



Cisco MDS 9000 Family and EMC ECC Integration

INTRODUCTION

Customers today prefer to manage their storage area network (SAN) from a centralized management application. This approach offers many benefits, including the following:

- Minimize the number of applications that each employee needs to learn.
- Minimize the number of applications needed to help manage the SAN.
- Reduce the number of steps needed to perform an activity.
- Achieve better accountability and simplify diagnosis of any problems in the network.

To deliver these benefits and help customers to effectively manage their SAN, Cisco Systems® is working with Storage Resource Management partners to integrate the Cisco® MDS 9000 Family multilayer directors and fabric switches with third-party applications. The Cisco MDS 9000 Family provides standards-based interfaces based on Simple Network Management Protocol (SNMP) and the SNIA Storage Management Initiative Specification (SMI-S) for discovery and management functions.

CISCO MDS SAN DISCOVERY

EMC ControlCenter (ECC) storage management software supports the Cisco MDS 9000 Family multilayer directors and fabric switches starting with ECC Release 5.1.1 Service Pack 1. Release 5.1.1 support is limited to physical fabric topology discovery, port attributes, and capability to launch Cisco Fabric Manager.

ECC 5.2 provides additional support for the Cisco MDS 9509, 9506, 9216, 9216i, 9120, and 9140 switches. Current support includes physical fabric topology discovery, VSAN discovery, port attributes, zone configuration, performance monitoring, health monitoring, and capability to launch Cisco Fabric Manager (Table 1).

ECC Release 5.2 and later are recommended.

Table 1. ECC Release 5.2 Support Matrix

Function	Status
Switch Models Supported	Cisco MDS 9509, 9506, 9216, 9216A, 9216i, 9120, 9140
VSAN Topology Map	Yes
Zone Configuration	Yes
Performance Metrics	Yes
Health Monitoring	Yes
Launch CLI, Device Manager, and Fabric Manager	Yes

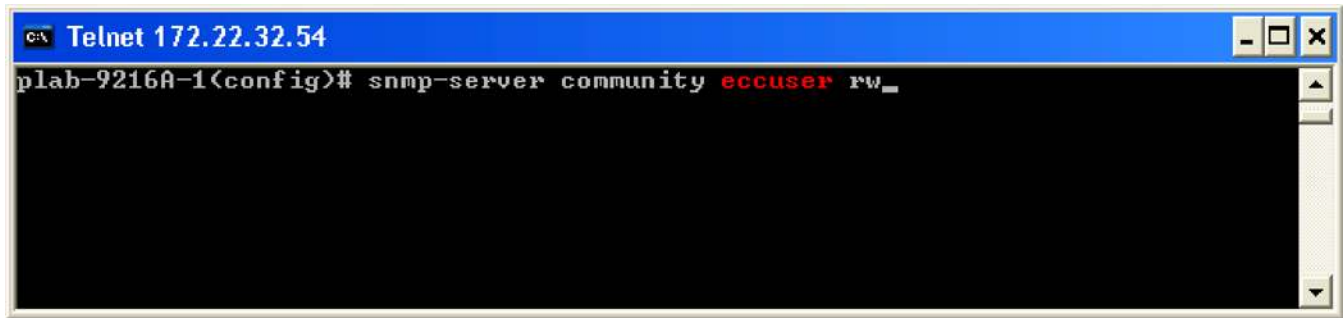
All versions of Cisco MDS 9000 SAN-OS except SAN-OS 2.0(1b) are recommended. SAN-OS 2.0(1b) has a bug that causes SNMPv1 frames to be out of format, and that has been addressed in SAN-OS 2.0(2b). SAN-OS 2.1(2b) is the latest version to be qualified by EMC.

Discovery Steps

ECC uses SNMP to discover the Cisco MDS 9000 switches. As a security measure, default Cisco MDS configuration does not configure any SNMP community strings. Figure 1 shows the Cisco MDS command-line interface (CLI) command to configure an SNMP community string “eccuser” with read write (rw) privileges.

Note: ECC requires an EMC SAN Manager license to discover the Cisco MDS 9000 switches.

Figure 1. CLI Command to Configure Community String

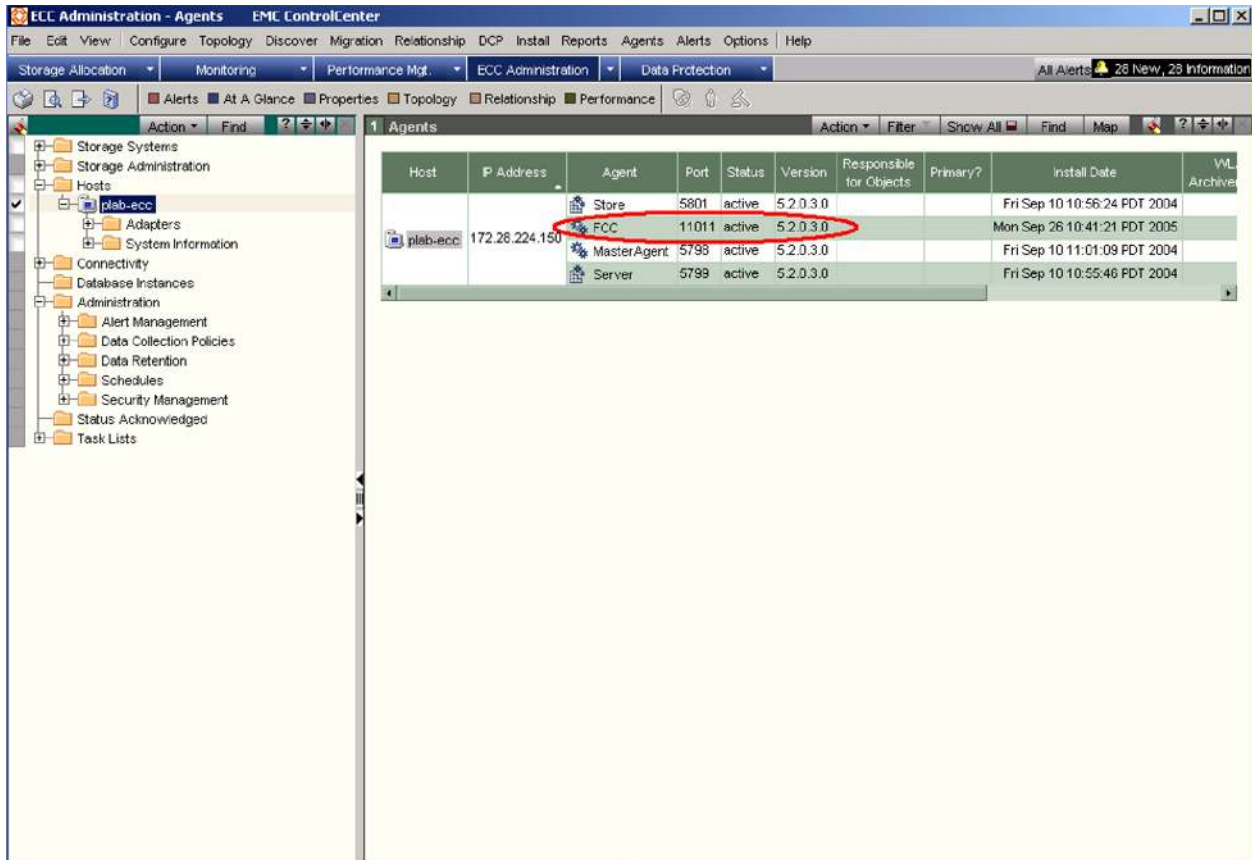
A screenshot of a Telnet session window. The title bar reads "Telnet 172.22.32.54". The main window shows a command-line interface with the prompt "plab-9216A-1(config)#". The command "snmp-server community eccuser rw_" is entered and highlighted in red. The cursor is at the end of the command. The window has standard Windows-style window controls (minimize, maximize, close) in the top right corner and a scroll bar on the right side.

Tip: To use ECC zone configuration functionality, the community string has to have read write privileges.

Recommendation: Keep SNMP community string consistent across all the Cisco MDS switches in a physical fabric.

ECC uses the FCC agent to discover the Cisco MDS 9000 switches. To verify that the FCC agent is running, select Agents under the ECC Administration menu. The status of the FCC agent should say “active” as shown in Figure 2.

Figure 2. ECC FCC Agent Status



To perform the discovery of the Cisco MDS 9000 switches in ECC, select the Connectivity option under the Discover menu.

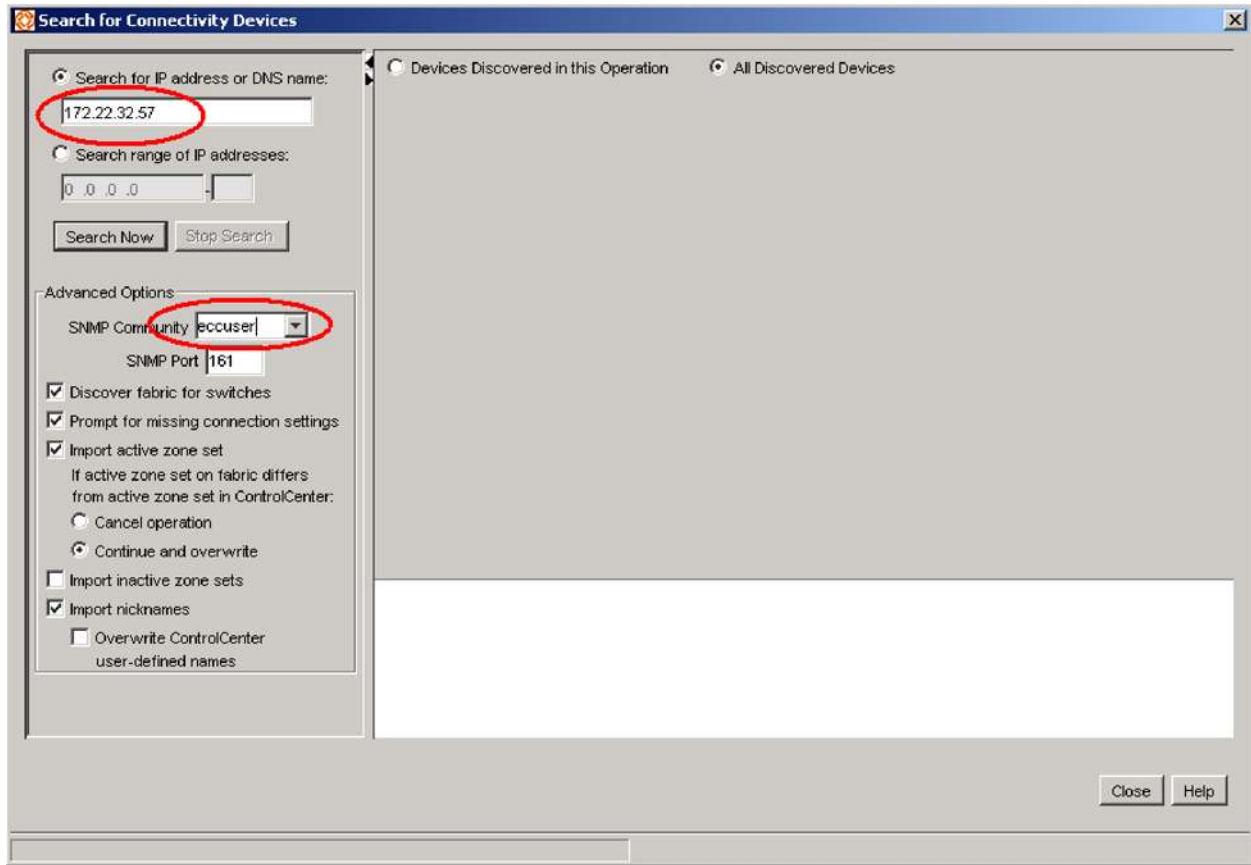
Note: If the Connectivity option is not available, verify

- EMC SAN Manager license information is valid
- FCC agent is active

As shown in Figure 3, enter the management IP address and the SNMP community string, and select the “Search Now” button.

Note: The community string used at the time of switch discovery is later used by ECC to do any write operations. If a community string with read-only privilege is used at the time of discovery, any attempt to provision (zone configuration) the switch will fail with an ambiguous message.

Figure 3. ECC Discovery Interface



To discover the Cisco MDS SAN, provide IP address of a Cisco MDS switch and ECC will discover all the Cisco MDS 9000 switches in the physical fabric. ECC does not support aliases, and if any aliases are defined for devices attached to the Cisco MDS switches, ECC discovery will prompt a warning message as shown in Figure 4. ECC has plans to support aliases in a release due in 2006.

Figure 4. ECC Alias Warning Message



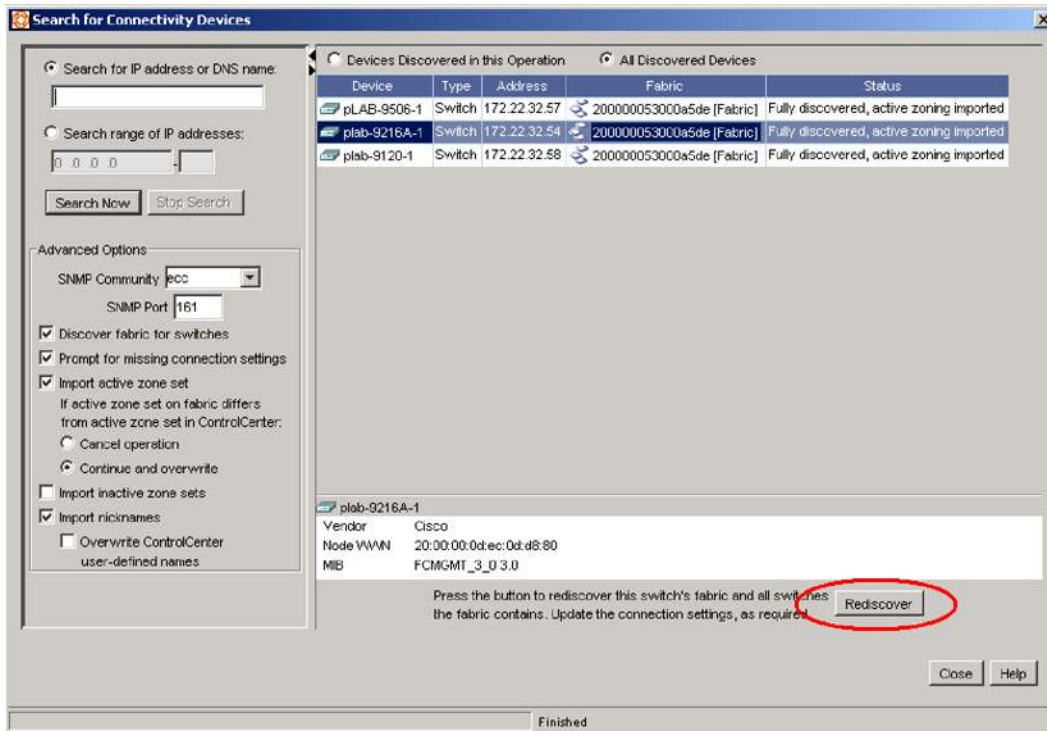
Note: Nicknames are a non-standard way of naming devices in a McDATA fabric. The ECC nickname feature is not applicable for the Cisco MDS switches.

Figure 5 shows the summary view of the discovered Cisco MDS 9000 switches. ECC does not update fabric topology based on events such as zone configuration changes. If changes are made to the SAN using another tool such as Cisco Fabric Manager or Cisco CLI, those changes reflect in ECC only after the FCC agent rediscovers based on the agent policy.

To rediscover a fabric, select a switch from the right panel of the connectivity devices window as show in Figure 5 and select the Rediscover button.

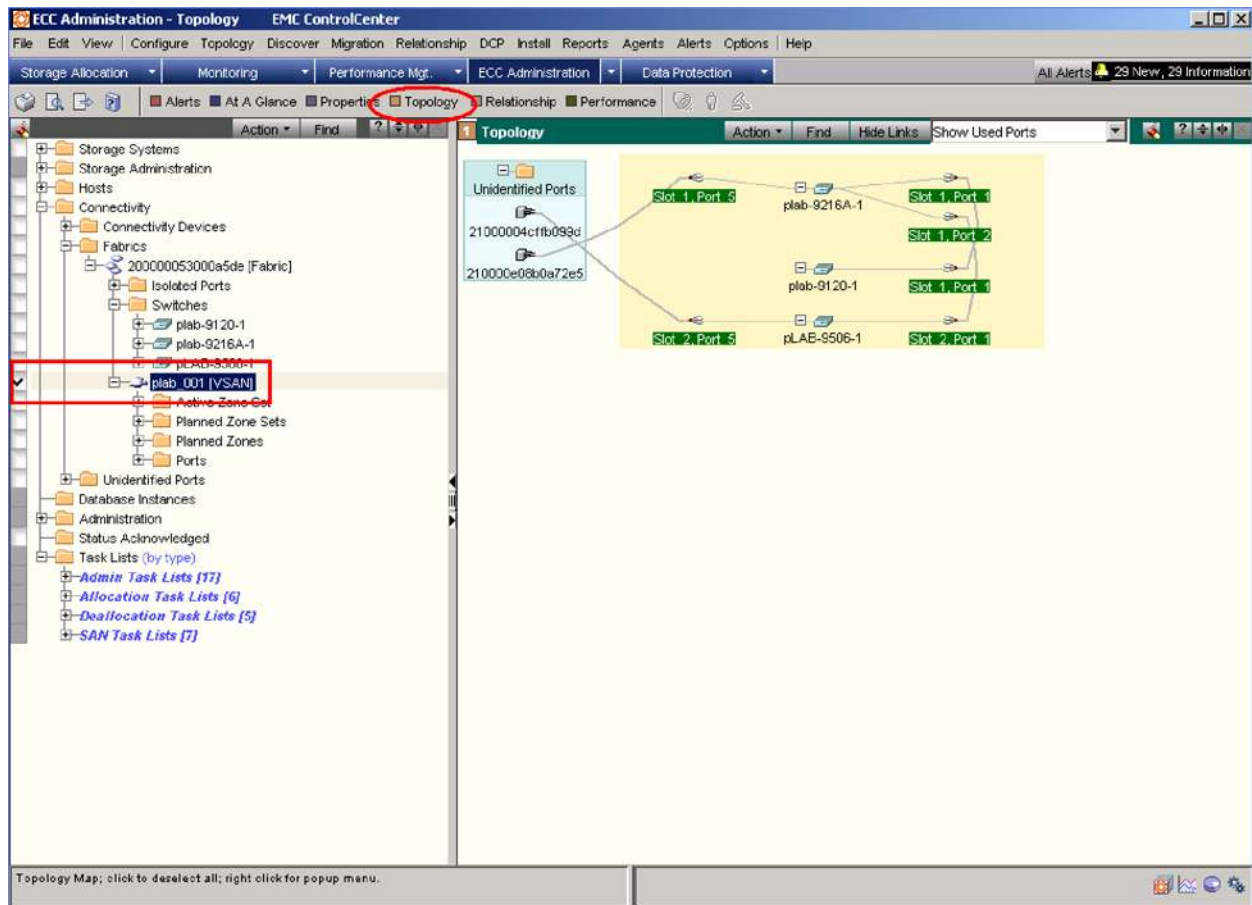
Tip: FCC agent policy should never be set to less than 15 minutes. For a large fabric, leave the default policy intact.

Figure 5. Discovered Cisco MDS 9000 Switches Information



The discovered Cisco MDS topology can be viewed as shown in Figure 6 by selecting the VSAN and clicking on the Topology button in the toolbar.

Figure 6. Cisco MDS VSAN Topology View



Configuring ECC to Launch Cisco Fabric Manger

Cisco and EMC are working together to deepen the integration between the Cisco MDS 9000 switches and ECC, which currently provides limited support for the Cisco MDS 9000 Family. For more comprehensive support, use the Cisco Fabric Manager to manage the Cisco MDS 9000 Family. The ECC console can be configured to launch Cisco Fabric Manager for each Cisco MDS 9000 switch discovered at the click of the right mouse button.

Note: Cisco Fabric Manager needs to be installed on the machine running the ECC console. The Cisco Fabric Manger server does not have to be running on the same machine. The Cisco Fabric Manger client can connect to a Cisco Fabric Manager server running on a different machine.

Note: This configuration has to be done for each ECC console installed and not on the ECC server.

By default the ECC console is installed under C:\Program Files\ECC\console on a Windows machine. Select the mgmttool.properties under C:\Program Files\ecc\console\class\properties\mgmttool

Tip: The ECC server install also has a mgmttool.properties under\class\properties. Do not make the changes to that file.

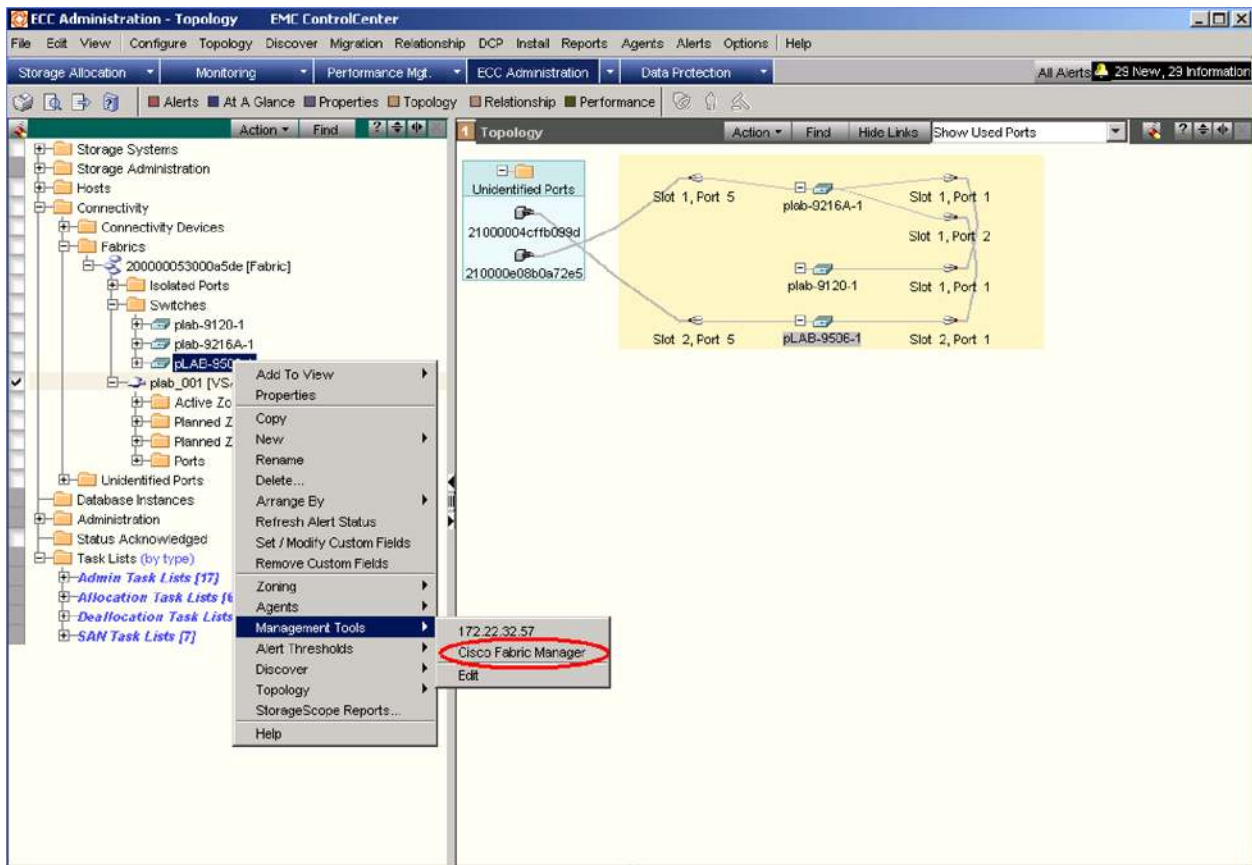
Recommendation: Make a backup copy of the mgmttool.properties file prior to making changes listed in Table 2.

Table 2. Changes to mgmttool.properties File

Properties	Modified Properties
ciscofm.install=no	ciscofm.install=yes
ciscofm.path=[ENTER PATH]	ciscofm.path=C:\Program Files\Cisco Systems\MDS 9000\bin\ Note: By default, Cisco Fabric Manager is installed in the following directory; please verify your specific install location path.
ciscofm.target=[ENTER TARGET]	ciscofm.target=FabricManager.bat Note: The FabricManager.bat file is under the bin directory; please verify that the file exists.

Save changes to the mgmttool.properties file, and restart the console. Select a Cisco MDS 9000 switch, right click, select Management Tools, and launch Cisco Fabric Manager as shown in Figure 7.

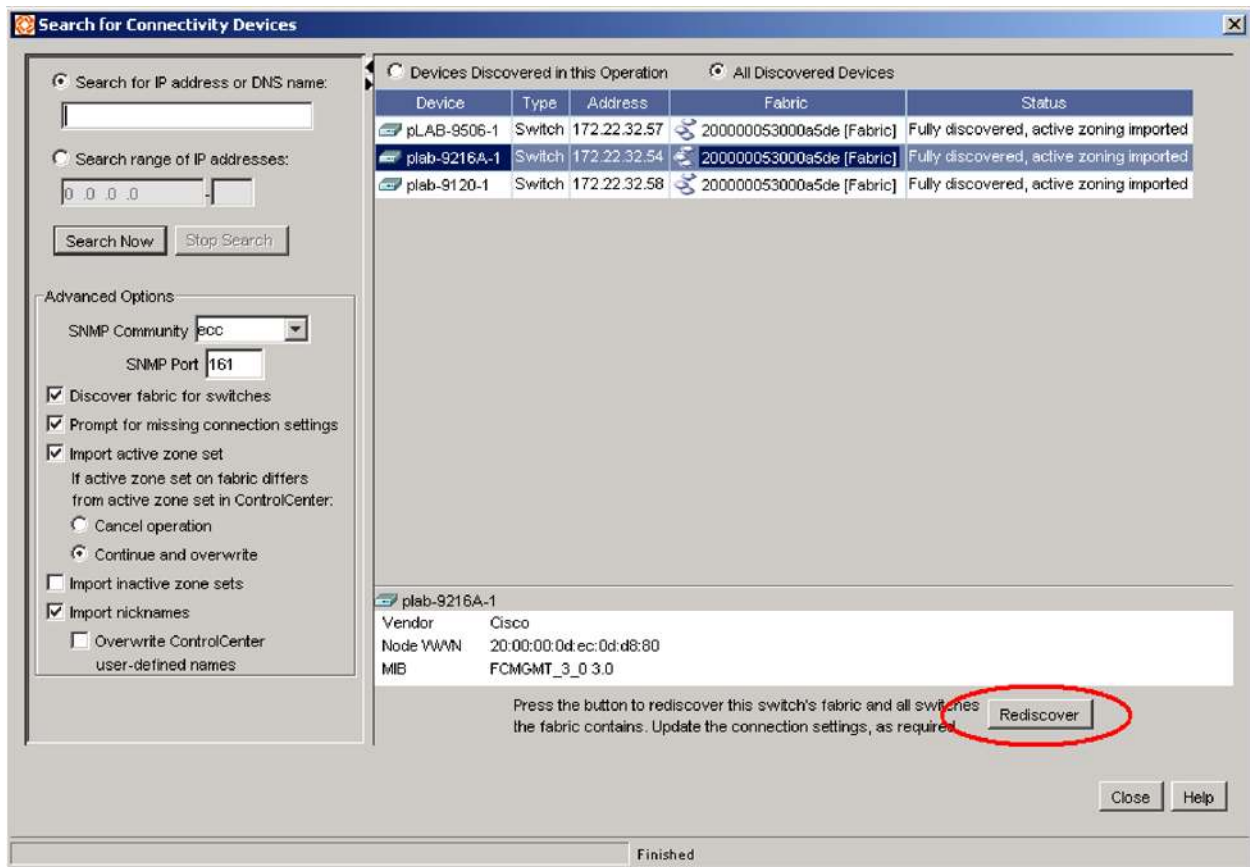
Figure 7. Launch Cisco Fabric Manager from ECC Console



VSAN PROVISIONING (ZONE CONFIGURATION)

Prior to performing any zone configuration changes using ECC, it is good practice to rediscover the fabric. To do so, select a switch from the right panel of the connectivity devices window as show in Figure 8 and select the *Rediscover* button.

Figure 8. Discovered Cisco MDS 9000 Switches Information



Zone Configuration:

1. Right click *Planned Zones*, select *New, Zone* as show in Figure 9.
2. Under *Available Ports*, select the VSAN, and the zoning type. **Only WWN Zoning is supported for the Cisco MDS 9000 switches.**

Zone Set Configuration:

1. Right click *Planned Zone Sets*, select *New, Zone Set* as shown in Figure 10.
2. Select the "Activate Zone Configuration Immediately" if satisfied with the Zone Set.

Upon successful zone set activation, the active zone set will be populated under *Active Zone Set*.

Figure 9. Zone Configuration

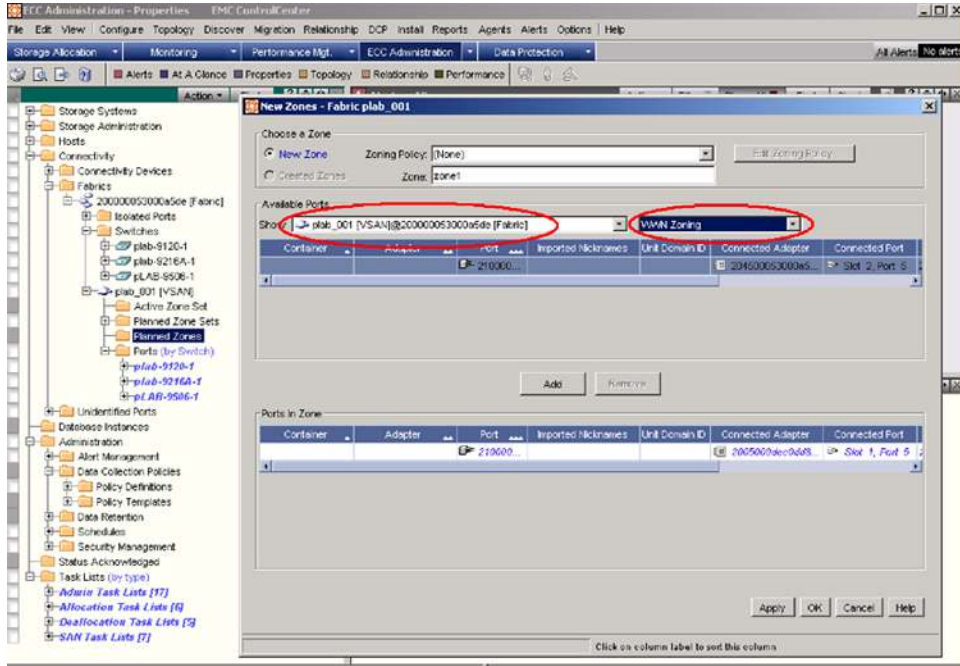
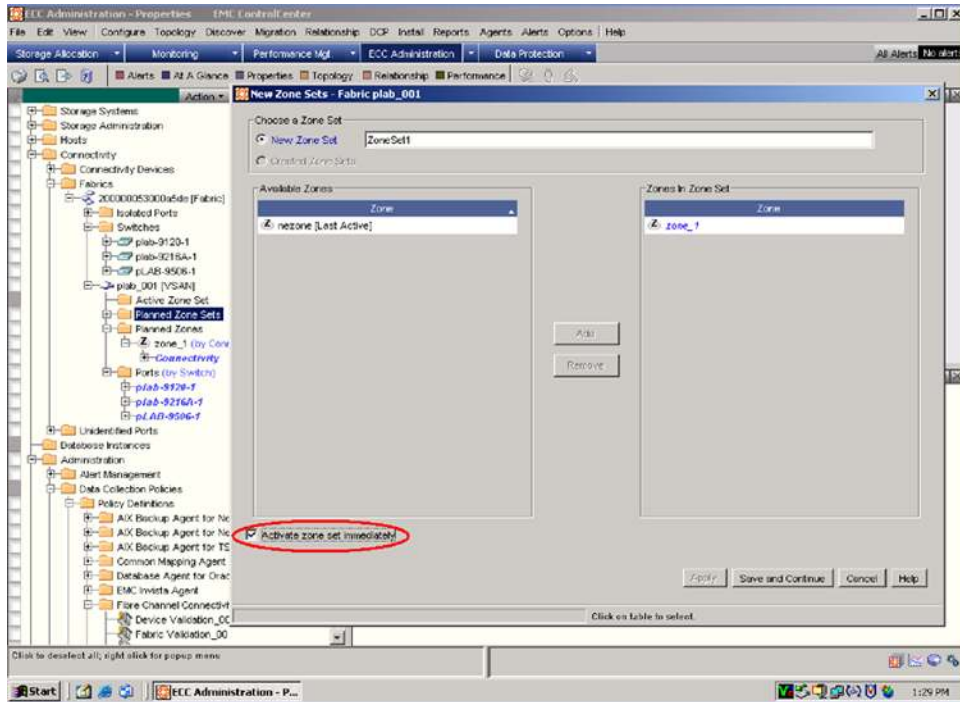


Figure 10. Zone Set Configuration



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