Oracle® Enterprise Communications Broker

Release Notes

Release PCZ3.1.0
F19868-03
August 2020

Oracle Enterprise Communications Broker Release Notes, Release PCZ3.1.0

F19868-03

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About This Guide

This guide provides the following information about the Oracle Enterprise Communications Broker (OECB) hardware and software.

- Specifications and requirements
- Upgrades and downgrades
- New features and enhancements
- Known issues, caveats, and limitations

Documentation Set

The following table describes the documentation set for the OECB.

Document Name	Document Description
Release Notes	Contains information about the current release, including specifications, requirements, new features, enhancements, inherited features, known issues, caveats, and limitations.
Administrator's Guide	Describes how to deploy the system.
User's Guide	Describes how to configure SIP signaling management and how to tailor the system to specific needs.
Help system	Contains task-oriented topics for configuring, administering, maintaining, and troubleshooting the ECB hardware and software.
SBC Family Security Guide	Provides information about security considerations and best practices from a network and application security perspective for the Session Border Controller family of products.

Related Documentation

The following table describes related documentation for the OECB.

Document Name	Document Description
Installation and Platform Preparation Guide	Contains conceptual and procedural information for system provisioning, software installations, and upgrades.

Revision History

The following table lists changes to this document and the corresponding dates of publication.

Date	Description
March 2019	• Initial Release
October 2019	• Updates Known Issues table for PCZ3.1.0p2.
January 2020	• Updates Known Issues table for PCZ3.1.0p2.
August 2020	• Updates Known Issues table for PCZ3.1.0p5 and PCZ3.1.0p6.

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Specifications and Requirements

Oracle recommends that you review the following information before installing the software.

Supported Platforms

Platforms

- Netra X3-2 — Ships with the Operating System and software installed.
- Netra X5-2 — Ships with the Operating System and software installed.
- Netra X7-2 — You must install the Operating System and software from a USB memory device.
  - Go to My Oracle Support (MOS) at https://support.oracle.com to download the Operating System and software. See "Download Software from MOS."
  - See "Software Installation - Oracle X7-2 Platforms" in the *Oracle Enterprise Session Border Controller Installation and Platform Preparation Guide* on https://docs.oracle.com/cd/E95619_01/index.htm for installation instructions.

Image and Boot Loader Files

The PCZ3.1.0 release uses the following image and boot loader files:

- Image—nnPCZ310.bz
- Boot loader—nnPCZ310.boot

Default Cores and Threads

The following list shows the default number of cores and the expected number of SIP threads per platform. Note that the number of SIP threads may vary, depending on the configuration of your deployment.

- VM—Default 5 cores. Yields 3 SIP threads.
- Netra X3-2, Netra X5-2, and Netra X7-2—Default16 cores. Yields 9 SIP threads.

Download Software from MOS

When you want to get a software release or a patch from Oracle, go to My Oracle Support (MOS) and download it to your system or to a USB memory device.

- Establish an account with My Oracle Support.

The following procedure requires you to enter your MOS credentials to log on.

1. Go to https://support.oracle.com and log on.
2. Click the **Patches & Updates** tab.

3. On the Patch Search pane, click the **Search** tab.
4. On the Search dialog, do the following:
   a. Product is—Select a product from the drop-down list.
   b. Release is—Select a release from the drop-down list.
5. Click **Search**.
6. On the Patch Advanced Search Results page, click the patch that you want.

   The system displays information about the patch, and a dialog where you can open the Read Me file and download the software.
7. In the dialog, do the following:
   - Read Me—Click to see the build notes.
   - Download—Click to download the software.
8. Log off.

Platform Boot Loaders

The Oracle Enterprise Communications Broker (OECB) platforms require a boot loader to load the operating system and software.

All ECB platforms require that the boot loader and the software image match per release. For example, if the software image filename is nnPCZ310.bz, use the corresponding boot loader file named nnPCZ310.boot.

You must install the boot loader file as /boot/bootloader on the target system. When you plan to upgrade the system image, upgrade the boot loader before booting the new system image.

Upgrade Paths

The PCZ3.1.0 release supports the following upgrade paths:

- PCZ2.2.0 to PCZ3.1.0
- PCZ3.0.0 to PCZ3.1.0

Schema Changes

The Oracle Enterprise Communications Broker (OECB) requires the PCZ3.1.0 configuration schema to support creating multiple VLANS. You must upgrade the configuration schema after you upgrade the software.

After upgrading the software to PCZ3.1.0, the system prompts you to upgrade the configuration schema the first time you log on. The configuration upgrade creates a network called "ecb" and a SIP interface with the Realm ID set to "ecb." The upgrade also exposes the Realm ID parameter in the session agent, SIP interface, LDAP, and ENUM configurations. The configuration upgrade defaults all Realm IDs to "ecb" for existing configuration elements. After the system creates the "ecb" network and adds Realm ID parameter, you can add up to four VLANs. You can set the Realm ID, as needed, in the newly added VLANs.

The updated schema makes the following changes to the GUI to support configuring multiple VLANs.

Networks Configuration

The relationship between networks and SIP interfaces is one-to-one, where the network realm-id must be unique in each SIP interface configuration. Formerly, the Networks configuration page displayed all of the necessary parameters in a static format because the system supported only one network. Now, the Networks page differs because it displays the multi-instance configuration dialog, so that you can configure multiple networks with unique parameters. When you click **Add** on the Networks page, the OECB displays the Network settings page with all of the necessary parameters and the functionality to create more than one network. The Networks page also includes the following newly added parameters:

- Realm Identifier - The name of the interface, which must be unique in each configuration. Default: None. Valid values: Any.
- Enable REFER Termination - Terminate and process SIP REFER messages as call transfers to avoid proxying the REFER back to the User Agent. Default: Disabled.
- Send NOTIFY for REFER provisional responses - Send 202 Accepted and 180 Ringing NOTIFY messages for REFER provisional responses. Default: None. Valid values: all | initial | none.
- Enable TOS marking - Mark all egress SIP signaling packets for ToS on this interface. Default: Disabled.
- TOS value - Set the RFC 2475 compliant value that you want the OECB to insert in all egress SIP signaling traffic from this interface. Default: 0x00. Valid values: Any integer in decimal or hexadecimal format.

SIP Interface Configuration

Because previous releases supported only a single SIP Interface, all general SIP configuration elements were included in the Interfaces configuration. Now, with support for up to four SIP Interfaces, you must configure certain parameters uniquely for each interface.

New sip-config Object

To support configuring multiple VLANs, Oracle modified the "Interfaces" configuration by moving the following parameters into the newly added "Sip-config" object. (Configuration, Interface, sip-config). .

- Enum sag match—Use to enable and disable Session Agent Group matching, where the ECB considers session agent groups as part of the response from the ENUM server. Default: disabled. Valid selections: enabled | disabled.
- Default context—Use to set the default context the system uses for a call when it is unable to identify the source context by way of any other method. Default: Empty. Valid values: Name of a valid, existing dial context.
- Parallel forking—Use to enable and disable the system to fork all sessions to all contacts in an Agent of Record. Default: disabled. Valid values: enabled | disabled.
- Fork group timeout—Use to set the time, in seconds, after which the system tries the next fork group with the highest priority. Default: 0. Range: 0-32.

- Ascii based routing—Use to enable and disable routing based on alphanumeric entries in the User database. Default: disabled. Valid values: enabled | disabled.
- Proxy registration—Use to enable or disable the system to accept a registration from an unauthorized domain, and proxy the registration to the intended registrar. Default: disabled. Valid selections: enabled | disabled.

New SIP ports Configuration Dialog

Formerly, the SIP port was a stand alone parameter specified outside of the SIP interface configuration because there was only one SIP interface. Starting with PCZ3.1.0, you must configure a SIP port for each SIP interface. For this reason, the SIP interface configuration now includes the multi-instance SIP Ports configuration dialog where you set the following:

- Address-The IP address of this interface.
- Port-The port for this interface. Default: 5060. Range: 0-65535.
- Transport protocol-Default: UDP. Valid values: UDP, SCTP, TCP, and TLS.
- Allow anonymous (Formerly; Allow Session Agents and Registered End Points Only)-Set the criteria for accepting and processing a SIP request from another SIP element. Default: All. Valid values: All (allow all anonymous requests) | Registered (Allow session agents and registered endpoints.)

Agents Configuration

PCZ3.1.0 exposes the RealmID parameter in the Agents configuration. The configuration upgrade sets Realm ID to "ecb" for existing Agent configurations. You can set the Realm ID, as needed, for newly added VLANs.

LDAP Configuration

PCZ3.1.0 exposes the RealmID parameter in the LDAP configuration. The configuration upgrade sets Realm ID to "ecb" for existing LDAP configurations.

> **Note:**
>
> Only the "ecb" realm can support LDAP.

ENUM Configuration

PCZ3.1.0 exposes the RealmID parameter in the ENUM configuration. The configuration upgrade sets Realm ID to "ecb" for existing ENUM configurations. You can set the Realm ID, as needed, for newly added VLANs.

SPL Support

The Oracle Enterprise Communications Broker supports the following Session Plug-in Language (SPL) engines.

- C2.0.0
- C.2.0.1
- C2.0.2

- C2.0.9
- C2.1.0
- C3.0.0
- C3.0.1
- C3.0.2
- C3.0.3
- C3.0.4
- C3.0.5
- C3.0.7
- P1.0.0
- P1.0.1

TLS Cipher Updates

Note the following changes to the DEFAULT cipher list.

Oracle recommends the following ciphers, and includes them in the DEFAULT cipher list:

- TLS_DHE_RSA_WITH_AES_256_GCM_SHA384
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA256
- TLS_DHE_RSA_WITH_AES_128_GCM_SHA256
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA256
- TLS_RSA_WITH_AES_256_CBC_SHA256
- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256
- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA384

The following ciphers have been added and included in the DEFAULT cipher list in CZ810m1p6:

- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384
- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256

Oracle supports the following ciphers, but does not include them in the DEFAULT cipher list:

- TLS_RSA_WITH_AES_256_GCM_SHA384
- TLS_RSA_WITH_AES_128_GCM_SHA256
- TLS_RSA_WITH_AES_128_CBC_SHA
- TLS_RSA_WITH_3DES_EDE_CBC_SHA

Oracle supports the following ciphers for debugging purposes only:

- TLS_RSA_WITH_NULL_SHA256 (debug only)

- TLS_RSA_WITH_NULL_SHA (debug only)
- TLS_RSA_WITH_NULL_MD5 (debug only)

Oracle supports the following ciphers, but considers them not secure. They are not included in the DEFAULT cipher-list, but they are included when you set the **cipher-list** attribute to **ALL**. Note that they trigger **verify-config** error messages.

- TLS_DHE_RSA_WITH_AES_256_CBC_SHA
- TLS_RSA_WITH_AES_256_CBC_SHA
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA
- TLS_DHE_RSA_WITH_3DES_EDE_CBC_SHA

To configure TLS ciphers, use the **cipher-list** attribute in the **tls-profile** configuration element.

> **WARNING:**
>
> When you set **tls-version** to either **tlsv1** or **tlsv11** and you want to use ciphers that Oracle considers not secure, you must manually add them to the **cipher-list** attribute.

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New Features

The PCZ3.1.0 release delivers the following enhancements to improve the functionality of the Oracle Enterprise Communications Broker (OECB) software.

Alphanumeric User Database and Call Routing Entries

The OECB allows you to enter alphanumeric entries in the User database and in the routing table because it can modify the request URI to use either alphanumeric or numeric entries, depending on the setting you choose for **egress-uri-mode**. When the OECB locates the home agent to which the call is routed, it uses one of the following configurable values from the **egress-uri-mode** parameter in the Agent configuration to determine whether or not to convert the request URI:

- No-conversion (Default)-The OECB adds only the IP address of the Home Agent in the outbound call.
- Convert-to-aor- When the incoming URI is a number, the OECB replaces it with the configured address of record in the outbound call.
- Convert-to-number-When the incoming URI is an Address of Record, the OECB replaces it with the configured number in the outbound call.

See "Alphanumeric User DB and Call Routing Entries" and "Configure a Session Agent" in the *User Guide*.

Automatically Upload Updated CSV Configuration Files

When you want to automatically update selected configuration objects on the OECB, you can enable the system to periodically check for updates and automatically upload the CSV configuration file. In the CSV file, you can specify the operation that you want the OECB to perform upon upload, such as add, modify, and delete data. The supported configuration objects include Agents, Dial Plan, Users, and Routing.

When enabled, the OECB checks /code/csv every two minutes for a new file and uploads it to the OECB.

See "Automatically Upload Updated CSV Configuration Files" and "Configure Automatic CSV Configuration File Upload" in the *User Guide*.

Enable ENUM Session Agent Group Matching

When you want the OECB to consider session agent groups as part of the response from the ENUM server, set the **enum sag match** parameter in **sip config** to enable. With this parameter enabled, the OECB matches session agent group names received from the ENUM server with the hostname portion in the naming authority pointer. In this way, the OECB supports a group of session agents as a SIP designation in the OECB ENUM request.

See "Enable ENUM Session Agent Group Matching" in the *User Guide*.

FTP Push for CDR Files

In addition to local and RADIUS server storage, the OECB can send accounting files to an FTP server. You can use FTP-push to copy local Call Detail Record (CDR) files to a remote FTP server on a periodic basis. At the specified time interval (file rotate time), the OECB closes the current file and pushes the files that are complete and have not yet been pushed, including the just-closed file to the FTP server. The OECB supports configuring up to five FTP push servers to receive accounting files. Use the **Push Recevier Add** dialog located on the **account-config** page to access the parameters for creating a list of FTP push receivers.

See "Accounting Configuration Changes" in the "GUI Changes" topic in the *Release Notes*, and "FTP Push", "Add an FTP Push Receiver", "Configure Accounting", and "Configure an Accounting Server" in the *Administrator's Guide*".

Support for Multiple VLANs

The OECB allows you to configure up to four separate Virtual Local Area Networks (VLAN) to help manage your deployment. For example, you might want separate networks for certain departments or locations. Each VLAN connects to its own uniquely defined network interface and SIP interface, which allows you to create separate networks. Beginning with the PCZ3.1.0 release, the system creates one network called "ecb" and one SIP interface with the Realm ID set to "ecb" when you perform the initial configuration. The system also populates the Realm ID parameter in the Session Agent, LDAP, and ENUM configurations with "ecb."

See "Support for Multiple VLANs", "Add Multiple VLANs", "Network Interface Configuration", "Configure a Network Interface", and "Configure SIP config" in the *Administrator's Guide*.

3
GUI Changes

The PCZ3.1.0 release includes the following changes to the GUI.

Changes to Accounting Configuration

The following changes and enhancements to the accounting configuration support FTP push.

The **Accounting** navigation pane no longer displays the **Account Server** configuration link. Only the **Accounting** link remains. Oracle moved the **Account Server** configuration controls and parameters onto the **Accounting Configuration** page, which displays when you click the remaining **Accounting** link.

On the **Accounting Configuration** page, Oracle changed **Generate interim** from a single-instance drop-down list to a multi-instance configuration element and added the **Push receiver** configuration dialog, also a multi-instance configuration element. Note the following behavioral differences:

Pre-PCZ3.1.0 Behavior	PCZ3.1.0 Behavior
The **Generate interim** parameter displays a drop-down list of interim events to collect. You can specify only one interim event to collect.	The **Generate interim** parameter displays the multi-instance **Add** dialog where you can specify multiple interim events to collect. The system adds each event to the list on the **Account config** page.
FTP Push displays a hide-show toggle for the FTP push parameters. The parameters allow you to enable FTP Push and configure one FTP push receiver.	The hide-show toggle is removed and the **Accounting Configuration** page displays the **Push receiver** dialog, where you can **Add** multiple FTP push servers. The system adds each push server to the list on the **Accounting Configuration** page.

The **Accounting Configuration** and **Push receiver** pages also include the following label changes that affect the existing parameters:

Page	Pre-PCZ3.1.0 label	PCZ3.1.0 label
Add Accounting Configuration	Intermediate period (in seconds)	Intermediate period
Add Accounting Configuration	Enable file output	File output
Add Accounting Configuration	File rotate time interval (Minutes)	File rotate time
Add Accounting Configuration	Maximum file size (bytes)	Max file size
Add Accounting Configuration	Enable Ftp push	FTP push
Add Push receiver	Ftp IP address	Server
Add Push receiver	Ftp remote file path	Remote path

The PCZ3.1.0 release deprecates the following parameters, except when no **Accounting Configuration** and **push-receivers** configuration elements are defined:

- FTP port
- FTP user
- FTP address
- FTP password
- FTP remote path

See "Configure Accounting" and "Configure an Accounting Server" in the *Oracle Enterprise Communications Broker Administrator's Guide.*

Changes to Support Configuring Multiple VLANs

Oracle made the following changes to the GUI to support configuring multiple Virtual Local Area Networks (VLAN).

See "Schema Changes" in the *Oracle Enterprise Communications Broker Release Notes.* for more information, including descriptions of the following parameters and the behavior of the configuration objects.

Networks Configuration

Formerly, the Networks configuration page displayed all of the necessary parameters in a static format because the system supported only one network. Now, the Networks page differs because it displays the multi-instance configuration dialog, so that you can configure multiple networks with unique parameters. The Networks page also includes the following newly added parameters:

- Realm Identifier
- Enable REFER Termination
- Send NOTIFY for REFER provisional responses
- Enable TOS marking
- TOS value

Interfaces Configuration and New sip-config Object

To support configuring multiple VLANs, Oracle modified the "Interfaces" configuration by moving the following parameters into the newly added "Sip-config" object. (Configuration, Interface, sip-config).

- ENUM sag match
- Default context
- Parallel forking
- Fork group timeout
- ASCII based routing
- Proxy registration

SIP Ports Configuration

Formerly, the SIP port was a stand alone parameter specified outside of the SIP interface configuration because there was only one SIP interface. Now you must configure a SIP port for each SIP interface. For this reason, the SIP interface configuration now includes the multi-instance SIP Ports configuration dialog where you set the following:

- Address
- Port
- Transport protocol
- Allow anonymous (Formerly; Allow Session Agents and Registered End Points Only)

Agents Configuration

- Exposes the **RealmID** parameter to support configuring multiple VLANs.
- Adds the **egress uri mode** parameter to support alphanumeric entries in the user database and routing tables. See "Alphanumeric User Database and Call Routing Entries."

LDAP Configuration

Exposes the **RealmID** parameter to support configuring multiple VLANs.

ENUM Configuration

Exposes the **RealmID** parameter to support configuring multiple VLANs.

4

Caveats, Known Issues, and Limitations

Oracle provides behavioral information that you need to know about the release in the form of caveats, known issues, and limitations. A caveat describes behavior that you might not expect, and explains why the system works in a certain way. A known issue describes temporarily incorrect or malfunctioning behavior, and often includes a workaround that you can use until Oracle corrects the behavior. A limitation describes a functional boundary or exclusion that might affect your deployment.

Caveats

The following items describe caveats in the P-CZ3.1.0 release.

LDAP Support

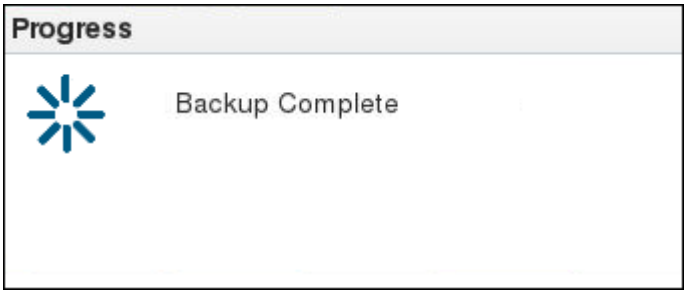
Only the default "ecb" network can support LDAP. Additional networks cannot.

Registrar Support

Only the default "ecb" network can act as the registrar. Additional networks cannot.

Set Initial Configuration Appears to Stall

When attempting to run "Set Initial Configuration" from the GUI, the operation may stall while displaying the following "Backup Complete" message:



Work-around: Refresh the browser, log back into the GUI, and run Set Initial Configuration again.

Call Routing

The ECB cannot route a call when the "Name or Pattern" parameter in the User Database includes the + character.

ECB Sync Compatibility

ECB Sync is supported only between nodes with similar platforms. For example, a mix of X3/X5/X7 is supported, but not a VM and X7.

Deprecated Ciphers

The system deprecates the following ciphers, adhering to recent OpenSSL changes intended to eliminate weak ciphers:

- All DES-CBC ciphers, including:
  - TLS_DHE_RSA_WITH_DES_CBC_SHA
  - TLS_RSA_EXPORT1024_WITH_DES_CBC_SHA

Oracle recommends that you remove any prior version configuration that uses these ciphers, and that you do not configure a security profile with the expectation that these ciphers are available. Note also that TLS profiles using the **ALL** (default) value for the **cipher-list** parameter no longer use these ciphers.

> **Note:**
>
> The ACLI may still display these ciphers when you run **cipher-list ?**, but the system does not support them.

Known Issues

The following table lists Known Issues and provides the Service Request ID number, a description of the issue, any workaround, when the issue occurred, and when Oracle fixed the issue. This table includes issues from previous releases that either remain open or are resolved in this release. Issues from previous releases that do not appear here do not apply to this release. You can also find information about resolved issues in the Build Notes for this release.

ID Number	Description	Found In	Fixed In
31630190	ECB going out of service after upgrade from PCZ3.1.0p4 to PCZ3.1.0p5.	PCZ3.1.0p5	PCZ3.1.0p6
29401925	The GUI does not allow you to edit a user database entry that contains an Address of Record. Work-around: Delete the entry and add it as a new entry with the changes that you want.	PCZ3.1.0	PCZ3.1.0p2

ID Number	Description	Found In	Fixed In
No ID number	If you want to establish a High Availability pair that uses IP addresses other than the defaults, perform the following procedure. Use this procedure regardless of whether the ECBs run on virtual or physical systems. The IP addresses you use must be available and valid in your network. If not, you must directly connect the two ECBs before performing this procedure to establish the HA pair initially. Note • Primary default—169.254.1.1 • Secondary default —169.254.1.2 Procedure 1. Perform the standard HA setup with the **run setup** command, and allow both systems to come up in an HA pair. 2. From the GUI, go to General, General, High Availability and assign the IP addresses that you want to use to the Primary and Secondary ECBs. 3. Move the wancom1 connection to the network that you want to use. (Either the physical connection, or for VMs, change the vswitch used by the wancom1 interface.)	PCZ3.0.0	

ID Number	Description	Found In	Fixed In
	4. Double reboot both systems, and they will come back up in an HA pair.		
28314178	When you turn on SIP debugging, you may see various unrelated messages displayed on the console. The messages do not prevent the ECB from generating logs, but they can make the console hard to use. Work-around: Use SSH when you turn on SIP debugging.	PCZ3.0.0	PCZ3.1.0p2

ID Number	Description	Found In	Fixed In
No ID number	If you see mapping errors after upgrading, for example errors about redundancy or media traffic, you may need to swap interface addresses. Work-around: Compare the MAC addresses on your Virtual Machine (VM) to those on your hardware. If the addresses are different, you need to swap interface addresses. Set the addresses on the hardware to match those from your VM. Use the **swap** command from the ECB command line. 1. Use SSH to access the command line prompt on the ECB. 2. From the ECB prompt type **sho interface mapping**, and press ENTER. The system displays its mappings. 3. Compare the mappings to your VM mappings. 4. Type **interface-mapping**, and press ENTER. 5. Type **swap <eth-if-name_1 eth-if-name_2>**, and press ENTER. Example: swap wancom0 s1p0 The system displays the interface mapping information after the swap and a warning that	PCZ3.0.0	PCZ3.1.0

ID Number	Description	Found In	Fixed In
	the change can affect services and requires a reboot. 6. At the Continue prompt, type **yes**, and press ENTER. 7. Exit the configuration. 8. Reboot the ECB.		
30576125	The ECB is reporting session limit inaccurately.	PCZ3.1.0p2	PCZ3.1.0p3
30574675	Inbound TLS fragmented packet failure when using Acano.	PCZ3.1.0p1	PCZ3.1.0p3
30355590, 30406870, 30464332	Some versions of ECB unable to load on some versions of OCSDM.	PCZ3.0.0p4	PCZ3.1.0p3

Limitations Removed

Oracle strives to improve the software and hardware with each successive release, which can sometimes modify or remove a previous limitation.

Number of VLAN Connections

The software no longer limits the number of VLAN connections to one. The software now allows up to four VLAN connections. See "VLAN Support."