



VIEW Certified Configuration Guide

MeshDynamics

MD4000 Series APs

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1725-36164-001
Version B

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Introduction

Polycom's Voice Interoperability for Enterprise Wireless (VIEW) Certification Program is designed to ensure interoperability and high performance between SpectraLink Wireless Telephones and WLAN infrastructure products.

The products listed below have been thoroughly tested in Polycom's lab and have passed VIEW Certification. This document details how to configure the MD4000 series access points (MeshNodes) with SpectraLink Wireless Telephones.

Certified Product Summary

Manufacturer:	MeshDynamics Inc.: www.meshdynamics.com			
Approved products:	Wireless Controllers	Access Points		
	N/A	MD4000 series APs		
RF technology:	802.11b/g/a			
Radio:	2.4 GHz, 5 GHz			
Security:	WPA-PSK and WPA2-PSK (AES)			
AP firmware version certified:	2.5.69			
SpectraLink handset models certified: **	e340/h340/i640	8020/8030		
SpectraLink handset software certified:	89.110	122.013		
SpectraLink radio mode:	802.11b	802.11b	802.11g	802.11a
Maximum telephone calls per AP:	8	8	12 *	10
Recommended network topology:	Switched Ethernet (recommended)			

* Maximum calls tested during VIEW Certification. The certified product may actually support a higher number of maximum calls for 802.11a and 802.11g radio modes.

** SpectraLink handset models 8020/8030, e340/h340/i640 and their OEM derivatives are VIEW Certified with the WLAN hardware and software identified in the table. Throughout the remainder of this document they will be referred to collectively as "SpectraLink Wireless Telephones".

Service Information

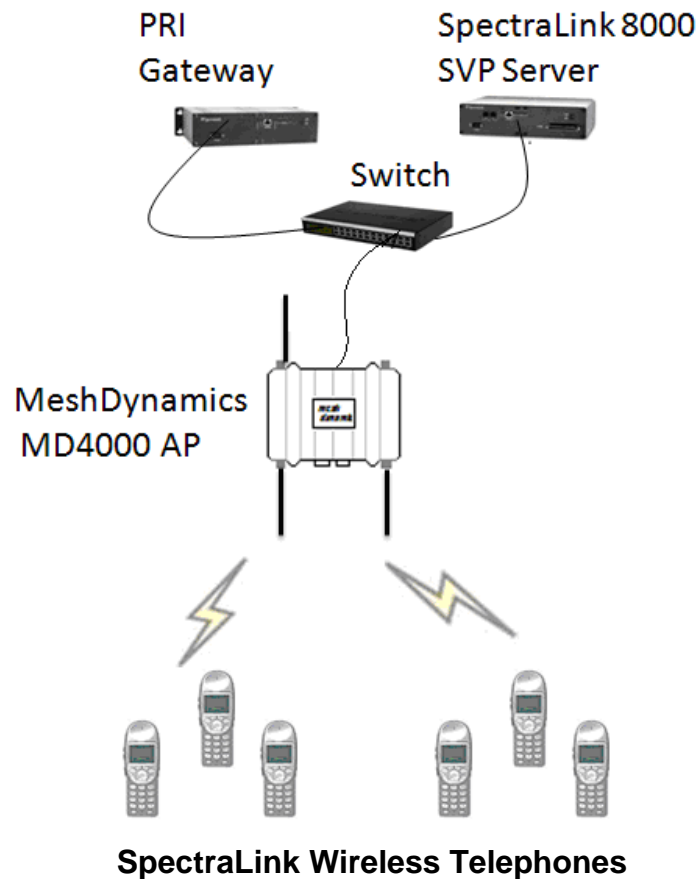
If you encounter difficulties or have questions regarding the configuration process, please contact technical support at www.meshdynamics.com

If you have questions related to this guide, please contact the Polycom Customer Support Hotline at 1-800-775-5330. The hotline is open

Monday through Friday, 6 a.m. to 6 p.m. Mountain time. You may also contact Polycom Technical Support at boul-technicalsupport@polycom.com for assistance.

Network Topology

The following topology was tested during VIEW Certification testing.



Initial Configuration Settings

Network Management System (NMS) is required to configure the access point.

1. Download <http://www.meshdynamics.com/downloads/MDNetworkViewer82.exe> from www.meshdynamics.com
2. The NMS must run from a machine on the **same network**.
3. The NMS requires **Java 1.4 Runtime Environment** to be installed. This may be downloaded from: <http://java.sun.com/j2se/1.4.2/download.html>
4. Click the **J2SE v 1.4.2_05 JRE** link.
5. After the software is downloaded to the machine, click **Meshviewer.exe**.
6. Click the green **Start** button to start seeing the access points in NMS.
7. Right-click the access point icon to configure it.



IP Address is not required to configure the access point.

Configuration Settings

The settings listed below are recommended for interoperability and high performance between SpectraLink Wireless Telephones and the MeshDynamics Wireless LAN System.

The screenshot displays the MeshDynamics Network Viewer 8.2 interface. On the left, a 'Properties' pane shows configuration details for a mesh node. The main window shows a network diagram with nodes 4350, 4250, 4458, 4151, and 4250 connected in a mesh topology. A table at the bottom provides a detailed view of the network's heartbeat data.

Mac Address	IP Address	Node Name	Time Stamp	Model No	Parent Downlink Signal (dBm)	Parent Downlink Rate (Mbps)	Uplink Signal (dBm)	Uplink Rate (Mbps)
00:12:ce:00:00:60	192.168.254.111	meshap	Jan 17, 12:15:19	MD4250-AAxx	-45	54	-48	54
00:12:ce:00:16:96	192.168.254.31	Togos1	Jan 17, 12:15:19	MD4250-AAxx	-75	24	-71	36
00:12:ce:00:1e:d9	192.168.254.35	MIED4	Jan 17, 12:15:20	MD4350-AAxx	-61	54	-70	54
00:12:ce:00:11:96	192.168.254.57	M1196	Jan 17, 12:15:19	MD4458-AAII	-62	54	-66	54
00:12:ce:00:20:d8	192.168.254.51	meshap	Jan 17, 12:15:16	MD4458-AAII	--	--	--	--
00:12:ce:00:08:a8	192.168.254.120	meshap	Jan 17, 12:15:13	MD4151-AAxx	-42	54	-45	54
00:12:ce:00:00:66	192.168.254.112	meshap	Jan 17, 12:15:12	MD4250-AAxx	-68	36	-96	48

STATISTICS: NODES = 7, RUNNING = 7, SELECTED = 1

Configuring Interfaces

1. Right-click the access point icon (Node).
2. Select **Configure Node** from the shortcut menu to begin configuration.

The screenshot shows the MeshDynamics Network Viewer 8.2 interface. On the left, the Properties window for node M1ED4 is visible, showing details such as Name, Description, Latitude, Longitude, Country Code, Flags, Hardware Info, IP-Settings, and Information. The main window displays a network topology with nodes 4458, 4350, 4250, 4151, and 4250 connected by links. A context menu is open over node 4350, with 'Configure Node' selected. At the bottom, a table displays network statistics for various nodes.

Mac Address	IP Address	Node Name	Time Stamp	Model No	Parent Downlink Signal (dBm)	Parent Downlink Rate (Mbps)	Uplink Signal (dBm)	Uplink Rate (Mbps)
00:12:ce:00:00:60	192.168.254.111	meshap	Jan 17, 12:17:16	MD4250-AAxx	-61	54	-67	54
00:12:ce:00:16:9a	192.168.254.31	Topos1	Jan 17, 12:17:16	MD4250-AAxx	-73	--	-70	36
00:12:ce:00:1e:d4	192.168.254.55	M1ED4	Jan 17, 12:17:16	MD4350-AAIx	-62	--	--	48
00:12:ce:00:11:96	192.168.254.57	M1196	Jan 17, 12:17:14	MD4458-AAII	-60	54	-67	54
00:12:ce:00:20:d8	192.168.254.51	meshap	Jan 17, 12:17:02	MD4458-AAII	--	--	--	--
00:12:ce:00:08:a6	192.168.254.120	meshap	Jan 17, 12:17:12	MD4151-AAxx	-45	54	-56	54

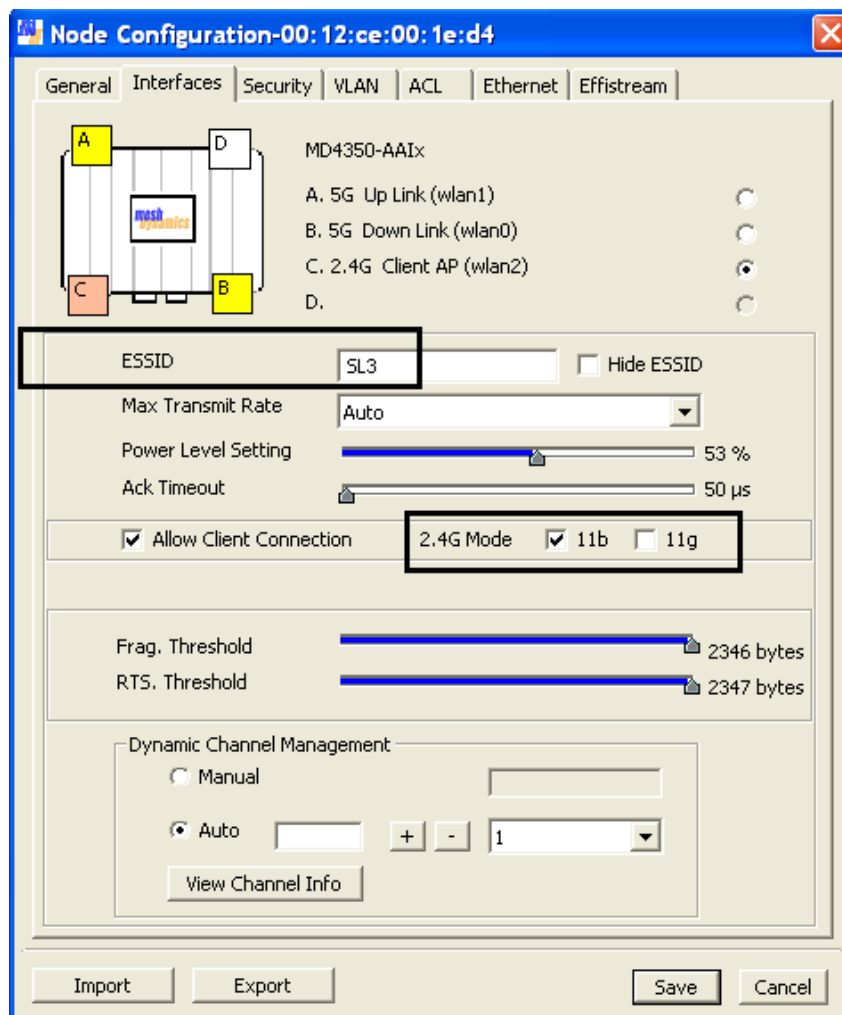
At the bottom of the screenshot, the status bar indicates: NODES = 6, RUNNING = 6, SELECTED = 1.

3. Click the **Interfaces** tab in the **Node Configuration** window.
4. Select the appropriate radio interface:
 - a. Click the **5G Down Link** option if the SpectraLink Wireless Telephones are configured for 802.11a.
 - b. Click the **2.4G Client AP** option if the SpectraLink Wireless Telephones are configured for 802.11b & b/g mixed mode or 802.11g only.

The screenshot shows the Node Configuration window for MD4350-AAIx, with the Interfaces tab selected. The window displays a diagram of the device with four radio interfaces labeled A, B, C, and D. To the right of the diagram, the configuration options for each interface are listed with radio buttons.

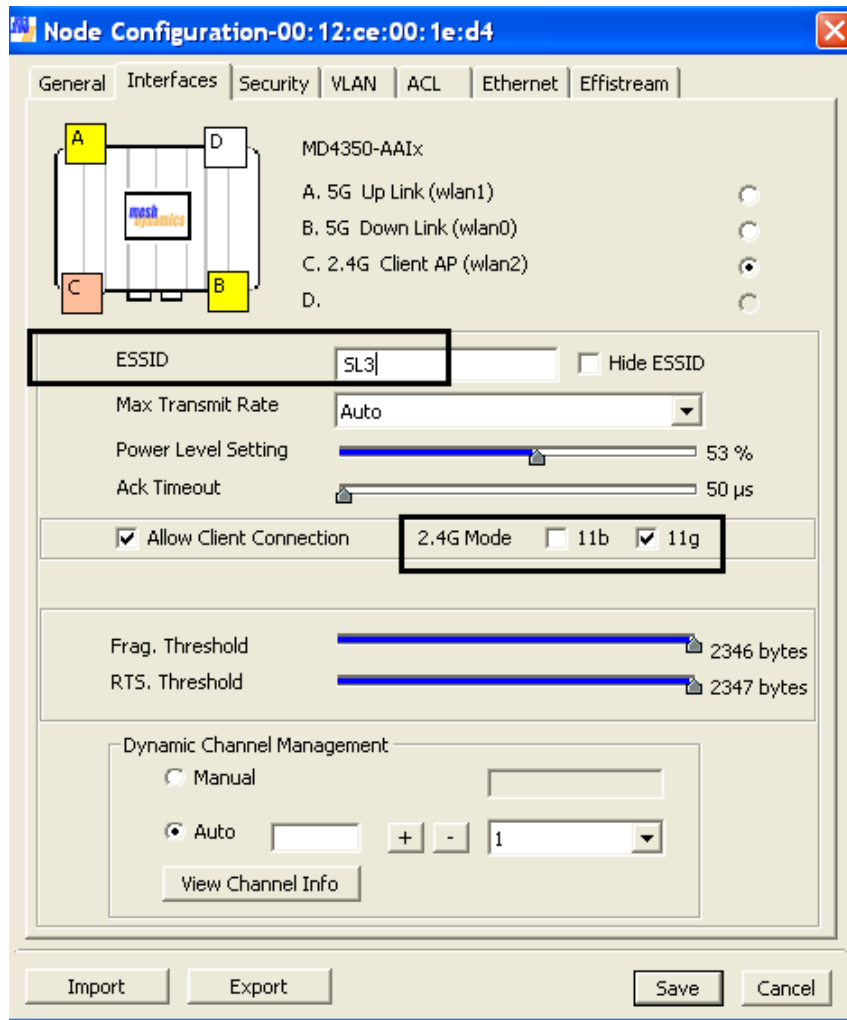
Interface Label	Description	Selected
A	5G Up Link (wlan1)	<input type="radio"/>
B	5G Down Link (wlan0)	<input type="radio"/>
C	2.4G Client AP (wlan2)	<input checked="" type="radio"/>
D		<input type="radio"/>

5. Enter the **ESSID** to match the SpectraLink Wireless Telephones.
6. Adjust the **Power Level Setting** and **Dynamic Channel Management** setting for appropriate level/channel as determined by your facility site survey, optimized for wireless voice traffic. If **Dynamic Channel Management** is set to **Auto**, the Node will determine the channel on boot up.
7. 802.11 configurations:
 - a. Always select the **Allow Client Connection** check box
 - b. If SpectraLink Wireless Telephones are configured for 802.11b/g mixed mode, select the **11b** check box for **2.4G Mode**.



For additional details on RF deployment please see the [Deploying Enterprise-Grade Wi-Fi Telephony](#) white paper and the [Best Practices Guide for Deploying SpectraLink 8020/8030 Wireless Telephones](#).

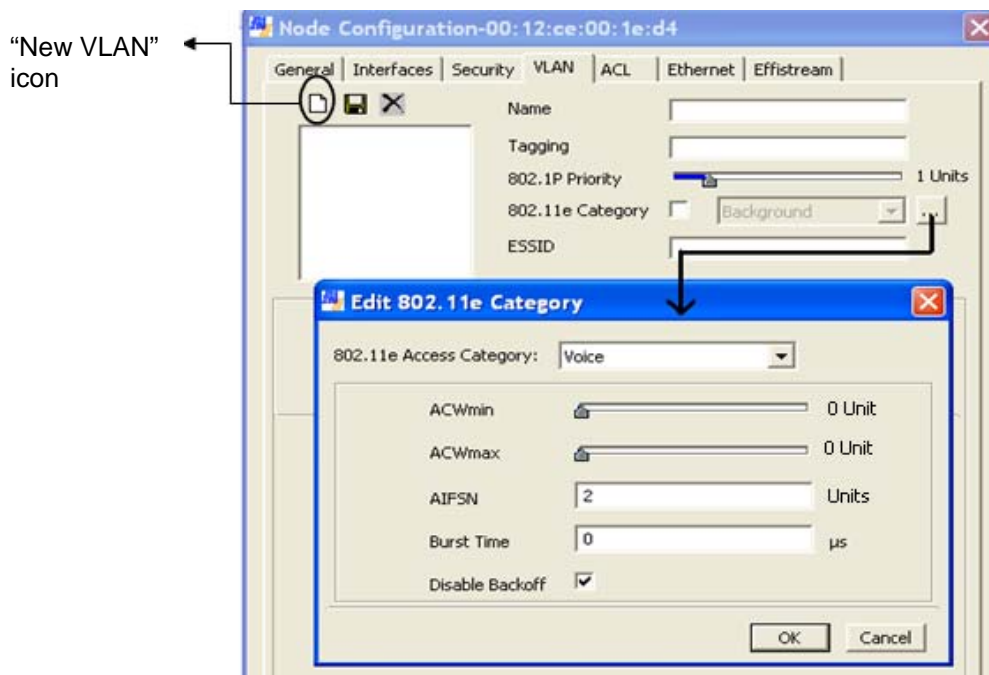
- c. If SpectraLink Wireless Telephones are configured for 802.11g only, select the **11g** check box for **2.4G Mode**.



All rates are set as basic rates; multicast traffic will be transmitted at the lowest basic rate for each band (1Mb/s for 802.11b, 6Mb/s for 802.11g, and 6Mb/s for 802.11a).

QoS Settings

1. Click the **VLAN** tab in the **Node Configuration** window.
2. To adjust QoS settings, click the “New VLAN” icon.
3. Click the “...” button to the far right of **802.11e Category** to edit the 802.11e category for that Node.
4. Select **Voice** from the **802.11e Access Category** drop-down list.
5. Set **ACWmin** to **0** and **ACWmax** to **0**.
6. Set **AIFSN**:
 - a. to **2** if the SpectraLink Wireless Telephones are configured for 802.11a or 802.11g only.
 - b. to **3** if the SpectraLink Wireless Telephones are configured for 802.11b & b/g mixed.
7. Set **Burst Time** to **0**.
8. Select the **Disable Backoff** check box.
9. Click the **OK** button to update settings.



10. Reboot the Node for settings to take effect.

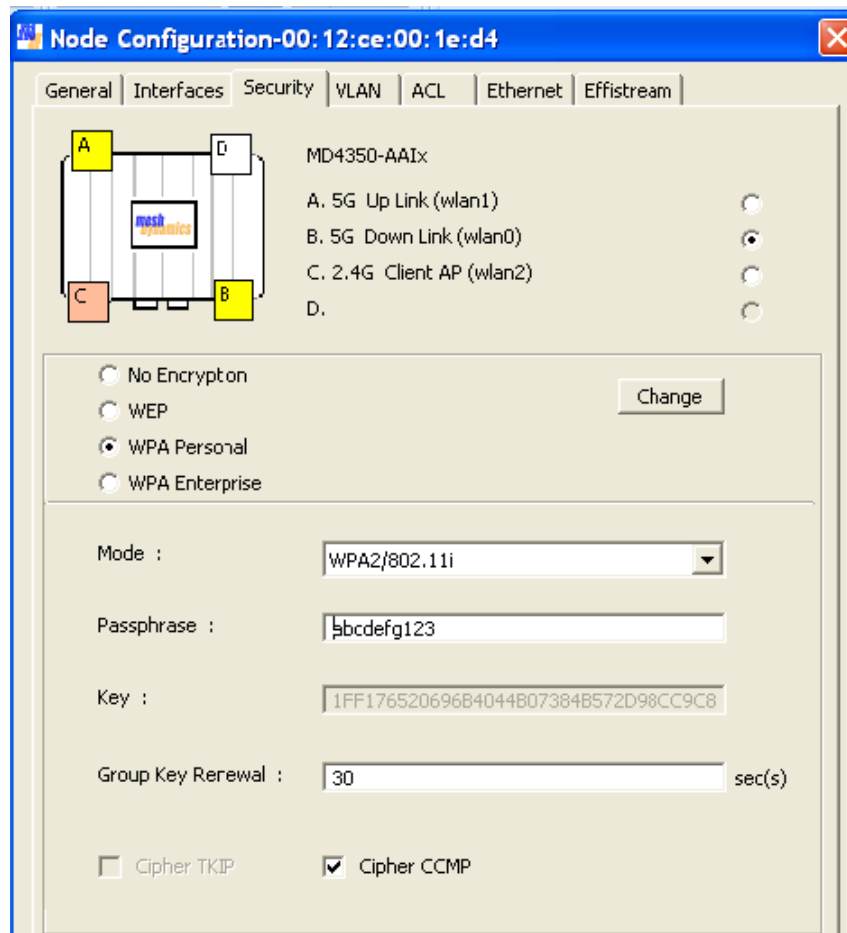


Configuring a VLAN on the radio is not required to edit the 802.11e category.

Security Settings

WPA2-PSK setup

1. Click the **Security** tab in the **Node Configuration** window.
2. Click the **WPA Personal** option.
3. At **Mode**, select **WPA2/802.11i** from the drop-down list.
4. Enter a **Passphrase** that matches the entry on the SpectraLink Wireless Telephones.
5. Click the **Save** button.
6. Reboot the Node for settings to take effect.

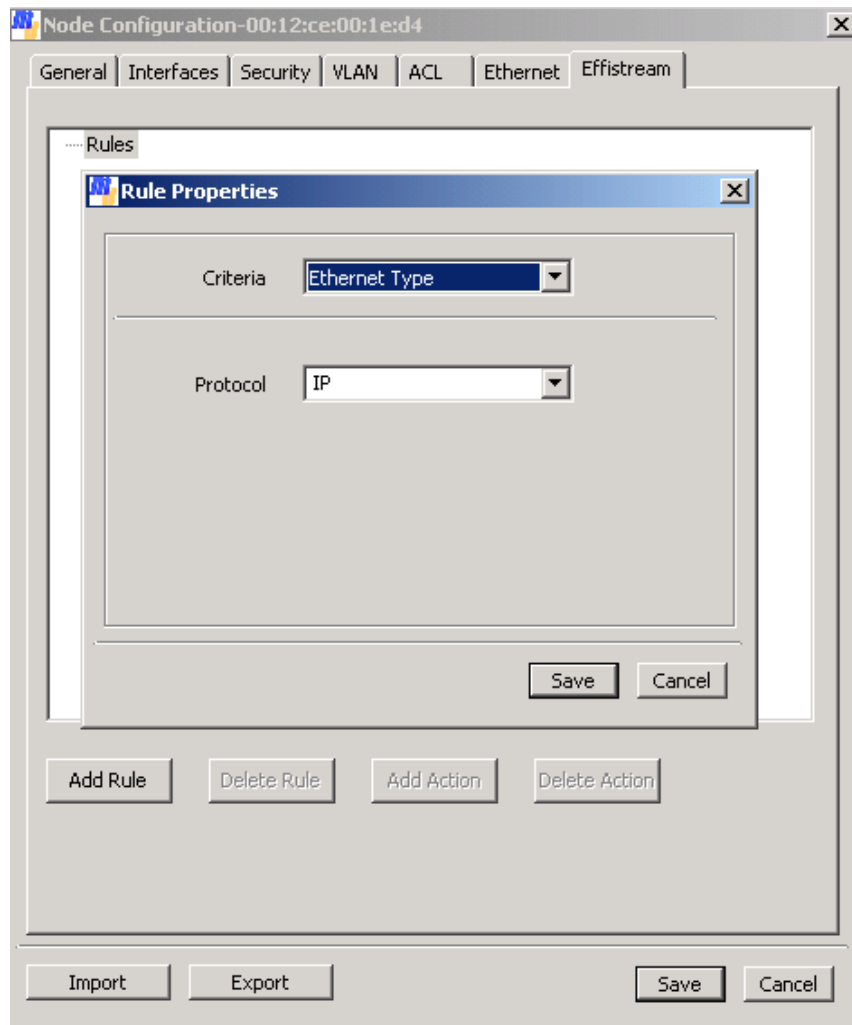


Effistream™ Settings

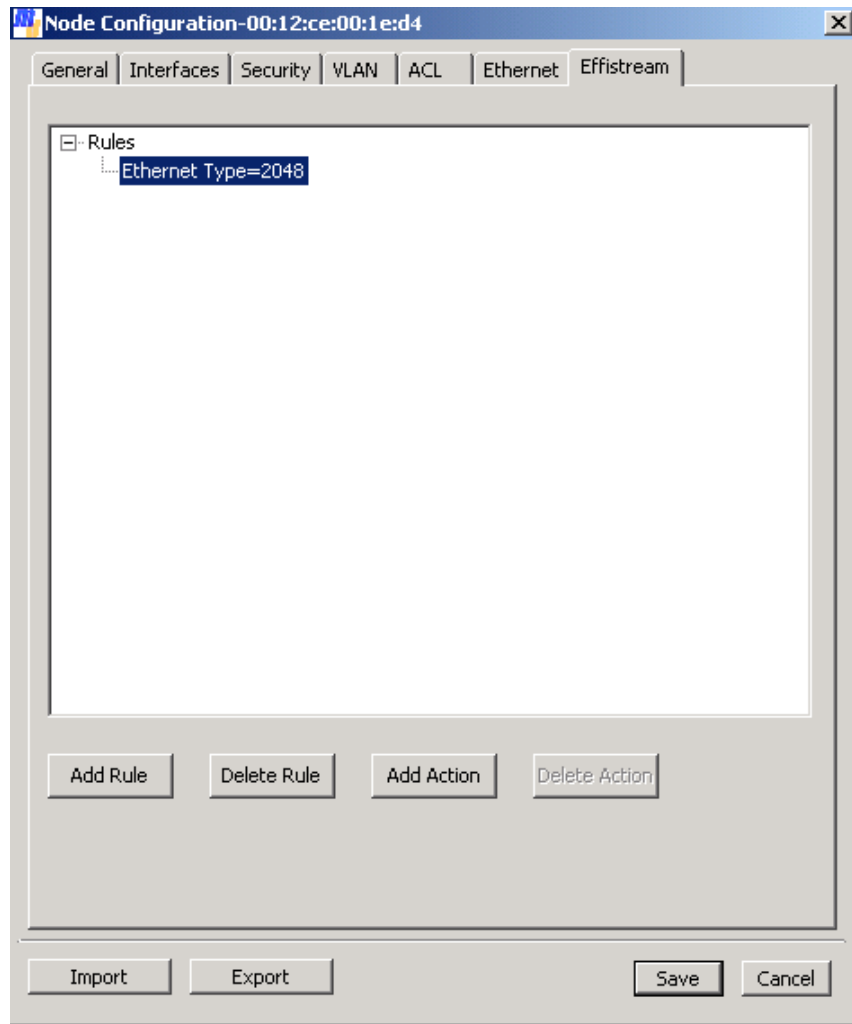
Effistream allows setting packet-based policies for QoS.

Effistream is set so that the access point can serve SVP Packets more efficiently.

1. Click the **Effistream** tab in the **Node Configuration** window.
2. Click the **Add Rules** button.
3. In the **Rule Properties** dialog box:
 - a. Let **Criteria** be **Ethernet Type**.
 - b. Set **Protocol** as **IP**.
 - c. Click the **Save** button.

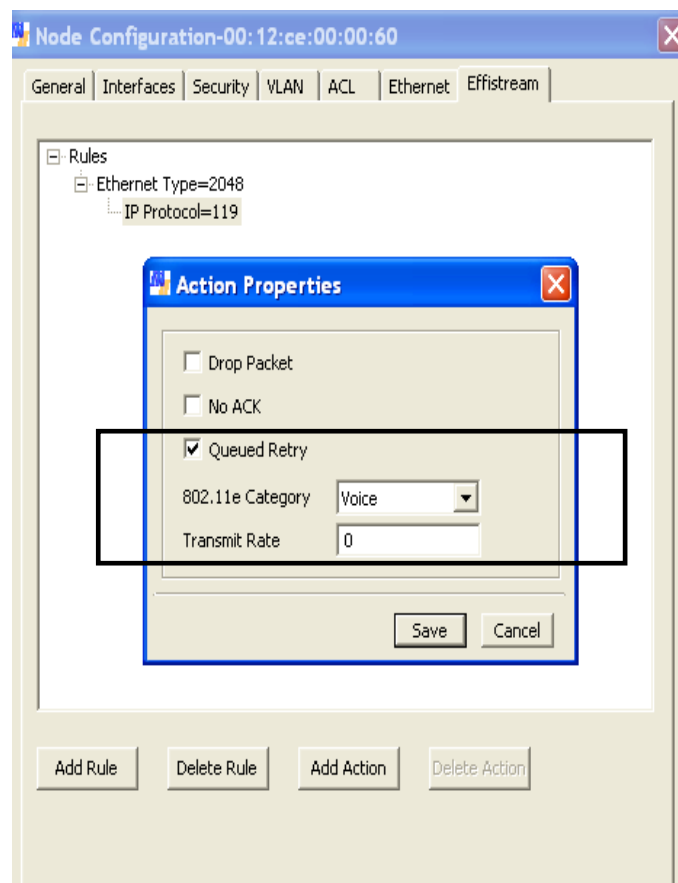


4. Select the previous rule (**Ethernet Type ...**).
5. Click the **Add Rule** button.



6. In the **Rule Properties** dialog box:
 - a. Let **Criteria** be **IP Protocol**.
 - b. In the **Protocol** field, type **119**.
 - c. Click the **Save** button.

7. Under **Rules**, select **IP Protocol=119**.
8. Click the **Add Action** button.
9. In the **Action Properties** dialog box:
 - a. Select the **Queued Retry** check box.
 - b. Set **Transmit Rate** as **0 (Auto)**.
 - c. Set **802.11e Category** as **Voice**.
 - d. Click the **Save** button to update the Node.
10. Reboot the Node for settings to take effect.



Further Assistance

For additional details on NMS installation and configuration, see http://www.meshdynamics.com/documents/MD4000_NMSGUIDE.pdf

or contact <http://www.meshdynamics.com> for support.

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