


# Aruba MeshConfig 4.4



User Guide

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This user guide provides instructions for installing and managing the Aruba AirMesh wireless mesh devices using the MeshConfig tool. This chapter covers the following:

- “Audience” on page 11
- “Fundamentals” on page 11
- “Related Documents” on page 11
- “Conventions” on page 12
- “Contacting Support” on page 12

## Audience

This guide is intended for system integrators and resellers responsible for managing networks that consist of the MSR series routers and the MST terminal device. This guide assumes that you have basic knowledge in Layer 2 and Layer 3 networking technologies.

## Fundamentals

Throughout this document references are made to routers. The following AirMesh routers are available for configuration:

- MSR1200
- MSR2000
- MSR4000.

In addition to the above the following MST terminal device is also available for configuration:

- MST200

Configuring your router is accomplished using either the Web-based Management Interface (WMI) or the command line interface (CLI).



---

The screenshots and examples in this guide are for demonstration purposes only. The exact output of the commands may vary depending on the version of the MeshConfig used as well as the model and firmware version of the router hardware.

---

## Related Documents

The following items are part of the complete documentation for the Aruba MeshOS network:

- *Aruba MeshOS 4.4 Quick Start Guide*
- *Aruba MeshOS 4.4 User Guide*
- *Aruba MeshOS 4.4 Command Line Reference Guide*
- *Aruba MeshOS 4.4 Release Notes*
- *Aruba MeshConfig 4.4 Release Notes*
- *MSR/MST Installation Guides*

## Conventions

The following conventions are used throughout this manual to emphasize important concepts:

**Table 1** *Typographical Conventions*

Type Style	Description
<i>Italics</i>	This style is used to emphasize important terms and to mark the titles of books.
System items	This fixed-width font depicts the following: <ul style="list-style-type: none"><li>• Sample screen output</li><li>• System prompts</li><li>• Filenames, software devices, and specific commands when mentioned in the text</li></ul>
<b>Commands</b>	In the command examples, this bold font depicts text that you must type exactly as shown.
<i>&lt;Arguments&gt;</i>	In the command examples, italicized text within angle brackets represents items that you should replace with information appropriate to your specific situation. For example: <pre># send &lt;text message&gt;</pre> <p>In this example, you would type “send” at the system prompt exactly as shown, followed by the text of the message you wish to send. Do not type the angle brackets.</p>
[Optional]	In the command examples, items enclosed in brackets are optional. Do not type the brackets.
{Item A   Item B}	In the command examples, items within curled braces and separated by a vertical bar represent the available choices. Enter only one choice. Do not type the braces or bars.

The following informational icons are used throughout this guide:



Indicates helpful suggestions, pertinent information, and important things to remember.



Indicates a risk of damage to your hardware or loss of data.



Indicates a risk of personal injury or death.

## Contacting Support

Main Site [arubanetworks.com](http://arubanetworks.com)

Support Site [support.arubanetworks.com](http://support.arubanetworks.com)

North American Telephone	1-800-943-4526 (Toll Free) 1-408-754-1200
International Telephones	<a href="https://arubanetworks.com/support-services/aruba-support-program/contact-support/">arubanetworks.com/support-services/aruba-support-program/contact-support/</a>
Software Licensing Site	<a href="https://licensing.arubanetworks.com/login.php">licensing.arubanetworks.com/login.php</a>
Wireless Security Incident Response Team (WSIRT)	<a href="https://arubanetworks.com/support/wsirt.php">arubanetworks.com/support/wsirt.php</a>
<b>Support Emails</b>	
Americas and APAC	<a href="mailto:support@arubanetworks.com">support@arubanetworks.com</a>
EMEA	<a href="mailto:emea_support@arubanetworks.com">emea_support@arubanetworks.com</a>
WSIRT Email Please email details of any security problem found in an Aruba product.	<a href="mailto:wsirt@arubanetworks.com">wsirt@arubanetworks.com</a>



This chapter consists of general information on the MeshConfig tool including information on installing and initial set up of the tool. The information is organized in the following sections:

- “Introduction to MeshConfig” on page 15
- “Installing MeshConfig” on page 16
- “Getting Started” on page 20
- “Changing the Password” on page 22
- “Logout” on page 23
- “Accessing the Online Help” on page 23
- “Installing the Java Runtime Engine” on page 24

## Introduction to MeshConfig

The MeshConfig tool is a management system for small networks of Aruba AirMesh wireless mesh routers. You can use this tool to configure and monitor Aruba mesh networks and to realize video surveillance.

## Hardware and Software Specifications

The hardware and software specifications for the MeshConfig tool are as follows:

### Hardware Specifications

**For installations with up to 50 nodes:**

- 4 core 2.0 GHz CPU
- 2 GB RAM
- 5 GB free disk space

**For installations greater than 50 nodes:**

- 512 MB RAM for every additional 50 nodes
- 5 GB disk space for every additional 50 nodes

For example, when MeshConfig manages 250 nodes, 4 core 2.0GHz CPU, 4GB RAM and 25GB disk space are needed. These 250 nodes can provide access service for up to 5000 clients.



The network should have no more than 250 MSR and/or MST nodes. A node can provide access services for up to 20 clients.

### Software Specifications

The software specifications for the MeshConfig tool are listed in [Table 2](#).

**Table 2** *Software Specifications*

<b>Windows OS</b>	<b>Server:</b> Windows 2008 server R2 standard (recommended) <b>Client:</b> Windows XP/Windows7
-------------------	--

**Table 2** *Software Specifications*

<b>Browsers</b>	Internet Explorer 7.0/8.0 Firefox 3.6
<b>Web server</b>	TomCat 5.0
<b>Database</b>	MySQL 5.0
<b>Java</b>	JRE 1.6

## Installing MeshConfig

To install MeshConfig:

1. Start the installation process by launching the installation wizard for MeshConfig using the **MeshConfig Install.exe** file.

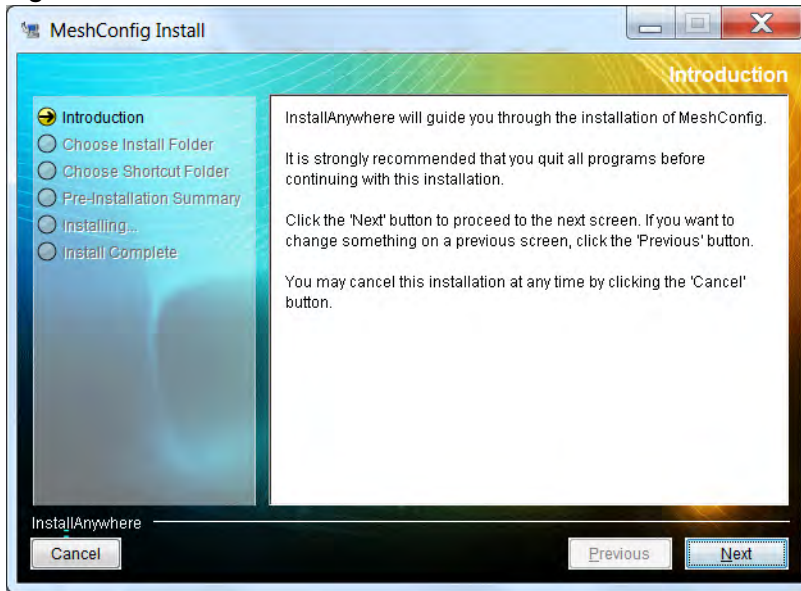
**Figure 1** *MeshConfig Install Wizard*



The **MeshConfig Install** screen is displayed as shown in [Figure 2](#).



**Figure 2** *Install Screen*



You can directly upgrade to the current version of the tool without having to uninstall the older version. This support is available only from MeshConfig 4.2 onwards. The upgrade process will detect the environment, backup your data, install the new version, and restore the data from the previous version automatically.

2. Click on **Next** to proceed with the Installation.

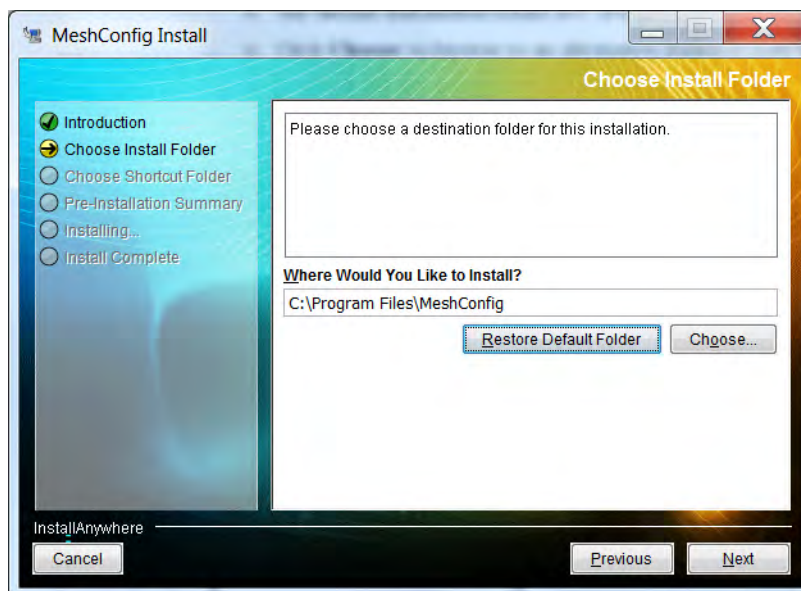
Use the **Cancel** button to exit the wizard.

3. Select an installation folder.

The default installation folder is **C:\Program files\MeshConfig**. Click on **Choose** to browse to an alternative folder or path. Use **Restore Default Folder** to go back to the default installation folder.

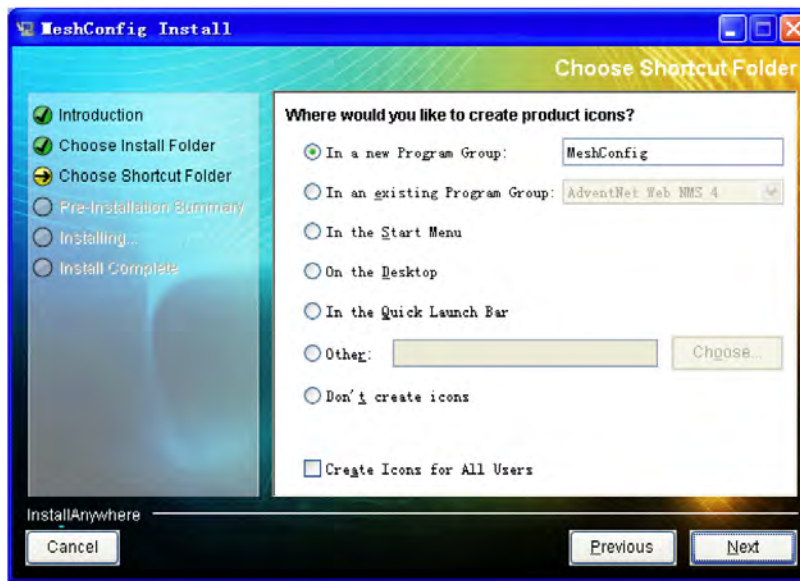
4. Click on **Next** to proceed.

**Figure 3** *Installation Folder*



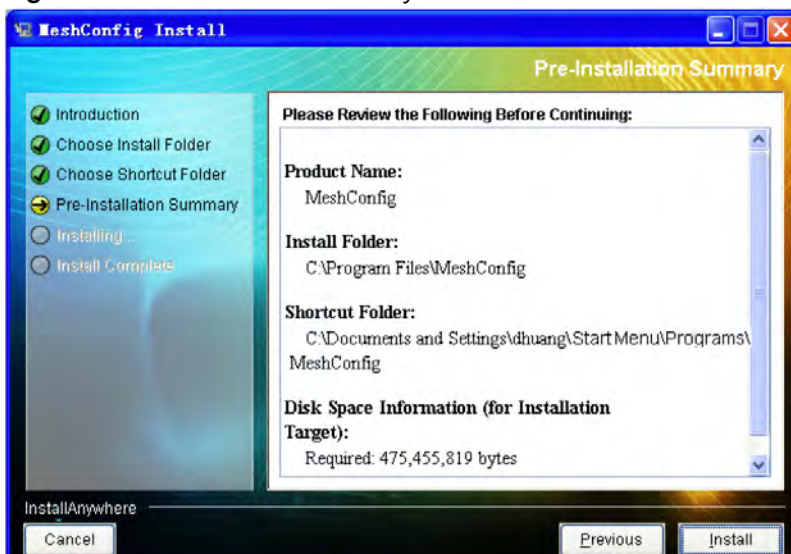
5. Specify a shortcut folder option and click on **Next** to proceed.

**Figure 4** *Shortcut Folder*



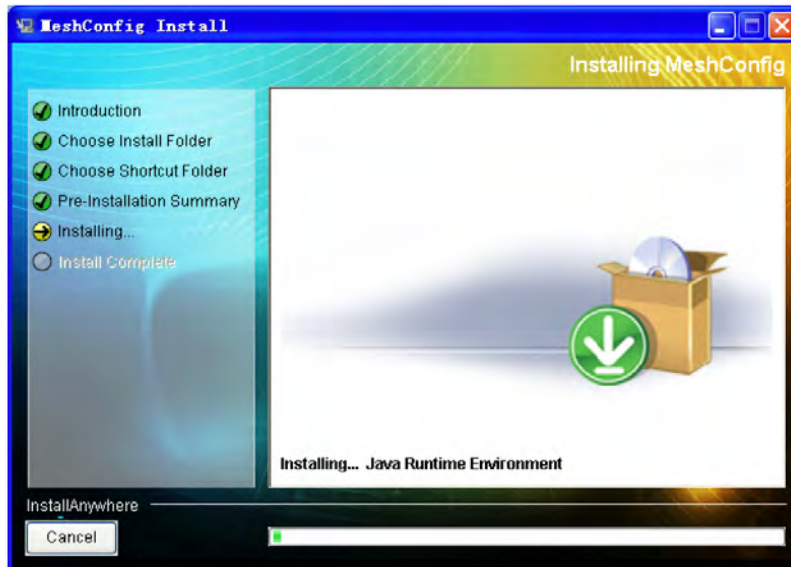
The pre-installation summary is displayed as shown in [Figure 5](#).

**Figure 5** *Pre-installation Summary*.



6. Click on **Install** to start installing the MeshConfig files.

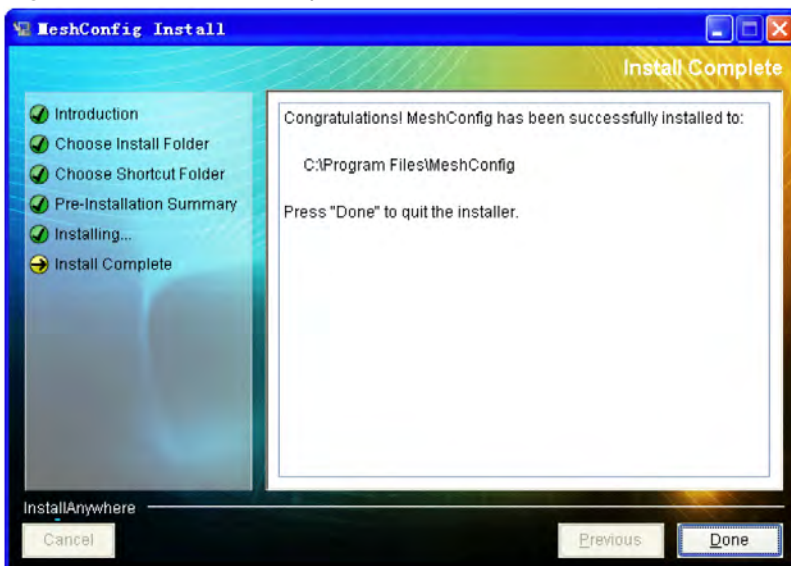
**Figure 6** *Installing MeshConfig*



A progress bar indicates the progress of the installation. The **Install Complete** screen as shown in Figure 7 is displayed once the installation is complete.

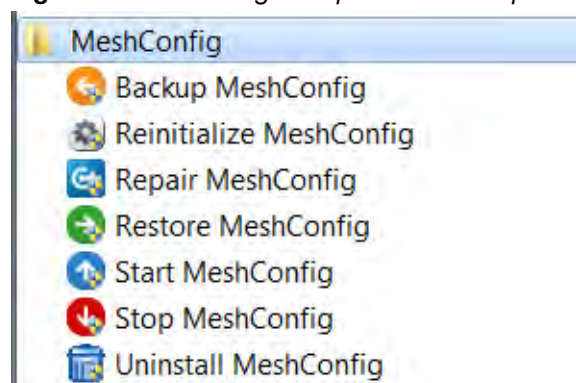
7. Click on **Done** to conclude the installation process and exit the wizard.

**Figure 7** *Installation Complete*



A new menu group as shown in Figure 8 is created in the Windows start up menu.

**Figure 8** MeshConfig Group in the Start up Menu



The following operations can be performed directly from the MeshConfig menu group:

- **Start MeshConfig**  
Use this option to start the MeshConfig services and automatically open the default web browser, to display the login page.
- **Stop MeshConfig**  
Use this option to stop the MeshConfig services without closing the WebUI.
- **Backup MeshConfig**  
Use this option to backup the MeshConfig configuration and database files to a folder of your choice.
- **Restore MeshConfig**  
Use this option to restore the configuration and database files from the backup folder.
- **Repair MeshConfig**  
Use this option to repair the mysql database in case of a database crash.
- **Reinitialize Meshconfig**  
Use this option to reinitialize the mysql database if the **Start MeshConfig** option is not effective after an upgrade or if you want to clear the MeshConfig database.
- **Uninstall MeshConfig**  
Use this option to uninstall MeshConfig.



---

Stop all MeshConfig services before you select the Backup, Restore, Repair, Reinitialize, and Uninstall MeshConfig options.

---

## Getting Started

The MeshConfig tool has a web-based interface for remote access. The MeshConfig web server is installed on the Windows Server. You may also run MeshConfig clients from a PC or laptop.

The following steps will guide you to set up the MeshConfig tool:

1. Launch the MeshConfig tool
  - a. On the server:  
Launch the MeshConfig tool using **Start Menu > All Programs > MeshConfig > Start MeshConfig**. A start up window as shown in [Figure 9](#) is displayed.

**Figure 9** *Launching MeshConfig*



A progress bar indicates the status. A login page as shown in [Figure 10](#) is displayed when the progress bar reaches **100%**.

b. As a client:

Open the web browser in a laptop or PC and enter the URL for example, <http://A.B.C.D:9090/LoginPage.do>, where A.B.C.D is the IP address of the server. For example, 192.168.10.1. A login page as shown in [Figure 10](#) is displayed.

2. Login to the MeshConfig user interface (UI).

The default login is:

- Username: root
- Password: public



We strongly recommend changing the default credentials, in order to prevent unauthorized access to the router. Refer to “[Changing the Password](#)” on [page 22](#) for details.

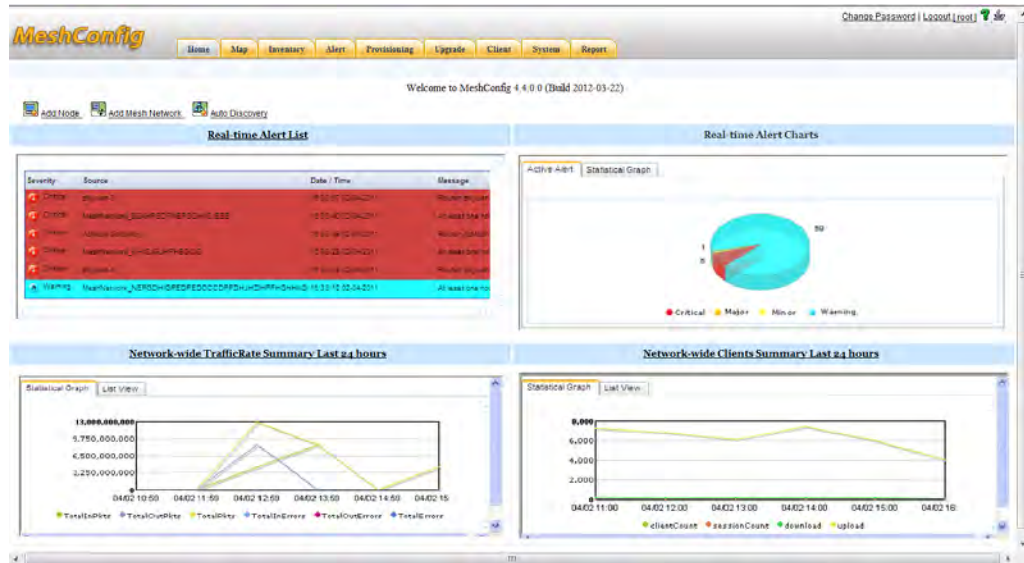
**Figure 10** *Login Screen*



After successful login, the home page as shown in [Figure 11](#) is displayed.



**Figure 11** Home Page



3. Add mesh nodes and mesh networks.

Use the following options in the **System** page to populate the MeshConfig tool with data:

- **Add Node:** Adds the node with the specified IP address.
- **Add Mesh Network:** Adds a mesh network with the specified gateway and parameters.
- **Auto Discovery:** Automatically discovers and adds mesh networks based on the specified IP or a range of IPs with the netmask.

For further details refer to “Adding a Node” on page 86, “Adding a Mesh Network” on page 86, and “Upgrading Nodes” on page 82.



Links to these options are also available on the **Home** page.

The mesh nodes are added to the inventory and are available on the **Inventory** page. For further details refer to [Chapter 2, “Inventory View”](#).



MeshConfig automatically discovers the parent network of a node and adds it to the database.

4. (Optional) Configure the following initial parameters:

- **Device Status Polling Interval: 30 Seconds.**  
You can modify this parameter. The recommended value is 30 seconds or above.
- **Performance Data Polling Interval: 15 Minutes.**  
You can modify this parameter. The recommended value is 5 Minutes or above.
- **Auto Discovery Interval: 24 hours.**
- **Real-time Reports Data Store Time Length: 7 Days.**  
You can modify this parameter. The range is 1 day - 90 days.
- **Periodicity Reports Data Store Times Length: 30 Days.**

## Changing the Password

To change the login password:

1. Click on the **Change Password** option located at the top right hand corner of the MeshConfig page as shown in Figure 12.

**Figure 12** *Changing the Password*



The Change Password window is displayed as shown in Figure 13.

**Figure 13** *Change Password Window*

The image shows a web browser window titled 'Change Password - Windows Internet Explorer'. The address bar shows 'http://127.0.0.1:9090/ChangePassword.do'. The main content area has a title 'Change Password'. Below the title are four input fields: 'Current Password' with a note '\* (Password length is 1-32)', 'New password' with a note '\* (Password length is 1-32)', 'Re-type password' with a note '\* (Password length is 1-32)', and 'Password Expiry Duration' with a value of '90' and a unit of 'days'. Below these fields is a red note '\* - Mandatory fields'. At the bottom are two buttons: 'Submit' and 'Reset'.

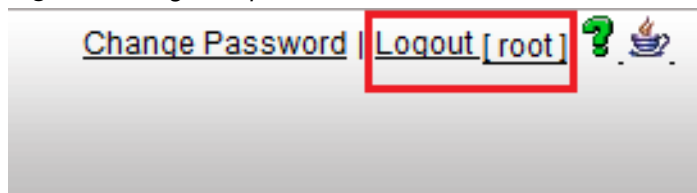
2. Enter the **Current Password**, **New Password**, and the **Password Expiry Duration** (optional) and click on **Submit**.

The password is changed to the specified string. Use the **Reset** button to reset the password to the default password.

## Logout

To logout, click on the **Logout** link located at the top right hand corner of the MeshConfig page as shown in Figure 14. Alternatively, you can also click on the **[root]** link.

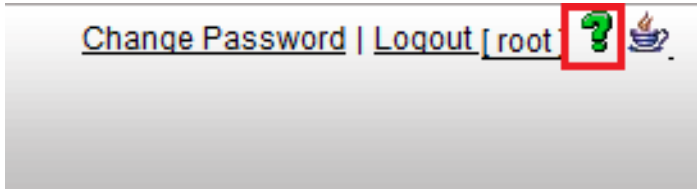
**Figure 14** *Logout Option*



## Accessing the Online Help

To access the online help file, click on the help icon as shown in Figure 15. The help instructions are displayed in a separate window.

**Figure 15** *Online Help*



## Installing the Java Runtime Engine

The Java Runtime Environment (JRE) version 1.6 or higher is recommended on the client side for the MeshConfig tool. The **Map** view may not display without the recommended version of JRE.

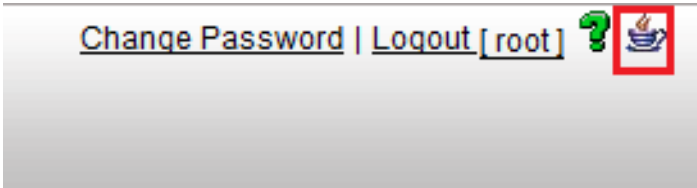


This requirement is applicable only for the client. At the server end, MeshConfig automatically registers to the browser.

To upgrade to the recommended version or to install the JRE on the client, and register it to the browser:

1. Click on the Java icon at the top right hand corner of the MeshConfig page as shown in [Figure 16](#).

**Figure 16** *Java Runtime Environment*



A download dialog is displayed. Click on the **Run** button to install JRE on the client and register it to the browser.



The **Inventory** page is used to configure the settings and perform operations specific to each wireless mesh node. This chapter consists of the following:

- “Viewing the Routers” on page 25
- “Naming the Routers” on page 26
- “Setting/Removing a Node as Gateway” on page 27
- “Viewing Router Properties” on page 29
- “Checking Router Connectivity” on page 31
- “Viewing Real-time Performance Statistics” on page 32
- “Router Operations” on page 34
- “Viewing a Mesh” on page 35
- “Viewing a Mesh Link” on page 36
- “Link Operations” on page 36
- “Viewing a SSID” on page 38

## Viewing the Routers

MeshConfig displays a list of all the routers that make up the mesh networks that it manages, on the **Inventory** page.

To view the list of routers:

1. Click on the **Inventory** tab.  
A list of all the routers is displayed as shown in [Figure 17](#).

**Figure 17** Viewing the Routers

Device Name	Serial Number	Running Image	Stored Image	Active Partition	IP Address	Mac Address	IP Type	Reachable	Mesh ID
M40_trident	34B02104500018	4.3.0.1(Bootloader)	4.3.0.1	Backup	10.65.100.127	00:17:7b:11:70:6f	Static	No	Campus
MSR2000-D-GT-2c6d:24	26A02110200233	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.100.100	00:17:7b:2a:6c:24	Static	Yes	Campus
zhiyuan-4	12A12093100098	(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Backup	10.65.12.214	00:17:7b:2a:6c:9f	Static	Yes	zhiyuan
zhiyuan-2	12A12093100084	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.212	00:17:7b:2a:6c:75	Static	Yes	zhiyuan
zhiyuan-1	34B02104500001	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.211	00:17:7b:11:70:1a	Static	Yes	zhiyuan
zhiyuan-3	12A12093100020	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.213	00:17:7b:2a:6c:b5	Static	Yes	zhiyuan
zhiyuan-5	61A12092800021	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.216	00:17:7b:2a:6c:ae	Static	Yes	zhiyuan

Use the **Page Length** option above the router list to set the page length of the list and the refresh button beside it to refresh the **Inventory** page. You can also search the **Inventory** page to locate routers matching a specific value for the column attributes, using the **Search** button. For example, the search option “**Column DeviceName Contain z**” displays all the routers with the string “z” in their **Device Name**.

## Naming the Routers

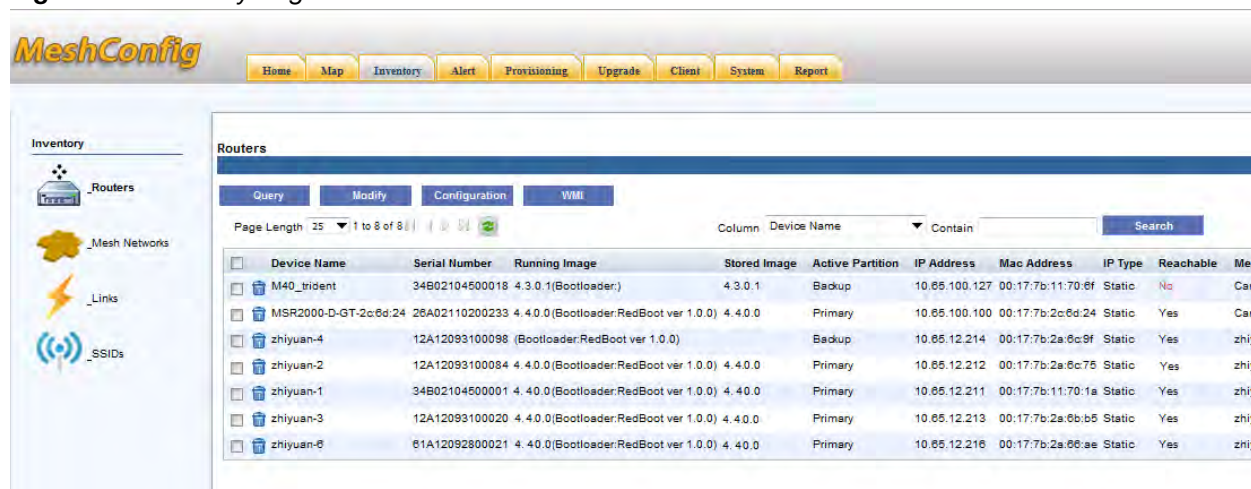
By default, routers are assigned hostnames based on their model type, for example, MST200. It is recommended that each router is assigned a unique and meaningful name to identify and manage the nodes effectively.

To change the hostname of a router:

1. Click on the **Inventory** tab.

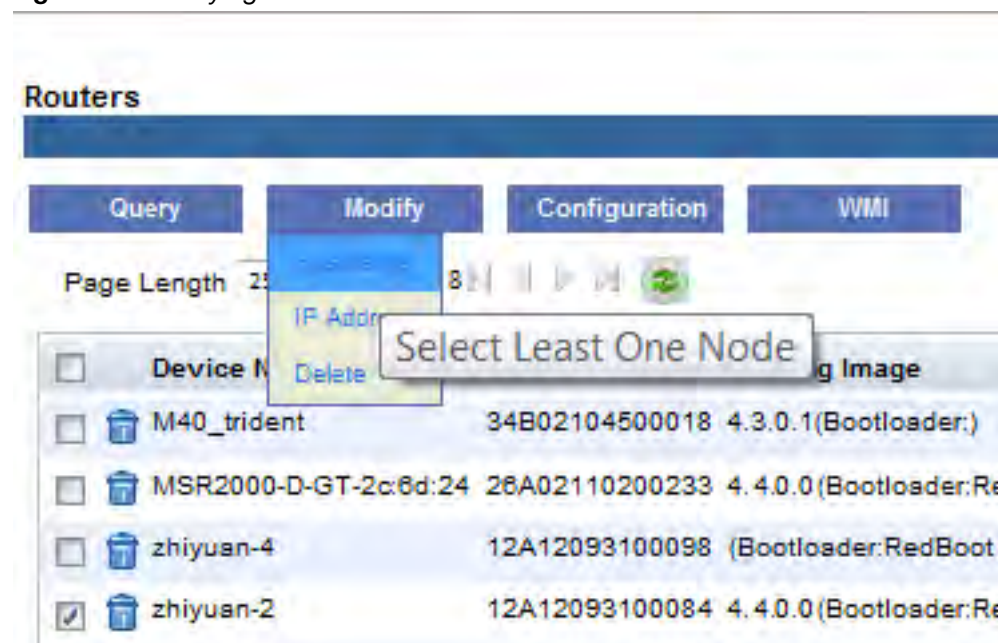
A list of all the routers is displayed as shown in Figure 18.

**Figure 18** Inventory Page



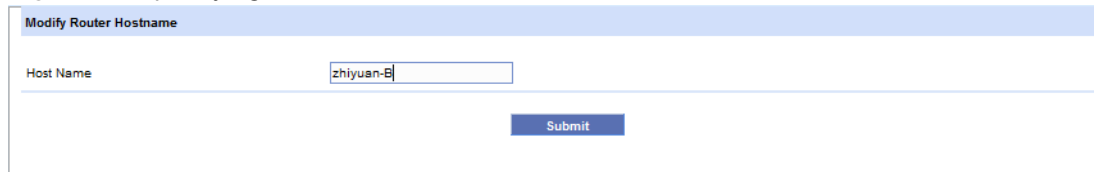
2. Use the **Serial Number** details to locate the node to be configured using the **Search** button and check the box in front of it.
3. Click on the **Modify** button located above the router list and select the **Hostname** option as shown in Figure 19.

**Figure 19** Modifying a Hostname



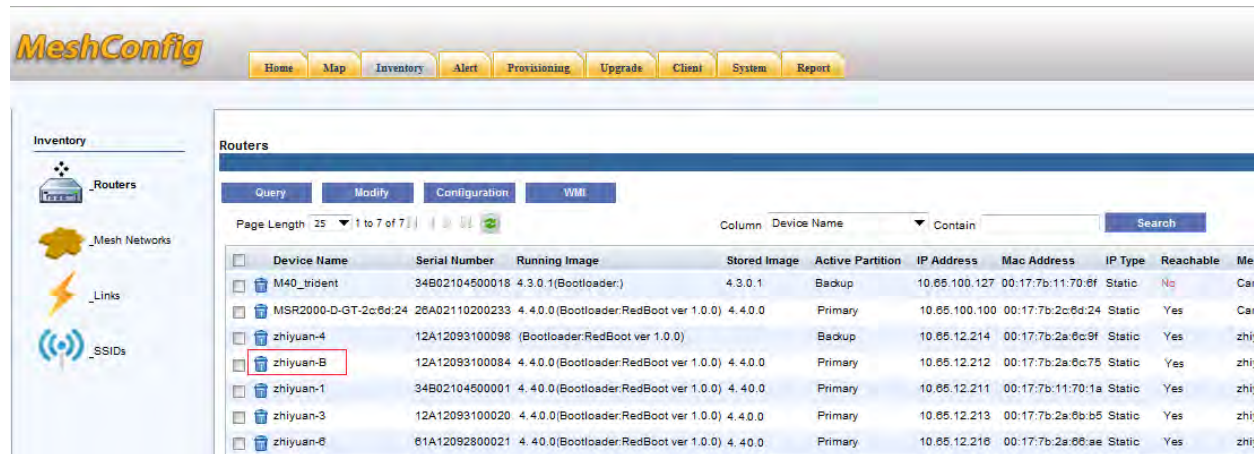
4. Enter the new hostname in the **Modify Router Hostname** page and click on **Submit** as shown in Figure 20.

**Figure 20** Specifying the New Hostname



The hostname of the router is changed as shown in Figure 21.

**Figure 21** New Hostname



Device Name	Serial Number	Running Image	Stored Image	Active Partition	IP Address	Mac Address	IP Type	Reachable	Me
M40_trident	34B02104500018	4.3.0.1(Bootloader)	4.3.0.1	Backup	10.65.100.127	00:17:7b:11:70:6f	Static	No	Car
MSR2000-D-GT-2c6d:24	26A02110200233	4.4.0.0(Bootloader.RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.100.100	00:17:7b:2c:6d:24	Static	Yes	Car
zhiyuan-4	12A12093100098	(Bootloader.RedBoot ver 1.0.0)		Backup	10.65.12.214	00:17:7b:2a:6c:9f	Static	Yes	zhi
zhiyuan-B	12A12093100084	4.4.0.0(Bootloader.RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.212	00:17:7b:2a:6c:75	Static	Yes	zhi
zhiyuan-1	34B02104500001	4.4.0.0(Bootloader.RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.211	00:17:7b:11:70:1a	Static	Yes	zhi
zhiyuan-3	12A12093100020	4.4.0.0(Bootloader.RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.213	00:17:7b:2a:6b:b5	Static	Yes	zhi
zhiyuan-6	61A12092800021	4.4.0.0(Bootloader.RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.216	00:17:7b:2a:6b:ae	Static	Yes	zhi

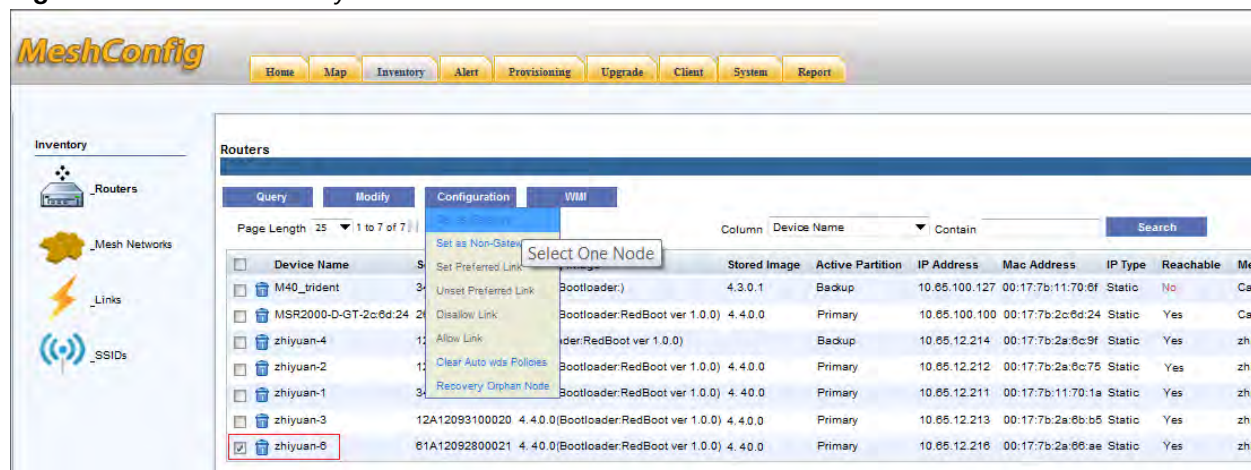
## Setting/Removing a Node as Gateway

A mesh network should have at least one gateway node that uses its Ethernet port to connect the mesh network to the wired network or to servers such as video servers, video decoders, and internet routers. Gateways do not need to be explicitly configured. However, marking a node as a gateway simplifies the management of these nodes. For example, the power LED on each node can indicate whether it has found a routing path to one of the gateways. This feature would not be available unless the gateway nodes has been explicitly specified in a mesh network.

To set/remove a node as gateway:

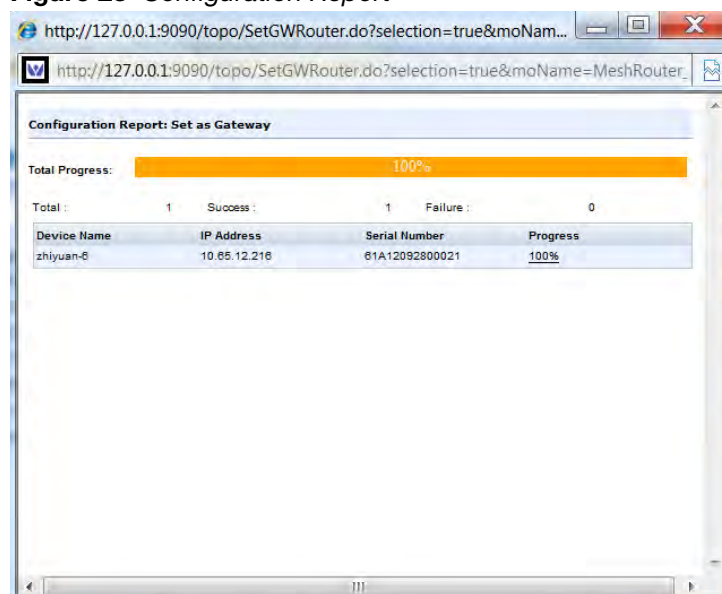
1. Click on the **Inventory** tab.  
A list of all the routers is displayed
2. Check the box in front of the node to be set/removed as a gateway
3. Click on the **Modify** button located above the list of routers and select the **Set as Gateway** to set the node as a gateway. Use the **Set as Non-gateway** option to remove this setting.

**Figure 22 Set as a Gateway Node**



4. Click on **Yes** in the confirmation dialog that is displayed.
5. A **Configuration Report** as shown in Figure 23 is displayed.
6. Wait until the **Total Progress** bar reaches **100%** and the **Success** count is increased as shown in Figure 23.

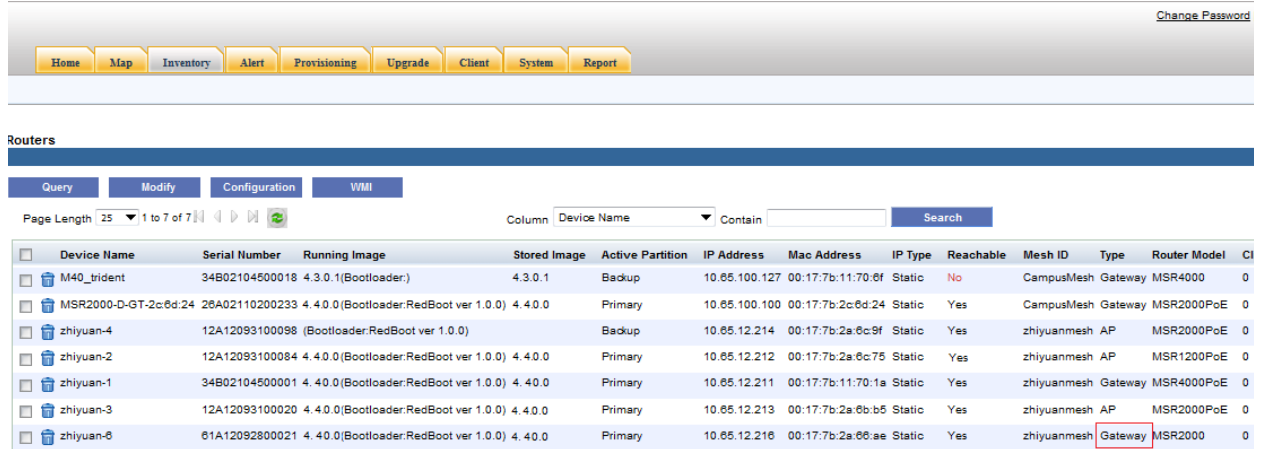
**Figure 23 Configuration Report**



7. Check on the **Inventory** tab to display the **Inventory** page. The node **Type** for the node is changed to **Gateway** as shown in Figure 24.



**Figure 24** Changing a Node to Gateway



Device Name	Serial Number	Running Image	Stored Image	Active Partition	IP Address	Mac Address	IP Type	Reachable	Mesh ID	Type	Router Model	CI
M40_trident	34B02104500018	4.3.0.1(Bootloader:)	4.3.0.1	Backup	10.65.100.127	00:17:7b:11:70:6f	Static	No	CampusMesh	Gateway	MSR4000	0
MSR2000-D-GT-2c6d:24	26A02110200233	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.100.100	00:17:7b:2c6d:24	Static	Yes	CampusMesh	Gateway	MSR2000PoE	0
zhiyuan-4	12A12093100098	(Bootloader:RedBoot ver 1.0.0)		Backup	10.65.12.214	00:17:7b:2a6c9f	Static	Yes	zhiyuanmesh	AP	MSR2000PoE	0
zhiyuan-2	12A12093100084	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.212	00:17:7b:2a6c75	Static	Yes	zhiyuanmesh	AP	MSR1200PoE	0
zhiyuan-1	34B02104500001	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.211	00:17:7b:11:70:1a	Static	Yes	zhiyuanmesh	Gateway	MSR4000PoE	0
zhiyuan-3	12A12093100020	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.213	00:17:7b:2a6b:b5	Static	Yes	zhiyuanmesh	AP	MSR2000PoE	0
zhiyuan-6	61A12092800021	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.216	00:17:7b:2a6b:ae	Static	Yes	zhiyuanmesh	Gateway	MSR2000	0



The menu options in the **Inventory** page are enabled based on the number of nodes selected. For example, if no node is selected, only the **Query->Update** option is enabled. If two nodes are selected, the menu options that require the selection of up to two nodes are enabled. For example, **Configuration->Set Preferred Link** option.

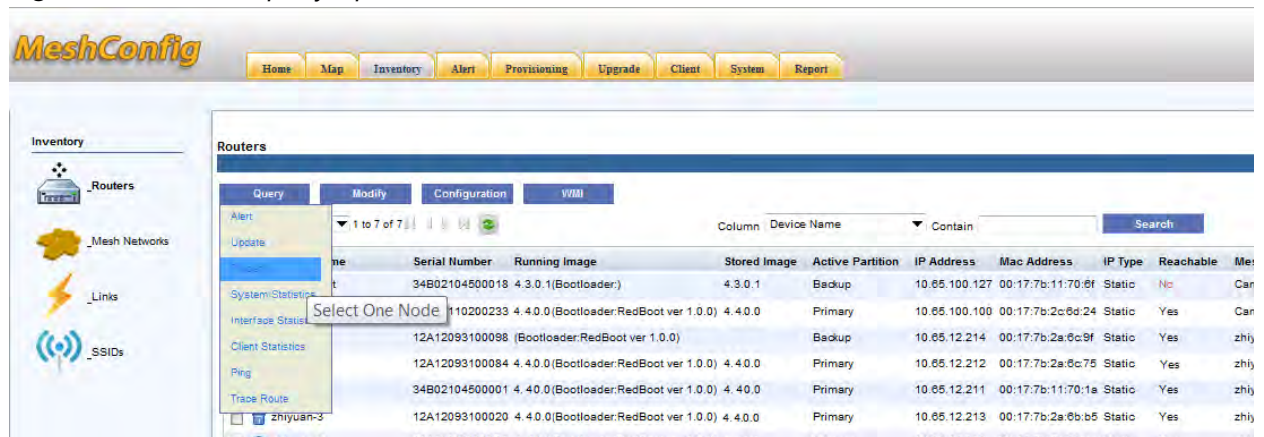
## Viewing Router Properties

MeshConfig collects a summary of the key information for each node.

To review this summary:

1. Click on the **Inventory** tab.  
A list of all the routers is displayed.
2. Select a router by marking the check box in front of it.
3. Click on the **Query** button above the list of routers and select the **Property** option to view the router properties as shown in Figure 25.

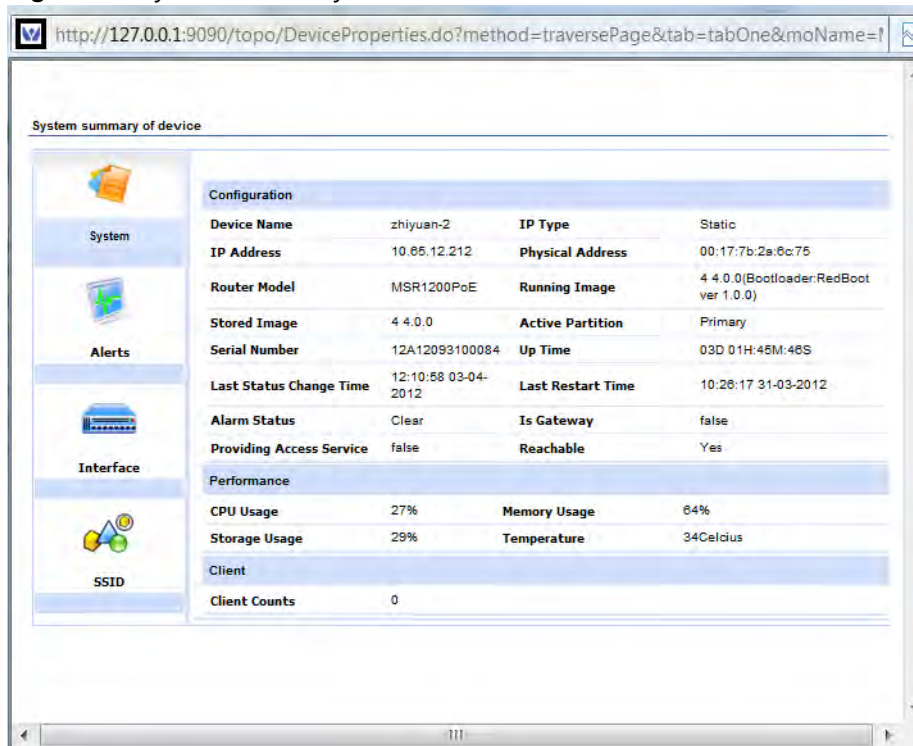
**Figure 25** Router Property Option



Device Name	Serial Number	Running Image	Stored Image	Active Partition	IP Address	Mac Address	IP Type	Reachable	Mesh ID	Type	Router Model	CI
M40_trident	34B02104500018	4.3.0.1(Bootloader:)	4.3.0.1	Backup	10.65.100.127	00:17:7b:11:70:6f	Static	No	CampusMesh	Gateway	MSR4000	0
MSR2000-D-GT-2c6d:24	26A02110200233	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.100.100	00:17:7b:2c6d:24	Static	Yes	CampusMesh	Gateway	MSR2000PoE	0
zhiyuan-4	12A12093100098	(Bootloader:RedBoot ver 1.0.0)		Backup	10.65.12.214	00:17:7b:2a6c9f	Static	Yes	zhiyuanmesh	AP	MSR2000PoE	0
zhiyuan-2	12A12093100084	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.212	00:17:7b:2a6c75	Static	Yes	zhiyuanmesh	AP	MSR1200PoE	0
zhiyuan-1	34B02104500001	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.211	00:17:7b:11:70:1a	Static	Yes	zhiyuanmesh	Gateway	MSR4000PoE	0
zhiyuan-3	12A12093100020	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.213	00:17:7b:2a6b:b5	Static	Yes	zhiyuanmesh	AP	MSR2000PoE	0
zhiyuan-6	61A12092800021	4.4.0.0(Bootloader:RedBoot ver 1.0.0)	4.4.0.0	Primary	10.65.12.216	00:17:7b:2a6b:ae	Static	Yes	zhiyuanmesh	Gateway	MSR2000	0

4. The **System Summary** for the router is displayed as shown in is Figure 26.

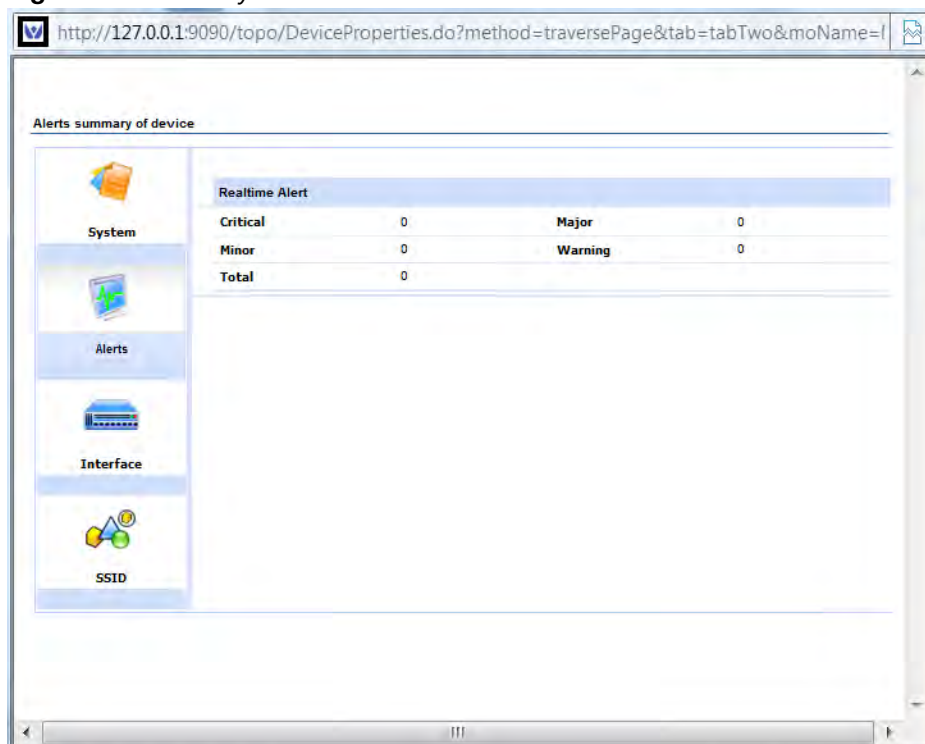
**Figure 26** System Summary of a Router



If this report is not displayed, check your browser settings and enable the display of popup windows.

- Click on the **Alerts** icon on the left pane of the window to see the summary of alarms on the router as shown in Figure 27.

**Figure 27** Summary of Alerts on a Router



- Click on the **Interface** icon on the left pane of the window to see the summary of interfaces on the router as shown in Figure 28.

**Figure 28** Summary of Interfaces on the Router

Interface summary of device			
System	Interface Total		
	5		
	Interface:dot11radio 0		
	Admin Status	Up	Operate Status Up
	Usage Mode	Access	Physical Mode 802.11na
Alerts	Channel	140	IfPhysAddress 00:17:7b:2a:6c:76
	Interface:dot11radio 0/wds 7		
	Admin Status	Up	Operate Status Up
	RSSI	79	SNR 79
	Interface:dot11radio 1		
Interface	Admin Status	Up	Operate Status Up
	Usage Mode	Access	Physical Mode 802.11na
	Channel	100	IfPhysAddress 00:17:7b:2a:6c:77
	Interface:dot11radio 1/wds 7		
	Admin Status	Up	Operate Status Up
SSID	RSSI	40	SNR 40
	Interface:gigabit-ethernet 0		
	IP Address	24.2.2.1	IP Mask 255.255.255.0
	Admin Status	Up	Operate Status Down
	Interface Speed	10M	IfPhysAddress 00:17:7b:2a:6c:75

- Click on the **SSID** icon on the left pane of the window to see the summary of SSIDs on the router as shown in Figure 29.

**Figure 29** Summary of SSIDs on the Router

SSID summary of device			
System	SSID Total		
	1		
	SSID:ArubaDefault		
	Security Type	Open	VLAN ID 0
	BSSID	00:17:7b:00:0b:b9	AssociatedStaCount 0
Alerts	Radio Interface	Dot11Radio0	
Interface			
SSID			

## Checking Router Connectivity

MeshConfig allows you to check the connectivity to a router using the **Ping** and **Traceroute** tools.

### Using the Ping Tool

- Click on the **Inventory** tab.

A list of all the routers is displayed.

2. Select a router by marking the check box in front of it.
3. Click on the **Query** button above the list of routers and select the **Ping** option.

The result of the ping command is displayed as shown in [Figure 30](#).

**Figure 30** Ping Command

```
Ping zhiyuan-6 Result
Pinging 10.65.12.216 with 32 bytes of data:
Reply from 10.65.12.216: bytes=32 time=557ms TTL=59
Reply from 10.65.12.216: bytes=32 time=551ms TTL=59
Request timed out.
Reply from 10.65.12.216: bytes=32 time=558ms TTL=59

Ping statistics for 10.65.12.216:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 551ms, Maximum = 558ms, Average = 555ms
```

## Using the Traceroute Tool

1. Click on the **Inventory** tab.  
A list of all the routers is displayed.
2. Select a router by marking the check box in front of it.
3. Click on the **Query** button above the list of routers and select the **Traceroute** option.

The result of the traceroute command is displayed as shown in [Figure 31](#).

**Figure 31** Traceroute Command

```
Trace Route to zhiyuan-6 Result
Tracing route to 10.65.12.216 over a maximum of 30 hops

  0  6 ms   3 ms   3 ms  10.13.108.254
  1  3 ms   3 ms   3 ms  10.13.2.1
  2 552 ms 571 ms 572 ms 10.64.96.2
  3 579 ms 555 ms 566 ms 10.64.96.1
  4 *      *      *      Request timed out.
  5 612 ms 622 ms 621 ms 10.65.12.216

Trace complete.
```

## Viewing Real-time Performance Statistics

MeshConfig supports the real-time collection and display of Key Performance Indicators (KPIs) on each router.

To monitor the KPIs of a router:

1. Click on the **Inventory** tab.  
A list of all the routers is displayed.
2. Select a router by marking the check box in front of it.
3. Click on the **Query** button above the list of routers and select the **System Statistics** option to view the **Realtime System Information** as shown in [Figure 32](#).



**Figure 32** *Realtime System Information*

Realtime System Information	
Device: zhiyuan-8	
Name	Value
Poll Time	Tue Apr 03 12:34:40 IST 2012
CpuLoadPercentage1Min	30%
MemoryTotal	128548KB
MemoryFree	44620KB
MemoryUsedPercentage	64%
StorageTotal	3392KB
StorageFree	1836KB
StorageUsedPercentage	46%
HardwareTemperature	30C
HardwareVersion	A1
Refresh	



This window displays the KPI for the system such as CPU usage, memory usage, flash usage, and hardware temperature. Use the **Refresh** button to update the values.

To view the real-time interface information of a router:

1. Click on the **Inventory** tab.  
A list of all the routers is displayed.
2. Select a router by marking the check box in front of it.
3. Click on the **Query** button above the list of routers and select the **Interface Statistics** option to view the **Realtime Interface Information** as shown in [Figure 33](#).

**Figure 33** *Realtime Interface Information.*

Realtime Interface Information					
Device: zhiyuan-8					
Interface Name	Admin State	Operation State	Current Rx Rate(Bytes/s)	Current Tx Rate(Bytes/s)	Total Up/Down Times
gigabit-ethernet 0	up	down	0	0	0
dot11radio 0/wds 1	up	up	5012	707	1
dot11radio 0	up	up	36450	5996	0
dot11radio 1	up	up	40372	11346	0
dot11radio 1/wds 1	up	up	3843	226	1
dot11radio 1/wds 7	up	up	5556	2665	1
Refresh					



This window displays the statistics for all the interfaces in the system, such as Ethernet ports, radio ports, and WDS link ports. Use the **Refresh** button to update the values.

To view the real-time client Information of a router:

1. Click on the **Inventory** tab.  
A list of all the routers is displayed.
2. Select a router by marking the check box in front of it.
3. Click on the **Query** button above the list of routers and select the **Client Statistics** option to view the **Realtime Client Information** as shown in [Figure 34](#).

**Figure 34** *Realtime Client Information*

Realtime Client Information											
Device: MSR2000-66-7e-05											
SSID	MAC	IP	Online length	Current Upstream	Current Downstream	Average Upstream	Average Downstream	Total Upload	Total Download	Associated Radio	RS
xweli-bss	00:17:7B:00:0B:98	10.65.14.13	26:40:35	0 Kb/s	0 Kb/s	1.27 Kb/s	0.49 Kb/s	15591525	6012849	Radio0	66

This window displays details on all of the wireless clients associated on the router. Client statistics such as traffic load, online time, and other important information is displayed for each client.

## Router Operations

The following are the other router operations available on the **Inventory** page:



The menu options in the **Inventory** page are enabled based on the number of nodes selected. For example, if no node is selected, only the **Query->Update** option is enabled. If two nodes are selected, the menu options that require the selection of up to two nodes are enabled. For example, **Configuration->Set Preferred Link** option.

- **Query > Alert**  
This operation performs a search for the active alarms for the selected router and displays them in a table.
- **Query > Update**  
This operation performs an instant refresh of the router status. Use this option if you want to refresh the values immediately. The automatic refresh cycle of MeshConfig occurs every 30 seconds (default). You can also configure the duration of the refresh cycle.
- **Modify > IP Address**  
This operation modifies the IP address of the selected router. If the router is the master node, you need to reattach MeshConfig to the master node via the new IP address.
- **Modify > Delete**  
This operation deletes the selected routers from the MeshConfig tool.
- **WMI > Home**  
This operation opens the Web-based Management Interface (WMI) for the selected router. The WMI provides in depth configuration and troubleshooting for the individual routers. The username/password of the router is required. For further information, refer to the *Aruba MeshOS 4.4 User Guide*.
- **WMI > Radio Interface**  
This menu item brings up the **Radio Settings** WMI Page for the router. The username/password of the router is required. For further information, refer to the *Aruba MeshOS 4.4 User Guide*.
- **WMI > DHCP Server**  
This menu item brings up the **DHCP Settings** WMI Page for the router. The username/password of the router is required. For further information, refer to the *Aruba MeshOS 4.4 User Guide*.
- **WMI > Routing Table**  
This menu item brings up the **Routing** WMI Page for the router. The username/password of the router is required. For further information, refer to the *Aruba MeshOS 4.4 User Guide*.
- **WMI > AVT**

This menu item brings up the **Active Video Transport Settings** WMI Page for the router. The username/password of the router is required. For further information, refer to the *Aruba MeshOS 4.4 User Guide*.

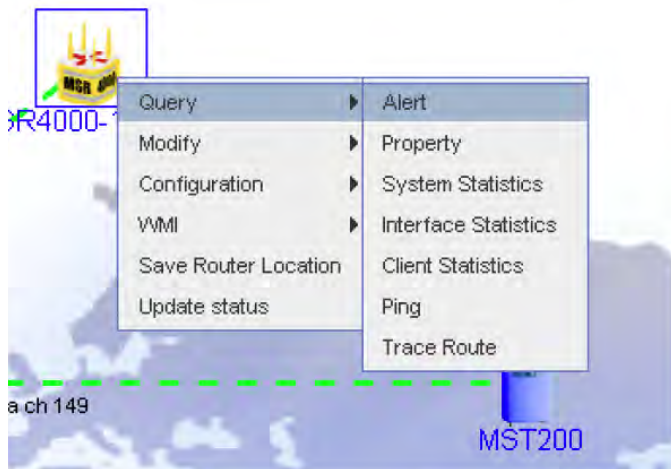
- WMI > Troubleshooting

This menu item brings up the **Troubleshooting** WMI Page for the router. The username/password of the router is required. For further information, refer to the *Aruba MeshOS 4.4 User Guide*.



All these operations can also be accessed from the **Map** view of a mesh network. Open the topology map of a mesh network and right-click on a router. The router operations are available in the menu options as shown in Figure 35.

**Figure 35** Router Operations in Map View



## Viewing a Mesh

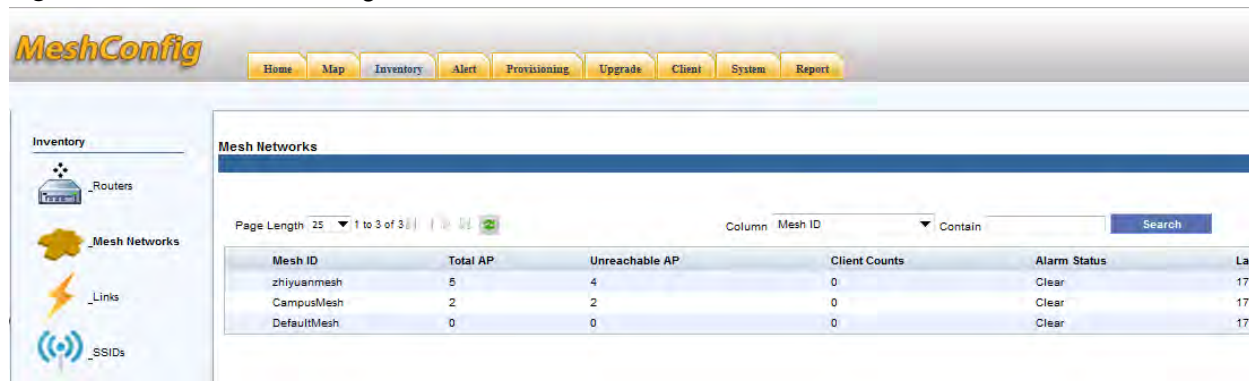
MeshConfig display a list of all the mesh networks that it manages in the **Inventory** page.

To view the list of the mesh networks:

1. Click on the **Inventory** tab in the MeshConfig tool to display the **Inventory** page.
2. Select the **Mesh Networks** link in the menu tree.

The list of all the mesh networks managed by the tool is displayed in the **Inventory** page as shown in Figure 36.

**Figure 36** Mesh Networks Page



Use the **Page Length** option above the list to set the page length of the list and the refresh button beside it to refresh the **Inventory** page. You can also search the **Inventory** page to locate mesh networks matching a specific value for the column attributes using the **Search** button. For example, the search option

“Column *MeshID* Contain Default” displays all the mesh networks with the string “Default” in their **MeshID**.

## Viewing a Mesh Link

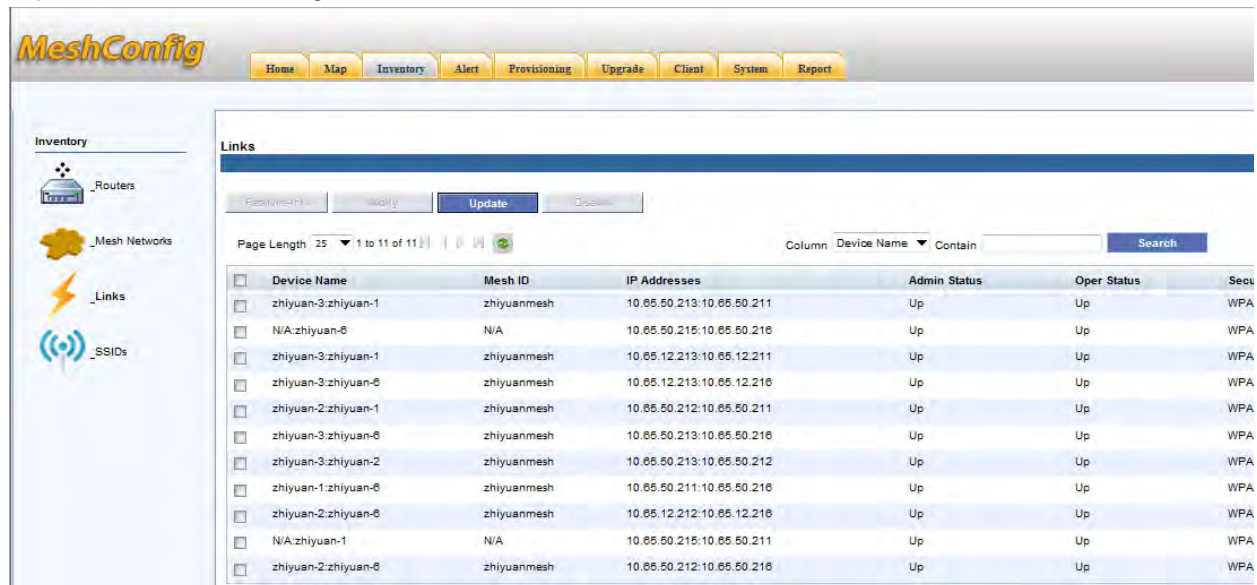
MeshConfig displays a list of all the mesh links in the networks that it manages.

To view the list of the mesh links:

1. Click on the **Inventory** tab in the MeshConfig tool to display the **Inventory** page.
2. Select the **Links** option in the menu tree.

The list of all the mesh links in the mesh networks managed by the tool is displayed in the **Inventory** page as shown in Figure 37.

Figure 37 Mesh Links Page



Device Name	Mesh ID	IP Addresses	Admin Status	Oper Status	Secu
zhiyuan-3:zhiyuan-1	zhiyuanmesh	10.85.50.213:10.85.50.211	Up	Up	WPA
N/A:zhiyuan-6	N/A	10.85.50.215:10.85.50.216	Up	Up	WPA
zhiyuan-3:zhiyuan-1	zhiyuanmesh	10.85.12.213:10.85.12.211	Up	Up	WPA
zhiyuan-3:zhiyuan-6	zhiyuanmesh	10.85.12.213:10.85.12.216	Up	Up	WPA
zhiyuan-2:zhiyuan-1	zhiyuanmesh	10.85.50.212:10.85.50.211	Up	Up	WPA
zhiyuan-3:zhiyuan-6	zhiyuanmesh	10.85.50.213:10.85.50.216	Up	Up	WPA
zhiyuan-3:zhiyuan-2	zhiyuanmesh	10.85.50.213:10.85.50.212	Up	Up	WPA
zhiyuan-1:zhiyuan-6	zhiyuanmesh	10.85.50.211:10.85.50.216	Up	Up	WPA
zhiyuan-2:zhiyuan-6	zhiyuanmesh	10.85.12.212:10.85.12.216	Up	Up	WPA
N/A:zhiyuan-1	N/A	10.85.50.215:10.85.50.211	Up	Up	WPA
zhiyuan-2:zhiyuan-6	zhiyuanmesh	10.85.50.212:10.85.50.216	Up	Up	WPA

Use the **Page Length** option above the list to set the page length of the list and the refresh button beside it to refresh the **Inventory** page. You can also search the **Inventory** page to locate links matching a specific value for the column attributes using the **Search** button. For example, the search option “Column *DeviceName* Contain z” displays all the links formed with devices containing the string “z” in their **Device Name**.

## Link Operations

The following are the operations that you can perform on the mesh links:

### Real-time Info

This operation queries the real-time information for the selected link and displays it in the form of a table.

To view the real-time information of a link:

1. Click on the **Inventory** tab in the MeshConfig tool to display the **Inventory** page.
2. Select the **Links** option in the menu tree.

The list of all the mesh links in the mesh networks managed by the tool is displayed in the **Inventory** page.

3. Select the link by marking the check box in front of the link.

4. Click on the **Realtime Info** button above the link list. The **Realtime Link Information** page is displayed as shown in Figure 38.

**Figure 38** *Realtime Link Information*

Realtime Link Information		
Router Name	zhiyuan-2	zhiyuan-1
Interface Name	dot11radio 1/wds 7	null
Channel	900 802.11na ch 100	900 802.11a ch 140
Admin Status	Up	Down
Physical Status	Up	Down
RSSI	41	null
SNR	41	null
Noise Floor	-117dBm	-113dBm
Data Rate	130Mb/s	N/A
Link Quality	71%	null%
Security Policy	WPA2	Invalid
Current Tx Rate	8.98 Kb/s	N/A

Refresh

## Modify

This operation modifies the radio setting of the selected link.

To modify the **Link Radio Setting** of a link:

1. Click on the **Inventory** tab in the MeshConfig tool to display the **Inventory** page.
2. Select the **Links** option in the menu tree.

The list of all the mesh links in the mesh networks managed by the tool is displayed in the **Inventory** page.
3. Select the link by marking the check box in front of the link.
4. Click on the **Modify** button above the link list. The **Link Radio Setting** page is displayed as shown in Figure 39.

**Figure 39** *Link Radio Setting Page*

Link Radio Setting

Radio Mode 802.11na(20MHz) ▼

Channel 165 ▼

Configure

5. Modify the parameters and click the **Configure** button to apply the changes.

## Update

This operation performs an instant refresh of the link status. Use this option if you want to refresh the values immediately. The automatic refresh cycle of MeshConfig occurs every 30 seconds (default). You can also configure the duration of the refresh cycle.

To update a link:

1. Check the box next to the link to select the link
2. Click on the **Update** button above the link list.

The link is updated immediately.

## Disallow Links

This operation blocks a link in a mesh network from forming.

To disallow a link:

1. Check the box in front of the link to select the link.
2. Click on the **Disallow** button above the list. The link is disallowed with immediate effect.

## Viewing a SSID

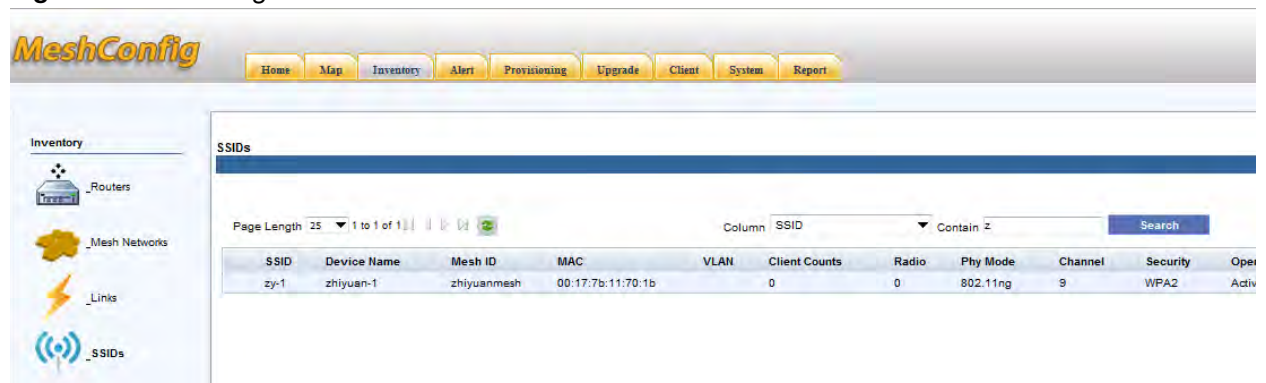
MeshConfig display a list of all the SSIDs in the networks that it manages, in the **Inventory** page.

To view the list of SSIDs:

1. Click on the **Inventory** tab in the MeshConfig tool to display the **Inventory** page.
2. Select the **SSIDs** link in the menu tree.

The list of all the SSIDs in the mesh networks managed by the tool is displayed in the **Inventory** page as shown in [Figure 40](#).

**Figure 40** SSIDs Page



Use the **Page Length** option above the list to set the page length of the list and the refresh button beside it to refresh the **Inventory** page. You can also search the **Inventory** page to locate SSIDs matching a specific value for the column attributes using the **Search** button. For example, the search option “**Column SSID** **Contain z**” displays all the SSIDs with the string “z”.

The **Map** view feature lets you view the topology maps for the mesh networks and perform operations on the maps. This chapter explains the following:

- “Viewing the Map” on page 39
- “Map Operations” on page 41
- “Removing/Disallowing Links” on page 43
- “Configuring Preferred Links” on page 45
- “Modifying Links” on page 47
- “Monitoring the Link Quality” on page 48
- “Recovering Orphaned Nodes” on page 50
- “Mesh Operations” on page 52



---

The JRE version 1.6 or higher is recommended on the client side for the MeshConfig tool. The **Map** view may not display without the recommended version of JRE.

---

### Viewing the Map

MeshConfig displays the maps of the networks that it actively manages, in the **Map** view.

To view the map of a mesh network:

1. Click on the **Map** tab.

The list of all the mesh networks in the MeshConfig tool are listed in the left navigation pane. The networks are pictorially represented in the right pane of the page as shown in [Figure 41](#).



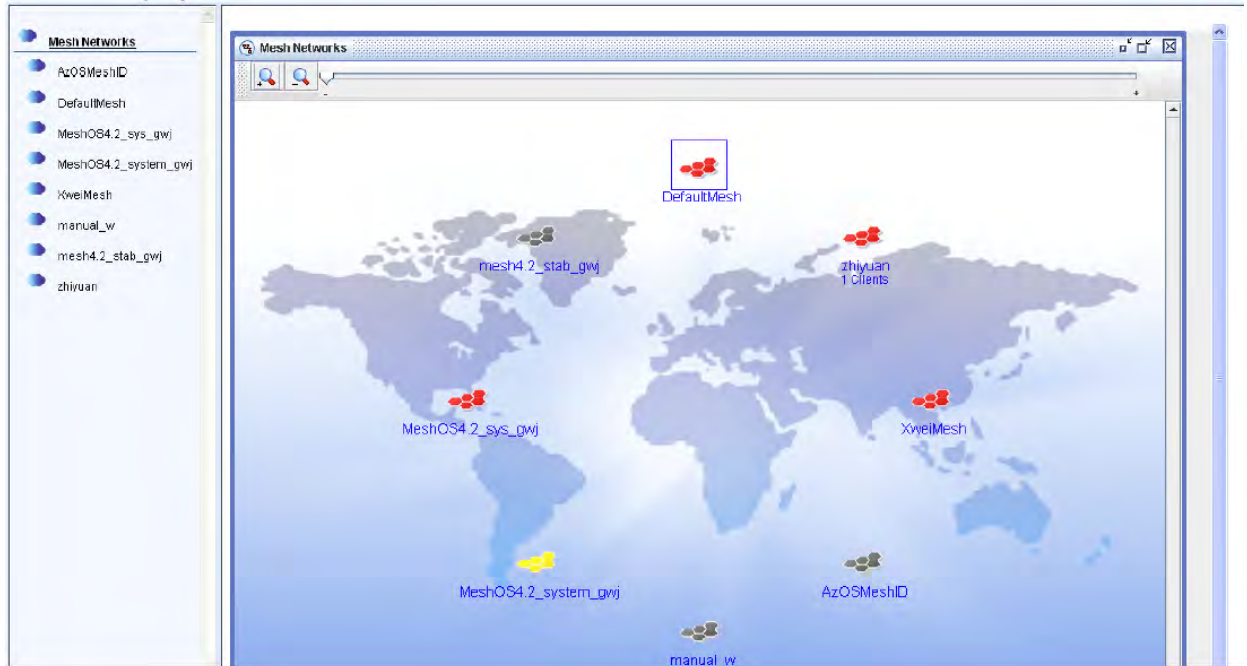
---

The pictorial representation displays the **Mesh ID** and the **client count** for each mesh network.

---



**Figure 41** Map View



2. Click on the Mesh ID in the left pane to display the mesh map for a particular mesh network as shown in Figure 42.

**Figure 42** Mesh Network View



The pictorial representation of a mesh network displays information such as Hostname of the routers in the network, the links, the strength of the links (indicated by the color and thickness of the links), information on the gateway nodes and the client count for each node.



## Map Operations

The following operations can be performed in the topology map of a mesh network:

- “Customizing the Map Background” on page 41
- “Customizing Node Locations” on page 42
- “Removing/Disallowing Links” on page 43
- “Configuring Preferred Links” on page 45
- “Modifying Links” on page 47
- “Monitoring the Link Quality” on page 48
- “Recovering Orphaned Nodes” on page 50

### Customizing the Map Background

To customize the map background:

1. Open the mesh map of the mesh network.
2. Right-click on the map background and select the **Modify Background** option as shown in Figure 43.

**Figure 43** *Modifying the Map Background*




3. The **Back Ground Image Management** window is displayed as shown in Figure 44.


**Figure 44** *Background Image Management*

**Back Ground Image Management**

Upload Filename:

**Image List:**



 router\_map.gif



If this window is not displayed, check the browser settings and enable pop-ups in the browser.

4. Browse and select the new background image file.

The image can be a Google earth screen capture, street map, campus map, or a building layout diagram.

5. Click on **Set as Background** to upload the new image to MeshConfig.

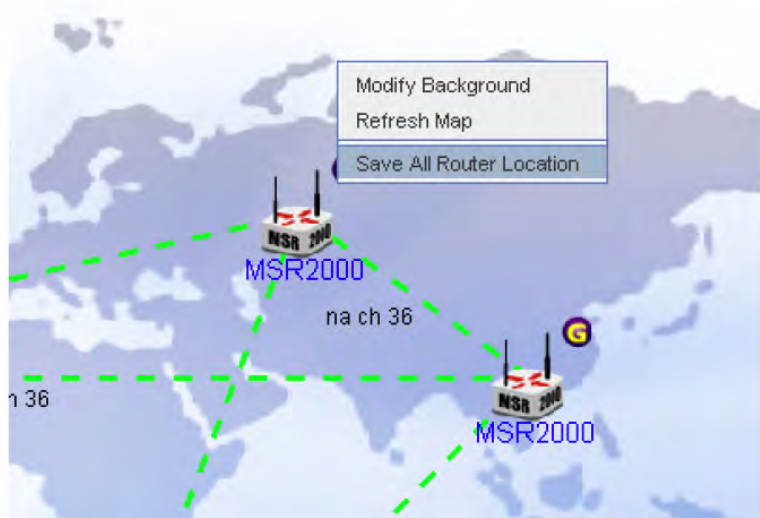
The background image of the map is changed with immediate effect.

## Customizing Node Locations

The MeshConfig topology map is regenerated and the new nodes are automatically placed within the map using a ring-like pattern, whenever the tool attaches to a new network. The location of the nodes within the map can be customized as follows:

1. Open the topology map for a mesh network.
2. Click on the nodes and drag them to the desired locations.
3. Right-click on the map background and select **Save All Router Location** to save the changes as shown in [Figure 45](#).

**Figure 45** Customizing Node Location



Use the **Refresh Map** option to discard the changes and go back to the previous status.

## Removing/Disallowing Links

The mesh nodes are designed to automatically form links with other nodes. The default network topology should be enough to meet most of the requirements. However, MeshConfig tool allows you to remove a formed link or disallow any two nodes from forming a link. This feature is useful when:

- A formed link is often down (indicated using red lines in the topology map)
- A formed link is not of high quality (indicated using yellow or orange lines in the topology map)
- The physical distance between two nodes is too far (over 500 meters)
- There are several alternative, multi-hop connections between two nodes that would be preferred over a direct link between them.
- One node may have too many links, causing too much load or interference.
- The topology formed does not match a pre-designed topology plan.

### Check List before Disallowing Links

Check the following conditions before disallowing any link:

- Given the physical characteristics of the two linked nodes, is the performance of the link reasonable?  
If not, check to see if there are physical factors that are abnormally degrading the link. These factors include, but are not limited to:
  - Interference
  - Disruption in the Line of Sight
  - Faulty antenna or radio hardware
  - Mismatch between radio and antenna
  - Faulty or damaged antenna cable connections
  - Incorrect antenna alignment
  - Misconfiguration of country code or transmission power
- Is there an alternative routing path between the two linked nodes?

Make sure that, by disallowing the link, no node would lose connectivity to the mesh network.

## Disallowing Links

After performing the checks specified in the checklist above, if it is determined that a link should be disallowed, use the following steps to disallow a link:

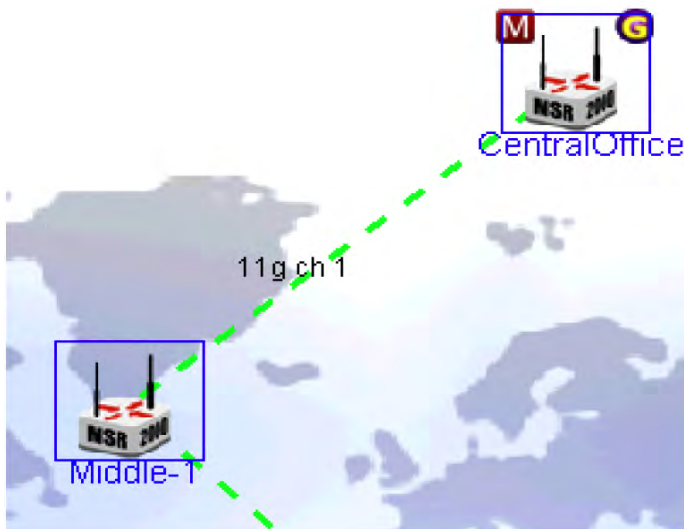
1. Click on the Mesh ID of the mesh network in the Map view to open the topology map for the mesh network.
2. Click on a formed link between two nodes to select the link as shown in [Figure 46](#).

**Figure 46** *Selecting a Link*



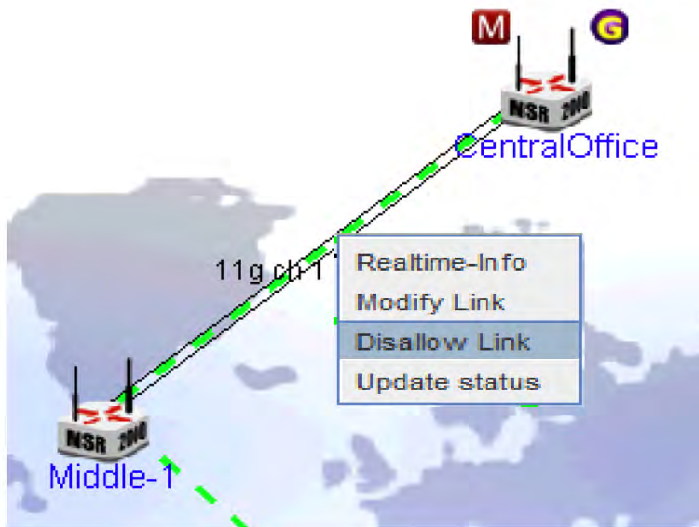
Alternatively, use CTRL + Left Mouse button to select the two nodes as shown in [Figure 47](#).

**Figure 47** *Selecting the Nodes*



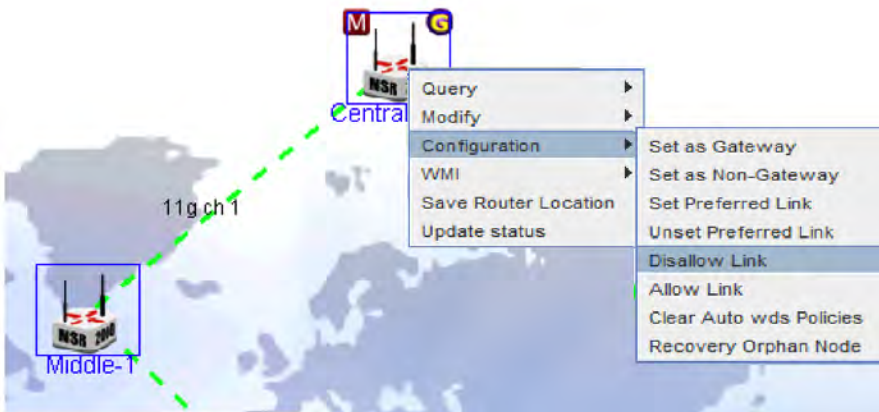
3. Right-click on the selected link and select the **Disallow Link** option from the menu as shown in [Figure 48](#).

**Figure 48** *Disallow a Link*



Alternatively, right-click on one of the two selected nodes and choose the menu item **Configuration > Disallow Link** as shown in Figure 49.

**Figure 49** *Disallow a Link at the Node*



4. A confirmation dialog box is displayed. Check again to ensure the link should be disallowed and click on **Yes** to confirm.



This change may take some time to take effect. During this process it is normal for the MeshConfig tool to lose connection to some of the nodes in the network.

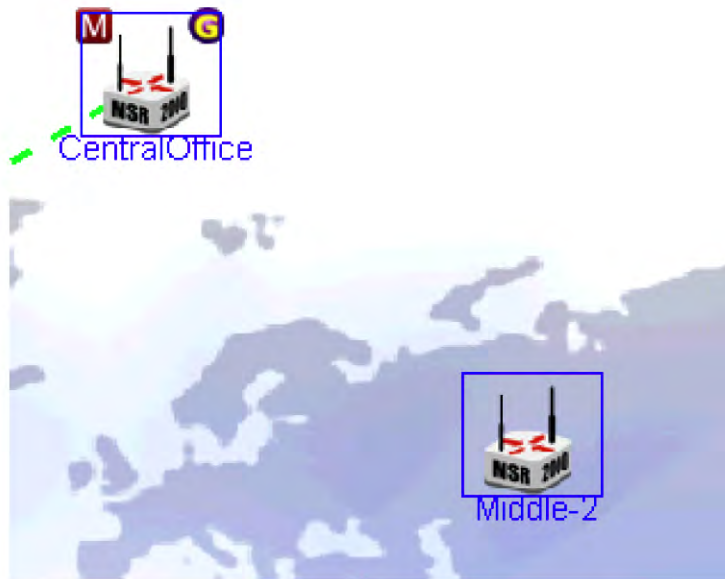
## Configuring Preferred Links

MeshConfig allows you to configure preferred links between two neighbors. This feature can be used to encourage the nodes to form a link.

To configure a preferred link:

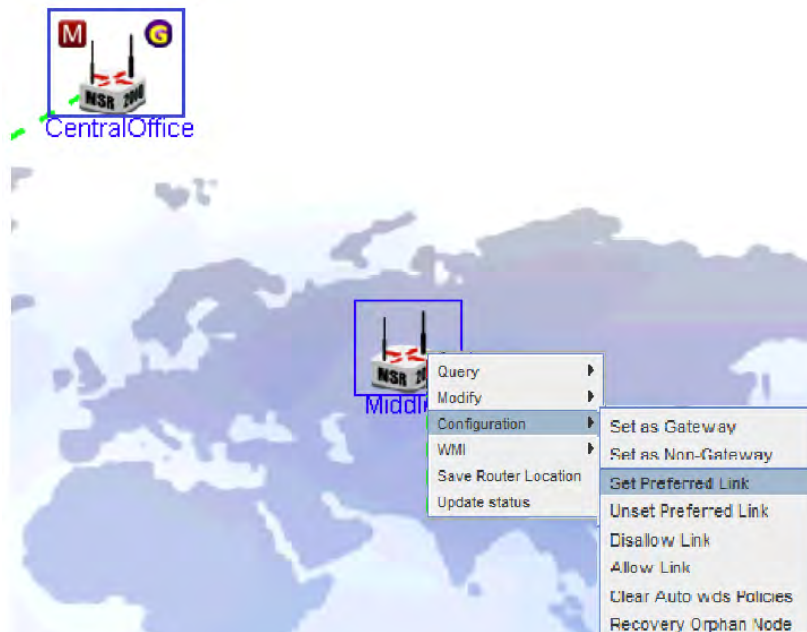
1. Select the two nodes in the topology map using CTRL + Left Mouse button as shown in Figure 50.

**Figure 50** *Selecting Nodes for a Preferred Link*



2. Right click on one of the two nodes and select the menu item **Configuration > Set Preferred Link** as shown in Figure 51.

**Figure 51** *Configuring a Preferred Link*



3. A confirmation dialog box is displayed. Check again to ensure the link should be disallowed and click on **Yes** to confirm.



This change may take some time to take effect. During this process it is normal for the MeshConfig tool to lose connection to some of the nodes in the network.



The formation of a preferred link depends on other physical conditions such as Line of sight, signal quality, and such other factors. This configuration does not guarantee the formation of a link between the two nodes.



To remove the preferred link configuration between two nodes:

1. Select the two nodes in the topology map using CTRL + Left Mouse button.
2. Right click on one of the two nodes and select the menu item **Configuration > Unset Preferred Link**.



There is an important difference between the option **Unset Preferred Link** and **Disallow Link**. The **Unset Preferred Link** option discourages two nodes from forming a link but it does not prevent them from doing so. The **Disallow Link** option prevents two nodes from forming a link.

## Modifying Links

MeshConfig allows you to modify the **Radio mode** and **channel** parameters of a link.

To modify a link:

1. Click on the Mesh ID of the mesh network in the Map view to open the topology map for the mesh network.
2. Select a formed link between two nodes by clicking on the link.
3. Right-click on the link and select the menu item **Modify Link** as shown in [Figure 52](#).

**Figure 52** *Modifying a Link*



4. The **Link Radio Setting** page is displayed as shown in [Figure 53](#).



**Figure 53** *Radio Link Setting*



5. Set the **Radio Mode** and **Channel** values for the link.

6. Click on the **Configure** button.

This will lock the radios at the two ends of the link to the specified **Mode** and **Channel**.

7. Click **OK** at a second confirmation dialog.

8. The configuration report which tracks the progress is displayed.

The configuration is complete when the **Progress** column shows **100%** for both the nodes.



---

It may take sometime for the above configuration to be completed as mesh links may need to reform. It is normal for one of the two nodes to temporarily lose its connection to the MeshConfig tool and time out.

---

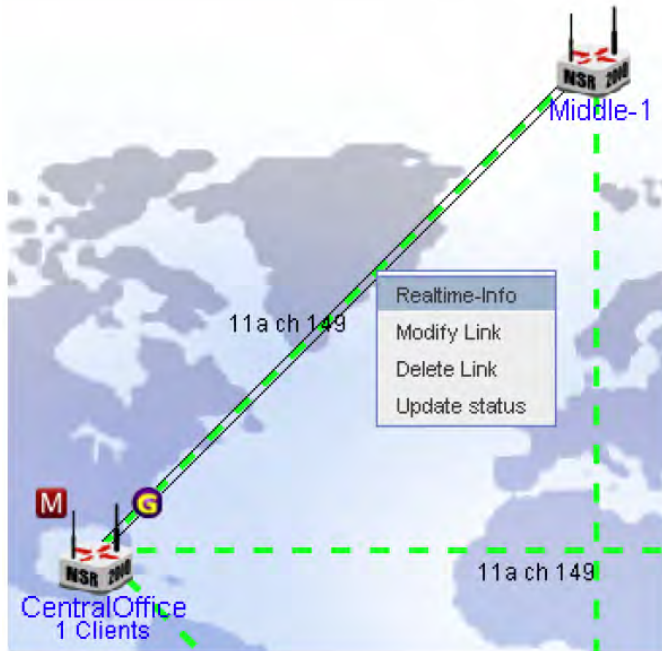
## Monitoring the Link Quality

You can monitor the performance of each link in a mesh network for individual nodes.

To monitor the link quality of a link:

1. Click on the Mesh ID of the mesh network in the **Map** view to open the topology map for the mesh network.
2. Select a formed link between two nodes by clicking on the link.
3. Right-click on the link to select the **Realtime-Info** option from the menu as shown in [Figure 54](#).

**Figure 54** *Realtime Information on a Link*



4. The **Realtime Link Information** window is displayed as shown in Figure 55. This window contains the information on the link statistics.

**Figure 55** *Realtime Link Information*

Realtime Link Information		
Router Name	CentralOffice	Middle-1
Interface Name	dot11radio 1/wds 0	dot11radio 1/wds 7
Channel	US 802.11na ch 165	US 802.11na ch 165
Admin Status	Up	Up
Physical Status	Up	Up
RSSI	30	34
SNR	30	34
Noise Floor	-117dBm	-108dBm
Data Rate	130Mb/s	117Mb/s
Link Quality	83%	75%
Security Policy	WPA2	WPA2
Current Tx Rate	3.13 Kb/s	0.54 Kb/s
Refresh		

The link statistics information is listed in Table 3.

**Table 3** *Link Statistics*

Statistic	Description	Example
<b>Interface Name</b>	The radio interface details	dot11radio 1/wds 0
<b>Channel</b>	The channel details	US 802.11na ch 165
<b>Admin Status</b>	The admin status of the link.	Up
<b>Physical Status</b>	The physical status of the link.	Up
<b>RSSI</b>	The Receive Signal Strength Indicator value. This is one of the KPIs.	30
<b>SNR</b>	The Signal to Noise Ratio. This is one of the KPIs.	30

**Table 3** *Link Statistics (Continued)*

Statistic	Description	Example
Noise Floor	The noise floor information.	-117 dBm
Data Rate	Data rate value of the link.	130 Mb/S
Link Quality	The link quality value. This is one of the KPIs.	83%
Security Policy	The encryption mode used.	WAP2
Current Tx Rate	The amount of traffic on the link at any given time.	3.13 Kb/s



You can get a quick view of the **Realtime Link Information** by moving the cursor over the link. This information is displayed in a hint box, which disappears when the cursor is moved away.

## Recovering Orphaned Nodes

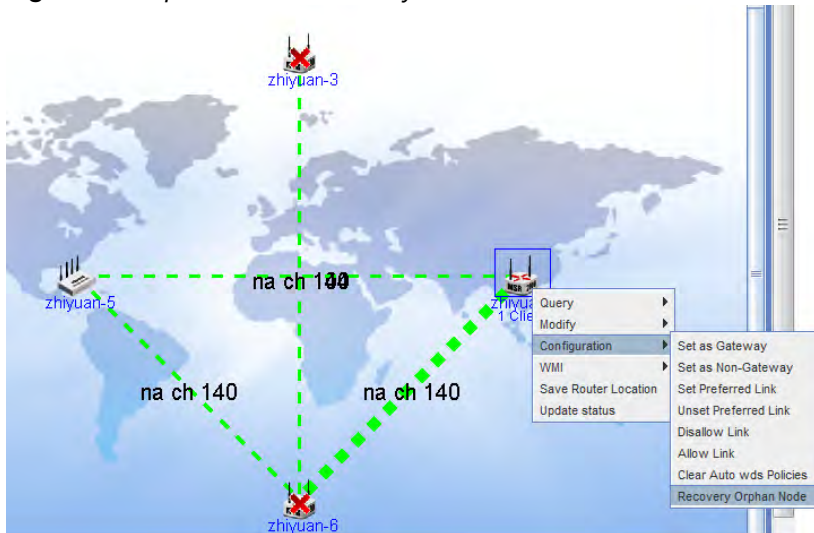
The Orphan Node Recovery (ONR) feature is used to recover a Orphan Node (ON) and to bring it back to a mesh network. The orphan node (ON) is a mesh node which has lost all links with the other node in a mesh network. A neighbor node is used to initiate the creation of a configuration file and the same is transferred to the orphan node. Check the settings on the recovered ON. The ONR feature may reset some of the configuration settings on the recovered ON to the default settings.

The following are the prerequisites for the ONR process:

- **MeshOS version:** The MeshOS version, both of the neighbor and the ON is MeshOS 4.3 or higher.
- **Topology:** The transmission of messages between nodes that are separated by more than one hop is not possible.
- **ON:** The ON can be scanned by at least one radio in the mesh point. At least one radio of a neighbor is in WDS mode. The MAC address of the ON is known. The MAC address can be Ethernet, radio (e.g. wifi\*), or any VAP (e.g. WDS, STA, or AP).
- **Neighbor node:** The ON and its neighbor are able to communicate at the physical layer with a RSSI greater than 15.

To recover an ON, identify a neighbor of the ON and run the ONR feature from the neighbor node as shown in [Figure 56](#).

**Figure 56** *Orphan Node Recovery*



## Node Operations

The following operations can be performed on each node in the mesh topology map:

- Query
- Modify
- Configuration
- WMI
- Save Router Location
- Update Status

### Query

The following parameters can be queried at each node:

- Alert
- Property
- System Statistics
- Interface Statistics
- Client Statistics

In addition to the above the result of the following commands can also be viewed:

- Ping
- Trace Route

To access the **Query** operation:

1. Right click on the node.
2. Select the **Query** option and the desired sub option (for example, **Query > Client Statistics**).
3. A separate pop-up window displays the results of the query.

### Modify

The **Modify** operation allows you to modify the following node details:

- Hostname

- IP Address

You can use the **Delete** option to delete a node from the mesh network.

## Configuration

To access the **Configuration** operation:

1. Right click on the node.
2. Select the **Configuration** option and the desired sub option (for example, **Configuration > Set as Gateway**).

The following configuration options are available at the nodes:

- Set as Gateway
- Set as Non-Gateway
- Set Preferred Link
- Unset Preferred Link
- Disallow Link
- Allow Link
- Clear Auto wds Policies
- Recovery Orphan Nodes

## WMI

This node operation provides direct links to the following WMI pages of the router:

- Home
- Radio Interface
- DHCP Server
- Routing Table
- AVT
- Troubleshooting

## Save Router Location

This node operation saves the current location of the node in the mesh topology map.

## Update Status

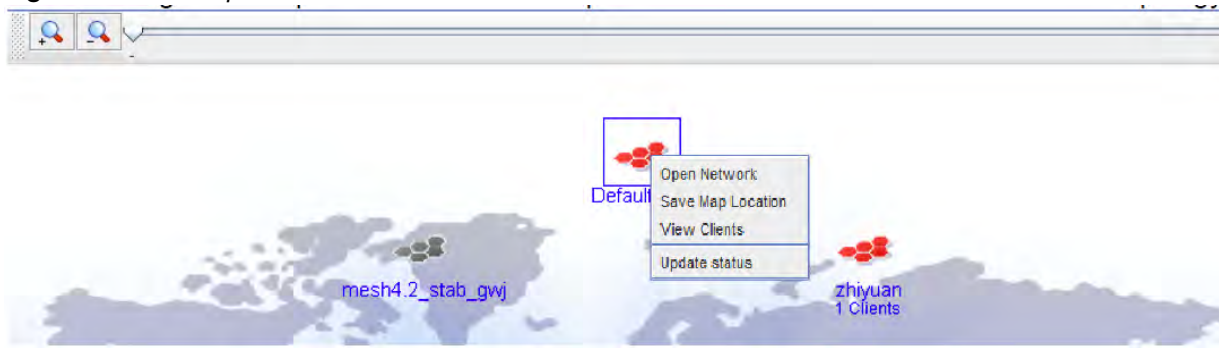
This node operation updates the status of the router.

## Mesh Operations

The following operations can be performed on each mesh network in the topology map:

- **Open Network:** Opens the map of the mesh network.
- **Save Map Location:** Saves the location of the mesh network in the mesh map.
- **View Clients:** Shows details on the clients connected to the mesh network
- **Update Status:** Updates the status of the mesh network.

**Figure 57** *Mesh Operations*







The **Provisioning** page includes the functions used for mesh configuration and upgrade. This chapter includes instructions on how settings and operations common to an entire mesh network are performed. The **Provisioning** page consists of the following features:

- “Import” on page 55
- “Configuration” on page 56
- “Backup” on page 73
- “Restore” on page 74
- “Audit” on page 76

## Import

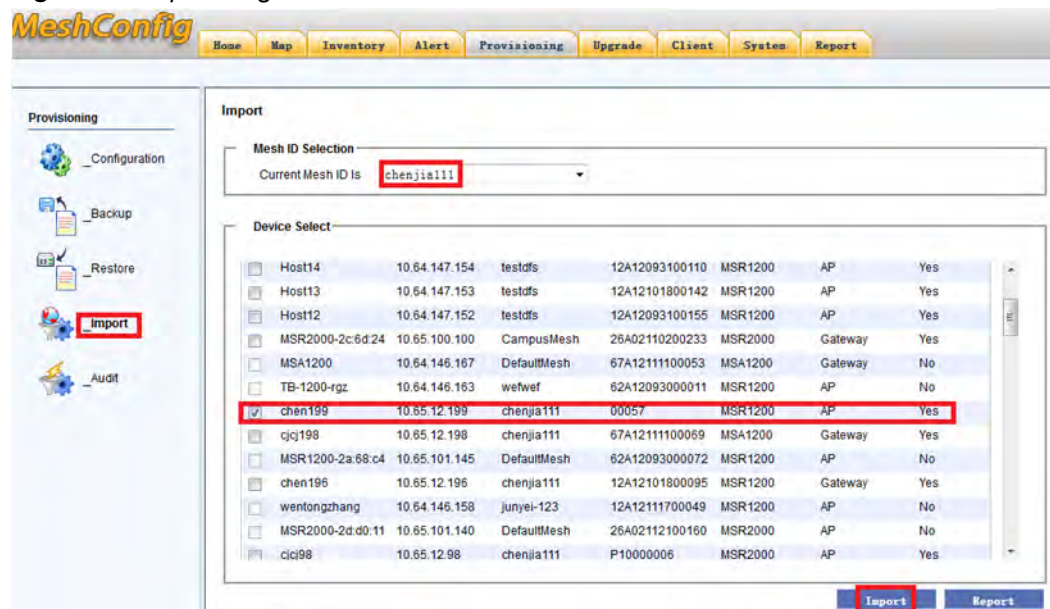
This function allows you to import the configuration of a router into the MeshConfig tool.

To import the configuration:

1. Click on the **Import** link to open the **Import** page.
2. Select the Mesh ID from the drop down list and one router in the selected Mesh ID.
3. Click on the **Import** button as shown in [Figure 58](#).

The configuration of the selected router is imported to the MeshConfig tool.

**Figure 58** Import Page

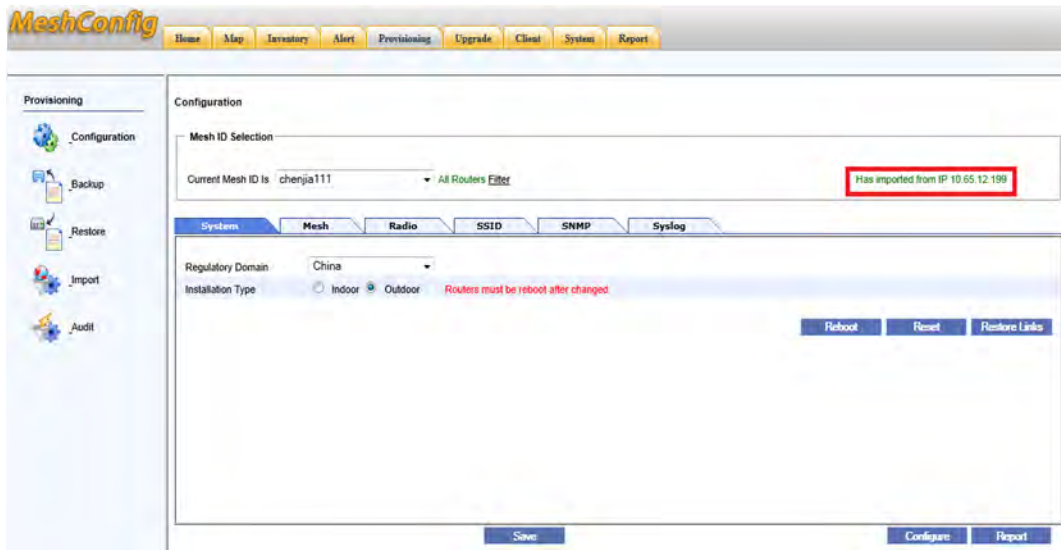


Import an existing configuration from a mesh node before proceeding with the configuration of the mesh network.

## Configuration

The network-wide settings can be accessed via the **Configuration** feature. The settings configured here are sent to all the nodes associated with the selected Mesh ID.

**Figure 59** Configuration Page



The configuration feature consists of the following settings that are available as separate tabs on the **Configuration** page:

- “System Tab” on page 57
- “Mesh Tab” on page 58
- “Radio Tab” on page 60
- “SSID Tab” on page 63
- “SNMP Tab” on page 69
- “Syslog Tab” on page 70

The following options are common to all the tabs in the **Configuration** page:

- **Save** button—Saves the configuration changes to a single configuration file.  
Click on the **Save** button in the **Configuration** page to save all the configuration settings into a single configuration file.
- **Configure** button—Applies the configuration changes to the nodes.
- **Report** button—Displays a report on the configuration status.

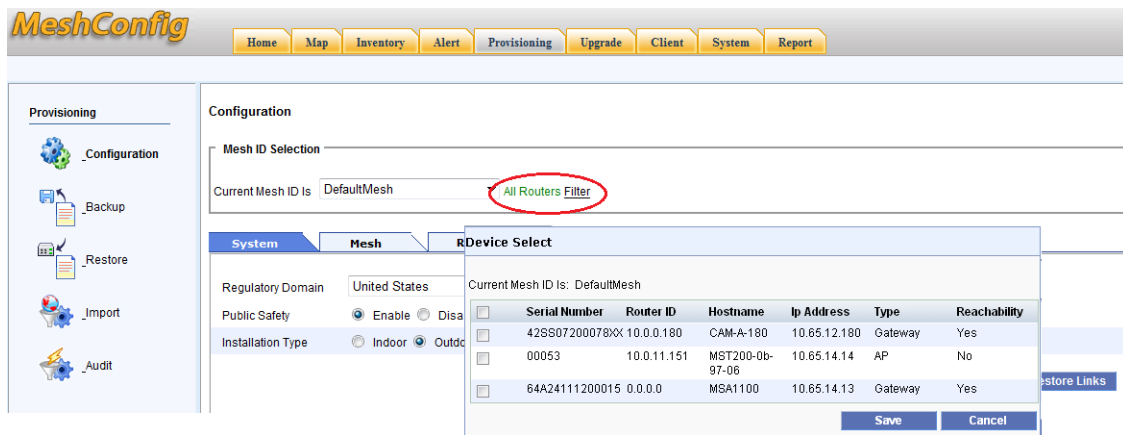


**NOTE**

The **Save** button saves the configuration changes in the configuration page to a *single* configuration file.

Additionally, an AP filter as shown in [Figure 60](#) is available. With this option, you can configure all the APs in a mesh network by configuring one of the APs.

Figure 60 AP Filter



The following steps illustrate how to configure all the routers in a mesh network by selecting one of the APs and using the AP filter:

1. Click on the **Filter** option in the **Mesh ID Selection** section of the **Configuration** page.  
A pop up window with the list of all the APs in that mesh network is displayed.
2. Select one of the APs and click on the **Save** button.  
The **All Routers Filter** changes to **Part Routers All**.
3. Click on the **All** option to configure all the routers in the mesh network.

## System Tab

The **System** tab is the default tab that is displayed on the **Configuration** page. You can configure the **Country code**, **Installation Type**, and perform network maintenance functions using the **System** tab.

Figure 61 Systems Tab

The system configuration settings are listed in Table 4.

Table 4 System Tab Settings

Setting	Description	Default
Regulatory Domain	The regulatory domain code	United States

**Table 4** System Tab Settings

Setting	Description	Default
<b>Public Safety</b>	Enables or disables the public safety feature. This setting is applicable only for the United States and Japan regulatory domains. Using this option you can enable the 4.9 G spectrum for use in the public safety domain. <b>NOTE:</b> This option requires a router reboot to take effect.	Disabled
<b>Installation Type</b>	The installation type - Indoor or Outdoor <b>NOTE:</b> This option requires a router reboot to take effect.	The default for MSR1200 is <b>Indoor</b> and the default for MSR2000, MSR4000, and MST200 is <b>Outdoor</b> .

Click on the **Configure** button to apply the configuration. A configuration report tracks the progress of the configuration. When the configuration is complete, “Apply Success” is displayed for all the nodes.

The following maintenance functions are also available at the click of a button:

- **Reboot**—Reboots the routers.
- **Reset**—Resets the routers to the factory default.

## Mesh Tab

This tab consists of the Mesh settings. You can configure the **Mesh ID** and the **Backhaul Security Mode** using this tab.

**Figure 62** Mesh Tab

The screenshot shows the Mesh configuration page. At the top, there are tabs for System, Mesh, Radio, SSID, SNMP, and Syslog. The Mesh tab is selected. Below the tabs, there is a section for Mesh ID with a text input field containing 'chenjia111'. Below that is the Backhaul Security Mode section, which has four radio buttons: No Security (selected), WEP, WPA, and WPA2. At the bottom of the page, there are three buttons: Save, Configure, and Report.

The mesh configuration settings are listed in [Table 5](#).

**Table 5** Mesh Tab Settings

Setting	Description	Default
<b>Mesh ID</b>	The Mesh ID of the network being configured.	-
<b>Backhaul Security Mode</b>	The backhaul security mode: <ul style="list-style-type: none"> <li>• <b>No Security</b></li> <li>• <b>WEP</b></li> <li>• <b>WPA</b></li> <li>• <b>WPA2</b></li> </ul>	<b>No Security</b>

Click on the **Configure** button to apply the configuration.

To configure backhaul security mode:

1. Choose the security mode (No Security, WEP, WPA, or WPA2).
2. You will be presented with additional configuration options based on the security mode selected, as illustrated below:

### WEP

Additional configuration options as shown in [Figure 63](#) should be configured for the WEP security mode.

**Figure 63** WEP Settings

**Key**

WEP Mode ☒ Open ☐ Shared

Key Type ☒ ASCII ☐ HEX

Default Key

WEP Key1  WEP Key should be 5, 13 or 16 character string or 10, 16 or 32 digits hex.

WEP Key2

WEP Key3

WEP Key4

Save Configure Report

The WEP settings are listed in [Table 6](#).

**Table 6** WEP Settings

Setting	Description	Default
<b>WEP Mode</b>	<ul style="list-style-type: none"><li>● <b>Open</b>—Open authentication.</li><li>● <b>Shared</b>—Shared key authentication.</li></ul>	open
<b>Key Type</b>	<ul style="list-style-type: none"><li>● <b>ASCII</b></li><li>● <b>Hex</b></li></ul>	ASCII
<b>Default Key</b>	WEP default key. Range is 1-4.	1
<b>WEP Key &lt;1-4&gt;</b>	WEP Key should be 5, 13, or 16 character string or 10, 16, or 32 digit hexadecimal.	N/A (Not applicable)

### WPA

Additional configuration options as shown in [Figure 64](#) should be configured for WPA security mode.

**Figure 64** WPA Settings

**Key**

Key Type ☒ ASCII ☐ HEX

WPA Key  WPA Key should be 8-63 character string or 64 digits hex.

Save Configure Report

The WPA settings are listed in [Table 7](#).

**Table 7** WPA Settings

Setting	Description	Default
<b>Key Type</b>	<ul style="list-style-type: none"> <li>• ASCII</li> <li>• Hex</li> </ul>	ASCII
<b>WPA Key</b>	WPA Key should be a 8 - 63 character string or a 64 digit hexadecimal.	-

## WPA2

Additional configuration options as shown in [Figure 65](#) should be configured for WPA2 security mode.

**Figure 65** WPA2 Settings

WPA2 Key

Key Type ☒ HEX ☐ ASCII

WPA2 Key  WPA2 Key should be 8-63 character string or 64 digits hex.

WPA2 Preauth ☐ Enable ☒ Disable

The WPA2 settings are listed in [Table 8](#).

**Table 8** WPA2 Settings

Setting	Description	Default
<b>Key Type</b>	<ul style="list-style-type: none"> <li>• ASCII</li> <li>• Hex</li> </ul>	ASCII
<b>WPA2 Key</b>	WPA2 Key should be 8-63 character string or 64 digit hexadecimal.	-

3. Click on the **Configure** button to apply the configuration.

## Radio Tab

This tab consists of the Radio settings. The settings apply to a specific radio on all nodes in the network. For example, if the radio index is set to 0, the other settings on this tab are applied to radio 0 of all nodes in the network, assuming that they do not conflict with any existing configuration.

**Figure 66** *Radio Tab*

The screenshot displays the 'Radio' configuration tab. It includes a 'Radio Index' dropdown set to 0, a 'WDS Auto' checkbox, and a 'Max Auto WDS' dropdown set to 4. The 'Radio Mode' is set to '802.11b/g'. There are two 'Channel List' fields: '802.11bg' and '802.11a', both with empty text boxes and example text below them. 'Output Power' is set to 50, and 'Antenna Gain' is set to 0. At the bottom right, there are three buttons: 'Save', 'Configure', and 'Report'.

The radio settings are listed in [Table 9](#).

**Table 9** *Radio Tab Settings*

Setting	Description	Default
<b>Radio Index</b>	0-3; 0 stands for Radio0 interface	-
<b>WDS Auto</b>	Used to enable or disable the Auto WDS Meshing feature.	-
<b>Max Auto WDS</b>	The range is 1-6.	4



**Table 9** *Radio Tab Settings*

Setting	Description	Default
<b>Radio Mode</b>	<p>Configures the wireless settings of the radio interface.</p> <ul style="list-style-type: none"> <li>● <b>802.11a</b></li> <li>● <b>802.11b</b></li> <li>● <b>802.11b/g</b>: Compatible with 802.11b.</li> <li>● <b>802.11na 20 MHz</b></li> <li>● <b>802.11ng 20 MHz</b></li> <li>● <b>802.11na 40 MHz Plus</b>: Combines two neighboring 20MHz channels into one 40MHz channel. The control channel is the configured channel, and the frequency of the extension channel is higher than that of the control channel.</li> <li>● <b>802.11na 40 MHz Minus</b>: Combines two neighboring 20MHz channels into one 40MHz channel. The control channel is the configured channel, and the frequency of the extension channel is lower than that of the master channel.</li> <li>● <b>802.11ng 40 MHz Plus</b>: Combines two neighboring 20MHz channels into one 40MHz channel. The control channel is the configured channel, and the frequency of the extension channel is higher than that of the control channel.</li> <li>● <b>802.11ng 40 MHz Minus</b>: Combines two neighboring 20MHz channels into one 40MHz channel. The control channel is the configured channel, and the frequency of the extension channel is lower than that of the control channel.</li> <li>● <b>802.11g-only</b>: Not compatible with 802.11b.</li> </ul> <p><b>NOTE:</b> g mode is compatible with 802.11b mode; g-only mode is not compatible with the 802.11b mode. ng, ng-ht40plus, ng-ht40minus mode is compatible with 802.11g; na, na-ht40plus, na-ht40minus mode is compatible with 802.11a. By default, the MSR/MSA only support 802.11b/g, other modes need license.</p>	802.11b/g
<b>Channel List 802.11bg</b>	<p>Specifies the channel list or channel numbers for the 802.11bg mode.</p> <p>Valid channel numbers: 100 104 108 112 116 120 124 128 132 136 140.</p> <p>Multiple channel numbers in the list are separated by commas. For example 100,104.</p>	-
<b>Channel List 802.11a</b>	<p>Specifies the channel list or channel numbers for the 802.11a mode.</p> <p>Valid channel numbers: 100 104 108 112 116 120 124 128 132 136 140.</p> <p>Multiple channel numbers in the list are separated by commas. For example 100,104.</p>	-
<b>Output Power</b>	Power of the radio as a percentage of full power.	50
<b>Antenna Gain</b>	<p>Configures the antenna gain. The range of value is 0-255.</p> <p><b>NOTE:</b> This parameter is usually set during deployment and is usually not changed thereafter.</p>	0

Click on the **Configure** button to apply the configuration.

## SSID Tab

This tab is used to create and manage the SSID settings. All the SSIDs in the mesh network are listed here with details as shown in [Figure 67](#).

**Figure 67** SSID Tab

SSID	Description	BSS Number	Security Mode	Radio
------	-------------	------------	---------------	-------

### Creating a New SSID

To create a new SSID:

1. Click on the **New** button in the **SSID** tab. The SSID configuration page is displayed as shown in [Figure 68](#).

**Figure 68** SSID Configuration

SSID

SSID

Description

BSS Number  0 to 15, can not reduplicate

Radio

Security Mode ☒ None ☐ WEP ☐ WPA ☐ WPA2 ☐ Radius Client

Advanced

2. Specify the configuration parameters.

The SSID configuration settings are listed in [Table 10](#).

**Table 10** SSID Configuration Settings

Setting	Description	Default
<b>SSID</b>	The 802.11 SSID for the BSS.	-
<b>Description</b>	Description of the BSS.	-
<b>BSS Number</b>	BSS interface index. Range is 0-15.	0
<b>Radio</b>	Radio index. Range is 0-3	0

**Table 10 SSID Configuration Settings**

Setting	Description	Default
<b>Security Mode</b>	Security mode of the BSS Interface: <ul style="list-style-type: none"> <li>• None</li> <li>• WEP</li> <li>• WPA</li> <li>• WPA2</li> <li>• Radius Client</li> </ul>	-

3. You will be presented with additional configuration options based on the security mode selected as illustrated below:

### WEP

Additional configuration options as shown in [Figure 69](#) should be configured for the WEP security mode.

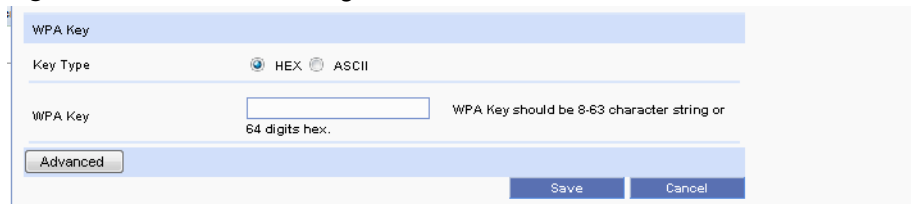
**Figure 69 SSID WEP Settings**
**Table 11 SSID WEP Settings**

Setting	Description	Default
<b>WEP Mode</b>	<ul style="list-style-type: none"> <li>• <b>Open</b>—Open authentication.</li> <li>• <b>Shared</b>—Shared key authentication.</li> </ul>	open
<b>Key Type</b>	<ul style="list-style-type: none"> <li>• <b>ASCII</b></li> <li>• <b>Hex</b></li> </ul>	ASCII
<b>Default Key</b>	WEP default key. Range is 1-4.	1
<b>Key &lt;1-4&gt;</b>	WEP Key should be 5, 13, or 16 character string or 10, 16, or 32 digit hexadecimal.	N/A (Not applicable)

## WPA

Additional configuration options as shown in [Figure 70](#) should be configured for WPA security mode.

**Figure 70** SSID WPA Settings



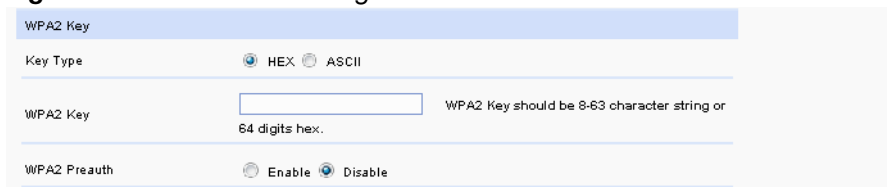
**Table 12** SSID WPA Settings

Setting	Description	Default
<b>Key Type</b>	<ul style="list-style-type: none"><li>● HEX</li><li>● ASCII</li></ul>	HEX
<b>WPA Key</b>	WPA Key should be a 8 - 63 character string or a 64 digit hexadecimal.	-

## WPA2

Additional configuration options as shown in [Figure 71](#) should be configured for WPA2 security mode.

**Figure 71** SSID WPA2 Settings



**Table 13** WPA2 Settings

Setting	Description	Default
<b>Key Type</b>	<ul style="list-style-type: none"><li>● HEX</li><li>● ASCII</li></ul>	HEX
<b>WPA2 Key</b>	WPA2 Key should be 8-63 character string or 64 digit hexadecimal.	-
<b>WPA2 Firewall</b>	<ul style="list-style-type: none"><li>● Enable</li><li>● Disable</li></ul>	Disable

## Radius Client

Additional configuration options as shown in [Figure 72](#) should be configured for Radius Client.

**Figure 72** *SSID Radius Client Settings*

Radius

Radius Client WPA Type ☒ WPA ☐ WPA2

Radius Auth Server IP

Radius Auth Port

Radius Auth Secret

Radius Acct Server IP

Radius Acct Port

Radius Acct Secret

**Table 14** *SSID Radius Client Settings*

Setting	Description	Default
<b>Radius Client WPA Type</b>	<ul style="list-style-type: none"><li>WPA</li><li>WPA2</li></ul>	WPA
<b>Radius Auth Server IP</b>	IP address of the radius authentication server.	-
<b>Radius Auth Port</b>	Port number of the radius authentication server.	-
<b>Radius Auth Secret</b>	Secret key string of the radius authentication server.	-
<b>Radius Acct Server IP</b>	IP address of the radius accounting server.	-
<b>Radius Acct Port</b>	Port number of the radius accounting server.	-
<b>Radius Acct Secret</b>	Secret key string of the radius accounting server.	-

4. Enter the security parameters.
5. Click on the **Advanced** button to display the advanced settings as shown in [Figure 73](#).

**Figure 73 SSID Advanced Settings**

The screenshot shows the 'SSID Advanced Settings' configuration page. It includes sections for General settings (Hide SSID, WMM Status, Station Isolation, Station Idle Timeout), QoS settings (Access Traffic Type, Max Client Allowed, Per Client Max Upstream/Downstream Rate, Per Client Upstream/Downstream Burst Size), VLAN settings (VLAN Number), and Mac List settings (Mac List Type, The MAC list). The 'Advanced' tab is selected. The 'Save' and 'Cancel' buttons are at the bottom right.

The SSID advanced settings are listed in [Table 15](#).

**Table 15 SSID Advanced Settings**

Setting	Description	Default
<b>Hide SSID</b>	<ul style="list-style-type: none"> <li><b>Yes</b> — The BSS ID is not broadcast. Clients cannot scan the SSID of the BSS. If a client needs to connect to this BSS, it needs to specify the SSID.</li> <li><b>No</b> — The SSID is broadcast periodically so that the clients can scan for the SSID.</li> </ul>	No
<b>WMM Status</b>	Enables or disables WMM service	Enable
<b>Station Isolation</b>	<ul style="list-style-type: none"> <li><b>Yes</b> — Prevents the stations under the BSS from communicating with each other.</li> <li><b>No</b> — The stations under the BSS can communicate with each other.</li> </ul>	No
<b>Station Idle Timeout</b>	Configures the maximum amount of time (15-65535 seconds) a station/client is allowed to be inactive before the inactivity policy takes effect. If in this configured time, BSS does not receive any data from the client, BSS will disassociate itself from the client.	300 seconds
<b>Access Traffic Type</b>	<ul style="list-style-type: none"> <li>None</li> <li>Best Effort</li> <li>Background</li> <li>Control Load</li> <li>Excellent Effort</li> <li>Network Control</li> <li>Standard</li> <li>Video Traffic</li> <li>Voice Traffic</li> </ul>	None
<b>Max Client Allowed</b>	The maximum number of clients that are allowed to associate with the BSS. The range is 1-255.	255

**Table 15 SSID Advanced Settings**

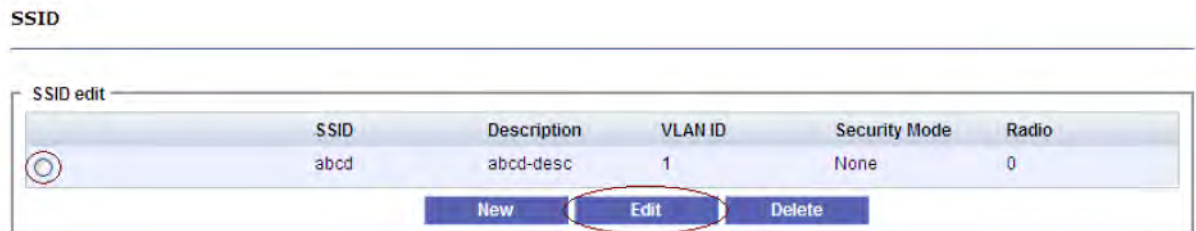
Setting	Description	Default
<b>Per Client Max Upstream Rate</b>	Maximum upstream rate per client.	Unlimited
<b>Per Client Max Downstream Rate</b>	Maximum downstream rate per client.	Unlimited
<b>Per Client Upstream Burst Size</b>	Upstream burst size per client.	20 KBytes
<b>VLAN Number</b>	VLAN ID. Range is 1-4094.	1
<b>Mac List Type</b>	<ul style="list-style-type: none"> <li>• No</li> <li>• Accept</li> <li>• Deny</li> </ul>	No
<b>The MAC List</b>	One MAC address per line.	N/A

6. Complete the configuration and click on the **Save** button. A new SSID is created and added to the SSID list.

### Editing a SSID

To change the configuration of an existing SSID:

1. Click on the radio button in front of the SSID to select the SSID from the list.
2. Click on the **Edit** button as shown in [Figure 74](#).

**Figure 74 SSID Edit**

3. The **SSID** configuration page is displayed.
4. Edit the configuration and click on the **Configure** button to apply the changes.

### Deleting a SSID

To delete a SSID:

1. Click on the radio button in front of the SSID to select the SSID from the list.
2. Click on the **Delete** button as shown in [Figure 75](#). The SSID is deleted from the list.



**Figure 75 SSID Delete**

SSID edit

SSID	Description	VLAN ID	Security Mode	Radio
abcd	abcd-desc	1	None	0

New Edit Delete

## SNMP Tab

This tab consists of the SNMP settings such as SNMP communities and SNMP trap receivers as shown in Figure 76.

**Figure 76 SNMP Tab**

System Mesh Radio SSID **SNMP** Syslog

Read Community: public

Write Community: private

Trap receiver edit

Receiver IP	Description	Trap Type
-------------	-------------	-----------

New Edit Delete

Save Configure Report

The SNMP configuration settings are listed in Table 16.

**Table 16 SNMP Tab Settings**

Setting	Description	Default
<b>Read Community</b>	Access to the SNMP Read-only community.	public
<b>Write Community</b>	Access to the SNMP Read-write community.	private

## Creating a Trap Receiver

To create a trap receiver:

1. Click on the **New** button in the **Trap receiver edit** section of the **SNMP** tab. The **Trap Receiver** configuration page is displayed as shown in Figure 77.

**Figure 77** *Trap Receiver Configuration*

The screenshot shows a web form for configuring a trap receiver. The form is titled "Trap Receiver" and has a sub-header "Trap Receiver". It contains the following fields:

- Receiver IP: A text input field.
- Description: A text input field.
- Port: A text input field.
- Community: A text input field.
- Trap Type: A dropdown menu with "v1c" selected.

At the bottom right of the form are two buttons: "Save" and "Cancel".

The trap receiver configuration settings are listed in [Table 17](#).

**Table 17** *Trap Receiver Settings*

Setting	Description	Default
<b>Receiver ID</b>	The trap receiver ID	-
<b>Description</b>	Description of the trap receiver	-
<b>Port</b>	The port number used by the receiver.	-
<b>Community</b>	The SNMP community.	-
<b>Trap Type</b>	The SNMP trap type: <ul style="list-style-type: none"><li>• v1c</li><li>• v2c</li><li>• v2i</li></ul>	v1c

2. Configure the trap receiver settings and click on the **Save** button to add a new trap receiver to the list.

### Editing a Trap Receiver

To change the configuration of an existing trap receiver:

1. Click on the radio button in front of the trap receiver to select it from the list.
2. Click on the **Edit** button. The **Trap Receiver** configuration page is displayed.
3. Edit the configuration and click on the **Configure** button to apply the changes.

### Deleting a Trap Receiver

To delete a trap receiver:

1. Click on the radio button in front of the trap receiver to select it from the list.
2. Click on the **Delete** button. The trap receiver is deleted from the list.

## Syslog Tab

This tab consists of the Syslog settings such as logging status, severity, and server settings as shown in [Figure 78](#).

**Figure 78 Syslog Tab**

The screenshot shows the 'Syslog' tab selected in a menu bar with other tabs: System, Mesh, Radio, SSID, and SNMP. Below the menu, there are two settings: 'Logging Status' with radio buttons for 'On' and 'Off' (where 'Off' is selected), and 'Syslog Severity' with a dropdown menu currently set to 'Emergency'. A section titled 'Syslog server edit' contains a table with two columns: 'Syslog Server IP' and 'Description'. Below this table are three buttons: 'New', 'Edit', and 'Delete'. At the bottom of the page, there are three buttons: 'Save', 'Configure', and 'Report'.

The syslog configuration settings are listed in [Table 18](#).

**Table 18 Syslog Tab Settings**

Setting	Description	Default
<b>Logging Status</b>	<ul style="list-style-type: none"><li>On</li><li>Off</li></ul>	off
<b>Syslog Severity</b>	<ul style="list-style-type: none"><li>Emergency</li><li>Alert</li><li>Critical</li><li>Error</li><li>Warning</li><li>Notice</li><li>Informational</li><li>Debug</li></ul>	Emergency

### Creating a Syslog Server IP

To create a Syslog Server IP:

1. Click on **New** button in the Syslog Server edit section of the **SNMP** tab. The **Syslog Server** configuration page is displayed as shown in [Figure 77](#).

**Figure 79 Syslog Server IP Configuration**

The screenshot shows a form titled 'Syslog Server'. It has two input fields: 'Syslog Server IP' and 'Description'. Below these fields are two buttons: 'Save' and 'Cancel'.

The syslog server configuration settings are listed in [Table 19](#).

**Table 19 Syslog Server Settings**

Setting	Description	Default
<b>Syslog Server IP</b>	The syslog server ID.	-

**Table 19 Syslog Server Settings**

Setting	Description	Default
<b>Description</b>	Description of the syslog server.	-

2. Configure the syslog server settings and click on the **Save** button to add a new syslog server to the list.

### Editing a Syslog Server

To change the configuration of an existing syslog server:

1. Click on the radio button in front of the syslog server to select it from the list.
2. Click on the **Edit** button. The **Syslog Server** configuration page is displayed.
3. Edit the configuration and click on the **Configure** button to apply the changes.

### Deleting a Syslog Server

To delete a syslog server:

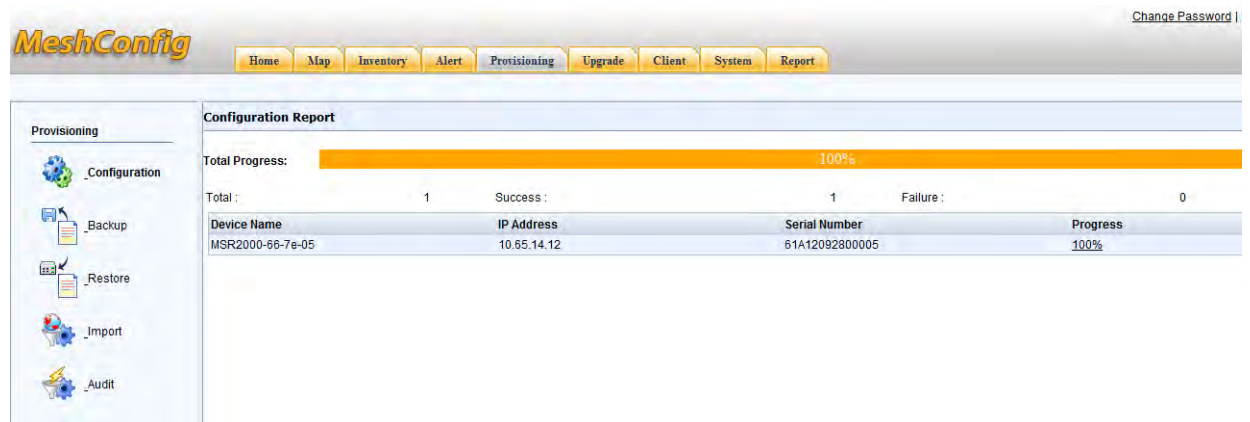
1. Click on the radio button in front of the syslog server to select it from the list.
2. Click on the **Delete** button. The syslog server is deleted from the list.

## Configuration Report

All the configuration changes are sent to the Configuration report for tracking when you click on the **Configure** button.

To view the Configuration report:

Click on the report button in the **Configuration** page. The configuration report is displayed as shown in Figure 80.

**Figure 80 Configuration Report**

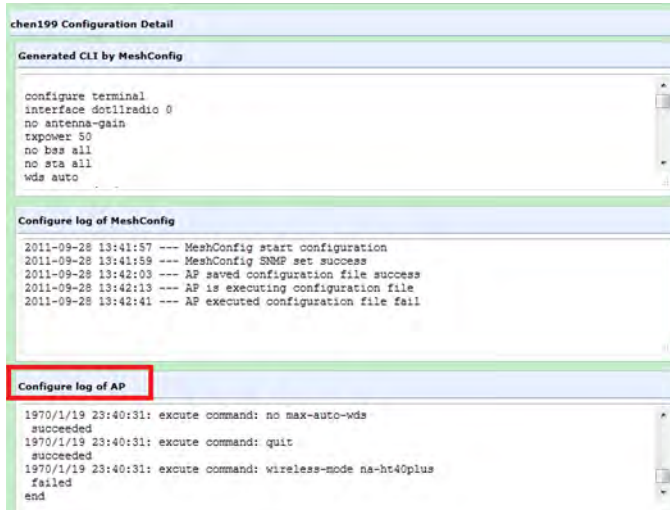
The progress of the configuration tasks is indicated in the **Progress** column. Successful configuration is indicated by “100%” and a failed configuration by “Failed” in the progress column.

The Total progress bar indicates the average progress of all nodes. You can also view the detailed configuration report for each configuration task.

To view the detailed configuration report:

Click on the link in the progress column for that task. The detailed configuration report opens in a separate pop up window. The detailed report includes the CLI and configure log that are generated as shown in Figure 81.

**Figure 81 Detailed Configuration Report**



Configure and run the report once and wait for the configuration progress for each AP to complete (100% or fail), before viewing the detailed report. This is to ensure that the AP log details are current.

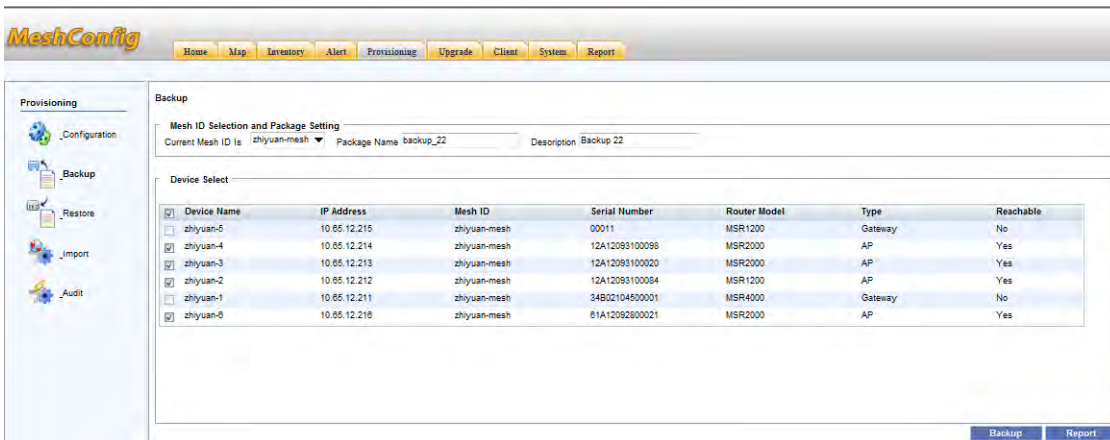
## Backup

MeshConfig supports the backup of configuration data of the routers.

To backup the configuration of a router:

1. Navigate to **Provisioning > Backup** to open the **Backup** configuration page as shown in [Figure 82](#).

**Figure 82 Backup**



2. Input the **Package Name** and **Description**.
3. Select the devices to be backed up by checking the box in front of the devices.
4. Click on the **Backup** button.
5. Click on **OK** in the confirmation dialog that is displayed
6. The backup report is displayed as shown in [Figure 83](#).

**Figure 83 Backup Report**

Backup Report				
Total Progress:		100%		
Total :	6	Success :	6	Failure :
				0
Device Name	IP Address	Serial Number	Progress	
zhiyuan-5	10.65.12.215	00011	100%	
zhiyuan-4	10.65.12.214	12A12093100098	100%	
zhiyuan-3	10.65.12.213	12A12093100020	100%	
zhiyuan-2	10.65.12.212	12A12093100084	100%	
zhiyuan-1	10.65.12.211	34B02104500001	100%	
zhiyuan-6	10.65.12.216	61A12092800021	100%	

The **Progress** column shows “100%” for a successful backup and “Failed” for the unsuccessful ones. Total progress indicates the average of the progress at all the nodes.

Click on the link in the progress column to view the detailed backup report. This report is displayed in a separate window and includes the backup CLI and the backup log.

**Figure 84 Detailed Progress Report**

zhiyuan-5 Backup Detail

Backup CLI from Router

```
configure terminal
! Aruba MeshOS 4.9.0.1 Configuration File
ip access-list standard s1
no rule remark
no rule
rule 10 permit any
quit
ip nat
access-group s1 out-interface gigabit-ethernet 0
quit
ip dhcp relay
no dhcp-servers
```

Backup log of MeshConfig

```
2011-12-27 20:26:42 --- MeshConfig is backuping configuration from AP
2011-12-27 20:26:48 --- MeshConfig backuped configuration success from AP
```



Uploading the settings to the MeshConfig tool and writing the same to a file may take several minutes. Wait until the **Progress** column for all devices in the **Backup Report** shows “100%” before proceeding further.

## Restore

MeshConfig supports restoring of a configuration file to the routers.

To restore a configuration file to a router:

1. Navigate to **Provisioning > Backup** to open the **Restore** configuration page as shown in [Figure 85](#).

**Figure 85 Restoring a Backup File**

MeshConfig

Home Map Inventory Alert Provisioning Upgrade Client System Report

Provisioning

Configuration Backup Restore Import Audit

Restore

Package Selection

Create Time	Package Name	Description
2011-12-27 20:26:57	backup22	Backup_10-22-2011
2011-12-27 20:26:42	backup22	Backup_10-22-2011

Continue Report

2. Select a package in the **Package Selection** section and click on the **Continue** button. The **Restore** page is displayed as shown in [Figure 86](#).

**Figure 86** *Restore Page*

Restore

Device Selection							
<input checked="" type="checkbox"/>	Device Name	IP Address	Mesh ID	Serial Number	Router Model	Type	Reachability
<input checked="" type="checkbox"/>	zhiyuan-0	10.55.12.210	zhiyuan-mesh	01A12092800021	MSR2000	AP	Yes

**Restore**

3. Select the devices to be restored by checking the box in front of the devices and click on the **Restore** button.
4. In the confirmation dialog that pops up, click on the **OK** button. The **Restore Report** is displayed as shown in [Figure 87](#).

**Figure 87** *Restore Report*

Restore Report

Total Progress: ☒ 20%

Device Name	IP Address	Serial Number	Progress
zhiyuan-9	10.55.12.199	09057	80%
zhiyuan-8	10.55.12.20	P100010005	80%
zhiyuan-7	10.55.12.97	12A12093100153	80%
zhiyuan-6	10.55.12.95	08011	80%
zhiyuan-5	10.55.12.95	12A12093100158	80%
zhiyuan-4	10.55.12.94	12A12093100014	80%
zhiyuan-3	10.55.12.93	12A12093100020	80%
zhiyuan-2	10.55.12.92	12A12093100084	80%
zhiyuan-1	10.55.12.91	34B02104500081	80%
zhiyuan-0	10.55.12.90	34B02110300091	80%

The **Progress** column shows “100%” for a successful restore and “Failed” for the unsuccessful ones. Total progress indicates the average of the progress at all the nodes. Click on the link in the **Progress** column to view the detailed report as shown in [Figure 88](#).

**Figure 88** *Restore Detailed Report*

zhiyuan-7 Restore Detail

Restore CLI to Router	
configure terminal	
ip nat	
quit	
ip dhcp relay	
no dhcp-servers	
quit	
ip dhcp server	
no default-lease-time	
no dns	
no max-lease-time	
no pool	
quit	

Restore log of MeshConfig	
2011-04-06 10:56:20	--- MeshConfig start restore
2011-04-06 10:56:22	--- MeshConfig SNMP set success
2011-04-06 10:56:25	--- AP saved configuration file success
2011-04-06 10:56:32	--- AP is executing configuration file
2011-04-06 10:59:10	--- AP executed configuration file success



Downloading the settings to each device and writing the same to its flash partition may take several minutes. Wait until the **Progress** column for all devices in the **Restore Report** shows “100%” before proceeding further.

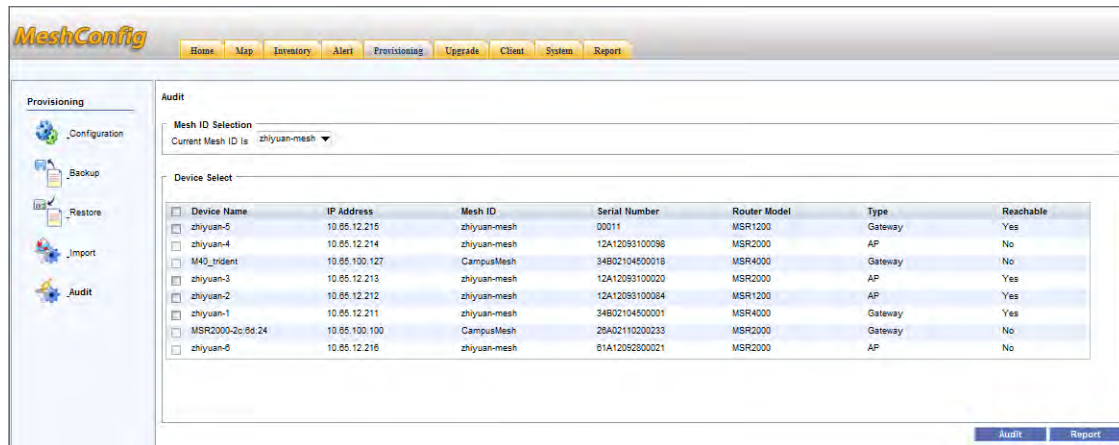
## Audit

MeshConfig allows you to audit the configuration for selected devices on the network and generate an audit report. This feature is used to compare the configuration of an AP with that of the MeshConfig tool. The audit report lists the difference between the configurations.

To audit a node in a mesh network:

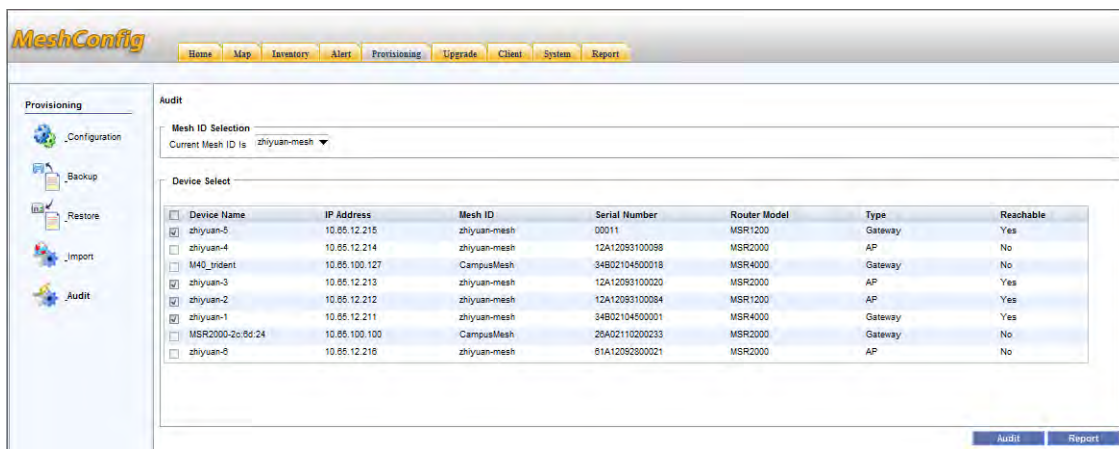
1. Click on the **Provisioning** tab to open the provisioning page.
2. Click on the **Audit** link in the menu tree to open the **Audit** page as shown in figure

**Figure 89** Audit Page



3. Select the router (s) that you want to audit by checking the box in front of the router in the **Device Selector** section as shown in Figure 90.

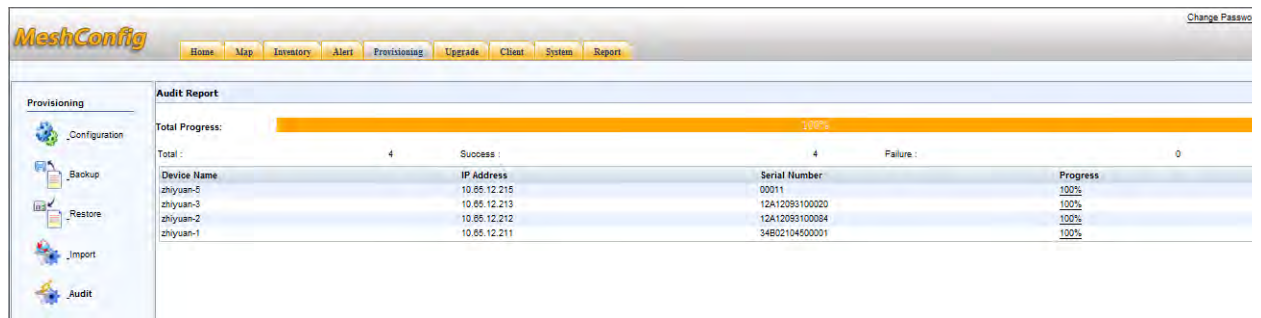
**Figure 90** Selecting Routers for Audit



4. Click on the **Audit** button to start the audit process. The audit report is displayed as shown in Figure 91.

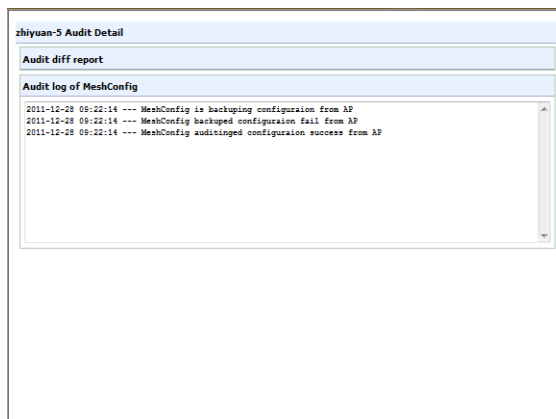


**Figure 91** *Audit Report*



5. Click on the link in the progress column once the progress shows “100%”.
6. The detailed audit report as shown in [Figure 92](#) is displayed in a separate window.

**Figure 92** *Detailed Audit Report*





This chapter contains instructions on how maintenance activities are performed in the network. The following topics are covered:

- “Checking Active Alarms” on page 79
- “Checking History Alarms” on page 81
- “Upgrading Nodes” on page 82
- “Online Client” on page 86
- “Adding a Node” on page 86
- “Adding a Mesh Network” on page 86
- “Auto Discovery” on page 87
- “Discovery Parameters” on page 88
- “Global Configuration” on page 89
- “Network Report” on page 89
- “Rebooting a Network” on page 90
- “Resetting Nodes to Factory Default” on page 91

## Checking Active Alarms

MeshConfig can display a list of active alarms that indicates problems in the network.

To view the list of active alarms, click on the **Alert** tab as shown in [Figure 93](#) to open the **Real time Alert** page.

The **Real time Alert** page also allows you to search the list of alarms using the **Search** option. You can filter the alarm list based on the following attributes:

- Source
- Category
- Message
- Severity
- Date / time

**Figure 93** *Alert Tab*

MeshConfig

Home Map Inventory **Alert** Provisioning Upgrade Client System Report

Change Password | Log Out

**Alert**

Real-time Alert

Delete

Page Length: 25 1 to 9 of 9

Column: Source Contain Search

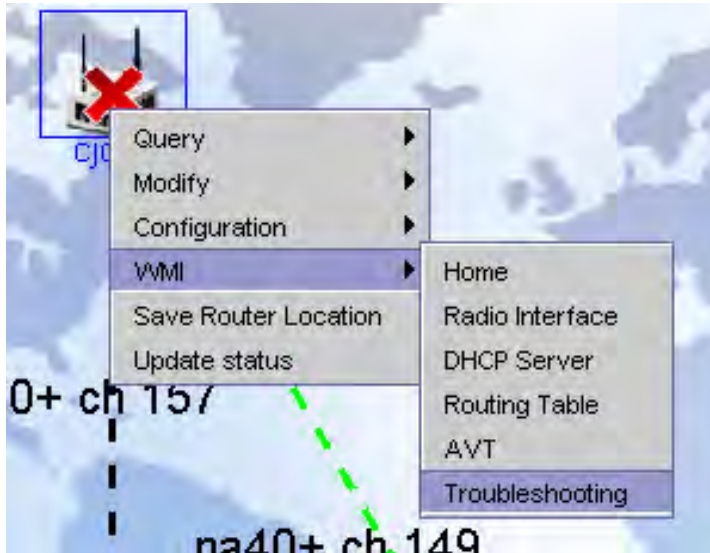
Source	Category	Message	Severity	Date / Time
cjc199	Equipment	IP is changed to 10.65.12.199	Warning	09:45:36 16-09
cjc197_Radio0AWds1	Equipment	Radio0AWds1 WDS Down	Major	19:09:08 18-09
10.65.12.196(Unmanaged)_Radio0AWds1	Equipment	Radio0AWds1 WDS Down	Major	07:25:48 15-09
cjc197	Equipment	Device rebooted, reason is: Unable to determine.	Warning	17:30:36 17-09
cjc197	Equipment	Router warm start	Warning	17:30:35 17-09
cjc199	Equipment	Router warm start	Warning	09:49:15 16-09

Most alarms occur when nodes become unreachable in the network. MeshConfig allows you to debug the situation by opening the WMI of the neighbor node.

To open the WMI of the neighbor node of a device:

1. Open the topology map and find a working node that has a link to the failing node.
2. Right-click on that neighbor node and select the menu option **WMI > Troubleshooting**.

**Figure 94** *Troubleshooting a Node*



3. The WMI of the node is displayed in a new web browser window.  
Check the browser settings to see if pop-ups are being blocked, if this window does not open.
4. Enter the username and password for the node in the login dialog that is displayed.  
The default is “root” and “public”.

**Figure 95** *WMI login*



The WMI Troubleshooting Tools for the neighbor device opens as shown in [Figure 96](#). This page has many troubleshooting utilities available to help determine the cause of the failure, either in the current node, or in the neighboring nodes.

**Figure 96** *Troubleshooting Tools in MeshOS WMI*



Refer to the *Aruba MeshOS 4.4 User Guide* for detailed information on the troubleshooting options.

## Checking History Alarms

MeshConfig stores and displays the list of history alarms of problems that have occurred in the network. You can configure the duration of storage for the history alarms.

To view the list of history alarms:

1. Click the **Alert** tab to open the Alert page.
2. Click on the **History Alert** link in the menu tree. A list of history alarms is displayed as shown in [Figure 97](#).

**Figure 97** Alarm History

The screenshot shows the MeshConfig interface with the 'History Alert' tab selected. The table displays the following data:

Severity	Source	Category	Date / Time	Message
Clear	zhiyuan-6	Operation	14:52:17 20-09-2011	Router zhiyuan-6 is operating normally.
Warning	zhiyuan-5_dot11radio 1/wds 0	Equipment	14:52:19 20-09-2011	Interface removed, last known status: admin status: Up, operational status: Down. Remote mac: 00:00:00:00:00:00
Warning	zhiyuan-2_dot11radio 1/wds 7	Equipment	14:52:41 20-09-2011	Interface removed, last known status: admin status: Up, operational status: Up. Remote mac: 00:17:7b:11:70:11
Warning	zhiyuan-4_dot11radio 1/wds 0	Equipment	14:52:43 20-09-2011	Interface removed, last known status: admin status: Up, operational status: Down. Remote mac: 00:00:00:00:00:00
Warning	zhiyuan-6_dot11radio 1/wds 1	Equipment	14:53:08 20-09-2011	Interface removed, last known status: admin status: Up, operational status: Down. Remote mac: 26:17:7b:11:70:11
Warning	zhiyuan-4_dot11radio 1/wds 1	Equipment	14:53:33 20-09-2011	Interface removed, last known status: admin status: Up, operational status: Down. Remote mac: 00:00:00:00:00:00
Warning	zhiyuan-1_dot11radio 1/wds 7	Equipment	14:53:54 20-09-2011	Interface removed, last known status: admin status: Up, operational status: Up. Remote mac: 0a:17:7b:2c:f7:4
Warning	zhiyuan-6_dot11radio 1/wds 2	Equipment	14:54:17 20-09-2011	Interface removed, last known status: admin status: Up, operational status: Up. Remote mac: 1e:17:7b:11:70:11
Warning	zhiyuan-5_dot11radio 1/wds 1	Equipment	14:54:34 20-09-2011	Interface removed, last known status: admin status: Up, operational status: Down. Remote mac: 00:00:00:00:00:00
Warning	zhiyuan-1_dot11radio 2/wds 7	Equipment	14:54:39 20-09-2011	Interface removed, last known status: admin status: Up, operational status: Down. Remote mac: 00:17:7b:2c:f7:4
Warning	zhiyuan-6_dot11radio 1/wds 0	Equipment	14:55:05 20-09-2011	Interface removed, last known status: admin status: Up, operational status: Down. Remote mac: 1e:17:7b:11:70:11
Clear	zhiyuan-3	Operation	14:55:16 20-09-2011	Router zhiyuan-3 is operating normally.
Critical	zhiyuan-6	Operation	14:55:44 20-09-2011	Router zhiyuan-6 cannot be pinged.
Critical	zhiyuan-2	Operation	14:55:47 20-09-2011	Router zhiyuan-2 cannot be pinged.
Critical	zhiyuan-3	Operation	14:55:54 20-09-2011	Router zhiyuan-3 cannot be pinged.
Warning	zhiyuan-1_dot11radio 2/wds 7	Equipment	14:57:21 20-09-2011	Interface removed, last known status: admin status: Up, operational status: Down. Remote mac: 06:17:7b:2c:f7:4

The **History Alert** page also allows you to search the list of alarms using the **Search** option. You can filter the alarm list based on the following attributes:

- Severity
- Source
- Category
- Date / time
- Message

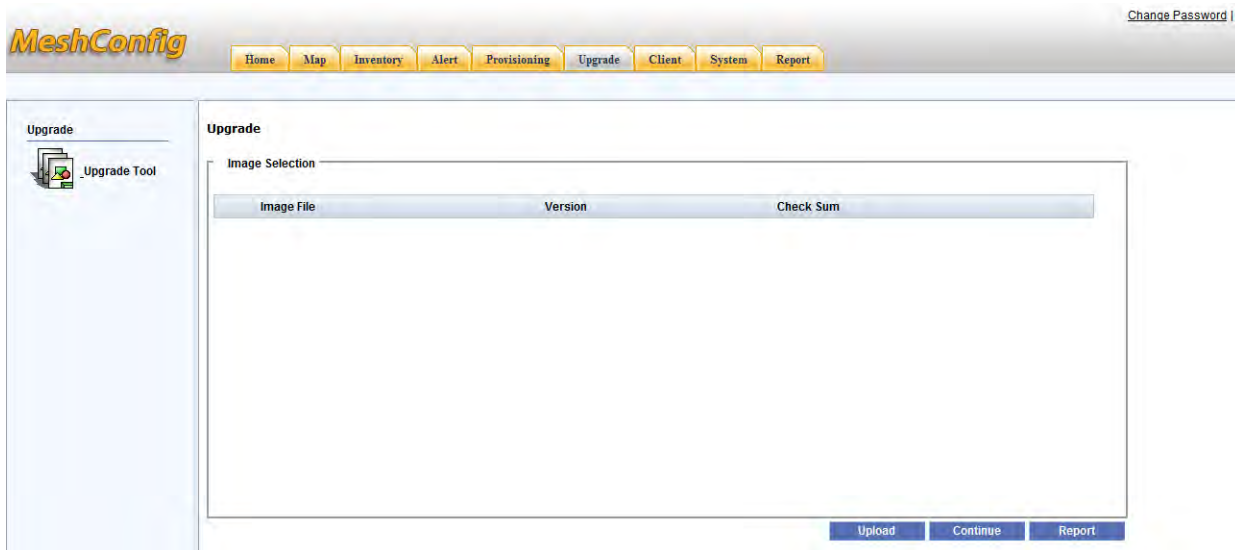
## Upgrading Nodes

The MeshConfig allows a single node or multiple nodes within a mesh network to be upgraded at the same time.

To upgrade a node:

1. Click on the **Upgrade** tab to open the **Upgrade** page as shown in [Figure 98](#).

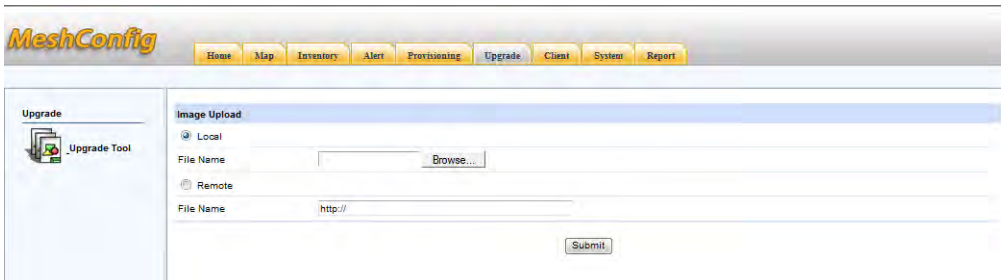
Figure 98 Upgrade Tab



The **Image Selection** section displays all the image files that have been saved in the system. Use the **Upload** option available on the page to upload image files in the case of a new installation.

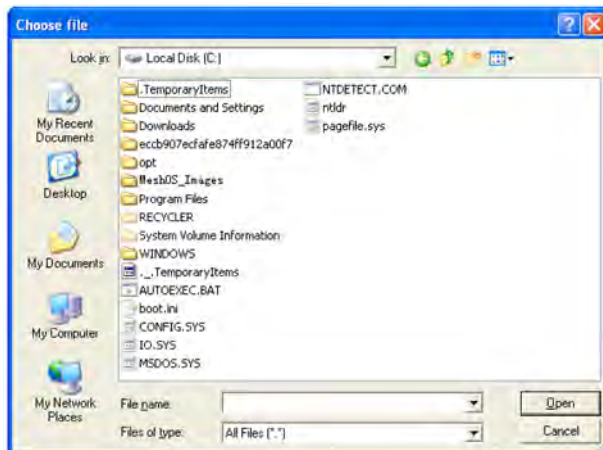
2. If the upgrade image file that you require is already in the list, skip Steps 2-6 and proceed with Step 7. If the image file is not available in the list, click on the **Upload** button to open the **Image Upload** page as shown in Figure 99.

Figure 99 Uploading Image File



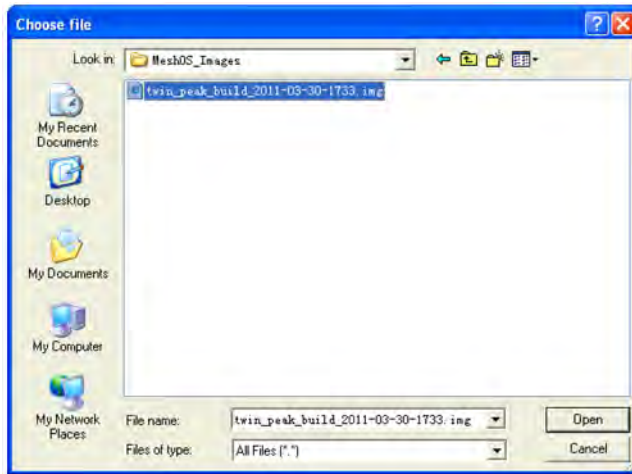
3. Click on the **Browse** button to browse the location of the file as shown in Figure 100.

Figure 100 Browsing the Image File



4. Browse to the location of the device image file (for example, c:\MeshOS\_Images) and select the image file.

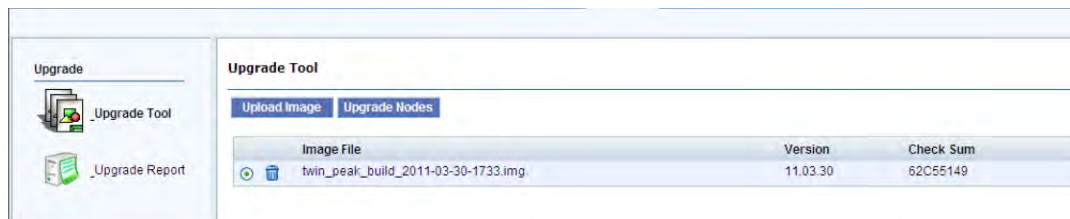
**Figure 101** *Selecting the Image file for Upload*



Alternatively, select the **remote** option and specify the remote location details of the image file.

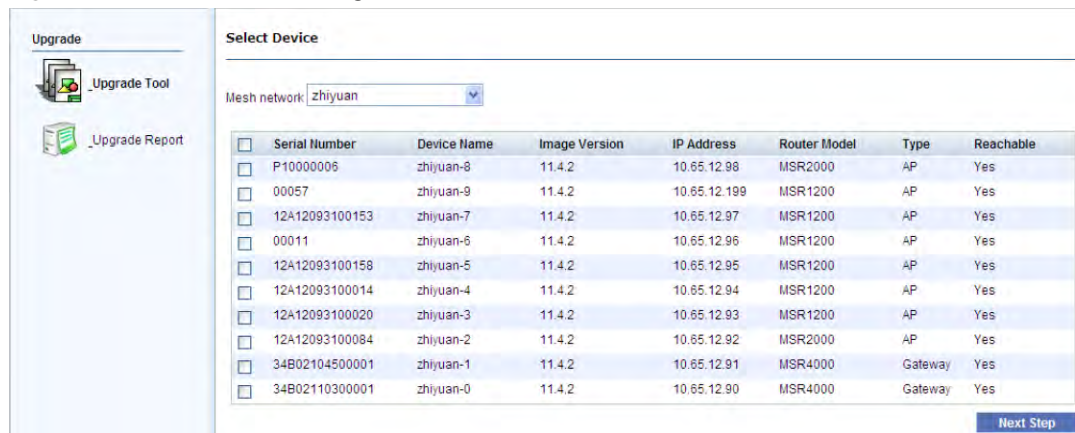
5. Click on the **Submit** button to upload the image file to the tool as shown in Figure 102.

**Figure 102** *Upload of Image File*



6. Select the image file and click on the **Upgrade Nodes** button to open the **Select Device** page as shown in Figure 103.

**Figure 103** *Select Device Page*



You may not see all of the nodes in this list because the upgrade tool only displays the devices that are compatible with the image file selected.

7. Select the devices to be upgraded by checking the box in front of them and click on **Next Step**.



**Figure 104** *Selecting the Nodes for Upgrade*

Serial Number	Device Name	Image Version	IP Address	Router Model	Type	Reachable
<input checked="" type="checkbox"/> P10000006	zhiyuan-8	11.4.2	10.65.12.98	MSR2000	AP	Yes
<input checked="" type="checkbox"/> 00057	zhiyuan-9	11.4.2	10.65.12.199	MSR1200	AP	Yes
<input type="checkbox"/> 12A12093100153	zhiyuan-7	11.4.2	10.65.12.97	MSR1200	AP	Yes
<input type="checkbox"/> 00011	zhiyuan-6	11.4.2	10.65.12.96	MSR1200	AP	Yes
<input type="checkbox"/> 12A12093100158	zhiyuan-5	11.4.2	10.65.12.95	MSR1200	AP	Yes
<input type="checkbox"/> 12A12093100014	zhiyuan-4	11.4.2	10.65.12.94	MSR1200	AP	Yes
<input type="checkbox"/> 12A12093100020	zhiyuan-3	11.4.2	10.65.12.93	MSR1200	AP	Yes
<input type="checkbox"/> 12A12093100084	zhiyuan-2	11.4.2	10.65.12.92	MSR2000	AP	Yes
<input type="checkbox"/> 34B02104500001	zhiyuan-1	11.4.2	10.65.12.91	MSR4000	Gateway	Yes
<input type="checkbox"/> 34B02110300001	zhiyuan-0	11.4.2	10.65.12.90	MSR4000	Gateway	Yes

8. In the confirmation dialog that is displayed, click on **OK** to confirm the upgrade. A upgrade report is displayed as shown in Figure 105.

The Progress column in the report shows “100%” on successful completion of the upgrade or “Failed” in all other cases. The **Total progress** bar indicates the average of the progress in all the nodes.

**Figure 105** *Upgrade Report*

Device Name	IP Address	Serial Number	Progress
zhiyuan-9	10.65.12.199	00057	100%
zhiyuan-8	10.65.12.98	P10000006	100%

Click on the link in the progress column to view the detailed upgrade report as shown in Figure 106. The detailed report is displayed in a separate pop up window and includes the upgrade log.

**Figure 106** *Detailed Upgrade Report*

```

2011-04-06 11:27:24 --- MeshConfig start upgrade
2011-04-06 11:27:25 --- MeshConfig SNMP set success
2011-04-06 11:27:29 --- AP is downloading image file from MeshConfig
2011-04-06 11:28:46 --- AP saved image file success
2011-04-06 11:29:57 --- AP is upgrading image file
2011-04-06 11:34:42 --- AP upgraded success
  
```



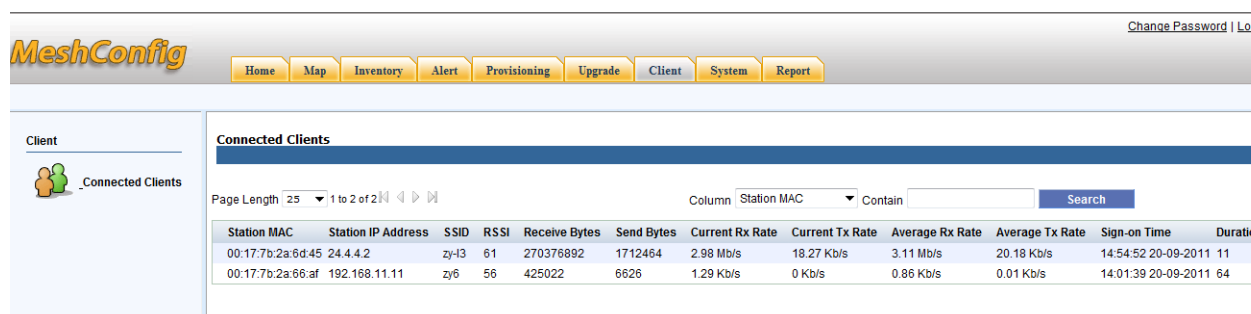
Downloading the new software image to each device and writing the same to its flash partition may take several minutes. Wait until the **Progress** column for all devices in the **Upgrade Report** shows “100%” before proceeding further.

## Online Client

You can view a list of online clients in MeshConfig.

To view the list of online clients, click on the **Client** tab to open the Connected Clients page as shown in Figure 107. A list of all the online clients is displayed.

**Figure 107** *Client Tab*



The screenshot shows the MeshConfig interface with the 'Client' tab selected. The 'Connected Clients' section displays a table of online clients. The table has columns for Station MAC, Station IP Address, SSID, RSSI, Receive Bytes, Send Bytes, Current Rx Rate, Current Tx Rate, Average Rx Rate, Average Tx Rate, Sign-on Time, and Duration. Two clients are listed in the table.

Station MAC	Station IP Address	SSID	RSSI	Receive Bytes	Send Bytes	Current Rx Rate	Current Tx Rate	Average Rx Rate	Average Tx Rate	Sign-on Time	Duration
00:17:b2:a6:d45	24.4.4.2	zy-43	61	270376892	1712464	2.98 Mb/s	18.27 Kb/s	3.11 Mb/s	20.18 Kb/s	14:54:52 20-09-2011	11
00:17:b2:a6:66:af	192.168.11.11	zy6	56	425022	6626	1.29 Kb/s	0 Kb/s	0.86 Kb/s	0.01 Kb/s	14:01:39 20-09-2011	64

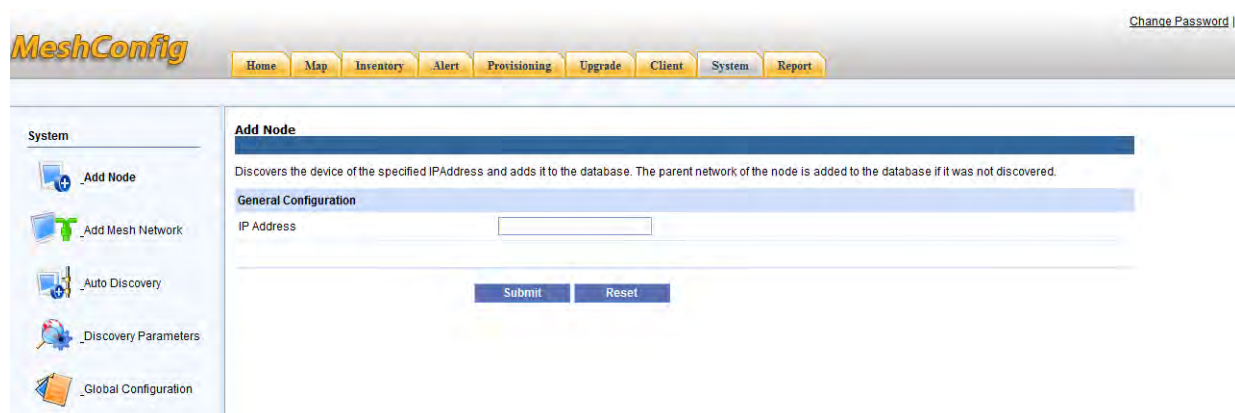
## Adding a Node

This option adds a node with the specified IP address to the MeshConfig Tool.

To add a node:

1. Click on the **System** tab to open the **Add Node** page as shown in Figure 108.

**Figure 108** *Adding a Node*



The screenshot shows the MeshConfig interface with the 'System' tab selected. The 'Add Node' page is displayed, which includes a description of the function and a 'General Configuration' section with an 'IP Address' input field and 'Submit' and 'Reset' buttons.

2. Enter the IP address in the box provided and click on the **Submit** button.  
MeshConfig will discovery this node by its IP address and add it to the list.

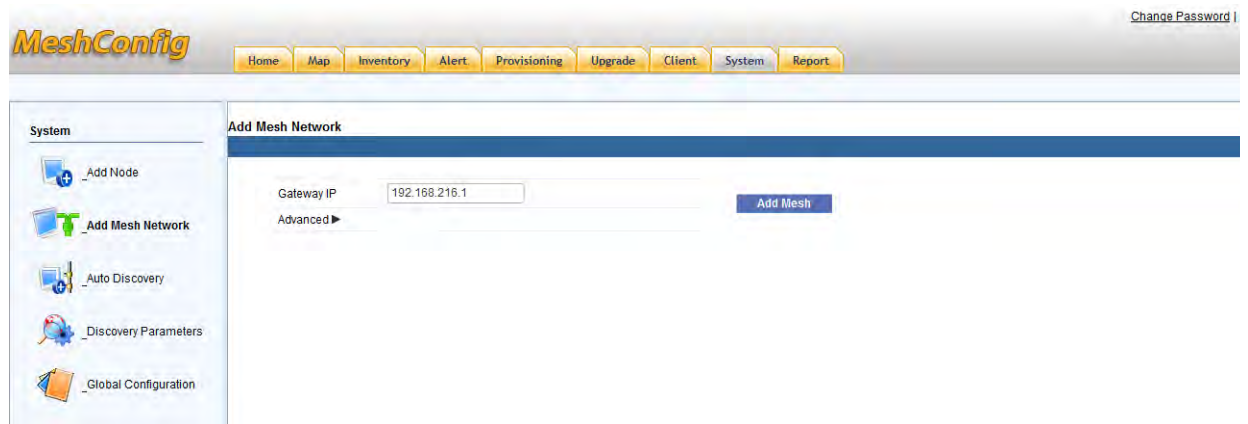
## Adding a Mesh Network

This option adds a mesh network with the specified gateway and parameters to the MeshConfig tool.

To add a mesh network:

1. Click on the **System** tab to open the **System** page
2. Click on the Add Mesh Network link in the menu tree to open the **Add Mesh Network** page as shown in Figure 109.

**Figure 109** Adding a Mesh Network



3. Enter the **Gateway IP** in the box provided.
4. (optional) Click on the **Advanced** link to access additional settings.
5. Click on the **Add Mesh** button.

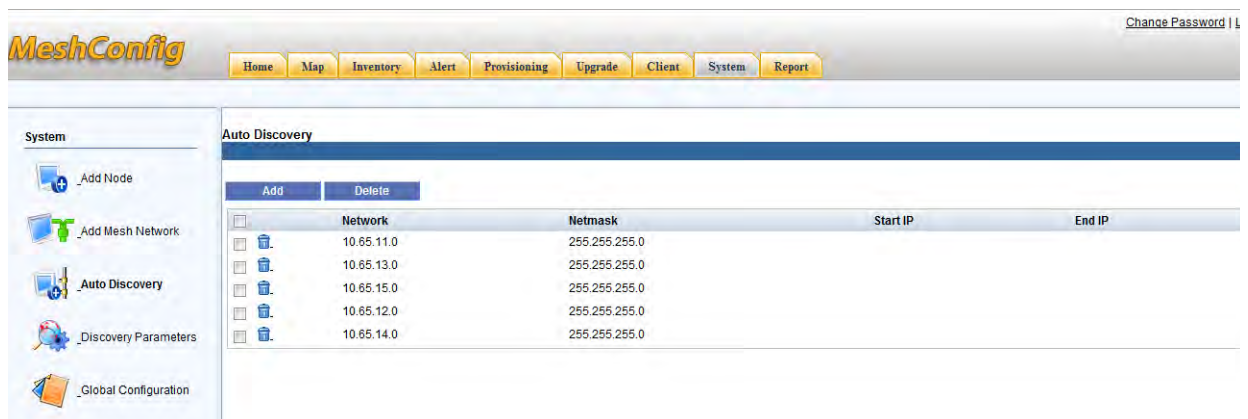
MeshConfig adds the gateway node to its list and starts managing the gateway node as well as any other node that is in the same mesh network.

## Auto Discovery

This option automatically discovers and adds mesh networks based on the specified IP or a range of IPs with the netmask.

Click on the **System** tab and select the **Auto Discovery** option from the menu tree to display the **Auto Discovery** page as shown in Figure 110.

**Figure 110** Auto Discovery



To add a auto discovery request:

1. Click on the **Add** button in the **Auto Discovery** page to display the auto discovery parameters as show in Figure 111.

**Figure 111** Adding an Entire Network

**Auto Discovery**

Discovers all elements of the specified Network and adds them to the database.

**Add Entire Network** ☒ **Add Range of Nodes** ☐

Network Address:

Netmask:

2. Enter the Network Address and Netmask details and click on **Submit**.  
MeshConfig discovers all the nodes within this network using the Network Address.
3. Alternatively, click on the **Add range of Nodes** option located on the right side of page as shown in Figure 112.

**Figure 112** Adding a Range of Nodes

**Auto Discovery**

Discovers all elements of the specified Network and adds them to the database.

**Add Entire Network** ☐ **Add Range of Nodes** ☒

Start IP Address:

End IP Address:

Netmask:

Enter the **Start IP Address**, **End IP Address**, and **Netmask**. Click on the **Submit** button. MeshConfig will discovery all the nodes within this network between the specified **Start IP** and **End IP**.

## Discovery Parameters

Discovery parameters such as **SNMP Timeout**, **SNMP Retries**, and enable/disable **Auto Discovery** option can be configured in the **System** tab.

To access these settings:

1. Click on the System tab to open the **System** page.
2. Click on the **Discovery Parameters** link in the menu tree to display the **Discovery Configuration Settings** as shown in Figure 113.

**Figure 113** Discovery Configuration Settings

**Discovery Configuration Settings**

**Common Parameters**

☒ Auto Discovery

**SNMP Properties**

SNMP Timeout:  second(s)

SNMP Retries:

3. Configure the parameters and click on **Submit**.

## Global Configuration

The Global Configuration page lets you configure global parameter such as:

- SNMP Polling

You can configure device status polling parameter and performance data polling parameter.

- SNMP Parameter
- HTTP parameter

These parameters are used for the backup, import, and audit functions. MeshConfig requests MeshOS for the CLI file of the AP with the **User Name** and **Password** configured in this section. The default username is **root** and password **public**.



The username and password configured here should match with the MeshOS username and password. The backup, import, and audit operations will fail if the parameters do not match.

- Historical Data Retention

You can configure a duration for storing the data generated such as reports. A duration in days starting from 1 day and up to 90 days is allowed.

To configure the global parameters:

1. Click on the **System** tab to open the **System** page.
2. Click on the **Global Configuration** link in the menu tree to display the **Global Configuration** settings as shown in [Figure 114](#).

**Figure 114** *Global Configuration Settings*

Global Configuration	
<b>SNMP Polling</b>	
Device Status Poll Period	30 Seconds
Performance Data Poll Period	15 Minutes
<b>SNMP Parameter</b>	
Read Community	public
SNMP Port	161
<b>HTTP Parameters</b>	
User Name	root
Password	public
<b>Historical Data Retention</b>	
Expire Report Data Older than	50 Days
<a href="#">Submit</a>	

3. Configure the parameters and click on **Submit**.

## Network Report

You can view detailed reports on devices, links, interfaces, and clients in the MeshConfig tool. Let us take the **Radio Link Quality Report** as an example.

1. Click on the **Report** tab to display the Report page as shown in [Figure 115](#).

**Figure 115 Report Tab**

2. Click on the **Radio Link Report > Radio Link Quality Report** link in the menu tree on the left panel to display the report in the **Report Detail** section as shown in Figure 116.

**Figure 116 Radio Link Quality Report - Example**

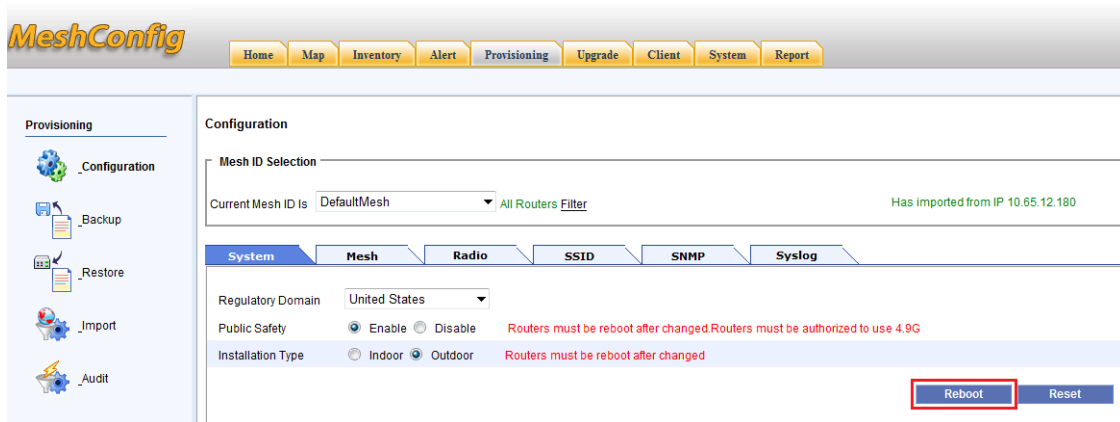
3. Use the **Report Generator** section to modify the **Start Time**, **End Time**, and **Sort by** parameters.  
 You can specify a time range for the stored statistics and limit the data displayed to a particular router. The default setting is the past 24 hours and all routers.  
**Start Time:** The start time to be searched.  
**End Time:** The end time to be searched.  
**Sort by:** You can sort the search result by options available in the drop down list.
4. Click on the **Generate** button to (re)generate the **Radio Link Quality Report**

## Rebooting a Network

To reboot all nodes in the network:

1. Navigate to **Provisioning > Configuration > System** tab.
2. Click on the **Reboot** button.

**Figure 117** *Rebooting Network Nodes*



3. Click **OK** in the confirmation dialog that is displayed  
All the nodes in the network will reboot.



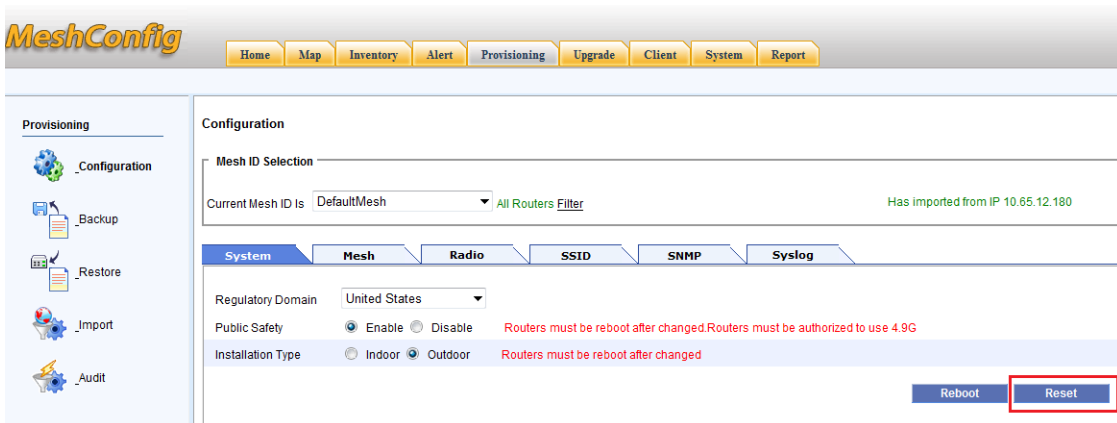
It is normal for MeshConfig to lose connection to the nodes when they are rebooting. Messages or alarms such as “unreachable” or “cannot ping” may appear in the **Alert** list.

## Resetting Nodes to Factory Default

To reset nodes in a network to the factory default:

1. Navigate to **Provisioning > Configuration > System** tab.
2. Click on the **Reset** button.

**Figure 118** *Resetting to Factory Default*



3. Click on **OK** in the confirmation dialog that is displayed  
The nodes will now be reset to factory default.



MeshConfig will lose the connection to all nodes because the IP address of the master node in the network is reset to the default IP address. Add the node to the MeshConfig tool using the default IP address (192.168.216.1).





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