



Installation Guide for Cisco Application Analysis Solution

Version 2.0

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:
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Preface

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

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/>

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<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 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 send comments about Cisco documentation to bug-doc@cisco.com.

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

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

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

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

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

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



Tip

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

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

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

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>



Planning Your Installation

Cisco Application Analysis Solution (Cisco AAS) is a combination of integrated software programs:

- An Application Analysis engine that enables you to capture application traffic in your production network; import the captured data and create detailed application models; visualize, analyze, and troubleshoot the applications; and predict application performance by “deploying” applications in a simulated network environment.
- The Cisco Application Analysis Solution, Application Decode Module (Cisco AAS-ADM), which enables you to pinpoint application-specific messages—for example, SQL statements—and problematic sub-transactions that might be causing delays in your application. An extensive set of Application Decodes are provided with this module.
- A set of Capture Agents that you can use to capture application traffic throughout your production network. Cisco AAS includes installers for multiple platforms. You can install as many Capture Agents as you need, and thereby capture multi-tier applications from multiple locations.
- The optional Cisco Application Analysis Solution, Advanced Capture Module (Cisco AAS-ACM), which enables you to perform “continuous captures” of application traffic. Continuous captures are useful for capturing intermittent problems. Packets are automatically stored locally in a rolling buffer. When a performance problem is reported, the trace (based on a user-specified time frame) is pulled from the buffer by the Capture Agent and imported into Cisco AAS for analysis.

The Cisco AAS package contains multiple installation CDs for the software, models, documentation, and other components of this solution.

Installation Workflows

There are several possible workflows for installing Cisco AAS, depending on your situation:

- [First-Time Installation, page 1-2](#)—Use this workflow to install Cisco AAS for the first time, with or without the optional Advanced Capture Module
- [Update Installation, page 1-3](#)—Use this workflow to update a previous version of Cisco AAS to the current version
- [Upgrade Installation, page 1-4](#)—Use this workflow to upgrade an existing installation of Cisco AAS 2.0 by adding the optional Cisco AAS-ACM
- [Simultaneous Update/Upgrade Installation, page 1-4](#)—Use this workflow to update a previous version of Cisco AAS to release 2.0 and also upgrade by adding the optional Cisco AAS-ACM

First-Time Installation

You should perform a first-time installation only if no prior version of Cisco AAS is installed on your computer. [Table 1-1](#) lists the phases of the installation process.



Note

Cisco recommends that you perform the steps in the order listed in this table.

Table 1-1 First-Time Installation: Workflow

	Description	Reference
Step 1	Register your Cisco Solution	Registering Your Cisco Solution Product, page 1-5
Step 2	Determine the host computers	Determining the Program and Agent Hosts, page 1-6
Step 3	Determine licensing options	Product Licensing, page 1-7
Step 4	Verify system requirements	System Requirements, page 2-1

Table 1-1 First-Time Installation: Workflow (continued)

	Description	Reference
Step 5	Install Cisco AAS, Application Analysis	Installing Cisco Application Analysis (Windows), page 3-1 Installing Cisco Application Analysis (Linux), page 4-1
Step 6	Add an Application Analysis license	Adding a License, page 6-3
Step 7	Add a Cisco AAS-ADM license	Adding a License, page 6-3
Step 8	Add a Cisco AAS-ACM license (if this optional module was purchased)	Adding a License, page 6-3
Step 9	Install Capture Agents	Installing Capture Agents, page 5-1

Update Installation

You should perform an update installation only if a prior version of Cisco AAS exists on your computer and you want to replace it with the current version.

Release 2.0 is backward-compatible with prior releases. Data from your existing installation (such as analyzed trace files) can be migrated transparently to release 2.0.

[Table 1-2](#) lists the phases of the installation process.



Note

Cisco recommends that you perform the steps in the order listed in this table.

Table 1-2 Update Installation: Workflow

	Description	Reference
Step 1	Remove the earlier release of Cisco AAS (unless you want to keep the old installation)	Uninstalling Application Analysis (Windows), page 7-1
Step 2	Verify system requirements	System Requirements, page 2-1
Step 3	Install the current release of Cisco AAS, Application Analysis	Installing Cisco Application Analysis (Windows), page 3-1

Table 1-2 Update Installation: Workflow (continued)

	Description	Reference
Step 4	Refresh licenses	Refreshing a License, page 6-6
Step 5	Install the latest releases of the Capture Agents	Installing Capture Agents, page 5-1

Upgrade Installation

You should perform an upgrade installation only if Cisco AAS 2.0 is already installed on your computer and you want to upgrade it by adding the optional Cisco AAS-ACM. [Table 1-3](#) lists the phases of the installation process.



Note Cisco recommends that you perform the steps in the order listed in this table.

Table 1-3 Upgrade Installation: Workflow

	Description	Reference
Step 1	Add a Cisco AAS-ACM license	Upgrading a License, page 6-4

Simultaneous Update/Upgrade Installation

You should perform a simultaneous update/upgrade installation only if a prior version of Cisco AAS exists on your computer and you want to update to release 2.0 and also upgrade by adding the optional Cisco AAS-ACM. [Table 1-4](#) lists the phases of the installation process.



Note Cisco recommends that you perform the steps in the order listed in this table.

Table 1-4 Simultaneous Update/Upgrade Installation: Workflow

	Description	Reference
Step 1	Remove the earlier release of Cisco AAS (unless you want to keep the old installation)	Uninstalling Application Analysis (Windows) , page 7-1
Step 2	Verify system requirements	System Requirements , page 2-1
Step 3	Install the current release of Cisco AAS, Application Analysis	Installing Cisco Application Analysis (Windows) , page 3-1
Step 4	Add a Cisco AAS-ACM license	Upgrading a License , page 6-4
Step 5	Refresh licenses	Refreshing a License , page 6-6
Step 6	Install the latest releases of the Capture Agents	Installing Capture Agents , page 5-1

Upgrading Licenses

If you have a Restricted license and want to upgrade it to an Unrestricted license, refer to the [“Upgrading a License”](#) section on page 6-4.

Registering Your Cisco Solution Product

Before you can install Cisco AAS, you must register your product with Cisco Systems, Inc. After you register your product, Cisco will send you a username, password, and group ID number. You will need this information when you install your product licenses (as described in the [“Adding a License”](#) section on page 6-3.)



Note

By accessing or using the Cisco Systems, Inc. products in this package, you agree that your use of such products is governed by the terms and conditions of the Cisco Systems, Inc. Software License and any applicable supplemental license agreement.

To review the terms of the Software License before accessing or using the products, read the copy of the Cisco Software License in the Cisco Information Packet that accompanies the products or online at:

http://www.cisco.com/univercd/cc/td/doc/es_inpkc/cetrans.htm

To obtain the license installation credentials, log on to one of the websites listed below, and follow the registration instructions. The Product Authorization Key (PAK) number attached to your Software License Claim Certificate is required for the registration process. After registering, retain your Claim Certificate for future reference.

Registration Information

Use this URL if you are a registered user of Cisco.com:

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

Use this URL if you are not a registered user of Cisco.com:

<http://www.cisco.com/go/license/public>

You should receive the license installation credentials and instructions through e-mail within one hour of registration. If you experience problems with the registration websites or if you have additional questions, contact the Cisco Licensing department through e-mail at licensing@cisco.com, or open a service request over the telephone by using one of these numbers:

- Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
- EMEA: +32 2 704 55 55
- USA: 1 800 553-2447

You can find a complete list of Cisco TAC contacts at this URL:

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

Determining the Program and Agent Hosts

In addition to the Application Analysis program, you can also install an unlimited number of Capture Agents in your network. A Capture Agent is used to record traffic that you can import into Application Analysis; the capture files generated

by an agent from the raw data used to analyze and troubleshoot applications. You should install an agent on any computer that acts as a tier for the transaction you want to study.

The first step in the installation process is to select the host computers where you want to install the program and Capture Agents. Each computer must meet the system requirements for the program or agent as described in the [System Requirements](#) chapter.

After you verify that the program and agent hosts meet the system requirements, return to the [“Installation Workflows”](#) section on page 1-2.

Product Licensing

Application Analysis requires a corresponding license to be installed and available to that program. On startup, the program contacts a *License Server* and requests a license; if it does not obtain a license, the program does not start. The License Server is a daemon/process that runs on the host where a license is installed; it handles license requests from component programs.

This section describes the different options for installing licenses and setting license options. After you determine the licensing configuration you want, return to the [“Installation Workflows”](#) section on page 1-2.

Restricted and Unrestricted Licenses

You can purchase either Restricted or Unrestricted versions of the Cisco AAS program license. This distinction determines the scope of authorized users:

- A *Restricted license* confines the user of a program to one IP network by default subnet class. This means that the licensed program can be used only if the License Server is in the same classful IP network. IP network connectivity between the program and server is required.
- An *Unrestricted license* offers the most flexibility for organizations that operate multiple IP networks (as defined by default subnet class). Users can access licenses from within the same classful IP network as the License Server as well as from up to 100 additional IP networks. These networks must be defined in advance.

Selecting the License Type

When you run the software installer, it prompts you to specify the licensing mode. The options are:

- Floating/Local (“*Floating: serve licenses from this computer*”)—If you select this option, the program will request a license from a License Server running on the local computer.
- Floating/Remote (“*Floating: access licenses from remote server*”)—If you select this option, the program will request a license from a License Server running on a remote computer. (The installer also prompts you for the hostname of the remote server.)

Floating mode enables multiple users to share a license for Application Analysis. The following section describes Floating mode in more detail.

- Standalone—If you select this option, the installed license is restricted to the local computer and the program can be run on that computer only. (The program acts as its own License Server.) Select this option only if you want to restrict the use of Application Analysis to one computer.

Floating License Mode

Floating mode enables multiple users to share a license for Application Analysis. On startup, the program communicates with the License Server automatically and “checks out” a license. When the program closes, it returns the license to the License Server. Then the license is available for another Application Analysis user to start the program and check out the license. In Floating mode, the license is not “node-locked,” but can “float” to different computers.



Note

Multiple users cannot share the same Application Analysis license concurrently. Multiple concurrent Application Analysis sessions require an equivalent number of program licenses.

How Licensing Types and Modes Affect Who Can Use a License

Table 1-5 illustrates how the different license modes and restriction types determine which applications can use a specific license.

Table 1-5 Licensing Types and Modes

License Mode Used by Installed Program	Restriction Type of Installed License	Client Applications That Can Use the License on the License Server		
		Applications on the Same Host as the License Server	Applications in the Same Classful IP ¹ Network as the License Server	Applications in a Different Classful IP Network from the License Server
Standalone	Restricted	Yes		
Standalone	Unrestricted	Yes		
Floating	Restricted	Yes	Yes	
Floating	Unrestricted	Yes	Yes	Yes

1. Classful IP network refers to the classic “A”, “B”, and “C” IP network classes. For example, if the License Server is installed on a workstation that has a class “B” IP network address, then all workstations with the same class “B” address as the License Server are considered to be on the same classful IP network as the License Server.

Licensing Requirements

Note the following requirements:

- You must add the Application Analysis license as described in the [“Adding a License” section on page 6-3](#). Installing a program and specifying the licensing options does not install the license itself.
- If you specify Floating (remote) licensing for a program, the specified License Server must be accessible (via a TCP/IP network) to that program, as described in the [“Restricted and Unrestricted Licenses” section on page 1-7](#).

- You must use Floating mode if Virtual Network Data Server is running on the same host where Cisco AAS is installed. (Virtual Network Data Server is a component of other Cisco software products, including Cisco Network Planning Solution and Cisco Configuration Assurance Solution. Note, however, that Cisco does not recommend running these programs on the same host.)

Licensing Scenario: Example

In [Table 1-6](#), all licenses are installed on one host (AA_1), which acts as the only License Server in the network. The local Application Analysis program uses Floating/Local mode, while the remote programs use Floating/Remote mode. (Remember that if only one license is installed on the host, only one Application Analysis session can run at a time.) This type of setup is recommended; because there is only one License Server, it is easy to manage your licenses and configure programs.

Table 1-6 *Licensing Scenario (Recommended): All Licenses Installed on One Host*

Host Name	Installed Program	Installed Licenses
AA_1 (License Server)	Application Analysis <i>Licensing options chosen during install:</i> – license_server ¹ = (local host) – license mode ² = Floating/Local	Application Analysis
AA_2	Application Analysis <i>Licensing options chosen during install:</i> – license_server = AA_1 – license mode = Floating/Remote	—
AA_3	Application Analysis <i>Licensing options chosen during install:</i> – license_server = AA_1 – license mode = Floating/Remote	—

1. Each installed program has a “license_server” preference that specifies where (that is, on which host) the program license is installed. This preference is set when the program is installed (as described in the [“Selecting the License Type” section on page 1-8](#)). On startup, the program reads this preference and contacts the License Server on the specified host.
2. The “license_server” preference determines whether the program is in Local or Remote mode. If you specify Floating (local) mode when you install the program, the installer sets the “license_server” preference to (local host) and installs the License Server software. If you specify Floating (Remote), the installer prompts you for the name or IP address of the License Server host.



System Requirements

This chapter describes the system requirements for Cisco Application Analysis Solution, including Application Analysis and the capture agents. Cisco recommends that, before you start to install Cisco AAS, you verify that your computer hardware and software meet the requirements outlined in this chapter.

Application Analysis: System Requirements

Supported Platforms

Table 2-1 Supported Platforms for Application Analysis

Vendor¹	OS	Processor
Microsoft	Windows 2000 Professional x86 or EM64T (Intel Pentium III, 4, Xeon, or compatible (1.5 GHz or better) x86 AMD or AMD64 (1.5 GHz or better) Windows XP Professional Windows XP Professional x64 Edition Windows 2000 Server Windows Server 2003 and Windows Server 2003 R2 Windows Server 2003 x64 Edition and Windows Server 2003 R2 x64 Edition	x86 or EM64T (Intel Pentium III, 4, Xeon, or compatible (1.5 GHz or better) x86 AMD or AMD64 (1.5 GHz or better)
Red Hat	Red Hat Enterprise Linux 3 ² (v2.4 Linux kernel) Red Hat Enterprise Linux 4 (v2.6 Linux kernel)	x86 or EM64T (Intel Pentium III, 4, Xeon, or compatible, 500 Mhz or better) x86 AMD or AMD64, 500 MHz or better

1. Application Analysis is supported on the English language version of each operating system.
2. libstdc++.so.6 is required with Red Hat Enterprise Linux 3. You can obtain this by installing gcc 3.4 or higher.

Table 2-2 Required System Patches for Application Analysis

Vendor	OS	Patch Number/Name
Microsoft	Windows XP Professional	Service Pack 1 is required; Service Pack 2 is supported but not required.
	Windows 2000 Professional	Service Packs 1, 2, and 4 are supported but not required.

System Configuration

Table 2-3 System Configuration for Application Analysis

RAM	minimum 256 MB, recommended 512 MB - 2 GB ¹
System File Space	1GB (Up to 2GB of free disk space might be required during installation)
Working File Space	100 MB or more for temporary and log files
Display Resolution	1024x768 minimum

1. Recommended system configuration varies based on scale and complexity of the analysis being performed. Please contact your Cisco representative to determine recommendations for your specific Application Analysis deployment

Other Requirements

Table 2-4 Other Requirements for Application Analysis

Supporting Software	TCP/IP networking software is required.
Web Browser	To view web reports generated by Cisco AAS, you must have Firefox 1.0.6 or higher, Internet Explorer 5.0 or higher, or a compatible browser that supports Style Sheets.

Supported Packet File Formats

Cisco Application Analysis Solution can import capture files from the following sources:

1. Native Cisco application capture files, which have a suffix of .appcapture
2. Network Associate's Sniffer Basic/Pro (Windows version) and Sniffer Analyzer (DOS version)
 - Industry-standard binary .enc file format (uncompressed)
 - Sniffer's "Print to file" feature enables additional ACE import capabilities such as Token Ring.
3. TCPdump
 - Free UNIX utility widely used in academia, available at <http://ee.lbl.gov>



Note You must include the “-w <filename>” command-line arguments when you run TCPdump. With these arguments included, TCPdump writes the packet contents to a file rather than parsing and printing them out. For example, you could enter the following:

```
cmd> tcpdump -w /cisco_aas_user_home/cisco_appcaptures/
<filename>
```

4. windump
 - Free Windows version of tcpdump
 - Available at <http://netgroup-serv.polito.it/windump>
5. .fdc (FDDI) files, uncompressed
6. ACE also interfaces with ProConvert (a conversion utility available from WildPackets, Inc.) to support the file formats listed in [Table 2-5](#)

Table 2-5 File Formats Supported by ProConvert

Vendor	Product
AG Group	EtherPeek
Agilent Technologies	Agilent LAN Analyzer
Fluke	Protocol Inspector

Table 2-5 File Formats Supported by ProConvert (continued)

Vendor	Product
HP/Agilent Technologies	Internet Advisor LAN (Win95/98)
HP/Agilent Technologies	Internet Advisor LAN/49xx (Pre-Win95)
IBM	DatagLANce
Microsoft	Network Monitor (SMS 1.2 and 2.0, NT Server)
Network General	Sniffer (including compressed files)
Network General	SnifferBasic/Pro (.cap format through release 3.5)
Network Instruments	Observer
Novell	LANalyzer for Windows
Precision Guesswork	LANWatch
Shomiti	Surveyor
Sun Microsystems	snoop (free w/Solaris)
TTC	Fireberd500
TTC	Fireberd500 PC
Wavetek Wandel Goltermann	DA-30 (DOS version)
Wavetek Wandel Goltermann	Domino

Capture Agents: Supported Platforms

Cisco AAS ships with capture agents for the following platforms:

- Windows
- Solaris
- HP-UX
- Linux
- AIX

Table 3-6 gives details about each supported platform.

Cisco AAS also supports older versions of the capture agents. Some of these versions support older OS versions, although with reduced features. For example, Windows multi-processors, remote file storage, or PathProbe might not be supported on the older capture agents. If you need an agent for an OS not listed in [Table 3-6](#), contact Cisco technical support as described in the [“Obtaining Technical Assistance”](#) section on page fm-x.

Table 3-6 Capture Agents, version 3.2: Supported Platforms

Vendor	OS	Required System Patches	Processor	PathProbe Support
Apple	Mac OS X (10.2 and higher)	None	PowerPC	Supported
Hewlett-Packard	HP UX 11.0 (32-bit only)	PHSS_21906	PA7000 v1.1c or higher	Not Supported
IBM	AIX 5.x (32-bit only)	None	RS/6000	Not Supported
Microsoft	Windows NT 4.0	Service Pack 3, 5, or 6a. Note: SP4 and SP6 are NOT supported.	Intel Pentium III, 4, or Compatible	Supported
Microsoft	Windows 2000 and Server 2003 (32-bit ONLY)	None	Intel Pentium III, 4, or Compatible	Supported
Microsoft	Windows XP (32-bit ONLY)	Service Pack 1	Intel Pentium III, 4, or Compatible	Supported
Sun Microsystems	Solaris 8	Recommended Cluster Patch	SPARC Family (e.g. UltraSPARC)	Supported. UltraSPARC processor required for PathProbe
Sun Microsystems	Solaris 9	None	SPARC Family (e.g. UltraSPARC)	Supported. UltraSPARC processor required for PathProbe

Table 3-6 Capture Agents, version 3.2: Supported Platforms (continued)

Vendor	OS	Required System Patches	Processor	PathProbe Support
Sun Microsystems	Solaris 10	None	SPARC Family (e.g. UltraSPARC)	Not Supported
Various	Linux Kernel 2.4 and 2.6	None	Intel Pentium III, 4, or Compatible	Supported



Installing Application Analysis (Windows)

This chapter provides instructions for installing the Application Analysis component of Cisco AAS on Windows. After you install the program components, return to the [“Installation Workflows”](#) section on page 1-2.



Note

The Cisco AAS-ACM module is automatically installed with Application Analysis. It is activated by a separate license.



Note

If you are installing on Windows XP, you might see an error window that reads “OPNET <product_name> has encountered a problem and needs to close.” This error occurs because the installer caused an existing License Server process (op_license_server.exe) to terminate abnormally. This is a known issue; simply click **Don’t Send** and proceed with the installation.

For information about installing capture agents, see the [Installing Capture Agents](#) chapter.

Installing Cisco Application Analysis (Windows)

- Step 1** Log in as Administrator before inserting a CD.
- Step 2** Insert the Cisco AAS, Application Analysis CD into your CD-ROM drive.

The installation program should start automatically. If it does not, double-click on the icon that represents the CD-ROM and click on the `setup.exe` icon.

Step 3 You will be prompted for a directory in which to install your software (typically `C:\Program Files\Cisco\CiscoAAS2.0`).

Step 4 The software installer prompts you to configure Cisco Report Server.

If you will be using Cisco Report Server (an optional component not included with Cisco AAS), select the “Send analysis results...” checkbox and enter the hostname and port number.

If you will not be using Cisco Report Server, click on Next >.

Step 5 When the software installer prompts you to specify the type of licensing system to install, the following might help you decide:

- *Standalone* is recommended if you are the only Cisco Application Analysis user.
- *Floating: access licenses from remote server* is the correct choice if you already have a license server running on a remote machine and you want this installation to get its licenses from that machine.
- *Floating: serve licenses from this computer* is the correct choice if the current machine will be the license server.

For more information about these options, see the [“Product Licensing” section on page 1-7](#).

If there is an existing installation of Cisco AAS on this computer, you can check how that release was licensed by running its License Manager. The first line of the license servers tree describes the licensing.



Note To connect to the License Server through a Windows XP firewall, you must add `op_license_server.exe` to the firewall exception list.

Step 6 Insert the Cisco AAS, Models CD into your CD-ROM drive.

The installation program should start automatically. If it does not, double-click on the icon that represents the CD-ROM and click on the `setup.exe` icon.

Step 7 Insert the Cisco AAS, Documentation CD into your CD-ROM drive.

The installation program should start automatically. If it does not, double-click on the icon that represents the CD-ROM and click on the `setup.exe` icon.

- Step 8** Insert the Cisco AAS, Application Decodes CD and run the installer. Use the default settings on the Component screen.
-



Installing Application Analysis (Linux)

This chapter provides instructions for installing the Application Analysis component of Cisco AAS on Linux. After you install the program components, return to the [“Installation Workflows”](#) section on page 1-2.



Note

The Cisco AAS-ACM module is automatically installed with Application Analysis. It is activated by a separate license.

For information about installing capture agents, see the [Installing Capture Agents](#) chapter.

Installing Cisco Application Analysis (Linux)



Note

Before you install OPNET Cisco Application Analysis 2.0, verify that you have a supported version of Linux installed as well as any required system patches. For information about system requirements for Cisco Application Analysis, go to www.opnet.com/support and follow the “System Requirements” link.

Step 1 Log in as `root`.

Step 2 Insert the Cisco AAS, Application Analysis software CD in your CD-ROM drive.

Step 3 Move to the `unix` directory on the CD, as follows:

```
mount /media/cdrom
cd /media/cdrom
cd unix
```

Step 4 Enter the command `./op_install`.

Step 5 The software installer prompts you to configure Cisco Report Server.

If you will be using Cisco Report Server (an optional component not included with Cisco AAS), select the “Send analysis results...” checkbox and enter the hostname and port number.

If you will not be using Cisco Report Server, click on Next >.

Step 6 When you are prompted to specify the type of licensing system to install, the following might help you decide:

- *Standalone* is recommended if you are the only Cisco Application Analysis user.
- *Floating -- access licenses from remote server* is the correct choice if you already have a license server running on a remote machine and you want this installation to get its licenses from that machine.
- *Floating -- serve licenses from this computer* is the correct choice if the current machine will be the license server.

Step 7 At the end of the installation script for the Core software CD, you see the instruction “To complete the installation process, follow these steps”. Note this information for use when configuring user accounts.

Step 8 When you see the prompt “End of installation script”, change directories to `/tmp` to allow the CD to be ejected.

Step 9 Eject the CD with the `eject` command.

Step 10 Insert the Cisco AAS, Models CD into your CD-ROM drive and run the installer as described previously.

Step 11 Insert the Cisco AAS, Documentation CD into your CD-ROM drive and run the installer as described previously.

Cisco Application Analysis is now installed.

**Note**

These installers do not automatically detect the default web browser you have installed on your Linux system. Search the known product issues (as described in [Appendix A, “Known Issues”](#)) for details on how to configure Cisco Application Analysis to use your preferred web browser.



Installing Capture Agents

These installation instructions apply to the Capture Agents included with Cisco Application Analysis Solution 2.0.

You can install an unlimited number of Capture Agents in your network. A Capture Agent is used to record traffic that you can import into Application Analysis. You should install an agent on any computer that acts as a tier for the transaction you want to study.



Note

As with any software installed on production machines, Cisco strongly advises you to ensure that these agents are compatible with your specific environment. To do this, test the agents on one or more non-mission-critical machines before you deploy them in your production environment (for more information, see the “Capturing Application Traffic” chapter in the *ACE User Guide*).

After you install the Capture Agents you want to use, return to the [“Installation Workflows”](#) section on page 1-2.

Installing Capture Agents on Windows

Use the following procedure to install a Capture Agent on a Windows computer.



Note

Before you install a Capture Agent, verify that the host meets the requirements for that agent. For detailed requirements, see [Table 3-6 on page 2-6](#).

Installing the Capture Agent on Windows

-
- Step 1** If a previous version of the Capture Agent is already installed, uninstall it as described in the “[Uninstalling Capture Agents \(Windows\)](#)” section on page 7-6, then reboot the computer.
- Step 2** Log in as Administrator.
- Step 3** Insert the Cisco AAS, Capture Agents CD into your CD-ROM drive.
- Step 4** Go to the corresponding platform-specific directory on the CD.
- Step 5** Run the installation executable for the desired version of the agent. There are two available versions of the agent on Windows:
- Agent with PathProbe (installer filename includes “_With_PathProbe”)—Captures traffic and includes PathProbe, which can obtain approximate measurements of your network connections, such as bandwidth and latency, by sending ICMP (“ping”) packets from the agent.
 - Agent with Payload (installer filename includes “_With_Payload”)—Captures traffic, but does not include PathProbe.

For additional details about PathProbe, refer to section “Measuring Network Connections Using PathProbe” of the “Capturing Traffic Using ACE” chapter of the *ACE User Guide*.

- Step 6** The installer program should start running after you double-click on it. Follow any instructions given by the installer.
-

Installing Capture Agents on Solaris

Use the following procedure to install a Capture Agent on a Solaris computer.

**Note**

Before you install a Capture Agent, verify that the host meets the requirements for that agent. For detailed requirements, see [Table 3-6 on page 2-6](#).

Installing the Capture Agent on Solaris

-
- Step 1** If a previous version of the Capture Agent is already installed, uninstall it as described in the “[Uninstalling Capture Agents \(Solaris, Linux, HP-UX, and AIX\)](#)” section on page 7-7, then reboot the computer.
- Step 2** Log in as root.
- Step 3** Insert the Cisco AAS, Capture Agents CD into your CD-ROM drive.
- Step 4** Go to the corresponding platform-specific directory on the CD.
- Step 5** Select the desired version of the agent. There are two available versions of the agent on Solaris:
- Agent with PathProbe (installer filename includes “_With_PathProbe”)—Captures traffic and includes PathProbe, which can obtain approximate measurements of your network connections, such as bandwidth and latency, by sending ICMP (“ping”) packets from the agent.
 - Agent with Payload (installer filename includes “_With_Payload”)—Captures traffic, but does not include PathProbe.

For additional details about PathProbe, refer to the following section of the product documentation:

Modules > ACE > Capturing Traffic Using ACE > Measuring Network Connections Using PathProbe

- Step 6** Copy the installer (*.tar.z) file from the CD to a working directory on your hard drive, then `cd` to the working directory.
- Step 7** Unpack the files and `cd` to the installer directory:

```
prompt% uncompress <agent_name>.tar.Z
prompt% tar xvf <agent_name>.tar
prompt% cd <agent_name>
prompt% cd unix
```



Note Replace <agent_name> with the complete name of the agent; for example, `Application_Capture_Agent_with_PathProbe_3.2_223`.

- Step 8** Run the installer using the following command:

```
prompt% ./op_install_capture_agent
```

Follow the instructions given by the installer.

- Step 9** After installing the software, remove the temporary files in the directory where the software archive was unpacked:

```
prompt% cd ../../
prompt% rm -rf <agent_name>
prompt% rm <agent_name>.tar
```

Installing Capture Agents on Linux

Use the following procedure to install a Capture Agent on a Linux computer.



- Note** Before you install a Capture Agent, verify that the host meets the requirements for that agent. For detailed requirements, see [Table 3-6 on page 2-6](#).
-

Installing the Capture Agent on Linux

-
- Step 1** If a previous version of the Capture Agent is already installed, uninstall it as described in the “[Uninstalling Capture Agents \(Solaris, Linux, HP-UX, and AIX\)](#)” section on page 7-7, then reboot the computer.
- Step 2** Log in as root.
- Step 3** Insert the Cisco AAS, Capture Agents CD into your CD-ROM drive.
- Step 4** Mount the CD by entering the following commands:
- ```
prompt% mount cdrom
prompt% cd /mnt/cdrom
```
- Step 5** Go to the corresponding platform-specific directory on the CD.
- Step 6** Select the desired version of the agent. There are two available versions of the agent on Linux:
- Agent with PathProbe (installer filename includes “\_With\_PathProbe”)—Captures traffic and includes PathProbe, which can obtain approximate measurements of your network connections, such as bandwidth and latency, by sending ICMP (“ping”) packets from the agent.

- Agent with Payload (installer filename includes “\_with\_Payload”)—  
Captures traffic, but does not include PathProbe.

For additional details about PathProbe, refer to section “Measuring Network Connections Using PathProbe” of the “Capturing Traffic Using ACE” chapter of the *ACE User Guide*.

**Step 7** Copy the installer (\*.tar.z) file from the CD to a working directory on your hard drive, then `cd` to the working directory.

**Step 8** Unpack the files and `cd` to the installer directory:

```
prompt% uncompress <agent_name>.tar.z
prompt% tar xvf <agent_name>.tar
prompt% cd <agent_name>
prompt% cd unix
```



---

**Note** Replace <agent\_name> with the complete name of the agent; for example, `Application_Capture_Agent_with_PathProbe_3.2_223`.

---

**Step 9** Run the installer using the following command:

```
prompt% ./op_install_capture_agent
```

Follow the instructions given by the installer.

**Step 10** After installing the software, remove the temporary files in the directory where the software archive was unpacked:

```
prompt% cd ../../
prompt% rm -rf <agent_name>
prompt% rm <agent_name>.tar
```

**Step 11** Unmount the CD by entering the following command:

```
prompt% umount /mnt/cdrom
```

---

# Installing Capture Agents on HP-UX

Use the following procedure to install a Capture Agent on an HP-UX computer.



**Note** Before you install a Capture Agent, verify that the host meets the requirements for that agent. For detailed requirements, see [Table 3-6 on page 2-6](#).

## Installing the Capture Agent on HP-UX

- Step 1** If a previous version of the Capture Agent is already installed, uninstall it as described in the “[Uninstalling Capture Agents \(Solaris, Linux, HP-UX, and AIX\)](#)” section on page 7-7, then reboot the computer.
- Step 2** Log in as root.
- Step 3** Insert the Cisco AAS, Capture Agents CD into your CD-ROM drive.
- Step 4** Mount the CD using the SAM (System Administration Manager) utility.
- Step 5** Go to the corresponding platform-specific directory on the CD.
- Step 6** Copy the installer (\*.tar.Z) file from the CD to a working directory on your hard drive, then `cd` to the working directory.
- Step 7** Unpack the files:
- ```
prompt% uncompress app_capture_With_Payload_3.2_223_hp_pa_hpx.tar.Z
prompt% tar xvf app_capture_With_Payload_3.2_223_hp_pa_hpx.tar
prompt% cd app_capture_With_Payload_3.2_223_hp_pa_hpx
prompt% cd unix
```
- Step 8** Install the new software. Note that you must install as root.
- Run the installer using the following command:
- ```
prompt% ./op_install_capture_agent
```
- Follow the instructions given by the installer.
- Step 9** Free up temporary installation files:
- After installing the software, remove the temporary files in the directory where the software archive was unpacked:
- ```
prompt% cd ../../
prompt% rm -rf app_capture_With_Payload_3.2_223_hp_pa_hpx
```

```
prompt% app_capture_With_Payload_3.2_223_hp_pa_hpux.tar
```

- Step 10** Unmount the CD by entering the following command:

```
prompt% umount cd/cdrom
```

Installing Capture Agents on AIX

Use the following procedure to install a Capture Agent on an AIX computer.



Note

Before you install a Capture Agent, verify that the host meets the requirements for that agent. For detailed requirements, see [Table 3-6 on page 2-6](#).

Installing the Capture Agent on AIX

- Step 1** Log in as root.
- Step 2** If a previous version of the Capture Agent is already installed, uninstall it as described in the “[Uninstalling Capture Agents \(Solaris, Linux, HP-UX, and AIX\)](#)” section on page 7-7.
- Step 3** Insert the Cisco AAS, Capture Agents CD into your CD-ROM drive.
- Step 4** Mount the CD by entering the following command:
- ```
prompt% mount -vcdvfs -oro /dev/cd0 /mnt
```
- Step 5** Go to the corresponding platform-specific directory on the CD.
- Step 6** Copy the installer (\*.tar.z) file from the CD to a working directory on your hard drive, then `cd` to the working directory.
- Step 7** Unpack the files:
- ```
prompt% uncompress appcapture20_125_aix.tar.Z
prompt% tar xvf appcapture20_125_aix.tar
prompt% cd appcapture20_125_aix
prompt% cd unix
```
- Step 8** Install the new software. Note that you must install as root.
- Run the installer using the following command:

```
prompt% ./op_install_capture_agent
```

Follow the instructions given by the installer.

Step 9 Free up temporary installation files:

After installing the software, remove the temporary files in the directory where the software archive was unpacked:

```
prompt% cd ../../
```

```
prompt% rm -rf appcapture20_125_aix
```

```
prompt% appcapture20_125_aix.tar
```



Note If you receive the message “/dev/bpf0: No such device or address” when you first attempt a capture, please read the following section.

Step 10 Unmount the CD by entering the following commands:

```
prompt% umount /mnt
```

Troubleshooting the BPF Driver on AIX

When you first try to capture traffic on an AIX computer, you might get the message “/dev/bpf0: No such device or address”. This situation is the result of the bpf drivers not being loaded. To resolve this, you must start and stop the tcpdump application that is provided with AIX.

Starting and Stopping the BPF Driver on AIX

Step 1 Log in as root.

Step 2 Enter `which tcpdump`. This command should return the path `/usr/sbin/tcpdump`.

Step 3 Enter the command `tcpdump` and wait for tcpdump to report the following:

```
tcpdump: listening on enX [where X is the number of the interface]
```

At this point, the bpf drivers should be loaded.

Step 4 Type Ctrl-C to stop tcpdump.

Step 5 Try to perform another application capture; you should now be successful.

**Note**

If the Capture Agent is still reporting the same error message, try using the interface flag with `tcpdump` to specify the interface where you intend to capture packets. To specify an interface, first run `ifconfig -a`, then run `tcpdump -i enx`, where `enx` is one of the interfaces reported by `ifconfig`.



Managing Licenses

To start a Cisco Solutions program such as Cisco Application Analysis, you must have a valid license for that program installed on the local or a remote computer.

This chapter describes the following operations:

- [Adding a License, page 6-3](#)—Perform this workflow if you have purchased an initial or additional license and want to add it.
- [Upgrading a License, page 6-4](#)—Perform this workflow if you have already added a Restricted license and want to upgrade it to an Unrestricted license.
- [Deregistering a License, page 6-6](#)—Perform this workflow if you need to deregister a license.

To use the Cisco Application Analysis Solution, you must install a license for the Application and Analysis program. (You do not need to install licenses for the Cisco application capture agents.)



Note

Licenses (that is, the License Manager) must reside on a host that is accessible to the component program at startup. This can be the local host where the component program is installed or a remote host. For more information about licensing options, see the [“Product Licensing” section on page 1-7](#).

Using the License Manager

You can see which licenses and license servers are installed on your network by using the License Manager. You can also perform license operations from the License Manager using the following procedure.

-
- Step 1** Start the License Manager for the installed program. On a Windows host, for example, you might see the following shortcut:
- Start > Programs > Cisco Application Analysis 2.0 > License Manager**
- Step 2** In the License Manager, select the license(s) or license server you want to act on, then click on the correct operation button on the right.



Note The License Manager might show some child windows that prompt you for additional information, such as which product modules to use. You do not need to specify these options to use the License Manager; generally you can click **OK** to accept the default settings and close the child window.

License Names

License names in the License Manager differ from the Cisco component names. The following table shows the component names and the license names that appear for each component.

Table 6-1 Cisco Product Component Names and License Names

Cisco Component Name	License Name
Application Analysis	IT Guru

Adding a License

Table 6-2 shows the workflow for adding your licenses.

Table 6-2 Adding a License: Workflow

	Description	Reference
Step 1	Obtain a username and password (if you have not done so already)	Obtaining a Username and Password, page 6-3
Step 2	Add program license(s) using one of the following methods for each license: <ul style="list-style-type: none"> • Express method • Browser method (if Express method does not work) Contact Cisco Technical Support (if Express and Browser methods do not work)	Adding a License (Express Method), page 6-7 Adding a License (Browser Method), page 6-8 Technical Support for Licensing Operations, page 6-13
Note	You must repeat the Add License procedure for every computer on which you want to add a license. In this case, you must do the add-license operation twice—once for each computer.	

Obtaining a Username and Password

To add a license, you must have a valid username, password, and group ID. To obtain this information, you must register your Cisco AAS product with Cisco Systems, Inc. Instructions for doing this are listed on the Software License Claim Certificate that is included in your product installation package. For more information, see the [“Registering Your Cisco Solution Product”](#) section on [page 1-5](#).

After your registration is confirmed, Cisco will send you an email with a username, password, and Group ID number. You will need this information when you add the component licenses as described in the following sections.

After you obtain a username and password, you can add your licenses as described in the [“Adding a Component License \(Express Method\)”](#) procedure on [page 6-7](#) or the [“Adding a Component License \(Browser Method\)”](#) procedure on [page 6-8](#).

Upgrading a License

Table 6-3 shows the workflow for upgrading your licenses. For information about different grades of licenses, see the “Product Licensing” section on page 1-7.

Table 6-3 Upgrading a License: Workflow

	Description	Reference
Step 1	Obtain an Upgrade authorization from Cisco Systems, Inc.	Getting an Upgrade Authorization from Cisco Systems, Inc. , page 6-5
Step 2	Deregister the original (Restricted) license using one of the following methods: <ul style="list-style-type: none"> Express method Browser method (if Express method does not work) Contact Cisco Technical Support (if Express and Browser methods do not work) 	Deregistering a License (Express Method) , page 6-10 Deregistering a License (Browser Method) , page 6-11 Technical Support for Licensing Operations , page 6-13
Step 3	Add the upgraded (Unrestricted) version of the original license using one of the following methods: <ul style="list-style-type: none"> Express method Browser method Contact Cisco Technical Support (if Express and Browser methods do not work) 	Adding a License (Express Method) , page 6-7 Adding a License (Browser Method) , page 6-8 Technical Support for Licensing Operations , page 6-13
Note	You must perform both procedures—that is, deregister the Restricted license and add the Unrestricted license—before you can use Unrestricted licensing mode. Also, keep in mind that after you deregister your current (Restricted) license, you will be unable to use the software until you register the updated (Unrestricted) license.	

Getting an Upgrade Authorization from Cisco Systems, Inc.

Before you can upgrade a Cisco Solution license, you must obtain an authorization from Cisco Systems, Inc. To obtain an authorization, do the following:

-
- Step 1** Go to the following URL:
http://www.opnet.com/support/cisco_qsp.html
 - Step 2** Follow the **my PAKS** link to see the Product Authorization Keys you have added already. Note the PAK of the product that you want to upgrade from Restricted to Unrestricted.
 - Step 3** Go to one of the URLs listed in the “[Registration Information](#)” section on [page 1-6](#).
 - Step 4** Follow the instructions on the Cisco licensing page. You must submit the Product Authorization Key for both the new license and the original license that you want to upgrade.

After you submit the requested information, Cisco Systems will email you an authorization to proceed with the upgrade (go to [Step 2](#) of [Upgrading a License](#), [page 6-4](#)).

Adding a Module to the Product Options List

After you add a license for a product module, you must update your Product Options list so that the program requests the module license on startup.

Adding a Module to the Product Options List

-
- Step 1** Start the program to which the product module applies.
 - Step 2** In the main program window, choose License > Product Modules.
 - Step 3** In the Select Product Modules, select the checkbox for the module you have added. Then click OK.

Step 4 For the change to take effect, you must exit and restart the program.

Deregistering a License

Table 6-4 shows the workflow for deregistering licenses.

Table 6-4 Deregistering a License: Workflow

Description	Reference
<p>Step 1 Deregister a program license(s) using one of the following methods for each license:</p> <ul style="list-style-type: none"> • Express method • Browser method (if Express method does not work) <p>Contact Cisco Technical Support (if Express and Browser methods do not work)</p>	<p>Deregistering a License (Express Method), page 6-10</p> <p>Deregistering a License (Browser Method), page 6-11</p> <p>Technical Support for Licensing Operations, page 6-13</p>

Refreshing a License

After installing an update to the Cisco Application Analysis Solution software, you must refresh your licenses by contacting Cisco Systems as described in the [“Technical Support for Licensing Operations”](#) section on page 6-13.

License Operations

Adding a License (Express Method)

The following procedure is the quickest and easiest way to add a license. This method requires that your computer be able to communicate directly with the Cisco Solutions license-registration server over the Internet, either directly or using a proxy server.

**Note**

The Express method can fail due to firewall restrictions, socket or proxy errors, or transaction time-outs. If you cannot add the license using this method, try the Browser method (as described in [Adding a License \(Browser Method\)](#), page 6-8).

Adding a Component License (Express Method)

- Step 1** Start the License Manager for the installed program. On a Windows host, for example, you might see the following shortcut:
Start > Programs > Cisco Application Analysis 2.0 > License Manager
- Step 2** In the License Manager, click on the green dot that represents the license server on the computer where you want to add the license. (The license server computer might not be the same as your local computer.)
Click on the **Add License** button on the right side of the box.
- Step 3** When prompted to select the transaction method, click **Express**. This method is easiest and fastest.
- Step 4** Enter the **Username**, **Password**, and **Group ID** that you received when you registered your product with Cisco Systems, Inc. (as described in the “[Obtaining a Username and Password](#)” section on page 6-3).
- Step 5** If the computer uses a proxy server, click on **Specify Proxy** button and fill in the information.
- Step 6** The next screen shows a list of available licenses. To select one license, click on it. To select multiple licenses, control-click or drag on the licenses.



Note Select only the licenses you want to add to the computer of the license server you have selected. (If you also want to add other licenses to a different computer, you must repeat this procedure for that computer.)

- Step 7** After you select the licenses you want to add, click on the **Add License** button at the bottom. A progress window might appear while the license is added to your computer. A window should then appear and say that the license operation succeeded.
- Step 8** When the operation is complete, the *Select Product Modules* box might appear. This allows you to select the modules you want to use. (In most cases, you should select all available modules.)
- Step 9** To start using the program, exit the License Manager and start the program.
-

Adding a License (Browser Method)


Before using the Browser method, try the Express method. With the Express method, there is no need to exchange codes and you can add many licenses to your computer in one operation. Use this procedure if the Express method fails or you prefer to use the Browser method.



Note If you still cannot add your licenses using this method, see the [“Technical Support for Licensing Operations”](#) section on page 6-13.

Adding a Component License (Browser Method)

-
- Step 1** Start the License Manager for the installed program. On a Windows host, for example, you might see the following shortcut:
- Start > Programs > Cisco Application Analysis 2.0 > License Manager**
- Step 2** *License Manager*: Click on the green dot that represents the license server on the computer where you want to add the license. (The license server computer might not be the same as your local computer.)
- Click **Add License** on the right side of the window.

- Step 3** *License Manager:* When prompted, click **Browser**. The following events should now occur:
- The License Manager launches your Web browser and points it to the Cisco Solutions Quick Support Page.
 - The License Manager shows a transaction code and a hostname.
- Step 4** *Web browser:* Enter the **Username** and **Password** that you received when you registered your product with Cisco Systems, Inc. (as described in the “[Obtaining a Username and Password](#)” section on page 6-3).
- If your browser fails to launch, start it manually and navigate to the following URL:
- http://www.opnet.com/support/cisco_qsp.html
- Then follow the **My Licenses** link in the browser window.
- Step 5** *Web browser:* Click **Perform license operations**, then select **Add License (add_permits)** and click **Next**. Back in the License Manager, a dialog box containing a Transaction Code and Hostname field should appear.
- Step 6** *Web browser:* Copy the Transaction Code and Hostname from the License Manager into the corresponding fields in the browser. You can either copy/paste the text or type it manually.
-  **Note** Make sure there are no extra spaces before or after the code or hostname.
- Step 7** *Web browser:* Click **Next**.
- Step 8** *Web browser:* When the *Select the starting license number* page appears, select the lowest license ID that you want to add to your computer. If you want to add only one license, select that license.
- Step 9** *Web browser:* When the *Select the ending license number* page appears, select the highest license ID that you want to add to your computer. If you want to add only one license, select that license. The confirmation page appears.
- Step 10** *Web browser:* When the License Registration Confirmation page appears, check that the information is correct, then click **Get Approval Code**. The approval code appears.
- Step 11** *License Manager:* Click **Next** and enter the approval code that appears in the web browser.



Note This code can be very long, so make sure you copy the entire approval code.

- Step 12** *License Manager:* After you enter the approval code, click **Next**.
- Step 13** *License Manager:* If the *Select Product Modules* license window appears, click **OK**. Then click **File > Exit** to close the License Manager.
- Step 14** To start using the program, exit the License Manager and start the program.
-

Deregistering a License (Express Method)

The following procedure is the quickest and easiest way to deregister a license. This method requires that your computer be able to communicate directly with the Cisco Solutions license-registration server over the Internet, either directly or using a proxy server.



Note The Express method can fail due to firewall restrictions, socket or proxy errors, or transaction time-outs. If you cannot deregister the license using this method, try the Browser method (as described in the [“Deregistering a License \(Browser Method\)”](#) section on page 6-11).

Deregistering a Component License (Express Method)

-
- Step 1** Start the License Manager for the installed program. On a Windows host, for example, you might see the following shortcut:
- Start > Programs > Cisco Application Analysis 2.0 > License Manager**
- Step 2** In the License Manager, expand the license file by clicking on the + sign next to the **License file** folder icon. Make sure the license you want to deregister is available (green).



Note If a license is represented by a “white page” icon, that license is currently in use. If you want to deregister a license that is in use, quit the component that is using it, then choose **File > Refresh Server Information** in the License Manager.

- Step 3** Select the license you want to deregister by clicking on it. To select one license, click on it. To select multiple licenses, control-click or drag on the licenses.
- Step 4** Click **Deregister License** on the right side of the License Manager window.
- Step 5** When prompted to select the transaction method, click **Express**. This method is easiest and fastest.
- Step 6** When the *Authentication* window appears, enter your **Username**, **Password**, and **Group ID** in the appropriate fields.
- Step 7** If the computer uses a proxy server, click **Specify Proxy**; when the *Specify proxy server information* window appears, fill in the requested information and click **OK**.
- Step 8** Click **OK** in the *Authentication* window.
- A progress window might appear while the license is deregistered from your computer.
 - A window should then appear to indicate that the operation succeeded.
-


Deregistering a License (Browser Method)

Before using the Browser method, try the Express method. With the Express method, there is no need to exchange codes and you can add many licenses to your computer in one operation. Use this procedure if the Express method fails or you prefer to use the Browser method.



Note If you still cannot deregister your licenses using this method, see the [“Technical Support for Licensing Operations”](#) section on page 6-13.

Deregistering a Component License (Browser Method)

-
- Step 1** Start the License Manager for the installed program. On a Windows host, for example, you might see the following shortcut:
- Start > Programs > Cisco Application Analysis 2.0 > License Manager**
- Step 2** *License Manager:* Expand the appropriate license file by clicking on the + sign next to the **License file** folder icon. Make sure the license you want to deregister is available (green).
-  **Note** If a license is represented by a “white page” icon, that license is currently in use. If you want to deregister a license that is in use, quit the component that is using it, then choose **File > Refresh Server Information** in the License Manager.
-
- Step 3** *License Manager:* Select the license you want to deregister by clicking on it. To select one license, click on it. To select multiple licenses, control-click or drag on the licenses.
- Step 4** *License Manager:* Click **Deregister License**.
- Step 5** *License Manager:* When prompted, click on the **Browser** button.
- Step 6** The License Manager launches your Web browser and points it to the Cisco Quick Support page. If your browser fails to launch, start it manually and navigate to the following URL:
- http://www.opnet.com/support/cisco_qsp.html
- Step 7** *Web browser:* Log in with your Cisco Solution username and password. Then click on **My Licenses**.
- Step 8** *Web browser:* Follow the **Perform license operations** link, then select **Deregister License (delete_permits)** and click **Next**.
- Back in the License Manager, a dialog box containing a Transaction Code and Hostname field should appear.
- Step 9** *Web browser:* Copy the **Transaction Code** and **Hostname** from the License Manager into the browser window, then click **Next**. You can either paste the text or type it manually.



Note Make sure there are no extra spaces before or after the text you enter.

- Step 10** *Web browser:* When the *Select the starting license number* page appears, select the lowest license ID that you want to deregister from your computer. If you want to deregister only one license, select that license.
- Step 11** *Web browser:* When the *Select the ending license number* page appears, select the highest license ID that you want to deregister from your computer. If you want to deregister only one license, select that license.
- Step 12** *Web browser:* When the License Registration Confirmation page appears, check that the information is correct, then click **Get Approval Code**. The approval code appears.
- Step 13** *License Manager:* Click **Next** and enter the approval code that appears in the browser.



Note This code can be very long, so make sure you copy the entire approval code.

- Step 14** *License Manager:* Click **Next**. The confirmation code appears.
- Step 15** *Web browser:* Enter the confirmation code that appears in the License Manager, then click **Next**.
- The confirmation code is saved in the Session Log, which is available from the Help menu in the Cisco Solution software.
- Step 16** *License Manager:* click **Done**. The license is deregistered and you can now add it to another computer.
-

Technical Support for Licensing Operations

If you cannot manage your licenses using the Express or Browser methods, or if you have additional questions or problems regarding your licenses, you can do the following:

- Go to the Cisco Solutions Quick Support Page:

http://www.opnet.com/support/cisco_qsp.html

- Contact Cisco Systems as described in the “Obtaining Technical Assistance” section on page fm-x



Uninstalling Cisco AAS

You can use the procedures in this chapter to uninstall software components from Cisco Application Analysis Solution.

- [Uninstalling Application Analysis \(Windows\)](#), page 7-1
- [Uninstalling Application and Analysis \(Linux\)](#), page 7-5
- [Uninstalling Capture Agents \(Windows\)](#), page 7-6
- [Uninstalling Capture Agents \(Solaris, Linux, HP-UX, and AIX\)](#), page 7-7

Uninstalling Application Analysis (Windows)

This section contains the following procedures:

- [Uninstalling Application Analysis on Windows \(Standard\)](#), page 7-1
- [Uninstalling Application Analysis on Windows \(Advanced\)](#), page 7-3

Uninstalling Application Analysis on Windows (Standard)

This is the recommended procedure for uninstalling Application Analysis.



Warning

Do not use this procedure if two different releases of Cisco AAS exist on the machine and you are removing the older release. Instead, use the [“Uninstalling Application Analysis on Windows \(Advanced\)”](#) procedure on page 7-3.

Uninstalling Application Analysis (Standard)

-
- Step 1** If this machine has licenses installed on it and there are no other versions of the program using the licenses, deregister the licenses. Use either the [“Deregistering a Component License \(Express Method\)” procedure on page 6-10](#) or the [“Deregistering a Component License \(Browser Method\)” procedure on page 6-12](#).



Warning Do not deregister licenses if a current version of Application Analysis exists on the machine and you are uninstalling an older version.

- Step 2** Open the Windows Control Panel from the Start menu:

Start > Settings > Control Panel

- Step 3** In the Windows Control Panel, double-click **Add/Remove Programs**.

- Scroll down the list of installed programs, select the entry for the program you want to remove, and click **Remove**. Repeat for the corresponding documentation and model library. Example names Cisco Application Analysis Solution 2.0
- Cisco Application Analysis Solution Documentation 2.0
- Model Library for Cisco Application Analysis Solution 2.0

If you cannot uninstall Application Analysis by using the Add/Remove Programs control panel, use the [“Uninstalling Application Analysis on Windows \(Advanced\)” procedure on page 7-3](#) to ensure that all of the Application Analysis files have been removed.

- Step 4** If this machine is running a local license server from the Application Analysis installation, use the Windows Services Manager to stop the Cisco license server service.

In Add/Remove Programs, select and remove “OPNET License Server 12.0.A”.

Uninstalling Application Analysis on Windows (Advanced)

You should do this procedure ONLY if you could not uninstall Application Analysis using the “[Uninstalling Application Analysis on Windows \(Standard\)](#)” procedure on page 7-1.

Uninstalling Application Analysis (Advanced)

-
- Step 1** If this machine has licenses installed on it and there are no other versions of the program using the licenses, deregister the licenses. Use either the “[Deregistering a Component License \(Express Method\)](#)” procedure on page 6-10 or the “[Deregistering a Component License \(Browser Method\)](#)” procedure on page 6-12.

**Warning**

Do not deregister licenses if a current release of Application Analysis exists on the machine and you are uninstalling an older release.

- Step 2** Remove the installation directory of the release you are uninstalling. Typical path:
- ```
C:\Program Files\Cisco\CiscoAAS2.0
```
- Step 3** If you had licenses installed on this machine, delete the `C:\OPNET_license` directory. Be sure you have already deregistered the licenses (as described in [Step 1](#)) before deleting the directory.

**Warning**

---

**Do not delete the license directory if it contains licenses being used by other versions of Cisco or OPNET software.**

---

- Step 4** There are shortcuts under the **Start > Programs** menu. You can remove these using the Advanced Taskbar properties.
- Right-click on the Windows task bar.
  - Select **Properties**. The Taskbar Properties dialog box appears.
  - Select the **Advanced** tab.
  - Click the **Advanced** button under Customize Start Menu. Windows Explorer opens.
  - Go up the tree to **All Users > Start Menu**, then delete the directories relating to the Cisco AAS software being removed.

**Step 5** Application Analysis creates two directories in your user's home directory (op\_admin and op\_models).

These directories can be deleted if you no longer wish to keep your custom models and projects.



**Warning**

**Do not delete these directories if your computer contains other versions of Cisco or OPNET software.**

**Step 6** Remove the InstallShield bookkeeping files.

a. Make sure that you can view hidden system files on your PC. This procedure varies on different versions of Windows; ask your system administrator if you do not know how to do this.

b. Open the following directory:

```
C:\Program Files\InstallShield Installation Information\
```

c. You will see some directories with long names consisting of numbers and letters surrounded by { } (these are called GUID names). CTRL-F to find files and look for the following:

Files named: \*.ini

Containing text: OPNET, Cisco, or similar

d. Determine which directories apply to the release you are uninstalling, as follows:

- Look in the \*.ini files to see if there is a release number.
- Look at the date timestamp of the \*.ini files to see if they match the installation date of the release you are removing.
- Open the \\HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\ registry tree (as described in [Step 7](#)), match the registry keys to the GUID name of the \*.ini file's directory, and check the release number in the registry.

Make a note of the GUID names of directories that contain matching \*.ini files.

e. Remove the directories that contain \*.ini files for the correct release from the InstallShield Installation directory.

If these directories are not deleted along with the Cisco Solution software, future Cisco Solution installations might fail.

**Warning**

**DO NOT delete the entire InstallShield Installation Information directory, because other software you have installed may have information installed here. Be sure only to delete those directories relating to Cisco AAS software.**

**Step 7** Remove Registry entries.

**Warning**

**Be very careful when you edit the system registry. Incorrect changes to the registry can cause your Windows system to become unstable. You might want to create a backup before editing the registry.**

- a. Start regedit: From the Windows Start menu, choose **Run**, then enter `regedit` and click **OK**.
- b. Open the registry tree to `\\HKEY_LOCAL_MACHINE\SOFTWARE\`
- c. Delete the registry key for the software being removed. Example registry key:  
`OPNET Technologies\Cisco Application Analysis Solution 2.0\OPNET  
\11.5.A`
- d. Open the registry tree to `\\HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\  
Windows\CurrentVersion\Uninstall\`
- e. Match the registry keys with the GUID names you recorded in [Step 6d](#) and delete them from the registry.
- f. Quit regedit.

You have now removed the desired version of Application Analysis entirely from your system.

## Uninstalling Application and Analysis (Linux)

Perform the following procedure to remove the Application Analysis software from your computer.

**Step 1** Open a command window.

**Step 2** Enter the following command:

```
rm -rf <install_dir>
```

where *<install\_dir>* is the directory where Application Analysis is installed. For example, suppose Application Analysis is installed in the following directory:

```
/usr/CiscoAAS/2.0
```

In this case, you would enter:

```
rm -rf /usr/CiscoAAS/2.0
```

**Warning**

---

When you enter this command, take care that you specify the exact directory where Application Analysis is installed. If you enter the wrong path—the parent directory, for example—you might delete other software by accident.

---

## Uninstalling Capture Agents (Windows)

Perform the following procedure to uninstall a Capture Agent from a Windows computer.

### Uninstalling a Capture Agent from a Windows Computer

---

- Step 1** Open the Windows Control Panel from the Start menu:  
**Start > Settings > Control Panel**
- Step 2** In the Windows Control Panel, double-click **Add/Remove Programs**.
- Step 3** Scroll down the list of installed programs, select the entry for the program you want to remove, and click **Remove**. Example name:
- OPNET Application Capture Agent 3.2
- Step 4** Similarly, remove **WinPcap**.
-

# Uninstalling Capture Agents (Solaris, Linux, HP-UX, and AIX)

To remove a Capture Agent from a Solaris machine, you simply need to kill the capture process and remove capture-agent binary files.

## Uninstalling a Capture Agent from a Solaris, HP-UX, Linux, or AIX Computer

---

**Step 1** Make sure that you are logged on as root.

**Step 2** Identify the capture server process by entering the following command:

```
ps -ef | grep op_capture
```

Note the process ID number and the directory location of the Capture Agent, because you will need this information in the following steps.

**Step 3** Terminate the process by entering the following command:

```
kill <PID_number>
```

**Step 4** Remove the Capture Agent directory by entering the following commands (replace *x* and *y* with the Capture Agent version):

```
cd <capture_agent_parent_directory>
rm -rf AppCaptureX.Y
```

If you don't remember where the Capture Agent is installed, you can look at the agent boot script (if this script was created when the agent was installed) or the system startup script. On Solaris, HP-UX, and Linux systems, the agent boot script contains the full executable path, and is normally installed in the following directory (depending on the platform):

- /etc/rc3.d (Solaris)
- /sbin/rc3.d (HP-UX)
- /etc/rc.d/init.d (Linux)

On AIX systems, the system startup script (/etc/rc) should contain a line that starts the Capture Agent automatically when the system is rebooted. Look in this file to see where the capture-agent directory is located.

**Step 5** (*Solaris, HP-UX, and Linux only*) If you created a boot script when you installed the Capture Agent, remove this script using one of the following commands (based on the platform):

- `rm -f /etc/rc3.d/S999opnet_app_capture` (Solaris)
- `rm -f /sbin/rc3.d/S999opnet_app_capture` (HP-UX)
- `rm -f /etc/rc.d/init.d/opnet_app_capture` (Linux)

**Step 6** (*AIX only*) Open the `/etc/rc` startup script and remove the following lines:

```
#Cisco Capture Agent
echo "Starting Application Capture Agent..."
<capture_agent_dir>/op_capture_server -tcp_port <tcp_port_number>
```

---



## Known Issues

---

We highly recommend that you check, after installation and on a regular basis, for software updates and maintenance information of any software, documentation, model, or other components on <http://www.cisco.com/techsupport>.

You can search for additional online information regarding known product issues and workarounds on the Cisco Quick Support page at OPNET Technologies ([http://www.opnet.com/support/cisco\\_qsp.html](http://www.opnet.com/support/cisco_qsp.html)).





---

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