Pulse Connect Secure
Client-Side Changes Guide

Pulse Secure, LLC
2700 Zanker Road, Suite 200
San Jose, CA 95134

www.pulsesecure.net

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If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

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About This Guide

Overview

This document lists files that are installed and registry keys that are modified on a client machine as the result of accessing web-based Pulse Connect Secure services (e.g., Network Connect, Host Checker, Pulse Collaboration, WSAM, JSAM, Terminal Services Client, Citrix Services Client).

Document Conventions

Table 1 defines notice icons used in this guide.

Table 1: Notice Icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Meaning</th>
<th>Description</th>
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<tbody>
<tr>
<td>🔄</td>
<td>Informational note</td>
<td>Indicates important features or instructions.</td>
</tr>
<tr>
<td>⚠️</td>
<td>Caution</td>
<td>Indicates a situation that might result in loss of data or hardware damage.</td>
</tr>
</tbody>
</table>

Obtaining Documentation

To obtain the most current version of all Pulse Secure technical documentation, see the products documentation page at https://www.pulsesecure.net/techpubs.

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can provide feedback by using one of the following methods:

- Document name
- Page number
- Software release version

Requesting Technical Support

Technical product support is available through the Pulse Secure Global Support Center (PSGSC). If you have a support contract, then file a ticket with PSGSC.

- Product warranties—For product warranty information, visit http://www.pulsesecure.net.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Pulse Secure, LLC has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: http://www.pulsesecure.net/support
- Search for known bugs: http://www.pulsesecure.net/support
- Find product documentation: https://www.pulsesecure.net/techpubs/
- Find solutions and answer questions using our Knowledge Base:
http://www.pulsesecure.net/support

- Download the latest versions of software and review release notes: http://www.pulsesecure.net/support
- Search technical bulletins for relevant hardware and software notifications: http://www.pulsesecure.net/support
- Join and participate in the Pulse Secure, LLC Community Forum: http://www.pulsesecure.net/support
- Open a case online in the CSC Case Management tool: http://www.pulsesecure.net/support

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: http://www.pulsesecure.net/support

Opening a Case with PSGSC

You can open a case with PSGSC on the Web or by telephone.

- Use the Case Management tool in the PSGSC at http://www.pulsesecure.net/support.
- Call Phone: 1-844 751 7629 (Toll Free, US).

For international or direct-dial options in countries without toll-free numbers, see http://www.pulsesecure.net/support
PART 1

Client-Side Changes

- Environment Variables
- Installers and Setup Programs
Chapter 1

Environment Variables

Environment Variable Definitions

The environment variable definitions used in this topic are as follows.

For Windows 7 and Windows 8:

- `%USERPROFILE% = %SystemDrive%\Users\%USERNAME%`
- `%APPDATA% = %USERPROFILE%\AppData\Roaming`

For medium and high integrity processes:

- `%TEMP% = %USERPROFILE%\AppData\Local\Temp`

For low integrity processes:

- `%TEMP% = %USERPROFILE%\AppData\Local\Temp\low`

Related Documentation

- Pulse Secure Installer Service
Chapter 2

Installers and Setup Programs

- Pulse Secure Installer Service
- Pulse Secure Setup

Pulse Secure Installer Service

When installing a Windows-based Pulse Connect Secure gateway client application on a user’s Windows system, the Pulse Secure Installer Service deploys two files on the client machine:

- PulseSetupClient.ocx and PulseSetupClient64.ocx
- AccessServiceComponent.exe (The device auto-starts this service when installing, and, then stops and removes it when uninstalling.)

If you plan to use the Pulse Secure Installer MSI package, you will need administrator rights to install onto your client systems. If you plan to use the EXE version, administrator rights is not needed as long as a previous version of the access service component (deployed through, for example, PIS, Pulse, and so forth) is already present.

**Additional Package Files and File Locations**

The Pulse Secure Service installs the following files in C:\Windows\Downloaded Program Files for Windows 7 and Windows 8.

- JuniperSetup.inf
- JuniperSetup.ocx
- PulseExt64.exe
- PulseSetupClient64.inf
- PulseSetupClient64.ocx
- PulseSetupClientCtrlUninstaller64.exe
- install.log
- PulseExt.exe
- PulseSetup.inf
- PulseSetupClient.inf
- PulseSetupClient.ocx
- PulseSetupClientCtrlUninstaller.exe
- string_de.properties
- string_en.properties
- string_es.properties
- string_fr.properties
- string_ja.properties
- string_ko.properties
- string_zh.properties
The Pulse Secure Installer Service also installs the following files in C:\Program Files (x86)\Pulse Secure\Installer Service:

- AccessServiceComponent.x86.exe
- PulseSetupClientOCX.exe
- PulseSetupOCX.exe
- x86_Microsoft.VC80.CRTD_8.0.50727.762.exe
- x86_Microsoft.VC80.CRTTR_8.0.50727.762.exe

The Pulse Secure Installer Service also creates the following files:

- C:\ProgramData\Pulse Secure\Logging\debuglog.log
- C:\Users\admin\AppData\Local\Pulse Secure\Logging\debuglog.log
- C:\Users\All Users\Pulse Secure\Logging\debuglog.log
- C:\Users\Public\Pulse Secure\Logging\debuglog.log (Windows 7/Windows 8)
- C:\Users\admin\AppData\Roaming\Pulse Secure\Logging\debuglog.log (Windows 7/Windows 8)

AccessServiceComponent extracts the following files:

- AccessMethodPS.dll
- accessRecovery.ini
- dsInstallerServicePS.dll
- dsIpc.dll
- dsLogService.dll
- MessageCatalogCommon_IT.txt
- MessageCatalogCommon_PL.txt
- NetMonitor.dll
- PulseSecureService.exe
- PulseSecureServicePS.dll
- PulseSecureServicePS64.dll
- versionInfo.ini
- access.ini
- dsAccessService.exe
- dsInstallerService.dll
- dsLogService.dll
- MessageCatalogCommon_DE.txt
- MessageCatalogCommon_EN.txt
- MessageCatalogCommon_ES.txt
- MessageCatalogCommon_FR.txt
Files Remaining After Uninstall

When the ActiveX control is deleted from within Internet Explorer, it leaves the following files behind:

- C:\Documents and Settings\<user>\Application Data\Pulse Secure\Setup\PulseSetupCtl.log
- C:\Program Files (x86)\Pulse Secure\Installer Service\NeoterisSetupService.log

Registry Modifications

The installer package creates a registry key under HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\PulseSecureService and HKEY_LOCAL_MACHINE\SOFTWARE\Pulse Secure.

Log File Location

The Pulse Secure Installer Service installs the log files in the following location: C:\Program Files (x86)\Pulse Secure\Installer Service.

Related Documentation

- Pulse Secure Setup
- Required Rights to Run and Install Applications

Pulse Secure Setup

When a Windows user signs in to the Pulse Connect Secure gateway, the device attempts to install an ActiveX control (Pulse Secure Setup) on the user’s system. If the device successfully installs Pulse Secure Setup, then the Pulse Secure Setup manages the installation of Windows-based client applications.

Installer Package Files

The Pulse Connect Secure gateway loads the following installer file.

- PulseSetupClient.cab

Additional Package Files and File Locations

The Pulse Secure Setup installs the following additional files under C:\Windows\Downloaded Program Files (Windows 7 and Windows 8):

- install.log
- PulseExt.exe
- PulseSetup.inf
- PulseSetup.ocx
- PulseSetupClient.inf
- PulseSetupClient.ocx
- PulseSetupClientCtrlUninstaller.exe
- string_de.properties
- string_en.properties
- string_es.properties
- string_fr.properties
- string_ja.properties
- string_ko.properties
- string_zh.properties
- string_zh_cn.properties

In addition, the following folder is created.
C:\Documents and Settings\username\Application Data\Pulse Secure

If the administrator configures a list of PCS services that the client can trust, this list of PCS services is stored in the following files:

- %ProgramFiles%\Pulse Secure\whitelist.txt (Windows)
- /usr/local/pulse/whitelist.txt (Mac OSX and Linux)

In addition, users can themselves make the decision to trust a Pulse Connect Secure gateway. When the user makes a decision to trust a Pulse Connect Secure gateway, the Pulse Connect Secure gateway is added to the user whitelist. User whitelist files are located in:

- %AppData%\Pulse Secure\whitelist.txt (Windows)
- ~/Library/Application Support/Pulse Secure/whitelist.txt (Mac OSX)
- ~/.pulse_Secure/whitelist.txt (Linux)

**Registry Modifications**

For Windows 7 and Windows 8, the following registry keys are created:

- HKEY_CURRENT_USER\Software\Microsoft\Internet Explorer\InternetRegistry\REGISTRY\USER\S-1-5-21-68661237-3255334891-3485583729-1000\SOFTWARE\Pulse Secure
- HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{CFE2313F-F5C4-45DCA667-42C339E859FF\}
- HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\PulseSetupClient.ocx
- HKEY_LOCAL_MACHINE\SOFTWARE\Classes\CLSID\{107AD0CA-8339-40C5-B554-AE361FB31090\}\InProcServer32
- HKEY_LOCAL_MACHINE\SOFTWARE\Classes\CLSID\{F27237D7-93C8-44C2-AC6E-D6057B9A918F\}
- HKEY_LOCAL_MACHINE\SOFTWARE\Classes\dsATLSetupCtrl\PulseSetupClientCont.1
- HKEY_LOCAL_MACHINE\SOFTWARE\Classes\dsATLSetupCtrl\PulseSetupClientContro
- HKEY_LOCAL_MACHINE\SOFTWARE\Classes\Interface\{107AD0CA-8339-40C5-B554-AE361FB31090\}
- HKEY_LOCAL_MACHINE\SOFTWARE\Classes\TypeLib\{1FEB5880-8108-4CA6-9FF0-BA5191352FCC\}1.0
- HKEY_LOCAL_MACHINE\SOFTWARE\Classes\TypeLib\{1FEB5880-8108-4CA6-9FF0-BA5191352FCC\}1.0\0\win32
- HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Code Store Database\Distribution Units\{F27237D7-93CB-44C2-AC6E-D6057B9A918F\}\Contains\Files
- HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Code Store Database\Distribution Units\{F27237D7-
Log File Location

The Pulse Secure Setup installs the log files in the following locations.

For Windows 7 and Windows 8:

- `C:\Users\username\AppData\Roaming\Pulse Secure\Logging\debuglog.log`
- `C:\Users\username\AppData\Local\Temp\Low\PulseSetupClientControl.log` (for ActiveX logs)

For low-integrity processes, such as Internet Explorer 7, the ActiveX installer installs the following log files in `C:\Users\username\AppData\Local\Temp\Low`:

- `PulseSetupClientCtrl.log`
- `PulseSetupDll.log`

Related Documentation

- **Pulse Secure Setup**
- **Required Rights to Run and Install Applications**
PART 2

Applications

- Host Checker
- Pulse Secure Collaboration
- Windows Secure Application Manager (WSAM)
- Java Secure Application Manager (JSAM)
- Network Connect
- Terminal Services Client
- Citrix Services Client
Chapter 3

Host Checker

- Host Checker Windows Client
- Host Checker Mac OSX Clients
- Host Checker Linux Clients
- Cache Cleaner

Host Checker Windows Client

To run Host Checker, the dsHostCheckerSetup.exe.cab package is downloaded to the user’s client. This package is responsible for downloading additional files to the user’s system in order to run Host Checker. Host Checker deletes the dsHostCheckerSetup.exe.cab package after installation is complete.

**Installer Package Files and File Location**
Host Checker installs the following CAB file: %TEMP%\dsHostCheckerSetup.exe.cab

**Additional Installer Package Files and File Locations**
Host Checker installs the following additional files on the client in C:\Users\<username>\AppData\Roaming\Pulse Secure\Host Checker:

- CertAuthIMC.dll
- dsHostChecker.exe
- dsHostCheckerProxy.exe
- dsHostCheckerResource_de.dll
- dsHostCheckerResource_en.dll
- dsHostCheckerResource_es.dll
- dsHostCheckerResource_fr.dll
- dsHostCheckerResource_ja.dll
- dsHostCheckerResource_ko.dll
- dsHostCheckerResource_zh.dll
- dsHostCheckerResource_zh_cn.dll
- dsInstallerClient.dll
- dsnsisdll.dll
- dsWinClient.dll
- dsWinClientResource_DE.dll
- dsWinClientResource_EN.dll
- dsWinClientResource_ES.dll
- dsWinClientResource_FR.dll
- dsWinClientResource_JA.dll
- dsWinClientResource_KO.dll
- dsWinClientResource_ZH.dll
- dsWinClientResource_ZH_CN.dll
In addition, if you implement policies that download or check for third-party software, Host Checker may install additional DLLs in subdirectories of: C:\Documents and Settings\username\Application Data\Pulse Secure\Host Checker.

**Log File Locations**

You can enable or disable client-side logs through the System > Log/Monitoring > Client Logs > Settings tab of the Web console.

When you enable logging, Host Checker adds log files to the following locations:

- C:\Users\<username>\AppData\Local\Pulse Secure\Logging\debuglog.log (Windows 7 and Windows 8)
- C:\ProgramData\Pulse Secure\Logging\debuglog.log (Windows 7 and Windows 8)

**Related Documentation**

- Pulse Secure Installer Service
- Pulse Secure Setup
- Host Checker Mac OSX Clients
- Host Checker Linux Clients
- Cache Cleaner
- Required Rights to Run and Install Applications

**Host Checker Mac OSX Clients**

The following information applies to Mac OSX clients only.

**Application and Additional Files Installed by Host Checker**

Host Checker downloads the HostCheckerInstaller.osx installer file from the server which installs the following files on the Mac OSX client under ~/Library/Application Support/Pulse Secure/HostChecker.app

- Contents/
- Contents/CodeResources
• Contents/Info.plist
• Contents/MacOS/
  o HCIMC.dylib
  o HCIMC.dylib
  o HostChecker
  o HostCheckerServicePS.dylib
  o MessageCatalogTncc_DE.txt
  o MessageCatalogTncc_EN.txt
  o MessageCatalogTncc_ES.txt
  o MessageCatalogTncc_FR.txt
  o MessageCatalogTncc_JA.txt
  o MessageCatalogTncc_KO.txt
  o MessageCatalogTncc_ZH-CN.txt
  o MessageCatalogTncc_ZH.txt
  o OPSWAT/
• UnifiedSDK.ini
• doSilent.txt
• libCoreUtils.dylib
• libImplAntivirus.dylib
• libImplFirewall.dylib
• libImplSoftwareProduct.dylib
• libOesisCore.dylib
• tables.dat
• temp/
  o OpswatIMC.dylib
  o hostChecker.dylib
  o libdsWinClientDylib.dylib
  o libhcUtils.dylib
  o tnc_config
• Contents/PkgInfo
• Contents/Resources/
  o AppleScriptCommandDescriptor.sdef
  o DSPACSupport.js
  o English.lproj/
    ▪ InfoPlist.strings
    ▪ MainMenu.nib
Files Remaining After Uninstall

There is no Host Checker uninstall on the Mac OSX client.

Log files Installed by Host Checker

Host Checker stores the log files in the following location on the Mac OSX client:

- ~/Library/Logs/Pulse Secure
- /private/var/log/Pulse Secure/Logging/debuglog.log

Related Documentation

- Pulse Secure Installer Service
- Pulse Secure Setup
- Host Checker Windows Client
- Host Checker Linux Clients
- Cache Cleaner
- Required Rights to Run and Install Applications

Host Checker Linux Clients

The following information applies to Linux clients only.

Application and Additional Files Installed by Host Checker

Host Checker installs $HOME/.pulse_secure/tncc.jar on the Linux client.

Files Remaining After Uninstall

The following files remain on the Linux client after uninstall:

- $HOME/.pulse_secure/dsHCLauncher_linux1.log
- $HOME/.pulse_secure/dsHostChecker_linux1.log

Log Files Installed by Host Checker

Host Checker installs the following log files on Linux systems:

- $HOME/.pulse_secure/dsHCLauncher_linux1.log
- $HOME/.pulse_secure/dsHostChecker_linux1.log

Related Documentation

- Pulse Secure Installer Service
- Pulse Secure Setup
- Host Checker Windows Client
- Host Checker Mac OSX Clients
- Cache Cleaner
- Required Rights to Run and Install Applications

Cache Cleaner

Cache Cleaner is installed as part of Host Checker. Host Checker downloads the binary files dSCacheCleaner.dll and dsCCProc.exe.

Files Remaining After Uninstall

None.

Registry Modifications
Cache Cleaner sets the following string registry values in
HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Uninstall\Pulse_Secure_Cache_Cleaner
version number.

<table>
<thead>
<tr>
<th>String</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>DisplayName</td>
<td>“Pulse Secure Cache Cleaner version”</td>
</tr>
<tr>
<td>DisplayVersion</td>
<td>the current software version</td>
</tr>
<tr>
<td>Publisher</td>
<td>“Pulse Secure”</td>
</tr>
<tr>
<td>QuietUninstallString</td>
<td>“%APPDATA%\Pulse Secure\Cache Cleaner version\uninstall.exe /S”</td>
</tr>
<tr>
<td>StartupApp</td>
<td>“%APPDATA%\Pulse Secure\Cache Cleaner version\dsCacheCleaner.exe”</td>
</tr>
<tr>
<td>StopApp</td>
<td>“%APPDATA%\Pulse Secure\Cache Cleaner version\dsCacheCleaner.exe” -action stop -nodelete 1”</td>
</tr>
<tr>
<td>UninstallString</td>
<td>“%APPDATA%\Pulse Secure\Cache Cleaner version\uninstall.exe”</td>
</tr>
<tr>
<td>URLInfoAbout</td>
<td>“<a href="http://www.pulsesecure.net%E2%80%9D">http://www.pulsesecure.net”</a></td>
</tr>
</tbody>
</table>

**Log File Location**

You can enable or disable client-side logs by clicking System > Log/Monitoring > Client Logs > Settings in the
Web console.

For Windows 7 and Windows 8, Cache Cleaner adds log files to %APPDATA%\Pulse Secure\Logging\debuglog.log

**Related Documentation**

- **Pulse Secure Installer Service**
- **Pulse Secure Setup**
- **Host Checker Windows Client**
- **Host Checker Linux Clients**
- **Required Rights to Run and Install Applications**
Chapter 4

Pulse Secure Collaboration

• Pulse Secure Collaboration Windows Client
• Pulse Secure Collaboration Mac OSX Clients
• Pulse Secure Collaboration Linux Client
• Pulse Secure Collaboration Plug-In

Pulse Secure Collaboration Windows Client
To execute the Windows version of Pulse Secure Collaboration, Pulse Connect Secure gateway downloads the neoCBoxSetup.exe package to the user's computer.

Installer Package File and File Location
Pulse Secure Collaboration installs the neoCBoxSetup.exe file on the Windows client in C:\Documents and Settings\username\Local Settings\Temp\neoCBoxSetup.exe

Additional Files Installed by Package and File Locations
- With an Active-X based install, Pulse Secure Collaboration installs additional files in:
  - (Windows 7 and Windows 8) C:\Users\username\AppData\Roaming\Pulse Secure\Pulse Collaboration version_number

The Pulse Secure Collaboration installer also contains the Access Services installer when run on a Windows 7 or Windows 8 system.
See the Pulse Secure Collaboration directory for a complete list of files.

Files Remaining After Uninstall
After Pulse Secure Collaboration uninstalls, the cbox_cfg.ini and cbox_cfg.txt files (for the Java client) and the installer logs remain on the client.

Registry Modifications
Pulse Secure Collaboration sets the following registry values:

<table>
<thead>
<tr>
<th>String</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>HKEY_CURRENT_USER\Software\Pulse Secure\Pulse Collaboration version</td>
</tr>
<tr>
<td>level</td>
<td>HKLM\Software\Pulse Secure\Logging\Level</td>
</tr>
</tbody>
</table>

Log File Locations
You can enable or disable client-side logs by clicking System > Log/Monitoring > Client Logs > Settings in the Web console.

NOTE: The maximum file size for each of the Pulse Secure Collaboration log files is 10 MB.

When you enable logging, Pulse Secure Collaboration adds log files to the following locations for Windows 7 and Windows 8:
- C:\Users\Public\Pulse Secure\Logging\debuglog.log
- C:\Users\username\AppData\Roaming\Pulse Secure\Logging\debuglog.log

Related Documentation
• Pulse Secure Installer Service
• Pulse Secure Setup
• Pulse Secure Collaboration Mac OSX Clients
• Pulse Secure Collaboration Linux Client
• Pulse Secure Collaboration Plug-In
• Required Rights to Run and Install Applications

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Pulse Secure Collaboration Mac OSX Clients
The following information applies to Mac OSX clients only.

**Application and Additional Files Installed by Pulse Secure Collaboration**
Pulse Secure Collaboration installs the following files on the Mac OSX client:
- ~/Library/Application Support/Pulse Secure/meetingAppMac.jar
- ~/Library/Application Support/Pulse Secure/cbox_cnf.txt
- ~/Library/Application Support/Pulse Secure/meeting.icns

**Files Remaining After Uninstall**
There is no Pulse Secure Collaboration uninstall on the Mac OSX client.

**Log Files Installed by Pulse Secure Collaboration**
Pulse Secure Collaboration installs log files in the following locations on the Mac OSX client:
- ~/Library/Logs/Pulse Secure/dsCboxLauncher_macx.log, where x is 0 or 1.
- ~/Library/Logs/Pulse Secure/dsCboxUI_macx.log, where x is 0 or 1.
- ~/Library/Logs/Pulse Secure/dsCboxUISummary_macx.log, where x is 0 or 1.
- ~/Library/Logs/Pulse Secure/MacPresenter.log.

Related Documentation
- Pulse Secure Installer Service
- Pulse Secure Setup
- Pulse Secure Collaboration Windows Client
- Pulse Secure Collaboration Linux Client
- Pulse Secure Collaboration Plug-In
- Required Rights to Run and Install Applications

Pulse Secure Collaboration Linux Client
The following information applies to Linux clients only.

**Application and Additional Files Installed by Pulse Secure Collaboration**
Pulse Secure Collaboration installs the following files on the Linux client:
- ~/.pulse_secure/meetingAppSun.jar
- ~/.pulse_secure/libSMJNIXWinLinux.so

**Log Files Installed by Pulse Secure Collaboration**
Pulse Secure Collaboration installs log files in the following locations on the Linux client:
- ~/.pulse_secure/LinuxPresenterx.log where x is 0 or 1.
- ~/.pulse_secure/dsCboxUISummary_linuxx.log where x is 0 or 1.
- ~/.pulse_secure/dsCboxUI_linuxx.log where x is 0 or 1.
- ~/.pulse_secure/dsCboxLauncher_linuxx.log where x is 0 or 1.

Related Documentation
- Pulse Secure Installer Service
- Pulse Secure Setup
- Pulse Secure Collaboration Windows Client
- Pulse Secure Collaboration Linux Client
- Pulse Secure Collaboration Plug-In

Pulse Secure Collaboration Plug-In
To run the Pulse Secure Collaboration plug-in, the Pulse Connect Secure gateway downloads the Pulse Secure Collaboration plug-in to the user's client.

**File Location**
The Pulse Secure Collaboration plug-in is installed on the Windows client in \\Documents and
Files Remaining After Uninstall

After the Pulse Secure Collaboration plug-in is uninstalled, the SecureMeetingOutlook.log file remains on the client.
Registry Modifications

<table>
<thead>
<tr>
<th>String</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>HKEY_CURRENT_USER\Software\Pulse Secure\Junos Pulse Collaboration for Outlook Plugin</td>
</tr>
</tbody>
</table>

Related Documentation

- Pulse Secure Installer Service
- Pulse Secure Setup
- Pulse Secure Collaboration Windows Client
- Pulse Secure Collaboration Mac OSX Clients
- Pulse Secure Collaboration Linux Client
- Required Rights to Run and Install Applications
Chapter 5

Windows Secure Application Manager (WSAM)

**Windows Secure Application Manager (WSAM)**

An administrator can use the Pulse Secure Installer Service to download, install, upgrade, and run client-side applications on client systems without requiring administrator privileges. With this approach, it is not necessary for the end-user to, for example, manually download the WSAM installer.

An administrator can choose to download a “stand-alone installer” to a client’s system for installing WSAM from a command line, batch file or Windows service. In this case, the administrator should install WSAM on the client as the end-user may not have the appropriate permissions.

**Installer Package Files and File Locations**

WSAM downloads its package files to the following locations:

- Windows 7 and Windows 8 (32- & 64-bit): `\Users\username\AppData\Local\Temp`
- Windows Mobile 6.0 Pocket PC/6.0 Classic/6.0 Professional: `\My Documents\WSAMInstARM.cab`
- Windows Mobile 5.0 Smartphone/6.0 Standard: `\My Document\WSAMInstARMSP.cab`

NOTE: You may choose to use a WSAM standalone installer or scriptable installer instead of the standard Web installers already mentioned. If you do, the installers are located where you save them, which may not be the same directories listed here. The filenames for these downloadable installers are:

- WSAMInstNt.exe—WSAM standalone installer for Windows 7 (including 32- & 64-bit) systems
- WSAMInstARM.cab—WSAM standalone installer for Windows Mobile 5.0 PocketPC/6.0 Classic/6.0 Professional
- WSAMInstARMSP.cab—WSAM standalone installer for Windows Mobile 5.0 Smartphone/6.0 Standard

**Additional Files Installed by Package and File Locations**

For Windows 7 and Windows 8, WSAM installs the following additional files on the client in C:\Program Files\Pulse Secure\Secure Application Manager or C:\Program Files (x86)\Pulse Secure\Secure Application Manager for 64-bit Windows operating systems:

- dsSamProxy.exe
- dsSamResource_DE.dll
- dsSamResource_EN.dll
- dsSamResource_ES.dll
- dsSamResource_FR.dll
- dsSamResource_JA.dll
- dsSamResource_KO.dll
- dsSamResource_ZH.dll
- dsSamResource_ZH_CN.dll
- dsSamUI.exe
- dsWinClient.dll
- dsWinClientResource_DE.dll
- dsWinClientResource_EN.dll
- dsWinClientResource_ES.dll
- dsWinClientResource_FR.dll
- dsWinClientResource_JA.dll
- dsWinClientResource_KO.dll
On Windows 7 and Windows 8 systems, WSAM also installs a TDI driver (neofltr_release number_build number.sys) in $SystemRoot\system32\drivers.

For Windows mobile, WSAM installs the following additional files on the client in %Program Files%\Pulse Secure\WSAM:

<table>
<thead>
<tr>
<th>File</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>dsSamProxy.exe</td>
<td>%Program Files%\Pulse Secure\WSAM</td>
</tr>
<tr>
<td>gapsp.dll</td>
<td>Windows</td>
</tr>
<tr>
<td>SamResource_DE.dll</td>
<td>%Program Files%\Pulse Secure\WSAM</td>
</tr>
<tr>
<td>SamResource_EN.dll</td>
<td>%Program Files%\Pulse Secure\WSAM</td>
</tr>
<tr>
<td>SamResource_ES.dll</td>
<td>%Program Files%\Pulse Secure\WSAM</td>
</tr>
<tr>
<td>SamResource_FR.dll</td>
<td>%Program Files%\Pulse Secure\WSAM</td>
</tr>
<tr>
<td>SamResource_JA.dll</td>
<td>%Program Files%\Pulse Secure\WSAM</td>
</tr>
<tr>
<td>SamResource_KO.dll</td>
<td>%Program Files%\Pulse Secure\WSAM</td>
</tr>
<tr>
<td>SamResource_ZH.dll</td>
<td>%Program Files%\Pulse Secure\WSAM</td>
</tr>
<tr>
<td>SamResource_ZH_CN.dll</td>
<td>%Program Files%\Pulse Secure\WSAM</td>
</tr>
<tr>
<td>SamUI.exe</td>
<td>%Program Files%\Pulse Secure\WSAM</td>
</tr>
</tbody>
</table>

### Files Remaining After Uninstall

After WSAM uninstalls, the following files remain on the Windows 7 and Windows 8 client:

- Microsoft.VC80.CRT/Microsoft.VC80.CRT.manifest
- Microsoft.VC80.CRT/msvcp80.dll
- Microsoft.VC80.CRT/msvcr80.dll
- pending.reboot
- samclean.exe

### Registry Modifications

WSAM sets the following registry values for the installation, uninstallation, current version, TDI driver for Windows 7 and Windows 8 only, and miscellaneous:

### Installation Values

For Windows 7 and Windows 8, WSAM sets the following installation values in `HKEY_LOCAL_MACHINE\SOFTWARE\Pulse Secure\Secure Application Manager`:
<table>
<thead>
<tr>
<th>InstallPath</th>
<th>C:\Program Files\Pulse Secure\Secure Application Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>EN (or appropriate language value)</td>
</tr>
</tbody>
</table>

For Windows Mobile, WSAM sets the following installation values:

- In HKEY_LOCAL_MACHINE\SOFTWARE\Pulse Secure\WSAM:

<table>
<thead>
<tr>
<th>String</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>AutoStart</td>
<td>0 or 1</td>
</tr>
<tr>
<td>ProductVersion</td>
<td>&lt;version number&gt;&lt;build number&gt;</td>
</tr>
<tr>
<td>ProductName</td>
<td>WSAM</td>
</tr>
</tbody>
</table>

- HKEY_LOCAL_MACHINE\SOFTWARE\Pulse Secure\WSAM\Config

<table>
<thead>
<tr>
<th>String</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Url1</td>
<td>???</td>
</tr>
</tbody>
</table>

- HKEY_LOCAL_MACHINE\SOFTWARE\Pulse Secure\WSAM\Log:

<table>
<thead>
<tr>
<th>String</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>LoggingApps</td>
<td>iexplore.exe; tmail.exe</td>
</tr>
<tr>
<td>LogLevel</td>
<td>3</td>
</tr>
<tr>
<td>ProductLocation</td>
<td>\Program Files\Pulse Secure\WSAM</td>
</tr>
</tbody>
</table>

- HKEY_LOCAL_MACHINE\SOFTWARE\Pulse Secure\WSAM

<table>
<thead>
<tr>
<th>String</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>EnableLogSvr</td>
<td>0 or 1 (depending upon server side log setting)</td>
</tr>
</tbody>
</table>

- HKEY_CURRENT_USER\SOFTWARE\Pulse Secure\WSAM

<table>
<thead>
<tr>
<th>String</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>UpgradeFlag</td>
<td>2 or 3 (depending upon auto profile generation requirement)</td>
</tr>
</tbody>
</table>

**Uninstallation Values**

WSAM sets the following uninstall values in HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\Current\Version\Uninstall\Netwotris_Secure_Application_Manager\Commands for Windows 7 and Windows 8.

<table>
<thead>
<tr>
<th>String</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>DelRV</td>
<td>&quot;C:\Program Files\Pulse Secure\Secure Application Manager\samnb.dll&quot;;SFS_DeleteRebootValue</td>
</tr>
<tr>
<td>FlushC</td>
<td>&quot;C:\Program Files\Pulse Secure\Secure Application Manager\samnb.dll&quot;;SFS_FlushCache</td>
</tr>
</tbody>
</table>

WSAM also sets the following locations:

- HKEY_CURRENT_USER\SOFTWARE\Pulse Secure\Secure Application Manager\SessionEstablishTasks
- HKEY_CURRENT_USER\SOFTWARE\Pulse Secure\Secure Application Manager\SessionCleanupTasks
- HKEY_CURRENT_USER\SOFTWARE\Pulse Secure\Secure Application Manager\EnableLogSvr (Set to 0 or 1, depending on server side log setting)

**Current Version Values**
WSAM sets the following uninstall and version information values in HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\Neoteris_Secure_Application_Manager:

<table>
<thead>
<tr>
<th>String</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>DisplayName</td>
<td>&quot;Pulse Secure Secure Application Manager&quot;</td>
</tr>
<tr>
<td>DisplayVersion</td>
<td>&lt;version number&gt;&lt;build number&gt;</td>
</tr>
<tr>
<td>Publisher</td>
<td>Pulse Secure</td>
</tr>
<tr>
<td>QuietUninstallString</td>
<td>C:\Program Files\Pulse Secure\Secure Application Manager\UninstallSAM.exe</td>
</tr>
<tr>
<td>StartupApp</td>
<td>C:\Program Files\Pulse Secure\Secure Application Manager\dsSamProxy.exe</td>
</tr>
<tr>
<td>UninstallString</td>
<td>C:\Program Files\Pulse Secure\Secure Application Manager\UninstallSAM.exe</td>
</tr>
<tr>
<td>URLInfoAbout</td>
<td><a href="https://www.pulsesecure.net/support/">https://www.pulsesecure.net/support/</a></td>
</tr>
</tbody>
</table>

In addition, WSAM sets the following version values:

<table>
<thead>
<tr>
<th>Location</th>
<th>Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\Zones\1</td>
<td>1A00 to: 1</td>
</tr>
<tr>
<td>HKEY_CURRENT_USER\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\Zones\1</td>
<td>1A00 to: 1</td>
</tr>
</tbody>
</table>

**TDI Driver Values (Windows 7/Windows 8 Only)**

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\NEOFLTR_releaseNumber_buildNumber:

<table>
<thead>
<tr>
<th>String</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>DisplayName</td>
<td>Pulse Secure TDI Filter Driver (NEOFLTR_releaseNumber_buildNumber)</td>
</tr>
<tr>
<td>Imagepath</td>
<td>C:\WINDOWS\System32\Drivers\NEOFLTR_releaseNumber_buildNumber.SYS</td>
</tr>
</tbody>
</table>

WSAM sets the following values in HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\NEOFLTR_releaseNumber_buildNumber\Enum:

<table>
<thead>
<tr>
<th>String</th>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>0</td>
<td>Root\LEGACY_NEOFLTR_releaseNumber_buildNumber\0 000</td>
</tr>
<tr>
<td>DWord</td>
<td>Count</td>
<td>0x00000001</td>
</tr>
<tr>
<td>Dword</td>
<td>NextInstance</td>
<td>0x00000001</td>
</tr>
</tbody>
</table>

WSAM sets the following value in HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\AFD\Parameters:

<table>
<thead>
<tr>
<th>String</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>IrpStackSize</td>
<td>Applicable TDI Irp stack size, if required</td>
</tr>
</tbody>
</table>

**Miscellaneous**

WSAM sets the following miscellaneous registry values:

- String: IntranetAuthOptions is set in HKEY_LOCAL_MACHINE\SOFTWARE\Neoteris\Secure Application
Log File Location

You can enable or disable client-side logs by clicking System > Log/Monitoring > Client Logs > Settings in the Web console. When you enable logging, WSAM adds log files to the following location:

For Windows 7 and Windows 8:
- C:\Users\username\AppData\Roaming\Pulse Secure\Secure Application Manager
- C:\Users\username\AppData\Roaming\Pulse Secure\Logging

WSAM also adds an installation log file to the C:\Program Files\Pulse Secure\Secure Application Manager directory.

For Windows Mobile 5 users, WSAM adds log files to the \Program Files\Pulse Secure\WSAM\Log directory.

Related Documentation
- Pulse Secure Installer Service
- Pulse Secure Setup
- Required Rights to Run and Install Applications
Chapter 6
Java Secure Application Manager (JSAM)

- Java Secure Application Manager (JSAM)
- JSAM Windows Client
- JSAM Mac OSX Clients
- JSAM Linux Client

Java Secure Application Manager (JSAM)

To run JSAM, the Pulse Connect Secure gateway launches an applet on the user's client. This applet handles downloading additional files to the user's system in order to run JSAM.

In addition, JSAM modifies the hosts file if you choose Automatic host-mapping under Users > User Roles > Role > SAM > Options > Java SAM Options.

Related Documentation
- Pulse Secure Installer Service
- Pulse Secure Setup
- JSAM Windows Client
- JSAM Mac OSX Clients
- JSAM Linux Client
- Required Rights to Run and Install Applications

JSAM Windows Client

The following information applies to Windows clients only.

**Additional Files Installed by Package and File Locations**

For Windows 7 and Windows 8:

- If PPS is disabled, JSAM installs C:\Users\username\AppData\Roaming\Pulse Secure\jsamtool.exe.
- If PPS is enabled, JSAM installs C:\Users\username\AppData\Local\Temp\Low\Pulse Secure\Java Secure Application Manager\jsamtool.exe.

**Files Remaining After Uninstall**

For Windows 7 and Windows 8, after JSAM uninstalls, files in C:\Users\username\AppData\Local\Temp\Low\Pulse Secure\Java Secure Application Manager remain.

**Registry Modifications**

JSAM sets the following registry values:

- If you configure a standard NetBIOS application through JSAM, or you configure a custom application on port 137, 138, or 139, JSAM makes the following registry key modification on machines (Administrator privileges required): SMBDeviceEnabled=dword:00000000 is set in the registry location: HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\NetBT\Parameters

- If you enable Outlook 5.5, 2000, or 2002 (Administrator privileges required), JSAM adds HKEY_LOCAL_MACHINE\Software\Microsoft\Exchange\Exchange Provider\Rpc_Binding_Order to the registry. (The second entry for this registry key is changed to ncacn_http.)

The original value of this setting is: ncalrpc,ncacn_ip_tcp,ncacn_spux,ncacn_np,netbios,ncacn_vns_spp

After JSAM is initially used, the value of this setting is:

ncalrpc,ncacn_http,ncacn_ip_tcp,ncacn_spux,ncacn_np,netbios,ncacn_vns_spp

- If you disable the Skip Web Proxy Registry Check option under Users > User Roles > Role > SAM >
Options > Java SAM Options (User read access required), JSAM reads: HKEY_CURRENT_USER\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\ProxyEnable

**Log File Locations**

You can enable or disable client-side logs by clicking System > Log/Monitoring > Client Logs > Settings in the Web console.

For Windows 7 and Windows 8, when you enable logging, JSAM adds C:\Users\username\AppData\Local\Temp\Low\Pulse Secure\Java Secure Application Manager\jsamtool.log and dsJSAM_win1.log.

**Related Documentation**

- [Pulse Secure Installer Service](#)
- [Pulse Secure Setup](#)
- [JSAM Mac OSX Clients](#)
- [JSAM Linux Client](#)
- [Required Rights to Run and Install Applications](#)

**JSAM Mac OSX Clients**

The following information applies to Mac OSX clients only.

**Application and Additional Files Installed by JSAM**

JSAM installs the following files on the Mac OSX client:

- ~/Library/Application Support/Pulse Secure/NeoterisMac.jar
- ~/Library/Java/Extensions/libJNPRAuthKit.jnilib
- ~/Library/Application Support/Pulse Secure/jsam.icns
- ~/Library/Application Support/Pulse Secure/logo.gif

**Files Remaining After Uninstall**

The following file remains on the Mac OSX client after uninstall: ~/Library/Logs/Pulse Secure/Java Secure Application Manager

**Log Files Installed by JSAM**

JSAM installs log files in the following location on the Mac OSX client: ~/Library/Logs/Pulse Secure/Java Secure Application Manager

**Related Documentation**

- [Pulse Secure Installer Service](#)
- [Pulse Secure Setup](#)
- [JSAM Windows Client](#)
- [JSAM Linux Client](#)
- [Required Rights to Run and Install Applications](#)

**JSAM Linux Client**

The following information applies to Linux clients only.

**Application and Additional Files Installed by JSAM**

JSAM does not install any application files on the Linux client.

**Files Remaining After Uninstall**

The only files that remain on the Linux client after uninstall are the log files.

**Log Files Installed by JSAM**
JSAM adds log files to the ~/.pulse_secure directory.

Related Documentation

- Pulse Secure Installer Service
- Pulse Secure Setup
- JSAM Windows Client
- JSAM Mac OSX Clients
- Required Rights to Run and Install Applications
Chapter 7
Network Connect

- Network Connect and GINA Windows Client
- Network Connect Linux Client
- Network Connect Mac OSX Clients

Network Connect and GINA Windows Client

To run Network Connect and Graphical Identification and Authorization (GINA), the Pulse Connect Secure gateway downloads the NcSetup.exe.cab package to the user’s Windows client. This package is responsible for downloading additional files to the user’s system in order to run Network Connect and GINA.

Installer Package Files and File Locations

- C:UsersusernameAppDataLocalTempneoNCSetup.exe (Windows 7 and Windows 8)
- For FIPS compliant systems, the following additional packages are downloaded:
  - C:UsersusernameAppDataRoamingPulse SecureSetup ClientneoFIPSSetup_6.5.x.xxxx.exe (Windows 7 and Windows 8)

Additional Files Installed by Package and File Locations

On Windows 7 and Windows 8, Network Connect installs the following additional files on the client in the following locations. The following files are installed in C:Program Files (x86)Pulse SecureNetwork Connectversion_number:

- dsNCInst64.exe
- dsNCResource_DEX64.dll
- dsNCResource_ENX64.dll
- dsNCResource_ESX64.dll
- dsNCResource_KOX64.dll
- dsNCResource_ZHX64.dll
- dsNCResource_ZHX64.dll
- dsNCResource_ZHX64.dll
- dsNCResource_ZH_CNX64.dll
- Microsoft.VC80.CRTmsvcp80.dll
- Microsoft.VC80.CRTmsvcr80.dll
- C:WindowsSysWOW64dsGinaLoaderX64.dll
- dsNcAdmin.dll
Network Connect also installs the following files:

- C:\Program Files (x86)\Pulse Secure\Common Files\dsNcService.exe
- C:\Program Files (x86)\Pulse Secure\Common Files\odFips2.dll (FIPS only)
- C:\Program Files (x86)\Pulse Secure\Common Files\odFips2.dll.icv (FIPS only)
- C:\Program Files (x86)\Pulse Secure\Common Files\salib_SSL.dll (FIPS only)
- C:\<WINDIR>\system32\drivers\dsNcAdpt.sys
- C:\Program Files (x86)\Pulse Secure\Common Files\dsNcAdmin.dll
- C:\Program Files (x86)\Pulse Secure\Common Files\dsNcInst64.exe
- C:\Program Files (x86)\Pulse Secure\Common Files\dsOpenSSL.dll (FIPS only)
- C:\Program Files (x86)\Pulse Secure\Common Files\libeay32.dll
- C:\Program Files (x86)\Pulse Secure\Common Files\ssleay32.dll
For Windows 7 and Windows 8, Network Connect also installs the following files:

- \%windows\%\system32\dsNCredProv.dll
- \%windows\%\system32\dsNcSmartCardProv.dll

**Files Remaining After Uninstall**

After Network Connect uninstalls, the following files remain on the client:

- dsGinaLoader.dll

If only one Network Connect installation is present on the client, this file is removed after you reboot. If there are multiple versions of Network Connect installed on the client, this file remains on the client.

- C:\Program Files\Pulse Secure\Common Files\Config.ini

**Registry Modifications**

Network Connect creates the following keys:

- HKEY_LOCAL_MACHINE\SOFTWARE\Pulse Secure\Network Connect version_number
- HKEY_CURRENT_USER\Software\Pulse Secure\Network Connect version_number
- (Windows 7 and Windows 8 only) HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Authentication\PLAP Providers\{9f4a51de-92b1-483a-b717-dd7d3bb7d3db}\"
- (Windows 7 and Windows 8 only) HKEY_CLASSES_ROOT \"CLSID\{9f4a51de-92b1-483a-b717-dd7d3bb7d3db\}\"
- (Windows 7 and Windows 8 only) HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Authentication\PLAP Providers\{60442b50-aac2-4db7-b9b0-813d2107287d}\"
- (Windows 7 and Windows 8 only) HKEY_CLASSES_ROOT \"CLSID\{60442b50-aac2-4db7-b9b0-813d2107287d\}\"

**Log File Location**

You can enable or disable client-side logs by clicking System > Log/Monitoring > Client Logs > Settings in the Web console.

When you enable logging, Network Connect adds log files to the following location:

For Windows 7 and Windows 8: C:\Users\username\AppData\roaming\Pulse Secure\logging\debuglog.log and C:\Users\public\Pulse Secure\logging\debuglog.log

**Related Documentation**
- Pulse Secure Installer Service
- Pulse Secure Setup
- Network Connect Linux Client
- Network Connect Mac OS X Clients
- Required Rights to Run and Install Applications

**Network Connect Linux Client**

The following information applies to Linux clients only.

**Application and Additional Files Installed by Network Connect**

Network Connect installs the following files on the Linux client:

- ~/.pulse_secure/ncLinuxApp.jar
Files Remaining After Uninstall

No files remain on the Linux client after uninstall, but the ~/.pulse_secure/network_connect/ directory does remain.

Log Files Installed by Network Connect

Network Connect installs the following log files on Linux systems:

- ~/.pulse_secure/network_connect/installnc.log
- ~/.pulse_secure/network_connect/ncsvc.log
- ~/.pulse_secure/network_connect/ncuijava.log
- ~/.pulse_secure/network_connect/ncui.log

Related Documentation

- Pulse Secure Installer Service
- Pulse Secure Setup
- Network Connect and GINA Windows Client
- Network Connect Mac OSX Clients
- Required Rights to Run and Install Applications

Network Connect Mac OSX Clients

The following information applies to Mac OSX clients only.

Application and Additional Files Installed by Network Connect

Network Connect installs the following files on the Mac OSX client:

- /Applications/Network Connect.app
- /usr/local/pulse/nc/version/ncproxyd
- /usr/local/pulse/nc/version/nctun[_[tiger]].kext
- ~/Library/Internet Plug-Ins/net.Pulse.DSSafariExtensions.plugin
- ~/Library/Application Support/Pulse Secure/
- NetworkConnectMac_de.jar
- NetworkConnectMac_en.jar
- NetworkConnectMac_es.jar
- NetworkConnectMac_fr.jar
- NetworkConnectMac Ja.jar
Files Remaining After Uninstall

The following files remaining on the Mac OSX client after uninstall:

- All files in ~/Library/Logs/Pulse Secure/Network Connect
- /usr/local/pulse/nc/install/NCJarVerify.jar
- /usr/local/pulse/nc/install/installer.common
- /usr/local/pulse/nc/install/ncinstallhelper
- /usr/local/pulse/nc/install/fwk_reference_tool
- /usr/local/pulse/nc/install/uninstall_nc.sh
- /usr/local/pulse/nc/install/version

Log Files Installed by Network Connect

Network Connect stores the log files in the following location on the Mac OSX client: ~/Library/Logs/Pulse Secure/Network Connect.

Related Documentation

- Pulse Secure Installer Service
- Pulse Secure Setup
- Network Connect and GINA Windows Client
- Network Connect Linux Client
- Required Rights to Run and Install Applications
Pulse Secure Terminal Services Client

To run Pulse Secure Terminal Services Client, the Pulse Connect Secure gateway downloads the Neotermservsetup.exe file to the user's client. This package is responsible for downloading additional files to the user's system in order to execute Terminal Services.

**Installer Package Files and File Locations**
The Pulse Connect Secure gateway downloads Neotermservsetup.exe to the user's %Temp% directory and deletes it once the installation is complete.

**Additional Files Installed by Package and File Locations**
The Pulse Secure Terminal Services Client installs additional Pulse proxy files in %APPDATA%\Pulse Secure\Pulse Secure Terminal Services Client on the client:

- dsTermServ.exe
- dsTermServDt.dll
- dsTermServProxy.dll
- dsTermServResource_DE.dll
- dsTermServResource_en.dll
- dsTermServResource_ES.dll
- dsTermServResource_FR.dll
- dsTermServResource_JA.dll
- dsTermServResource_KO.dll
- dsTermServResource_ZH.dll
- dsTermServResource_ZH_CN.dll
- dsWinClient.dll
- dsWinClientResource_DE.dll
- dsWinClientResource_EN.dll
- dsWinClientResource_ES.dll
- dsWinClientResource_FR.dll
- dsWinClientResource_JA.dll
- dsWinClientResource_KO.dll
- dsWinClientResource_ZH.dll
- dsWinClientResource_ZH_CN.dll
- uninstall.exe
- versionInfo.ini

The Pulse Secure Terminal Services Client installs the following files in %APPDATA%\Pulse Secure\Pulse Secure Terminal Services Client\Microsoft.VC80.CRT:

- Microsoft.VC80.CRT.manifest
- msvcp80.dll
- msvcr80.dll

**Files Remaining After Uninstall**
None

**Registry Modifications**
The Pulse Secure Terminal Services Client adds the following registry values under the registry key, HKEY_CURRENT_USER\Software\Pulse Secure\Pulse Secure Terminal Services Client.
Pulse Secure Terminal Services Client sets the following string registry values in 
HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Uninstall\Pulse_Term_Services.

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>REG_SZ</td>
<td>InstallPath</td>
<td>%APPDATA%\Pulse Secure Terminal Services Client</td>
</tr>
<tr>
<td>REG_SZ</td>
<td>Language</td>
<td>user_locale. The default is en.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>DisplayName</td>
<td>“Pulse Secure Terminal Services Client”</td>
</tr>
<tr>
<td>String</td>
<td>DisplayVersion</td>
<td>Set to the current software version</td>
</tr>
<tr>
<td>String</td>
<td>Publisher</td>
<td>“Pulse Secure”</td>
</tr>
<tr>
<td>String</td>
<td>QuietUninstallString</td>
<td>%APPDATA%\Pulse Secure Terminal Services Client\uninstall.exe&quot; /S</td>
</tr>
<tr>
<td>String</td>
<td>StartupApp</td>
<td>%APPDATA%\Pulse Secure Terminal Services Client\dsTermServ.exe&quot;</td>
</tr>
<tr>
<td>String</td>
<td>StopApp</td>
<td>%APPDATA%\Pulse Secure Terminal Services Client\dsTermServ.exe&quot; - stop</td>
</tr>
<tr>
<td>String</td>
<td>UninstallString</td>
<td>%APPDATA%\Pulse Secure Terminal Services Client\uninstall.exe&quot;</td>
</tr>
<tr>
<td>String</td>
<td>URLInfoAbout</td>
<td><a href="http://www.pulsesecure.net">http://www.pulsesecure.net</a></td>
</tr>
</tbody>
</table>

**Log File Location**

You can enable or disable client-side logs by clicking System > Log/Monitoring > Client Logs > Settings in the Web console.

When you enable logging, the Pulse Secure Terminal Services Client adds the debuglog.log file to the following locations:

For Windows 7 and Windows 8: %APPDATA%\Pulse Secure\Pulse Secure Terminal Services Client

**Related Documentation**

- Pulse Secure Installer Service
- Pulse Secure Setup
- Required Rights to Run and Install Applications
Chapter 9
Citrix Services Client

Pulse Secure Citrix Services Client
To execute the Pulse Secure Citrix Services Client, the Pulse Connect Secure gateway downloads neoCitrixServSetup.exe to the user’s client. This executable downloads additional files to the user’s system.

Installer Package Files and File Locations
The Pulse Connect Secure gateway downloads Neocitrixsrvsetup.exe to the user’s %Temp% directory and deletes it once the installation is complete.

Additional Files Installed by Package and File Locations
The Pulse Secure Citrix Services Client installs the following Pulse proxy files on the client in %APPDATA%\Pulse Secure\Pulse Secure Citrix Services Client.
For administrators, Citrix client files are also installed to %ProgramFiles%\Citrix where %ProgramFiles% = %SystemDrive%\Program Files.

- dsCitrixConnector.dll
- dsCitrixProxy.exe
- dsCitrixProxyResource_DE.dll
- dsCitrixProxyResource_en.dll
- dsCitrixProxyResource_ES.dll
- dsCitrixProxyResource_FR.dll
- dsCitrixProxyResource_JA.dll
- dsCitrixProxyResource_KO.dll
- dsCitrixProxyResource_ZH.dll
- dsCitrixProxyResource_ZH_CN.dll
- dsWinClient.dll
- dsWinClientResource_DE.dll
- dsWinClientResource_EN.dll
- dsWinClientResource_ES.dll
- dsWinClientResource_FR.dll
- dsWinClientResource_JA.dll
- dsWinClientResource_KO.dll
- dsWinClientResource_ZH.dll
- dsWinClientResource_ZH_CN.dll
- uninstall.exe
- versionInfo.ini

Pulse Secure Citrix Services Client also installs the following files in %APPDATA%\Pulse Secure\Pulse Secure Citrix Services Client \Microsoft.VC80.CRT:
- Microsoft.VC80.CRT.manifest
- msvcp80.dll
- msvcr80.dll

Files Remaining After Uninstall
None

Registry Modifications
The Pulse Secure Citrix Services client adds the following registry value under HKEY_CURRENT_USER\Software\Pulse Secure\Pulse Secure Citrix Services Client
The Pulse Secure Citrix Services client adds the following registry value under HKEY_CURRENT_USER\Software\Pulse Secure\Pulse Secure Citrix Services Client:

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>REG_SZ</td>
<td>Language</td>
<td>user locale. The default is en.</td>
</tr>
</tbody>
</table>

Log File Location

You can enable or disable client-side logs by clicking System > Log/Monitoring > Client Logs > Settings in the Web console. When you enable logging, the Pulse Secure Citrix Services Client adds the dsCitrixServ.log file to the following location:

For Windows 7 and Windows 8:

\Users\username\AppData\Roaming\Pulse Secure\Pulse Secure Citrix Services Client

Related Documentation

- Pulse Secure Installer Service
- Pulse Secure Setup
- Required Rights to Run and Install Applications
PART 3

Appendices

- Required Permissions
Appendix A

Required Permissions

- Required Rights to Run and Install Applications

Required Rights to Run and Install Applications

The following tables outline the rights that are required to install and run the following Pulse Connect Secure gateway client-side components using the Pulse Connect Secure gateway's ActiveX, ActiveX installer service, and Java mechanisms.

Where applicable, the tables contain links to topics that describe in further detail the components that the Pulse Connect Secure gateway uses to install and run its client-side applications.

Table 2: Windows Secure Application Manager (WSAM)

<table>
<thead>
<tr>
<th>Client/Action</th>
<th>ActiveX Windows</th>
<th>ActiveX: Installer Service Windows</th>
<th>Java Windows</th>
<th>Java Mac/Linux</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install</td>
<td>Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Admin</td>
<td>Not Applicable</td>
<td>&quot;Windows Secure Application Manager (WSAM)&quot;</td>
</tr>
<tr>
<td>Run</td>
<td>Standard User</td>
<td>Standard User</td>
<td>Standard User</td>
<td>Not Applicable</td>
<td>&quot;Windows Secure Application Manager (WSAM)&quot;</td>
</tr>
</tbody>
</table>

NOTE:
- Restricted users can perform the initial installation of WSAM with the installer service only if they start the installation by clicking the WSAM link in the user's portal page.
- The ActiveX installer requires users to reboot their systems after an installation or upgrade (Windows Mobile only).

Users must have ActiveX components or Java enabled through their browsers to use the WSAM installers.

Table 3: Java Secure Application Manager (JSAM)

<table>
<thead>
<tr>
<th>Client/Action</th>
<th>ActiveX Windows</th>
<th>ActiveX: Installer Service Windows</th>
<th>Java Windows</th>
<th>Java Mac/Linux</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSAM</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Restricted, Power User, or Admin</td>
<td>User</td>
<td>&quot;Java Secure Application Manager (JSAM)&quot;</td>
</tr>
<tr>
<td>JSAM with Host File Modification</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Admin</td>
<td>Admin/Root</td>
<td>&quot;Java Secure Application Manager (JSAM)&quot;</td>
</tr>
</tbody>
</table>

NOTE:
- JSAM Windows 7 and Windows 8:
  - Automatic host mapping: you must have the rights to install jsamtool.exe on the system and run it.
  - Outlook and NetBIOS applications: you must have the rights to install jsamtool.exe on the system and run it.
- JSAM Mac OS X:
  - Automatic host mapping: you must provide the administrator password when JSAM prompts for it at launch.
  - Any applications that listen on ports below 1024: you must provide the administrator password when JSAM prompts for it at launch.
- JSAM Linux:
  - Automatic host mapping: you must be the root user.
  - Any applications that listen on ports below 1024: you must be the root user.
Table 4: Network Connect

<table>
<thead>
<tr>
<th>Client/Action</th>
<th>ActiveX: Windows</th>
<th>Java: Windows</th>
<th>Java Mac/Linux</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install</td>
<td>Admin</td>
<td>Admin</td>
<td>Admin*</td>
<td></td>
</tr>
<tr>
<td>Run</td>
<td>Standard User</td>
<td>Standard User</td>
<td>Standard User</td>
<td></td>
</tr>
</tbody>
</table>

NOTE:
- Restricted users can perform the initial installation of Network Connect with the installer service only if they start the installation by clicking the Network Connect link in the user's portal page.
- (Mac only) When Network Connect is first installed (before ncinstallhelper exists on the system), you must provide the administrator password when prompted during the installation. On subsequent launches no special privileges are required.
- When the installer service is running, uninstalling Network Connect as a restricted user should be done from the user browser's preference page.

* Linux also requires Admin rights to upgrade or downgrade Network Connect. Mac OSX does not have this restriction.

Table 5: Terminal Services Component

<table>
<thead>
<tr>
<th>Client/Action</th>
<th>ActiveX: Windows</th>
<th>Java: Windows</th>
<th>Java Mac/Linux</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Run</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Table 6: Citrix Terminal Services Component

<table>
<thead>
<tr>
<th>Client/Action</th>
<th>ActiveX: Windows</th>
<th>Java: Windows</th>
<th>Java Mac/Linux</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Run</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Table 7: Host Checker (includes Secure Virtual Workspace)

<table>
<thead>
<tr>
<th>Client/Action</th>
<th>ActiveX: Windows</th>
<th>Java: Windows</th>
<th>Java Mac/Linux</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Run</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
NOTE: If you implement SVW through Host Checker, note that restricted users, power users, and admins all have adequate rights to install and run SVW.

Table 8: Cache Cleaner

<table>
<thead>
<tr>
<th>Client/Action</th>
<th>ActiveX Windows</th>
<th>ActiveX: Installer Service Windows</th>
<th>Java Windows</th>
<th>Java Mac/Linux</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Not Applicable</td>
<td>“Cache Cleaner”</td>
</tr>
<tr>
<td>Run</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Restricted, Power User, or Admin</td>
<td>Not Applicable</td>
<td>“Cache Cleaner”</td>
</tr>
</tbody>
</table>

Table 9: Pulse Secure Collaboration

<table>
<thead>
<tr>
<th>Client/Action</th>
<th>ActiveX Windows</th>
<th>ActiveX: Installer Service</th>
<th>Java Windows</th>
<th>Java Mac/Linux</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pulse Secure Collaboration: Win32</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Install</td>
<td>Restricted, Power User, or Admin</td>
<td>Not Applicable</td>
<td>Restricted, Power User, or Admin</td>
<td>Not Applicable</td>
<td>“Pulse Secure Collaboration Windows Client”</td>
</tr>
<tr>
<td>Run</td>
<td>Restricted, Power User, or Admin</td>
<td>Not Applicable</td>
<td>Restricted, Power User, or Admin</td>
<td>Not Applicable</td>
<td>“Pulse Secure Collaboration Windows Client”</td>
</tr>
</tbody>
</table>

| **Pulse Secure Collaboration: Java** | | | | | |
| Install (see Note below) | Restricted, Power User, or Admin | Not Applicable | Restricted, Power User, or Admin | User | “Pulse Secure Collaboration Windows Client” |
| Run | Restricted, Power User, or Admin | Not Applicable | Restricted, Power User, or Admin | User | “Pulse Secure Collaboration Windows Client” |

| **Junos Pulse Collaboration: Outlook Plug-in** | | | | | |
| Install | Power User, or Admin | Not Applicable | Power User, or Admin | Not Applicable | “Pulse Secure Collaboration Plug-In” |
| Run | Restricted, Power User, or Admin | Not Applicable | Restricted, Power User, or Admin | Not Applicable | “Pulse Secure Collaboration Plug-In” |

NOTE: On Windows 7 and Windows 8, if Pulse Secure Collaboration is installed with restricted user privilege, remote control of high privilege processes (such as regedit and so forth) is not available.

Pulse Secure Collaboration requires the end-user to have admin privileges in order to install the client software on and later operating systems. If PIS is installed on the end-user’s system, PIS installs the Pulse Secure Collaboration client and user admin privilege is not required. If PIS is not installed and the user does not have admin privilege, the client software is installed with limited features.
PART 4

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