

Policy Management

Feature Notice Release 11.0

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Policy Server: Mobile Policy Gateway (MPG) - Copyright, Notice, Trademarks, and Patents

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Patents

This product may be covered by one or more of the following U.S. and foreign patents:

U.S. Patent Numbers:

7,738,440; 7,788,357; 7,805,515; 8,254,551; US 7961623; US 8073444;

Foreign Patent Numbers:

AU 2004247256; AU 2004247251; AU 2005208846; AU 2005208847; AU 2005286941; EP 1631917; EP 1997276; EP 2049909; JP 4395662; JP 4582346; JP 4652345; JP 4843610; ZL 200680049126.1;

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Release Content

Introduction

The Policy Management solution for Release 11.0 introduces the following changes:

- *Georedundant Configuration Support (PR 226613)*
- *Multi-Stream WAN Replication (PRs 221989 and 222399)*
- *Separate Traffic on Different VLANs (PR 222540)*
- *Dual Active Resolution (PR 223464)*
- *Prevent Duplicate Correlation ID on LI Interface (PR 223586)*
- *3GPP Compliance for Gx, Rx, and Sh Interfaces (PR 221797)*
- *Checkpoint Rollback Enhancements (PR 219580)*
- *CMP Bulk Operations (PR 228704)*
- *Codec Support Enhancements (PR 221799)*
- *Enhancements to Avoid Oscillations in System Response (PR 223504)*
- *Gx Race Conditions (PR 225166)*
- *Load Balancing Enhancements (PR 223519)*
- *Load Shedding to Consider Rx Traffic (PR 223505)*
- *MRA Aggregated Counts Displayed on the KPI Dashboard (PR 222746)*
- *Rx Subscription Expiry (PR 221800)*
- *SANE Support Integration (PR 222541)*
- *Split AF Session by RAT Type (PR 223393)*
- *Split PDN Count by APN (PR 221817)*
- *Subscriber Indexing Split (PR 221818)*
- *Upgrade Manager Subscriber State Data Preservation (PR 217773)*
- *User-defined Query of the MPE Session State Database (PR 218673)*

Georedundant Configuration Support (PR 226613)

Georedundancy for the Configuration Management Platform (CMP) systems, Multimedia Platform Engine (MPE) devices, and Multiprotocol Routing Agent (MRA) databases is supported.

Georedundancy is implemented for CMP clusters by pairing a primary CMP server with a server at a separate site. The active server from the Site 1 CMP cluster continuously replicates topology and application data to the active server of the Site 2 cluster.

A georedundant MPE or MRA cluster can contain an additional server, called a spare server, located at a separate site. The active server replicates its database to the standby and spare servers. If the active

server fails, the standby server takes over and becomes the active server, if both the active and standby servers fail, the spare server becomes the active server.

Multi-Stream WAN Replication (PRs 221989 and 222399)

A georedundant MPE/MRA cluster consists of two MPE/MRA servers at one site and a third server configured at a second site and connected by a Wide Area Network (WAN). Redundant TCP/IP socket connections (streams) can be set up between the MPE/MRA servers at different sites.

The CMP GUI is used to configure the number of streams that are created.

Separate Traffic on Different VLANs (PR 222540)

MPE/MRA replication traffic and secondary high availability (HA) heartbeat traffic can be sent between georedundant sites on specific networks. MPE/MRA replication traffic can also be marked with Differentiated Services Control Point (DSCP).

As part of this functionality, an optional REP network is added to the Policy Management system. The REP network carries replication traffic between MPE and MRA servers and is not used by the CMP system.

MPE/MRA replication traffic and secondary HA heartbeat traffic can be sent on the REP, SIG-A, SIG-B, or OAM network. Replication traffic between CMP servers is always sent on the OAM network.

A new MPE/MRA replication stats report is added to the CMP GUI.

Dual Active Resolution (PR 223464)

When two georedundant sites lose contact, the servers at both sites go active, causing a dual-active or split-brain scenario. After the two sites resume contact, the site with two MPE/MRA servers (the original primary site) always becomes the primary site, and one of the servers at that site becomes the active server.

Prevent Duplicate Correlation ID on LI Interface (PR 223586)

To prevent duplicate correlation IDs on the Lawful Intercept (LI) interface during a split-brain scenario, unique correlation IDs are generated on different servers of the same MPE cluster. The active MPE server uses its IPv4 IP address when generating a correlation ID. After generation, the correlation ID is stored on the MPE device.

3GPP Compliance for Gx, Rx, and Sh Interfaces (PR 221797)

The MPE device is enhanced for 3GPP compliance as follows:

- The MPE device can receive and store the Rx-Request-Type attribute value pair (AVP).
- The MPE device can receive, process, and store the Min-Requested-Bandwidth-UL/DL AVPs if received within the Media-Component-Description AVP.

Checkpoint Rollback Enhancements (PR 219580)

Match lists, retry profiles, application profiles, and policy counter IDs are included in policy checkpoints and are rolled back into the Policy Management system during a restore operation.

CMP Bulk Operations (PR 228704)

A single command entry can be provisioned on the CMP system and applied to all of the MPE devices or MRA databases in a specified group.

The following bulk operations can be applied to all MPE devices in a group:

- Reapply Config
- Reset Counters
- Enable/Disable Sh interface

The following bulk operations can be applied to all MRA databases in a group:

- Reapply Config
- Reset Counters (when Stats Reset Configuration is set to Interval)
- Reset All Counters (when Stats Reset Configuration is set to Manual)

Codec Support Enhancements (PR 221799)

The following enhancements are provided to support processing of the codec AVP:

- Support is provided for a bandwidth calculation for the H.264 and T.38 codecs, based on RTP and TCP transport protocols.
- An updated policy rule is provided to evaluate the media type, based on configurable input. If the configured media value is not within the Media-type AVP, then the MPE device uses the media type specified in the m-line of the Codec-Data AVP.
- A new policy condition is provided to check for audio and video codecs that are not supported by the MPE device. This policy rule can also be used to set the pre-defined bandwidth for a received codec-data AVP.

Enhancements to Avoid Oscillations in System Response (PR 223504)

The stability of the system under a heavy traffic load is enhanced.

Gx Race Conditions (PR 225166)

A new error code is introduced to handle the possibility of messages being delivered out of order. When a Diameter node receives a Diameter request while a Diameter request for an existing session is pending, the node rejects the request with a `DIAMETER_PENDING_TRANSACTION` error code. On receipt of this error code, the client or server performs specific operations to ensure data consistency for the session.

Load Balancing Enhancements (PR 223519)

Load balancing enhancements are added to the MPE device and the MRA database.

For the MPE device:

- The CPU is included when calculating the current load factor.
- The MPE device publishes the load factor to the MRA database when the load factor changes by .05 or more. The load factor is published at least once per minute but not more frequently than once per second.

For the MRA database:

- The MRA database uses the load factor published by the MPE device when calculating the MPE selection distribution. The load factor is rounded down to the closest hundredth decimal place, allowing for a more even distribution of the load.
- The selection frequency formula is enhanced to reduce the selection frequency of a loaded MPE device while ensuring that the MPE device is never starved of new selections as long as it has not become busy.

Load Shedding to Consider Rx Traffic (PR 223505)

The load shedding infrastructure is enhanced to include all Diameter applications and the request types when performing admission control on the corresponding requests.

A new load shedding interface is added to the CMP GUI. This interface is used to configure load shedding criteria, including the settings for entering busyness and the action to take when messages arrive after the busyness level has been reached. Up to 3 levels of busyness (from Level 1 as the least busy to Level 3 as the most busy) for an MPE device can be configured. The current busy level of a system is added to the KPI statistics.

MRA Aggregated Counts Displayed on the KPI Dashboard (PR 222746)

Two rows are added to the KPI Dashboard:

- MRAs Selected — Displays the aggregation count for user-selected MRA databases.
- MPEs Selected — Displays the aggregation counts for the MPE devices that belong to the user-selected MRA databases.

The following counts are aggregated for selected MRA databases and the associated MPE devices:

- TPS (no percentage)
- PDNs (no percentage)
- Active Subscribers (no percentage)
- Critical Alarm Count
- Major Alarm Count
- Minor Alarm Count
- Protocol Errors Sent
- Protocol Errors Received

Note: Isolated MPE devices are not included in the aggregation counts.

Rx Subscription Expiry (PR 221800)

The MPE device can be configured to use the Authorization-Lifetime and Auth-Grace-Period AVPs to determine whether an Rx session is stale. A grace period that controls how aggressively the stale Rx sessions are purged can also be configured.

If a message contains the Authorization-Lifetime AVP, and the associated value within the AVP is between the configured minimum and maximum values, then the value in the AVP is used to determine the lifetime of the Rx session. If the value within the AVP is greater than the configured maximum value, then the configured value is used. If the value within the AVP is less than the configured minimum value, then the functionality is disabled, and the value within the AVP is used.

SANE Support Integration (PR 222541)

Support for the Secure Access to Network Elements (SANE) authentication and authorization system is extended to the Platform Management & Configuration platform component. The ability to select SANE authentication is restricted to an administrator-level user.

Split AF Session by RAT Type (PR 223393)

Application function (AF) sessions can be tracked by RAT type. A new statistics object is added to the MPE device to track the sessions. The sessions can be viewed on a new AF session report.

Split PDN Count by APN (PR 221817)

Packet data network (PDN) connections can be organized and viewed by access point name (APN). The PDN connections count can be tracked on up to 25 provisioned, unique APN suffixes. If the APN of a PDN connection does not match any of the provisioned APN suffixes, that PDN connection is tracked under the Other APNs counter.

A new report is added on the CMP system to display the current and maximum PDN connection counts by APN suffix.

Subscriber Indexing Split (PR 221818)

Subscriber indexing is split into indexing by IPv4 address and IPv6 address for both the MRA database and the MPE device. IPv4 and/or IPv6 indexing can be enabled or disabled per APN.

Upgrade Manager Subscriber State Data Preservation (PR 217773)

The Upgrade Manager can be configured from the CMP GUI to support preservation of binding and session data (referred to as subscriber state data) on rollback. This functionality can be used in the following situation:

1. All CMP systems, MPE devices, and MRA databases have been upgraded to the latest version of Policy Management.
2. The user decides to roll back the MPE devices and MRA databases to the previous version of Policy Management.

When an MPE or MRA cluster is rolled back, the user can export the subscriber state data from the active server and import the data on the standby server. The standby server is then changed to the active server.

User-defined Query of the MPE Session State Database (PR 218673)

Users can create and extract a subset of an MPE session state database. A command line is used to query the database.

The query produces an XML output file that is stored as a compressed file.

Tekelec 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**.