



Altai Certification Training

Altai Wireless Management System

Version 1.6

Content

AWMS Overview

- AWMS Features Highlight
- AWMS Architecture
- AWMS Platform Requirement
- AWMS Capacity and Product Ordering
- AWMS Deployment Scenarios

AWMS Installation

- AWMS Installation
- AWMS License Activations
- AWMS Proxy/CCS/CCC Startup

Content

AWMS Basic Operation

- AWMS Proxy registration and NE Discovered
- Configuration Management
- Topology Management
- Alarm Management
- Performance Management
- Administration Management
- Software Management
- Scheduled Tasks
- System backup and restoration

Ps: This training session just present the basic operation, more feature operation will be found from the AWMS manual

AWMS Basic Troubleshooting

AWMS OVERVIEW

AWMS Features Highlight

Altai Wireless Management System provides network operators a full suite of element and network management functions for WiFi networks.

Configuration
Management

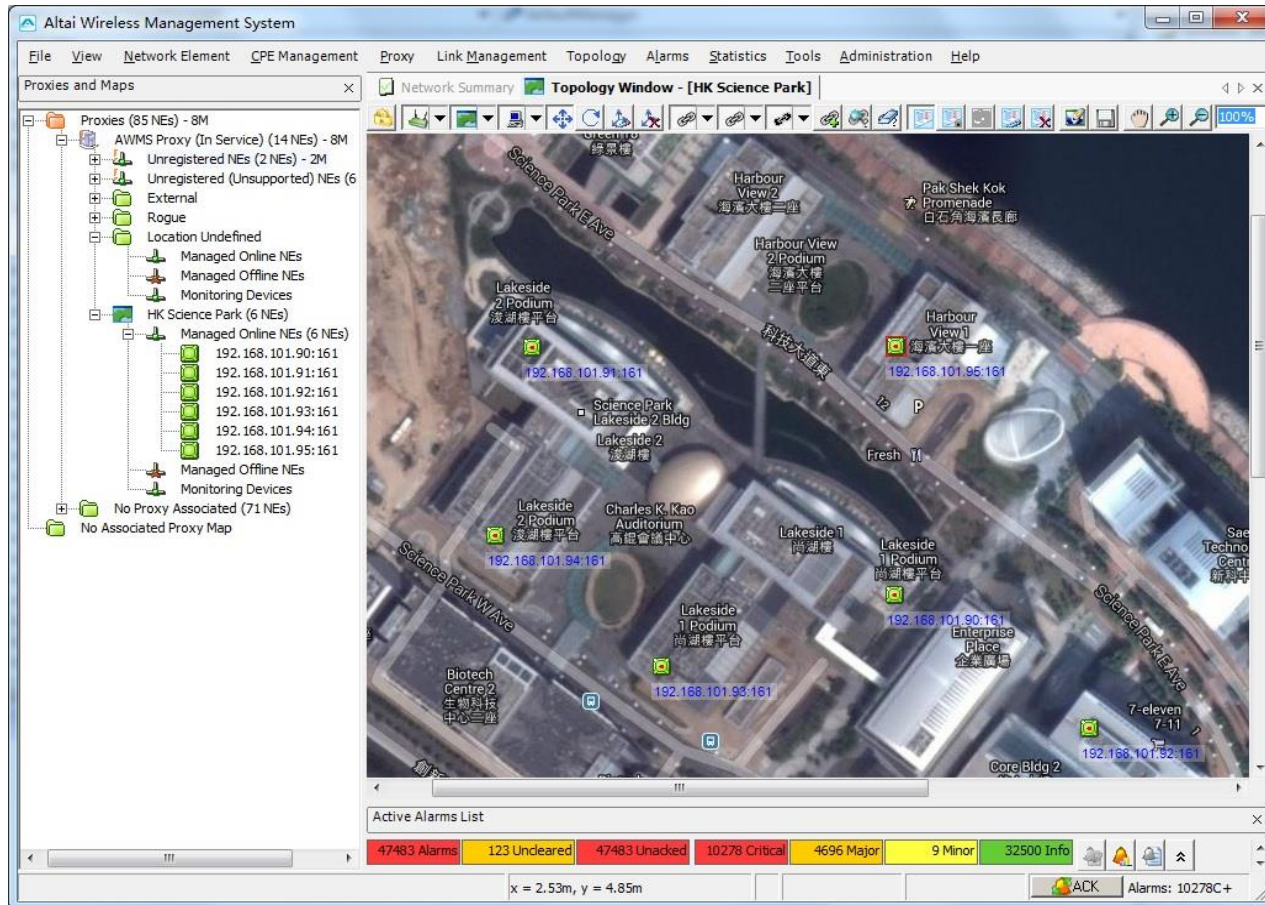
Fault
Management

Performance
Management

Topology
Management

Firmware
Management

Security
Management



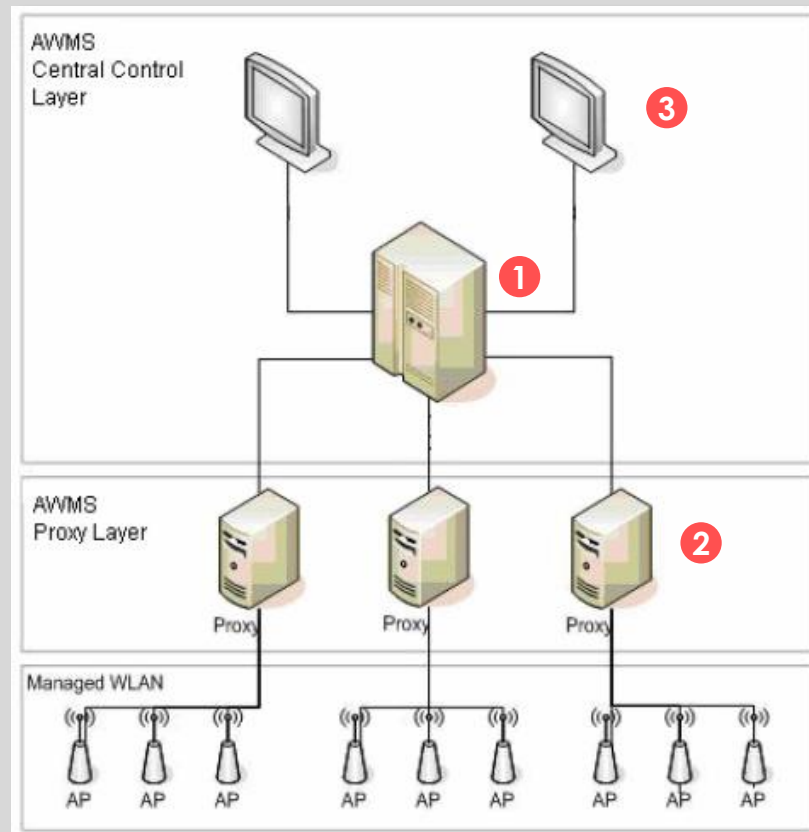
AWMS Architecture

Altai Wireless Management System (AWMS) is composed of three parties. They can be installed in one or different hosts.

1. AWMS Server

2. Proxy Server

3. AWMS Client



AWMS Platform Requirement

Network size	Small network	Medium network	Large network	Metro network
NE supported	≤ 20 NE	21 – 200 NE	201 – 1,000 NE	1,001 – 4,000 NE
Proxy supported	N/A	2	4	6
Con. AWMS client	1	2	4	8
AWMS server	Desktop CPU Core i5-4670, 4G RAM, 40G HDD, 100M Ethernet or above; Windows XP/7/8 Pro (32/64 bits); MySQL 5.0.96; Java SDK 1.6.0_30	Desktop CPU Core i7-4770, 4G RAM, 40G HDD, 100M Ethernet or above; Windows 2003/2008 Server (32/64 bits); MySQL 5.0.96; Java SDK 1.6.0_30	CPU Xeon E5-2640 v2, 8G RAM, 100G HDD, 100M Ethernet or above; Windows 2003/2008 Server (64 bits); MySQL 5.0.96; Java SDK 1.6.0_30	CPU Xeon E5-2640 v2, 8G RAM, 40G HDD, 100M Ethernet or above; Windows 2003/2008 Server (64 bits); Java SDK 1.6.0_30
Database server	Integrated in AWMS Server	Integrated in AWMS Server	Integrated in AWMS Server	CPU Xeon E5-2640 v2, 6G RAM, 100G HDD, 100M Ethernet or above; Windows 2003/2008 Server (64 bits); MySQL 5.0.96
Proxy server	Integrated in AWMS Server	Integrated in AWMS Server, or Desktop CPU Core i5-4670, 4G RAM, 40G HDD, 100M Ethernet or above; Windows XP/7/8 Pro (32/64 bits); Java SDK 1.6.0_30	Integrated in AWMS Server, or Desktop CPU Core i5-4670, 4G RAM, 40G HDD, 100M Ethernet or above; Windows XP/7/8 Pro (32/64 bits); Java SDK 1.6.0_30	Integrated in AWMS Server, or Desktop CPU Core i5-4670, 4G RAM, 40G HDD, 100M Ethernet or above; Windows XP/7/8 Pro (32/64 bits); Java SDK 1.6.0_30
AWMS client	Integrated in AWMS Server	Integrated in AWMS Server, or Desktop CPU Core i3-3220, 2G RAM, 40G HDD, 100M Ethernet or above; Windows XP/7/8 Pro (32/64 bits)	Desktop CPU Core i3-3220, 4G RAM, 40G HDD, 100M Ethernet or above; Windows XP/7/8 Pro (32/64 bits)	Desktop CPU Core i3-3220, 4G RAM, 40G HDD, 100M Ethernet or above; Windows XP/7/8 Pro (32/64 bits)

AWMS Capacity and Product Ordering

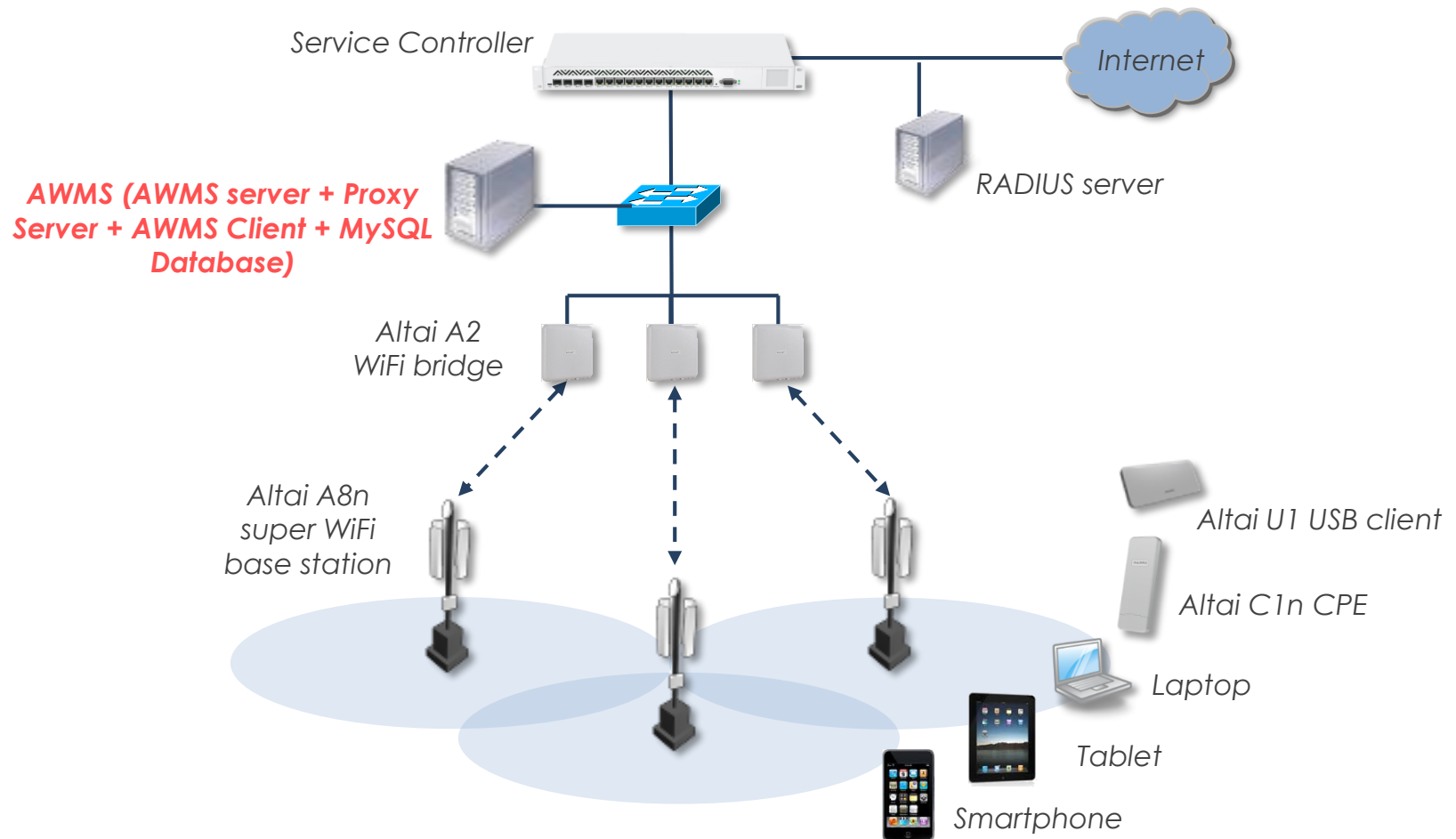
AWMS system	System capacity (Max.)
Network Element (NE)	4,000
Proxy per AWMS server	6
Concurrent AWMS client	8

PS: Every unit of A8 series, A8n series, A2 series, A3 series, B5 series, C1n series, C2 series counts as 1 NE

- Basic AWMS software supports up to 25 NE
- Basic AWMS Lite software supports up to 5 NE
- Expandable by adding License Pack for 10, 100, 500 or 1,000 additional NE
- A8 and A8n series unit requires 1 NE license
- A2 series, A3 series, C2 series and B5 series unit requires 0.25 NE license
- C1n series unit is requires 0.1 NE license
- Servers and Windows to be provided by customer
- 30-day free trial is available

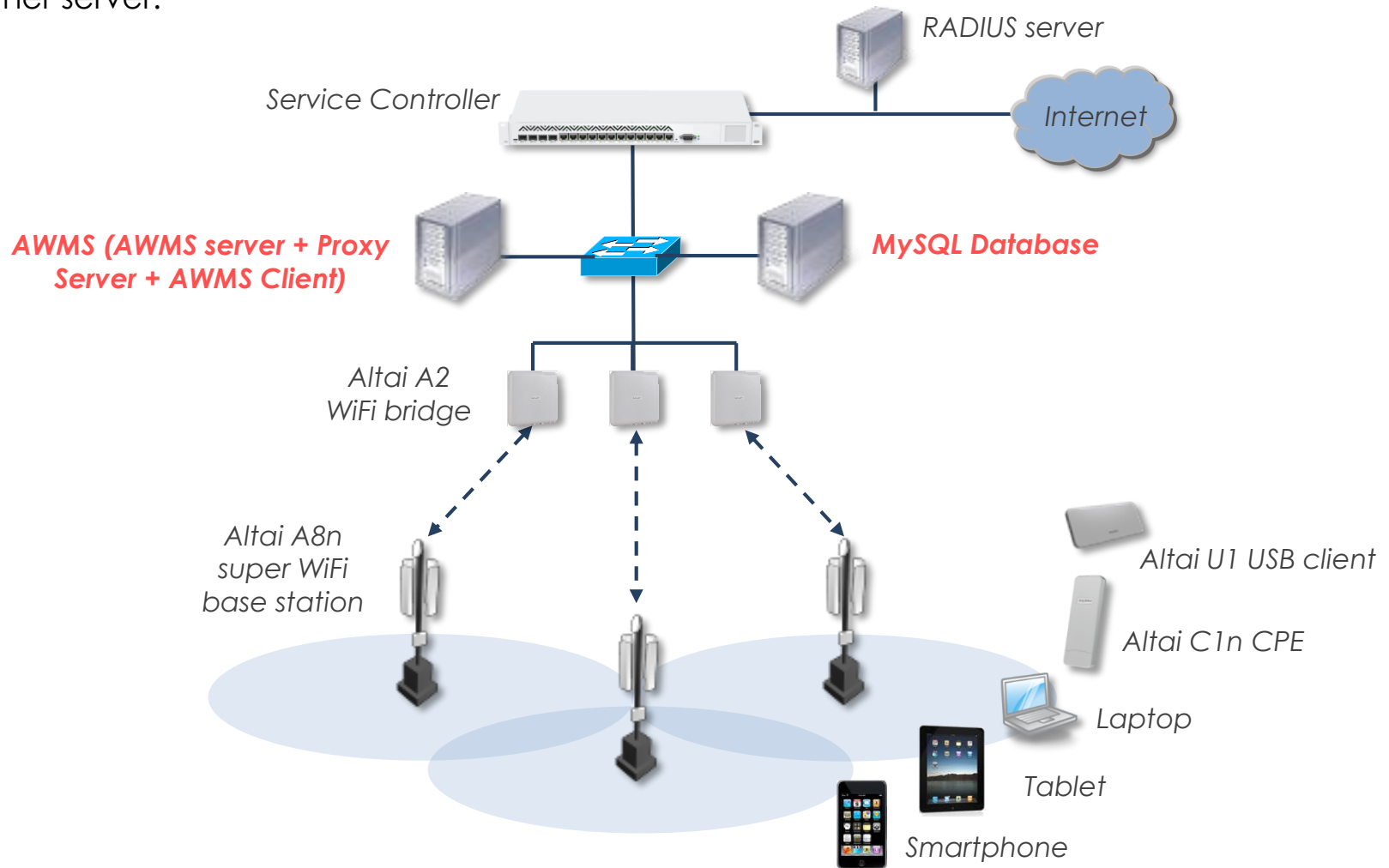
AWMS Deployment Scenarios (Single Region)

For single region where deployed with less than 200 NE, then all three components of AWMS can be installed in one server.



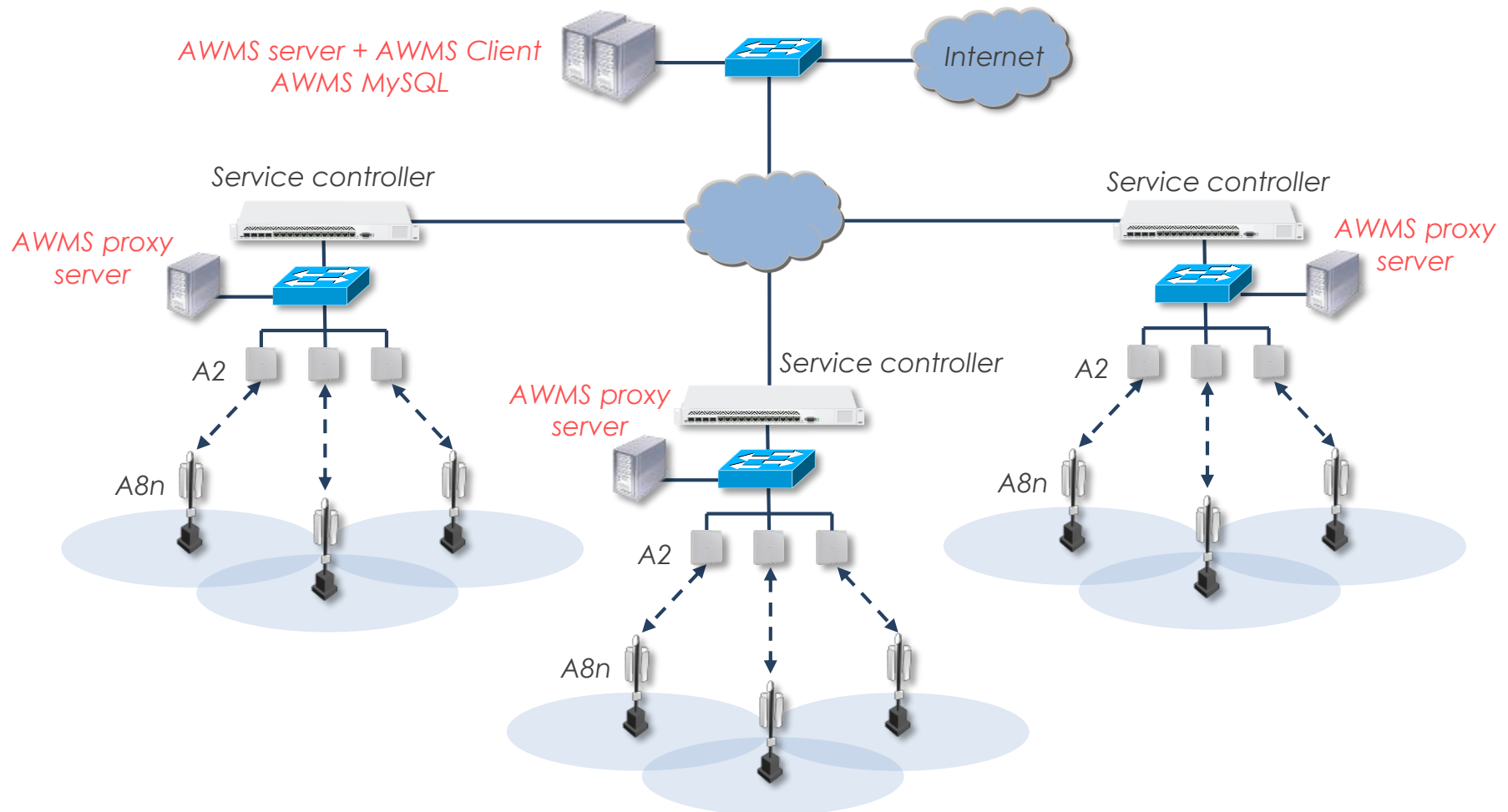
AWMS Deployment Scenarios (Single Region)

For single region where deployed with less than 200 NE but required with larger database capability, then all three components of AWMS can be installed in one server and MySQL database installed in another server.



AWMS Deployment Scenarios (Multiple Regions)

For Multiple regions where deployed more than 200 NE, AWMS proxy will be deployed at every region to handle 200 NE. In data center, AWMS server and AWMS client installed in one server, and MySQL installed in another server.



AWMS INSTALLATION

AWMS Installation

Below is the flow to install the AWMS, the detail steps can be found from the AWMS installation manual.

Install the necessary application before installing the AWMS (There applications can be found from the AWMS installation packet folder)

- 1) JDK
- 2) Microsoft .NET Framework 2.0
- 3) MySQL



Install the AWMS

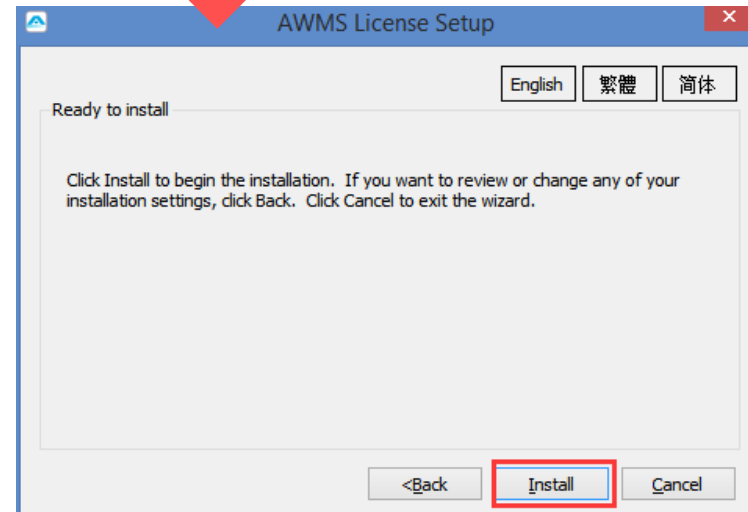
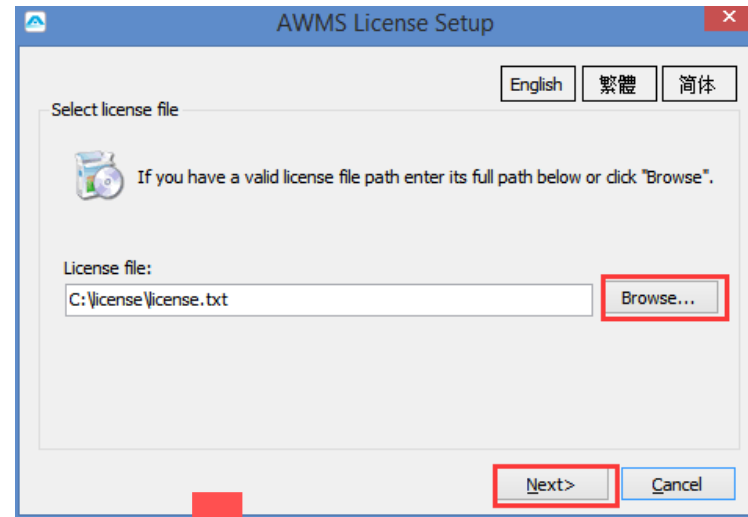
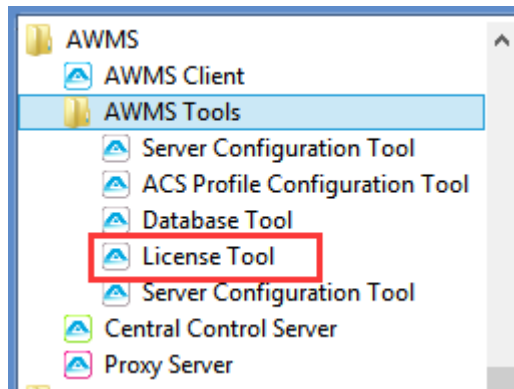
- 1) Central Control Server (AWMS server)
- 2) Proxy Server
- 3) AWMS Client

(PS: Install them in the same computer or separate computers.)



Import the AWMS License and active it.

AWMS License Activation

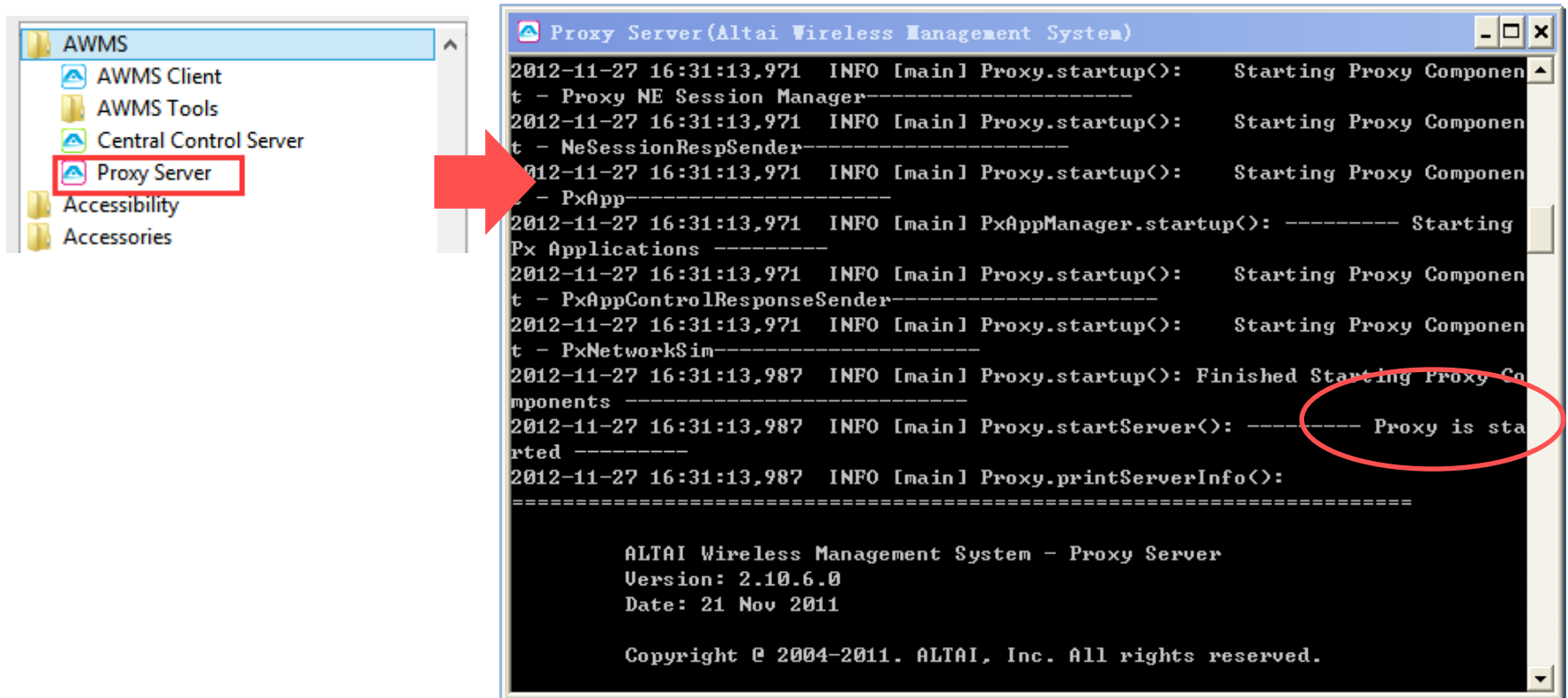


Launch the AWMS (AWMS Proxy)

AWMS CCS and Proxy can be launched by selecting start->all programs->AWMS->Central control server

And start->all programs->AWMS->proxy server respectively.

When "Proxy is started" raised up, the AWMS proxy launch finished.

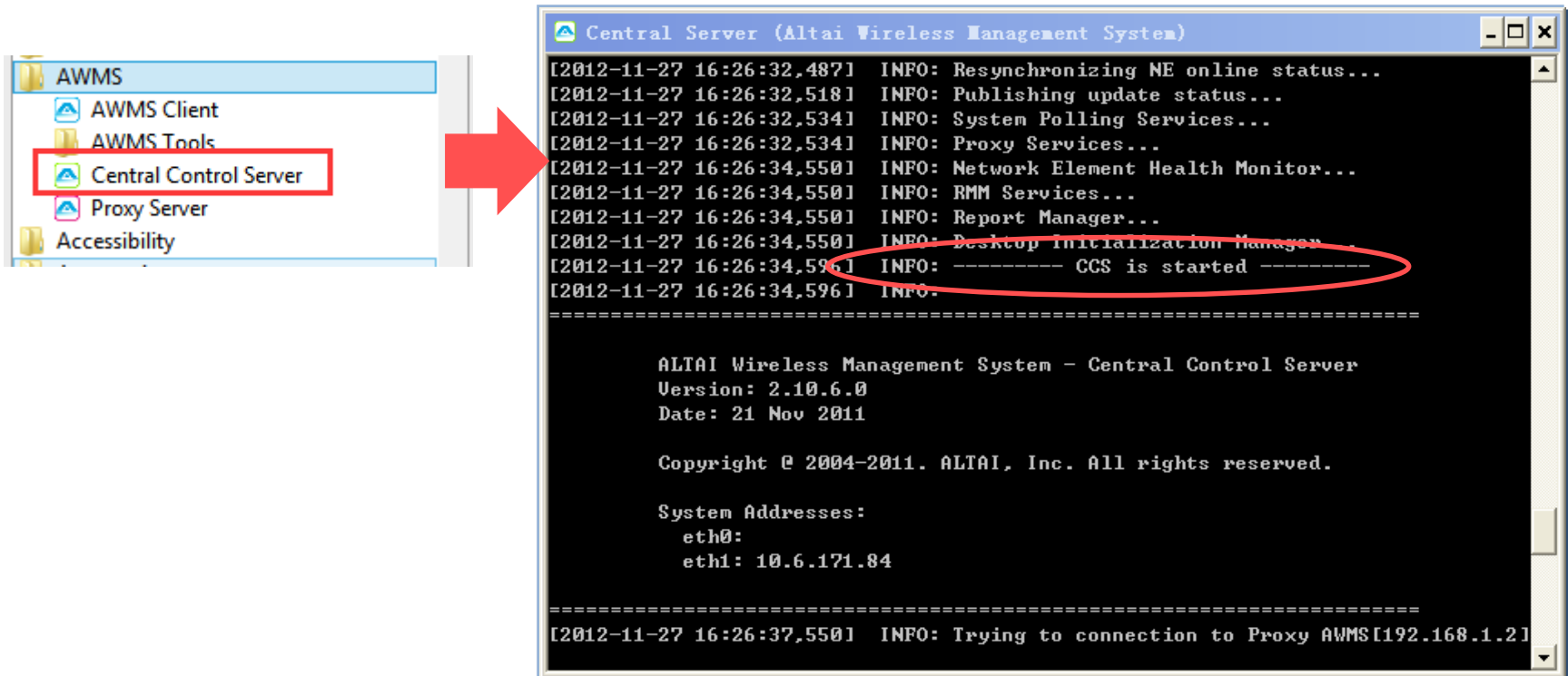


Launch the AWMS (AWMS CCS)

AWMS CCS and Proxy can be launched by selecting start->all programs->AWMS->Central control server

And start->all programs->AWMS->proxy server respectively.

When "CCS is started" raised up, the CCS launch finished.

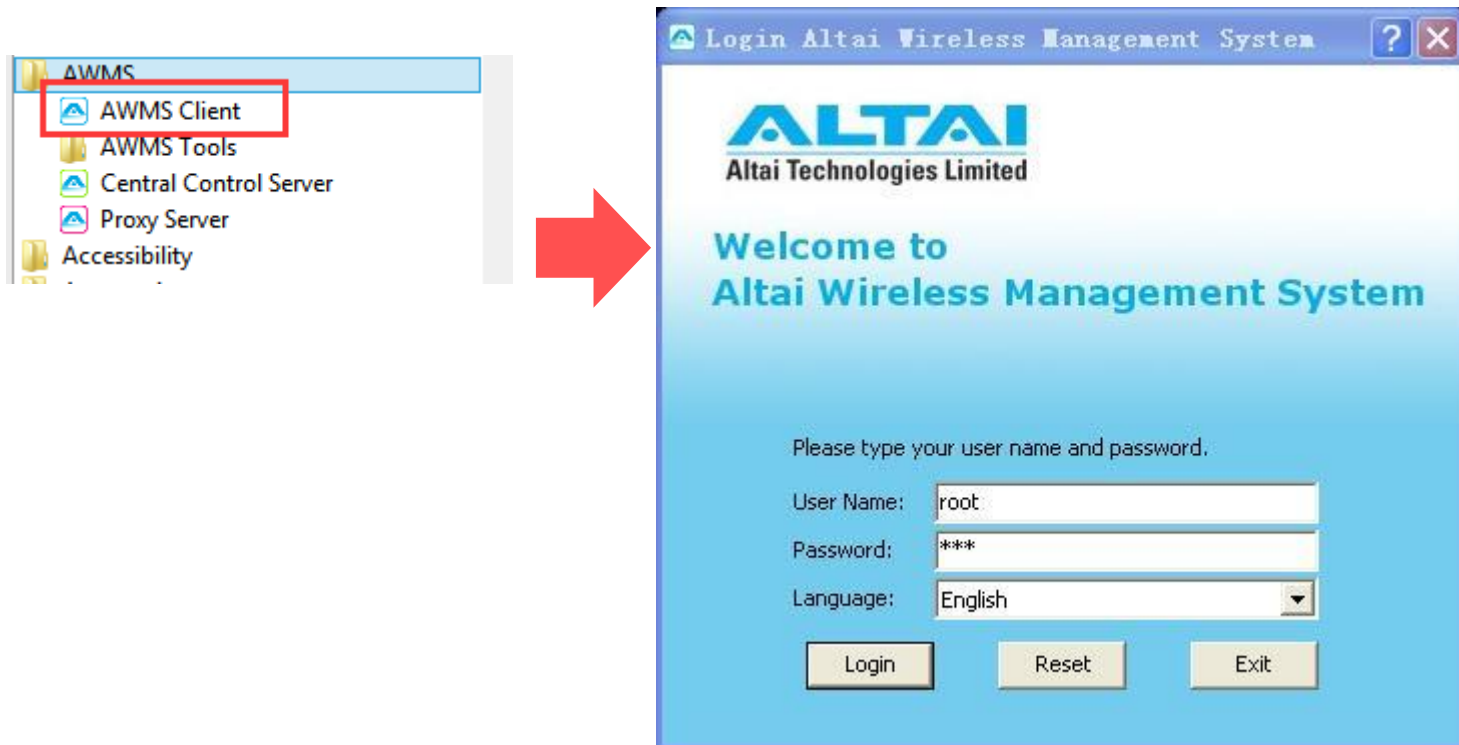


Launch the AWMS (AWMS Client)

The client can be launched after the CCS launch finished.

The default username/password to login the AWMS client:

root/ims



AWMS BASIC OPERATION

AWMS GUI Main Window

Function Menu

Main Window

AWMS proxy/NE
Status List

Active Alarm
List Window

Altai Wireless Management System

File View Network Element CPE Management Proxy Link Management Topology Alarms Statistics Tools Administration Help

Proxies and Maps

- Proxies
 - AWMS Training (In Service)
 - Unregistered NEs
 - Unregistered (Unsupported) NEs
 - External
 - Rogue
 - Location Undefined
 - Managed Online NEs
 - Managed Offline NEs
 - Monitoring Devices
 - No Proxy Associated
 - Location Undefined
 - Managed Offline NEs
 - External Offline NEs
 - Rogue Offline NEs
 - No Associated Proxy Map
 - DEFAULTREGION

Network Summary

General

Number of Proxies	1
Number of Registered NEs	0
Number of Unregistered NEs	0

System (Hourly) Performance Statistics Summary

Report Time: Thu, 30 June 2016, 10:12:39
Next Update Time: Thu, 30 June 2016, 11:12:39
Summary Time: Wed, 29 June 2016, 09:00:00 - Thu, 30 June 2016, 09:00:00
Network Elements: 0

Network Elements Online Status In Report Period

Legend: ■ Online ■ Offline ■ Loss of Communication

Active Alarms List

4 Alarms 2 Uncleared 3 Unacked 1 Critical 2 Major 0 Minor 1 Info

Active alarms (37 ~ 44)

ID	Clear	Ack	Severity	Category	Alarm Name	Equipment Type	Equipment
44	Yes	No	Major	Facility	Proxy Unreachable	Proxy	test2
43	N/A	No	Info	Facility	Central Server Startup	System	

4 Alarm(s)

ACK Alarms: 1

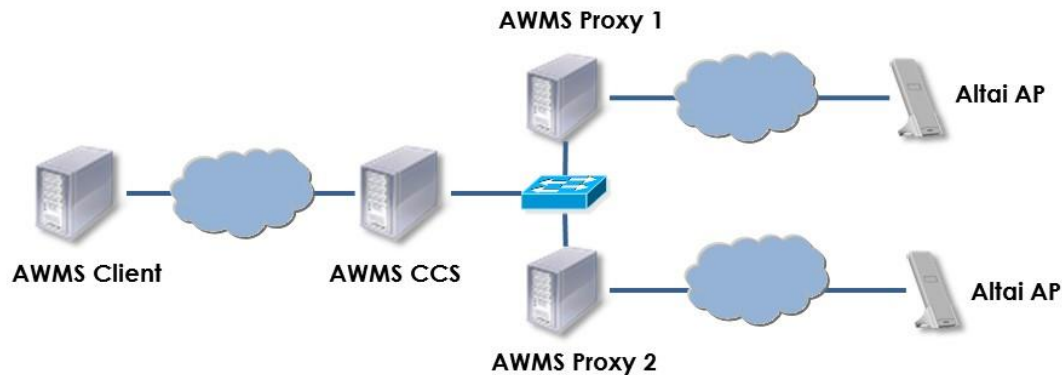
Preparation

Before starting below hand-on operation, please make sure below items ready:

- 1) If AWMS proxy, AWMS CCS and AWMS client installed in same computer/server, make sure the computer/server reachable to APs.



- 2) If AWMS proxy, AWMS CCS and AWMS client installed in different computers/servers, make sure the AWMS CCS reachable to AWMS proxy, AWMS client reachable to AWMS CCS and AWMS proxy reachable to APs.



Preparation

3) Make sure the SNMP enable in Altai AP and set the related proxy server IP as the trap host in Altai AP.

Status
Configuration
Administration
Tools
About

User Admin
SNMP
Certificate
Firmware Update
Factory Default
Backup / Restore
Customization

SNMP Configuration

Enable SNMP: ☒

Read Community:

Write Community: ☐ Show

Trap Host ID	Trap Host	Trap Port	Trap Community	Enable	Detail
1	10.6.161.73	162	public	Yes	
2	NA	162	public	No	
3	NA	162	public	No	
4	NA	162	public	No	

Submit

AWMS Proxy Registration and NE Discovered

AWMS Proxy Registration and NE Discovered

Select **Proxy->Add Proxy...** and bring up the *Proxy Registration* window. Finish the "Server Configuration" firstly.

Altai Wireless Management System

File View Network Element CPE Management **Proxy** Link Management Topology Alarms Statistics Tools Administration Help

Proxies and Maps

- Proxies
- No Proxy Associated
- No Associated Proxy Map
- DEFAULTREGION

Proxy Server Configuration

SNMP Default Settings... Proxies Health... **Add Proxy...**

***Proxy Registration - [New]**

Server Configuration SNMP Discovery Configuration

1 **The name of the Proxy**

Proxy Name:

2 **A brief description for the corresponding Proxy Server. (Optional)**

Description:

3 **The IP address of the Proxy Server**

IP Address:

4 **Status of the Proxy Server. The Proxy Server is active when the box is checked under the CCS, otherwise it is inactive. Check it after finish the SNMP Discover Configuration.**

☐ In-Service

AWMS Proxy Registration and NE Discovered

Then go to “SNMP Discovery Configuration” to set the discovery IP range of target AP under this proxy. Make sure Port and SNMP Version setting match the value set in APs.

***Proxy Registration - [New]**

Server Configuration | **SNMP Discovery Configuration**

Discovery Range Type	Start IP	End IP	Start Port	End Port	Read Community	Write Community

Discovery Range Type

☒ Discover In IP Range Start IP: 0 . 0 . 0 . 0 Start Port: 161

☐ Discover In Port Range End IP: 0 . 0 . 0 . 0 End Port: 0

SNMP Version

☒ v2c Read Community String: public ☐ v3

Write Community String: netman

1 The range of IP addresses is used to define the managed APs under the Proxy Server.

2 The port for the Proxy Server to communicate with NEs. By default, the value is 161.

3 Read Community String: Allows AWMS to issue “Get” and “GetNext” messages through SNMP.
Write Community String: Allows AWMS to issue “Set” messages through SNMP.

4 Add Modify Delete Clear

Save Reset Close

AWMS Proxy Registration and NE Discovered

After finish the “**SNMP Discovery Configuration**”, check the “**In-Service**” box and click the “**Save**” to make this proxy online. When this proxy online (In Service), then the AWMS will discover the APs automatically.

The screenshot displays the 'Proxy Registration - [AWMS Training]' window. The left sidebar shows a tree view of network elements. The main area shows the configuration for the 'AWMS Training (In Service)' proxy.

Network Elements (NEs) Discovered:

- Proxies (12 NEs) - 12M**
 - AWMS Training (In Service) (12 NEs) - 12M** (Status: In Service)
 - Unregistered NEs (9 NEs) - 9M**
 - 10.6.161.18:161 (1M)
 - 10.6.161.28:161 (1M)
 - 10.6.161.68:161 (1M)
 - 10.6.161.80:161 (1M)
 - 10.6.161.87:161 (1M)
 - 10.6.161.92:161 (1M)
 - 10.6.161.113:161 (1M)
 - 10.6.161.109:161 (1M)
 - 10.6.161.134:161 (1M)
 - Unregistered (Unsupported) NEs (3 NEs) - 3M**
 - 10.6.161.2:161 (1M)
 - 10.6.161.1:161 (1M)
 - 10.6.161.50:161 (1M)
 - External
 - Rogue
 - Location Undefined
 - No Proxy Associated
 - No Associated Proxy Map
 - DEFAULTREGION

Configuration Details:

- Server Configuration** tab is active.
- In-Service** checkbox is checked (labeled 1).
- Save** button is highlighted (labeled 2).

Annotations:

- 3** points to the 'Unregistered NEs' list.
- The proxy online status: In Service** points to the 'AWMS Training (In Service)' status.
- AWMS will discover all Altai APs which in the discover range** points to the 'Unregistered NEs' list.
- AWMS will also discover all other devices which in the discover range** points to the 'Unregistered (Unsupported) NEs' list.

AWMS Proxy Registration and NE Discovered

For some cases like discovery range too big, APs number too many, the AP may be discovered slowly. You can use “On Demand Discovery” option to fast discover specified APs.

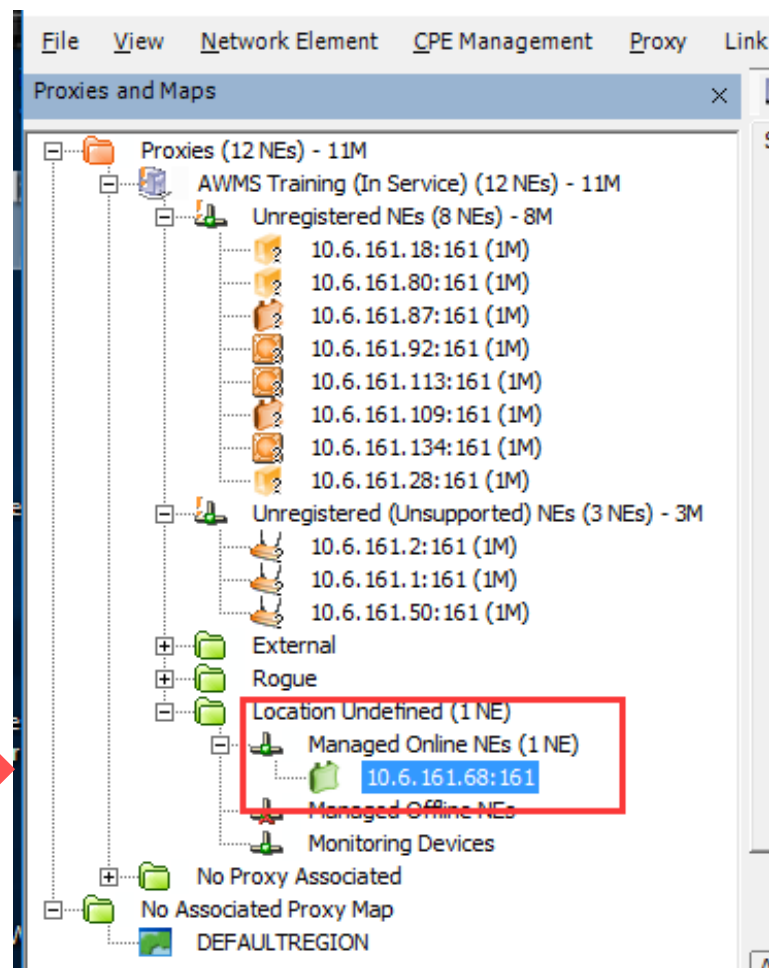
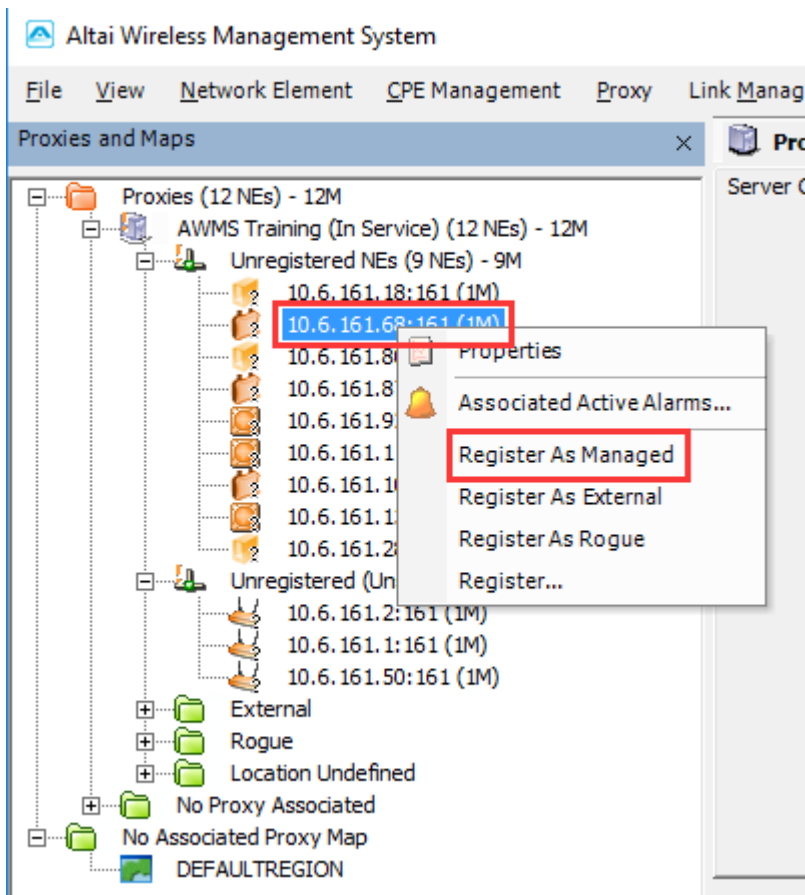
The screenshot displays the Altai Wireless Management System interface. The main window is titled "Proxy Registration - [AWMS Training]" and has tabs for "Server Configuration" and "SNMP Discovery Configuration". The "On Demand NE Discovery" sub-window is active, showing the "Information" section with the following fields:

- Proxy Name: AWMS Training
- NE IP Address: 0 . 0 . 0 . 0
- NE Port: 161
- View SNMP Discovery Configuration: View

The "OK" button is highlighted with a red box. In the background, a tree view on the left shows the network structure, with "AWMS Training" selected. A context menu is open over this selection, with the "On Demand Discovery" option highlighted. A red arrow points from this menu option to the "On Demand NE Discovery" sub-window.

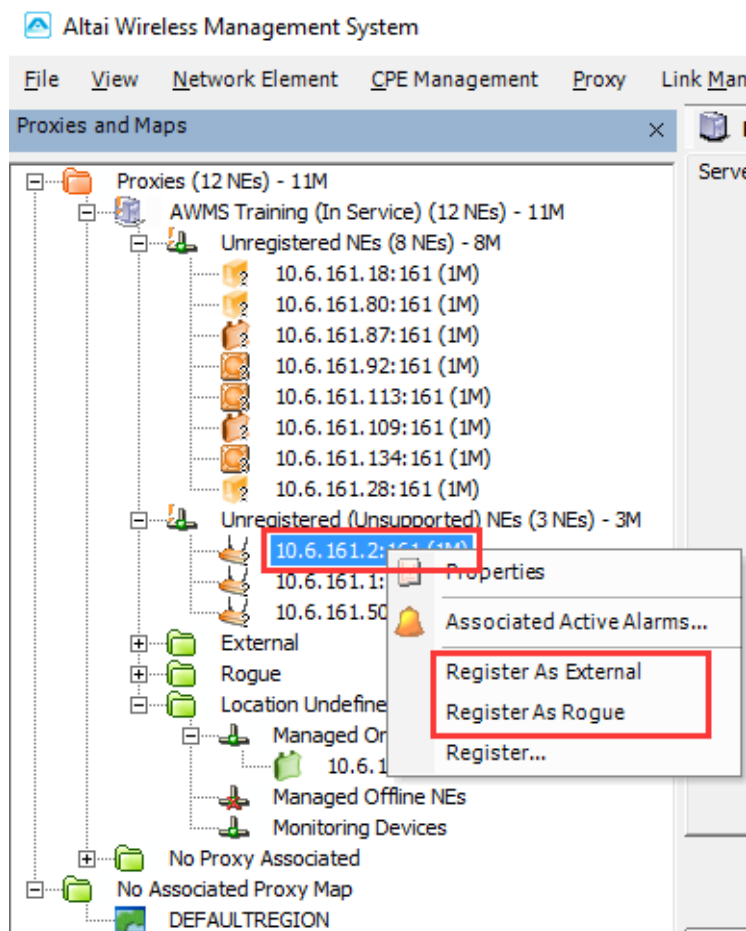
AWMS Proxy Registration and NE Discovered

After APs discovered by AWMS, you need to register them so that AWMS can manage them. Right-click the specified NE/ all selected NEs, and select the “**Register As Managed**”.



AWMS Proxy Registration and NE Discovered

For other devices discovered by AWMS under “**Unregistered (Unsupported) NEs**”, there are two options: “**Register As External**” and “**Register As Rogue**”. No matter which option selected, the devices will be monitored by AWMS as part of Network.



Configuration Management

Configuration Management — Single NE Configuration

Right-click the specified NE and select “**NE Configuration...**” to bring the NE Configuration Settings window where you can change the NE configuration, after finishing all changes, click “**Save**” and “**Provision**” to make configurations apply to AP.

The screenshot displays the 'NE Configuration Settings - [10.6.161.68:161]' window. The left pane shows a tree view of 'Proxies (13 NEs) - 12M' and 'Unregistered NEs (9 NEs) - 9M'. A right-click context menu is open over a specific NE, with 'NE Configuration...' highlighted (1). The main pane shows the 'System > System' tab with 'Basic System Setting' and 'Basic General' sections. The 'Basic System Setting' section contains a table with 'Attribute', 'Value', and 'Value From' columns. The 'Basic General' section also contains a similar table. The 'Save' (3) and 'Provision' (4) buttons are highlighted at the bottom. The bottom status bar shows 'Alarms: 14M+'.

Attribute	Value	Value From
Guest User Password		Copied From NE
Admin User Password		Copied From NE

Attribute	Value	Value From
System Name		Copied From NE
System NE ID		Copied From NE
System Location		Copied From NE

Buttons: Save (3), Reset, Provision (4), Copy from Current Config., Create Template ..., Close

Status Bar: Alarms: 14M+

Configuration Management — Mass NE Configuration

Using template configuration to apply the same configuration to mass NE.

- 1) Create a template based on the existing configuration from one NE;
- 2) Edit the configuration template (for same configurations in mass NE like SSID, NTP...);
- 3) Apply the configuration template to the target NEs (only available for same type and firmware of NE, if the configuration template created based on A8n series, then the modified template just available for all A8n series).

Configuration Management — Mass NE Configuration

Create a configuration Template

The screenshot displays the Altai Wireless Management System interface. On the left, a tree view shows the network hierarchy under 'Proxies (11 NEs) - 6M'. A context menu is open for a selected network element (10.6.161.1), with the 'More Edit' option highlighted. A red arrow labeled '1' points from this menu to a 'Create Template from NE Configuration Settings' option in a sub-menu. On the right, a 'Network Summary' window shows statistics: 1 proxy, 5 registered NEs, and 6 unregistered NEs. Below this, a 'System (Hourly) Performance' window displays report and update times. A second dialog box, 'Create New Template From C...', is open, prompting for a 'Configuration template' name. A red circle labeled '2' is around the input field, and a red arrow points from the sub-menu option to this dialog. The 'OK' button in the dialog is also highlighted with a red box.

Altai Wireless Management System

File View Network Element CPE Management Proxy Link Management Topology Alarms Statistics Tools Administ

Proxies and Maps

Proxies (11 NEs) - 6M

- AWMS Training (In Service) (11 NEs) - 6M
 - Unregistered NEs (4 NEs) - 4M
 - 10.6.161.18:161 (1M)
 - 10.6.161.80:161 (1M)
 - 10.6.161.87:161 (1M)
 - 10.6.161.28:161 (1M)
 - Unregistered (Unsupported) NEs (2 NEs) - 2M
 - 10.6.161.2:161
 - 10.6.161.1:161
 - External
 - Rogue
 - Location Undefined
 - Managed Online
 - 10.6.161 (Selected)
 - 10.6.161
 - 10.6.161
 - 10.6.161
 - 10.6.161
 - Managed Offline
 - Monitoring Device
- No Proxy Associated
- No Associated Proxy Map
- DEFAULTREGION

Network Summary

General

Number of Proxies	1
Number of Registered NEs	5
Number of Unregistered NEs	6

System (Hourly) Performance

Report Time: Thu, 30 June 2016, 14:18:30

Next Update Time: Thu, 30 June 2016, 15:18:30

Summary Time: Wed, 29 June 2016, 14:00:00

Network Elements: 0

Network Elements Online Status

- Copy Configuration From NE
- Create Template from NE Configuration Settings (Highlighted)
- Create Template from NE Current Configuration
- Provisioning Options...
- Apply Template...

Create New Template From C...

Please enter new configuration template name.

Configuration template

OK Cancel

Configuration Management — Mass NE Configuration

Edit the configuration Template

The screenshot displays the ALTAI Super WiFi configuration interface. The left sidebar shows a tree view of network elements under 'Proxies and Maps'. A context menu is open for a selected NE, with 'More Edit' highlighted. A secondary menu is open from 'More Edit', with 'Apply Template...' selected. A red arrow points from this menu to the 'Apply Configuration Template' dialog box on the right.

The 'Apply Configuration Template - NE: [10.6.161.68:161]' dialog box contains the following information:

- Selected Network Elements:** 10.6.161.68:161
- Available Configuration Templates:**
 - Configuration template
 - FACTORY_DEFAULT
- Auto-save all selected NE configurations after applying template:** ☒
- Buttons:** Apply, Edit Template... (highlighted with a red box and a red circle with the number 2), Cancel

The background interface also shows a 'Network Summary' tab with the following data:

Network Summary	
General	
Number of Proxies	1
Number of Registered NEs	7
Number of Unregistered NEs	6

Below the summary, a 'System (Hourly)' report is visible, showing:

- Report Time:** Thu, 30 June 20...
- Next Update Time:** Thu, 30 June 20...
- Summary Time:** Wed, 29 June 20...
- Network Elements:** 5

A red circle with the number 1 is placed near the 'Apply Template...' option in the context menu.

Configuration Management — Mass NE Configuration

Edit the configuration Template: after finishing all changes in the configuration template, click the **“Save”** to keep the changes.

Apply Configuration Template - NE: [10.6.161.68:161]

Selected Network Elements

10.6.161.68:161

Available Configuration Templates

Name

Configuration template

FACTORY_DEFAULT

☒ Auto-save all selected NE Configuration after applying template.

Apply Edit Template... Cancel

***Configuration Template - [Configuration template]**

Name: Configuration template

Applicable Network Element Type

NE Type	Model	MIB Version
Altai A2N	A2n	2.0

Name

- System
 - *System
 - SNMP
 - System Log
 - User Admin
- Network
- Wireless
- Ethernet Setting

***System > System**

Basic System Setting

Attribute	Value	Applicable
Guest User Password		☐
Admin User Password		☐

Basic General

Attribute	Value	Applicable
*System Name	test	☒
System NE ID		☐
System Location		☐

Check All Uncheck All Save Reset Apply To NE Configurations... Close

Configuration Management — Mass NE Configuration

Apply the configuration template to mass NEs: Click “**Apply To NE Configurations...**” will bring a window to show all available NEs for that template. Select the target NEs and click “**Apply**” then template will be applied to selected NEs.

Name: Configuration template

Applicable Network Element Type: Altai A2N

NE Type: Altai A2N, Model: A2n, MIB Version: 2.0

System > System

Basic System Setting

Attribute	Value	Applicable
Guest User Password		☐
Admin User Password		☐

Basic General

Attribute	Value	Applicable
System Name	test	☒
System NE ID		☐
System Location		☐

This object represents system NE Id.

Check All Uncheck All Save Reset **Apply To NE Configurations...** Close

Apply Configuration Template To NE Configuration... x

Applicable Network Elements

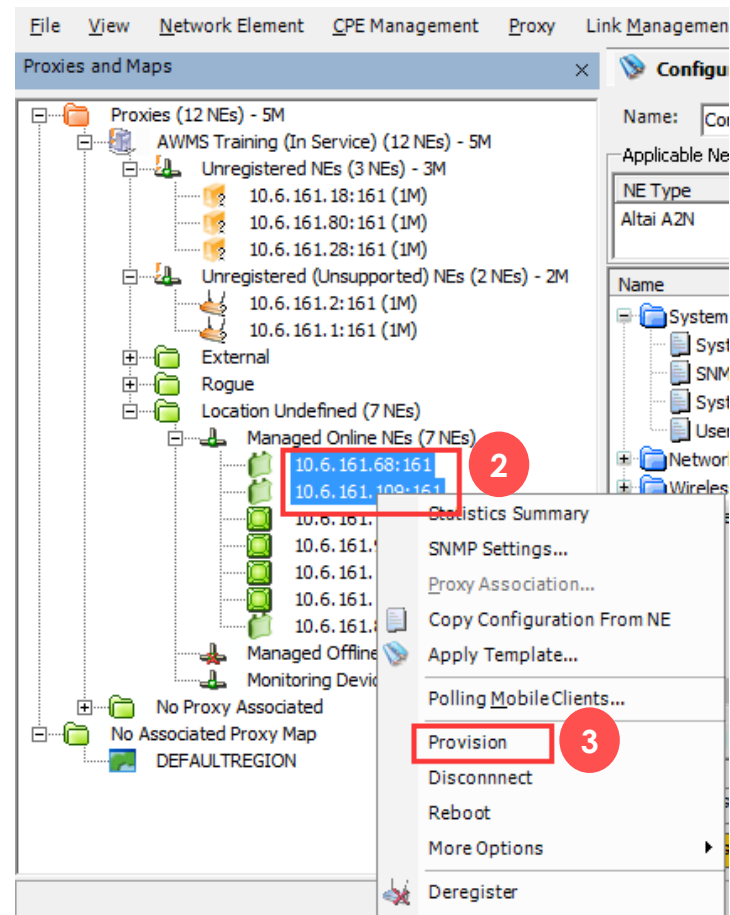
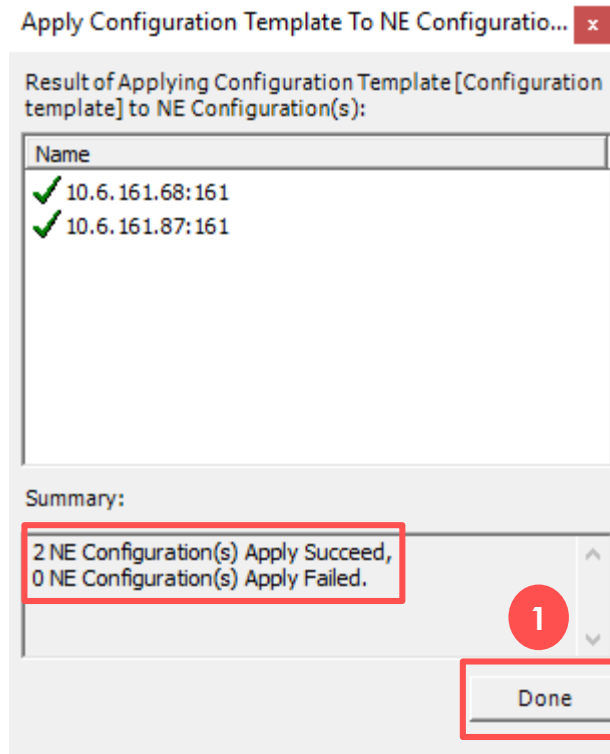
Name
10.6.161.68:161
10.6.161.87:161

Auto-save selected NE Configurations after applying template. ☒

Apply Edit Template... Cancel

Configuration Management — Mass NE Configuration

Apply the configuration template to mass NEs: After the configuration complete apply successfully, then Provision the target NE.



Configuration Management — Checking the current configuration of NE

File View Network Element CPE Management Proxy Link Management Topology Alarms Statistics Tools Administration Help

Proxies and Maps

Proxies (13 NEs) - 1M

- AWMS Training (In Service) (13 NEs) - 1M
 - Unregistered NEs
 - Unregistered (Unsupported) NEs
 - External (2 NEs)
 - Rogue
 - Location Undefined (11 NEs) - 1M
 - Managed Online NEs (11 NEs) - 1M
 - 10.6.161.6
 - 10.6.161.1
 - 10.6.161.1
 - 10.6.161.9
 - 10.6.161.1
 - 10.6.161.1
 - 10.6.161.8
 - 10.6.161.5
 - 10.6.161.1
 - 10.6.161.8
 - 10.6.161.2
 - Managed Offline
 - Monitoring Device
 - No Proxy Associated
 - No Associated Proxy Map
 - DEFAULTREGION

Configuration Status - [10.6.161.68:161]

Last Updated Time: 2016/06/30 14:57:07

System > System

Basic System Setting

Attribute	Value	Undefined
Guest User Password		No
Admin User Password		No

Basic General

Attribute	Value	Undefined
Model	AP5822	No
MIB	2.0	No
MACAddress	00:19:BE:70:9D:77	No
HW Version	2.1	No
SW Version	2.1.0.910	No
FPGA	0x0	No
Time of Day	2016/06/30 14:57:05	No

Refresh Create Template ... Close

List

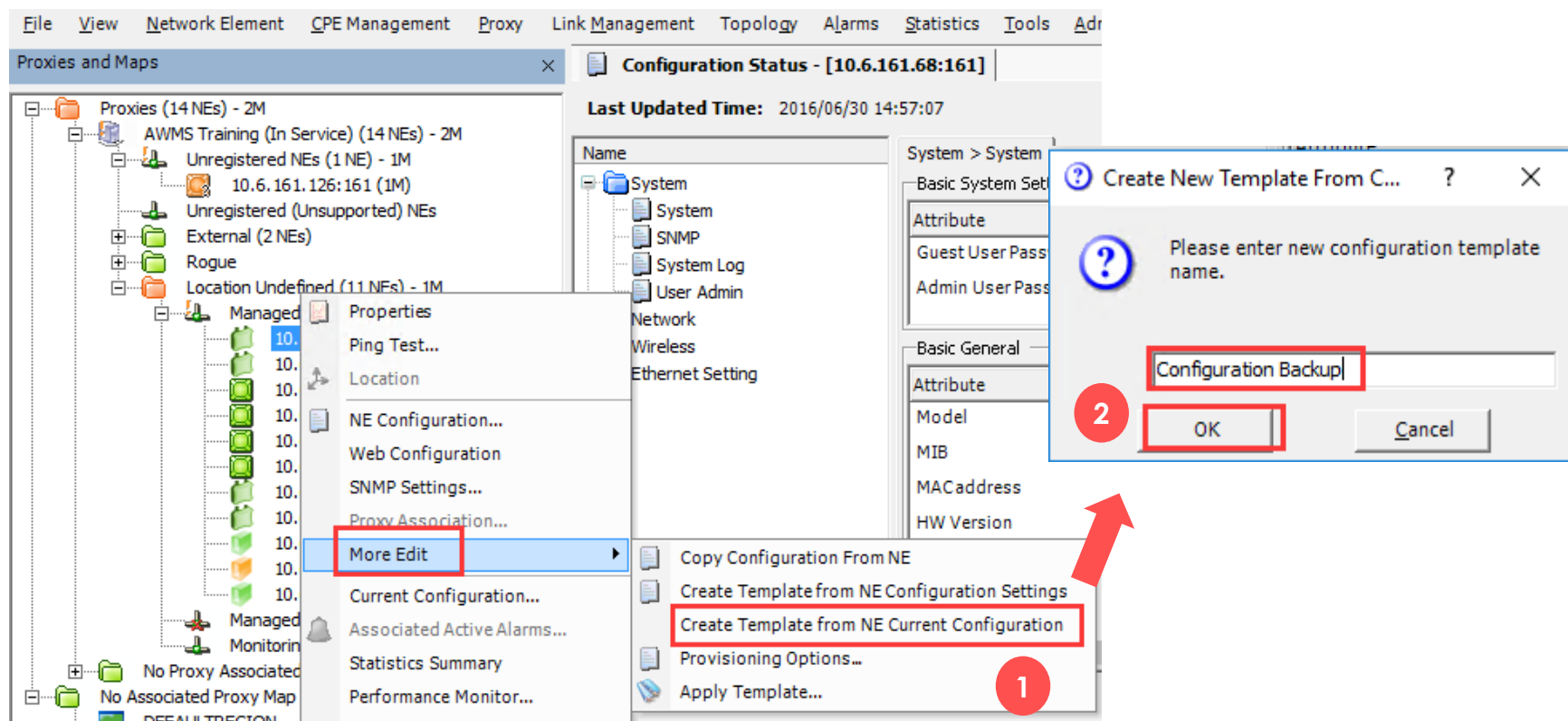
1 Undeared 0 Unacked 0 Critical 1 Major 0 Minor 0 Info

ACK Alarms: 1M

Properties Ping Test... Location NE Configuration... Web Configuration SNMP Settings... Proxy Association... More Edit Current Configuration... Associated Active Alarms... Statistics Summary Performance Monitor... More View Provision Disconnect Reboot

Configuration Management — Backup the configuration of NE

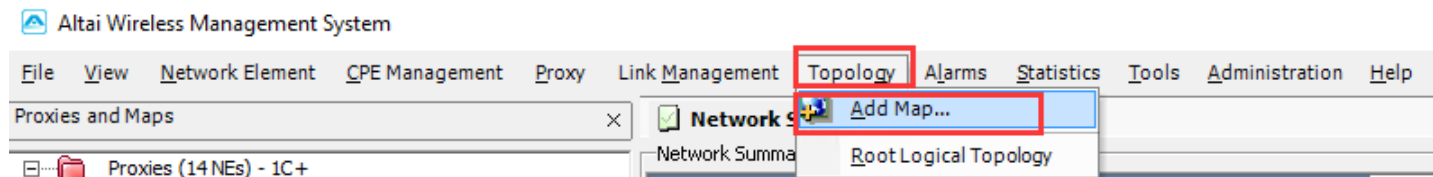
Create a template from NE current configuration as configuration backup of NE. This template can be restored to any same type/firmware NE by applying template.



Topology Management

Topology Management — Adding Map

To add a new map in AWMS Client, Select **Topology->Add Map...** from the main menu.



Create Map Wizard

Steps:

1. Fill in map basic information.
2. Select map image.
3. Fill in map size and scale or projection type.
4. Confirm.

Map Basic Information

Name:

Description:

Associated Proxy:

Parent Map:

Type of Environment:

Environment Description

Open Outdoor: Open area without obstacles
Example: Campus, Exhibition Center, Shopping Mall

Coordinates System: ☐ GPS Location (Latitude, Longitude)
☒ x-y coordinates in meters

Coordinates System Description

x-y coordinates are represented in meters, suitable for indoor environment.

Next >

Finish

Cancel

The map name and description.

Select the matched type for the map environment: Open Outdoor/ Indoor Cubicle Office/Indoor Closed Office

There are two options for the Coordinates System: GPS Location and x-y coordinates in meters.

Topology Management — Adding Map

The coordinates system is used for scaling the map.

- 1) GPS Location: For the case you get locations (Latitude, Longitude) of three points in the upload map;



- 2) X-y coordinates in meters: For the case you get the width and height in meters of the upload map.



Topology Management — Adding Map

Select GPS location as coordinates system.

Create Map Wizard

Steps:

1. Fill in map basic information.
2. Select map image.
3. Fill in map size and scale or projection type.
4. Confirm.

Map Basic Information

Name:

Description:

Associated Proxy:

Parent Map:

Type of Environment:

Environment Description

Open Outdoor: Open area without obstacles
Example: Campus, Exhibition Center, Shopping Mall

Coordinates System: ☒ GPS Location (Latitude, Longitude) ☐ x-y coordinates in meters

Coordinates System Description

Coordinates are represented in longitude and latitude, suitable for outdoor environment.

1

Create Map Wizard

Steps:

1. Fill in map basic information.
2. Select map image.
3. Fill in map size and scale or projection type.
4. Confirm.

Map Image

Do you have image displayed for this new map?

☐ No ☒ Yes **2**

Filename:

Image Size

Width: pixels

Height: pixels

Image Position

X-coordinate: pixels
(Positive value means moving to the right from the left side of the map, while negative value means moving to left from the left side of the map.)

Y-coordinate: pixels
(Positive value means moving down from the top of the map, while negative value means moving up from the top of the map.)

3

Topology Management — Adding Map

Select GPS location as coordinates system.

5

Point out three points in the map which you already know the location and fill in the Latitude and longitude for each point.

Create Map Wizard

Steps:

1. Fill in map basic information.
2. Select map image.
3. Fill in map size and scale or projection
4. Confirm.

Map Size and Calibration

Map Size
Width: 640 pixels Height: 447 pixels

Map Projection Type
Country: International Datum: WGS84
Used by the global GPS system. Most GPS-devices has this datum configured as default.

Reference Points

Reference Point 1: **4** Map Calibration...
X: Latitude: Adjust
Y: Longitude: Adjust

Reference Point 2:
X: Latitude: Adjust
Y: Longitude: Adjust

Reference Point 3:
X: Latitude: Adjust
Y: Longitude: Adjust

< Back Next > Finish Cancel

Map Calibration

Scaling Coordinates

Please enter scaling coordinate:

X-Y Coordinates
X: 264 Y: 316

Geographic Position
Latitude: 0.00 Longitude: 0.00
☒ Decimal Degrees ☐ Degree / Minute / Second

OK Cancel

Please click 3 reference points on the map, to provide better calibration result.

Topology Management — Adding Map

Select GPS location as coordinates system.

Create Map Wizard

Steps:

1. Fill in map basic information.
2. Select map image.
- 3. Fill in map size and scale or projection**
4. Confirm.

Map Size and Calibration

Map Size

Width: pixels Height: pixels

Map Projection Type

Country: Datum:

Used by the global GPS system. Most GPS-devices has this datum configured as default.

Reference Points

Reference Point 1:

X: Latitude: Adjust

Y: Longitude: Adjust

Reference Point 2:

X: Latitude: Adjust

Y: Longitude: Adjust

Reference Point 3:

X: Latitude: Adjust

Y: Longitude: Adjust

Map Calibration...

< Back

Next >

Finish

Cancel

6

Create Map Wizard

Steps:

1. Fill in map basic information.
2. Select map image.
3. Fill in map size and scale or projection type.
- 4. Confirm.**

Confirmation

Name:

Description:

Associated Proxy:

Parent Map:

Type of Environment:

Coordinates System:

Map Size and Calibration

Width: pixels Height: pixels

Country: Datum:

Map Image

Filename:

Width: pixels Height: pixels

X-coordinate: pixels Y-coordinate: pixels

Remain 100% for the image size.

< Back

Next >

Finish

Cancel

7

Topology Management — Adding Map

Select GPS location as coordinates system.

The screenshot shows the Altai Wireless Management System interface. The 'Topology Window - [AWMS Training]' is active, displaying a satellite map of a residential area. On the left, a tree view shows the network structure, including 'Proxies (15 NEs) - 2C+', 'Managed Online NEs (11 NEs) - 2C+', and 'Managed Offline NEs'. A red arrow points to the 'AWMS Training' entry under 'Managed Offline NEs'. At the bottom of the window, a red box highlights the coordinates '6° 33' 38.54"N, 3° 24' 40.11"E'. The 'Active Alarms List' at the bottom shows 9 Alarms, 6 Undeared, 8 Unacked, 2 Critical, 6 Major, 0 Minor, and 1 Info.

Move the mouse on the map, then you will see the longitude and latitude you point.

Topology Management — Adding Map

Select x-y coordinates in meters as coordinates system.

Create Map Wizard

Steps:

1. Fill in map basic information.
2. Select map image.
3. Fill in map size and scale or projection type.
4. Confirm.

Map Basic Information

Name:

Description:

Associated Proxy:

Parent Map:

Type of Environment:

Environment Description

Open Outdoor: Open area without obstacles
Example: Campus, Exhibition Center, Shopping Mall

Coordinates System: ☐ GPSLocation (Latitude, Longitude) ☒ x-y coordinates in meters

Coordinates System Description

x-y coordinates are represented in meters, suitable for indoor environment.

Buttons: Next > Finish Cancel

Create Map Wizard

Steps:

1. Fill in map basic information.
2. Select map image.
3. Fill in map size and scale or projection type.
4. Confirm.

Map Image

Do you have image displayed for this new map?

☐ No ☒ Yes

Filename: Browse

Image Size

Width: pixels

Height: pixels

Image Position

X-coordinate: pixels
(Positive value means moving to the right from the left side of the map, while negative value means moving to left from the left side of the map.)

Y-coordinate: pixels
(Positive value means moving down from the top of map, while negative value means moving up from the top of the map.)

Buttons: < Back Next > Finish Cancel

Topology Management — Adding Map

Select x-y coordinates in meters as coordinates system.

Fill the width and height of the map.

Create Map Wizard

Steps:

1. Fill in map basic information.
2. Select map image.
- 3. Fill in map size and scale or projection**
4. Confirm.

Map Size and Scale

☒ I know the actual map size:

Width: meters Height: meters

Please calculate the map scale for me.

☐ I know the actual map scale:

Scale: pixels / meter

Please calculate the map size for me.

☐ I do not know both map size and scale:

Open the map to measure the map size and scale.

Width: meters Height: meters

Scale: pixels / meter

☐ I know both the map size and scale:

Width: meters Height: meters

Scale: pixels / meter

Create Map Wizard

Steps:

1. Fill in map basic information.
2. Select map image.
3. Fill in map size and scale or projection type.
- 4. Confirm.**

Confirmation

Name:

Description:

Associated Proxy:

Parent Map:

Type of Environment:

Coordinates System:

Map Size and Scale

Width: meters Height: meters

Scale: pixels / meter

Map Image

Filename:

Width: pixels Height: pixels

X-coordinate: pixels Y-coordinate: pixels

Topology Management — Adding Map

Select x-y coordinates in meters as coordinates system.

The screenshot displays the Altai Wireless Management System interface. On the left, the 'Proxies and Maps' tree shows a hierarchy of network elements. A red arrow points to 'AWMS Training 2' under the 'Managed Online NEs' section. The main window, titled 'Topology Window - [AWMS Training 2]', shows an aerial map of a residential area. A red box on the map indicates the selected coordinates: x = 251.72m, y = 246.09m. The bottom status bar shows 'Alarms: 2' and a list of alarm counts: 9 Alarms, 6 Undeared, 8 Unacked, 2 Critical, 6 Major, 0 Minor, and 1 Info.

Move the mouse on the map, then you will see the x-y in meters you point.

Topology Management — Adding NE on Map

Put NE on the target Map by drag and drop.

The screenshot displays the Altai Wireless Management System (AWMS) interface. The main window is titled "Altai Wireless Management System" and features a menu bar with options: File, View, Network Element, CPE Management, Proxy, Link Management, Topology, Alarms, Statistics, Tools, Administration, and Help.

The "Proxies and Maps" panel on the left shows a tree structure of network elements. Under "Proxies (15 NEs) - 2C+", the "Managed Online NEs (11 NEs) - 2C+" folder is expanded, listing various IP addresses. The IP address "10.6.161.87:161" is highlighted in blue.

The "Topology Window - [AWMS Training]" on the right shows an aerial map of a residential area. Three network elements are visible on the map, each labeled with its IP address: "10.6.161.68:161", "10.6.161.87:161", and "10.6.161.113:161".

At the bottom, the "Active Alarms List" section shows a summary of system status: 9 Alarms, 6 Undeared, 8 Unacked, 2 Critical, 6 Major, 0 Minor, and 1 Info. The status bar at the very bottom indicates the current location as "6° 35' 40.61"N, 3° 24' 56.82"E" and shows a status of "ACK" with "Alarms: 2C+".

Topology Management — Adding NE on Map

Click “Save” button then the NEs on map will be moved to under the map. In this way, NEs will be grouped by different maps.

The screenshot displays the Altai Wireless Management System (AWMS) interface. The main window is titled "Topology Window - [AWMS Training]". The interface is divided into several sections:

- Left Panel (Proxies and Maps):** A tree view showing the hierarchy of Network Elements (NEs). The "Managed Online NEs (3 NEs)" folder is highlighted with a red box, containing three NEs: 10.6.161.87:161, 10.6.161.113:161, and 10.6.161.68:161.
- Right Panel (Map):** An aerial map showing the geographical location of the NEs. Three NEs are plotted on the map, each with a label: 10.6.161.68:161, 10.6.161.113:161, and 10.6.161.87:161. A red box highlights the "Save" button in the top right corner of the map area.
- Bottom Panel (Active Alarms List):** A table showing the status of various alarms. The table has columns for "9 Alarms", "6 Undeared", "8 Unacked", "2 Critical", "6 Major", "0 Minor", and "1 Info".

The status bar at the bottom indicates the current location: 6° 36' 59.02"N, 3° 25' 18.31"E. The "ACK" button is visible, and the "Alarms: 2C+" status is shown.

Topology Management — Adding NE on Map

You can modify the information of NE shown on the map.

The screenshot displays the Altai Wireless Management System interface. The main window is titled "Topology Window - [AWMS Training]". It features a toolbar with various icons for network management. A context menu is open, showing options to customize the information displayed for network elements on the map. The map itself shows an aerial view of a residential area with two network elements highlighted by red boxes. One element is labeled "10.6.161.87:161" and the other "10.6.161.113:161".

Context Menu Options:

- ☒ Show Name
- ☒ Show Identity
- ☒ Show Network Element Type
- ☐ Show Associated Proxy
- ☐ Show Registration Type
- ☐ Show Alarm Status
- ☒ Show Online Status
- ☐ Show Provision Status
- ☐ Show Location
- ☐ Show Orientation
- ☐ Show No. of Associated Mobile Clients

Map Data:

- 10.6.161.87:161
00:19:BE:70:9D:8C
Altai A2N
Online
- 10.6.161.113:161
00:19:BE:A3:0A:18
Altai A3c
Online

Active Alarms List:

9 Alarms	6 Undeared	8 Unacked	2 Critical	6 Major	0 Minor	1 Info
----------	------------	-----------	------------	---------	---------	--------

Bottom Bar:

7° 8' 59.60"N, 3° 33' 44.86"E

ACK Alarms: 2C+

Alarm Management

Alarm Management — Real-time alarm collection and reporting

Altai Wireless Management System

File View Network Element CPE Management Proxy Link Management Topology Alarms Statistics Tools Administration Help

Proxies and Maps x Topology Window - [AWMS Training]

Proxies (14 NEs) - 2C+

- AWMS Training (In Service)
 - Unregistered NEs (1)
 - Unregistered (Unsu)
 - External (2 NEs)
 - Rogue
 - Location Undefined
 - AWMS Training (3 N
 - AWMS Training 2 (2
- No Proxy Associated
- No Associated Proxy Map
- DEFAULTREGION

10.6.161.68:161
00:19:BE:70:9D:77
Altai A2N
Online

Alarm severity at different colors can be easily seen at a glance

Active Alarms List

9 Alarms 5 Undeared 8 Unacked 2 Critical 6 Major 0 Minor 1 Info

Active alarms (22 ~ 31)

ID	Clear	Ack	Severity	Category	Alarm Name	Equipment Type	Equipment ID	Alarm Raised Time
30	Yes	No	Major	Security	Unregistered NE Detected	NE	10.6.161.121	2016/06/30 16:26:05
29	Yes	No	Major	Facility	Radio Down	NE	10.6.161.92:161	2016/06/30 16:25:47
28	N/A	No	Info	Equipment	System Warm Start	NE	10.6.161.92:161	2016/06/30 16:15:02
27	Yes	No	Major	Security	Unregistered NE Detected	NE	00:19:BE:70:A1:42	2016/06/30 16:10:58
26	Yes	No	Major	Security	Unregistered NE Detected	NE	00:19:BE:70:A1:42	2016/06/30 16:05:58
25	No	No	Critical	Facility	NE Loss of Communication	NE	10.6.161.50:161	2016/06/30 15:47:28
24	No	No	Major	Security	Unregistered NE Detected	NE	00:19:BE:A3:06:8C	2016/06/30 15:46:05
23	No	Yes	Major	Operation	Unack'd Message NE	NE	10.6.161.92:161	2016/06/30 15:26:26

Detail list of Alarms: double-click any alarm then more detail about the alarm will be provided.

Alarm Management — Visual Alarm Warning via Map

The screenshot displays the Altai Wireless Management System (AWMS) interface. The main window is titled 'Topology Window - [AWMS Training]'. It features a map showing the geographical locations of network elements (NEs). Three specific NEs are highlighted with red icons and their details are shown in a tooltip:

- 10.6.161.68:161
00:19:BE:70:9D:77
Altai A2N
Loss Of Communication
- 10.6.161.87:161
00:19:BE:70:9D:6C
Altai A2N
Online
- 10.6.161.113:161
00:19:BE:A3:0A:18

Below the map, there is an 'Active Alarms List' section. It shows a summary of alarms: 11 Alarms, 7 Undeared, 10 Unacked, 3 Critical, 7 Major, 0 Minor, and 1 Info. Below this, a table lists the active alarms (22 ~ 33):

ID	Clear	Ack	Severity	Category	Alarm Name	Equipment Type
29	Yes	No	Major	Facility	Radio Down	NE
28	N/A	No	Info	Equipment	System Warm Start	NE
27	Yes	No	Major	Security	Unregistered NE Detected	NE
26	Yes	No	Major	Security	Unregistered NE Detected	NE
25	No	No	Critical	Facility	NE Loss of Communication	NE

At the bottom of the interface, there is a status bar showing the coordinates '5° 40' 0.22"N, 3° 10' 11.51"E' and a button labeled 'ACK'. The total number of alarms is indicated as 'Alarms: 3C+'.

Details of NE alarm can be shown by clicking the icon

Alarm locations can be easily identified by referring to the network map

Location of NE can be shown in network map by clicking the list

Alarm Management — Alarm Filtering

With the Alarm filtering, specified alarms can be found easily.

The screenshot displays the ALTAI Super WiFi Alarm Management interface. A 'Filtering' dialog box is open, allowing users to filter active alarms based on various criteria. The background shows a 'Topology Window' with a map and an 'Active Alarms List' table.

Active Alarms List Filtering Dialog:

- Filter Operator:** And
- ID:** * (dropdown)
- Clear:** (dropdown)
- Ack:** (dropdown)
- Severity:**
 - ☐ Critical
 - ☐ Major
 - ☐ Minor
 - ☐ Info
- Category:** (dropdown)
- Alarm Name:** (text input)
- Equipment Type:** (dropdown)
- Equipment ID:** (text input)
- Alarm Raised Time:** 2016/06/30 17:15:09 (dropdown)
- Buttons:** Clear Filters, Close

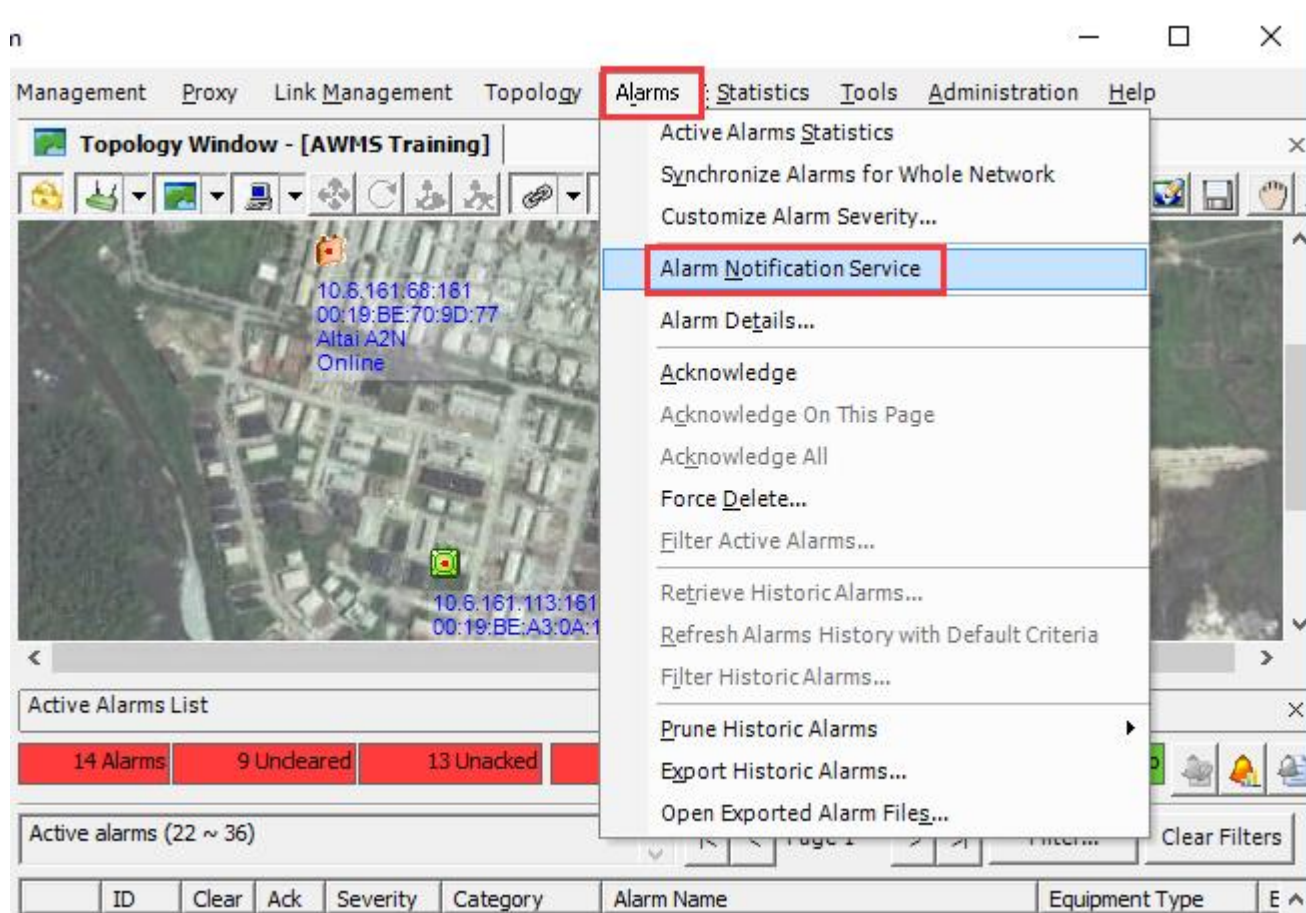
Active Alarms List Table:

ID	Clear	Ack	Severity	Category	Alarm Name	Equipment Type
27	Yes	No	Major	Security	Unregistered NE Detected	NE
26	Yes	No	Major	Security	Unregistered NE Detected	NE
25	No	No	Critical	Facility	NE Loss of Communication	NE
24	No	No	Major	Security	Unregistered NE Detected	NE
22	No	Yes	Major	Operation	Unable to Manage NE	NE

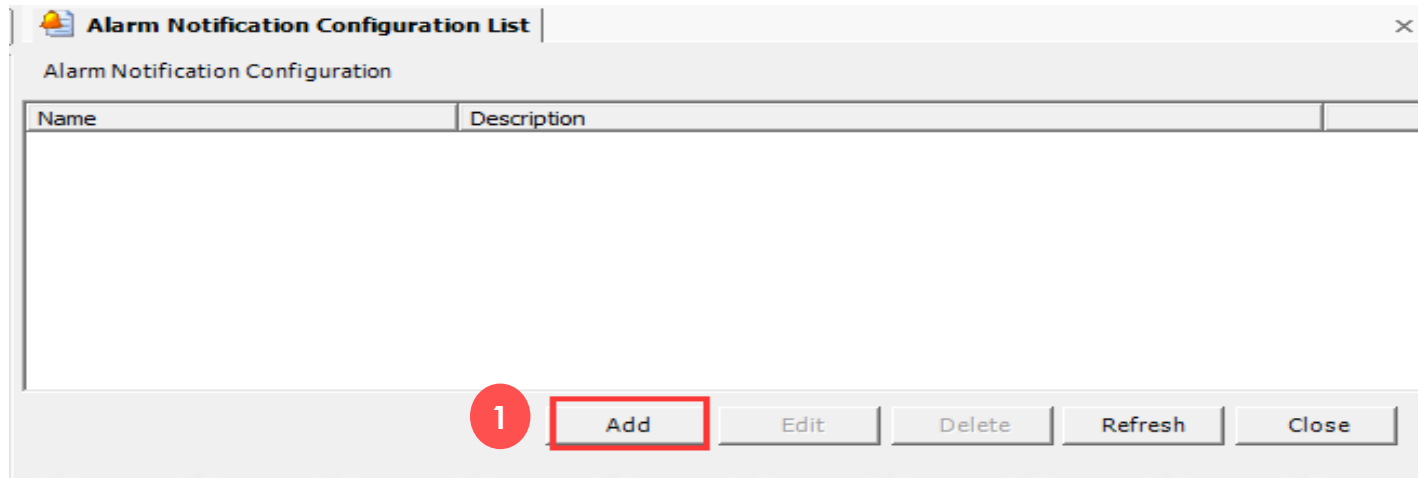
The interface also shows a status bar at the bottom with coordinates (5° 57' 26.39"N, 3° 14' 56.39"E), an ACK button, and a summary of 3C+ alarms.

Alarm Management — Alarm Notification Service

After enable the Alarm Notification Service in AWMS, the AWMS will send email with alarm information to specified email address (operator/administrator) once any alarm raise up.
To use this feature, make sure the AWMS server reachable to any email server.

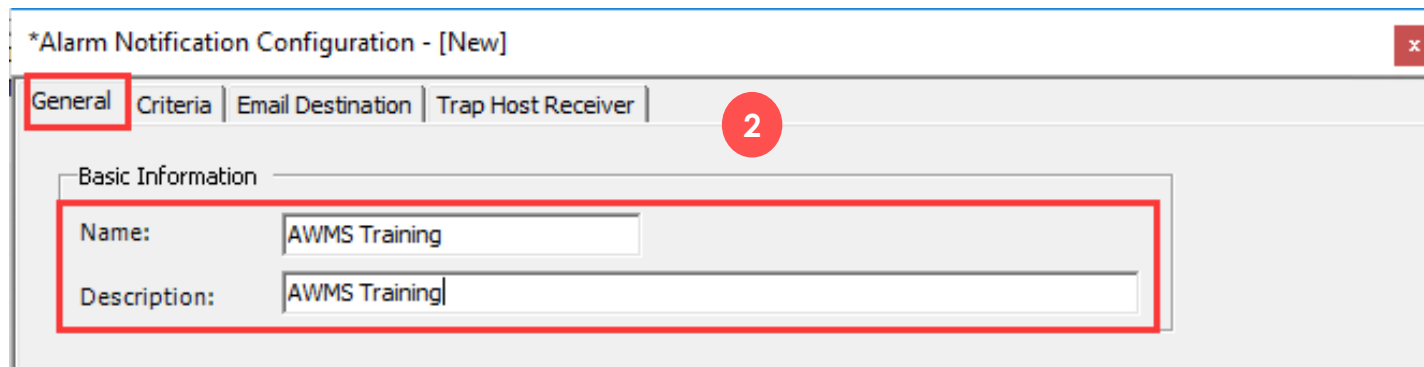


Alarm Management — Alarm Notification Service

The screenshot shows a window titled "Alarm Notification Configuration List" with a close button (X) in the top right corner. Below the title bar, the text "Alarm Notification Configuration" is displayed. A table with two columns, "Name" and "Description", is shown but is currently empty. At the bottom of the window, there is a row of buttons: "Add", "Edit", "Delete", "Refresh", and "Close". A red circle with the number "1" is placed over the "Add" button, and a red rectangle highlights the "Add" button.

Name	Description
------	-------------

1 Add Edit Delete Refresh Close

The screenshot shows a window titled "*Alarm Notification Configuration - [New]" with a close button (X) in the top right corner. Below the title bar, there are four tabs: "General", "Criteria", "Email Destination", and "Trap Host Receiver". The "General" tab is selected and highlighted with a red rectangle. A red circle with the number "2" is placed over the "General" tab. Below the tabs, there is a section titled "Basic Information" which contains two text input fields: "Name:" and "Description:". Both fields contain the text "AWMS Training". A red rectangle highlights the "Name:" and "Description:" labels and their respective input fields.

*Alarm Notification Configuration - [New]

General Criteria Email Destination Trap Host Receiver

2

Basic Information

Name: AWMS Training

Description: AWMS Training

Alarm Management — Alarm Notification Service

*Alarm Notification Configuration - [New]

General **Criteria** Email Destination Trap Host Receiver

Object Id 3

Registered NEs

- ☐ 10.6.161.113:161
- ☐ 10.6.161.109:161
- ☐ 10.6.161.92:161
- ☐ 10.6.161.68:161
- ☐ 10.6.161.80:161
- ☐ 10.6.161.18:161
- ☐ 10.6.161.2:161
- ☐ 10.6.161.1:161
- ☐ 10.6.161.50:161
- ☐ 10.6.161.134:161
- ☐ 10.6.161.125:161
- ☐ 10.6.161.28:161
- ☐ 10.6.161.87:161

☐ All Registered NEs

Optional

☒ Severity ☐ Alarm Name ☐ Neither

Severity

- ☐ Critical
- ☐ Major
- ☐ Minor
- ☐ Info

Alarm Name

- Activity log cross threshold
- Bad NE Registration
- Central Server Shutdown
- Central Server Startup
- CPU Usage Too High
- Device Ping Failed
- Excessive logon attempt
- Excessive password change attempt
- Failure to put NE In Service
- Failure to put NE Out Service
- Interference AP found
- Memory Usage Too High
- NE Cold Startup
- NE Configuration Inconsistency
- NE De-provision Failed
- NE Firmware Update Failed
- NE Instantaneous Alarm

Save Close

Select the alarm type which will be included in the alarm email.

Select the NE which will be included in the alarm notification service.

Alarm Management — Alarm Notification Service

Set the Email Destination, Gmail will be used as example in below.

*Alarm Notification Configuration - [New]

General | Criteria | **Email Destination** | Trap Host Receiver

Email Destination List:

From	To	Subject

4 Add Edit Delete

Fill in existing available Gmail address and login password.

Customize the email format body.

5 Destination Toolbox ?

SMTP Server Port
(Domain Name or IP Address, e.g. smtp.mycomp.com)

☒ SSL User Name
☒ Require Authentication Password
Confirm Password

Email Format and Body

From
To
CC
Subject
Email Body

Save Close

Fill the SMTP server (Domain or IP address) and port number

Alarm Management — Alarm Notification Service

Set the Email Destination, Gmail will be used as example in below.

*Alarm Notification Configuration - [New]

General | Criteria | **Email Destination** | Trap Host Receiver

Email Destination List:

From	To	Subject

4 Add Edit Delete

Fill in existing available Gmail address and login password.

Customize the email format body.

5 Destination Toolbox ?

SMTP Server Port
(Domain Name or IP Address, e.g. smtp.mycomp.com)

☒ SSL User Name
☒ Require Authentication Password
Confirm Password

Email Format and Body

From
To
CC
Subject
Email Body

Save Close

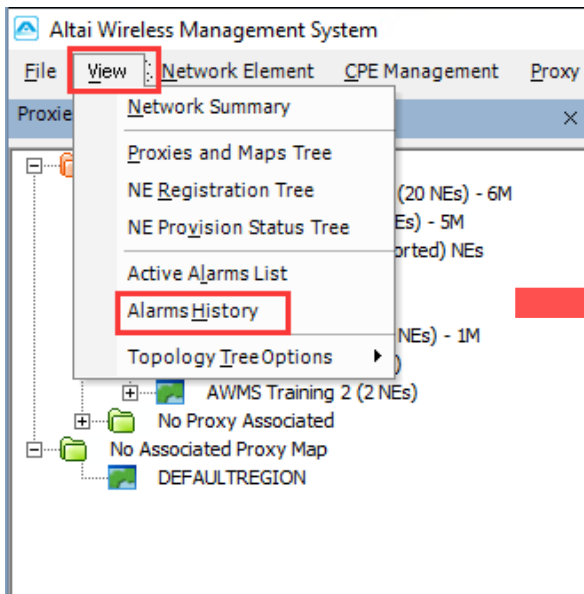
Fill the SMTP server (Domain or IP address) and port number

Alarm Management — Alarms History

Alarms which acknowledged and deleted will be storied in alarms history window.

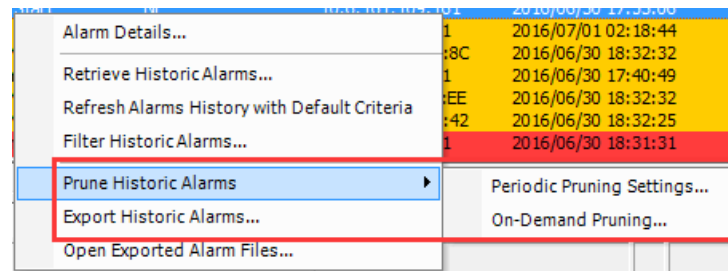
Right-Click any alarm of historic alarm window, then you can find below options:

- 1) By default, AWMS will keep last 7 days alarm history, you can modify it;
- 2) You can import the historic alarms to a CVS file;



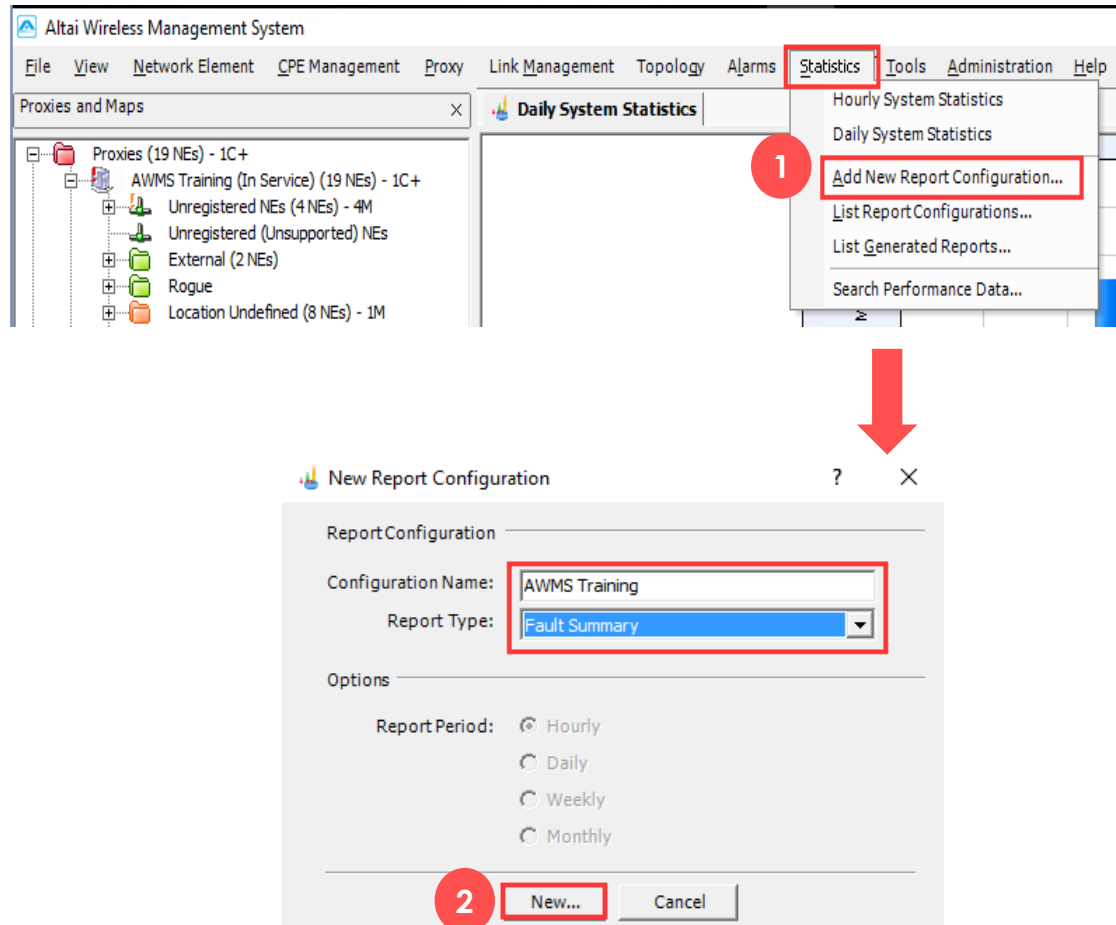
AlarmsHistory							
Most Current 100 Entries							
History alarms (34 ~ 54)							
ID	Severity	Category	Alarm Name	Equipment Type	Equipment ID	Alarm Raised Time	Cleared Time
45	Info	Equipment	System Warm Start	NE	10.6.161.109:161	2016/06/30 17:53:06	N/A
53	Major	Facility	Radio Down	NE	10.6.161.92:161	2016/07/01 02:18:44	2016/07/01 02:20:26
51	Major	Security	Unregistered NE Detected	NE	00:19:BE:A3:06:8C	2016/06/30 18:32:32	2016/06/30 19:05:05
43	Major	Operation	Unable to Manage NE	NE	10.6.161.68:161	2016/06/30 17:40:49	2016/06/30 19:04:24
52	Major	Security	Unregistered NE Detected	NE	00:19:BE:20:03:EE	2016/06/30 18:32:32	2016/06/30 18:46:55
49	Major	Security	Unregistered NE Detected	NE	00:19:BE:70:A1:42	2016/06/30 18:32:25	2016/06/30 18:46:54
47	Critical	Facility	NE Loss of Communication	NE	10.6.161.80:161	2016/06/30 18:31:31	2016/06/30 18:31:31
48	Critical	Facility	NE Loss of Communication	NE	10.6.161.113:161	2016/06/30 18:31:31	2016/06/30 18:31:31

Right-Click any alarm



Alarm Management — Alarm Reporting

Automatically alarm report created can be enable in AWMS to get the alarm summary reports.



Alarm Management — Alarm Reporting

Automatically alarm report created can be enable in AWMS to get the alarm summary reports.

***Report Configuration - [AWMSTraining] (New)**

General | Title | Header and Footer | Contents

General

Configuration Name: AWMSTraining

Report Type: Fault Summary

File Name: AWMSTraining ☒ Include timestamp suffix

Output Format

☐ PDF

☐ HTML

Other Settings

Schedule ... Disabled

Destination ... Enabled (Default Repository)

Prune ... Disabled

Set the schedule for the report creating: one-time, daily, weekly or monthly

Select the format of output report: PDF or HTML.

Set the destination where the created reports sent: FTP or email.

Set the prune schedule to keep the created reports: based on time or based on the number of reports.

Alarm Management — Alarm Reporting

Automatically alarm report created can be enable in AWMS to get the alarm summary reports.

Title of the report can be customized.

*Report Configuration - [AWMSTraining] (New)

General | **Title** | Header and Footer | Contents

<Title>

<Sub-Title>

<Author>

Header and Footer of the report can be customized.

*Report Configuration - [AWMSTraining] (New)

General | Title | **Header and Footer** | Contents

<Header Text>

* Double-click the <Header Text> to type header text.
* Click the below rectangle to select header image. The default footer size is 555px * 25px. Scale to fit size if the image size is larger than the specific size.

<Contents>

* Double-click the <Footer Text> to type footer text.
* Click the below rectangle to select footer image. The default footer size is 555px * 25px. Scale to fit size if the image size is larger than the specific size.

<Footer Text>

Alarm Management — Alarm Reporting

Automatically alarm report created can be enable in AWMS to get the alarm summary reports.

***Report Configuration - [AWMSTraining] (New)**

General | Title | Header and Footer | **Contents**

Summary
A fault summary contains a system fault summary and/or multiple NE fault summaries. For NE fault summaries, please drag and drop the NEs listed in the left-hand tree-view into below listbox. You should choose the alarm severity as report parameter. Generation start and end time can also be specified or by Default

Summary Statistics
☐ System Fault Summary

Statistics Parameters
Minimum Alarm Severity
Critical

NE Statistics
NE Fault Summary
Drag and drop a NE/map/proxy into below list
10.6.161.113:161

Time Range
Start End

☐ Default start time slot before report generation

☐ Specific time
2016/07/05 09:57:00 2016/07/05 10:57:00

☐ Time lag behind report generation
0 day(s) 0 day(s)
0 hours(s) 0 hours(s)
0 minutes(s) 0 minutes(s)

System fault summary included in report or not.

Statistics Parameters of alarm included in report or not

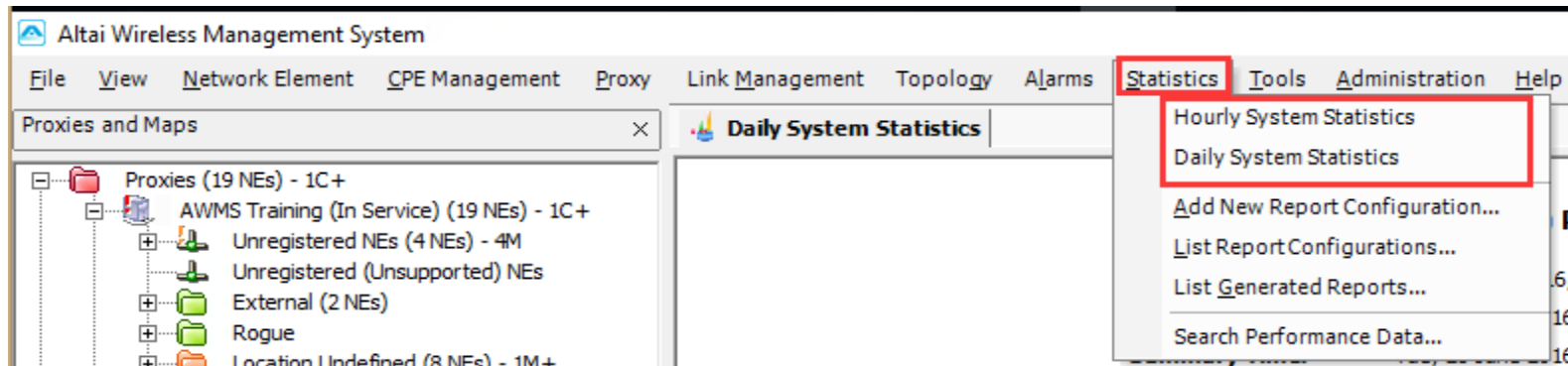
Time range of the alarm raised up included in the report.

Drag and drop the NE which should be included in the report.

Performance Management

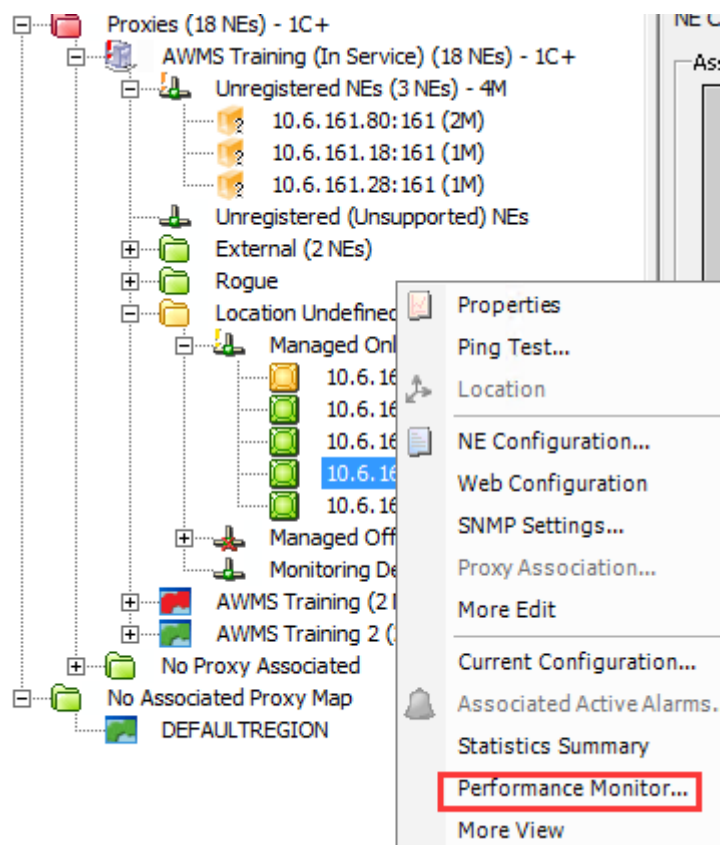
Performance Management — System Statistic Summary

- 1) System statistic summary have two options: Hourly and Daily;
- 2) System statistic summary includes:
 - a) NE online status in report period;
 - b) Total traffic on all NEs in report period;
 - c) Top/Bottom 5 NEs with highest/lowest traffic;
 - d) Number of associated client in report period;
 - e) Top 5 NEs with highest associated client number.

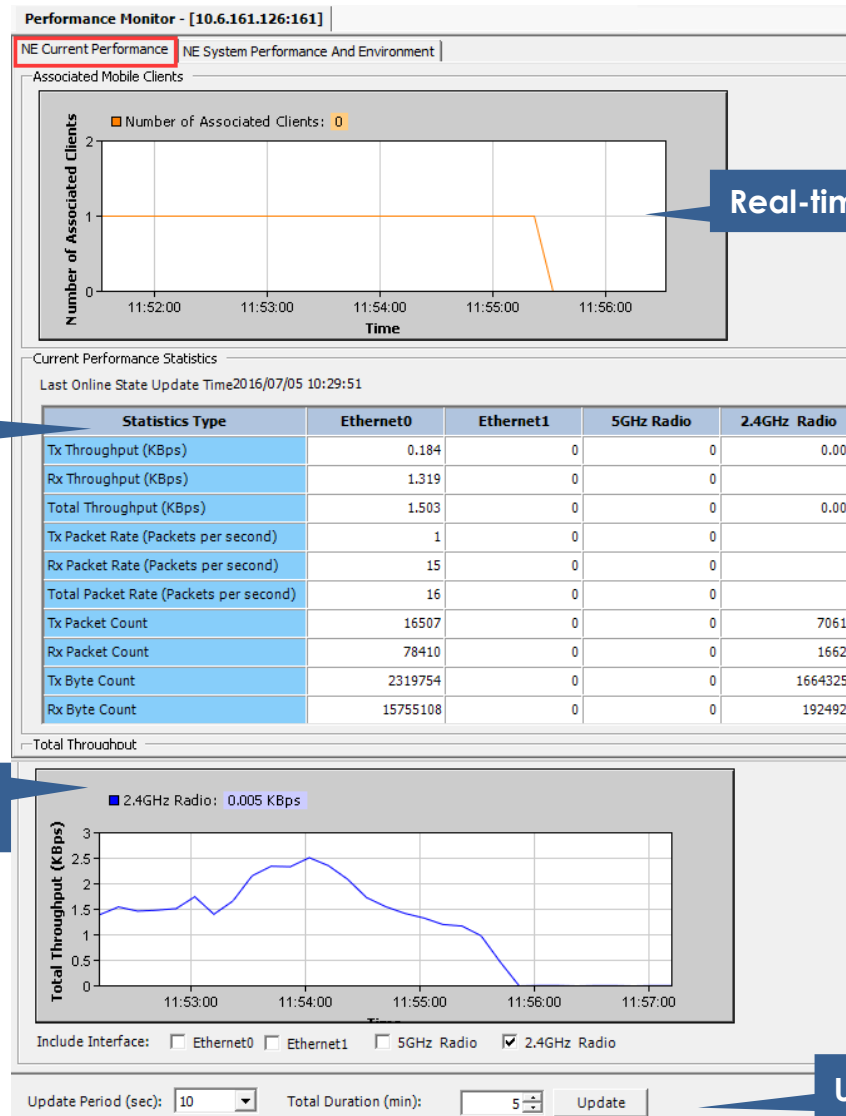


Performance Management — Specified NE Real-Time Performance Statistic

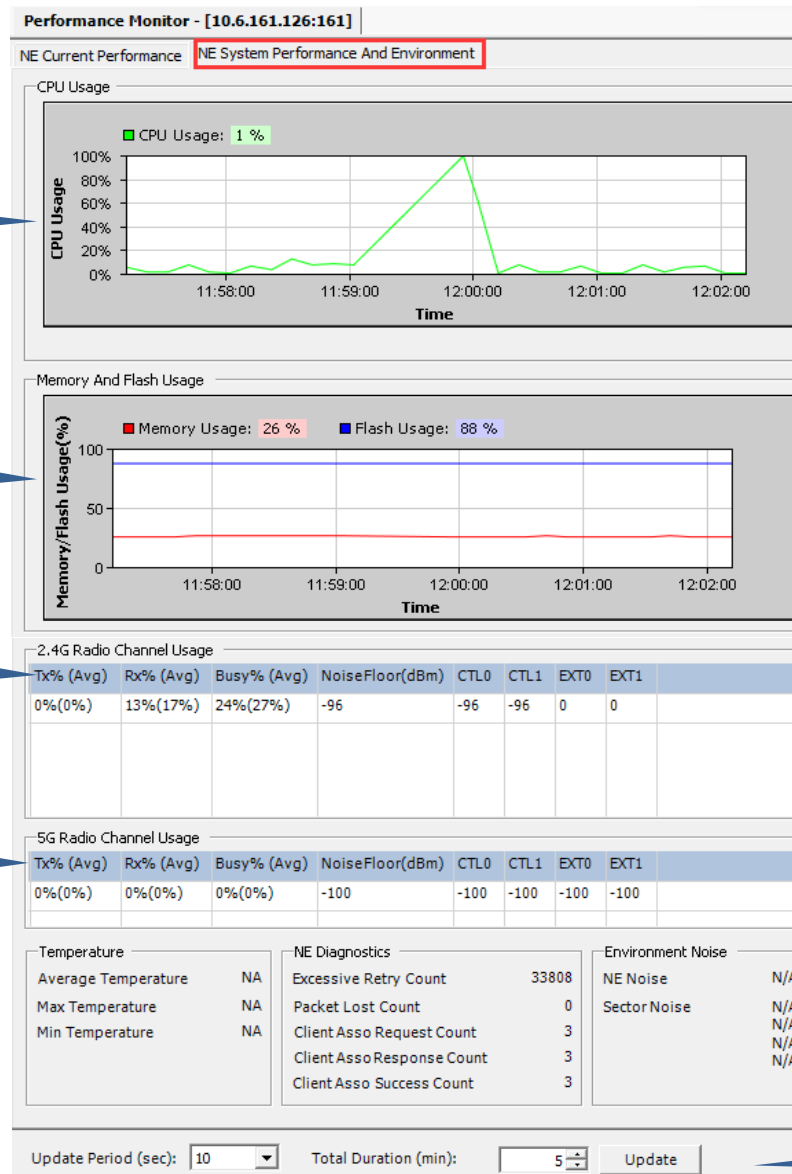
Right-click the specified target NE and select the “**Performance Monitor...**”



Performance Management — Specified NE Real-Time Performance Statistic



Performance Management — Specified NE Real-Time Performance Statistic



CPU Usage

Memory and
Flash Usage

2.4GHz channel
Usage

5GHz channel
Usage

Update time option

Performance Management — Search All/Specified Associated Clients

Under tools, you can use “Search All Associated Mobile Clients” to check all/specified associated clients information.

Wireless Management System

Network Element CPE Management Proxy Link Management Topology Alarms Statistics **Tools** Administration Help

Network Summary

Network Summary

General	
Number of Proxies	1
Number of Registered NEs	15
Number of Unregistered NEs	4

Proxies (19 NEs) - 5M+

- AWMS Training (In Service) (19 NEs) - 5M+
- Unregistered NEs (4 NEs) - 4M
- Unregistered (Unsupported) NEs
- External (2 NEs)
- Rogue
- Location Undefined (9 NEs) - 1M+
- AWMS Training (2 NEs)
- AWMS Training 2 (2 NEs)
- No Proxy Associated
- Associated Proxy Map
- DEFAULTREGION

Report Time
Next Update
Summary Time
Network Element

- Configuration Templates
- NE Specific Configuration Templates...
- ACS Profile Management...
- Firmware Management...
- Task Scheduler
- Monitoring DeviceList
- Mobile Clients Scan...
- Mobile Clients InfoBase
- Search All Associated Mobile Clients**
- Channel Scan
- Rogue AP Detection

Performance Management — Search All/Specified Associated Clients


Search Associated Mobile Clients

×

Clients Summary

No. of Mobile Clients: 5

Search Time: 2016/07/06 11:04:50

Proxy Name: AWMS Training

NE Name: *

Client Name: *

Client IP Address: 0 . 0 . 0 . 0

Client Mac Address: : : : : :

* supports wildcard matching using *, literal string matching if text is surrounded by ""

NE Name	Client Name	Client IP Address	Client Mac Address	RADIUS User	VAP	TxPort	Rx SS
10.6.161.226:161	N/A	169.254.38.160	5C:C5:D4:65:18:91	0	2	0	-73
10.6.161.226:161	N/A	10.6.161.96	E0:C7:67:68:2B:F8	0	2	0	-79
10.6.161.226:161	N/A	192.168.120.12	C0:BD:D1:9D:13:2C	0	1	0	-24
10.6.161.226:161	N/A	10.6.161.91	38:BC:1A:12:10:C7	0	2	0	-79
10.6.161.87:161	N/A	10.6.161.100	00:19:BE:74:A1:42	0	0	0	-57

Search Result: 1 - 5 of 5
 Go to: 1 - 5

Search conditions: for fast finding the specified clients

The clients information shown based on the search conditions you set.

Select one shown client and click "Locate..." then the NE which selected client connect to will located on map.

Select one shown client and click this button then will show all associated client of the NE which selected client connect to.

Performance Management — Search PM (Performance Monitoring) Data

Specified performance monitoring data can be search based on different conditions.

Search Condition:
based on time,
proxy, location, NE,
statistic type,
interface...

Searched Result
based on the
conditions.

**Export the searched
result in CVS file.**

Search PM Data

Search ResultSummary: **No. of Search Results:** 9 **Search Time:** 2016/07/06 11:16:26

Start Time: 2016/07/06 10:16:23 End Time: 2016/07/06 11:16:23 ☒ Latest Data Only

Proxy Name: Location: NE Name: *

Statistics Type: NE Performance Statistics Interface Type: Ethernet Interface

Period Type: Hourly

* supports wildcard matching using *, literal string matching if text is surrounded by ""

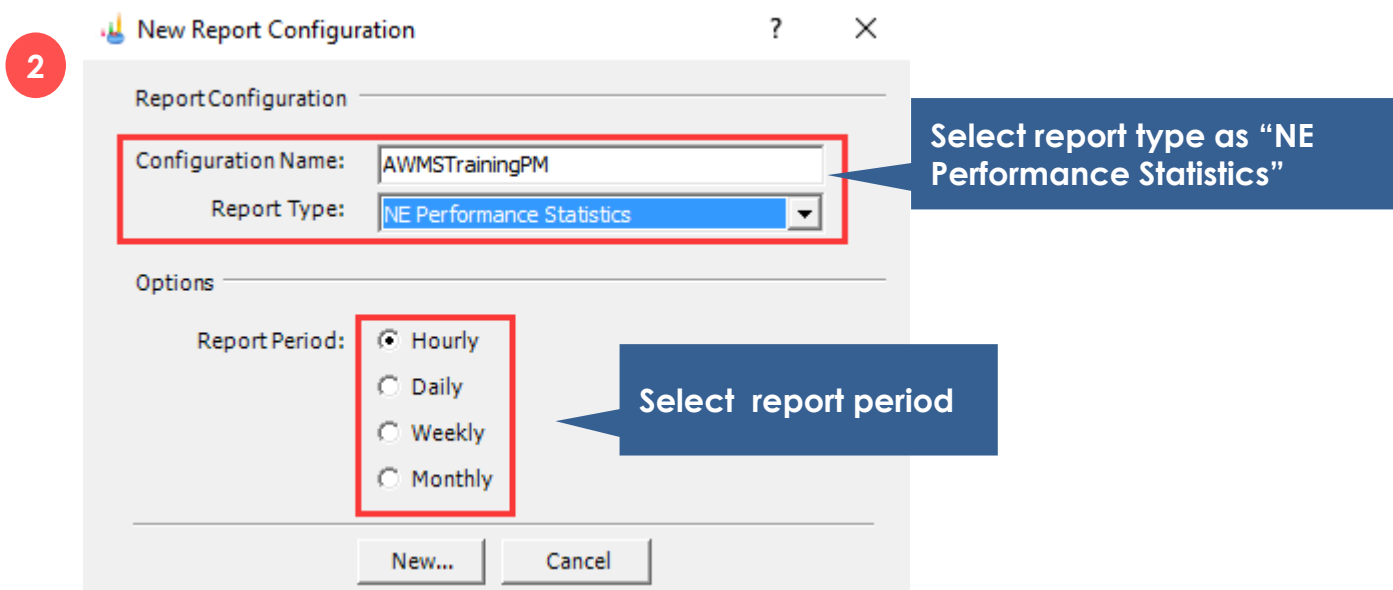
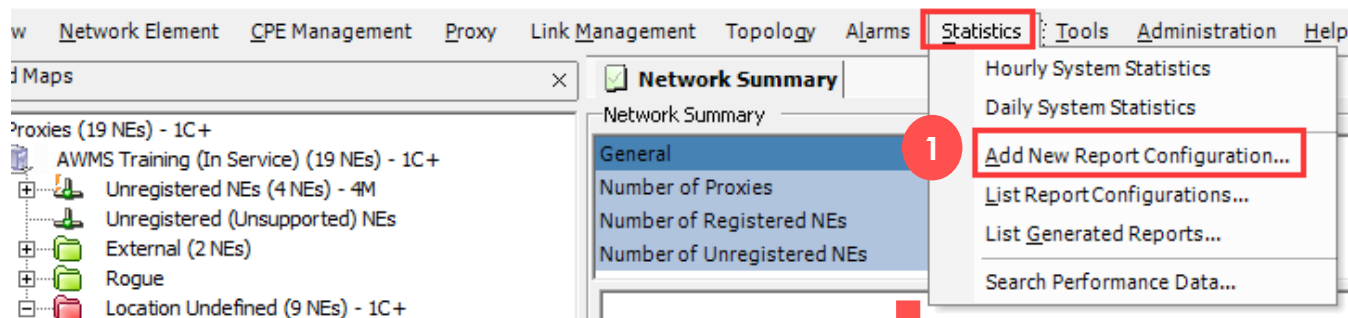
Results

Proxy Name	Location	NE Name	Statistics Type	Interface Type	Downlink Packet Count	Uplink
AWMS Training	NA	10.6.161.92:161	NE Performance Statistics	Ethernet Interface	12436	483
AWMS Training	AWMS Training 2	10.6.161.109:161	NE Performance Statistics	Ethernet Interface	38920	2921
AWMS Training	AWMS Training	10.6.161.87:161	NE Performance Statistics	Ethernet Interface	0	0
AWMS Training	NA	10.6.161.226:161	NE Performance Statistics	Ethernet Interface	13940	3489
AWMS Training	NA	10.6.161.81:161	NE Performance Statistics	Ethernet Interface	14854	3102
AWMS Training	NA	10.6.161.126:161	NE Performance Statistics	Ethernet Interface	15160	3879
AWMS Training	NA	10.6.161.126:161	NE Performance Statistics	Ethernet Interface	15160	3879
AWMS Training	NA	10.6.161.226:161	NE Performance Statistics	Ethernet Interface	13940	3489
AWMS Training	NA	10.6.161.81:161	NE Performance Statistics	Ethernet Interface	14854	3102

Search Result: 1 - 9 of 9
Go to: 1 - 9

Performance Management — Performance Report Creation

AWMS can create the performance report based on hourly, daily, weekly and monthly.



Performance Management — Performance Report Creation

AWMS can create the performance report based on hourly, daily, weekly and monthly.

The screenshot shows the 'Report Configuration - [AWMSTrainingPM] (New)' dialog box. The 'General' tab is selected. The 'Configuration Name' is 'AWMSTrainingPM', 'Report Type' is 'NE Performance Statistics', and 'File Name' is 'AWMSTrainingPM'. The 'Include timestamp suffix' checkbox is checked. The 'Output Format' section has radio buttons for 'PDF' and 'HTML'. The 'Other Settings' section has three rows: 'Schedule ...' (Disabled), 'Destination ...' (Enabled (Default Repository)), and 'Prune ...' (Disabled). Annotations point to these sections: 'Set the report created schedule.' points to the 'Schedule ...' button; 'Set the Destination after report created: FTP or Email.' points to the 'Destination ...' button; 'Set the Prune schedule: based on report number or time' points to the 'Prune ...' button; and 'Select the output format of report.' points to the 'Output Format' section. A red circle with the number '3' is in the top right corner.

3

Select the output format of report.

General | Title | Header and Footer | Contents

General

Configuration Name: AWMSTrainingPM

Report Type: NE Performance Statistics

File Name: AWMSTrainingPM ☒ Include timestamp suffix

Output Format

☐ PDF

☐ HTML

Other Settings

Schedule ... Disabled

Destination ... Enabled (Default Repository)

Prune ... Disabled

Set the report created schedule.

Set the Destination after report created: FTP or Email.

Set the Prune schedule: based on report number or time

Performance Management — Performance Report Creation

Edit the Title of the report (Optional).

*Report Configuration - [AWMSTrainingPM] (New)

General | **Title** | Header and Footer | Contents

4

<Title>

<Sub-Title>

<Author>

Edit the header and footer of the report (Optional).

*Report Configuration - [AWMSTrainingPM] (New)

General | Title | **Header and Footer** | Contents

5

<Header Text>

* Double-click the <Header Text> to type header text.
* Click the below rectangle to select header image. The default footer size is 555px * 25px. Scale to fit size if the image size is larger than the specific size.

<Contents>

* Double-click the <Footer Text> to type footer text.
* Click the below rectangle to select footer image. The default footer size is 555px * 25px. Scale to fit size if the image size is larger than the specific size.

<Footer Text>

Performance Management — Performance Report Creation

6

***Report Configuration - [AWMSTrainingPM] (New)**

General | Title | Header and Footer | **Contents**

NE Selection

Select the NEs that you wish to generate hourly NE performance statistics

☒ Sort NEs by Map.
☐ Sort NEs by NE name.

Name

- ☒ AWMs Training
- ☒ AWMs Training 2
- ☐ DEFAULTREGION
- ☒ [Location Undefined]

☐ Select All

Options

☐ Specific Time(Max 48 Hour(s))

Start Time: 2016/07/05 11:00:00
End Time: 2016/07/06 11:00:00

☒ Duration before report generation time

24 (1-48)Hour(s)

☒ Show Hourly NE Summary Statistics Report for All Selected NEs

☐ Display all NE statistics
☒ Only display Top/Bottom NEs

☒ Top 5 NE(s)
☒ Bottom 5 NE(s)

☐ Show Individual NE Hourly Statistics Report

Set the duration to show the performance statistics in the report.

Select the NE which should be included in the report.

Customize the report content: display all/top/bottom NE statistics,

Performance Management — Performance Report Creation

6

***Report Configuration - [AWMSTrainingPM] (New)**

General | Title | Header and Footer | **Contents**

NE Selection

Select the NEs that you wish to generate hourly NE performance statistics

☒ Sort NEs by Map.
☐ Sort NEs by NE name.

Name

- ☒ AWMs Training
- ☒ AWMs Training 2
- ☐ DEFAULTREGION
- ☒ [Location Undefined]

☐ Select All

Options

☐ Specific Time(Max 48 Hour(s))

Start Time: 2016/07/05 11:00:00
End Time: 2016/07/06 11:00:00

☒ Duration before report generation time

24 (1-48)Hour(s)

☒ Show Hourly NE Summary Statistics Report for All Selected NEs

☐ Display all NE statistics
☒ Only display Top/Bottom NEs

☒ Top 5 NE(s)
☒ Bottom 5 NE(s)

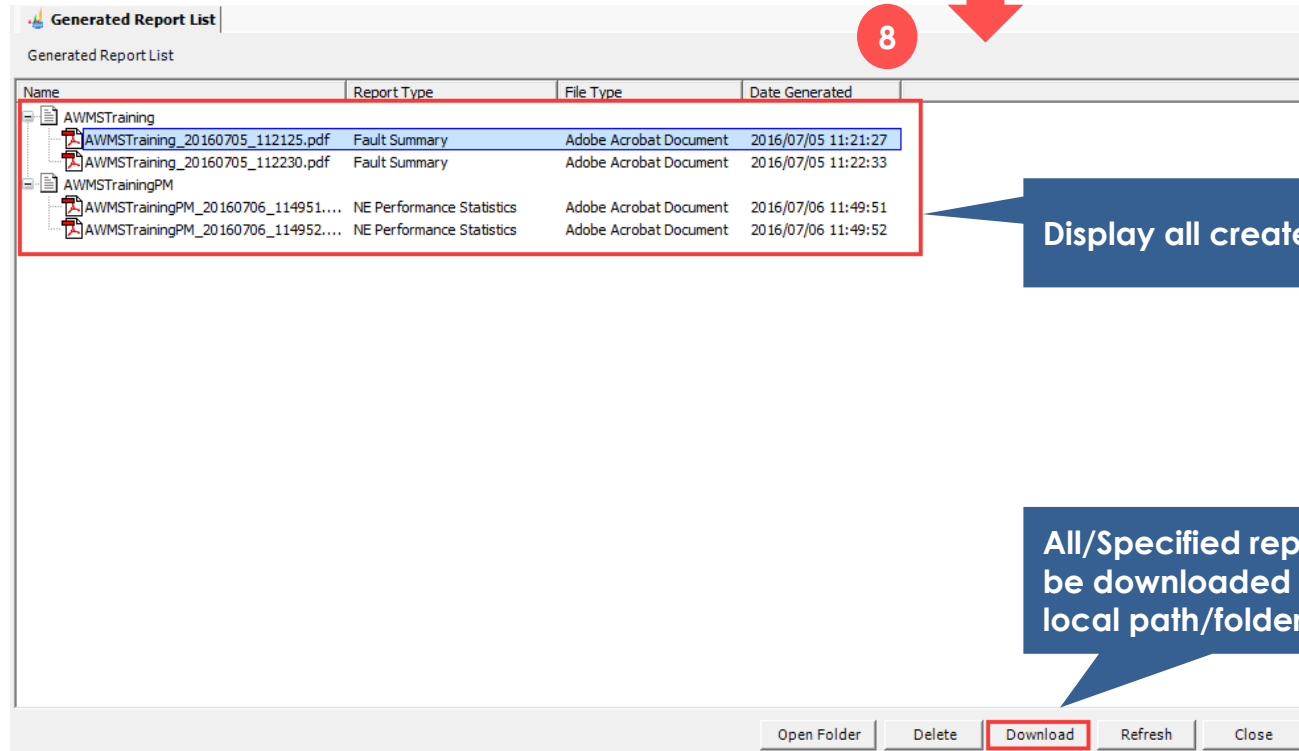
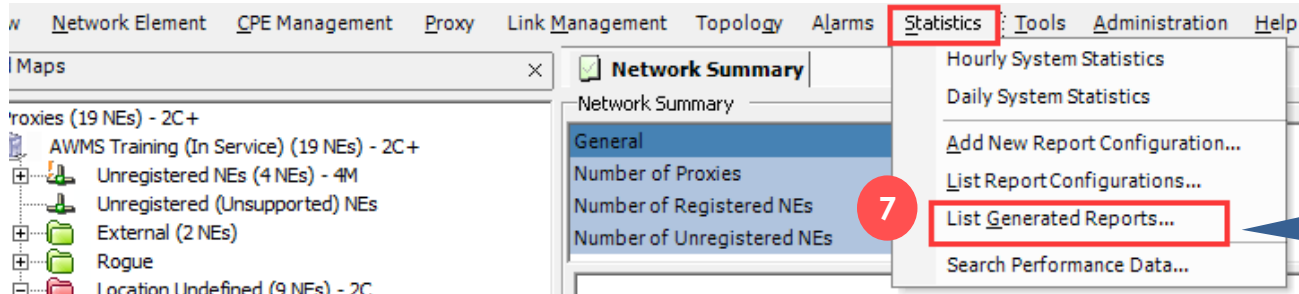
☐ Show Individual NE Hourly Statistics Report

Set the duration to show the performance statistics in the report.

Select the NE which should be included in the report.

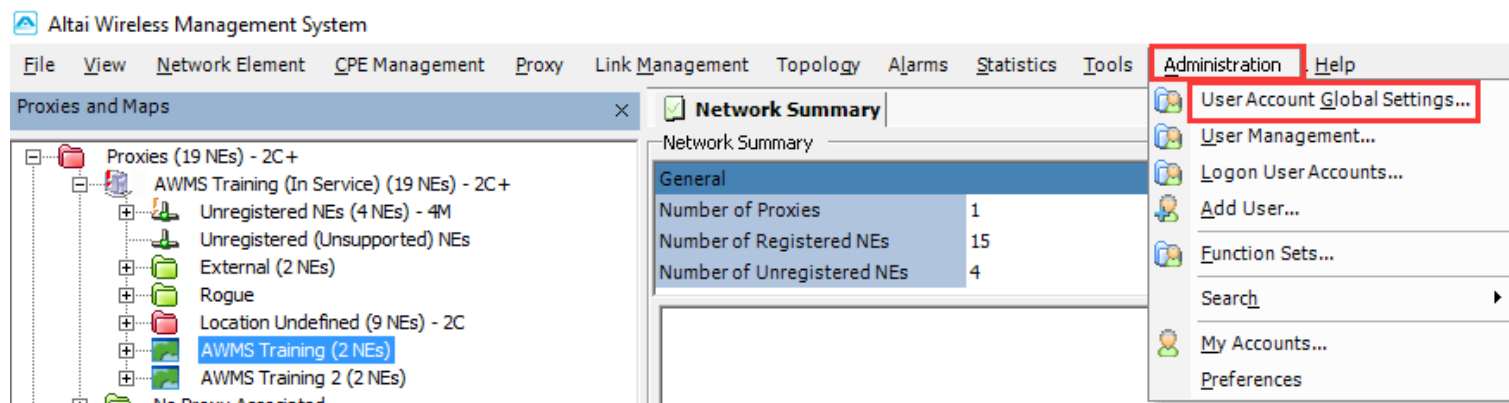
Customize the report content: display all/top/bottom NE statistics,

Performance Management — Performance Report Creation

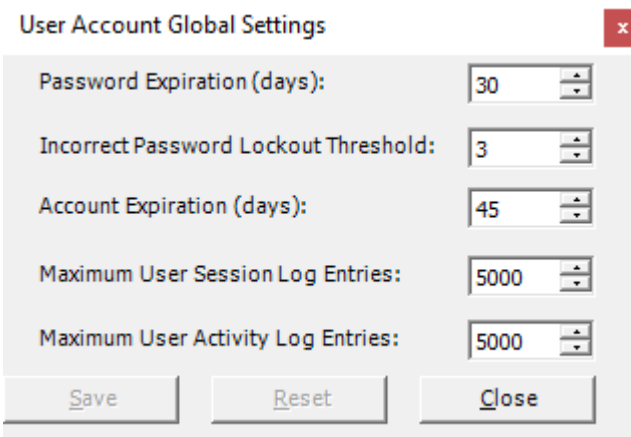


Administration Management

Administration Management — User Account Global Settings



User account global settings: the settings will be applied to all user accounts of AWMS.



Administration Management — Function Sets

The screenshot shows the 'Wireless Management System' interface. The 'Administration' menu is open, highlighting 'Function Sets...'. Below, the 'Function Set List' table is shown with four rows: Admin, Monitor, Operator, and Root. A red box highlights these rows. A red arrow points from the 'Function Sets...' menu item to the table. At the bottom, a red box highlights the 'Add...' button in the toolbar.

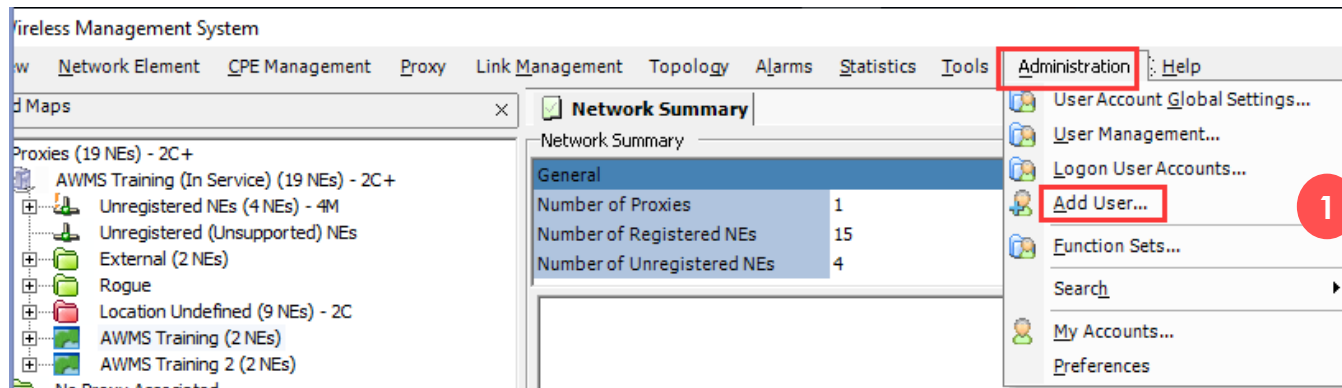
Function Set	Description
Admin	Administrator user group
Monitor	Network Monitor user group
Operator	Network Operator user group
Root	Root user group

By Default, there are four function sets:

- Monitor** users could only monitor the status of the network and acknowledge the alarms.
- Besides monitoring the network, **Operator** users are allowed to have some levels of access right of configuration.
- Admin** users have even higher access right of configuration than Operator users.
- Root** users not only have the access right to configure all the settings but also could create new user accounts and function sets.

New function set can be added and customized with authorized functions

Administration Management — Add New User Account



Set the new user account.

Register New User

Register New User

Username

Full Name

Description

Password

Confirm Password

Function Set

OK Cancel

Administration Management — User Management and Logon User Accounts

Wireless Management System

Network Element CPE Management Proxy Link Management Topology Alarms Statistics Tools Administration Help

Network Summary

Network Summary

General	
Number of Proxies	1
Number of Registered NEs	15
Number of Unregistered NEs	4

Proxies (19 NEs) - 2C+

- AWMS Training (In Service) (19 NEs) - 2C+
 - Unregistered NEs (4 NEs) - 4M
 - Unregistered (Unsupported) NEs
 - External (2 NEs)
 - Rogue
 - Location Undefined (9 NEs) - 2C
 - AWMS Training (2 NEs)
 - AWMS Training 2 (2 NEs)
- No Proxy Associated

Administration Help

- User Account Global Settings...
- User Management...
- Logon User Accounts...
- Add User...
- Function Sets...
- Search
- My Accounts...
- Preferences

User Management

Name	Function Set	Status
root	Root	Enabled
Training	training	Enabled

Show all available user account.

Wireless Management System

Network Element CPE Management Proxy Link Management Topology Alarms Statistics Tools Administration Help

Network Summary

Network Summary

General	
Number of Proxies	1
Number of Registered NEs	15
Number of Unregistered NEs	4

Proxies (19 NEs) - 2C+

- AWMS Training (In Service) (19 NEs) - 2C+
 - Unregistered NEs (4 NEs) - 4M
 - Unregistered (Unsupported) NEs
 - External (2 NEs)
 - Rogue
 - Location Undefined (9 NEs) - 2C
 - AWMS Training (2 NEs)
 - AWMS Training 2 (2 NEs)
- No Proxy Associated

Administration Help

- User Account Global Settings...
- User Management...
- Logon User Accounts...
- Add User...
- Function Sets...
- Search
- My Accounts...
- Preferences

Logon Users List

User Name	IP Address	Function Set	Session Start Time
root	10.6.161.73	Root	2016/07/06 10:58:23

Show all logon user accounts.

Software Management

Software Management — AP Firmware Upgrade

Altai Wireless Management System

File View Network Element CPE Management Proxy Link Management Topology Alarms Statistics **Tools** Administration Help

Proxies and Maps

Proxies (20 NEs) - 5M+

- AWMS Training (In Service) (2)
- Unregistered NEs (5 NEs)
- Unregistered (Unsupport
- External (2 NEs)

Network Summary

Network Summary

General

Number of Proxies	1
Number of Registered NEs	15
Number of Unregistered NEs	5

1

2

- Configuration Templates
- NE Specific Configuration Templates...
- ACS Profile Management...
- Firmware Management...**
- Task Scheduler



Firmware Images for Supported NE Types

Current Firmware

☒ A8n_2.1.0.903_2016-06-26.bin

Delete

Upload Firmware

Select the target AP type for upgrading.

3

NE Type	Model	MIB Version	Number of Radio
Altai A8n	A8n	1.2	1
Altai A8	A8n	1.2	2
Altai A8nAC	A8n	2.0	2
Altai AC			
Altai A2N			
Altai A3c			
Altai RS			

4

Select the matched MIB version and number of radio for the target upgraded AP.

Upload the target firmware.

5

Close

Software Management — AP Firmware Upgrade

Select the target NE need to be upgraded.
Multiple NEs can be selected..

The screenshot shows the left-hand navigation pane with a tree structure. A red box labeled '6' highlights a specific NE entry. A context menu is open over this entry, with a red box labeled '7' highlighting the 'More Options' item. A red box labeled '8' highlights the 'Update Firmware...' option at the bottom of the menu.

Select the target firmware

The 'Firmware Update [10.6.161.92:161]' dialog box is shown. It contains two tables: 'Current Firmware' and 'Upgradable Firmware'. A red box labeled '9' highlights a row in the 'Upgradable Firmware' table. At the bottom, a red box labeled '10' highlights the 'Update' button.

NE System Name	Model	MIB Version	Number of Radio
10.6.161.92:161	A8n	1.2	2

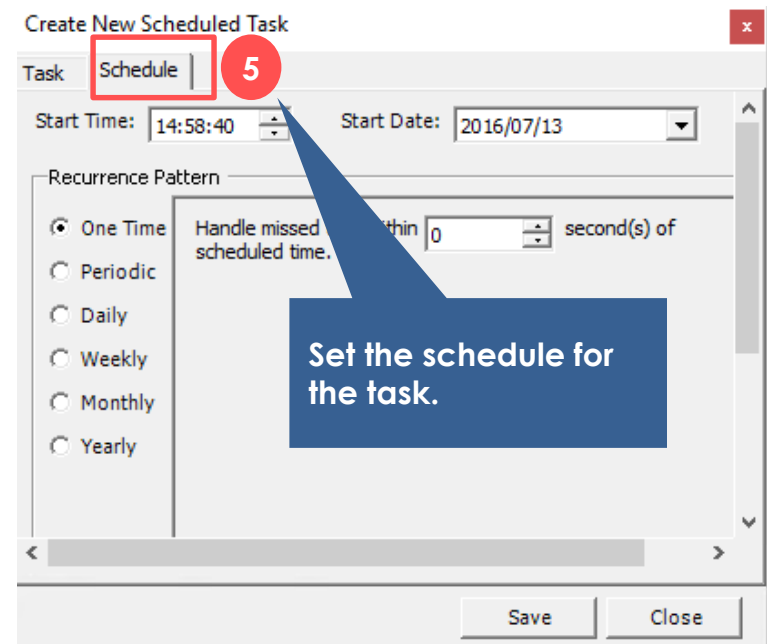
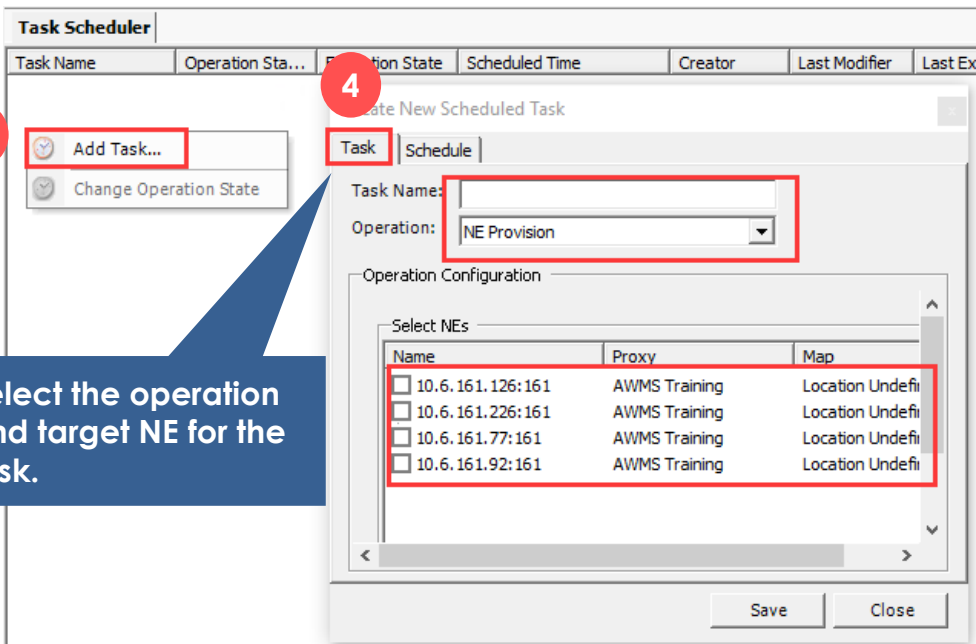
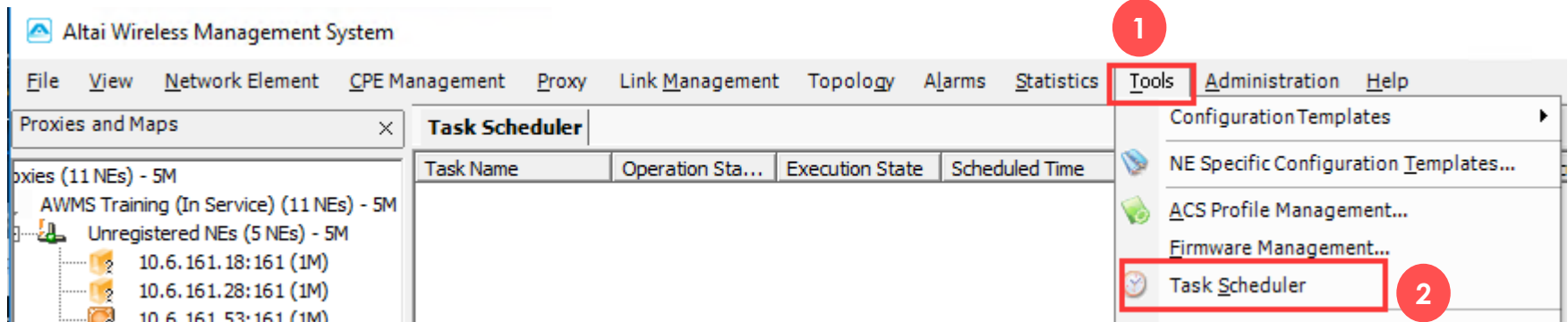
NE Type	Model	MIB Version	Number of Radio	Current Firmware	Remarks
Altai A8n	A8n	1.2	2	A8n_2.1.0.903_...	#

Remarks:
 # You can update the selected NEs to this NE type without any lost of NE type specific configurations.
 * You can update the selected NEs to this NE type, system will convert the NE type specific configurations to new NE
 ** WARNING!!! If you update the selected NEs to this NE type, all NE type specific configurations would be lost.

Buttons: Upload Firmware, Update, Cancel

Scheduled Tasks

Scheduled Tasks



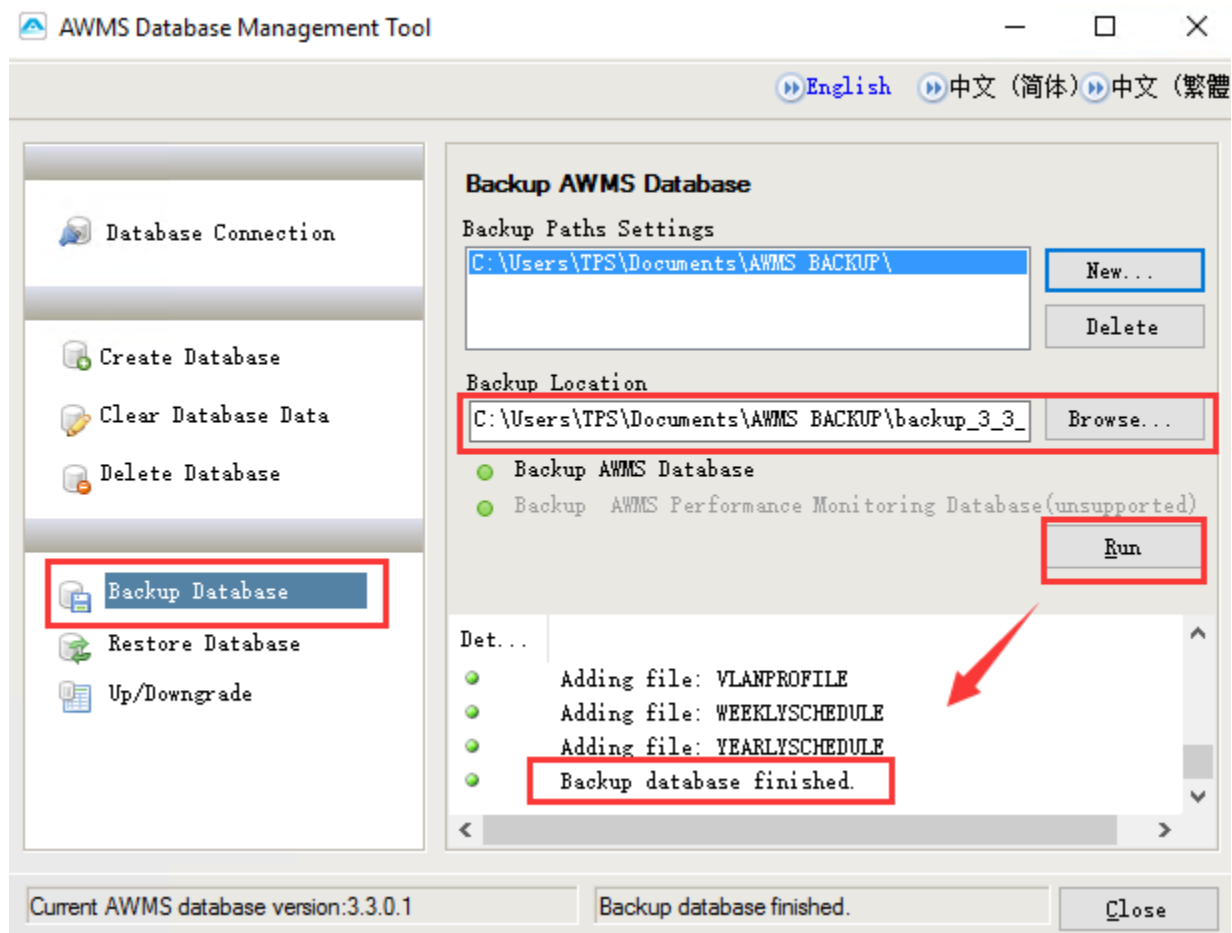
Select the operation and target NE for the task.

Set the schedule for the task.

Database Backup and Restore

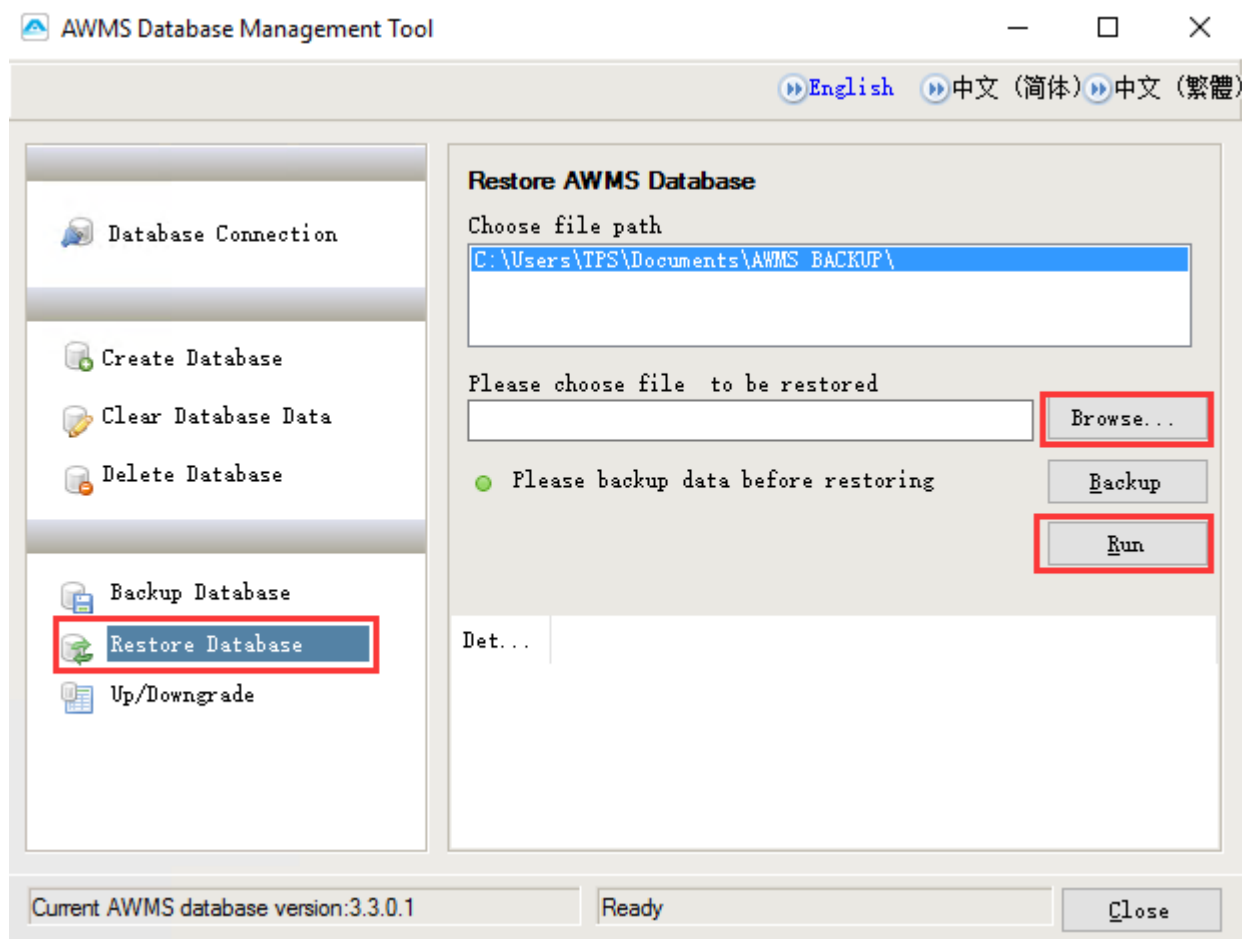
Database Backup and Restore

Launch the AWMS management tool, then you can backup the database of AWMS including the performance statistics and AWMS configurations.



Database Backup and Restore

Launch the AWMS management tool, then you can restore the backup database of AWMS including the performance statistics and AWMS configurations.



Basic Troubleshooting

Basic Troubleshooting — NE cannot be discovered.

If the NE cannot be discovered by AWMS, below checking will be necessary:

- 1) Check if the AWMS server can ping to the target NE which cannot be discovered.
- 2) Check if the SNMP setting in the target NE match SNMP setting in AWMS.
- 3) Check if the target NE IP address included discovery range in AWMS.
- 4) Check if the Proxy service enable or not in AWMS.
- 5) Check if the AP use the correct firmware.

Basic Troubleshooting — NE cannot be Managed.

If NE cannot be registered as managed after being discovered by AWMS, below checking will be necessary:

- 1) Check if the AWMS server can ping to the target NE, and also ping latency high / ping lose or not.
- 2) Check if the SNMP communication between AWMS and target NE is complete so that all information from the target NE can be read by AWMS. (Using MIB browser to get all SNMP node of the target NE).

Basic Troubleshooting — CCS cannot launch successfully.

If NE CCS cannot be launched successfully and the error "Proxy cannot be connected, the IP address has been used already" appears, then the following checks will be necessary:

- 1) Check if one CCS program is already running; you can check from the Task Manager of the server; Ending the running process can solve the issue.
- 2) Check if there is another user logged in the AWMS server and running the CCS already; you can check from the Task Manager of the server; Disconnect the logged-on user / reboot the server can solve the issue.

Thank You