



# **Pulse Client for Desktop Supported Platforms Guide**

**9.1R15**

**Build 15819**

**FIPS Version Build 15821**

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# Revision History

The following table lists the revision history for this document.

Revision	Document	Date	Description
9.1R15	1.22	April 2022	Updated "Platform and Browser Compatibility " on page 10, "Pulse Desktop Client Qualified Platforms" on page 10, and "Platform and Browser Compatibility " on page 10.
9.1R14	1.21	January 2022	Updated "Platform and Browser Compatibility " on page 10, "Pulse Desktop Client Qualified Platforms" on page 10, and "Platform and Browser Compatibility " on page 10.
9.1R13	1.20	October 2021	For macOS 12 support, updated "Pulse Desktop Client Qualified Platforms" on page 10.
9.1R13	1.19	October 2021	For windows 11 support, updated "Platform and Browser Compatibility " on page 10, "Pulse Desktop Client Qualified Platforms" on page 10, and "Platform and Browser Compatibility " on page 10.
9.1R12	1.18	August 2021	Updated "Platform and Browser Compatibility " on page 10, "Pulse Desktop Client Qualified Platforms" on page 10, and "Platform and Browser Compatibility " on page 10.
9.1R11.5	1.17	June 2021	Updated Windows, operating system support in "Pulse Desktop Client Qualified Platforms" on page 10.
9.1R11	1.16	May 2021	Updated Windows, macOS operating system support in "Pulse Desktop Client Qualified Platforms" on page 10.

Revision	Document	Date	Description
9.1R11	1.15	February 2021	Updated Windows, macOS operating system and web browsers support in " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10.
9.1R10	1.14	December 2021	Updated Windows, macOS operating system and web browsers support in " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10.
9.1R9	1.13	October 2020	Updated Windows operating system support in " <a href="#">Platform and Browser Compatibility</a> " on page 10. Updated Windows, macOS operating system and web browsers support in " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10.
9.1R8.2	1.12	September 2020	Updated Windows operating system support in " <a href="#">Platform and Browser Compatibility</a> " on page 10. Updated Windows, macOS operating system and web browsers support in " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10.
9.1R8	1.11	July 2020	Updated " <a href="#">Platform and Browser Compatibility</a> " on page 10, " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10, and " <a href="#">Platform and Browser Compatibility</a> " on page 10.
9.1R7	1.10	June 2020	Added Mac OS version to table " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10.
9.1R6	1.9	May 2020	Added Windows OS version 2004 to table " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10.
9.1R5	1.8	April 2020	Updated section " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10.
9.1R4.1	1.7	February 2020	Updated macOS operating support in " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10
9.1R4	1.6	January 2020	Removed Cent OS 6.x, 64 bit and 32 bit from " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10.

Revision	Document	Date	Description
			Added macOS 10.15.2, 64 bit in " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10. Updated " <a href="#">Platform and Browser Compatibility</a> " on page 10 for Windows and macOS support. Updated " <a href="#">Smart Card and Soft Token Compatibility</a> " on page 13 for Yubikey support. Updated .
9.1R3.1	1.5	November 2019	Updated Windows operating system support in " <a href="#">Platform and Browser Compatibility</a> " on page 10. Updated Windows, macOS operating system and web browsers support in " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10.
9.1R3	1.4	October 2019	Added Windows 10 and web browsers support in " <a href="#">Platform and Browser Compatibility</a> " on page 10. Removed NC, OAC, and WSAM from .
9.1R2	1.3	September 2019	Added Safari 13.x and 12.x in " <a href="#">Platform and Browser Compatibility</a> " on page 10.
9.1R2	1.2	July 2019	Added Windows 10 Version 1903 (OS build 10.0.18362.207) Enterprise, 64 bit and Windows 10 Version 1903 (OS build 10.0.18362.207) Professional, 64 bit in " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10.
9.1R1	1.1	June 2019	Added Windows 10 Version 1903 (OS build 10.0.18362.175) Enterprise, 64 bit and Windows 10 Version 1903 (OS build 10.0.18362.175) Professional, 64 bit in " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on page 10.
9.1R1	1.0	May 2019	Added Windows 10 Redstone 5 Version 1809 (OS build 17763.437), Enterprise, 64 bit in " <a href="#">Platform and Browser Compatibility</a> " on page 10.

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Revision	Document	Date	Description
			Added macOS 10.14.4 (64 bit), macOS 10.14.3 (64 bit), macOS 13 (64 bit), macOS 12 (32 bit and 64 bit) in " <a href="#">Platform and Browser Compatibility</a> " on <a href="#">page 10</a> . Added macOS 10.11 (32 bit and 64 bit) in " <a href="#">Pulse Desktop Client Qualified Platforms</a> " on <a href="#">page 10</a> .

# Overview

Pulse Client is a dynamic, integrated and easy-to-use network client that delivers anytime/anywhere secure connectivity. The Pulse Desktop Client Supported Platforms Guide describes which operating environments are supported by Pulse Desktop Clients for Windows, macOS and Linux.

The Pulse client testing environment provides the following types of software qualifications:

**Qualified Platform:** The platforms listed as qualified have been systematically tested by the Ivanti Quality Assurance department as part of this release.

**Compatible Platform:** The platforms listed as compatible have not been systematically tested by our QA department in this release; however, Ivanti expects that the Pulse functionality will work based on testing of previous releases and knowledge of the platform.

The Pulse client on Windows, macOS and Linux are different clients with different feature sets. For more information, see the Ivanti documentation.



# Supported Platforms

## Hardware Requirements

The following table lists the minimum hardware configuration required to support the Pulse Desktop Clients.

### Pulse Desktop Client Hardware Requirements

Hardware Component	Requirement
CPU	Intel / AMD, 1.8GHz, 32-bit (x86) or 64-bit (x64) processor
System Memory	2 GB RAM
Disk Space	Install: 33 MB Logging: 50 MB

From 9.1R14 release, Pulse Desktop Client is available on Windows 10 and Windows 11 systems with ARM64 processors. For detailed list of features, see [PDC Feature List for ARM 64 Processor](#).

## Server Platform Compatibility

The following table lists the server platforms that were tested with this release of the Pulse Desktop Clients for Windows, macOS and Linux.

Product	Qualified	Compatible
Ivanti Connect Secure (formerly Pulse Connect secure, Secure Access Service, or SA)	9.1Rx	9.0Rx
Ivanti Policy Secure (formerly Pulse Policy secure, Access Control Service, or Unified Access Control/UAC)	9.1Rx	9.0Rx



Previous versions of the Pulse client can be used with the latest release of Ivanti server software, but new features that were added after the release of that client will not be available.

## Platform and Browser Compatibility

Unless otherwise noted, a major and minor version number (for example, 10.9), means that all revisions (10.9.x) with that major/minor version are supported. When major, minor, and revision version number are specified (for example, 10.7.3), only that revision and later revisions of that major/minor version are supported. For example, 10.7.3 means that 10.7.3 through 10.7.x are supported, where x is the latest revision available.

### Pulse Desktop Client Qualified Platforms

Platform	Operating System	Web Browser
<b>Windows</b>	<ul style="list-style-type: none"> <li>Windows 11 Version 21H2(OS Build 22000.348) Enterprise, 64 bit</li> <li>Windows 10 Version 21H2 (OS build 10.0.19044.1645) Enterprise, 32 and 64 bit</li> <li>Windows 10 Version 21H1 (OS build 10.0.19043.1266) Enterprise, 32 and 64 bit</li> <li>Windows 10 Version 20H2 (OS build 10.0.19042.1110) Enterprise, 64 bit</li> <li>Windows 8.1 Enterprise, 64 bit</li> </ul>	<ul style="list-style-type: none"> <li>Microsoft Edge Browser 100.0.1185.36 (64-bit)</li> <li>Internet Explorer 21H1</li> <li>Chrome 100.0.4896.88 (64 bit)</li> <li>Firefox ESR 68.9.0esr</li> <li>Chromium-based Edge Browser 86.0.622.48 (Official build) (64-bit)</li> </ul>
<b>macOS</b>	<ul style="list-style-type: none"> <li>macOS Monterey 12.3</li> <li>macOS Monterey 12.2</li> <li>macOS Monterey 12.0</li> <li>macOS Big Sur 11.4</li> </ul>	Safari 15.4, 15.3, 14.x and 13.x

Platform	Operating System	Web Browser
	<ul style="list-style-type: none"> <li>macOS Big Sur 11.1</li> <li>Apple Silicon 11.1</li> <li>macOS Catalina 10.15.6</li> </ul>	
<b>Linux (Unified Client 9.1R9 onwards)</b>	<ul style="list-style-type: none"> <li>Ubuntu 20.04.03</li> <li>Ubuntu 20.04.1</li> <li>Fedora 32</li> <li>Debian 10.6</li> <li>RHEL 7</li> <li>RHEL 8</li> <li>CentOS 8.2.2004</li> </ul>	NA



The Pulse Client installer for RHEL 7/CentOS 7 is not available by default in Ivanti Connect secure server. The RHEL 7/CentOS 7 installer is available for download at [www.ivanti.com](http://www.ivanti.com).

## Pulse Desktop Client Compatible Platforms

Platform	Operating System	Web Browser
<b>Windows</b>	<ul style="list-style-type: none"> <li>Windows 10 Version 2004 (OS build 10.0.19041.1081) Enterprise, 32 and 64 bit</li> <li>Windows 10 Version 1903 (OS build 10.0.18362.476) Professional, 64 bit</li> <li>Windows 10 Version 1903 10.0.18362.449</li> </ul>	<ul style="list-style-type: none"> <li>Edge browser 90.0.818.62 (Official build) (64-bit)</li> <li>Internet Explorer Version 21H1 (OS Build 19043.985)</li> <li>Google Chrome 90.0.4430.212</li> </ul>

Platform	Operating System	Web Browser
	<ul style="list-style-type: none"><li>• Windows 10 Redstone 5 Version 1809 (OS build 17763.437), Enterprise, 64 bit</li><li>• Windows 10 Redstone 4 Version 1803 (OS build 17134.228)</li><li>• Windows 10 Version 1909 10.0.18363.535</li><li>• Windows 10 Enterprise, 32 bit</li><li>• Windows 10 non-Enterprise, 32 and 64 bit</li><li>• Windows 10 Redstone</li><li>• Windows 10 Enterprise, 32 and 64 bit</li><li>• Windows 8.1 non-Enterprise, 32 and 64 bit</li><li>• Windows 2019</li><li>• Windows 2016</li><li>• Windows 2012</li></ul> <p>There is limited feature support available on Win Server operating systems, limited only to L3 VPN, Host checker and PSAM functionalities.</p>	
<b>macOS</b>	<ul style="list-style-type: none"><li>• macOS Big Sur 11.6</li><li>• macOS Big Sur 11.5</li><li>• macOS Big Sur 11.3.1</li><li>• macOS Big Sur 11.2</li></ul>	Safari 14.X

Platform	Operating System	Web Browser
	<ul style="list-style-type: none"> <li>Apple Silicon 11.2</li> <li>macOS 10.15.3, 64 bit</li> <li>macOS 10.15.2, 64 bit</li> <li>macOS 10.13, 64 bit</li> </ul>	
<b>Linux (Unified Client 9.1R9 onwards)</b>	<ul style="list-style-type: none"> <li>Ubuntu 18.04 LTS</li> <li>Fedora 30</li> <li>Debian 10.X</li> <li>RHEL 8.X</li> <li>CentOS 8.X</li> </ul>	NA

- Google Chrome is compatible rather than qualified because of Google's policy to support a "rapid release cycle" rather than an Extended Support Release (ESR) model.
- To install Pulse 9.1R8 or later clients on Pre Windows 10 platforms, it is a prerequisite to install the Microsoft update [KB2999226](#). For more information, refer [KB44575](#).

## Smart Card and Soft Token Compatibility

The smart cards are compatible on the following platforms (all 64-bit):

- Windows 11
- Windows 10 Version 21H2
- Windows 10 Version 21H1
- Windows 10 Version 20H2
- Windows 10 Version 2004 Enterprise
- Windows 10 version 1909
- Windows 10 version 1903
- Windows 10 Enterprise

- Windows 8.1 Enterprise
- macOS Monterey 12
- macOS Big Sur 11.1
- macOS 10.15, 64 bit
- macOS 10.14

Cards	Software Version
Yubikey	Driver Version 10.0.18362.1 Yubikey supports Windows and macOS with below authentication modes under certificates: Digital Signature Card Authentication
Aladdin eToken	PKI client version 5.1 and drivers version of 5.1
Safenet iKey 2032	PKI client version 7.0.8.0022, driver version v4.0.0.20
Gemalto .Net cards	Driver version 2.1.3.210

The following table lists compatible soft tokens.

Soft Tokens	Software Version
RSA	Application version 5.0.0.292
Server	RSA Authentication Manager 8.2
Client	RSA SecurID Software Token

# Language Support

User-interface, message and online-help text in the Pulse Desktop Clients for Windows and macOS have been localized in the following languages:

- DE – German
- EN – English
- ES – Spanish
- FR – French
- IT – Italian
- JA – Japanese
- KO – Korean
- PL – Polish
- ZH-CN – Chinese (Simplified)
- ZH – Chinese (Traditional)

For the Pulse Desktop Client to use a language listed above, the corresponding locale must be set on the local operating system.

# Adaptive Delivery

Pulse clients (both Windows/macOS desktop clients, Host Checker, Windows Terminal Services, and Secure Meeting clients) feature “Adaptive Delivery”, which is a mechanism for installing and launching Pulse clients from a web browser. The exact mechanism used for Adaptive Delivery depends on many factors, including:

1. The Pulse client being launched/installed
2. The client operating system type and version
3. The web browser type and version
4. The security settings of the client operating system and browser

To leverage Adaptive Delivery for a client/OS/browser combination, you may need to enable the appropriate technology on the endpoint device. For example, to launch the Pulse Desktop Client from Internet Explorer on Windows, you will need to ensure that ActiveX is enabled in Internet Explorer on the end user’s endpoint device.



PSAL leverages “URL handler” functionality by invoking a custom URL in a manner that instructs the web browser to execute a program that launches/installs the appropriate Pulse client. PSAL was created to address both the restrictions placed on Java on macOS and the depreciation of Java (and ActiveX) plug-ins in Google Chrome version 45 and the Microsoft Edge browser. You can read more about the PSAL in article KB40102.

The following table shows the Adaptive Delivery mechanism for client/OS/browser combinations.

Operating System	Pulse client	Web Browser	Pulse Client Adaptive Delivery Mechanism
Windows	All Pulse clients	Internet Explorer	ActiveX
Windows	All Pulse clients	Firefox Google Chrome Edge Browser	Pulse Secure Application Launcher



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Operating System	Pulse client	Web Browser	Pulse Client Adaptive Delivery Mechanism
macOS	Pulse Desktop Client Host Checker (HC)	Safari	Pulse Secure Application Launcher
macOS	JSAM	Safari	Pulse Secure Application Launcher

- Chrome is compatible rather than fully qualified on Windows.
- Chrome and Firefox on macOS are not supported (only Safari is supported on macOS), but PSAL will be invoked if an attempt is made to use either Chrome or Firefox on macOS for the Pulse Desktop Client or Host Checker

# Access Methods

The Pulse Desktop Client supports the following kinds of connections to Ivanti gateways:

- Layer 3 VPN connections to Ivanti Connect Secure
- Layer 2 (802.1x) and Layer 3 connections to Ivanti Secure
- Per-application VPN tunneling to Ivanti Connect Secure (Windows Secure Access Manager)

There are a vast number of possible combinations of connections and configurations. For example, both Layer 2 (wired and wireless) and Layer 3 connections can be configured either with or without enforcement (Host Checker enforcement of system health and policy compliance). Although an endpoint can have only one active VPN connection to Ivanti Connect Secure, an endpoint can have multiple simultaneous Ivanti Policy Secure connections with or without a VPN connection. Also, Ivanti Policy Secure IPsec enforcement in Ivanti Connect Secure (TLS) tunnels is supported.

The following table lists the configurations that are qualified and compatible. Any combination not mentioned in the table is not supported.

Access Method Configuration	Description	Level of Support
Layer 3 IPsec tunnel inside VPN outer tunnel	Outer tunnel: TLS or ESP VPN tunnel to Ivanti Connect Secure gateway Inner tunnel: Layer 3 IPsec tunnel authenticated through Ivanti Policy Secure to ScreenOS or SRX firewall	Qualified
Layer 2 Ivanti Policy Secure + Multiple Layer 3 Ivanti Policy Secure	One Ivanti Policy Secure Layer 2 connection running in parallel to multiple Ivanti Policy Secure Layer 3 connections	Qualified

The following table lists the supported nested tunnel (tunnel-in-tunnel) configurations. The configurations are for a Ivanti Connect Secure v9.1 outer tunnel, a Ivanti Policy Secure v9.1 inner tunnel, and the Pulse Desktop Client v9.1.

Ivanti Connect Secure (Outer Tunnel Config)				Ivanti Policy Secure (Inner Tunnel Support)				
Split-Tunneling Mode	Route Precedence	Route Monitor	Traffic Enforcement	IPsec (with VA)	IPsec (without VA)	Dynamic IPsec	Source IP	Dynamic Source IP
Disabled	Tunnel Routes <sup>1</sup>	Disabled	Disabled	Supported	Supported	Supported	Supported	Supported
Disabled	Tunnel Routes <sup>1</sup>	Disabled	IPv4 Disabled and IPv6 Enabled	Supported	Supported	Supported	Supported	Supported
Disabled	Tunnel Routes <sup>1</sup>	Disabled	IPv4 Enabled and IPv6 Disabled	Not Supported	Supported	Supported	Supported	Supported
Disabled	Tunnel Routes	Enabled	Enabled or Disabled	Not Supported	Supported	Supported	Supported	Supported
Enabled	Tunnel Routes <sup>1</sup>	Disabled	Enabled or Disabled	Supported <sup>2</sup>	Supported <sup>3</sup>	Supported	Supported	Supported
Enabled	Tunnel Routes <sup>1</sup>	Enabled	Enabled or Disabled	Supported <sup>2</sup>	Supported <sup>3</sup>	Supported	Supported	Supported
Enabled or Disabled	Endpoint routes	Enabled or Disabled	Enabled or Disabled	Supported <sup>2</sup>	Supported <sup>3</sup>	Supported	Supported	Supported

1. Tunnel Routes and Tunnel Routes with Local Subnet Access behave the same way.
2. Ivanti Policy Secure IP address, IE IP address, and Ivanti Policy Secure VA pool IP addresses should be added to the Pulse split-tunnelling network policy.

3. Ivanti Policy Secure IP address, IE IP address, and protected resources should be added to a Pulse split-tunnelling network policy, and Ivanti Connect Secure should have a route to the Ivanti Policy Secure protected resource.



Pulse WSAM does not inter-operate with Ivanti Policy Secure.

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# PDC Feature List for ARM 64 Processor

From 9.1R14, Pulse Desktop Client is available on Windows 10 and Windows 11 systems with ARM 64 processors.

## Supported features

In this release, the following PDC features are supported on systems with ARM 64 processors:

- Web Proxy (Proxy server in front of ICS)
- Web Proxy (Proxy server behind ICS)
- Split Tunneling (IP-based)
- Split Tunneling (FQDN-based) Layer 3
- Traffic Enforcement
- Tunneling Route Monitor
- Tunneling enable local subnet routes
- Configurable DNS search order
- Launch from Browser
- Location Awareness
- Always-On VPN
- SSL VPN
- ESP VPN
- SSL VPN over IPv6
- ESP VPN over IPv6
- ESP VPN Mixed Mode (IPv4-in-IPv6 and IPv6-in-IPv4)
- Run script on connect/disconnect
- FIPS Compliance

- Embedded Browser
- SAML Support
- SAML Single Logout
- Smart Card
- Yubikey Smart Card
- RSA Token Code
- RSA Soft-token Integration/Automation
- Time-based One-Time Password (ICS Only)
- Certificate Authentication
- Certificate Authentication with IKE and ESP
- Automatic Client Certificate Selection
- EKU/OID based Filtering for Client Certificate Selection
- Machine Authentication
- Stealth Mode Tunnels
- Secondary Authentication (not to IPS)
- Bio-metric authentication (touch-id / face id)
- Single Sign On to Device and to ICS/IPS (not Cloud Secure)
- Full Host Checker Support
- Periodic Host Checker Support
- Minimal/OS check Support
- OS Version Support
- Device Health Check
- Antivirus Check

- Firewall Check
- Security patch requirement check
- Allow/Deny OS versions
- File Support
- Process Support
- Ports Support
- Registry

## Unsupported Features

In this release, the following PDC features are not supported on systems with ARM 64 processors:

- PPS features / connectivity
- Zero Trust Access
- PSAL (64-Bit), HOB & JSAM
- Terminal Services Clients (WTS & Citrix)
- Multiple Concurrent Tunnels
- Configure VPN through MDM
- L3 and L4 Coexistence
- SAM Support
- SAM IPv6
- Credential Provider Support

# Technical Support

When you need additional information or assistance, you can contact "Ivanti Global Support Center:

- <https://www.ivanti.com/support/contact>
- <https://www.ivanti.com/support/contact>

Call us at 1- 844-751-7629 (toll-free USA)

For more technical support resources, browse the support website

<https://www.ivanti.com/support/contact>.