



# **5520 Access Management System, Release 9.6.07**

## **User Guide**

**3JL-01001-BRAA-PCZZA**

**Issue: 02**

**December 2018**

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# 1 Preface

The 5520 AMS provides fault, configuration, and performance management of the underlying access networks, using a GUI and hierarchical tree navigation. The 5520 AMS also supports network-productivity features such as equipment profile management, NE backup and restore, and NE software management.

## 1.1 Documentation

The *5520 AMS Release Notice* describes changes or enhancements made to the software and its features, as well as information about delivery, compatibility, and customer documentation.

The *5520 AMS Solution Planning Guide* describes how to plan the purchase and configuration of hardware and software to support the deployment of the 5520 AMS.

The *5520 AMS Server Configuration Technical Guidelines* describes how to prepare hardware for installation of the 5520 AMS, including information about installing the server, setting up a cluster and configuring a network.

The *5520 AMS Installation and Migration Guide* describes how to install, optimize, and uninstall the 5520 AMS server, client, and plug-in components, as well as how to migrate data to the 5520 AMS from other EMSs.

The *5520 AMS Administrator Guide* describes administrative functions, including management of server-client communication, users, NE communication, schedules, links, and codes.

The *5520 AMS User Guide* describes user functions, including monitoring, fault, and alarm management and performing tasks that are common to all NEs.

The *5520 AMS Northbound Interface Guide* describes functions supported by the 5520 AMS NBI.

The *5520 AMS Glossary* provides descriptions of 5520 AMS-related terms and acronyms.

The *5520 AMS and 5529 Enhanced Applications Privacy Considerations* provides information on the product features that impact privacy and the measures taken to protect such data.

## 1.2 Conventions used in this guide

The following table lists the conventions that are used in this guide.

**Table 1** Documentation conventions

Convention	Description	Examples
Key name	Identifies a keyboard key.	Delete
Italics	Identifies a variable.	<i>hostname</i>
Key+Key	Type the appropriate consecutive keystroke sequence.	CTRL+G
Key-Key	Type the appropriate simultaneous keystroke sequence.	CTRL-G
↵	Press the Return or Enter key.	Press ↵
—	An em dash in a table cell indicates that there is no information or that the category is not applicable.	—
*	An asterisk is a wildcard character that means “any character” in a search argument. An asterisk also indicates a default option for an NMTI parameter.	Path_analysis.*file
→	Indicates a submenu.	File→Save

## 1.2.1 Important information

The following conventions are used to indicate important information:



**Warning** — Warning indicates that the described task or situation may, or will, cause equipment damage or serious performance problems.



**Caution** — Caution indicates that the described task or situation may, or will, cause service interruption.



**Note** — Note provides information that is, or may be, of special interest.



**Applies to** — The Applies to note indicates that the described task or situation applies only in the situation specified.

---

## 1.2.2 Navigation steps

The 5520 AMS GUI allows you to navigate to objects using any of the following methods:

- Navigation trees in the Network and Administration perspectives: Expand, collapse, and choose objects.
- Graphical View: Double-click on objects.
- Search and Find utilities: Enter information about the object in a window.

See Section [5.4](#) for more information about navigating in the GUI.

### Procedure 1 Example of NE navigation convention

- 
- 1 Navigate to the NE and choose *object*.
- 
- 2 Right-click *object* and choose *menu item*.
- 

## 1.2.3 Procedures with options or substeps

When there are options in a procedure, they are identified by an unordered list. When there are substeps in a procedure, they are identified by roman numerals.

### Procedure 2 Example of options in a procedure

At step [1](#), you can choose to perform one of the options provided in the unordered list. At step [2](#), you must do what the step indicates.

- 
- 1 This step offers two options. You must perform one of the following:
    - This is one option.
    - This is another option.
- 
- 2 You must perform this step.
-

---

### Procedure 3 Example of substeps in a procedure

At step 1, you must perform a series of substeps within a step. At step 2, you must do what the step indicates.

- 
- 1 This step has a series of substeps that you must perform to complete the step. You must perform the following substeps:
    - i This is the first substep.
    - ii This is the second substep.
    - iii This is the third substep.
  - 2 You must perform this step.
- 

## 1.3 Multiple PDF file search

You can use Adobe Reader, Release 6.0 or later, to search multiple PDF files for a term. Adobe Reader displays the results in a display panel. The results are grouped by PDF file. You can expand the entry for each file.



**Note** — The PDF files in which you search must be in the same folder.

### Procedure 4 To search multiple PDF files for a term

- 
- 1 Open Adobe Reader.
  - 2 Choose Edit→ Search from the Adobe Reader main menu. The Search panel opens.
  - 3 Enter the term to search for.
  - 4 Select the All PDF Documents option.
  - 5 Choose the folder in which to search using the drop-down menu.
-

6 Select the following search criteria, if required:

- Whole words only
  - Case-Sensitive
  - Include Bookmarks
  - Include Comments
- 

7 Click Search.

Adobe Reader displays the search results. Click the + symbol to expand the entries for each file.



**Note** — After you click on a hyperlink, right-click and choose Previous View from the contextual menu to return to the location of the hyperlink that you clicked on.

---

## 1.4 Contact information

If you have questions or comments about this documentation, contact:

[documentation.feedback@nokia.com](mailto:documentation.feedback@nokia.com)



# Getting started

[2 What's new](#)

[3 Overviews](#)

[4 Logging in and out of the 5520 AMS client](#)



## 2 What's new

[2.1 What's new in Release 9.6.07](#)

[2.2 What's new in Release 9.6.05](#)

[2.3 What's new in Release 9.6.03](#)

[2.4 What's new in Release 9.6](#)

[2.5 What's new in Release 9.5](#)

[2.6 What's new in Release 9.4](#)

[2.7 What's new in Release 9.3.10](#)

[2.8 What's new in Release 9.3.0](#)

### 2.1 What's new in Release 9.6.07

Table 2 lists the new 5520 AMS features and enhancements added to the *5520 AMS User Guide* for Release 9.6.07.

**Table 2** What's new in Release 9.6.07

Feature/enhancement	Description	See
<b>New features/enhancements</b>		
Audit configuration files	Added configuration file audit icons.	Section <a href="#">9.16</a>
Unacknowledged alarms	Added information about collecting details for unacknowledged alarms	Procedure <a href="#">81</a> and Table <a href="#">40</a>
Bird's-eye view in Map View	Added information on bird's-eye view in Map view.	Sub-section <a href="#">5.4.2</a> and Procedure <a href="#">32</a>
Privacy Considerations	Included the <i>5520 AMS and 5529 Enhanced Applications Privacy Considerations</i> document to the related documentation section.	Section <a href="#">1.1</a>
Number of NE tabs in Network Tree	Updated the maximum number tabs supported in the Network view.	Procedure <a href="#">20</a>
<b>Documentation changes</b>		
Number of NEs not fully reachable or supervised	Added information about the Find Objects window.	Procedure <a href="#">126</a>
Discovered template name	Added information about the discovered template name.	Procedure <a href="#">212</a>

(1 of 2)

Feature/enhancement	Description	See
5520 AMS GUI components	Added a column for the legend and updated the description for the AMS GUI components.	Table <a href="#">12</a>
Web links in the Tools menu	Added information about customized web links in the Tools menu.	Subsection <a href="#">5.1.1</a>

(2 of 2)

## 2.2 What's new in Release 9.6.05

Table [3](#) lists the new 5520 AMS features and enhancements added to the *5520 AMS User Guide* for Release 9.6.05.

**Table 3** What's new in Release 9.6.05

Feature/enhancement	Description	See
<b>New features/enhancements</b>		
Shortcut keys	Added shortcut keys for table view.	Table <a href="#">14</a>
Start and stop supervision of NEs at group level	Added a new security function, NE - Supervision at group level.	Section <a href="#">18.4</a> Procedures <a href="#">121</a> , <a href="#">123</a> , and <a href="#">153</a>
Configuration Template	Added information about the Configuration Template used for NEs managed by the Nokia Access Virtualizer Adaptor <sup>(1)</sup> .	Table <a href="#">46</a>
Boot Time	Added information on Boot Time parameter.	Section <a href="#">25.1</a>
<b>Documentation changes</b>		
Ping Test	Added more information on ping test executed from 5520 AMS and CLI.	Section <a href="#">32.3.1</a> and Procedure <a href="#">226</a>
Change NE IP Address option	Added note that the option 'Change NE IP Address' does not change the IP address of the NE.	Section <a href="#">17.6</a>
Data server	Updated the term Master data server as Active data server.	Table <a href="#">16</a>
Expand or collapse a node in a tree view	Updated the support of Arrow and F8 to expand or collapse a node in a tree view.	Section <a href="#">5.5</a>
Cut-through operation	Added information about the functions required in the user role to perform cut-through operation.	Sub-section <a href="#">20.1.1</a>
Deploying bulk templates	Updated the note on deploying bulk templates.	Procedure <a href="#">201</a>

(1 of 2)

Feature/enhancement	Description	See
Auto-refresh function in multiple alarm views	Added information about the function of auto-refresh when "Historical" alarm view and the combined alarm views such as "Current Alarms & Conditions" and "Current & Historical Alarms" are opened.	Procedure <a href="#">68</a>

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## Notes

<sup>(1)</sup> To use this functionality, you must have Nokia Access Virtualizer Adaptor installed. Contact your Nokia technical representative for more information.

## 2.3 What's new in Release 9.6.03

Table 4 lists the new 5520 AMS features and enhancements added to the *5520 AMS User Guide* for Release 9.6.03

**Table 4** What's new in Release 9.6.03

Feature/enhancement	Description	See
<b>New features/enhancements</b>		
Toggling alarms	Updated the description for Additional Info/Text parameter in the Object Details for Alarm parameters table.	Table <a href="#">40</a>
Object monitoring view	Added a procedure to define filters in Object monitoring view.	Procedure <a href="#">189</a>
	Added icons for Start Monitoring and Show NE history.	Table <a href="#">20</a>
Zero touch provisioning	Added a new section on Zero touch provisioning.	Section <a href="#">18.6</a>
Nokia Access Virtualizer Adaptor in 5520 AMS <sup>(1)</sup>	Added information about Nokia Access Virtualizer Adaptor in the 5520 AMS.	Chapter <a href="#">35</a> Section <a href="#">18.5</a>
Message broadcasting	Added two new icons for message box-normal and important message icons.	Table <a href="#">20</a>
	Updated the section on message broadcasting	Section <a href="#">14.1.1</a>
Historical alarms	Added notes on the new show historical alarms view	Procedure <a href="#">71</a>
	Added the icons on show historical alarms	Table <a href="#">28</a>
Start and Stop supervision	Added more information on start and stop supervision	Procedures <a href="#">121</a> and <a href="#">153</a>
Rate-limiting login mechanism	Added a note on rate-limiting login mechanism.	Procedure <a href="#">10</a> .

(1 of 2)

Feature/enhancement	Description	See
NE-NE links	Added information on NE-NE link type.	Table <a href="#">17</a>
<b>Documentation changes</b>		
IP pool information	Removed the procedure to create a RADIUS IP pool and corresponding IP pool reservation, and removed IP pool steps from the procedure to create RADIUS domain.	Procedure <a href="#">173</a>
ZTP action	Added a note on retrying a failed ZTP action.	Section <a href="#">18.6</a>
Deploying bulk templates	Added a note on deploying bulk templates.	Procedure <a href="#">201</a>
PM counters	Added a note on PM counters display in Table view.	Section <a href="#">29.3</a>

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## Notes

- (1) To use this functionality, you must have Nokia Access Virtualizer Adaptor installed. Contact your Nokia technical representative for more information.

## 2.4 What's new in Release 9.6

Table [5](#) lists the new 5520 AMS features and enhancements added to the *5520 AMS User Guide* for Release 9.6.

**Table 5** What's new in Release 9.6

Feature/enhancement	Description	See
<b>New features/enhancements</b>		
Action Manager	Added information about Action filters.	Sub-section <a href="#">10.2.1</a> Procedures <a href="#">59</a> and <a href="#">60</a>
Maximum number of password changes in a day	Added a note regarding maximum number of password changes allowed in a day.	Section <a href="#">4.5</a>
Maintenance mode	Added a section with procedures for enabling and disabling maintenance mode.	Section <a href="#">17.7</a>
SIP FTP files	Updated the following section about successful and unsuccessful SIP file generation.	Sub-section <a href="#">33.2</a>
Aggregated EMS alarms	Added information on EMS Aggregate Alarms which appear in the status bar.	Table <a href="#">20</a> , Figure <a href="#">1</a> , Section <a href="#">5.1.2</a>
NE Subtype/Release	Added a new parameter in Object Details for Alarm parameters.	Table <a href="#">40</a>

(1 of 2)

Feature/enhancement	Description	See
Create an NE	Added new parameters in create NE parameters guidelines.	Table <a href="#">46</a>
<b>Documentation changes</b>		
Creating a command log file	Updated the procedure on creating a command log file.	Procedure <a href="#">133</a>
SIP FTP	The SIP FTP section has been moved to <i>5520 AMS Administrator Guide</i> .	
Syslogs	Removed information about SFTP and TFTP in viewing security log files.	Section <a href="#">28.5</a>
TL1 or CLI NE Cut-through log file	Added new icons for the CLI cut-through logs.	Table <a href="#">20</a>
	Modified the section and procedure to create a command log.	Section <a href="#">20.3</a> Procedure <a href="#">133</a>
TL1 or CLI cut-through prompt issue	Added a note to mention about the CLI prompt change for a successful CLI cut-through session.	Procedure <a href="#">131</a>
Multiple NE edit	Added a note to mention about the NE group details are not updated immediately after performing multiple NE edit.	Section <a href="#">8.2</a>
Configuring a web browser	Added a section and procedure about configuring a web browser.	Section <a href="#">6.3</a>
Historical actions	Updated the note on the threshold to move and delete actions from the historical view.	Section <a href="#">10.3</a>
Help Legend	The Legend is removed from the 5520 AMS GUI Help. The 5520 AMS icons continue to be described in the <i>5520 AMS User Guide</i> .	-

(2 of 2)

## 2.5 What's new in Release 9.5

Table [6](#) lists the new 5520 AMS features and enhancements added to the *5520 AMS User Guide* for Release 9.5.

**Table 6** What's new in Release 9.5

Feature/enhancement	Description	See
New features/enhancements		
Stopped support to Solaris	Removed references to Solaris from the guide.	Chapters <a href="#">4</a> , <a href="#">6</a> , and <a href="#">33</a>
GSIP 5.0 Support	Added the latest GSIP version supported.	Section <a href="#">33.1</a>

(1 of 2)

Feature/enhancement	Description	See
Smart NE groups	Added a new chapter for Custom Groups. Updated table for custom groups perspective, enumerations and updated section for NE selection.	Chapter <a href="#">23</a> Table <a href="#">18</a> , <a href="#">55</a> and Section <a href="#">17.4</a>
Map and Link management license	Removed the references to Map and Link management license from the guide.	Chapter <a href="#">6</a> , <a href="#">9</a> , and <a href="#">34</a>
Applying multiple Template Group Versions at NE supervision	Modified the Template Group parameter and its description. Added a note about template group containing templates with open arguments.	Table <a href="#">46</a>
Changing NE IP address	Added a new section for Managing IP address.	Section <a href="#">17.6</a>
Two-factor authentication	Added a note on two-factor authentication for Radius server authentication.	Procedure <a href="#">10</a>
Documentation Changes		
Moved the AMS GUI option	Moved object identifier explanation.	Table <a href="#">10</a>
Managing perspectives	Removed the Dock feature from the guide.	Procedure <a href="#">44</a>
Locking and unlocking the 5520 AMS GUI	Modified the note on locking mechanism.	Section <a href="#">4.6</a>
SSH configuration	Added a caution note on the impact on AMS server behavior due to customization of SSH configuration.	Section <a href="#">26.2</a>
Reachability Test With IP Stats and Traceroute	Added a caution note regarding Reachability Test With IP Stats and Traceroute.	Procedure <a href="#">225</a>
SSH system parameters	Added a procedure to configure the SSH system parameters.	Procedure <a href="#">167</a>
160k profile support	Updated the procedure to add templates to a group.	Procedure <a href="#">204</a>
AMS GUI keys	Updated the table for Arrow key.	Table <a href="#">14</a>
PM counter	Added a note related to PM counter data.	Section <a href="#">29.3</a>
SFTP server and SFTP client	Updated section to include information regarding syslogs, SFTP client and servers.	Section <a href="#">Architecture</a>

(2 of 2)

## 2.6 What's new in Release 9.4

Table 7 lists the new 5520 AMS features and enhancements added to the *5520 AMS User Guide* for Release 9.4.

**Table 7** What's new in Release 9.4

Feature/enhancement	Description	See
New features/enhancements		
Print function	Added a procedure to print records in different views.	Procedure <a href="#">29</a>
	Added the print icon to the PM graphical view buttons table.	Table <a href="#">67</a>
Solaris client	Updated the procedure to start up client with Solaris information.	Procedure <a href="#">9</a> and <a href="#">37</a>
Reachability test	Added a procedure to perform a reachability test on multiple NEs.	Procedure <a href="#">225</a>
Subscriber search attribute categories	Renamed Unmapped Attributes to Not Collected for SMA.	Table <a href="#">20</a>
Managing NE selection	Added a section to manage NE selection in NE Selection wizard and Agent Selection wizard.	Section <a href="#">17.4</a>
Using the Map view	Updated the procedure to add a new graticule or quadrillage option in the Map view.	Procedure <a href="#">32</a>
Upgrading SIP manually	Added a procedure to upgrade SIP FTP.	Procedure <a href="#">242</a>
<b>Documentation Changes</b>		
Detected and supervised NEs	Added a note related to inventory collection for the NEs that are detected and supervised automatically.	Section <a href="#">15.1</a>
5520 AMS GUI	Updated the 5520 AMS GUI component graphic.	Figure <a href="#">1</a>

## 2.7 What's new in Release 9.3.10

Table 8 lists the new 5520 AMS features and enhancements added to the *5520 AMS User Guide* for Release 9.3.10.

**Table 8** What's new in Release 9.3.10

Feature/enhancement	Description	See
<b>New features/enhancements</b>		
Displaying 5520 AMS version information in the GUI	Added a procedure to view 5520 AMS version information in the GUI	Procedure <a href="#">18</a>
Avoiding failure during creation or deletion of NE objects	Added a note indicating to contact the Nokia representative to avoid failure during creation or deletion of NE objects.	Section <a href="#">17.3</a>
Templates	Updated show template versions information.	Section <a href="#">30.2</a> , Procedure <a href="#">197</a>
	Added a note to the procedure to delete templates.	Procedure <a href="#">203</a>
Red Hat Enterprise Linux client	Added a procedure to start up the Red Hat Enterprise Linux client.	Procedure <a href="#">9</a>
GSIP	Add the latest release of the GSIP to the list of GSIP releases supported.	Section <a href="#">33.1</a>
<b>Documentation</b>		
Tree icons	Updated Search the next occurrence and Search the previous occurrence icons.	Table <a href="#">25</a>
Map view links	Added information on map view links and provided references of the document where these links are created.	Section <a href="#">6.4</a> and Table <a href="#">17</a>
Single Ended Line Test	Modified the description of SELT.	Table <a href="#">77</a>
5529 Enhanced Applications	Moved the table note on the 5529 Enhanced Applications documentation to the section.	Sections <a href="#">6.1</a> and <a href="#">7.1</a>
Software icon	Updated the software, software package tree and software release icons.	Tables <a href="#">19</a> , <a href="#">21</a> and <a href="#">25</a>
Shortcut Keys	Added information about the GUI shortcut keys.	Table <a href="#">14</a>
Graphical or Map view as image	Updated the procedure to save a Graphical or Map view as an image.	Procedure <a href="#">37</a>
Alarm rules	Modified the icon descriptions for Alarm Rules view.	Table <a href="#">20</a>
Template management operations	Modified the sub-section on template management operations and added a sub-section title to it.	Section <a href="#">Template behavior</a>
	Added a note to the procedure to delete a template.	Procedure <a href="#">202</a>
5520 AMS version information	Updated the procedure to add the Installation Details for 5520 AMS version information.	Procedure <a href="#">18</a>

## 2.8 What's new in Release 9.3.0

Table [9](#) lists the new 5520 AMS features and enhancements added to the *5520 AMS User Guide* for Release 9.3.0.

**Table 9** What's new in Release 9.3.0

Feature/enhancement	Description	See
<b>New features/enhancements</b>		
Managing alarm rules	Added support for Alarm Rules view.	Tables <a href="#">13</a> , <a href="#">16</a> , <a href="#">18</a>
	Added icons supported in the Alarm Rules view.	Tables <a href="#">20</a> , <a href="#">21</a>
Alarm timestamps	Updated the description of Event Time and Cleared Time.	Table <a href="#">40</a>
	Updated the description of Network Alarm Summary for the 5520 AMS GUI views.	Table <a href="#">16</a>
<b>Documentation</b>		
Find functionality	Added a note to explain the find functionality for software names.	Procedure <a href="#">53</a>
TL1 and CLI cut-through	Added a note that copying the TL1/CLI commands does not work for commands above a certain number.	Section <a href="#">20.1</a>
Inventory collection strategy	Removed the section 'Configuring an inventory collection strategy for an NE'.	—
Cluster status degraded	Added a note in the table to explain that the degraded state of the cluster is for notification purpose only.	Table <a href="#">20</a>



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## 3 Overviews

### 3.1 Guide overview

### 3.2 5520 AMS overview

### 3.3 5529 Enhanced Applications

### 3.4 Technical support

## 3.1 Guide overview

The *5520 AMS User Guide* includes procedures for functions that can be performed in the 5520 AMS GUI and that do not require you to be logged in as an administrator. These functions include:

- Monitoring and fault management
- Managing alarms
- Network management
- Tasks common to NEs, such as:
  - Creating an NE
  - Communicating with NEs using CLI and TL1 cut-throughs
  - Managing SNMP, SNTP, and SSH
  - RADIUS authentication
  - Upgrading, backing up, and restoring NE software
  - Using syslogs
  - Managing PM counters
  - Managing templates
  - Managing NE alarms
  - NE troubleshooting

Before you can perform the procedures in this guide, the 5520 AMS client and all required plug-ins must be installed and all licenses must be applied. For installation information, see the *5520 AMS Installation and Migration Guide*. For information about applying licenses and other configuration that needs to be performed by an administrator, see the *5520 AMS Administrator Guide*.

## 3.2 5520 AMS overview

The 5520 AMS provides fault, configuration, and performance management of the underlying networks, using a GUI and hierarchical tree navigation. The 5520 AMS also supports network-productivity features such as equipment profile management, NE backup and restore, and NE software management.

---

Navigation in the 5520 AMS is performed within the hierarchical structure of the navigation tree, using clicks to expand and explore the contents, and within the Graphical View to display sub-objects. In the case of the Network tree, you can open a new tab per NE, and navigate to the sub-objects within the hierarchical tree structure. Multiple views, in addition to those in the default Network perspective, are available to customize the environment. You can detach views and move them across multiple monitors if the equipment is set up for multiple displays.

For immediate visual identification of NE status, real-time alarm and status information is displayed beside objects in the Network perspective Network Tree and as part of the object icon in the Graphical View. Hardware and software features are identified as objects in the Network Tree, which are grouped by type or collocated with the object that is being configured. Enhanced productivity features, such as equipment profile management, scheduling, and NE backup and restore tasks, are provided.

The 5520 AMS has a Java-based platform and provides advanced OSS interfaces based on Web Services (XML/SOAP). It can be installed in a Microsoft Windows or Red Hat Enterprise Linux environment.

### 3.2.1 5520 AMS GUI

The 5520 AMS has a Java-based GUI. You can use the 5520 AMS to manage the network and EMS.

You can configure all NE parameters using the 5520 AMS, instead of using CLI for NE configuration.

The 5520 AMS GUI allows you to customize the display options so that you can choose which views to display. Click Pin icon in any view to open a pinned version of the view that will not change (unless you refresh it). You can pin multiple views to compare different objects. You can also detach the views, which you can then move to another location on the computer monitor.

Most tables in the 5520 AMS GUI are also customizable. You can sort the rows in most tables by clicking on the column header.

#### 3.2.1.1 Navigation trees and Graphical View

Navigation trees provide a representation of the network and the 5520 AMS in a hierarchical tree structure. From the Network perspective, the Network Tree provides a simple and structured view of the complex network. From the Administration perspective, you can use the Administration Tree to manage the administrative features of the 5520 AMS.

---

In the Network Tree, the default tab displays the Group Network, the NE Groups and the NEs. You cannot close this tab. Double-click an NE, or right-click the NE and choose Open, to open a new tab for the NE. To configure the number of NE tabs in the Network Tree, see Procedure [20](#).

When you click on an object in a navigation tree, the open views are updated to display the information for the object. For example, the Object Details view displays the object parameters, and the Alarm Summary shows the alarm status of the object.

Some of the hardware objects in the Network Tree support the Graphical View, which displays a graphical representation of the object that you select in the Network Tree. You can display sub-objects by double-clicking on the object in the Graphical View, when a graphical representation of the subobjects is available.

### 3.2.1.2 Perspectives and views

A perspective is a predefined set of related views, menus, and toolbars that allow you to configure, monitor, or manage a 5520 AMS component. For example, the Alarm perspective opens the related alarm views. You can change between perspectives to allow you to access different management functions and features.

The 5520 AMS also allows you to create a custom perspective to display a selected group of views.

## 3.2.2 Adding NEs

You can add NEs to the 5520 AMS GUI by creating them as an NE (see Procedure [123](#)). You can view NEs in the Network perspective.

When the NE has been created, you can manage it using the GUI or send commands to it using a TL1 Gateway or TL1 or CLI cut-through.

## 3.2.3 Alarms

In the Network perspective, the Network Tree and the Graphical View provide visual identification of alarms.

The Network Alarm Summary displays the current condition of alarms for the NE object that is selected in the Network Tree. Alarm conditions are color-coded by severity.

An Alarm view is also provided, through which you can view and sort current alarms. Current alarms include active and cleared alarms based on configured Alarm Settings. See Procedure [66](#) to view current alarms using the 5520 AMS.

See Section [11.2](#) for information about the Historical Alarm View.

See the *5520 AMS Administrator Guide* for information about filtering the severities of alarms that are reported to the 5520 AMS.

Before you can perform the procedures in this guide, the 5520 AMS software and client must be installed and running, administrative settings must be configured, and you must have a user account.

For information about installation, see the *5520 AMS Installation and Migration Guide*. For detailed hardware requirements and network specifications, see the *5520 AMS Solution Planning Guide*.

See the *5520 AMS Administrator Guide* for information about administrative functions, including management of server-client communication, users, NE communication, schedules, links, and codes.

For information specific to management of a particular NE, see the Operations and Maintenance guide for the NE.

### 3.3 5529 Enhanced Applications

The 5529 Enhanced Applications are a set of optional products that expand the management capabilities provided by the 5520 AMS. Each application provides a specific management function. The supported applications are:

- 5529 Access Provisioning Center
- 5529 Inventory Data Manager
- 5529 Large-scale Release Manager
- 5529 OSS Alarm Dispatcher
- 5529 Statistics and Data Collector

For more information about one of the 5529 Enhanced Applications, see the product documentation for the application.

### 3.4 Technical support

Include the release of the 5520 AMS and the 5520 AMS plug-in release and version when reporting issues to Nokia Technical Support.

Procedure 5 describes how to find the contact information for technical assistance for a country.

**Procedure 5 To find contact information for technical assistance**

- 
- 1 Go to <http://support.alcatel-lucent.com>.

---

  - 2 Log in to the Nokia Customer and Business Partner Portals with the user name and password for your OLCS account. A customized Customer Center page opens.

---

  - 3 Under Product Technical Support, select a country. The Nokia Support Contact Numbers window opens and displays the phone and e-mail contact information for technical assistance for the selected country.
-



## 4 Logging in and out of the 5520 AMS client

### [4.1 Overview](#)

### [4.2 Starting up the 5520 AMS client](#)

### [4.3 Logging in](#)

### [4.4 Logging in as a trusted host user](#)

### [4.5 Changing the user account password](#)

### [4.6 Locking and unlocking the 5520 AMS GUI](#)

### [4.7 Logging out](#)

### [4.8 Closing and exiting the client](#)

### [4.9 Client login behavior and active client session behavior in cluster setups](#)

## 4.1 Overview

This chapter describes the procedures for starting up, logging in to, and logging out of the 5520 AMS client.

## 4.2 Starting up the 5520 AMS client

The first time that you start the 5520 AMS client and log in, the Network perspective is displayed. The Network perspective contains the Network Tree, the Graphical View, the Object Details view, and the Network Alarm Summary view. This perspective also provides a high-level overview of the items in the network and their status. On subsequent logins, the 5520 AMS GUI displays the views that were open during the last session.

---

**Procedure 6 To start up the 5520 AMS client from the Windows command prompt**

---

- 1 To start up the 5520 AMS client from the command prompt, perform any of the following:
    - To log in without a startup option, enter:  

```
path\amsclient.exe ↵
```
    - To log in with a start up option, pass the start up options through the command line, enter:  

```
path\amsclient.exe options ↵
```

where:  
*path* is the path to the 5520 AMS installation directory; for example, C:\Program Files\ams.  
*options* is one or more options given in the Table 10. If more than one option is given, the options must be separated by a space.
  - 2 Log in to the 5520 AMS client. See Procedure 10.
- 

**Procedure 7 To start up the 5520 AMS client from Windows Explorer**

---

- 1 Navigate to the 5520 AMS client installation directory. For example, type:  

```
C:\Program Files\ams ↵
```
- 2 Double-click the amsclient.exe file to start the 5520 AMS client.



**Note** — You can create a desktop shortcut to the amsclient.exe file.

- 
- 3 Log in to the client. See Procedure 10.



**Note 1** — To add start up options to the amsclient.ini file, see Procedure 8.

**Note 2** — If you are connecting to the 5520 AMS using a proxy server, configure your proxy settings. See the 5520 AMS Administrator Guide for more information on Configuring proxy settings in the 5520 AMS.

---

## Procedure 8 To add start up options in amsclient.ini

To add start up options, perform the following steps:

- 1 Close the 5520 AMS client (if it is open).
- 2 In the 5520 AMS client installation directory, open the amsclient.ini file.
- 3 Add the required start up options to the amsclient.ini. See Table 10 for information on the start up options.
- 4 Save the amsclient.ini file.

**Table 10 Startup options**

Options	Description
-allowmultiple	Allows a user to start multiple 5520 AMS clients.
-serverip <i>IP_address</i>	Specifies a server to log in to 5520 AMS client.
-objectid <i>object</i>	Specifies an object to navigate in 5520 AMS GUI. For example, ams:application.nelist:group:/name=2. This navigates to a group with the name 2 immediately after you log in. When the filter is applied, only groups with matching NEs are shown in the Network Tree.
-noclientupdate	Disables automatic updates in 5520 AMS client.
-grayoutserveratlogin	Forbids a user to modify the server in the login dialog.
-clientsauthentication	Allows the user to login to the 5520 AMS as a trusted host user. See Section 4.4.



**Note 1** — The startup options must be present at the beginning of the file, one option per line, before the line "-vmargs".

**Note 2** — If you are using the 'noclientupdates' option, you need to use the Help menu to check for updates. From the GUI, choose Help→Install→Install→Update.

**Note 3** — You need to add the IP\_address in a new line in the amsclient.ini file.

---

## Procedure 9 To start up the Red Hat Enterprise Linux client

Starting the client application in the Red Hat Enterprise Linux operating system using the `amsclient` script requires the terminal window to be open while the client is running. To allow the client application to run in the background, you can start the client application using the `ams` script instead.

- 
- 1 Navigate to the folder in which you installed the 5520 AMS client application.



**Note** — To log in with a start up option, see Table 10. Pass the start up options either through command line or through the `amsclient.ini`. The start up options must be present at the beginning of the file, one option per line, before the line `"-vmargs"`.

- 
- 2 To start the client application, perform one of the following:



**Note** — If you choose option **i**, the terminal window must remain open while the client is running. If you choose option **ii**, the client application will run in the background.

- i Type:

```
client_dir/ams/amsclient ↵
```

where *client\_dir* is the installation directory you chose when you installed the client

- ii Type:

```
client_dir/ams/ams ↵
```

where *client\_dir* is the installation directory you chose when you installed the client

The 5520 AMS client opens and displays a login window.

- 
- 3 Log in to the 5520 AMS client. See Procedure 10.
-

---

## 4.3 Logging in

Before you can log in to the 5520 AMS client, you must ensure the following:

- The 5520 AMS server must be installed. See the *5520 AMS Installation and Migration Guide* for more information.
- You need a 5520 AMS user account and password. See the *5520 AMS Administrator Guide* for more information about managing user accounts.
- You need the IP address for the 5520 AMS server that the client is accessing.



**Note** — If the 5520 AMS server has several network interfaces, use the IP address of the primary interface.

### Procedure 10 To log in to the 5520 AMS client

Use this procedure to log in to the 5520 AMS client.

- 
- 1 Click the Login icon () on the 5520 AMS toolbar, or choose Login from the File menu.

Result: The Login window opens.

- 
- 2 In the Login window, perform one of the following steps:
    - Enter the IP address or hostname of the server in the Server field.
    - If you have logged in to the site before, click on the drop-down menu in the Server field and choose the site name.
- 
- 3 Enter the user ID and password.

**4** Click Finish.

**Note 1** — If login is successful and RADIUS authentication is enabled, the Enter the Passcode dialog may open. The RADIUS server responds to the Access-Request message of the client with an Access-Challenge message for additional authentication. The additional authentication requested may be a secure token, secondary password, or PIN. Go to step [5](#).

**Note 2** — If the login is successful, and RADIUS authentication is not enabled, go to step [6](#).

**Note 3** — If the login fails, the login problems or errors are displayed at the top of the Login window. Verify that you have entered the correct IP address, user ID, password and passcode (if prompted during RADIUS authentication).

**Note 4** — If the user password is an empty string in the user account, the user's login request will be rejected in the following scenarios:

- If the authentication source is remote authentication, and the Use Internal Database check box is selected for the user account.
- If the authentication source is local authentication.

**Note 5** — If you are using the two-factor authentication with append method for RADIUS server authentication, then the Authentication Scheme must be set to PAP in Site settings and you need to enter the passcode along with the password in the Password field. For more information, see the *5520 AMS Administrator Guide*.

---

**5** Enter the passcode in the Passcode field, and click Finish.

Result: If the login succeeds, go to step [6](#).

- 
- 6 If the password expiration warning is configured for the user, and the user tries to login during the password expiration warning period, then, after a successful login, the 5520 AMS displays a password expiration warning with the information that the user's password will expire within the configured number of days and prompts the user to change the password.



**Note** — This warning does not appear for remotely authenticated users. The following message is displayed: Your password will expire in <n> days. Would you like to change your password NOW?

Perform the following steps:

- Click Yes to change the password. The Change Password Information dialog appears with the following confirmation message: After changing your password, your session will expire and you will have to login again. Do you want to proceed? Click Yes to change the password of the user. After changing the password, go to step 7.
- Click No to proceed without changing the password.  
Result: The login information window opens.

- 
- 7 Click OK to complete the login.



**Note 1** — If the License violation window appears, your license is in violation. Click OK to accept the message, or click Show License to view the license alarm details. If you cannot view the license, contact your administrator.

**Note 2** — If RADIUS or LDAP authentication is enabled and you cannot access the 5520 AMS GUI, see the *5520 AMS Administrator Guide* for the procedure to disable RADIUS or LDAP authentication.

**Note 3** — In a simplex setup, if a client is logging in to a server which is starting up, the message "Server currently starting up" is displayed.

**Note 4** — In a cluster setup, the client login behavior and the active client session behavior differ depending on the status of the application servers. For more information, see Section 4.9.

**Note 5** — You can open multiple GUI windows. To open another window, choose File→Open New Window.

**Note 6** — When a user logs in to the 5520 AMS client with correct user id and incorrect password, the user is locked out after a configured number of attempts. The source IP address of the failed login is stored. The 5520 AMS implements a rate limiting login mechanism that increasingly delays the successive failed logins from the same source. If you encounter a login failure, contact your system administrator.

---

---

## 4.4 Logging in as a trusted host user

The 5520 AMS also provides you with the option to log in as a trusted host user. When logging in to the 5520 AMS from a trusted host, enter a password of your choice in the Login window. You can use a different password on your next login.

To enable user login from a trusted host, the 5520 AMS administrator needs first to perform the following configuration tasks on the 5520 AMS server:

- Set the Authentication Source to Client OS.
- Create a user account with the same name as the trusted host user ID.

See the *5520 AMS Administrator Guide* for more information about the configuration tasks.

When user login from trusted hosts has been enabled on the 5520 AMS, perform Procedure 11 to log in to the 5520 AMS client.

### Procedure 11 To log in to the 5520 AMS as a trusted host user

Use this procedure to log in to the 5520 AMS as a trusted host user.

- 
- 1 Navigate to the 5520 AMS client installation directory, and double-click the `amsclient.exe` file to start the 5520 AMS client.

Result: The Login window opens.



**Note** — You can also configure a Windows command prompt to log in to the 5520 AMS as a trusted host user, then create a shortcut to the command prompt. You need to enter the following command at the prompt:

```
amsclient.exe -clientosauthentication ↵
```

When you log in using the shortcut to the command prompt, the Password field is not visible.

- 
- 2 Fill in the appropriate values in the Server and User fields. Fill in a Password of your choice. Click Finish to complete the login.

Result: If the login is successful, a Login Information window opens.

---

If the login is unsuccessful, the problems or errors are displayed at the top of the Login window. Verify that you have entered the correct IP address and user ID.



**Note 1** — If you encounter a login failure, see your administrator.

**Note 2** — If the violation window appears, your license is in violation. Click OK to accept the message, or click Show License to view the license alarm details. If you cannot view the license, contact your administrator.

- 
- 3 Click OK to complete the login.
- 

## 4.5 Changing the user account password

You can change the password for the user account you used to log in to the 5520 AMS. You may be required to follow rules for the new password, such as including a special character. See your system administrator for information.

When you change the password, you are logged out and required to log in with the new password.



**Note** — An operator can change their password only a limited number of times per day. When this threshold is exceeded, an error message “Max. number of password change attempts reached” is displayed in the Change Password window.

See the *5520 AMS Administrator Guide* for information about managing user accounts.

### Procedure 12 To change the user account password

- 
- 1 Log in to the 5520 AMS client. See Procedure [10](#) or [11](#).
- 

- 2 Click the Change Password icon () on the GUI toolbar.

Result: A confirmation window opens and warns that you will be required to log in with the new password after you change the password.

- 
- 3 Click Yes to proceed.

Result: The Change Password window opens.

- 
- 4 Configure the parameters and click OK.
-

---

Result: The Change Password window closes and you are logged out.

---

- 5 Log in to the 5520 AMS client using the new password. See Procedure [10](#) or [11](#).
- 

## 4.6 Locking and unlocking the 5520 AMS GUI



**Note 1** — You need to be logged in to the 5520 AMS GUI to lock the screen.

**Note 2** — The locking mechanism is only supported for Internal Database users.

### Procedure 13 To lock the 5520 AMS GUI

Use this procedure to lock the 5520 AMS GUI.

- 1 From the File menu, select Lock Screen, or click the Lock Screen icon (  ) on the 5520 AMS toolbar.

Result: The Lock dialog appears with the following message: *Are you sure you want to lock the screen?*

- 2 Click Yes to lock the 5520 AMS GUI.

Result: The 5520 AMS GUI is locked.

---

### Procedure 14 To unlock the 5520 AMS GUI

Use this procedure to unlock the 5520 AMS GUI.

- 1 Enter your password in the Password field of the 5520 AMS Lock Screen dialog.
- 2 Click Finish to unlock the 5520 AMS GUI.

---

Result: The 5520 AMS GUI is unlocked. You can also log out from the 5520 AMS GUI, by entering the correct password and clicking Logout in the 5520 AMS Lock Screen dialog.



**Note** — If you click on the Close icon in the 5520 AMS Lock Screen dialog, the following message is displayed: Press 'Logout' to log out or 'Finish' to unlock.

---

## 4.7 Logging out

The GUI stores the open views and perspectives from the last session and displays them the next time you log in.

### Procedure 15 To log out of the 5520 AMS client

Use this procedure to log out of the 5520 AMS client from a Windows-based workstation.

---

1 Perform one of the following steps:

- On the 5520 AMS toolbar, click the Logout icon ().
- Choose File→Logout.

---

2 Click Yes to confirm the action.

Result: You are now logged out of the 5520 AMS client. All the open GUI windows will remain open.

---

## 4.8 Closing and exiting the client

You can open multiple 5520 AMS GUI windows. See Procedure 10. Each window can be closed without affecting the others. When you exit the client, you will be logged out and all open windows will be closed. On your next login, all the windows, views, and perspectives that were open when you last logged out will be restored.

A session time-out of up to five minutes can occur if the client is disconnected and you cannot close or exit correctly.

---

**Procedure 16 To close a 5520 AMS GUI window**

Use this procedure if you have more than one GUI window open and need to close one window without logging out of the client.

---

1 From the window you need to close, perform one of the following steps:

- Click Close in the top right corner of the window.
- Choose File→Close.

---

2 Click Yes to confirm the action.

Result: The GUI window will close.

---

**Procedure 17 To exit the 5520 AMS client**

Use this procedure if you need to log out of the 5520 AMS client and close all GUI windows.

---

1 Perform one of the following steps:

- Choose File→Exit.
- If you have only one GUI window open, click Close in the top right corner of the window.

---

2 Click Yes to confirm the action.

Result: You will be logged out of the 5520 AMS client and all open GUI windows will close.

---

## 4.9 Client login behavior and active client session behavior in cluster setups

In cluster setups, the client login behavior and the active client session behavior differ depending on the status of the application servers.

In cluster setups, IP filtering is used to block or unblock the client interface during server startup. By default, the IP filtering is disabled and the client interface is not blocked during server startup. The GUI login requests during server startup are allowed. Enabling IP filtering blocks the client interface during server startup, and the GUI login requests during server startup are not allowed.

Table 11 lists the client login behavior for the chosen IP filtering setting and the active session behavior in cluster setups.

For information on choosing the IP filtering setting in cluster setups, see the *5520 AMS Installation and Migration Guide*.

**Table 11 Client login behavior and active client session behavior in cluster setups**

Scenario	Active client session behavior	Client login behavior with IP filtering disabled	Client login behavior with IP filtering enabled
Both the application servers are down	-	The message "No Connection to Server" is displayed. Check the server status, the connection interface and the GUI software version.	The message "No Connection to Server" is displayed. Check the server status, the connection interface and the GUI software version.
One application server is starting up and the other server is down	-	The message "No Connection to Server" is displayed until the application server component is deployed. The application server component is the first component to be deployed from the 5520 AMS. After the application server component is deployed, the message "Server currently starting up" is displayed.	The message "No Connection to Server" is displayed. Check the server status, the connection interface and the GUI software version.
Both the application servers are starting up	-	The message "No Connection to Server" is displayed until the application server component is deployed. The application server component is the first component to be deployed from the 5520 AMS. After the application server component is deployed, the message "Server currently starting up" is displayed.	The message "No Connection to Server" is displayed. Check the server status, the connection interface and the GUI software version.

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Scenario	Active client session behavior	Client login behavior with IP filtering disabled	Client login behavior with IP filtering enabled
<p>One application server has fully started and the other server is starting up</p>	<p>Remains active</p>	<p>If the login request is sent to the server which is starting up, the message "No Connection to Server" is displayed until the application server component is deployed. The application server component is the first component to be deployed from the 5520 AMS.</p> <p>After the application server component is deployed, the message "Server currently starting up" is displayed.</p> <p>If you have stopped the 5520 AMS server for maintenance and try to access the NEs managed by the server which is starting up, exceptions are displayed.</p>	<p>Login is successful.</p> <p>If you have stopped the 5520 AMS server for maintenance and try to access the NEs managed by the server which is starting up, exceptions are displayed.</p>
		<p>If the login request is sent to the server which is fully started, the login will be successful.</p>	
<p>Master application server goes down</p>	<p>User is logged out</p>	<p>Login is successful.</p> <p>While the load rebalancing is in progress, if you try to access the NEs that are managed by the server which is going down, exceptions are displayed.</p>	

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Scenario		Active client session behavior	Client login behavior with IP filtering disabled	Client login behavior with IP filtering enabled
Non-master application server goes down	If the client is logged in to the master application server, and if the non-master application server is stopped, shutdown or restarted	Remains active	Login is successful. While the load rebalancing is in progress, if you try to access the NEs that are managed by the server which is going down, exceptions are displayed.	
	If the client is logged in to the master application server, and if the cluster communication interface goes down	Remains active		
	If the client is logged in to the non-master application server, and if the non-master application server is stopped, shutdown or restarted	Remains active		
	If the client is logged in to the non-master application server, and if the cluster communication interface goes down	User is logged out		

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# 5520 AMS GUI

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[6 Views](#)

[7 Perspectives](#)

[8 Objects](#)

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# 5 5520 AMS GUI overview

- 5.1 Overview
- 5.2 Viewing 5520 AMS version information
- 5.3 GUI language
- 5.4 Navigation in the GUI
- 5.5 Key shortcuts
- 5.6 Alarms

## 5.1 Overview

The 5520 AMS is an EMS that supports network configuration, fault management, performance monitoring, and security for the supported NEs. The 5520 AMS GUI can be used to manage a network and the EMS. Figure 1 shows the components of the GUI.

**Figure 1** 5520 AMS GUI components

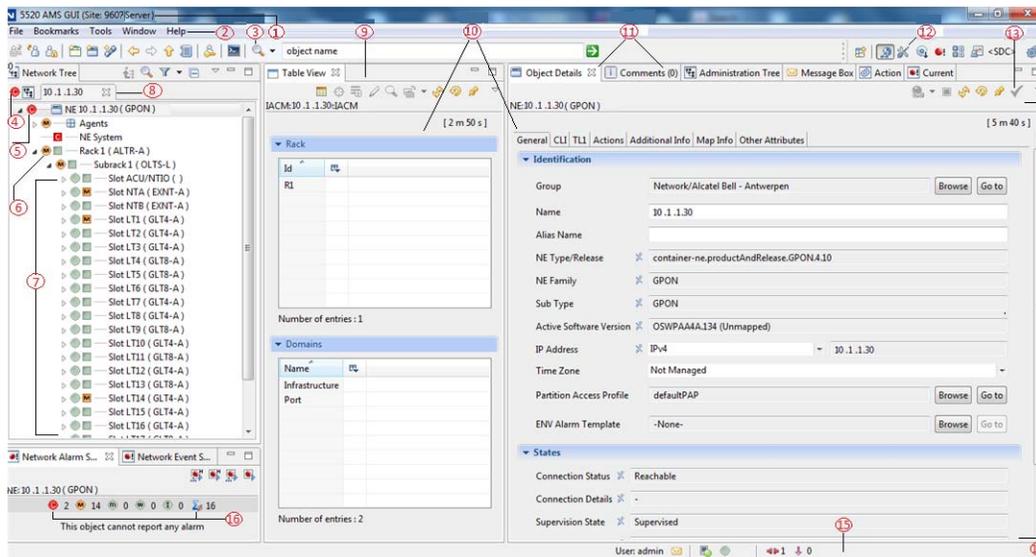


Table 12 describes the components in the AMS GUI:

**Table 12** 5520 AMS GUI components

Legend	Area	Description
1	Titlebar	Name of the EMS, site name in this format: 5520 AMS GUI (Site: <i>site_name</i> ). When the GUI is minimized, mouseover provides the same information
2	Menu bar	File, Bookmarks, Tools, Window, and Help <sup>(1)</sup> menus
3	Toolbar	Buttons for Login, Logout, Create Group, Create NE, Create Link, Back, Forward, Up, History, Change Password, and CutThrough Search field
4	Default tab	Default tab in Network tree
5	Alarm aggregation Icon	Icon for alarm status in Network or Administration Tree
6	Alarm status Icon	Icon for sub-objects alarm status in Network or Administration Tree
7	Network Tree	Window to display objects and sub-objects within the hierarchical tree structure
8	NE-specific tab	Open new tab per NE
9, 13	View toolbars	Buttons to refresh, auto refresh, minimize, or maximize the view. There are also buttons to apply a pin, apply changes, and pull down the menu
10	Views	Windows that appear in the page area
11	View titlebar	Area where Object Details, Comments, Object Monitoring View, Schedule names appear
12	Perspectives bar	Open Perspective button and the perspective icons
14	Page	Area where views appear
15	Status bar	Area where status information is displayed
16	Alarm Mnemonic Icon	Identifies alarm, shows selected objects alarm reports, and color-coded by severity

**Note**

<sup>(1)</sup> The Help menu includes a Manage Extensions option, which allows you to enable and disable plug-ins in the GUI. Use of this option is not recommended.

## 5.1.1 Menu bar

The Menu bar contains the following menus: File, Bookmarks, Tools, Window, and Help. The File menu has basic options such as Login and Logout. The Bookmarks menu has options for managing bookmarks to objects. The Tools menu has options such as checking connectivity to NE agents, accessing external tools through customized web links. The Window menu provides access to all of the 5520 AMS views. The Help menu offers installation and update features, as well as access to the 5520 AMS Help.

You can also view version, patch and plug-in information from the Administration perspective. See the *5520 AMS Administrator Guide*.

---

The GUI also offers contextual menus, which you access by right-clicking on the object, icon, or toolbar. For example, views have common contextual menus containing options to detach, move, resize, maximize, minimize, or close a view. Some views have additional options that are unique to them. Right-clicking on an object gives you a contextual menu listing the possible actions for the object, such as restart, lock, or unlock.

## 5.1.2 Toolbar

The main toolbar provides key GUI functionality for the user. The main toolbar icons allow you to log in or out, create an NE or NE group, navigate the tree hierarchy, navigate forward and backward through your navigation history, display your navigation history, change your password, and perform searches.

Each View also has its own toolbar. The icons on the View toolbar vary depending on the view that is open. These icons often allow a user to filter, clear, or save information, add or delete items, stop or start actions, as well as navigate multiple pages of information. The most common View toolbar icons include Apply, Refresh, Auto Refresh, and Pin.

Table 20 describes the icons on the 5520 AMS main toolbar, View toolbar, and Status bar.

## 5.1.3 Status bar

The Status bar is located at the bottom of the 5520 AMS GUI and contains icons that provide the status of certain items, including unread messages in the Message Box view, site status, the aggregated EMS alarms icon which is specific to the site, the number of NEs not fully reachable or supervised, and number of objects selected in the tree. The name of the user that is logged in to the client is also displayed.

Table 20 describes the icons on the 5520 AMS main Status bar.



**Note** — In Geo-redundant cluster setups, there are two aggregated EMS alarm icons, one for each site in the status bar.

## 5.1.4 Perspectives bar

In the Perspectives bar, which is located in the top right corner, you can choose a predefined perspective. A perspective is a logical grouping of related GUI views. The default perspective is Network. You can also create custom perspectives.

The Perspectives bar has an Open Perspective icon. When you open a perspective, an icon appears on the Perspectives bar. By default, the Network perspective icon appears on the Perspectives bar.

Table 13 describes the menu options for the default Open Perspective icon and lists the default views associated with each perspective. For more information about views, see Chapter 6.

**Table 13 Perspectives and default views**

Perspective	Description	Default views
Other	Open Perspective window, where you can select another perspective	—
Action Manager	Views to manage actions on 5520 AMS NEs and applications	Action, Historical Action, Progress
Administration	Views to manage the 5520 AMS client	Administration Tree, Admin Alarm Summary, Object Details, Alarm Rules
Alarm	Alarm views that appear on the page of the 5520 AMS	Alarm, Historical Alarm, Combined Alarm View
Backup Restore	View to configure and schedule backup and restore activities, and manage backup files	Backup Restore Tasks, Backup File Management, Action
Network (default)	Views to manage network equipment	Network Tree, Object Details, Graphical View, Network Alarm Summary, Comments, OTDR
NE Detection	Views to detect NEs	Detected NEs, Action
PM	Views to manage performance monitoring activities	Global Monitoring, Object Monitoring
Scheduler	Scheduler views in the page area of the 5520 AMS	Schedule
Software	Software management views in the page area of the 5520 AMS	Software Package Tree, Table View, Object Details view, ONT SW HW Table view, Action view
Templates	Template management views in the page area of the 5520 AMS	Action, Template Tree, Template Details

## 5.2 Viewing 5520 AMS version information

This section provides information on how to view version details of the 5520 AMS GUI, such as release number, GUI and server version, and build timestamp.

### Procedure 18 To view 5520 AMS version information

In the 5520 AMS GUI, choose Help → About 5520 AMS GUI.

---

Result: The About 5520 AMS GUI dialog opens. You can view the following information about the 5520 AMS GUI:

- Click Installation Details to view the 5520 AMS installation details, Configuration details, Installed Software details, and Installation History details.
  - Release number
  - GUI version
  - Server version
  - Build timestamp
  - IP address of the 5520 AMS server through which the client is connected
- 

## 5.3 GUI language

The GUI can be customized to display the local language. For more information about how to translate the 5520 AMS GUI and to receive the *Localization Tools User Guide*, contact Nokia technical support at <http://support.alcatel-lucent.com>. See Procedure 5 for more information.

When the GUI has been customized for the local language, you can use Procedure 19 to change the language setting. This language setting only affects the user interface of the operator who has selected it.

### Procedure 19 To modify the GUI language

- 
- 1 In the 5520 AMS menu, choose Window→Language.

Result: The language options are displayed.

- 
- 2 Click the language that you need the GUI to display.

Result: The display changes to the language you chose.

---

## 5.4 Navigation in the GUI

You can navigate to objects in the 5520 AMS GUI using the navigation tree views in the Network and Administration perspectives, and the Graphical View in the Network perspective.

---

## 5.4.1 Navigation tree views

Navigation tree views are graphical representations of an EMS in a hierarchical tree structure. In the tree structure, each object connects to the object directly above it. Navigating to objects using the tree views involves expanding, collapsing, and choosing objects. See [Navigation steps](#) in this section for more information about the procedural convention for navigating to objects.

In the 5520 AMS Network perspective, the root of the hierarchical Network Tree structure is the Group Network object, as shown in [Figure 3](#). The Group Network object is used to monitor and manage the NEs. The NE Groups and the NEs are the sub-objects of the Group Network object. A default tab displays the Group Network object and its sub-objects.

In the Administration perspective, the root of the Administration Tree structure is the EMS Administration object. The EMS Administration object is used to monitor and manage the 5520 AMS. For more information about EMS Administration objects, see the *5520 AMS Administrator Guide*.

In any GUI session, when you first open a perspective that has a navigation tree view, the tree is expanded to one level.

In the default tab containing the NE Groups, the NEs and the NE shortcuts, the NEs are displayed in alphabetical order, by NE name. When you add an NE or change the name of an NE, the list is automatically reordered in the Network Tree and in the Graphical View. Double-clicking an NE opens a new tab for the NE in the Network Tree. This NE tab contains the hierarchical tree structure for the NE. When you open an NE in the Network Tree, the first rack and subrack objects in the NE open at the same time, if they are available.

You can open multiple NE tabs. To configure the number of NE tabs that can be opened in the Network Tree, see [Procedure 20](#).

When you choose an object in a tree, information about that object appears in the other views, and a graphical representation of the object appears in the Graphical View. The icons next to the network objects provide visual identifiers for real-time alarm and status information. [Table 25](#) describes the icons on the Network Tree view toolbar.

In an NE tab, any object in the hierarchical tree structure can be made the root of the subtree. For more information, see [Procedure 21](#).

---

## Procedure 20 To configure the number of NE tabs in the Network Tree



**Note** — Configuring the number of NE tabs in the Network Tree affects the navigation to NE objects.

- 
- 1 From the Windows menu, choose Preferences.  
Result: The Preferences window opens.

---

  - 2 Select General in the left pane of the Preferences window.

---

  - 3 In the Navigation View Settings pane, enter the number of tabs in the Max Number of Tabs in Network View field.



**Note** — The default value for the Max Number of Tabs in Network View field is 10. The minimum value for the field is 1 and the maximum value for the field is 10.

- 
- 4 If you do not want to be prompted to confirm whether the NE tab that is unused for the longest time can be closed when you reach the configured maximum limit of open tabs in the Network Tree, select the Always close the NE tab that is unused for the longest time check box. The NE tab that is unused for the longest time is closed automatically without any confirmation message, when the maximum limit of NE tabs is reached.

---

  - 5 Click OK.



**Note** — If you try to open NE tabs more than the configured value, and you have not selected the Always close the NE tab that is unused for the longest time check box in the Preferences window, a message is displayed prompting you to confirm closing the NE tab that is unused for the longest time before proceeding. You can select the Always close the NE tab that is unused for the longest time check box in this confirmation window.

---

---

## Procedure 21 To make an object in the NE tab the root of the subtree

Perform one of the following steps:

- In the NE tab window, right-click an object in the hierarchical tree structure and choose Make Root.
- In the NE tab window, select an object in the hierarchical tree structure and click the Make Root icon (  ) on the Network Tree toolbar.

Result: The object becomes the root of the subtree. A panel indicating the change in the root is displayed in the Root field at the top of the NE tab window. To remove the object as the root, click the Go back up to the tab icon (  ) beside the Root field at the top of the NE tab window. The NE becomes the root.



**Note 1** — The Make Root option is enabled only when a single sub-object is selected in the hierarchical tree.

**Note 2** — Executing the Make Root option impacts the Graphical View.

---

## 5.4.2 Graphical View

The Graphical View is a default view of the Network perspective. The purpose of the Graphical View is to display a real-time overview of all the objects at that level in the Network Tree. The view shows the objects with their alarm and state information. When you place the cursor over the alarm and state icons, tooltips provide a description of the alarm or status indicator.

The Graphical View is synchronized with the other views in the Network perspective. When you click on parts of the graphical representation of the object, the 5520 AMS highlights the associated location in the Network Tree, displays the object parameters in the Object Details view, and displays the alarm information in the Network Alarm Summary.



**Note** — Double-clicking an NE in the Graphical View opens a new tab for the NE, containing a hierarchical tree structure for the NE, in the Network Tree.

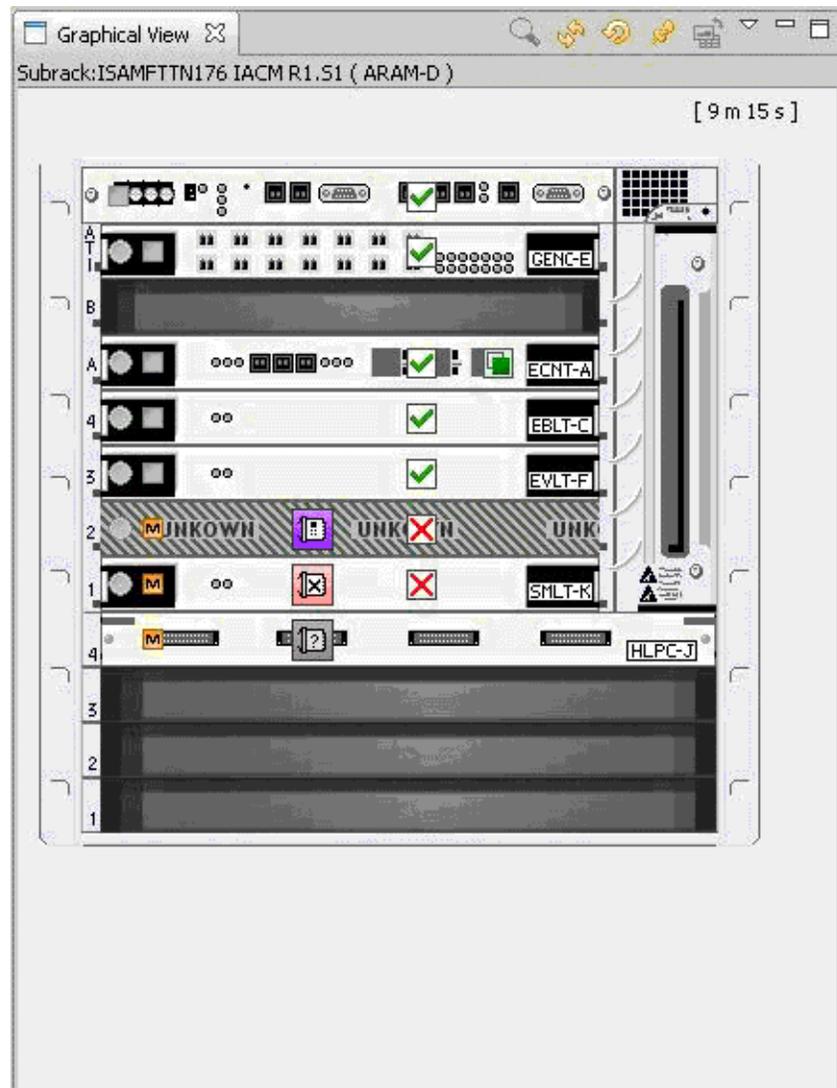
Navigating to objects using the Graphical View involves double-clicking objects. See [Navigation steps](#) in this section for more information about the procedural convention for navigating to objects using the Graphical View. You can also use the Back, Forward, Up, and History icons in the 5520 AMS toolbar to navigate to other objects in the Network Tree.

Not all objects have a graphical representation in the Graphical View. For more information, see [“Table view”](#).

NEs are ordered alphabetically by NE name in the Graphical View, as they are in the Network Tree. When you add an NE or change the name of an NE, the list is automatically reordered in the Network Tree and in the Graphical View.

Figure 2 shows an example of the Graphical View of a subrack.

**Figure 2** Graphical View of a subrack



**Note** — When you launch the 5520 AMS client, if the Graphical View is opened by default, or opened immediately after launching the client, an exception appears. To avoid this exception, perform the following steps:

- Open Internet Explorer.
- From the Tools menu, select Internet Options.
- Select the Advanced tab in the Internet Options dialog.
- Select the Disable Script Debugging (Other) check box.

---

### 5.4.2.1 Table view

When an object does not have a graphical representation, the Graphical View displays the objects in a Table View, if defined. If both graphical representation and table view are available for the object, then the Graphical View displays the graphical representation by default, and you can toggle between the Graphical View and Table View. If there is neither a graphical representation nor a table view available for the object, then the Graphical View displays the closest parent object that has either.

You can expand or contract tables in the table view by clicking on the table title.

### 5.4.2.2 Mapping view

The Map topology is an optional graphical view for network groups. The purpose of the Map topology view is to display a background image, such as a map, with the objects contained in the group placed on top. Object icons can be clicked and dragged to new positions on the image, and both the background image and the positions of the icons are shared for all 5520 AMS users. The Map topology view also gives a bird's-eye view of the map, and you can know the current location of the objects in the map.

For more information about using and configuring the Map topology view, see section [6.4](#).

### 5.4.3 Navigation steps

The 5520 AMS GUI allows you to navigate to objects using any of the following methods:

- Navigation trees in the Network and Administration perspectives—expand, collapse, and choose objects
- Graphical View—double-click objects
- Search and Find utilities—enter information about the object in a window

#### Procedure 22 Example of NE navigation convention

- 
- 1 Navigate to the NE and choose *object*.
  - 2 Right-click on *object* and choose *menu item*.
-

## 5.5 Key shortcuts

Table 14 lists the key shortcuts for the 5520 AMS GUI.

**Table 14** 5520 AMS GUI key shortcuts

Key shortcuts	Description
<b>Common Key shortcuts</b>	
Arrow	<ul style="list-style-type: none"> <li>Highlight the next or previous value in a list of possible values in an active window.</li> <li>Activate or deactivate radio buttons or select list items in a drop-down menu, in an active window.</li> <li>To select one of the buttons in the View toolbar.</li> </ul>
<F8> or <Shift >+ Arrow	<p>Expand or collapse a node in a tree view which supports cell selection.</p> <p>Use the Shift + right arrow to expand a node in other trees (such as Network Tree, Administration Tree, and Software Tree)</p> <p>or Shift + left arrow to collapse a node in other trees (such as Network Tree, Administration Tree, and Software Tree).</p>
<Ctrl> + A	Select all.
<Ctrl> + Arrow	Navigate within a list and to give the focus to a particular item without losing the already selected items. To be used in combination with Ctrl + Space.
<Ctrl> + <F7> or <Ctrl> + <Shift> + <F7>	Toggle between the current views.
<Ctrl> + <F8> or <Ctrl> + <Shift> + <F8>	Toggle between the open perspectives.
<Ctrl> + I	Launch the Filter wizard in the following views: Network Tree view, Alarm views, Action views, Backup File Management, Detected NEs, and User Activity logs.
<Ctrl> + P	Print the selected records.
<Ctrl> + R	Refresh the selected views. The views are: Object view, Graphical view, Current and Historical Alarm view, Object and Global Monitoring view, Action view, Backup File Management, Detected NEs, User Activity and ONT SW HW table.
<Ctrl> + <Space>	Add to or remove from the selection an item that has the focus in a list. To be used in combination with Ctrl + Arrow.
<Enter>	Confirm the selection in a dialog box when a user action is required.
<Shift> + Arrow	Select and highlight the consecutive values from a list of possible values.

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Key shortcuts	Description
<Space>	Change the value of a checkbox or a boolean.
<Tab> or <Shift> + <Tab>	Select the next or previous parameter in a view or dialog.
<b>Menu Key shortcuts</b>	
<Alt>	Access the main menu items and toggle between them. This shortcut key is applicable for the Microsoft Windows client only.
<Alt> + Q	Execute the File→ Exit menu option. Logs out of the 5520 AMS client and closes the window.
<Ctrl> + B	Execute the Bookmark→ Bookmark Selected Objects menu option. Bookmarks the selected objects.
<Ctrl> + G	Execute the File→ Logout menu option. Logs out of the client.
<Ctrl> + K	Execute the Tools→ Connectivity Check menu option. Verifies the connectivity to the NE.
<Ctrl> + O	Execute the File→Open New Window menu options. Opens a new GUI window.
<Ctrl> + T	Execute the Tools→ Cut Through menu option. Opens a CLI or TL1 cut-through sessions to the NE.
<Ctrl> + W	Execute the File→ Close menu option. Closes the GUI window without logging out of the client (used when more than one GUI window is open).
<Ctrl> + <F10>	Display the commands under the View Menu for the views that have View Menu icon.
<F1>	Open the 5520 AMS Help.
<F10>	Access the menus on the main menu bar.
<Shift> + <F10>	Access the shortcut menu for the current view. The shortcut menu is displayed only when an object is selected in the view. When no object is selected, and Shift + F10 is pressed, the main menu is activated. Usage of this shortcut is dependent on the Windows manager that you use.
<b>Network and Graphical View Key shortcuts</b>	
<Ctrl> + E	Shows E2E Resource Path (Only in Port and Service level).
<Ctrl> + F	Launches the Find wizard.
<Ctrl> + M	Shows alarms on selected object.
<Ctrl> + T	Opens a cut through sessions to the NE.
<Ctrl> + Y	Resynchronizes alarms and states.
<Delete>	Deletes the selected NE or group (Only in Group and NE level).
<b>Object Details View-specific Key shortcuts</b>	
<Ctrl> + C	Copy

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Key shortcuts	Description
<Ctrl> + N	Copies object name
<Ctrl> + V	Paste
<Ctrl> + X	Cut
<b>NE plug Key shortcuts</b>	
<Ctrl> + L	Execute the Actions→ Lock menu option. Locks the selected object (available only on slot, port and service level).
<Ctrl> + <Shift> + L	Execute the Actions→ Unlock menu option. Unlocks the selected object (available only on slot, port and service level).
<b>Table view Key shortcuts</b>	
<F6>	Decrease the column width of the selected cell.
<F7>	Increase the column width of the selected cell.

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## 5.6 Alarms

An aggregated alarm icon is a graphical representation of the highest alarm severity raised against the sub-objects within the object in the Network Tree, Graphical View, or Administration Tree. Alarms raised against the object beside which the icon appears are not included in the aggregate. An aggregated alarm icon is round with a specific color and letter. An object alarm icon is a square with a specific color and letter. The color and letter depends on the alarm severity.

The alarm icons represent the severity of the unacknowledged alarms having the highest severity. A decorator in the alarm icon represents the severity of the active alarm having the highest severity. The NE shortcuts show the aggregated alarms of the corresponding NE, but this alarm synthesis is not taken into account in the aggregated alarm count on the groups above it. Table 15 provides the scenarios in which the color of the alarm icons is updated.

**Table 15 Scenarios of alarm icon color updates**

Scenario	Example	Icon
When at least one alarm of the highest severity is not acknowledged	An alarm of critical severity is not acknowledged.	
When all alarms of the highest severity are acknowledged	All alarms of critical severity are acknowledged, and the highest severity of unacknowledged alarms is Major.	

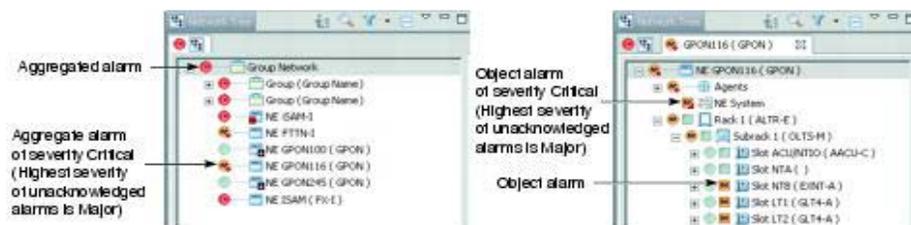
When there are no alarms against a branch of the tree view, the circle and square icons are blank. The tooltips display aggregated and object alarm information when you point to an object.

The NE shortcuts show the alarm synthesis of the corresponding NE, but this synthesis is not taken into account in the aggregated alarm count on the groups above it.

For more information on the alarm icons, see Section 9.10.

In Figure 3, the red C in the circle next to Group Network indicates that the object has at least one sub-object with a critical alarm. The orange M in the circle with a red indicator next to NE GPON116 indicates that all alarms of critical severity for the sub-objects are acknowledged, and the highest severity of unacknowledged alarms is Major. The orange M in the square next to Slot NTB (EXNT-A) indicates that the object has a major alarm. The orange M in the square with a red indicator next to NE System indicates that all alarms of critical severity for the object are acknowledged, and the highest severity of unacknowledged alarms is Major.

**Figure 3 Alarm status in the Network Tree**



By default, the Alarm view sorts alarms by event time, starting with the most recent alarm. You can change the sorting method by clicking on the column headers. Current alarms are active and cleared alarms that remain in the current Alarm view. Historical alarms are cleared alarms that are moved to the Historical Alarm view.

See Table 40 for descriptions of the Alarm view column headings.

When reporting alarms of highest severity, the presence of lower severity alarms, if any, is indicated in the Table View of the object. For more information, see [Alarm Counters in the Table View](#).



# 6 Views

## 6.1 Overview

## 6.2 Managing Views

## 6.3 Configuring a web browser

## 6.4 Using the Map View

## 6.1 Overview

Views are windows that allow you to view, modify, and configure the parameters associated with an NE or EMS component. The views appear in the page area of the 5520 AMS GUI. When you open a perspective, the default views for that perspective are opened in the page area. For more information about which views are defaults for which perspectives, see Table 13. For more information about opening individual views, see Procedure 23.

Many views contain tables in which you can sort the rows, in ascending or descending order, by clicking on the column header.



**Note** — See the documentation of the 5529 Enhanced Applications for information on views related to 5529 Enhanced Applications.

Table 16 describes the 5520 AMS views.

**Table 16** 5520 AMS GUI views

View	Description
General	
Internal Web Browser	Use this view to access the Internet from the 5520 AMS GUI.
Cut Through	
CLI Cut Through Secure	Use this view to establish a secure cut-through session on an agent. You can open a cut-through session by selecting an NE and right-clicking anywhere in the Network Tree.
CLI Cut Through Standard	Use this view to establish a standard cut-through session on an agent. You can open a cut-through session by selecting an NE and right-clicking anywhere in the Network Tree.
Serial Link Cut Through	Use this view to issue NE commands via a serial cut through session.

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View	Description
TL1 Cut Through Secure	Use this view to establish a secure cut-through session on an agent. You can open a cut-through session by selecting an NE and right-clicking anywhere in the Network Tree.
TL1 Cut Through Standard - Telnet	Use this view to establish a standard cut-through session using Telnet on an agent. You can open a cut-through session by selecting an NE and right-clicking anywhere in the Network Tree.
TL1 Cut Through Standard - UDP	Use this view to establish a standard cut-through session using UDP on an agent. You can open a cut-through session by selecting an NE and right-clicking anywhere in the Network Tree.
Help	
Help	Use this view to open the Help tool.
Network Management	
Admin Alarm Summary Network Alarm Summary	Use this view to display the current alarms against the selected object in a navigation tree. The alarms are color-coded by severity and the alarm box includes a mnemonic that identifies the alarm. You can view the full name of the alarm by placing the cursor over the alarm box. By default, the time displayed is in the local time of the 5520 AMS GUI. To display the time in GMT/UTC, see the <i>5520 AMS Administrator Guide</i> . For more information about alarms, see Chapter 11.
Administration Tree	Use this view to configure various administrative settings.
Alarm	Use this view to display the alarms raised in the last 24 h. See the Historical Alarms view for information about alarms raised over the previous 24 h.
Alarm Condition	Use this view to display alarms for which the reporting mode has been turned off, and alarms whose severity is below the severity threshold of the NE. For more information about alarms, see Chapter 11.
Alarm Rules	Use this view to define and manage alarm rules to modify the normal processing of alarms.
Customized Web Links	Use this view to display the web links defined in the 5520 AMS.
Graphical View	Use this view to see a visual representation of the object selected in the Network Tree. You can click on objects in the Graphical view to highlight them in the Network Tree and display object details in the Object Details view. You can double-click to navigate to sub-objects.
Historical Alarm	Use this view to display historical alarms. Historical alarms are alarms that are cleared and moved from the (current) Alarm view. See Alarm view for information about current alarms.
Network Tree	Use this view to display and navigate objects in a hierarchical structure. To display the tree structure of an NE in a new tab, double-click the NE in the default tab containing the NE Groups and the NEs. You can right-click on objects to perform actions, and you can select objects in the tree to display object details and settings for those objects in the Object Details view.
OTDR	Use this view to display the OTDR status and results for a PON port or an ONT.

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View	Description
Object Details	Use this view to display, modify, or configure information about the object selected in a navigation tree or the Graphical View. The information provided depends on the object selected.
Platform	
Action	Use this view to view jobs and job progress.
Collection Statistics	Use this view to display the statistics related to the Inventory. The 5520 AMS performs an automatic collection of inventory basic data once a day.
Historical Action	Use this view to display historical actions. Historical actions are completed actions that are moved from the Action view. For information about configuring the delays before a completed action is moved to and deleted from the Historical Action view, see the <i>5520 AMS Administrator Guide</i> .
Progress	Use this view to display the status or progress of actions currently being performed by the 5520 AMS. When no action is in progress, the Progress view is empty.
Template	
Template Details	Use this view to display information about the template selected in the Template Tree view. You can also use this view to perform actions on the template, such as creating a template based on the existing template, deleting the template, or exporting the template.
Template Object Details	Use this view to display the Template Object Details view.
Template Tree	Use this view to display templates and template groups in a hierarchical tree structure. The templates are listed by template type. You can right-click on an object to perform actions such as creating a template, upgrading a template, or downloading a template to an NE.
Other	
Backup File Management	Use this view to manage backup files. For more information about backup and restore tasks, see the <i>5520 AMS Administrator Guide</i> .
Backup Restore Tasks	Use this view to initiate software management tasks for NE backup, restore, and migration tasks, and checking backup consistency. Click on a link in the view to begin the task.  For more information about backup and restore tasks, see the <i>5520 AMS Administrator Guide</i> .
CPE Vendor ID Mapper	Use this view to add, modify, or delete CPE vendor ID codes. For more information, see the <i>5520 AMS Administrator Guide</i> .
Comments	Use this view to add, modify, or delete comments from objects in the Network Tree. You can sort the comments by description or date.
Custom Counters	Use this view to add custom counters. You can also create, modify, and monitor custom counters. For more information about custom counters, see Chapter 21.
Custom Fields	Use this view to add custom fields (attributes stored in the AMS database) to the selected network objects. For more information about custom fields, see Chapter 22.
Detected NEs	Use this view to add detected NEs to the Network Tree. For more information about NE detection, see Chapter 15.

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View	Description
EMS Performance Monitoring	Use this view to display performance monitoring data in a graph format for a specific server. You can export the current graph or all graphs to a .jpg file.
External TL1GW	Use this view to perform batch TL1 command executions and load command templates on an NE that is managed by the TL1 Gateway. For more information about the TL1 Gateway, see the <i>5520 AMS Administrator Guide</i> .
External TL1GW Manager	Use this view to perform batch TL1 command executions, and load command templates on NEs that are managed by the TL1 Gateway. You can also use this view to configure and manage the TL1 Gateway. For more information about the TL1 Gateway, see the <i>5520 AMS Administrator Guide</i> .
Global Monitoring	Use this view to monitor the status and active tasks for objects in the 5520 AMS. By default, 100 tasks are displayed per page. This value can be changed, see the <i>5520 AMS Administrator Guide</i> .
Message Box	Use this view to display, broadcast, and manage messages sent using the Message Broadcasting feature. For more information about Message Broadcasting, see Chapter 14.
ONT SW HW Table	Use this view to display the list of selected ONT software and ONT hardware loads across all the ONT software releases.
Object Monitoring	Use this view to monitor the configuration, status, and active tasks for an object in the 5520 AMS.
Operator Defaults	Use this view to display sets of default values that are selectable in views where users can enter data. You will be able to view the default names, the NE to which they apply, the window in which they appear, and basic preferences that control how they behave.
PM Data	Use this view to display the PM data of the selected object set for monitoring in a table format.
Schedule	Use this view to display, add, modify, or delete scheduled tasks. The view toolbar has options to display scheduled activities horizontally and vertically. For more information about creating scheduled activities, see the <i>5520 AMS Administrator Guide</i> .
Software Package Tree	Use this view to install, manage and view the software packages and the NE software releases.
Subscriber Search Attribute Categories	Use this view to define the filter parameters for searching on subscribers.
Switchover Log	Use this view to display information about the most recent switchovers of the active data server.
User Activity Log	Use this view to display the users with logged tasks. You can filter the task log by choosing specific users, applications, or a time period during which the task was logged.

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## 6.2 Managing Views

You can customize the look of the 5520 AMS GUI by resizing or moving views. You can also create a custom perspective to display a selected group of views. For more information about creating a custom perspective, see Procedure 41.

---

Use the following procedures to:

- Open a view, see Procedure [23](#).
- Resize a view, see Procedure [24](#).
- Move a view, see Procedure [25](#).
- Detach a view, see Procedure [26](#).
- Reattach a view, see Procedure [27](#).
- Close a view, see Procedure [28](#).
- Print record in a view, see Procedure [29](#).

### **Procedure 23 To open a view**

Perform one of the following to open a view:

- Choose Window→Show View and select a view from the menu. If the view you need does not appear in the shortcut menu, choose Other to display the full list of views.
  - Open the perspective for which the view is a default view. For more information about the default views for perspectives, see Table [13](#). For more information about opening perspectives, see Procedure [39](#).
- 

### **Procedure 24 To resize a view**

#### **To make a view smaller**

---

- 1 Perform one of the following steps:
  - Right-click the view titlebar and choose Minimize.
  - Click the Minimize icon () on the view toolbar.
  - Drag any of the view borders to resize the window.

#### **To make a view bigger**

---

- 2 Perform one of the following steps:
  - Right-click the view titlebar and choose Maximize.
  - Click the Maximize icon () on the view toolbar.
  - Drag any of the view borders to resize the window.

**To restore a view to the default size**

---

- 3 Perform one of the following steps:
    - Right-click view titlebar and choose Restore.
    - Click the Restore icon (  ) on the view toolbar.
    - For a view that is minimized, click the view tab.
- 

**Procedure 25 To move a view**

To move a view to another area on the 5520 AMS page, click the view titlebar and drag the view.

---

**Procedure 26 To detach a view**

To detach a view from the 5520 AMS page and put the view in a separate window, right-click view titlebar and choose Detached.

Result: A check mark appears in the contextual menu next to the Detached menu option.

---

**Procedure 27 To reattach a view**

Right-click on the view titlebar and perform one of the following steps:

- Choose Detached.
    - Result: A check mark is no longer displayed in the contextual menu next to the Detached menu option.
  - Choose Move→View and drag the view back to the 5520 AMS page.
  - Choose Move→Tab Group and drag the view back to the 5520 AMS page.
-

---

**Procedure 28 To close a view**

Perform one of the following steps:

- Click the Close icon () in the view titlebar.
  - Right-click the view tab and choose Close.
- 

**Procedure 29 To print records in a view**

**Applies to** — This procedure can be performed from Alarm view, Alarm Condition view, Historical Alarm view, PM Data view, or User Activity Log view.

Use this procedure to print records in a view.

- 
- 1 Navigate to the Alarm view, Alarm Condition view, Historical Alarm view, PM Data view, or User Activity Log view.

---

  - 2 Click the View Menu icon () in the selected view toolbar.

---

  - 3 Choose Print.

---

  - 4 To select the range, perform one of the following:
    - Enter the specific Range in Print Settings window.
    - In PM Data table view, select the Start Date/Time and End Date/Time in PM Search window.
    - In PM Data graph view, click the Print icon ()

---

  - 5 Click OK.

Result: The selected range of records is printed.



**Note** — You can print maximum of 10000 records.

---

---

## 6.3 Configuring a web browser

Perform this procedure to configure the web browser in the 5520 AMS GUI.

### Procedure 30 To configure a web browser

---

1 From the 5520 AMS menu bar, choose Windows→ Preferences.

Result: The Preferences window opens.

---

2 Click Web Browser to display the web browser panel.

---

3 Select the type of web browser from one of the following that will be used by default when web pages are opened:

- Use internal web browser
- Use external web browser



**Note 1** — Some applications use the external web browser by default.

**Note 2** — In Red Hat Enterprise Linux, no internal browsers are available. Internal browsers only work in a Windows setup.

---

4 For external web browsers, select the default browser from the local system to be accessed. For example, Firefox, Chrome, Internet Explorer or the Default system web browser.

---

5 Click OK to save the changes.

---

## 6.4 Using the Map View

You can use the Map View to display NEs, NE groups, ONTs, subracks, splitters, or link icons on a background map image. The background image can be a map to display the physical connections between objects, or a network diagram to illustrate relationships. Icons can be moved on the map, and both the background image and the position of the icons are shared for all 5520 AMS users.



**Note 1** — An internet connection is required to view the maps. If you are unable to access the internet, check if the proxy settings are configured. Refer to the section Configuring proxy settings in the 5520 AMS clients to access the Internet in the *5520 AMS Administrator Guide*.

**Note 2** — For information about enabling the Map View settings, see the *5520 AMS Administrator Guide*.

The Map View supports saving the current view in the following image formats:

- JPG
- PNG

To view the configured links between the different objects in the Map View, create the links between different NE endpoints. See Table 17 for more information on how to create these links.

**Table 17**      **Creating links between NEs**

Link types	Reference
Hub-subtended links	7302 ISAM   7330 ISAM FTTN   7356 ISAM FTTB   7360 ISAM Operations and Maintenance using the 5520 AMS
ISAM-MDU links	7302 ISAM   7330 ISAM FTTN   7356 ISAM FTTB   7360 ISAM Operations and Maintenance using the 5520 AMS and 7342 ISAM FTTU Operations and Maintenance using the 5520 AMS
Subrack-subrack links	7302 ISAM   7330 ISAM FTTN   7356 ISAM FTTB   7360 ISAM Operations and Maintenance using the 5520 AMS
Genband G6 to 7342 ISAM FTTU / 7360 ISAM links	7342 ISAM FTTU Operations and Maintenance using the 5520 AMS and GENBAND G6 Operations and Maintenance using the 5520 AMS
	7302 ISAM   7330 ISAM FTTN   7356 ISAM FTTB   7360 ISAM Operations and Maintenance using the 5520 AMS

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Link types	Reference
PON port to Splitter links	7342 ISAM FTTU Operations and Maintenance using the 5520 AMS and 7302 ISAM   7330 ISAM FTTN   7356 ISAM FTTB   7360 ISAM Operations and Maintenance using the 5520 AMS
Splitter to Splitter links	7342 ISAM FTTU Operations and Maintenance using the 5520 AMS and 7302 ISAM   7330 ISAM FTTN   7356 ISAM FTTB   7360 ISAM Operations and Maintenance using the 5520 AMS
Splitter to ONT links	7342 ISAM FTTU Operations and Maintenance using the 5520 AMS and 7302 ISAM   7330 ISAM FTTN   7356 ISAM FTTB   7360 ISAM Operations and Maintenance using the 5520 AMS
NE-NE links	7302 ISAM   7330 ISAM FTTN   7356 ISAM FTTB   7360 ISAM Operations and Maintenance using the 5520 AMS

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### Procedure 31 To open the Map View

- 1 Perform one of the following steps:
  - Choose Window→Show View and select Graphical View from the menu.
  - Open a perspective for which the Graphical view is a default view. For more information about the default views for perspectives, see Table 13. For more information about opening perspectives, see Procedure 39.
- 2 In the Graphical View tab, click the Toggle View icon () and choose Map View.  
Result: The Map View opens.

---

## Procedure 32 To select the display options in the Map View

---

- 1 In the Map View, click the  icon to expand the Map View display options.

The following options are displayed:

- Base Layer
  - Open Street Map
  - Web Map Server
- Overlays
  - Graticule
  - Links
  - Equipments



**Note** — Selecting the Graticule option displays the grids in the Map view.

- 
- 2 Select from the given options to display the Map View:

- a Select the map provider for the Map View from the following options:

- Open Street Map
- Web Map Server



**Note** — The Web Map Server option is displayed in the Map View only when the Offline Map server is installed and the Web Map server URL is configured in the GUI settings in the Administration Perspective.

- b Select the Links check box to view the configured links between objects.



**Note** — You can see the links between the following objects in the Map View:

- Hub-subtended links
- ISAM-MDU links
- NE-NE links
- Subrack-Subrack links
- GENBAND G6 to 7342 ISAM FTTU /7360 ISAM links
- PON port to Splitter links
- Splitter to Splitter links
- Splitter to ONT links

- c Select the Equipments check box to view the object icons on the map.

---

You can see the object icons for the following objects in the Map View:

- NE
- NE Group
- Subrack
- PON port
- ONT
- Splitter
- Links

On selecting the display options in the Map View, you can also see the bird's-eye view of the map. When you drag anywhere in the map, the bird's-eye view changes accordingly and you can know the current location of the objects in the map.

- 
- 3 Click the  icon to close the Map View menu.
- 

### Procedure 33 To set the pan and zoom level in the Map View

- 
- 1 In the Map View, use the pan  icon to move in different directions of the map:
- Click the up-arrow icon to navigate in the upward direction in the map.
  - Click the down-arrow icon to navigate in the downward direction in the map.
  - Click the left-arrow icon to navigate towards the left.
  - Click the right-arrow icon to navigate towards the right.
- 
- 2 Click the  icon to zoom in to the map.
- 
- 3 Click the  icon to zoom out of the map.
- 

### Procedure 34 To expand stacked objects in the Map View



**Note** — Depending on the Map Info attribute values (Latitude and Longitude), the NE or NE Group icons are displayed in the Map view.

If the NE or NE Group icons are stacked, perform the following steps to expand and separate the objects.

---

In the Map View, perform one of the following steps:

- Click the Expand Stacked Objects icon () on the Map View toolbar, or
  - Click the View Menu icon () on the Map View menu, and select Expand Stacked Objects.  
Results: The objects are separated from the stack.
- 

### Procedure 35 To move object icons in the Map View



**Note** — A user assigned with the Map - Edit security function can perform this action.

Use this procedure to move object icons on the map.

In the Map View, perform one of the following steps:

- Click the Allow Moving Objects icon () on the Map View toolbar, or
- Click the View Menu icon () on the Map View menu, and select Allow Moving Objects.

By enabling this option, a user can move objects on the map.

---

### Procedure 36 To move an object to the center of the map



**Note 1** — The option to move an object to center of the map is typically used when you need to move an object from one location to another target location in the map.

**Note 2** — A user assigned with the Map - Edit security function can perform this action.

Use this procedure to move objects to another target location in the map.

- 
- 1 Click the Allow Moving Objects icon () on the Map View toolbar.
  - 2 In the Map View, select the objects that need to be moved to another (target) location in the map.
-

3 Move the map such that the target location appears in the center of the map.

---

4 Perform one of the following steps:

- Click the Move to Center of Map icon (  ) on the Map View toolbar, or
- Click the View Menu icon (  ) on the Map View menu, and select Move to Center of Map.

Result: The longitude and latitude are set so that the selected objects appear in the center of the Map View (that is, the target location).



**Note** — The Move to Center of Map option is enabled only if the Allow Moving Objects option is selected and one or more locatable objects are selected in the view.

---

### Procedure 37 To save a Graphical or Map View as an image



**Note** — A user assigned with the GUI – Save File to Client security function can perform this action.

Use this procedure to save the selected Graphical or Map View as an image.

---

1 In the Graphical or Map View, click the View Menu icon (  ) on the toolbar, and select the Save as Image option.

Result: The Save As dialog opens.

---

2 Enter the name of the image in the File name field, select the extension as .jpg or .png, and save the image.

Result: The current image of the view is saved. The saved image is the exact copy of the View.

---

---

**Procedure 38 To update the geo-coordinates of an object**

**Note 1** — Use this procedure to update the geo-coordinates of the following locatable objects:

- NE
- NE Group
- Subrack
- ONT
- Splitter

**Note 2** — The geo-coordinates are measured in degrees. A maximum of 6 decimals are allowed.

**Note 3** — The default value of the geo-coordinates is derived from the locatable parent of the object to be created. Therefore, if the latitude and longitude values for the object are empty, the object is displayed at the location of its parent.

- 
- 1 In the Object Details view of the selected object, select the Map Info tab.

---

  - 2 Enter the value of the latitude in the Latitude field.

---

  - 3 Enter the value of the longitude in the Longitude field.

---

  - 4 Click the Apply icon (✓) to save the changes.



**Note** — The geo-coordinates of the object are automatically updated in the Map View also. Similarly, if you move the object in the Map View, the geo-coordinates of the object are automatically updated in the Object Details view of the object.

---



# 7 Perspectives

## 7.1 Overview

### 7.2 Managing perspectives

## 7.1 Overview

The 5520 AMS GUI has default perspectives that display a set group of views. You can also create a custom perspective to display the views of your choice.



**Note** — See the documentation of the 5529 Enhanced Applications for information on perspectives related to 5529 Enhanced Applications.

Table 18 describes the 5520 AMS GUI perspectives.

**Table 18** 5520 AMS GUI perspectives

Perspective	Default views	Description
Action Manager	<ul style="list-style-type: none"> <li>Historical Action View</li> <li>Action View</li> <li>Progress View</li> </ul>	The Action Manager manages tasks that affect a large number of NEs. The tasks include NE SW backup and restore, NE template management, NE SW management and NE management.
Administration	<ul style="list-style-type: none"> <li>Administration Tree</li> <li>Table View</li> <li>Object Details View,</li> <li>Message Box</li> <li>Admin Alarm Summary View</li> <li>Alarm Rules</li> </ul>	The Administration perspective enables an administrator to configure various administrative settings.
Alarm	<ul style="list-style-type: none"> <li>Alarm view</li> <li>Historical Alarm view</li> </ul>	The Alarm perspective is used to view active reported alarms, cleared alarms, and unreported alarms of the selected objects in the Alarm view. In the Historical view, you can view cleared alarms on the selected objects.
Backup Restore	<ul style="list-style-type: none"> <li>Backup Restore Tasks</li> <li>Backup File Management view</li> <li>Action view</li> </ul>	The Backup Restore perspective enables you to configure and schedule backup and restore activities, and manage backup files.
NE Detection	<ul style="list-style-type: none"> <li>Detected NEs view</li> <li>Action view</li> </ul>	The NE Detection perspective is used to schedule automatic detection of the NEs.

(1 of 2)

Perspective	Default views	Description
Network	<ul style="list-style-type: none"> <li>• Network Tree view</li> <li>• Graphical view</li> <li>• Object Details view</li> <li>• Comments view</li> <li>• Network Alarm Summary view</li> <li>• OTDR view</li> </ul>	The Network perspective is the default perspective which appears in the perspective bar when a user logs in to the 5520 AMS GUI. From the Network perspective, the Network Tree provides a simple and structured view of the complex network. From the Network perspective, the following tasks can be performed: you can view and create NEs, identify the alarms, view and modify Object Details, view the Graphical and Map view of selected objects and view the OTDR status and results for PON ports and ONTs.
PM	<ul style="list-style-type: none"> <li>• Network Tree</li> <li>• Global Monitoring view</li> <li>• Object Monitoring view</li> </ul>	The PM perspective is used to view the current NE data, and to create a monitoring task to gather data over time for later viewing.
Scheduler	<ul style="list-style-type: none"> <li>• Schedule view</li> </ul>	The Scheduler perspective can be used to create, view, modify or delete simple and complex schedules. It also displays the tasks to which the selected schedule is assigned, configuration information for the selected schedule, which user created the schedule and information about the last scheduled task.
Software	<ul style="list-style-type: none"> <li>• Software Package Tree</li> <li>• Table view</li> <li>• Object Details view</li> <li>• ONT SW HW Table</li> <li>• Action view</li> </ul>	The Software perspective is used to create NE software releases, ONT software releases, NE release mappings and to download software to an NE.
Templates	<ul style="list-style-type: none"> <li>• Template Tree</li> <li>• Template Details</li> <li>• Template Object Details</li> <li>• Action view</li> </ul>	The Template perspective manages the template management operations.
Custom Groups	<ul style="list-style-type: none"> <li>• Custom Group Tree</li> <li>• NEs in Custom Group</li> </ul>	The Custom Group perspective is used to perform operations on custom groups. This view is used to manage all NEs that are part of a custom group.

(2 of 2)

## 7.2 Managing perspectives

Use the following procedures to open, close, create, reset, and customize perspectives:

- Open a perspective. See Procedure [39](#).
- Close a perspective. See Procedure [40](#).
- Create a perspective. See Procedure [41](#).
- Reset a perspective. See Procedure [42](#).

- Customize a perspective. See Procedure [43](#).
- Customize the perspective bar. See Procedure [44](#).

---

### Procedure 39 To open a perspective

---

- 1 Click the Open Perspective icon ().

Result: The perspective menu opens.



**Note** — To add perspectives to, or delete perspectives from, the shortcuts list, see Procedure [43](#).

- 
- 2 Perform one of the following steps:
    - Choose a perspective from the shortcut menu.
    - Choose Other to display the full list of perspectives, choose a perspective, and click OK.
- 

### Procedure 40 To close a perspective

To close a perspective, right-click the perspective icon and choose Close.

Result: The selected perspective and all of its views close.

---

### Procedure 41 To create a perspective

---

- 1 Open a perspective.
- 2 Close the views that you do not need to include in the perspective.
- 3 Open the views that you need to include in the perspective.
- 4 Arrange the views on the page into the configuration that you need. See Procedure [25](#).
- 5 Right-click on the perspective icon for the current perspective and choose Save As.

Result: The Save Perspective As window opens.

---

6 Enter a name for the perspective.

---

7 Click OK to save the change.

---

#### **Procedure 42 To reset the default settings for a perspective**

---

1 Open the perspective that you need to reset to the default settings.

---

2 Right-click the perspective icon for the current perspective and choose Reset.

Result: You are prompted to reset the current perspective to the default settings.

---

3 Click OK to reset the perspective to its default settings.

---

#### **Procedure 43 To customize perspective menu shortcuts**

---

1 Right-click the perspective icon and choose Customize.

Result: The Customize Perspective window opens.

---

2 Click the Shortcuts tab.

---

3 Choose Open Perspective in the Submenus drop-down menu.

Result: The perspective shortcuts appear in the Shortcuts table.

---

4 Select each shortcut name that you need to appear when you click on the perspective icon.

---

5 Click OK to save the change.

---

#### **Procedure 44 To customize the perspective bar**

Perform the following step:

To toggle icon text on or off, right-click the perspective bar or a perspective icon and choose Show Text.



**Note** — When text is enabled, there is a check mark next to the Show Text menu item. When text is disabled, there is no check mark next to the Show Text menu item.

---



---

# 8 Objects

## 8.1 Overview

## 8.2 Editing multiple objects

## 8.3 Setting default values for objects

## 8.4 Network Tree filters

## 8.5 Finding objects

## 8.6 Exporting object data to a file

## 8.7 Copying an object data

## 8.8 Communicating an object reference to another user

## 8.1 Overview

An object is anything that appears in the navigation trees and Graphical View, in any perspective. For example, anything that appears in the Network Tree, Group Network, NE Groups, NEs, and under an NE is an object.

Use the following procedures to:

- Open an object
- Navigate to a previously viewed object
- View object parameters
- Copy an object

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this chapter. See the *5520 AMS Administrator Guide* for more information.

### Procedure 45 To open an object

Perform one of the following steps:

- In the Network or Administration Tree, click on the name of the object. If there is an expand button [+] to the left of the object, you can click on it to view the sub-objects.
- In the Graphical or Map View, click on the icon that represents the object. Double-click on the icon to view the sub-objects, if there are any. You can switch to the Table View by clicking the Toggle View icon () on the Graphical or Map View toolbar.

---

Only some objects are displayed in the Map View. See Procedure 32 for information on objects that can be displayed in the Map View.

The selected object is highlighted in the Network or Administration Tree or Graphical View, Map View, or Table View, and the Object Details view displays configuration details about the object, when information is available.

If the selected object does not have a Graphical View, Map View, or Table View representation, the closest parent object is displayed using the view format that is available for that object.

---

## Procedure 46 To navigate to a previously viewed object

Perform one of the following steps:

- To navigate to a specific previously viewed object, click the History icon () on the toolbar.  
Result: The Navigation history window opens and displays the navigation history for the current GUI session. Select an object from the list and click OK.
- To navigate back through previously viewed objects one by one, click the Back icon () icon on the toolbar.
- To navigate forward through previously viewed objects one by one, click the Forward icon () on the toolbar.
- To navigate to the parent object, click the Up icon () on the toolbar.



**Note 1** — The 5520 AMS stores the 20 most recent history items when you log out. When you log in again, you can return to your work by clicking the History icon () , selecting an object in the Navigation history window, and clicking OK.

**Note 2** — The Navigation history window displays the navigation history for the tree that you are currently viewing.

---

## Procedure 47 To view object parameters

- 1 Verify that you have the Network perspective open. To open the Network perspective, see Procedure 39 or click the Network Perspective icon () on the Perspectives toolbar. This perspective includes the Object Details view, by default.
  - 2 In the Network Tree, Graphical View, or Map View, open the object for which you need to view the parameters. See Procedure 45.
-

---

Result: The Object Details view displays the configurable and nonconfigurable parameters for the object. Some parameters have a Browse button that allows you to view additional details about the parameter.

- 
- 3 In the Object Details view, click Browse beside the parameter.

Result: A selection window opens.

- 
- 4 In the selection window, choose an object from the list, and click Show Details.

Result: The object details are displayed in the Object Details view.

- 
- 5 When you are finished viewing the object details, click Finish or Cancel to close the Object Details view and return to the selection window.



**Note** — Some parameters in the Object Details view also appear in the Network Tree and Graphical View. You can navigate to the objects that correspond to these parameters by clicking Go to beside the parameter in the Object Details view. The object is then highlighted in the Network Tree and displayed in the Graphical View.

---

## 8.2 Editing multiple objects

The 5520 AMS GUI allows you to edit simultaneously the parameters of multiple objects, such as NEs and alarms.

The multiple edit option is available under the following conditions:

- More than one object of the same type is selected.
- None of the objects selected is a domain object, such as Infrastructure.  
Domain objects do not display parameters in the Object Details view.

You can select up to 5000 objects at one time.

To perform an edit on multiple NE objects, the NEs must be of the same type and release, however, they can be in different groups.

You can perform an edit of multiple objects from the Network Tree, the Administration Tree, the Graphical View, and the Alarm view.



**Note** — After performing multiple edit of NE objects, the object details for some of the NE groups are not updated immediately. You need to wait for a few minutes; and the wait time depends on the number of NEs and groups selected.

---

**Procedure 48 To edit multiple objects**

---

1 From the required tree or view, press the Ctrl key and select the objects that you want to edit.

---

2 Right-click a selected object and choose Multiple Edit.

Result: The Multiple Edit window opens.

---

3 Modify the parameters.

---

4 Click Finish.

Result: The changes are applied to the selected objects.

---

## 8.3 Setting default values for objects

You can reset the values of one or more attributes of an object to its default settings.

Procedure [49](#) describes how to set the default values for the objects in the 5520 AMS.

**Procedure 49 To set the default values for objects**

---

1 In the Object Details view of the selected object, click the View Menu icon (  ), and choose Set Default Values.

Result: The Set Default Values window opens.

---

2 Select the check box next to the attributes which need to be set to the default value.



**Note** — In the Filter field, you can type the first few letters of the attributes to display the attribute name as per their filter criterion.

---

3 Click Finish.

Result: The selected attributes are reset to their default value in the Object Details view.

---

---

## 8.4 Network Tree filters

You can create a Network Tree filter to display a reduced number of objects having specific attributes. Only the objects that have the attributes specified in the filter are displayed in the Network Tree.

When the 5520 AMS is managing thousands of NEs and millions of alarms with several database changes, the Show Configured Equipment Only option from the Network Tree filter may take 30 seconds to appear and be usable by the operator.

Use the following procedures to:

- Create a Network Tree filter
- Save a Network Tree filter
- Delete a Network Tree filter

You can also navigate to NEs that are not fully reachable and not fully supervised, see section [18.9](#).

### Procedure 50 To create a Network Tree filter

- 
- 1 On the Network Tree toolbar, click the Network Filter icon ().

Result: The Filter Configuration window opens.



**Note** — The Network Tree filter is applicable only to the main/default Network Tree tab, except for the "Show Configured Equipment Only" filter parameter, which applies to all the tabs.

- 
- 2 Choose the Simple tab and perform the following steps to define a Simple filter.

- Enable the check boxes beside the NE filter parameters that will be used to filter the object in the Network Tree.
- Enable the check boxes beside the NE filter parameters that will be used to filter the object in the Network Tree.
- To apply the filter, click OK.

Result: The Filter Configuration window closes and the Network Tree displays the filtered objects.



**Note 1** — If multiple NE tabs are open, the filter is applied to all NE tabs.

**Note 2** — If an NE tab is already open for an NE that is filtered out, then this NE tab will not be closed.

- 
- 3** Perform the following steps to define an Advanced filter:
- Choose the Advanced tab. Choose the Advanced tab. Select one of the following options:
    - Match all of the following to match all the advanced filter criteria.
    - Match any of the following to match any of the advanced filter criteria.
  - Select the filter parameter from the first drop-down list.
  - Select the operator from the second drop-down list. Different operators are supported, such as, equals, does not equal, begin with, does not begin with, and contains.
  - Enter or select the filter parameter option from the third drop-down list.
  - Click the plus icon (  ) to add more advanced filter criteria. Click the minus icon (  ) to delete a filter criterion.
  - To apply the filter, click OK.
- Result: The Filter Configuration window closes and the Network Tree displays the filtered objects.



**Note 1** — If multiple NE tabs are open, the filter is applied to all NE tabs.

**Note 2** — If an NE tab is already open for an NE that is filtered out, then this NE tab will not be closed.

- 
- 4** Perform any of the following steps, as required. Click the Network Filter menu icon (  ), and choose any one of the following:
- Edit to edit the applied network filter. The filter configuration window opens. Perform step 2 to step 3 to update the filter.
  - Clear to clear the applied filter. When a filter is cleared, the Network Tree displays all objects in the network. Clearing the filter does not delete it.
  - Save to save a filter. See Procedure 51.
  - Save as to save an existing filter as a new filter. See Procedure 51.
  - Delete to delete a saved filter. See Procedure 52.



**Note** — Alternatively, to clear an applied filter, click the Clear Active Filters icon (  ) beside the Filter Active field at the top of the Network Tree window.

---

## Procedure 51 To save a Network Tree filter

Before you proceed, a filter must be applied on the Network Tree. See Procedure [50](#).

---

1 On the Network Tree toolbar, click the Network Filter menu icon (  ), and choose one of the following steps:

- Save to save a new filter
- Save As to save an existing filter as a new filter.

Result: The Save Filter As window opens.

---

2 Choose one of the following options:

- Private to save the filter as private filter visible only to the current user.
- Public to save the filter as a public filter visible to all users.

---

3 Enter a name in the Filter Name field.

---

4 Click OK to save the filter.

Result: The filter is saved.

---

## Procedure 52 To delete a Network Tree filter

Only a saved filter can be deleted. See Procedure [51](#) to save an applied filter.

---

1 On the Network Tree toolbar, click the Network Filter menu icon (  ).

---

2 Select Delete from the drop-down menu.

Result: The Delete Filter window opens.

---

3 Select the filter to be deleted and click OK.

Result: A confirmation dialog appears.

---

4 Click OK to confirm the deletion.

---

---

## 8.5 Finding objects

You can find objects using:

- The Find function to configure a set of parameters as search criteria
- The Search by icons in the 5520 AMS toolbar
- The Show Quick Search icon in the Network, Administration, or Software Package tree

You can also navigate to NEs that are not fully reachable and not fully supervised, see Section [18.9](#).

### Procedure 53 To find objects using the Find function

- 
- 1 In the Network Tree, right-click the Group Network object, an NE group, or an NE, and choose Find.

Result: The Find Objects window opens.

- 
- 2 Select the type of object that you want to find and click Next.



**Note 1** — The subscriber filters in the Find function are determined by the subscriber search attribute categories. See the *5520 AMS Administrator Guide* for more information.

**Note 2** — Searching on the System ID, OSWP on NT Disk (is present), and OSWP on NT Disk (is absent) options for NEs is case sensitive. Searching for all other objects is case insensitive. However, you have the option to perform a case-sensitive search on Objects with Comments.

**Note 3** — Sometimes, the software name includes the IP address of the NE. Therefore, to avoid any incorrect search results, Nokia recommends to use a string which is not a part of the valid IP address. For example, instead of '.44' use 'AA.44'.

- 
- 3 Configure the filter parameters, and click Finish.

Result: The Find Results window opens and displays the results.

- 
- 4 To copy the search results, click Copy All. Paste the copied data into a text editor and save it to a file.

- 
- 5 To navigate to a particular object from the search results, perform one of the following steps:

- Select the object and click Go to.
- Double-click on the object.

---

Result: The object is highlighted in the Network Tree.

---

- 6 Click Close to close the Find Results window.
- 

## Procedure 54 To find objects using the Search by icon in the 5520 AMS toolbar

---

- 1 Click the Search by icon () in the 5520 AMS toolbar and choose a category from the drop-down menu.



**Note** — The subscriber filters in the Search function are determined by the subscriber search attribute categories. See the *5520 AMS Administrator Guide* for more information.

---

- 2 Type a search string in the search field and click the Search icon ()

Result: The Find Results window opens and displays the results.

---

- 3 To copy the search results, click Copy All. Paste the copied data into a text editor and save it to a file.
- 

- 4 To navigate to a particular object from the search results, perform one of the following:

- Select the object and click Go to.
- Double-click on the object.

Result: The object is highlighted in the Network Tree.

---

- 5 Click OK to close the Find Results window.
- 

## Procedure 55 To find objects using the Show Quick Search icon

---

- 1 Perform one of the following steps:
  - Click the Show Quick Search icon () in the Network, Administration, or Software Package tree toolbar.
  - Press any of the following keys (a-z or A-Z or 1-9), when the Network, Administration, or Software Package tree is selected.

---

Result: A free text search panel opens at the bottom of the tree view.

- 
- 2 Type a search string in the text field and perform any of the following steps:
- Click the Search the previous occurrence () icon to search for the previous occurrence of the text string.
  - Click the Search the next occurrence () icon to search for the next occurrence of the text string.
  - Press the ENTER key.

Result: The first visible object in the tree view that contains the text string is selected.

---

## 8.6 Exporting object data to a file

The 5520 AMS provides you the option to save data from the Object Details view or the Table View to a text, .csv, or .xml file. As a result, you are able to analyze the content of the saved files using desktop applications or scripts.

### Procedure 56 To export data from the Object Details view or Table View to a file

- 
- 1 In the Network or Administration Tree, choose the object for which you want to export its data to a file.
- 
- 2 Go to the Object Details view or Table View for the selected object. In the Graphical View, click the Toggle View icon () to change to the Table View, if applicable.
- 
- 3 Click the View Menu icon () of the view, and choose one of the following:
- Save as...
  - Save as CSV  
For information about the configuration tasks required for this option, see the *5520 AMS Administrator Guide*.
  - Save as XML

Result: The Save window opens.

- 
- 4 Enter a file name, choose a directory to which to save the file, and click Save.

Result: The object data is saved to a file in the selected directory.

---

---

## 8.7 Copying an object data

You can copy all object data from the Object Details view. The Copy→All menu option copies all of the object data present in the Object Details view (parameters and values). The copied object data can then be pasted in a mail or any text editor.

### Procedure 57 To copy object data

- 
- 1 In the Network or Administration Tree, choose the object you need to copy data for.

---

  - 2 Click Object Details view.

---

  - 3 Click the View Menu icon (  ) and choose Copy→All.  
Paste the copied data to a text file.
- 

## 8.8 Communicating an object reference to another user

Use the procedure in this section in troubleshooting scenarios to communicate an object reference with another user, so that the other user can look at the object, and troubleshoot problems with the object.

### Procedure 58 To communicate an object reference to another user

- 
- 1 In the Network Tree or Graphical View, choose the object you need to communicate to another user.

---

  - 2 In the Object Details view, click the View Menu icon (  ) and choose Copy→Object Name.

- 3** Paste the copied data to a text file and send it to the other user (via E-mail, Instant message or any other communication tool).
- 4** Upon receiving this file, the other user can search for this object in the Network Tree, by performing the following steps:
  - a** Copy the object data and paste it in the Search field on the toolbar.
  - b** Select the Network Tree view, and click the Search by icon () in the 5520 AMS toolbar.
  - c** Set the criteria to Equals and Object Name, and click the Search icon ().

Result: The Object reference opens in the Network Tree.

---

---

# 9 Icons

- [9.1 Overview](#)
- [9.2 Perspective icons](#)
- [9.3 Toolbar icons](#)
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- [9.5 Menu icons](#)
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- [9.15 Link management icons](#)
- [9.16 Configuration file audit icons](#)

## 9.1 Overview

This chapter identifies and describes all of the icons that appear in the default 5520 AMS GUI. Icons that appear for 5529 Enhanced Applications are not described here. For information about icons for one of the 5529 Enhanced Applications, see the documentation for the application.

## 9.2 Perspective icons

A perspective icon is a graphical representation of a perspective. Table 19 lists the icon and name of each perspective icon that appears in the 5520 AMS GUI.

The icons in Table 19 are listed according to the order in which they appear under the Open Perspective icon in the 5520 AMS GUI.

**Table 19** Perspective icons

Icon	Icon name
	Open Perspective
	Action Manager
	Administration
	Alarm
	Backup Restore
	NE Detection
	Network
	PM
	Scheduler

(1 of 2)

Icon	Icon name
	Software
	Templates

(2 of 2)

## 9.3 Toolbar icons

Table 20 describes the common toolbar icons for the views. The icons appear at the top right corner of the view. Other icons may appear that are not listed. The icons that appear depend on the view displayed.

The icons in Table 20 are divided into main and view toolbar icons and listed alphabetically.

**Table 20**      **Toolbar icons**

Icon	Icon name	Icon description
<b>Main toolbar icons</b>		
	Back	Navigates the user back through the previously viewed objects
	Change Password	Allows you to change a user password
	Create Any Object	Allows you to create any type of object
	Create Group	Allows you to create an NE group below the selected location
	Create Link	Allows you to create a link between NEs
	Create NE	Allows you to create an NE below the selected location

(1 of 9)

Icon	Icon name	Icon description
	Cut-Through	Opens a Cut-Through window
	Forward	Navigates the user forward through the previously viewed objects
	History	Displays the recently viewed objects in the Network or Administration Tree
	Log File Selection	Opens the Command Log File Settings window from the Cut Through view
	Login	Logs in to the 5520 AMS system
	Logout	Logs out of the 5520 AMS system
	Lock Screen	Locks the 5520 AMS GUI screen
	Save file to client	Saves the file in the client
	Save file to server	Saves a file to the 5520 AMS server
	Search	Allows you to go to a particular object
	Search by	Allows you to choose search criteria. You can search by object name or for a subscriber
	Subscriber Search Attribute Categories	Allows you to search for subscribers

(2 of 9)

Icon	Icon name	Icon description
	Up	Navigates the user to the parent objects
<b>Status bar icons</b>		
	Click here to open Message Box	Opens the Message Box view. The icon also appears in Window→Show View→Message Box but does not reflect the presence of unread messages.
	Click here to open Message Box	Opens the Message Box view. This icon appears when there are 'important' unread messages in the Message Box.
	Click here to open Message Box	Opens the Message Box view. This icon appears when there are only 'normal' unread messages in the Message Box.
	Cluster degraded	Indicates that the 5520 AMS cluster is operating but that there is a problem. Allows you to navigate to the Site object in the Administration perspective. <sup>(1)</sup> <sup>(2)</sup>
	Cluster healthy	Indicates that the 5520 AMS cluster is operating as expected. Allows you to navigate to the Site object in the Administration perspective. <sup>(1)</sup>
	Cluster unavailable	Indicates that the 5520 AMS cluster is not operating. Allows you to navigate to the Site object in the Administration perspective. <sup>(1)</sup>
	Duplicate	Copy the settings for one NE Type/Release to another NE Type/Release
	Number of NEs not fully reachable	Allows you to navigate to the NEs that are not fully reachable. The number of NEs in the system that are not fully reachable is displayed beside the icon in the status bar.
	Number of NEs not fully supervised	Allows you to navigate to the NEs that are not fully supervised. The number of NEs in the system that are not fully supervised is displayed beside the icon in the status bar.
	Shows background operations in Progress view	Allows you to open the Progress view and display a progress summary of operations running in the background while the client is starting up.
	Standalone degraded	Indicates that the 5520 AMS simplex server is operating but that there is a problem. Allows you to navigate to the Site object in the Administration perspective.

(3 of 9)

Icon	Icon name	Icon description
	Standalone healthy	Indicates that the 5520 AMS simplex server is operating as expected. Allows you to navigate to the Site object in the Administration perspective.
	Standalone unavailable	Indicates that the 5520 AMS simplex server is not operating. Allows you to navigate to the Site object in the Administration perspective.
<b>View toolbar icons</b>		
	Action Details	Shows the details of the selected action
	Action Details Filter	Applies a filter to action details in the Action Details view
	Action Filter	Applies a filter to actions in the Action perspective
	Network Filter	Applies a filter to objects in the Network Tree
	Filter	Applies a filter to the view
	Add	Manually adds an alarm rule
	Add NE Manual Mapping	Manually adds NE release mapping
	Add New Category	Adds a subscriber management attribute mapping category
	Add ONT Manual Mapping	Manually adds ONT release mapping
	Align EMS Database with Stored NE Backups	Scans the backup database. If a record in the NE backup database does not have a corresponding NE backup file on the 5520 AMS server, the record in the NE backup database is deleted.
	Check All Rules	Allows you to validate the defined alarm rule set
	Apply	Commits the changes that are implemented for the view to the database
	Allow Moving Objects	Allows you to move objects on the map
	Audible Notification	Enables/disables audible notification when an alarm is received
	Auto Refresh	Automatically updates the view according to a predefined interval

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Icon	Icon name	Icon description
	Batch Execution Action	Plays a batch execution file
	Play a file	Plays a TL1 or CLI script file
	Resume Action	Resumes a suspended action
	Start OTDR	Starts OTDR
	Broadcast	Opens the Broadcast Message window
	Rename Category	Rename a category in the Subscriber Search Attribute Categories view
	Modify	Allows you to modify an alarm rule
	Cancel/Revert	Cancels your changes and reverts to the previous configuration (in the Object Details view)
	Stop	Stops an operation
	Stop Batch Execution	Stops a batch execution action
	Change Mode	Allows a submenu to change the way values are displayed in a graph (such as Absolute, Relative, or Delta in PM Table view)
	Change Status	Changes the status of an alarm rule (activates or deactivates an alarm rule)
	Clear Active Filters	Clears the active filter
	Go back up to the top	Restores the NE as the root in the NE tab and displays the hierarchical tree structure for the NE.
	Clear Screen	Clears the screen below
	Delete	Deletes the selected items Deletes the alarm rules
	Delete Comment	Deletes the selected comment
	Detect NEs	Launches a search for new NEs
	Run	Runs an operation (for example, a query)
	Edit Format	Edit the regular expression that defines the format of a subscriber search attribute
	Edit NE Release Mapping File	Edit an NE release mapping file
	Edit ONT Release Mapping File	Edit an ONT release mapping file

(5 of 9)

Icon	Icon name	Icon description
	Expand Stacked Objects	Allows you to expand stacked objects in the map view for which latitude and longitude are set to zero or not defined
	Export All Graphs Export Current Graph	Exports EMS Performance Monitoring graphs to a directory of your choice
	First	Displays the first page in a view that has multiple pages of information
	Freeze	Freezes the view so that it is not updated
	Last	Displays the last page in a view that has multiple pages of information
	Load NE Release Mapping File	Loads release mapping files for an NE
	Load ONT Release Mapping File	Loads release mapping files for an ONT
	Mark Unread	Marks the selected message as Unread
	Modify	Allows you to modify or edit a parameter
	Move to Historical	Moves the selected item to the Historical Action view
	Move Attributes	Moves attributes from Not collected for SMA category to a mapping group or from a mapping group to Not collected for SMA category in the Subscriber Mgmt Attribute Mapping view.
	Move to Center of Map	Allows you to move an object icon to the center of the map view. Typically, to change the location of an object, you need to select the object, then move the map such that the target location appears in the center of the map, and then click this icon. The object is moved to the required location, and appears in the center of the map view.
	Move to Top	Moves an item to the top of a list

(6 of 9)

Icon	Icon name	Icon description
	Move Up	Moves an item up one position in a list
	Move Down	Moves an item down one position in a list
	Move to Bottom	Moves an item to the bottom of a list
	Next	Displays the next page in a view that has multiple pages of information
	Pack	Compresses the alarms displayed in the Alarm view
	Pin	Places the current view anywhere on the screen. This allows you to open multiple versions of the same view to compare different objects.
	Previous	Displays the previous page in a view that has multiple pages of information
	Refresh	Updates the view
	Retry Action	Retries a failed or cancelled action
	Save	Saves data to file
	Show Details	Shows details of the selected object
	Single/Multiple Graph	Toggles the display of information to and from a single graph or multiple graph format (used in the PM Table view)

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Icon	Icon name	Icon description
	Start Session	Start a TL1 or CLI cut-through session
	Stop Session	Stop a TL1 or CLI cut-through session
	Suspend Action	Suspends an action
	Start Monitoring	Start monitoring for all the counters shown in the Object Monitoring View The icon is enabled only when an active filter is selected in the Object Monitoring View. The icon is disabled when there are more counters than the allowed counters per category to be shown in PM data view.
	Show NE History	Shows the NE history for all the counters shown in the Object Monitoring View The icon is enabled only when an active filter is selected in the Object Monitoring View. The icon is disabled when there are more counters than the allowed counters per category to be shown in PM data view.
	Toggle View	Toggles the display of information to and from a grid or table format to a graphical or map view
	Total Number of Partial Templates in NE	Indicates the total number of partial templates in the NE, in the Template Presence window
	Total Number of Templates Absent in NE	Indicates the total number of templates that are absent in the NE, in the Template Presence window
	Total Number of Templates Present in NE	Indicates the total number of templates that are present in the NE, in the Template Presence window
	Visual Notification	Enables/disables visual notification when an alarm is received
	Web Links	Indicates that one or more objects in the Object Details view has a customized web link associated with it.

(8 of 9)

Icon	Icon name	Icon description
	Show Topology	Displays the OTDR topology view.
	Show Measurements	Displays the OTDR measurements view.
	Select Log File	Selects the log files where the cut-through command output is logged. It is enabled when a CLI cut-through session is started.
	Clear Logging File	Clears the cut-through log file. It is enabled when a CLI cut-through session is started.
	Start Logging	Starts logging the cut-through commands output to the selected log file. It is enabled when a log file is selected or when logging has not started for a CLI cut-through session.
	Stop Logging	Stops logging the cut-through commands output to the selected log file. Enabled when logging has started for a CLI cut-through session.

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Notes

- (1) If an interface is down, it may take several minutes for the 5520 AMS to update the icon and status in the Object Details view for the Site object.
- (2) Changes to this icon are for notification only. This may change at different intervals as it receives updates from the cluster.

## 9.4 View icons

A view icon is a graphical representation of a view. Table 21 lists the icon and name of each view icon that appears in the 5520 AMS GUI.

The icons in Table 21 are listed alphabetically.

**Table 21 View icons**

Icon	Icon name
	Action view

(1 of 4)

Icon	Icon name
	Admin Alarm Summary Alarm Alarm Rules Network Alarm Summary Historical Alarm
	Backup File Management Backup Restore Tasks
	Comments (no comments present) The icon also appears in Window→Show View→Comments but does not reflect the presence of comments.
	Comments (one or more comments present)
	Custom Fields
	Customized Web Links
	CLI Cut Through Secure CLI Cut Through Standard Serial Link Cut Through
	Collection Statistics
	Detected NEs
	External TL1GW External TL1GW Manager
	Network Tree Administration Tree
	EMS Performance Monitoring Switchover Log

(2 of 4)

Icon	Icon name
	Global Monitoring Object Monitoring Custom Counters PM Data
	Graphical View Object Details Template Object Details ONT HW SW Table
	Help
	Historical Action
	Internal Web Browser
	Message Box (no unread messages present) The icon also appears in Window→Show View→Message Box but does not reflect the presence of unread messages.
	Message Box (one or more unread messages present)
	Progress CPE Vendor ID Mapper
	Templates Details Template Tree
	Operator Defaults
	OTDR view
	Schedule

(3 of 4)

Icon	Icon name
	Software Package Tree
	Subscriber Search Attribute Categories
	User Activity Log

(4 of 4)

## 9.5 Menu icons

Only the Create and Delete menus contain icons. Table 22 describes the menu icons.

The icons in Table 22 are listed according to the order in which they appear in views, starting from left to right.

**Table 22** Menu icons

Icon	Icon name	Icon description
	Collapse All	Collapses all expanded objects
	Expand All	Expands all collapsed objects
	Delete	Deletes the object
	Delete All Completed Tasks	Deletes the selected tasks in the Object Monitoring View and the Global Monitoring View.
	View Menu	Displays a contextual menu for the view. The availability and content of this menu depends on the view.

(1 of 2)

Icon	Icon name	Icon description
	Minimize	Minimizes the size of the view to less than the size of the page
	Maximize	Maximizes the size of the view to the same size as the page
	Restore	Restores the view to its previous size

(2 of 2)

## 9.6 Overlay icons

Table 23 lists the overlay icons.

**Table 23** Overlay icons

Icon	Icon name
	Create (used in menu)

## 9.7 State icons

A state icon indicates the status of an object. Table 24 lists the state icons.

The icons in Table 24 are listed alphabetically.

**Table 24** State icons

Icon	Icon name
	Administrative State: Auto Up
	Administrative State: Locked

(1 of 4)

Icon	Icon name
	Connection Status: Partially Reachable
	Connection Status: Reachable
	Connection Status: Unreachable (Also applicable for Nokia Access Virtualizer Adaptor when it is not reachable)
	Connection Status of Nokia Access Virtualizer Adaptor NE device: Unreachable (Nokia Access Virtualizer Adaptor is reachable but the device is not reachable)
	Equipment Mismatch
	Equipment Missing
	Equipment Not Planned
	Global Monitoring/Object Monitoring task in progress
	Global Monitoring/Object Monitoring task completed
	Hot Standby (operational mode)
	Loopback State (Active)
	Operational State: Up

(2 of 4)

Icon	Icon name
	Operational State: Down
	Port State: Initializing This icon is for SHDSL spans.
	Port State: Not OK This icon is for SHDSL spans.
	Port State: OK This icon is for SHDSL spans.
	Port State: Unknown This icon is for SHDSL spans.
	Power State: Power Down
	Providing Service (operational mode)
	Supervision State: Declared
	Supervision State: In maintenance
	Supervision State: Partially Supervised
	Supervision State: Supervised
	Supervision State: Supervising

(3 of 4)

Icon	Icon name
	Supervision State: Imported from Supervised state
	Supervision State: Imported from Declared state
	Testing
	Unknown (operational mode)

(4 of 4)

## 9.8 Tree icons

Table 25 lists the Tree icons of the various views. The icons are listed alphabetically.

**Table 25** Tree icons

Icon	Icon description
	Address
	Agent <i>name</i>
	Aggregator
	Alarm silent mode
	ATM interface

(1 of 9)

Icon	Icon description
	ATM VCL
	Authentication
	Bonding Group
	Bonding Link
	Bridge port
	Card <i>type (name)</i> Slot <i>type (name)</i> Unit <i>type (name)</i>
	CES DS1/E1 Service
	Channel
	Chassis Shelf <i>number (type)</i> Subrack <i>number (type)</i>
	Cluster
	Counter
	Database

(2 of 9)

Icon	Icon description
	Device Unit
	DHCP
	Domain (Logical group of objects)
	EMS Administration
	Engine
	Entry
	Event
	Fan
	Filter
	Group
	Group of NEs
	Horizontal dots for an icon that should not be in the Network Tree

(3 of 9)

---

Icon	Icon description
	Internet
	IP interface
	Line Port <i>number (type)</i>
	Line Segment
	Link (Up)
	Link (Down or Unusable)
	Link (Misconfigured)
	Link (Not configured)
	Log
	Maintenance Association
	Maintenance Domain

(4 of 9)

Icon	Icon description
	Maintenance Point
	Maintenance Point List
	Make Root
	Monitoring
	Multicast Package
	Multicast Source
	NE <i>name</i>
	ONT Slot
	Unconfigured ONT
	Configured ONT; no ONT installed
	Home ONT (GSFU); appears only when an ONT is installed
	Business ONT (GSBU); appears only when an ONT is installed

(5 of 9)

Icon	Icon description
	Multi-dwelling Unit ONT (MDU); appears only when an ONT is installed
	OSWP
	Pair (Twisted)
	PAP
	PAP Group
	Performance monitoring data—15-min. interval
	Performance monitoring data—1-h interval
	Performance monitoring data—24-h interval
	Performance monitoring—current data
	Policy
	PON Port
	Profile

(6 of 9)

---

Icon	Icon description
	Protection
	Protocol
	Queue
	Rack number (type)
	Software Release
	Routing
	Sealing Current
	Search the next occurrence
	Search the previous occurrence
	Server
	Session
	Severity

(7 of 9)

---

Icon	Icon description
	SFP
	Show Quick Search
	Site ( <i>name</i> )
	Software file
	SSH
	System
	Test
	TCA
	Thermal Sensor <i>name</i>
	Topology device
	Traffic Class
	User

(8 of 9)

Icon	Icon description
	Video
	VLAN
	VLAN association
	VoIP
	VRF

(9 of 9)

## 9.9 Template icons

A template icon is a graphical representation of a template object. Table 26 lists the template icons that appear in the 5520 AMS GUI.

The icons in Table 26 are listed alphabetically.

**Table 26** Template icons

Icon	Icon description
	NE template
	Template
	Template group

(1 of 2)

Icon	Icon description
	Template or template group root directory
	Template type
	Template version

(2 of 2)

## 9.10 Alarm icons

The 5520 AMS GUI has the following types of alarm icons, which are described in Table 27, and Alarm view icons, which are described in Table 28.

**Table 27 Alarm icons**

Alarm Icon Type	Alarm Icon	Alarm Severity
Aggregated alarm		Critical
		Major
		Minor
		Warning

Alarm Icon Type	Alarm Icon	Alarm Severity
		Intermediate
		Cleared (normal, no alarms)
		Critical (acknowledged)
		Major (acknowledged)
		Minor (acknowledged)
		Warning (acknowledged)
		Indeterminate (acknowledged)
		Critical (Highest severity of unacknowledged alarms is Critical)
		Critical (Highest severity of unacknowledged alarms is Major)

Alarm Icon Type	Alarm Icon	Alarm Severity
		Critical (Highest severity of unacknowledged alarms is Minor)
		Critical (Highest severity of unacknowledged alarms is Warning)
		Critical (Highest severity of unacknowledged alarms is Indeterminate)
		Critical (all alarms are acknowledged)
		Major (Highest severity of unacknowledged alarms is Major)
		Major (Highest severity of unacknowledged alarms is Minor)
		Major (Highest severity of unacknowledged alarms is Warning)
		Warning (Highest severity of unacknowledged alarms is Indeterminate)
		Warning (all alarms are acknowledged)

Alarm Icon Type	Alarm Icon	Alarm Severity
		Indeterminate (Highest severity of unacknowledged alarms is Indeterminate)
		Indeterminate (all alarms are acknowledged)
		No Critical alarms
		No Major alarms
		No Minor alarms
		No Warning alarms
		No Indeterminate alarms
Object alarm		Critical
		Major
		Minor
		Warning
		Indeterminate

Alarm Icon Type	Alarm Icon	Alarm Severity
		Cleared (normal, no alarms)
		Critical (Highest severity of unacknowledged alarms is Critical)
		Critical (Highest severity of unacknowledged alarms is Major)
		Critical (Highest severity of unacknowledged alarms is Minor)
		Critical (Highest severity of unacknowledged alarms is Warning)
		Critical (Highest severity of unacknowledged alarms is Indeterminate)
		Critical (Highest severity of unacknowledged alarms is Indeterminate)
		Critical (Highest severity of unacknowledged alarms is Indeterminate)
		Major (Highest severity of unacknowledged alarms is Major)
		Minor (Highest severity of unacknowledged alarms is Minor)
		Minor (Highest severity of unacknowledged alarms is Warning)
		Minor (Highest severity of unacknowledged alarms is Indeterminate)

Alarm Icon Type	Alarm Icon	Alarm Severity
		Minor (all alarms are acknowledged)
		Warning (Highest severity of unacknowledged alarms is Warning)
		Warning (Highest severity of unacknowledged alarms is Indeterminate)
		Warning (all alarms are acknowledged)
		Indeterminate (Highest severity of unacknowledged alarms is Indeterminate)
		Indeterminate (all alarms are acknowledged)

**Table 28 Alarm view icons**

Alarm view icon type	Icon	Description
Alarm counters		Total number of alarms (including active and cleared)
		Total number of cleared alarms
		Total number of acknowledged alarms
Alarm table (set columns)		Select columns to display in Alarm table

**Table 29 Alarm summary view icons**

Alarm summary view icon type	Icon	Description
Alarm counter		Total number of unacknowledged alarms
Show alarms		Show current alarms on the selected object and subtree
		Show current alarms on the selected object
		Show historical alarms on the selected object and subtree
		Show historical alarms on the selected object

## 9.11 Miscellaneous icons

Table 30 lists miscellaneous icons.

The icons in Table 30 are listed alphabetically.

**Table 30 Miscellaneous icons**

Icon	Icon name
	Loading
	Misaligned
	Plotter

(1 of 2)

Icon	Icon name
	Service
	Success
	Unconfigured

(2 of 2)

## 9.12 Port icons

Table 31 lists port icons.

The icons in Table 31 are listed alphabetically.

**Table 31** Port icons

Icon	Icon name
	Port (configured, outband management)
	Port (configured and connected to subtended equipment)
	Port is Unconfigured
	Port is Configured

(1 of 2)

Icon	Icon name
	Port Type: LT
	Port Type: Control
	Port Type: Network
	Port Type: User

(2 of 2)

## 9.13 Security icons

A security icon is a graphical representation of a security object. Table 32 lists the security icons that appear in the 5520 AMS GUI.

The icons in Table 32 are listed alphabetically.

**Table 32 Security icons**

Icon	Icon name
	License
	Role
	Session

(1 of 2)

Icon	Icon name
	User
	User Settings

(2 of 2)

## 9.14 Object details icons

Table 33 describes the object details icons.

**Table 33** Object details icons

Icon	Description
	Identifies a read-only view field
	Identifies a parameter value that has not been saved
	Identifies an invalid parameter value

## 9.15 Link management icons

Table 34 lists the link topology state icons.

**Table 34** Topology state icons

Icon	Icon name
	Topology Indicator: Hub
	Topology Indicator: Hub and Subtended

(1 of 2)

Icon	Icon name
	Topology Indicator: Subtended

(2 of 2)

## 9.16 Configuration file audit icons

Table 35 lists the configuration file audit icons

**Table 35** Configuration file audit icons

Icon	Description
	Default value and current value of the configuration file parameter are the same.
	Default value and current value of the configuration file parameter are not the same.
	Parameter value is not present in the configuration file.



# Monitoring and fault management

- [10 Action Manager](#)
- [11 Alarms](#)
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---

# 10 Action Manager

## 10.1 Overview

### 10.2 Working with the Action Manager

### 10.3 Configuring the Action Manager

### 10.4 Job Queue status

## 10.1 Overview

The Action Manager is a set of tools for managing tasks that could potentially affect a very large number of NEs. The Action Manager initiates and tracks the overall task as a collection of individual jobs, each affecting a single target NE.



**Note** — Making changes that have a narrow scope, such as, applying changes to attributes of a single object in the Network Tree through its Object Details view, are not performed or tracked by the Action Manager. Such changes are tracked in the User Activity Log.

Because the management of these jobs is handled by the 5520 AMS server, the Action Manager continues to manage jobs independently of the GUI session that started them. Users can see and manage the list of the jobs they initiated from any GUI session they log in to. Users with appropriate functions can see and manage the jobs of all users.

With the Action Manager, you can view lists of past and present tasks and their status, and cancel pending tasks. A details view displays the status of each component job in the overall task, which can be monitored and managed separately.

Examples of tasks currently managed by the Action Manager are:

- NE software backup and restore
- NE template management
- NE software management (downloading and activating software)
- NE management (starting and stopping supervision)



**Note** — For a complete list of Action Manager applications, see the Viewing User Log section in the Managing Logs chapter in the *5520 AMS Administrator Guide*.

---

When supervision of an NE is started, the Action Manager displays the tasks for inventory collection (using one of the 5529 Enhanced Applications) and template group deployment (option when creating an NE). These tasks are:

- Created only one time, when the NE is supervised for the first time
- Started only when the start supervision task is completed

The Action Manager has four components:

- Action view
- Progress view
- Action Details view
- Historical Action view

This chapter describes the role of the Action Manager in managing general tasks.

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this chapter. See the *5520 AMS Administrator Guide* for more information.

## 10.2 Working with the Action Manager

Use the procedures in this section to use the different tools that constitute the Action Manager.

### Procedure 59 To use the Action view

Use this procedure to monitor and manage tasks with the Action view.

---

1 Click the Open Perspective icon () on the 5520 AMS toolbar, and choose Action Manager.

Result: The Action Manager window opens.

---

2 Click the Action tab.

---

3 To filter the list of actions displayed:

i Click the Action Filter icon () on the Action Manager toolbar.

Result: The Action Filter window opens.

---

ii Select one or more of the available filters:

- User
- Type
- Application
- Action
- Description
- Target
- Status
- Errors
- Started Before (Select to view actions that started before the selected time/date.)
- Started After (Select to view actions that started after the selected time/date.)

and for each selected filter, type the criterion text.



**Note** — You can view actions that started during a specific duration by selecting both “Started Before” and “Started After” Action filters.

iii Click Finish.

Result: The Action view updates to show only actions that match the filter.

---

4 To suspend one or more actions, select actions in the list and perform one of the following steps:

- Right-click Action and choose Suspend Action.
- Click the Suspend Action icon (  ).

---

5 To resume one or more suspended actions, select actions in the list and perform one of the following steps:

- Right-click Action and choose Resume Action.
- Click the Resume Action icon (  ).

---

6 To cancel one or more actions, select actions in the list and perform one of the following steps:

- Right-click Action and choose Cancel Action.
- Click the Cancel Action (  ) icon.

Result: This cancels any jobs within the action that are not yet in the Ongoing state.

- 
- 7 To retry one or more failed or cancelled actions, select actions in the list and perform one of the following steps:
- Right-click Action and choose Retry Action.
  - Click the Retry Action icon ()



**Note** — It is also possible to configure automatic retry of failed NE database backup operations. See the *5520 AMS Administrator Guide* for more information. If automatic retries are configured for an action, the Action Manager automatically retries the failed action. If more than one retry is configured, and the retry attempt also fails, the Action Manager waits for a duration that is configured as the wait time between two retries before retrying the action again. The number of pending automatic retries for the failed action is displayed in the Pending Auto Retries column in the Action view.

If the automatic retry option is configured for an action, cancelling a job associated with the action does not cancel the pending retries for the action.

- 
- 8 To view the details of an action, perform one of the following steps:
- Select an action and click the Action Details icon ()
  - Double-click on an action.

Result: The Action Details view opens. See Procedure 62 for information about using the Action Details view.

- 
- 9 To save the actions listed in the Action view in a .csv file, perform the following steps:
- i Click the View Menu icon () and choose Save as CSV.  
Result: The Save as CSV window opens.
  - ii Browse and select the location of the export file in the Target field. The filename is automatically assigned with a .csv extension.
  - iii If needed, modify the number of records to export.
  - iv Click OK.

Result: The .csv file is generated.

- 
- 10 To copy the actions listed in the Action view to the clipboard perform the following steps:
- Click the View Menu icon () and choose Copy All.  
This option copies the first 50000 entries in the page.
  - Choose the rows of actions from the Action view for which you need to copy the data. Right-click the selected rows and choose Copy.

---

Result: This copies the selected actions to the clipboard in the standard .csv format. You can paste the copied rows to a file.

- 
- 11** To move actions to the Historical Action view, select one or more actions in the list and perform one of the following steps:
- Right-click the selection and choose Move to Historical from the contextual menu.
  - Click the Move to Historical icon ()

There may be a delay before the actions appear in the Historical Action view.

---

## 10.2.1 Action view

The Action view provides a list of all current actions and their status. For each action, this view shows the:

- User who initiated the action
- Type of action (initiated directly by user or a schedule)
- Application responsible for the action
- Name and description of the action undertaken
- Number of component jobs included in the action
- Number of errors in the action
- Number of canceled jobs
- Percentage progress for the action
- Status of the action (ongoing, suspended, or completed)
- Time remaining before the action is complete
- Date and time the action was initiated

An action can be initiated:

- Directly by a user (Direct)
- A schedule defined by the 5520 AMS (Scheduled)
- Automatically (Automatic)

The action type is displayed in the Action Manager for each action listed and is a criterion when filtering a list of actions.

By default, actions in the list are sorted by their starting date and time. You can also choose to view actions before, after, or during a specific time or day using the Action filter; see Procedure [59](#).

Completed actions are automatically moved from the Action view to the Historical Action view according to a schedule configured by the administrator. By default actions are moved after 7 days. You can also move them to the Historical Action view manually.

---

## 10.2.2 Historical Action view

The Historical Action view displays actions that have been moved from the main Action view, either manually by a user or by an automated schedule configured by the Administrator.

Actions in the Historical Action view are regularly deleted according to a schedule configured by the Administrator. By default actions are deleted every 30 days. You can also delete these actions manually.

### Procedure 60 To use the Historical Action view

Use this procedure to review tasks with the Historical Action view.

- 
- 1 To open the Historical Action view, open Action Manager, Software, Backup, Template, or Network perspective and click the tab for the Historical Action view.

If the Historical Action tab is not already present in the perspective, enable the Historical Action view by performing the following:

- i In the 5520 AMS menu, choose Window→Show View→Other.

Result: The Show View window opens.

- ii Choose Platform→Historical Action in the Show View navigation tree, and click OK.

Result: The Historical Action view displays.

- 
- 2 To filter the list of actions displayed:

- i Click the Action Filter icon ()

Result: The Action Filter window opens.

- ii Select one or more of the available filters:

- User
- Type
- Application
- Action
- Description
- Target
- Status
- Errors
- Started Before (Select to view actions that started before the selected time/date.)
- Started After (Select to view actions that started after the selected time/date.)

---

for each selected filter, type the criterion text.



**Note** — You can view actions that started during a specific duration by selecting both “Started Before” and “Started After” Action filters.

- iii Click Finish.

Result: The Action view updates to show only actions that match the filter.

- 
- 3 To view the details of an action, perform one of the following steps:

- Select an action and click the Action Details icon ().
- Double-click on an action.

Result: The Action Details view opens. See Procedure 62 for information about using the Action Details view.

- 
- 4 To copy the actions listed in the Historical Action view to the clipboard, perform the following steps:

- i Click the View Menu icon () and choose Copy All.

This option copies the first 50000 entries in a page.

- ii Choose the rows of actions from the Historical Action view for which you need to copy the data. Right-click the selected rows and choose Copy.

Result: This copies the selected actions to the clipboard in the standard .csv format. You can paste the copied rows to a file.

- 
- 5 To delete actions from the Historical Action view, select one or more actions in the list and click the Delete Action from Historic icon ().
- 

### 10.2.3 Progress view

The Progress view is displayed after you initiate one of the actions managed by Action Manager. You can also open it as a separate view.

The Progress view displays a progress summary of an action, including:

- Percentage completion for the overall action, and a corresponding progress bar
- Estimated remaining time for the action
- Number of errors and cancelled jobs within the action

---

You can set the action displayed in the Progress view to run in the background, where the ongoing action will display in the 5520 AMS GUI as an icon indicating a background process. The icon changes to indicate when new results for the component jobs are available.

### Procedure 61 To use the Progress view

Use this procedure to monitor and manage tasks with the Progress view.

- 
- 1 To open the Progress view (separately from the Progress window, which opens automatically when starting a task), perform the following steps:
    - i In the 5520 AMS menu, choose Window→Show View→Other.  
Result: The Show View window opens.
    - ii In the Show View window, choose Platform→Progress, and click OK.
  - 2 To view details of background operations in the Progress view, double-click on the Show background operations in the Progress View icon (). See Procedure 62 for information about using the Action Details view.
  - 3 To view details of an action displayed in the Progress window, click Details.  
Result: The Action Details panel opens, showing the component jobs of the overall action and their progress.
  - 4 To cancel a job displayed in the Progress Window, open the Details view and click the Cancel icon () beside the job. You can only cancel jobs that are in the Pending state.
- 



**Note** — There can be brief delays in communication between the components of the Action Manager. This delay varies depending on the number and the complexity of jobs currently being executed. Because of these delays, it is possible that a job that shows as Pending in the Progress Window has just recently begun on the server. In such cases, it may not be possible to cancel a job that shows as Pending.

---

## 10.2.4 The Action Details view

The Action Details view displays the owner and execution status of the parent action as well as information about each of the component jobs that constitute the parent action.

---

When you open the Action Details view, the results are filtered by default to show only failed jobs for the selected action. You can modify the filter settings to display different results.

## Procedure 62 To use the Action Details view

Use this procedure to monitor and manage tasks with the Action Details view.

- 
- 1 To open the Action Details view, perform one of the following steps:
    - In the Action view or Historical Action view, choose an action and click the Action Details icon () , or double-click on the action.
    - Open the Action Manager perspective. See Procedure 39. The Action Manager perspective contains Action view and Historical Action view.



**Note** — The Action Details view also appears automatically when an action is complete.

The Action Details view opens. In the upper panel this view displays a summary of the action:

- The name of the overall action (for example, Stop Supervision or Rebalance)
- The user who started the action
- The start date and time
- Total execution time
- The number of errors and canceled jobs

The details panel shows, for each job in the overall action:

- Target NE
- Description of the job (for example, Stop Supervision)
- Status (either Pending, In Progress, Success, Failure, or Cancelled)
- Additional information (such as the reason for a failure, if available)

You can click on the column heading button to also display:

- Submitted at (date and time the job was submitted to the Action Manager)
- Started at (date and time the job was started)
- Completed at (date and time the job was completed)

- 
- 2 To filter the list of actions displayed in the detail panel:

- i Click the Action Filter icon ().

Result: The Action Filter window opens.

- 
- ii Select one or more of the available filters:
    - Status (select one Status from the drop-down menu)
    - Target (type criterion text)
    - Description (enter criterion text)

- iii Click Finish.

Result: The Action Details view updates to show only jobs that match the filter you configured.

- 
- 3 A list of more than 500 jobs splits into multiple pages. To navigate between pages of a long job list, click First Page, Previous Page, Next Page, or Last Page.

- 
- 4 To cancel a job, select a job in the list and click Cancel. You can only cancel a job whose status is Pending.



**Note** — The Action Details view displays job status at the moment it is opened. The status retrieved at that moment can be affected by the delays described in Procedure 62. Also, jobs that begin execution after you open the Action Details view will not change their status in the window. In such cases, it may not be possible to cancel a job that shows as Pending.

- 
- 5 To retry a failed action, select an action in the list and click Retry.



**Note** — You can only retry a failed action if you opened the Action Details view from the Action view. You cannot retry an action from the Action Details view if you opened it from the Historical Action view.

- 
- 6 To copy the information displayed in the Action Details view, click Copy All.

Result: This copies the summary information displayed at the top of the Details window, as well as the details for each job displayed (based on the current filter). You can then paste the information into a text file.

- 
- 7 To close the Action Details view, click Close.
-

---

## 10.3 Configuring the Action Manager

Settings in the Administration perspective allow you to schedule the following tasks affecting the Action Manager:

- Movement of completed actions from the Action view to the Historical Action view (by default, this occurs every 7 days)
- Deletion of actions from the Historical Action view (by default, this occurs every 30 days)



**Note** — The 5520 AMS checks the threshold for moving completed actions to the historical view, and deleting actions from the historical view every 1 hour. The period between these checks may cause slight delays before actions are moved or deleted according to the configured schedule.

### Procedure 63 To configure the Action Manager

Use this procedure to configure the Action Manager, scheduling periodic movement and deletion of actions.

- 
- 1 In the Administration Tree, choose EMS Administration→Configuration→Action Manager Settings.

---

  - 2 In the Object Details view, configure one or both of the following parameters:
    - Delay Before a Completed Action is Moved to the Historical List
    - Delay Before an Action is Deleted from the Historical List

For either parameter, enter a number followed by a time unit (s for seconds, m for minutes, h for hours, or d for days).

---

  - 3 Click the Apply icon (✓) to save changes.
- 

## 10.4 Job Queue status

You can view the job queue details, such as pending jobs and jobs that are in progress, for a selected agent in the Network Tree view.

**Procedure 64 To view a Job Queue status**

To view the Job Queue status, perform the following:

---

**1** In the Network Tree view, navigate to the NE and choose Agents→Agent.

---

**2** Right-click Agent and choose Show→Job Queue.

Result: The Job Queue window opens.

---

**3** Check the status of the job and click Finish.

Result: The Job Queue window closes.

---

# 11 Alarms

## 11.1 Overview

### 11.2 Displaying alarms

### 11.3 Filtering alarms

### 11.4 Working with alarms

## 11.1 Overview

The alarms application in the 5520 AMS GUI contains alarms information for the 5520 AMS and its associated NE plug-ins. You can:

- View alarm lists, details, and summaries
- Customize alarm views
- Acknowledge and assign alarms
- Sort, filter, and export alarms
- Work with historical alarms
- Configure alarm storage

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this chapter. See the *5520 AMS Administrator Guide* for more information.

### 11.1.1 Alarm views

The 5520 AMS organizes alarm information in tables called views, in which you can perform alarm management tasks. You can view an unlimited number of alarms at one time. Table 36 describes the 5520 AMS alarm views.

**Table 36 Alarm views**

View	Description
Current	Shows active alarms raised in the last 24 h. This is the main alarm view, in which you can perform most of the alarm management tasks. For example, you can use this view to acknowledge and assign alarms, and to move cleared alarms to the Historical view.
Historical	Shows historical alarms. Historical alarms are alarms that are cleared and moved from the alarm view either manually or by an automatic moving strategy.

(1 of 2)

View	Description
Condition	Shows alarms for which the reporting mode has been turned off, and alarms whose severity is below the severity threshold of the NE. Use this view to investigate low severity alarms and troubleshoot their causes. The information in the Condition view is static, and cannot be refreshed manually or automatically. The functionality of this view is limited, you cannot acknowledge and assign alarms in the Condition view.
Current & Historical	Shows current and historical alarms in a single view. The information in the Current & Historical view is static, and cannot be refreshed manually or automatically. The functionality of this view is limited. You cannot acknowledge and assign alarms in the Current & Historical view.

(2 of 2)

For information on the alarm icons and alarm view icons, see [Table 27](#) and [Table 28](#).

## 11.1.2 Alarm summaries

The Network and Administration perspectives each include an Alarm Summary view. When you choose an object in the navigation tree, the Alarm Summary view shows mnemonic icons for the alarms reported by the selected object.

The color of each mnemonic icon corresponds to the highest severity alarm reported with the mnemonic. You can place the cursor over an icon to view a list of the specific problems reported, or double-click an icon to open a filtered Alarm view.



**Note** — The filtered lists created by double-clicking on a mnemonic icon show alarms on the selected object only. They do not show alarms reported by objects in the subtree.

The Alarm Summary view displays icons depicting the count for each severity level. The number adjacent to the icons represents the number of alarms for each severity level. The color of the icons is updated when all alarms of related severity are acknowledged.

The Alarm Summary view also displays the total number of unacknowledged alarms. You can place the cursor over the icon to view the total count of unacknowledged alarms along with counters for unacknowledged alarms in each severity.

For information on the alarm summary view icons, see [Table 29](#).

## 11.1.3 Alarm filters

You can create and manage filters to view only the alarms you need. Private filters are available only to you. Public filters are available to all users who have access to your PAP groups.

## 11.1.4 Alarm settings

For 5520 AMS supported alarm types and information about configuring alarm settings in the Administration perspective. See the *5520 AMS Administrator Guide*.

For the alarms that are supported on a specific NE, see the Operations and Maintenance guide for the NE. For information about configuring NE alarms settings and managing NE alarms, see Chapter 31.

## 11.1.5 Alarm Counters in the Table View

You can find the overview of the highest severity alarms on the object and its subtree in the Table View of the object. See Table 37 for information on the alarm counters in the Table View.

**Table 37 Alarm Counters in the Table View**

Column Name	Description
Act	Displays the number of highest severity active alarms on the object and its subtree.
Unact	Displays the number of highest severity unacknowledged alarms on the object and its subtree.



**Note 1** — A plus sign '+' is displayed adjacent to the alarm counters in the columns to indicate the presence of active alarms of a lower severity.

**Note 2** — A minus sign '-' is displayed in the columns to indicate the absence of alarms on the object and its subtree.

## 11.2 Displaying alarms

Use the procedures in this section to manage alarm views. The alarm views display alarms related only to NEs in the PAP groups that are assigned to your user profile. Table 38 lists the procedures described in this section.

**Table 38 Alarm display procedures**

Task	See
To show or hide alarm status icons	Procedure 65
To view alarms	Procedure 66

(1 of 2)

Task	See
To open multiple alarm views	Procedure <a href="#">67</a>
To change the number of alarms displayed	Procedure <a href="#">68</a>
To customize the alarm display	Procedure <a href="#">69</a>
To sort an alarm list	Procedure <a href="#">70</a>
To display the Alarm Summary view	Procedure <a href="#">71</a>

(2 of 2)

### Procedure 65 To show or hide alarm status icons

Use this procedure to show or hide alarm status icons in the Network Tree or Administration Tree.

- 1 Click the View Menu icon (  ) on the local toolbar in the navigation tree.
- 2 Enable or disable the Show alarm info menu option, as required. A check mark appears beside the menu label when the alarm status information is set to show.

### Procedure 66 To view alarms

Perform this procedure to view current and historical alarms.

- 1 Open alarm views by performing one of the following steps:
  - Open the Alarm perspective. See Procedure [39](#) or click the Alarm Perspective icon (  ) on the Perspectives toolbar. The Alarm perspective contains the Current view and Historical view.
  - From the Admin Alarm Summary view or the Network Alarm Summary view, double-click one of the alarm mnemonic icons. A filtered alarm view opens in the Alarm perspective.
  - From the Network Tree or the Administration Tree or the Software Package Tree, select the objects for which you need to view the alarms. Right-click an object, and choose one of the menu options described in Table [39](#).



**Note** — Spatial alarms on an NE appear on the Alarm System Parameters object. Navigate to the NE and choose Infrastructure→Alarms→Alarm System Parameters.

**Table 39 Alarm menu options**

Menu option	Description
Show→Current Alarms→on Selected Object <sup>(1)</sup>	Displays the Current Alarm view that contains the active reported alarms on the selected object.
Show→Current Alarms→on Selected Object & Subtree <sup>(1)</sup>	Displays the Current Alarm view that contains the active reported alarms on the selected object and its subtree.
Show→Current Alarms & Conditions→on Selected Object & Subtree	Displays the Condition view that contains unreported alarms on the selected object and its subtree.
Show→Current & Historical Alarms→on Selected Object <sup>(3)</sup>	Displays the Current & Historical view that contains both current and historical alarms on the selected object.
Show→Current & Historical Alarms→on Selected Object & Subtree <sup>(3)</sup>	Displays the Current & Historical view that contains both current and historical alarms on the selected object and subtree.
Show→Historical Alarms→on Selected Object <sup>(1) (2)</sup>	Displays the Historical view that contains the cleared alarms on the selected object that have been moved to the Historical Alarm view.
Show→Historical Alarms→on Selected Object and Subtree <sup>(1) (2)</sup>	Displays the Historical view that contains the cleared alarms on the selected object and its subtree that have been moved to the Historical view.
Show→Unacknowledged Alarms→on Selected Object <sup>(1)</sup>	Displays the Current:Only Unacknowledged view that contains the active reported alarms that are unacknowledged on the selected object.
Show→Unacknowledged Alarms→on Selected Object & Subtree <sup>(1)</sup>	Displays the Current:Only Unacknowledged view that contains the active reported alarms that are unacknowledged on the selected object and its subtree.

**Notes**

- (1) If you change an NE name after using this menu option, you need to click the Refresh icon to update the NE name in the Current view table (the Freeze icon must be Disabled). However, the alarms that moved to the Alarm view before you changed the NE name continue to show the old NE name.
- (2) When Historical view protection is enabled, you can only view historical alarms on a limited number of NEs at a time. No alarms are displayed if you use this menu option on more NEs than the configured limit allows. See the *5520 AMS Administrator Guide* for information about configuring Historical view protection.
- (3) The 'Current & Historical Alarms' and 'Current Alarms & Conditions' menu are applicable only when a single object is selected. These options do not apply when NE groups are selected.

- a** From any other perspective, choose Window→Show View→Other, select an alarm view, and click OK.

- 2 By default, an alarm view displays the 30 most recent alarms. To display more alarms in the list, perform one of the following steps:
  - To scroll to the next 30 alarms, and so on, click the Next icon (⇒) in the alarm view toolbar.
  - To view a specific page of alarms, type a page number in the Go To Page field, and click the Go To icon (➔).
- 3 Double-click on an alarm to open the Object Details view for that alarm. See Table 40 for more information about the object details.



**Note 1** — In the alarm view, if you double-click on the alarm tooltip that is displayed when you mouse over an alarm instead of directly on the alarm, the Object Details view for the alarm does not open. Make sure that you double-click on an area of the alarm where the tooltip does not display.

**Note 2** — The Object Details view for an alarm displayed in the Condition view contains only a subset of the parameters described in Table 40, due to the reduced functionality of this view.

**Table 40** Object Details for Alarm parameters

Parameters	Description
<b>Diagnosis</b>	
Severity	Severity that the 5520 AMS identifies for the alarm
Probable Cause	Probable cause that the 5520 AMS identifies for the alarm. The probable cause is the expansion of the PCM. For example, AlarmSynchronizationProblem (ALRM).
Mnemonic	PCM for the alarm. For example ALRM. For the expansion of PCMs, view the Probable Cause column.
Specific Problem	Details about the alarm, based on the probable cause
TL1 Alarm Condition	TL1 alarm condition used in CLI and TL1 alarm reporting. Maps to 5520 AMS alarm Probable Cause and Specific Problem parameters.
Proposed Repair Actions	Recommended actions to resolve the alarm
Additional Info/Text	Additional information about the alarm from the NE, such as counters that indicate where the problem is. In case of toggling alarms, it displays the <i>&lt;count&gt; occurrences in the hour before &lt;time&gt;</i> , where: <count> is the number of times the alarm occurred in that hourly measurement window for that NE. <time> is the time of the measurement expressed in UTC. For example, <i>2 occurrences in the hour before Tue May 09 02:47:22 UTC 2017</i> . This field is updated at the end of each measurement window, that is, once in an hour.
Service Affecting	SA, NSA or '-' (unknown)

(1 of 4)

Parameters	Description
Filter Type	Indicates whether the alarm is derived (spatial or temporal) or basic. If the alarm is basic, then the parameter remains empty.
<b>General</b>	
Category	Type of the alarm. For example, Equipment, Communications, Environmental, Quality of Service, Processing Error, Integrity Violation, Operational Violation, Physical Violation, Time Domain Violation, Security Service/Mechanism Violation, and Resource nearing Capacity.
Domain	Class of NE or connection where the alarm occurred. For example, NE, Board, or XDSL.
Source Name	Name for the source of the alarm. For example, XDSL Port 7324RU 13.
NE Group	Name of the group that the NE on which the alarm originates belongs to, including the path to the root. The NE Group parameter can also be added as a column to the alarm view tables.
NE Name	Name of the NE
NE IP Address	Refers to the IP address of the NE to which an alarm is related. This parameter is available only in the Alarm view and in the Object Details view of an alarm in the Alarm view. The parameter is unavailable in the Historical view. When an alarm is raised, modified or cleared, the alarm will contain the IP address of the impacted NE.
Alias Name	The alias name of the NE. The length of the field is 225 characters. It also supports any language.
NE Subtype/Release	The NE subtype and release at the time an alarm is raised. For example, FTTN/5.4.
Event Time	Date and time when the alarm occurred, as retrieved from the NE. By default, the time displayed is in the local time of the 5520 AMS GUI. To display the time in GMT/UTC: <ul style="list-style-type: none"> <li>• Configure time zone management.</li> <li>• Set the values of the Display 'Event/Cleared Time' in Alarm Views as parameter in the Time Zone Settings to 'GMT/UTC'.</li> </ul> See the <i>5520 AMS Administrator Guide</i> for more information.
NE Event Time	Date and time when the alarm occurred, displayed in the local time of the NE. This column only appears when the following criteria are met: <ul style="list-style-type: none"> <li>• Time zone management has been configured. See the <i>5520 AMS Administrator Guide</i></li> <li>• When the Display 'NE Event/Cleared Time' Columns in Alarm Views parameter is configured in the Time Zone settings. See the <i>5520 AMS Administrator Guide</i>.</li> </ul>
EMS Event Time	Date and time when the alarm is received by the 5520 AMS server, displayed in the local time of the 5520 AMS GUI.
Cleared Time	Date and time when the alarm was cleared, as retrieved from the NE. By default, the time displayed is in the local time of the 5520 AMS GUI. To display the time in GMT/UTC: <ul style="list-style-type: none"> <li>• Configure time zone management.</li> <li>• Set the values of the Display 'Event/Cleared Time' in Alarm Views as parameter in the Time Zone Settings to 'GMT/UTC'.</li> </ul> See the <i>5520 AMS Administrator Guide</i> for more information.

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Parameters	Description
NE Cleared Time	Date and time when the alarm was cleared, displayed in the local time of the NE. This column only appears when the following criteria are met: <ul style="list-style-type: none"> <li>Time zone management has been configured. See the <i>5520 AMS Administrator Guide</i></li> <li>When the Display 'NE Event/Cleared Time' columns in Alarm Views parameter is configured in the Time Zone settings. See the <i>5520 AMS Administrator Guide</i>.</li> </ul>
EMS Cleared Time	Date and time when the alarm was cleared, in the local time of the 5520 AMS GUI.
History Time (historical alarms only)	Date and time when the alarm was moved to the historical alarm list
Last Modification Time	Date and time when the alarm was last modified
<b>Follow Up</b>	
Acknowledged	Alarm acknowledgement indication. The table cells for an acknowledged alarm are dimmed.
(un)Acknowledged by	User who acknowledged the alarm or who unacknowledged an acknowledged alarm.
(un)Acknowledged via IP address	Displays the IP address of the 5520 AMS client used by the user who has acknowledged the alarm. When the user changes the value of the Acknowledged attribute in the Follow Up tab and clicks Finish, then the session ID of the GUI is retrieved and the client IP address of this session is populated as the value of the attribute. This is applicable for both GUI and NBI users. Or Displays the IP address of the 5520 AMS client used by the user who has unacknowledged an acknowledged alarm.
(un)Acknowledged on	Date on which the alarm was acknowledged or the acknowledged alarm was unacknowledged.
Assigned To	User to which the alarm is assigned
Assigned by	User who assigned the alarm
Assigned via IP address	Displays the IP address of the 5520 AMS client used by the user who has assigned the alarm. When the user changes the value of the Assigned To attribute in the Follow Up tab and clicks Finish, then the session ID of the GUI is retrieved and the Client IP address of this session is populated as the value of the attribute. This is applicable for both GUI and NBI users.
Assigned on	Date on which the alarm was assigned
Notes	Information to display in the Object Details view for alarms
<b>Filter</b>	
Filter ID	ID of the alarm filter
Number of Occurrences	The threshold value of the alarm filter. For temporal alarm filters, the value is the number of alarms that have to be detected on a specific object while a filter is in progress before the related derived alarm is raised. For spatial alarm filters, the value is the number of objects within the NE for which the basic alarm must be raised before the related derived alarm is raised.
Within Time Period (s)	The duration (in seconds) of the filtering window. This parameter applies only when the alarm is derived and the alarm filter is temporal. The parameter does not apply to spatial alarm filters.
<b>Miscellaneous</b>	
ID	ID is the friendly name of the alarm. It is a unique integer number assigned to the alarm.

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Parameters	Description
Notification ID <sup>(1)</sup>	ID generated for the notification received from the NE. It is different from the alarm ID. This ID helps to find the original notification from the NE.
NE Alarm Type	The NE Alarm type is a combination of the alarm type and alarm number found in the SNMP alarm.
Custom Field 1	Additional information on the alarm type
Custom Field 2	Additional information on the alarm type
Custom Field 3	Additional information on the alarm type
TL1 AID	Displays the TL1 style AID defined for the object. The name refers to the TL1 AID and does not include Object type, NE Name or Agent. If the TL1 AID cannot be determined for an object the default name should be used. The Object Type, NE Name, and Agent Name should not be used when the default name is used, the AID should only be displayed. Display of this parameter must be enabled in Alarm Settings.

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Note

<sup>(1)</sup> This applies only to a few NE types.

**Note 1** — In the Current view and the Historical view, by default, the parameters Custom Field 1, Custom Field 2 and Custom Field 3 are not displayed. To view them, see Procedure 69.

**Note 2** — In the Current view, by default, the NE IP Address parameter is not displayed. To view the parameter, see Procedure 69.

## Procedure 67 To open multiple alarm views

Use this procedure to open multiple alarm view windows so that you can specify different filter conditions.

- 1 Display the Alarm perspective, as described in Procedure 66.
- 2 Click the View Menu icon (  ) in the selected alarm view toolbar.
- 3 Choose New Alarm View.

Result: A blank Alarm view opens. You can create a filter to display alarms. See Procedure 72.

---

**Procedure 68 To change the number of alarms displayed**

Use this procedure to change the number of alarms that are displayed on a page in the Current view and the Historical view.

---

1 Display the Alarm perspective, as described in Procedure 66.

---

2 Click the View Menu icon (  ) on the view toolbar and choose Settings from the menu.

Result: The View Settings window opens.

---

3 Change the settings as required.

---

4 Click Finish.

Result: The alarm view refreshes with the number of alarms on the page that you specified. Use the Next (  ) and Previous (  ) icons in the view toolbar to scroll between pages.

The "Historical" alarm view and the combined alarm views such as "Current Alarms & Conditions" and "Current & Historical Alarms" do not support the auto-refresh functionality. Therefore, the change to the number of alarms displayed per page will be applied to these views after you click the Refresh (  ) icon.

---

**Procedure 69 To customize the alarm display**

Use this procedure to customize the columns in the alarm display of the Current view and Historical view.

---

1 Display the Alarm perspective, as described in Procedure 66.

---

2 Click the Set columns to display icon (  ).

Result: The Select Columns window opens.

---

3 Select and double-click one or more column headings from the Available list to move the columns to the Selected list.

---

4 Click OK.

Result: The selected columns appear in the alarm display. You can arrange the order of the columns by dragging the column heading.

- 
- 5 To save the column layout as the default, click the View Menu icon (  ) and choose Save Columns as Default.
  - 6 To restore the columns to the default that you saved in step 5, click the View Menu icon (  ) and choose Restore Columns as Default.
- 

## Procedure 70 To sort an alarm list

Use this procedure to sort an alarm list by column heading in the Current view and the Historical view.

- 
- 1 Display the Alarm perspective, as described in Procedure 66.
  - 2 Click on a column heading. For example, click on the Severity column heading to sort the alarm list by perceived severity, in descending order. A down arrow next to the column heading indicates descending sorting order.
  - 3 Click on any column heading a second time to sort the alarm list in ascending order. An up arrow next to the column heading indicates ascending sorting order.



**Note** — You can only sort the alarm list by one column at a time. For example, when an alarm list is sorted in descending order by Severity and you click on the Event Time column heading, the 5520 AMS sorts the list in descending order by Event Time.

---

## Procedure 71 To display the Alarm Summary view

The Network and Admin Alarm Summary views display mnemonic icons for the types of alarms reported by a selected object. Use this procedure to open an Alarm Summary view.

1 Choose an object in the navigation tree with active alarms. For NE-specific information about showing alarms, see the Operations and Maintenance guide for the NE.

2 Choose one of the following from the menu:

- Window→Show View→Network Management→Admin Alarm Summary
- Window→Show View→Network Management→Network Alarm Summary

Result: The 5520 AMS displays the Alarm Summary view and alarm information about the selected object in the navigation tree.



**Note 1** — Perform any of the following options:

- Double-click the Unacknowledged Alarms icon () to open the Current: Only Unacknowledged view listing the unacknowledged alarms of the selected object and its subtree.
- Click the Show Current Alarms on Selected Object and Subtree icon () to open the Current view listing the alarms on the selected object and subtree.
- Click the Show Current Alarms on Selected Object icon () to open the Current view listing the alarms on the selected object.

**Note 2** — For more information on alarm icons, see Section 9.10.

## 11.3 Filtering alarms

Use the procedures in this section to filter displayed alarms. You can create and save filters for alarm views, and widen or narrow the scope of an existing filter. Table 41 lists the procedures described in this section.

**Table 41 Alarm filtering procedures**

Task	See
To filter the selected alarm view display	Procedure 72
To view historical alarms that match the current filter	Procedure 73
To create a filter from the Alarm Summary view	Procedure 74
To save the current filter	Procedure 75

(1 of 2)

Task	See
To edit a filter	Procedure <a href="#">76</a>
To load a saved filter	Procedure <a href="#">77</a>
To find similar alarms	Procedure <a href="#">78</a>
To widen the scope of a filter	Procedure <a href="#">79</a>

(2 of 2)

## Procedure 72 To filter the selected alarm view display

Use this procedure to filter the column display in the selected alarm view.

- 1 Display the alarm views, as described in Procedure [66](#).
- 2 Perform one of the following steps:
  - Click the Filter icon () in the selected alarm view toolbar.
  - Click the pull-down menu next to the Filter Menu icon () in the selected alarm view toolbar, and choose Edit.  
Result: The Filter Configuration window opens.
- 3 Choose the criteria on which you need to filter the alarm views.
- 4 Click OK to apply the filter.  
Result: The alarm perspective displays the alarm views based on the filtering criteria.

## Procedure 73 To view historical alarms that match the current filter

Use this procedure to filter the column display in the Historical view.

- 1 Perform Procedure [72](#).
- 2 Click the View Menu icon () in the Historical view toolbar.
- 3 Choose Run in history.

---

**Procedure 74 To create a filter from the Alarm Summary view**

You can open a filtered alarm view from the Admin or Network Alarm Summary view. Use this procedure to create filters from the filtered view.

- 
- 1 Display the Alarm Summary view. See Procedure [71](#).
  - 2 From the Alarm Summary view, double-click on a mnemonic icon. A filtered alarm view opens in the Alarm perspective, showing the alarms of the selected type on the selected object.
- 

**Procedure 75 To save the current filter**

- 
- 1 Apply a filter, as described in Procedure [72](#).
  - 2 Click the pull-down menu next to the Filter menu icon (  ) in the selected alarm view toolbar.

Result: The Filter Configuration window opens.

- 
- 3 Choose Save or Save As.

Result: The Save Filter As window opens.

- 
- 4 Select Private or Public radio.

- 
- 5 Enter a filter name.

- 
- 6 Click OK.

Result: The filter appears in the list of saved filters.

---

**Procedure 76 To edit a filter**

- 
- 1 Load the filter as described in Procedure [77](#).
  - 2 To edit a filter, perform one of the following steps:
    - Click the Filter icon (  ) in the selected alarm view toolbar.

---

Result: The Filter Configuration window opens.

- Click the pull-down menu next to the Filter Menu icon (  ) on the selected alarm view toolbar and choose Edit.

Result: The Filter Configuration window opens.

- 
- 3 Modify the filter parameters in the Filter Configuration window as required and click OK.
- 

### Procedure 77 To load a saved filter

- 
- 1 Display the Alarm perspective. See Procedure 66.
- 

- 2 Click the pull-down menu next to the Filter menu icon (  ) in the selected alarm view toolbar.
- 

- 3 Choose the filter name.

Result: A filtered list of alarms is displayed.

- 
- 4 To return to the full list of alarms, click the Clear Active Filters icon (  ), or click the pull-down menu next to the Filter menu icon (  ) and choose Clear.
- 

### Procedure 78 To find similar alarms

Use this procedure to select an alarm and add a filter to find similar alarms.

- 
- 1 Select an alarm in any alarm view.
- 

- 2 Right-click the alarm and select Actions→Add Filter, then choose a parameter.

Alarms that do not match the chosen parameter are removed from the current alarm view, and the parameter is added to the current filter as a criterion. For example, selecting a major alarm and choosing Actions→Add Filter→Severity (Major) filters out all non-major alarms from the list.

---

## Procedure 79 To widen the scope of a filter

Use this procedure to expand an existing filter so that it applies to a higher-level object in the hierarchy.

- 1 Display the alarms on an object, as described in Procedure 66.
- 2 Click the Filter icon () in the alarm view toolbar.
- 3 Click the Scope tab.
- 4 In the Selected Object drop-down menu, select the object to which you need to apply the filter.  
  
The Selected Object menu only displays objects that contain the currently selected object for the filter. For example, if you are displaying alarms for a slot, you can only select the sub-rack, rack, NE, groups, or network that contains the slot.
- 5 To include alarms on objects contained by the Selected Object, select the Include the alarms of the subtree option.
- 6 Click OK.  
  
Result: The filter is expanded to include the selected object.
- 7 To narrow the filter to another object, select an alarm on the object and choose Actions→Add Filter→Source Name.

## 11.4 Working with alarms

Use the procedures in this section to manage existing alarms in the 5520 AMS. Table 42 lists the procedures described in this section.

**Table 42 Alarm management procedures**

Task	See procedure
To follow up alarms	Procedure 80
To acknowledge alarms	Procedure 81
To assign alarms	Procedure 82
To set notification for new alarms	Procedure 83

(1 of 2)

Task	See procedure
To configure sound settings for each alarm severity	Procedure <a href="#">84</a>
To save alarm records	Procedure <a href="#">85</a>
To move an alarm to the Historical view	Procedure <a href="#">87</a>
To manually clear the system status of the NE system object	Procedure <a href="#">88</a>

(2 of 2)

## Procedure 80 To follow up alarms

- 1 Select an alarm in the selected alarm view.
- 2 Right-click the alarm and select Actions→Follow Up.

Result: The Follow Up window opens.



**Note** — The Follow Up option is available only in the Current View.

- 3 Select the Acknowledged check box to acknowledge the alarm, if required.
- 4 Assign the alarm to a user in the Assigned To field, if required.
- 5 Enter a note in the Notes field, if required.
- 6 Click Finish.

Result: A message appears at the bottom right-hand side of the Alarm view page:

Alarm #: Follow up has been completed successfully.

where:

# represents the alarm number for which the follow up was done.

---

## Procedure 81 To acknowledge alarms

When you acknowledge alarms, user details such as name, IP address, and the time of acknowledgment are recorded by the 5520 AMS. The same information is collected by AMS even if you unacknowledge the acknowledged alarms.

- 
- 1 Open the Object Details view for an alarm. See Procedure [66](#).

---

  - 2 Click the Follow Up tab.

---

  - 3 Select the box beside the Acknowledged parameter.

---

  - 4 Click Finish.

---

  - 5 Verify that the alarm has been acknowledged by confirming one of the following:
    - The Acknowledged column in the alarms view states “true”.



**Note** — To see the changes in the alarms table, the Acknowledged column must be set to display and the Alarm view must be refreshed. See Procedure [69](#) for information about managing the visible columns in the Alarm view.

- The Acknowledgment parameters on the Follow Up tab of the Object Details are configured.
- 

## Procedure 82 To assign alarms

- 
- 1 Open the Object Details view for an alarm. See Procedure [66](#).

---

  - 2 Click the Follow Up tab.

---

  - 3 Click Browse.  
Result: The Select Assigned To window opens.

---

  - 4 Choose a user from the list.

---

  - 5 Click OK.  
Result: The Select Assigned To window closes.

---

6 Click Finish.

---

7 Confirm the alarm has been assigned by viewing one of the following:

- The Assigned To column in the alarms view lists the user.



**Note** — To see the changes in the alarms table, the Assigned To column must be set to display and the selected alarm view must be refreshed. See Procedure 69 for information about managing the visible columns in the Alarm view.

- The Assignment parameters on the Follow Up tab of the Object Details are configured.
- 

### Procedure 83 To set notification for new alarms

Use this procedure to set visual or audible notifications for when a new alarm arrives in the Current view.

---

1 Display the alarm views, as described in Procedure 66.

---

2 Click one or both of the notification icons (🔊) (📄).



**Note** — When you click the Freeze icon (❄️) to freeze the selected alarm view, the notification icons are disabled because you do not receive notifications when the view is frozen.

---

### Procedure 84 To configure sound settings for each alarm severity

To configure sound settings for each alarm severity, perform the following steps:

---

1 From the Windows menu, choose Preferences.

Result: The Preferences window opens up.

---

2 Select Alarm Audio Settings in the left pane of the Preferences window.

- 
- 3 Click Browse and select a .wav file to configure the sound for each alarm severity (Critical, Major, Minor, Warning, and Indeterminate).



**Note 1** — Only .wav files can be configured for the alarm severity sound settings.

**Note 2** — If .wav files are not selected, then the default alarm sound (beep sound) will be played.

- 
- 4 Select the "Repeat sound until the mouse is moved or key pressed" check box. If this check box is selected the sound of the received alarm is played in a loop, until the operator moves the mouse or presses any key.



**Note 1** — The sound stops playing when a new alarm of a higher severity is received. Then the sound of the new alarm severity is played.

**Note 2** — If the check box is disabled, the sound is played only once.

**Note 3** — The alarm sound does not stop playing for some keys and mouse buttons such as:

- Left, right and middle mouse keys.
- Fn key and Windows key.

- 
- 5 Click OK to save changes.
- 

## Procedure 85 To save alarm records

Use this procedure to save alarm records to a .csv file.

- 
- 1 Display the alarm views, as described in Procedure [66](#).
  - 2 Click the View Menu icon (  ) on the selected alarm view toolbar.
  - 3 Choose Save as CSV from the menu.  
Result: The Save as CSV window opens.
  - 4 Browse and select the location to save the file in the Target field. The filename is automatically assigned with a .csv extension.
  - 5 If needed, modify the number of records to save.
-

- 
- 6 Click OK.

Result: The .csv file for the alarm record is saved. See Procedures [56](#) and [57](#), and the *5520 AMS Administrator Guide* for more information.

- 
- 7 To cancel the saving of alarm records, click the Cancel icon (  ).
- 

## Procedure 86 To copy alarm records

- 
- 1 Click the Alarm Perspective icon (  ) on the Perspectives toolbar. The Alarm perspective contains the Current view and Historical view.
  - 2 Perform one of the following steps to copy the alarm records in the alarm views:
    - To copy all records in the current page, click the View menu icon (  ) and choose Copy→Page.
    - To copy all records in the table, click the View menu icon (  ) and choose Copy→All or right-click in the table and choose Select All and then Copy.  
If the table consists of more than 50000 records, then the first 50000 entries are copied.
    - To copy selected rows in a table, choose the rows to be copied, right-click and choose Copy.
  - 3 Paste the copied rows to a .csv file.
- 

## Procedure 87 To move an alarm to the Historical view

Use this procedure to manually move an alarm to the Historical view. See the *5520 AMS Administrator Guide* for information about configuring the alarm settings to send alarms to the Historical view automatically.



**Note** — You can only move cleared alarms to the Historical view.

- 
- 1 Display the alarm views, as described in Procedure [66](#).
  - 2 Right-click the alarm in the Current view that you need to move, and choose Move To Historical Alarm.
-

---

Result: The alarm moves to the Historical view.

---

- 3 Click Finish.
- 

### Procedure 88 To manually clear the system status of the NE system object

Use this procedure to manually clear an alarm.

- 
- 1 Navigate to the NE and choose NE System.
- 

- 2 Right-click NE System and choose Actions.
- 

- 3 Choose Clear State.

Result: The Clear State window opens.

---

- 4 From the Available list, select the alarm that you need to clear.
- 

- 5 Click the right arrow next to the Selected list to move the selected alarm to the Selected list.
- 

- 6 Click Finish.

Result: The Clear State window closes. The state of the alarm on the NE System object is cleared.

---

### Procedure 89 To manually clear an alarm from the Alarm table



**Note** — Only a user assigned with the security function 'Alarm - Manual Alarm Clear' can perform this procedure.

- 
- 1 Click the Alarm Perspective icon (  ) on the Perspectives toolbar. The Alarm perspective contains the Current view and Historical view.
- 

- 2 In the Alarm view, select the alarms you want to clear and right-click the alarms and select Actions → Manual Alarm Clear.

The following message is displayed:

---

*Are you sure you want to clear the selected alarm in the EMS Alarm Table? WARNING: NE alarms will not be cleared from the NE itself.*

---

- 3 Click OK to clear the selected alarms.

Result: The selected alarms are cleared from the EMS Alarm Table. The cleared time is set to the current time. The alarm clearance reason is updated in the Additional Info/Text field as 'Manual Alarm Clear by operator <user name>'.

This action has the following restrictions:



**Note 1** — NE alarms cleared using the option will eventually be raised again when a full alarm re-synchronization is triggered with the NE (for example, when the NE is reset).

**Note 2** — Some NE alarms can be cleared on the NE using supported actions from the Network Tree. Refer to NE Plugin-specific Operations and Maintenance Using the 5520 AMS guides.

**Note 3** — AMS application alarms are either:

- Raised periodically as long as the alarm condition is present. These alarms will reappear periodically.
  - Raised once. The application remembers that the alarm was raised and will not raise it again. These alarms will not reappear unless the error conditions disappear and reappear again.
-



---

# 12 Comments

## 12.1 Overview

## 12.2 Managing comments

### 12.1 Overview

You can add, modify, or delete comments for any object in the Network Tree or Graphical View that represents a physical resource: an NE, agent, rack, subrack, board, or port. You can also search to find objects with comments. When you add a comment to an NE shortcut, the comment is added to the NE. See Procedure 53.

A date and time can be set for the expiration of comments. Expired comments are automatically deleted from the 5520 AMS server within a few minutes after the configured expiration time.

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this chapter. See the *5520 AMS Administrator Guide* for more information.

### 12.2 Managing comments

Use the procedure in this section to add comments in the 5520 AMS GUI.

#### Procedure 90 To add a comment

Perform the following procedure to add a comment.

- 
- 1 Right-click on the object in the Network Tree to which you need to add a comment, and select Comments→Add.

Result: The Add Comment window opens.

- 
- 2 In the Add Comment window, type the required comment in the Comment field.

- 
- 3 Select one of the following options in the Expiration Date panel to set the expiration date for the comment:
    - Never: This option is selected by default. The comment does not expire if this option is selected.
    - Date/Time: The comment expires by the selected date and time. Click the Date/Time tab and select the date and time for the expiration of the comment.
- 
- 4 Click OK.

The Comments icon (  ) in the Comments view tab changes color to (  ) icon to indicate that comments are present for the selected object.
- 

## Procedure 91 To modify a comment

Perform the following procedure to modify a comment.

- 
- 1 To view the list of comments for an object, right-click the object in the Network Tree and choose Window→Show View→Other.
- 
- 2 In the Show View window, expand the Other object and choose Comments.

Result: The Comments view opens.
- 
- 3 Choose the comment you need to modify.
- 
- 4 Right-click on the comment and choose Modify.

Result: The Modify Comment window opens.
- 
- 5 Modify the comment and click OK.

Result: The modified comment appears in the Comments view.
-

---

## Procedure 92 To save comments

Perform the following procedure to save comments to a .csv file.

- 
- 1 To view the list of comments for an object, right-click the object in the Network Tree and choose Window→Show View→Other.

---

  - 2 In the Show View window, expand the Other object and choose Comments.  
Result: The Comments view opens.

---

  - 3 Click the View Menu icon (  ) on the Comments view toolbar and choose Save as CSV.  
Result: The Save as CSV window opens.

---

  - 4 Browse and select the location to save the file in the Target field. The filename is automatically assigned with a .csv extension.

---

  - 5 If needed, modify the number of records to save.

---

  - 6 Click OK.  
Result: The .csv file is generated.
- 

## Procedure 93 To copy comments

Perform the following procedure to copy comments.

- 
- 1 To view the list of comments for an object, right-click on the object in the Network Tree from which you need to copy the comment and choose Window →Show View→Other.

---

  - 2 In the Show View window, expand the Other object and choose Comments.  
Results: The Comments view opens.

**3** Perform one of the following steps:

- To copy all comments in the table, click the View Menu icon (  ) and choose Copy All. If the table consists of more than 50000 comments, then only the first 50000 entries are copied.
- To copy selected rows in the table, choose the rows to be copied right-click and choose Copy.

**4** Paste the copied rows to a .csv file.

---

---

# 13 Bookmarks

## 13.1 Bookmarks overview

## 13.2 Working with bookmarks

## 13.3 Invalid bookmarks

### 13.1 Bookmarks overview

You can bookmark objects and groups in the Network perspective for immediate access to frequently-viewed objects. Bookmarks in the 5520 AMS work just like bookmarks in a Web browser.

### 13.2 Working with bookmarks

You can create bookmarks and organize them using subfolders within the root folder. Bookmarks are stored in the client, but you can export them to the 5520 AMS server. This will preserve bookmarks when you upgrade the server.

Use the following procedures to:

- Create a bookmark. See Procedure [94](#).
- Navigate to a bookmark. See Procedure [95](#).
- Rename a bookmark. See Procedure [96](#).
- Organize bookmarks. See Procedure [97](#).
- Import bookmarks. See Procedure [99](#).
- Export bookmarks. See Procedure [100](#).



**Note** — Do not perform export and import operations at the same time on the same 5520 AMS server.

#### Procedure 94 To create a bookmark

- 
- 1 In the Network Tree, navigate to the object or group you need to bookmark and perform one of the following steps:
    - Right-click the object and choose Bookmark This Object.
    - Choose Bookmarks→Bookmark Selected Object.

---

Result: The Add Bookmark window opens.

- 
- 2 In the Add Bookmark window, the name of the object appears in the Bookmark Name field. Modify this field if you need to customize the name of the bookmark.



**Note** — Modifying the Bookmark Name does not affect the name of the object in the Network Tree.

- 
- 3 In the Bookmark Location field, perform one of the following steps:
    - Choose a folder and click OK.
    - Click New Folder, enter a name for the folder in the Add New Bookmark Group window, and click OK.
    - Choose the new folder in the Bookmark Location field and click OK.

Result: The bookmark is created in the selected folder.

---

## Procedure 95 To navigate to a bookmark

- 
- 1 Open the Network perspective.
  - 2 Choose Bookmarks, navigate to the desired folder, and choose the bookmark.

Result: The Object Details view opens for the bookmarked object.

---

## Procedure 96 To rename a bookmark

- 
- 1 Choose Bookmarks→Manage Bookmarks.

Result: The Bookmark Manager window opens.

- 
- 2 In the Bookmark Manager window, choose the bookmark you need to rename.
  - 3 Perform one of the following steps:

- Click Rename.
- Right-click on the bookmark and choose Rename.

Result: The Input Name window opens.

---

4 Enter the new name in the Input Name window.

---

5 Click OK.

Result: The new name appears in the Bookmarks menu.

---

### **Procedure 97 To create a bookmark subfolder**

---

1 Choose Bookmarks→Manage Bookmarks.

Result: The Bookmark Manager window opens.

---

2 In the Bookmark Manager window, choose the root folder or a subfolder and click New Folder.

---

3 Enter a name in the Add New Bookmark Group window and click OK.

Result: The subfolder is created in the selected folder.

---

### **Procedure 98 To move a bookmark**

---

1 Choose Bookmarks→Manage Bookmarks.

Result: The Bookmark Manager window opens.

---

2 In the Bookmark Manager window, choose the bookmark you wish to move.

---

3 Drag the bookmark to the new location.

Result: The bookmark is now displayed in its new folder.

---

### **Procedure 99 To import bookmarks**

---

1 Choose File→Import.

Result: The Import window opens.

---

- 
- 2 In the Import window, click Browse.  
Result: The Files in shared data directory window opens.

---

  - 3 Choose the file you need to import from the server and click Finish.  
Result: The path to the file appears in the Import window.

---

  - 4 Click Next.  
Result: The second Import window opens.

---

  - 5 In the Application Filter panel, select the Bookmarks check box.

---

  - 6 Click Finish.  
Result: The bookmarks appear in the bookmarks list.
- 

### **Procedure 100 To export bookmarks**

- 
- 1 Choose File→Export.  
Result: The Export window opens. The destination directory on the 5520 AMS server is displayed at the top of the window.

---

  - 2 In the Application Filter panel, select the Bookmarks check box.

---

  - 3 Click Finish.  
Result: An .xml file is created in the destination directory, containing the bookmarks created by all users.
- 

## **13.3 Invalid bookmarks**

A bookmark is invalid if it points to an object whose details cannot be displayed. This will occur if the object has been deleted or if the bookmark points to an NE that is unreachable. If you attempt to navigate to an invalid bookmark, you will receive an error message.

---

If the object has been deleted, you will be prompted to delete the bookmark. If the NE is unreachable, you will receive an error message saying “Cannot navigate to this element, *details*”, for example, “Cannot navigate to this element, Rack: 178.24.125.32 IACM R1 (ALTRA-A).”



---

# 14 Message broadcasting

## 14.1 Message broadcasting overview

### 14.1 Message broadcasting overview

You can broadcast messages to all users on your 5520 AMS server. For example, a message can be sent to all users to advise them of planned maintenance to the server.

Messages are displayed in the Message Box view, in any perspective. The top half of the view shows the message headers: Sender, Date, Subject, Importance, and Read. Unread messages appear in boldface.

The Message Box icon (✉) appears in the status bar at the bottom of the 5520 AMS GUI.

When you receive a message, a New Message window appears, showing the sender and the subject of the message. The window disappears automatically after a few seconds.

Up to 100 messages can be saved on the server at a time. When this number is exceeded, the oldest messages are automatically deleted to bring the total number to 100. When there are messages in your inbox that have been deleted from the server, the message headers for these messages will be dimmed.



**Note** — Messages whose headers were dimmed will be deleted when you log out, regardless of whether they have been read.

Any user can view messages, mark messages unread, and delete messages. The ability to broadcast messages is restricted. For users who are unable to broadcast messages, the Broadcast icon is dimmed. If you need to be able to broadcast messages, contact your system administrator.

Use the following procedures to:

- Broadcast a message. See Procedure [101](#).
- View a message. See Procedure [102](#).
- Mark a message unread. See Procedure [103](#).

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this chapter. See the *5520 AMS Administrator Guide* for more information.

---

## 14.1.1 Message broadcasting

The delivery mode of the broadcasted message can be in the form of a message or a pop-up. In case of a message, the following types of message icons can be seen, depending on the settings of the broadcast message:

- When there are 'normal' unread messages, then the (📧) icon is shown.
- When there are 'important' unread messages on the server, then the (📧🔔) icon is shown.

When the delivery mode of the message is a pop-up, then an information dialog is displayed for all the users currently logged in to the 5520 AMS GUI.

When any action is completed with an error, and the user who launched the action has logged out, a new broadcast message is generated once the user logs in. The message in the message box has navigation to the Action View or the Historical Action View.



**Note** — When a message is sent to a specific user, then the number of messages for this specific user in the database is checked and only the recent 20 messages for the user are retained.

### Procedure 101 To broadcast a message

---

1 Open the Message Box view by performing one of the following:

- Choose Window→Show View→Message Box.
- Click the Message Box icon (📧).

Result: The Message Box view opens.

---

2 In the Message Box view, click the Broadcast icon (📧✎).

Result: The Broadcast message window opens.

---

3 In the Broadcast Message window, configure the following parameters:

- In the Subject field, enter the subject of the message.
- In the Importance field, select the importance of the message as Normal or Important.
- In the Delivery Mode field, select the mode of the message delivery as Message or Pop-Up.
- In the Content field, enter the body of the message.

---

4 Click Finish.

---

Result: The New Message window appears within a few seconds.

---

## Procedure 102 To view a message

---

1 Open the Message Box view by performing one of the following:

- Choose Window→Show View→Message Box.
- Click the Message Box icon (✉).

Result: The Message Box view opens.

---

2 In the top half of the Message Box view, choose the message you need to view. The subject and body of the message appear in the bottom half of the view.

---

## Procedure 103 To mark a message unread

---

1 In the top half of the Message Box view, choose the message you need to mark unread.

---

2 Perform one of the following steps:

- Right-click the message header and choose Mark Unread.
- Click the Mark Unread icon (📧).

The message headers appear in boldface and the flag reappears on the Message Box icon (✉).



**Note** — Marking a message unread will mark it unread in your message box only.

---



# Network management

[15 Automatic NE detection](#)

[16 Network information](#)



---

# 15 Automatic NE detection

## 15.1 Automatic NE detection overview

### 15.2 Detecting NEs

## 15.1 Automatic NE detection overview

You can configure the 5520 AMS to automatically detect new NEs on your network, and, if needed, to automatically create and supervise the new NEs.

To detect an NE, you need to provide a range of IP addresses to search. The 5520 AMS pings the IP addresses in the range, and, if a ping is successful, checks for SNMP connectivity to the object at the IP address. If SNMP connectivity can be established, a match to an NE is confirmed. The NE is displayed in the list of detected NEs, or, depending on your settings, is automatically created.

If an NE is detected that is already in the Network Tree, it does not appear in the Detected NEs list.

See the *5520 AMS Administrator Guide* for information about configuring NE detection settings.

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this chapter. See the *5520 AMS Administrator Guide* for more information.



**Note** — If an NE is detected and supervised automatically, the inventory collection occurs every five minutes or before five minutes. To ensure that the inventory is collected, enable the Real-Time Update Enabled and Automatic Resynchronization of Out of Sync NEs parameters in the inventory basic settings. See the *5520 AMS Administrator Guide* for information about configuring the inventory basic settings.

## 15.2 Detecting NEs

You can schedule automatic detection of NEs, or perform an automatic detection from the NE Detection perspective.

---

Before you proceed:

- SNMP profiles must be created. See the *5520 AMS Administrator Guide*.
- NE Detection settings must be configured. See the *5520 AMS Administrator Guide*.



**Note** — Extension agents, such as IVPS cards, are not detected.

## Procedure 104 To detect NEs

- 
- 1 Click the Open Perspectives icon () on the 5520 AMS toolbar, and choose NE Detection.  
Result: The NE Detection perspective opens.

---

  - 2 Click the Detect NEs icon ().  
Result: The NE Detection window opens, showing the default IP ranges.

---

  - 3 To enter an IP range, select the New IP Range option and enter the IP range in the IP Ranges field.

---

  - 4 In the Schedule field, click Browse to choose the time when you need to perform the detection.  
Result: The Select Schedule window opens. Perform one of the following steps:
    - Choose Schedule now to run the detect operation immediately. Click OK.
    - Choose the name of a previously created schedule to run the detect operation at a specified time. Click OK.
    - Click Create to create a schedule.  
See the *5520 AMS Administrator Guide* for the procedures to configure schedules.

---

  - 5 Click Finish to start the detect operation.

---

  - 6 When the operation is completed a summary appears in the Action view.

---

  - 7 Click the Refresh icon () to see the list of NEs in the Detected NEs view.
-

---

**Procedure 105 To accept a detected NE**

Use this procedure to create an NE from the Detected NEs view. If your NE Detection settings are configured to auto create NEs, there is no need to perform this procedure.

---

**1** Detect NEs. See Procedure [104](#).

---

**2** From the Detected NEs view, choose an NE in the list.

---

**3** Right-click the NE and choose Accept.

Result: The Create NE window opens, with many parameters already configured.

---

**4** Modify the parameters as required and click Finish.

Result: The NE appears in the Network Tree.

---



---

# 16 Network information

## 16.1 Viewing NE distribution

### 16.2 Isolated or unreachable NE

## 16.1 Viewing NE distribution

You can generate a report on the distribution of NE types in an NE group. You can generate the report for the Group Network or any other group.

The report provides the following information for NEs in the group:

- The number of NEs of each NE type
- The number of NEs of each release of an NE type
- The total number of NEs

### Procedure 106 To view NE distribution

---

1 Navigate to a group and right-click on the group.

---

2 Choose Show→Total NE Count.

Result: The Total NE Count window opens and displays the type and number of NEs in the group, and the total number of NEs.

---

3 To view the number of NEs for each release of an NE type, expand the NE type.

---

4 Click OK to close the window.

---

## 16.2 Isolated or unreachable NE

When an NE is isolated, the NE configuration can no longer be viewed in the 5520 AMS GUI. If an NE becomes unreachable during navigation, the Network Tree is collapsed, and the Graphical View and Object Details do not show any information. All navigation attempts result in a time out.

When the parent NE of an object that you selected in the Network Tree is isolated, a dialog box informs you that the NE is unreachable, and prompts you to bookmark the object.

You can navigate to an object on an unreachable NE using the following options:

- Select a bookmark to the object.
- Type or paste the object name in the Search box on the toolbar, and click Search.
- In the Alarm view, right-click an alarm row and choose Go To→*Object name*.

---

# NE tasks

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# 17 NE tasks overview

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- [17.3 Managing NE objects](#)
- [17.4 Managing NE selection](#)
- [17.5 Searching an Infrastructure object](#)
- [17.6 Managing IP Address](#)
- [17.7 Managing NE maintenance mode](#)

## 17.1 Overview of this volume

The NE tasks volume includes procedures that apply to all or most NEs. Some procedures or parameters included in this volume may not apply to all NEs.

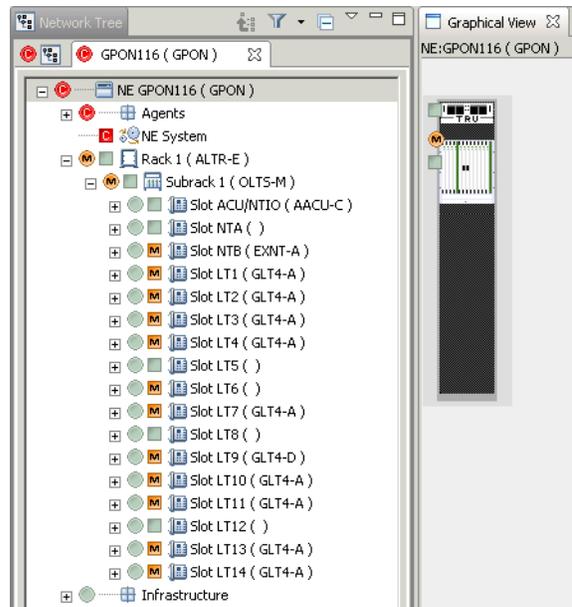
The Operations and Maintenance guide for the NE includes a chapter called “NE information in the 5520 AMS User Guide”. This chapter describes which of the chapters in the NE tasks volume are applicable to your NE. Where differences exist, the chapter provides the location in the Operations and Maintenance guide for the NE where the information can be found.

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this volume. See the *5520 AMS Administrator Guide* for more information.

## 17.2 Overview of an NE

The 5520 AMS GUI displays representations of NEs in the Network Tree and the Graphical View. Figure 4 shows the GUI representation of a 7342 ISAM FTTU.

Not all objects can be represented in the Graphical View. If you choose an object that does not have a Graphical View or Table View representation, the Graphical View will display the closest parent object that can be represented. If an object cannot be represented in the Graphical View, you need to navigate to it using the Network Tree.

**Figure 4 Representation of an NE in the 5520 AMS GUI**

## 17.2.1 NE objects

The representations of all NEs include the following objects:

- **Agents:** An NE has one or more agents. The Agent objects represent the NE interfaces with the network, such as IACM, SHub, or IHub. Agents are displayed in the Network Tree and the Table View.
- **NE System:** The NE System Object Details view displays parameters that apply at the NE level, for example, the software release and SNTP parameters. The NE System object cannot be represented in the Graphical View.
- **Racks, subracks and slots:** Racks, subracks and slots represent equipment on the NE. Most NEs have racks and subracks. Equipment objects are represented in the Network Tree and the Graphical View.
- **Infrastructure:** The objects that appear in the Infrastructure subtree vary by NE. Infrastructure objects represent NE parameters such as alarm settings, software and authentication. Infrastructure objects cannot be represented in the Graphical View.

## 17.3 Managing NE objects

Use the generic procedures in this section to modify and delete an object on an NE.

---

An object is anything that appears in a navigation tree or Graphical View, in any perspective. For example, in the Network Tree, the Group Network, an NE Group, an NE, and anything that appears under an NE is an object.

If the procedures in this section cannot be used with a particular object, see the Operations and Maintenance guide for the NE for the procedure to use.

To create an NE, see Chapter 18.

To delete an NE temporarily and re-create it, see Chapter 19.



**Note** — To avoid failure during creation or deletion of NE objects because of the incomplete creation or deletion operations of dependent NE objects, contact the local Nokia representative.

### Procedure 107 To modify NE object parameters



**Caution** — Changing the name of an NE may disrupt the OSS interfaces because they will not recognize the new name and will then not be able to contact the NE.

A dialog box opens to confirm the change. If you are making other NE object changes at the same time as changing the name and you choose not to proceed with the changes, all of the changes will be ignored and reset to the values before you changed them.

- 
- 1 Navigate to the NE and choose the object you need to modify.

Result: The Object Details view opens.

- 
- 2 Configure the parameters and click the Apply icon () to save the changes.
-

---

## Procedure 108 To delete an object

Use this procedure to delete an object other than an NE, or to delete an NE permanently. If you need to delete an NE temporarily, you will need to perform other steps to preserve data, see Chapter 19.



**Note** — When you delete an NE, the 5520 AMS performs cleanup activities that require several seconds to complete. When you delete large numbers of NEs, it may take several minutes or longer to remove the NEs, depending on how many deletions you need to perform.

- 
- 1 Navigate to the NE and choose the object you need to delete.
  - 2 Right-click the object and choose Delete. Click Yes to confirm the deletion.
- 

## Procedure 109 To lock an object

You can lock objects that have Actions→Lock available in the contextual menu or an Administrative State of Unlocked.

- 
- 1 Navigate to the NE and choose the object you need to lock.
  - 2 Perform one of the following procedures:
    - a Lock the object using the Object Details view.
      - i Choose Locked from the Administrative State drop-down menu.
      - ii Click the Apply icon (✓) to save the changes.
    - b Lock the object using the Actions menu.
      - i Right-click on the object in the Network Tree and choose Actions→Lock.  
Result: The Lock window opens.
      - ii Click Finish.
- 

When an object has a Graphical View representation, such as a slot or a port, the object displays a lock icon (🔒) in the Graphical View.

---

---

**Procedure 110 To unlock an object**

You can unlock objects that have Actions→Unlock available in the contextual menu or an Administrative State of Locked.

- 
- 1 Navigate to the NE and choose the object you need to unlock.

---

  - 2 Perform one of the following steps:
    - a Unlock the object using the Object Details view.
      - i Choose Unlocked from the Administrative State drop-down menu.
      - ii Click the Apply icon (  ) to save the changes.
    - b Unlock the object using the Actions menu.
      - i Right-click the object in the Network Tree and choose Actions→Lock.  
Result: The Unlock window opens.
      - ii Click Finish.
- 

## 17.4 Managing NE selection

This section describes managing NE selection from a client file, NE group, clipboard, or filtered NE list to populate the list of NEs in the NE selection wizard or Agent selection wizard. You can manage NEs by adding or removing the existing NE selection.

**Procedure 111 To select NEs**

**Applies to** — This procedure can be performed from NE Selection window or Agent Selection window.

---

Before you proceed, navigate to the NE and choose a task to add one or more NEs.

- 
- 1 Click Add to select one or more NEs.



**Note 1** — Add is used to append NEs to the existing NE selection.

**Note 2** — Replace All is used to replace the existing NE selection.

- 
- 2 Perform one of the following steps.

- a To load NEs from a list:

- i Click Select NEs or Select Agents.
- ii Use the filters in the Filters panel and click Build List to build the list of NEs.

Result: The Name, Type/Release, Group, and Active Software Version details for each NE is displayed on the right side of the window.

- iii Choose the NEs from the current page or click Select All to select all the NEs across all the pages of the wizard.
- iv Click OK.

- b To load NEs from a group:

- i Click Select NE Groups.
- ii Choose group from NE Groups.



**Note** — When an NE group is selected, the list of NEs in the group is evaluated during the task execution and not when the NE Group is selected in this wizard. While performing a scheduled task, the list of NEs in the group is re-evaluated each time the schedule is triggered to execute the task. If NEs are added or deleted from the NE group, the latest list of NEs in the group is considered for executing the task.

- iii Click OK.

Result: The selected group is added.

- c To load NEs from Custom Groups:
  - i Click Custom Groups and select the required custom group criterium from the adjacent drop-down list. The corresponding custom groups are displayed in NE/Custom Groups.
  - ii Select the required custom group and click OK.  
Result: The selected custom group is added.
- d To load NEs from a file or clipboard:
  - i Click Import NEs from File or Clipboard.
  - ii To import NEs from file, select From file and click Browse to select and load NEs from a .csv file.
  - iii To import NEs from clipboard, select From Clipboard.



**Note** — The format of the NE list in a .csv file can be either comma separated list of names or carriage return separated list of names. The CSV separator is defined in Window→Preferences→General.

- iv Click Build List to import the NEs from a file or clipboard.

The following formats is applicable when importing the NE list.

- The empty lines and comments in NE list are ignored. Comments are the strings between the sharp sign(#) and carriage return.
- The spaces before and after the NE names are ignored.

Result: A table of NEs with State, Name or Agent Name, Type/Release, Group, and Active Software Version is displayed. Table 43 describes the values of State.

**Table 43 NE selection state values**

State	Description
Valid	The NE is valid.
Not applicable or not found	<ul style="list-style-type: none"> <li>• Not applicable: The selected operation is not compatible with the NE.</li> <li>• Not found: There is no NE with this name in the 5520 AMS.<sup>(1)</sup></li> </ul>

---

**Note**

(1) Retrieving NEs by name is case sensitive in NE Selection wizard.

**v** Choose the NEs.

By default, all the NEs with the state as Valid is selected.

**vi** Click OK.

---

## 17.5 Searching an Infrastructure object

Some Infrastructure objects in the Network Tree have a Search object that allows you to search for a filtered list of objects. See the Operations and Maintenance guide for the NE for information about the Infrastructure objects that have a Search object.

### Procedure 112 To search an Infrastructure object

---

1 Navigate to the NE and choose Infrastructure.

---

2 In the Infrastructure subtree that you need to search, choose Search.

Result: The Search window opens.

---

3 Configure the filter parameters and click Search.

Result: The objects that match the parameter values appear in the Network Tree and the Table View.



**Note** — To generate a list of all of the objects, deselect all the check boxes, leave the parameters blank, and click Search.

---

4 Click on the objects in the Network Tree or Table View.

Result: The Object Details view opens.



**Note** — To clear the found objects from the Network Tree, collapse and expand the subtree.

---

---

## 17.6 Managing IP Address



**Note 1** — The option 'Change NE IP Address' is enabled only when user role has NE - Edit security function.

**Note 2** — The option 'Change NE IP Address' does not change the IP address of the NE. It will only change the NE IP address as known in the 5520 AMS.

Use the following procedure to change the IP address of an NE.

### Procedure 113 To change the IP address of an NE

---

1 Choose an NE in the Network Tree or Graphical View.

---

2 Right-click the NE for which you need to change the IP address and choose Supervision→Change IP Address.

Result: The Change NE IP Address window opens. This window allows you to change the management IP address of an NE.

---

3 In the Change NE IP Address window, enter a new valid IP address in the New IP Address field.



**Note 1** — The new NE IP address must be different from the original NE IP address. If the IP address is the same as the original, the following error message is displayed "The new IP address is identical to the current one".

**Note 2** — If you enter the IP address which is already used, changing the IP address fails with an error message "IP address already used by NE <xyz>" where <xyz> is the name of the NE with the same IP address.

---

4 Click Finish.

Result: New IP address is assigned to the NE.

- 
- 5 Verify if the IP address is successfully changed.



**Note** — Changing the NE IP address impacts the usage of NE migration/Large-scale Release Manager (LRM)/SW management commands if you are managing the NEs through SSH. If the NE backups/SW download is using SFTP or the Secure CLI/TL1 cut-through, then Nokia recommends you to:

- Remove existing entry for the NE from \$HOME/.ssh/known\_hosts, on all the Application Servers.
  - SSH to the NE as amssys to add the new IP address to the known\_hosts file.
- 

## 17.7 Managing NE maintenance mode

Use the following procedures to change the maintenance mode of one or more NEs.

### Procedure 114 To enable NE maintenance mode

Perform the following procedure to set NEs in maintenance mode from the GUI so that provisioning is blocked. This can be useful during an NE software upgrade.

- 
- 1 Choose an NE in the Network Tree or Graphical View.
- 
- 2 Right-click the NE for which you need to change the maintenance mode and choose Supervision→ Maintenance ModeAlcatel-Lucent Enable.  
  
Result: The Enable Maintenance Mode window opens. This window allows you to enable the maintenance mode of one or more NEs.
- 
- 3 Click Add to select one or more NEs for which maintenance mode needs to be enabled. The NE Selection window opens. See [111](#) to select NEs.
- 
- 4 Click Replace All to replace the NEs already selected with the new set of NEs. The NE Selection window opens. See [111](#) to select NEs.
- 
- 5 In the Schedule field, click Browse to choose the time when you need to perform the detection.

---

Result: The Select Schedule window opens. Perform one of the following steps:

- Choose Schedule now to run the detect operation immediately. Click OK.
- Choose the name of a previously created schedule to run the detect operation at a specified time. Click OK.
- Click Create to create a schedule.  
See the *5520 AMS Administrator Guide* for the procedures to configure schedules.

---

6 Click Finish.

Result: Maintenance mode is enabled on the selected NEs.

---

## Procedure 115 To disable NE maintenance mode

Use this procedure to disable maintenance mode on one or more NEs. This allows configuration change on one or more NEs.

---

1 Choose an NE in the Network Tree or Graphical View.

---

2 Right-click the NE for which you need to change the maintenance mode and choose Supervision→ Maintenance Mode→ Disable.

Result: The Disable Maintenance Mode window opens. This window allows you to disable the maintenance mode of one or more NEs.

---

3 Click Add. The NE Selection window opens. See [111](#) to select NEs for which maintenance mode needs to be disabled.

---

4 Click Replace All. The NE Selection window opens. See [111](#) to select NEs for which maintenance mode needs to be disabled. This option replaces the NEs already selected with the new set of NEs.

---

5 In the Schedule field, click Browse to choose the time when you need to perform the detection.

Result: The Select Schedule window opens. Perform one of the following steps:

- Choose Schedule now to run the detect operation immediately. Click OK.
- Choose the name of a previously created schedule to run the detect operation at a specified time. Click OK.
- Click Create to create a schedule.  
See the *5520 AMS Administrator Guide* for the procedures to configure schedules.

---

6 Click Finish.

---

Result: Maintenance mode is disabled on selected NEs.

---

---

# 18 Creating an NE

## 18.1 Overview

## 18.2 Navigating the 5520 AMS Network Tree

## 18.3 Verifying hardware connectivity

## 18.4 Managing groups

## 18.5 Creating an NE

## 18.6 Automatic NE turn up using Zero Touch Provisioning

## 18.7 Configuring an NE agent

## 18.8 Configuring NE system parameters

## 18.9 Navigating to NEs that are not fully reachable and not fully supervised

## 18.10 License counters

## 18.1 Overview

To create an NE in the 5520 AMS GUI, follow the procedures in this chapter to:

- To open an element. See Procedure [116](#).
- Verify NE connectivity. See Procedure [119](#).
- Optionally, create a group that will contain the NE. See Procedure [120](#).
- Create the representation of the NE in the 5520 AMS GUI. See Procedure [123](#).

## 18.2 Navigating the 5520 AMS Network Tree

The first time you start the 5520 AMS client and log in, the Network perspective appears. By default, the Network perspective contains the Network Tree, the Graphical View, the Object Details view, the Network Alarm Summary view, and the Comments view. This perspective provides a high-level overview of the items in the network and the status of the items. On subsequent logins, the 5520 AMS displays the views that were open during your last session. See [Chapter 6](#) and [Chapter 7](#) for more information about these GUI views and perspectives.

---

The Network Tree is a tabbed tree view providing a hierarchical graphical representation of the network and element management system. In the Network Tree, the default tab contains only the NE Groups and the NEs. You cannot close the default tab. The Group Network top-level element contains graphical representations of network equipment. The Group Network is empty until NEs are added. You can view the sub-objects of an NE by opening the NE in a separate tab. The number of NE tabs in the Network Tree can be configured. For more information, see Procedure 20. In an NE tab, any object within an NE can be made the root of the subtree. For more information, see Procedure 21.

When you work in the Network perspective, you can use the Graphical View as a navigation tool in addition to the Network Tree. When an element is selected in the Network Tree, a graphical representation of the element appears in the Graphical View. Click on the image to highlight the element in the Network Tree and display the element information in the Object Details view. Double-click on the image to drill down to sub-elements, and continue to highlight your location in the Network Tree.



**Note** — Double-clicking an NE in the Graphical View opens a new tab for the NE, containing a hierarchical tree structure for the NE, in the Network Tree.

### Procedure 116 To open an element

---

1 To view the NEs in a Group, click the Expand icon [+] to the left of the Group.

---

2 Perform one of the following steps:

- Double-click the NE.
- Right-click the NE and choose Open.

Result: A new tab containing the hierarchical tree structure of the sub-objects of the NE opens.

---

3 In the NE tab, click the Expand icon [+] to the left of the element.

---

Result: The sub-elements are displayed.

- 
- 4 To close an NE tab, mouseover the tab to view the Close icon (  ). Click the Close icon (  ) to close the tab.



**Note 1** — If multiple NE tabs are open, choose the required tab to display the tree structure of the NE.

**Note 2** — If multiple NE tabs are open, and if the required NE tab is not visible, click the Show List icon (  ) to display the list of open NE tabs. To view the required NE tab, choose the tab from the list.

**Note 3** — The number adjacent to the Show List icon (  ) indicates the number of open NE tabs that are currently not visible.

---

### Procedure 117 To view information about an element

- 
- 1 To view information about an element in the Network Tree, choose the element in the tree. The Object Details view shows configuration details about the element selected, when information is available.
  - 2 To open a tab within a view, click the tab.

Some views include additional tabs at the top of the view. Other views show additional information about the element selected, as applicable.

---

### Procedure 118 To return to a previously viewed element in the Network Tree

To return to a previously viewed element in the Network Tree, perform one of the following actions:

- Click the History icon (  ) in the 5520 AMS toolbar and choose the element from the list in the Navigation History window.
  - Click the Back (  ) and Forward (  ) icons to navigate to previously visited elements.
- 

## 18.3 Verifying hardware connectivity

Before you can successfully add the NE to the 5520 AMS, you must ensure that the 5520 AMS server can communicate with the NE hardware.

---

The connectivity check verifies the following connections:

- IP and SNMP connectivity to the NE
- TL1 and CLI connectivity to the NE

The TL1 and CLI connectivity test is based on the TL1 and CLI credentials that are defined on the selected NE object. The TL1 and CLI connectivity tests will fail if the username or password is not configured for the appropriate protocol on the NE object. You can perform the TL1 and CLI connectivity tests without performing any other tests in the Connectivity Check window.

You can also configure the connectivity check to perform a traceroute test. The traceroute test traces the route in the network for an IP address and calculates and displays the amount of time each hop takes.

The connectivity check also determines whether packets are lost in transmission to and from an NE and how long it takes to get a response back from an NE.



**Note** — You can also perform a ping test on an NE that has an SHub or IHub agent to verify IP connectivity and SNMP connectivity. See Chapter [32](#) for more information.

You cannot perform any other actions on the 5520 AMS while you are running a connectivity check.

Before you proceed:

- The NE must be powered up.
- The NE must be connected to an Ethernet network that is accessible from the 5520 AMS.
- The Auto populate Credentials check box in the Cut Through Settings object details must be checked, see the *5520 AMS Administrator Guide*.

## Procedure 119 To verify NE connectivity

- 1 To open the Connectivity Check window, perform one of the following steps:
  - Navigate to the NE and choose Agents→Agent. Right-click the agent and choose Connectivity Check.  
Result: The Connectivity Check window opens with the IP address and SNMP profile of the selected NE displayed.
  - From the 5520 AMS menu, choose Tools→Connectivity Check.  
Result: The Connectivity Check window opens.  
If you select an NE first and then choose Tools→Connectivity Check, the Connectivity Check window opens with the values automatically provided in the IP/SNMP and TL1/CLI tabs if the values have already been configured in the NE. If the NE has an IPv6 address, the IP Address field is not pre-populated. Support of IPv6 depends on the NE type and release.
    - Select the type of IP address from the drop-down list. By default, it is IPv4. Enter the IP address of an NE in the IP Address field.
    - Select the type of IP address from the drop-down list. By default, it is IPv4. Enter the IP address of an NE in the IP Address field.
    - Click Browse and choose the SNMP profile of the target NE.
- 2 Configure the remaining parameters for the following tests, as applicable:
  - IP ping test
  - Traceroute test
- 3 To configure a TL1 or CLI connectivity test, click the TL1/CLI tab and configure the parameters, as applicable.
  - a To configure a TL1 test, select the TL1 test check box. Select the protocol from the Protocol drop-down menu. Table 44 lists the protocols for TL1 tests.

**Table 44 TL1 test protocols**

Protocol	Port
TL1/Telnet	1023
TL1/UDP	13001
TL1/SSH	1022

- b To configure a CLI test, select the CLI test check box. Select the protocol from the Protocol drop-down menu. Table 45 lists the protocols for CLI tests.

**Table 45** CLI test protocols

Protocol	Port
Standard	23
Secure	22

If you accessed the Connectivity Check window from a selected NE agent and the TL1 and CLI parameters are configured on the NE object, then the parameters values in the TL1/CLI tab display by default. If you accessed the Connectivity Check window from the 5520 AMS menu, then the parameter values in the TL1/CLI tab are not displayed by default and you must enter them manually.

---

**4** Click Next.

Result: The connectivity tests begin. When complete, the Connectivity Check window displays the connectivity results for the configured tests.

---

**5** Click Finish.

Result: The Connectivity Check window closes.

---

## 18.4 Managing groups

You can create a group in which you will create an NE.

Groups provide a hierarchical structure that contains NEs for network management. The Group Network top-level group is always present in the 5520 AMS. You can create additional groups at this level or you can create subgroups that are nested within previously created groups.

When you create a group, by default it is assigned the PAP of the parent object in the Group Network.

Guidelines for creating and managing an NE group:

- To maintain system performance, the recommended maximum number of NEs to include in each group is 100.
- To create an NE Group, the user must be assigned both NE - Edit and NE - Move security functions.
- To start and stop supervision of an NE group or a custom group, your role must have the security function, NE-Supervision at group level.

---

**Procedure 120 To create a group**

---

- 1 Perform one of the following steps:
    - Click the Create Group icon () located at the top of the main 5520 AMS page.
    - To create a group under an existing group, right-click a group in the Network Tree and choose Create Group.  
Result: The Create NE Group window opens.
  - 2 If required, select the Operator Defaults.
  - 3 Enter a name for the NE group in the Name field.
- 



**Note 1** — The Name field allows spaces, but does not allow tabs.

**Note 2** — By default, NE group names are case sensitive. For example, you can create an NE group with the name NodeGroup11 and another NE group with the name NODEGROUP11 and both NE groups can exist in the system. See the *5520 AMS Administrator Guide* for information about how to force all NE group names to be in uppercase.

---

- 4 If required, perform the following steps:
    - i Click Browse in the Parent field.
    - ii Type the filter text in the Filter field to filter the group list. Select a parent group in which you want to create the new group from the list.
    - iii Click OK.
  - 5 Click Finish.  
Result: The new NE group appears in the Network Tree.
- 

**Procedure 121 To move NEs to other groups or remove NEs from groups**

---

- 1 Right-click the NE in the Network Tree and choose Supervision→Stop.  
  
In the Stop Supervision window, you can select multiple NEs for supervision through NE Selection wizard by clicking Add, Remove, or Replace All buttons, and then click Finish. The NE Selection wizard allows you to select NEs from a filtered list, a file, or the clipboard.  
  
To stop supervision of an NE group or a custom group, your role must have the security function, NE-Supervision at group level.

Result: The state in the Supervision field is changed from Supervised to Declared for the selected NEs.

- 
- 2 Choose the NE that you need to relocate in the Network Tree.

---

  - 3 Click the NE and drag the NE to the new location. You can move the NE into an existing NE group or subgroup, or to an area outside of a group anywhere in the Network Tree.

---

  - 4 Right-click the relocated NE in the Network Tree and choose Supervision→Start.

In the Start Supervision window, you can select multiple NEs for supervision through NE Selection wizard by clicking Add, Remove, or Replace All buttons, and then click Finish. The NE Selection wizard allows you to select NEs from a filtered list, a file, or the clipboard.

To start supervision of an NE group or a custom group, your role must have the security function, NE-Supervision at group level.

Result: The state in the Supervision field is changed from Declared to Supervised for the selected NEs.



**Note** — If you do not stop supervision on an NE before moving it, the new group is not reflected in the existing alarms for the NE. This may lead to unusual behavior if you need to filter alarms based on NE group.

---

## Procedure 122 To move NE groups to other groups or remove groups from groups

- 
- 1 Choose the group that you need to relocate in the Network Tree.

---

  - 2 Click on the group and drag the group to the new location. As long as you maintain the hierarchy of the groups in the Network Tree, you can choose to move the group to an existing group to form a subgroup, or you can move a subgroup to create a main group in the Network Tree.
- 

## 18.5 Creating an NE

Use the procedures in this section to create a representation of the NE in the 5520 AMS.

When you create an NE, by default it is assigned the PAP of the parent object in the Network Tree.

---

Before you proceed:

- You must have verified connectivity to the NE. See Procedure [119](#).
- When creating an NE that is managed by the Nokia Access Virtualizer Adaptor, ensure that the Nokia Altiplano Access Virtualizer is up and running.
- If you are placing the NE in a group, the group must be created. See Procedure [120](#).
- Depending on the configuration of the 5520 AMS, the name you assign to an NE may have to match the NE System ID. See your system administrator to verify whether this is necessary.

If it is necessary, you must obtain the System ID of the NE before creating the NE in the 5520 AMS GUI. For the procedure to obtain the NE System ID using CLI and TL1 commands, see the NE hardware documentation.

- If you are applying templates or template groups, they must be created. See Chapter [30](#) for information about templates.
- If the NE is behind a NAT server, DCN settings must be configured before you can supervise the NE. See the *5520 AMS Administrator Guide*.
- If you need to set up time zone management, time zone settings must be configured. See the *5520 AMS Administrator Guide*.

## 18.5.1 Deploying template groups at NE creation

You can also deploy a pre-defined and limited set of templates during NE supervision to have an initial NE configuration in place when you create an NE. The templates are for object types that are supported by the 5520 AMS templates. When you create an NE, you have the option to choose a pre-defined template group and enable it to be deployed after the next successful Start Supervision operation is performed. The administrator configures the maximum number of templates that can be added to a template group. See the *5520 AMS Administrator Guide* for more information. If a template group was not enabled to be deployed when you created the NE, you can still enable the template group to be deployed before you start supervision of the NE.

To avoid deleting a template or template group from the Templates perspective when the template or group is in use as part of the NE creation settings for one or more NEs, the application will decline the request for deletion. If multiple occurrences of templates or template groups are in use as part of the NE creation settings for multiple NEs at one time, you can use the Multiple Edit function. See Section [8.2](#) for more information.

You can view the results of the template group deployment at NE creation using the Action Manager. For example, if you start the supervision of 10 NEs, the Action Manager displays two linked actions (inventory collection and template group deployment), but each action displays 10 jobs and the associated target ID for each job. When supervision of an NE is started, the Action Manager displays the jobs but they are started only when the start supervision job is completed. You can retry a failed job for a template. See Chapter [10](#) for more information.

**Procedure 123 To create an NE**



**Note** — Not all parameters apply to all NEs.

- 1 Click the Create NE icon (📄) located at the top of the main 5520 AMS page, or right-click Group Network in the Network Tree or an existing group in the Network Tree, and choose Create NE.

Result: The Create NE window opens and prompts you to select the product and release.

- 2 Choose the type of NE and the applicable version you need to create from the list. Only the currently supported NE types and versions appear in the list.
- 3 Click Next.
- 4 If required, select Operator Defaults.
- 5 Configure the NE parameters under the General, CLI, and Actions tabs. Table 46 provides guidelines for configuring the parameters.



**Caution** — After the NE is created, changing the name of the NE may disrupt the OSS interfaces because they will not recognize the new name and will then not be able to contact the NE. See Procedure 107 for more information.



**Note** — NEs managed by Nokia Access Virtualizer Adaptor cannot be renamed after the NE creation.

**Table 46 Create NE parameters guidelines**

Parameter	Guideline
<b>General tab</b>	
Group	Click Browse and select the Group to create the NE in.
Name	Enter a unique name for the NE. (1) (2) (3) Do not enter spaces or tabs in the Name field.

(1 of 3)

Parameter	Guideline
Partition Access Profile	Click Browse to select the Partition access profile to associate the NE with. Partition access profiles allow administrators to configure which NEs other users can access and configure. The default PAP is automatically generated on the 5520 AMS and is associated with new NEs. See the <i>5520 AMS Administrator Guide</i> for additional information about partition access profiles and the procedures to create a partition access profile.
Time zone	From the drop-down menu, choose the time zone the NE is located in.
IP Address	This parameter applies to G6 NEs. Enter a valid IP address in the field.
Single IP Address	This parameter applies only to ISAM and GPON NEs. If this check box is available, you can select it to use the same IP address when there are two agents on the NE, such as an IACM and SHub. When you select this check box, the second field is disabled and the NE uses the IP Address provided in the first field for both agents.  The 5520 AMS allows you to set up dual IP addresses for some NEs. However, Nokia recommends that you set up the NE using a single IP address.
SNMP Profiles	Click Browse beside the agent fields to select the SNMP profile to apply to each agent.
IP Address - IACM	This parameter applies only to ISAM and GPON NEs. Enter a valid IP address in the field.
IP Address - SHUB	This parameter applies only to ISAM and GPON NEs. Enter a valid IP address in the field.
DUID <sup>(4)</sup>	Enter the value for DHCP Unique Identifier (DUID) used in Nokia Access Virtualizer Adaptor.
Interface - ANV <sup>(4)</sup>	Click Browse to select the Nokia Access Virtualizer Adaptor process that will be used to manage the device.
Default Configuration - Configuration Template <sup>(4)</sup>	Click Browse to select the Configuration template for the created NE Type and Release.
ENV Alarm Template	Click Browse to select the environmental alarm template to deploy to the NE. See the <i>5520 AMS Administrator Guide</i> for information about creating and customizing environmental alarm templates.
<b>CLI tab</b>	
User Name	Enter the username for the CLI cut-through.
Password	Enter the password for the CLI cut-through.
Re-Type Password	Enter again the password for the CLI cut-through.
<b>TL1 tab</b>	
User Name	Enter the username for the TL1 cut-through.
Password	Enter the password for the TL1 cut-through.
Re-Type Password	Enter again the password for the TL1 cut-through.
External TL1 GW Server	Enter the name of the External TL1 Gateway server to associate the NE with, or click Browse to select it.  This parameter is disabled if the Use Single Server check box is selected in the Site settings. See the <i>5520 AMS Administrator Guide</i> .

(2 of 3)

Parameter	Guideline
<b>Actions tab</b>	
<b>Download and Activate SW at Start Supervision<sup>(5)</sup></b>	
Target SW Release	Select a target NE SW release in the list of available NE software release for the same NE type. You can configure software download execution through zero touch provisioning settings, see the <i>5520 AMS Administrator Guide</i> .
Download and Activate SW at Start Supervision	<p>Enable the parameter. You must first choose the target SW release in the Target SW Release parameter to be able to enable this parameter.</p> <p>When the Download and Activate SW at Start Supervision is not checked or if there is no default software available for the NE family, the software download action completes as Not Applicable</p> <p>This parameter will be automatically reset after the software is successfully activated on the NE.</p>
<b>Deploy Template at Start Supervision</b>	
Template Group	Select a template group or multiple template groups. A template group must be created before it can be selected. <a href="#">30.2.2</a>
Deploy at Start Supervision	Enable the parameter. You must first choose a template group in the Template Group parameter to be able to enable this parameter.
<b>Execute Script at Start Supervision<sup>(5)</sup></b>	
Target Script or Archive	Select a target script in the list of available scripts for the same NE family type. The scripts and script archives are placed under \$AMS_EXTERNAL_SHAREDDATA_HOME/ne/script
Other Command Line Parameters	<p>Enter the command line parameters.</p> <p>The Other Command Line Parameters parameter is disabled when no value is associated with Target Script or Archive parameter.</p>
Execute Script at Start Supervision	<p>Enable the parameter. You must first choose a target script in the Target Script or Archive parameter to be able to enable this parameter.</p> <p>This parameter will be automatically reset after the script is successfully executed on the NE.</p> <p>You can enter the parameter details through <code>ams_ne_mgr</code> script. For more information and the script output details, see the <i>5520 AMS Administrator Guide</i>.</p>

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Notes

- (1) If the NE Name parameter does not match the NE's System ID, an NE user label mismatch alarm will be reported when the NE is supervised. To clear the alarm, update the NE Name to match the System ID (for TL1) parameter.
- (2) By default, NE names are case sensitive. For example, you can create an NE with the name Node55 and another NE with the name NODE55 and both NEs can exist in the system. See the *5520 AMS Administrator Guide* for information about how to force all NE names to be in uppercase.
- (3) The NE name should not include the following characters: comma (,), semicolon (;), and colon (:).
- (4) This parameter is applicable only for NEs managed by the Nokia Access Virtualizer Adaptor.

- <sup>(5)</sup> This parameter is applicable only to NE type which supports zero touch provisioning features. For more information, see the *5520 AMS Administrator Guide*.



**Note 1** — For a TL1 or CLI cut-through to connect automatically, the username and password information must be entered in the TL1 or CLI tab and the Auto populate Credentials check box in the Cut Through settings must be checked.

For more information about cut-throughs, see Chapter 20. For information about Cut Through settings, see the *5520 AMS Administrator Guide*.

**Note 2** — When a template group containing templates with arguments are deployed, where the argument does not have any default value in the template, an error message appears to prevent from adding that template group.

**Note 3** — The different versions of the same template group cannot be added twice. A duplicate entry exception is displayed "Cannot select different versions of the same template group."

- 
- 6 Click Finish to create the NE.

Result: The new NE appears in the Network Tree.



**Note** — When you expand the NE from the top-level of the hierarchy, the 5520 AMS displays the Agents group, which contains the agents.

- 
- 7 Right-click the new NE in the Network Tree and choose Supervision→Start.

In the Start Supervision window, you can select multiple NEs for supervision through NE Selection wizard by clicking Add, Remove, or Replace All buttons, and then Click Finish. The NE Selection wizard allows you to select NEs from a filtered list, a file or the clipboard.

To start supervision of an NE group or a custom group, your role must have the security function, NE-Supervision at group level.

Result: The state in the Supervision field is changed from Declared to Supervised for the selected NEs.

Table 47 describes the NE states.

**Table 47 NE states**

State	Description	Indicated by		
		Network Tree	Graphical View	Object Details view
<b>Connection state of an NE</b>				
Reachable	The NE is reachable (connected)	—	—	Connection Status in is Reachable
Unreachable	The NE is unreachable (disconnected)	—	Unreachable icon: 	Connection Status is Unreachable
Partially reachable	At least one, but not every, agent is reachable	—	Partially reachable icon: 	Connection Status is Partially Reachable
<b>Connection state of an NE managed by Nokia Access Virtualizer Adaptor</b>				
Reachable	Nokia Access Virtualizer Adaptor and device are reachable (connected)	—	—	Connection Status in is Reachable
Unreachable	Nokia Access Virtualizer Adaptor is reachable but the device is not reachable (disconnected)	Unreachable icon: 	Unreachable icon: 	Connection Status is Unreachable
	Nokia Access Virtualizer Adaptor is not reachable (disconnected)	—	Unreachable icon: 	Connection Status is Unreachable
<b>Supervision state</b>				
Declared	The NE is not supervised by the 5520 AMS	Supervision State is Declared	Declared icon: 	Supervision State is Declared
Supervising	The 5520 AMS is attempting to connect to the NE to begin supervision. The NE remains in the Supervising state until the 5520 AMS forms a connection.	Supervision State is Supervising	Supervising icon: 	Supervision State is Supervising.

(1 of 2)

State	Description	Indicated by		
		Network Tree	Graphical View	Object Details view
Supervised	<p>All of the NE agents are supervised by the 5520 AMS. You must be able to connect to the NE to start supervision.</p> <p>When the NE is supervised, the 5520 AMS collects NE alarms. When you stop supervision, the 5520 AMS stops collecting NE alarms.</p> <p>If the connection to the NE fails after the NE is supervised, the supervision state remains.</p>	Supervision State is Supervised	Supervised icon:  	Supervision State is Supervised
Partially supervised	One of the NE agents is not supervised by the 5520 AMS	Supervision State is Partially Supervised	Partially Supervised icon:  	Supervision State is Partially Supervised
In Maintenance State	The NEs are in an upgrade state.	Supervision State is In Maintenance State	Maintenance State icon:  	Supervision State is In Maintenance State
Imported (was "Declared")	The NE has been imported and was in the Declared state before import. <sup>(1)</sup>	Supervision State is Imported (was "Declared")	Imported (was "Declared") State icon:  	Supervision State is Imported (was "Declared")
Imported (was "Supervised")	The NE has been imported and was in the Supervised state before import. <sup>(1)</sup>	Supervision State is Imported (was "Supervised")	Imported (was "Supervised") State icon:  	Supervision State is Imported (was "Supervised")

(2 of 2)

**Note**

- (1) NEs imported from the 5526 AMS are imported in the Imported (was “Declared”) state regardless of their supervision state in the 5526 AMS.



**Note 1** — Depending on the type of NE, you may be able to select an agent separately to start the supervision process. You would need to start either agent separately in the event one of the agents loses connectivity.

**Note 2** — Some NE states may disable 5520 AMS core functionality.

**Note 3** — If an NE cannot be reached, it enters the Supervising state.

**Note 4** — For Start or Stop supervision on one or more NEs or NE Groups, perform the following in Start Supervision or Stop Supervision window.

- Click Add to append NEs to the existing NE selection.
- Click Remove to remove the existing entry of the NEs.
- Click Replace All to replace the existing NE selection.

Result: The NE Selection wizard opens.

You can import list of NEs from a file or clipboard. For more information on selecting NEs from a file or clipboard, see Procedure [111](#).

- 
- 8** After you have created the NE in the 5520 AMS GUI, see the Operations and Maintenance guide for the NE for procedures to:
- Configure subracks
  - Create expansion modules
  - Plan LT and NT units
- 

## 18.6 Automatic NE turn up using Zero Touch Provisioning



**Note** — The Zero Touch Provisioning feature is supported only on SNMP managed ISAM NEs when used with an Ethernet uplink. For information on the supported NEs, see the 7302/7330/7356/7360/7362/7363/7367 ISAM documentation. The Zero Touch Provisioning feature is not supported on 7360 ISAM FX NE.

Due to the trend towards smaller NEs supplying higher bandwidths to end users, many NEs have to be turned up in the networks. The Zero Touch Provisioning (ZTP) feature of the ISAM with support of the 5520 AMS enables service providers to target the automation of the NE turn up. The 5520 AMS ZTP support enables automation of the ISAM SW download and activation, template deployment, and script execution. You can set up the ZTP for NEs using 5520 AMS GUI, 5520 AMS NBI, and 5520 AMS scripts.

Zero Touch Provisioning (ZTP) allows you to provision a new device in your network automatically, without manual intervention. When you physically connect a device to the network and boot the device with a default configuration, the device attempts to upgrade the software automatically and installs a configuration file from the 5520 AMS.

The following actions are applicable for the Zero Touch Provisioning feature:

- The NE gets the IP address and location of the boot file from the DHCP server, and then executes the CLI commands in the boot file.
- The operator must configure NEs in 5520 AMS before the deployment through 5520 AMS GUI, NBI, or scripts.

When the device has a PON uplink, ensure that the pre-configuration of the ONT in the OLT is done before the field deployment. The ONT is identified by a serial number. Therefore, the field user needs to pick the correct SFP of the location they are working on.

For more information on ZTP at the NE level, see the *Operation and Maintenance using CLI for 7367 ISAM SX/DX and 7363 ISAM MX* guide.

Before you proceed, perform the following actions:

- Setup the DHCP server. The DHCP server allocates an IP address to the device. For more information about configuring the DHCP server, see the *Operation and Maintenance using CLI for 7367 ISAM SX/DX and 7363 ISAM MX* guide.
- Setup the file server. The NE configuration script in the file server includes the trap registration of the 5520 AMS IP address in the trap manager of the NE and the NE configuration script is executed by the NE after the DHCP response is received.

An example shows the list of CLI commands to be added to the configuration script file of the NE so that it sends the registerNode trap to the 5520 AMS.

```
configure system management no default-route
configure system management host-ip-address manual:<ip_address>/24
configure system management default-route <ip_address>
configure system security snmp user ztpuser
configure system security snmp group ztpgroup security-level none context all
configure system security snmp map-user-group ztpuser group-name ztpgroup
```

```

configure system security snmp notify-profile ztpgroup snmp-version
v2:publicztp

configure system security snmp manager ztpuser destination
<ip_address_application_server>:9001 notify-profile ztpgroup nt configure
trap manager <ip_address_application_server>:9001 priority low register-node

configure system security snmp community public host-address
<ip_address_application_server>/24

```

In the previous example:

- *<ip\_address>* is an example of fixed IP address of the NE
- *<ip\_address\_application\_server>* is an example of IP address of the AMS application server, reachable from the NE. When the 5520 AMS runs multiple application servers, each application server can add a trap registration for the NE
- 9001 is the default port where the 5520 AMS application listens for a trap. If the port is changed in AMS, ensure to change it here too.
- Create an NE which supports zero touch provisioning feature through one of the following options:
  - You can create an NE through 5520 AMS GUI. See Section 18.5.
  - You can create an NE through `ams_ne_mgr` script by defining input parameters specific to zero touch provisioning. For more information, see the *5520 AMS Administrator Guide*.
  - You can create an NE through NBI NE management operations. You cannot modify the NE through NBI when the NE is not supervised for ZTP operations. For more information, see the *5520 AMS Northbound Interface Guide*.
- The NEs are declared and not supervised. When the NE is connected to the network, it sends a trap to the 5520 AMS and triggers the supervision to start and executes the configured actions.
- The custom script is executed during the supervision of an NE and the custom script is located in the 5520 AMS data server. You need to place the custom script in the path `$AMS_EXTERNAL_SHARED_DATA_HOME/ne/script` so that the script can be selected while creating an NE in 5520 AMS through 5520 AMS GUI or NBI. You can enter additional input parameters to the script. To enable the custom script to be executed at supervision, see Table 46.

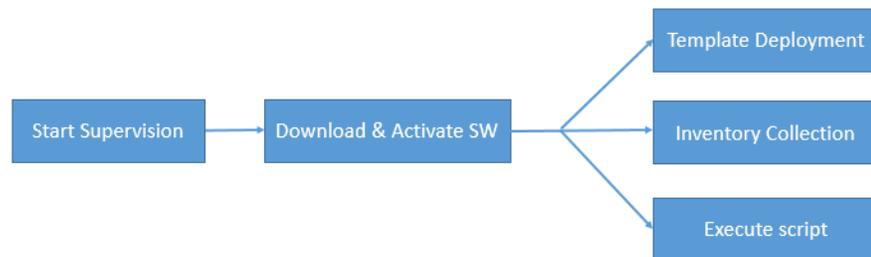


**Note** — An example custom script is provided as part of 5520 AMS package. The script is NE plug, release specific and the example script is provided with the ISAM plug delivery in the directory: `repository/plugin-combo-isam-<NE release>-<version>_<ams release>-<build>/example`. You need to take a copy of the script, update the script, and create a similar script.

For information on configuring ZTP settings, see *5520 AMS Administrator Guide*.

The ZTP flow contains a sequence of linked actions as shown in Figure 5. When one of the linked actions after Start Supervision fails, the actions that follow the failed action are not executed to prevent more failed actions. The failed action reports an alarm on the NE and the Additional Information in the “Action Details” window states the reason for the failure of the linked action.

**Figure 5** Linked actions in the ZTP flow



If a triggered action is linked to an already failed action, then the status is reported as “Not Applicable.” An example for a linked action failure is, if the software download fails the custom script will not be executed. You can check the Action Details for the failure reason. The Additional Information column in the Action Details window states, “Not executed because a job on this target failed in the previous linked action Download and Activate SW (ZTP).”



**Note** — The security function Action Manager - Admin role must be assigned to a user to retry any failed ZTP action. For more information on functions, see *5520 AMS Administrator Guide*.

The linked actions triggered by the ZTP trap will also raise an alarm on the main agent of the NE when the action fails.

The ZTP related alarms are distinguishable. In the Additional Info/Text field of the ZTP Alarm additional text is added as stated: “Triggered by causes hindering Zero Touch Provisioning (ZTP)”

The action names and alarms related to ZTP have “ZTP” appended to it. Using “ZTP” as the keyword, you can filter actions and alarms.

- From the Action Manager view to view only the ZTP related actions, filter actions containing “ZTP.” For more information on how to use Action Details view, see Procedure 62.
- From the Alarms Summary or Historical view to view ZTP alarms, filter using “Additional Info/Text” containing “ZTP.” For information on how to filter alarms, see Section 11.3.

---

## 18.7 Configuring an NE agent

An agent represents a management interface on the NE. Some NEs have a single agent, while others have multiple agents, such as an IACM agent for user-side interfaces and a SHUB agent for network-side interfaces. An agent has connectivity and state information associated with it.

When you create an NE, the 5520 AMS creates all of the mandatory agents for the NE. Some NEs have other agents that you create after you create the NE. See the Operations and Maintenance guide for the NE.

When an agent is supervised, you can view the agent parameters in the Object Details view. When an agent is not supervised, you can configure some of the parameters, such as: SNMP profile, bypass type, and release check.

### Procedure 124 To configure an NE agent

---

1 Navigate to the NE and choose Agents→Agent.

Result: The Object Details view opens.

---

2 Configure the parameters and click the Apply icon (✓) to save the configuration.

---

## 18.8 Configuring NE system parameters

All NEs have an NE system object. The NE system Object Details view has the following types of parameters:

- NE information
- SNTP
- Clock configuration
- Out-of-band management
- Transaction

---

**Procedure 125 To configure NE system parameters**

---

- 1 Navigate to the NE and choose NE System.

Result: The Object Details view opens.

- 2 Configure the parameters and click the Apply icon (✓) to save the configuration.
- 

## 18.9 Navigating to NEs that are not fully reachable and not fully supervised

Use the following procedure to navigate to the NEs that are not fully reachable and not fully supervised.

The total number of NEs that are not fully reachable is displayed in the status bar next to the Number of NEs not fully reachable icon. The total number of NEs that are not fully supervised is displayed in the status bar next to the Number of NEs not fully supervised icon.

To navigate to NEs with a specific connection state and supervision state, you can apply a filter that specifies the NE states to the Network Tree. See Section 8.4. Table 47 describes the NE states.

**Procedure 126 To navigate to NEs that are not fully reachable and not fully supervised**

---

- 1 Click one of the following icons in the status bar at the bottom of the 5520 AMS GUI:

- Number of NEs not fully reachable (🔴🔴)

Result: The Find Objects window opens and displays the list of NEs and their connectivity details.

- Number of NEs not fully supervised (🔴↓)

Result: The Find Objects window opens and displays the list of NEs and their supervision status.

If there is only one NE that is not fully reachable or not fully supervised, you navigate directly to the NE in the GUI.



**Note** — Results are displayed only for NEs that are within your PAP. If the PAP groups are changed or new PAPs are added to your PAP group during a session, invalid values are displayed. You must log in to the GUI again to view accurate values.

---

2 Select an NE from the list and click Go to.

---

3 Click OK.

---

## 18.10 License counters

You can view the license counters for license features on NEs.

See the *5520 AMS Administrator Guide* for more information about licenses.

### Procedure 127 To view license counters

Navigate to the NE and choose Infrastructure→Licenses.

Result: The Object Details view opens and displays the license counters for each license feature.

---

---

# 19 Deleting an NE

## 19.1 Overview

### 19.2 Exporting SIP data

### 19.3 Re-creating the NE in the 5520 AMS

### 19.4 Importing SIP data

## 19.1 Overview

You may need to temporarily delete an NE from the 5520 AMS for troubleshooting. To ensure that you do not lose any data when you re-create the NE, you need to perform the following before deletion:

- Copy the NE backup files. See the *5520 AMS Administrator Guide*.
- Note any schedules the NE is a part of. See the *5520 AMS Administrator Guide*.
- If you are using SIP with the 7342 ISAM FTTU, export SIP data. See Procedure [129](#).

To export and import SIP data you need to be able to log in to the 5520 AMS client as an administrator. See the *5520 AMS Administrator Guide*.



**Note 1** — Do not perform export and import operations at the same time on the same 5520 AMS server.

**Note 2** — When you delete an NE, the 5520 AMS performs cleanup activities that require several seconds to complete. When you delete large numbers of NEs, it may take several minutes or longer to remove the NEs, depending on how many deletions you need to perform.

### 19.1.1 Deleting an NE

Before deleting an NE, stop supervision of the NE.

#### Procedure 128 To delete an NE

- 
- 1 Navigate to the NE that you want to remove from the Network Tree.

---

  - 2 Right-click the NE and choose Delete.

---

Result: The NE is removed from the Network Tree. All the objects and the related data is removed with the NE.

---

## 19.2 Exporting SIP data

An export of SIP data includes the following information:

- SIP Client Profile
- SIP Subscriber Profile
- Address of Record
- Realm
- Password
- URI user name

### Procedure 129 To export SIP data for an NE

---

1 Log in to the 5520 AMS client as an administrator.

---

2 From the 5520 AMS menu, choose File→Export.

Result: The Export window opens.

---

3 In the Application Filter, select the SIP-FTP and SIP Profiles check boxes.

---

4 To choose the 7342 ISAM FTTUs for which to export SIP, select the Select NE Filter check box and click Add.

Result: The NE Selection window opens.

---

5 Perform the following to select NEs:

- i Click Select NEs or Select NE Groups.
- ii Use the filters in the Filters panel and click Build List.

Result: The NEs appear in the list on the right side of the window.



**Note** — In the Name field, you can enter part of the name or use the asterisk (\*) as a wildcard. Enter one string at a time.

- iii Choose NEs from the list and click OK.

---

Result: The NE Selection window closes and the selected NEs or groups appear in the Selected NEs panel of the Export window. To remove any of the selected NEs or NE groups, choose the NE or group in the Selected NEs panel, and click Remove.

- 
- 6 Click Finish on the Export window.

The 5520 AMS exports the SIP data to the export/ams directory. The default directory is /var/opt/ams/shared/common/export/ams.

The file will be called export*timestamp*.tar file, where *timestamp* is the date and time that the file was exported. For example, export26Sep2010-11-46-13.tar.

Result: The Export Result window opens.

- 
- 7 Review the Export Result window for errors.

- 
- 8 To store the information in the Export Result window:

- i Click Copy to Clipboard.

Result: All of the entries are copied to the clipboard.

- ii Paste the results into a text editor and save the file.

- 
- 9 Click OK.

Result: The Export Results window closes.

---

## 19.3 Re-creating the NE in the 5520 AMS

See Procedure [123](#) to create the NE.

After creating the NE in the 5520 AMS, you need to perform the following:

- Copy the NE backup files back to the NE. See the *5520 AMS Administrator Guide*.
- Synchronize the NE backup files. See the *5520 AMS Administrator Guide*.
- Add the NE back to any schedules you noted. See the *5520 AMS Administrator Guide*.
- If you are using SIP with the 7342 ISAM FTTU, import SIP data. See Procedure [130](#).

---

## 19.4 Importing SIP data

After recreating an NE that uses SIP, you need to import the SIP data. This will ensure that dial tone is maintained if an ONT reboots.

Before you proceed, the NE must be supervised.

### Procedure 130 To import SIP to the 5520 AMS

- 
- 1 Log in to the 5520 AMS client as an administrator.

---

  - 2 From the 5520 AMS menu, choose File→Import.  
Result: The Import File Selection window opens.

---

  - 3 Click Browse.  
Result: The Files in shared data directory window opens.

---

  - 4 Navigate to the file you need to import and click Finish.  
Result: The Files in shared data directory window closes.

---

  - 5 Click Next.  
Result: The second Import window opens.

---

  - 6 Select the SIP-FTP and SIP Profiles check boxes.  
Result: The Finish button is enabled. Click Finish to import your data.

---

  - 7 To store the information in the Import Results window, click Copy to Clipboard.  
Result: All entries are copied to the clipboard. Paste the results into a text editor and save the file.

---

  - 8 Click OK to close the Import window. Click Yes to restart the 5520 AMS GUI.

---

---

# 20 Using TL1 and CLI

## 20.1 Overview

### 20.2 Using a TL1 or CLI cut-through window

### 20.3 Creating a command log file for a TL1 or CLI cut-through session

### 20.4 TL1 or CLI cut-through scripting

## 20.1 Overview

TL1 and CLI accounts are managed as part of the NE configuration. For information about setting TL1 and CLI accounts on an NE, see Procedure [123](#).

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this chapter. See the *5520 AMS Administrator Guide* for more information.

### 20.1.1 TL1 and CLI cut-through

The TL1 and CLI cut-through window allows you to communicate directly with an NE using a text-based interface, issuing TL1 and CLI commands directly to the NE and viewing the NE response in the same window. TL1 commands are processed by the application server associated with the NE.

You can copy and paste commands in the TL1 or CLI cut-through window, as needed. You can also copy the text displayed in the cut-through window to a text file, or print the contents of the window directly from the 5520 AMS GUI. Text copied from the cut-through window can be run as a script, see Section [20.4](#).

To perform cut-through operations, the user role must have the following functions:

- Cut through - Secure CLI
- Cut through - Secure TL1
- Cut through - Settings Edit
- Cut through - Settings View
- NE View

- User Management View
- GUI - Save to file on client



**Note 1** — The TL1 and CLI cut-through window can hold up to 2000 lines at one time.

**Note 2** — To execute TL1 or CLI commands in bulk use the 'Play a file' option. Copying and pasting commands in bulk to a TL1 or CLI cut-through session window directly for execution may make the session non-responsive.

TL1 and CLI cut-throughs are supported by the 5520 AMS only on the NE agents supporting them. For instance, some agents support only CLI. When you start a session, the Type menu in the Cut Through window shows the available cut-through types for the agent.

Communication using a TL1 or CLI cut-through requires a username and password. You can configure the username and password as part of the creation of the NE. If the username and password have not been configured, or if auto population has been disabled by an administrator, you will need to enter them to start a session.

An NE will terminate a TL1 or CLI cut-through connection after a period of time determined by the NE administrator. The default timeout period is 10 min.

The 5520 AMS does not restrict the number of TL1 or CLI sessions open at the same time for a single NE. See the NE hardware documentation for information about limits and restrictions for open sessions.

Opening and closing a TL1 or CLI session is among the actions recorded in the User Activity log.

## 20.1.2 ams\_ne\_cli script

You can configure NEs from the 5520 AMS server using a script called `ams_ne_cli`. The script reads an input file that contains CLI commands.

## 20.2 Using a TL1 or CLI cut-through window

Use these procedures to open a TL1 or CLI cut-through window for communication with the NE.



**Note** — If the cut-through session cannot reach the NE because of a connection problem, it may take up to 3.5 minutes before the session times out.

---

**Procedure 131 To use a CLI cut-through window**

---

1 Choose an NE in the Network Tree or Graphical View.

2 Perform one of the following steps:

- From the 5520 AMS toolbar, click the Cut Through icon ().
- Right-click on the NE and choose Cut Through→on NE.  
Result: The Cut Through window opens.

3 In the Agent menu, choose the agent to which you are connecting.

If a default username and password have been configured, Finish button is enabled.

4 To start a CLI cut-through session, choose CLI (Secure) or CLI (Standard) from the Type menu. Perform one of the following:

- If the username and password are not populated, enter them. You can change the port number if needed.
- Click Finish.

The CLI Cut Through Secure view or CLI Cut Through Standard view opens, and the 5520 AMS attempts to open a cut-through session with the NE.



**Note 1** — In the case of ISAM NEs, it is recommended not to change the default prompt (#) to a user-defined prompt in the user's profile. If the default prompt of the user is changed in the NE, when the user logs in to the NE through the CLI Cut Through session via 5520 AMS, the cut-through session fails.

**Note 2** — If the user changes the CLI prompt, then the prompt must end with a \$ <space> or #<space> for the CLI cut-through to work.

If the NE does not accept the username and password, an error message appears in the cut-through window.

Otherwise, the cut-through session begins. Go to step 5.

5 Enter commands in the cut-through window.

Result: The window displays your commands and the response from the NE.



**Note** — If the cut-through window is idle for more than 10 min, the NE closes the connection. If this happens, you can resume the connection by clicking the Start Session icon (.

- 
- 6 To clear the commands from the Cut Through view, click the Clear Screen icon ().
  - 7 To re-execute a command from the command history, press the up arrow key to find the command and press ↵ to re-execute it.
  - 8 To stop the cut-through session, click the Stop Session icon (.
- 

### Procedure 132 To use a TL1 cut-through window

- 
- 1 Choose an NE in the Network Tree or Graphical View.
  - 2 Perform one of the following steps:
    - From the 5520 AMS toolbar, click the Cut Through icon (.
    - Right-click the NE and choose Cut Through→on NE.

Result: The Cut Through window opens.
  - 3 In the Agent menu, choose the agent to which you are connecting.  
If a default username and password have been configured, Finish button is enabled.
  - 4 To start a TL1 session, choose TL1 (Secure) or TL1 (Standard) from the Type menu. Perform the following:
    - i If the username and password are not populated, enter them. You can change the port number if needed.
    - ii Click Finish.

Result: The TL1 Cut Through Secure view or TL1 Cut Through Standard view opens, and the 5520 AMS attempts to open a cut-through session with the NE.

If the NE does not accept the username and password, an error message appears in the cut-through window.

Otherwise, the cut-through session begins.

- 
- 5 Enter commands in the cut-through window. The window displays your commands and the response from the NE.



**Note** — If the cut-through window is idle for more than 10 minutes, the NE closes the connection. If this happens, you can resume the connection by clicking the Start Session icon (.

- 
- 6 To clear the commands from the Cut Through view, click the Clear Screen icon (.
- 
- 7 To re-execute a command from the command history, click the View Menu icon () and choose the command you need to re-execute.
- 
- 8 To clear the command history, click the View Menu icon () and choose Clear history.
- 
- 9 To stop the cut-through session, click the Stop Session icon (.
- 

## 20.3 Creating a command log file for a TL1 or CLI cut-through session

You can create a log file to capture commands sent during a TL1 or CLI cut-through session. You can start and stop logging at any time during the session. You can also start logging to a different file at any time.



**Note** — The 5520 AMS GUI cannot create a history of CLI commands. You can view the command history for a CLI session on the NE.

### Procedure 133 To create a command log file

- 
- 1 Start a CLI or TL1 cut-through session, see Procedure [131](#).
- 
- 2 To select the log file, click the Select Log File icon (.
- Result: The Cut Through Log Settings window opens.
- 
- 3 In the Cut Through Log Settings window, perform the following steps:
    - Browse and select the Log File Name and destination.
    - From the drop-down list select the required option.

- 
- 4 Click OK.
  - 5 To start or stop logging the CLI cut-through details, click the Start Logging icon (  ) or click the Stop Logging icon (  ).
  - 6 To clear the contents of the log file saved in your system, click the Clear Logging File icon (  ).
- 

## 20.4 TL1 or CLI cut-through scripting

You can create script files for frequently-used series of commands and play them from the 5520 AMS GUI. You can create script files of CLI commands in a text editor. Script files for TL1 commands can be created in a text editor or from the 5520 AMS GUI.

The script file must meet the following criteria:

- Command lines must appear exactly as you would type them
- Comment lines must have a hash (#) as the first non-white character
- Commands must not span more than one line

White characters, such as space or tab, at the beginning of a line are ignored. Empty or white lines are allowed and are ignored by the system.

---

**Procedure 134 To create a TL1 script**

---

- 1 Perform one of the following steps:
  - To copy the contents of the cut-through view to a text file, see step 2.
  - Type and save the series of commands in a text editor.
- 2 To create a script from the contents of the cut-through view, perform the following:
  - i Click the View Menu icon (  ) and choose Copy.  
Result: You can then paste the contents into a text file.
  - ii Edit the text file to remove responses from the NE.



**Note** — You can also print the contents of the cut-through view from the View Menu.

---

**Procedure 135 To play a CLI or TL1 script**

---

- 1 Start a CLI or TL1 cut-through session, see Procedure [131](#) or Procedure [132](#).
- 2 Click the Play a file icon (  ).  
Result: The Play File window opens.
- 3 Click Browse and navigate to the script file you need to play.
- 4 Optionally, deselect the Stop playing when an error occurs check box. The check box applies only to secure TL1 cut-through sessions. It does not apply to TL1 cut-through sessions over Telnet.  
  
If a TL1 standard cut-through session is configured for a 7342 ISAM FTTU NE, this option will not be visible as the 7342 ISAM FTTU supports the TL1 standard cut-through session over Telnet, by default.
- 5 Click Next to review the contents of the file you chose, or click Finish to play the file without reviewing.

Result: The 5520 AMS sends the series of commands to the NE and displays the progress in the cut-through view.

- 
- 6** To stop playing the file at any time, click the Stop a file icon (  ).
-

---

# 21 Managing custom counters

## 21.1 Overview

### 21.2 Managing custom counters

### 21.3 Monitoring custom counters

## 21.1 Overview

Custom counters can only be associated to physical resources such as boards or ports. They are attributes that are configured through the 5520 AMS GUI as an equation using other PM counters (15-min, 1-day and traceable attributes). They are locally stored in the AMS database. They are not configured in the NE and cannot be retrieved from the NE CLI. The persistency is preserved when the NE is upgraded or migrated from one release to the next release.

Custom counters are imported and exported as part of subscriber search attributes. For more information on import and export of subscriber search attributes, see the 5520 AMS Installation and Migration Guide.

## 21.2 Managing custom counters

In the Custom counter view, you can create and manage custom counters.

You must have the following allowed functions included in the role to manage the custom counters. See the *5520 AMS Administrator Guide* for information about User Roles.

- PM User: Able to view and monitor custom counters.
- PM Admin: Able to create, edit, view, delete, and monitor custom counters.



**Note** — Custom counters that are added, modified or deleted in this view will only be visible after you log out and log in to the 5520 AMS client.

### Procedure 136 To add a new custom counter

- 
- 1 In the 5520 AMS menu, choose Window→Show View→Other.

Result: The Show View window opens.

- 2 Choose Other→Custom Counters and click OK.

Result: The Custom Counters view opens.

- 3 Click the Add new Custom Counter icon (  ).

Result: The Create Custom Counters window opens.

- 4 Configure the parameters as described in Table 48.

**Table 48 Add a Custom Counter parameters**

Parameter	Description
<b>Identification</b>	
NE Family	Specifies the type of NE for which you need to create the custom counter.
Object	Specifies the object of the selected NE type for which you need to create the custom counter.
Internal Attribute Name	Specifies the internal name of the attribute. The internal name has to be unique within the object, and not conflict with the attributes defined in the NE plugs or other custom counters. Only alphanumeric and underscore characters are allowed. The name must start with a letter.
<b>User Interface</b>	
GUI Attribute Name	Specifies the user friendly name of the attribute. which is displayed in the object details and object monitoring views. The GUI attribute name is provided in a single language. The same value will be displayed in the GUI regardless of the selected language.
<b>Calculated Attribute</b>	
Attribute Expression	Specifies the attribute expression. You can enter digits (0-9), the decimal character (.), mathematical operators ("+, -, *, /") and the brackets characters ( "(,)" ). You can also insert PM Attributes (PM Counters and traceable attributes) through the Attribute value field.
Insert Attribute Value	Specifies all the traceable attributes and PM counters (only 15-min and 24-hour counters) that are supported for the selected NE Family and Object. This contains all the attributes supported by the installed node plugins. Default value is empty.
Attribute Unit	Specifies the units for the configured expression. You can enter the units.

**5** Perform one of the following:

- To add a custom counter within an existing section, configure the parameters as described in Table 49.
- To add a custom counter in a new section, configure the parameters as described in Table 50.



**Note** — Only the common attributes/sections are displayed when more than one plug of the same family is installed.

**Table 49** Add a Custom Counter in an existing section parameters

Parameter	Description
<b>Object Details Layout</b>	
Add Within an Existing Section	Adds the attribute within an existing section.
Attribute Position	Specifies the position of the attribute with respect to the available sections.

**Table 50** Add a Custom Counter in a new section parameters

Parameter	Description
<b>Object Details Layout</b>	
Add a New Section	Adds the attribute in a new section.
New Section Name	The name of the new section to which you want to add the new attribute.
Section Position	The position of the new section with respect to the available sections.

**6** Click Finish to add the custom counter.



**Note** — The definition of the new custom counters takes effect immediately in the custom counters view and on the individual objects at the next login.

---

**Procedure 137 To edit a custom counter**

**Note** — You cannot modify a counter if the counter is monitored.

- 
- 1 In the 5520 AMS menu, choose Window→Show View→Other.

Result: The Show View window opens.

- 
- 2 Choose Other→Custom Counters and click OK.

Result: The Custom Counters view opens.

- 
- 3 Select a custom counter from the list, and click the Edit Custom Counter icon ().

Result: The Modify Custom Counters window opens.

- 
- 4 Configure the parameters as described under the Calculated Attribute section in Table 48 and *Object Details Layout* section in Table 49 or Table 50.

- 
- 5 Click Finish.



**Note** — The modification of custom counter details takes effect immediately.

---

**Procedure 138 To view custom counter definition**

To view a custom counter definition from the 5520 AMS menu:

- Choose Window→Show View→Other.  
Result: The Show View window opens.
- Choose Other→Custom Counters and click OK.  
Result: The Custom Counters view opens.

- 
- Select a custom counter and click the View Custom Counter icon (  ).  
Result: The View Custom Counters window opens with the custom counter details.



**Note** — Alternatively, double click on a selected custom counter to open the View window.

---

### Procedure 139 To view custom counter value

To view a custom counter value perform one of the following:

- From the Object Monitoring view:  
In the 5520 AMS menu, choose Window→Show View→Other→Object Monitoring view.  
Result: The custom counters are displayed under 'Traceable Attributes'.
- From the Object Details view:  
Navigate to an object in the Network tree on which custom counters are created.  
Result: The custom counters are displayed in the object details.

---

### Procedure 140 To delete a custom counter



**Note** — You cannot delete a custom counter if the counter is monitored.



**Warning** — Deleting a custom counter erases all values of that custom counter from the system.

- 
- 1 In the 5520 AMS menu, choose Window→Show View→Other.  
Result: The Show View window opens.
  - 2 Choose Other→Custom Counters and click OK.  
Result: The Custom Counters view opens.
-

---

3 Select a custom counter from the list and perform one of the following:

- Click the Delete icon (  ).
- Right-click the counter and choose Delete counter Definition.

Result: The following message appears with a warning:

Are you sure you want to delete these custom counters?



**Warning** — Deleting custom counters will erase all values of those fields from the system. It will also require that you log out from the GUI after this operation.

---

4 Click OK to delete the custom counter.



**Note** —

- The deletion of the custom counter takes effect at the next login.
- To avoid an error upon clicking on the object which contains the deleted custom counter, it is strongly recommended that you log out and log in to the 5520 AMS client immediately after deleting a custom counter.

---

## 21.3 Monitoring custom counters

You can monitor custom counters like any other PM counters.



**Note** — When you start monitoring custom counters with common reference attributes, it is recommended to group the monitoring as a single task to optimize operations and performance.

### Procedure 141 To monitor custom counters

- 
- 1 Navigate to an object in the Network tree on which a custom counter is created and right-click and choose Show→ PM Counters.
- 
- 2 Select a custom counter listed under 'Traceable Attributes'.
- 
- 3 Right-click and choose Start Monitoring.

Result: The list of custom counters, which are monitored is displayed in the Global Monitoring view.

---

### **Procedure 142 To view monitored custom counters**

In the 5520 AMS menu, choose Window→Show View→Other→Global Monitoring view.

Result: The list of custom counters, which are monitored is displayed.

---



---

# 22 Managing custom fields

## 22.1 Overview

### 22.2 Managing custom fields

## 22.1 Overview

Custom fields can be associated to the following types of objects:

- User objects
- NE objects
- Physical resources of an NE such as boards or ports

They are attributes that are locally stored in the AMS database. Custom fields are not typed, they are strings. However, the syntax of the string can be controlled using regular expressions.

Assigning custom attributes involves selecting the object supporting the local attribute, and configuring the local attribute to appear in the GUI. The attribute is managed like any other attribute of the object, and is visible in the create wizard, the Object Details view, and the Graphical/Table views.

Custom fields associated to physical resources of an NE in the 5520 AMS GUI are not configured in the NE and cannot be retrieved from the NE CLI. The persistency is preserved when the NE is upgraded or migrated from one release to the next release. The object can be queried from the search menu or the tool-bar.

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this chapter. See the *5520 AMS Administrator Guide* for more information.



#### Caution —

- Service providers should be aware that the related data are stored in the system. Changing the data model for such attributes may require migration efforts, that are considered project-specific and therefore not part of the generic product.
- Nokia is in favor of using NE attributes to store information, because such attribute information is available to field engineers as well and, therefore, migration of data is handled with the NE migration. Custom field attributes are therefore considered as for exceptional use only.

## 22.2 Managing custom fields

In the Custom Field view, you can create and manage custom fields.

You must have the following allowed functions included in the role to manage the custom fields. See the *5520 AMS Administrator Guide* for information about User Roles.

- Subscriber Search Attribute Categories - Edit
- Subscriber Search Attribute Categories - View



**Note —**

- Do not define more than 50 custom fields per object.
- Custom fields that are added, modified or deleted in this view will only be visible after you log out and log in to the 5520 AMS client.
- Custom fields for user objects are supported only in the GUI.

### Procedure 143 To add a new custom field

1 In the 5520 AMS menu, choose Window→ Show View and select Custom Fields from the menu.

Result: The Custom Fields view opens.

2 Click the Add new Custom Field icon ( ).

Result: The Create Custom Fields window opens.

3 Configure the parameters as described in Table 51.

**Table 51 Add a Custom Field parameters**

Parameter	Description
Identification	
Family	Specifies the family type for which you can create the custom field. The available options are: <ul style="list-style-type: none"> <li>• Platform: Select Platform to create custom fields for user and NE objects.</li> <li>• NE_type: Select an NE_type to create custom fields for physical objects of the selected NE type. For example, NE_type can be G6 or GPON.</li> </ul>

(1 of 2)

Parameter	Description
Object	<p>Specifies the object for which you need to create the custom field.</p> <p>If you selected the Platform family type:</p> <ul style="list-style-type: none"> <li>• Select User to create custom fields for a user object.</li> <li>• Select NE to create custom fields for a NE object.</li> </ul> <p>If you selected a specific NE family type, select the physical object for which you need to create custom fields.</p>
Internal Attribute Name	<p>Specifies the internal name of the attribute.</p> <p>The internal name has to be unique within the object, and not conflict with the attributes defined in the NE plugs or other custom fields.</p> <p>Do not define the internal name of your custom field with a name ending with "_CST", as this "_CST" suffix will be appended to this internal name to provide the corresponding NBI attribute name.</p> <p>Only alphanumeric and underscore characters are allowed. The name must start with a letter.</p>
User Interface	
GUI Attribute Name	<p>Specifies the user friendly name of the attribute.</p> <p>The GUI attribute name is provided in a single language. The same value will be displayed in the GUI regardless of the selected language.</p>
Display in Tree	<p>Provides an option to display the attribute in the Tree view.</p> <p>If there are more than one custom fields associated to an object, it is displayed as a comma-separated value in the Administration perspective tree view.</p>
Modifiable from GUI	<p>Provides an option to modify the attribute from the GUI.</p>

(2 of 2)

4 Perform one of the following:

- To add a custom field within an existing section, configure the parameters as described in Table 52.
- To add a custom field in a new section, configure the parameters as described in Table 53.



**Note** — Only the common attributes/sections are displayed when more than one plug of the same family is installed.

**Table 52 Add a Custom Field in an existing section parameters**

Parameter	Description
Object Details Layout	
Add Within an Existing Section	Adds the attribute within an existing section.

(1 of 2)

Parameter	Description
Attribute Position	Specifies the position of the attribute with respect to the available sections. Select Before to position the custom field before the selected section from the drop-down list. Select After to position the custom field after the selected section from the drop-down list.

(2 of 2)

**Table 53 Add a Custom Field in a new section parameters**

Parameter	Description
Object Details Layout	
Add in a New Section	Adds the attribute in a new section.
New Section Name	The name of the new section to which you want to add the new attribute.
Section Position	The position of the new section with respect to the available sections. Select Before to position the custom field before the selected section from the drop-down list. Select After to position the custom field after the selected section from the drop-down list.



**Note** — For splitter objects, positioning a new section After General or After Up Links will not provide the expected result due to internal reasons.

- To position a new section between General and Up Links, select Before Up Links.
- To position a new section between Up Links and Down Links, select Before Down Links.
- To add a custom field in a new section, add the new section for the first custom field. The remaining custom fields are created under Add within an Existing Section.

5 Configure the parameter as described in Table 54.

**Table 54** Alarms parameter

Parameter	Description
Alarms	
Add to Alarms if not empty	Provides an option to add the custom field information to the additional information field of the alarm. This is applicable only if the custom field value is defined.

**Note —**

- Enabling this option may impact the performance of alarm reporting.
- Upon enabling the option, the custom fields are added to the alarms that will be generated. The alarms that are already generated are not updated.
- If a custom field is added to an ONT, only the alarms generated on the ONT object will support the custom field tag, and not the alarms on the ONT cards, ONT ports or ONT services.

**6** If Family is set as Platform and Object is set as NE, perform the following steps:

**i** Click Next.

Result: The Create Custom Field window opens.

**ii** Select the Enumeration option and click Add to add the Enumeration details as described in [Table 55](#)

**Table 55 Create Enumeration Field**

Parameter	Description
Internal Name	Specifies the internal name of the enumeration item. The internal name has to be unique within the custom field. Only alphanumeric and underscore characters are allowed. The name must start with a letter.
GUI Name	Specifies the user friendly name of the enumeration item. The GUI name is provided in a single language. The same value will be displayed in the GUI regardless of the selected language.

7 Click Finish.



**Note** — The definition of the new custom field will take effect at the next login and will appear in the Custom Fields view. Upon the next login, you will be able to provide the actual values for the custom fields on boards and ports, from the Network Tree - either in Create wizards, Object Details view or Multiple Edit wizard.

**Procedure 144 To edit a custom field**

1 In the 5520 AMS menu, choose Window→ Show View and select Custom Fields from the menu.

Result: The Custom Fields view opens.

2 Select a custom field from the list, and click the Edit Custom Field icon (✎).

Result: The Modify Custom Fields window opens.

3 Configure the parameters as described under the *User Interface* section in Table 51, Table 52 or Table 53, and the *Alarms* section in Table 54.

4 Click Finish.



**Note** — The modification of custom field details will take effect at the next login. Upon the next login, you will be able to provide the actual values for the custom fields on boards and ports, from the Network Tree - either in Create wizards, Object Details view or Multiple Edit wizard.

---

**Procedure 145 To view custom field details**

- 1 In the 5520 AMS menu, choose Window→ Show View and select Custom Fields from the menu.

Result: The Custom Fields view opens.

- 2 To display the details of a specific custom field, select the custom field and click the View Custom Field icon ().

Result: The View Custom Fields window opens.

---

**Procedure 146 To delete a custom field**

**Warning** — Deleting a custom field will erase all values of that field from the system.

- 1 In the 5520 AMS menu, choose Window→ Show View and select Custom Fields from the menu.

Result: The Custom Fields view opens.

- 2 Select a custom field from the list, and click the Delete icon (.

Result: A confirmation window opens.

- 3 Click OK to delete the custom field.

**Note —**

- If you try to delete a custom field from the 5520 AMS GUI, an error message could be displayed indicating that the custom field cannot be deleted because it is in used by another application in the following situations:
    - The custom field is a parameter in a deployed template and it has a value, or
    - The custom field is an argument in a non-deployed template.
  - The deletion of the custom field will take effect at the next login.
  - To avoid an error upon clicking on the object which contains the deleted custom field, it is strongly recommended that you log out and log in to the 5520 AMS client immediately after deleting a custom field.
- 

**Procedure 147 To navigate to the Subscriber Search Attribute Categories view**

---

- 1 In the 5520 AMS menu, choose Window→ Show View and select Custom Fields from the menu.

Result: The Custom Fields view opens.

---

- 2 Click the Navigate to Subscriber Search Attribute Categories icon ().

Result: The Subscriber Search Attribute Categories view opens.

See the *5520 AMS Administrator Guide* for information about subscriber search attribute categories.

---

---

# 23 Managing custom groups

## 23.1 Overview

## 23.2 Managing custom groups

## 23.3 Custom Groups Tasks

## 23.4 Viewing custom group

### 23.1 Overview

Custom Groups are a group of network elements. They are created based on:

- NE native attributes such as NE Type, Release, Subtype (Family), Time Zone.
- Custom Field (enumerated type)

Custom groups created using NE native attributes are managed by the system.

You can schedule tasks such as backups to be performed, templates to be deployed on custom groups.

### 23.2 Managing custom groups

In the Custom Field view, you can create and manage custom groups.

#### Procedure 148 To add a new custom group

Use this procedure to create custom groups:

- 
- 1 In the 5520 AMS menu, choose Window→ Show View and select Custom Fields from the menu.

Result: The Custom Fields view opens.

- 
- 2 Click the Add new Custom Field icon (  ).

- 
- 3 Configure the parameters as described in Table 56.

**Table 56 Add a Custom Field parameters**

Parameter	Description
Identification	
Family	Select Platform to create custom group.
Object	Select NE to create custom group.
Internal Attribute Name	Only alphanumeric and underscore characters are allowed. The name must start with a letter.
User Interface	
GUI Attribute Name	The GUI attribute name is provided in a single language. The same value will be displayed in the GUI regardless of the selected language.
Display in Tree	Provides an option to display the attribute in the Tree view.
Modifiable from GUI	Provides an option to modify the attribute from the GUI.

**4** Perform one of the following:

- To add a custom group within an existing section, configure the parameters.
- To add a custom group in a new section, configure the parameters.

**5** Click Next.

Result: The second Create Custom Fields window appears.

**6** Select the Enumeration option and click Add to add the Enumeration details as described in [Table 57](#)

**Table 57** Create Enumeration Field

Parameter	Description
Internal Name	Specifies the internal name of the custom group. The internal name has to be unique within the enumeration. Only alphanumeric and underscore characters are allowed. The name must start with a letter.
GUI Name	Specifies the user friendly name of the custom group. The GUI name is provided in a single language. The same value will be displayed in the GUI regardless of the selected language.
NE Custom Group	Specifies that the NE Custom Group will be used as a custom group. The Use as Custom Group check box must be selected when creating custom groups.



**Note** — The definition of the new custom group will take effect at the next login and will appear in the Custom Groups tree.

## Procedure 149 To edit a custom group



**Caution** — If an operation is scheduled for the custom group, you cannot edit the custom group.

- 1 In the 5520 AMS menu, choose Window→ Show View and select Custom Fields from the menu.  
Result: The Custom Fields view opens.
- 2 Select a custom field from the list, and click the Edit Custom Field icon ()  
Result: The Modify Custom Fields window opens.
- 3 Configure the parameters.
- 4 Click Next.  
Result: The second Modify Custom Fields window appears.
- 5 Select the custom field option and click Add to add the Enumeration details as described in Table [57](#)

- 
- 6 Click Finish.



**Note** — The modification of custom group details will take effect at the next login. Upon the next login, you will be able to provide the actual values for the custom fields on boards and ports, from the Network Tree - either in Create wizards, Object Details view or Multiple Edit wizard.

---

### Procedure 150 To delete a custom group details



**Caution** — If an operation is scheduled for the custom group, you cannot delete the custom group.

- 
- 1 In the 5520 AMS menu, choose Window→ Show View and select Custom Fields from the menu.  
Result: The Create Custom Fields view opens.
  - 2 Select a custom group from the list, and click the Delete icon (  ).  
Result: A confirmation window opens.
  - 3 Click OK to delete the custom field.
- 



**Note** —

- The deletion of the custom group will take effect at the next login.
  - To avoid an error upon clicking on the object which contains the deleted custom group, it is strongly recommended that you log out and log in to the 5520 AMS client immediately after deleting a custom field.
- 

## 23.3 Custom Groups Tasks

The Custom Groups perspective comprises of Custom Group Tree and NEs in Custom Group. From the Custom Group Tree, you can perform the following tasks:

- Deploy templates
- Undeploy templates

- 
- Resynchronize audit data
  - Perform backup

### **Procedure 151 To deploy template**

Perform one of the following procedure to deploy templates:

- 
- 1 Navigate to the custom group in the Custom Group Tree. Right-click the custom group and select Templates→ Deploy.

Result: The Deploy Template window opens.

- 
- 2 Perform the following steps to select the templates to be deployed.

- i Click Add to select the templates.

- ii Click Select Templates.

Use the filters in the Filters panel and click Build List.

Result: The selected templates appear in the list on the right side of the window.

- iii Choose templates from the list and click OK.

- 
- 3 Click Finish.

Result: The selected template is deployed for the corresponding NEs.

---

## **23.4 Viewing custom group**

This section describes the procedure to view NEs in a custom group.

### **Procedure 152 To view NEs in a custom group**

Before you proceed, ensure that custom groups are already created.

Perform the following steps to view NEs in a custom group.

- 1** Navigate to the custom group in the Custom Group Tree.
  - 2** The NEs that belong to the selected custom group are displayed in the NEs in Custom Group view.
-

---

# 24 Managing SNMP

## 24.1 Overview

### 24.2 Changing the SNMP profile for an NE

### 24.3 Viewing the SNMP system information on an NE

### 24.4 Configuring a trap definition on an NE

### 24.5 Managing a trap destination on an NE

### 24.6 Creating an SNMP notification profile on an NE

### 24.7 Managing an SNMP element manager on an NE

### 24.8 Managing SNMPv3 users and groups on the NE

## 24.1 Overview

SNMP profiles are used by the 5520 AMS to apply SNMP configuration to communication with the NEs. You assign an SNMP profile when creating an NE.

You can change the SNMP version that the 5520 AMS uses for communications with the NE by changing the SNMP profile that is assigned to the NE. See Section [24.2](#).



**Note** — The 5520 AMS provides functionality to configure SNMPv3 users, groups, and user-to-group mappings. However, Nokia recommends that you configure these settings using the CLI procedures in the Operations and Maintenance guide for the NE.

### 24.1.1 SNMP principles

SNMP provides secure communications between the 5520 AMS and the NEs, by a combination of authenticating and encrypting packets over the network. The 5520 AMS supports SNMPv1/v2c and v3.



**Note** — Although the 5520 AMS supports SNMPv1/v2c and v3, individual NEs may only support some of these SNMP versions. For more information, see the Operations and Maintenance guide for the NE.

The 5520 AMS uses SNMP to monitor conditions on the NEs. Each managed NE (the SNMP agent) reports information by way of SNMP to the managing system (the 5520 AMS).

The 5520 AMS requests data from the NE through GET, GETNEXT, and GETBULK protocol operations, and the NE can also initiate the sending of data to the 5520 AMS, using TRAP protocol operations (referred to as traps). For SNMPv3, the 5520 AMS requests data using GET, GETNEXT, GETBULK, SET, and WALK protocol operations. This means that the 5520 AMS retrieves the whole MIB table for the specified entries. SNMPv3 traps are also supported.

A security model is an authentication strategy that is set up for a user and the group in which the user resides. A security level is the permitted level of security within a security model. A combination of a security model and a security level determines which security mechanism is employed when you handle an SNMP packet. The following three security models are available: SNMPv1, SNMPv2c, and SNMPv3. Table 58 identifies the combinations of security models and levels.

**Table 58 SNMP security models and levels**

Model	Level	Authentication	Encryption	Description
v1	noAuthNoPriv	Community String	No	Uses a community string match for authentication
v2	noAuthNoPriv	Community String	No	Uses a community string match for authentication
v3	noAuthNoPriv	Username	No	Uses a username match for authentication
v3	authNoPriv	MD5 or SHA	No	Provides authentication based on the HMAC-MD5 or HMAC-SHA algorithm
v3	authPriv	MD5 or SHA	DES	Provides authentication based on the HMAC-MD5 or HMAC-SHA algorithms. Provides DES 56-bit encryption in addition to authentication based on the CBC-DES (DES-56) standard.

Nokia recommends using SNMPv3 for secure communication to NEs that support it. If SNMPv3 is used, it should be used throughout the network and not mixed with SNMPv1 or SNMPv2c unless necessary.

## 24.2 Changing the SNMP profile for an NE

You must assign an SNMP profile to an NE when you create the NE. Only one profile can be assigned to an NE at one time. You can change the SNMP profile that is assigned to the NE by stopping supervision on the NE, assigning a different SNMP profile, then starting supervision on the NE.

---

**Procedure 153 To change an SNMP profile**

---

1 Navigate to the NE and choose NE→Agents in the Network Tree.

2 Right-click the agent for which you need to change the SNMP profile and choose Supervision→Stop.

In the Stop Supervision window, you can select multiple NEs for supervision through NE Selection wizard by clicking Add, Remove, or Replace All buttons, and then Click Finish. The NE Selection wizard allows you to select NEs from a filtered list, a file or the clipboard.

To stop supervision of an NE group or a custom group, your role must have the security function, NE-Supervision at group level.

Result: The state in the Supervision field is changed from Supervised to Declared for the selected NEs.

3 Choose the agent in the Network Tree to display the Object Details view for the agent.

4 In the General tab of the Object Details view, click Browse in the SNMP Profile field.

Result: The Select SNMP Profile window opens and displays the available profiles.



**Note 1** — To create a SNMP profile from the Select SNMP Profile window, click Create.

**Note 2** — To delete an existing SNMP profile from the Select SNMP Profile window, choose the profile that you need to delete, and click Delete.

5 Choose a profile and click OK.

Result: The profile is displayed in the SNMP Profile field.

6 Click the Apply icon (✓) to save the changes.

7 In the Network Tree, right-click the agent and choose Supervision→Start.

In the Start Supervision window, you can select multiple NEs for supervision through NE Selection wizard by clicking Add, Remove, or Replace All buttons, and then Click Finish. The NE Selection wizard allows you to select NEs from a filtered list, a file or the clipboard.

You can also select NE Groups or Custom Groups. You can also select NE Groups or Custom Groups and start supervision only when assigned both the NE - Edit and NE - Supervision at group level security functions.

---

Result: The state in the Supervision field is changed from Declared to Supervised for the selected NEs.

---

## 24.3 Viewing the SNMP system information on an NE

The SNMP System Information Object Details view provides additional read-only information about the SNMP agent, message statistics, and security statistics.

### Procedure 154 To view SNMP system information

- 
- 1 Navigate to the NE and choose Infrastructure→OAM→SNMP System Information.

Result: The SNMP system information parameters are displayed in the Object Details view.

---

- 2 Review the parameters and, when complete, click the Close icon () icon to close the Object Details view.
- 

## 24.4 Configuring a trap definition on an NE

In the event that a trap is triggered by the NE, you can configure the priority level of the trap type when the NE raises the notification that a trap has been raised. The priority level is set to medium by default. You can configure the priority level for the SNMP trap ID types described in Table 59.

**Table 59** SNMP trap ID type descriptions

SNMP trap ID type	Description
authentication failure	Indicates that there is an authentication failure on the NE
change occurred	Indicates that a change has occurred on the NE
cold start	Indicates that initialization is complete, the NE is restarted, and SNMP is running
init started	Indicates that the NE has started the initialization sequence
license key changed occurred	Indicates that a change occurred with the NE license key
link down	Indicates that communication with the link is disabled
link up	Indicates that communication with the link is enabled
topo changed	Indicates that the topology on the NE has changed



**Note** — If trap registration fails or is lost, you can re-register the NE for traps by resynchronizing alarms on the NE. See Procedure [222](#).

### Procedure 155 To configure a trap definition on an NE

- 1 Navigate to the NE and choose Infrastructure→OAM→Trap Definition.
- 2 Choose the trap ID you need to configure.  
Result: The trap ID appears in the Object Details view.
- 3 Choose the trap definition priority level (Urgent, High, Medium, or Low) from the Priority drop-down menu.
- 4 Click the Apply icon (✓) to save the configuration.

## 24.5 Managing a trap destination on an NE

Use this procedure to create a trap destination.

---

**Procedure 156 To create a trap destination**

- 
- 1 Navigate to the NE and choose Infrastructure→OAM→Trap Destination.

---

  - 2 Right-click Trap Destination and choose Create→Trap Destination.  
Result: The Create Trap Destination window opens.

---

  - 3 Enter the IP address of the destination trap in the IP Address field.

---

  - 4 Enter a port number in the range of 0 to 65535 in the Port field.

---

  - 5 Click Next.  
Result: The second Create Trap Destination window opens.

---

  - 6 Configure the parameters.

---

  - 7 Click Finish to create the new trap destination.  
Result: The new trap destination is displayed under the Trap Destination element and is named according to the IP address provided.
- 

**Procedure 157 To reset the buffer on a trap destination**

- 
- 1 Navigate to the NE and choose Infrastructure→OAM→Trap Destination.

---

  - 2 Right-click Trap Destination and choose Actions→Reset Buffer.  
Result: The Reset Buffer window opens.

---

  - 3 Click Finish.  
Result: The buffer is reset.
-

---

## 24.6 Creating an SNMP notification profile on an NE

After you create an SNMP notification profile, you cannot modify the parameters. To modify the notification profile, you need to delete and re-create the profile.

Up to 10 SNMP notification profiles can be created on an NE.

### Procedure 158 To create an SNMP notification profile

---

1 Navigate to the NE and choose Infrastructure→OAM→SNMP Notification Profiles.

---

2 Right-click SNMP Notification Profiles element and choose Create→SNMP Notification Profile.

Result: The Create SNMP Notification Profile window opens.

---

3 Enter a name for the SNMP notification profile in the Name field.

---

4 Click Next.

Result: The second Create SNMP Notification Profile window and prompts you to configure the parameters for the SNMP notification profile.

---

5 Configure the parameters.

---

6 Click Finish to create the new SNMP notification profile.

Result: The new SNMP notification profile is displayed under the SNMP Notification Profiles element.

---

## 24.7 Managing an SNMP element manager on an NE

Follow the procedure in this section to create an SNMP element manager on an NE.

---

**Procedure 159 To create an SNMP element manager**

---

1 Navigate to the NE and choose Infrastructure→OAM→SNMP Element Managers.

---

2 Right-click SNMP Element Managers element and choose Create→SNMP Element Manager.

Result: The Create SNMP Element Manager window opens and prompts you to configure the parameters for the new SNMP element manager.

---

3 Enter a name for the new SNMP element manager in the Name field.

---

4 Click Next.

Result: The second Create SNMP Element Manager window prompts you to configure the parameters for the SNMP element manager.

---

5 Configure the parameters.

---

6 Click Finish to create the new SNMP element manager.

Result: The new SNMP element manager is displayed under the SNMP Element Manager element.

---

## 24.8 Managing SNMPv3 users and groups on the NE

The 5520 AMS provides functionality to configure SNMPv3 users and groups on the NE.



**Note** — The first SNMPv3 user and group must be created on the NE using CLI. See the Operations and Maintenance guide for the NE. This establishes management of the NE using SNMPv3.

When the NE is managed using SNMPv3, you can create additional users and groups using the 5520 AMS.

---

**Procedure 160 To create an SNMPv3 user on the NE**

After you have created the first SNMPv3 user, you can use this procedure to create additional users by copying the parameters from the existing SNMPv3 user.

---

1 Navigate to the NE and choose Infrastructure→OAM→SNMPv3 Users.

---

2 Right-click SNMPv3 Users element and choose Create→SNMPv3 User.

Result: The Create SNMPv3 User window opens and prompts you to configure the parameters for the new SNMPv3 user.

---

3 Enter a value in the Engine ID field, or use the default engine ID provided. The default number is the next available ID number.



**Note** — If you have entered a value manually and you need to change it to use the next available number, click Auto to generate a number automatically.

---

4 Enter a name for the new SNMPv3 user in the User Name field.

---

5 Click Next.

Result: The second Create SNMPv3 User window prompts you to configure the parameters for the SNMPv3 user.

---

6 Configure the parameters.



**Note** — In the Copy From User field, choose the existing user from which the parameters for the new user will be based. The first user must be created using CLI commands.

---

7 Click Finish to create the new SNMPv3 user.

Result: The new SNMPv3 user is displayed under the SNMPv3 Users element.

---

**Procedure 161 To create an SNMPv3 group**

---

1 Navigate to the NE and choose Infrastructure→OAM→SNMPv3 Groups.

---

2 Right-click SNMPv3 Groups and choose Create→SNMPv3 Group.

---

Result: The Create SNMPv3 Group window opens and prompts you to configure the parameters for the new SNMPv3 group.

---

3 Enter a name for the new SNMPv3 group in the Group Name field.

---

4 Configure the remaining parameters.

---

5 Click Next.

Result: The second Create SNMPv3 Group window prompts you to configure the parameters for the SNMPv3 group.

---

6 Configure the parameters.

---

7 Click Finish to create the new SNMPv3 group.

Result: The new SNMPv3 group is displayed under the SNMPv3 Groups element.

---

### **Procedure 162 To create SNMPv3 user-to-group mapping**

---

1 Navigate to the NE and choose Infrastructure→OAM→SNMPv3 User To Group Mapping.

---

2 Right-click SNMPv3 User To Group Mapping element and choose Create→SNMPv3 User To Group.

Result: The Create SNMPv3 User To Group window opens and prompts you to configure the parameters for the new SNMPv3 user-to-group mapping.

---

3 Enter a name for the new SNMPv3 user-to-group mapping in the Group Name field.

---

4 Configure the remaining parameters.

---

5 Click Next.

Result: The second Create SNMPv3 User To Group window prompts you to configure the parameters for the SNMPv3 user-to-group mapping.

---

6 Configure the parameters.

---

7 Click Finish to create the new SNMPv3 user-to-group mapping.

---

Result: The new SNMPv3 user-to-group mapping is displayed under the SNMPv3 User To Group Mapping element.

---



---

# 25 Managing SNTP

## 25.1 Overview

### 25.2 Configuring SNTP on the NE

## 25.1 Overview

NEs use local time by default. Nokia recommends that the local time on the NE be configured in UTC.

NEs can also use SNTP to synchronize their internal clocks. An SNTP server can be used to synchronize the time on an NE. To synchronize time on an NE using SNTP, you must configure SNTP and enable SNTP on the 5520 AMS. See the *5520 AMS Administrator Guide* for more information. You must also configure SNTP for each NE that you need to manage with the SNTP server.

The global SNTP settings must be configured and enabled on the 5520 AMS for the SNTP parameters on the NE to take effect. See the *5520 AMS Administrator Guide* for more information.

The SNTP parameters on the 5520 AMS are global and are applied to an NE when supervision is started on the NE. The SNTP parameters at the NE level are specific to the NE and can be used to override the global parameters after supervision is started.

The NE Time parameter displays the time reported by the NE. This is the time that is displayed in CLI and TL1 timestamps. For some NEs, if the NE is out of sync with the SNTP server, the NE reports the time since the last reboot. If the NE Time parameter shows a time stamp in the past, the NE may be out of sync with the SNTP server.

The Boot Time parameter is the difference between the network time and system uptime. The Boot Time specifies the time for an NE to be operational after the power has turned on. The value is displayed as timestamp in the 5520 AMS GUI. This is the time that is displayed in CLI and TL1 timestamps.



**Note** — If SNTP fails, you can re-register the NE for NTP by resynchronizing alarms on the NE. See Procedure [222](#).

You can also configure time zone settings in the 5520 AMS so that alarm and event timestamps in the GUI are converted to the time zone for the NE's location. See the *5520 AMS Administrator Guide*.



**Caution** — The local time on the NE should be configured in UTC regardless of whether you will be configuring time zone settings in the 5520 AMS. This will ensure accurate timestamps.

---

## 25.2 Configuring SNTP on the NE

Before you proceed:

- An SNTP server must be installed. An SNTP server does not come pre-packaged with the 5520 AMS.
- The NE must be supervised by the 5520 AMS.

### Procedure 163 To configure SNTP on the NE



**Caution** — It is recommended to define SNTP servers in the Administration tree and to associate them to parts of the network. By doing so, the SNTP parameters will automatically be configured correctly when a new NE is supervised. See the 5520 AMS Administrator Guide for more information. The following procedure must be performed only to bypass the rules defined in the Administration tree.

- 
- 1 Navigate to the NE and choose NE System.

Result: The NE System Object Details view opens.

- 
- 2 In the Object Details view, configure the SNTP parameters.



**Note** — When the server is in the initial state where SNTP is set to Disabled, and the SNTP Server IP Address is set to 0.0.0.0, you can specify the IP address and set the SNTP state to Enabled at the same time.

- 
- 3 Click the Apply icon (✓) to save the changes.
-

---

# 26 Managing SSH

## 26.1 Overview

### 26.2 Enabling or disabling communication channels

### 26.3 Confirming the SSH client public key

### 26.4 Configuring the SSH server

## 26.1 Overview

SSH provides secure tunneling capabilities over insecure networks, such as secure file transfers using the SFTP protocol. All traffic is encrypted, including passwords, to eliminate eavesdropping, connection hijacking, and other network-level attacks. The SSH/SFTP functionality is supported over the TCP protocol.

## 26.2 Enabling or disabling communication channels

This section provides the steps to enable or disable the supported communication channels between the NE and the 5520 AMS server.

You can choose the method to use for file transfers between the NE and the 5520 AMS server when performing a backup or restore procedure. See the *5520 AMS Administrator Guide*.

The following server applications are available:

- TL1 over Telnet—Establishes a TL1 connection using a Telnet session
- CLI over SSH—Establishes a CLI connection using a SSH session
- CLI over Telnet—Establishes a CLI connection using a Telnet session
- TL1 over SSH—Establishes a TL1 connection using a SSH session
- TL1 over UDP—Establishes a TL1 connection using a UDP session
- Trace&Debug over UDP—Establishes a trace and debug connection using a UDP session



**Caution** — Modify the `sshd_config` file only as described in the AMS customer documentation. If not, the SSH customizations might impact the AMS server behavior. Contact your Nokia support representative if you need to customize SSH.

---

**Procedure 164 To enable or disable communication channels**

---

- 1 Navigate to the NE and choose Infrastructure→OAM→SSH System Parameters.

Result: The SSH System Parameters Object Details view opens.

---

- 2 In the Enabled Server Applications window, choose the server applications you need to enable by selecting the application in the Disabled window and using the right-arrow to move it to the Enabled window. To disable an application, move the application from the Enabled window to the Disabled window using the left-arrow.
- 

- 3 Click the Apply icon (✓) to save the changes.
- 

## 26.3 Confirming the SSH client public key

You can confirm an SSH client public key for the NE using the 5520 AMS. The server on which the 5520 AMS is installed acts as the SSH client for the NE. The public key is transferred to the SFTP file server whenever a software backup or restore procedure is performed on the NE.

You must enable SFTP on the NE before secured file transfer can be used.

**Procedure 165 To confirm the SSH client public key**

---

- 1 Navigate to the selected NE (see Section 18.2) and choose Infrastructure→OAM→SSH Client.
- 

- 2 Right-click SSH Client and choose Create→SSH Client.

Result: The Create SSH Client window opens and prompts you to configure the parameters for the new SSH client.

---

- 3 Enter a client name.
- 

- 4 Click Next.

Result: The second Create SSH Client window prompts you to configure the parameters for the new SSH client.

---

- 5 Enter a public key and the key length.
- 

- 6 Click Finish.
-

---

Result: The SSH client public key is confirmed.

---

## 26.4 Configuring the SSH server

Use this procedure to configure the SSH server.

### Procedure 166 To configure the SSH server

- 
- 1 Navigate to the NE and choose Infrastructure→OAM→SSH Server.

---

  - 2 Expand SSH Server and choose an existing SSH server.  
Result: The Object Details view opens and displays the SSH server parameters.

---

  - 3 Configure the parameters.

---

  - 4 Click the Apply icon (✓) to save the configurations.
- 

### Procedure 167 To configure the SSH system parameters

Perform this procedure to configure the SSH system parameters.

- 
- 1 Navigate to the NE and choose Infrastructure→OAM→SSH System Parameters  
Result: The Object Details view opens and displays the SSH system parameters.

---

  - 2 Configure the parameters. See Table 60 to configure the SSH system parameters.

**Table 60** SSH system parameters

---

Parameter	Description
SFTP Client User Name	Indicates the SFTP client username on the NE.
Server applications	Indicates the server applications on which the SFTP client details are applicable.
SFTP Client Password	Indicates the SFTP client password.
Re-Type SFTP Client Password	Enter the SFTP client password again.

---

**3** Click the Apply icon () to save the configurations.

---

---

# 27 RADIUS authentication

## 27.1 Overview

### 27.2 Configuring RADIUS authentication on the NE

## 27.1 Overview

IP networks commonly use RADIUS servers to help manage user authentication, service accounting, and personalized on-demand service settings. RADIUS provides a standardized method of information exchange between a device that provides network access to users (RADIUS client) and a device that contains authentication and profile information for the users (RADIUS server). The NE supports RADIUS for both layer 2 and layer 3 forwarding.

When RADIUS user authentication is enabled on the NE, the NE verifies that TL1 and CLI local and standalone cut-through sessions force and allow TL1 and CLI users to log in to the system with a valid RADIUS username and password.

When you configure the authentication and accounting servers, you can set the priority in which the server is accessed. The creation of the accounting server is optional. At the minimum, you need to create one RADIUS policy and at least one server for the policy. A policy contains a list of authentication servers and optional accounting servers. Although you can create multiple policies, you only need one to associate it to the NE.

The VRF attribute for the RADIUS authentication server, accounting server, dynamic authorization client, and domain must be created before it can be selected during server creation.

The NE uses local database authentication by default. You must configure the NE to use RADIUS authentication in the security settings. The change goes into effect after the server is restarted. See the *5520 AMS Administrator Guide* for information about how to configure the authentication security settings.



**Caution** — If your RADIUS server is not reachable or your configuration is wrong, you must revert back to the database authentication resource using the `ams_switch_authentication_local.sh` script. Otherwise, you will not be able to log back in to the system.

## 27.2 Configuring RADIUS authentication on the NE

Use the following procedures to configure RADIUS authentication on an NE.

---

**Procedure 168 To view RADIUS system parameters**

- 
- 1 Navigate to the NE and choose Infrastructure→Authentication→Radius.
  - 2 Choose Radius System Parameters or, if available on your NE, Radius System Parameters SHUB.  
Result: The Object Details view for Radius System Parameters opens.
- 

**Procedure 169 To create a RADIUS authentication server**

- 
- 1 Navigate to the NE and choose Infrastructure→Authentication→Radius→Auth Servers.
  - 2 Right-click Auth Servers and choose Create→Radius Auth Server.  
Result: The Create Radius Auth Server window opens and prompts you to configure the parameters.
  - 3 Enter a value in the Server field, or use the default number provided. The default number is the next available server number.
- 



**Note** — If you have entered a value manually and you need to change it to use the next available number, click Auto to generate a number automatically.

- 
- 4 Click Next.  
Result: The second Create Radius Auth Server window opens and prompts you to configure the parameters.
  - 5 Configure the RADIUS authentication server parameters.
  - 6 Click Finish.
-

---

**Procedure 170 To create a RADIUS accounting server**

- 
- 1 Navigate to the NE and choose Infrastructure→Authentication→Radius→Accounting Servers.

---

  - 2 Right-click Accounting Servers and choose Create→Radius Acc Server.  
  
Result: The Create Radius Acc Server window opens and prompts you to configure the parameters.

---

  - 3 Enter a value in the Server field, or use the default number provided. The default number is the next available server number.



**Note** — If you have entered a value manually and you need to change it to use the next available number, click Auto to generate a number automatically.

- 
- 4 Click Next.  
  
Result: The second Create Radius Acc Server window opens and prompts you to configure the parameters.

---

  - 5 Configure the RADIUS accounting server parameters.

---

  - 6 Click Finish.
- 

**Procedure 171 To create a RADIUS dynamic authorization client**

- 
- 1 Navigate to the NE and choose Infrastructure→Authentication→Radius→Dynamic Authorization Clients.

---

  - 2 Right-click Dynamic Authorization Clients and choose Create→Radius Dyn Auth Client.  
  
Result: The Create Radius Dyn Auth Client window opens and prompts you to configure the parameters.

- 
- 3 Enter a value in the Server field, or use the default number provided. The default number is the next available server number.



**Note** — If you have entered a value manually and you need to change it to use the next available number, click Auto to generate a number automatically.

- 
- 4 Click Next.

Result: The second Create Radius Dyn Auth Client window prompts you to configure the parameters for the dynamic authorization client.

- 
- 5 Configure the RADIUS dynamic authorization client parameters.

- 
- 6 Click Finish.
- 

## Procedure 172 To create a RADIUS policy and a corresponding server set

- 
- 1 Navigate to the NE and choose Infrastructure→Authentication→Radius→Policies.

- 
- 2 Right-click Policies and choose Create→Radius Policy.

Result: The Create Radius Policy window opens and prompts you to configure the parameters.

- 
- 3 Enter a value in the Policy field, or use the default number provided. The default number is the next available server number.



**Note** — If you have entered a value manually and you need to change it to use the next available number, click Auto to generate a number automatically.

- 
- 4 Click Next.

Result: The second Create Radius Policy Object Details window opens and prompts you to configure the parameters.

- 
- 5 Configure the RADIUS policy parameters.

- 
- 6 Click Finish.
-

- 
- 7 To create the corresponding server set on the policy, right-click on the policy you created, and choose Create→Radius Server Set.

Result: The Create Radius Server Set window opens.

- 
- 8 Enter a value in the Server Set field.

- 
- 9 Click Next.

Result: The second Create Radius Server Set window opens and prompts you to configure the parameters.

- 
- 10 Configure the parameters.

- 
- 11 Click Finish.

Result: The Radius Server Set appears under Radius Policy in the Network Tree.

---

### Procedure 173 To create a RADIUS domain

- 
- 1 Navigate to the NE and choose Infrastructure→Authentication→Radius→Domains.

- 
- 2 Right-click on Domains and choose Create→Radius Domain.

Result: The Create Radius Domain window opens and prompts you to configure the parameters.

- 
- 3 Enter a value in the Domain field, or use the default number provided. The default number is the next available server number.



**Note** — If you have entered a value manually and you need to change it to use the next available number, click Auto to generate a number automatically.

- 
- 4 Click Next.

Result: The second Create Radius Domain window opens and prompts you to configure the parameters.

---

5 Configure the RADIUS domain parameters.

---

6 Click Finish.

---

### Procedure 174 To create a RADIUS connection profile

---

1 Navigate to the NE and choose Infrastructure→Authentication→Radius→Radius Connection Profile.

---

2 Right-click Radius Connection Profile and choose Create→Radius Connection Profile.

Result: The Create Radius Connection Profile window opens and prompts you to configure the parameters.

---

3 Enter a value in the Profile Number field, or use the default number provided. The default number is the next available profile number.



**Note** — If you have entered a value manually and you need to change it to use the next available number, click Auto to generate a number automatically.

---

4 Click Next.

Result: The second Create Radius Connection Profile window opens.

---

5 Configure the parameters.

---

6 Click Finish.

---

---

**Procedure 175 To activate a RADIUS connection policy and associate it to the NE**

**Note** — You must create a RADIUS connection profile before performing this task. See Procedure [174](#).

- 
- 1 Navigate to the NE and choose Infrastructure→Authentication→Radius→Connection Policies.

---

  - 2 Right-click Connection Policies and choose Create→Radius Connection Policy.  
  
Result: The Create Radius Connection Policy window opens and prompts you to configure the parameters.

---

  - 3 Click Next.  
  
Result: The second Create Radius Connection Policy window opens and prompts you to configure the parameters.

---

  - 4 Choose a connection profile.

---

  - 5 Click Finish.
- 

**Procedure 176 To view the RADIUS user sessions**

- 
- 1 Navigate to the NE and choose Infrastructure→Authentication→Radius→User Sessions.

---

  - 2 View the entries for the authenticated RADIUS users.
-



# 28 Syslogs

- [28.1 Overview](#)
- [28.2 Viewing syslog system parameters](#)
- [28.3 Managing a syslog server](#)
- [28.4 Configuring the syslog rotation settings](#)
- [28.5 Viewing security log files](#)

## 28.1 Overview

Syslog provides a logging facility to capture and log or broadcast system secure access and configuration changes made using TL1, CLI, and authorization actions. You can also use the 5520 AMS to view and configure syslog parameters such as log rotation, server type, facility, and message severity.

Table 61 describes the supported syslog message types.

See the CLI Commands guide for your NE for more information about CLI syntax, and the Commands and Messages guide for your NE for more information about TL1 syntax.

**Table 61 Syslog messages**

Syslog message	Description
Authentication actions	Logs successful and unsuccessful login attempts. See the <i>5520 AMS Administrator Guide</i> for information about viewing sessions.
CLI configuration changes	Logs CLI configuration changes made by users. See Chapter 20 for information about CLI configuration.
TL1 configuration changes	Logs TL1 configuration changes made by users. See Chapter 20 for information about TL1 configuration.
CLI messages	Broadcasts messages to all active CLI terminals. See section 28.3 for information about configuring this parameter.
TL1 messages	Broadcasts messages to all active TL1 terminals. See Section 28.3 for information about configuring this parameter.
Tracing 1	Logs protocol tracing messages 1
Tracing 2	Logs protocol tracing messages 2
Tracing 3	Logs protocol tracing messages 3

(1 of 2)

Syslog message	Description
Video CDR	Logs video CDR messages
ipsecMsg	Logs ipsec security log messages
eqpt	Logs equipment events, for instance, protection switch

(2 of 2)

Authenticated users can also make configuration changes using TL1 and CLI.

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this chapter. See the *5520 AMS Administrator Guide* for more information.

## 28.1.1 Architecture

Syslog is a subsystem designed to handle system security logging. Other subsystems that have messages to be logged into the system log depend on the syslog subsystem.

The syslog subsystem uses the syslog protocol, which is a transport mechanism for sending event messages across an IP network. The receiving server is known as an “event message collector.” System events may be sent at the start or end of a process, or to transmit the current status of some condition or process in the operating system or application.

If SFTP is used as the file transfer protocol, the correct login credentials must be provided. You can set the username and password for the NE SFTP file server in the SNMP profile used by the NE. For more information, see the *5520 AMS Administrator Guide*.

When the 5520 AMS server acts the SFTP server, the credential for amssftp can be provided from the external SFTP server.

The 5520 AMS behaves as an SFTP /TFTP server when files are opened at the NE’s such as ISAM, ISAM FTTU etc. The 5520 AMS behaves as an SFTP/TFTP client when performing operations such as NBI, backup, syslog and so on.

## 28.2 Viewing syslog system parameters

Use the procedure in this section to view syslog parameters on an NE.

### Procedure 177 To view syslog system parameters

- 1 Navigate to the NE and choose Infrastructure→Syslog in the Network Tree.
- 2 Expand Syslog and choose Syslog System Parameters.

Result: The Object Details view opens and displays the syslog system parameters. See Table 62.

**Table 62 Syslog system parameters**

Parameters	Description
<b>General</b>	
Maximum Message Size	Displays the maximum syslog message size in bytes
<b>Storage Capacity</b>	
Free	Displays available disk space for syslogs in bytes
Used	Displays the amount of space used for syslogs in bytes
Reserved	Displays the space reserved for syslogs in bytes
Total	Displays the total free, used, and reserved space for syslogs in bytes

## 28.3 Managing a syslog server

Use the procedures in this section to:

- Create a syslog server.
- Create a syslog server message.

### Procedure 178 To create a syslog server

---

1 Navigate to the NE and choose Infrastructure→Syslog in the Network Tree.

---

2 Right-click Syslog and choose Create→Syslog Server.

Result: The Create Syslog Server window opens and prompts you to configure the parameters for the new syslog server.

---

3 In the Server Number field, use the default or enter a server index value for the new server. The value must be an integer from 1 to 64, inclusive.

---

4 Click Next.

Result: The second Create Syslog Server window opens and prompts you to configure the parameters for syslog server. Table 63 describes the parameters for a syslog server.

**Table 63 Syslog server parameters**

Parameter	Description
Name	Specifies the name of the syslog server
Type	Specifies the type of syslog server. See Table 64 for more information about server types.
File name	When the Type parameter is set to File, this parameter specifies the local filename used by the syslog server.
IP Address	When the Type parameter is set to UDP, this parameter specifies the IP address of the syslog server.
File Size [B]/Port Number	When the Type parameter is set to File, this parameter specifies the maximum file size of the log file. If the Type parameter is set to UDP, this parameter specifies the UDP port of the syslog server.

5 Configure the parameters. Table 64 describes the syslog server type options.

**Table 64 Syslog server type options**

Options	Description
File	Specifies that syslog messages are logged to local files
UDP	Specifies that syslog messages are sent to the IP address and UDP port number of the syslog server
All CLI	Specifies that syslog messages are sent to all CLI-type servers
All TL1	Specifies that syslog messages are sent to all TL1-type servers
All Users	Specifies that syslog messages are sent to all users

6 If the State panel is visible, choose Enabled or Disabled from the Logging drop-down menu.

7 Perform one of the following steps:

- Click Finish to create the syslog server and close the Create Syslog Server window.  
Result: The new syslog server is displayed in the Network Tree as Syslog Server *name*, where *name* represents the syslog server number and name.
- Click Back to change settings.

---

### Procedure 179 To create a syslog server message

The server message type represents the input format used to communicate with the server. You can create multiple messages for a syslog server message. See Table 61 for a list of syslog server messages.

---

1 Navigate to the NE and choose Infrastructure→Syslog in the Network Tree.

---

2 Right-click an existing syslog server and choose Create→Syslog Message.

Result: The Create Syslog Message window opens and prompts you to configure the parameters for the new message.

---

3 Choose a message type from the Message Type drop-down menu.



**Note** — The system appends the syslog number to the message type string.

---

4 Click Next.

Result: The second Create Syslog Message window opens and prompts you to configure the parameters for the new message.

---

5 Choose a syslog facility. In the Facility drop-down menu, choose an option for the method to send messages to the remote server.

---

6 Assign available severity filtering options to the message. In the Severity panel, choose an option for the message severity filtering.

Use the left-arrow and right-arrow to add and remove the options from the Available and Selected windows. Options in the Selected column will be applied and options in the Available column are not applied.

---

7 Click Finish to create the syslog server message.

Result: The new syslog message is displayed in the Network Tree by message type.

---

## 28.4 Configuring the syslog rotation settings

This section provides the steps to configure the rotation strategy between the two NE syslog files when the current log becomes full.

---

Only one backup file for the syslog is supported. For example, when the configured syslog file is “A1”, you can have only two log files—“A1” and “A2”, where A1 will have the latest messages.

You can initiate rotation from the GUI. System-initiated rotation occurs when the log file size exceeds the configured reserve size (see section 28.2 for information about viewing syslog parameters). During rotation, contents of the log file are moved to the backup file and logging continues in the main log file.

You can configure the syslog server to upload the syslog file to the remote server on rotation.

### Procedure 180 To configure the syslog rotation settings

- 
- 1 Navigate to the NE and choose Infrastructure→Syslog in the Network Tree.

---

  - 2 Expand Syslog and choose a Syslog Server.  
Result: The Object Details view displays the syslog server parameters.

---

  - 3 Configure the Upload Rotated Files to the Server parameter. The options are:
    - Yes: When the log file is rotated with an associated secondary log file, the primary log file is uploaded to the remote server. When you choose this option, you need to configure the Upload Path parameter.
    - No: When the log file is rotated, the contents are moved to the secondary log file. The contents of the secondary log file will be overwritten with the next rotation.

---

  - 4 Click the Apply icon (✓) to save the configuration.
- 

### Procedure 181 To rotate log files

Use this procedure to force a log file rotation from the GUI. If you need the log file to be uploaded to the remote server on rotation, see Procedure 180.

- 
- 1 Navigate to the NE and choose Infrastructure→Syslog→Syslog Server in the Network Tree.

---

  - 2 Choose the syslog server for which you need to rotate the file.

---

3 Right-click the syslog server and choose Actions→Rotate File.

---

4 Click Finish to confirm the rotation.

---

## 28.5 Viewing security log files

Security logs record authentication transactions, including successful and unsuccessful attempts to log in. A security log for an NE serves a similar purpose to the User Activity Log for the 5520 AMS.

Security logs can be viewed in the GUI.

Not all users can view security logs. If you need to view security logs, see your 5520 AMS administrator.

Table 65 describes the tasks required to create a security log.

**Table 65 Security log tasks**

Task	See
Create a syslog server with the Type parameter set to File	Procedure 178
Add a syslog server message to the server with the Message Type parameter set to Authentication Actions	Procedure 179
(Optional) Configure the syslog server to upload the file to the remote server when the file is rotated	Procedure 180

### Procedure 182 To view a security log

---

1 Navigate to the NE and choose Infrastructure→Syslog→Syslog Server in the Network Tree.

---

2 Right-click the server you need to view the log for and choose Actions→View File. Click Finish to confirm the action.

Result: The Result page window opens and displays the contents of the security log file.



**Note** — If the NE does not have a security log message file, the Result page window will display xFTP Authentication failed, where xFTP is the file transfer mode.

---

---

# 29 Monitoring NEs

## 29.1 Overview

### 29.2 Managing monitoring tasks

### 29.3 Viewing PM counter data

### 29.4 Using the table and graph views

### 29.5 Saving PM counter data

## 29.1 Overview

You can use the 5520 AMS to monitor NEs in the network, or collect historical data gathered by the NEs. Data gathered through monitoring or from an NE can be displayed as a graph or table, or saved to a CSV file, using the PM perspective.

NE data that is useful in monitoring includes traceable attributes, counters, and historical counters. You can view current NE data immediately using the PM perspective, or create a monitoring task to gather data over time for later viewing.

This chapter refers to attributes and counters that can be monitored by the 5520 AMS as PM counters. A PM counter is a metric or attribute of an NE that may change over time and can be traced or logged, for example, bitrate or temperature.

Current data for PM counters is displayed in the Object Monitoring view. You can also start monitoring tasks on PM counters to help diagnose problems in the network.

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this chapter. See the *5520 AMS Administrator Guide* for more information.

### 29.1.1 Traceable attributes

A traceable attribute is any attribute specific to the equipment for which the value can be measured. You can monitor the evolution of a traceable attribute over a period of time (for example, the operational state or port egress rate of a port) by creating a monitoring task for the attribute.

---

## 29.1.2 Counters

A counter is an attribute that is regularly updated by the NE at a specific interval - usually every 15 minutes or 24 hours. You can create a monitoring task to record counter data reported by the NE.

## 29.1.3 Historical counters

Some NEs record counter data automatically, generally storing the previous 24 to 48 hours of information on the NE (for example, a counter with a 15-minute polling interval may store the previous 96 poll results). This data can be helpful in troubleshooting an NE when a monitoring task has not been created on the 5520 AMS to gather data. The 5520 AMS can access and display the data on the NE as a historical counter. See the appropriate NE documentation for information about counters collected by the NE. See section 29.3 for information about viewing historical data in the 5520 AMS.

Historical data is usually collected less often, and so is less precise, than data collected using a monitoring task, but historical data is always available.

## 29.2 Managing monitoring tasks

A monitoring task is a task created to monitor changes in one or more PM counters or traceable attributes. When you start a monitoring task, specify the polling interval and the duration of data collection. Monitoring tasks can be displayed in data view, created, suspended, resumed, restarted, saved to a .csv file, or deleted by you or an administrator.



**Note 1** — Monitoring tasks are not deleted when you terminate the client session.

**Note 2** — After a monitoring task is completed, the results are displayed at the bottom of the view. You can perform the following by right-clicking the menu of the task:

- Show in Data View
- Delete
- Suspend
- Resume
- Save as

The administrator configures the maximum number of monitoring tasks that a user can create and the maximum number of active monitoring tasks for a user. See the *5520 AMS Administrator Guide* for more information. The PM settings parameters apply to all users.

A monitoring task is local to the user who creates it. Only the user who creates a monitoring task can view and control the task (except for administrator users, who can view and control all monitoring tasks on the system).

A monitoring task, when active, can be displayed and plotted in real time. The data can also be saved to a .csv file.

A green arrow icon in the Status column for a parameter in the Object Monitoring view or the Global Monitoring view indicates that monitoring is in progress on the PM counter. For more information, see [29.2.1](#).

## 29.2.1 Monitoring views

The Object Monitoring view displays current data for PM counters and traceable attributes. From this view, you can start and control (suspend, resume, and delete) monitoring activities on the displayed counters and attributes.

The Object Monitoring view is displayed when you view PM counters. For information about the Object Monitoring view, see the Operations and Maintenance guide for the NE. The Object Monitoring view is also accessible from the Windows menu.



**Note** — The Global Monitoring view can fetch monitoring tasks only after pre-fetching is complete. After logging in, you need to wait until the 5520 AMS has completed pre-fetching metadata before you can view all monitoring tasks.

For a user with administrator privileges, the Global Monitoring view displays all monitoring tasks created by all users on the 5520 AMS. The administrator can control all monitoring tasks from this view. In the Global Monitoring view, a user without administrator privileges can view and control only the monitoring tasks created by that user.

The Global Monitoring view is the default view of the PM perspective. It can also be accessed from the Windows menu.



**Note** — The summary data at the bottom of the view may be truncated, if the view is sized very small. Double-clicking on the title tab allows the view to be quickly enlarged to see the summary. After the summary has been reviewed double-click on the title tab to reduce it to its original size. Alternatively, the view can be detached from the main window and resized appropriately. For more information on how to detach a view, see Procedure [26](#).

---

## 29.2.2 Starting monitoring tasks

When you start a monitoring task, you can limit the task duration. When the time expires, the task is automatically paused. You can also start a task that has no time limit.

Monitoring tasks for a selected NE or NE component in the Network Tree are displayed in the Object Data view. All of your monitoring tasks are displayed in the Global Monitoring view.

You can start monitoring tasks in the Object Monitoring view for a selected NE or NE component in the Network Tree. You can suspend, resume, and delete monitoring tasks from the Object Monitoring view or the Global Monitoring view.

You can configure the default values for the monitoring polling interval and the duration for which data is collected in the PM Settings Object Details view in the Administration perspective. In the Administration Tree, choose Configuration→PM→PM Settings. The Object Details view opens and displays the following parameters for which you can configure the default settings:

- Max. Monitors Per User
- Max. Active Monitors Per User
- Default Polling Interval
- Default for Time Duration
- Max. Monitored Records
- Page Size (Data View)
- Page Size (Global Monitoring View)

### Procedure 183 To start a PM monitoring task with indefinite data collection

- 
- 1 Show PM counters for an NE object, as described in Procedure [190](#).

---

  - 2 In the Object Monitoring view - Control tab, right-click PM counter and choose Start Monitoring.  
  
Result: The Start Monitoring window opens.

---

  - 3 Enter a polling interval in hours, minutes, and seconds.



**Note** — The default value is 5 seconds. You can configure the default value by configuring the Default Polling Interval in the PM Settings Object Details view in the Administration perspective. This default value is configured in seconds.

---

4 Select Manual Stop.

---

5 Click Finish.



**Note** — If it will not cause you to exceed the maximum active monitoring tasks per user, the monitoring task starts immediately. If you have already reached the maximum number of active monitoring tasks, you must suspend or delete another one of your active monitoring tasks before the new one can start.

---

### Procedure 184 To start a PM monitoring task with a specific stop time

---

1 Show PM counters for an NE object, as described in Procedure [190](#).

---

2 In the Object Monitoring view - Control tab, right-click PM counter and choose Start Monitoring.

Result: The Start Monitoring window opens.

---

3 Enter a polling interval in hours, minutes, and seconds.



**Note** — The default value is 5 seconds. You can configure the default value by configuring the Default Polling Interval in the PM Settings Object Details view in the Administration perspective. This default value is configured in seconds.

---

4 Click the Until option.

---

5 Click the Date/Time option.

Result: The Select Date/Time dialog opens.

---

6 Click the date and enter the time for data collection to stop.

---

7 Click Done.

---

8 Click Finish.



**Note** — If it will not cause you to exceed the maximum active monitoring tasks per user, the monitoring task starts immediately. If you have already reached the maximum number of active monitoring tasks, you must suspend or delete another one of your active monitoring tasks before the new one can start.

---

### Procedure 185 To start a PM monitoring task with a specific duration

---

1 Show PM counters for an NE object, as described in Procedure [190](#).

---

2 In the Object Monitoring view - Control tab, right-click PM counter and choose Start Monitoring.

Result: The Start Monitoring window opens.

---

3 Enter a polling interval in hours, minutes, and seconds.



**Note** — The default value is 5 seconds. You can configure the default value by configuring the Default Polling Interval in the PM Settings Object Details view in the Administration perspective. This default value is configured in seconds.

---

4 Click the For option.

---

5 Enter the duration of time (in hours, minutes, and seconds) for data collection to occur.

---

6 Click Finish.



**Note** — If it will not cause you to exceed the maximum active monitoring tasks per user, the monitoring task starts immediately. If you have already reached the maximum number of active monitoring tasks, you must suspend or delete another one of your active monitoring tasks before the new one can start.

---

---

## 29.2.3 Managing existing monitoring tasks

Use the following procedures to suspend, resume, restart, or delete a monitoring task.

### Procedure 186 To suspend or resume a PM monitoring task

You can suspend or resume a PM monitoring task from the Global Monitoring view or Object Monitoring view. An administrator for PM monitors can see monitoring tasks created by other users in the Global Monitoring view and can suspend or resume these tasks.



**Note** — A PM monitoring task that has reached its time duration for data collection will automatically be set to the completed state. At this point, you can change the state to restart PM monitoring tasks.

---

1 Perform one of the following steps:

- To open the Global Monitoring view, click Open Perspectives and choose PM.  
Result: The PM perspective opens and the Global Monitoring view is displayed.
- To open the Object Monitoring view, show the PM counters as described in procedure [190](#), then click Monitoring Tasks tab.

#### Suspend a PM monitoring task

---

2 To suspend a PM monitoring task in the Object Monitoring view or Global Monitoring view, right-click on the monitoring task, and choose Suspend.

#### Resume a PM monitoring task

---

3 To resume a PM monitoring task in the Object Monitoring view or Global Monitoring view, right-click on the monitoring task, and choose Resume.

---

### Procedure 187 To restart a completed PM Monitoring task

---

1 Navigate to the NE and to the object for which you need to show PM counters.

---

2 Right-click the NE object and choose Show→PM Counters.

---

3 Choose the PM counters in the Monitoring Tasks tab in the Object Monitoring view for which you need to restart the task which has been completed.

---

4 Right-click PM Counter and choose Restart.

---

---

Result: The Performance window is displayed.

- 
- 5 Select Yes to proceed with restarting the task.

Result: The Restart Attribute Monitoring window is displayed.

- 
- 6 Configure the parameters and click Finish.

Result: The task is restarted. Once the task is completed, the completed icon is displayed near the task and the status is also displayed at the bottom of the Object Monitoring View window.

---

### Procedure 188 To delete a completed PM Monitoring task

- 
- 1 Navigate to the NE and to the object for which you need to show PM counters.
- 
- 2 Right-click on the NE object and choose Show→PM Counters.
- 
- 3 Choose the Object Monitoring View tab or the Global Monitoring View tab. If at least one task is in the completed state, the Delete All Completed Tasks icon is enabled.
- i Select the completed task in the Object Monitoring View tab which you want to delete and click the Delete All Completed Tasks icon.
  - ii All completed tasks in the Global Monitoring View tab are deleted when you click the Delete All Completed Tasks icon.
- 
- 4 The Performance dialog box is displayed. Click Yes to confirm the deletion. The completed tasks are deleted from the page.



**Note 1** — In the Global Monitoring or Object Monitoring View, the Completed tasks for which the login user is authorized, gets deleted.

**Note 2** — In the Global Monitoring or Object Monitoring View, the user with the Admin role has rights to delete all Completed tasks.

---

### Procedure 189 To define filters in object monitoring view

You can create filters to view specific counters or traceable attributes. Only the counters specified in the filter are displayed under the Control tab of Object Monitoring View. You can define multiple filters but only one filter can be active.

Perform the following procedure to define filters in Object Monitoring view.

- 1 In the 5520 AMS menu, choose Window→ Show View → Other → Object Monitoring view.

Result: The Object Monitoring View opens.

- 2 Click the Filter icon () in the Object Monitoring view toolbar.

Result: The Filter Configuration window opens.

- 3 Perform the following steps to define a Simple filter.

- Choose Simple tab.
  - Enable the check boxes in the window that will be used to filter the counters in the Object Monitoring view.
  - Click Add or Remove buttons to select and remove the counters from the filter. You can select multiple counters from the selection window and click OK. Only the parameters which are not added to the filter is displayed in the selection list.
  - Configure the Monitoring Polling Interval and Monitoring Time Duration parameters.
  - To apply the filter, click OK.

- 4 Perform any of the following steps, as required. Click the Filter menu icon () , and choose any one of the following:

- Edit to edit the applied network filter. The filter configuration window opens. Perform step 3 to update the filter.



**Note 1** — When the category is not selected in the Filter Configuration window, then all the parameters are listed in the Object Monitoring view. And when the category is selected, only the parameters which are defined in the filter configuration are listed.

**Note 2** — If you select more than 20 parameters per category in the filter, a warning message “Cannot start monitoring for all the parameters in the same PM data view” is displayed in the Filter Configuration window.

- Clear to clear an active filter. When a filter is cleared, the Object Monitoring view displays all the counters. Clearing the filter does not delete it.
- Save to save a filter. You can save the filter as Public or Private.



**Note** — The creation of Public Filters is driven by a security function.

- Save as to save an existing filter as a new filter.
- Delete to delete a saved filter.

Result: The Object Monitoring View displays the parameters which are defined in the filter under Control tab.

You can view only the counters for the selected filter and the counters which are not selected in the filter appears disabled under Monitoring Tasks tab in Object Monitoring View.



**Note 1** — Alternatively, to clear an applied filter, click the Clear Active Filters icon (  ) beside the Filter Active field at the top of the Object Monitoring View window.

**Note 2** — You can view the PM counters for any existing filter in the Network Tree. Right-click the NE object and choose Show→ PM Counters→ <filter\_name>. The PM counters information is displayed for the selected filter in the Object Monitoring View.

## 29.3 Viewing PM counter data

PM counters are displayed in the Object Monitoring view. You can choose to display historical data for a counter or attribute, in table or graph format. You can view PM counter information on NE systems or on any object that processes traffic, such as racks, subracks, slots and ports.



**Note 1** — The “-” value in a table cell indicates that there is no PM value returned by the NE for that particular interval.

**Note 2** — You must select only twenty attributes in Object Monitoring View for monitoring so that the PM counter data is displayed correctly in Table view. To view PM counters in Table view, see Procedure [190](#).

### Procedure 190 To show table data for a real-time PM counter

- 1 Navigate to the NE and to the object for which you need to show PM counters.
- 2 Right-click the NE object and choose Show→PM Counters.
- 3 Choose the PM counters in the Object Monitoring view for which you need to view the data.
- 4 Right-click PM Counters and choose Start Monitoring.  
Result: The Start Monitoring window opens for each counter you selected.
- 5 Configure the parameters and click Finish.
- 6 Click the Monitoring Tasks tab to view the created tasks.
- 7 Right-click the selected task and choose Show in Data View.

---

Result: The PM Table View tab opens. The retrieved data is displayed in a table.



**Note 1** — To toggle between showing data in absolute, or deltanmode, click Change Mode icon in the top right corner of the PM Table View tab. For more information about these modes, see Section [29.1](#).

**Note 2** — You can choose up to 20 attributes to view in the PM Table View.

---

### Procedure 191 To show graph data for a real-time PM counter

- 
- 1 Navigate to the NE.

---

  - 2 Navigate to the object for which you need to show PM counters.

---

  - 3 Right-click the NE object and choose Show→PM Counters.

---

  - 4 Right-click a selected task and choose Show in Data View.

Result: The PM Table View tab opens. The retrieved data is displayed in a table.



**Note** — To toggle between showing data in absolute, or delta mode, click Change Mode icon in the top right corner of the PM Table View tab. For more information about these modes, see Section [29.1](#).

- 
- 5 Click Change View in the top right corner of the PM Table View tab.

Result: The PM Graphical View tab opens.

- 
- 6 Click the Line or Bar option.
- 

### Procedure 192 To show table data for a historical PM counter

- 
- 1 Navigate to the NE.

---

  - 2 Navigate to the object for which you need to show PM counters.

---

  - 3 Right-click the NE object and choose Show→PM Counters.

---

Result: Traceable, 15 Minutes, and 1 Day PM counters are displayed.

- 
- 4 Right-click 15 Minutes or 1 Day PM counter in the Object Monitoring view and choose Show NE History.

Result: The PM Table View tab opens. The retrieved data for the PM counter is displayed in a table.

---

### **Procedure 193 To show graph data for a historical PM counter**

- 
- 1 Navigate to the NE.

- 
- 2 Navigate to the object for which you need to show PM counters.

- 
- 3 Right-click the NE object and choose Show→PM Counters.

- 
- 4 Right-click a PM counter in the Object Monitoring view and choose Show NE History.

Result: The PM Table View tab opens. The retrieved data for the PM counter is displayed in a table.

- 
- 5 Click Graph in the top right corner of the PM Table View tab.

- 
- 6 Select the Single Graph or Multiple Graph option.

- 
- 7 Select the Line Graph or Bar Graph option.
- 

## **29.4 Using the table and graph views**

You can display numeric and non-numeric data for PM counters and traceable attributes in the table or graph view.

The default view for showing data is the PM Table view, which displays data in a table of time-stamped entries. Figure 6 shows the PM Table view.



## 29.4.1 Absolute, delta, and rate mode

You can use the Absolute, Delta, and Rate modes to show actual and differential data for counter values that can increment and decrement.

- The Absolute mode shows the actual counter values that the PM application collects from the NE.
- The Delta mode shows the change value, or delta, between each of the counter values that are collected.
- The Rate mode divides the delta by the polling frequency of the counter value, producing a rate of change since the data was last collected.

Certain modes are best used with certain kinds of data. For example, a counter measuring bytes sent is best viewed using rate mode, otherwise the graph simply displays a large number that grows larger with little context. In contrast, a direct bitrate counter is best viewed in absolute mode.

For examples of how these views display data, see [Table 66](#).

**Table 66** Absolute, Delta, and Rate modes (example)

Absolute mode (15-minute counter)	Delta mode	Rate mode (per second)
5000	—	—
5100	100	0.11
5150	50	0.055
5160	10	0.01
5169	9	0.01
5189	20	0.022
5200	11	0.012
5170	-30	-0.033
5100	-70	-0.076
5050	-50	-0.055
0	-5050	-5.61
10	10	0.01
15	5	0.005

## 29.4.2 Using graph views

You can adjust the format of the information displayed in a graph view using the buttons on the PM Graphical View tab. Table 67 describes the buttons and their functions.



**Note** — Graphs show either numerical or nonnumerical data but do not combine the two.

**Table 67** PM Graphical View buttons

Icon	Name	Function
	More properties	Opens the More Properties window, which you can use to configure the color of the variables that appear in the graph, and the ranges of the values displayed on the axis.
	Save	Saves data to a file
	Display Mode	Opens a drop-down menu that you can use to choose a display mode for the graph. The graph can be displayed as an area, line, or bar graph.
	Display Mode Area	Changes the displayed graph to an area graph.
	Display Mode Bar	Changes the displayed graph to a bar graph.
	Display Mode Line	Changes the displayed graph to a line graph.
	Change mode	Opens a drop-down menu that you can use to choose a data mode for the graph. The graph can be displayed in absolute, delta, or rate mode.
	Zoom in	Sets the data mode to Static and magnifies the displayed segment of the graph by a factor of two.
	Zoom out	Sets the data mode to Static and expands the displayed segment of the graph by a factor of two.

(1 of 2)

Icon	Name	Function
	Show All Data	Displays all available data in the graph. The graph expands to include new data.
	Show Last Data	Displays the latest 20 samples in the graph. The graph scrolls as new data arrives, always displaying 20 samples.
	Static	Displays the currently-displayed data in the graph, and the graph does not update when new data arrives.
	Align All Graphs	Applies the data, display, and zoom level of the current graph to all displayed graphs.
	Print	Prints the selected graph type. The graph can be printed as an area, line, or bar graph.

(2 of 2)

## 29.5 Saving PM counter data

You can save the retrieved data for a PM counter to a .csv file. You can also save data from the PM Table view (default view) and the PM Graphical View.

Regardless of whether you save from Absolute, Delta, Rate, or Relative view, it is always the Absolute values that are saved. Although the data view only shows the 20 most recent values, all data that is collected during the 8 hours prior to saving or since the start of the PM collection (whichever is less) is saved.

### Procedure 194 To save PM counters

---

1 Show table data for PM counters, as described in Procedure [190](#).

---

2 Click the View Menu icon (  ) and choose Save as CSV.

Result: The Save As dialog opens.

---

3 Enter a filename, choose a location for the file and click Save.

Result: The .csv file is saved. See Procedure [56](#) and Procedure [57](#) and the *5520 AMS Administrator Guide* for more information.

---

**Procedure 195 To copy PM counter data**

---

- 1 Show table data for PM counters, as described in Procedure [190](#).
  - 2 Perform one of the following steps:
    - To copy all records in the current page, click the View Menu icon (  ), and choose Copy→Page.
    - To copy all records in the table, click the View Menu icon (  ), and choose Copy→All.
    - To copy selected rows in the table, choose the rows to be copied, right-click and choose Copy.
  - 3 Paste the copied rows to a file.
-



---

# 30 Templates

## 30.1 Template overview

## 30.2 Template management operations

## 30.3 Template NE operations

## 30.4 Operations on multiple templates

## 30.5 Alarm templates

### 30.1 Template overview

The 5520 AMS provides profile templates, alarm templates, and VLAN templates that allow you to configure profile objects consistently for different NE types and releases. You can also customize the information that applies to a specific NE type and release.

A profile template is a set of parameters that allow the 5520 AMS to process information about NEs. Templates are organized in the Template Tree by template domain and template type. The template type defines the object the template will configure, for example, a Bonding Group Profile template will configure a Bonding Group profile on the NE.

Each NE type is associated with a specific set of templates. For information about the templates supported by an NE type, see the Operations and Maintenance guide for the NE.

You can use the 5520 AMS to perform the following template-related tasks:

- Template management operations in the Templates perspective, see Section 30.2.
- Template NE operations in the Network perspective, see Section 30.3.

Additional template operations are available with certain 5529 Enhanced Applications. For more information, see the documentation for the application.

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this chapter. See the *5520 AMS Administrator Guide* for more information.



**Note** — The maximum number of threads for the Template application must not exceed 30.

## 30.1.1 Versions

Each template in the Template Tree consists of a set of versions. Template versions allow you to configure NEs with different configurations of the same service. For example, Version 1 and Version 2 of a template can be identical except for the value of one parameter. You can deploy either version of the template, depending on the value you need for that parameter.

## 30.1.2 NE-specific templates

Each template version consists of a set of NE-specific templates. NE-specific templates include the parameters required to configure the object for each NE type and release.

You can create multiple templates of the same template type, containing different sets of NE-specific templates. For example, you can create a template for each NE type in your network, and each template can contain an NE-specific template for each release of the NE type.

When you create a new version of a template, the new version contains copies of all the NE-specific templates that were available in the source version. You can modify the NE-specific templates individually.

## 30.1.3 Template presence in NEs

You can verify that an object matching a template exists in the selected NE. The state of the comparison of template to object (total number of templates present in NE, total number of templates absent in NE, total number of partial templates in NE) is displayed in the results window.

## 30.1.4 Template user functions

To be able to perform template-related tasks, users need to have roles with the appropriate functions. The 5520 AMS defines the template user functions described in Table 68.

For more information about user functions, see the *5520 AMS Administrator Guide*.

**Table 68**      **Template user functions**

Function	Operation description
Template - Apply	All template NE operations in the Network perspective, except discovery

(1 of 2)

Function	Operation description
Template - Discover	Template discovery operation in the Network perspective
Template - Edit	All template management operations in the Templates perspective
Template - View	Viewing templates in the Templates perspective

(2 of 2)

## 30.2 Template management operations

Use the procedures in this section to manage templates in the Templates perspective.

### Procedure 196 To create a template



**Note** — When you create a template, you can choose to provide some values during deployment, instead of at template creation. For example, you can choose to provide VLAN IDs during deployment, instead of when you create a VLAN template. To provide the values during deployment, select the check box for the 'Provide the unique identifier during deployment' parameter.

Use this procedure to create a template. An NE-specific template is also created.

- 1 Click the Open Perspective icon () and choose Templates.
- 2 In the Template Tree view, choose Templates → *Template Domain* → *Template Type*.
- 3 Right-click a template type and choose Create Template.  
Result: The Create Template window opens.
- 4 Configure the parameters and click Finish. In case of reference to other template types, the template to be linked needs to be created so it can be selected using the Browse button, and associated with this template.  
Result: The template appears in the Template Tree view. A default Version 1 of the template is also created.
- 5 To rename a template, right-click the template and choose Rename.

---

## 30.2.1 Template behavior

While referencing a different template or a linked template, you can either select the template name or the specific template version of the template to be linked in the Select <Linked\_Template> dialog. To select a specific template version, enable the Show Template Versions check box in the Select <Linked\_Template> dialog. The template versions associated with the template name to be linked are listed. Select the specific template version that you want to link to this template and click OK. If you select the template name only and not a specific template version of the template to be linked, the template is linked to the latest template version that is in the Template State 'Released'. In this case, to identify the specific template version that is linked:

- Click Go To in the Template Object Details view to navigate to the specific template version that is linked dynamically.
- Click Show Details in the Select <Linked\_Template> dialog to open the object details view of the specific template version that is linked dynamically. If the version is selected, then it displays the details of the selected version. If the version is not selected, then by default the details of the latest version is displayed.

### Procedure 197 To create an NE-specific template

Use this procedure to add an NE-specific template to an existing template.

- 
- 1 In the Template Tree view, choose Templates→*Template Domain*→*Template Type*→*Template*→*Version*.

---

  - 2 Right-click the version and choose Create NE Specific Template.  
Result: The Create *Template Type* window opens.

---

  - 3 Choose the NE type and release from the list and click Next.  
Result: The second Create *Template Type* window opens.

---

  - 4 Configure the parameters and click Finish. In case of reference to other template types, the template to be linked needs to be created so it can be selected using the Browse button, and associated with this template.



**Note** — For templates that have a VLAN or Domain parameter, enter the VLAN or domain name, not the ID.

The NE-specific template appears in the Template Tree view.

---

---

**Procedure 198 To modify a template**

Use this procedure to modify a template.

- 
- 1 In the Template Tree view, choose *Templates → Template Domain → Template Type → Template → Version → NE-specific template*.

---

  - 2 Choose the *NE-specific template*.  
Result: The Object Details view opens.

---

  - 3 Modify the parameters and click the Apply icon (✓) to save the changes. In case of reference to other template object types, the template to be linked needs to be created so it can be selected using the Browse button, and associated with this template.
- 

**Procedure 199 To create a new template version**

Use this procedure to create a new template version, containing copies of all the NE-specific templates that were available in the source version, if the NE-specific template can be modified in the NE.

- 
- 1 In the Template Tree view, choose *Templates → Template Domain → Template Type → Template → Version*.

---

  - 2 Right-click the version and choose *Copy to New Version*.  
Result: The Copy to New Version Result window opens, showing the status of each NE-specific template.

---

  - 3 Click OK. If at least one of the NE-specific templates could be copied to a new version, the new version appears under the template in the Template Tree view.
-

**Procedure 200 To clone a template**

Use this procedure to clone a template.

- If you clone a template, a template with all the template versions of the selected template is created.
- If you clone an NE-specific template, a template version with only one NE-specific data is created. That is, a new template is created with a template version 1 containing the new NE-specific template.
- If you clone a template version, a template with all the NE-specific data of the selected version is created.

In the Template Tree view, perform one of the following:

- To clone a template from an existing template:
  - Choose Templates →Template Domain→Template Type→Template.
  - Right-click the template and choose Clone Template.  
Result: The Clone Template window opens.
  - Enter a unique name for the new template in the Template Name field.
  - Click Add next to the Template Group field to select the template group to which you want to add the template.
  - Click Finish.

Result: A new template appears for the selected template type in the Template Tree view, with all the versions of the original template.

- To clone a template from a selected NE-specific template:

- Choose Templates →Template Domain→Template Type→Template→Version→NE-specific template.
- Right-click the NE-specific template and choose Clone.

Result: The Create a new Template Type window opens.

- Enter a unique name for the new template in the Template Name field.
- Choose the NE Type and release from the NE Type/Release list and click Next.

Result: The second Create a new Template Type window opens.

- Configure the parameters and click Finish. In case of reference to other template types, the template to be linked needs to be created so it can be selected using the Browse button, and associated with this template.

Result: A new template appears for the template type in the Template Tree view, with Version 1 containing the new NE-specific template.

- You can modify the template version, if versioning is supported by the Template type.

- To clone a template from an existing template version:

- Choose Templates →Template Domain→Template Type→Template→Version.
- Right-click the selected template version and choose Clone Template.

Result: The Clone Template window opens.

- Enter a unique name for the new template in the Template Name Field.
- Click Add next to the Template Group field to select the template group to which you want to add the template.
- Click Finish.

Result: A new template appears for the selected template type in the Template Tree view, with Version 1 including all the NE-specific templates of the original template version.

---

---

## Procedure 201 To deploy or undeploy a template or template group

Use this procedure to choose NEs and templates or template groups for deployment or undeployment.



**Note 1** — When deploying bulk templates, you must use Template Groups for limiting the network usage on the application servers.

**Note 2** — The Alarm Filter, Alarm Severity Threshold, and Alarm Severity Assignment templates cannot be undeployed.

**Note 3** — The Template Group deployment will be deployed when start supervision is successful and when deployment is enabled.

---

1 In the Template Tree view, choose one of the following options:

- Templates → *Template Domain* → *Template Type*
- Groups → *Template Group*

---

2 Right-click a Template Type or Template Group version, and choose one of the following options:

- Deploy—the Template Deployment window opens.
- Undeploy—the Template Undeployment window opens.

The Deploy and Undeploy options are also available when you right-click the Template or Version:

- Templates → *Template Domain* → *Template Type* → *Template*
- Templates → *Template Domain* → *Template Type* → *Template* → *Version*
- Groups → *Template Group* → *Template Group Version*

Result: The Template Deployment window is displayed.

---

3 In the Selected NEs area, click Add.

Result: The NE Selection window opens.

---

4 Perform the following steps to select NEs:

- i Click Select NEs.
- ii Use the filters in the Filters panel and click Build List.

---

Result: The NEs appear in the list on the right side of the window.



**Note** — In the Name field, you can enter part of the name or use the asterisk (\*) as a wildcard. Enter one string at a time.

- iii Choose NEs from the list and click OK.

Alternatively, you can click Select NE Groups and choose a group.

The NE Selection window closes and the selected NEs or groups appear in the Selected NEs panel of the Template Deployment window. To remove any of the selected NEs or NE groups, choose the NE or group in the Selected NEs panel, and click Remove.

- 
- 5 In the Selected Templates/Groups area, click Add.

Result: The Template Selection window opens.

- 
- 6 Perform the following to select templates:

- i Click Select Templates.
- ii Use the filters in the Filters panel and click Build List.

Result: The selected templates appear in the list on the right side of the window.



**Note** — In the Name field, you can enter part of the name or use the asterisk (\*) as a wildcard. Enter one string at a time.

- iii Choose templates from the list and click OK.

Alternatively, you can click on Select Groups and choose a group.

The Template Selection window closes and the selected templates or groups appear in the Selected Templates/Groups panel of the Template Deployment window. To remove any of the selected templates or groups, choose the template or group in the Selected Templates/Groups panel, and click Remove.

- 
- 7 Click Finish.

Result: The latest template version (which is in the Template State 'Released') of the selected templates is deployed on the selected NEs. In case the template to be deployed has a reference to other template types, the latest template version (that is also in the Template State 'Released') of the linked template is deployed on the NE. If none of the linked template versions are in the Template State 'Released', the linked template is not deployed, and the following error is reported: *Linked template not found*.

---

---

## Procedure 202 To delete a template

Use this procedure to delete a template.



**Note 1** — A template that is deployed on an NE cannot be deleted, if the template is being tracked.

**Note 2** — When a linked template is specified only by a template name and if the user is trying to delete any specific Linked Template Version, the following instances may result:

- If the Template Version being deleted is tracked for any NE, then deletion is not allowed.
- If the Template Version being deleted is the only version for that template, then deletion is not allowed.

---

1 In the Template Tree view, choose one of the following options:

- Templates → *Template Domain* → *Template Type* → *Template* → *Version* → *NE-specific template*
- Templates → *Template Domain* → *Template Type*
- Templates → *Template Domain* → *Template Type* → *Template*
- Templates → *Template Domain* → *Template Type* → *Template* → *Version*

---

2 Right-click your selection, and choose Delete.

Result: The Template Delete window opens.

---

3 Choose one or more templates from the Selected Templates list. If a template is referenced by other templates, then you cannot delete that template, unless you remove the link to the template. You can delete the template version irrespective of the template state only if that template version is not the only available template.

---

4 If you need to add more templates to the list, perform the following:

i Click Add.

Result: The Template Selection window opens.

ii Use the components of the Template Selection window to choose templates or template groups, and click OK.

To remove any of the selected templates or template groups, choose the template or template group in the Selected Templates/Groups list, and click Remove.

---

5 Click Finish.

---

---

## 30.2.2 Groups

Use the Groups directory to store template groups that you create for specific deployment purposes. You can assign a template to a group from the Templates directory and from the Network perspective when you discover the template. A template group is a logical template set that you can deploy at the same time to one or more NEs. The same template can belong to one or more template groups. The management of the templates and template groups is done independently.

A template group contains a Version 1 object. The template group Version supports the deploy, undeploy, and create open arguments header file operations.

The data structure of template groups is identical to that of the elements in the Templates directory. However, there are fewer operations that you can perform on groups: Delete, Rename, Merge, Deploy, and Undeploy. The Merge operation combines the templates that are part of two groups in a new group.

The following considerations apply to template groups:

- A template group needs to be already created before you can add templates to it.
- A template can be discovered, created, and deployed without being part of a group.
- A template that was added to a group can still be discovered and deployed separately.
- If a template has several versions, only one version can be added to a template group because only one version can be downloaded to an NE.

### Procedure 203 To create a template group

Use this procedure to create a template group.

---

1 From the Template Tree, choose Groups.

---

2 Right-click Groups and choose Create Template Group.

Result: The Create Template Group window opens.

---

3 Configure the parameters and click Finish.

Result: The group appears in the Groups directory.

---

---

## Procedure 204 To add a template to a group



**Note** — The maximum number of templates that can be added to a template group is configurable. See the *5520 AMS Administrator Guide* for more information.

Use this procedure to add a template to a group.

---

1 In the Template Tree view, choose *Templates → Template Domain → Template Type*.

---

2 Right-click the selected Template Type and choose *Add to Group*.

Result: The *Add Template Version to Group* window opens.

The *Add to Group* option is also available when you right-click *Templates → Template Domain → Template Type → Template*, or *Templates → Template Domain → Template Type → Template → Version*.

---

3 Add the template to the group:

i Choose the template from the *Selected Templates/Groups* list.

You can choose more than one template from the list. Click *Add* to open the *Template Selection* window. See [6](#), for more information. Click *Remove* to remove templates from the list.

You can choose more than one template from the list. Click *Add* to open the *Template Selection* window, and add more templates to the list. Click *Remove* to remove templates from the list.

ii Choose one or more groups from the *Groups* list.

Click *Add* to open the *Select Template Group* window. You can choose more than one group from the list. Enter the name of the group in the filter text box. Template groups that match the filter are displayed. Click *Create* to create a template. See [203](#) to create a template group. Click *Remove* to remove template groups from the list.



**Note** — If the number of templates that match the search criteria exceeds the number of templates to be displayed, a search option is displayed. A warning message is also displayed indicating that there are more entries and partial results are being displayed.

iii Click *Finish*.

Result: The template appears in the group.

---

---

## Procedure 205 To rename a template group

Use this procedure to rename an existing template group.

---

1 In the Template Tree view, choose *Groups*→*Template Group*.

---

2 Right-click the group that needs to be renamed and choose *Rename*.

Result: The *Rename Group* window opens.

---

3 Modify the group name and click *OK*.

Result: The renamed group appears in the Template tree. You can rename a group even if it is deployed on an NE.

---

## Procedure 206 To clone a template group

Cloning a template group allows to create a new template group having all the templates of the selected template group being cloned. The templates in the new template group are the templates present in the template group being cloned.

Perform this procedure to clone a template group.

- If you clone a template group, a new template group is created with all the template group versions of the original template group.
- If you clone a template group version, a new template group is created including a template group version 1 containing templates from the referenced template group version.

In the Template tree view, perform one of the following:

- To clone a template group from an existing template group:
  - Choose *Groups*→*Template Group*.
  - Right-click the group that needs to be cloned and choose *Clone*.  
Result: The *Clone Template Group* window opens.
  - Enter a unique name for the new template group in the *Name* field.
  - Configure the other parameters and click *Finish*.

Result: A new template group appears in the Template Tree view, with all the template group versions of the original template group.

- To clone a template group from an existing template group version:

- Choose *Group*→*Template Group*→*Template Group Version*.
- Right-click the selected template group version and choose Clone.

Result: The Clone Template Group window opens.

- Enter a unique name for the new template group in the Name Field.
- Configure the other parameters and click Finish.

Result: A new template group appears in the Template Tree view, with only the selected template group version from the referenced template group.

- The new Template Group will be created with the default Template State that is defined in the Administration Perspective. The description of the source Template Group is shown by default. The operator can modify the description field.



**Note 1** — A cloned Template Group Version is meant to be used for deployment on different NEs than its origin Template Group. Multiple template groups with the same reference templates cannot be deployed to the same NE. For example, Template Group Version x is deployed to NE 1, Template Group Version y (which is cloned from Template Group Version x) is deployed to NE 2. Template Group Version x and y cannot be deployed to the same NE 1.

**Note 2** — A Template Group is release-independent. This means that an operator is not supposed to create a Template Group for a certain NE release and another Template Group for another NE release for the same template definition. When multiple NE releases need to be supported for same logical configuration entity, then this can be achieved within the same Template Group. When an NE specific release template data is added to a template, it will automatically be added to the template groups which have reference to that template.

## Procedure 207 To create a new template group version

Use this procedure to create a new template group version.

---

1 In the Template Tree view, choose Groups.

---

2 Right-click the group and choose Create New Group Version.

Result: The Create A New Template Group Version window opens.

---

3 Configure the parameters and click Finish.

---

Result: An empty template group version is created and appears under the selected group in the Template Tree view. You can add templates to the template group. See Procedure 204 to add templates to the group.

---

### **Procedure 208 To modify a new template group version**

Use this procedure to modify the description of a template group version.

---

1 In the Template Tree view, choose *Groups → Template Group → Template Group Version*.

---

2 Right-click the template group version and choose *Modify*.

Result: The Modify Template Group Version window opens.

---

3 Modify the parameters and click *Finish*.

Result: The description of the template group version is modified.

---

### **Procedure 209 To delete a template group or template group version**

Use this procedure to delete a template group or a template group version.

---

1 Perform one of the following:

- To delete a template group, in the Template Tree view, choose *Groups*.
  - To delete a template group version, in the Template Tree view, choose *Groups → Template Group → Template Group Version*.
- 

2 Right-click the template group or the template group version and choose *Delete*.

---

Result: The Confirm Deletion dialog opens with the message: Are you sure you want to delete the selected groups?

- 
- 3 Optionally, select the Delete Template Versions that are not used and not deployed anymore check box.



**Caution** — This option deletes the following, upon confirmation of the template group or version deletion:

- Unused templates in the group
- Unused linked templates
- Template Group and version

Click Yes to confirm the deletion.

Result: The Delete Template Group Job window opens showing the progress of the deletion and listing the template group or template group versions deleted in the Actions Details window.

---

## Procedure 210 To remove a template from a group

Use this procedure to remove a template from a group.

- 
- 1 From the Template Tree view, choose Groups.

Result: The list of Groups that are created will be displayed.

- 
- 2 Choose *Template Group* → *Template Group Version* → *Template Type* → *Template*.

- 
- 3 Right-click the Template and choose Remove from Group.

Result: A dialog box is displayed, confirming the removal of template from the group.

- 
- 4 Optionally, select the Delete Template Versions that are not used and not deployed anymore check box.



**Caution** — This option deletes the unused templates in the group, upon confirmation.

- 
- 5 Click Yes to confirm the removal.

---

Result: The Remove Template from Group Job window opens showing the progress of the removal and listing the template or template versions removed in the Actions Details window.

---

### 30.2.3 Template or template group search

The template search functionality enables you to manage huge number of profile template definitions in the Template Tree.

#### Procedure 211 To search for templates or template group

Use this procedure to search for templates or template groups.

- 
- 1 Click the Open Perspective icon () and choose Templates.

---

  - 2 In the Template Tree view, choose Templates→Template Domain→TemplateType→().  
Result: The Search window is displayed.

---

  - 3 Select one of the following:
    - New Search (remove existing results)- To perform a new search.
    - Add the results to the existing ones - To add the new search results to the existing search results.

---

  - 4 Select the Template Name check box and enter the name of the template or template group.

---

  - 5 Click Finish.

---

Result: The templates that match the search criteria are displayed in the Tree.



**Note 1** — If the number of templates that match the search criteria exceeds the number of templates to be displayed, a warning message is displayed indicating that there are more entries and partial results are being displayed.

**Note 2** — When the number of existing templates is equal to the maximum number of templates/template groups configured, if a new template is created, only the newly created template and the search option is displayed.

**Note 3** — If you need to display more number of templates/template groups than the maximum number configured in the Administration Tree, please contact Technical Support.

---

## 30.3 Template NE operations

Use the procedures in this section to manage templates from the Network perspective.

### Procedure 212 To discover a template

Use this procedure to save the profile configurations on an NE as templates. The name of a template is the same as the name of the profile.

---

1 Navigate to the NE in the Network perspective.

---

2 Right-click the NE, and choose Templates→Discover.

Result: The Discover Templates window opens.

---

3 Select the check boxes for profile types or individual profiles.

The name of the discovered template is based on the template name strategy. If the template name strategy is Template with ID, then the discovered template name does not include the NE name. Also, the discovered template name is not more than 32 characters long. The excess characters from the template name are removed and not displayed.

- 
- 4 To add the discovered templates to a group, select the Add Profiles to Group check box, and enter the name of the group in the Template Group Name field.



**Note** — You can create a group by entering a new group name in the Template Group Name field.

- 
- 5 Optionally, select Rename Template Name check box to rename the template during discovery. Proceed to step 6 if this step is performed, else proceed to step 7.



**Note 1** — The Rename Template Name checkbox is enabled when only one object of the same profile and object type is selected. You can also select multiple object types.

**Note 2** — Although not recommended, it may occur in exceptional circumstances that the same profile needs to be configured on different nodes with different content (for example, depending on the region in the network). Templates representing these different configuration settings need to be distinguishable. For example, ASAT or AF settings can vary depending on the NE's role or region in the network. Therefore, there is a need to have different templates for such settings, so that different NE settings can be deployed on different nodes. In such cases, the Rename Template Name option can be used.

- 
- 6 Enter the new template name in the Template Name field. This field is enabled only if the Rename Template Name check box is selected.

- 
- 7 Click Finish.

Result: The Action Details view displays the status of the template discovery action.

The template is discovered with the new name and the Object Details view refers to the profile name.



**Note 1** — If you rename the template with an existing template name, the Action Details view indicates in the Additional Info field that the template name already exists.

**Note 2** — In case of profile templates, if you rename a new template with an existing template name but with a different identifier, the Action Details view shows a failure status and an error message is reported:

Another template already exists with the same name.

---

---

## Procedure 213 To deploy or undeploy a template or template group from the Network perspective



**Note** — When you deploy the template, you can enter the values in the GUI or add the values to an open arguments file.

You can enter the values in the GUI only when you:

- Choose a single NE.
- Choose multiple NEs that have the same NE type and release. For example, six 7342 ISAM FTTU R4.8 NEs.
- Enter the same values for all of the NEs.

You must enter the values in the open arguments file when you:

- Need to enter different values for each NE
- Choose NEs that have the different NE types and releases. For example, three 7342 ISAM FTTU R4.8 NEs and three 7342 ISAM FTTU R4.7 NEs.

Use this procedure to choose templates or template groups to deploy or undeploy to one or more NEs.



**Note** — The Alarm Filter, Alarm Severity Threshold, and Alarm Severity Assignment templates cannot be undeployed.

- 
- 1 Navigate to the NE in the Network perspective.

---

  - 2 Right-click the NE, and choose one of the following options:
    - Deploy—the Template Deployment window opens.
    - Undeploy—the Template Undeployment window opens.

---

  - 3 In the Selected NEs area, click Add.  
Result: The NE Selection window opens.

---

  - 4 Perform the following steps to select NEs:
    - i Click Select NEs.
    - ii Use the filters in the Filters panel and click Build List.

---

Result: The NEs appear in the list on the right side of the window.



**Note** — In the Name field, you can enter part of the name or use the asterisk (\*) as a wildcard. Enter one string at a time.

- iii Choose NEs from the list and click OK.

Alternatively, you can click Select NE Groups and choose a group.

The NE Selection window closes and the selected NEs or groups appear in the Selected NEs panel of the window. To remove any of the selected NEs or NE groups, choose the NE or group in the Selected NEs panel, and click Remove.

- 
- 5 In the Selected Templates/Groups area, click Add.

Result: The Template Selection window opens.

- 
- 6 Perform the following to select templates:

- i Click Select Templates.
- ii Use the filters in the Filters panel and click Build List.

Result: The selected templates appear in the list on the right side of the window.



**Note** — In the Name field, you can enter part of the name or use the asterisk (\*) as a wildcard. Enter one string at a time.

- iii Choose templates from the list and click OKs.

Alternatively, you can click on Select Groups and choose a group.

Result: The Template Selection window closes and the selected templates or groups appear in the Selected Templates/Groups panel of the window. To remove any of the selected templates or groups, choose the template or group in the Selected Templates/Groups panel, and click Remove.

- 
- 7 Click Finish.

Result: The latest template version (which is in the Template State 'Released') of the selected templates is deployed on the selected NEs. In case the template to be deployed has a reference to other template types, the latest template version (that is also in the Template State 'Released') of the linked template is deployed on the NE. If none of the linked template versions are in the Template State 'Released', the linked template is not deployed, and the following error is reported: *Linked template not found*.

---

---

**Procedure 214 To create an open arguments header file**

**Note** — You can create an open arguments header file from the 5520 AMS, add the values, and save the file as an open arguments file. The open arguments header file is a .csv file that provides a template for entering the values in the correct columns.

When you choose multiple templates for which to generate an open arguments header file, the 5520 AMS creates a header file only for the templates that support open arguments.

Use this procedure to create an open arguments header file from the 5520 AMS.

---

**1** In the Template Tree view, choose one of the following:

- Templates → *Template Domain* → *Template Type*
- Templates → *Template Domain* → *Template Type* → *Template*
- Templates → *Template Domain* → *Template Type* → *Template* → *Version*
- Groups → *Template Group*
- Groups → *Template Group* → *Template Group Version*

---

**2** Right-click a Template Type, Template, Version, Template Group or Template Group Version and choose Create Open Arguments Header File.

Result: The Create Open Arguments Header File opens.

---

**3** If required, click Add to add more templates.

---

**4** Click Finish.

Result: The 5520 AMS creates the open arguments header file and displays a message window that describes the name and location of the open arguments header file.

---

**5** Click OK to close the message window.

---

---

## Procedure 215 To display the template presence in an NE

You can check for the template presence in an NE for one version of a template or one template group. This functionality checks that the content of a template is present in the NE. If you select multiple templates with the same content and check their presence in the NE, then all of the selected templates are identified as present in the NE.

- 
- 1 Navigate to the NE in the Network perspective.
  - 2 Right-click the NE and choose Templates→Show Presence in NE.

Result: The Show Template Presence window opens.

- 
- 3 In the Selected Templates/Groups area, click Add.

Result: The Template Selection window opens.

- 
- 4 Perform the following steps to select templates:

- i Click Select Templates.
- ii Use the filters in the Filters panel and click Build List.

Result: The templates appear in the list on the right side of the window.



**Note** — In the Name field, you can enter part of the name or use the asterisk (\*) as a wildcard. Enter one string at a time.

- iii Choose templates from the list and click OK.

Alternatively, you can click on Select Groups and choose a group.

Result: The Template Selection window closes and the selected templates or group appear in the Selected Templates/Groups panel of the Template Deployment window. To remove any of the selected templates or groups, choose the template or group in the Selected Templates/Groups panel, and click Remove.

- 
- 5 Click Finish.

Result: When the operation is completed, the Template Presence window opens, showing the results for the template or template group you chose. The icons in the window indicate the total number of templates that are present in the NE , the total number of partial templates in the NE , or the total number of templates absent in the NE .

---

---

## 30.4 Operations on multiple templates

You can perform operations on multiple templates at the same time. This feature gives you access to the template management operations that are the most frequently used.

### Procedure 216 To perform operations on multiple templates

Use this procedure to perform operations on multiple templates.

- 
- 1 In the Template Tree, choose the templates that you need to work on.
- 
- 2 Right-click your template selection, and choose one of the operations available for multiple template selections:
    - Deploy: This option opens the Template Deployment window. See Procedure [201](#).
    - Undeploy: This option opens the Template Undeployment window. See Procedure [201](#).
    - Add to Group: This option opens the Add Template Version to Group window. See Procedure [204](#).
    - Delete: This option opens the Template Delete window. See Procedure [202](#).
- 

## 30.5 Alarm templates

The 5520 AMS provides the following alarm templates, which allow you to perform alarm configuration tasks:

- Alarm Filter: Use this template to configure alarm filters. See Section [31.3](#).
- Alarm Severity Assignment: Use this template to configure alarm severity assignment parameters. See Section [31.4](#).
- Alarm Severity Threshold: Use this template to configure alarm severity thresholds. See Section [31.2](#).

You can perform the template-management operations described in Section [30.2](#) on the Alarm Filter and Alarm Severity Assignment templates, except the undeploy operation.

You can also discover the Alarm Filter and Alarm Severity Assignment templates in the Network perspective. See Section [30.3](#). A successful Discovery operation creates a Default element under the Alarm Filter and Alarm Severity Assignment element. The Default element contains a template version (Version 1), and an NE-specific template.

---

If the Default element is not in Released state you can use the Rename operation to replace Default with a meaningful name. Once the template has been released, you need to delete any tracking information before you can rename the element. If you run another Discovery after renaming an alarm template, a new Default element is created.



---

# 31 NE alarms

- [31.1 Overview](#)
- [31.2 Configuring alarm system parameters](#)
- [31.3 Managing alarm filters](#)
- [31.4 Managing alarm severity assignment](#)
- [31.5 Viewing alarm logs](#)
- [31.6 Manually resynchronizing alarms](#)
- [31.7 Suppress alarms on NEs](#)

## 31.1 Overview

Basic alarms are raised when a problem is detected on an object. Derived alarms are raised when a basic alarm occurs beyond a threshold specified in time or space. Only basic alarms are reported by default.

A temporal alarm is reported when a basic alarm has been active on an object more than a threshold number of times within a specified duration, for example, if an NE reports a loss of signal more than 5 times within one minute. You can set the threshold and duration by configuring a temporal alarm filter for the basic alarm. Temporal alarms are reported on the object.

A spatial alarm is reported when a basic alarm is active on more than a threshold number of objects, for example, if more than 2 ports report configuration errors. You can set the threshold by configuring a spatial alarm filter for the basic alarm. Spatial alarms are reported on the Alarm System Parameters object of the NE.

The Network Alarm Summary displays the current condition of alarms for the NE object that is selected in the Network Tree. Alarm conditions are color-coded by severity:

- Red = critical
- Orange = major
- Yellow = minor
- Cyan = warning
- White = indeterminate
- Pale green = normal operation (no alarm conditions)

For detailed alarm information, view the alarm log.

To manage alarm handling on an NE, you can configure the following:

- Alarm system parameters
  - Buffer size, overflow state, and the action taken when the log file is full
  - Alarm log reset
- Alarm severity and handling
  - Alarm severity level: critical, major, minor, not alarmed, or not reported
  - Logging mode
  - Reporting mode
  - Service affecting or non-service affecting status

You can use alarm severity assignments configured for a reference NE for use in template groups. You can then deploy the template group to other NEs on your network.
- Alarm filters
  - Temporal and spatial alarm filters

For information about viewing and filtering alarms, see Chapter 11.

Before you proceed, make sure your user account is assigned the necessary functions to perform the procedures in this chapter. See the *5520 AMS Administrator Guide* for more information.

## 31.2 Configuring alarm system parameters

Use the procedures in this section to configure alarm system parameters or default alarm severity individually. You can also configure these parameters using the Alarm Severity Threshold template, see Chapter 31.

### Procedure 217 To configure alarm system parameters

- 1 Navigate to the NE and choose Infrastructure→Alarms→Alarm System Parameters in the Network Tree.

Result: Parameters appear in the Object Details view. See Table 69.

**Table 69 Alarm system parameters**

Parameters	Description	Values
<b>Global Alarm Settings — Default Severity</b>		
Alarm Reporting Threshold Severity for Non Interface	Specifies default severity of the non-interface alarms  This parameter controls the volume of the alarms that are reported. You need to choose a parameter value that ensures that the 5520 AMS server is not overloaded with alarms.	Critical Major Minor Warning Indeterminate

(1 of 2)

Parameters	Description	Values
<b>Delta Log Synchronization</b>		
Critical Major Minor Warning Indeterminate	Displays whether the alarm log is over or under the threshold for a severity	Overflow State
	Displays the last time the delta log was reset	Reset Time
<b>Alarm Log</b>		
Severity Level	Specifies the current alarm log severity level	Critical Major Minor Warning Indeterminate
Internal Log Buffer Size	Displays the size of temporary log storage cache in kilobytes.	—
Overflow State	Displays whether the alarm log is over or under the threshold	—
Reset Time	Displays the date and time when the alarm log was reset	<i>Date and time</i>

(2 of 2)

- 2 If they are available, configure the alarm system parameters.
- 3 If the Operations drop-down menu is visible, choose Alarm Clear or Alarm Cutoff.
- 4 Click the Apply icon (✓) to save the changes.

## Procedure 218 To configure default alarm severity

- 1 Navigate to the NE and choose Infrastructure→Alarms→Default Severity in the Network Tree.
- 2 Depending on the NE type, additional objects may exist for which to configure the default alarm severity. If there are additional objects (for example, Default Severity→Default Severity PON\_Port or Default Severity→Alarm Default Severity shdsl), choose an object in the Network Tree or Table View.

- 
- 3 Configure the parameter, as described in Table 70.



**Note** — Some NE types may have a different default level. To receive all alarms for an NE, modify the default alarm severity threshold to Intermediate.

**Table 70** Default alarm reporting severity parameter

Parameter	Options	Description
Alarm Reporting Severity Threshold	Critical Major Minor Warning Indeterminate (default)	Specifies the severity threshold required before alarms are reported

- 
- 4 Click the Apply icon (✓) to save the changes.
- 

## 31.3 Managing alarm filters

Alarm filtering suppresses alarm reporting until a threshold is met. An alarm filter defines an additional alarm, called a derived alarm. Table 71 describes the types of alarm filters.

**Table 71** Spatial and temporal alarm filters

Filter type	Description
Spatial	An NE reports a spatial alarm when a basic alarm is active above a specified threshold of object instances. For example, you could configure a spatial alarm filter from a basic lossOfSignal alarm by specifying that the alarm be raised only if it occurred on more than 10 different XDSL ports.
Temporal	An NE reports a temporal alarm when a basic alarm is active above a specified threshold for one object instance within a specified time period. For example, you could configure a temporal alarm filter from a basic lossOfSignal alarm by specifying that the alarm be raised only if it occurred more than 10 times on the same XDSL port within 60 min. This is referred to as “alarm toggling”.

Use templates and template groups to manage alarm filters associated with NEs. After they are configured and discovered in templates and template groups, you can quickly apply filters to other NEs. For more information about templates, see Chapter 30.

---

Use the procedure in this section to configure alarm filters.

### Procedure 219 To configure alarm filters

- 
- 1 Navigate to the NE and choose Infrastructure→Alarms→Alarm Filter in the Network Tree.

Result: The Object Details view displays a table that provides details for each alarm filter.



**Note** — You can customize the table content by adding or removing columns using the button in the top right corner of the table.

- 
- 2 Choose an alarm filter from the table and configure the parameters as required. See [Table 72](#).

**Table 72 Alarm filter parameters**

Parameter	Description	Values
ID	Alarm filter identifier. Alphanumeric string that includes the following: <ul style="list-style-type: none"> <li>• Alarm Filter (template name)</li> <li>• Agent name or type</li> <li>• Alarm type</li> <li>• Alarm filter number</li> </ul>	—
State	Specifies whether the filter is in use	In Use Not Used
Type	Displays the type of filter	Spatial Temporal
Basic Alarm	Specifies the basic alarm type to be filtered. Use Browse to display all supported alarms, then choose the basic alarm.	<i>Alarm number</i>
Number of Occurrences	Specifies the number of times the basic alarm should be activated before the derived alarm is generated.  Do not insert a comma or space as part of the number. If you do, only the digits before the comma or space will be retained. For example, if you enter 65,535 or 65 535, the entry will be changed to 65.	2 (default)
Within Time Period [s]	Specifies the time span of the filter.  Do not insert a comma or space as part of the number. If you do, only the digits before the comma or space will be retained. For example, if you enter 65,535 or 65 535, the entry will be changed to 65.  The Within Time Period parameter only applies to temporal alarm filters.	60 s (default)
Severity	Specifies the default severity of the alarm	Critical Major Minor Warning Indeterminate
Reported	Specifies whether the alarm is disabled or enabled	No Yes
Service Affecting	Specifies whether the alarm is service affecting	No Yes
Logged	Specifies whether the alarm is logged	No Yes

3 Click the Apply icon (✓) to save the changes.

---

## 31.4 Managing alarm severity assignment

Nokia configures default alarm severity assignments, but you can reconfigure them to suit the needs of your network. You can then use a single reference NE with configured severity assignments to create a template to apply across a network.

Use templates and template groups to manage the various alarm conditions and parameters associated with NEs. After alarm severity assignments are configured and discovered in templates or template groups, you can quickly apply them to other NEs. For more information about templates, see Chapter 30.

The following alarm parameters can be configured. They are included in the alarm severity assignments profile of the NE when you discover templates.

- Severity
- Reporting mode
- Service effect
- Log mode



**Note** — When changing alarm severity assignments on an NE, the new alarm severity assignment is used only for new alarms. The severity of previously active alarms is not changed unless an NE's alarms are re-synchronized by stop/start supervision of the NE.

Use the procedure in this section to configure alarm severity assignments.

### Procedure 220 To configure alarm severity assignment parameters

- 
- 1 Navigate to the NE and choose Infrastructure→Alarms→Alarm Severity Assignment in the Network Tree.

Result: The Object Details view displays a table that provides details for each alarm severity assignment.



**Note** — You can customize the table content by adding or removing columns using the button in the top right corner of the table.

- 2 Choose an alarm severity assignment from the table. Table 73 describes the alarm severity parameters.

**Table 73 Alarm severity assignment parameters**

Parameter	Description	Values
<b>Identification</b>		
ID	Alarm severity assignment identifier. Alphanumeric string that includes the following: <ul style="list-style-type: none"> <li>• Alarm Severity Assignment (template name)</li> <li>• Agent name or type</li> <li>• Alarm type</li> <li>• Alarm assignment number</li> </ul>	—
TL1 Alarm Condition	Displays the TL1 alarm condition that corresponds to the alarm	See the alarm descriptions in the Operations and Maintenance guide for the NE
Probable cause	Displays the probable cause of the problem. For example, Address Conflict	—
Specific problem	Displays specific problem information. For example, Persistent Data Loss	—
Domain	Displays the alarm domain in which the problem occurred	—
Category	Displays the category of the problem. For example, equipment, communications, or quality of service	—
<b>Parameters</b>		
Severity	Specifies the current severity of the alarm	Critical Major Minor Warning Indeterminate
Reported	Specifies whether the alarm will be reported. You need to choose carefully the alarms that are reported to ensure that the 5520 AMS server is not overloaded with alarms.	Yes No
Service Affecting	Specifies whether the alarm is service affecting	Yes No
Logged	Specifies whether the alarm is added to the log	Yes No
Configuration State	Specifies whether the default values of all the parameters are in effect	System Init Values Operator Modified Values
Discard Alarm	Specifies whether the alarm is discarded	—

- 
- 3 Configure the parameter settings.
- 
- 4 Click the Apply icon (✓) to save the changes.
- 

## 31.5 Viewing alarm logs

Use the procedure in this section to view alarm logs.

The alarm log information appears in table format. To interpret the numbers that are displayed in the Alarm Type and Alarm Numbers columns, see the alarm descriptions in the Operations and Maintenance guide for the NE. For example, in a 7342 ISAM FTTU, if the Alarm Type parameter value is 3 and the Alarm Numbers parameter value is 8, search for the 3 / 8 alarm ID in the Operations and Maintenance guide for the NE. In the context of this NE, 3 represents a plug-in unit (board) alarm and 8 represents the specific alarm problem, which is Temperature Exceeded 80 Degrees.

The Index 1 and Index 2 parameter values do not need to be interpreted, however, you can sort the alarm log information by their column headings. Multiple alarms with the same index value indicates that the alarms were reported on the same object instance. For more detailed alarm information, Nokia recommends that you use the Alarm view to display alarms.

### Procedure 221 To view alarm logs

Navigate to the NE and choose Infrastructure→Alarms→Log.

Result: A table of logged alarms opens in the Object Details view, as described in Table 74.

**Table 74 Alarm log parameters**

Parameter	Options	Description
<b>General</b>		
ID	—	Displays a number representing the alarm reported
Alarm Type	—	Displays the number representing the type of basic alarm to which the log refers
Alarm Numbers	—	Displays the numbers (within the alarm type) of active alarms in the alarm log. <sup>(1)</sup>
Changed Alarm Numbers	—	Displays the alarm numbers (within the alarm type) of changed alarms

(1 of 2)

Parameter	Options	Description
Index 1	—	Displays a number representing the object instance on which an alarm change occurred
Index 2	—	Displays a number representing the object instance on which an alarm change occurred
Log Time	<i>date and time</i>	Displays the date and time the alarm change was logged
Additional Information	—	Displays additional information
Basic Alarm ID	—	Displays a number representing the basic alarm reported

(2 of 2)

Note

(1) Alarm number 0 indicates no alarms (within the alarm type) are active.

## 31.6 Manually resynchronizing alarms

By default, the 5520 AMS processes the alarms as they come from the NE and resynchronizes alarms between the NE and database every 5 min. This procedure performs resynchronization on demand.

The 5520 AMS time zone management function will update the UTC offset on an NE based on the NE configuration settings when you manually resynchronize the alarms between the NE and the 5520 AMS database. As a result, if you suspect a time zone discrepancy is at the root of a problem that you are troubleshooting, then you can manually resynchronize the NE and 5520 AMS database alarms to clear the problem potentially.

### Procedure 222 To manually resynchronize alarms

- 1 Navigate to the NE.
- 2 Right-click the NE and choose Supervision→Resynchronize Alarms and State.  
Result: A confirmation window opens.
- 3 Click OK to proceed.  
Result: The alarms are resynchronized for the NE.

---

## 31.7 Suppress alarms on NEs

When an NE is created in 5520 AMS and supervised, several alarms are raised for various NE operations and sent to the 5520 AMS. The operator may not find some alarms raised on routine engineering operations useful. For example, alarms raised when cards are reshuffled or replaced in a NE during a maintenance window. In such cases, the 5520 AMS provides an option to suppress alarms on an NE without unsupervising the NE, using the alarm silent mode option. When the alarm silent mode is:

- Enabled on the NE, the existing alarms are auto-cleared and moved to the Historical Alarm View, and new alarms are discarded (both NE alarms and EMS alarms).
- Disabled on the NE, an alarm resynchronization is triggered, and new alarms are processed.

### Procedure 223 To enable or disable alarm silent mode

- 
- 1 In the Network tree, select an NE or multiple NEs.
- 
- 2 Right-click the NEs and choose one of the following options:
    - Supervision→Alarm Silent Mode→Enable, to enable the alarm silent mode.  
Result: The Enable Alarm Silent Mode window opens. Go to step 3.
    - Supervision→Alarm Silent Mode→Disable, to disable the alarm silent mode.  
Result: The Disable Alarm Silent Mode window opens. Go to step 4.

---

**3** Perform the following to suppress alarms on the NEs:

- i Configure the parameters as described in Table 75.

**Table 75 Enable alarm silent mode parameters**

Parameter	Description	Possible value	Default value
Selected NEs	List of NEs or NE Groups	NEs NEs Groups	Selected NEs of NE groups
Start Schedule	Specifies the start of a schedule to suspend the processing of alarms on one or more NEs	Any schedule	Schedule now
Duration	The schedule duration (in seconds, minutes, hours or days)	<ul style="list-style-type: none"> <li>• Forever - schedule configured forever</li> <li>• Fixed duration - schedule is configured for a fixed duration</li> </ul> <p>The default value is 0 days, 2 hours, and 0 minutes.</p>	Forever

- ii Click Finish.

Result: The alarm silent mode is enabled on the selected NEs. No alarms will be displayed on the NEs.

---

**4** Perform the following to disable suppression of alarms on the selected NEs:

- i Configure the parameters as described in Table 76.

**Table 76 Disable alarm silent mode parameters**

Parameter	Description	Possible value	Default value
Selected NEs	List of NEs or NE Groups	NEs NEs Groups	Selected NEs of NE groups
Start Schedule	Specifies the start of a schedule to resume the processing of alarms on one or more NEs	Any schedule	Schedule now

- ii Click Finish.

---

Result: The alarm silent mode is disabled on the selected NEs. Alarms will be displayed on the NEs.

---



---

## 32 Troubleshooting

### 32.1 Troubleshooting overview

### 32.2 Tests initiated from the 5520 AMS

### 32.3 Tests initiated from the NE

### 32.4 Object tests

## 32.1 Troubleshooting overview

This chapter includes information about the following tests that you can use to troubleshoot errors in communication between the 5520 AMS and the NEs it manages:

- Tests initiated from the 5520 AMS:
  - Reachability test—verifies that the 5520 AMS can connect to an NE and verifies the TL1 and CLI connectivity to the NE. You can also perform a connectivity check from the Reachability Test results window.
  - Connectivity check—verifies IP and SNMP connectivity and TL1 and CLI connectivity to the NE.  
The connectivity check also determines whether packets are lost in transmission to and from an NE and how long it takes to get a response back from an NE.
- Tests initiated from the NE:
  - Ping test—verifies IP connectivity and SNMP connectivity on an NE that has an SHub or IHub agent
  - Traceroute test—traces the route in the network for an IP address and calculates and displays the amount of time each hop takes. The traceroute test can also only be performed on an NE with an SHub or IHub agent.
- Object tests—a range of tests can be performed from objects on an NE

You can view the connection status for an NE in the General tab of the Object Details view for the selected NE.

You can navigate to NEs that are unreachable, partially reachable, declared, and partially supervised. See Section [18.9](#).

## 32.2 Tests initiated from the 5520 AMS

This section provides information about the troubleshooting tests that you can perform from the 5520 AMS: the reachability test and the connectivity check.

## 32.2.1 Reachability test

This section describes how to verify the connection status of the NE, including TL1 and CLI connectivity, using the reachability test. The reachability test can be performed on a supervised or unsupervised NE. You can also perform a connectivity check of the NE from the reachability test results window.

If an NE managed with SNMPv3 is reachable but you cannot manage it, changes may have been made to the NE's configuration. In this case, stop and restart supervision to make the NE manageable.

The TL1 and CLI connectivity tests will fail if the username or password is not configured for the appropriate protocol on the NE object. If a test is not performed, a hyphen (-) is displayed in the column for the protocol in the Reachability Test results window. The TL1 or CLI connectivity tests can fail for the following reasons:

- A dependent test failed. For example, the IP connection test failed.
- The test is not supported by the NE agent. For example, the TL1/CLI connectivity test is not supported on a SHub agent.
- The test is supported by the NE agent but the username and password for the protocol are not configured.

The presence of the protocol columns in the Reachability Test results window depend on the NE type and release. If the NE does not support TL1 and CLI, then those columns do not display in the results window.

At the system level, you can configure the strategy for which protocols (SSH, Telnet, UDP) to test during a reachability test. Configuring the strategy allows you to rely on the NE configuration or to force a protocol to be verified. The strategy can be the protocol that is enabled by the NE, or a fixed protocol selection according to priority. See the *5520 AMS Administrator Guide* for more information.

The TL1 and CLI connectivity tests are also run when attempting to enable a TL1 or CLI cut-through session.

Before you proceed:

- Make sure that there is IP connectivity between the 5520 AMS and NE agent by performing a connectivity check. See Procedure [119](#).  
The TL1 and CLI connectivity tests are not dependent on the SNMP connectivity status.
- If you are verifying the TL1 connectivity to the NE:
  - Make sure that the NE agent supports TL1
  - Configure the TL1 username and password on the NE object. See the *5520 AMS Administrator Guide*
- If you are verifying the CLI connectivity to the NE:
  - Make sure that the NE agent supports CLI
  - Configure the CLI username and password on the NE object. See the *5520 AMS Administrator Guide*.

---

**Procedure 224 To perform a reachability test**

---

1 Navigate to the NE.

2 Right-click the NE, and choose Supervision→Reachability Test.

Result: The test results are displayed in the Reachability Test results window. The results are displayed for each agent for each protocol. Additional information is provided when the test passes or fails.



**Note** — You may be able to perform a reachability test on agents separately. Expand the Agents group, right-click an agent, and choose Reachability Test.

3 If the error information in the Additional information column is too long to display in its entirety, double-click on the NE agent row in the results window.

Result: The Additional information window opens to display all of the error information. Click OK to close the Additional information window.

4 To navigate to the agents in the Network Tree, select an agent in the results window and click Show Agents.

5 To perform a connectivity check:

i Select an agent in the results window and click Advanced.

Result: The Connectivity Check window opens with the values automatically provided in the IP/SNMP and TL1/CLI tabs if the values have already been configured in the NE. If the agent has an IPv6 address, the IP Address field is not pre-populated. (Support of IPv6 depends on the NE type and release). Select the type of IP address from the drop-down list. Enter the IP address of the NE in the IP Address field.

ii Configure the remaining parameters for the following tests, as applicable:

- IP ping test
- Traceroute test

iii To configure a TL1 or CLI connectivity test, click the TL1/CLI tab and configure the parameters, as applicable.

If the TL1 and CLI parameters are configured on the NE object, then the parameters values in the TL1/CLI tab display by default.

iv Click Next.

---

Result: The connectivity tests begin. When complete, the Connectivity Check window displays the connectivity results for the configured tests.

- v Click Finish.

Result: The Connectivity Check window closes.

See Procedure [119](#) for more information on Connectivity check.

- 
- 6** Click Close to close the Reachability Test results window.
- 

## **Procedure 225 To perform a reachability test on multiple NEs**

Perform the following procedure to start a reachability test with ping and trace route on one or more NEs.

- 
- 1** Navigate to the NE.

- 
- 2** Right-click the NE, and choose Supervision→Reachability Test→With IP Statistics & Trace Route

Result: The Reachability Test window is displayed.

- 
- 3** Click Add to select one or more NEs.

Result: The NE Selection window is displayed.

- 
- 4** Perform one of the following to select NEs:

- Select NEs
- Select NE Groups
- Import NEs from File or Clipboard.

- 
- 5** Click Build List and select the NEs for reachability test.

- 
- 6** Click OK.

Result: The NE Selection window is closed.

---

7 Configure the parameters.



**Note 1** — If the IP Ping Test and Traceroute Test is enabled, then the parameters values are displayed by default.

**Note 2** — If the parameters values are entered manually for IP Ping and Traceroute test, the new values are retrieved as default values when the command is launched next time.

---

8 Click Finish to close the Reachability Test window.

Result: The Action Details window displays the result for each NE.



**Caution** — SNMP Test does not fail, if an SNMP reply has been received from the NE. Reachability Test With IP Stats and Traceroute does not check if the NE type/release is correct, unlike the Regular Reachability Test.

---

## 32.2.2 Connectivity check

See Section [18.3](#) for information about verifying hardware connectivity.

## 32.3 Tests initiated from the NE

This section provides information about the troubleshooting tests that you can perform from the NE: the ping test and the traceroute test.

### 32.3.1 Ping test

The ping test only applies to NEs that have an SHub or an IHub.

You can use the ping test to check IP connectivity. The test will report issues with IP connectivity. You can view results while the test is ongoing and when the test is complete. The ping test cannot be aborted.

Nokia recommends that you limit the ping count to 10. If you need to have more than 10 pings for a test, Nokia recommends that you repeat the ping test multiple times with 10 pings in each test.

A ping test invoked from 5520 AMS is equivalent to the CLI command *Ping Per Vrf Command*. This command allows the user to ping another host in a given SHUB VRF. If the ISAM NE is in IP aware bridging mode and the SHUB is acting as a DHCP relay agent, a direct subnet route from LT VRF to SHUB IP address is mandatory. Under this condition, pinging to a CPE WAN IP address through SHUB VRF will be successful, else it will fail. Only one simultaneous ping to an IP address through an SHUB VRF is possible. This is because ping test supported on 5520 AMS is on SHUB and not in NT. The ping test in CLI is on NT and a general ping. Hence, ping test on NT cannot be supported from 5520 AMS

## Procedure 226 To perform a ping test on an NE with an SHub



**Note** — The 5520 AMS always uses the default value for the parameter VRF ID while performing a ping test. The default value for the VRF ID parameter is 0. It is recommended to choose the VRF ID value from the supported range based on the NE types in the result window so that the ping test will be successful.

- 1 Navigate to the NE and choose Infrastructure→Layer3→IP→Troubleshooting.

---

- 2 Right-click Ping Tests and choose Create→Ping Test.  
Result: The Create Ping Test window opens.

---

- 3 Enter the IP address for the ping test and click Next.  
Result: The second Create Ping Test window opens.

---

- 4 Enter the values for the ping test and click Finish.  
Result: The ping test is performed and a Ping Test object appears in the Network Tree.

---

- 5 Choose Ping Test object to display the results of the test.  
Result: The Ping Test Object Details view opens. Result parameters include the operational status of the test, the number of ping messages received, and the percentage of packets lost.  
You can click the Refresh icon (🔄) to update the test results if the test is still in progress.

---

- 6 To perform the same ping test again:
  - i Right-click Ping Test object and choose Actions→Retry.  
Result: The Ping Test object is deleted and re-created by the 5520 AMS.
  - ii Choose Ping Test object to display the results of the test.  
Result: The Ping Test Object Details view opens.

---

You can click Refresh to update the test results if the test is still in progress.

- 
- 7 If you need to perform another different ping test, the completed ping test must be deleted. To delete a ping test, right-click Ping Test object, and choose Delete.

Result: The Ping Test object is deleted from the Network Tree.

---

### Procedure 227 To perform a ping test on an NE with an IHub

- 
- 1 Navigate to the NE and choose Rack→Subrack→Slot NT→IHUB System.

- 
- 2 Right-click IHUB System and choose Actions→Ping Test.

Result: The Ping Test window opens.

- 
- 3 Enter the IP address for the ping test and click Finish.

Result: The ping test runs in the background. When the test is complete the Result page is displayed. Result parameters include the operational status of the test, the number of ping messages received, and the percentage of packets lost.

- 
- 4 Save the Result page to a .csv file or copy the results to a clipboard.

- 
- 5 Click Finish.
- 

## 32.3.2 Traceroute test

The traceroute test only applies to NEs that have an SHub or an IHub. Only one traceroute test can be performed at a time on an NE.

The traceroute test allows you to trace the route in the network for an IP address. It also calculates and displays the amount of time each hop takes.

The traceroute command initiates the sending of a packet (using the ICMP), with a TTL value that is designed to be exceeded by the first router that receives it, which returns a Time Exceeded message. This message enables the traceroute command to determine the time required for the hop to the first router. When you increase the time limit value, the command sends the packet again so that it will reach the second router in the path to the destination, which returns another Time Exceeded message, and so forth.

---

The duration of a traceroute test depends on the configured TTL and timeouts. The traceroute test cannot be aborted.

The traceroute command determines when the packet has reached the destination by including a port number that is outside the normal range. When the packet is received, a Port Unreachable message is returned that enables the traceroute command to measure the time length of the final hop. As the tracerouting progresses, the results are displayed hop-by-hop.

On NEs that have an SHub, you must delete the completed traceroute test before performing another traceroute test on the NE. You can view results while the test is ongoing and when the test is complete.

### Procedure 228 To perform a traceroute test on an NE with an SHub

- 
- 1 Navigate to the NE and choose Infrastructure→Layer3→IP→Troubleshooting.

---

  - 2 Right-click Traceroute Tests and choose Create→Traceroute Test.  
Result: The Create Traceroute Test window opens.

---

  - 3 Enter the IP address for the traceroute test.

---

  - 4 Click Next.  
Result: The second Create Traceroute Test window opens.

---

  - 5 Enter the values for the traceroute test and click Finish.  
Result: The traceroute test is performed and a Traceroute Test object, with an associated Traceroute Result object for each hop in the route, appears in the Network Tree.

---

  - 6 Choose the Traceroute Test object to display the operational status of the test and other test identifiers.  
Result: The Traceroute Test Object Details view opens.

---

  - 7 Choose Trace Route Result object to display the test results for the associated hop.  
Result: The Trace Route Result Object Details view opens. Result parameters include the reach time, in seconds, for the first, second, and third tries.  
You can click the Refresh icon (🔄) to update the test results if the test is still in progress.

---

  - 8 If you need to perform another traceroute test, the completed traceroute test must be deleted. To delete a traceroute test, right-click Traceroute Test and choose Delete.

---

Result: The Traceroute Test and associated Trace Route Result objects are deleted from the Network Tree.

---

### Procedure 229 To perform a traceroute test on an NE with an IHub

---

1 Navigate to the NE and choose Rack→Subrack→Slot NT→IHUB System.

---

2 Right-click IHUB System and choose Actions→TraceRouteTest.

Result: The TraceRouteTest window opens.

---

3 Enter the Target IP address for the traceroute test and click Finish.

Result: The traceroute test runs in the background. The traceroute test is performed and a traceroute test object, with an associated traceroute result object for each hop in the route is displayed in the Result Page. Result parameters include the reach time, in seconds, for the first, second, and third tries.

---

4 Save the Result page to a .csv file or copy the results to a clipboard.

---

5 Click Finish.

---

## 32.4 Object tests

The 5520 AMS introduces a series of tests that you can launch from the NE objects that you need to verify. The tests are available only for specific objects, depending on the NE type. These tests have the following characteristics:

- Each test consists of four phases—Start, Polling, Result, and Stop.
- Each test reports results that you can analyze to troubleshoot object issues.

The 5520 AMS implements the object tests consistently so that each test displays the following windows after being launched:

- Test configuration window, which prompts you to start the test or, for the tests that require parameters, to enter the applicable parameters and start the test
- Test progress window
- Test result window, which indicates if the test succeeded or failed, and provides you with the options to save the test results to a .csv file on your local workstation or to the clipboard

To launch a test, navigate to the appropriate object in the Network perspective, right-click on the object, and choose Actions and the appropriate test. See Table 77 for more information about the object tests.

**Table 77 Object tests**

Test	Object	Description
F4 loopback test	VPL	Sends loopback messages to a VP endpoint to test reachability
F5 loopback test	VCL	Sends loopback messages to a VC endpoint to test reachability
MTA	ADSL xDSL	Configures the MTA test head type. Test cannot be launched from the GUI. The 5520 AMS provides test configuration only.
Ping test	SHub NE System IHub NE System	Checks IP and SNMP connectivity and reports issues
Traceroute test	SHub NE System IHub NE System	Traces the route in the network for an IP address and calculates the amount of time each hop takes
Loop diagnostics test	xDSL Line	Retrieves detailed carrier data measurements for the port
Single ended line test	xDSL port on a card supporting this test	Performs an uncalibrated test of the twisted cable pair and provides an indication related to noise and echo on an XDSL line. (1)
CFM loopback test	CFM Maintenance Point	Sends loopback messages from a local maintenance point to a remote maintenance point to verify and isolate faults
CFM link trace test	CFM Maintenance Point	Discovers the path through the network by sending link messages from a local maintenance point to a remote maintenance point
Self test	ONT	Verifies the functionality of an ONT
	ONT Card	Verifies the functionality of an ONT card
Metallic Ended Line Test	A slot—all ports of a selected card xDSL port on a card supporting this test SHDSL span on a card supporting this test	Tests AC/DC, resistance, capacitance, PPA, signature, e-ringer (group test)
MLT	POTS port	Tests a POTS service on an ONT Used as an initial test for subscriber problems with POTS service
Narrowband Line Test	Voice unit configured for SIP, for example, POLT or NPOT units A SIP voice port	Tests AC/DC, resistance, capacitance, PPA, e-ringer (group test)
Search Tone Test	xDSL port on a card supporting this test SHDSL span on a card supporting this test SIP voice port	Tests cable pair search tone

(1 of 2)

---

Test	Object	Description
Dial tone test	POTS port	Checks for dial tone on the POTS port
SIP dial tone test	POTS port	Checks for SIP connectivity on the POTS port

**(2 of 2)**

Note

<sup>(1)</sup> Calibrated single ended line tests with a detailed result analysis are performed by the 5530 Network Analyser.



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# 33 Configure SIP on an ONT

## 33.1 Overview

## 33.2 FTP server

## 33.3 Configure SIP profiles for ONT VoIP service

## 33.4 Configuring SIP

## 33.5 Configuring a SIPPING server for an NE

## 33.6 Upgrading SIP manually

## 33.7 Configuring SIP download over OMCI

## 33.1 Overview

See the *5520 AMS Installation and Migration Guide* for information about migrating SIP from an earlier 5520 AMS release or the 5526 AMS (Modular).

SIP is an application layer control protocol used to establish, modify, and terminate multimedia sessions such as Internet telephone calls. SIP can also invite participants to existing sessions. SIP supports name mapping and the redirection of services, allowing users to maintain one, externally visible identifier, regardless of their network location.

The 5520 AMS supports the following GSIP releases:

- 1.4
- 1.5
- 1.6
- 2.1
- 3.0
- 3.1
- 4.4
- 4.4v2
- 4.5
- 4.6
- 4.7
- 4.8
- 5.0

---

### 33.1.1 SIP configuration overview

Each ONT configured for SIP has a SIP configuration file on an FTP server. The SIP configuration file must be downloaded to the ONT.

The SIP configuration file is updated when SIP parameters for an existing ONT VoIP service or POTS port are modified, and when a POTS port is created on the ONT. Whenever the configuration file is updated, the 5520 AMS server initiates the 7342 ISAM FTTU to retrieve the updated configuration file from the FTP server.

A new SIP configuration file must be downloaded each time the SIP configuration for an ONT VoIP service or POTS port is modified, or when a new POTS port is created on the ONT.

The SIP configuration file contains information that is compiled from the following profiles:

- SIP client profile
- SIP subscriber profile
- Dial plan profile
- ONT hardware data file

### 33.1.2 SIP profiles

You can configure the following types of SIP profiles:

- Client
- Subscriber
- Dial plan

Information from the SIP profiles is compiled in a SIP configuration file. The SIP configuration file is downloaded to an ONT that is configured to retrieve SIP information from the FTP server.

SIP profiles are configured on the 5520 AMS server. You can apply the SIP profiles to multiple 7342 ISAM FTTU views to speed up SIP configuration. SIP profiles minimize the entry of SIP client and subscriber properties when you configure SIP.

You can configure multiple versions of each SIP client profile and SIP subscriber profile. Each version can support multiple SIP releases, so a subscriber can use the same SIP profile regardless of the SIP release. This also allows you to change a profile and keep track of the profile versions that are applied to subscribers.

See Section [33.3](#) to configure SIP profiles.

### 33.1.2.1 SIP client profiles

A SIP client profile is used to configure the 5520 AMS client server configuration file properties.

You can configure multiple versions of each SIP client profile. Each version can support multiple releases of SIP.

### 33.1.2.2 SIP subscriber profiles

Configure a SIP subscriber profile to:

- Create or change subscriber information on POTS ports for SIP
- Create or change a VoIP service on the ONT for SIP

SIP subscriber profile information is downloaded to the ONT in the SIP configuration file when you configure the ONT VoIP service and the associated POTS port to retrieve SIP information.

You can configure multiple versions of each SIP subscriber profile. Each version can support multiple releases of SIP.

### 33.1.2.3 SIP dial plan profiles

A SIP dial plan profile is associated with a SIP subscriber profile and supports all releases of SIP. You can create a SIP dial plan profile or use the default profile. You can configure multiple versions of the SIP dial plan profile.

## 33.1.3 Backup

You should create a local backup of the SIP configuration file on the ONT.

When you perform an NE backup, you should also back up the SIP configuration files. See the *5520 AMS Administrator Guide* for information about backing up the NE.

## 33.1.4 SIP download over OMCI

When the ONT supports download over OMCI, the 5520 AMS supports VoIP configuration XML file download using OLT, with no direct IP communication between the ONT and the 5520 AMS.

Table 78 lists the XML file download methods for the SIP download over OMCI.

**Table 78 XML file download methods**

Configuration Method	Parameters to be configured	Download method
FTP	<ul style="list-style-type: none"> <li>The Configuration File Name parameter is set to OMCI_DOWNLOAD.</li> <li>The Configuration Method parameter is set to FTP.</li> <li>The VoIP Mode parameter is set to SIP1 or SIP2.</li> </ul>	The 5520 AMS downloads an XML file to the OLT as an ONT software load, then uses an OMCI command to notify the ONT to download the XML file. The ONT uses the file size and filename to determine that the ONT software load is a XML file and then downloads the XML file from the OLT using an OMCI channel.
OMCI FTP	<ul style="list-style-type: none"> <li>The Configuration Method parameter is set to OMCI FTP.</li> <li>The VoIP Mode parameter is set to SIP1 or SIP2.</li> </ul>	<p>When online, the ONT downloads the XML file from the OLT using an OMCI channel.</p> <p>When offline, the ONT will try to download the XML file from the OLT.</p> <p>The ONT may also try to download the XML file from the FTP server when the XML file for an ONT is not available in the OLT.</p>

See Section 33.7 to configure SIP download over OMCI.

### 33.1.5 Deleting SIP

The 5520 AMS deletes the SIP configuration file from 5520 AMS server directory and the OLT when you delete an ONT or VoIP service.

## 33.2 FTP server

The ONT retrieves the SIP configuration file from an FTP server. The FTP server can be:

- An external server
- The 5520 AMS server

When you create a VoIP service, you configure the IP address of the FTP server. When you create the first POTS port, the 5520 AMS generates the SIP configuration file with the client and the subscriber information and sets the SIP configuration filename as a parameter for the VoIP service. When the SIP configuration filename parameter is set, the ONT logs in to the FTP server, using anonymous FTP and the IP Address configured in the VoIP service, and tries to download the SIP configuration file.

The ONT tries to download the SIP configuration file multiple times if the download experiences problems.

---

### 33.2.1 FTP server in a 5520 AMS standalone installation

When you use the 5520 AMS server as the FTP server, set the FTP IP address parameter on the VoIP service to the IP address of the 5520 AMS server. You must configure an anonymous FTP user on the 5520 AMS FTP server before the SIP configuration file can be downloaded to the ONT.

When you do not need to allow an anonymous FTP session from the ONT to the 5520 AMS server because of security concerns, you can configure an external FTP server to which the 5520 AMS uploads the SIP configuration file. Set the FTP IP address parameter on the VoIP service to the IP address of the external FTP server, so that the ONT can download the file from the external FTP server.

SIP configuration files are generated in the following scenarios:

- Create VOIP service with SIP integration
- Modify existing VOIP service
- During SIP FTP upgrade

If SIP configuration file generation is successful, the last file generated is stored in AMS server's shared location.

If SIP configuration file generation is unsuccessful, the last file generated is stored in the AMS server's shared location for troubleshooting purpose. On successful SIP configuration file generation, this file is deleted.

### 33.2.2 FTP server in a 5520 AMS cluster installation

In a 5520 AMS cluster, you must configure an external server for SIP XML files. The 5520 AMS server cannot be used as a SIP XML file server.

For SIP in a 5520 AMS cluster installation:

- 1 Configure an external FTP server to which the 5520 AMS uploads the SIP configuration file, using a script provided with the 5520 AMS. Set the FTP IP address parameter on the VoIP service to the IP address of the external FTP server, so that the ONT can download the file from the external FTP server.
- 2 To ensure that the uploaded SIP configuration file is always available to the ONTs, make a load balancer available. Set the FTP IP address parameter on the VoIP Service to the IP address of the load balancer. The load balancer routes the request from the ONT to the FTP server.

---

### 33.2.3 Using an external FTP server

If you do not need to allow an anonymous FTP session from the ONT to access the 5520 AMS server, you can upload the SIP configuration file to an external FTP server that the ONT can access.



**Note** — You must provide an external FTP server for SIP in a cluster. See [FTP server in a 5520 AMS cluster installation](#).

The 5520 AMS provides a script template that you copy and rename to generate a script for uploading the SIP configuration file to an external FTP server. You can configure the 5520 AMS to transfer SIP files to the external server using FTP, SCP, or SFTP.

When the SIP configuration file is generated, the 5520 AMS server looks for the upload script in the \$AMS\_SHAREDDATA\_HOME/ne/sip/bin directory. When the upload script exists, the 5520 AMS executes the script and the SIP configuration is uploaded to the external FTP server. The ONT can download the SIP configuration from the external FTP server.

If SIP configuration file generation is successful, the file is uploaded to the external FTP server. It is not stored in AMS server's shared location.

If SIP configuration file generation is unsuccessful, the file is stored in the AMS server's shared location for troubleshooting purpose. On successful SIP configuration file generation, this file is deleted.



**Note** — When you configure VoIP service, configure the IP address of the external FTP server so that the ONT can download the SIP configuration file from the external FTP server. See the Operations and Maintenance guide for the NE for information about configuring VoIP service.

## 33.3 Configure SIP profiles for ONT VoIP service

### Procedure 230 To create an ONT SIP client profile

- 
- 1 Click the Open Perspective icon () and choose Other.

Result: The Open Perspective window opens.

- 
- 2 Choose SIP Profiles and click OK.

Result: The SIP Profiles opens.

- 
- 3 Right-click SIP Client Profile and choose Create Profile.

---

Result: The Create Profile window opens.

- 
- 4 Type a profile name and click Finish.

Result: The new profile is added to the SIP Client Profile list.

- 
- 5 Expand the new profile, right-click Version 1, and choose Create SIP Release Specific Profile.

Result: The Create SIP Client Profile window opens.

- 
- 6 Choose a GSIP release and click Next.

Result: The second Create SIP Client Profile window opens.

- 
- 7 Configure the parameters and click Finish.

Result: The new profile is added to the Version list.

---

### Procedure 231 To add an ONT SIP client profile version

- 
- 1 Click the Open Perspective icon () and choose Other.

Result: The Open Perspective window opens.

- 
- 2 Choose ONT SIP Profiles and click OK.

Result: The SIP Profiles view opens.

- 
- 3 Choose SIP Client Profile→Version.

- 
- 4 Right-click on Version and choose Clone to new version (Profile Upgrade).

The 5520 AMS creates a Version element in the SIP Client Profile list, with the next version number, and displays a message indicating the profile was successfully upgraded. The new version contains the same SIP client profiles as the old version.



**Note** — When a profile is in use by a VoIP service or POTS port, the Profile Usage State is “Deployed”. When a profile that is in use is cloned, the new profile has the same parameter settings as the original profile, except for the Profile Usage State parameter, which is set to “UnDeployed”.

- 
- 5 Expand the new Version element.
- 
- 6 Perform one of the following steps:
    - Change a SIP client profile.
      - Choose Version profile from the Version list.  
Result: The Object Details view opens.
      - Configure the parameters and click the Apply icon () to save the changes.
    - Create a SIP client profile
      - Right-click Version and choose Create SIP Release Specific Profile.  
Result: The Create SIP Client Profile window opens.
      - Choose a GSIP release and click Next.  
Result: The second Create SIP Client Profile window opens.
      - Configure the parameters and click Finish.  
Result: The new profile is added to the Version list.
- 

### **Procedure 232 To create an ONT SIP subscriber profile**

Before you proceed, a dial plan profile must be created.

- 
- 1 Click the Open Perspective icon () and choose Other.  
Result: The Open Perspective window opens.
- 
- 2 Choose ONT SIP Profiles and click OK.  
Result: The SIP Profiles opens.
- 
- 3 Right-click SIP Subscriber Profile and choose Create Profile.  
Result: The Create Profile window opens.
- 
- 4 Type a profile name and click Finish.  
Result: The new profile is added to the SIP Subscriber Profile list.
- 
- 5 Expand the new profile, right-click Version, and choose Create SIP Release Specific Profile.  
Result: The Create SIP Subscriber Profile window opens.
- 
- 6 Choose a GSIP release and click Next.

---

Result: The second Create SIP Subscriber Profile window opens.

- 
- 7 Configure the parameters and click Finish.

Result: The new profile is added to the Version list.

---

### Procedure 233 To add an ONT SIP subscriber profile version

- 
- 1 Click the Open Perspective icon () and choose Other.

Result: The Open Perspective window opens.

- 
- 2 Choose ONT SIP Profiles and click OK.

Result: The SIP Profiles opens.

- 
- 3 Expand SIP Subscriber Profile, right-click Version, and choose Clone to new version (Profile Upgrade).

The 5520 AMS creates a Version element in the SIP Subscriber Profile list and displays a message indicating the profile was successfully upgraded. The new version contains the same SIP subscriber profiles as the old version.



**Note** — When a profile is in use by a VoIP service or POTS port, the Profile Usage State is “Deployed”. When a profile that is in use is cloned, the new profile has the same parameter settings as the original profile, except for the Profile Usage State parameter, which is set to “UnDeployed”.

- 
- 4 Expand the new Version element.
- 
- 5 Perform one of the following:
    - Change a SIP subscriber profile.
      - Choose a profile from the Version list.  
Result: The Object Details view opens.
      - Configure the parameters and click the Apply icon () to save the changes.
    - Create a subscriber profile.
      - Right-click Version and choose Create SIP Release Specific Profile.  
Result: The Create SIP Subscriber Profile window opens.
      - Choose a GSIP release and click Next.  
Result: The second Create SIP Subscriber Profile window opens.
      - Configure the parameters and click Finish.  
Result: The new profile is added to the Version list.
- 

### Procedure 234 To create an ONT SIP dial plan profile

- 
- 1 Click the Open Perspective icon () and choose Other.  
Result: The Open Perspective window opens.
- 
- 2 Choose ONT SIP Profiles and click OK.  
Result: The SIP Profiles opens.
- 
- 3 Right-click Dial Plan Profile and choose Create Profile.  
Result: The Create Profile window opens.
- 
- 4 Type a profile name and click OK.  
Result: The new profile is added to the Dial Plan Profile list.
- 
- 5 Expand the new profile, right-click Version 1, and choose Create SIP Release Specific Profile.  
Result: The Create Dial Plan Profile window opens.
- 
- 6 Configure the parameters and click Finish.

---

Result: The new profile is added to the SIP Dial Plan Config Profile list.



**Note** — You can add only one profile, the default profile, to each version of a SIP client dial plan profile.

---

### Procedure 235 To add an ONT SIP dial plan profile version

- 
- 1 Click the Open Perspective icon () and choose Other.

Result: The Open Perspective window opens.

- 
- 2 Choose ONT SIP Profiles and click OK.

Result: The SIP Profiles opens.

- 
- 3 Expand Dial Plan Profile, right-click Version, and choose Clone to new version (Profile Upgrade).

The 5520 AMS creates a Version element in the Dial Plan Profile list and displays a message indicating the profile was successfully upgraded. The new version contains the same dial plan profile as the old version.



**Note** — When a profile is in use by a VoIP service or POTS port, the Profile Usage State is “Deployed”. When a profile that is in use is cloned, the new profile has the same parameter settings as the original profile, except for the Profile Usage State parameter, which is set to “UnDeployed”.

- 
- 4 Expand the new Version element and choose Default from the Version list.

Result: The Object Details view displays the parameters.



**Note** — There is only one profile, the default profile, in each version of a client dial plan profile.

- 
- 5 Configure the parameters and click the Apply icon () to save the changes.
-

## 33.4 Configuring SIP

Table 79 lists the tasks for configuring SIP.

**Table 79**      **Configure SIP**

Task	See
Configure the ONT	Operations and Maintenance guide for the NE
Configure SIP profiles	Section 33.3
Create a VoIP service and enable FTP and SIP	Operations and Maintenance guide for the NE
Configure SIP on the ONT POTS port	Procedure 236

### Procedure 236      To configure SIP on the ONT POTS port

- 1    Navigate to the NE and choose Rack→Subrack→Slot LT→PON Port→ONT (Provisioned)→ONT→ONT Card (POTS)→POTS Port.

Result: The Object Details view opens.

- 2    Click the SIP-FTP tab and configure the SIP parameters. Table 80 provides guidelines for the SIP parameters.

**Table 80**      **ONT POTS port SIP configuration guidelines**

Parameter	Guidelines
Subscriber Profile	Choose a subscriber profile that supports the same SIP release as the subscriber profile on the associated VoIP service. See the Operations and Maintenance guide for the NE for information about configuring a VoIP service.
IOT Parameters	The IOT parameters appear when the GSIP release in the SIP profiles is R4.4v2 or later. See Section 33.3 to configure the GSIP release for the profile, and see the Operations and Maintenance guide for the NE for more information on the IOT parameters.

- 3    Click the Apply icon (✓) to save the changes.

## 33.5 Configuring a SIPPING server for an NE

You can configure and deploy a SIPPING server network address profile for each NE. If required, you can use one network address for all the VoIP services configured for SIPPING on one or more NEs.

### Procedure 237 To configure a SIPPING server for an NE

Perform this procedure to create a network address profile for deployment and use by individual NE's for VoIP services.

- 1 Open the template perspective and create a Network Address Profile. See Chapter 30.
- 2 Deploy the network address profile on the NE. See Chapter 30.
- 3 Create a VoIP service and configure the parameters as follows:
  - On the Configuration tab, configure the Configuration Method parameter as SIP Server.
  - On the Sipping tab, choose the network address profile created in step 1.

See the Operations and Maintenance guide for the NE for information about creating a VoIP service.

## 33.6 Upgrading SIP manually

You can manually upgrade SIP by generating the SIP configuration file and applying the SIP configuration file to VoIP services.

Table 79 lists the tasks for upgrading SIP manually.

**Table 81 Upgrade SIP manually**

Task	See
Set the GSIP Assignment Mode parameter on the FTP tab of the VoIP service to manual.	Operations and Maintenance guide for the NE
Create SIP client and subscriber profiles that correspond to the SIP version to which the VoIP services are being upgraded.	Procedures 230 and 232
Generate a test SIP configuration file.	Procedure 238

(1 of 2)

Task	See
Generate the SIP configuration file and apply it to VoIP services.	For VoIP services on a selected PON port: Procedure 239 to generate the SIP configuration file and apply it to selected VoIP services Procedure 241 to apply a generated SIP configuration file to a VoIP service
	For multiple VoIP services in a network: Procedure 240 to generate the SIP configuration file and apply it to multiple VoIP services on a network

(2 of 2)

### Procedure 238 To generate a test SIP configuration file

- 1 Navigate to the NE and choose one of the following:
  - Rack
  - Rack→Subrack
  - Rack→Subrack→Slot LT
  - Rack→Subrack→Slot LT→PON Port

---

- 2 Right-click the object and choose SIP→FTP Upgrade.
 

Result: The Upgrade SIP FTP Release window opens and displays all of the VoIP services under the element.

---

- 3 Select and mark the VoIP services to upgrade (click Mark Selected to mark the VoIP services for upgrade).

---

- 4 Select the Generate SIP Config File option and click Finish.
 

Result: The 5520 AMS generates the SIP configuration file. The changes are not applied to VoIP services.

---

- 5 Open the SIP configuration file with a text editor and review the contents to ensure that the VoIP services and POTS ports are configured with the profiles for the SIP version to which the VoIP services are being upgraded.

---

---

**Procedure 239 To generate the SIP configuration file and apply it to selected VoIP services**

- 
- 1 Navigate to the NE and choose one of the following:
    - Rack
    - Rack→Subrack
    - Rack→Subrack→Slot LT
    - Rack→Subrack→Slot LT→PON Port

---

  - 2 Right-click the object and choose SIP→FTP Upgrade.

Result: The Upgrade SIP FTP Release window opens and displays all of the VoIP services under the element.

---

  - 3 Select and mark the VoIP services to upgrade (click Mark Selected to mark the VoIP services for upgrade).

---

  - 4 Select the Generate and Apply SIP Config File option.

---

  - 5 Choose the SIP release to which to upgrade the VoIP services from the New SIP Release drop-down menu.

---

  - 6 Click Finish.

Result: The 5520 AMS generates the SIP configuration file and upgrades the SIP release on the selected VoIP services.

The Upgrade SIP FTP Release window displays the upgrade status for each VoIP service.
- 

**Procedure 240 To generate the SIP configuration file and apply it to multiple VoIP services on a network**

- 
- 1 In the Network Tree, select the VoIP services you need to upgrade.



**Note** — If you are using 5529 Enhanced Applications to manage inventory services on your network, you can select VoIP services from an inventory list. See the 5529 Enhanced Applications documentation for more information about using inventory lists.

- 
- 2 Right-click VoIP Service and choose Multiple Edit.

---

Result: The Multiple Edit for VoIP Service window appears.

- 
- 3 In the FTP tab, configure the GSIP Assignment Mode, GSIP Release, and SIP File Generation parameters.
- 
- 4 Click OK.

Result: The 5520 AMS generates the SIP configuration file and upgrades the SIP release on the selected VoIP services.



**Note** — The Action Manager displays the information about the SIP upgrade. See Chapter 10 for information about using the Action Manager.

---

### Procedure 241 To apply the SIP configuration file to a VoIP service

- 
- 1 Navigate to the NE and choose Rack→Subrack→Slot LT→PON Port→ONT (Provisioned)→ONT→VoIP Service→VoIP Service.
- 
- 2 Right-click VoIP Service and choose Actions→Apply FTP-SIP Configuration.

Result: The 5520 AMS upgrades the SIP release on the selected VoIP service.



**Note** — The Action Manager displays the information about the SIP upgrade. See Chapter 10 for information about using the Action Manager.

---

### Procedure 242 To upgrade SIP FTP

Perform the following procedure to upgrade SIP FTP.



**Note** — When SIP FTP is upgraded using SFTP/SCP as file transfer protocol to the external server, the upgrade takes more time when compared to FTP. The slow transfer observed with SFTP/SCP is due to the nature of the protocol.

- 
- 1 Open the Network perspective and navigate to the NE.
- 
- 2 Right-click the NE and choose SIP → FTP Upgrade.

---

Result: The SIP FTP Upgrade on NE Level window opens.

- 3 In the SIP FTP Upgrade on NE Level window, configure the parameters. Table 82 provides guidelines for configuring the parameters.

**Table 82 Parameters to configure the SIP FTP**

Parameter	Guidelines
Selected NEs	You can add upto 10 NEs of the same family or release for SIP FTP upgrade. The NEs can be filtered using the following methods: <ul style="list-style-type: none"> <li>• Name</li> <li>• Type/Release</li> <li>• Active Software Version</li> <li>• Group</li> </ul>
From > SIP Release	This field lists all the SIP releases supported in AMS. This field is mandatory.
From > File Generation Status	The default value for this parameter is All. When All is selected, both the last successful and failure SIP FTP upgrade is chosen for SIP release upgrade.
To > SIP Release	This field lists all the SIP releases supported in AMS. This field is mandatory.
To > SIP Config File	The default value for this parameter is Generate and Apply.

- 
- 4 Click Finish.

Result: The Action Details window displays the result of the SIP FTP upgrade.

---

## 33.7 Configuring SIP download over OMCI

The AMS generates the SIP configuration file with different naming convention if you:

- Modify the SIP parameters on the VoIP service.
- Add a new POTS port on the ONT with VoIP SIP-FTP.
- Delete a POTS port on the ONT with configured VoIP SIP-FTP.
- Modify the SIP parameters on the POTS port.

**Procedure 243 To configure SIP download over OMCI**

1 Create the SIP client and subscriber profiles. See Procedure [230](#) and Procedure [232](#).

2 Configure the VoIP service and a POTS port on the ONT. For more information, see the Operations and Maintenance guide for the NE.

Perform one of the following steps:

- To use the configuration method as FTP while configuring the VoIP service, perform the steps mentioned in Table [83](#).
- To use the configuration method as OMCI FTP while configuring the VoIP service, perform the steps mentioned in Table [84](#).

**Table 83 Configure SIP download over OMCI - Configuration Method as FTP**

Step #	Step
1	Set the Configuration File Name parameter to OMCI_DOWNLOAD.
2	Set the Configuration Method parameter to FTP.
3	Set the VoIP Mode parameter to SIP1 or SIP2.
4	Configure the SIP parameters in the FTP tab.
5	Configure a POTS port on the ONT and configure the parameters on the SIP-FTP tab.
Result: The 5520 AMS generates an XML file and updates the generated file name in the Downloaded Software parameter in the ONT Object Details view.	

**Table 84** Configure SIP download over OMCI - Configuration Method as OMCI FTP

Step #	Step
1	Perform one of the following steps: <ul style="list-style-type: none"> <li>If you want to use the external FTP server, configure copyXmlToExternalServer.pl. The 5520 AMS transfers the generated XML file to the external FTP server. Go to step 2.</li> <li>If you do not want to use the external FTP server, go to step 3.</li> </ul>
2	Configure the file transfer protocol to be used to establish the connection to the external server.
3	Set the Configuration Method parameter to OMCI FTP.
4	Set the VoIP Mode parameter to SIP1 or SIP2.
5	Configure the SIP parameters in the FTP tab.
6	Configure a POTS port on the ONT and configure the parameters on the SIP-FTP tab.
Result: The 5520 AMS generates an XML file and updates the generated filename in the Configuration File Name parameter in the ONT Object Details view.	



**Note 1** — The filename of the generated XML file will be in the format:

*nnxyyy#.xml*

where:

*nn* is the slot identifier

*xx* is the PON identifier

*yyy* is the ONT identifier

*#* is the file version.

For example, 18161280.xml

**Note 2** — There can be maximum of three versions, namely 0,1 and 2.

### Procedure 244 To view an XML file for SIP download over OMCI

You can identify an XML file by its filename. For example: 18161280.xml

Navigate to the NE and perform one of the following steps:

- Choose Rack→Subrack→Slot LT→PON Port→ONT→VoIP Service.  
Result: The Object Details view opens and shows the XML filename in the Configuration File Name parameter in the Configuration tab.

- Choose Infrastructure→Software→ONT→SW Version→ONT SW Version.  
Result: The Object Details view opens and shows the XML filename in Version parameter.
- 

### **Procedure 245 To view XML file information**

Navigate to the NE and choose Infrastructure→Software→SW File→OLTFile→Disk File /Sw/*nn**xx**yyy*#.xml, where *nn* is the slot identifier, *xx* is the PON identifier, *yyy* is the ONT identifier, and # is the file version. For example: 18161282.xml.

Result: The Object Details view opens and shows information for the XML file.

---

## 34 Managing links between NEs

### 34.1 Link and subnetwork management overview

#### 34.2 Creating links between NEs

#### 34.3 Viewing links

#### 34.4 Navigating from links to endpoints

### 34.1 Link and subnetwork management overview

A link creates a logical connection between endpoints on two different NEs. You can use the link information to help provision consistent services and troubleshoot services. Links can also be used by 5529 Enhanced Applications.

Before you can perform the procedures in this guide, the 5520 AMS software and client must be installed and running, administrative settings must be configured, you must have a user account, NEs must be installed, and NE plug-ins must be installed and activated. Licenses for the components must be applied.

For information about installation, see the *5520 AMS Installation and Migration Guide*. For detailed hardware requirements and network specifications, see the *5520 AMS Solution Planning Guide*.

For information about administrative functions, including management of server-client communication, users, NE communication, schedules, links, and codes, see the *5520 AMS Administrator Guide*.

For information specific to management of a particular NE, see the Operations and Maintenance guide for the NE.

#### 34.1.1 Link status

Table 85 describes the link status.

**Table 85** Link status

Link status	Description
Up	Both link endpoints exist and are operational
Down	Both link endpoints exist but one or both are not operational
Unusable	One of the link endpoints has been deleted

---

### 34.1.2 Deleting links

The 5520 AMS deletes a link when you delete an NE that contains one of the link endpoints.

Links can be used by 5529 Enhanced Applications. You can configure the 5520 AMS GUI settings to display a warning when you try to delete a link that is in use or forbid the deletion of the link. See the *5520 AMS Administrator Guide* for more information.

You can unplan one or both units that contain one of the link endpoints without deleting the link. When you unplan a unit that contains one of the link endpoints, the state of the link becomes Unusable.

### 34.1.3 Repairing links

You can repair a link that has a link status of Unusable. See Procedure [247](#) to view the link status.

For example, if a unit was pulled out of a slot or unplanned, the endpoint will disappear, breaking the link. To repair the link, undo the configuration change that broke the link. Plug the unit back in or replan the unit, so that the endpoint reappears. See the Operations and Maintenance guide for the NE for more information about planning units.

## 34.2 Creating links between NEs

This section describes how to create a link using the Create Link icon and from the 5520 AMS application server. See the Operations and Maintenance guide for the NE for the procedures to create a link from an endpoint on an NE in the 5520 AMS GUI. See the *5520 AMS Administrator Guide* for the procedures to create links from the 5520 AMS application server.

### Procedure 246 To create a link using the Create Link icon

- 
- 1 Click the Create Link icon () on the 5520 AMS toolbar.  
Result: The Create Link window opens.

---

  - 2 Choose the type of link that you need to create and click Next.  
Result: The second Create Link window opens.

---

  - 3 Configure the parameters and click Finish.

---

Result: The new link appears in the Network Tree below NE→Links.

---

## 34.3 Viewing links

View a link to determine:

- The link status described in Table 85.
- Whether the link is in use and how many applications are using the link.

This section describes how to view a link from NE→Links in the Network Tree. See the Operations and Maintenance guide for the NE for the procedures to view a link from an endpoint on a NE.

### Procedure 247 To view a link

- 
- 1 Navigate to the NE and choose Links.



**Note** — Links appears in the Network Tree only when there are configured links.

- 
- 2 Expand Links and choose a link.

Result: The Object Details view opens.

- 
- 3 If required, click the General tab to display the link status. If the link status is Unusable, you can repair the link. See 34.1.3.
- 

## 34.4 Navigating from links to endpoints

Use this procedure to navigate from a link to a link endpoint.

---

**Procedure 248 To navigate from a link to an endpoint**

---

- 1 Navigate to the NE and choose Links.



**Note** — Links appears in the Network Tree only when there are configured links.

- 
- 2 Choose Window→Show View→Object Details.

Result: The Object Details view opens.

- 
- 3 Expand Links and choose a link.

Result: The object details for the link are displayed in the Object Details view.

- 
- 4 Click Go To beside the link endpoint.

Result: The Network Tree expands to display the endpoint and the Object Details view for the endpoint opens.

---

---

# 35 Nokia Access Virtualizer Adaptor in 5520 AMS

## 35.1 Overview

### 35.2 Creating a Nokia Access Virtualizer Adaptor from the 5520 AMS

### 35.3 Viewing and editing a device in Nokia Access Virtualizer Adaptor

### 35.4 Software management operations for Nokia Access Virtualizer Adaptor devices

### 35.5 Downloading NE software to Nokia Access Virtualizer Adaptor devices

### 35.6 Activating NE software on Nokia Access Virtualizer Adaptor devices

### 35.7 Viewing Nokia Access Virtualizer Adaptor Device Status

### 35.8 Checking the connectivity state of a Nokia Access Virtualizer Adaptor

### 35.9 Deleting a Nokia Access Virtualizer device or NE

## 35.1 Overview

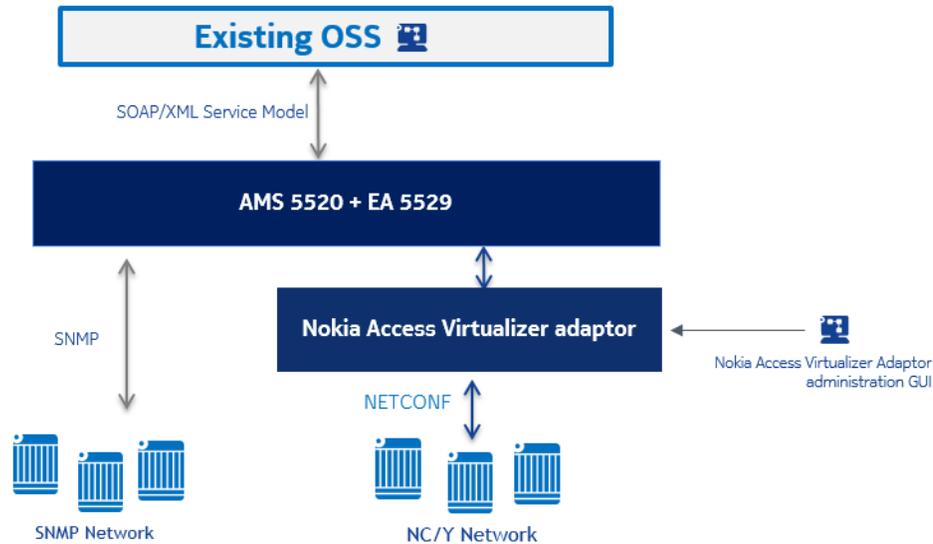
Nokia Access Virtualizer is an adapter that mediates between the EMS or the OSS and thousands of remote devices or Distribution Point Units (DPUs) connected to a home network. Usually, a DPU is reversed-powered taking the power source from modems they are connected to. When a DPU is down configuration changes can still be done for the DPU. As the master of DPU configuration, all the configurations are stored in the Nokia Access Virtualizer Adaptor. Once the DPU is up, the configuration changes done when the DPU was down are automatically pushed to the DPU by the Nokia Access Virtualizer Adaptor.

Nokia Access Virtualizer Adaptor is used for managing the NetConf/YANG managed devices and NEs; and aids in the transition from SNMP managed devices to NetConf devices. From ISAM Release 5.6, ISAM nodes supports NetConf/YANG model.

To use the Nokia Access Virtualizer Adaptor features in the 5520 AMS, you must have a valid license. For licensing information, see the 5520 AMS Administrator Guide.

Figure 7 shows the architecture of Nokia Access Virtualizer Adaptor integrated with 5520 AMS and 5529 Enhanced Applications.

**Figure 7** Nokia Access Virtualizer Adaptor integrated with 5520 AMS and 5529 Enhanced Applications architecture



### 35.1.1 Software plug-in

On the 5520 AMS you can install the NE plugs for each NE type managed through the Nokia Access Virtualizer Adaptor.

For more information about the supported NE plug-in for an Nokia Access Virtualizer Adaptor, see the Release Notice of Nokia Access Virtualizer Adaptor.

### 35.1.2 Nokia Access Virtualizer Adaptor administration setting

For viewing and modifying Nokia Access Virtualizer Adaptor setting from the AMS Administration perspective, in the Administration Tree navigate to EMS Administration → ANV. You can view the Nokia Access Virtualizer Adaptor process information such as the Device Manager, Connectivity State, and Netconf.

New devices which have established connection with Nokia Access Virtualizer Adaptor through call home but not yet created by the operator in the 5520 AMS can be viewed from the Administration Tree, under the ANV → Device manager → New Devices.

---

## 35.2 Creating a Nokia Access Virtualizer Adaptor from the 5520 AMS

For each Nokia Access Virtualizer Adaptor process created in the 5520 AMS, a Nokia Access Virtualizer Adaptor object is created in the AMS Administration Perspective. The Nokia Access Virtualizer Adaptor process is used to manage the Nokia Access Virtualizer Adaptor device. See Procedure [249](#) to create a Nokia Access Virtualizer Adaptor process.

### Procedure 249 To create an Nokia Access Virtualizer Adaptor process

---

1 Navigate to the Administration Tree and choose ANV.

---

2 Right-click ANV and then select Create → ANV.

Result: The Create ANV window opens.

---

3 Perform the actions mentioned in this step.

- Enter the name and IP address of the Nokia Access Virtualizer Adaptor process.
- For Netconf Profile, click Browse.

Result: The Select Netconf Profile window opens.

- Click Create.

Result: The Create NETCONF Profile window opens.

- Enter the required details such as the profile name, port number, username, and password.

The default SSH Port for connecting through NBI is 6515. The port number can be changed during the Nokia Access Virtualizer Adaptor installation.

The default username is “adminuser” and password is “password”. It is recommended to change the default username and password for security reasons.

- Click Finish in the Create NETCONF Profile window.
- Select the created profile in the Select Netconf Profile window and then click OK.

---

4 In the Create ANV window, click Finish.

Result: The Nokia Access Virtualizer Adaptor process is created under ANV in the Administration Tree.

---

5 Now check the connectivity status of the Nokia Access Virtualizer Adaptor process. The Connectivity State should be reachable. See Section [35.8](#) for information about checking the connectivity state.

---

6 Check the number device holders for the Nokia Access Virtualizer Adaptor process.

---

Navigate to the Administration Tree and choose ANV→ ANV<IP address> → Device Manager. In the Object Details view, you can view the number of device holders supported by the Nokia Access Virtualizer Adaptor process.

---

Procedure for creating an NE managed by Nokia Access Virtualizer Adaptor in the 5520 AMS is similar to other NE creation. For creating NEs and devices that are managed by Nokia Access Virtualizer Adaptor in the 5520 AMS, see Section [18.5](#).

### 35.3 Viewing and editing a device in Nokia Access Virtualizer Adaptor

After the creation of a Nokia Access Virtualizer Adaptor device, you can view or edit the configuration details of the device.

#### Procedure 250 To view or edit a call home device

- 
- 1 Navigate to the NE that is managed by a Nokia Access Virtualizer Adaptor and choose Device.

---

  - 2 In the Object details view make the necessary changes.

---

  - 3 Click the Apply icon (✓) to save the configuration.

Result: The device is updated with the new configuration details in the 5520 AMS and Nokia Access Virtualizer Adaptor.

---

### 35.4 Software management operations for Nokia Access Virtualizer Adaptor devices

The 5520 AMS is used to configure the Nokia Access Virtualizer Adaptor with the required software for its devices.

The Nokia Access Virtualizer Adaptor supports configuration of software for devices that are connected, disconnected, and pre-provisioned. Also, ensures the configured software is downloaded and/or activated on the device whenever the device connects to the Nokia Access Virtualizer Adaptor. If the software download or activation fails, the Nokia Access Virtualizer retries the operation periodically.

---

A 'software-mismatch' alarm is raised on the Nokia Access Virtualizer device until the software is downloaded to the device or activated on the device after the download and activation operations are performed on the AMS GUI. If the software download or activation fails, a 'software-error' alarm is raised.

For downloading and activating the software to NEs managed by Nokia Access Virtualizer Adaptor, see Sections [35.5](#) and [35.6](#).

## 35.5 Downloading NE software to Nokia Access Virtualizer Adaptor devices

After you create an NE software release in Nokia Access Virtualizer Adaptor, you can download the software to an NE managed by a Nokia Access Virtualizer Adaptor from the 5520 AMS GUI. For information about installing the device software, see the Nokia Access Virtualizer documentation.

### Procedure 251 To download NE software to Nokia Access Virtualizer Adaptor devices

- 
- 1 Navigate to the NE that is managed by a Nokia Access Virtualizer Adaptor.

---

  - 2 Right-click the NE and choose Software → NE → Download to NE.  
Result: The Download NE Software window opens.

---

  - 3 Click Add to choose the NEs from the Agent Selection window. Then, click Build List.

---

  - 4 From the Selected NE SW Releases panel, you can choose the location from the where the software file should be downloaded.
    - From a managed server: Select the file from a server that is managed by Nokia Access Virtualizer Adaptor.

---

  - 5 Click Browse and schedule a software download.

---

  - 6 Click Finish to download the software.

---



**Note** — When the 5520 AMS manages multiple servers of Nokia Access Virtualizer Adaptor, the selected software load must be managed by the Nokia Access Virtualizer Adaptor server which manages the NE selected for software download, else the software download operation will be rejected.

- From a URL: Provide the URL to select the file from an external location.

---

## 35.6 Activating NE software on Nokia Access Virtualizer Adaptor devices

The software on an NE can be active or not active. Not active means that the software has been downloaded to the NE, but is not currently active. You can activate the software load on up to 50 NEs. If the software activation on one NE fails, the activation for the other NEs still proceeds.

### Procedure 252 To activate NE software on Nokia Access Virtualizer Adaptor devices

- 
- 1 Navigate to the NE that is managed by a Nokia Access Virtualizer Adaptor.

---

  - 2 Right-click the NE and choose Software → NE → Activate.  
Result: The Activate NE Software window opens.

---

  - 3 Click Add to choose the NEs from the Agent Selection window.

---

  - 4 From the Selected NE SW Releases panel, you can choose the location of the software load to be activated.
    - From a managed server: Select the file from a server that is managed by Nokia Access Virtualizer Adaptor.
    - From a URL: Provide the URL to select the file from an external location.

---

  - 5 Click Browse to schedule a software load activation.

---

  - 6 Click Finish to activate the software.
- 

## 35.7 Viewing Nokia Access Virtualizer Adaptor Device Status

You can view the Connection Status and Connection Details of the NE managed by the Nokia Access Virtualizer Adaptor in the “States” panel of the NE Object Details view. The “Connectivity details” at the NE indicates whether the device can be reached from the Nokia Access Virtualizer Adaptor or not (latter case with the value “The NE can be managed off-line but the equipment is disconnected”).

For information about NE connectivity state icons, see Tables [24](#) and [47](#).

Different scenarios of the “Connectivity Status” at the NE and device level are described in Table 86.

**Table 86 Different Connection Status scenarios**

Scenario	NE Connection status	Device Connection status	NE / device unreachable icon
Nokia Access Virtualizer Adaptor and device are reachable	Reachable	Reachable	—
Nokia Access Virtualizer Adaptor is reachable but the device is not reachable	Reachable; clarification is provided in the "Connectivity Details"	Not Reachable	
Nokia Access Virtualizer Adaptor is not reachable	Not Reachable	Cannot see the device level as you cannot browse the NE	

## 35.8 Checking the connectivity state of a Nokia Access Virtualizer Adaptor

You can check the connectivity state of the Nokia Access Virtualizer Adaptor, Application servers, and the Notification server (Kafka Broker) from the AMS Administration perspective. When the 5520 AMS loses communication with the Nokia Access Virtualizer Adaptor or the Kafka Broker, the 5520 AMS raises an alarm and retries to connect every 15 seconds.

To check the Connectivity State navigate to the Administration Tree and choose ANV → ANV<IP address> → Connectivity States → ANV Application Server Connectivity APP. In the Object details view, check the connection status of the Application server, Nokia Access Virtualizer Adaptor, and the Kafka Broker. The connection status should be as mentioned in Table 87.

Table 87 describes the attribute details in the Object Details View of an ANV Application Server Connectivity APP.

**Table 87 Attributes of ANV Application Server Connectivity APP**

Attribute	Description
<b>General</b>	
App Server IP Address	By default it is ipv4. Provide the IP of the Nokia Access Virtualizer Adaptor managed NE.
<b>States</b>	

(1 of 2)

Attribute	Description
Connection Status	Connection status of an Application Server should be Reachable. Possible connection status are: <ul style="list-style-type: none"> <li>• Reachable</li> <li>• Unreachable</li> </ul>
Connection Details	Indicates whether the device can be reached from the Nokia Access Virtualizer Adaptor or not.
<b>App Server to Kafka Server and ANV Process to Kafka Server</b>	
Connection Status	Connection status should be Connected. Possible connection status: <ul style="list-style-type: none"> <li>• Connected</li> <li>• Disconnected</li> </ul>

(2 of 2)

When performing Start supervision of device and when re-synchronizing alarm and states on the NE, the Device state is Synchronized successfully.

If there is a connectivity issue or there is a change in the Nokia Access Virtualizer Adaptor profile for NetConf IP address, you should resynchronize the alarm and states as mentioned in Procedure [253](#).

### Procedure 253 To resynchronize the alarms and state

- 1 Navigate to the Administration Tree → EMS Administration → ANV → ANV (Nokia Access Virtualizer Adaptor object)
- 2 Right-click ANV and choose Actions → Resynchronize Alarm and States.
- 3 Click Finish on the confirmation message.

## 35.8.1 Performing reachability test

Reachability test in the 5520 AMS can be used to check the connection between the 5520 AMS and Nokia Access Virtualizer Adaptor. A reachability alarm is raised on the Device Object details view when the connection is lost between the 5520 AMS and Nokia Access Virtualizer Adaptor.

To check the NE reachability status, navigate to the NE → Device; under Device State panel, Reachable check box indicates whether device is reachable or not. You can also right-click the NE and select Supervision → Reachability Test, then select the required test to perform the reachability test.

## 35.9 Deleting a Nokia Access Virtualizer device or NE

When an NE is deleted from the 5520 AMS, the corresponding device can be removed or retained in the NAV adaptor using the ANV Settings.

### Procedure 254 To delete an NE and the associated device in the Nokia Access Virtualizer Adaptor

- 
- 1 Navigate to the Administration Tree → EMS Administration → Configuration → NETCONF → ANV Settings.

---

  - 2 In the Object Details view, select the check box for Auto-delete Device When NE is Deleted.

---

  - 3 Click the Apply icon (✓) to save the configuration.

Result: When an Nokia Access Virtualizer Adaptor managed NE is deleted in the AMS GUI, the corresponding device is deleted in the Nokia Access Virtualizer Adaptor.

---

For more information about deleting NEs, see Chapter [19](#).



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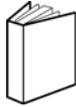
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