

Integrating CiscoWorks2000 with Network Management System Platforms

As users of CiscoWorks2000 link together a variety of Cisco, third-party, and internally developed network management applications into a management intranet, one of the most commonly asked questions is, "does CiscoWorks2000 integrate with my network management system (NMS) platform?" To help users build their management intranets with their NMS platforms, Cisco is working closely with the leading companies in this market, including Aprisma, Computer Associates, Evidian, Fujitsu, Hewlett-Packard, and Tivoli to provide our customers with:

- Web-based integration of CiscoWorks2000 solutions and NMSs
- Integration of intelligent Cisco traps from CiscoWorks2000 Device Fault Manager
- Greater flexibility in the physical location of CiscoWorks2000 and NMSs
- Greater flexibility in operating system deployment
- Quicker time to market for CiscoWorks2000/NMS support

New Web-Based Integration Method

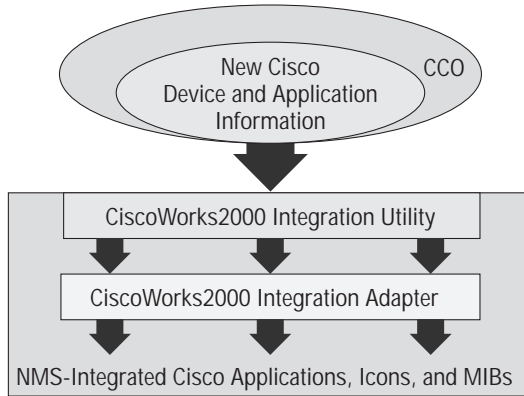
With the release of the CiscoWorks2000 Routed wide-area network (WAN) Management Solution and local-area network (LAN) Management Solution, Cisco has developed the CiscoWorks2000 integration utility. When installed on a NMS and coupled with a specific CiscoWorks2000 integration adapter developed by the NMS vendor, the integration utility enables the following integration services:

- Launch of CiscoView 5 from the NMS maps or menus
- Launch of the device center of Resource Manager Essentials 3.x from the NMS maps or menus
- Management information base (MIB) registration with NMS platform¹
- Cisco-provided icons display on NMS maps¹
- Incremental new Cisco device support via Cisco Connection Online (CCO)
- Incremental new Cisco management application integration via CCO
- Integration of CiscoWorks2000 applications and NMSs residing on different servers and even different operating systems
- Dynamic updates to integration information in the NMS
- Dynamic upgrades to new versions of the NMS without reinstalling or waiting for a new release of CiscoWorks2000 software
- Flexibility in customizing the management intranet environment using completely Web-based tools from Cisco
- Frequent NMS support updates downloaded from CCO Software Center

1. Use of these CiscoWorks2000/NMS integration services is at the discretion of the NMS vendors.

As shown in Figure 1, the CiscoWorks2000 integration utility is responsible for obtaining the necessary information about Cisco MIBs, Cisco icons, and Cisco application registration (such as CiscoView) and providing this information to the NMS.

Figure 1 New Cisco Device Integration



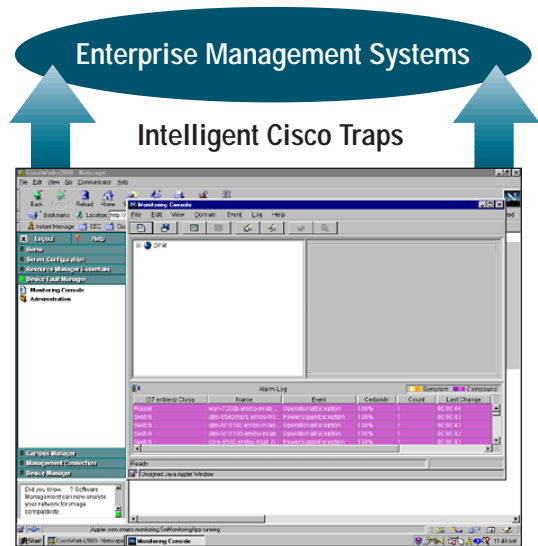
When new Cisco devices are released, the information needed by the NMS and CiscoView to manage these devices, including the MIBs, icons, and CiscoView updates, is posted on CCO and made available to the NMS through the CiscoWorks2000 integration utility. Once this information is downloaded to the integration utility, it is the function of the CiscoWorks2000 integration adapter, developed by the NMS vendor, to process this information and properly bind this new Cisco device and CiscoWorks2000 application data with the NMS.

This integration method will also be used to bind new CiscoWorks2000 applications with the NMS when they become available, such as the applications in the upcoming CiscoWorks2000 Service Management Solution.

Integration of Intelligent Cisco Traps from CiscoWorks2000 Device Fault Manager

CiscoWorks2000 Device Fault Manager can be utilized as a Cisco fault subsystem, generating intelligent Cisco traps to other multi-device, multi-vendor event management systems installed in the network. Cisco has worked closely with a range of enterprise management systems including Hewlett-Packard and Tivoli Systems, to enable these intelligent Cisco traps to be displayed properly in their respective event systems. For more information on how to properly integrate these intelligent Cisco traps go to: <http://www.cisco.com/warp/public/cc/pd/wr2k/ent/>

Figure 2 Device Fault Manager

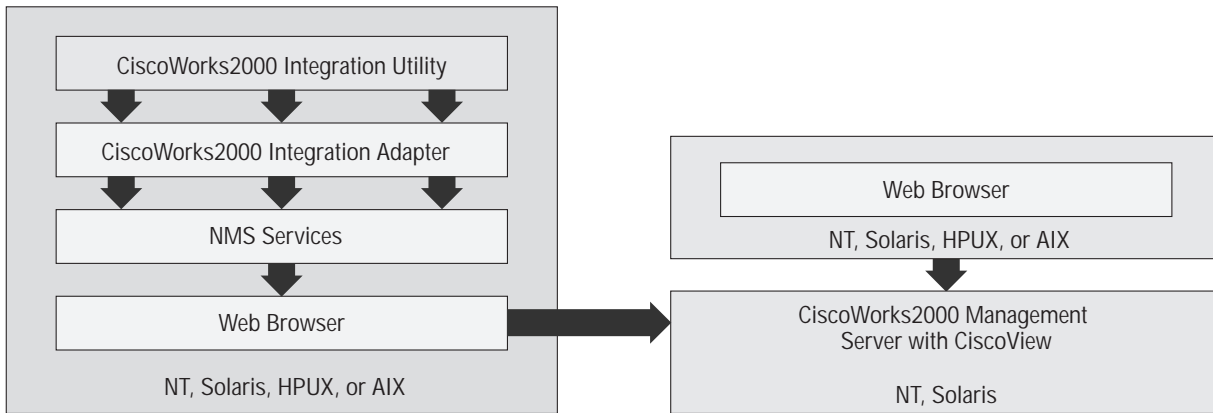


Greater Flexibility Via Web-Based Integration

Historically, if users wanted to integrate an application like CiscoView with a NMS, both applications had to reside on the same machine, with the same operating system version. Because one of the main functions of a NMS is the integration of multiple applications to manage a network, it was not uncommon for three to five different applications from different vendors to all be installed on the same machine.

This caused problems, however, when one of the vendors released an upgrade requiring a new operating system version or other changes in system requirements. Users were often forced to either keep their existing set of applications, depriving themselves of new functionality, or install the new application on a different machine without the NMS integration, forcing the common “swivel-chair” approach to network management.

Figure 3 Flexible Deployment of NMS Integrated Systems



The new Web-based version of CiscoView combined with the CiscoWorks2000 integration utility eliminates this dilemma. The CiscoWorks2000 integration utility is designed to be installed directly on the NMS. During the installation process, the user is asked to select the appropriate CiscoWorks2000 integration adapter for their NMS, along with where CiscoView and the other CiscoWorks2000 applications are to be installed on their network. Now that CiscoView is Web-based, it and the other Web-based components of CiscoWorks2000 no longer must physically reside on the same machine as the NMS. The user can input the name of the CiscoWorks2000 server and the integration utility, working in conjunction with the CiscoWorks2000 integration adapter, properly binds the two applications together.

Instead of launching a “local” application installed on the same machine when the CiscoView application is selected from the NMS map, the NMS launches a browser window pointed directly at the CiscoWorks2000 server, wherever it is installed on the network. No matter where CiscoWorks2000 is installed (either on the same machine or different machines) the integration remains the same.

In this scenario, a NMS with the CiscoWorks2000 integration utility and adapter installed and running on HP-UX, IBM AIX, Microsoft Windows NT, or Sun Solaris can be integrated with CiscoWorks2000 on any combination of its supported operating systems.

In addition, the Web-based services of CiscoWorks2000 enable different parts of an IT organization to easily access the same CiscoWorks2000 applications. Previously, if different parts of an organization wanted access to an application like CiscoView, they were forced to maintain two separate installations of the Cisco software.

Quicker Time to Market—“Day One” Integration

This new CiscoWorks2000/NMS integration model fundamentally changes the engineering, testing, and release of NMS integration, resulting in quicker time to market for NMS support.

Previously, for a NMS to be supported by Cisco, all of the integration software development and testing necessary to deliver NMS support was the sole responsibility of Cisco. This integration software was built directly into the CiscoView application. If a new version or new operating system of a NMS was coming to market, a final version of the NMS had to be made available to Cisco at the same time a new version of CiscoView was being engineered. Since the engineering cycles of CiscoView and the range of NMSs on the market were rarely on the same time schedule, more often than not CiscoView either did not have support for a new NMS, or support for it lagged by a few months. CiscoView was always engineered for incremental Cisco device support, but it was not designed for NMS changes.

In the new model, Cisco is responsible for engineering the necessary software for obtaining new Cisco device and management application information, and providing it to the appropriate NMS integration adapter. It is the responsibility of the NMS vendor to make the necessary changes to their integration adapter if and when they have new features, functions, version changes, and so on that would impact the proper integration of CiscoWorks2000 and their NMS.

When a NMS vendor makes changes to their adapter, the adapter is run through a independent certification system at KeyLabs, Inc., verifying its integration with CiscoWorks2000. Once certified, the adapter is made available to all CiscoWorks2000 customers via CCO, and can be immediately installed with the CiscoWorks2000 integration utility installed on the NMS. As Cisco releases new versions of CiscoWorks2000, the current set of "certified" NMS adapters will be bundled with CiscoWorks2000 to ease the installation step for users.

In this new model, where the NMS vendor is responsible for the necessary changes to their adapter and the delivery of this adapter is not tied directly to the release or any engineering of a Cisco product, the integration of CiscoWorks2000 and NMSs becomes market-driven. It is now possible for Cisco management products and NMS products to be engineered on separate schedules, but have integration available the first day either of the products is released, creating "day one" integration.



Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters
Cisco Systems Europe
11, Rue Camille Desmoulins
92782 Issy Les Moulineaux
Cedex 9
France
www.cisco.com
Tel: 33 1 58 04 60 00
Fax: 33 1 58 04 61 00

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems Australia, Pty., Ltd
Level 17, 99 Walker Street
North Sydney
NSW 2059 Australia
www.cisco.com
Tel: +61 2 8448 7100
Fax: +61 2 9957 4350

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