

# Cisco Assurance Management Solution 1.0

## Solution Overview

Cisco® Assurance Management Solution (AMS) delivers service providers and large enterprises real-time centralized monitoring and root-cause analysis, integrated with Cisco Active Network Abstraction (ANA). Built using Cisco ANA and IBM Tivoli technologies, Cisco AMS provides the key building blocks for flexible deployment of end-to-end assurance management for complex, multivendor, multitechnology networks. Further, Cisco provides several prepackaged professional services to implement and tailor Cisco AMS deployments to your specific requirements.

## Features and Benefits

Cisco AMS uses Cisco and IBM Tivoli technology to provide the following features and benefits:

- **Root-Cause Analysis:** Network faults are visualized with real-time analysis of the root cause, reducing the time needed to troubleshoot network issues. Consequential fault events are automatically correlated to the root-cause fault event in real time.
- **Manager of Managers:** This feature enables data from multiple tools to be managed under a single console in Cisco AMS, improving the effectiveness of the network operations environment.
- **Real-time Management Views:** Operations staff and executives have “anytime, anywhere” access to device and network status and actionable information. Highly customizable dashboards offer a wide range of images, maps, charts, tables, and event lists to help provide immediate visibility of the network status.
- **Incremental Deployment:** The solution is packaged to facilitate incremental use of Cisco AMS functions, integrated with Cisco ANA, to protect your investment in existing systems.
- **Extensibility:** Cisco AMS can easily be extended with the Layer 3 Multiprotocol Label Switching (MPLS) VPN fault monitoring and service path tracing features of Cisco Service Fault Isolation. The solution can also easily be extended to include fault and assurance functions of Tivoli Netcool or Cisco Info Center.

## Solution Architecture

The basis of Cisco AMS is the use of the breakthrough network mediation solution, Cisco ANA. Purchased separately, Cisco ANA is a next-generation platform designed to overcome the current problems associated with operations support system (OSS) implementations, which include the following:

- **Infrastructure is disjointed:** Most current OSSs are highly complex back-end systems combining disparate sets of point solutions from different vendors.
- **Deployment is human-intensive:** Adding new elements and devices to the network requires a great deal of difficult and time-consuming hand coding and other low-level work.
- **Operation is costly:** Industry analysts say that 50 to 70 percent of all spending on an OSS goes into systems integration and maintenance of inherited systems.

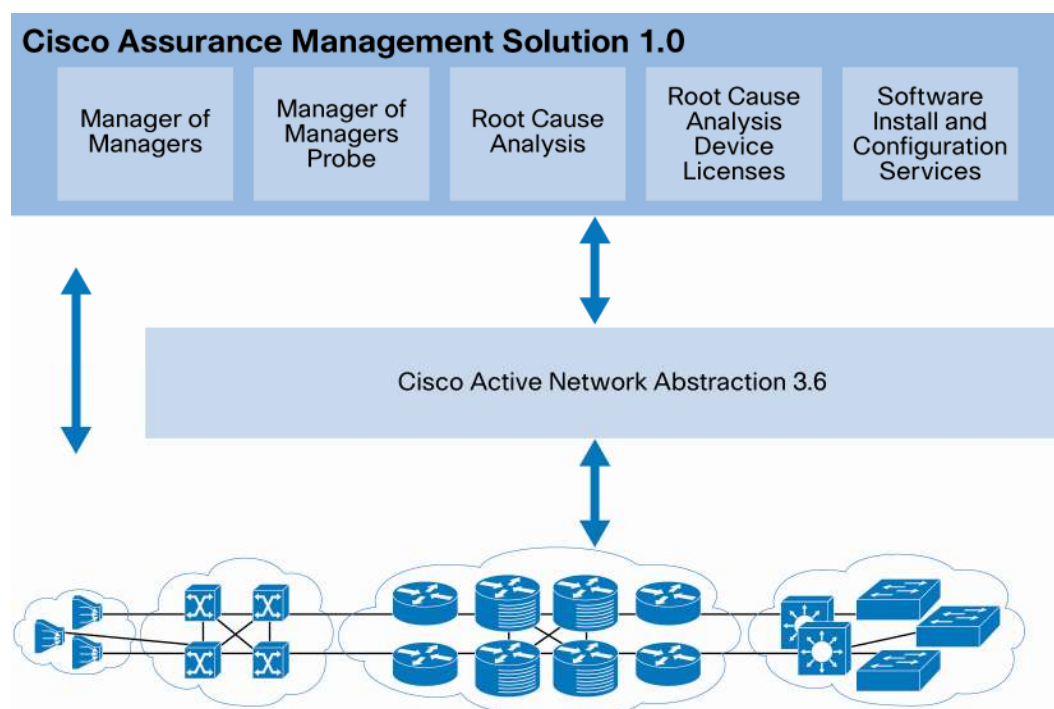
- Implementation is difficult: Integration work is highly specialized, dependent on costly and scarce programming personnel or integration services.

Cisco ANA is a fully distributed OSS mediation platform that abstracts the network, its topology, and its capabilities from the physical elements. Cisco ANA provides full visibility into the network topology, the services created on top of the network, and the status of the whole system. By providing a common information model across physical network elements, the services those elements provide, and the network and its services, Cisco ANA provides a strong platform for service activation and provisioning, service assurance, and for network management itself.

The integration of Cisco ANA and Cisco AMS, implemented by Cisco Advanced Services, facilitates end-to-end service assurance with near real-time centralized monitoring and root-cause analysis of multivendor and multitechnology networks. (See Figure 1.) Incorporating technology from the IBM Tivoli portfolio, Cisco AMS helps you manage IP-based services more effectively while dramatically reducing implementation and maintenance costs. It extends the existing Cisco Info Center solution to provide trouble isolation and root-cause analysis. It enables you to change and evolve network devices and configurations without having to change your service management and OSS applications.

The combination of Cisco ANA and Cisco AMS is available in a variety of deployment packages to help ensure a high degree of investment protection. If you currently use Cisco ANA, Cisco Info Center, or Tivoli Netcool, you can purchase only those new components you require.

**Figure 1.** Integration of Cisco AMS with Cisco ANA



#### Integration with and Dependency on Cisco ANA

Cisco AMS is integrated with and requires a separate license for Cisco ANA for all managed devices. Integration between Cisco ANA and Cisco AMS, implemented by Cisco Advanced Services, includes the following:

- A right-to-use (RTU) license for network fault isolation features is shipped as part of Cisco ANA.
- Event and alarm data collected by Cisco ANA is automatically forwarded to Cisco AMS for consolidation and correlation.
- Events and data collected by Cisco ANA are automatically displayed using the Cisco AMS Manager of Managers user interface:
- Network fault correlation of Cisco AMS root-cause analysis features is forwarded to Cisco AMS Manager of Managers.
- Cisco ANA correlated events can be forwarded to multiple OSS systems.
- Cisco ANA correlated alarms maintain their parent relationship.
- Cisco AMS Manager of Managers can receive updates from Cisco ANA.

### Extension of Cisco AMS Features with Cisco MPLS Service Fault Isolation

Cisco AMS can be extended through a Cisco MPLS Service Fault Isolation add-on package to provide:

- Logical inventory information specific to VPNs
- Discovery and monitoring of MPLS Traffic Engineering (MPLS-TE)
- Discovery and monitoring of pseudo wire end-to-end emulation tunnels
- Service impact analysis
- MPLS Service view with visibility into specific VPNs and information about the business elements they contain
- Multipath tracing capability using the PathTracer tool
- Support for Layer 3 VPN services (based on the Border Gateway Protocol/MPLS VPN as defined in RFC2547), PWE3 (RFC3985/Luca Martini drafts), and MPLS-TE (based on RFC 2702 with RSVP for signaling as described in RFC 3209)

### Solution Specifications

Cisco AMS is packaged in the following components:

- Cisco AMS Manager of Managers: Table 1 lists specifications for IBM Tivoli Netcool/OMNIbus Object Server, Netcool/Webtop, Netcool/OMNIbus SNMP EMS Probe, and Netcool Read/Write Client.
- Cisco AMS Root-Cause Analysis (RCA) Component A: Table 2 lists specifications for IBM Netcool/Precision IP RCA server and Netcool Precision Topology server.
- Cisco AMS RCA Component B: Makes use of existing Cisco ANA implementations. Requirements for Cisco ANA can be found at <http://www.cisco.com/go/ana>.

**Table 1.** Solution Requirements for Cisco AMS Manager of Managers (Webtop, Object Server, Read/Write Client, and SNMP EMS Probe)

Description	Specifications
<b>Hardware</b>	<ul style="list-style-type: none"> <li>• Pentium IV, 2.66 MHz processor or better</li> <li>• DVD drive</li> <li>• Minimum screen resolution of 1024x768 pixels</li> <li>• True Color (32 bit) setting</li> </ul>
<b>Operating system</b>	Solaris 9 or 10
<b>Memory</b>	2 GB RAM

<b>Processor</b>	Pentium IV, 2.66 MHz processor or better (not provided by IBM)
<b>Disk space</b>	4 GB free disk space
<b>Database software included</b>	All necessary database software is included
<b>Browser supported</b>	<ul style="list-style-type: none"> <li>• OMNibus Netscape 7.x, Internet Explorer 6, Mozilla Firefox 1.x</li> <li>• Webtop Internet Explorer 6, Mozilla Firefox 1.07 and 1.5</li> </ul>

**Table 2.** Solution Requirements for Cisco AMS RCA Component A (Precision IP RCA Server, Precision Topology Server)

Description	Specifications
<b>Hardware</b>	<ul style="list-style-type: none"> <li>• Sun MicroSolutions UltraSPARC</li> <li>• DVD drive</li> <li>• Minimum screen resolution of 1024x768 pixels</li> <li>• True Color (32 bit) setting</li> </ul>
<b>Operating system</b>	Solaris 9 or 10
<b>Memory</b>	4 GB RAM
<b>Processor</b>	SunFire v210 or better
<b>Disk space</b>	8 GB free disk space
<b>Database software included</b>	MySQL database software
<b>Browser supported</b>	Internet Explorer 6, Mozilla Firefox 1.0 and 1.5

## Ordering Information

To help protect your existing investment, Cisco AMS has a high degree of ordering flexibility based on the following environments.

### No Existing System

Table 3 lists the mandatory ordering information for Cisco AMS for users without a license for Cisco Info Center/Netcool Object Server. Note that the ordering information is dependent upon the size of the network, and a separate Cisco ANA license is required.

**Table 3.** Cisco AMS Ordering Information

Part Numbers	Description
<b>AMS-SOFTWARE</b>	Cisco Assurance Mgmt Solution 1.0 (Top Level Part Number)
<b>AMS-1.0-RCA-A-K9</b>	Cisco Assurance Mgmt Solution 1.0 RCA Software
<b>AMS-1.0-MOM-K9</b>	Cisco Assurance Mgmt Solution 1.0 Manager of Managers and Probe Software
<b>Order Right to Use (RTU) licenses</b>	See Table 8

### Cisco Info Center or Netcool/OMNibus Object Server Installed

Table 4 lists the mandatory ordering information for Cisco AMS for users with an existing license for Cisco Info Center or Netcool/OMNibus Object Server. Note that the ordering information is dependent upon the size of the network, and a separate Cisco ANA license is required.

**Table 4.** Cisco AMS Ordering Information for Current Cisco Info Center or Netcool/OMNibus Licensees

Part Numbers	Description
<b>AMS-SOFTWARE</b>	Cisco Assurance Mgmt Solution 1.0 (Top Level Part Number)
<b>AMS-1.0-RCA-A-K9</b>	Cisco Assurance Mgmt Solution 1.0 RCA Software
<b>AMS-1.0-MOMP-K9</b>	Cisco Assurance Mgmt Solution 1.0 Probe Software
<b>Order Right to Use (RTU) licenses</b>	See Table 8

### Cisco Info Center and Precision or Netcool/OMNibus Object Server and Precision Installed

Table 5 lists the mandatory ordering information for Cisco AMS for users with an existing license for Cisco Info Center and Precision or Netcool/OMNibus Object Server and Precision. Note that the ordering information is dependent upon the size of the network, and a separate Cisco ANA license is required.

**Table 5.** Cisco AMS Ordering Information for Networks with either Cisco Info Center or Netcool Object Server Installed with Precision

Part Numbers	Description
<b>AMS-SOFTWARE</b>	Cisco Assurance Mgmt Solution 1.0 (Top Level Part Number)
<b>AMS-1.0-MOMP-K9</b>	Cisco Assurance Mgmt Solution 1.0 Probe Software
<b>Order Right to Use (RTU) licenses</b>	See Table 8

### Cisco ANA Installed

For users that have Cisco ANA but do not have Cisco Info Center or Netcool/OMNibus Object Server, Table 6 lists the mandatory ordering information for Cisco AMS. Note that the ordering information is dependent upon the size of the network.

**Table 6.** Cisco AMS Ordering Information for Current Cisco ANA Licensees

Part Numbers	Description
<b>AMS-SOFTWARE</b>	Cisco Assurance Mgmt Solution 1.0 Media
<b>AMS-1.0-RCA-A-K9</b>	Cisco Assurance Mgmt Solution 1.0 RCA Software
<b>AMS-1.0-MOMP-K9</b>	Cisco Assurance Mgmt Solution 1.0 Manager of Managers and Probe Software
<b>Order Right to Use (RTU) licenses</b>	See Table 8

### Cisco AMS Manager of Managers Installed

For users that do not have Cisco Info Center/Netcool Object Server but have Manager of Managers installed, Table 7 lists the mandatory ordering information for Cisco AMS. Note that the ordering information is dependent upon the size of the network, and a separate Cisco ANA license is required.

**Table 7.** Cisco AMS Ordering Information for Users with Manager of Managers Installed

Part Numbers	Description
<b>AMS-SOFTWARE</b>	Cisco Assurance Mgmt Solution 1.0 (Top level part number)
<b>AMS-1.0-RCA-A-K9</b>	Cisco Assurance Mgmt Solution 1.0 RCA Software
<b>Order Right to Use (RTU) licenses</b>	See Table 8

### Ordering RTU Licenses Based on Network Size

See Table 8 for RTU part numbers. Identify the number of devices in the network and the device group each device belongs to.

**Table 8.** Cisco AMS Ordering Information for per Device RTU Licenses

Part Numbers	Description
<b>AMS-1.0-RCA-A-G1</b>	Cisco Assurance Mgmt Solution 1.0 RCA-A Sft RTU-Group 1 Device
<b>AMS-1.0-RCA-A-G2</b>	Cisco Assurance Mgmt Solution 1.0 RCA-A Sft RTU-Group 2 Device
<b>AMS-1.0-RCA-A-G3</b>	Cisco Assurance Mgmt Solution 1.0 RCA-A Sft RTU-Group 3 Device
<b>AMS-1.0-RCA-A-G4</b>	Cisco Assurance Mgmt Solution 1.0 RCA-A Sft RTU-Group 4 Device

<b>AMS-1.0-RCA-A-G5</b>	Cisco Assurance Mgmt Solution 1.0 RCA-A Sft RTU-Group 5 Device
<b>AMS-1.0-RCA-A-G6</b>	Cisco Assurance Mgmt Solution 1.0 RCA-A Sft RTU-Group 6 Device

## For More Information

For more information about Cisco Assurance Management Solution, visit <http://www.cisco.com/go/ams> or contact your local Cisco account representative.



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