



Introduction

This document presents a Network Management System (NMS) architecture and implementation guidelines intended to facilitate the creation of a framework for monitoring and managing a generalized wholesale dial solution.

No single NMS component assumes all responsibilities within the environment. Instead, several components are integrated to ensure the wholesale dial solution is comprehensively managed.

This brief chapter summarizes the purpose, scope, assumptions, and intended audience of this document. The remainder of the document is split into two parts:

- Wholesale Dial Solution Management
- Wholesale Dial NMS Case Study

Purpose

This document has the following chief goals:

- To present an architecture for managing Cisco-based wholesale dial environments in the context of the general International Organization for Standardization (ISO) Open System Interconnection (OSI) Network Management System (NMS) model.
- To illustrate how such an architecture can be used to monitor and manage the typical components in a wholesale dial network.

Scope

This document addresses the architectural framework for a wholesale dial NMS environment. It provides implementation recommendations for several selected Cisco and third-party NMS tools.

This document is not a task-oriented implementation study guide. Instead, the information presented is intended to illustrate a framework for managing wholesale dial to help you build a scalable and manageable NMS infrastructure. Where applicable, elements of various NMS tools, relevant management information base (MIB) objects, and other relevant application features are discussed to help guide readers toward effective NMS deployment.

Related Documents

More detailed information and guidance can be found at the following reference sites and documents.

Technical References and Support

For additional information refer to the following support documents:

- Wholesale Dial Resources—Provides links to technical documents related to wholesale dial Internet access services.
<http://mccain.ots.utexas.edu/coe/wholesaledial/index.html>
- Technical Assistance Center—Provides technical support information about Cisco technologies. Locate your technology of interest from a list of available technology pages, which are continually updated by Cisco TAC engineers.
<http://www.cisco.com/tac>
- SNMP Technology Support Pages—Provides an overview of SNMP, network design tips, implementation and operation guidelines, and links to suggested reading.
http://www.cisco.com/cgi-bin/Support/PSP/psp_view.pl?p=Internetworking:SNMP
<http://www.cisco.com/warp/public/535/3.html>
<http://www.faqs.org/faqs/snmp-faq/>
- CiscoWorks 2000 TAC Support Page—Describes how to implement, operate, and troubleshoot CiscoWorks 2000.
http://www.cisco.com/cgi-bin/Support/PSP/psp_view.pl?p=Software:CiscoWorks2000
- Access Technology Software Center—Provides the firmware for modem upgrades.
<http://www.cisco.com/kobayashi/sw-center/sw-access.shtml>
- Increasing Security on IP Networks—Addresses network-layer security issues.
<http://www.cisco.com/univercd/cc/td/doc/cisintwk/ics/cs003.htm>
- Carnegie Mellon CERT® Security Improvement Modules—Provides information about security management.
<http://www.cert.org/security-improvement/>

Internetworking Solutions Guides

For additional information refer to the following support documents:

- Basic Dial NMS Implementation Guide
<http://www.cisco.com/univercd/cc/td/doc/cisintwk/intsolns/dialnms/index.htm>
- Cisco AS5x00 Case Study for Basic IP Modem Services—Describes how to configure, verify, and troubleshoot basic IP modem services.
<http://www.cisco.com/univercd/cc/td/doc/cisintwk/intsolns/as5xipmo/index.htm>
- Cisco AAA Implementation Case Study—Describes how to design, implement, and operate basic Cisco IOS AAA security and accounting functions.
<http://www.cisco.com/univercd/cc/td/doc/cisintwk/intsolns/aaaisg/index.htm>

- Access VPN Solutions Using Tunneling Technology—Describes how to configure, verify, and troubleshoot access VPN solutions. See also Access VPDN Dial-in Using L2TP.
<http://www.cisco.com/univercd/cc/td/doc/cisintwk/intsolns/index.htm>

Freeware

For additional information refer to the related sites:

- The UCD-SNMP Home Page—Provides an overview of UCD-SNMP, links to the FTP site, recent news, documentation, bug reports, mailing lists, and where to go for more information.
<http://ucd-snmp.ucdavis.edu/>
- Multi Router Traffic Grapher (MRTG) Product Site—Provides an overview of MRTG, links to the FTP site, documentation, frequently asked questions, mailing lists, and contact information.
<http://ee-staff.ethz.ch/~oetiker/webtools/mrtg/mrtg.html>

Cisco Product Documentation

For additional information refer to the following support documents:

- CiscoWorks 2000 Documentation Set—A collection of configuration guides and reference manuals.
<http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cw2000/index.htm>

Intended Audience

This document is intended for but not restricted to the following audience

- Cisco Professional Services staff
- Cisco Global Solutions Engineering (GSolE) staff
- Cisco training staff
- Cisco Technical Assistance Center (TAC) support staff
- Customer and service provider technical staff

This document assumes that readers have a working knowledge of the following topics:

- Cisco IOS system configuration
- Cisco network management solution (such as CiscoWorks 2000) management
- Oracle database management
- HP OpenView Network Node Manager operations
- Sun Microsystems Solaris OS
- Dial-based connection implementation
- Authentication, Authorization, and Accounting (AAA) security basics and Cisco IOS implementation
- *Remote Authentication Dial-in User Service (RADIUS)*
- *Terminal Access Terminal Access Controller Access Control System Plus (TACACS+)*

