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Release Notes for AnyConnect Secure Mobility Client, Release 4.1

These release notes provide information for AnyConnect Secure Mobility on Windows, Mac OS X and Linux platforms.



Note AnyConnect release 4.1.08005 is the last maintenance release for 4.1. AnyConnect 4.1 customers must upgrade to AnyConnect 4.2 to benefit from future defect fixes. Any defects found in AnyConnect 4.1.x will be fixed only in the AnyConnect 4.2.x maintenance releases.

AnyConnect release 4.1.x will become the maintenance path for any 4.x bugs. AnyConnect 4.0 customers must upgrade to AnyConnect 4.1.x to benefit from future defect fixes. Any defects found in AnyConnect 4.0.x will be fixed in the AnyConnect 4.1.x maintenance releases only.

See the following release notes for information on mobile devices supported by this release of AnyConnect:

- [Release Notes for Cisco AnyConnect Secure Mobility Client, Release 4.1.x for Windows Phone](#)

Download the Latest Version of AnyConnect

Before you begin

To download the latest version of AnyConnect, you must be a registered user of Cisco.com.

Procedure

- Step 1** Follow this link to the Cisco AnyConnect Secure Mobility Client product support page:
http://www.cisco.com/en/US/products/ps10884/tsd_products_support_series_home.html.
- Step 2** Log in to Cisco.com.
- Step 3** Click **Download Software**.
- Step 4** Expand the **Latest Releases** folder and click the latest release, if it is not already selected.
- Step 5** Download AnyConnect Packages using one of these methods:
- To download a single package, find the package you want to download and click **Download**.
 - To download multiple packages, click **Add to cart** in the package row and then click **Download Cart** at the top of the Download Software page.
- Step 6** Read and accept the Cisco license agreement when prompted.
- Step 7** Select a local directory in which to save the downloads and click **Save**.
- Step 8** See the [Cisco AnyConnect Secure Mobility Client Administrator Guide, Release 4.x](#).
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AnyConnect Package Filenames for Web Deployment

OS	AnyConnect Web-Deploy Package Names
Windows	anyconnect-win- <i>version</i> -k9.pkg
macOS	anyconnect-macosx-i386- <i>version</i> -k9.pkg
Linux (64-bit)	anyconnect-linux-64- <i>version</i> -k9.pkg

AnyConnect Package Filenames for Predeployment

OS	AnyConnect Predeploy Package Name
Windows	anyconnect-win- <i>version</i> -pre-deploy-k9.iso
macOS	anyconnect-macosx-i386- <i>version</i> -k9.dmg
Linux (64-bit)	anyconnect-predeploy-linux-64- <i>version</i> -k9.tar.gz

Other files, which help you add additional features to AnyConnect, can also be downloaded.

New Features in AnyConnect 4.1.08005

AnyConnect 4.1.08005 is a maintenance release that resolves the defects described in [AnyConnect 4.1.08005, on page 29](#).

New Features in AnyConnect 4.1.06020

AnyConnect 4.1.06020 is a maintenance release that resolves the defects described in [AnyConnect 4.1.06020, on page 30](#).

New Features in AnyConnect 4.1.06013

AnyConnect 4.1.06013 is a maintenance release that resolves the defects described in [AnyConnect 4.1.06013, on page 30](#).

New Features in AnyConnect 4.1.04011

AnyConnect 4.1.04011 is a maintenance release that resolves the defects described in [AnyConnect 4.1.04011, on page 31](#). It also adds the following new features:

AnyConnect Compatibility with Microsoft Windows 10

AnyConnect 4.1MR4(4.1.04011) and later are compatible with Windows 10 official release. Technical Assistance Center (TAC) support is available beginning on 7/29/2015.

For best results, we recommend a clean install of AnyConnect on a Windows 10 system and not an upgrade from Windows 7/8/8.1. If you are planning to perform an upgrade from Windows 7/8/8.1 with AnyConnect pre-installed, make sure that you first upgrade AnyConnect prior to upgrading the operating system. The Network Access Manager Module **must** be uninstalled prior to upgrading

to Windows 10. After the system upgrade is complete, you can re-install Network Access Manager on the system. You may also choose to fully uninstall AnyConnect and re-install one of the supported versions after upgrading to Windows 10.

June 2015 and July 2015 OpenSSL Vulnerabilities

Cisco AnyConnect 4.1.04011 resolves CSCuu83398 and CSCuv26246 OpenSSL vulnerabilities.

New Features in AnyConnect 4.1.02011

AnyConnect 4.1.02011 is a maintenance release that resolves the defects described in [AnyConnect 4.1.02011, on page 32](#).

New Features in AnyConnect 4.1.00028

AnyConnect 4.1.00028 is a major release that resolves the defects described in [AnyConnect 4.1.00028, on page 32](#). It also adds the following new features:



Note AnyConnect release 4.1.x will become the maintenance path for any 4.x bugs. AnyConnect 4.0 customers must upgrade to AnyConnect 4.1.x to benefit from future defect fixes. Any defects found in AnyConnect 4.0.x will be fixed in this release 4.1.00028 or future AnyConnect 4.1.x maintenance releases.

AMP Enabler

AnyConnect AMP Enabler is used as a medium for deploying Advanced Malware Protection (AMP) for endpoints. It pushes the AMP for Endpoints software to the endpoints from a server hosted locally within the enterprise and installs AMP services to its existing user base. This approach provides AnyConnect user base administrators with an additional security agent. If you chose to install it, any messages related to the actual download of AMP and the installation appear as a partial tile on the AMP Enabler tile of the AnyConnect UI.

Certificate Revocation List Checking

This feature is only implemented for Windows desktop. For both SSL and IPsec VPN connections, you have the option to perform Certificate Revocation List (CRL) checking. When this setting is enabled, AnyConnect retrieves the updated CRL for all certificates in the chain. AnyConnect then verifies whether the certificate in question is among those revoked certificates which should no longer be trusted; and if found to be a certificate revoked by the Certificate Authority (CA), it does not connect. This feature is disabled by default.

Automation Support for Proxies

Public proxies are supported on Windows and Linux platforms. Proxy servers are chosen based on preferences set in the client profile. In case of proxy override, AnyConnect extracts proxy servers from the profile. With release 4.1 we added proxy support on Mac along with Native-proxy configuration on Linux and Mac.

Additional Operating Systems Supported

RHEL 7 and Ubuntu 14 were added as supported operating systems for Cisco AnyConnect Secure Mobility Client.

ISE Posture Enhancements

Although there is no change to client functionality or the VPN user experience for ISE posture, enhancements such as elevated posture processing have been added with ISE 1.4.

Important Interoperability Considerations

Coexistence of ISE and ASA Headends

- If you are using both ISE and ASA for client posture, the profiles must match on both headends.
- AnyConnect ignores the ISE server if NAC Agent is provisioned for the endpoint.
- If the Cisco NAC agent and the VPN Posture (HostScan) module are both installed on a client, the Cisco NAC agent must be at least version 4.9.4.3 or later to prevent posture conflicts.
- The NAC Agent ignores the ISE server if AnyConnect is provisioned for the endpoint in ISE.

System Requirements

This section identifies the management and endpoint requirements for this release. For endpoint OS support and license requirements for each feature, see [AnyConnect Secure Mobility Client Features, Licenses, and OSs](#).

Cisco cannot guarantee compatibility with other VPN third-party clients.

Changes to the AnyConnect Profile Editor

You must install the 32-bit version of Java, version 6 or higher, before installing the profile editor.

ISE Requirements for AnyConnect

- **Warning!**

Incompatibility Warning: If you are an Identity Services Engine (ISE) customer running 2.0 (or later), you must read this before proceeding!

The ISE RADIUS has supported TLS 1.2 since release 2.0; however, there is a defect in the ISE implementation of EAP-FAST using TLS 1.2, tracked by CSCvm03681. The defect has been fixed in the 2.4p5 release of ISE. The fix will be made available in future hot patches for supported releases of ISE.

If NAM 4.7 is used to authenticate using EAP-FAST with any ISE releases that support TLS 1.2 prior to the above releases, the authentication will fail, and the endpoint will not have access to the network.

- ISE 2.0 is the minimum release capable of deploying AnyConnect software to an endpoint and posturing that endpoint using the new ISE Posture module in AnyConnect 4.0 and later.
- ISE 2.0 can only deploy AnyConnect release 4.0 and later. Older releases of AnyConnect must be web deployed from an ASA, predeployed with an SMS, or manually deployed.

ISE Licensing Requirements

To deploy AnyConnect from an ISE headend and use the ISE Posture module, a Cisco ISE Apex License is required on the ISE Administration node. For detailed ISE license information, see the *Cisco ISE Licenses* chapter of the [Cisco Identity Services Engine Admin Guide](#).

ASA Requirements for AnyConnect

Minimum ASA/ASDM Release Requirements for Specified Features

- You must upgrade to ASA 9.3(2) to use TLS 1.2.
- You must upgrade to ASA 9.2(1) if you want to use the following features:
 - ISE Posture over VPN
 - ISE Deployment of AnyConnect 4.x
 - Change of Authorization (CoA) on ASA is supported from this version onwards
- You must upgrade to ASA 9.0 if you want to use the following features:
 - IPv6 support
 - Cisco Next Generation Encryption “Suite-B” security
 - Dynamic Split Tunneling(Custom Attributes)
 - AnyConnect client deferred upgrades
- You must use ASA 8.4(1) or later if you want to do the following:
 - Use IKEv2.
 - Use the ASDM to edit non-VPN client profiles (such as Network Access Manager, Web Security, or Telemetry).
 - Use the services supported by a Cisco IronPort Web Security Appliance. These services let you enforce acceptable use policies and protect endpoints from websites found to be unsafe, by granting or denying all HTTP and HTTPS requests.
 - Deploy firewall rules. If you deploy always-on VPN, you might want to enable split tunneling and configure firewall rules to restrict network access to local printing and tethered mobile devices.
 - Configure dynamic access policies or group policies to exempt qualified VPN users from an always-on VPN deployment.
 - Configure dynamic access policies to display a message on the AnyConnect GUI when an AnyConnect session is in quarantine.

ASA Memory Requirements



Caution The minimum flash memory recommended for all ASA 5500 models using AnyConnect 4.0 or later is 512MB. This will allow hosting of multiple endpoint operating systems, and logging and debugging to be enabled on the ASA.

Due to flash size limitations on the ASA 5505 (maximum of 128 MB), not all permutations of the AnyConnect package will be able to be loaded onto this model. To successfully load AnyConnect, you will need to reduce the size of your packages (i.e. fewer OSs, no HostScan, etc.) until they fit on the available flash.

Check for the available space before proceeding with the AnyConnect install or upgrade. You can use one of the following methods to do so:

- CLI—Enter the **show memory** command.

```
asa3# show memory
Free memory:      304701712 bytes (57%)
Used memory:      232169200 bytes (43%)
-----
Total memory:     536870912 bytes (100%)
```

- ASDM—Choose Tools > File Management. The File Management window displays flash space.

If your ASA has only the default internal flash memory size or the default DRAM size (for cache memory), you could have problems storing and loading multiple AnyConnect client packages on the ASA. Even if you have enough space on the flash to hold the package files, the ASA could run out of cache memory when it unzips and loads the client images. For additional information about the ASA memory requirements and upgrading ASA memory, see the [latest release notes for the Cisco ASA 5500 series](#).

VPN Posture and HostScan Interoperability

The VPN Posture (HostScan) Module provides the Cisco AnyConnect Secure Mobility Client the ability to identify the operating system, antivirus, antispysware, and firewall software installed on the host to the ASA.

When using Start Before Logon (SBL) and HostScan, you must install the AnyConnect/HostScan posture predeploy module on the endpoints to achieve full HostScan functionality, since SBL is pre-login.

In HostScan 4.4 and later, endpoint data (endpoint attributes) for antivirus, antispysware, and firewall have changed. Antispysware (*endpoint.as*) and antivirus (*endpoint.av*) are both categorized as antimalware (*endpoint.am*). Firewall (*endpoint.pw*) is categorized as firewall (*endpoint.pfw*). Refer to the [AnyConnect HostScan Migration 4.3.x to 4.6.x and Later](#) documentation for the specifics of this configuration.

The VPN Posture (HostScan) Module requires Cisco Hostscan to gather this information. Cisco Hostscan, available as its own software package, is periodically updated with new operating system, antimalware, and firewall software information. Cisco recommends that you run the most recent version of HostScan, which is the same as the version of AnyConnect.

AnyConnect 4.1.00028 is compatible with Cisco HostScan 4.1.00028 (OPSWAT 3.6.10013.2) or later. If you cannot upgrade AnyConnect and HostScan at the same time, upgrade HostScan first, then upgrade AnyConnect.

AnyConnect 4.0.02052 is compatible with Cisco Hostscan 4.0.02052 (OPSWAT 3.6.10013.2) or later. If you cannot upgrade AnyConnect and HostScan at the same time, upgrade HostScan first, then upgrade AnyConnect.

The [HostScan Antimalware and Firewall Support Charts](#) are available on cisco.com. The support charts opens most easily using a Firefox browser. If you are using Internet Explorer, download the file to your computer and change the file extension from `.zip` to `.xls.m`. You can open the file in Microsoft Excel, Microsoft Excel viewer, or Open Office.



Note AnyConnect will not establish a VPN connection when used with an incompatible version of HostScan. Also, Cisco does not recommend the combined use of HostScan and ISE posture. Unexpected results occur when the two different posture agents are run.

ISE Posture Compliance Module

The ISE Posture compliance module contains the list of supported antimalware and firewall for ISE posture. While the HostScan list organized by vendor, the ISE posture list organizes by product type. When the version number on the headend (ISE or ASA) is greater than the version on the endpoint, the OPSWAT gets updated. These upgrades are mandatory and happen automatically without end user intervention.

The individual files within the library (a zip file) are digitally signed by OPSWAT, Inc., and the library itself is packaged as a single, self-extracting executable which is code signed by a Cisco certificate. Refer to the [ISE compliance modules](#) for details.

IOS Support of AnyConnect

Cisco supports AnyConnect VPN access to IOS Release 15.1(2)T functioning as the secure gateway; however, IOS Release 15.1(2)T does not currently support the following AnyConnect features:

- Post Log-in Always-on VPN
- Connect Failure Policy
- Client Firewall providing Local Printer and Tethered Device access
- Optimal Gateway Selection
- Quarantine
- AnyConnect Profile Editor

For additional limitations of IOS support for AnyConnect VPN, please see [Features Not Supported on the Cisco IOS SSL VPN](#).

Refer to <http://www.cisco.com/go/fn> for additional IOS feature support information.

AnyConnect Supported Operating Systems

Cisco AnyConnect Secure Mobility Client supports the following operating systems for its contained modules:

Supported Operating Systems	VPN Client	Network Access Manager	Cloud Web Security	VPN Posture (HSA)	ISE Posture	DART	Customer Experience Feedback			
			No							
Windows 7, 8, 8.1, & 10	Yes	Yes	Yes	Yes	Yes	Yes				
Mac OS X 10.8, 10.9, 10.10, 10.11	Yes	No	Yes	Yes	Yes	Yes				
Linux Red Hat 6, 7 & Ubuntu 12.04 (LTS), and 14.04 (LTS) (64-bit only)	Yes	No	No	Yes	No	Yes	Yes			

AnyConnect Support for Microsoft Windows

Windows Requirements

- Pentium class processor or greater.
- 100 MB hard disk space.
- Microsoft Installer, version 3.1.
- Upgrading to Windows 8.1 from any previous Windows release requires you to uninstall AnyConnect, and reinstall it after your Windows upgrade is complete.
- Upgrading from Windows XP to any later Windows release requires a clean install since the Cisco AnyConnect Virtual Adapter is not preserved during the upgrade. Manually uninstall AnyConnect, upgrade Windows, then reinstall AnyConnect manually or via WebLaunch.

- To start AnyConnect with WebLaunch, you must use the 32-bit version of Firefox 3.0+ and enable ActiveX or install Sun JRE 1.4+.
- ASDM version 7.02 or higher is required when using Windows 8 or 8.1.

Windows Limitations

- AnyConnect is not supported on Windows RT. There are no APIs provided in the operating system to implement this functionality. Cisco has an open request with Microsoft on this topic. Those who want this functionality should contact Microsoft to express their interest.
- Other third-party product's incompatibility with Windows 8 prevent AnyConnect from establishing a VPN connection over wireless networks. Here are two examples of this problem:
 - WinPcap service "Remote Packet Capture Protocol v.0 (experimental)" distributed with Wireshark [does not support Windows 8](#).
To work around this problem, uninstall Wireshark or disable the WinPcap service, reboot your Windows 8 computer, and attempt the AnyConnect connection again.
 - Outdated wireless cards or wireless card drivers that do not support Windows 8 prevent AnyConnect from establishing a VPN connection.
To work around this problem, make sure you have the latest wireless network cards or drivers that support Windows 8 installed on your Windows 8 computer.
- AnyConnect is not integrated with the new UI framework, known as the Metro design language, that is deployed on Windows 8; however, AnyConnect does run on Windows 8 in desktop mode.
- HP Protect tools do not work with AnyConnect on Windows 8.x.
- Windows 2008 is not supported; however, we do not prevent the installation of AnyConnect on this OS. Also, Windows Server 2008 R2 requires the optional SysWow64 component
- If you are using Network Access Manager on a system that supports standby, Cisco recommends that the default Windows 8.x association timer value (5 seconds) is used. If you find the Scanlist in Windows appears shorter than expected, increase the association timer so that the driver can complete a network scan and populate the scanlist.

Windows Guidelines

- Verify that the driver on the client system is supported by your Windows version. Drivers that are not supported may have intermittent connection problems.
- For Network Access Manager, machine authentication using machine password will not work on Windows 8 or 10 / Server 2012 unless a registry fix described in Microsoft KB 2743127 is applied to the client desktop. This fix includes adding a DWORD value LsaAllowReturningUnencryptedSecrets to the HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Lsa registry key and setting this value to 1.

Machine authentication using machine certificate (rather than machine password) does not require a change and is the more secure option. Because machine password was accessible in an unencrypted format, Microsoft changed the OS so that a special key was required. NAM cannot know the password established between the operating system and active directory server and can only obtain it by setting the key above. This change permits Local Security Authority (LSA) to provide clients like Cisco Network Access Manager with the machine password.



Note Machine authentication allows a client desktop to be authenticated to the network before the user logs in. During this time the administrator can perform scheduled administrative tasks for this client machine. Machine authentication is also required for the EAP Chaining feature where a RADIUS server can authenticate both the User and Machine for a particular client. This will result in identifying company assets and applying appropriate access policies. For example, if this is a personal asset (PC/laptop/tablet), and a corporate credentials are used, the endpoint will fail Machine authentication, but succeed User authentication and the proper network access restrictions are applied to the user's network connection.

- On Windows 8, the Export Stats button on the Preferences > VPN > Statistics tab saves the file on the desktop. In other versions of Windows, the user is asked where to save the file.
- AnyConnect VPN is compatible with 3G data cards which interface with Windows via a WWAN adapter.

AnyConnect Support for Linux

Linux Requirements

- Using VPN CLI without GUI sessions (for example SSH) is not supported
- The Snap version of Firefox is not supported by AnyConnect on Linux
- x86 instruction set
- 64-bit processor
- 32 MB RAM
- 20 MB hard disk space
- Superuser privileges are required for installation
- network-manager
- libnm (libnm.so or libnm-glib.so)
- libstdc++ users must have libstdc++.so.6(GLIBCXX_3.4) or higher, but below version 4
- Java 5 (1.5) or later. The only version that works for web installation is Sun Java. You must install Sun Java and configure your browser to use that instead of the default package.
- zlib - to support SSL deflate compression
- xterm - only required if you're doing initial deployment of AnyConnect via Weblaunch from ASA clientless portal
- gtk 2.0.0
- gdk 2.0.0
- libpango 1.0
- iptables 1.2.7a or later
- tun module supplied with kernel 2.4.21 or 2.6

AnyConnect Support for macOS

macOS Requirements

- AnyConnect requires 50MB of hard disk space.
- To operate correctly with macOS, AnyConnect requires a minimum display resolution of 1024 by 640 pixels.

macOS Guidelines

AnyConnect 4.8 for macOS has been notarized, and installer disk images (dmg) have been stapled.

- macOS 10.8 introduces a new feature called Gatekeeper that restricts which applications are allowed to run on the system. You can choose to permit applications downloaded from:
 - macOS App Store
 - macOS App Store and identified developers
 - Anywhere

The default setting is macOS App Store and identified developers (signed applications). AnyConnect is a signed application, but it is not signed using an Apple certificate. This means that you must either select the Anywhere setting or use Control-click to bypass the selected setting to install and run AnyConnect from a predeploy installation. Users who web deploy or who already have AnyConnect installed are not impacted. For further information, refer to Apple documentation.



Note Web launch or OS upgrades (for example 10.7 to 10.8) install as expected. Only the predeploy installation requires additional configuration as a result of Gatekeeper.

AnyConnect Licensing

For the latest end-user license agreement, see [Cisco End User License Agreement, AnyConnect Secure Mobility Client, Release 4.x](#).

For our open source licensing acknowledgments, see [Open Source Software Used in AnyConnect Secure Mobility Client](#).

To deploy AnyConnect from an ISE headend and use the ISE Posture module, a Cisco ISE Apex License is required on the ISE Administration node. For detailed ISE license information, see the *Cisco ISE Licenses* chapter of the [Cisco Identity Services Engine](#).

To deploy AnyConnect from an ASA headend and use the VPN and VPN Posture (HostScan) modules, an AnyConnect 4.X Plus or Apex license is required, trial licenses are available, see the [Cisco AnyConnect Ordering Guide](#).

For an overview of the AnyConnect 4.X Plus and Apex licenses and a description of which license the features use, see [AnyConnect Secure Mobility Client Features, Licenses, and OSs](#).

AnyConnect Installation Overview

Deploying AnyConnect refers to installing, configuring, and upgrading the AnyConnect client and its related files. The Cisco AnyConnect Secure Mobility Client can be deployed to remote users by the following methods:

- Predeploy—New installations and upgrades are done either by the end user, or by using an enterprise software management system (SMS).
- Web Deploy—The AnyConnect package is loaded on the headend, which is either an ASA or ISE server. When the user connects to an ASA or to ISE, AnyConnect is deployed to the client.
 - For new installations, the user connects to a headend to download the AnyConnect client. The client is either installed manually, or automatically (web-launch).
 - Updates are done by AnyConnect running on a system where AnyConnect is already installed, or by directing the user to the ASA clientless portal.

When you deploy AnyConnect, you can include the optional modules that enable extra features, and client profiles that configure the VPN and other features. Keep in mind the following:

- All AnyConnect modules and profiles can be predeployed. When predeploying, you must pay special attention to the module installation sequence and other details.
- The Customer Experience Feedback module and the Hostscan package, used by the VPN Posture module, cannot be web deployed from the ISE.
- The Compliance Module, used by the ISE Posture module, cannot be web deployed from the ASA.

For more information about deploying the AnyConnect modules, see the [Cisco AnyConnect Secure Mobility Client Administrator Guide, Release 4.6](#).

For more information about deploying the AnyConnect modules, see the [Cisco AnyConnect Secure Mobility Client Administrator Guide, Release 4.5](#).

For more information about deploying the AnyConnect modules, see the [Cisco AnyConnect Secure Mobility Client Administrator Guide, Release 4.3](#).



Note Make sure to update the localization MST files with the latest release from CCO whenever you upgrade to a new AnyConnect package.

Upgrading from 3.1 MR10 AnyConnect Clients/Incompatibility Issues

Once AnyConnect 3.1.10010 has been automatically deployed to an endpoint, you cannot connect to a secure gateway configured with AnyConnect versions 4.0, 4.1, 4.1MR2, 4.2, and 4.3 which are incompatible. If you try to upgrade from AnyConnect 3.1 MR10 version to any version other than AnyConnect 4.1MR4 (or later) or 3.1 versions later than 3.1.10010, you will receive a notification that the upgrade is not allowed.

Refer to CSCuv12386 for further information.

Upgrading from AnyConnect 3.0 or Later

When you upgrade from AnyConnect Secure Mobility Client Release 3.0 or later, AnyConnect performs the following operations:

- Upgrades all previous versions of the core client and retains all VPN configurations.
- Upgrades any HostScan files used by AnyConnect.

Upgrading from AnyConnect 2.5 and earlier

When you upgrade from any 2.5.x version of AnyConnect, the AnyConnect Secure Mobility Client performs the following:

- Upgrades all previous versions of the core client and retains all VPN configurations.
- Upgrades any HostScan files used by AnyConnect.
- If you install Network Access Manager, AnyConnect retains all CSSC 5.x configuration for use with Network Access Manager, then removes CSSC 5.x.
- Does not upgrade or remove the Cisco IPsec VPN client. However, the AnyConnect client can coexist on the computer with the IPsec VPN client.
- Does not upgrade and cannot coexist with Cisco's ScanSafe AnyWhere+. You must uninstall AnyWhere+ before installing the AnyConnect Secure Mobility Client.



Note If you are upgrading from the legacy Cisco VPN client, the MTU value on the physical adapters may have been lowered to 1300. You should restore the MTU back to the default (typically 1500) for each adapter to achieve optimal performance when using AnyConnect.

Upgrading from AnyConnect 2.2 is not supported using the ASA or Weblaunch. You must uninstall AnyConnect 2.2 then install the new version either manually or using an SMS.

Web-based Installation May Fail on 64-bit Windows

This issue applies to Internet Explorer versions 10 and 11, on Windows versions 7 and 8.

When the Windows registry entry HKEY_CURRENT_USER\Software\Microsoft\Internet Explorer\Main\TabProcGrowth is set to 0, Active X has problems during AnyConnect web deployment.

See <http://support.microsoft.com/kb/2716529> for more information.

The solution to is to:

- Run a 32-bit version of Internet Explorer.
- Edit the registry entry to a non-zero value, or remove that value from the registry.



Note On Windows 8, starting Internet Explorer from the Windows start screen runs the 64-bit version. Starting from the desktop runs the 32-bit version.

AnyConnect Support Policy

Cisco supports all non-beta AnyConnect software versions available on the Cisco AnyConnect VPN Software Download site; however, we provide fixes and enhancements only in maintenance or features releases based on the most recently released version.

For information about when releases are no longer supported, see <http://www.cisco.com/c/en/us/products/eos-eol-policy.html>

Guidelines and Limitations

Server Certificate Validation Error

(CSCvu71024) AnyConnect authentication may fail if the ASA headend or SAML provider uses certificates signed by the AddTrust root (or one of the intermediaries), because they expired in May 2020. The expired certificate causes AnyConnect to fail and presents as a server certificate validation error, until operating systems make the required updates to accommodate the May 2020 expiration.

Windows DNS Client Optimizations Caveat

Windows DNS Client optimizations present in Windows 8 and above may result in failure to resolve certain domain names when split DNS is enabled. The workaround is to disable such optimizations by updating the following registry keys:

Key: HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Dnscache\Parameters

Value: DisableParallelAandAAAA

Data: 1

Key: HKEY_LOCAL_MACHINE\Software\Policies\Microsoft\Windows NT\DNSClient

Value: DisableSmartNameResolution

Data: 1

Preparation for macOS 10.15 Users

The macOS 10.15 operating system does not support 32-bit binaries. Additionally, Apple verifies that all software installed on 10.15 has been cryptographically notarized via digital signature. For the best user experience, we recommend upgrading to AnyConnect 4.8, because it is the first version that officially supports operation on macOS 10.15 and contains no 32-bit code.

Otherwise, make note of these limitations:

- AnyConnect versions prior to 4.7.03052 may require an active internet connection to upgrade.
- AnyConnect HostScan versions prior to 4.8.x will not function on macOS 10.15. Refer to [HostScan Will Not Function With macOS 10.15 Without Upgrade \(CSCvq11813\)](#), on page 14.
- AnyConnect HostScan and SystemScan users on macOS 10.15 will experience permission popups during initial launch. Refer to [Permission Popups During Initial AnyConnect HostScan or System Scan Launch \(CSCvq64942\)](#), on page 15.

HostScan Will Not Function With macOS 10.15 Without Upgrade (CSCvq11813)

AnyConnect HostScan packages earlier than 4.8.x will not function with macOS Catalina (10.15). End users who attempt to connect from macOS Catalina to ASA headends running HostScan packages earlier than 4.8.x will not be able to successfully complete VPN connections, receiving a posture assessment failed message.

To enable successful VPN connections for HostScan users, all DAP and HostScan policies must be HostScan 4.8.00175 (or later) compatible. Refer to [AnyConnect HostScan Migration 4.3.x to 4.6.x and Later](#) for additional information related to policy migration from HostScan 4.3.x to 4.8.x.

As a workaround to restore VPN connectivity, administrators of systems with HostScan packages on their ASA headends may disable HostScan. If disabled, all HostScan posture functionality, and DAP policies that depend on endpoint information, will be unavailable.

The associated field notice can be found here: <https://www.cisco.com/c/en/us/support/docs/field-notices/704/fn70445.html>.

Permission Popups During Initial AnyConnect HostScan or System Scan Launch (CSCvq64942)

macOS 10.15 (and later) requires that applications obtain user permissions for access to Desktop, Documents, Downloads, and Network Volume folders. To grant this access, you may see popups during an initial launch of HostScan, System Scan (when ISE posture is enabled on the network), or DART (when ISE posture or HostScan is installed). ISE posture and HostScan use OPSWAT for posture assessment on endpoints, and the posture checks access these folders based on the product and policies configured.

At these popups, you must click **OK** to have access to these folders and to continue with the posture flow. If you click **Don't Allow**, the endpoint may not remain compliant, and the posture assessment and remediation may fail without access to these folders.

To Remedy a *Don't Allow* Selection

To see these popups again and grant access to the folders, edit cached settings:

1. Open **System Preferences**.
2. Navigate to **Security & Privacy > Privacy > Files and Folders > .**
3. Delete folder access related cache details in the Cisco AnyConnect Secure Mobility Client folder.

The permission popups will reappear with a subsequent start of posture, and the user can click **OK** to grant access.

macOS Management Tunnel Disconnect After Upgrade to 4.8

If you encounter any of the following scenarios, it is related to security improvements to comply with Apple notarizations:

- You had management tunnel connectivity with AnyConnect 4.7, but the AnyConnect 4.8 version fails in the same environment.
- The VPN statistic window displays "Disconnect (Connect Failed)" as the management tunnel state.
- Console logs indicate "Certificate Validation Failure," signifying a management tunnel disconnect.

If configured to allow access (without prompting) to an AnyConnect app or executables, ACLs must be reconfigured after upgrading to AnyConnect 4.8, by re-adding the app or executable. You must change the private key access in the system store of the keychain access to include the `vpnagentd` process from 4.8:

1. Navigate to **System Keychain > System > My Certificates > Private key**.
2. Remove the `vpnagentd` process from the access control tab.
3. Add the current `vpnagentd` into the `/opt/cisco/anyconnect/bin` folder.
4. Enter the password when prompted.
5. Quit Keychain Access and stop the VPN service.
6. Restart.

PMK-Based Roaming Not Supported With Network Access Manager

You cannot use PMK-based roaming with Network Access Manager on Windows.

DART Requires Admin Privileges

Due to system security restrictions, DART now requires administrator privileges on macOS, Ubuntu 18.04, and Red Hat 7 to collect logs.

Changes with Certificate Store Database (NSS Library Updates) on Firefox58

(Only Impacting RedHat and Ubuntu users prior to 18.04) Because NSS certificate store DB format changed starting with Firefox 58, an environment variable change is required for AnyConnect to comply with this change and to prevent needing an operating system upgrade. Set `NSS_DEFAULT_DB_TYPE="sql"` as a workaround to use the new SQL DB format. Once NSS is updated to version 3.35 or later, this environment variable is no longer required, and it will default to use SQL DB.

Conflict with Network Access Manager and Group Policy

If your wired or wireless network settings or specific SSIDs are pushed from a Windows group policy, they can conflict with the proper operation of the Network Access Manager. With the Network Access Manager installed, a group policy for wireless settings is not supported.

Web Deploy of NAM, DART, ISE Posture, and/or Posture Fails with Signature/File Integrity Verification Error

This "timestamp signature and/or certificate could not be verified or is malformed" error only occurs on Windows during web deploy of AnyConnect 4.4MR2 (or later) from ASA or ISE. Only the NAM, DART, ISE Posture, and Posture modules that are deployed as MSI files are affected. Because of the use of SHA-2 timestamping certificate service, the most up-to-date trusted root certificates are required to properly validate the timestamp certificate chain. You will not have this issue with predeploy or an out-of-the-box Windows system configured to automatically update root certificates. However, if the automatic root certificate update setting has been disabled (not the default), refer to [https://technet.microsoft.com/en-us/library/dn265983\(v=ws.11\).aspx](https://technet.microsoft.com/en-us/library/dn265983(v=ws.11).aspx) or manually install the timestamping root certificates that we use. You can also use the signtool to verify if the issue is outside of AnyConnect by running the

```
signtool.exe verify /v /all/debug/pa<file to verify>
```

command from a Microsoft provided Windows SDK.

macOS Keychain Prompts During Authentication

On macOS, a keychain authentication prompt may appear after the VPN connection is initiated. The prompt only occurs when access to a client certificate private key is necessary, after a client certificate request from the secure gateway. Even if the tunnel group is not configured with certificate authentication, certificate mapping may be configured on the ASA, causing the keychain prompts when the access control setting for the client certificate private key is configured as *Confirm Before Allowing Access*.

Configure the AnyConnect VPN profile to restrict AnyConnect access strictly to clients certificates from the login keychain (in the ASDM profile editor, choose Login under Preferences (Part 1) - Certificate Store - macOS). You can stop the keychain authentication prompts with one of the following actions:

- Configure the certificate matching criteria in the client profile to exclude well-known system keychain certificates.
- Configure the access control setting for the client certificate private keys in the system keychain to allow access to AnyConnect.

CSCuv78008 tracks an enhancement request to extend support for profile-based certificate store filtering to macOS. This enhancement allows you to restrict AnyConnect access strictly to user certificates from the login keychain without configuring certificate matching criteria in the profile.

Microsoft Inadvertently Blocks Updates to Windows 10 When Network Access Manager is Installed

Microsoft intended to block updates to earlier versions of Windows when the Network Access Manager is installed, but Windows 10 and Creators Edition (RS2) were inadvertently blocked as well. Because of the error (Microsoft Sysdev 11911272), you must first

uninstall the Network Access Manager module before you can upgrade to the Creators Edition (RS2). You can then reinstall the module after the upgrade. Microsoft's fix for this error is planned for June 2017.

Windows 10 Defender False Positive—Cisco AnyConnect Adapter Issue

When upgrading to Windows 10 Creator Update (April 2017), you may encounter a Windows Defender message that the AnyConnect adapter has an issue. Windows Defender instructs you to enable the adapter under the Device Performance and Health section. In actuality, the adapter should be disabled when not in use, and no manual action should be taken. This false positive error has been reported to Microsoft under Sysdev # 11295710.

AnyConnect 4.4MR1 (or later) and 4.3MR5 are compatible with Windows 10 Creators Edition (RS2).

AnyConnect Compatibility with Microsoft Windows 10

AnyConnect 4.1MR4(4.1.04011) and later are compatible with Windows 10 official release. Technical Assistance Center (TAC) support is available beginning on 7/29/2015.

For best results, we recommend a clean install of AnyConnect on a Windows 10 system and not an upgrade from Windows 7/8/8.1. If you are planning to perform an upgrade from Windows 7/8/8.1 with AnyConnect pre-installed, make sure that you first upgrade AnyConnect prior to upgrading the operating system. The Network Access Manager Module **must** be uninstalled prior to upgrading to Windows 10. After the system upgrade is complete, you can re-install Network Access Manager on the system. You may also choose to fully uninstall AnyConnect and re-install one of the supported versions after upgrading to Windows 10.

Win32 Limitation With Connected Standby

Because AnyConnect is a Win32 (not a Windows store) application, we have limitations with Microsoft regarding privileges; therefore, AnyConnect cannot provide access to the Connected Standby (suspend and resume events) status in Windows 8 and later.

Always On Behavior for Windows 8 and 10

DAP and group policy's *Always On disabled* head end setting will not be enforced by AnyConnect beyond a reboot. If the client has Always On enabled in the VPN profile and receives a DAP or group policy Always On disabled setting, Always On will not remain disabled after the next system reboot.

However, head end settings pertaining to the ApplyLastVPNLocalResourceRules Always On profile setting (such as excluded networks, client public firewall rules configured in the group policy, and so on) remain enforced after reboot. This related functionality allows local LAN access with Always On enabled and a fail close policy to remain operational after a VPN connection failure.

No ISE Posture Remediation from Symantec AV 12.1.X

Because of architectural changes in Symantec products, ISE posture cannot support remediation from Symantec AV 12.1.x and onwards.

Microsoft Phasing out SHA-1 Support

A secure gateway with a SHA-1 certificate or a certificate with SHA-1 intermediate certificates may no longer be considered valid by a Windows Internet Explorer 11 / Edge browser or a Windows AnyConnect endpoint after February 14, 2017. After February 14, 2017, Windows endpoints may no longer consider a secure gateway with a SHA-1 certificate or intermediate certificate as trusted. We highly recommend that your secure gateway does not have a SHA-1 identity certificate and that any intermediate certificates are not SHA-1.

Microsoft has made modifications to their original plan of record and timing. They have published details for how to [test whether your environment will be impacted by their February 2017 changes](#). Cisco is not able to make any guarantees of correct AnyConnect operation for customers with SHA-1 secure gateway or intermediate certificates or running old versions of AnyConnect.

Cisco highly recommends that customers stay up to date with the current maintenance release of AnyConnect in order to ensure that they have all available fixes in place. The most up-to-date version of AnyConnect 4.x and beyond are available [Cisco.com Software Center](#) for customers with active AnyConnect Plus, Apex, and VPN Only terms/contracts. [AnyConnect Version 3.x is no longer actively maintained](#) and should no longer be used for any deployments.



Note Cisco has validated that AnyConnect 4.3 and 4.4 (and beyond) releases will continue to operate correctly as Microsoft further phases out SHA-1. Long term, Microsoft intends to distrust SHA-1 throughout Windows in all contexts, but their current advisory does not provide any specifics or timing on this. Depending on the exact date of that deprecation, many earlier versions of AnyConnect may no longer operate at any time. Refer to [Microsoft's advisory](#) for further information.

Authentication Failure When Using a SHA512 Certificate for Authentication

(For Windows 7, 8, and 8.1 users running an AnyConnect version prior to 4.9.03047) When the client uses a SHA512 certificate for authentication, authentication fails, even though the client logs show that the certificate is being used. The ASA logs correctly show that no certificate was sent by AnyConnect. These versions of Windows require that you enable support for SHA512 certificates in TLS 1.2, which is not supported by default. Refer to <https://support.microsoft.com/en-us/kb/2973337> for information on enabling support for these SHA512 certificates. 4.9.03049

No Longer Supporting RC4 TLS Cipher Suite

RC4 TLS cipher suites are not supported from AnyConnect release 4.2.01035 and onwards due to security policy enhancements.

OpenSSL Cipher Suites Changes

Because the OpenSSL standards development team marked some cipher suites as compromised, we no longer support them beyond AnyConnect 3.1.05187. The unsupported cipher suites include the following: DES-CBC-SHA, RC4-SHA, and RC4-MD5.

Likewise, our crypto toolkit has discontinued support for RC4 ciphers; therefore, our support for them will be dropped with releases 3.1.13011 and 4.2.01035 and beyond.

AnyConnect Support on Mac OS X El Capitan 10.11

The Cisco AnyConnect Secure Mobility Client is supported on the Mac OS X El Capitan 10.11 operating system.

Using Log Trace in ISE Posture

After a fresh installation, you see ISE posture log trace messages as expected. However, if you go into the ISE Posture Profile Editor and change the Enable Agent Log Trace file to 0 (disable), you must do an AnyConnect service restart to get expected results.

Interoperability With ISE Posture on macOS

If you are using macOS 10.9 or later and want to use ISE posture, you may need to do the following to avoid issues:

- Turn off certificate validation to avoid a "failed to contact policy server" error during posture assessment.
- Disable the captive portal application; otherwise, discovery probes are blocked, and the application remains in pre-posture ACL state.

CRL is Not Supported for Server Certificate Verification

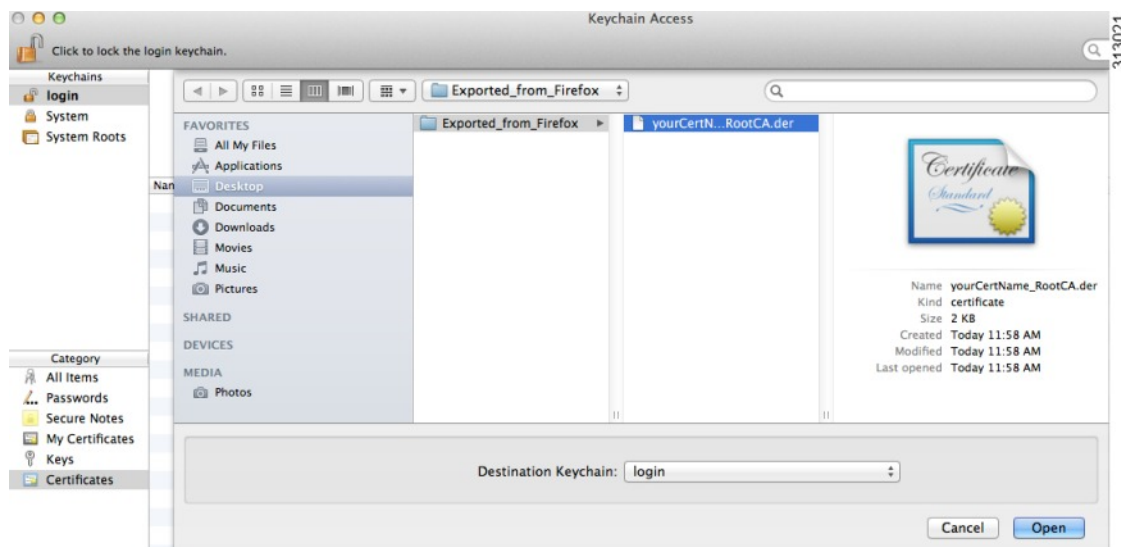
Many sites position the Certificate Authority they use to validate server certificates inside the corporate network. That means that a client cannot verify CRL when it is trying to connect to a headend, since the CRL is not accessible on the public network. The client operating system can be configured to verify CRL in Windows and Mac OS X, but we ignore that setting.

Firefox Certificate Store on macOS is Not Supported

The Firefox certificate store on macOS is stored with permissions that allow any user to alter the contents of the store, which allows unauthorized users or processes to add an illegitimate CA into the trusted root store. AnyConnect no longer utilizes the Firefox store for either server validation or client certificates.

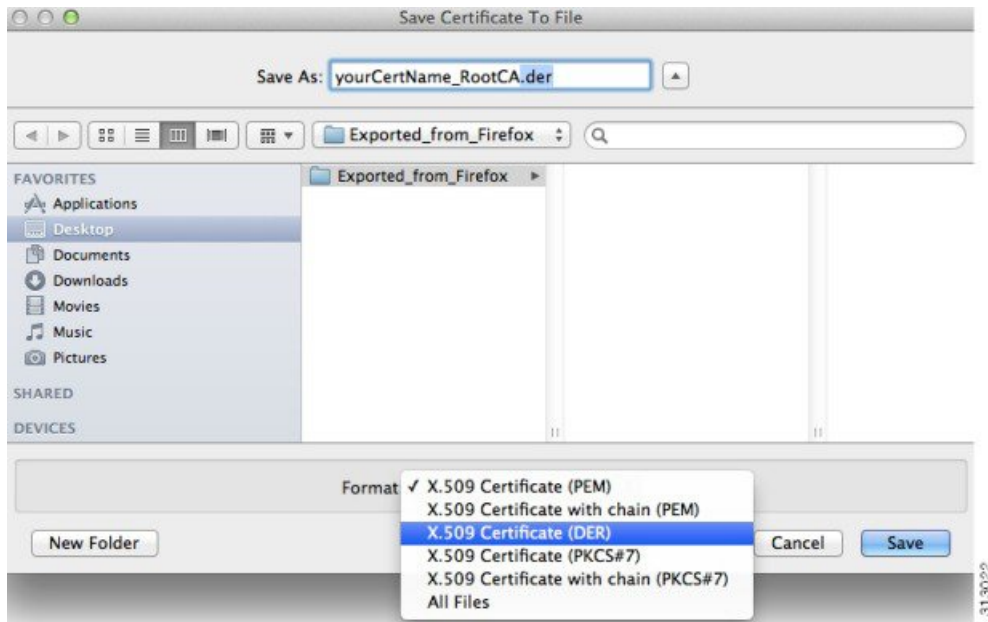
If necessary, instruct your users how to export your AnyConnect certificates from their Firefox certificate stores, and how to import them into the macOS keychain. The following steps are an example of what you may want to tell your AnyConnect users.

1. Navigate to **Firefox > Preferences > Privacy & Security > Advanced**, Certificates tab, click **View Certificates**.
2. Select the Certificate used for AnyConnect, and click **Export**.
Your AnyConnect Certificate(s) will most likely be located under the Authorities category. Verify with your Certificate Administrator, as they may be located under a different category (Your Certificates or Servers).
3. Select a location to save the Certificate(s), for example, a folder on your desktop.
4. In the Format pull down menu, select **X.509 Certificate (DER)**. Add the .der extension to the certificate name, if required.



Note If more than one AnyConnect Certificate and/or a Private Key is used/required, repeat the above process for each Certificate).

5. Launch KeyChain. Navigate to File, Import Items..., and select the Certificate that you exported from Firefox.
In the Destination Keychain:, select the desired Keychain. The login Keychain that is used for this example may not be the one used at your company. Ask your Certificate Administrator to which Keychain your certificate(s) should be imported.
6. In the Destination Keychain:, select the desired Keychain. The login Keychain that is used for this example may not be the one used at your company. Ask your Certificate Administrator to which keychain your certificate(s) should be imported.



7. Repeat the preceding steps for additional Certificates that are used or required for AnyConnect.

AnyConnect UI Fails Due to Missing Dependency libpangox

On many newer Linux distributions, the AnyConnect UI may fail to start with the error:

```
error while loading shared libraries: libpangox-1.0.so.0: cannot open shared
object file: No such file or directory
```

The missing library is obsolete and is no longer available. This impacts other applications, not just AnyConnect.

Pango has released the source code of a compatible library that has been built by others and is available online. To resolve this problem, find and install either the package *pangox-compat-0.0.2-2.e17.x86_64.rpm* or *pangox-compat-0.0.2-3.fc20.x86_64.rpm*.

SSLv3 Prevents HostScan From Working

(CSCue04930) HostScan does not function when the SSLv3 options SSLv3 only or Negotiate SSL V3 are chosen in ASDM (Configuration > Remote Access VPN > Advanced > SSL Settings > The SSL version for the security appliance to negotiate as a server). A warning message displays in ASDM to alert the administrator.

Problems Due to Modified sysctl Network Settings

We have seen instances where Apple's Broadband Tuner application (from 2005) was used with Mac OS X 10.9. That application changes the network settings in *sysctl.conf*, which can cause connection problems. That application was designed for much older versions of the Mac OS. We suspect that the current default OS settings take broadband networks into consideration, so most users will not need to take any action.

Running AnyConnect 3.1.04074 along with the modified *sysctl* settings may generate the following message:

```
The VPN client driver encountered an error..please restart
```

To Verify

To verify that the sysctl network setting is the cause of the problem, open a Terminal window and type:

```
sysctl -a | grep maxsockbuf
```

If the results contain a value much lower than the default value of 8388608, for example:

```
kern.ipc.maxsockbuf: 512000
```

Then this value may have been overwritten in `/etc/sysctl.conf` by Apple's Broadband Tuner application

To Fix

Edit `/etc/sysctl.conf`, comment out the line that sets `kern.ipc.maxsockbuf`, and reboot the computer.

OR

If you have no other Customization other than the one set by the Broadband Tuner application, rename or delete `sysctl.conf`.

Apple is aware of this problem, and has opened Bug ID: 15542576.

WebLaunch Issues With Safari

There is an issue with Weblaunch with Safari. The default security settings in the version of Safari that comes with OS X 10.9 (Mavericks) prevents AnyConnect Weblaunch from working. To configure Safari to allow Weblaunch, edit the URL of the ASA to Unsafe Mode, as described below.

Safari 9 (and earlier)

1. Open Safari **Preferences**.
2. Choose **Security** preference.
3. Click **Manage Website Settings...** button.
4. Choose **Java** from the options listed on the left side.
5. Change the option from **Block** to **Allow Always** for the website "Hostname_or_IP_address" that you are trying to connect to.
6. Click **Done**.

Safari 10 (and later)

1. Open Safari **Preferences**.
2. Choose **Security** preference.
3. Check the **Internet plug-ins:** option to **allow plug-ins**.
4. Choose **Plug-in Settings** button.
5. Choose **Java** from the options listed on the left side.
6. Highlight the "Hostname_or_IP_address" that you are trying to connect to.
7. Hold **Alt** (or **Option**) and click the drop-down menu. Make sure that **On** is checked, and **Run in Safe Mode** is unchecked.
8. Click **Done**.

Active X Upgrade Can Disable Weblaunch

Automatic upgrades of AnyConnect software via WebLaunch will work with limited user accounts as long as there are no changes required for the ActiveX control.

Occasionally, the control will change due to either a security fix or the addition of new functionality.

Should the control require an upgrade when invoked from a limited user account, the administrator must deploy the control using the AnyConnect pre-installer, SMS, GPO or other administrative deployment methodology.

Java 7 Issues

Java 7 can cause problems with AnyConnect Secure Mobility Client, Hostscan, CSD and Clientless SSL VPN (WebVPN). A description of the issues and workarounds is provide in the Troubleshooting Technote [Java 7 Issues with AnyConnect, CSD/Hostscan, and WebVPN - Troubleshooting Guide](#), which is in Cisco documentation under Security > Cisco Hostscan.

Internet Explorer, Java 7, and AnyConnect 3.1.1 Interoperability

Supported versions of Internet Explorer stop working when the user attempts to connect to the ASA, when Java 7 is installed on the endpoint, when HostScan is installed and enabled on the ASA, and when AnyConnect 3.1.1 is installed and enabled on the ASA.

This does not happen when Active X or earlier versions of Java 7 are installed. To avoid this, use a supported version of Java on the endpoint that is earlier than Java 7.

Refer to the Bug Toolkit and defect CSCuc48299 to verify.

Implicit DHCP filter applied when Tunnel All Networks Configured

To allow local DHCP traffic to flow in the clear when Tunnel All Networks is configured, AnyConnect adds a specific route to the local DHCP server when the AnyConnect client connects. To prevent data leakage on this route, AnyConnect also applies an implicit filter on the LAN adapter of the host machine, blocking all traffic for that route except DHCP traffic.

AnyConnect VPN over Tethered Devices

Cisco has qualified the AnyConnect VPN client over a bluetooth or USB tethered Apple iPhone only. Network connectivity provided by other tethered devices should be verified with the AnyConnect VPN client before deployment.

AnyConnect Smart Card Support

AnyConnect supports Smartcard provided credentials in the following environments:

- Microsoft CAPI 1.0 and CAPI 2.0 on Windows7, Windows 8, and Windows 10.
- Keychain on macOS.



Note AnyConnect does not support Smart cards on Linux or PKCS #11 devices.

AnyConnect Virtual Testing Environment

Cisco performs a portion of AnyConnect client testing using these virtual machine environments:

- VMWare ESXi Hypervisor (vSphere) 4.0.1 and later

- VMWare Fusion 2.x, 3.x, and 4.x

We do not support running AnyConnect in virtual environments; however, we expect AnyConnect to function properly in the VMWare environments we test in.

If you encounter any issues with AnyConnect in your virtual environment, report them. We will make our best effort to resolve them.

UTF-8 Character Support for AnyConnect Passwords

AnyConnect 3.0 or later used with ASA 8.4(1) or later supports UTF-8 characters in passwords sent using RADIUS/MSCHAP and LDAP protocols.

Disabling Auto Update May Prevent Connectivity Due to a Version Conflict

When Auto Update is disabled for a client running AnyConnect, the ASA must have the same version of AnyConnect or earlier installed, or the client will fail to connect to the VPN.

To avoid this problem, configure the same version or earlier AnyConnect package on the ASA, or upgrade the client to the new version by enabling Auto Update.

Interoperability between Network Access Manager and other Connection Managers

When the Network Access Manager operates, it takes exclusive control over the network adapters and blocks attempts by other software connection managers (including the Windows native connection manager) to establish connections. Therefore, if you want AnyConnect users to use other connection managers on their endpoint computers (such as iPassConnect Mobility Manager), they must disable Network Access Manager either through the Disable Client option in the Network Access Manager GUI, or by stopping the Network Access Manager service.

Network Interface Card Drivers Incompatible with Network Access Manager

The Intel wireless network interface card driver, version 12.4.4.5, is incompatible with Network Access Manager. If this driver is installed on the same endpoint as the Network Access Manager, it can cause inconsistent network connectivity and an abrupt shutdown of the Windows operating system.

Avoiding SHA 2 Certificate Validation Failure (CSCtn59317)

The AnyConnect client relies on the Windows Cryptographic Service Provider (CSP) of the certificate for hashing and signing of data required during the IKEv2 authentication phase of the IPsec/IKEv2 VPN connection. If the CSP does not support SHA 2 algorithms, and the ASA is configured for the pseudo-random function (PRF) SHA256, SHA384, or SHA512, and the connection profile (tunnel-group) is configured for certificate or certificate and AAA authentication, certificate authentication fails. The user receives the message Certificate Validation Failure.

This failure occurs for Windows only, for certificates that belong to CSPs that do not support SHA 2-type algorithms. Other supported OSs do not experience this problem.

To avoid this problem you can configure the PRF in the IKEv2 policy on the ASA to md5 or sha (SHA 1). Alternatively, you can modify the certificate CSP value to native CSPs that work such as Microsoft Enhanced RSA and AES Cryptographic Provider. Do not apply this workaround to SmartCards certificates. You cannot change the CSP names. Instead, contact the SmartCard provider for an updated CSP that supports SHA 2 algorithms.



Caution Performing the following workaround actions could corrupt the user certificate if you perform them incorrectly. Use extra caution when specifying changes to the certificate.

You can use the Microsoft Certutil.exe utility to modify the certificate CSP values. Certutil is a command-line utility for managing a Windows CA, and is available in the Microsoft Windows Server 2003 Administration Tools Pack. You can download the Tools Pack at this URL:

<http://www.microsoft.com/downloads/en/details.aspx?FamilyID=c16ae515-c8f4-47ef-a1e4-a8dcbacff8e3&displaylang=en>

Follow this procedure to run Certutil.exe and change the Certificate CSP values:

1. Open a command window on the endpoint computer.
2. View the certificates in the user store along with their current CSP value using the following command:**certutil -store -user My**

The following example shows the certificate contents displayed by this command:

```
===== Certificate 0 =====
Serial Number: 3b3be91200020000854b
Issuer: CN=cert-issuer, OU=Boston Sales, O=Example Company, L=San Jose,
S=CA, C=US, E=csmith@example.com
NotBefore: 2/16/2011 10:18 AM
NotAfter: 5/20/2024 8:34 AM
Subject: CN=Carol Smith, OU=Sales Department, O=Example Company, L=San Jose, S=C
A, C=US, E=csmith@example.com
Non-root Certificate
Template:
Cert Hash(sha1): 86 27 37 1b e6 77 5f aa 8e ad e6 20 a3 14 73 b4 ee 7f 89 26
Key Container = {F62E9BE8-B32F-4700-9199-67CCC86455FB}
Unique container name: 46ab1403b52c6305cb226edd5276360f_c50140b9-ffef-4600-ada
6-d09eb97a30f1
Provider = Microsoft Enhanced RSA and AES Cryptographic Provider
Signature test passed
```

3. Identify the <CN> attribute in the certificate. In the example, the CN is Carol Smith. You need this information for the next step.
4. Modify the certificate CSP using the following command. The example below uses the subject <CN> value to select the certificate to modify. You can also use other attributes.

On Windows 7 or later, use this command: **certutil -csp "Microsoft Enhanced RSA and AES Cryptographic Provider" -f -repairstore -user My <CN> carol smith**

5. Repeat step 2 and verify the new CSP value appears for the certificate.

Configuring Antivirus Applications for HostScan

Antivirus applications can misinterpret the behavior of some of the applications included in the posture module and the HostScan package as malicious. Before installing the posture module or HostScan package, configure your antivirus software to allow or make security exceptions for these HostScan applications:

- cscan.exe
- cisnod.exe
- cstub.exe

Public Proxy Not Supported by IKEv2

IKEv2 does not support the public-side proxy. If you need support for that feature, use SSL. Private-side proxies are supported by both IKEv2 and SSL as dictated by the configuration sent from the secure gateway. IKEv2 applies the proxy configuration sent from the gateway, and subsequent HTTP traffic is subject to that proxy configuration.

MTU Adjustment on Group Policy May Be Required for IKEv2

AnyConnect sometimes receives and drops packet fragments with some routers, resulting in a failure of some web traffic to pass.

To avoid this, lower the value of the MTU. We recommend 1200. The following example shows how to do this using CLI:

```
hostname# config t
hostname(config)# group-policy DfltGrpPolicy attributes
hostname(config-group-policy)# webvpn
hostname(config-group-webvpn)# anyconnect mtu 1200
```

To set the MTU using ASDM, go to **Configuration > Network (Client) Access > Group Policies > Add or Edit > Advanced > SSL VPN Client**.

MTU Automatically Adjusted When Using DTLS

If Dead Peer Detection (DPD) is enabled for DTLS, the client automatically determines the path MTU. If you previously reduced the MTU using the ASA, you should restore the setting to the default (1406). During tunnel establishment, the client auto-tunes the MTU using special DPD packets. If you still have a problem, use the MTU configuration on the ASA to restrict the MTU as before.

Network Access Manager and Group Policy

Windows Active Directory Wireless Group Policies manage the wireless settings and any wireless networks that are deployed to PCs in a specific Active Directory Domain. When installing the Network Access Manager, administrators must be aware that certain wireless Group Policy Objects (GPOs) can affect the behavior of the Network Access Manager. Administrators should test the GPO policy settings with the Network Access Manager before doing full GPO deployment. GPOs pertaining to wireless networks are not supported.

FreeRADIUS Configuration to Work With Network Access Manager

To use Network Access Manager, you may need to adjust the FreeRADIUS configuration. Any ECDH related ciphers are disabled by default to prevent vulnerability. In `/etc/raddb/eap.conf`, change the `cipher_list` value.

Full Authentication Required if Roaming between Access Points

A mobile endpoint running Windows 7 or later must do a full EAP authentication instead of leveraging the quicker PMKID reassociation when the client roams between access points on the same network. Consequently, in some cases, AnyConnect prompts the user to enter credentials for every full authentication if the active profile requires it.

User Guideline for Cisco Cloud Web Security Behavior with IPv6 Web Traffic

Unless an exception for an IPv6 address, domain name, address range, or wild card is specified, IPv6 web traffic is sent to the scanning proxy where it performs a DNS lookup to see if there is an IPv4 address for the URL the user is trying to reach. If the scanning proxy finds an IPv4 address, it uses that for the connection. If it does not find an IPv4 address, the connection is dropped.

If you want all IPv6 traffic to bypass the scanning proxies, you can add this static exception for all IPv6 traffic `::/0`. Doing this makes all IPv6 traffic bypass all scanning proxies. This means that IPv6 traffic is not protected by Cisco Cloud Web Security.

Preventing Other Devices in a LAN from Displaying Hostnames

After one uses AnyConnect to establish a VPN session with Windows 7 or later on a remote LAN, the network browsers on the other devices in the user's LAN display the names of hosts on the protected remote network. However, the other devices cannot access these hosts.

To ensure the AnyConnect host prevents the hostname leak between subnets, including the name of the AnyConnect endpoint host, configure that endpoint to never become the primary or backup browser.

1. Enter **regedit** in the Search Programs and Files text box.
2. Navigate to **HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Browser\Parameters**
3. Double-click **MaintainServerList**.

The Edit String window opens.

1. Enter **No**.
2. Click **OK**.
3. Close the Registry Editor window.

Revocation Message

An AnyConnect certificate revocation warning popup window opens after authentication if AnyConnect attempts to verify a server certificate that specifies the distribution point of an LDAP certificate revocation list (CRL) if the distribution point is only internally accessible.

If you want to avoid the display of this popup window, do one of the following:

- Obtain a certificate without any private CRL requirements.
- Disable server certificate revocation checking in Internet Explorer.



Caution

Disabling server certificate revocation checking in Internet Explorer can have severe security ramifications for other uses of the OS.

Messages in the Localization File Can Span More than One Line

If you try to search for messages in the localization file, they can span more than one line, as shown in the example below:

```
msgid ""  
"The service provider in your current location is restricting access to the "  
"Secure Gateway. "
```

AnyConnect for macOS Performance when Behind Certain Routers

When the AnyConnect client for macOS attempts to create an SSL connection to a gateway running IOS, or when the AnyConnect client attempts to create an IPsec connection to an ASA from behind certain types of routers (such as the Cisco Virtual Office (CVO) router), some web traffic may pass through the connection while other traffic drops. AnyConnect may calculate the MTU incorrectly.

To work around this problem, manually set the MTU for the AnyConnect adaptor to a lower value using the following command from the macOS command line:

```
sudo ifconfig utun0 mtu 1200 (For macOS v10.7 and later)
```

Preventing Windows Users from Circumventing Always-on

On Windows computers, users with limited or standard privileges may sometimes have write access to their program data folders. This could allow them to delete the AnyConnect profile file and thereby circumvent the always-on feature. To prevent this, configure the computer to restrict access to the `C:\ProgramData` folder, or at least the Cisco sub-folder.

Avoid Wireless-Hosted-Network

Using the Windows 7 or later [Wireless Hosted Network](#) feature can make AnyConnect unstable. When using AnyConnect, we do not recommend enabling this feature or running front-end applications that enable it (such as Connectify or Virtual Router).

AnyConnect Requires That the ASA Not Be Configured to Require SSLv3 Traffic

AnyConnect requires the ASA to accept TLSv1 traffic, but not SSLv3 traffic. The SSLv3 key derivation algorithm uses MD5 and SHA-1 in a way that can weaken the key derivation. TLSv1, the successor to SSLv3, resolves this and other security issues present in SSLv3.

Thus, the AnyConnect client cannot establish a connection with the following ASA settings for “ssl server-version”:

```
ssl server-version sslv3
```

```
ssl server-version sslv3-only
```

Trend Micro Conflicts with Install

If you have Trend Micro on your device, the Network Access Manager will not install because of a driver conflict. You can uninstall the Trend Micro or uncheck **trend micro common firewall driver** to bypass the issue.

What HostScan Reports

None of the supported antimalware and firewall products report the last scan time information. HostScan reports the following:

- For antimalware
 - Product description
 - Product version
 - File system protection status (active scan)
 - Data file time (last update and timestamp)
- For firewall
 - Product description
 - Product version
 - Is firewall enabled

Long Reconnects (CSCtx35606)

You may experience long reconnects on Windows if IPv6 is enabled and auto-discovery of proxy setting is either enabled in Internet Explorer or not supported by the current network environment. As a workaround, you can disconnect any physical network adapters not used for VPN connection or disable proxy auto-discovery in IE, if proxy auto-discovery is not supported by the current network environment. With release 3.1.03103, those with multi-homed systems may also experience the long reconnects.

Users with Limited Privileges Cannot Upgrade ActiveX

On Windows 7 or later, user accounts with limited privileges cannot upgrade ActiveX controls and therefore cannot upgrade the AnyConnect client with the web deploy method. For the most secure option, Cisco recommends that users upgrade the client from within the application by connecting to the headend and upgrading.



Note If the ActiveX control was previously installed on the client using the administrator account, the user can upgrade the ActiveX control.

Using the Manual Install Option on macOS if the Java Installer Fails

If users WebLaunch from the ASA headend to start AnyConnect on a macOS, and the Java installer fails, a dialog box presents a **Manual Install** link. Users should do the following when this happens:

1. Click **Manual Install**. A dialog box presents the option to save a `.dmg` file that contains a macOS installer.
2. Mount the disk image (`.dmg`) file by opening it and browsing to the mounted volume using Finder.
3. Open a Terminal window and use the `CD` command to navigate to the directory containing the file saved. Open the `.dmg` file and run the installer.
4. Following the installation, choose **Applications > Cisco > Cisco AnyConnect Secure Mobility Client** to initiate an AnyConnect session, or use Launchpad.

No Pro-Active Key Caching (PKC) or CCKM Support

Network Access Manager does not support PKC or CCKM caching. On Windows 7, fast roaming is unavailable.

Application Programming Interface for the AnyConnect Secure Mobility Client

The AnyConnect Secure Mobility Client includes an Application Programming Interface (API) for those who want to write their own client programs.

The API package contains documentation, source files, and library files to support a C++ interface for the Cisco AnyConnect VPN Client. You can use the libraries and example programs for building on Windows, Linux and MAC platforms. The Makefiles (or project files) for the Windows platform are also included. For other platforms, it includes platform specific scripts showing how to compile the example code. Network administrators can link their application (GUI, CLI, or embedded application) with these files and libraries.

You can download the APIs from Cisco.com.

For support issues regarding the AnyConnect API, send e-mail to the following address: anyconnect-api-support@cisco.com.

AnyConnect Caveats

Caveats describe unexpected behavior or defects in Cisco software releases.

The Cisco Bug Search Tool, <https://tools.cisco.com/bugsearch/>, has detailed information about the following open and resolved caveats in this release. A Cisco account is required to access the Bug Search Tool. If you do not have one, register at <https://tools.cisco.com/RPF/register/register.do>.

AnyConnect 4.1.08005

Caveats Resolved and Open

To find the latest information about resolved defects in this release, refer to the [Cisco Bug Search Tool](#).

Identifier	Component	Headline
CSCum90946	core	Routing LOCAL LAN subnet when split-include is supernet of LOCAL subnet
CSCUw47430	core	Challenge/Response (challenge messages) not displayed on OS X
CSCUw01093	dart	DART fills up hard drive while running acnampkgplugin.exe
CSCUw15384	gui	Text is not clear and is hidden in Cisco AnyConnect About
CSCUv87776	nam	NAM installation not successful on some workstations running Windows 10
CSCUv93588	phone-home	AnyConnect 4.1 under Mac OS X 10.10.3 - 10.10.5 crashes every few min
CSCUw02322	phone-home	Windows 10 wrongly reported as Windows 8
CSCUv79716	posture-asa	HostScan upgrade from ASA fails if it was pre-deployed via msi package
CSCUw23596	posture-ise	AnyConnect posture module reports wrong OS version
CSCUw81938	posture-ise	AnyConnect posture module sends illegal character in posture XML report
CSCUv56788	scansafe	Websec client fails to detect TND server
CSCur31786	vpn	DNS suffix list deleted upon AnyConnect client connection
CSCUw12132	vpn	ClearSmartcardPin XML tag not working

CSCuw16498	vpn	AnyConnect SBL missing Disconnect button on disabling vpndownloader
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To find the latest information about open defects in this release, refer to the [Cisco Bug Search Tool](#).

AnyConnect 4.1.06020

Caveats Resolved and Open

To find the latest information about resolved defects in this release, refer to the [Cisco Bug Search Tool](#).

Identifier	Component	Headline
CSCuv01279	download_install	AnyConnect client for Windows privilege escalation vulnerability
CSCuv11947	download_install	AnyConnect client for Linux or OS X privilege escalation vulnerability
CSCuw15384	gui	Text is not clear and is hidden in Cisco AnyConnect About
CSCuu20658	nam	Does not detect link up with certain Intel network adapters
CSCuv93588	phone home	AnyConnect 4.1 under Mac OS X 10.10.3 crashes every few minutes
CSCuw02322	phone home	Windows 10 wrongly reported as Windows 8

To find the latest information about open defects in this release, refer to the [Cisco Bug Search Tool](#).

AnyConnect 4.1.06013

Caveats Resolved and Open

To find the latest information about resolved defects in this release, refer to the [Cisco Bug Search Tool](#).

Identifier	Component	Headline
CSCur82067	core	No DNS query is seen if IPv6 DNS server is configured on PHY interface
CSCuu72650	nam	SSL error when re-provisioning expired PAC
CSCut12524	posture-asa	ASDM: HostScan cannot be configured after upgrade to 3.1.06073
CSCuv82622	posture-asa	HostScan 3.1.10010 fails to identify Windows 10

CSCuv32875	posture-ise	Posture discovery fails at random after login from sleep
CSCuv43829	posture-ise	AnyConnect system scan stuck in initializing state forever
CSCuv67267	scansafe	Websecurity client still prob TND server every 5 minutes
CSCuu94601	vpn	AnyConnect fails to connect [IKEv2] if IpProtocolSupport has IPv6 only
CSCuv14020	vpn	SBL creates a delay of 10-15 minutes when VpnDownloader is disabled
CSCuv58340	vpn	AnyConnect 4.x: Allow ManualHostInput XML tag not working

To find the latest information about open defects in this release, refer to the [Cisco Bug Search Tool](#).

AnyConnect 4.1.04011

Caveats Resolved and Open

To find the latest information about resolved defects in this release, refer to the [Cisco Bug Search Tool](#).

Identifier	Component	Headline
build_system	CSCut83093	Executables not linked against CiscoSSL in AnyConnect Mac OSX
core	CSCut93920	Cisco AnyConnect Secure Mobility Client directory traversal vulnerability
doc	CSCud72988	Unable to use ampersand (&) on passphrases when creating NAM profiles
download_install	CSCus79385	AnyConnect Secure Mobility Client arbitrary code execution vulnerability
download_install	CSCus79392	AnyConnect Secure Mobility Client arbitrary file write vulnerability
gui	CSCuv08412	Network Access Manager: AnyConnect 4.X Login GUI Misaligned
gui	CSCuv18149	OS X: AnyConnect GUI not initializing with certain regional settings
mobile	CSCuu83398	OpenSSL June 2015 vulnerabilities - AnyConnect
nam	CSCuu55397	4.x throws looping error when there is no valid cert or e-token

vpn	CSCut12255	AnyConnect Secure Mobility Client local denial of service vulnerability
vpn	CSCuu91515	DTLS breaks after SSL rekey starting AC 3.1 MR7 / 4.0 MR2

To find the latest information about open defects in this release, refer to the [Cisco Bug Search Tool](#).

AnyConnect 4.1.02011

Caveats Resolved and Open

To find the latest information about resolved defects in this release, refer to the [Cisco Bug Search Tool](#).

Identifier	Component	Headline
CSCut88723	core	AnyConnect in failed-close is blocking DHCP packets after LAN connected
CSCuu44314	doc	AnyConnect passive deploy with logging option command wrong
CSCuu18805	gui	Additional validation of input to AnyConnect COM components is needed
CSCuq17045	ipv6	AnyConnect blocking DHCPv6 replies causes loss of IPv6 address
CSCup07733	mobile	Android: Incorrect Intel Android architecture check on some devices
CSCup83003	mobile	Android: AnyConnect should not auto-disconnect on CLAT46 network
CSCuu83398	mobile	OpenSSL June 2015 vulnerabilities - AnyConnect
CSCur51577	mobile-android	AnyConnect 4.0 not fully exiting with Menu > Exit
CSCun89654	nam	Password change Windows error "Username or Password Incorrect"
CSCuq62752	nam	
CSCur94613	nam	PMK list corruption causing disconnections
CSCuu21202	posture-ise	OS X system scan stuck at 10%

To find the latest information about open defects in this release, refer to the [Cisco Bug Search Tool](#).

AnyConnect 4.1.00028

Caveats Resolved and Open

To find the latest information about resolved defects in this release, refer to the [Cisco Bug Search Tool](#).

Identifier	Component	Headline
CSCur87460	certificate	AnyConnect ignores certificate map when non-standard EKU is present

CSCus71091	certificate	AnyConnect 3.1.06073 PKI card PIN dialogue take up to one minute
CSCup72548	core	Link level route add for DHCP server fails on Windows 7
CSCur38043	core	Enhancement AnyConnect 3.1 - document how to modify AnyConnect modules
CSCur71745	core	AnyConnect after disconnects, does not restore proxy setting on IE
CSCur78318	core	AnyConnect 3.1 vpnagent crash with vpnccommon module
CSCus72903	doc	AnyConnect 3.1 doc needs to indicate support for Win 8.1
CSCut05131	doc	AnyConnect 4.0 release notes non working links
CSCut60304	doc	DOC deployment guides should state that same OS packages not supported
CSCut66189	doc	HostScan: Delete Kaspersky AntiVirus Ver 15.x from support charts
CSCuv16458	doc	AnyConnect 4.0 DOC NAM profile editor does not support manual PAC
CSCus79195	gui	AnyConnect Secure Mobility Client arbitrary code execution
CSCut56317	gui	VPN: When vpnu.exe is open on the desktop, PC will not shutdown
CSCut46503	mobile	March 2015 OpenSSL vulnerabilities
CSCur29569	nam	AnyConnect NAM not stable for wireless usb card
CSCur66749	nam	AC NAM 3.1 has periodic high latency and ping timeouts, 3.0 does not
CSCus15275	nam	AnyConnect NAM scanlist shows zero networks just after hibernation
CSCut40643	nam	3.1.7021 eap-fast PAC provisioning SSL handshake fails with ISE
CSCut85334	nam	Smart card PIN logon causes 15 second delay in logon process
CSCus79173	posture-asa	AnyConnect Secure Mobility Client HostScan path traversal vulnerability

CSCsg77160	vpn	Automatically determine public proxy on non-Windows from browser setting
CSCus90159	vpn	Mac: AnyConnect/Homepage functionality broken in Mac OS X

To find the latest information about open defects in this release, refer to the [Cisco Bug Search Tool](#).

Related Documentation

Other AnyConnect Documents

- [Cisco AnyConnect Secure Mobility Client Administrator Guide](#)
- [Cisco AnyConnect Secure Mobility Client Features, Licenses, and OSs](#)
- [Open Source Software Used in AnyConnect Secure Mobility Client](#)
- [Cisco End User License Agreement, AnyConnect Secure Mobility Client, Release 4.x](#)

ASA Related Documents

- [Release Notes for the Cisco ASA Series](#)
- [Navigating the Cisco ASA Series Documentation](#)
- [Cisco ASA 5500-X Series Next-Generation Firewalls, Configuration Guides](#)
- [Supported VPN Platforms, Cisco ASA 5500 Series](#)
- [HostScan Support Charts](#)

ISE Related Documents

- [Release Notes for Cisco Identity Service Engine](#)

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