Overview

This chapter provides an overview of the Cisco 12000/10720 Routers and the Cisco 12000/10720 Router Manager application.

The Cisco 12000 Series Routers are part of Cisco's premier routing product family and play an integral part in the network architecture. The Cisco 12000 Series Routers were designed and developed for the core of service provider and enterprise IP backbones.

The Cisco 10720 Router provides IP services to users at optical speeds at the edge of their networks. The Cisco 10720 Router provides network access using Ethernet and Dynamic Packet Transport (DPT) technology for optical connectivity. Each router is equipped with one uplink card and one Ethernet access card.

Figure 1-1 shows a typical Cisco 12000 Series Routers deployment. The Cisco 12000/10720 Router Manager application supports the entire range of the Cisco 12000 Series Routers like: Cisco 12008, Cisco 12012, Cisco 12016, Cisco 12404, Cisco 12406, Cisco 12410, Cisco 12416 and the Cisco 10720 Router.
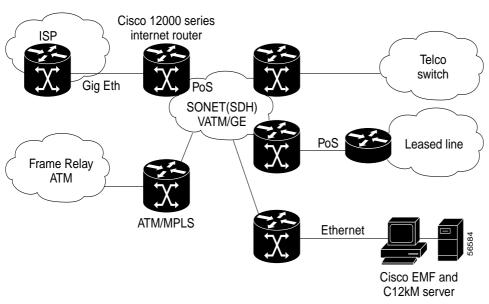
Figure 1-1   Typical Cisco 12000 Series Router Deployment

The Cisco 12000/10720 Router Manager application works in conjunction with the Cisco Element Management Framework (Cisco EMF) application to provide element management for the Cisco 12000 Series and Cisco 10720 Routers. The Element Manager includes FCAP management.

This chapter describes:

- Cisco Element Manager Framework (Cisco EMF)
- Cisco 12000/10720 Router Manager
- Key Features of Cisco 12000/10720 Router Manager
- Accessing Online Help

Cisco Element Manager Framework (Cisco EMF)

Cisco EMF is an open carrier class management system, designed to integrate with third party products and proprietary operational support systems.

Many different management protocols, both standards-based and proprietary, are supported by Cisco EMF in a transparent manner. New network devices are managed instantly and new management applications can be quickly developed to meet new requirements.

Cisco EMF systems architecture provides a distributed network management solution designed to manage large-scale networks. Cisco EMF provides the performance required within the logical and physical architecture and provides user interfaces that support the need to perform mass operations to large domains within the overall network.

In addition, because of the distributed nature of Cisco EMF, administration tools are provided to "manage" the management system. Refer to the *Cisco Element Management Framework User Guide Release 3.2 (78-12536-01)* for further details.

Map Viewer is the primary entry point into the Cisco 12000/10720 Router Manager software. When Map Viewer is launched, the application is displayed corresponding to the highlighted map icon in the hierarchy pane.

You can easily monitor the status of all network elements or abstractions of elements contained within the network and you can launch any additional applications available. See "Map Viewer (Viewer)" section on page 3-7 for further details.

Cisco 12000/10720 Router Manager

The Cisco 12000/10720 Router Manager application is a carrier class Element Manager (EM) that allows you to manage Cisco 12000/10720 Routers. Cisco 12000/10720 Router Manager adds custom windows and modeling behavior to the standard Cisco EMF to allow the management of the Cisco 12000 Series and Cisco 10720 Routers.

Note   This Guide describes the concepts and operating instructions for the Cisco 12000/10720 Router Manager. Refer to the *Cisco Element Management Framework User Guide Release 3.2 (78-12536-01)* for further details on Cisco EMF.

Key Features of Cisco 12000/10720 Router Manager

Cisco 12000/10720 Router Manager features include the following:

- Maps for Chassis representation of Cisco 12000/10720 Router objects

- Cisco 12000/10720 Router Manager windows and wizards—Eliminate the need for operators to have detailed Cisco IOS software and SNMP-based knowledge for individual interface or system parameter commands

- Cisco 12000/10720 Router Manager deployment—Eases deployment of large networks by enabling template-based element configuration, operations, administration, and maintenance

    - Pre-deployment of chassis, GRP and line cards

    - AutoDiscovery—Automatically discovers existing Cisco 12000/10720 routers

- Comprehensive fault management system—For chassis, line cards and interfaces

- Configuration Backup/Restore using RME—Uses Resource Manager Essentials to back up and save the running configuration of a device and its modules so that if a hardware failure occurs, you can restore configuration

- Configuration Editor—Uploads and saves the running configuration on a device after editing

- Configuration operations—Performs in bulk to numerous Cisco 12000/10720 routers

- Cisco 12000/10720 Router Manager Management—Fault, Configuration, Accounting and Performance (FCAP) Element Management of Cisco 12000 Series Routers using Cisco EMF windows

- Interface profiles—Enables you to apply the same parameters to a large number of objects at one time

- Layer 3 QoS support—Includes Committed Access Rate (CAR), Weighted Random Early Detection (WRED), WRED ToFab and Modified Deficit Round Robin (MDRR)

- Line cards and interfaces—Supports various line cards and interfaces, such as packet-over-SONET (POS), Asynchronous Transfer Mode (ATM), Digital Signal 3 (DS3), Dynamic Packet Transport (DPT), Spatial Reuse Protocol (SRP) and Gigabit and Fast Ethernet

- Cisco IOS releases—Easily downloads new software releases from Cisco 12000/10720 Router Manager onto devices using RME

- ATM Connections Management—Uploads existing PVCs and associated QoS profiles from any device into the Cisco 12000/10720 Router Manager and also manual deployment and management of PVCs and SVCs

- Subchassis discovery—Determines the physical chassis contents, such as line cards and interfaces

- Rediscover Line Cards after online insertion or removal (OIR)

- BGP and OSPF Protocols Management—Configuration and Fault Management for BGP and OSPF routing protocols and uploading BGP Address Family configurations

- Route Processor Redundancy (GRP and PRP) support for chassis management

- Complete support for IP Routing, TCP and UDP Status Management

- MPLS Management—Fault Management and Performance Management for MPLS Interfaces and Sub-Interfaces, Fault Management for LDP Entities and MPLS Tunnels, Configuring MPLS and VRF Traps

- VRF Management—Configuration of VRFs in the EM. Creation of VRFs in the device through EM and Association of VRFs to Interfaces. Fault Management for VRFs

- VLAN Management—Configuration and performance monitoring of the VLAN sub-interfaces

- VLAN Synchronization—Uploads the existing VLAN information from the network into Cisco 12000/10720 Router Manager

Accessing Online Help

Each window has the option to click the Help icon, or to select **Help** from the menu bar. A list of help topics is displayed.