# Oracle® Communications Policy Management

Feature Notice Release 9.4

**910-6735-001 Revision C**

April 2014

ORACLE®

Oracle® Communications Feature Notice Release 9.4

Copyright © 2013, 2014, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle America, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information on content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.

# Table of Contents

# Release Content

## Introduction

The 9.4 Feature Notice is updated to include the following features:

- *IPv6 Prefix Aggregation (PR 232881)*
- *IPv6 Prefix Filtering (PR 232880)*

The Policy Management solution for Release 9.4 introduces the following changes:

- *Migration of Customer's Legacy System to 9.4 (PR 216542)*
- *TPD Transition for the Cable Release of Policy including Direct Link HA Replication (PR 211148)*
- *MPE Georedundancy in the Cable Release (PR 211155)*
- *Moving BoD AM GUI into CMP (PR 216541)*
- *BoD Georedundancy (PR 211151)*
- *BoD AM must Support Alternate MPE Connection (PR 216556)*
- *Cable Session Cleanup for MPE and BoD (PR 227285)*
- *Find CMTS and MPE Associated with IP Address or Subnet (PR 227283)*
- *IPv6 Prefix Aggregation (PR 232881)*
- *IPv6 Prefix Filtering (PR 232880)*
- *PCMM I06 Updates for the CMP System and MPE Devices (PR 211146)*
- *PCMM I06 Updates for BoD (PR 224950)*
- *Short-Interval Activity Monitoring (TPS) (PR 227281)*
- *Support for IPTV (PR 211141)*
- *MGPI Support for Simultaneous IPv4 and IPv6 on the same Cable Modem (PR 227512)*
- *Allow Video Bandwidth above 1Mbps (PR 216537)*
- *Maintain Statistics for Valid Result Codes within each Message Type (PR 216539)*
- *Manager Statistics: Show Last Reset Time (PR 216536)*

## Migration of Customer's Legacy System to 9.4 (PR 216542)

The standard software upgrade is not supported for the installation of Release 9.4 due to underlying software changes. Instead, the migration is a function of Release 9.4, and migration capabilities and processes are defined to allow existing customers to transition their deployments to the release.

Release 9.4 Configuration Management Platform (CMP) system capabilities allow co-ordination with Multimedia Policy Engine (MPE) devices that are running a previous release. Release 9.4 MPE device capabilities allow the routing and handling of traffic between a mixed collection of 9.4 and previous release nodes.

Tekelec may provide assistance in customizing migration procedures to meet the needs of individual deployments. Further details of migrations support will be managed through the account team.

## TPD Transition for the Cable Release of Policy including Direct Link HA Replication (PR 211148)

The Cable release of Policy Management, including the CMP, MPE, Management Agent (MA), and Bandwidth on Demand Application Manager (BoD AM) components, is moved to the Tekelec Platform Distribution (TPD) platform.

All of the components will be compatible with HP Gen8 DL380 rack-mount hardware and will use COMCOL High-Availability. The MPE devices and the BoD servers will use the COMCOL database to store session and gate data.

High-Availability database replication traffic between rackmount servers will be carried on a direct link backplane, consisting of redundant Gigabit Ethernet links connected directly between the servers.

## MPE Georedundancy in the Cable Release (PR 211155)

The following MPE devices are used with the TPD platform and the CMP GUI:

- MPE-Routing (MPE-R): This MPE device is configured in stateless, non-policy-executing mode and is used to route PacketCable Multimedia (PCMM) and Rx traffic by IP subnet of the subscriber address to downstream MPE-Serving instances.
- MPE-Serving (MPE-S): This MPE device is configured in stateful, policy-executing mode and is used to manage resources across a pool of associated cable modem termination system (CMTS)/network elements.

The MPE-S devices can be deployed in a georedundant configuration, consisting of a trio of active, standby, and spare servers. These three servers form a georedundant cluster. The spare server does not have to be in the same location as the active and standby servers. If the active server fails, then the standby server becomes the active server. If both active and standby servers fail, then the remote spare server becomes the active server.

The MPE-S device that functions as the active server replicates application state data to the standby and spare servers. The replication provides continuity of PCMM and Rx operations and makes the services available during a catastrophic failure of the primary site or servers.

The CMP system is used to manage the georedundancy topology. The CMP system provides information that allows the MPE-R instances to route Rx and PCMM traffic to the MPE-S instances.

The MPE-R device manages PCMM and Rx connections with the active server for each MPE-S instance. The MPE-R device routes all PCMM and Rx traffic appropriate for a downstream MPE-S instance to the active server in that instance.

## Moving BoD AM GUI into CMP (PR 216541)

The BoD AM GUI is moved into the CMP framework. This transition allows management of distributed BoD servers in a single topology.

## BoD Georedundancy (PR 211151)

BoD servers can be deployed in a georedundant configuration, consisting of a trio of active, standby, and spare servers that form a georedundant cluster. The spare server does not have to be in the same location as the active and standby servers. If the active server fails, then the standby server becomes the active server. If both active and standby servers fail, then the remote spare server becomes the active server.

The active BoD server replicates application state data to the standby and spare servers to provide continuity for BoD session management, including correlated PCMM Gate state information, during a catastrophic failure of the primary site or servers.

The CMP system is used to manage the georedundancy topology.

## BoD AM must Support Alternate MPE Connection (PR 216556)

The BoD server is enhanced to support two IP addresses for PCMM messages. These addresses are configured on the CMP GUI.

When the BoD server receives an HTTP or SOAP request, the BoD server attempts to send the message to the primary server. If the primary server address is not available, the BoD server sends the message to the secondary server. When the primary server address becomes available, the BoD server resumes sending messages to the primary server. However, the secondary server remains available.

When the BoD server is shut down, all connections to the primary or secondary server are also shut down.

## Cable Session Cleanup for MPE and BoD (PR 227285)

The MPE devices support periodic detection and cleanup of Rx and PCMM sessions that have not had activity for a specified period. Stale PCMM and Rx session records are removed from the MPE device unless the MPE device can determine that the session is still valid.

Cleanup functionality for both sessions is enabled by default for the MPE device.

The BoD servers support detection and removal of PCMM sessions that have not had activity for a specified period. These sessions are removed when they are detected.

Cleanup functionality is disabled by default for the BoD server. It is expected that the calling application will be responsible for teardown of all sessions.

Cleanup functionality for the MPE device and the BoD server can be configured through the CMP GUI.

## Find CMTS and MPE Associated with IP Address or Subnet (PR 227283)

From the CMP GUI, a search can be performed based on the subscriber's IP address or subnet to find associated CMTS's and MPE devices.

If a subscriber IP address and mask code are entered, then any associated CMTS and MPE device are displayed. If the mask is left blank, then for purposes of the search, the input IP subnet is treated as an IP address, and the mask code is set automatically to 32 for IPv4 or 128 for IPv6.

## IPv6 Prefix Aggregation (PR 232881)

IPv6 prefixes can be aggregated into a single entry. This aggregation allows reduction of the data set when network behaviors, such as prefix delegation, cause multiple adjacent prefixes to be separately represented in the SNMP data.

IPv6 prefix aggregation is applied repeatedly to ensure that "aggregates of aggregates" are reduced to the minimum possible representation size in the data set for the discovered prefixes.

IPv6 prefix aggregation is configured in the CMP GUI and applied globally across the Policy Management system. IPv6 prefix aggregation changes are shown in the audit log. The result of aggregation functionality for each CMTS and the net result of aggregation functionality for all CMTSs are shown in the trace log.

## IPv6 Prefix Filtering (PR 232880)

IPv6 prefixes can be filtered and discarded from the data collected by the SNMP before the data is routed to the CMP system and the MPE devices.

IPv6 prefix filtering rules support the following matching criteria:

- Matching all prefixes in a given IP address/prefix length. For example, a filter could be configured to discard all prefixes within "2001::/16", which would discard all of "2001::/16", "2001:1000::/18", and "2001::0001/128".
- Matching a specific prefix length. For example, a filter could be configured to discard all prefixes with a prefix length of 128 by entering "*/128".
- Matching all prefixes. This filter would prevent the collection of any IPv6 prefixes. This criterion would be indicated as "*", with no prefix length specified.

IPv6 prefix filtering is configured in the CMP GUI and applied globally across the Policy Management system. When no IPv6 prefix filtering rules are configured, the filtering function is disabled. IPv6 prefix filtering changes are shown in the audit log. The result of filtering functionality for each CMTS and the net result of filtering functionality for all CMTSs are shown in the trace log.

## PCMM I06 Updates for the CMP System and MPE Devices (PR 211146)

The CMP system and associated MPE devices are updated to support revision I06 of the PCMM I06 standard.

All traffic profiles from the previous platform are supported on PCMM I06. The following new fields are added to the Traffic Profile page in the CMP GUI to support PCMM I06 traffic profiles:

- Upstream Peak Traffic Rate
- Minimum Buffer
- Target Buffer
- Maximum Buffer

Policy conditions and actions are updated to support these new fields.

The MPE devices are updated to support the new fields in the traffic profiles configured on the CMP system, while continuing to support the traffic profiles from the previous PCMM revisions.

## PCMM I06 Updates for BoD (PR 224950)

The BoD AM is updated to support revision I06 of the PCMM standard as follows:

- BoD servers can connect to MPE devices that use revision I06 of the PCMM standard.
- The value for the Differentiated Services Code Point (DSCP)/TOS Overwrite field can be configured from the CMP GUI. This field, combined with the 1-byte DSCP/TOS Mask, is used to identify bits in the IPv4 DSCP/TOS byte.
- The Upstream Peak Traffic Rate, Minimum Buffer, Target Buffer, and Maximum Buffer fields can be configured from the CMP GUI.
- The HTTP/SOAP Application Programming Interface supports the Upstream Peak Traffic Rate field using the UPPTR parameter.
- The PCMM I06 sessions are displayed in the BoD session viewer.

## Short-Interval Activity Monitoring (TPS) (PR 227281)

The TPS-PCMM and TPS-RX counters are added to the KPI dashboard. These counters indicate a short-term Transactions per Second (TPS) rate for PCMM and Rx transactions, respectively, at each managed MPE device. These counters are also available in the Trending report and in the OSSI/OMStats XML interface.

The KPI statistics are enhanced to track PCMM and Rx TPS transactions separately.

## Support for IPTV (PR 211141)

Support for IP-Television (IPTV) includes:

- Session modification
- Notification of session status change to calling party

**Session Modification**

The BoD server can modify the bandwidth and classifier parameters for an active session in response to an HTTP or SOAP request from calling applications that have previously established BoD sessions through the *createSession* API.

After receiving the request, the BoD server validates the parameters. If the validation succeeds, then depending on the requirements in the service profile, the BoD server uses the modified parameters or the parameter obtained from the active session to create a PCMM request and sends the request to the MPE device for processing.

After receiving the result from the MPE device, the BoD server updates the database and returns the result to the calling application.

If a session modification operation is successful, then the result consists of an indication of success and the BoD session-ID.

If the operation is unsuccessful, then the result consists of an indication of failure and a textual description of the failure type where possible.

**Notification of Session Status Change to Calling Party**

An HTTP interface can be established between the BoD server and a third-party calling application to allow the BoD server to inform the application in near real-time of events that change the session status.

## MGPI Support for Simultaneous IPv4 and IPv6 on the same Cable Modem (PR 227512)

Multiple Grants per Interval (MGPI) functionality can support IPv4 and IPV6 classifiers simultaneously on the same cable modem. The MGPI record can be aggregated on both IPv4 and IPv6 addresses of the cable modem when the MGPI functionality is turned on and a cable modem is associated with the device.

When locating an MGPI record corresponding to a cable modem, the IPv4 or IPv6 address of the cable modem is used as an indexing key, depending on the format of the Subscriber ID parameter in the command.

## Allow Video Bandwidth above 1Mbps (PR 216537)

The Rx-to-PCMM function will utilize the full DOCSIS specification of video scheduling requirements, allowing support of video stream bandwidths above 1Mbps.

## Maintain Statistics for Valid Result Codes within each Message Type (PR 216539)

The MPE device will maintain statistics counts for each valid protocol result code in response messages. For example, separate statistics counters would be maintained for *GateSetError* responses with each displayed PCMM error code.

## Manager Statistics: Show Last Reset Time (PR 216536)

The displayed statistics in the CMP system Reports pages will include the most recent reset time.

# References and Services

## Customer Care Center

The Tekelec Customer Care Center is your initial point of contact for all product support needs. A representative takes your call or email, creates a Customer Service Request (CSR) and directs your requests to the Tekelec Technical Assistance Center (TAC). Each CSR includes an individual tracking number. Together with TAC Engineers, the representative will help you resolve your request.

The Customer Care Center is available 24 hours a day, 7 days a week, 365 days a year, and is linked to TAC Engineers around the globe.

Tekelec TAC Engineers are available to provide solutions to your technical questions and issues 7 days a week, 24 hours a day. After a CSR is issued, the TAC Engineer determines the classification of the trouble. If a critical problem exists, emergency procedures are initiated. If the problem is not critical, normal support procedures apply. A primary Technical Engineer is assigned to work on the CSR and provide a solution to the problem. The CSR is closed when the problem is resolved.

Tekelec Technical Assistance Centers are located around the globe in the following locations:

**Tekelec - Global**

Email (All Regions): support@tekelec.com

- **USA and Canada**

  Phone:

  1-888-FOR-TKLC or 1-888-367-8552 (toll-free, within continental USA and Canada)

  1-919-460-2150 (outside continental USA and Canada)

  TAC Regional Support Office Hours:

  8:00 a.m. through 5:00 p.m. (GMT minus 5 hours), Monday through Friday, excluding holidays

- **Caribbean and Latin America (CALA)**

  Phone:

  +1-919-460-2150

  TAC Regional Support Office Hours (except Brazil):

  10:00 a.m. through 7:00 p.m. (GMT minus 6 hours), Monday through Friday, excluding holidays

  - **Argentina**

    Phone:

    0-800-555-5246 (toll-free)

  - **Brazil**

Phone:

0-800-891-4341 (toll-free)

TAC Regional Support Office Hours:

8:00 a.m. through 5:48 p.m. (GMT minus 3 hours), Monday through Friday, excluding holidays

- **Chile**

  Phone:

  1230-020-555-5468

- **Colombia**

  Phone:

  01-800-912-0537

- **Dominican Republic**

  Phone:

  1-888-367-8552

- **Mexico**

  Phone:

  001-888-367-8552

- **Peru**

  Phone:

  0800-53-087

- **Puerto Rico**

  Phone:

  1-888-367-8552 (1-888-FOR-TKLC)

- **Venezuela**

  Phone:

  0800-176-6497

- **Europe, Middle East, and Africa**

  Regional Office Hours:

  8:30 a.m. through 5:00 p.m. (GMT), Monday through Friday, excluding holidays

  - **Signaling**

    Phone:

    +44 1784 467 804 (within UK)

  - **Software Solutions**

    Phone:

+33 3 89 33 54 00

- **Asia**
  - **India**

    Phone:

    +91-124-465-5098 or +1-919-460-2150

    TAC Regional Support Office Hours:

    10:00 a.m. through 7:00 p.m. (GMT plus 5 1/2 hours), Monday through Saturday, excluding holidays
  - **Singapore**

    Phone:

    +65 6796 2288

    TAC Regional Support Office Hours:

    9:00 a.m. through 6:00 p.m. (GMT plus 8 hours), Monday through Friday, excluding holidays

## Emergency Response

In the event of a critical service situation, emergency response is offered by the Tekelec Customer Care Center 24 hours a day, 7 days a week. The emergency response provides immediate coverage, automatic escalation, and other features to ensure that the critical situation is resolved as rapidly as possible.

A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of the system's ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with the Tekelec Customer Care Center.

## Related Publications

The Policy Management product set includes the following publications, which provide information for the configuration and use of Policy Management products in the following environments:

**Cable**

- *Feature Notice*
- *Cable Release Notice*
- *Roadmap to Hardware Documentation*
- *CMP Cable User Guide*
- *Troubleshooting Reference Guide*
- *SNMP User Guide*
- *OSSI XML Interface Definitions Reference Guide*
- *Platform Configuration User Guide*
- *Bandwidth on Demand Application Manager User Guide*
- *PCMM specification PKT-SP-MM-I06* (third-party document, used as reference material for PCMM)

**Wireless**

- *Feature Notice*
- *Wireless Release Notice*
- *Roadmap to Hardware Documentation*
- *CMP Wireless User Guide*
- *Multi-Protocol Routing Agent User Guide*
- *Troubleshooting Reference Guide*
- *SNMP User Guide*
- *OSSI XML Interface Definitions Reference Guide*
- *Analytics Data Stream Reference*
- *Platform Configuration User Guide*

**Wireline**

- *Feature Notice*
- *Wireline Release Notice*
- *Roadmap to Hardware Documentation*
- *CMP Wireline User Guide*
- *Troubleshooting Reference Guide*
- *SNMP User Guide*
- *OSSI XML Interface Definitions Reference Guide*
- *Platform Configuration User Guide*

## Customer Training

Tekelec offers a variety of technical training courses designed to provide the knowledge and experience required to properly provision, administer, operate, and maintain Tekelec products. To enroll in any of the courses or for schedule information, contact the Tekelec Training Center at (919) 460-3064 or E-mail `training@tekelec.com`.

A complete list and schedule of open enrollment can be found at `www.tekelec.com`.

## Locate Product Documentation on the Customer Support Site

Access to Tekelec's Customer Support site is restricted to current Tekelec customers only. This section describes how to log into the Tekelec Customer Support site and locate a document. Viewing the document requires Adobe Acrobat Reader, which can be downloaded at www.adobe.com.

1. Log into the *Tekelec Customer Support* site.

   **Note:** If you have not registered for this new site, click the **Register Here** link. Have your customer number available. The response time for registration requests is 24 to 48 hours.

2. Click the **Product Support** tab.
3. Use the Search field to locate a document by its part number, release number, document name, or document type. The Search field accepts both full and partial entries.
4. Click a subject folder to browse through a list of related files.
5. To download a file to your location, right-click the file name and select **Save Target As**.