



Support for TIBCO Management Interface

Document Release History

Publication Date	Comments
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Feature History

Release	Modification
9.5(2)	This feature was introduced in the Cisco Media Gateway Controller (MGC) software.

The Support for TIBCO Management Interface feature is described in the following sections:

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Feature Overview

The Support for TIBCO Management Interface feature provides the Cisco MGC with the ability to communicate with a TIBCO management system using TIBCO Rendezvous Message Transport. In order to enable data exchange, TIBCO Rendezvous daemons and an adapter are installed on the Cisco MGC hosts during the installation/upgrade process. With this feature enabled, you can add, modify, delete, and retrieve provisioning data using your TIBCO management system.

This feature is described in the following sections:

- [Supported Daemons, page 2](#)
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Supported Daemons

This feature uses TIBCO Version 6 daemons and libraries. When this feature is enabled, the Cisco MGC can communicate with one of two TIBCO daemons on your management system:

- **Rendezvous Daemon (RVD)**—Used when the management system is in the same network as the Cisco MGC hosts. RVD is started automatically on the management system by the TIBCO adapter on the Cisco MGC, unless either the RVD or Routing Daemon (RVRD) is already running.
- **Routing Daemon (RVRD)**—Used when the management system and the Cisco MGC hosts are not on the same network. You must configure the RVRD routing table and start RVRD manually before activating the Support for TIBCO Management Interface feature on the Cisco MGC. Refer to the TIBCO user documentation for information on configuring the RVRD routing table.

Supported Request Message Content Formats

Your TIBCO management system and your Cisco MGC communicate using request messages. Request messages comprise two field types: subjects and members. Subjects are like addresses; they identify the sender of the request message and might identify the replying component. Member data fields contain command information, response text, error text, and identification numbers. The subject and member types supported by this feature are defined in the following sections:

- [Incoming Request Message Content Formats, page 2](#)
- [Outgoing Request Message Content Formats, page 3](#)

Incoming Request Message Content Formats

The request messages sent from the TIBCO management system to the MGC are comprised of the mandatory subjects and members listed below.

Subjects

SendSubject

This subject identifies the TIBCO management system that sent the request message. If a *SendSubject* is present in the request message, the TIBCO adapter on the MGC uses the value of this field as the *ReplySubject* in the responding request message. The value for this field is a character string.

ReplySubject

This subject identifies the MGC that replies to the request message. If a *ReplySubject* is present in the request message, the TIBCO adapter on the MGC uses the value of this field as the *SendSubject* in the responding request message. If a *ReplySubject* is not present, the TIBCO adapter on the MGC uses its internally defined *RespondSubject* value as the *SendSubject* value in the responding request message. The value for this field is a character string.

Members

CMDCTD

This member identifies the command content. The value for this field is a character string. For example, when a request is made to add a subscriber, the value of this member is *addSubscriber*. The TIBCO adapter on the MGC uses the value in this field to determine the appropriate Man-Machine Language (MML) command(s) to execute on the MGC to perform the indicated action.

P1

This member identifies the first command parameter. The value for this field is a character string. The TIBCO adapter on the MGC passes the value as a parameter in the MML command(s). This field is not always populated with data.

P2

This member identifies the second command parameter. The value for this field is a character string. The TIBCO adapter on the MGC passes the value as a parameter in the MML command(s). This field is not always populated with data.

P3

This member identifies the third command parameter. The value for this field is a character string. The TIBCO adapter on the MGC passes the value as a parameter in the MML command(s). This field is not always populated with data.

TARGET

This member identifies the MGC subsystem associated with the execution of the command, such as MML. The TIBCO adapter on the MGC sends this value to the component handler for the subsystem. The value for this field is a character string. The default value is *ADAPTER*.

TXID

This member is a transaction identification number for the request message. The value for this field is an integer. The TIBCO adapter on the MGC takes the value from the incoming request message and attaches it to the outgoing request message. The value is an integer.

Outgoing Request Message Content Formats

The request messages from the MGC that are sent to your TIBCO management system are comprised of the mandatory subjects and members listed below.

Subjects

SendSubject

This subject identifies the MGC that sent the responding request message. If a *ReplySubject* is present in the incoming request message, the TIBCO adapter on the MGC uses the value of that field as the *SendSubject* in the responding request message. If a *ReplySubject* is not present, the TIBCO adapter on the MGC uses its internally defined *RespondSubject* value as the *SendSubject* value in the responding request message. The value for this field is a character string.

ReplySubject

This subject identifies the TIBCO management system that sent the incoming request message. The value for this field is a character string.

Members

ERRCODE

This member identifies a warning or error code for the provisioning component associated with the execution of the MML command(s) identified in the incoming message. This code is provided for informational purposes. The value for this field is an integer. This field is populated only when execution of the MML command causes an error associated with the specific provisioning component.

INFOTXT

This member identifies the response to the execution of the MML command on the MGC. This field is provided for informational purposes. The value for this field a character string.

RTNCODE

This member identifies the return code that is created as the result of the requested operation. The value for this field is an integer from 0 through 4. These integers indicate the following:

- 0 (Successful)—Operation performed successfully.
- 1 (Warning)—Operation performed, but anomalies discovered.
- 2 (Error)—Operation failed.
- 3 (External error)—Operation failed, because the targeted component is not currently supported.
- 4 (Command not supported error)—Operation failed, because the targeted command is not supported.

TXID

This member is a transaction identification number for the incoming request message. The value of this field is an integer. The TIBCO adapter on the MGC takes the value from the incoming request message and attaches it to the outgoing request message. The value is an integer.

Sample TIBCO Configuration File

Settings for the Cisco MGC TIBCO adapter are maintained in a TIBCO configuration file. An example is provided below.

```
[DAEMON]
daemonSPort = 7500
nwInterface =
daemonRPort = 7500
```

```
[ADAPTER]
subscribeSubject = Cisco.pgw.config
respondSubject = Cisco.pgw.respond
extProcess = mml

[COMMANDS]
platform = rtrv-ne
addSubscriber = numan-add:anumdpsel:custgrpId="?",cli="?",newdp="?"
modifySubscriber = numan-ed:anumdpsel:custgrpId="?",cli="?",newdp="?"
deleteSubscriber = numan-dlt:anumdpsel:custgrpId="?",cli="?"
retrieveSubscriber = numan-rtrv:anumdpsel:custgrpId="?"
```

Benefits

The benefit of using this feature is described below.

Enables users to subscribe/publish subjects for provisioning.

This feature simplifies the provisioning process for TIBCO users, enabling you use TIBCO's publish approach. This approach eliminates the need for you to address specific target components in the provisioning process. The publish approach ensures that each provisioning component is subscribed to the information it needs.

Related Features and Technologies

This feature enables you to maintain your Cisco MGC using a TIBCO management system. For more information on TIBCO Software, Incorporated technologies, refer to their website, <http://www.tibco.com>.

Related Documents

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

- *Release Notes for Cisco Media Gateway Controller Software Release 9.5(2)*
- *Cisco Media Gateway Controller Hardware Installation Guide*
- *Regulatory Compliance and Safety Information for the Cisco Media Gateway Controller*
- *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*
- *Cisco Media Gateway Controller Software Release 9 Provisioning Guide*
- *Cisco Media Gateway Controller Software Release 9 Dial Plan Guide*
- *Cisco Media Gateway Controller Software Release 9 MML Command Reference*
- *Cisco Media Gateway Controller Software Release 9 Messages Reference Guide*
- *Cisco Media Gateway Controller Software Release 9 Billing Interface Guide*
- *Cisco Media Gateway Controller Software Release 9 Management Information Base Guide*
- *Cisco Media Gateway Controller Software Release 9 Operations, Maintenance, and Troubleshooting Guide*

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 management information bases (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 MIB Guide*.

RFCs

No new or modified Request For Comments (RFCs) are supported by this feature.

Configuration Tasks

The following section contains the steps necessary for configuration of the Cisco MGC software to enable the Support for TIBCO Management Interface feature.



Caution

Configuration of the Cisco MGC software requires that the system software be shut down. In a simplex system, calls cannot be processed during system shutdown. In a continuous service system, your system loses the ability to maintain calls during a critical event while the system software on one of the MGC hosts is shut down.

To configure this feature, perform the following steps:

- Step 1** If you are upgrading from a previous release of the Cisco MGC software, proceed to Step 2. Otherwise, proceed to Step 3.
- Step 2** Perform the upgrade procedures described in the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*. Once you encounter the `*.tibcoSupport` parameter in the XECfgParm.dat file, proceed to Step 4.
- Step 3** Perform the installation and configuration procedures described in the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*. Once you encounter the `*.tibcoSupport` parameter in the XECfgParm.dat file, proceed to Step 4.
- Step 4** If you have not already done so, open the `/opt/CiscoMGC/etc/XECfgParm.dat` file on the active and standby Cisco MGC hosts using a text editor, such as `vi`.
- Step 5** If you have not already done so, ensure that the `pom.dataSync` parameter is set to `false` on the active and standby Cisco MGC hosts.
- Step 6** Search for the `*.tibcoSupport` parameter and change the value to `enable`.

- Step 7** Return to the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide* and continue from where you left off.

For more information on configuring the rest of the Cisco MGC software, refer to the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*.

Troubleshooting the Configuration

If you are experiencing difficulties with your TIBCO interface, perform the procedure below to troubleshoot the problem. For information on troubleshooting the rest of the Cisco MGC software, refer to the *Cisco Media Gateway Controller Software Release 9 Operations, Maintenance, and Troubleshooting Guide*.

- Step 1** Verify that the TIBCO adapter daemon is running by entering the following UNIX command on the active Cisco MGC:

```
ps -ef
```

The system returns a response similar to the following:

```
UID    PID  PPID  C   STIME TTY      TIME CMD
root    0    0    0  10:28:20 ?        0:00 sched
root    1    0    0  10:28:20 ?        0:27 /etc/init -
mgcusr 14437 14427  0  13:57:19 ?        0:00 /opt/CiscoMGC/bin/perl
/opt/CiscoMGC/local/tibAdapter.pl
mgcusr 14427    1    0  13:57:18 ?        0:00 -csh -c /opt/CiscoMGC/local/tibAdapter.pl
```

If the daemon is running, proceed to Step 11. Otherwise, proceed to Step 2.



Note

If your system is also equipped with an SNMP interface, a trap is generated when the MGC software cannot start the TIBCO daemon. If you find such a trap, proceed to Step 6.

- Step 2** Log in to the standby Cisco MGC as root and change directories to the etc subdirectory by entering the following UNIX command:

```
cd /opt/CiscoMGC/etc
```

- Step 3** Open the XECfgParm.dat using a text editor, such as vi.

- Step 4** Search for the **.tibcoSupport* parameter and verify that it is set to **enable**. If it is set properly, exit the text editor and proceed to Step 11. Otherwise proceed to Step 5.

- Step 5** Change the value of the parameter to **enable**, save your changes, and exit the text editor.

- Step 6** Manually stop the Cisco MGC software on the standby Cisco MGC by entering the following UNIX command:

```
/etc/init.d/CiscoMGC stop
```

- Step 7** Once the software shutdown is complete, manually start the Cisco MGC software on the standby Cisco MGC by entering the following command:

```
/etc/init.d/CiscoMGC start
```

- Step 8** Log in to the active Cisco MGC, start an MML session, and enter the following command:

```
sw-over::confirm
```

Site alarms are automatically set until the out-of-service (OOS) Cisco MGC host is returned to an in-service (IS) state.

- Step 9** Verify that the TIBCO adapter daemon is running by entering the following UNIX command on the active Cisco MGC:

```
ps -ef
```

The system returns a response similar to the following:

```
UID    PID  PPID  C   STIME TTY      TIME CMD
root    0     0   0  10:28:20 ?        0:00 sched
root    1     0   0  10:28:20 ?        0:27 /etc/init -
mgcusr 14437 14427 0  13:57:19 ?        0:00 /opt/CiscoMGC/bin/perl
/opt/CiscoMGC/local/tibAdapter.pl
mgcusr 14427     1   0  13:57:18 ?        0:00 -csh -c /opt/CiscoMGC/local/tibAdapter.pl
```

If the daemon is running, proceed to Step 10. Otherwise, proceed to Step 11.

- Step 10** Repeat steps 2 through 9 for the newly standby Cisco MGC host. If that resolves the problem, the procedure is finished. Otherwise, proceed to Step 11.
- Step 11** Contact the Cisco TAC to further analyze the problem and determine a solution. For more information about contacting the Cisco TAC, refer to the [“Obtaining Technical Assistance” section on page 10](#).

Configuration Examples

This section provides the following example of configuration of the XECfgParm.dat parameter associated with this feature:

```
*.tibcoSupport=enable
```

Additional examples of configuration for the Cisco MGC software can be found in the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*.

Reference Information

The following sections contain reference material related to this feature. Information is included on the following areas:

- [XECfgParm.dat Parameters, page 8](#)

XECfgParm.dat Parameters

The XECfgParm.dat file configuration parameter added for this feature is in the table below.

Configuration Parameter	Definition
*.tibcoSupport	<p>Determines whether or not the system supports a TIBCO maintenance interface.</p> <p>Default: disable</p> <p>Valid values: enable or disable</p>

For information on the other XECfgParm.dat parameters, refer to the *Cisco Media Gateway Controller Software Release 9 Installation and Configuration Guide*.

Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

<http://www.cisco.com/univercd/home/home.htm>

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco websites can be accessed from this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated regularly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual or quarterly subscription.

Registered Cisco.com users can order a single Documentation CD-ROM (product number DOC-CONDOCCD=) through the Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/ordering_place_order_ordering_tool_launch.html

All users can order annual or quarterly subscriptions through the online Subscription Store:

<http://www.cisco.com/go/subscription>

Click Subscriptions & Promotional Materials in the left navigation bar.

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

<http://www.cisco.com/en/US/partner/ordering/index.shtml>

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can submit e-mail comments about technical documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour-a-day, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance. If you do not hold a valid Cisco service contract, please contact your reseller.

Cisco TAC Website

The Cisco TAC website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year. The Cisco TAC website is located at this URL:

<http://www.cisco.com/tac>

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

<http://tools.cisco.com/RPF/register/register.do>

Opening a TAC Case

Using the online TAC Case Open Tool is the fastest way to open P3 and P4 cases. (P3 and P4 cases are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using the recommended resources, your case will be assigned to a Cisco TAC engineer. The online TAC Case Open Tool is located at this URL:

<http://www.cisco.com/tac/caseopen>

For P1 or P2 cases (P1 and P2 cases are those in which your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete listing of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—Your network is “down” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Priority 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Priority 3 (P3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Priority 4 (P4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The Cisco Product Catalog describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

http://www.cisco.com/en/US/products/products_catalog_links_launch.html

- Cisco Press publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

<http://www.ciscopress.com>

- Packet magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:
<http://www.cisco.com/packet>
- iQ Magazine is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:
<http://www.cisco.com/go/iqmagazine>
- Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:
http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html
- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:
<http://www.cisco.com/en/US/learning/index.html>

Glossary

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

Table 1 *Acronyms and Definitions*

Acronym	Definition
IS	In-Service
MGC	(Cisco) Media Gateway Controller
MIB	Management Information Base
MML	Man-Machine Language
OOS	Out-of-Service
RFC	Request for Comment
RVD	Rendezvous Daemon. Part of the TIBCO management software that is used to communicate with the MGC.
RVRD	Routing Daemon. Part of the TIBCO management software that is used to communicate with the MGC.
SNMP	Simple Network Management Protocol