



Pulse Connect Secure: Release Notes

PCS 9.1R11.5 Build 13127

Default ESAP Version: ESAP 3.4.8

Product Release	9.1R11.5
Published	June 2021
Document Version	11.5.1

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

www.pulsesecure.net

© 2021 by Pulse Secure, LLC. All rights reserved.

Pulse Secure and the Pulse Secure logo are trademarks of Pulse Secure, LLC in the United States. All other trademarks, service marks, registered trademarks, or registered service marks are the property of their respective owners.

Pulse Secure, LLC assumes no responsibility for any inaccuracies in this document. Pulse Secure, LLC reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

Pulse Connect Secure: Release Notes

The information in this document is current as of the date on the title page.

END USER LICENSE AGREEMENT

The Pulse Secure product that is the subject of this technical documentation consists of (or is intended for use with) Pulse Secure software. Use of such software is subject to the terms and conditions of the End User License Agreement (“EULA”) posted at <http://www.pulsesecure.net/support/eula/>. By downloading, installing or using such software, you agree to the terms and conditions of that EULA.

Revision History

Table 1 lists the revision history for this document.

Document Revision	Date	Description
11.5.1	June 2021	Updated section "Upgrade Paths".
11.5	June 2021	Updated the Fixed Issues section > 9.1R11.5 list. Updated the Known Issues section > 9.1R11.5 list.
11.4	May 2021	Updated " Noteworthy Information in 9.1R11 Release " and updated Fixed Issues.
11.4	April 2021	Updated Fixed Issues and Known for 9.1R11.4.
11.3	April 2021	Updated Fixed Issues and Known for 9.1R11.3.
11.0	January 2021	Changed company logo, initial publication for 9.1R11.
10.1	December 2020	Updated " Noteworthy Information in 9.1R10 Release " with MSSP License reporting enhancements.
10.0	December 2020	Initial Publication 9.1R10.
9.1	November 2020	Updated the Fixed Issues section > 9.1R9.1 list. Updated the Known Issues section > 9.1R9.1 list.
9.0.1	November 2020	Updated the Fixed Issues section > 9.1R8.2 list. Updated the Known Issues section > 9.1R9 list.
9.0	October 2020	Initial Publication 9.1R9.
8.4	September 2020	Initial Publication 9.1R8.2.
8.3	August 2020	Initial Publication 9.1R8.1.
8.2	August 2020	Updated the Known Issues section.
8.1	July 2020	Updated the Fixed Issues section > 9.1R7 and 9.1R8 list.
8.0	July 2020	Initial Publication 9.1R8
7.0	June 2020	Initial Publication 9.1R7 Updated Fixed Issues > 9.1R1 Release with PRS-368927
6.0	May 2020	Initial Publication 9.1R6
5.3	April 2020	Updated Known Issues section for 9.1R5
5.2	April 2020	Cosmetic change for 9.1R5
5.1	April 2020	Updated New Features section for 9.1R5
5.0	April 2020	Initial Publication 9.1R5

Document Revision	Date	Description
4.3	April 2020	Initial Publication 9.1R4.3
4.2	March 2020	Initial Publication 9.1R4.2
4.1	February 2020	Initial Publication 9.1R4.1
4.0	January 2020	Initial Publication 9.1R4
3.1	October 2019	Updated Known Issues section for 9.1R3
3.0	October 2019	Initial Publication 9.1R3
2.0	July 2019	Initial Publication 9.1R2
1.0	May 2019	Initial Publication 9.1R1

Contents

REVISION HISTORY	3
CONTENTS.....	5
INTRODUCTION	6
HARDWARE PLATFORMS	6
VIRTUAL APPLIANCE EDITIONS.....	6
VMWARE APPLICATIONS	7
UPGRADE PATHS.....	7
UPGRADE SCENARIO SPECIFIC TO VIRTUAL APPLIANCES.....	8
GENERAL NOTES	8
NOTEWORTHY INFORMATION IN 9.1R11.5 RELEASE	9
NOTEWORTHY INFORMATION IN 9.1R11.4 RELEASE	9
NOTEWORTHY INFORMATION IN 9.1R11 RELEASE.....	9
NOTEWORTHY INFORMATION IN 9.1R10 RELEASE.....	9
NOTEWORTHY INFORMATION IN 9.1R8 RELEASE	10
NOTEWORTHY INFORMATION IN 9.1R4.3 RELEASE	10
NEW FEATURES.....	11
FIXED ISSUES	18
KNOWN ISSUES	36
DOCUMENTATION	51
TECHNICAL SUPPORT	51

Introduction

This document is the release notes for Pulse Connect Secure Release 9.1R11.5. This document contains information about what is included in this software release: supported features, feature changes, unsupported features, and known issues. If the information in the release notes differs from the information found in the documentation set, follow the release notes.

Hardware Platforms

You can install and use this software version on the following hardware platforms:

- PSA300, PSA3000, PSA5000, PSA7000f, PSA7000c

To download software for these hardware platforms, go to: <https://support.pulsesecure.net/>

Virtual Appliance Editions

This software version is available for the following virtual appliance editions:

- Virtual Pulse Secure Appliance (PSA-V)

Note: From 9.1R1 release onwards, VA-DTE is not supported.

Note: From 9.0R1 release, Pulse Secure has begun the End-of-Life (EOL) process for the VA-SPE virtual appliance. In its place, Pulse Secure has launched the new PSA-V series of virtual appliances designed for use in the data center or with cloud services such as Microsoft Azure, Amazon AWS, OpenStack Fabric and Alibaba Cloud.

The following table lists the virtual appliance systems qualified with this release

Platform	Qualified System
VMware	<ul style="list-style-type: none"> • HP ProLiant DL380 G5 with Intel(R) Xeon(R) CPU • ESXi 6.7 Update 2c
KVM	<ul style="list-style-type: none"> • CentOS 6.6 with Kernel <code>cst-kvm 2.6.32-504.el6.x86_64</code> • QEMU/KVM v1.4.0 • Linux Server Release 6.4 on an Intel Xeon CPU L5640 @ 2.27GHz • 24GB memory in host • Allocation for virtual appliance: 4vCPU, 4GB memory and 40GB disk space
Hyper-V	<ul style="list-style-type: none"> • Microsoft Hyper-V Server 2016 and 2019
Azure-V	<ul style="list-style-type: none"> • Standard DS2 V2 (2 Core, 2 NICs) • Standard DS3 V2 (4 Core, 3 NICs) • Standard DS4 V2 (8 Core, 3 NICs)
AWS-V	<ul style="list-style-type: none"> • T2.Medium (2 Core, 3 NICs and 2 NICs) • T2.Xlarge (4 Core, 3 NICs) • T2.2Xlarge (8 Core, 3 NICs)

Platform	Qualified System
Alibaba Cloud	• ecs.g6.2xlarge (8 vCPU, 32GB, 2 NICs)

To download the virtual appliance software, go to: <https://support.pulsesecure.net/>

VMware Applications

The following table lists the VMware applications qualified.

Platform	Qualified
VMware	
VMware Horizon View Connection Server version 7.12	Rewriter
VMware Horizon Agent version 7.12	VDI Profiles
VMware Horizon View HTML Access version 5.4	VDI Profiles
VMware Horizon View Client version 5.4	VDI Profiles

Upgrade Paths

The following table describes the tested upgrade paths. Please note that here x and y refer to the following:

x: Latest maintenance release version

y: versions less than x

Upgrade From	Qualified	Compatible
9.1Rx	Yes	-
9.1Ry	-	Yes
9.0Rx	Yes	-
9.0Ry	-	Yes

For versions prior to 9.0, first upgrade to release 9.0Rx | 9.0Ry, and then upgrade to 9.1Rx.

Note: If your system is running beta or hot-fix version of the software, roll back to your previously installed official software release before you upgrade to 9.1Rx. This practice ensures the rollback version is a release suitable for production.

Note: : On a PCS/PPS virtual appliance, we highly recommend to freshly deploy a PSA-V with 8.3Rx or higher based OVF, when any of the following conditions are met:

- If the disk utilization goes beyond 85%.
- If an admin receives iveDiskNearlyFull SNMP Trap.

- If the factory reset version on the PSA-V is 7.x|8.0.

Upgrade Scenario Specific to Virtual Appliances

PSA-Vs cannot be upgraded to 9.1Rx without a core license installed.

Note: x: Latest maintenance release version

Follow these steps to upgrade to 9.1Rx:

1. If PSA-V is running earlier to 9.0Rx versions:
 - a. Upgrade to 9.0Rx.
 - b. Install Core license through Authcode.
 - c. Upgrade to 9.1Rx.
2. If PSA-V is running 9.0Rx or later versions:
 - d. Install Core license through Authcode.
 - e. Upgrade to 9.1Rx.

For more details, see the [“Noteworthy Information in 9.1R4.3 Release”](#) section.

General notes

1. For policy reasons security issues are not normally mentioned in release notes. To find more information about our security advisories, please see our [security advisory page](#).
2. In 8.2R1.1 and above, all PCS client access binaries (Network Connect, WSAM, Host Checker, JSAM, Windows Terminal Services, Citrix Terminal Services) are signed with a SHA2 code signing certificate to improve security and ensure compatibility with Microsoft OS's 2016 restrictions on SHA1 code signing. This certificate will expire on April 12, 2021. For details, refer to KB articles [KB14058](#) and [KB43834](#).
3. Important note: Windows 7 machines must contain a March 10, 2015 Windows 7 Update in order to be able to accept and verify SHA2-signed binaries properly. This Windows 7 update is described [here](#) and [here](#). If this update is not installed, PCS 8.2R1.1 and later will have reduced functionality (see PRS-337311 below). (As a general rule, Pulse Secure, LLC recommends that client machines be kept current with the latest OS updates to maximize security and stability).
4. When custom ciphers are selected, there is a possibility that some ciphers are not supported by the web browser. If any ECDH/ECDSA ciphers are selected, they require ECC certificate to be mapped to the internal/external interface. If an ECC certificate is not installed and mapped to the internal and external ports (if enabled), administrators may not be able to login to the appliance. The only way to recover from this situation is to connect to the system console and select option 8 to reset the SSL settings. Option 8 resets the SSL setting to factory default. Any customization is lost and will need to be reconfigured. This is applicable only to Inbound SSL settings.
5. Pre-5.0 Android and pre-9.1 iOS devices don't support Suite B ciphers. If Suite B is enabled, Pulse client on pre-5.0 Android and pre-9.1 iOS devices will not be able to connect to PCS device.
6. Minimum ESAP version supported on 9.1R10 is 3.4.8 and later.

Note: From 9.1R2 release onwards, Network Connect (NC) client and legacy Windows Secure Application Manager (WSAM) client are not supported.

Note: From 9.1R1 release onwards, Active Directory Legacy Mode configuration is not supported. If you have an existing Active Directory authentication server using Legacy Mode, first migrate to Standard Mode and then upgrade PCS. For the detailed migration procedure, refer [KB40430](#).

Noteworthy Information in 9.1R11.5 Release

- Added an option for the Admin to enable users to download the Pulse Client Components removal (Pulse Upgrade Helper) tool on Windows End User machines upon Browser access. This option helps to remediate the certificate expiry issue. For more information, refer [KB44781](#) and [KB44810](#).
- This release provides important security hardening. For more information refer to [SA44800](#).
- Source IP restriction (RFC1918) is removed on Admin Realms for fresh deployments on OpenStack KVM platform. Default source IP restrictions are applicable for PSA appliances, VMWare, KVM, and Hyper-V platforms.

Noteworthy Information in 9.1R11.4 Release

- This release provides important security hardening. For more information refer to [SA44784](#).

Noteworthy Information in 9.1R11 Release

- The HTTP only DSDID session cookies were introduced from Release 9.0R3. From release 9.1R11 onwards, the DSDID cookies are enabled by default for all new roles created. On upgrade, if DSDID is not enabled for any of the roles, a warning message displays on the dashboard. A link displays on the UI, administrator can click to enable DSDID cookies option for all the roles.
- Major browsers disable TLS1.0 and TLS1.1 by default. Administrators are recommended to use TLS1.2 and later and also select Maximize Security option under **Configuration > Security > SSL options** for inbound and outbound connections. If not selected, a warning message displays. From 9.1R11 onwards, for new ESP VPN Tunneling Connection Profiles, AES256/SHA256 (maximize security) encryption is chosen by default.
- User logs and Administrator logs are refined and enhanced to display more information.
- A source IP restriction is added on Admin Realms so that admins can connect with only private addresses (RFC1918) on fresh deployments or when the configurations are cleared. This restriction is applicable to PSA appliances, VMWare, KVM, Hyper-V, and OpenStack KVM.
- From 9.1R11, SHA1 hashing algorithm is removed from the "Maximize Security (High Ciphers)" settings

Noteworthy Information in 9.1R10 Release

- Added stability improvements for L4 JSAM connections.
- Added following licensing reporting enhancements on MSSP deployments:

- When the license client has concurrent users license installed locally, the client excludes the local installed count while sending lease usage to the license server.
- When the license client has ICE license enabled or has an evaluation license installed which gives maximum platform limit for concurrent users, the license lease usage reported by client is zero.
- The license client allows 10% extra usage over the licensed limit. This applies for maximum lease limit as well. In such case, the license client reports only the maximum lease limit usage. For example, if license client has leased 100 licenses and 110 users are logged in, license client reports only 100 as usage to the license server.
- Host header validation is introduced in 9.1R10. When this option is enabled on the server under **System > Configuratin > Security > Miscellaneous**, the Pulse Client upgrade through PCS may fail. For more information, refer to [KB44646](#).
- Added graphs to display advanced HTML5 connections under System Status dashboard. Refer to “Displaying System Status” in Pulse Connect Secure Administration Guide.

Noteworthy Information in 9.1R8 Release

For 9.1R8, Pulse Collaboration Client is packaged using PCS 9.1R7 build.

Noteworthy Information in 9.1R4.3 Release

- In 9.1Rx OVF a critical issue was observed. The 9.1R4.3 release addresses this issue.
- On some of the installations, it was observed that a few read-only files were being overwritten. Customers are experiencing HTTP 500 response for some of the admin requests. The 9.1R4.3 release addresses this issue.
- Upgrade works only if VA is deployed with 8.3 OVF onwards. If VA is deployed with pre 8.3 OVF, upgrade to this image will not work.
- Refer to [KB44408](#) for the recommendations / best practices to deploy Virtual Appliance and the logs needed for analysis/troubleshooting.

New Features

The following table describes the major features that are introduced in the corresponding release.

Feature	Description
Release 9.1R11.5 Features	
No new features applicable for this release.	
Release 9.1R11.4 Features	
No new features applicable for this release.	
Release 9.1R11.3 Features	
No new features applicable for this release.	
Release 9.1R11 Features	
Advanced HTML5 solution (General Availability version)	PCS supports Advanced HTML5 Access solution. This Advanced HTML5 Access solution supports two Advanced HTML5 sessions by default and includes multiple monitors, session recording, audio recording, high sound quality, and camera support. From 9.1.R11, Advanced HTML5 access is available as General Availability version.
Release 9.1R10 Features	
No new features applicable for this release. Refer to “Noteworthy Information in 9.1R10 Release” for more details.	
Release 9.1R9.1 Features	
No new features applicable for this release.	
Release 9.1R9 Features	
SNMP v3 multiple user support	PCS supports two users to be registered with an SNMP engine with different authentication and privilege settings.
ESP Tunnel for Mixed Mode	PCS provides option to use ESP tunnel for 6in4 and 4in6 traffic.

Feature	Description
Advanced HTML5 solution (Trial version)	PCS supports Advanced HTML5 Access solution. This Advanced HTML5 Access solution supports two Advanced HTML5 sessions by default and includes multiple monitors, session recording, audio recording, high sound quality, and camera support.
Remote microphone support in WTS	Supports microphones connected to the client computer during the remote session.
Release 9.1R8.2 Features	
No new features added in this release.	
Release 9.1R8.1 Features	
No new features added in this release.	
Release 9.1R8 Features	
UEBA package for fresh installation of PCS/PPS	In case you have a fresh installation of PCS/PPS, you may download latest UEBA package from Pulse Secure Support Site (my.pulsesecure.net) and add the package at Behavior Analysis page before using Adaptive Authentication or Geolocation based Conditional Access.
Show users by access type	Apart from showing the number of concurrent user sessions, PCS Dashboard now shows the L4 access type (PSAM) and Clientless access type (Browser) logins as non-tunnel users.
PCS Protection from Overload	This feature disallows user login, user login via Pulse Desktop, HTML5 connection or connection to a web resource when the CPU load is above a certain threshold. By default, this option is disabled for PCS upgrades and enabled for new installation.
Reset/Unlock TOTP user through REST API	This release provides REST API to Reset/Unlock a user under a TOTP server.
New license SKUs for PCS/PPS	In this release, added around 120 new license SKUs for PCS/PPS.
Support for pool of NTP servers and NTP status check	PCS now supports pool of NTP servers up to 4 NTP servers to sync date and time.
Release 9.1R7 Features	
Automatic enable/disable ICE license	This release provides automatic management of ICE license. PCS enables ICE license when the logged in users count crosses the maximum licensed users count and disables ICE license when the logged in users count drops below the maximum licensed users count. As an example, If you installed 100 licensed user counts, when the 101th user logs in, ICE license gets automatically enabled.
Show current HTML5 RDP sessions in Dashboard	This release provides HTML5 sessions information in the dashboard and the trend graph that helps admin to view the CPU usage and take necessary action to provide better remote access experience for the users.

Feature	Description
Support for srcset attribute in HTML	PCS provides support for the responsive images (in web applications) via rewriter by rewriting the srcset attribute value. The corresponding images would be fetched on client application based on screen size, resolutions and other features.
Enable/Disable FQDN ACL	FQDN ACL feature was enabled by default earlier even though there are no policies configured. A new admin configurable option to enable or disable FQDN ACL feature is added in 9.1R7 at System > Configuration > VPN tunneling.

Release 9.1R6 Features

Hyperlink to Host Checker Policies	In the User Realms > Authentication Policy > Host Checker page, the policy names now have hyperlinks. Click the link to view the policy configuration.
Hardware ID in the System Maintenance page	The System > Maintenance > Platform page displays Hardware ID along with the other platform details.
Serial number in the Licensing screen	The System > Configuration > Licensing page, displays Hardware Id and Serial number.
Enable/Disable option for ICE license	This release provides REST API to do the following on a Standalone/Cluster: <ul style="list-style-type: none"> enable/disable ICE license get the current status of ICE license.

Release 9.1R5 Features

Terraform template support for AWS and Azure	PCS can be deployed using Terraform templates on supported hypervisors and cloud platforms.
Location based Conditional Access	Conditional Access feature for Cloud Secure now provides a mechanism to enforce access control policies based on location parameters by defining policies for applications.
Password management for Open LDAP	LDAP based password management works with generic LDAP servers such as OpenLDAP.
Microsoft Intune MDM integration	In this release, the Pulse Secure device access management framework supports integration with Microsoft Intune.
HTML5 Sessions report	Active number of HTML5 sessions on PCS can be obtained using a REST API call to <code>api/v1/stats/active-html5-sessions</code> .
MSSP Reporting enhancements	It is now possible to extract any particular license client/cluster report through REST API. Enhancements include: <ul style="list-style-type: none"> Cluster-wise view in the license report. License report in JSON format through REST. Options to get cluster/client/period sub-section of the granular report through REST.
SSLDump for VLAN	In this release, SSLDump utility supports VLAN. Admins can use this tool for debugging / data collection purpose.
Edit default gateway configuration	In PCS hosted on a cloud environment, it is now possible to edit default gateway configuration from UI.

Feature	Description
Host Checker feature enhancement	Host Checker policy to detect and allow hard disk in which encryption is in progress.
License server with Active-Active cluster	Administrators can: <ul style="list-style-type: none"> • create license server with Active Active cluster on virtual/cloud and hardware platforms. • lease all different type of licenses to license clients from any node of active-active cluster. • surrender/recall licenses from any node of active-active cluster.
Release 9.1R4.3 Features	
No new features added for this release	
Release 9.1R4.2 Features	
No new features added for this release	
Release 9.1R4.1 Features	
No new features added for this release	
Release 9.1R4 Features	
PCS VA on Alibaba Cloud	PCS now supports VA deployment on Alibaba Cloud.
Conditional Access	Conditional Access feature for Cloud Secure provides a mechanism to enforce access control policies based on user and device parameters by defining policies for applications. Conditional Access policies are evaluated during application access time while roles are mapped to the session during the session creation time.
REST API enhancements	Enhancements include: <ul style="list-style-type: none"> • Update to "Getting Active Sessions" • Update to "Getting System Information" • Added "Fetching the User Login Statistics" • Added "Health Check Status" • Added "VIP Failover" • Added "Applying License" • Added "Deleting License" • Added "Getting License Clients" • Added "Getting License Report from License Server" • Added Profiler REST APIs
vTM and PCS Integration for Load Balancing	The Platform Limit, Maximum Licensed User Count and Cluster Name attribute values are available for optimal load balancing.
Support for Windows Redstone 6	In 9.1R4 release, Windows Redstone 6 - version 1909 is qualified.

Feature	Description
Support for SharePoint 2019	In 9.1R4 release, SharePoint 2019 is qualified.
Support for VMware VDI 7.9, and 7.10	In 9.1R4 release, VMware VDI versions 7.9 and 7.10 are qualified.
Support for Citrix Virtual Apps and Desktops 7 1909	In 9.1R4 release, Citrix Virtual Apps and Desktops 7 1909 is qualified.
Protect passwords stored in local auth server using stronger hash	When a new local authentication server is created, now admin has a choice to store the password with strong hashing using pbkdf2.
Support license reporting per license client	Licensing report is enhanced with usage statistics for each PCS instance - maximum user count per month per PCS/per MSSP. MSSPs can now: <ul style="list-style-type: none"> • generate accurate usage reports of their customers. • make the structured report in XML format to enable for parsing and usage for dashboard.
Release 9.1R3 Features	
Consolidated system and troubleshooting logs	The various system logs and troubleshooting logs that help in investigating user access issues and system issues can be configured and accessed using the Log Selection page.
Connect to nearest available DC	The LDAP authentication configuration is enhanced in 9.1R3 to locate the nearest Microsoft domain controllers, which are spread across the globe, by resolving DNS SRV records.
Zero touch provisioning	From 9.1R3 release, PCS can detect and assign DHCP networking settings automatically at the PCS VM boot up. In the script included in the PSA-V package, the PCS parameters should be set to null in order to fetch the networking configuration automatically from the DHCP server. Note: This feature is not supported on PSA hardware.
PCS hosted in OpenStack cloud	OpenStack is an open source cloud computing platform that allows deploying and managing a cloud infrastructure as an IaaS service. As part of this release, Pulse Secure supports deploying PCS KVM in OpenStack cloud.
VMware tools support	From 9.1R3 release, VMware support is qualified for VMware 10.3.10, ESXi 6.7 Update 2c.
Debug Log storage expansion	From 9.1R3 release, the maximum debug log size is increased to 1024 MB on hardware platforms.
Periodic iostat data collection	From 9.1R3 release, the "iostat" information is gathered periodically and made available as part of node monitoring in system snapshot.
Control copy/paste option for a user from an HTML5 session	9.1R3 release provides option to the administrators as well as end-user to enable/disable copy/paste from HTML5 RDP sessions. This option will be available under User Roles as well as Admin Created Bookmarks".

Feature	Description
Enhancements to Local Authentication Server default password	From 9.1R3 release, for a fresh installation, the valid password range defined is 0-999. Minimum length 10 and maximum length 128 are set as default values.
Restricting access to default resource policies	From 9.1R3 release, for a fresh installation, the following predefined resource policies are set to "Deny" state by default. <ul style="list-style-type: none"> Web Access Resource Policy "Initial Policy for Local Resources" Windows File Access Resource Policy "Initial File Browsing Policy" <p>Note: The predefined policy for VPN Tunneling is not provided.</p>
IKEv2 Fragmentation	IKEv2 packets can be larger than the MTU especially the IKE_AUTH packets which include the certificate chain. These larger IKE packets get fragmented in the intermediate devices. This feature implements fragmentation at IKE level and avoids IP fragmentation.
MSS value for TCP connections on Tun devices	Due to larger IPv6 header as compared to IPv4, if the MSS of the PCS external interface is not set appropriately, the packets would be dropped on the external interface. This feature enables to set MSS to a lower value so that TCP connections are not dropped for 6-in-4 cases or when there is NAT translation somewhere in the network before reaching PCS.
Release 9.1R2 Features	
SP-Initiated SAML SSO	Pulse Secure supports SP-initiated SAML SSO when PCS is configured as IdP in gateway mode. PCS uses the existing user session in generating SAML assertion for the user for SSO.
IDP initiated SAML Single Logout	This feature provides a single logout functionality wherein if a user gets logged out of a session from one application, PCS (configured as IdP) notifies all other connected applications of that user with Single Logout.
Flag Duplicate Machine ID in access logs	Pulse client expects the machine ID is unique on each machine. If multiple endpoints have the same machine ID, for security reasons, the existing sessions with the same machine id are closed. <p>A new access log message is added to flag the detection of a duplicate Machine ID in the following format:</p> <p><i>Message: Duplicate machine ID "<Machine_ID>" detected. Ending user session from IP address <IP_address>. Refer document KB25581 for details.</i></p>
Microsoft RDWeb HTML5 Access	The newly introduced Microsoft RDWeb resource profile controls access to the published desktops and applications based on HTML5. The Microsoft RDWeb templates significantly reduce the configuration time by consolidating configuration settings into one place and by pre-populating a variety of resource policy settings. <p>Note: In the 9.1R2 release, Microsoft RDWeb HTML5 access does not support Single Sign On. SSO will be made available in the future release.</p>
Backup configs and archived logs on AWS S3/Azure Storage	Two new methods of archiving the configurations and archived logs are available now apart from SCP and FTP methods: <p>Pulse Connect Secure now supports pushing configurations and archived logs to the S3 bucket in the Amazon AWS deployment and to the Azure storage in the Microsoft Azure deployment.</p>
V3 to V4 OPSWAT SDK migration	PCS supports the migration of servers and clients to OPSWAT v4 to take advantage of latest updates.

Feature	Description
Report Max Used Licenses to HLS VLS	From 9.1R2 release, the licensing client (PCS) starts reporting maximum used sessions count instead of the maximum leased licenses count. For MSP customers, this change helps in billing the tenants based on maximum sessions used.
VA Partition Expansion	<p>PCS/PPS supports upgrading from 8.2Rx to 9.1R2 for the following supported platforms:</p> <ul style="list-style-type: none"> • VMware ESXi • KVM • Hyper-V <p>When upgrading a VA-SPE running 8.2R5.1 or below that was deployed with an OVF template to a higher version, the upgrade was failing. This feature solves the upgrade problem for VMware, KVM and Hyper-V. Refer KB41049 for more details.</p>
Release 9.1R1 Features	
Software Defined Perimeter	Pulse Secure SDP uses PCS appliances which individually act as either an SDP controller or an SDP gateway. Mobile users of the Pulse Secure Client perform authentication on an SDP controller which runs an Authentication, Authorization and Accounting (AAA) Service. The SDP controller then enables direct communication between the user and the SDP gateways that protect the user's authorized resources and enables requested encryption.
DNS traffic on any physical interface	Prior to 9.1R1 release, DNS traffic was sent over the Internal interface. Starting with 9.1R1 release, an administrator can modify the DNS setting to any physical interface namely Internal Port, External Port or Management Port.
Authentication failure management	Account Lockout option is provided to manage user authentication failures for admin users of local authentication server. The admin user account will be locked after specified number of consecutive wrong password attempts. The account will be unlocked after the specified lockout period or by using the Unlock option.
Support for "client-name" parameter in HTML5 Access	User can pass "client-name" in HTML5 rdp using launcher method. The %clientname% variable is matched with a workstation ID and normally that variable is unique and dedicated remote desktop computer name.
Deploying PSA-V in KVM	User can deploy PSA-V in KVM using a template.
User access to internet resources on an Azure-based or AWS-based PCS	AWS VPC GW and Azure VNet GW drop packets if the source IP is the endpoint tunnel IP. This feature NATs endpoint tunnel IP to Internal interface IP. The NAT allows user to access internet resources when connected to a VPN tunnel on an Azure or AWS-based PCS.
REST API enhancements	<p>Enhancements include:</p> <ul style="list-style-type: none"> Getting Config without Pulse packages such as ESAP package and Pulse Client package Backing up and restoring binary configuration

Fixed Issues

Problem Report Number	Summary
Release 9.1R11.5 PRs	
PRS-400823	State Storage full and Program cache-server failed.
PRS-400746	Unable to see the details of package uploaded into Staging Area in Admin UI
PRS-400717	Improper titles for lines on HTML5 dashboard graph and some titles missing in Concurrent users graph.
PRS-400614	PSAL fails to launch Java Applets.
PRS-400653	In versions 9.1R11.4 and below, if the 'HTTP only cookie' option is enabled for admin role, the super admin session will not work.
PRS-400544	Program web recently failed on 9.1R11.3
PRS-399600	Forced authentication is provided as a configurable option in case Azure SAML with MFA.
PRS-399576	The localization support is not available for new options on user created advanced HTML5 bookmarks.
PRS-399150	Host header Validation is failing for Virtual hostnames.
PRS-396923	Device crashes with no access to UI or Console.
PRS-384770	PSA-5000 H/W: GARP frames are dropped at the NIC if Default VLAN is configured.
Release 9.1R11.4 PRs	
PRS-400095	Web crash due to empty session IDs.
PRS-399115	Warm restart of services is observed on two node PSA7K AA cluster when run continuously for multiple days causing L3 and L4 connection drops.
PRS-398510	Error code 1326 displays on Pulse Client when username/password is saved on Client and expired on AD server.
PCS-27395	Custom expression failure messages is flooding User Access Logs.
Release 9.1R11.3 PRs	
PRS-400438	Code signing certificate fails globally when launching HC using browser. The certificate issue is addressed. For information refer KB44781 .
Release 9.1R11 PRs	
PRS-398532	During Kernel Panic (System stalls with no access to Admin UI), PCS/PPS devices will automatically reboot by default.

Problem Report Number	Summary
PRS-397979	Process snapshot gets generated for dsagentd/Web processes in 9.1R10. This issue can happen rarely when Client closes PSAM session with PCS server immediately just after closing TCP application connection.
PRS-397324	Dsagentd crashes when PCS System load average goes high.
PRS-397190	Rename all the places that contain WSAM keyword on the Admin UI to PSAM.
PRS-397171	Kernel panic is observed sometimes and PCS restarts.
PRS-397072	Host Check fails on macOS 11.1 when the policy is enforced. For more information, refer KB44663 .
PRS-397046	Background image and recaptcha is not loading through rewriter.
PRS-397000	Supporting corner cases for jquery usage in client side rewriter handling.
PRS-396944	WTS: End users unable to enable MIC on the user interface.
PRS-396870	PDC: Virtual adapter stops intercepting IPv6 packets on Mac/Windows/Linux platforms using PDC 9.1R9 build in ESP mix mode.
PRS-396773	Host Checker fails after upgrading ESAP version to 3.7.1 or 3.7.2 or 3.7.4 from any previous ESAP version on macOS endpoints (KB44643).
PRS-396675	Fixed rewriting for other elements of div tag caused due to Data-srcset support.
PRS-396389	User is not able to configure Azure as backup server in China region.
PRS-396262	Login button is not enabled when accessing web rewriter through IE browser.
PRS-396134	NTP will not synchronize time when default VLAN ID is configured on the interface.
PRS-396116	Browser-based Host checker fails to get launched in 64 Bit Internet Explorer.
PRS-396097	Kernel panic "nf_udp_esp6" may be observed on PSA7000F.
PRS-395982	Rename all the places that contain WSAM keyword on the Admin UI to PSAM.
PRS-395902	Pulse Component Set is selected to NONE does not update the "connstore" in spite of changing the connection set. A warning message is displayed to guide configuring the "Connection Set".
PRS-395813	Disabled DMI Inbound connections setting is not retained after reboot.
PRS-395330	SNMP query for "sysObjectID" is returning PSA7000F for PSA7000C platform.
PRS-394382	Handling rewriting of Data: URLs at server side code to avoid rewriter crashes.
PRS-392135	Pulse One disconnected from PCS after PCS upgrade.
PRS-391667	Aligned the latest MaxMind DB pointer with local DB for Ueba package upgrade.
PRS-390324	Spikes are observed at regular intervals in the concurrent SSL connections graph.

Release 9.1R10 PRs

Problem Report Number	Summary
PRS-395039	License client reports the excess allowed usage while sending the usage to server. This issue is fixed to limit the reported count to maximum lease limit.
PRS-394744	"Error updating data for chart hc_failure_reason/auth_mechanism" log on PCS is not seen. The Exception that was causing this error is fixed.
PRS-394586	Administrator can set a guaranteed minimum users on a realm to allow an user from that realm to log into the PCS/PPS when the licensed concurrent user limit is reached. From Release 9.1R10, guaranteed minimum users is applicable when no ICE license is installed or ICE license is installed and enabled.
PRS-393989	When the current MSP license expires, and customers installs a new MSP license, VLS needs to re-register with PCLS. This was not happening previously, and this resulted in billing against older authcode. In 9.1R10, we have fixed this issue, so that VLS re-registers with the next active MSP license. Hence, the license usage is reported against the new authcode.
PRS-393140	Certificate authentication fails when the option 'Trusted for Client Authentication' is disabled in client CA certificate hierarchy. Added a new user access log and an Admin UI note to alert the PCS administrator in such cases.
PRS-389455	Analytics Device OS graph does not show Windows 10 OS information. This issue is fixed in 9.1R10 onwards.
PRS-387059	Unable to publish config when trusted client CA cert (using CRL) is deleted on Master appliance. This issue is fixed in 9.1R10 onwards.
PRS-380696	Predefined Host Checker policy can now be configured with a ignore category based on the vendor.
PRS-390086	End-Points connected through slow internet now will not hit the incomplete ESAP package download scenario.
PRS-395701	Access to advanced HTML5 custom URL is not successful without user logging into PCS server. The user is now prompted to log into PCS followed by log in prompt to target machine.
Release 9.1R9.1 PRs	
PRS-396149	Web process restarts when Client Application profiles are configured under SAM --> Resource Profiles .
PRS-396441	For advanced HTML5 sessions, web process restarts if the FQDN is not resolved.
PRS-396463	For advanced HTML5 sessions, login may fail if the target machine username or password contain special characters.
Release 9.1R9 PRs	

Problem Report Number	Summary
PRS-395306	"Failed file system integrity check" warning appears on Admin UI when the file "integrity_check" is either not created or deleted. This is addressed in 9.1R9.
PRS-394759	DHCP Set option is added for AWS (If no DNS server configured in DHCP option set, it will take the second IP address as primary DNS server from the internal port subnet).
PRS-394604	Agent Type in active users page on PCS fails to show Windows OS version with 9.1R8 PDC builds.
PRS-394537	XML export shows virtual Platform for physical license clients. This is addressed in 9.1R9 release.
PRS-394242	Rewriter client side parser issue fixed for DanaGetURLUnencoded API.
PRS-394137	Performance tuning is incorporated for FQDN ACL feature.
PRS-394107	Pulse Client version does not display under "Active Users" tab for mobile devices. The issue is addressed in 9.1R9.
PRS-394075	Pulse Collaboration stops working after Setup Client download fails, after upgrading it to PCS 9.1R8.
PRS-393736	Dssecidcheck program fails. This is addressed in 9.1R9.
PRS-393649	If a session is no longer present in the system when the IP lease period is active, then the IP address is released back to the DHCP server.
PRS-393627	Host Checker: Compliance check fails when using Sophos Cloud Endpoint 2.8.6.
PRS-393624	SNMP polling on ifHighSpeed does not return the correct speed of a network interface, if default VLAN is enabled for that interface. This is resolved in 9.1R9.
PRS-393603	File Share: When a big file is uncompressed, PCS will ensure that all the chunks are read properly from 9.1R9.
PRS-393544	On the "Virtual Port" view page, if admin clicks "Cancel" button without saving any changes, then Network service is restarted. This is addressed in 9.1R9.
PRS-393437	From 9.1R9, if PCS VA is hosted by VMware, then NTP setting at "Date and Time" page will have an extra note which informs admin that the Virtual appliance should have only one source of Time Sync (VMware ESXi or NTP Server, NOT both).
PRS-393313	Web Process crash due to timer Library corruption is addressed in 9.1R9.
PRS-393269	PCS was unable to handle "Unknown" OCSP Response. This is addressed in 9.1R9.
PRS-393230	Sometimes, TCP Dump does not start. This is addressed in 9.1R9.
PRS-393070	Logical volume support is removed from KVM instances.
PRS-392547	Custom start page takes about a minute to show up when connected from IE with split tunnel and VPN auto-launch enabled. This is addressed in 9.1R9.
PRS-392359	The default password length has been increased and the same has been updated in the Azure ARM Template.

Problem Report Number	Summary
PRS-391949	In spite of installing the Meeting license on a virtual appliance running A/A cluster, the effective count of concurrent meeting users remain zero. This is addressed in 9.1R9.
PRS-391629	PSAL Linux is unable to connect to PCS. This is addressed in 9.1R9.
PRS-391573	During domain controller reachability test under LDAP Auth Server, PCS does not close the LDAP TCP socket connection with domain controller. This is addressed in 9.1R9.
PRS-391273	When SAML config has both SLS and SSO service types using same Location URL, Import XML fails causing SAML metadata publish to go into loop. This is addressed in 9.1R9.
PRS-389484	PCS appliance now sends IPv6 Neighbor Advertisement with correct VLAN tag for user roles mapped with sourceIP as VLAN interface.
PRS-389448	dsagentd process crashes when handling multicast traffic. This is addressed in 9.1R9.
PRS-388972	Session extension fails when custom sign-in page is configured for the sign-in policy. This is addressed in 9.1R9.
PRS-387807	When default VLAN is enabled, virtual port is not considered for the user role while calculating the source IP. So, default IP was assigned as source IP. This is addressed in 9.1R9.

Release 9.1R8.2 PRs

PRS-394540	A tactical fix was provided as part of 9.1R8.1 (PRS-393243). However, Custom Rule Expression evaluation is now made more robust with thread safety in 9.1R8.2.
PRS-394113	PCS can parse and store up to 32 IP addresses returned by DNS server.
PRS-393865	Running TCP Dumps can get the Disk Full as there is no Log Rotation in place. This is addressed in 9.1R8.2.
PRS-393666	Application level integrity check was missing on PCS for Fragmented EAP-TLS packets. This is addressed in 9.1R8.2.
PRS-393440	Host Checker fails with Error "Host checker did not get installed properly. Your computer does not meet requirements". This is addressed in 9.1R8.2.
PRS-392873	The desktop settings configured under terminal services bookmarks will not apply if the resource's Operating System is Windows 8 or later. This issue is seen in Pulse Client 9.1R8.1 or earlier. The issue is resolved after implementing new interfaces of the Microsoft MSTscAx component.
PRS-392156	Modified WebRequest code to prevent null pointer (Hprewrite-server) crashes.
PRS-391188	DHCP options disappear upon clicking "Refresh Now" button under Connection Profiles > Proxy Server Settings. This is addressed in 9.1R8.2.
PRS-391141	Duplicate syslog (SYS31407) messages appear in event logs. This is addressed in 9.1R8.2.
PRS-388494	Large Username XML Import now logs proper error message.
PRS-385110	Upgrade failure due to white spaces in the configuration is fixed in 9.1R8.2.

Release 9.1R8.1 PRs

Problem Report Number	Summary
PRS-393434	Time drift is observed when NTP is configured on Virtual Appliances. This can affect authentication, cluster sync, and cause licensing issues. This is addressed in 9.1R8.1 (KB44558).
PRS-393243	Host Checker policy evaluation fails very intermittently for some time if policy rules need to be evaluated based on Custom Rule expression. This is addressed in 9.1R8.1.
PRS-392995	dsagentd crashes occasionally in load condition during initial data channel establishment. This is addressed in 9.1R8.1.
PRS-392842	The Overview/cockpit graphs representation will now show data similar to the Classic UI (it will omit the duration for which the data is not available).
PRS-392593	Restriction of REST API commands via the internal port is now fixed.
PRS-392254	SNMP polling was not returning false PCS Model Number and device type. This is addressed in 9.1R8.1.
PRS-392153	Session Server failures due to cluster instability is fixed in 9.1R8.1.
PRS-392096	Winbindd crash seen due to an exception is fixed in 9.1R8.1.
PRS-391990	SSH/Netconf clients should now be able to connect PCS DMI Agent successfully.
PRS-391708	Quick navigation link added to Enable/Disable FQDN ACL. And the following warning message is also added: "Ensure that there is no DNS latency/delay in the network to avoid performance issues".
PRS-391690	When a license client surrenders a license, the expiry date of that surrendered license keeps changing in license server to keep the expiry date always as 10 days (default) ahead of current date. The change is reflected in "License Summary" page of license server admin UI. But the change is not always reflected correctly at the "Pool of available licenses" section under the "Configure Clients" tab as there is a sync-up issue. This is addressed in 9.1R8.1.
PRS-391253	When Pulse Desktop client is used, PCS server does not provide session ID in User Access log after a successful login. Here "session ID" denotes the last 8 characters of actual session ID in server, and it is used to differentiate a session from other sessions for one user. From 9.1R8.1, PCS server will provide this ID for all types of Pulse clients after successful logins.
PRS-390500	From 9.1R8.1, PCS end user name will appear as client name (instead of Localhost) in HTML5 RDP session.
PRS-389526	From 9.1R8.1, a warning message will be sent only when the lease request fails or no leasable license is left with the number of users reaching towards maximum concurrent users limit.
PRS-389251	Frequent warning message about "number of concurrent users is nearing system limit" creates confusion about actual issue with concurrent users limit. From 9.1R8.1, a warning message will be sent only when lease request fails or no leasable license is left and number of users are reaching towards maximum concurrent users.
PRS-387936	Global session configuration values (Users > User Roles > Default Options) are used when individual user role is not configured with session options.

Release 9.1R8 PRs

Problem Report Number	Summary
PRS-388630	With current OPSWAT library code, the verification of update functionality was not working. OPSWAT has fixed the issue and provided a new library.
PRS-388104	The top-roles section displayed on dashboard was not showing the roles name in Japanese and other languages. This issue is fixed for both Classic UI and New UI in 9.1R8.
PRS-385646	Whenever a user tries to access the VDI resource, a wrong error code for timeout was written in the logfile. The user sees the message "Missing host name/IP, Invalid host name/IP: " To address the issue: 1. Timeout error ID is passed to write in logfile. 2. A proper validation has been done for the wrong false alarm.
PRS-364693	Bandwidth Management policy not getting enforced for VPN tunneling users is fixed in 9.1R8 - https://kb.pulsesecure.net/articles/Pulse_Secure_Article/KB44402/?kA13Z000000L3Dc .
PCS-20480	PCS was returning "Incorrect ICE action" error message when trying to execute api/v1/license/ice REST API to fetch the current status of ICE. This is addressed in 9.1R8.
Release 9.1R7 PRs	
PRS-391296	Application access using Citrix Terminal Services through IE browser fails in 9.1R5-9.1R6 PCS versions. This is addressed in 9.1R7.
PRS-390778	Host Checker support for OS version check is added for iOS versions 13.4 and 13.4.1.
PRS-390775	PCS syslog forwarder does not work if connection to syslog server fails during startup of the syslog forwarder process. This is addressed in 9.1R7.
PRS-390530	Enterprise user onboarding fails in Mac OS Catalina as the filename extension was not populated as '.mobileconfig'. This extension is added in 9.1R7.
PRS-390475	Noticeable slowness was seen in several applications including Citrix HTML5 video rendering in 9.1R3-9.1R6 PCS versions. This is addressed in 9.1R7.
PRS-390401	SNMP functionality was not working after cache sync. This is addressed in 9.1R7.
PRS-390234	User access log now shows real-time active HTML5 sessions count.
PRS-390118	In PCS A/P cluster split and joined scenario, lease license IDs are validated to reset the stale ID and license client will be able to lease licenses successfully.
PRS-389481	Cloud Platforms: Improved SNAT performance by tuning kernel module parameters based on the memory available in the device.
PRS-389209	With PCS 9.0R2-9.1R6 and Pulse 9.0R2-9.1R3, the client continues to send the CAV traffic to PCS every 300 seconds even when Cloud Secure license is not installed. From PCS 9.1R7 onwards, the PDC client (Pulse 9.0R2-9.1R3) will contact the PCS server only once per user session - KB44410 .

Problem Report Number	Summary
PRS-388932	From PCS 9.1R7, the "Synchronization of last access time in user sessions" option in A/A Cluster mode will be auto-enabled and grayed out when the "Synchronize user sessions" option is enabled (otherwise, it can affect session migration). Existing cluster configuration is not modified during upgrade, so we recommend admins to enable this option for existing configurations as well.
PRS-388455	If epupdate_hist.xml is hosted internally with no authentication and if "Use Proxy Server" (With/without auth) is enabled with FQDN or IP Address, the first 3 characters are ignored thus causing it to fail. For example, proxy.domain.net is taken as xy.domain.net. This issue is now fixed for both PCS and PPS.
PRS-382777	Client's original Source IP was not logged if Load Balancer is used. Client's Source IP is now retrieved from 'X-Forwarded-For' header and logged in user access logs.
Release 9.1R6 PRs	
PRS-390370 PRS-390145	Java Script is displayed after the user scans the QR code only during the TOTP user registration.
PRS-390352	Hostname resolution for an FQDN with up to 255 characters was not supported through the L3 tunnel in PCS 9.1R5.
PRS-390198	Admin cannot download reports in PDF format for PCS.
PRS-389973	HTML5 connections cause memory leak in Guacamole server and result in high memory usage and swap memory usage
PRS-389811	CPU Allocation issue on PSA-7000 (all flavors/varieties) appliances in case of Single-Arm mode VA deployments is now resolved on PSA-7000 HW and ESXi (VMWare) solutions. Refer KB44446 for more details.
PRS-389744	Process snapshot for "dsserver-tasks" is generated while deleting meeting objects for corresponding users.
PRS-389544	Some of the examples listed under "Split Tunneling Networks" policies are not supported.
PRS-389523	External backend resource access using HTTP GET request with username in the URL for the file login.cgi fails through Rewriter.
PRS-389517	Web server crashes and results in User disconnections due to websocket upgrade related messages during Auth Only URL access.
PRS-389440	User Accounts under TOTP Auth server Users section cannot be exported.
PRS-389406	Delayed or no response from PCS for SNMP queries under load condition.
PRS-389276	The corruption of blob during the epupdate results in Host Checker scan failure for users until the next successful epupdate.
PRS-389262	Web process snapshot is generated while sending POST request by REST API with an empty body.
PRS-389127	Garbled text in Citrix VDI profiles page when accessed using bookmark with the Japanese language.

Problem Report Number	Summary
PRS-388796	The dsagentd process (client server process) crashes and frequently disconnects in 9.1R4 when there are more than 1024 tunnels including MobIKE IKEv2 tunnels.
PRS-388645	After upgrading PCS/PPS to 9.1R3-9.1R5, slow Host Checker response is observed due to a very frequent re-evaluation of Cybereason Active Probe product.
PRS-388542	Garbled text in file share page when accessed using bookmark with the Japanese language.
PRS-374603	During system downtime activities such as an upgrade, Event IDs such as 20412/20413 are missing in the Syslog server.
Release 9.1R5 PRs	
PRS-389938	9.1R4.3 Radius crashing, unable to authenticate Pulse.
PRS-389550	Intermittently, the system throughput falls drastically and user connections fail.
PRS-389246	"500 Internal Error" is displayed when opening Authentication related pages.
PRS-389212	Intuitive Customer friendly ways and relevant logs to avoid customers configuring single core.
PRS-388958	Idle timeout session is not working, OWA 2016 keepalives not ignored through web-rewrite.
PRS-388885	License Surrendering not happening due to the heartbeat not sent.
PRS-388743	Host Checker :: OS Checks :: MAC :: Add support to configure Minimum Service Pack/Version for MAC Catalina(10.15).
PRS-388734	PSA7000 at 30% total CPU due to two guacd processes at 100% CPU, planning pandemic and wanted to know root cause.
PRS-388536	One node in Cluster is surrendering the licenses to the License server. However, the increment of the surrendered time is not happening.
PRS-388479	PSA5000 : 9.1R4 : A/P Cluster : REST API calls are failing intermittently when they are executed in a loop continuously.
PRS-388429	Text corrected under Log/Monitoring > Admin Access > Settings.
PRS-388421	PCS 9.1R4 incorrectly reporting duplicate machine ID.
PRS-388409	Unable to upload config to Pulse One: Configuration changed while preparing configuration to upload.
PRS-388331	After upgrade VA-DTE & PSA-V to 9.1R4, nfqueue unable to create IPTables when VM is configured with 1 CPU core only.
PRS-388244	FileShare:: Customer unable to download direct file from FileShare on 9.1R4 PCS version.
PRS-387954	Rewrite: Web page of the maps web applications fails to load via rewrite.
PRS-387780	Registered PCS Appliance failing with Pulse one communication after importing user config and shows registration expired error message.
PRS-387641	"Sign Out message" does not properly display unicode text (Japanese, Korean, Chinese, etc.) with Sign-In Pages via browser.

Problem Report Number	Summary
PRS-387359	Unable to authenticate user using certificate. Reason: Wrong Certificate::unsupported name constraint type.
PRS-387349	System: Built-in Trusted Server CAs cannot be removed if they have subCAs.
PRS-387062	PSAM sending unintended traffic via tunnel to VPN in 9.1R3.
PRS-386875	User Sessions get disconnected after upgrading to 9.1R3HF1.
PRS-385747	Program dsdashsummary failing continuously on PCS running on 9.0R4.1.
PRS-385466	Sharepoint 2019 is not loading properly through web-rewrite.
PRS-385027	VDI Bookmark would not establish connection to the VDI resource without host entry on the client machine.
PRS-384955	XML Import of trusted server CAs generates a spurious admin log message for each unchanged CA.
PRS-382364	System: Device does not boot up when upgrading from 8.3R7.1 to 9.0R5 with option DELETES all system and user configuration data before installing the service package is selected.
PRS-381972	System : Licensing : "License server low-level protocol error, server=, Code = [6] :Could not resolve host name" populated in event logs of license server.
PRS-381905	After upgrading to iOS 13, HTML5 Access users seems to have broken the on-screen mouse pointer.
PRS-381716	AAA::Issues with host checker when user logs in to a different realm with TOTP auth server enabled.
PRS-381699	Pulse One 2.0.1902: Certificate > Trusted Server CA changes not being distributed (deleted expired CA).
PRS-381678	VIP became unreachable from enforcer when upgrading from 5.4R7 to 9.1R2.
PRS-381046	Rewrite: Dynamic365 menu tabs do not render when on 9.1R1.
PRS-380298	User access log indicates Login failed using auth server LDAP Server (Failed::unable to verify the first certificate) for wrong password.
PRS-380225	"Program fqdnacl recently failed" event failure on PCS 9.0R4.
PRS-379752	Reboot failed on PSA7000f.
PRS-379137	Gliffy Plugin in Confluence does not work via Web Rewrite.
PRS-376852	IPV4 Settings change in External or Internal port keeping Default VLAN ID same does not reflect under VLAN tab..
PRS-365669	SNMP: ifAdEntAddr mapped to wrong ifAdEntIndex values.
Release 9.1R4.3 PRs	
PRS-389246	"500 Internal Error" is displayed when opening Authentication related pages.
Release 9.1R4.2 PRs	

Problem Report Number	Summary
PRS-380298	User Access log indicates "Login failed using Auth. server LDAP server (Failed: unable to verify the first certificate)" for wrong password.
PRS-387780	Registered PCS Appliance fails with Pulse One communication after importing user config and shows "Registration Expired" error message.
Release 9.1R4.1 PRs	
PRS-382268	PDC throws Authentication rejected by server [Error : 1319] when using global PCS url.
PRS-387062	PSAM sending unintended traffic via tunnel to VPN in 9.1R3.
Release 9.1R4 PRs	
PRS-365669	SNMP: ifAdEntAddr mapped to wrong ifAdEntIndex values.
PRS-367786	Device locked up and dropped all connections due to Web process consuming CPU.
PRS-375181	VLS does not throw any error if there is no response for Heartbeats sent to PCLS.
PRS-377456	EasyPrint feature using the Premier Java RDP Applet not working.
PRS-379345	Program dsagentd failed.
PRS-379411	PCS not sending any Syslog traffic to configured Syslog servers.
PRS-379801	Active Sync stopped working after upgrading the device to 9.0R4.
PRS-380136	Cluster communication and state storage problems on A/A cluster.
PRS-380765	Program dsagentd recently failed after upgrading PCS from 9.0R3.2 to 9.0R4.
PRS-380796	PCS-VA sending critical SNMP alerts while leasing license.
PRS-380993	DFS: process snapshot generated by snmptrap process.
PRS-381100	Program dsagentd recently failed while running Mixed [V4 and V6] 60K VPN Tunneling ACL's throughput test on PSA5k for secure cache build-3164.
PRS-381366	Multiple users getting disconnected from Pulse Client.
PRS-381403	Sharing Feature is not working in macOS Catalina.
PRS-381579	Sometimes empty logs are seen under "Log/Monitoring".
PRS-381621	9.0R4 and 9.0R5 SPE (PSA-V) do not show the User Record Sync column in Admin UI > Auth Server page.
PRS-381633	Host Checker checking for virus definition file based on Number of updates fails for Sophos Endpoint Security and Control 10.8.4.
PRS-381736	After Upgrade from 8.3R7.1 to 9.1R1, error encountered while upgrading cache (in Host Checker).
PRS-381795	[FQDN ACL / NFQUEUE] Request DEV help in determining why thousand of VPN Tunnels dropped traffic within.
PRS-381960	Facing slowness when accessing web application through Authorization-only access post upgrading to PCS OS 9.0R5.

Problem Report Number	Summary
PRS-381963	Group Names in the role mapping rule will get added with &, # and; special character if more than 5 groups are selected with AD as the auth server.
PRS-381984	The cookie setting should be included in the resource profile.
PRS-382001	UI: Description incorrect on default deny in 9.1R3 initial deployment.
PRS-382021	Button to dismiss the banner on PPS/PCS Dashboard for not accepting Perpetual license is not working.
PRS-382031	Need to replace VA-SPE PSA-V in "Only EVAL licenses are allowed for manual installation in VA-SPE PSA-V".
PRS-382035	Proper logging for NFQUEUE full and drops needed, also consider this situation for cluster A/P failover or add to healthcheck.
PRS-382191	Unable to ping the IPv6 VLAN-Gateway from the PCS device after changing the Gateway address.
PRS-382240	User dropped from the VPN tunnel connection ##g_dhcp_proxy_wbuf is maxed!.
PRS-382350	Unknown RAID status in PSA7000f due to no space left on device.
PRS-382804	Active node went unresponsive in A/P cluster and generated multiple Watchdog snapshots.
PRS-384939	"Invalid ECU text" error found while configuring "E-mail protection" under ECU text.
PRS-384963	Host checker: After upgrading to 9.1R3, HC "Successfully loaded" message is garbled when it is initiated in browser with Japanese language.
PRS-384967	healthcheck.api showing incorrect MAXIMUM-LICENSED-USER-COUNT in AA cluster.
PRS-385144	Web Rewrite: Images not loading on the web page for a web resource configured via rewrite.
PRS-385150	Access via SSH port forwarding fails.
PRS-385159	Home page of eTime (Timesheet) Web application is not rendering properly via Rewrite in all web browsers.
PRS-385203	Add iOS check for 13.2, 13.2.1, 13.2.2.
PRS-385496	Adding default policy for Citrix resources.
PRS-385500	VLS should use only MSP Authcode for registering with PCLS.
PRS-385526	Add iOS Check for 13.2.3.
PRS-385550	Users cannot see full display of shared screen, if the size of text, app and other items in the "Scale & layout" in Display settings is set to 150% (Recommended) on the client's machine.
PRS-385721	Unable to restore Local User Accounts Backup on PCS 9.0R5.
PRS-387517	DanaLoc appears to be missing when using IE11.
PRS-387541	Web Rewrite: Drop-down menu, Refresh button, Change Password option and Login button not working on the login page.
Release 9.1R3 PRs	

Problem Report Number	Summary
PRS-366490	System Temperature status value on SNMP server displaying wrong value.
PRS-371351	Citrix sessions drop regularly causing various issues. These issues are observed in PCS 9.0 with Citrix port 2598 via JSAM. This issue is not found in 8.2R8.
PRS-371699	Users unable to login as well as dropping users - LMDB full.
PRS-372805	Realm level certificate restriction skipped with SAML Auth.
PRS-372999	Host checker is failing for Host Checker (OS-Check only) for Chrome OS 71.0.3578.127 with PCS 9.0R1 firmware version.
PRS-373160	Dropdown option misses internal menu while accessing via web rewrite.
PRS-374124	VDI Session are not showing under Virtual Desktop Sessions.
PRS-374146	UNC path is not handled properly by HOB Applet.
PRS-374318	PCS deployed on the AWS Cloud showing speed 10 Mbps.
PRS-374344	Last core dumps being generated at customer after 9.0R2.1HF6 with fixes.
PRS-374603	Syslog missing event logging info when upgrading.
PRS-374765	PSA7000f RAID failed after upgrading.
PRS-374831	Login page is not rendering properly for a web resource configured through rewrite.
PRS-374992	PCS using DUO as secondary authentication fails the first authentication attempt after installation.
.PRS-375079	CORE.fqdnac crashes continues to occur even after 9.0R2.1HF6 (with fix).
PRS-375880	None of the contents in the Azure web portal are loading through rewrite.
PRS-375906	Unable to load a sign-in page getting stuck in loading the web page while accessing a web resource configured through the rewrite.
PRS-376036	PCS evaluation of the custom expression "time.dayOfYear" is not working as expected.
PRS-376247	Factory-reset does not work in 9.1R1 instead it boot up PCS with current image.
PRS-376249	Logon page of SAP fiori portal displayed as blank in IE11 only via rewrite.
PRS-376343	Mails are not getting synced in Native Email Client in iOS when using SA as ActiveSync Proxy due to stale records present and crash is happening in aseproxy-server service.
PRS-376357	When extending Pulse Client sessions, it causes network drop.
PRS-376429	JSAM stuck on loading forever on IE - Java.
PRS-376458	HOB stuck on loading forever on IE - Java.
PRS-376500	Azure 9.0R3.1 - postgresd service restarts constantly after deployment.
PRS-376520	Host checker fails to detect FireEye Endpoint Agent 29.7.0.
PRS-376840	Running Add command when the Disk is missing will cause a minor error message which requires a reboot.

Problem Report Number	Summary
PRS-376869	Dns_cache process snapshots persist after upgrading to 9.0R4HF6.
PRS-376953	Unable to view PDF files in the myDocuments application.
PRS-377022	File Share accessing issue in 9.0R4.
PRS-377160	HTML-5 -RDP requires additional authentication.
PRS-377482	After upgrading to 9.1R1, host checker word is garbled when it is initiated in browser with Japanese language.
PRS-377681	PSA7000f reports HDDs missing and inactive after upgrade to 9.1R1.
PRS-377825	After upgrading to 9.1R1, the name of the user role displayed in submenu is broken if the language is in Korean.
PRS-377979	When accessing the resources via bookmark, contents are not displayed correctly.
PRS-378049	Failed filesystem integrity check message seen on PSA5K console after upgrading from 9.1R1 to 9.1R2-2119.
PRS-378882	Periodic Snapshot settings via REST fails with error "Modification of Attribute not Allowed".
PRS-378964	When the admin clicks on 'Agent', they receive an error "the page you requested could not be found".
PRS-379125	Pulse One 2.0.1901: With PCS 9.0R5 (EA) having failure in target importing SAML using Artifact - empty "Source Artifact Resolution Service URL".
PRS-379336	Chat option not working on the Medical application.
PRS-379773	Syslog - If an appliance is rebooted, it cannot successfully reconnect to a P1 syslog server.
PRS-379974	Critical Events do not get displayed in System > Overview Page.
PRS-380009	REST API calls failing for RDWeb Profiles in PCS.
PRS-380148	When syslog server's FQDN resolves to two IP addresses, one of which is reachable, PCS/PPS may fail to connect.
PRS-380762	Delay during session failover of PCS in Active/Active cluster in AWS.
PRS-381014	Japanese words are garbled when we click on the File share bookmark.
PRS-381318	DMI get-config of RDWeb resource profile returns badly formed XML.
Release 9.1R2 PRs	
PRS-367907	FQDNST denied IP is going via tunnel.
PRS-370210	Clear config on PSA 300 fails with unable to mount /webserver partition.
PRS-372439	Post failover, session resumption delayed with Pulse Client.
PRS-373290	Clear config on PSA 300 fails with unable to mount /webserver partition.
PRS-375013	Radius OTP as Secondary authentication fails for the Pulse Client.
PRS-375329	HOB failed to launch through Java in IE.

Problem Report Number	Summary
PRS-375886	JSAM launch failing for IE -JAVA.
PRS-376312	Factory reset from VMware VA console does not load the factory reset version and loads the current version.
PRS-376348	VMWare View 5.1 client does not connect after upgrade.
PRS-376859	Premier Java Applet for Terminal Service failed to download .jar file.
PRS-377945	Publishing for certain block types causes many log messages and other side effects.
Release 9.1R1 PRs	
PCS-5064	Remove legacy mode from Active Directory auth. server.
PRS-375534	JSAM Stats value (Bytes count) is not getting displayed in IE - Activex.
PRS-375067	DNS resolution not working for alternate VPN connections.
PRS-374597	The definition update is not listed for Sentinelone product in "epupdate_hist.xml" file.
PRS-374057	Unable to add the resource <userAttr.Framed-Route> in IPV4 address under Split tunneling policy for PCS version 9.0Rx.
PRS-374037	Rewrite: PSAL launching Citrix app multiple times in an infinite loop on all the browsers.
PRS-373948	Contents of a web response are not getting compressed as content encoding header is missing in the response from PCS.
PRS-373769	Host Checker IMC detects the Antivirus Change in the client PC and report it to IMV even when Perform Check every min is set to 0.
PRS-373696	Split tunneling FQDN policy with special character, fails to save.
PRS-370953	Unable to edit word documents hosted on SharePoint 2013 via PTP using MS Edge.
PRS-371023	Resource access dropped (RDP, SSH etc.) intermittently on SAW environment.
PRS-373102	Core Access: E-mail web page getting stuck on "login processing".
PRS-373076	Core Access:Web page shows horizontal scrollbars at the bottom of screen.
PRS-372181	DanaLoc fails in case of old window object reference from a new window object.
PRS-372834	PSAM:Pulse SAM takes at least 40 seconds to open custom start up page in UI Options compared to WSAM.
PRS-372677	AAA/Security/Pulse: SAML AuthnRequest leaks data across users with "Reuse NC/Pulse session" enabled.
PRS-372595	User getting same IP address assigned from IP pool in few hours.
PRS-372489	Pulse browser Toolbar is flickering when accessing OWA 2016 resource on iOS device through webrewrite.
PRS-372285	PSA 7000f Frequently reports one of the power supplies is back up.
PRS-372055	Unable to save Citrix listed application using Hostname with port number.

Problem Report Number	Summary
PRS-371973	HC: Compliance fails using Pulse Desktop client 9.0.2 build 1151.
PRS-371970	Users with username in UPN format in System Local Authserver are unable to log in using TOTP after upgrading to 9.0R3.
PRS-371944	Killed user session admin log "ADM23534" does not display admin user but the actual user being terminated.
PRS-371800	PCS device is unable to get the enrolled mobile device attribute from MDM server.
PRS-371394	Setting the hash property of location object causes problem in IE, Edge and Firefox browsers because the URL is appended with fragment identifier. In chrome and Safari browsers things work fine.
PRS-371602	Post upgrade to PCS 9.0R3, "License server low-level protocol error Code = [47]" error is triggered on license client.
PRS-371513	Page does not load via IE browser.
PRS-371406	"Auto populate domain information" behavior when unchecked: blank first then if wrong password, auto populates domain.
PRS-371357	HTML5 RDP logging do not show realm and shows ().
PRS-371342	Add iOS Check 12.1.1.
PRS-371266	Menu is not loading when accessing the application through web-rewrite.
PRS-371231	PCS 9.0 VA-DTE :: Nodes in cluster gets disabled automatically.
PRS-371205	Multicast Traffic not working intermittently in the VPN Tunnel in 8.3R6 / 5.3R6 version and after restarting services, works fine for all users.
PRS-371154	Wrong information in the log messages for Authorization Only Access when source ip restriction is configured on role.
PRS-371114	Add support for adding parameters "client-name" for HTML5 Access.
PRS-369351	LDAP authorization does not work when using ikev2 tunnel (handle 10K tunnels+few hundred ikev2 clients).
PRS-370138	Read-only admin sessions see an option as disabled that is actually enabled on user roles.
PRS-369960	Page displayed while PSAL downloads to a Mac client shows instruction for Mac; but then references Windows System Tray.
PRS-369200	Logs are not fully displayed if select the date as filter.
PRS-369142	File browsing SSO is not working with user details are given in variable form as well when configured to use system credentials.
PRS-369031	When a configuration object is renamed, not all of the resulting configuration changes are uploaded to Pulse One.
PRS-368927	Web process crashes and logs "ERR31093: Program web recently failed." in the event logs.
PRS-367879	Core Access: Unable to import or download the image using PTP.

Problem Report Number	Summary
PRS-367789	DMI agent not responding to netconf commands as expected.
PRS-367285	System Active/Passive cluster responding to ICMP request even after shutdown.
PRS-366634	Randomly users are not able to access IPv6 resources through VPN device via VPN tunneling.
PRS-364219	PSA7000f interface status in Network Settings not working.
PRS-366490	System Temperature status value on SNMP server displaying wrong value.
PRS-371351	Citrix sessions drop regularly causing various issues. These issues are observed in PCS 9.0 with Citrix port 2598 via JSAM. This issue is not found in 8.2R8.
PRS-371699	Users unable to login as well as dropping users - LMDB full.

Known Issues

The following table lists the known issues introduced in 9.1R11.5 and also outstanding from previous releases:

Problem Report Number	Release Note
Release 9.1R11.5 PRs	
No new known issues found in this release.	
Release 9.1R11.4 PRs	
PRS-400951	<p>Symptom: Static IP allocation fails for both single and multi-session enabled users.</p> <p>Condition: Overlapping IP pools are configured in VPN profile.</p> <p>Workaround: If the overlapping IP pool is broken up/split up this issue is not seen.</p>
PRS-400802	<p>Symptom: Static IP allocation fails for both single and multi-session enabled users.</p> <p>Condition: Users having multiple preferred IP addresses and/or multiple users assigned same preferred IP address.</p> <p>Workaround: None.</p>
PRS-400717	<p>Symptom: Improper titles for lines on HTML5 dashboard graph and some titles missing in Concurrent users graph.</p> <p>Condition: This issue appears after upgrading to 9.1R11 even without load.</p> <p>Workaround: On old UI, for a particular graph, click "Edit" and select "Restore Factory Defaults".</p>
PRS-400668	<p>Symptom: Pulse Desktop Client (PDC) always displays upgrade prompt even when client version on the endpoint and the server are same. Clicking on upgrade prompt performs no action (Cosmetic/UI issue).</p> <p>Condition: Occurs when the Pulse Desktop Client has Symantec signed binaries and the PCS on which it is hosted (9.1R11.3/ 9.1R10.2/ 9.1R9.2/ 9.1R8.4) is signed by Digicert.</p> <p>Workaround: Disable End-point upgrade on Pulse Connect Secure (PCS). Enable again only when a higher version of PDC is activated on PCS and let the users trigger the client upgrade through the browser.</p>
PRS-400614	<p>Symptom: PSAL fails to launch Java Applets.</p> <p>Condition: Observed on clean environment (both PDC and PCS) and is not consistent.</p> <p>Workaround: Re-trigger JSAM by clicking start button.</p>
PRS-400631	<p>Symptom: AP cluster fail-over VIP is taking more time for Cluster VIP reachable.</p> <p>Condition: When clicking Fail-over VIP button from Cluster status page (Cluster setup configured with IPv6 ip address).</p> <p>Workaround: None.</p>

Problem Report Number	Release Note
PRS-400639	<p>Symptom: Sometimes back-end resources are not accessible over L7 VPN.</p> <p>Condition: When both L3 & L7 VPN are connected.</p> <p>Workaround: Disconnect the L3 VPN & access back-end resources. Connect back to L3 VPN.</p>
Release 9.1R11.3 PRs	
PRS-400509	<p>Symptom: The PSAL installation prompts for admin credentials on windows 8.1 for Local user.</p> <p>Condition: On Windows 8.1 Endpoints.</p> <p>Workaround: Right click on the PSAL msi->Properties and enable Unblock. Click Apply and OK. Then install the PSAL.</p>
PRS-400486	<p>Symptom: Upgrade prompts missing on connecting to latest PCS.</p> <p>Condition: When endpoint has PSIS Installed.</p> <p>Workaround: Uninstall PSIS.</p>
Release 9.1R11 PRs	
PRS-399842	<p>Symptom: Pulse client is assigned an IP address from static pool while configuration is to prefer IP from LDAP/Radius attribute.</p> <p>Condition: LDAP/Radius attribute template and static IP address/range is configured in a single user profile as resources.</p> <p>Workaround: Split the connection profile into multiple profiles like one Profile with LDAP/Radius attributes/resources and other configuration and another profile with static IP address/range and other configuration. The new profiles can be ordered correctly to maintain the expected order of resources.</p>
PRS-398621	<p>Symptom: Enabling “SNMP Diagnostic Logging On” is not working.</p> <p>Condition: When manually “SNMP Diagnostic Logging On” is enabled.</p> <p>Workaround: None.</p>
PRS-398303	<p>Symptom: HTML5 bookmarks will not be accessible.</p> <p>Condition: When using IE browser.</p> <p>Workaround: Use Chrome, MS edge or Firefox browsers.</p>
PRS-398121	<p>Symptom: User sessions are not syncing with one of the node in Active-Active cluster.</p> <p>Condition: LMDB related error messages observed.</p> <p>Workaround: Clear session data.</p>
Release 9.1R10 PRs	
PRS-397227	<p>Symptom: Admin URLs are not accessible if administrator logs in with IPv6 address of PCS.</p> <p>Condition: When the administrator uses IPv6 address for admin login.</p> <p>Workaround: Use IPv4 address or FQDN address.</p>

Problem Report Number	Release Note
PRS-397064	<p>Symptom: For advanced HTML5 sessions, on administrator UI shows IP address instead of hostname under virtual desktop sessions page.</p> <p>Condition: When an advanced HTML5 bookmark is configured with a hostname.</p> <p>Workaround: None.No functionality impact.</p>
PRS-396921	<p>Symptom: When a user access basic html5 bookmark, guacd process may restart.</p> <p>Condition: When the target machine is configured with NLA & CredSSP options: Force update clients.</p> <p>Workaround: Use "CredSSP options: Mitigated".</p>
PRS-396895	<p>Symptom: For basic HTML5 connections file transfer is not working on macOS.</p> <p>Condition: When a basic html5 bookmark is accessed by using Safari browser.</p> <p>Workaround: Access basic html5 bookmark using chrome browser.</p>
PRS-396827	<p>Symptom: When advanced HTML5 connections are accessed first time, user may see "Failed to connect to gateway" message.</p> <p>Condition: When advanced HTML5 bookmark is configured with a hostname.</p> <p>Workaround: Refresh the page or go back to landing page and access the bookmark again.</p>
PRS-396726	<p>Symptom: Active user page "Agent Type" shows "Mac OS 10.15" in place of "Mac OS 11.0.1".</p> <p>Condition: When using Safari on macOS version BigSur 11.0.1.</p> <p>Workaround: None.</p>
PRS-396499	<p>Symptom: For advanced HTML5 connections, graph shows invalid values.</p> <p>Condition: When user access advanced HTML5 bookmarks.</p> <p>Workaround: Check the HTML5 session count on the virtual desktop sessions page.</p>
Release 9.1R9.1 PRs	
PRS-396733	<p>Symptom: For advanced HTML5 bookmarks, when the target machine is configured with hostname resource, may not be available at times.</p> <p>Condition: When VLAN based source IP is configured under the roles along with the hostname.</p> <p>Workaround: Configure target machine with IP address.</p>
PRS-396710	<p>Symptom: For advanced HTML5 sessions, REST API count displays invalid values.</p> <p>Condition: When no active HTML5 session is present.</p> <p>Workaround: Check the HTML5 count on Virtual desktop session page.</p>
PRS-396609	<p>Symptom: For unsuccessful HTML5 connection, VDS page displays the entry for advanced bookmarks.</p> <p>Condition: When user is unable to connect to target machine.</p> <p>Workaround: None.</p>

Problem Report Number	Release Note
PRS-396606	<p>Symptom: Ctrl+C (abort) command is not working for advanced html5 sessions.</p> <p>Condition: When user access Putty SSH session within Windows 10VM through advanced html5 bookmark.</p> <p>Workaround: None.</p>
PRS-396540	<p>Symptom: On the IE browser for the advanced HTML5 intermediate, login page text displays "submit query" instead of submit.</p> <p>Condition: When NLA encryption is configured without SSO.</p> <p>Workaround: None.</p>
Release 9.1R9 PRs	
PRS-396149	<p>Symptom: Web process crashes.</p> <p>Condition: With new PSAM improvement changes, when PSAM is configured with client application functionality, ACL Deny results are always treated as UDP connection deny request which is causing the issue.</p> <p>Workaround: Configure resources with WSAM destinations.</p>
PRS-395973	<p>Symptom: User column for SNMP traps does not show the username.</p> <p>Condition: When an SNMP trap is added for v2c and then SNMP version is changed to v3.</p> <p>Workaround: Delete the trap server and then reconfigure the trap sever with user details.</p>
PRS-395925	<p>Symptom: "IP Owned by device with HWADDR" messages at MAJOR level seen in Admin logs after upgrade to 9.1R9.</p> <p>Condition: These messages are seen during the following sequence:</p> <ol style="list-style-type: none"> 1. Active Passive Cluster upgrade (Example: Node-1 and Node-2) 2. Upgrade started on Node-1. Node-1 with upgraded version is starting up. 3. Node-2 holds the VIP, till it goes for a reboot. <p>Workaround: None. These messages do not cause any impact to the cluster functionality.</p>
PRS-395911	<p>Symptom: Pull state from server not leasing licenses to all the nodes in cluster. Following event logs are seen:</p> <p>E.g.: 2020-10-19 17:25:01 - DFS_VA_NODE_115_19 - [127.0.0.1] Root::System()[] - Lease request on behalf of DFS_VA_NODE_115_20 by DFS_VA_NODE_115_19 failed: Not Cluster Member, status code=0x22..</p> <p>Condition: When, occasionally, both the cluster nodes talk to license server to fetch the license clients.</p> <p>Workaround:</p> <ol style="list-style-type: none"> 1. Do XML export of license clients. 2. Delete the affected license clients using admin UI. 3. Re-import the license clients from XML file.

Problem Report Number	Release Note
PRS-395722	<p>Symptom: For existing HTML5 profiles configuration through REST may not set solution type properly always.</p> <p>Condition: While updating the existing HTML5 profile solution type.</p> <p>Workaround: Create new profile through REST API.</p>
PRS-395711	<p>Symptom: For Advanced HTML5 user's Zoom sessions, audio stream can be inconsistent.</p> <p>Condition: When Zoom application is used for meeting session over Advanced HTML5 session.</p> <p>Workaround: Use Microsoft Teams application.</p>
PRS-395709	<p>Symptom: In MAC Safari browser, Advanced HTML5 sessions clipboard is not available.</p> <p>Condition: When using MAC Safari browser in Advanced HTML5 session.</p> <p>Workaround: Use Chrome browser for clipboard access.</p>
PRS-395707	<p>Symptom: For Advanced HTML5 RDP sessions, Microsoft Teams video call might disconnect the session.</p> <p>Condition: When making a Microsoft Teams video call in Advanced HTML5 RDP session.</p> <p>Workaround: None.</p>
PRS-395703	<p>Symptom: For Advanced HTML5 sessions, some documents may not invoke print function properly.</p> <p>Condition: When printing a text document with Notepad++.</p> <p>Workaround: Use default document mode.</p>
PRS-395699	<p>Symptom: For Advanced HTML5 RDP sessions, video quality can be inconsistent at times.</p> <p>Condition: When accessing high resolution video streaming in an Advanced HTML5 RDP session.</p> <p>Workaround: None.</p>
PRS-395696	<p>Symptom: For Advanced HTML5 sessions, error messages are not displayed.</p> <p>Condition: When target machine is not reachable.</p> <p>Workaround: None.</p>
PRS-395223	<p>Symptom: REST based import of user role fails with the following error: "/sam/sam-options/wsam-autoinstall] Unsupported attribute type 0".</p> <p>Condition:</p> <ol style="list-style-type: none"> 1. User role config obtained from PCS running pre-9.1R9 through REST. 2. Admin uses REST PUT POST to import the config from Step 1 on PCS running 9.1R9. <p>Workaround: Replace wsam-autoinstall with wsam-autouninstall and use REST based import.</p>

Problem Report Number	Release Note
PRS-395217	<p>Symptom: Pulse One fails to sync files Windows ACL policies on Target PCS from Master PCS.</p> <p>Condition: On Master PCS, when made changes to Windows File ACL policies and tried to push it to targets where the same policies are already present.</p> <p>Workaround: Manually export those ACL policies from Master PCS and manually import them on Target PCS.</p>
PRS-394390	<p>Symptom: PCS is not responding to ping with payload size larger than the MTU size.</p> <p>Condition: Issue occurs in 4in6 scenario. when pinging a protected resource with large packet size.</p> <p>Workaround: None.</p>
PRS-393851	<p>Symptom: Invalid Admin log shows as “Unable to synchronize time, either NTP server(s) are unreachable or provided symmetric key(s) are incorrect.” even though NTP servers are reachable and clock is syncing.</p> <p>Condition: When upgrading to 9.1R8.1 or later builds.</p> <p>Workaround: None. There is no functionality impact</p>
PRS-393672	<p>Symptom: Noticeable slowness seen in upgrade from 9.1R4 to 9.1R8 on AWS platform.</p> <p>Condition: When the load on data center is high. Also, depends on the network parameters in the given zone.</p> <p>Workaround: Please plan upgrades with sufficient upgrade window.</p>
PCS-22768	<p>Symptom: Remote-program, Multi Monitor, Session recording options are not working for end-user created bookmark.</p> <p>Condition: When a user tries to access end-user created advanced HTML5 bookmark.</p> <p>Workaround: User can use admin created bookmarks.</p>
PCS-22757	<p>Symptom: Advanced HTML5 graph is not implemented.</p> <p>Condition: When accessing advanced HTML5 bookmarks.</p> <p>Workaround: User can check the advanced bookmark count by using REST API/Active Virtual Desktop Sessions page.</p>
Release 9.1R8.2 PRs	
PCS-22360	<p>Symptom: SAML SLO is not initiated from PCS to its IDP when the user’s browser-based session is ended.</p> <p>Condition: When user is authenticated using any browser to PCS with SAML authentication method where PCS is SAML SP, user session is ended in browser because of idle timeout or max session timeout or if admin ends the user session from PCS Admin console. Currently only manual sign out from browser session is supported to send SLO request to IDP from PCS side.</p> <p>Workaround: Close the browser window and launch a new browser window, so that user is prompted for authentication again for security reasons.</p>
Release 9.1R8.1 PRs	
No new known issues found in this release	

Problem Report Number	Release Note
Release 9.1R8 PRs	
PRS-393174	<p>Symptom: Local proxy PAC file not working in Internet Explorer 11.</p> <p>Condition: When PAC file resides on a local system.</p> <p>Workaround: Store the PAC file on an HTTP/HTTPS-accessible server and use that link for Internet Explorer 11 proxy settings.</p>
PRS-393172	<p>Symptom: Windows client connecting to PCS using Firefox ESR 68.10 intermittently throws error during Compliance check through Proxy configuration.</p> <p>Condition: Using Firefox ESR 68.10 version.</p> <p>Workaround: Once a successful connection is established from the client to the server using Chrome/IE, try connecting to the server using Firefox ESR. This works as expected.</p>
PRS-393146	<p>Symptom: Host Checker process tnccs crash.</p> <p>Condition: When user role is configured with 120 HC rules and policy check interval is every one minute and with 8K user load.</p> <p>Workaround: (Recommended) Increase the Host Checker policy check interval.</p>
PRS-392934	<p>Symptom: PCS does not restrict user logins, even though dsagentd crossed 80% CPU utilization.</p> <p>Condition: Noticed the issue especially with clusters and when changing from Active-Active to Active-Passive cluster or vice versa.</p> <p>Workaround: Restart of System Services should solve the issue.</p>
PRS-392749	<p>Symptom: Pulse collaboration client version is not same in Mac and Windows.</p> <p>Condition: When user installs 9.1R8 Pulse collaboration client.</p> <p>Workaround: None.</p>
PRS-392345	<p>Symptom: Archiving on AWS S3 storage and Azure is failing when DNS server is not reachable from internal interface.</p> <p>Condition: When admin trying to Archive using AWS S3 bucket or Azure storage account on management port and DNS server is not reachable through internal port.</p> <p>Workaround: Admin has to configure internal port for DNS resolution, Archival interface can be internal/management for archiving on AWS S3 bucket or Azure storage account.</p>
PRS-392236	<p>Symptom: Hyper-V 9.1R8 upgrade from earlier versions is not supported.</p> <p>Condition: When upgrading from the earlier versions, say 9.1R5.</p> <p>Workaround: Install a fresh instance of 9.1R8 and import the config from the earlier version.</p>
PRS-391999	<p>Symptom: TOTP Authentication fails for all users.</p> <p>Condition: After importing TOTP users into the PCS via REST API.</p> <p>Workaround: Use Export and Import option under TOTP Authentication server in Admin UI.</p>
PRS-391947	<p>Symptom: Websocket URL is not accessible.</p> <p>Condition: When trying to access https://web.whatsapp.com/ URL.</p> <p>Workaround: None</p>

Problem Report Number	Release Note
PRS-391305	<p>Symptom: Upgrading Azure images from 9.1R5 to any later releases returns with error message if the factory reset version is 9.1R5.</p> <p>Condition: When factory reset version is 9.1R5.</p> <p>Workaround: Export the existing PCS configurations, deploy the new PCS image with the latest version, and import the PCS configurations.</p>
PRS-390577	<p>Symptom: Active user page is not displaying node details correctly for the users connected in AA cluster after split and join.</p> <p>Condition: After cluster split and re-join.</p> <p>Workaround: Display issue, user sessions will not get impacted. Newly connected sessions are showing the details correctly.</p>
PRS-390488	<p>Symptom: Host checker is getting timed out (can be seen on user access log) and user is getting logged out.</p> <p>Condition: When periodic evaluation is enabled.</p> <p>Workaround: This issue is not replicable every time, but as a workaround, we have suggested to disable dynamic evaluation or increase the periodic policy evaluation interval.</p>
PRS-384976	<p>Symptom: Host Checker installation error found Intermittently while installing Host Checker or Pulse Client [HC enabled] through browser [Chromium Edge/Chrome/Firefox].</p> <p>Condition: Fresh Installation of Host Checker or Pulse Client [Host Checker enabled] through browser [Chromium Edge/Chrome/Firefox] after uninstalling old Host Checker components</p> <p>Workaround:</p> <ol style="list-style-type: none"> 1 Uninstall the Host Checker/Pulse Client components manually and reboot the system. <p>OR</p> <ol style="list-style-type: none"> 2 Manually kill Host Checker process before installing Pulse Client/Host Checker components.
PRS-375138	<p>Symptom: Client upload logs fails for Network Connect and JSAM.</p> <p>Condition: After launching Network Connect and JSAM on Windows 10, client upload log fails.</p> <p>Workaround: None</p>
PCS-21262	<p>Symptom: Update in PSAM Resource policies configuration from Admin portal is not getting applied immediately to existing users with UDP PSAM sessions.</p> <p>Condition: When Admin changes ACL action from Deny to Allow for a particular UDP based resource (i.e., UDP Server Application) for which user already has UDP PSAM Session active, user will still see access denied and vice-versa. But this condition might occur very rarely in real world scenario.</p> <p>Workaround: Admin can choose to delete existing UDP PSAM user sessions for which ACL action changes from Deny to Allow and vice-versa.</p> <p>Alternatively, user can disconnect and connect PSAM UDP based application session.</p>

Problem Report Number	Release Note
PCS-20664	<p>Symptom: Pulse client is not showing correct error message when there is no bandwidth to allocate for L3 tunnel.</p> <p>Error message in Pulse client - "Unable to allocate IP address".</p> <p>Condition: When there is no bandwidth to allocate for L3 tunnel for that specific user.</p> <p>Workaround: Display issue, correct error message will get displayed in User Access logs.</p> <p>Error message in User Access logs - "Cannot find a qualified bandwidth management policy for user based on current available bandwidth."</p>
Release 9.1R7 PRs	
PCS-20433	<p>Symptom: Existing HTML5 active sessions are not displayed under "Active Virtual Desktop Sessions" tab.</p> <p>Condition: After cluster upgrade, existing HTML5 sessions are not displayed under "Active Virtual Desktop Sessions" tab.</p> <p>Workaround: User has to re-login and connect to HTML5 session.</p>
Release 9.1R6 PRs	
PCS-19628	<p>Symptom: Platform page shows hypervisor information as KVM instead of Alibaba-Cloud-KVM or OpenStack-KVM.</p> <p>Condition: This issue is seen only with PCS deployed on Alibaba Cloud and OpenStack hypervisors.</p> <p>Workaround: None. There is no functionality loss though. PCS will function without any issues.</p>
Release 9.1R5 PRs	
PRS-390106	<p>Symptom: Inconsistent upgrade issues seen while upgrading Hyper-V images in clustering and single node.</p> <p>Condition: Upgrading a Hyper-V image to 9.1R5.</p> <p>Workaround: If cluster upgrade fails, reboot the node which is not upgraded. If the issue persists, try upgrading the nodes individually and then form cluster.</p>
PRS-389742	<p>Symptom: Cannot register the device with Intune to get SCEP profile that has IMEI as common name.</p> <p>Condition: The devices like Wi-fi only iPad / Wi-Fi only android tablets that do not have IMEI support or do not have IMEI.</p> <p>Workaround: None.</p>
PRS-389737	<p>Symptom: Cluster VIP is not getting migrated to other node when active node's internal interface is not reachable and external port is reachable.</p> <p>Condition: In AP Cluster configured with both internal and external port, when active node's internal port became unreachable.</p> <p>Workaround: Reboot the cluster node having issue with internal interface is unreachable.</p>

Problem Report Number	Release Note
PRS-389642	<p>Symptom: XML import is failing if configuration file has syslog IPv6 settings.</p> <p>Condition: if one of the devices configured IPv6 syslog server on log settings, the XML import will fail on another device if the same XML is exported from first device.</p> <p>Workaround: Export the binary system configuration and import on another device.</p>
PRS-389451	<p>Symptom: TCPDump fails to capture packets when multiple interfaces are selected.</p> <p>Condition: When multiple interface - Internal, External and Management are selected.</p> <p>Workaround: Select individual interface to capture packets using TCPDump.</p>
PRS-389409	<p>Symptom: User sessions will be removed for the session logged in at the time of second node upgrade in AP cluster.</p> <p>Condition: During AP cluster upgrade, when the first node comes up after upgrading newer version, it informs other node to upgrade. During this time if any new user logs in, then all those sessions will be removed after second node goes for upgrade.</p> <p>Workaround: User needs to re-login.</p>
PRS-388121	<p>Symptom: Reliable users may be prompted for secondary authentication despite Adaptive authentication being enabled for the realm.</p> <p>Condition: Adaptive Authentication feature may not work in some scenarios where nodes are in the cluster setup.</p> <p>Workaround: None.</p>
Release 9.1R4.3 PRs	
No new known issues found in this release	
Release 9.1R4.2 PRs	
No new known issues found in this release	
Release 9.1R4.1 PRs	
No new known issues found in this release	
Release 9.1R4 PRs	
PCS-18480	<p>Symptom: Bookmark based access flow for Cloud based apps does NOT support MFA.</p> <p>Condition: When user tries to access any Cloud apps using Bookmark based flow, MFA based Conditional Access policies does Not work and will Deny the access to user.</p> <p>Workaround: Access Cloud apps using SP Initiated flow for MFA to work, or do NOT configure MFA for these Bookmark based Cloud apps.</p>
PCS-18217	<p>Symptom: License report did not show proper values for older dates (Dec month) after upgrading to 9.1R4 image.</p> <p>Condition: License report generated from License server running with lesser than 9.1R4 version will have older data (For example: Dec-2019) and after upgrading the license sever to 9.1R4 image, data for older months will not be accurate.</p> <p>Workaround: None</p>

Problem Report Number	Release Note
PCS-18002	<p>Symptom: Pulse Collaboration meeting is not getting launched with PSAL in macOS Catalina from the second time.</p> <p>Condition: In macOS Catalina, Pulse Collaboration meeting can be launched only after the fresh download of the client. If we try to relaunch the meeting, it is getting failed.</p> <p>Workaround: Delete the Pulse Collaboration client folder and perform a fresh download before launching the meeting.</p>
PCS-17932	<p>Symptom: TOTP server, Certificate server and SAML server authentication do not work for MFA based Conditional Access policy settings.</p> <p>Condition: When TOTP server, Certificate server and SAML server are configured as MFA server for Conditional Access.</p> <p>Workaround: Any other supported Authentication server can be configured as MFA server.</p>
PCS-17926	<p>Symptom: License report doesn't show the software version for one of the members cluster setup.</p> <p>Condition: When cluster is in license client</p> <p>Workaround: None (Display issue).</p>
PRS-387697	<p>Symptom: HOB launch on CentOS failing when Oracle JDK is installed.</p> <p>Condition: Oracle JDK installed on CentOS.</p> <p>Workaround: Install OpenJDK.</p>
PRS-387572	<p>Symptom: AliCloud PCS-7K-V: Watchdog restarting cgi-server auth processes (cgi).</p> <p>Condition: Beyond 20K concurrent users under Pulse ESP and PSAM throughput test.</p> <p>Workaround: None</p>
PRS-387499	<p>Symptom: Hob auto-launch - PSAL failing with error "Failed to contact server".</p> <p>Condition: When auto-launch is enabled on HOB bookmark.</p> <p>Workaround: Disable auto-launch.</p>
PRS-387452	<p>Symptom: SSH does not work after restarting services in AWS and Azure.</p> <p>Condition: After performing restart services.</p> <p>Workaround: SSH works after a reboot.</p>
PRS-387192	<p>Symptom: Rewriter issues with SharePoint 2019 – a few buttons and icons does not load and rename file does not work.</p> <p>Condition: When using PCS web bookmark for the new SharePoint 2019 server.</p> <p>Workaround: Switch to Classic View in SharePoint 2019.</p>
PRS-384976	<p>Symptom: Host Checker error found Intermittently while installing Pulse Client via Chromium Edge browser in presence of Host Checker configured.</p> <p>Condition: Host Checker configured.</p> <p>Workaround: Click on Ignore button.</p>

Release 9.1R3 PRs

Problem Report Number	Release Note
PCS-15327	<p>Symptom: When trying to restart PCS from vCenter, PCS shuts down instead of restart.</p> <p>Condition: When trying to restart PCS using the Restart Guest option from vCenter.</p> <p>Workaround: Restart PCS using the PSA-V virtual console.</p>
PRS-382259	<p>Symptom: DNS address and domain names are taken from DHCP server when deploying new PCS instance in AWS and Azure.</p> <p>Condition: When passing DNS address and domain name as parameter for initial configuration, DNS address and domain name are taken from DHCP server.</p> <p>Workaround: Reconfigure DNS address and domain in network over view page.</p>
PRS-382085	<p>Symptom: Not able to enable "copy/paste" option for end user created bookmarks after upgrade from 9.1R2 to 9.1R3.</p> <p>Condition: After an upgrade, not able to enable "copy/paste" option in the end user created bookmarks.</p> <p>Workaround: The user has to delete and create the bookmarks to enable "copy/paste" option.</p>
PRS-382083	<p>Symptom: Not able to enable "copy/paste" option via RDP launcher URL.</p> <p>Condition: When trying to enable "Copy/paste" option via RDP launcher URL.</p> <p>Workaround:</p> <ul style="list-style-type: none"> • User should use admin created bookmark. • User should use end-user created bookmark.
PRS-382078	<p>Symptom: AWS or Azure new PCS deployment fails when customer using old templates with admin password is less than 10 characters.</p> <p>Condition: When the template contains admin password with less than 10 characters.</p> <p>Workarounds: Customer has to provide admin password length with minimum of 10 characters.</p>
PRS-382021	<p>Symptom: Dismiss until next upgrade option is not working for banner related to perpetual licensing.</p> <p>Condition: Admin clicks on Dismiss until next upgrade.</p> <p>Workaround: Use the Close button for temporary solution.</p>
PRS-381990	<p>Symptom: During peak hours when multiple users try to do browser-based login on PSA5K, a few users might not be able to connect in the very first attempt.</p> <p>Condition: When PCS is upgraded to 9.1R3 on PSA5K.</p> <p>Workaround: When the failed user tries to reconnect, the login will happen successfully.</p>
PRS-381853	<p>Symptom: Azure PCS - Network interface speed is showing as "Unknown" in the Network Overview page.</p> <p>Condition: When deploying new PCS instance in Azure, the network interface speed is showing as "Unknown" in the Network Overview page.</p> <p>Workaround: This is just a display issue.</p>

Problem Report Number	Release Note
PRS-381707	<p>Symptom: Intermittently, Behavioral analytics dashboard page shows "Unable to connect to database" error.</p> <p>Condition: Sometimes, when admin navigates to Behavioral analytics dashboard page, "Unable to connect to database" error is seen.</p> <p>Workaround: Administrator can reload the Behavioral analytics dashboard page after some time to get the details on the page.</p>
PRS-381579	<p>Symptom: Sometimes logs are not shown under Log/Monitoring page.</p> <p>Condition: Not applicable.</p> <p>Workaround: Refresh the page or click on the Update button on the logs page.</p>
PRS-381554	<p>Symptom: When File rule configured for validating a file location using System default Directories <%HOME%> policy evaluation failed on macOS 10.14x or any higher versions.</p> <p>Condition: If file located at System Directories <%HOME%> and configured a Hostcheck policy with File Rule for macOS 10.14.x or higher versions.</p> <p>Workaround: Need to add permissions for "Pulse Client" under "Accessibility" and "Full Disk Access" and which can be accessed from "System Preferences" > "Security & Privacy"-> "Privacy</p> <p>Or without providing permission /tmp location can be used for File validation.</p>
PRS-381403	<p>Symptom: Sharing Feature is not working in macOS Catalina.</p> <p>Condition: When Attendee Joined in Pulse Collaboration meeting via macOS Catalina, Attendee cannot share the Desktop. But Attendee can view the Presenter's screen.</p> <p>Workaround: None</p>
PRS-367403	<p>Symptom: Pulse collaboration not getting launched in macOS.</p> <p>Condition: When the Java version above 8 is installed in the macOS, Pulse collaboration will not launch.</p> <p>Workaround: Use Java version 8 for launching the Pulse collaboration in macOS.</p>
Release 9.1R2 PRs	
PRS-14530	<p>Symptom: Shutdown of PSA-V deployed on KVM hypervisor does not complete.</p> <p>Conditions:</p> <ul style="list-style-type: none"> • PSA-V is deployed on KVM hypervisor. • Shutdown is initiated from PSA-V virtual console. <p>Workaround: None</p>
PRS-361501	<p>Symptom: Sometimes end-user is unable to access backend resources.</p> <p>Conditions:</p> <ol style="list-style-type: none"> 1 PCS is deployed as an AP cluster. 2 Admin has configured VLAN source IP under User Roles. 3 VIP changes from active node to passive node. <p>Workaround: Log out and then log back in as an end user.</p>

Problem Report Number	Release Note
PRS-374575	<p>Symptom: DNS Search Order notes for macOS needs correction as Device only DNS is supported in macOS.</p> <p>Condition: macOS supports Device only DNS.</p> <p>Workaround: None</p>
PRS-377549	<p>Symptom: Older PSIS is not upgrading to 9.1R2 PSIS version.</p> <p>Condition: When CTS, WTS and VDI gets upgraded to 9.1R2 in Windows 10 Redstone 5 and later, PSIS is not upgraded to latest version.</p> <p>Workaround: None. Old PSIS will continue to work and no impact seen.</p>
PRS-377700	<p>Symptom: Using REST API - Archiving Schedule settings change from hourly to specified time does not update the hour/minute setting.</p> <p>Condition: None</p> <p>Workaround: Apply the same API again the second time.</p>
PRS-378101	<p>Symptom: JSAM fails to launch on Mac OS Catalina 10.15.</p> <p>Conditions:</p> <ul style="list-style-type: none"> • Configured a role with Host checker. • Configured JSAM access with auto-launch. <p>Workaround: None</p>
PRS-379014	<p>Symptom: After single logout with PCS as SP, the SP lands on either IdP page or SP page.</p> <p>Condition: PCS is configured as IdP and another PCS configured as SP with single logout enable.</p> <p>Workaround: None.</p>
Release 9.1R1 PRs	
PRS-373762	<p>Symptom: Named User Remote Repo (NURR) mode does not work when MSSP unlimited license is installed on the License server.</p> <p>Condition: MSSP Unlimited License installed on License server.</p> <p>Workaround: Pulse Secure advises MSSP customers with MSSP SKU to not use NURR mode.</p>
PCS-11922	<p>Symptom: DNS Port selection will not take any effect. DNS traffic will go through Internal Port only.</p> <p>Condition: On a PCS Virtual Appliance, when Administrative Network is enabled under Traffic Segregation. This issue is not applicable for PSA Hardware Devices.</p> <p>Workaround: None</p>
Cloud Secure	
PRS-371781	<p>Symptom: Blocked ECP users will not be updated if Generic is selected under LDAP server Type.</p> <p>Condition: LDAP server type selected is Generic.</p> <p>Workaround: Select the LDAP server type as Active Directory.</p>

Problem Report Number	Release Note
PRS-372846	Symptom: Blocked ECP users will have a “Blocked till time” of 5 minutes. Condition: Request count for a particular user is less than 3. Workaround: None
PRS-372861	Symptom: Blocked ECP users will not be removed from the ECP reports page based on “Blocked till time”. Condition: When a user entry is present in the ECP reports page. Workaround: None

Documentation

Pulse documentation is available at <https://www-prev.pulsesecure.net/techpubs/>

Technical Support

When you need additional information or assistance, you can contact "Pulse Secure Global Support Center (PSGSC):

- <https://support.pulsesecure.net/>
- support@pulsesecure.net

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

For more technical support resources, browse the support website <https://support.pulsesecure.net/>