



# Installation and Setup Guide for Campus Manager on Solaris

Software Release 4.0.3  
CiscoWorks

## **Corporate Headquarters**

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

Customer Order Number: DOC-7817187=  
Text Part Number: 78-17187-01



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# Preface

---

This manual describes Campus Manager 4.0.3 and provides instructions for installing and configuring it.

## Audience

This document is for anyone who installs, configures, verifies, and uses Campus Manager 4.0.3 software. Network administrators or operators should have the following skills:

- Basic Solaris system administrator skills
- Basic network management skills
- Basic Internet browser skills

## Conventions

This document uses the following conventions:

Item	Convention
Commands and keywords	<b>boldface</b> font
Variables for which you supply values	<i>italic</i> font
Displayed session and system information	screen font

Item	Convention
Information you enter	<b>boldface screen font</b>
Variables you enter	<i>italic screen font</i>
Menu items and button names	<b>boldface font</b>
Selecting a menu item in paragraphs	<b>Option &gt; Network Preferences</b>
Selecting a menu item in tables	Option > Network Preferences

**Note**

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

**Caution**

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

## Product Documentation

**Note**

We sometimes update the printed and electronic documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

Table 1 describes the product documentation that is available.

**Table 1**      **Product Documentation**

Document Title	Available Formats
<i>Release Notes for Campus Manager 4.0.3 on Solaris</i>	<ul style="list-style-type: none"> <li>• Printed document that was included with the product.</li> <li>• PDF on the product CD-ROM</li> <li>• On Cisco.com at this URL: <a href="http://cisco.com/en/US/products/sw/cscowork/ps563/prod_release_notes_list.html">http://cisco.com/en/US/products/sw/cscowork/ps563/prod_release_notes_list.html</a></li> </ul>
<i>Release Notes for Campus Manager 4.0.3 on Windows</i>	<ul style="list-style-type: none"> <li>• Printed document that was included with the product.</li> <li>• PDF on the product CD-ROM</li> <li>• On Cisco.com at this URL: <a href="http://cisco.com/en/US/products/sw/cscowork/ps563/prod_release_notes_list.html">http://cisco.com/en/US/products/sw/cscowork/ps563/prod_release_notes_list.html</a></li> </ul>
<i>Installation and Setup Guide for Campus Manager 4.0.3 on Solaris</i>	<ul style="list-style-type: none"> <li>• Printed document that was included with the product.</li> <li>• PDF on the product CD-ROM.</li> <li>• On Cisco.com at this URL: <a href="http://cisco.com/en/US/products/sw/cscowork/ps563/prod_installation_guides_list.html">http://cisco.com/en/US/products/sw/cscowork/ps563/prod_installation_guides_list.html</a></li> <li>• Printed document available by order (part number DOC-7817187=).<sup>1</sup></li> </ul>
<i>Installation and Setup Guide for Campus Manager 4.0.3 on Windows</i>	<ul style="list-style-type: none"> <li>• Printed document that was included with the product.</li> <li>• PDF on the product CD-ROM.</li> <li>• On Cisco.com at this URL: <a href="http://cisco.com/en/US/products/sw/cscowork/ps563/prod_installation_guides_list.html">http://cisco.com/en/US/products/sw/cscowork/ps563/prod_installation_guides_list.html</a></li> <li>• Printed document available by order (part number DOC-7817188=).<sup>1</sup></li> </ul>

**Table 1**      **Product Documentation (continued)**

Document Title	Available Formats
<i>User Guide for Campus Manager 4.0.3</i>	<ul style="list-style-type: none"> <li>• PDF on the product CD-ROM.</li> <li>• On Cisco.com at this URL: <a href="http://cisco.com/en/US/products/sw/cscowork/ps563/products_user_guide_list.html">http://cisco.com/en/US/products/sw/cscowork/ps563/products_user_guide_list.html</a></li> <li>• Printed document available by order (part number DOC-7817186=).<sup>1</sup></li> </ul>
<i>Supported Devices Table for Campus Manager 4.0.3</i>	On Cisco.com at this URL: <a href="http://cisco.com/en/US/products/sw/cscowork/ps563/products_device_support_tables_list.html">http://cisco.com/en/US/products/sw/cscowork/ps563/products_device_support_tables_list.html</a>
Context-sensitive online help	<ul style="list-style-type: none"> <li>• Select an option from the navigation tree, then click <b>Help</b>.</li> <li>• Click the Help button in the dialog box.</li> </ul>

1. See the “Obtaining Documentation” section on page xii.

## Related Documentation



### Note

We sometimes update the printed and electronic documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

Table 2 describes the additional documentation that is available.

**Table 2**      **Related Documentation**

Document Title	Available Formats
<i>Release Notes for CiscoWorks Common Services 3.0.3 (Includes CiscoView 6.1.2) on Solaris</i>	<ul style="list-style-type: none"> <li>• Printed document that was included with the product.</li> <li>• PDF on the product CD-ROM.</li> <li>• On Cisco.com at this URL: <a href="http://cisco.com/en/US/products/sw/cscowork/ps3996/prod_release_notes_list.html">http://cisco.com/en/US/products/sw/cscowork/ps3996/prod_release_notes_list.html</a></li> </ul>
<i>Release Notes for CiscoWorks Common Services 3.0.3 (Includes CiscoView 6.1.2) on Windows</i>	<ul style="list-style-type: none"> <li>• Printed document that was included with the product.</li> <li>• PDF on the product CD-ROM.</li> <li>• On Cisco.com at this URL: <a href="http://cisco.com/en/US/products/sw/cscowork/ps3996/prod_release_notes_list.html">http://cisco.com/en/US/products/sw/cscowork/ps3996/prod_release_notes_list.html</a></li> </ul>
<i>Installation and Setup Guide for CiscoWorks Common Services 3.0.3 (Includes CiscoView 6.1.2) on Solaris</i>	<ul style="list-style-type: none"> <li>• Printed document that was included with the product.</li> <li>• PDF on the product CD-ROM.</li> <li>• On Cisco.com at this URL: <a href="http://cisco.com/en/US/products/sw/cscowork/ps3996/prod_installation_guides_list.html">http://cisco.com/en/US/products/sw/cscowork/ps3996/prod_installation_guides_list.html</a></li> <li>• Printed document available by order (part number DOC-7817183=).</li> </ul>

**Table 2**      **Related Documentation (continued)**

Document Title	Available Formats
<i>Installation and Setup Guide for CiscoWorks Common Services 3.0.3 (Includes CiscoView 6.1.2) on Windows</i>	<ul style="list-style-type: none"> <li>• Printed document that was included with the product.</li> <li>• PDF on the product CD-ROM.</li> <li>• On Cisco.com at this URL: <a href="http://cisco.com/en/US/products/sw/cscowork/ps3996/prod_installation_guides_list.html">http://cisco.com/en/US/products/sw/cscowork/ps3996/prod_installation_guides_list.html</a></li> <li>• Printed document available by order (part number DOC-7817184=).</li> </ul>
<i>User Guide for CiscoWorks Common Services 3.0.3</i>	<ul style="list-style-type: none"> <li>• PDF on the product CD-ROM.</li> <li>• On Cisco.com at this URL: <a href="http://cisco.com/en/US/products/sw/cscowork/ps3996/products_user_guide_list.html">http://cisco.com/en/US/products/sw/cscowork/ps3996/products_user_guide_list.html</a></li> <li>• Printed document available by order (part number DOC-7817182=).</li> </ul>

## Additional Information Online

Service Packs (SP) contain updated files necessary for the latest device support and fixes to known problems that are not available in Campus Manager. If you are a registered user, you can download the Service Packs for Campus Manager from:

<http://www.cisco.com/cgi-bin/tablebuild.pl/cw2000-campus>

## Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

## Cisco.com

You can access the most current Cisco documentation at this URL:

<http://www.cisco.com/techsupport>

You can access the Cisco website at this URL:

<http://www.cisco.com>

You can access international Cisco websites at this URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

## Product Documentation DVD

Cisco documentation and additional literature are available in the Product Documentation DVD package, which may have shipped with your product. The Product Documentation DVD is updated regularly and may be more current than printed documentation.

The Product Documentation DVD is a comprehensive library of technical product documentation on portable media. The DVD enables you to access multiple versions of hardware and software installation, configuration, and command guides for Cisco products and to view technical documentation in HTML. With the DVD, you have access to the same documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .pdf versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD=) from Cisco Marketplace at this URL:

<http://www.cisco.com/go/marketplace/>

## Ordering Documentation

Beginning June 30, 2005, registered Cisco.com users may order Cisco documentation at the Product Documentation Store in the Cisco Marketplace at this URL:

<http://www.cisco.com/go/marketplace/>

Nonregistered Cisco.com users can order technical documentation from 8:00 a.m. to 5:00 p.m. (0800 to 1700) PDT by calling 1 866 463-3487 in the United States and Canada, or elsewhere by calling 011 408 519-5055. You can also order documentation by e-mail at [tech-doc-store-mkpl@external.cisco.com](mailto:tech-doc-store-mkpl@external.cisco.com) or by fax at 1 408 519-5001 in the United States and Canada, or elsewhere at 011 408 519-5001.

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You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems  
Attn: Customer Document Ordering  
170 West Tasman Drive  
San Jose, CA 95134-9883

We appreciate your comments.

# Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

[http://www.cisco.com/en/US/products/products\\_security\\_vulnerability\\_policy.html](http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html)

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

<http://www.cisco.com/go/psirt>

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

[http://www.cisco.com/en/US/products/products\\_psirt\\_rss\\_feed.html](http://www.cisco.com/en/US/products/products_psirt_rss_feed.html)

## Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—[security-alert@cisco.com](mailto:security-alert@cisco.com)

An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- Nonemergencies—[psirt@cisco.com](mailto:psirt@cisco.com)

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

**Tip**

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We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.x through 8.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

[http://www.cisco.com/en/US/products/products\\_security\\_vulnerability\\_policy.html](http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html)

The link on this page has the current PGP key ID in use.

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## Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

## Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

<http://www.cisco.com/techsupport>

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

<http://tools.cisco.com/RPF/register/register.do>

**Note**

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Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

---

## Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

## Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

## Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

<http://www.cisco.com/go/marketplace/>

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

<http://www.ciscopress.com>

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

<http://www.cisco.com/packet>

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

<http://www.cisco.com/go/iqmagazine>

or view the digital edition at this URL:

<http://ciscoiq.texterity.com/ciscoiq/sample/>

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

<http://www.cisco.com/ipj>

- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:

<http://www.cisco.com/en/US/products/index.html>

- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:

<http://www.cisco.com/discuss/networking>

- World-class networking training is available from Cisco. You can view current offerings at this URL:

<http://www.cisco.com/en/US/learning/index.html>





# Prerequisites

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This chapter describes the factors that you should consider before installing Campus Manager 4.0.3 on a Solaris system.

This chapter contains:

- [Product Overview](#)
- [Campus Manager Upgrade Paths](#)
- [Server Requirements](#)
- [Client Requirements](#)
- [Supported Devices](#)

# Product Overview

Campus Manager, a member of the CiscoWorks family of products, is a suite of web-based network management tools that enable administrators to obtain various types of graphical views of their network topology and end-user information. Campus Manager is based on a client-server architecture that connects multiple web-based clients to a server on the network.

Campus Manager server discovers information about network devices and saves it in the Campus Manager database so that the applications can access it. For more information, see *User Guide for Campus Manager 4.0.3*.

The Campus Manager applications and what they allow you to do are as follows:

- Path Analysis—View the path that packets take between end nodes/devices on your network.
- User Tracking—Locate and display data about users, IP Phones, hosts, and wireless clients in your network.
- Topology Services—Discover, view, and monitor the physical and logical services on your network. View detailed network information about all devices, links, and ports in your network.
- VLAN Port Assignment—View port information, create trunk, configure VLANs on a trunk, and move ports between VLANs on your network.
- Discrepancy Reports—Discover and view physical and logical discrepancies in your network.

# Campus Manager Upgrade Paths

You can upgrade to Campus Manager 4.0.3 from:

- Campus Manager 3.2.x
- Campus Manager 3.3.x
- Campus Manager 4.0
- Campus Manager 4.0 Service Pack 1
- Campus Manager 4.0 Service Pack 2

where .x refers to the IDU upgrades.

You must install Common Services 3.0.3, before upgrading to Campus Manager 4.0.3.

You can upgrade to Campus Manger 4.0.3 by either:

- Using the Campus Manager 4.0.3 CD-ROM.

For more details, see [Installing Campus Manager 4.0.3, page 2-3](#).

Or

- Using LAN Management Solution 2.5 December 2005 Update on Solaris. You can download this from:

<http://www.cisco.com/kobayashi/sw-center/cw2000/lan-planner.shtml>

For more details see, Readme for LAN Management Solution 2.5 December 2005 Update on Solaris that can be downloaded from the same location.

When you install Campus Manager 4.0.3, certain data from the previous versions of Campus Manager is converted to Campus Manager 4.0.3 format. This data includes:

- Seed devices
- Data Collection schedule
- Data Collection filters
- Data Collection debugging options
- User Tracking queries and layouts
- User Tracking jobs and archives
- User Tracking administration preferences

- User Tracking usernames, notes, and entries
- SNMP community strings
- Discovery schedule
- Discovery filters
- Discovery debugging options
- Path preferences
- Job schedule
- Job archives
- Topology groups
- Topology map preferences
- Discrepancies settings
- Syslog settings

## Server Requirements

The server requirements for Campus Manager 4.0.3 are the same as that of LMS 2.5.1.

The minimum system requirements for CiscoWorks Common Services 3.0.3 and Campus Manager 4.0.3 are shown in [Table 1-1](#).

**Table 1-1** Server System Requirements Summary

Requirement Type	Minimum Requirement <sup>1</sup>
System hardware	<ul style="list-style-type: none"> <li>• Sun UltraSPARC IIIi</li> <li>• CD-ROM drive</li> </ul>
Memory (RAM)	512 MB
Available drive space <sup>2</sup>	2 GB on the partition on which you install the product. The default is /opt
Swap space	Swap space equal to double the amount of memory (RAM). For example, if your system has 512 MB of RAM, you need 1024 MB of swap space.
/tmp directory	Must be on a swap partition

**Table 1-1** Server System Requirements Summary (continued)

Requirement Type	Minimum Requirement <sup>1</sup>
System software	Solaris 8 (Solaris 2.8) or Solaris 9 (Solaris 2.9) <sup>3</sup> Campus Manager supports US-English and Japanese versions of Solaris Operating Systems. It does not support any other language version. Set the default locale to US-English for US-English version and Japanese for Japanese version.
Additional software	Netscape 7.0, if you are using the CiscoWorks Home page on the server system

1. If other applications are installed, or the number of devices on your network exceeds 500, the requirements might be greater.
2. For information about verifying disk space, see the [“Checking Required Disk Space”](#) section on page 1-5.
3. Patch 106292-05 must not be installed.

## Checking Required Disk Space

To verify the amount of available disk space in each of the specified partitions and directories, enter:

```
# df -k directory
```

where *directory* is the partition or directory for which you want to check the available disk space.

## Solaris Patches

Table 1-2 lists the required and recommended patches for Solaris 8 (Solaris 2.8) and Solaris 9 (Solaris 2.9).

**Table 1-2** Required and recommended patches for Solaris

Operating System	Required		Recommended	
	Server	Client	Server	Client
Solaris 8 (Solaris 2.8)	111327-05	111626-03	110951-01	110951-05
	110945-08	108652-81	110662-02	110662-12
	110934-16	108921-21	110615-01	110615-11
	110898-09	108940-62	110286-02	108964-06
	109326-14			
	108827-40			
	108528-29			
Solaris 9 (Solaris 2.9)	114224-01	112771-14	113326-01	112808-06
	113580-01	112661-06	112998-03	
	112839-04	113244-05	113713-14	
	112233-12		112964-07	
	114006-01		113575-05	
			112970-07	

Use the **showrev -p** command to verify that these patches have been applied.

## Maximum Recommended Load

The maximum recommended load on servers configured with the minimum server requirements shown in Table 1-1 is 500 Cisco devices and one client at a time.

If other network management applications are installed on your server, you may need additional resources.

## Server Recommendations

To select or configure a server system that best meets your needs, consider the number of managed devices.

[Table 1-3](#) shows the recommendations for a server running Common Services and Campus Manager Manager. These recommendations produce optimal response time while running user reports.

**Table 1-3** *Server System Recommendations*

Minimum System Configuration	No. of Managed Devices
Ultra 10 Memory: 512 MB Swap space: 1 GB Available disk space: 40 GB	0–1000 managed devices
Ultra 10 Memory: 2 GB Swap space: 2 GB Available disk space: 80 GB	1000–2500 managed devices
Ultra 60 (dual processor) Memory: 2 GB Swap space: 4 GB Available disk space: 80 GB	2,500–5,000 managed devices

## Client Requirements

The minimum client system requirements for CiscoWorks Common Services 3.0.3 and Campus Manager 4.0.3 are shown in [Table 1-4](#). The maximum recommended load on clients configured with the minimum requirements shown in [Table 1-4](#) is 2000 Cisco devices.

**Table 1-4** Client System Requirements Summary

Requirement Type	Minimum Requirement
System Software and Hardware	<ul style="list-style-type: none"> <li>• Client system:               <ul style="list-style-type: none"> <li>– IBM system with at least a 300 MHz Pentium processor running Windows (Professional and Server), or Windows XP SP1</li> </ul> </li> <li>Or               <ul style="list-style-type: none"> <li>– Solaris SPARC station Solaris 8 (Solaris 2.8) or Solaris 9 (Solaris 2.9)</li> <li>– Color monitor with video card set to 24 bits color depth</li> </ul> </li> </ul>
Memory (RAM)	512 MB
Browser	<p>Any one of these browsers:</p> <ul style="list-style-type: none"> <li>• On Windows 2000 and Windows XP clients:               <ul style="list-style-type: none"> <li>– Microsoft Internet Explorer 6.0.26 and Microsoft Internet Explorer 6.0.28</li> <li>– Netscape Navigator 7.1 and Netscape Navigator 7.2</li> <li>– Mozilla 1.7 and 1.7.5</li> </ul> </li> <li>• On Solaris clients:               <ul style="list-style-type: none"> <li>– Netscape Navigator 7.0</li> <li>– Mozilla 1.7 and Mozilla 1.7.5</li> </ul> </li> </ul>

## Supported Devices

For information about supported devices, access the Supported Devices table at the following location on cisco.com:

[http://cisco.com/en/US/products/sw/cscowork/ps563/products\\_device\\_support\\_tables\\_list.html](http://cisco.com/en/US/products/sw/cscowork/ps563/products_device_support_tables_list.html)



## Installing Campus Manager

---

This chapter describes how to install, uninstall, and reinstall Campus Manager 4.0.3.

You must install Common Services 3.0.3 before you can install Campus Manager 4.0.3.

This chapter contains:

- [Installation Overview, page 2-2](#)
- [Installing Campus Manager 4.0.3, page 2-3](#)
- [Reinstalling Campus Manager, page 2-7](#)
- [Backing Up and Restoring Data After Installation, page 2-9](#)
- [Uninstalling Campus Manager, page 2-12](#)

# Installation Overview

Table 2-1 is an overview of the Campus Manager 4.0.3 installation tasks. It contains references to more detailed information about each task.

**Table 2-1**      **Installation Tasks**

Task	Steps	References
1. Prepare to install Campus Manager.	Verify that server requirements are met.	<a href="#">“Server Requirements” section on page 1-4</a>
2. Install Campus Manager.	Run the installation program.	<a href="#">“Installing Campus Manager 4.0.3” section on page 2-3</a>
3. Verify and troubleshoot installation.	<ol style="list-style-type: none"> <li>a. Verify the correct files and directories are installed.</li> <li>b. Analyze installation error messages.</li> </ol>	<a href="#">“Understanding Installation Messages” section on page A-2</a>
4. Set up Campus Manager	Prepare the system for Campus Manager applications and set up the applications.	<a href="#">Setting Up Campus Manager Applications, page 3-3</a>

## Installing Campus Manager 4.0.3

This section describes how to install Campus Manager 4.0.3. You must install CiscoWorks Common Services 3.0.3 before installing Campus Manager 4.0.3.

For information on installing CiscoWorks Common Services 3.0.3, see the *Installation and Setup Guide for CiscoWorks Common Services 3.0.3 (Includes CiscoView) on Solaris*.

Campus Manager gets installed in the same directory where you have installed CiscoWorks Common Services 3.0.3.

The Campus Manager 4.0.3 installer automatically updates program files and data from previous versions of Campus Manager .

All device updates up to Campus Manager 4.0 SP 2 have been incorporated in Campus Manager 4.0.3.

## Licensing in Campus Manager 4.0.3

Campus Manager 4.0.3 uses the license of Campus Manager 4.0. If you have a licensed version of Campus Manager 4.0, you can install Campus Manager 4.0.3.

Campus Manager 4.0.3 emulates the licensing behavior of Campus Manager 4.0. For example, if the Campus Manager 4.0 license is restricted, Campus Manager 4.0.3 is also restricted.

For information on the licensing mechanism in Campus Manager 4.0, see *Installation and Setup Guide for Campus Manager 4.0 on Solaris*.

## Installation Notes

If you have configured Common Services in ACS mode (**Common Services > Server > Security > AAA Mode Setup**), while installing RME 4.0.3, you are prompted with this message during installation:

```
CiscoWorks Server is in ACS mode
The application that you are installing requires new tasks to be
registered with ACS. If you have already registered this application
with ACS from another server, you do not need to register it again.
However if you re-register the application, you will lose any custom
roles that you had created earlier for this application in ACS.
```

Enter (Y)es to Register, (N)o to continue without registering, (Q)uit  
: [N]

- If you enter **y**, Campus Manager 4.0.3 gets registered with ACS server.
- If you enter **n**, Campus Manager 4.0.3 does not get registered with ACS server.

After the installation, you can register Campus Manager 4.0.3 with ACS server, using the script, AcsRegCli.pl:

```
/opt/CSCOpX/bin/perl /opt/CSCOpX/bin/AcsRegCli.pl -register rme
```

- If you enter **q**, Campus Manager 4.0.3 installation is aborted.

## Running the Installation Program

To install Campus Manager 4.0.3:

---

**Step 1** As root, mount the Campus Manager 4.0.3 CD-ROM, using either of the following methods:

- Mount the CD-ROM on the Campus Manager server system.

Or

- Mount the CD-ROM on a remote Solaris system, then access the CD-ROM from the Campus Manager server system.

See Appendix B, "[Mounting and Unmounting the CD-ROM, page B-1](#)" for mounting instructions.

**Step 2** Run the installation program.

Enter:

```
./setup.sh
```

A message appears:

```
Press Enter to read/browse the following license agreement:
```

**Step 3** Press **Enter** to read the license agreement.

The following message appears at the end of the license agreement:

```
You must accept this License agreement for the installation to
proceed.
If you enter N/n, the installation will exit.
Do you accept all the terms of the proceeding License Agreement? (y/n)
[n]
```

If you are upgrading from Campus Manager 4.0, you will not see the license agreement.

**Step 4** Enter **y** to accept the license and proceed with the installation.

Or

Enter **n** to deny and stop the installation.

If you select **y**, the following message appears:

```
For security reasons, Cisco recommends that you change the default
password for ANI database.
Do you want to change it now, no is the default option.
```

**Step 5** Enter **y** to change your default Campus Manager database password.

The following message appears:

```
Enter ANI database password:
Confirm password:
```

**Step 6** Enter the password, and re-enter to confirm it.

The following message appears:

```
If no other CiscoWorks application installations are pending, you can
choose to start CiscoWorks Daemons.
Do you want to restart CiscoWorks Daemons at the end of this
installation?(y/n) [n]:
```

**Step 7** Enter **y** to restart the CiscoWorks daemons after installation.

The following message appears:

```
Exiting installation beyond this point might result in system
instability.
Do you want to continue the installation? (y/n) [y]:
```

**Step 8** Enter **y** to continue the installation.

The installation program displays messages about the various packages being installed and the services being started.

The packages include application software and device adapter packages for all devices that can be managed with Campus Manager applications. The following message appears:

```
To ensure that you retain the latest device support and bug fixes,
please install the latest Service Pack (SP) for Campus Manager 4.0.3
```

```
You can download the latest SP from
http://www.cisco.com/cgi-bin/tablebuild.pl/cw2000-campus.
Please refer to the Installation and Setup Guide for details.
```

```
User Tracking Utility 1.0 is not compatible with Campus Manager 4.0.3
User Tracking Utility 1.1.1 is available for Campus Manager 4.0.3.
You can download the latest UTU from
http://www.cisco.com/cgi-bin/tablebuild.pl/cw2000-campus-crypto.
```

The installation completes.

---

After installing Campus Manager 4.0.3, you can verify the process status by running `NMSROOT/bin pds`

If errors occurred during installation, check the installation log file `/var/tmp/ciscoinstall.log`. For information about troubleshooting, see [Appendix A, “Troubleshooting the Installation.”](#)

After the installation completes, do either of the following:

- If you have data from the earlier version of Campus Manager to import into Campus Manager 4.0.3, see the [“Backing Up and Restoring Data After Installation”](#) section on page 2-9.
- If you do not have data to import, continue to [Chapter 3, “Preparing to Use Campus Manager.”](#)

After Campus Manager 4.0.3 is installed, Topology Services allows you to either convert the saved view layouts in the new Campus Manager 4.0.3 format or directly use the default view layouts generated by Campus Manager 4.0.3. See the [“Upgrading Saved View Layouts From Topology Services”](#) section for more information.

# Reinstalling Campus Manager

If you had any problems with previous installation, you can reinstall Campus Manager.

To run the reinstallation program:

---

**Step 1** As root, mount the Campus Manager 4.0.3 CD-ROM. You can either:

- Mount the CD-ROM on the CiscoWorks server system.

Or

- Mount the CD-ROM on a remote Solaris system, then access the CD-ROM from the CiscoWorks server system.

See [Appendix B, “Mounting and Unmounting the CD-ROM,”](#) for detailed mounting instructions.

**Step 2** Run the installation program.

Enter:

```
./setup.sh
```

A prompt appears:

```
Campus Manager 4.0.3 has been detected on your system. Are you sure
you want to reinstall? (y/n)? [n]
```

**Step 3** Enter **y** to continue to install or **n** to cancel.

If you select **y**, the following message appears:

```
For security reasons, Cisco recommends that you change the default
password for ANI database.
Do you want to change it now, no is the default option.
```

**Step 4** Enter **y** to change your default Campus Manager database password.

The following message appears:

```
Enter ANI database password:
```

**Step 5** Enter the password, and re-enter to confirm it.

The installation program displays messages about the various packages being installed and the services being started.

The packages include application software and device adapter packages for all devices that can be managed with Campus Manager applications.

The following message appears:

```
To ensure that you retain the latest device support and bug fixes,
please install the latest Service Pack (SP) for Campus Manager 4.0.3.
You can download the latest SP from
http://www.cisco.com/cgi-bin/tablebuild.pl/cw2000-campus.
Please refer to the Installation and Setup Guide for details.
```

```
User Tracking Utility 1.0 is not compatible with Campus Manager 4.0.3
User Tracking Utility 1.1.1 is available for Campus Manager 4.0.3.
You can download the latest UTU from
http://www.cisco.com/cgi-bin/tablebuild.pl/cw2000-campus-crypto.
Please refer to the Installation and Setup Guide for details
```

The re-installation completes.

---

After installing Campus Manager 4.0.3, you can verify the process status by running `NMSROOT/bin pdshow`

After installing Campus Manager 4.0.3, you can manually import your existing database to the system on which CiscoWorks is installed if it was not automatically imported during installation. See the [“Backing Up and Restoring Data After Installation”](#) section on page 2-9.

After Campus Manager 4.0.3 is installed, Topology Services allows you to either convert the saved view layouts in the new Campus Manager 4.0.3 format or directly use the default view layouts generated by Campus Manager 4.0.3. See the [“Upgrading Saved View Layouts From Topology Services”](#) section for more information.

## Upgrading Saved View Layouts From Topology Services

Use the following procedure to upgrade saved topology view layouts generated by the previous version of Campus Manager to the new Campus Manager 4.0.3 format. The following view layouts are upgraded:

- Layer 2 View
- Unconnected Device View
- LAN Edge View

To upgrade saved view layouts:

- 
- Step 1** Start Topology Services. (**Campus Manager > Topology Services**)
  - Step 2** Select **File > Upgrade View Layouts**.
  - Step 3** Select the view layout you want to upgrade.
  - Step 4** Click **Upgrade** to upgrade the selected view layout.  
Topology Services upgrades the selected view layout to the Campus Manager 4.0.3 format.
  - Step 5** Select the corresponding view layout from the side panel in Topology Services to display this layout.  
The upgraded view layout might not be formatted in exactly the same as the previous version of the view layout.
- 

## Backing Up and Restoring Data After Installation

This section describes how to back up and restore data from previous versions of Campus Manager. You can back up and restore data from:

- Campus Manager 3.2.x
- Campus Manager 3.3.x
- Campus Manager 4.0
- Campus Manager 4.0 Service Pack 1
- Campus Manager 4.0 Service Pack 2

where .x refers to the IDU upgrades.

This section consists of:

- [Backing Up Data Using GUI](#)
- [Backing Up Data Manually From Campus Manager](#)
- [Restoring Data Manually From Campus Manager](#)

## Backing Up Data Using GUI

You can schedule immediate, daily, weekly, or monthly automatic database backups.

To back up data:

**Step 1** In the CiscoWorks Homepage, select **Common Services > Server > Admin > Backup**.

The Backup page appears.

**Step 2** Enter the appropriate information in the following fields:

**Table 2-2**      *Backing Up Data*

Field	Description
Backup Directory	Location of the backup directory. We recommend that your target location be on a different partition than the CiscoWorks installation location.
Runtime	Select the desired check box. You have options to schedule immediate, daily, weekly, or monthly backups.
Time	From the drop-down lists, select the time and date. <ul style="list-style-type: none"> <li>If you schedule a weekly backup, select the day of the week from the drop-down list.</li> <li>If you schedule a monthly backup, select the day of the month from the drop-down list.</li> </ul>
Generations	Maximum number of backups to be stored in the backup directory.

**Step 3** Click **Apply**.

## Backing Up Data Manually From Campus Manager

To manually back up saved data in earlier versions of Campus Manager:

- 
- Step 1** Stop the daemon manager on the local machine on which the previous version of Campus Manager is installed. Enter:
- ```
/etc/init.d/dmgttd stop
```
- Step 2** Export CiscoWorks data by entering:
- ```
NMSROOT/bin/perl NMSROOT/bin/backup.pl -d /backup dir
```
- You should enter the path where you want to export CiscoWorks Common Services data. The script command will back up the CiscoWorks data.
- Step 3** Start the daemon manager by entering:
- ```
/etc/init.d/dmgttd start
```
- Step 4** Copy the backed up directory to the remote machine.
- 

## Restoring Data Manually From Campus Manager

To restore data manually:

- 
- Step 1** Stop the daemon manager on the local machine on which the previous version of Campus Manager is installed by entering:
- ```
/etc/init.d/dmgttd stop
```
- Step 2** Restore CiscoWorks data by entering:
- ```
NMSROOT/opt/CSCOpX/bin/perl /opt/CSCOpX/bin/restorebackup.pl -d /backup dir
```
- You should enter the path where you want the data to be restored.
- Step 3** Start the daemon manager by entering:
- ```
NMSROOT /etc/init.d/dmgttd start
```
-

# Uninstalling Campus Manager

The uninstallation program removes Campus Manager 4.0.3 files and settings. The uninstall option enables you to remove only Campus Manager 4.0.3 or remove CiscoWorks Common Services 3.0.3 as well.

You must use the Campus Manager 4.0.3 uninstallation program to remove the product. You could damage your system, if you attempt to remove Campus Manager 4.0.3 or its components manually.



## Caution

---

Uninstalling Campus Manager deletes the Campus Manager database.

---

To remove Campus Manager 4.0.3 or other major components:

---

**Step 1** Enter the following commands as root to start the uninstall program:

```
# /opt/CSCOpX/bin/uninstall.sh
```

where `/opt/CSCOpX` is the default installation directory. If you have specified a different directory while installing CiscoWorks Common Services, substitute the name of the directory.

A prompt similar to the following appears:

- 1) Cisco View 6.1.2
- 2) Integration Utility 1.6
- 3) CiscoWorks Common Services 3.0.3
- 4) Campus Manager 4.0.3
- 5) All of the above

Select one or more of the items using its number separated by comma or enter `q` to quit [q]

**Step 2** Enter the number that corresponds to it (in this case, 4).

- You can select one or more of the items using its number separated by comma or enter `q` to quit.
- To remove Campus Manager, CiscoWorks Common Services, CiscoView and Integration Utility, enter the number that corresponds to all of the above (in this case, 5).

A prompt appears, where the default selection is indicated in brackets:

```
Are you sure you want to uninstall: Campus Manager 4.0.3 (y/n)? [n]
```

**Step 3** Enter **y** to continue to uninstall or **n** to cancel.

If any other prompts appear, respond appropriately.

The uninstallation program displays a series of messages. Ignore any additional messages that ask if you want to remove packages.

The uninstall messages are written to the `/var/tmp/ciscouninstall.log` file.

After the uninstallation script successfully completes, the following message appears:

```
All files were deleted successfully.
```

---





## Preparing to Use Campus Manager

---

This chapter describes the various administrator and application setup tasks that you must perform after installing Campus Manager 4.0.3.

This chapter contains:

- [Overview of Campus Manager Setup Tasks](#)
- [Accessing the CiscoWorks Server](#)
- [Performing Administrator Tasks](#)
- [Setting Up Campus Manager Applications](#)
- [Logging Out as Administrator](#)

# Overview of Campus Manager Setup Tasks

Table 3-1 provides an overview of the Campus Manager 4.0.3 setup tasks and references to more detailed information about each task.

**Table 3-1 Overview of Campus Manager Setup Tasks**

Tasks	References
1. Access the CiscoWorks Server.	<a href="#">“Accessing the CiscoWorks Server” section on page 3-2</a>
2. Perform administrator setup tasks.	<a href="#">“Logging In as Administrator” section on page 3-3</a>
3. Start and configure applications.	<a href="#">“Setting Up Campus Manager Applications” section on page 3-3</a>
4. Log out of the Server.	<a href="#">“Logging Out as Administrator” section on page 3-10</a>

## Accessing the CiscoWorks Server

You must set up the client before using Campus Manager. See *Installation and Setup Guide for CiscoWorks Common Services 3.0 (Includes CiscoView) on Solaris* for configuring browser and client systems.

To access Campus Manager, enter the URL of the CiscoWorks Server in your web browser:

**http://server\_name:1741**

**https://server\_name:443** (for SSL mode)

where *server\_name* is the name of the CiscoWorks Server. If you were prompted to supply a port number for the CiscoWorks Server during the installation, use that port number in the URL. The default port number is 1741 (443 if SSL is enabled).

If you cannot access the CiscoWorks Server or the CiscoWorks Home page is not displayed correctly, refer to [Appendix A, “Troubleshooting the Installation.”](#)

After you access the CiscoWorks Server, see the [“Performing Administrator Tasks”](#) section on page 3-3.

## Performing Administrator Tasks

After accessing the CiscoWorks Server, you must log in as the administrator and set up the server for other users.

### Logging In as Administrator

To log in as administrator:

---

**Step 1** Enter the system administrator username and password in the Login page.

**Step 2** Click **Login**.

The CiscoWorks Homepage appears.

---

After you log in as the administrator, continue to the [“Setting Up Campus Manager Applications”](#) section on page 3-3.

To log out the CiscoWorks Server, see the [“Logging Out as Administrator”](#) section on page 3-10 for information.

## Setting Up Campus Manager Applications

This section describes the tasks that you must perform to set up the Campus Manager 4.0.3 applications. Some of these tasks require the administrator login.

This section contains:

- [Setting Up Your Network](#)
- [Configuring Device Discovery](#)

- [Setting Up Topology Services](#)
- [Setting Up Path Analysis](#)

## Setting Up Your Network

To ensure that the Campus Manager Server successfully discovers the devices in your network, you must set up your network correctly. [Table 3-2](#) lists the required tasks for each application, marked by x.

See the *User Guide for Campus Manager 4.0.3* for more information.

**Table 3-2** Network Setup Tasks

Network Setup Requirement	Topology Services	User Tracking	Path Analysis	VLAN Port Assignment	Discrepancy Reports
Connect to seed device	x	x	x	x	x
Enable Simple Network Management Protocol (SNMP)	x	x	x	x	x
Enable Cisco Discovery Protocol (CDP)	x	x	x	x	x
Enable Call Detail Record (CDR)	—	—	x	—	—
Set a unique sysName variable on devices	x	x	x	x	—
Enable Integrated Local Management Interface (ILMI) on ATM devices	x	x	x	x	x
Configure DNS	x	x	x	x	x
Configure VLAN Trunk Protocol (VTP)	x	x	x	x	x
Configure VLAN trunks on Fast Ethernet and Gigabit Ethernet	x	x	x	x	x

**Table 3-2** Network Setup Tasks (continued)

Network Setup Requirement	Topology Services	User Tracking	Path Analysis	VLAN Port Assignment	Discrepancy Reports
Create the default configuration server for ATM LAN Emulation (LANE)	x	x	x	x	x
Enable source routing	–	–	x	–	–

After you set up your network, continue to the [“Configuring Device Discovery” section on page 3-5](#).

## Configuring Device Discovery

You can modify SNMPv2 and SNMPv3 credentials using the **Discovery > SNMP Settings** option from the Admin tab in the Campus Manager Administration window.

To configure Device Discovery Settings:

---

**Step 1** Go to **Campus Manager > Administration > Device Discovery > Discovery Settings**.

The Device Discovery Settings dialog box appears.

**Step 2** Specify the seed device and IP address range.

**Step 3** Click **Apply** to save the changes.

**Step 4** Click **OK** to start Device Discovery.

---

If you do not specify the IP address range, Device Discovery tries to discover as many devices as it can based on the community strings and connectivity.

For more information, see [Specifying Seed Device Online help](#).

After you set up your network, continue to the [“Configuring Data Collection” section on page 3-6](#).

## Verifying Device Discovery

To verify the status of Device Discovery, go to **Campus Manager > Administration**. In the Campus Manager Administration dashboard that appears, you can view the status of Device Discovery.

## Configuring Data Collection

You should have run Device Discovery atleast once before starting Data Collection, or the devices should be available in Device and Credential Repository (DCR).

To configure Data Collection, go to **Campus Manager > Administration > Campus Data Collection > Data Collection Filters**. The Data Collection Filter Settings dialog box appears.

### Specifying VTP Domain

---

- Step 1** In the Data Collection Filter Settings dialog box, select VTP Domain and click **Configure**.  
The VTP Domain Filter dialog box appears.
- Step 2** From the drop-down list, select either of these options:
- Manage devices in specified VTP domains.
  - Do not manage devices in specified VTP domains.
- Step 3** Enter the VTP domains that are to be used to limit data collection and click **Apply**.  
You will be prompted to click **OK** to start Data Collection or to click **Cancel** to apply only the settings.
-

### Specifying IP Address Range

---

**Step 1** In the Data Collection Filter Settings dialog box, select IP Address Range and click **Configure**.

The IP Range Filter dialog box appears.

**Step 2** From the drop-down list, select either of these options:

- **Manage devices in specified IP Address Range**
- **Do not manage devices in specified IP Address Range**

**Step 3** Specify the IP Address Range and click **Apply**.

A confirmation dialog box appears.

**Step 4** Click **OK** to start Data Collection.

---

**Note**

You can apply either the VTP domain or the IP Address Range, but not both.

---

If you do not specify the IP address range or VTP domain, Campus Manager takes all devices from the DCR. The number of devices for which data can be collected depends upon your licence limit.

## Verifying Data Collection

To verify the status of Data Collection, go to **Campus Manager > Administration**. In the Campus Manager Administration dashboard that appears, you can view the status of Data Collection.

## Setting Up Topology Services

To set up Topology Services:

- 
- Step 1** Verify that the Campus Manager Server is running.
- Step 2** Make sure the Campus Manager Server has managed the devices.  
To verify this, go to the Data Collection Metrics page. (**Campus Manager > Administration > Reports > Data Collection Metrics**)
- Step 3** Select **Campus Manager > Topology Services** from CiscoWorks Homepage.  
For more information, see the Topology Services Online help.
- 

## Verifying Topology Services

To verify that Topology Services is working correctly, do the following:

- Verify that all devices and interfaces are discovered.  
Correctly discovered devices and interfaces appear in green in the Topology Services window.
- Verify that devices displayed in red are SNMP reachable and have correct community strings.
- Verify that all VLANs and ELANs are discovered and that their port assignments are correct.

The devices are displayed in Topology services only after data collection.

For more information, see the Topology Services Online help.

## Setting Up Path Analysis

To set up Path Analysis:

- 
- Step 1** Install and configure a DNS server on your network.
- A DNS server is required for Campus Manager. For devices with multiple IP addresses, there should be a single DNS entry that includes all IP addresses.
- Step 2** Specify correct read community strings on all devices.
- Step 3** Specify correct write community strings for multi-layer switching shortcut path determination on Catalyst 5000 devices.
- Step 4** Edit the VLAN/ELAN Mapping Table.
- This table provides mapping of VLANs and ELANs to subnets.
- These mappings are auto-discovered based on information gathered by Topology Services and User Tracking.
- In some cases, the information might be incomplete. In these cases, you can edit a VLAN/ELAN mapping table to supplement the Topology Services and User Tracking information. If subnet mappings are not correct, Layer 2 traces on those subnets might fail.
- Step 5** Enable Cisco Discovery Protocol (CDP) on all Cisco devices.
- If CDP is not enabled, these devices will not appear on Layer 2 path traces.
- Step 6** Enable source routing on your network.
- This is required if you plan to run path traces outside of the domain known to Topology Services.
- For more information, see the Path Analysis Online help.
-

## Verifying Path Analysis

To verify that Path Analysis is working correctly, do the following:

- Start Topology Services and make sure that all devices, interfaces, and links are managed correctly.

Correctly managed devices appear in green in the Topology Services window.

- Verify that all VLANs and ELANs are managed with correct port assignments.
- Start User Tracking and run User Tracking major acquisition with the Ping Sweep option enabled to verify that all end-user stations are managed.
- Run **nslookup** on several known devices in the command shell.
- Verify that DNS lookup works and takes one second or less.
- Verify the Subnet Mapping table entries.

Each VLAN and ELAN entry should have any corresponding subnets listed. Any subnets that do not correspond to a VLAN or ELAN should be in a Subnet row.

- Run a few traces between endpoints known to User Tracking or Topology Services and verify that the trace completed successfully.

For troubleshooting information, see the Path Analysis Online help.

---

## Logging Out as Administrator

To end your administrator tasks, you must log out of Campus Manager.

---

**Step 1** Close all secondary browser windows.

You should have only one browser window opened displaying the Campus Manager interface.

**Step 2** Click **Logout**.

The Login page replaces the navigation tree.

---



# Troubleshooting the Installation

---

This appendix provides troubleshooting information for Campus Manager 4.0.3 installation and setup.

This appendix contains:

- [Logging In After Upgrading](#)
- [Understanding Installation Messages](#)
- [Failing to Delete a Package During Uninstallation](#)
- [Accessing the CiscoWorks Server](#)
- [FAQs on Service Packs](#)

## Logging In After Upgrading

If the Login window on the CiscoWorks Home page does not appear correctly when you attempt to log in for the first time after upgrading, clear your browser cache then re-enter the server URL in your browser.

To clear the browser cache in Microsoft Internet Explorer:

---

**Step 1** Select **Tools > Internet Options**.

The Internet Options dialog box opens.

**Step 2** Click the General tab.

**Step 3** Click **Delete Files** and click **OK** in the Delete Files dialog box.

---

To clear the browser cache in Netscape Navigator:

---

**Step 1** Select **Edit > Preferences**.

The Preferences dialog box opens.

**Step 2** Select **Advanced > Cache**.

**Step 3** Click **Clear Cache** and click **OK**.

---

## Understanding Installation Messages

After verifying that the correct files are installed, check the `/var/tmp/ciscoinstall.log` file for installation errors.

The following types of installation messages might appear:

- Information messages—Display important details
- Warning messages—Inform you that something might be wrong with a particular process, but the process will complete
- Error messages—Inform you that a particular process could not complete

Table A-1 shows error messages that might occur during installation and describes the reasons for the errors.

**Table A-1**      **Installation Error Messages**

Message	Reason for Message	User Action
Install CiscoWorks Common Service 3.0.3 first	CiscoWorks Common Service Service Pack 3.0.3 is not installed.	Install CiscoWorks Common Service Service Pack 3.0.3, and then install Campus Manager 4.0.3.
Access problem with <i>directory</i> .	The installation program cannot access the product <i>directory</i> that you specified.	Check the permissions on the directory <i>directory</i> .
Bad installation root dir.	You are trying to install the product in an unusable directory.	Install the product on a different directory.
Base package did not install. Exiting.	The installation program cannot install a package that is required for the product.	Contact your technical support representative.
Cannot backup /etc/services, no change will be made.	The installation program could not make a copy of /etc/services before modifying it.	Make sure that there is enough space in /tmp.
Cannot become owner of file in directory <i>directory</i> .	You cannot become the owner of a file in the directory that you specified as the product root.	Check the permissions on the directory that you specified.
Cannot change ownership of library. Exiting.	The installation program could not write to the product root directory.	Check the permissions on the directory that you specified.
Cannot create <i>directory</i> .	The installation program could not write to the directory that you specified.	Check the permissions on the directory that you specified.
Cannot create symlink: ln -s root /opt/CSCOpX.	The installation program cannot create a link from /opt/CSCOpX to the product root directory that you specified.	Contact your technical support representative.
Cannot determine the CiscoWorks Common Services version.	The installation disk is corrupted.	Contact your technical support representative.

■ Understanding Installation Messages

**Table A-1**      *Installation Error Messages (continued)*

Message	Reason for Message	User Action
Cannot determine the version of <i>product</i> .	The installation program was unable to determine the product version.	Contact your technical support representative.
Cannot make list of packages for installation.	The installation has suffered a major failure.	Contact your technical support representative.
Cannot upgrade.	Upgrade failed.	Contact your technical support representative.
Copy <i>setupdir</i> to <i>\$NMSROOT</i> failed.	The installation program could not write to product root directory.	Check the permissions on the root.
Installation in progress.	You are already running an installation on this machine.	Run only one installation program at a time.
Missing file <i>file</i> .	The installation program could not find the <i>file</i> file.	Contact your technical support representative.
No syslog facility is available.	There are no available syslog facilities.	Make one of the facilities available.
Not enough disk space: <i>root</i> .	You have picked a product root in a file system with insufficient space to load the product.	Make at least 2 GB of disk space available on the partition on which you install the product.
Package verification failed: <i>pkg</i> aborting.	While attempting to load our packages on the machine, one of the packages loaded incorrectly.	Contact your technical support representative.
Syslog is not running.	The installation program was unable to start syslogd on this machine.	Restart syslogd.
The components have dependency errors.	The installation program suffered a major failure.	Contact your technical support representative.

Table A-1 Installation Error Messages (continued)

Message	Reason for Message	User Action
User must be root.	You must be logged in as root to install the product.	Log in as root and enter the correct password.
Wrong OS.	This operating system is not Solaris or not a supported version of Solaris.	Make sure that you are running Solaris 2.8 or Solaris 2.9.

## Failing to Delete a Package During Uninstallation

If you try to remove Campus Manager Manager 4.0.3 but the uninstallation program fails to delete a package, try running the uninstallation program again. Several circumstances can cause a package not to uninstall successfully. Running the uninstallation program again will usually remove it.

## Accessing the CiscoWorks Server

The CiscoWorks server uses port 1741 by default (443 if SSL is enabled). This port is normally used by web servers. If you see an error message that an existing web server is already configured to run on port 1741, and the alternative port 1744 is used instead, verify that you entered the correct URL for the server:

```
http://server_name:1744
```

where *server\_name* is the name of the machine on which CiscoWorks was installed and 1744 is the alternative port on which CiscoWorks is installed if port 1741 is in use.

If you still cannot access the server, enter the following command to make sure your server is running:

```
# ping server_name
```

If you get a message that the server is *alive*, and get a proxy error when you try to connect to the server, make sure the proxy is set up correctly. If your server is configured to use a proxy server outside the firewall, you will get proxy errors if you have configured the proxy to ignore requests to a certain machine, set of machines, or domain.

You can specify a proxy server in Netscape Navigator under **Edit > Preferences > Advanced > Proxies** and in Internet Explorer under **Tools > Internet Options > Connections > LAN Settings**.

Your proxy is set up incorrectly if:

- You receive an error message informing you that you are using a proxy outside the firewall.
- The proxy server recognizes www-int as an internal server, so it does not send proxy requests to that server.
- You set up a new internal server, www-nms, but when you make a request to the proxy server, it does not recognize www-nms as an internal server and proxies the request.
- The proxy server outside the firewall tries to request data from a server inside the firewall, and the request is blocked.
- You get a `Connection Refused` error from the proxy server.

## FAQs on Service Packs

The following are the Frequently Asked Questions (FAQs) on Service Packs.

- Q.** What is an SP? Why should I install the latest SP?
- A.** SP (Service Pack) for Campus Manager is a downloadable package containing a collection of updated files to provide you with support for new devices. In addition, the SP contains fixes to certain known problems, as well as fixes to newly discovered problems. SPs are available for downloading from Cisco.com.
- Q.** From where can I download a Service Pack?
- A.** To retain support for new devices, we recommend that you download and install the latest SP for Campus Manager from:
- <http://www.cisco.com/cgi-bin/tablebuild.pl/cw2000-campus>

- Q.** How do I know which version of SP I have installed?
- A.** To check the version of SP installed on your system, from the CiscoWorks Homepage, go to **Software Center > Software Update > Campus Manager**.





# Mounting and Unmounting the CD-ROM

---

This appendix describes how to mount and unmount the Campus Manager 4.0.3 CD-ROM on a Solaris system and provides general information only. For more detailed instructions, consult your Sun documentation.

You can install Campus Manager 4.0.3 from a CD-ROM mounted on the Campus Manager server system or from a CD-ROM mounted on a remote Solaris system. After you complete the Campus Manager 4.0.3 installation, you must unmount the CD-ROM drive.

This appendix contains:

- [Mounting a Local CD-ROM Drive](#)
- [Mounting a Remote CD-ROM Drive](#)
- [Unmounting a Local CD-ROM Drive](#)
- [Unmounting a Remote CD-ROM Drive](#)

# Mounting a Local CD-ROM Drive

To mount a local CD-ROM drive:

- 
- Step 1** Insert the Campus Manager 4.0.3 CD-ROM.
- Step 2** Become the superuser by entering the command **su** and the root password at the command prompt, or log in as root. The command prompt changes to the pound sign (#).

If the `/cdrom` directory does not already exist, enter the following command to create it:

```
# mkdir /cdrom
```

- Step 3** Mount the CD-ROM drive.




---

**Note** The `vold` process manages the CD-ROM device and performs the mounting. The CD-ROM might automatically mount onto the `/cdrom/cdrom0` directory.

---

- If you are running File Manager, a separate File Manager window displays the contents of the CD-ROM.
- If the `/cdrom/cdrom0` directory is empty because the CD-ROM was not mounted, or if File Manager did not open a window displaying the contents of the CD-ROM, verify that the `vold` daemon is running by entering:

```
# ps -e | grep vold | grep -v grep
```

- If `vold` is running, the system displays the process identification number of `vold`. If the system does not display anything, restart the daemon by entering:

```
# /usr/sbin/vold &
```

- If the `vold` daemon is running but did not mount the CD-ROM, stop the `vold` daemon and then restart it. To stop the `vold` process, you must know the process identification number. If you do not know the process identification number, you can get it by entering:

```
# ps -ef | grep vold | grep -v grep
```

**Step 4** Stop the vold process by entering:

```
# kill -15 process_ID_number
```

**Step 5** Restart the vold process by entering:

```
# /usr/sbin/vold &
```

If you encounter problems using the vold daemon, enter the following command to mount the CD-ROM:

```
# mount -F hsfs -r ro /dev/dsk/cxtyd0sz /cdrom/cdrom0
```

where *x* is the CD-ROM drive controller number, *y* is the CD-ROM drive SCSI ID number, and *z* is the slice of the partition on which the CD-ROM is located.

You have now mounted the CD-ROM drive. See [Chapter 2, “Installing Campus Manager”](#) for instructions on installation.

---

## Mounting a Remote CD-ROM Drive

To mount a remote CD-ROM drive:

**Step 1** Insert the Campus Manager 4.0.3 CD-ROM into the CD-ROM drive of the remote machine.

**Step 2** Become the superuser on the remote machine by entering the command **su** and the root password at the command prompt, or log in as root. The command prompt changes to the pound sign (#).

If the /cdrom directory does not already exist, enter:

```
# mkdir /cdrom
```

**Step 3** Mount the CD-ROM drive.



**Note** The vold daemon process manages the CD-ROM device and performs the mounting. The CD-ROM might automatically mount onto the /cdrom/cdrom0 directory.

---

- If you are running File Manager, a separate File Manager window displays the contents of the CD-ROM.
- If the `/cdrom/cdrom0` directory is empty because the CD-ROM was not mounted, or if File Manager did not open a window displaying the contents of the CD-ROM, verify that the `vold` daemon is running by entering:

```
# ps -e | grep vold | grep -v grep
```

- If `vold` is running, the system displays `/usr/sbin/vold`. If the system does not display anything, restart the daemon by entering:

```
# /usr/sbin/vold &
```

- If the `vold` daemon is running but did not mount the CD-ROM, stop the `vold` daemon and then restart it. To stop the `vold` process, you must know the process identification number. If you do not know the process identification number, you can get it by entering:

```
# ps -ef | grep vold | grep -v grep
```

**Step 4** Stop the `vold` process by entering the following command:

```
# kill -15 process_ID_number
```

**Step 5** Restart the `vold` process by entering the following command:

```
# /usr/sbin/vold &
```

If you encounter problems using the `vold` daemon, enter the following to mount the CD-ROM:

```
# mount -F hfs -o ro /dev/dsk/cxtyd0sz /cdrom/cdrom0
```

where *x* is the CD-ROM drive controller number, *y* is the CD-ROM drive SCSI ID number, and *z* is the slice of the partition on which the CD-ROM is located.

**Step 6** Use a text editor to create an `/etc/dfs/dfstab` file, if one does not exist.

**Step 7** Add the following line to the `/etc/dfs/dfstab` file:

```
share -F nfs -o ro /cdrom/cdrom0
```

**Step 8** Make sure your remote machine is enabled as an NFS server by entering:

```
# ps -ef | grep nfs | grep -v grep
```

The output of this command indicates whether the `/usr/lib/nfs/nfsd` and `/usr/lib/nfs/mountd` daemons are running. If they are not running, enable your machine as an NFS server by entering:

```
# /etc/init.d/nfs.server start
```

If your machine is enabled as an NFS server, enter one of the following:

```
# share
```

or

```
# shareall
```

**Step 9** Log in to the machine on which you want to install Campus as superuser by entering the command `su` and the root password, or log in as root.

**Step 10** Create a `/cdrom` directory, if one does not already exist, by entering:

```
# mkdir -p /cdrom/cm403
```

**Step 11** To mount the CD-ROM drive, enter:

```
# /usr/sbin/mount -r remote_machine_name:/cdrom/cdrom0 /cdrom/cm403
```

You have now mounted the CD-ROM drive. See [Chapter 2, “Installing Campus Manager”](#) for installation instructions.

---

## Unmounting a Local CD-ROM Drive

To unmount a local CD-ROM drive:

---

**Step 1** As root, enter:

```
# cd  
# umount /cdrom/cdrom0
```

**Step 2** Remove the CD-ROM and store it in a safe place.

---

# Unmounting a Remote CD-ROM Drive

To unmount a remote CD-ROM drive:

- 
- Step 1** As root, enter the following on the local machine:
- ```
# umount /cdrom/cm403
```
- Step 2** As root, enter the following on the remote machine:
- ```
# umount /cdrom/cdrom0
```
- Step 3** Remove the CD-ROM and store it in a safe place.
-



# User Tracking Utility

---

CiscoWorks User Tracking Utility 1.1.1 (UTU) is a desktop utility that provides quick access to useful information about users or hosts discovered by the Campus Manager User Tracking application.

This chapter contains:

- [Understanding UTU, page C-1](#)
- [Hardware and Software Requirements for UTU, page C-2](#)
- [Downloading UTU, page C-3](#)
- [Installing UTU, page C-3](#)
- [Accessing UTU, page C-5](#)
- [Configuring UTU, page C-6](#)
- [Uninstalling UTU, page C-7](#)
- [Upgrading to UTU 1.1.1, page C-8](#)
- [Reinstalling UTU, page C-9](#)

## Understanding UTU

User Tracking Utility allows users with Help Desk access to search for users or hosts discovered by Campus Manager User Tracking application. UTU comprises a server-side component and a client utility.

To use UTU, Campus Manager must be installed and accessible through the network.

## Definitions

Table C-1 explains certain terms and definitions used in User Tracking Utility.

**Table C-1**      **Definitions**

Term	Definition
Host	Any UNIX or Windows system discovered by User Tracking.
Host Name	Name of the discovered host.
Campus Manager Server	Host name or IP address of CiscoWorks server on which you have installed Campus Manager.
Port	<ul style="list-style-type: none"> <li>• Port number to which the host is connected</li> <li>• Port number on which Campus Manager is running on the CiscoWorks server</li> </ul>
Subnet	Subnet to which the host belongs.
User Name	Name of the user who has logged into the host.

## Hardware and Software Requirements for UTU

Table C-2 lists the minimum system requirements for UTU 1.1.1.

**Table C-2**      **System Requirements**

Requirement Type	Minimum Requirements
System hardware	IBM PC-compatible computer with Intel Pentium processor.
System software	Windows 2000 (Professional or Server) with Service Pack 3 or higher, Windows XP with Service Pack 2 or higher.
Memory (RAM)	128 MB
Additional required software	Campus Manager 4.0.3
Network Connectivity	Campus Manager 4.0.3 must be running and accessible through the network

## Downloading UTU

UTU requires CiscoWorksUserTrackingUtility1.1.1.exe file to be downloaded and installed.

- 
- Step 1** Locate the file CiscoWorksUserTrackingUtility1.1.1-k9.zip at:  
<http://www.cisco.com/cgi-bin/tablebuild.pl/cw2000-campus-crypto>  
This zip file contains CiscoWorksUserTrackingUtility1.1.1.exe and setup.iss file (required for silent installation).
- Step 2** Extract the file using any file extractor such as WinZip.
- 

## Installing UTU

To install UTU in normal installation mode:

- 
- Step 1** Log into the system with local system administrator privileges.
- Step 2** Navigate to the directory that contains CiscoWorksUserTrackingUtility1.1.1.exe.
- Step 3** Double-click CiscoWorksUserTrackingUtility1.1.1.exe to begin installation.  
The User Tracking Utility Welcome screen appears.
- Step 4** Click **Next**.  
The Choose Destination Location dialog box appears. By default, UTU is installed in the directory C:\Program Files\CSCOutu.
- Step 5** Click **Next** to install UTU in the default directory.  
or
- Click **Browse** to choose a different directory and click **OK**.
  - Click **Next** to continue with the installation.
- The Configure CiscoWorks LMS Server Details dialog box appears.
- Step 6** Enter the name or IP address of the server on which Campus Manager is installed.
- Step 7** Enter the port number of the Campus Manager server. The default port number is 1741.

**Step 8** Click **Next**.

The following message appears:

```
Is CiscoWorks LMS Server SSL Enabled?
```

**Step 9** Click **Yes** if the Campus Manager server is SSL enabled, otherwise, click **No**.

The Configure LMS Server Authentication dialog box appears. You can also configure these server details after installation.

**Step 10** Enter a valid CiscoWorks Campus Manager server user name and password.

This is used to verify the validity of the user when searching for users or hosts.

**Step 11** Confirm the password and click **Next**.

The Setup Complete dialog box appears.

**Step 12** Click **Finish** to complete the installation.

User Tracking Utility is installed at the destination location you specified in [Step 5](#) above. However, it does not create a program group under **Start > Programs**.

You cannot re-install UTU on a system that already has this application installed on it. You must check for existing installations of UTU before beginning a fresh installation.

To install UTU in silent mode, enter the following at the command prompt:

```
exe-location\CiscoWorksUserTrackingUtility1.1.1.exe -a -s  
-ffile-location\setup.iss
```

where

- *exe-location* is the directory where you have CiscoWorksUserTrackingUtility1.1.1.exe
- *file-location* is the directory where you have the setup.iss file.

Do not use space after the **-f1** option. Use the complete path for *file-location*.

For example:

If the install directory for UTU is c:\utu, enter the following at the command prompt:

```
c:\utu\CiscoWorksUserTrackingUtility1.1.1.exe -a -s  
-f1c:\utu\setup.iss
```

To configure the server information, modify the setup.iss file before running the silent install. Edit the following fields:

```
[SdShowDlgEdit2-0]
szEdit1= <hostname>
szEdit2= <server-port>
Result=1
[AskYesNo-0]
Result=1          <1- SSL Enabled, 0 - SSL Disabled>
[SdShowDlgEdit3-0]
szEdit1=<username>
szEdit2=<password>
szEdit3=<password>
```

You cannot re-install UTU on a system that already has this application installed on it. You must check for existing installations of UTU before beginning a fresh installation.

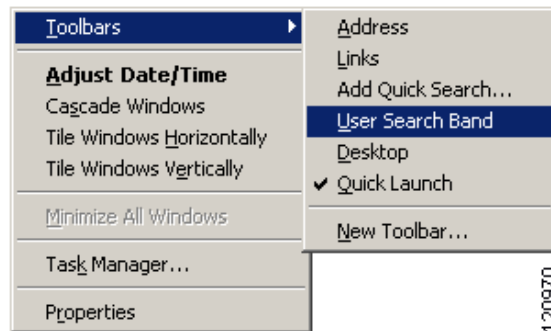
To confirm UTU installation on your system, right-click the taskbar and select the **Toolbar** option in your machine. You can find the User Search Band option in the popup menu.

## Accessing UTU

To display the UTU desktop band on the taskbar:

- 
- Step 1** Right-click the taskbar of the machine on which you installed UTU.
  - Step 2** Select **Toolbars > User Search Band**, as shown in [Figure C-1](#).

**Figure C-1**      **Selecting the Toolbar**



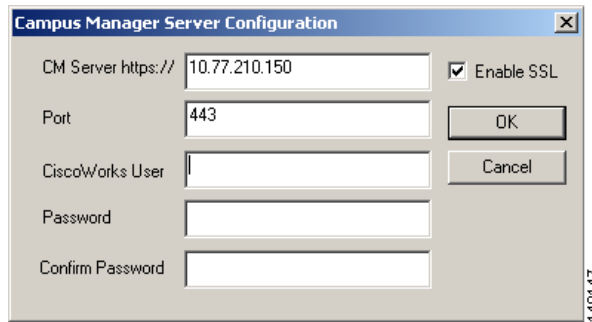
The UTU desktop band appears on the taskbar with the title User Information.

## Configuring UTU

You must configure UTU only if you want to change the Campus Manager server configurations that you entered while installing UTU.

To configure UTU:

- 
- Step 1** Right-click the User Information search area on the taskbar of the machine on which you installed UTU.  
A popup menu appears.
  - Step 2** Select **Configure**.  
The Campus Manager Server Configuration dialog box appears.
  - Step 3** Modify the settings as required.
  - Step 4** Click **Enable SSL** for communicating with an SSL enabled server.  
The port is changed to 443, which is the default port for SSL. See [Figure C-2](#).

**Figure C-2 Enabling SSL**

**Step 5** Click **OK** to configure or **Cancel** to quit.

## Uninstalling UTU

Before you uninstall UTU 1.1.1, you must hide the UTU desktop band. To do that, right-click the taskbar of the machine on which you installed UTU, and deselect **User Search Band** in the Toolbars popup menu.

To uninstall UTU:

**Step 1** From the Windows taskbar, select **Start > Settings > Control Panel > Add/Remove Programs**.

The Add/Remove Programs dialog box appears.

**Step 2** Select **CiscoWorks User Tracking Utility**.

**Step 3** Click **Change/Remove**.

The system prompts you to confirm uninstallation.

**Step 4** Click **Yes**.

The Remove Programs From Your Computer dialog box appears.

**Step 5** Click **Yes** to remove the shared DLL, UTBand.dll, and click **OK**.

Or

Click **No**.

The uninstallation proceeds, but it does not completely uninstall UTU. To complete the uninstallation process:

a. Go to the directory where you have installed UTU. The default directory is C:\Program Files\CSCOutu.

- Enter `regsvr32 /u UTBand.dll`

The following message appears:

```
DLLUnregisterServer in UTBand.dll failed
```

- Click **OK**.

- Enter `del UTBand.dll`

This removes the UTU installation completely from the machine.

**Step 6** Restart your system.

---

## Upgrading to UTU 1.1.1

You can upgrade User Tracking Utility from UTU 1.1 to UTU 1.1.1.

When you install UTU 1.1.1 above UTU 1.1, UTU prompts you to uninstall the previous version. A message appears:

```
WARNING: The setup program has detected a previous version of
CiscoWorks User Tracking Utility. To install CiscoWorks
User Tracking Utility 1.1.1, previous version of the product must be
uninstalled. Do you want to uninstall CiscoWorks User Tracking Utility
1.1.1 now?
```

```
Yes/No
```

Click **Yes** to upgrade, or **No** to quit.

## Reinstalling UTU

You must not install UTU 1.1.1 on a system that already has this application installed on it. You must check for existing installations of UTU 1.1.1 before attempting to reinstall it.

To check for an existing installation of UTU 1.1.1:

---

**Step 1** Right-click on the Taskbar of the machine.

**Step 2** Select **Toolbars**.

If you see the User Search Band option, it means you have UTU 1.1.1 already installed on the system.

You must first uninstall the current installation of UTU 1.1.1, and only then reinstall it.

---





## Changes and Enhancements in Campus Manager 4.0.3

---

Campus Manager 4.0.3 provides management support for Layer 2 technologies. It is built on CiscoWorks Common Services 3.0.3 and is an integral component of CiscoWorks LAN Management Solution 2.5.1 (LMS 2.5.1).

In this release, the major change on the server side architecture is the refactoring of Campus Manager server. On the client side, the User Tracking application has been redesigned and now appears with a new look and feel.

This appendix contains the changes and enhancements in Campus Manager 4.0.3:

- [Re-Factoring of Campus Manager Server Process, page D-12](#)
- [Improved Network Discovery, page D-12](#)
- [Improved Data Collection, page D-13](#)
- [Support for SNMPv3, page D-13](#)
- [Support for IPv6, page D-13](#)
- [Support for VLAN and VTP, page D-13](#)
- [Support for Spanning Tree Protocols, page D-14](#)

# Re-Factoring of Campus Manager Server Process

The Campus Manager server has been refactored to improve the performance and scalability of the application.

Before Campus Manager 4.0, the Campus Manager server process was a single process to perform Device Discovery, user tracking, servicing query and configuration from clients.

To improve the server performance and to handle larger networks, Campus Manager server process has been separated into transient processes for device discovery and User Tracking Major Acquisition.

Campus Manager 4.0.3 contains:

- Campus Manager server process as a daemon
- Transient Device Discovery process
- Transient User Tracking Major acquisition process

Campus Manager server performs Data collection, query and configuration services.

## Improved Network Discovery

With Campus Manager 4.0.3, you can:

- Provide seed devices.
- Set the SNMP credentials.
- Run device discovery.

Device Discovery process discovers devices and updates the Device Credential Repository (DCR) with the credentials of the devices.



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**Note**

Campus Manager cannot manage the devices until you run the Data collection process.

---

## Improved Data Collection

You can choose devices to be managed by Campus Manager from the devices in DCR, or through data collection filters (IP subnets or VTP domains).

## Support for SNMPv3

Campus Manager discovers devices configured with SNMPv3 credentials.

## Support for IPv6

Campus Manager can discover IPv6, manage IPv4, and dual stack IPv6 devices.

## Support for VLAN and VTP

With Campus Manager 4.0.3, you can:

- Create a primary VLAN, secondary VLANs of different types and associate them to the primary VLAN, assign or move ports to secondary VLANs, and configure Promiscuous ports.
- Verify the VTPv2 or VTPv3 related information for the devices in your network that are managed by Campus Manager.
- Apply VTP server filter, transparent filter, or client filter for VTPv2 or VTPv3 domains in Topology Maps.

# Support for Spanning Tree Protocols

Campus Manager 4.0.3 provides support for Spanning Tree Protocol. Along with support for different types of Spanning Tree Protocol (STP)—PVST, PVST+, MST, MISTP, it allows you to:

- View STP parameters for each switch-cloud, VLAN or instance, or for each port.
- Configure STP parameters on each port and each device.
- View and change the instance-to-VLAN mapping (for MST and MISTP).
- Configure preferred VLANs on trunk ports.
- Find the recommended optimal root for a switch cloud and highlights the computed Optimal Root (switch) on topology map.
- Find the recommendation for setting up the number of STP instances on a switch cloud. Highlights the recommended instances on the Map.
- Find the recommendation for reduction of number of STP instances.
- Highlight the instance to which the other instances can be merged.
- Map a new VLAN to recommended instance.
- Highlight the instance on the Map.
- Change certain STP parameters and view the result before applying the changes in the network.

# Support for Configuration of Ether Channel and Inter-VLAN Routing

Campus Manager 4.0.3 provides the following support for EtherChannels:

- Configuring multiple links between switches as EtherChannel.
- Configuring EtherChannel load balancing parameters.

## Support for Trunking

Campus Manager 4.0.3 supports the following trunking features:

- Configuring a link between two switches as a trunk.
- Configuring the allowed and disallowed VLANs on a trunk.

## Support for TDR

Campus Manager 4.0.3 provides support for Cable Diagnostic Test using Time Domain Reflectometry (TDR).

## HTML Based User Interface

Campus Manager 4.0.3 has a non-Java based user interface for User Tracking application and Campus Manager Administration.

## Integration with Common Services 3.0.3 Components

Campus Manager 4.0.3 integrates with Common Services 3.0.3 modules like OGS, UII, Security and ACS, DCR, PSU, and CiscoWorks Homepage.

■ Support for Spanning Tree Protocols



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