Support of Provisionable QoS for Signaling Traffic

Feature Overview

This feature provides support of provisionable QoS over all signaling links as well as intra-PGW and EGW traffic.

This feature adds provisionable QoS support with the default value set to \textit{DSCP CS3} in accordance with Cisco baseline QoS recommendations for the following:

- Signaling paths:
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Supported Platforms

- MGCP
- EISUP
- SIP
- ISDN Backhaul over RUDP
- DPNSS Backhaul over SCTP
- BRI Backhaul over TCP
- ISUP Backhaul over SCTP
- QBE
- AXL
- LI
- Various checkpointing traffic between PGW and Cisco EGW

Benefits

This feature will allow you to set appropriate priority for various signaling traffic to be transported between PGW and Cisco EGW and other call control entities, like Cisco CallManager, Cisco Unity, SIP servers and Gatekeepers and Gateways over QoS-enabled IP networks.

Cisco EGW already supports fixed QoS in clustering over the WAN implemented by IPtables packages. Now the QoS will be supported by MGC itself to support dynamically provisionable QoS for both PGW and Cisco EGW.

Restrictions

The QoS feature is supported for use by MGC itself. TimesTen would continue to use IPtables packages to get QoS support.

Related Documents

This document contains information that is related to this feature. The documents that contain additional information related to the Cisco Media Gateway Controller (MGC) are at the following url:


Supported Platforms

The hardware platforms supported for the Cisco MGC software are described in the Cisco Media Gateway Controller Hardware Installation Guide.
Supported Standards, MIBs, and RFCs

Standards
No new or modified standards are supported by this feature.

MIBs
No new or modified MIBs are supported by this feature.
For more information on the MIBs used in the Cisco MGC software, refer to the Cisco Media Gateway Controller Release 9 Management Information Base Guide.

RFCs
No new or modified RFCs are supported by this feature.

Prerequisites for Using this Feature

The Cisco PGW 2200 must be running Cisco MGC software Release 9.7(3). Prerequisites for this release can be found in the Release Notes for the Cisco Media Gateway Controller Software Release 9.7(3) at: http://www.cisco.com/univercd/cc/td/doc/product/access/sc/rel9/relnote/rn973.htm.

Provisioning This Feature

You must start a provisioning session to enable this feature. See the Cisco MGCP Provisioning Guide for details on how to start a provisioning session. Provision the transport path between the IUA IOCCs of the Cisco PGW 2200 and the external Cisco media gateway nodes. Communication between the Cisco PGW 2200 and the Cisco media gateways is provisioned so that there is a reliable communication path between the two platforms.

Provisioning Basics

The procedures in this section describe how to start a provisioning session and how to save and activate the changes you have made.

• Starting a Provisioning Session, page 3
• Saving and Activating your Provisioning Changes, page 4
• Ending a Provisioning Session Without Activating your Changes, page 5
• Retrieving Provisioning Data, page 5

For more detailed information about provisioning your Cisco MGC, refer to the Cisco Media Gateway Controller Software Release 9 Provisioning Guide.

Starting a Provisioning Session

You may need to start a provisioning session as part of your system operations. To do this, log into the active Cisco MGC, start an MML session, and enter the following command:

prov-sta::srcver="curr_ver",dstver="mod_ver"
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Prerequisites for Using this Feature

Note
Where:
- \textit{curr\_ver}—The name of the current configuration version. In place of the name of the current configuration version, you can also enter:
  - new—A new default session configuration; no existing source configuration is available.
  - active—Selects the active configuration as the source for configuration changes.
- \textit{mod\_ver}—A new configuration version name that contains your provisioning changes.

For example, to use a configuration version called \textit{ver1} as the basis for a version to be called \textit{ver2}, you would enter the following command:

\texttt{prov-sta::srcver="ver1", dstver="ver2"}

Once a provisioning session is underway, you may use the \texttt{prov-add}, \texttt{prov-ed}, or \texttt{prov-dlt} MML commands to add, modify, and delete components on your system. This document describes how to provision this feature. For more information on provisioning other components on your Cisco MGC, refer to the \textit{Cisco Media Gateway Controller Software Release 9 Provisioning Guide}.

There are two ways to close your provisioning session: saving and activating your provisioning changes, as described in the “Saving and Activating your Provisioning Changes” section on page 4 or ending your provisioning session without saving and activating your changes, as described in the “Ending a Provisioning Session Without Activating your Changes” section on page 5.

Saving and Activating your Provisioning Changes

When you have completed making provisioning changes in your session, you must enter a command to save and activate your changes. There are two different provisioning MML commands that do this: \texttt{prov-cpy} and \texttt{prov-dply}.

\textbf{Caution}
Using the \texttt{prov-cpy} and \texttt{prov-dply} MML commands can severely impact your system’s call processing performance, depending on the extent of your provisioning changes. We recommend that these commands be issued during a maintenance window when traffic is minimal.

The \texttt{prov-cpy} MML command is used to save and activate your changes on simplex Cisco MGC (single host) systems.

\textbf{Note}
When you enter the \texttt{prov-cpy} command, your provisioning session is also automatically ended. If you want to make additional provisioning changes, you must start a new provisioning session as described in the “Starting a Provisioning Session” section on page 3.
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Caution
Do not use the prov-cpy command to save and activate your changes on a continuous-service Cisco MGC (active and standby hosts) system. Saving and activating using prov-cpy on such a system would require using the prov-sync MML command to synchronize the provisioning data on the active and standby hosts. The system does not indicate when the synchronization process fails, which would create problems when a switchover operation occurs.

The prov-dply MML command is used to save and activate your changes on the active and standby Cisco MGCs in a continuous-service system. This command should not be used on a Cisco MGC in a simplex configuration.

Note
When you enter the prov-dply command, your provisioning session is also automatically ended, unless an error occurs during execution. If you want to make additional provisioning changes, you must start a new provisioning session, as described in the “Starting a Provisioning Session” section on page 3.

Ending a Provisioning Session Without Activating your Changes

If you want to end a provisioning session without saving and activating the changes you have entered, enter the prov-stp MML command. This command ends your current provisioning session and your changes are not entered.

Retrieving Provisioning Data

You can use the prov-rtrv MML command to retrieve information about your current provisioning settings. The ways you can use this command to retrieve provisioning data are described in the following sections:

- Retrieving Data for an Individual Component, page 5
- Retrieving Data for All Components, page 6
- Retrieving Data for All Components of a Particular Type, page 6
- Retrieving Data on the Current Provisioning Session, page 6
- Retrieving Data on Supported Signaling Protocols, page 6

Retrieving Data for an Individual Component

You can retrieve provisioning data on any individual component on your system. To do this, log in to the active Cisco MGC, start an MML session, and enter the following command:

```
prov-rtrv:component:name=MML_name
```

Where:

- `component`—The MML component type associated with the desired component. You can find a complete list of MML component types in the Cisco Media Gateway Controller Software Release 9 Provisioning Guide.
- `MML_name`—The MML name for the desired component. You can determine the MML names for the various components using the prov-rtrv:all MML command.

For example, to view the provisioning data for a SS7 signaling service called ss7svc1, you would enter the following command:
The response to the command is dependent upon the component type associated with the desired component. For example, to view the properties for an SUA routing key called suakey1, you would enter the following command:

```
prov-rtrv:suakey:name="suakey1"
```

### Retrieving Data for All Components

You can retrieve data on all of the components provisioned on your system. To do this, log in to the active Cisco MGC, start an MML session, and enter the following command:

```
prov-rtrv:all
```

### Retrieving Data for All Components of a Particular Type

You can retrieve provisioning data on all components of a particular type on your system. To do this, log in to the active Cisco MGC, start an MML session, and enter the following command:

```
prov-rtrv:component:"all"
```

Where: `component` is the MML component type associated with the desired component group. You can find a complete list of MML component types in the *Cisco Media Gateway Controller Software Release 9 Provisioning Guide*.

For example, to view the provisioning data for all SS7 signaling services, you would enter the following command:

```
prov-rtrv:ss7path:"all"
```

### Retrieving Data on the Current Provisioning Session

You can retrieve provisioning data on the current provisioning session. To do this, log in to the active Cisco MGC, start an MML session, and enter the following command:

```
prov-rtrv:session
```

The system returns a response similar to the following:

```
MGC-02 - Media Gateway Controller 2003-01-13 13:39:19
M RTRV
 "session=jtest:session"
 /*
 Session ID = mml1
 SRCVER = active
 DSTVER = jtest
 */
```

### Retrieving Data on Supported Signaling Protocols

You can retrieve protocol data for the current provisioning session. To do this, log in to the active Cisco MGC, start an MML session, and enter the following command:

```
prov-rtrv:variants
```
Command Reference

This section documents new, modified, or deleted Man-Machine Language (MML) commands. All other MML commands are documented in the Cisco Media Gateway Controller Software Release 9 MML Command Reference Guide.

New MML Commands

This section contains the MML commands that are new for this feature.

PROV-ADD:tos:dscp—Add TOS Value

Purpose: This MML command is used to set a global dscp value to signaling traffic.

Syntax: PROV-ADD:tos:dscp=cs3

Input Description:
Assoc_name—MML name of a previously configured SCTP association.
All—All QoS values

Output Description:
tos—QoS value.
dscp—differential service code point; valid values are:
• BE
• CS1
• CS2
• CS3
• CS4
• AF11
• AF21
• AF31
• AF41
Default value is CS3.

Example: The MML command shown in the following example adds the default value of CS3 to the signaling traffic:

mml>prov-add:tos:dscp=CS3

Comments: Performance Impact Category: A
**PROV-DLT:tos— Delete TOS Value**

**Purpose:** This MML command is used to delete changes and set the global dscp value of signaling traffic to the default CS3.

**Syntax:** PROV-DLT:tos=CS3

**Input Description:**
- **Assoc_name**—MML name of a previously configured SCTP association.
- **All**—All QoS values

**Output Description:**
- **tos**—QoS value.
- **dscp**—differential service code point; valid values are:
  - EF
  - BE
  - CS1
  - CS2
  - CS3
  - CS4
  - AF11
  - AF21
  - AF31
  - AF41

Default value is CS3.

**Example:** The MML command shown in the following example deletes the existing dscp value for signaling traffic and sets it back to the default value of CS3:

```mml>prov-dlt:tos
```

**Comments:** Performance Impact Category: A

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**PROV-ED:tos:dscp— Edit TOS Value**

**Purpose:** This MML command is used to change the global dscp value for the signaling traffic.

**Syntax:** PROV-ADD:tos:dscp=CS3

**Input Description:**
- **Assoc_name**—MML name of a previously configured SCTP association.
- **All**—All QoS values
**PROV-RTRV:tos—Retrieve TOS Value**

<table>
<thead>
<tr>
<th>Output Description</th>
<th>tos—QoS value</th>
</tr>
</thead>
<tbody>
<tr>
<td>dscp—differential service code point; valid values are:</td>
<td></td>
</tr>
<tr>
<td>• BE</td>
<td></td>
</tr>
<tr>
<td>• CS1</td>
<td></td>
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<td>• CS2</td>
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<td>• AF11</td>
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<td>• AF21</td>
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<td>• AF31</td>
<td></td>
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<tr>
<td>• AF41</td>
<td></td>
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<tr>
<td>Default value is CS3.</td>
<td></td>
</tr>
</tbody>
</table>

**Example:** The MML command shown in the following example changes the value of signaling traffic to AF31:

```
mml> prov-ed:tos:dscp=AF31
```

**Comments:** Performance Impact Category: A
Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly What's New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation at:


Glossary

Table 1 contains definitions of acronyms and technical terms used in this feature module.

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGC</td>
<td>Cisco Media Gateway Controller</td>
</tr>
<tr>
<td>PGW</td>
<td>PSTN Gateway</td>
</tr>
<tr>
<td>QoS</td>
<td>Quality of Service</td>
</tr>
<tr>
<td>SC</td>
<td>Signaling Controller</td>
</tr>
<tr>
<td>ToS</td>
<td>Type of Service</td>
</tr>
<tr>
<td>VSC</td>
<td>Virtual Switch Controller</td>
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</tbody>
</table>

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