



IP Communications Applications for Business Advantage

METREOS MANAGEMENT CONSOLE USER GUIDE

Metreos Communications Environment 2.2



Copyright © 2005 Metreos Corporation.
All rights reserved.

Proprietary and Confidential Information.
For Release Under NDA Only.

Information in this document is subject to change without notice.

Metreos trademarks marked with a ® or © herein are registered or protected trademarks of Metreos in the U.S. and foreign countries. All other trademarks in the document are the property of their respective owners.

Metreos Corporation
4401 Westgate Blvd.
Suite 308
Austin, Texas 78745

Contents

<i>About This Guide</i>	v
Intended Audience	v
Organization of the Guide	v
Notational Conventions	v
Notes, Cautions, and Warnings	v
Typographical Conventions	vi
<i>Chapter 1 Introduction</i>	1
<i>Chapter 2 Metreos Communications Environment</i>	3
Metreos Management Console	3
Application Server	4
Provider Manager	4
Router	4
Telephony Manager	4
Application Manager	5
Management Interface	5
Application Environment	5
Logger	6
<i>Chapter 3 Metreos Management Console</i>	7
Configuring the Console	8
Configuring Core Components	9
Configuring the Application Server	10
Managing Users	15
System Configuration and Control	18
Network Configuration	18
Service Control	20
Uploading a Media Firmware License	21
Configuring Date and Time	22
System Update	23
System Backup and System Restore	25
Working with Components	30
Managing Applications	31
Managing Media Servers	37
Managing Providers	43
Provider Configuration	44
Configuring Telephony Servers	50
Metreos Logs	72
<i>Index</i>	75

About This Guide

This document explains how to administer and maintain the Metreos Communications Environment (MCE) using the Metreos Management Console.

Intended Audience

This guide is intended for system administrators who are familiar with the Windows operating system and have a basic understanding of IP telephony. This guide does not provide information about IP telephony systems. For information about basic telephony and IP telephony Metreos recommends the following Internet Web sites:

<http://en.wikipedia.org/wiki/Voip>

<http://www.voip-info.org/tiki-index.php>

<http://www.packetizer.com/voip/>

The MCE works with Cisco CallManager as a Voice over IP provider. If you need to manage and configure CallManager, the following sites provide useful information:

http://www.cisco.com/en/US/tech/tk652/tsd_technology_support_category_home.html

<http://www.cisco.com/en/US/products/sw/voicesw/ps556/>

<http://www.cisco.com/en/US/products/sw/voicesw/>

Organization of the Guide

The *Metreos Communication Environment Management Console User Guide* is organized into the following chapters:

- About This Guide — Describes the notational and typographical conventions used in the guide, and provides the terms of the End User License Agreement (EULA).
- Chapter 1: Introduction — Provides basic information about the MCE architecture.
- Chapter 2: Metreos Communications Environment — Describes the Metreos Application Runtime Environment and its components.
- Chapter 3: The Metreos Management Console — Describes the Metreos Management Console user interface and provides administrative procedures for the Metreos Communications Environment.

Notational Conventions

The following section summarizes the notational conventions used in the Metreos guide.

Notes, Cautions, and Warnings

NOTE: *A note provides important information, helpful suggestions, or reference material.*



CAUTION: A Caution indicates a potential risk for damage to hardware or loss of data, and describes how to avoid the problem.



WARNING: A Warning indicates a potential hazardous risk that could result in serious bodily harm or death.

Typographical Conventions

This section defines the *general* typographical conventions followed in this Metreos guide.

- **Bold** typeface — Represents:
 - Information and controls displayed on screen, including menu options, windows dialogs and field names
 - Commands, file names, and directories
 - In-line programming elements such as class names and XML elements when referenced in the main text
- *Italics* typeface — Represents:
 - New concepts
 - A variable element such as *filename.mca*
 - A reference to a chapter or section heading
- Courier typeface — Represents code or code fragments, or text that you enter. For example: Type `xxxxxxx`
- ... (ellipsis) — Represents omitted content in code fragments
- <UPPERCASE> typeface enclosed in angle brackets — Represents keys and keystroke combinations you would type. For example: <CTRL + ALT + DEL>

Metreos Corporation End User License

Important – Use of this Software is subject to license restrictions.

Carefully read this license agreement before using the software.

This End User License Agreement (the “Agreement”) is a legal agreement between you, either individually or as an authorized representative of the company or organization acquiring the license, and Metreos Corporation (“Metreos”). USE OF SOFTWARE INDICATES YOUR COMPLETE AND UNCONDITIONAL ACCEPTANCE OF THE TERMS AND CONDITIONS SET FORTH IN THIS AGREEMENT. If you do not agree to these terms and conditions, promptly return or, if electronically received, certify destruction of the Software and all accompanying items within five days after receipt of Software and you will receive a full refund of the applicable license fees paid.

1. License Grant

a. The software programs you are installing, downloading, or have acquired with this Agreement, including any related equipment or hardware, documentation, updates, upgrades, modifications, revisions, copies and design data (“Software”) are copyrighted, trade secret and confidential information of Metreos and its licensors who maintain exclusive title to all Software and retain all rights not expressly granted by this Agreement. Metreos grants to you, subject to payment of appropriate license fees, a non-exclusive, non-transferable, internal-use only, term license to use the Software owned or distributed by Metreos in machine readable, object-code form on the computer hardware or at the site(s) for which an applicable license fee has been paid, as authorized by Metreos.

b. To the extent that you design applications that operate on the Metreos Communications Environment (the “MCE”), Metreos grants you a non-exclusive, non-transferable, internal-use only, term license to use the Software, including the MCE, for the purposes of operating such programs, subject to payment of appropriate license fees.

c. The license granted herein is contingent on your (or your organization’s) continued acceptance and subscription to the maintenance and support terms provided by Metreos. Termination by you or your organization of ongoing maintenance and support requirements terminates the license granted herein.

2. Restrictions and Intellectual Property Ownership

a. You may not (i) remove or modify any notice of Metreos’ proprietary rights, (ii) re-license, rent, lease, timeshare, or act as a service bureau or provide subscription services for the Software, (iii) use the Software to provide third-party training, except for training agents and contractors authorized under this Agreement; (iv) assign this Agreement or give the Software or an interest in the Software to another individual or entity; (v) cause or permit reverse engineering or decompilation of the Software; (vi) disclose results of any Software benchmark tests without Metreos’ prior written consent; or (vii) modify the Software or any portions thereof without Metreos’ prior written consent.

b. The Software, which is copyrighted, and any modifications, upgrades, or updates thereto, is the sole and exclusive property of Metreos and is a valuable asset and trade secret of Metreos. Metreos retains all ownership and intellectual property rights to the Software and to any modifications, upgrades, or updates thereto. Except for the rights granted in herein above, you shall have no right, title, or interest of any kind in or to the Software.

c. Metreos may audit your use of the Software. If Metreos gives you or your organization reasonable advance written notice, you agree to cooperate with the audit, and to provide reasonable assistance and access to information. You agree to immediately remit any underpaid license and technical support fees determined as the result of such audit.

3. Term and Termination.

a. This Agreement remains effective until expiration or termination. This Agreement will immediately terminate upon notice if you exceed the scope of the license granted or otherwise fail to comply with the provisions in sections 1 and 2 above. For any other material breach of the Agreement, Metreos may terminate this Agreement if you are in breach and fail to cure the breach within thirty (30) days of written notification. If Software is provided for a limited term use, this Agreement will automatically expire at the end of the authorized term.

b. Upon termination of this Agreement for any reason, you shall within ten (10) business days return to Metreos all Software. Additionally, you agree to delete from any permanent machine storage (i.e., hard disk) previously loaded copies of the Software in all forms. Upon request of Metreos, you shall certify in writing that all copies of the Software and associated documentation have been destroyed or returned to Metreos. The indemnity and limitation of liability obligations hereunder, as well as your obligations with respect to confidential treatment of the Software and Metreos' trade secrets, other intellectual property, and proprietary information, shall survive the termination of this Agreement.

4. Limited Warranty.

a. Metreos warrants that the Software will substantially operate as described in the applicable Software documentation for ninety (90) days after Metreos delivers it to you. **THE WARRANTY HEREIN IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. METREOS MAKES NO WARRANTY THAT ANY SOFTWARE WILL PERFORM ERROR-FREE OR UNINTERRUPTED, OR THAT ALL ERRORS THEREIN CAN OR WILL BE CORRECTED. METREOS FURTHER DISCLAIMS ANY IMPLIED WARRANTIES ARISING FROM COURSE OF PERFORMANCE, COURSE OF DEALING OR USAGE OF TRADE.**

b. For any breach of the above warranty, Metreos' entire liability and your exclusive remedy shall be, at Metreos' option, either (1) refund of the fees paid upon return of the Software to Metreos, or (2) correction or replacement of the Software that does not meet this limited warranty, provided you have complied with the terms of this Agreement.

5. Indemnity

a. Metreos will defend and indemnify you against a claim that any Software, infringes a patent or copyright, provided that: (i) you notify Metreos in writing within thirty (30) days of the claim; (ii) Metreos has sole control of the defense and all related settlement negotiations; and (iii) you provide Metreos with the assistance, information, and authority reasonably necessary to perform the above; reasonable out-of-pocket expenses incurred by you in providing such assistance will be reimbursed by Metreos.

b. Metreos shall have no liability for any claim of infringement resulting from: (i) your use of a superseded or altered release of the Software if infringement would have been avoided by the use of a subsequent unaltered release of the Software which Metreos provides to you; or (ii) any information, design, specification, instruction, software, data, or material not furnished by Metreos or (iii) any combination of the Software with other hardware, software or processes that, but for the combination, the Software would not be infringing.

c. In the event that some or all of the Software is held or is believed by Metreos to infringe, Metreos shall have the option, at its expense: (i) to modify the Software to be non-infringing; or (ii) to obtain for you a license to continue using the Software. If it is not commercially feasible to perform either of the above options, then Metreos may require from you return of the infringing Software and all rights thereto. Upon return of the infringing Software to Metreos, you may terminate the Agreement with ten (10) days' written notice and you shall be entitled to a pro-rata refund of the fees paid for the infringing Software. This subsection sets forth Metreos' entire liability and exclusive remedy for infringement.

d. You will defend and indemnify Metreos and its licensors against any claim incurred by, borne by or asserted against Metreos or its licensors that relates to or results from (i) your use of the Software, (ii) any intentional or willful conduct or negligence by you or (iii) any breach of an applicable representation, covenant or warranty contained herein.

e. Should the party seeking indemnification (“Indemnitee”) reasonably determine that the party from whom indemnity is sought (“Indemnitor”) has failed to assume the defense of any claim referenced herein, Indemnitee shall have the right to assume such defense and have all expense and cost of the defense reimbursed by Indemnitor, including reasonable attorneys fees.

6. Confidentiality

The Software contains proprietary and confidential information of Metreos as well as trade secrets owned by Metreos. You agree to hold the Software in strict confidence and not to disclose the Software in any way except as expressly permitted hereunder. You agree to protect the Software at least to the same extent that you protect your similar confidential information, but in no event less than reasonable care. You further agree that you will not, directly or indirectly, copy the structure, sequence, or organization of the Software, nor will you copy any portion of the Software or related documentation to produce software programs that are substantially similar to the Software.

7. LIMITATION OF LIABILITY

EXCEPT WHERE THIS EXCLUSION OR RESTRICTION OF LIABILITY WOULD BE VOID OR INEFFECTIVE UNDER APPLICABLE LAW, IN NO EVENT WILL METREOS BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES, OR DAMAGES FOR LOSS OF PROFITS, REVENUE, DATA, OR USE, INCURRED BY YOU OR ANY THIRD PARTY, WHETHER IN AN ACTION IN CONTRACT OR TORT, EVEN IF METREOS OR ANY OTHER PERSON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. METREOS’ LIABILITY FOR DAMAGES HEREUNDER SHALL IN NO EVENT EXCEED THE AMOUNT OF FEES PAID BY YOU FOR THE SOFTWARE OR SERVICE GIVING RISE TO THE CLAIM. IN THE CASE WHERE NO AMOUNT WAS PAID, METREOS SHALL HAVE NO LIABILITY FOR ANY DAMAGES WHATSOEVER.

8. Assignment; Jurisdiction.

This Agreement will be binding upon, and will inure to the benefit of, the permitted successors and assigns of each party hereto. You may not assign, delegate, transfer, or otherwise convey this Agreement, or any of its rights hereunder, to any entity without the prior written consent of Metreos, and any attempted assignment or delegation without such consent shall be void. This Agreement, and all matters arising out of or relating to this Agreement, shall be governed by the laws of the State of Texas, United States of America. Any legal action or proceeding relating to this Agreement shall be instituted in any state or federal court in Travis or Dallas County, Texas, United States of America. Metreos and you agree to submit to the jurisdiction of, and agree that venue is proper in, the aforesaid courts in any such legal action or proceeding.

9. Severability; Waiver

In the event any provision of this Agreement is held to be invalid or unenforceable, the remaining provisions of this Agreement will remain in full force. The waiver by either party of any default or breach of this Agreement shall not constitute a waiver of any other or subsequent default or breach. Except for actions for nonpayment or breach of either party’s intellectual property rights, no action, regardless of form, arising out of this Agreement may be brought by

either party more than two years after the cause of action has accrued. The headings appearing in this Agreement are inserted for convenience only, and will not be used to define, limit or enlarge the scope of this Agreement or any of the obligations herein.

10. Restricted Rights Notice.

The Software is commercial in nature and developed solely at private expense. The Software is delivered as "Commercial Computer Software" as defined in DFARS 252.227-7014 (June 1995) or as a commercial item as defined in FAR 2.101(a) and as provided with only such rights as are provided in this Agreement, which is Metreos' standard commercial license for the Software. Technical data is provided with limited rights only as provided in DFAR 252.227-7015 (Nov. 1995) or FAR 52.227-14 (June 1987), whichever is applicable.

11. Payment; Interpretation; Compliance.

You will pay all amounts invoiced, in the currency specified on the invoice, within 30 days from the date of such invoice. This Agreement constitutes the complete agreement between the Parties and supersedes all previous and contemporaneous agreements, proposals, or representations, written or oral, concerning the subject matter of this Agreement. This Agreement may not be modified or amended except in a writing signed by a you and Metreos; no other act, document, usage, or custom shall be deemed to amend or modify this Agreement. It is expressly agreed that the terms and conditions of this Agreement supersede the terms of any purchase order. Each party agrees to comply with all relevant export laws and regulations of the United States and the country or territory in which the Services are provided ("Export Laws") to assure that neither any deliverable, if any, nor any direct product thereof is (a) exported, directly or indirectly, in violation of Export Laws or (b) intended to be used for any purposes prohibited by the Export Laws, including without limitation nuclear, chemical, or biological weapons proliferation. Each party agrees to comply with all federal, state and local laws and regulations applicable to this Agreement. Each party represents and warrants that it is qualified to do business in the geographies in which it will perform its obligations under this Agreement, and will obtain all necessary licenses and permits, and satisfy any other legal, regulatory and administrative requirements, necessary to its performance hereunder.

The Metreos Communications Environment (MCE) is a feature-rich platform for developing and hosting IP telephony applications. The MCE includes an Application Runtime Environment, controlling media and external resources under the direction of custom telephony applications. The Application Runtime Environment also works with one or more media servers to process, mix, analyze, and route digital audio data.

Applications hosted on the MCE are developed using a GUI-based design tool, the Metreos Visual Designer. The power and flexibility of the Visual Designer helps you build IP telephony applications quickly. System administrators manage the MCE through a Web browser-based interface, the Management Console.

Figure 1 depicts a simplified view of the MCE Architecture.

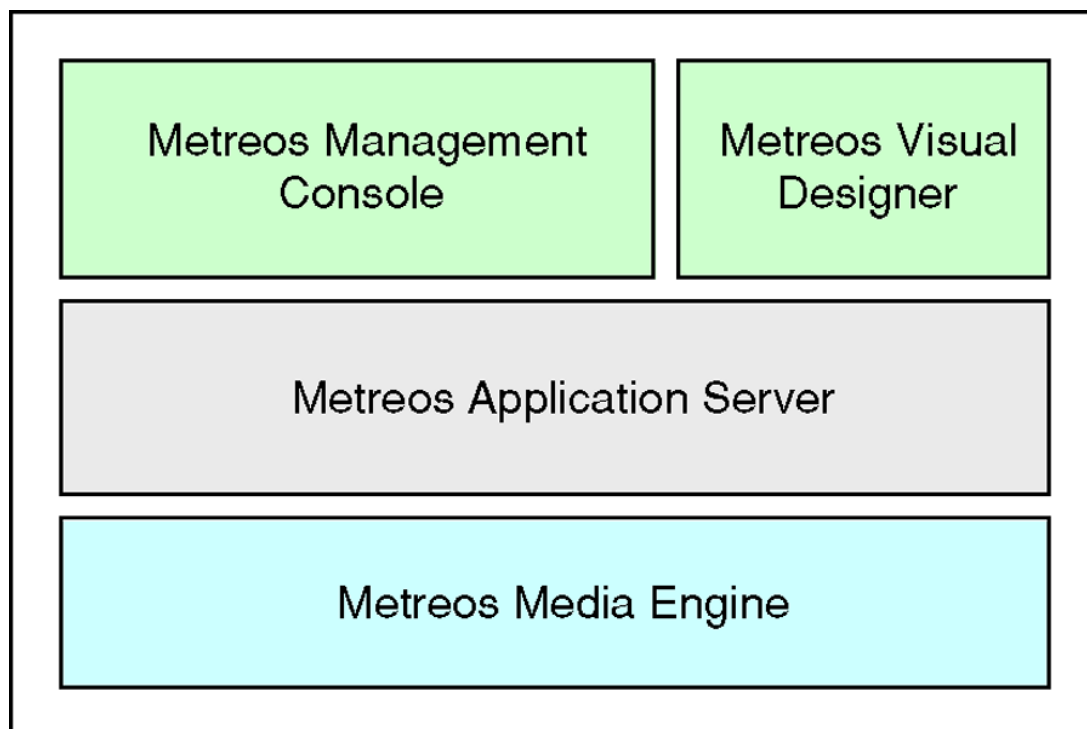


Figure 1. MCE Architecture

Metreos Communications Environment 2

Metreos Management Console

The Metreos Management Console allows you to administer the MCE for IP telephony systems. The following diagram depicts the components of the environment, their relationship with each other, and with other components in a telephony system.

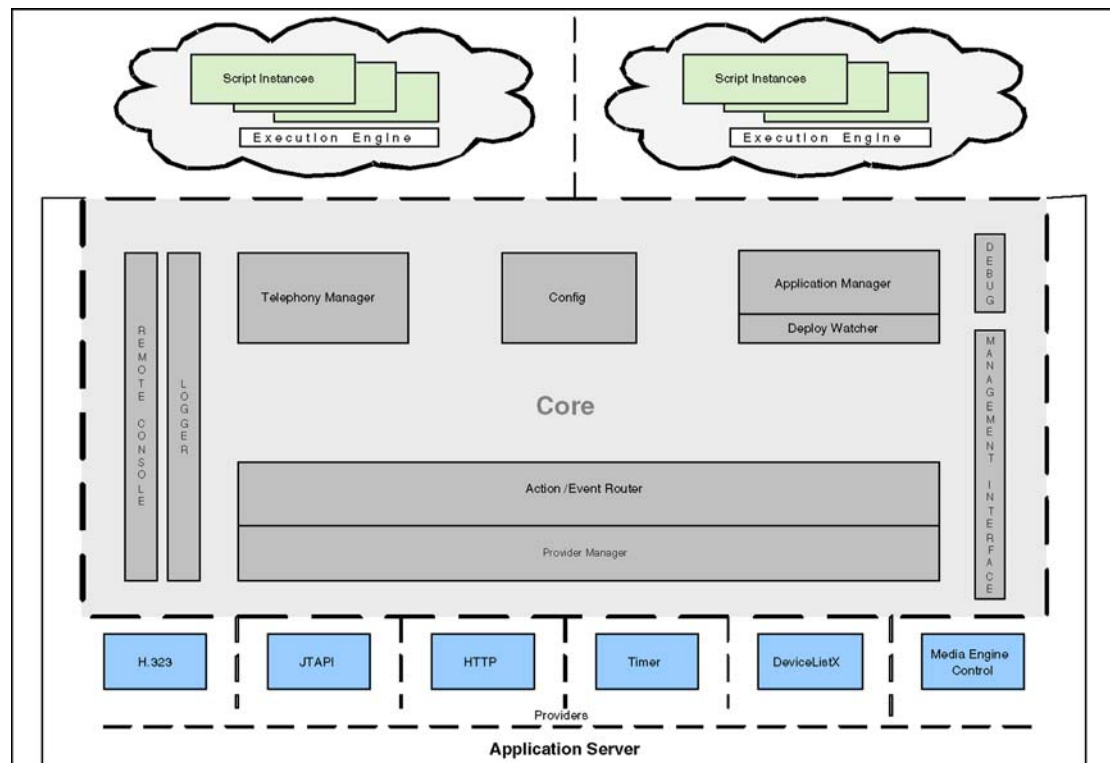


Figure 2. Metreos Communications Environment

The diagram depicts the applications and providers outside the core as separated by broken lines, which represent process boundaries. Isolating the processes prevents external components from affecting the system, in the unlikely event of failure.

You can access, manage, and configure the core components as well as applications and providers through the Management Console. Each core component manages some aspect of the IP telephony system, and the management console enables the configuration of those components.

The core components managed by the console include:

- Application server — Contains all core components and serves as a bootstrap loader for the other core elements.
- Provider Manager — Manages loading and unloading of providers.

- Router — Routes actions and events between providers and applications.
- Telephony Manager — Manages the details of establishing and terminating calls.
- Application Manager — Manages the installation and uninstallation of applications.
- Management Interface — Notifies the core engine of changes to the application server configuration.
- Application environment — A virtual machine providing a runtime environment in which IP telephony applications can be executed.
- Logger — Manages log messages.

The following sections provide details on of the core components.

Application Server

The Application Server starts, executes, terminates, and manages application script execution. Each application runs in its own runtime environment; for every application there is a separate virtual machine on which the application scripts run.

Provider Manager

The Provider Manager is responsible for instantiating and managing providers. Similar to a system process or daemon, a provider opens network ports and allows the Application Runtime Environment to communicate with other devices on a network.

Providers can be loaded or unloaded at any time through the management console. The Provider Manager also manages basic administrative tasks. For example, it monitors providers to ensure that they are running.

Router

In the Metreos system, applications specify sets of triggering criteria. After an instance of an application is triggered, the Router retains the state of that instance and routes subsequent events until the instance terminates.

Telephony Manager

IP telephony applications require complex protocols to establish connections between devices, exchange messages among them, and disconnect them when appropriate. Telephony Manager abstracts implementation details so that you aren't exposed to them.

The Telephony Manager also allows you to enable and disable *sandboxing*. Sandboxing is a system-level, fail-safe capability that ensures system resources do not remain in use after a script ends.

If a script stops prematurely, it might not be able to terminate outstanding calls and the media resources for those calls would remain in use. In such an event, sandboxing permits the Telephony Manager to release the media resources.

Sandboxing is globally disabled by default, but can be enabled on the Telephony Manager Configuration page. You should ensure that sandboxing is disabled if you have an application in which control of the call is transferred from one script to another.

In that case, the media resources are retained after the original script instance terminates because the call is still in progress. The Telephony Manager detects that the original script has terminated but the media has not been released. If sandboxing is enabled, the Telephony Manager releases the media on behalf of the original script and terminates the call.

Refer to [“Configuring the Telephony Manager” on page 14](#) for instructions on enabling and disabling sandboxing.

Application Manager

The Application Manager’s primary responsibility is to manage applications as they progress through the application lifecycle. The Application Manager unpackages applications and creates the application runtime environment on behalf of applications. It also routes debugger commands to the appropriate application.

Using the Application Manager, you can install an application by uploading a Metreos installation package through the management console. The system automatically unpackages it and performs the installation process.

Each application instance has one or more *partitions* associated with it. A partition comprises a set of configuration data applied to an application. All application-defined configuration information and required call control and media resource settings are contained in the application partitions.

A partition is a template that determines the behavior of an application. It specifies parameter values such as triggering criteria. The MCE supports multiple partitions for each application, and each application can specify different triggering criteria and other parameter values. When multiple partitions are defined, multiple user groups can execute concurrent instances of a given application, each running in a uniquely-configured partition.

When an application is installed a default partition is created, which the application uses if multiple partitions are not required. Refer to [“Managing Applications” on page 31](#) for instructions to create and edit application partitions.

Management Interface

The Management Interface listens on a socket (3120 by default) and accepts TCP connections from the management console. The console uses this interface to notify the core engine of changes to the Application Runtime Environment configuration. The management interface exposes the following functions:

- Execute provider extensions (special actions exposed by the provider for management purposes).
- Enable and disable applications.
- Install and uninstall applications.
- Enable and disable providers.
- Install/uninstall providers.
- Add and remove media servers.
- Add and remove CallManager clusters.

Application Environment

When an application script is executed it runs in its own environment segregated from all other components and applications by virtue of process boundaries provided by the MCE.

Logger

The Logger manages log messages. The Metreos Logger uses trace listeners to route log messages to various log sinks based on configurable criteria. The standard logs packaged with the Application Runtime Environment are:

- Debug Logger — Writes logs to the Windows debug queue. A third-party application, DebugView, available from SysInternals is required to view it. (<http://www.sysinternals.com/ntw2k/freeware/debugview.shtml>).
- Console Logger — Writes logs to the console (stdout).
- Event Logger — Writes logs to the Windows event log.
- File Logger — Writes logs to a file.
- Remote Console Logger — Writes logs to any number of TCP connections.
- Log Server Logger — Centralized repository for all logs in a production environment.

The Metreos Management Console is a browser-based interface used to administer the MCE. Its purpose is to simplify the management of applications and media servers. You can use the management console to add new applications, monitor the performance of existing applications, and troubleshoot any problem that might occur. When you launch the Management Console a login screen is displayed.

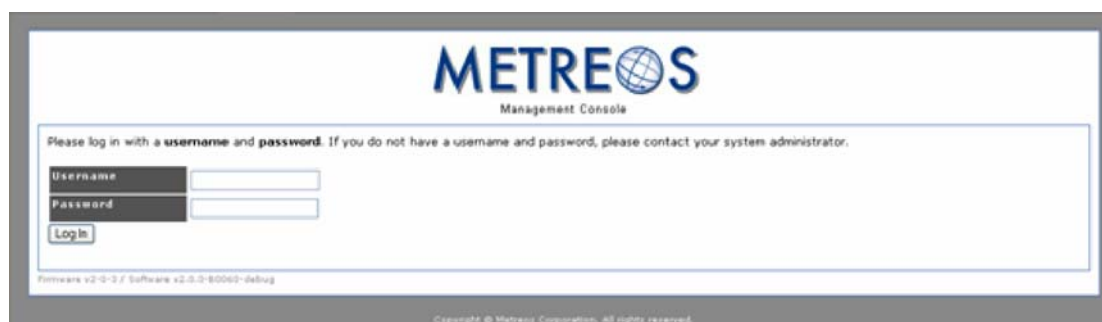


Figure 3: Management Console Login Screen

After logging in, the system displays the Main Control Panel screen.



Figure 4: Metreos Management Console

The Main Control Panel screen is divided into four groups of related management activities:

- Environment
- System
- Components
- Logs

The Metreos Environment

The Environment group contains links to the following MCE configuration pages.

- Console Configuration — An interface that allows you to set basic system attributes.
- Core Components — An interface for configuring the core components described in *Metreos Communications Environment* on [page 3](#).
- User Management — A display of all users and a field for adding new users.

Configuring the Console

You use the Console Configuration page to set system name and time zone parameters and to restart the internal Web server.

The screenshot shows the Metreos Management Console interface. At the top, the Metreos logo is displayed with the text "Management Console" below it. A status message indicates "The application server is running." and a "Logout" button is present. A breadcrumb trail shows "Home > Console Configuration". The main heading is "Console Configuration". Below this, there is a "Configuration" section with two input fields: "System Name" (containing "rowling") and "Time Zone" (set to "GMT-1200" with a dropdown arrow). An "Update" button is located below these fields. Underneath is a "Console Restart" section with a paragraph of text explaining when to restart the webserver and a "RestartWebserver" button. At the bottom left, version information "Firmware v2.0-3 / Software v2.0.0-80060-debug" is shown, and at the bottom right, a copyright notice "Copyright © Metreos Corporation. All rights reserved." is displayed.

Figure 5: Console Configuration Display

To set or reset System Name and Time Zone:

1. Under **Configuration**, enter or select the appropriate parameters.
2. Click the **Update** button.

NOTE: *Metreos recommends you leave the Time Zone setting at Greenwich Mean Time (GMT) unless you have a specific requirement to change it.*

To restart the Web server:

1. Under **Console Restart**, click the **Restart Web server** button.
2. After restarting, you may have to wait about a minute before using the console.

Configuring Core Components

You use the Core Components page to configure the MCE core components as shown in the following figure.

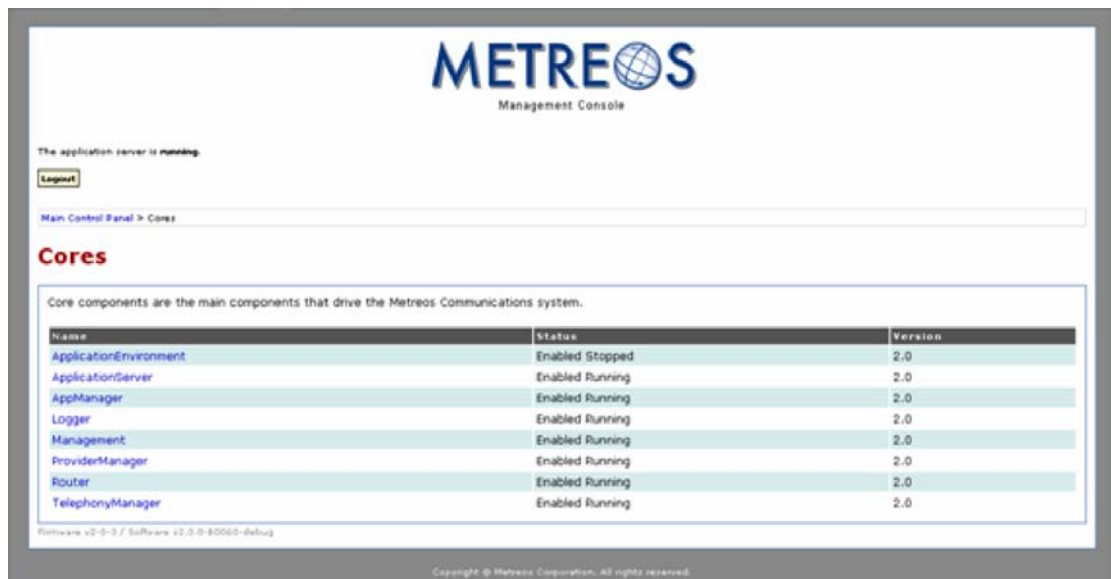


Figure 6: Core Components Management Interface

To configure core components:

1. Click on the desired component link in the **Cores** page.
2. The configurable parameters for that component are displayed.
3. Enter or select the values for the desired parameters.
4. Click the **Update** button.

The procedure for configuring other components in the Environment Group is similar:

1. Select the component you wish to configure.
2. Enter or select the desired parameters.
3. Click the **Update** button.

Configuring the Application Environment



Figure 7: Application Environment Configuration Interface

Application environment parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels.
- **GC Interval** — *Garbage collection* interval. Periodically, the system searches the runtime environment for objects that are no longer being used by the application, but have not released memory. It removes those objects and any associated resources. The **GC Interval** field specifies the time interval in seconds between garbage collection events.
- **Max Threads** — The size of the thread pool used for concurrent execution of actions.

Configuring the Application Server



Figure 8: Application Runtime Environment Configuration Interface

Application server parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels.
- **Server Name** — Identifier for the application server.

Configuring the Application Manager



Figure 9: Application Manager Configuration Interface

Application Manager parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels.
- **Debug Listen Port** — The port number on which the debugger is to listen for debug commands.

Configuring the Logger

The screenshot shows the METREOS Management Console interface. At the top, the METREOS logo and "Management Console" text are displayed. Below the logo, a status message reads "The application server is running." and a "Logout" button is present. A breadcrumb trail shows "Main Control Panel > Config > Logger". The main heading "Logger" is in red. Below it, a "Configuration" section contains a table of settings:

Configuration	Value	Description
DebugView Logger Level	Verbose	Filters Windows debug output below specified level
Console Logger Level	Info	Filters console debug output below specified level
Event Log Level	Warning	Filters Windows debug output below specified level
File Logger Level	Verbose	Filters file debug output below specified level
Max File Log Lines	50000	Max number of lines written to file before starting a new file Valid Range: 100 - 1000000
TCP Logger Level	Verbose	Filters remote console debug output below specified level
TCP Logger Port	8140	Port that the TCP remote console logger remoting server listens on for connections
Log Server Sink Logger Level	Info	Filters log server debug output below specified level

At the bottom of the configuration section are "Update" and "Done" buttons. The footer of the console shows "Software v2.0-3 / Software v2.0-3-80060-debug" and "Copyright © Metreos Corporation. All rights reserved."

Figure 10: Logger Configuration Interface

Logger parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) supported levels.
- **Max File Log Lines** — The maximum number of lines any log file can contain. When the log is full, a new log file is created with a timestamp as the file name.
- **TCP Logger Port** — The port number for the TCP connection of the Remote Console Logger.

Configuring the Management Interface

The screenshot shows the METREOS Management Console interface for the Management configuration. At the top, the METREOS logo and "Management Console" text are displayed. Below the logo, a status message reads "The application server is running." and a "Logout" button is present. A breadcrumb trail shows "Main Control Panel > Config > Management". The main heading "Management" is in red. Below it, a "Configuration" section contains a table of settings:

Configuration	Value	Description
Log Level	Error	Filters all debug output below the specified level
Management Port	8120	Port to listen on for management commands

At the bottom of the configuration section are "Update" and "Done" buttons. The footer of the console shows "Software v2.0-3 / Software v2.0-3-80060-debug" and "Copyright © Metreos Corporation. All rights reserved."

Figure 11: Management Interface Configuration Page

You set the Log Level in the Management Interface Configuration page. **Log Level** refers to the type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels. The **Management Port** field is read only.

Configuring the Provider Manager



Figure 12: Provider Manager Configuration Interface

Provider Manager parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels.
- **Shutdown Timeout** — The length of time in milliseconds the system will wait for a provider to shut down before forcing a shutdown.
- **Startup Timeout** — The length of time in milliseconds the system will wait for a provider to start before considering it unloading.

Configuring the Router



Figure 13: Router Configuration Interface

Router parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels.
- **Default Action Timeout** — The maximum length of time in milliseconds the system will wait for a provider to respond to an Action.

Configuring the Telephony Manager



Figure 14: Telephony Manager Configuration Interface

Telephony Manager parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels.

- **Enable Call/Connection Sandboxing** — When enabled, the system clears any remaining calls and media connections when the controlling script exits. Refer to “[Telephony Manager](#)” on page 4 for information about sandboxing.

Managing Users

Use the User Management page to add users and to list all existing users and their access levels.

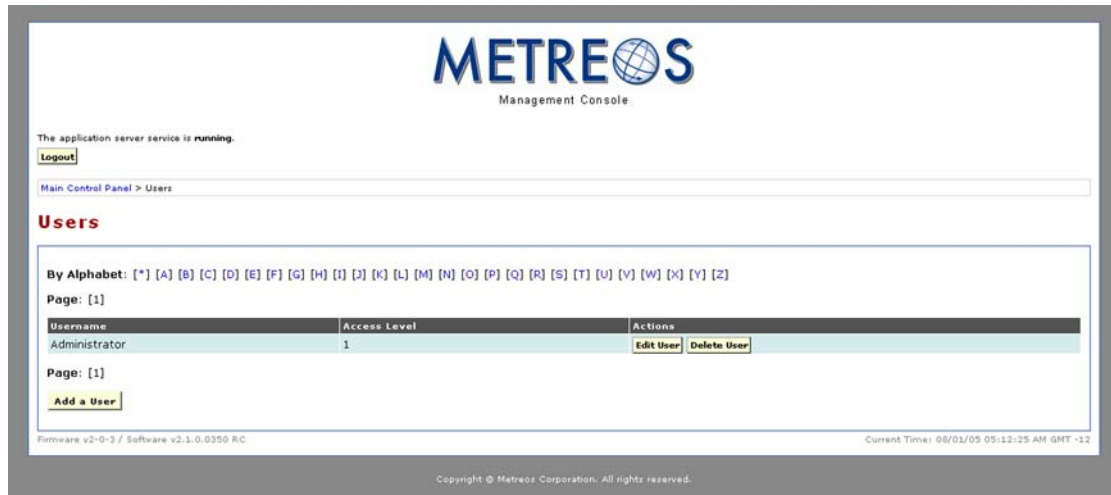


Figure 15: User Management Interface

To add a user:

1. On the Users page, click the **Add a User** button located in the lower left corner.



Figure 16: Add User Interface

2. Enter user's name in the **Username** field.
3. Enter an initial password in **Password** field.

4. Select either **Normal User** or **Administrator** from the **Access Level** pull-down menu. Users who are assigned the **Administrator** role are allowed full access to the management console. Users who are assigned the **Normal User** role are allowed to manage only the following system components:
 - Core Components
 - Applications
 - Media servers
 - Providers
 - Telephony Servers
5. Click the **Add User** button.

The screenshot shows the METREOS Management Console interface. At the top, the METREOS logo and 'Management Console' text are displayed. Below the logo, a status message indicates 'The application server service is running.' and a 'Logout' button is present. A breadcrumb trail shows 'Main Control Panel > Users > Add User'. The main heading is 'Add User'. A success message in a blue box states 'User Adams has been added.' Below this, a form displays the user details: Username 'administrator', Password '*****', Re-type Password '*****', and Access Level 'Normal User' (selected from a dropdown). At the bottom of the form are 'Add User' and 'Go Back' buttons. The footer contains version information 'Firmware v2-0-3 / Software v2.1.0.0351 RC' and the current time 'Current Time: 08/01/05 08:27:39 PM GMT -12'. A copyright notice 'Copyright © Metreos Corporation. All rights reserved.' is also present.

Figure 17: User Added

The Users page is displayed and the system lists all users.

The screenshot shows the METREOS Management Console interface. At the top, the METREOS logo is displayed with the text 'Management Console' below it. A status message indicates 'The application server service is running.' and a 'Logout' button is present. The breadcrumb trail shows 'Main Control Panel > Users'. The 'Users' section title is in red. Below it, an alphabetical filter is shown: 'By Alphabet: [*] [A] [B] [C] [D] [E] [F] [G] [H] [I] [J] [K] [L] [M] [N] [O] [P] [Q] [R] [S] [T] [U] [V] [W] [X] [Y] [Z]'. The 'Page: [1]' indicator is also present. The user list table has three columns: 'Username', 'Access Level', and 'Actions'. The users listed are Adams, Administrator, Eisenhower, Grant, Jefferson, Johnson, Kennedy, Lincoln, Reagan, Roosevelt, Washington, and Wilson. Each user has an 'Access Level' of 3, except for 'Administrator' which is 1. The 'Actions' column contains 'Edit User' and 'Delete User' buttons for each user. At the bottom, there is a footer with 'Formware v2-0-3 / Software v2.1.0.0351 RC' and 'Current Time: 08/01/05 08:25:40 PM GMT -12'. A copyright notice 'Copyright © Metreos Corporation. All rights reserved.' is also present.

Username	Access Level	Actions
Adams	3	Edit User Delete User
Administrator	1	Edit User Delete User
Eisenhower	3	Edit User Delete User
Grant	3	Edit User Delete User
Jefferson	3	Edit User Delete User
Johnson	3	Edit User Delete User
Kennedy	3	Edit User Delete User
Lincoln	3	Edit User Delete User
Reagan	3	Edit User Delete User
Roosevelt	3	Edit User Delete User
Washington	3	Edit User Delete User
Wilson	3	Edit User Delete User

Figure 18: Updated User List — Default View

On the Users page you can view all users, or view only users whose names begin with a specified letter of the alphabet.

To view users whose names begin with a specified letter in the alphabet:

1. Click a letter in the alphabet string above the user list.
2. Click the asterisk (*) next to the **A** in the alphabet string to return to the default view (all users).

To edit a user's username, password, or access level, or to delete a user:

1. Click the **Edit User** button associated with the user, or
2. Click the **Delete User** button associated with the user.

System Configuration and Control

The System group contains links to interfaces that help you manage system-level components. These include:

- **Network Configuration** — View and edit your network configuration.
- **Service Control** — Direct services on which Metreos relies.
- **Media Firmware** — Activate a new media server license.
- **System Update** — Upload new system firmware and software.
- **System Backup / System Restore** — Back up and restore MCE system settings.

Network Configuration

From the Main Control Panel, click the **Network Configuration** link to open the Network Configuration page and display the current network configuration.

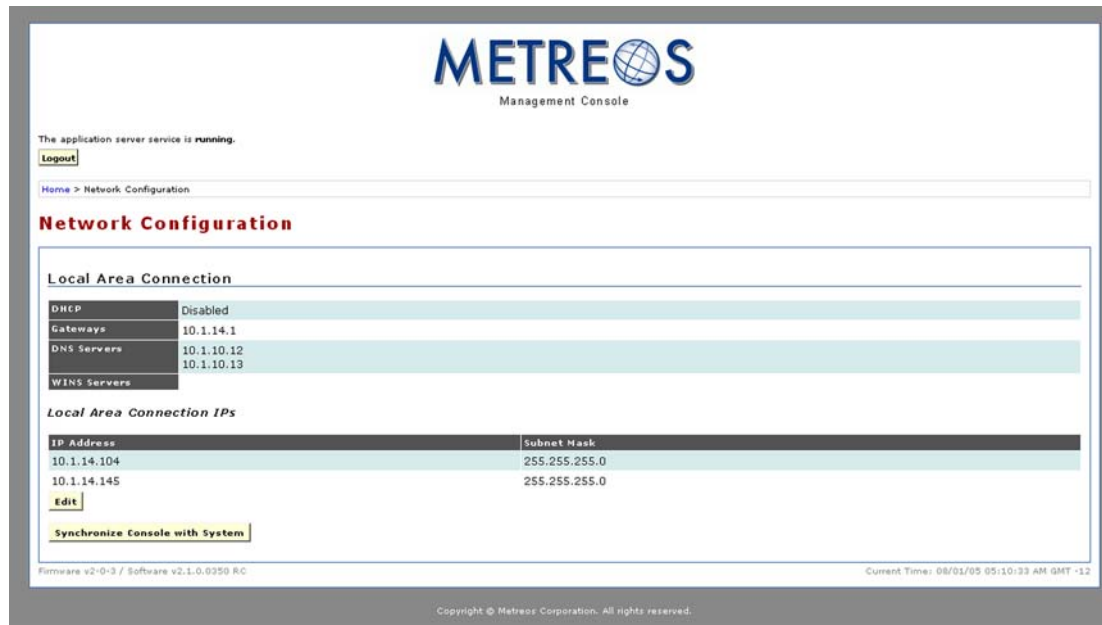


Figure 19: Network Configuration Page

If you know your network configuration has changed you can update the console settings by clicking the **Synchronize Console with System** button.

You can also statically configure your network configuration, as follows:

1. Click the **Edit** button.
The Edit Interface Local Area Connection page is displayed.



Figure 20: Network Configuration Page

2. Click the **Disable DHCP** button.

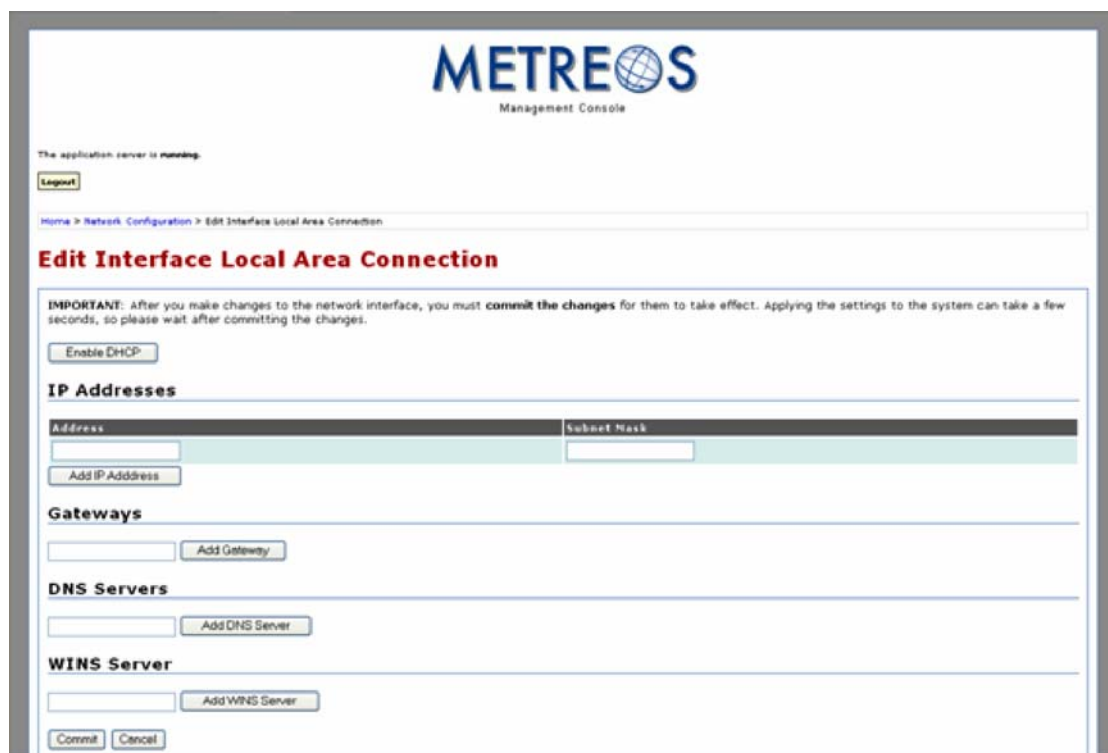


Figure 21: DHCP Configuration Page

3. For each field on the page, enter the configuration information and click the **Add information** button next to the field.
4. Click the **Commit** button. The page displays the new configuration information.

Service Control

The service control interface page displays a table containing system-level services required by the runtime.



Figure 22: Service Control Interface

For each service, the table displays the following:

- **Service Name** — Name of the service.
- **Description** — A short description of the service.
- **Enabled** — Yes or No.
- **Status**:
 - **Running** — Service is available.
 - **Stop Pending** — Service is shutting down.
 - **Stopped** — Service is not available.
 - **Start Pending** — Service is starting up.
- **Action**:
 - **Disable** — Make service unavailable; disallow automatic start at reboot.
 - **Restart** — Stop and restart.
 - **Stop** — Make service unavailable.
 - **Enable** — Allow automatic start at reboot.
 - **Start** — Make service available.

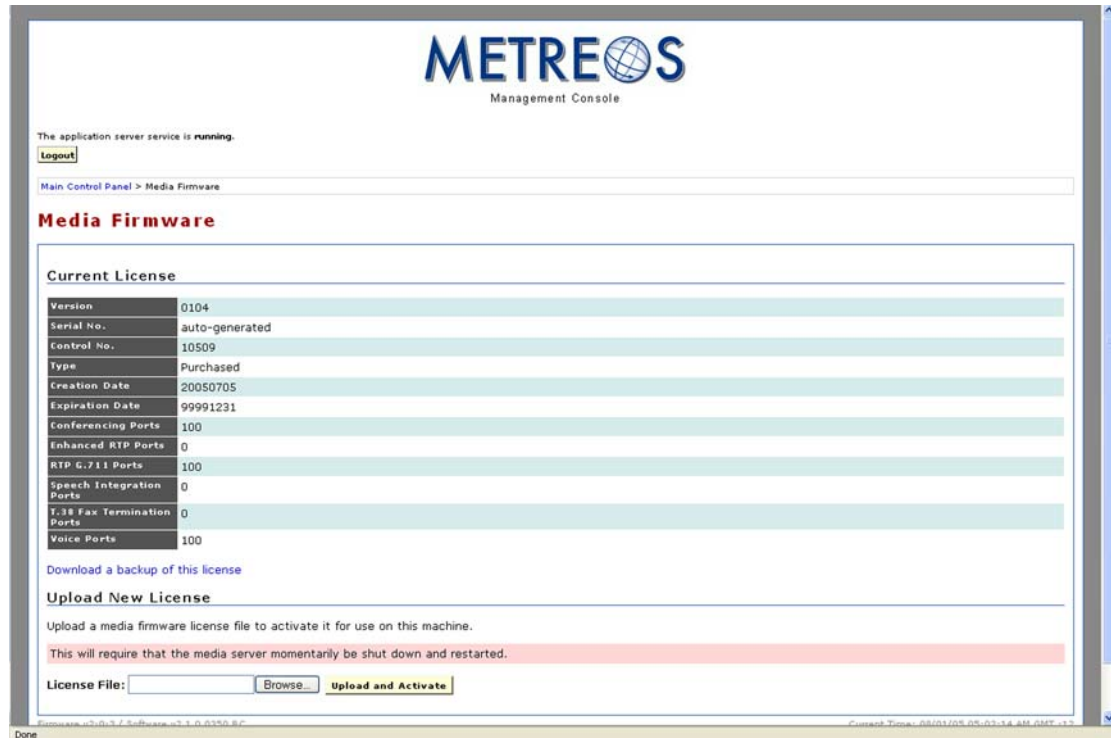
An *enabled* service automatically starts when the system is rebooted; a *disabled* service does not automatically start when the system is rebooted. If you disable a service, the system automatically stops the service. When you take some action on a service, click the **Refresh** button located at the bottom left of the page to update the current status display.

Uploading a Media Firmware License

MCE requires a Host Media Processor (HMP) license, and you will occasionally be required to upload a new license.

To upload a new license:

1. Click the **Media Firmware** link on the Main Control Panel to view the Activate Media Firmware page.



The application server service is **running**.
[Logout](#)

[Main Control Panel](#) > [Media Firmware](#)

Media Firmware

Current License	
Version	0104
Serial No.	auto-generated
Control No.	10509
Type	Purchased
Creation Date	20050705
Expiration Date	99991231
Conferencing Ports	100
Enhanced RTP Ports	0
RTP G.711 Ports	100
Speech Integration Ports	0
T.38 Fax Termination Ports	0
Voice Ports	100

[Download a backup of this license](#)

Upload New License

Upload a media firmware license file to activate it for use on this machine.

This will require that the media server momentarily be shut down and restarted.

License File: [Browse...](#) [Upload and Activate](#)

Done

Figure 23: Activate Media Firmware Page

The Media Firmware page displays the current license information.

2. Type the local path of the license file in the **License File** field, or click the **Browse** button to locate the license on the hard drive.
3. Click the **Upload & Activate** button.
The media server will be restarted.

Configuring Date and Time

To set the current date and time:

1. Click the **System Date and Time** link on the Main Control Panel to view the Activate Media Firmware page.

The screenshot shows the METREOS Management Console interface. At the top, the METREOS logo and 'Management Console' text are displayed. Below this, a status message states 'The application server is running.' with a 'Logout' button. A breadcrumb trail indicates 'Main Control Panel > System Date and Time'. The main heading is 'System Date and Time'. The configuration area includes a 'Date' section with dropdowns for month (June), day (15), and year (2005), and a 'Time' section with dropdowns for hour (14), minute (39), and second (05), followed by 'GMT'. Below this is the 'NTP Servers' section, which includes a radio button for 'Enable NTP Server Use' (set to 'No'), a text input for 'NTP Servers' with a placeholder 'Enter each NTP server on a separate line', and three input fields for 'NTP Server Polling Interval' (900), 'Max Positive Phase Correction' (1800), and 'Max Negative Phase Correction' (1800), all in seconds. A red warning box states: 'Please note that changing the system's time settings requires briefly shutting down currently running services and restarting them.' At the bottom of the form are 'Update Time Settings' and 'Go Back' buttons. The footer shows 'Firmware v2-0-3 / Software v2.1.0.0254 DEV' and 'Current Time: 06/15/05 08:39:06 AM GMT -6'.

Figure 24: Date and Time Page

2. Set the correct time (GMT) and date.
3. Set the information in the **NTP Servers** section.
Information about NTP servers can be found at <http://support.microsoft.com/kb/816042>.

System Update

To update your application:

1. Click the **System Update** link on the Main Control Panel to view the Activate System Update page.



Figure 25: System Update Page

2. Type the local path of the update package file in the text field, or click the **Browse** button to browse the hard drive.
3. Click the **Upload** button. The update package will be validated and release notes displayed, as shown in the following figure.



Figure 26: System Update release notes

4. After reading the release notes, click the **Continue** button at the bottom of the release notes. After the package is uncompressed, the system displays a self-refreshing **In Progress...** page.

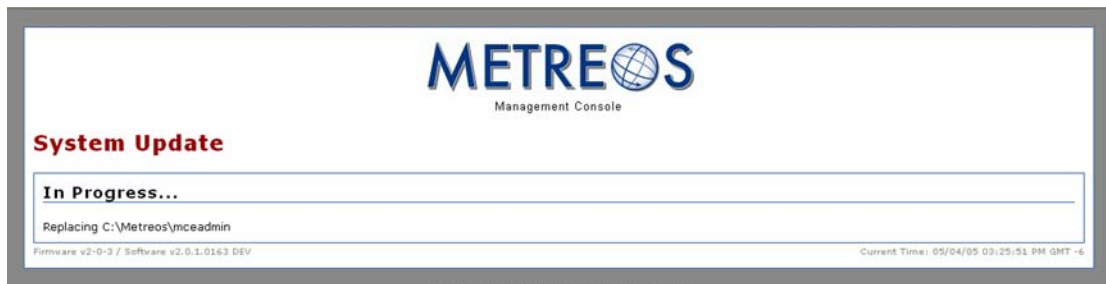


Figure 27: System Update In Progress

5. When the update is complete, the system displays a page indicating whether the update succeeded.



Figure 28: System Update Complete

6. Click the **Done** button.

System Backup and System Restore

Metreos recommends you back up your system regularly to prevent data loss in the event of system failure.

To back up your system:

1. Click the **System Backup** link to launch the System Backup page, which displays the application databases currently in use.



Figure 29: System Backup Page

2. Configure the system backup by clicking in the check box of each application database you want to back up, as shown in the following figure.



Figure 30: Selected Backup Configuration

NOTE: *You can perform a system database backup without backing up application databases. To do so, leave the application databases unchecked and skip to step four. The system database is always backed up when you perform the backup process. A note provides important information, helpful suggestions, or reference material.*

3. Click the **Submit** button to submit the backup configuration.
The page is updated to indicate the new backup configuration is now available, as shown in the following figure.



Figure 31: Backup Configuration Set

4. Click the **Perform a Backup** button to launch the **Performing a Backup** page.



Figure 32: Start Backup

5. Click the **Start** button to start the backup.
The system indicates that the backup is in progress.



Figure 33: Backup in Progress

6. Click the **Next Step** button. If the backup was successful the system notifies you with the following page.

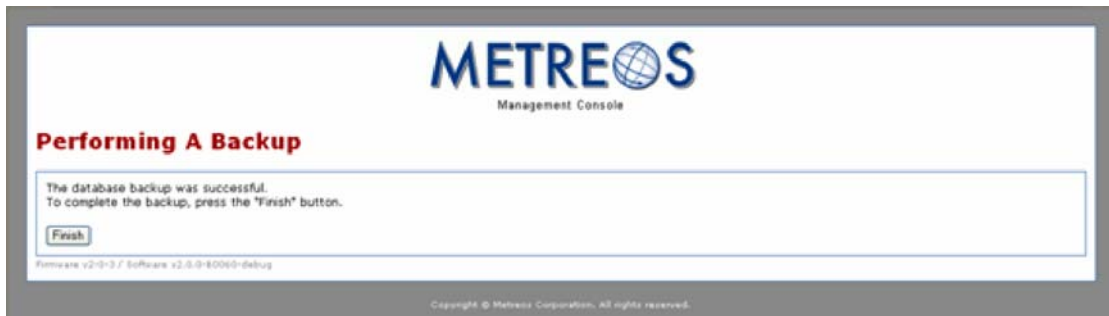


Figure 34: Finish Backup

7. Click the **Finish** button to complete the process. The system indicates the backup is complete.



Figure 35: Complete Backup

8. Click the **Done** button to view the list of backup files, which you can store.



Figure 36: System Backup Page with Downloadable Backup File Complete

You can download the backup file or delete it.

9. To download the backup file, click **Download**.

10. To delete the backup file, click **Delete**.

11. To view a history of all backups click the **All Backups** link.



Figure 37: System Backup History

After backing up the system you can restore it if necessary.

To restore the system:

1. From the Main Control Panel, click the **System Restore** link.



Figure 38: System Restore Page

2. You can select a backup file currently stored on the system or upload it from a local drive. If you choose to use a system file, select the file from the **Select a Backup** drop-down list, then click the **Restore from Backup** button.



Figure 39: System Restore — File Selection

If you choose to restore from a file on a local drive, either type the full path in the **Upload Restore File** field, or use the **Browse** button to locate the file, then click the **Upload File** button.

Working with Components

The management console provides access to the system components you use to manage IP telephony applications. These include:

- **Applications** — Deploy and uninstall applications.
- **Media servers** — Add and remove media servers.

- **Providers** — An interface for adding and removing Providers.
- **Telephony Servers** — An interface for adding and removing Telephony Servers.

Managing Applications

The primary task you perform on the Applications interface page is installing and uninstalling applications.

To install an application:

1. Click the **Applications** link on the Main Control Panel.



Figure 40: Application Manager Main Page

2. Type the full path of the install file or click the **Browse** button to locate the file.
3. Click the **Upload File** button.
The Application Manager processes the file and installs the application, then updates the Applications page to list the application.



Figure 41: Application Manager with MCE Application

The page displays the application name (**CBarge**) the status (**Enabled Running**) and the version (**1.0**). The application name is displayed as a link.

- Click the link to launch a page for managing the application.

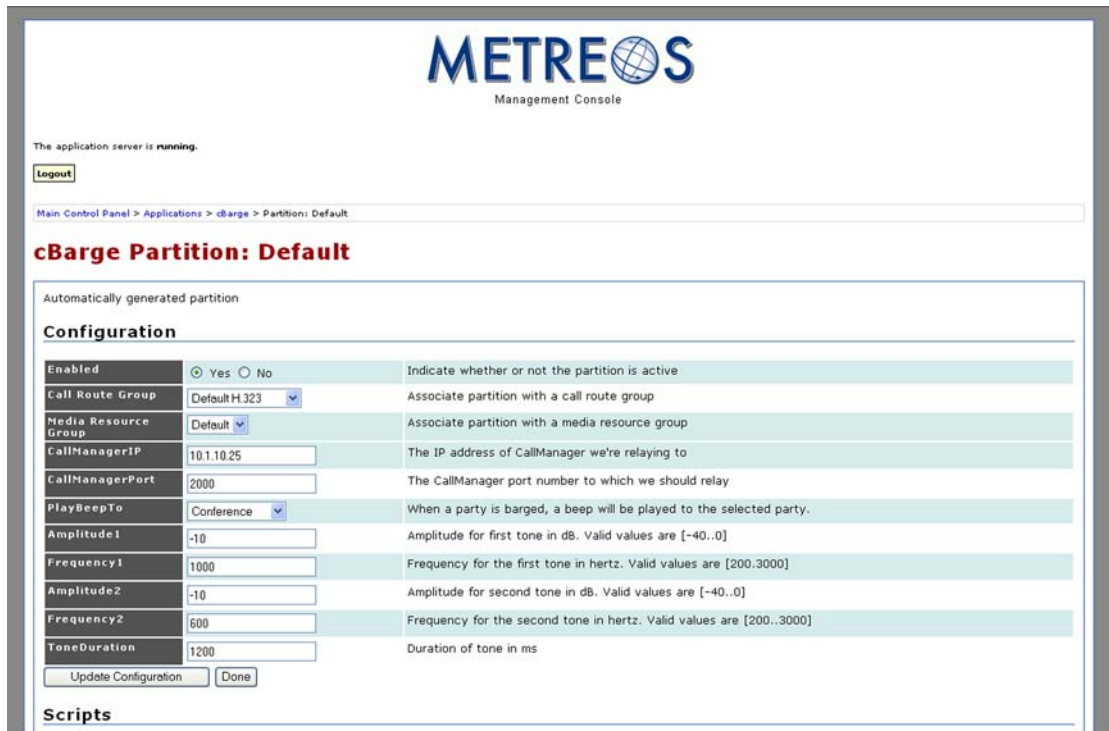


Figure 42: Application Manager with MCE Application

After the application is installed you can create additional partitions for it. Refer to “[Application Manager](#)” on page 5 on page 14 for an explanation of partitions. The parameters on all partitions are application specific. A default Metreos partition is assigned to the application as shown in the following figure.

The screenshot displays the Metreos Management Console interface. At the top, the Metreos logo and 'Management Console' text are visible. Below this, a status message indicates 'The application server is running.' and a 'Logout' button is present. The breadcrumb trail shows 'Main Control Panel > Applications > cBarge > Partition: Default'. The main heading is 'cBarge Partition: Default'. Below this, it states 'Automatically generated partition'. The 'Configuration' section contains a table of settings:

Configuration	Value	Description
Enabled	<input checked="" type="radio"/> Yes <input type="radio"/> No	Indicate whether or not the partition is active
Call Route Group	Default H.323	Associate partition with a call route group
Media Resource Group	Default	Associate partition with a media resource group
CallManagerIP	10.1.10.25	The IP address of CallManager we're relaying to
CallManagerPort	2000	The CallManager port number to which we should relay
PlayBeepTo	Conference	When a party is barged, a beep will be played to the selected party.
Amplitude1	-10	Amplitude for first tone in dB. Valid values are [-40..0]
Frequency1	1000	Frequency for the first tone in hertz. Valid values are [200..3000]
Amplitude2	-10	Amplitude for second tone in dB. Valid values are [-40..0]
Frequency2	600	Frequency for the second tone in hertz. Valid values are [200..3000]
ToneDuration	1200	Duration of tone in ms

At the bottom of the configuration section are 'Update Configuration' and 'Done' buttons. Below this is a 'Scripts' section. The bottom status bar shows 'Done' and 'Local intranet'.

Figure 43: Default Partition

- **Enabled (Yes/No)** — Activates or inactivates the partition.
- **Call Route Group** (*call_route_group_name*) — Designates a call route group for the partition.
- **Media Resource Group** (*media_resource_group*) — Designates a media resource group for the partition. Refer to “[Managing Media Servers](#)” on page 37 for details.

5. Click the **Done** button to return to the application page.

To create a new partition:

1. Click the **Create Partition** button to launch the Create Partition page.

The screenshot shows the 'Creating partition for cBarge' page in the Metreos Management Console. The page has a header with the Metreos logo and 'Management Console'. Below the header, there is a status bar indicating 'The application server is running.' and a 'Logout' button. A breadcrumb trail shows 'Main Control Panel > Applications > cBarge > Create Partition'. The main title is 'Creating partition for cBarge'. The form contains several fields: 'Name' (text input), 'Description' (text input with a help icon), and a 'Configuration' section. The 'Configuration' section includes: 'Enabled' (radio buttons for 'Yes' and 'No'), 'Call Route Group' (dropdown menu), 'Media Resource Group' (dropdown menu), 'Alarm Group' (dropdown menu), 'CallManagerIP' (text input), 'CallManagerPort' (text input), 'PlayBeepTo' (dropdown menu), 'Amplitude1' (text input), 'Frequency1' (text input), 'Amplitude2' (text input), 'Frequency2' (text input), and 'ToneDuration' (text input). Each field has a description. At the bottom, there are 'Create Partition' and 'Cancel' buttons.

Field	Value	Description
Name		
Description		
Enabled	<input type="radio"/> Yes <input type="radio"/> No	Indicate whether or not the partition is active
Call Route Group	None	Associate partition with a call route group
Media Resource Group	None	Associate partition with a media resource group
Alarm Group	TestQ	Associate partition with an alarm group
CallManagerIP	10.1.10.25	The IP address of CallManager we're relaying to
CallManagerPort	2000	The CallManager port number to which we should relay
PlayBeepTo	Conference	When a party is barged, a beep will be played to the selected party.
Amplitude1	-10	Amplitude for first tone in dB. Valid values are [-40..0]
Frequency1	1000	Frequency for the first tone in hertz. Valid values are [200..3000]
Amplitude2	-10	Amplitude for second tone in dB. Valid values are [-40..0]
Frequency2	600	Frequency for the second tone in hertz. Valid values are [200..3000]
ToneDuration	1200	Duration of tone in ms

Figure 44: Application Partition Page

2. Give the partition a name and enter it in the **Name** field.
3. Provide a description in the **Description** field.
4. If you want to immediately enable the application partition, click the **Yes** radio button next to **Enabled**, if not click the **No** radio button.
5. Change any configuration parameters as needed for the partition you want to create.

- Click the **Create Partition** button.

Main Control Panel > Applications > cBarge > Partition: Partition1

cBarge Partition: Partition1

A new partition has been created. Please edit the trigger parameters for each script in the new partition.

Lowered Amplitude1

Configuration

Enabled	<input checked="" type="radio"/> Yes <input type="radio"/> No	Indicate whether or not the partition is active
Call Route Group	None	Associate partition with a call route group
Media Resource Group	None	Associate partition with a media resource group
Alarm Group	None	Associate partition with an alarm group
CallManagerIP	10.1.10.25	The IP address of CallManager we're relaying to
CallManagerPort	2000	The CallManager port number to which we should relay
PlayBeepTo	Conference	When a party is barged, a beep will be played to the selected party.
Amplitude1	-20	Amplitude for first tone in dB. Valid values are [-40..0]
Frequency1	1000	Frequency for the first tone in hertz. Valid values are [200..3000]
Amplitude2	-10	Amplitude for second tone in dB. Valid values are [-40..0]
Frequency2	600	Frequency for the second tone in hertz. Valid values are [200..3000]
ToneDuration	1200	Duration of tone in ms

Update Configuration Done

Scripts

Name	Event Type	
Barge	Metreos.CallControl.IncomingCall	Edit Trigger Parameters
SccpProxy	Metreos.Providers.SccpProxy.Register	Edit Trigger Parameters
FallOver	Metreos.Providers.SccpProxy.RegisterTokenReq	Edit Trigger Parameters

Metreos v2.0.0-1.7 Software v2.0.0-80000-debug

Figure 45: New Partition Added



CAUTION: Parameter values are inherited from the default partition and all unchanged parameters in the new partition remain linked to parameters in the default partition. These parameter values will be updated in the new partition to match any changes made to them in the default partition.

- Click the **Done** button to return to the application page.

cBarge

Disable Application Done

Configuration

CallManagerIP	10.1.10.25	The IP address of CallManager we're relaying to
CallManagerPort	2000	The CallManager port number to which we should relay
PlayBeepTo	Conference	When a party is barged, a beep will be played to the selected party.
Amplitude1	-10	Amplitude for first tone in dB. Valid values are [-40..0]
Frequency1	1000	Frequency for the first tone in hertz. Valid values are [200..3000]
Amplitude2	-10	Amplitude for second tone in dB. Valid values are [-40..0]
Frequency2	600	Frequency for the second tone in hertz. Valid values are [200..3000]
ToneDuration	1200	Duration of tone in ms

Update Done

Scripts

Name	Event Type
Barge	Metreos.CallControl.IncomingCall
SccpProxy	Metreos.Providers.SccpProxy.Register
FailOver	Metreos.Providers.SccpProxy.RegisterTokenReq

Partitions

Name	Description	Actions
Default	Automatically generated partition	Edit
Partition1	Lowered Amplitude1	Edit Delete

Create Partition

Software v2.0-3 / Software v2.0-3-80060-debug

Figure 46: Example Partition Configuration

- To disable an enabled application, click the **Disable Application** button.
 - To enable a disabled application, click the **Enable Application** button.
- To uninstall the application, first disable it then click the **Uninstall Application** button. The uninstall confirmation page is displayed.

METREOS
Management Console

Uninstall cBarge

Are you sure you want to uninstall cBarge?

Yes No

Software v2.0-3 / Software v2.0-3-80060-debug

Copyright © Metreos Corporation. All rights reserved.

Figure 47: Application Manager Uninstall Page

- Click the **Yes** button to proceed with the uninstallation. The system uninstalls your application.

Managing Media Servers

The management console lets you create and configure media server groups and media servers. A media server group is a container for a collection of media servers. Each media server must be associated with one or more groups. Although you can create media server groups, it is not necessary to do so. The system provides a default media server group you can use if multiple groups are not needed.

To create a new media group:

1. Click the **Media Servers** link on the Main Control Panel.

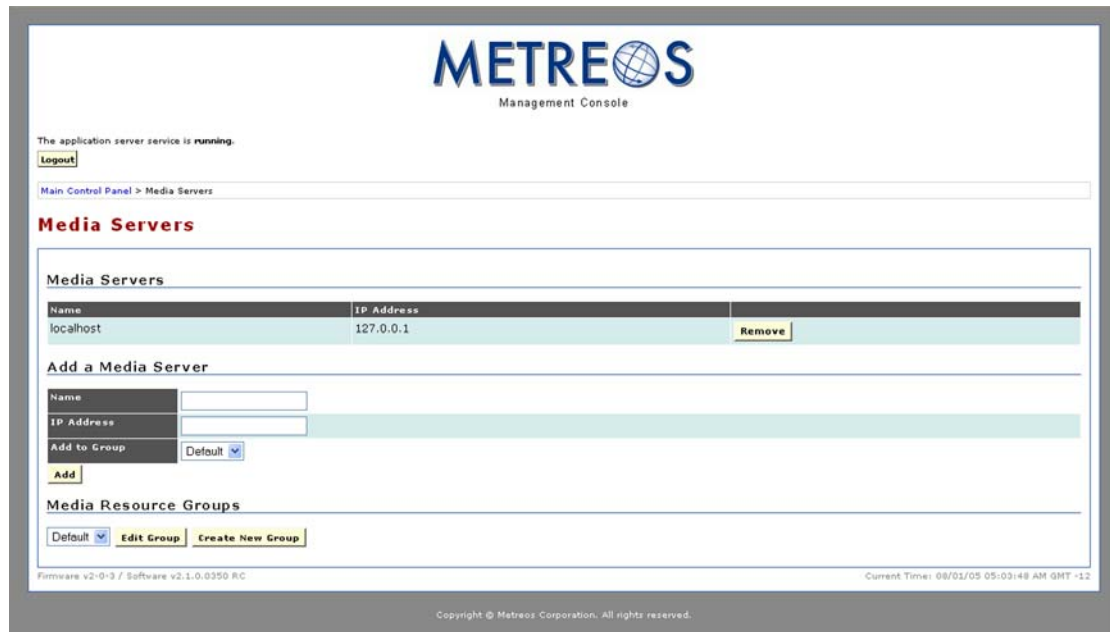


Figure 48: Media Servers Page

2. Click on the **Create New Group** button located at the bottom of the Media Servers page.

The screenshot displays the METREOS Management Console interface. At the top, the METREOS logo and 'Management Console' text are visible. Below the logo, a status message states 'The application server is running.' and a 'Logout' button is present. A breadcrumb trail reads 'Main Control Panel > Media Servers > Create Group'. The main heading is 'Create Group' in red. The 'Group Properties' section contains a form with the following fields: 'Name' (text input), 'Type' (set to 'Media Resource Group'), 'Description' (text input with a help icon), 'Failover Group' (dropdown menu set to 'None'), and 'Alarm Group' (dropdown menu set to 'None'). At the bottom of the form are 'Create Group' and 'Cancel' buttons. The footer includes version information 'Firmware v2.0-3.7 Software v2.0.0-80060-debug' and a copyright notice 'Copyright © Metreos Corporation. All rights reserved.'

Figure 49: FigureMedia Servers Group Page

3. Enter the group name in the **Name** field.
4. Enter a description of the group in the **Description** field.
5. If you want to designate a failover group select the appropriate group from the **Failover Group** drop-down list.
6. Click the **Create Group** button to proceed. Clicking the **Create Group** button creates the group and displays the **Edit Groups** page.

- Click the **Done** button to return to the Media Servers page.

The screenshot shows the METREOS Management Console interface. At the top, the METREOS logo and 'Management Console' text are displayed. Below the header, a status message indicates 'The application server service is running.' and a 'Logout' button is present. The main navigation bar shows 'Main Control Panel > Media Servers'. The 'Media Servers' section features a table with columns 'Name' and 'IP Address'. The table contains one entry: 'localhost' with IP '127.0.0.1'. A 'Remove' button is next to this entry. Below the table is the 'Add a Media Server' form, which includes input fields for 'Name' and 'IP Address', a dropdown for 'Add to Group' (currently set to 'Default'), and an 'Add' button. At the bottom, the 'Media Resource Groups' section shows a dropdown for 'Default', an 'Edit Group' button, and a 'Create New Group' button. The footer contains version information and a copyright notice.

Name	IP Address
localhost	127.0.0.1

Add a Media Server

Name:

IP Address:

Add to Group:

Add

Media Resource Groups

Edit Group **Create New Group**

Figure 50: Add Media Server

You can now add a media server:

- Type the name of the media server in the **Name** field.
- Type the IP address for the media server in the **IP Address** field.
- Select the media server group for the media server from the **Add to Group** drop-down list.
- Click the **Add** button to add the server. The system adds the server and displays it in the **Media Servers** list.

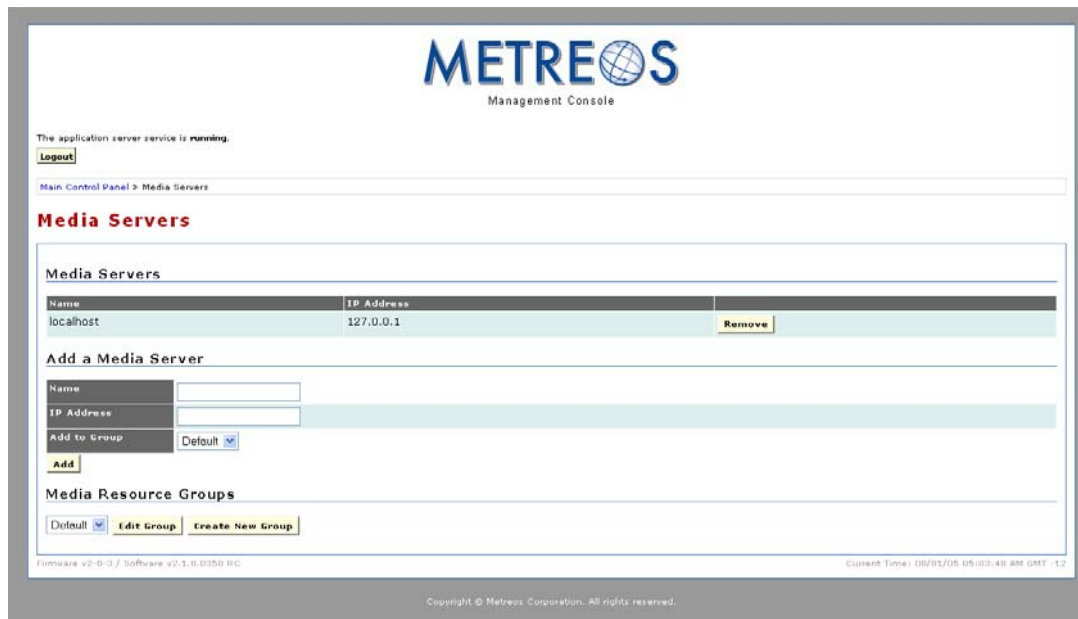


Figure 51: Media Server Added

You can confirm that the **Media Server** was added to the correct group by selecting the group from the drop-down list at the bottom of the page and clicking the **Edit Group** button.

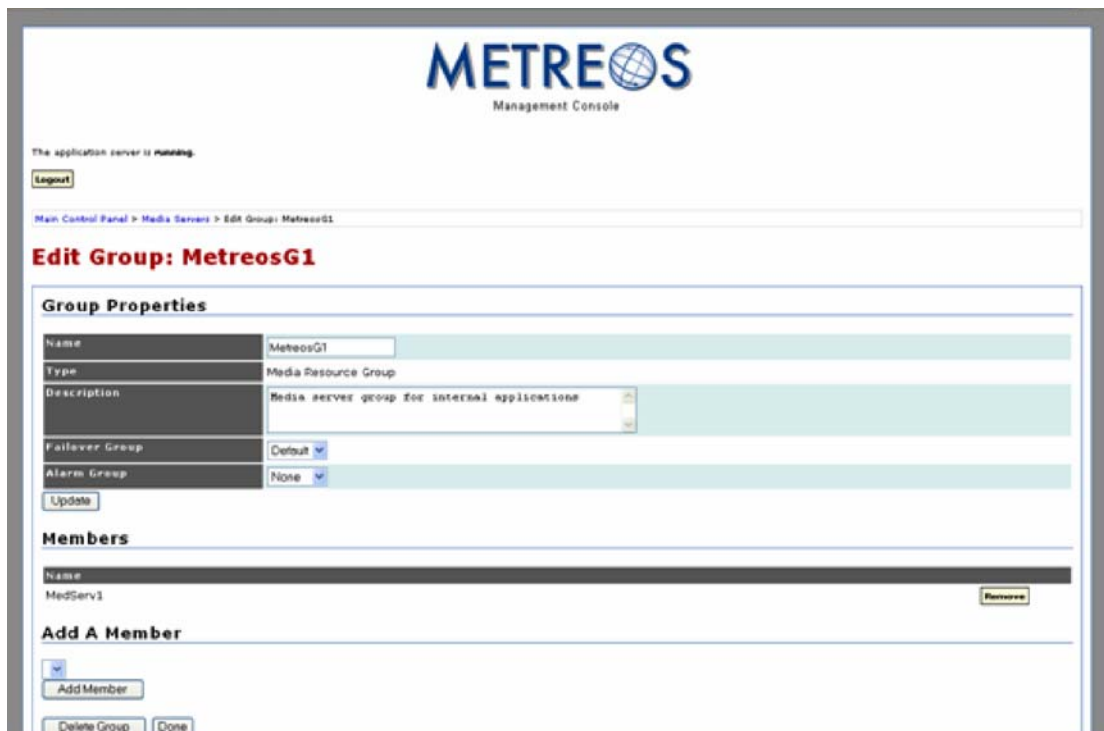


Figure 52: Media Server Displayed in Group

You can remove the media server from the group without removing it from the system by clicking the **Remove** button on the right hand side of the page.

The system confirms that the group has been removed.

The screenshot shows the METREOS Management Console interface. At the top, the METREOS logo and 'Management Console' text are visible. Below the header, a status message reads 'The application server is running.' with a 'Logout' button. The breadcrumb trail is 'Main Control Panel > Media Servers > Edit Group: MetreosG1'. The main heading is 'Edit Group: MetreosG1'. A confirmation message in a blue box states 'The component has been removed from group.' Below this, the 'Group Properties' section contains a table with the following details:

Name	MetreosG1
Type	Media Resource Group
Description	Media server group for internal applications
Fallover Group	Default
Alarm Group	None

Below the table is an 'Update' button. The 'Members' section is currently empty, showing only a 'Name' header. The 'Add A Member' section includes a dropdown menu, an 'Add Member' button, and 'Delete Group' and 'Done' buttons at the bottom.

Figure 53: Media Server Deleted from Group



CAUTION: A media server cannot be used unless it is associated with a group. If you remove a media server from a group you must reassign it to a group before an application can access it. It remains unusable by the application server until you explicitly add it to a media server group.

To remove a media server from the system:

1. Go to the Media Servers page.



Figure 54: Remove Media Server

2. Click the **Remove** button.

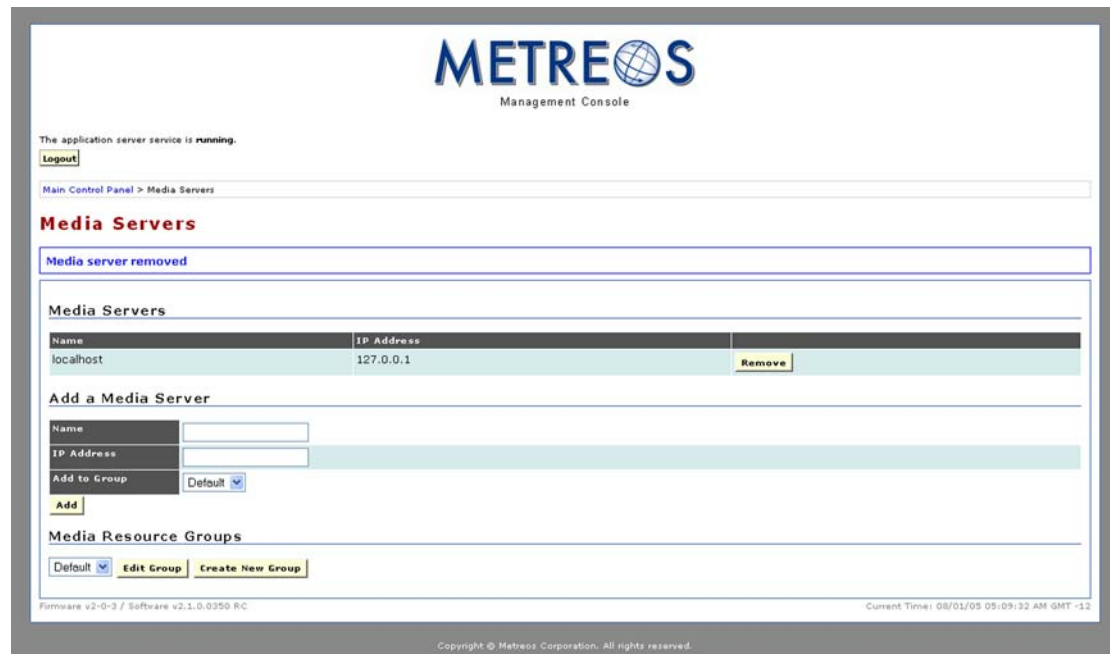


Figure 55: Media Server Removed from System

Managing Providers

Using the management console, you can configure, disable, and uninstall providers.

Clicking on the **Providers** link in the **Components** group of the Main Control Panel launches the Providers page.



Name	Status	Version
CiscoDeviceListX	Enabled Running	2.1.0.0337
H323Provider	Enabled Running	2.1.0.0337
HTTP	Enabled Running	2.1.0.0337
JTapiProvider	Enabled Running	2.1.0.0337
MediaControlProvider	Enabled Running	2.1.0.0337
TimerFacility	Enabled Running	2.1.0.0337

Figure 56: Provider Management Page

The page displays the list of providers shipping with the Metreos 2400 system, the status of each provider (**Enabled Running** or **Disabled**), and the version number. Clicking on the provider name launches the configuration page for that provider. From there you can disable the provider or edit the configuration.

Provider Configuration

The following page depicts a typical Provider configuration page.

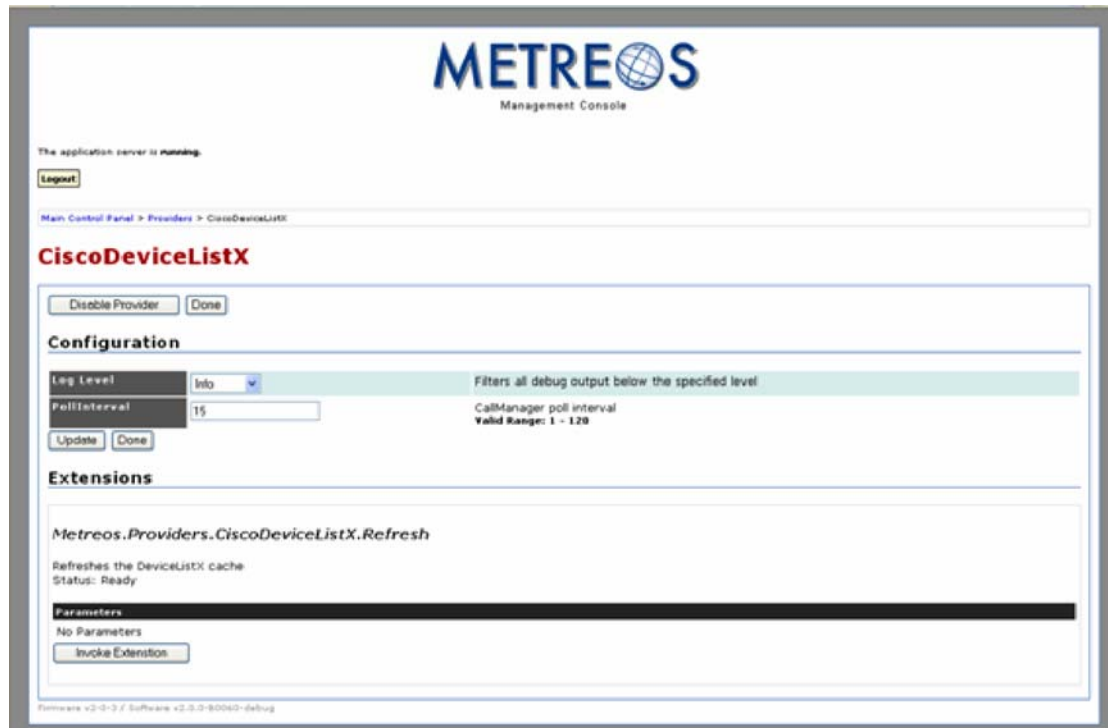


Figure 57: Sample Provider Configuration Page

Every provider configuration page is divided into three sections.

- **Enable or Disable Provider** — Enable and disable switch.

NOTE: *Disabling the provider allows you to subsequently uninstall the provider. Uninstalling a provider resets it back to its default configuration settings and makes it unavailable. To restart the provider, restart the application server; the provider will be restarted automatically.*

- **Configuration** — Configurable parameters for the provider.
- **Extensions** — Special actions exposed by the provider that are invoked only through the Management Console rather than by a script. Not all providers have extensions.

To invoke the extension:

Click the **Invoke Extension** button.

Configuring CiscoDeviceListX

1. Click the **CiscoDeviceListX** link to display the CiscoDeviceListX configuration page. Refer to [Figure 56 Provider Management Page](#) previously presented.

The CiscoDeviceListX parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels.
- **PollInterval** — The interval in minutes between requests sent to CallManager to refresh device information (cache refresh).

2. To put configuration changes into effect, Click the **Update** button.

3. Click **Done** to return to the providers page.

Configuring H323Provider

Click the **H323Provider** link on the Providers page to configure the H323Provider.

The screenshot displays the H323Provider configuration page within the Metreos Management Console. At the top, the Metreos logo and 'Management Console' text are visible. Below the header, a status message indicates 'The application server is running.' and a 'Logout' button is present. The breadcrumb trail shows 'Main Control Panel > Providers > H323Provider'. The main title 'H323Provider' is in red. Below the title, there are 'Disable Provider' and 'Done' buttons. The 'Configuration' section contains several fields: 'Log Level' is a dropdown menu set to 'Info'; 'Port' is a text input field with '1720' and a note 'Listen port Valid Range: 1024 - 32768'; 'EnableStackDebugging' has radio buttons for 'Yes' and 'No', with 'No' selected; 'StackDebuggingLogLevel' is a text input field with '3' and a note 'Valid Range: 0 - 5'; and 'StackDebuggingLogFile' is a text input field with 'H323StackLog.txt'. At the bottom of the configuration section are 'Update' and 'Done' buttons. The 'Extensions' section below shows 'No extensions.' At the very bottom, there is a footer with 'Firmware v2-0-3 / Software v2.0.1.0161 DEV' and 'Current Time: 05/03/05 10:03:32 AM GMT -12'.

Figure 58: H323Provider Configuration Page

H323Provider parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels.
- **Port** — The number of the port on which H323 listens.
- **EnableStackDebugging** — Enables the StackDebugger, a tool that writes logs to a file for H.323 diagnostics.
- **StackDebuggingLogLevel** — Log level specifying the detail of logs written by the StackDebugger. Valid values are 0 – 5; 0 is no debugging, and 5 is maximum debugging.
- **StackDebuggingLogFile** — The name of the log file for the StackDebuggingLog function.

- **EnableProcessWindow** — Configures H323 to write debug output to a window rather than a log file.
1. To put configuration changes into effect, Click the **Update** button.
 2. Click **Done** to return to the Providers page.

Configuring the HTTP Provider

Click the **HTTP** link on the Providers page to configure the HTTP Provider.

The application server is **running**.

[Logout](#)

Main Control Panel > Providers > HTTP

HTTP

[Disable Provider](#) [Done](#)

Configuration

Log Level	Info	Filters all debug output below the specified level
Port	8000	Listen port Valid Range: 1024 - 65536
Session Expiration Minutes	20	Number of minutes before HTTP sessions expire. Valid Range: 1 - 3600
Session Cleanup Minutes	20	Number of minutes between each session cleanup run. Valid Range: 1 - 60

[Update](#) [Done](#)

Extensions

No extensions.

Firmware v2-0-3 / Software v2.0.1.0161

Copyright © Metreos Corporation. All rights reserved.

Figure 59: HTTP Provider Configuration Page

HTTP Provider parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels.
 - **Name** — The name of the HTTP provider.
 - **Port** — The number of the port on which the provider listens.
 - **Session Expiration Minutes** — The number of inactive minutes before the session is automatically terminated.
 - **Session Cleanup Minutes** — The interval between clean-up of resources for terminated sessions in minutes.
1. To put configuration changes into effect, click the **Update** button.
 2. Click **Done** to return to the providers page.

Configuring JTapiProvider

JTAPI can use CTI ports and route points for first party calls. The devices configured in this section, however, are exclusively for monitoring third party calls.

Click the **JTapiProvider** link on the Providers page to configure JTapiProvider.

The screenshot shows the 'JTapiProvider' configuration page in the Metreos Management Console. The page has a header with the Metreos logo and 'Management Console'. Below the header, there's a status bar indicating 'The application server service is running.' and a 'Logout' button. The main navigation bar shows 'Main Control Panel > Providers > JTapiProvider'. The title 'JTapiProvider' is displayed in red. The configuration area contains several fields and buttons:

- Buttons:** 'Disable Provider', 'Update', and 'Done' are located at the top and bottom of the configuration area.
- Log Level:** A dropdown menu set to 'Verbose'. Description: 'Filters all debug output below the specified level'.
- MonitorDevices:** A button labeled 'View and Edit Values'. Description: '(Optional) List of devices to monitor'.
- Username:** A text input field. Description: '(Optional) CTI user who has permission to monitor all devices in list'.
- Password:** A text input field with a 'Change Password' button next to it. Description: '(Optional) Password for CTI user'.
- CtlManager:** A text input field. Description: '(Optional) CTI Manager IP address'.
- BackupCtlManager:** A text input field. Description: '(Optional) Backup CTI Manager IP address'.
- MaxCallsPerDevice:** A text input field with the value '1'. Description: 'Maximum number of calls allowed on any first-party CTI Port device (as configured in CallManager)'.
- ServerVersion:** A dropdown menu set to '1.40'. Description: 'Version of the JTAPI service with which this provider should work'.
- Extensions:** A section titled 'Extensions' with the text 'No extensions.'

At the bottom of the page, there is a footer with 'Firmware v2.0-3 / Software v2.1.0.0350 RC' and 'Current Time: 08/01/05 05:01:07 AM GMT +12'. A copyright notice 'Copyright © Metreos Corporation. All rights reserved.' is also present.

Figure 60: JTapi Provider Configuration Page

JTapiProvider parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels.
- **Monitor Devices** — Devices to monitor.

Clicking the **View & Edit Values** button launches the Monitor Devices page.

The screenshot shows the 'MonitorDevices' page in the Metreos Management Console. The page has a header with the Metreos logo and 'Management Console'. The title 'MonitorDevices' is displayed in red. The main content area contains the following elements:

- Text:** '(Optional) List of devices to monitor' and 'You must press the "Update" button after adding values to commit the changes to the configuration.'
- Form:** A table with a single row for adding a device. It has a 'Value' column with a text input field and an 'Add' button.
- Buttons:** 'Update' and 'Close' buttons are located below the table.

At the bottom of the page, there is a footer with 'Firmware v2.0-3 / Software v2.0.0-80040-debug' and a copyright notice 'Copyright © Metreos Corporation. All rights reserved.'.

Figure 61: JTapi Provider Configuration Page

The value you specify in the **Values** field is the exact device name registered in CallManager for the devices you want to monitor.

- **Username** — Username having permission to monitor the specified devices.
- **Password** — Account password for user having permission to monitor the specified devices.

Clicking the **Change Password** button launches the Change Password page.

Figure 62: JTapi Provider Change Password Page

To change the password:

1. Enter the current password in the **Current Password** field.
 2. Enter the new password in the **New Password** field.
 3. Re-enter the new password in the **Re-enter New Password** field.
- **CtiManager** — The IP address for CTI Manager.
 - **BackupCtiManager** — The backup IP address for CTI Manager.
 - **MaxCallsPerDevice** — The maximum number of calls allowed on any first-party CTI Port device. This value must match the equivalent value in Cisco CallManager.

NOTE: *Route Points are not affected by this value.*

1. To put configuration changes into effect, Click the **Update** button.
2. Click the **Done** button to return to the Providers page.

Configuring MediaControlProvider

Click the **MediaControlProvider** link to configure the MediaControlProvider Provider.

MediaControlProvider

Disable Provider Done

Configuration

Log Level	Info	Filters all debug output below the specified level
Connect Timeout	5000	Connect timeout Valid Range: 1000 - 60000
Heartbeat Interval	10	Valid Range: 1 - 60
Heartbeat Skew	5	Valid Range: 1 - 60
DiagInboundConnectMessages	<input type="radio"/> Yes <input checked="" type="radio"/> No	
DiagOutboundConnectMessages	<input type="radio"/> Yes <input checked="" type="radio"/> No	
DiagOutboundDisconnectMessages	<input type="radio"/> Yes <input checked="" type="radio"/> No	
DiagOutboundCommandMessages	<input type="radio"/> Yes <input checked="" type="radio"/> No	
DiagInboundResponseMessages	<input type="radio"/> Yes <input checked="" type="radio"/> No	
DiagHeartbeatResourceInfo	<input type="radio"/> Yes <input checked="" type="radio"/> No	

Update Done

Extensions

Metreos.MediaControl.RefreshMediaServers

Manually refresh the media server list.
Status: Ready

Parameters
No Parameters

Invoke Extension

Firmware v2-0-3 / Software v2.1.0.0256 DEV
Current Time: 06/17/05 03:46:31 AM GMT -4

Figure 63: MediaControlProvider Page

MediaControlProvider parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels.
- **Connect Timeout** — The interval in milliseconds before a connection is deemed unsuccessful and the system attempts to retry the connection.
- **Heartbeat Interval** — The interval in seconds between heartbeat signals to a media server.
- **Heartbeat Skew** — The interval in seconds MediaControlProvider waits for a response to the heartbeat signal.
- **DiagInboundConnectMessages** — Writes inbound connect messages to the Log Server.
- **DiagOutboundConnectMessages** — Writes outbound connect messages to the Log Server.
- **DiagOutboundDisconnectMessages** — Writes outbound disconnect messages to the Log Server.
- **DiagOutboundCommandMessages** — Writes outbound command messages to the Log Server.
- **DiagInboundResponseMessages** — Writes responses to the Log Server.
- **DiagHeartbeatResourceInfo** — Writes heartbeat signal information to the Log Server.

Configuring TimerFacility

Click the **TimerFacility** link to configure the TimerFacility Provider.



Figure 64: TimerFacility Configuration Page

TimerFacility parameters are:

- **Log Level** — The type and amount of information you want the system to write to the log for each component. Refer to the *MCE Logs* in Table 1 on [page 73](#) for supported levels.
- **TimerEventsEveryMinute** — Select **Yes** to generate a timer event every minute.
- **TimerEventsEveryHour** — Select **Yes** to generate a timer event every hour.
- **TimerEventsEveryDay** — Select **Yes** to generate a timer event every day.

Configuring Telephony Servers

Every IP telephony system must contain at least one telephony server. The Management Console provides a telephony server configuration page for adding and configuring telephony servers and devices on those servers. When you add a telephony server however, you must associate all of its devices with one or more *call route* groups.

Just as a media server group functions as a container for media servers, a call route group functions as a container for telephony devices. Each telephony device must belong to one or more groups.

NOTE: *Creating a call route group is optional because the system provides a default call route group you can use if multiple groups are not needed.*

To view the Telephony Servers page:

Click the **Telephony Servers** link on the Main Control Panel.



Figure 65: Telephony Servers Page

The application server currently supports three call control protocols:

- H.323
- CTI
- SCCP

It also supports two types of telephony servers:

- H.323 gateways — Telephony servers, which are used exclusively with H.323.
- CallManager — Multipurpose telephony server devices supporting SCCP and CTI in the Metreos system.

Creating H.323 Call Route Groups and Gateways

The following procedures describe the creation and configuration of H.323 call route groups and gateways. If a call route group other than the default group is required, you can create a new H.323 call route group using the following procedure.

1. Click the **Telephony Servers** link on the Management Console Main Control Panel. The system presents the **Telephony Servers** page.



Figure 66: Telephony Servers Page

2. Select **H.323** from the **Create New Group** drop-down list.
3. Click the **Create New Group** button.

The screenshot shows the METREOS Management Console interface. At the top, the METREOS logo and 'Management Console' text are visible. Below the logo, a status message states 'The application server is running.' and a 'Logout' button is present. A breadcrumb trail indicates the current location: 'Main Control Panel > Telephony Servers > Create Group'. The main heading is 'Create Group' in red. Below this is a 'Group Properties' section containing a form with the following fields: 'Name' (text input), 'Type' (set to 'H.323 Group'), 'Description' (text input), 'Failover Group' (dropdown menu set to 'None'), and 'Alarm Group' (dropdown menu set to 'None'). At the bottom of the form are two buttons: 'Create Group' and 'Cancel'. A small footer text at the bottom left reads 'Firmware v2.0-3 / Software v2.0.0-80060-debug'.

Figure 67: Configuring a New H323 Telephony Group

4. Enter the name of the group in the **Name** field.
5. Enter a description in the **Description** field.
6. If you want to specify a previously created failover group, select the group from the **Failover Group** drop-down list.
7. Select **Create Group**.

To create a H.323 Gateway:

1. Click the Telephony Servers link on the Main Control Panel.



Figure 68: Added H323 Telephony Group

Before adding a H.323 telephony server to a group, you must create a H.323 gateway. Because H.323 does not require static configuration of devices, the gateway is added to a call route group. All logical devices created during runtime will automatically be part of that same group.

To add a H.323 Gateway:

1. Select **H.323 Gateway** from the **Add Server** drop-down list on the Telephony Servers configuration page.
2. Click the **Add Server** button. The system displays the Add H.323 Gateway.

The screenshot shows the METREOS Management Console interface. At the top, the METREOS logo and 'Management Console' text are displayed. Below this, a status message states 'The application server service is running.' with a 'Logout' button. A breadcrumb trail reads 'Main Control Panel > Telephony Servers > Add H.323 Gateway Server'. The main heading is 'Add H.323 Gateway'. The form contains the following fields: 'Name' (text input), 'Description' (text input), 'IP Address' (text input with a placeholder 'IP Address for a H.323 Gateway'), and 'Add to Group' (a dropdown menu currently showing 'Default H.323'). At the bottom of the form are two buttons: 'Add H.323 Gateway' and 'Cancel'. The footer of the console shows 'Firmware v2-0-3 / Software v2.1.0.0350 RC' on the left and 'Current Time: 08/01/05 05:21:50 AM GMT -12' on the right, with a copyright notice for Metreos Corporation in the center.

Figure 69: Configuring H323 Telephony Server

3. Enter the server name in the **Name** field.
4. Type the CallManager version in the **Version** field.

Note: *The MCE supports 3.3, 4.0, and 4.1. Enter only the first two digits of the version number, for example 4.0 not 4.0.1. If the gateway is not part of a CallManager installation, enter 1.0.*

5. Enter the IP address in the **IP Address** field.
6. Select the appropriate group from the **Add to Group** drop-down list.
7. Click the **Add H.323 Gateway** to create the server.



Figure 70: H323 Telephony Server Added

Creating CTI Telephony Devices

Computer Telephony Integration (CTI), unlike H.323, is an IP telephony protocol based on the notion of line-oriented telephony devices. This section describes how to set up and administer CTI ports and Route Points that are configured on a CTI Manager.

A CTI Route Point is a group unto itself. CTI ports are grouped into *Device Pools*. Both CTI ports and Route Points must have at least one CTI manager associated with them. Call route groups should contain exactly one Route Point or one Device Pool. Further, the application server will not allow a call route group containing a combination of Route Points and Device Pools.

CTI Route Points and Device Pools are contained within a CTI Manager and are associated with CTI Groups. The following procedures describe how to create:

- CTI Groups
- CTI Managers
 - CTI Route Points
 - CTI Device Pools

To create a CTI route group:

1. Click the **Telephony Servers** link on the Management Console Main Control Panel. The system displays the **Telephony Servers** page.



Figure 71: Telephony Servers Page

2. Select **CTI Server Group** from the **Create New Group** drop-down list.
3. Click the **Create New Group** button.

The screenshot shows the METREOS Management Console interface. At the top, the METREOS logo and 'Management Console' text are displayed. Below the logo, a message states 'The application server is running.' and a 'Logout' button is visible. The breadcrumb trail reads 'Main Control Panel > Telephony Servers > Create Group'. The main heading is 'Create Group' in red. The 'Group Properties' section contains a form with the following fields: 'Name' (text input), 'Type' (set to 'CTI Server Group'), 'Description' (text input), 'Failover Group' (dropdown menu set to 'None'), and 'Alarm Group' (dropdown menu set to 'None'). At the bottom of the form are 'Create Group' and 'Cancel' buttons. The footer includes version information 'Firmware v2.0-3 / Software v2.0-0-00000-debug' and a copyright notice 'Copyright © Metreos Corporation. All rights reserved.'

Figure 72: Configuring a New CTI Telephony Group

4. Enter the name of the group in the **Name** field.
5. Enter a description in the **Description** field.
6. If you want to specify a previously created failover group, select the group from the **Failover Group** drop-down list.
7. Click the **Create Group** button.

The application server is **running**.
[Logout](#)

Main Control Panel > Telephony Servers > Edit Group: RTGCTI1

Edit Group: RTGCTI1

Group RTGCTI1 was created.

Group Properties

Name	RTGCTI1
Type	CTI Server Group
Description	CTI coste group #1
Fallover Group	Default CTI
Alarm Group	None

[Update](#)

Members

Name

Add A Member

[Add Member](#)

[Delete Group](#) [Done](#)

Figure 73: New CTI Telephony Group Created

- Click the **Done** button.

The application server service is **running**.
[Logout](#)

Main Control Panel > Telephony Servers

Telephony Servers

Telephony Servers

Name	Type
CM40GW	H.323 Gateway
MyCM	H.323 Gateway
Test Server	Test CC
CM40	CallManager 4.0 Cluster
CM41	CallManager 4.1 Cluster

Add a Telephony Server

CallManager [Add Server](#)

Call Route Groups

Default SCCP [Edit Group](#)

SCCP Device Pool Group [Create New Group](#)

Firmware v2-0-3 / Software v2.1.0.0350 R/C
 Copyright © Metreos Corporation. All rights reserved.
 Current Time: 08/01/05 05:31:24 AM GMT -12

Figure 74: New CTI Telephony Group Added

Metreos CTI clusters are known as *CallManager clusters*. You can create a CallManager cluster and associate it with the new group.

1. Ensure **CallManager** is displayed in the **Add Server** drop-down menu and click the **Add Server** button:

The screenshot shows the 'Create Call Manager' form in the Metreos Management Console. At the top, the Metreos logo and 'Management Console' text are visible. Below the logo, a status message says 'The application server is running.' with a 'Logout' button. A breadcrumb trail reads 'Main Control Panel > Telephony Servers > Create Call Manager'. The form title 'Create Call Manager' is in red. The form contains several input fields: 'Name', 'Version', 'Publisher IP', 'Publisher Admin Password', 'Retype Publisher Admin Password', and 'Description'. A 'Create Call Manager Cluster' button is at the bottom of the form. The footer of the console shows 'Metreos v2.0-3.2 Software v2.0-3-RC3-003' and 'Copyright © Metreos Corporation. All rights reserved.'

Figure 75: Configuring a New CallManager

2. Enter the server name in the **Name** field.
3. Type the CallManager version in the **Version** field.

NOTE: *The MCE supports 3.3, 4.0, and 4.1. Enter only the first two digits of the version number, for example 4.0 not 4.0.1. If the gateway is not part of a CallManager installation, enter 1.0.*

4. Enter the IP address in the **Publisher IP Address** field.
5. Enter the password for the Publisher Administrator.
6. Click the **Create CallManager Cluster**.

METREOS
Management Console

The application server service is **running**.

[Logout](#)

Main Control Panel > Telephony Servers > CallManager: CMCL1

CMCL1

CallManager Created
You will need to restart the Application Server for the changes to take effect.

Name	CMCL1
Version	4.0
Publisher IP	10.1.10.26
Publisher Admin Username	Administrator
Change Publisher Admin Password	<input type="text"/> (Leave blank to keep old password)
Verify Publisher Admin Password	<input type="text"/>
Description	<input type="text"/>

[Update CallManager Cluster](#) [Uninstall CallManager Cluster](#)

SCCP Subscribers

Name	IP Address
Add Subscriber	

CTI Managers

Name	IP Address
Add CTI Manager	

Devices

Done

Figure 76: New CallManager Created

You can now create CTI devices.

To create a CTI manager:

1. Click the **Add CTI Manager** button.

METREOS
Management Console

The application server is **running**.

[Logout](#)

Main Control Panel > Telephony Servers > Call Manager > CTI Manager

Create A CTI Manager

Name	<input type="text"/>
IP Address	<input type="text"/>

[Add CTI Manager](#) [Go Back](#)

Formware v2.0-3 / Software v2.0-RC3-003

Copyright © Metreos Corporation. All rights reserved.

Figure 77: Configuring a New CTI Manager

2. Enter the manager name in the **Name** field.

3. Enter the IP address in the **IP Address** field.
4. Click the **Add CTI Manager**.

The screenshot shows the Metreos Management Console interface. At the top, the Metreos logo and 'Management Console' text are visible. Below the logo, a status message states 'The application server service is running.' with a 'Logout' button. A breadcrumb trail reads 'Main Control Panel > Telephony Servers > CallManager: CMCL1'. The main heading is 'CMCL1'. A message box says 'CTI Manager added' and 'You will need to restart the Application Server for the changes to take effect.' Below this is a form with fields for Name (CMCL1), Version (4.0), Publisher IP (10.1.10.26), Publisher Admin Username (Administrator), Change Publisher Admin Password, Verify Publisher Admin Password, and Description. Below the form are buttons for 'Update CallManager Cluster' and 'Uninstall CallManager Cluster'. The 'SCCP Subscribers' section has a table with columns 'Name' and 'IP Address', and an 'Add Subscriber' button. The 'CTI Managers' section has a table with columns 'Name' and 'IP Address', showing a manager named 'CM1A' with IP '1.10.14.27' and an 'Edit' button. An 'Add CTI Manager' button is at the bottom left of the CTI Managers section. The status bar at the bottom left says 'Done'.

Figure 78: New CTI Manager Added

You can now create devices the manager will contain.

To create a Device Pool:

1. Click the **Create CTI Device Pool** button.

The screenshot shows the 'Create A CTI Device Pool' form in the Metreos Management Console. The form is titled 'Create A CTI Device Pool' in red. It contains several input fields and dropdown menus. The fields are: Name, How many devices to register? (with a valid range of 1 - 9,999), Device Name Prefix, Primary CTI Manager (dropdown menu with 'CMTA' selected), Secondary CTI Manager (dropdown menu with 'None' selected), Username, Password (with a 'Enter again to verify:' field), Add To Group (dropdown menu with 'Default CTI' selected), and a 'Create CTI Device Pool' button. The form is set against a light blue background with a white border. The Metreos logo is at the top, and the text 'Management Console' is below it. A status bar at the bottom indicates 'The application server is running.' and 'Logout' button. A breadcrumb trail shows 'Main Control Panel > Telephony Servers > Call Manager > Add CTI Device Pool'.

Figure 79: Configuring a New CTI Device Pool

2. Enter the name of the pool in the **Name** field.
3. Enter the number of devices in the pool in the **How Many Devices to Register?** field.
4. For every device created within the Device Pool, the runtime will assign a name constructed by concatenating a prefix you designate with a sequentially assigned number. For example, designating a prefix of MyDevice results in a name of MyDevice1 for the first device and MyDevice2 for the second device. Enter a designated prefix for the devices in your pool in the **Device Name Prefix** field.
5. Select the CTI manager you previously created from the **Primary CTI Manager** pull-down menu.
6. If you want a secondary CTI manager to be available for the Device Pool, create a new CTI manager and select it from the **Secondary CTI Manager** pull-down menu.
7. Enter the name of a user with permission to control the all of the CTI devices in the pool in the **Username** field.
8. In the **Password** field, enter the password for the user account in the **Username** field.
9. Select the group you created from the **Add To Group** pull-down menu.
10. Click the Create CTI Device Pool.

Name	CMCL1
Version	4.0
Publisher IP	10.1.10.26
Publisher Admin Username	Administrator
Change Publisher Admin Password	(Leave blank to keep old password)
Verify Publisher Admin Password	
Description	

SCCP Subscribers

Name	IP Address
<input type="button" value="Add Subscriber"/>	

CTI Managers

Name	IP Address	
CM1A	1.10.14.27	<input type="button" value="Edit"/>
<input type="button" value="Add CTI Manager"/>		

Devices

SCCP Device Pools

Name	Action
Please add a SCCP Subscriber to the CallManager before creating SCCP Device Pools.	

CTI Device Pools

Name	Action
DevPoolA	<input type="button" value="View"/> <input type="button" value="Edit"/>
<input type="button" value="Create CTI Device Pool"/>	

CTI Route Points

Name	Device Name	Action
------	-------------	--------

Done

Figure 80: New CTI Device Pool Created

You can also create a Route Point, as follows:

1. Click the **Create CTI Route Point** button.



Management Console

The application server is **running**.

Main Control Panel > Telephony Servers > Call Manager > Add CTI Route Point

Create A CTI Route Point

Name	<input type="text"/>	
Device Name	<input type="text"/>	Device identifier as understood by Call Manager
Primary CTI Manager	CM1A	Primary CTI Manager for the CTI Route Point
Secondary CTI Manager	None	(Optional) Secondary CTI Manager for the CTI Route Point
Username	<input type="text"/>	Username to allow monitoring of the CTI Route Point
Password	<input type="password"/>	Password for monitoring the CTI Route Point
	Enter again to verify:	
	<input type="password"/>	
Add To Group	Default CTI	Select a call route group for this route point

Software v2.0-3.7 Software v2.0.0-RC3-003

Copyright © Metreos Corporation. All rights reserved.

Figure 81: Configuring a New CTI Route Point

2. Enter the name of the Route Point in the **Name** field.
3. Enter the device name from Cisco CallManager in the **Device Name** field.
4. Ensure that the CTI Manager you previously created is selected from the **Primary CTI Manager** pull-down menu.
5. If you want a secondary CTI manager, create a new CTI Manager and select it from the **Secondary CTI Manager** pull-down menu.
6. In the **Username** field, enter the name of a user with permission to control the individual responsible for monitoring the Route Point.
7. In the **Password** field, enter the password for the user account in the previous **Username** field.
8. Select the group you created from the **Add To Group** pull-down menu.
9. Click the **Create CTI Route Point** button.

The screenshot displays the Metreos Management Console interface. At the top, there are input fields for Username, Change Publisher Admin Password, Verify Publisher Admin Password, and Description. Below these are buttons for 'Update CallManager Cluster' and 'Uninstall CallManager Cluster'. The main content area is divided into several sections:

- SSCP Subscribers**: A table with columns 'Name' and 'IP Address', and an 'Add Subscriber' button.
- CTI Managers**: A table with columns 'Name' and 'IP Address'. It lists 'CM1A' with IP '1.10.14.27' and an 'Edit' button. There is also an 'Add CTI Manager' button.
- Devices**: A section header.
- SSCP Device Pools**: A table with columns 'Name' and 'Action'. It includes a message: 'Please add a SSCP Subscriber to the CallManager before creating SSCP Device Pools.'
- CTI Device Pools**: A table with columns 'Name' and 'Action'. It lists 'DevPoolA' with 'View' and 'Edit' buttons. There is also a 'Create CTI Device Pool' button.
- CTI Route Points**: A table with columns 'Name', 'Device Name', and 'Action'. It lists 'RoutePt1' with 'Device Name' 'CMRoutePt1' and an 'Edit' button. There is also a 'Create CTI Route Point' button.

At the bottom, the footer shows 'Firmware v2-1-0 / Software v2.1.0.0013 DEV' and 'Current Time: 05/15/05 03:25:30 PM GMT 0'.

Figure 82: New CTI Route Point Created

You can view and edit any of these devices by clicking any of the **View** and **Edit** buttons associated with them.

Configuring SCCP Devices

If you have applications that require the use of SCCP devices, you must create and configure at least one SCCP device pool to contain your SCCP devices. To create a device pool you must first add a subscriber to CallManager, as follows:

1. Click the **Telephony Servers** link on the Management Console Main Control Panel. The system displays the **Telephony Servers** page.

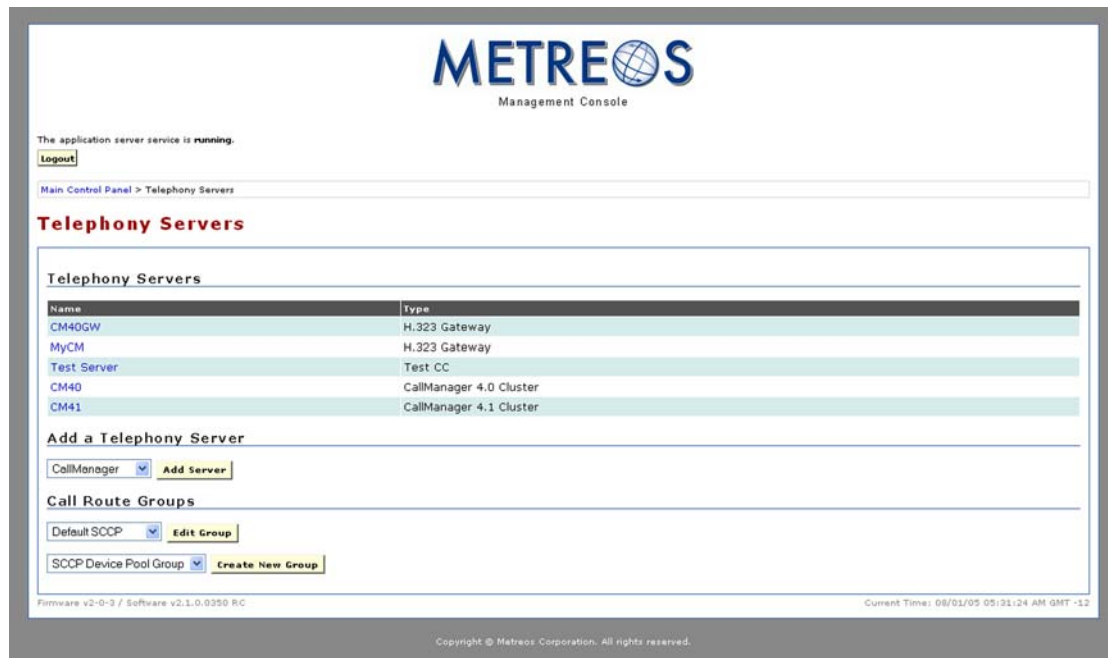


Figure 83: Telephony Servers Page

2. In the Telephony Servers section click the telephony server link you want to add as a SCCP subscriber.

Verify Publisher Admin Password:
 Description:

[Update CallManager Cluster](#) [Uninstall CallManager Cluster](#)

SCCP Subscribers

Name	IP Address
Add Subscriber	

CTI Managers

Name	IP Address	Action
CM1A	1.10.14.27	Edit
Add CTI Manager		

Devices

SCCP Device Pools

Name	Action
Please add a SCCP Subscriber to the CallManager before creating SCCP Device Pools.	

CTI Device Pools

Name	Action
DevPoolA	View Edit
Create CTI Device Pool	

CTI Route Points

Name	Device Name	Action
RoutePt1	CMRoutePt1	Edit
Create CTI Route Point		

Firmware v2-1-0 / Software v2.1.0.0313 DEV Current Time: 05/18/05 08:52:00 AM GMT 0

Copyright © Metreos Corporation. All rights reserved.

Figure 84: Telephony Server Configuration Page

- Click the **Add Subscriber** button located in the SCCP Subscribers section.

METREOS
Management Console

The application server service is **running**.
[Logout](#)

Main Control Panel > Telephony Servers > CallManager > Subscriber

Create A Subscriber

Name	<input type="text"/>
IP Address	<input type="text"/>
Password	<input type="password"/>
Verify Password	<input type="password"/>
Add Subscriber Go Back	

Firmware v2-1-0 / Software v2.1.0.0313 DEV Current Time: 05/18/05 09:13:55 AM GMT 0

Copyright © Metreos Corporation. All rights reserved.

Figure 85: Create a Subscriber Page

- Enter the subscriber Name in the **Name** field.

NOTE: *You must create a subscriber on an existing CallManager cluster.*

- Enter the Subscriber IP address in the **IP Address** field.

6. Enter the Subscriber password in the **Password** field.
7. Re-enter the Subscriber password in the **Verify Password** field.
8. Click the **Add Subscriber** button. The system return the Telephony Server Configuration page for the subscriber you created.

CMCL1

Subscriber created
You will need to restart the Application Server for the changes to take effect.

Name	CMCL1
Version	4.0
Publisher IP	10.1.10.26
Publisher Admin Username	Administrator
Change Publisher Admin Password	<input type="text"/> (Leave blank to keep old password)
Verify Publisher Admin Password	<input type="text"/>
Description	<input type="text"/>

[Update CallManager Cluster](#) [Uninstall CallManager Cluster](#)

SSCP Subscribers

Name	IP Address	
CMCL1	10.1.10.26	edit

[Add Subscriber](#)

CTI Managers

Name	IP Address	
CM1A	1.10.14.27	edit

[Add CTI Manager](#)

Devices

SSCP Device Pools

Name	Action
Create SSCP Device Pool	

CTI Device Pools

Name	Action
Create CTI Device Pool	

Done

Figure 86: Telephony Server Configuration Page With Newly created Subscriber

You can now create a device pool on the subscriber you created to contain your SCCP devices.

To create the device pool:

1. Click the **Create SSCP Device Pool** button in the SSCP Device Pools section.

The application server service is running.

[Logout](#)

Main Control Panel > Telephony Servers > CallManager > Add SCCP Device Pool

Create A Device Pool

Name	<input type="text"/>	
How many devices to register?	<input type="text"/>	Valid Range: 1 - 16,777,216
6-Digit MAC Address Prefix	<input type="text"/>	
Primary Subscriber	CMCL1	Primary subscriber for the SCCP Device Pool
Secondary Subscriber	None	(Optional) Secondary subscriber for the SCCP Device Pool
Add To Group	Default SCCP	Select a call route group for this device pool

[Create Device Pool](#)

Formware v2-1-0 / Software v2.1.0.0313 DEV

Current Time: 05/18/05 09:42:06 AM GMT 0

Copyright © Metreos Corporation. All rights reserved.

Figure 87: Create Device Pool Page

2. Enter the device pool name in the **Name** field.
3. Enter the number of devices the device pool will contain in the **How many devices to register?** field.
 Each device contains a 12 digit MAC address to uniquely identify it. The Create a Device Pool page allows you to specify the first six digits of the MAC address for every device in the pool.
 The application server registers all of the devices in the device pool with the specified CallManager subscriber, assigning the last six digits of the MAC address for each device sequentially beginning with **000000**.
 The device is then identified by a 12 digit MAC address constructed by the concatenation of the 6 digits you assigned, and the sequential number appended automatically by the application server.
4. Add the MAC address prefix you want to designate for this device pool.
5. Select the subscriber you created using the previous procedure from the **Primary Subscriber** drop-down list.
6. If you want to associate the device pool with a second subscriber select the subscriber from the **Secondary Subscriber** drop-down list.
7. Select the group to which you want to add this device pool from the **Add to Group** drop-down list.
8. Click the **Create Device Pool** button.

CMCL1

Name

CMCL1

Version

4.0

Publisher IP

10.1.10.26

Publisher Admin Username

Administrator

Change Publisher Admin Password

(Leave blank to keep old password)

Verify Publisher Admin Password

Description

Update CallManager Cluster

Uninstall CallManager Cluster

SCCP Subscribers

Name	IP Address	
CMCL1	10.1.10.26	Edit

Add Subscriber

CTI Managers

Name	IP Address	
CM1A	1.10.14.27	Edit

Add CTI Manager

Devices

SCCP Device Pools

Name	Action
DevPoolB	View Edit

Create SCCP Device Pool

CTI Device Pools

Name	Action
DevPoolA	View Edit

Done

Figure 88: Telephony Server Configuration Page with Newly Created SCCP Device Pool

Configuring RTP Relay

With the release of MCE 2.2 you can more securely extend your IP network beyond your firewall to remote locations as shown in the following diagram.

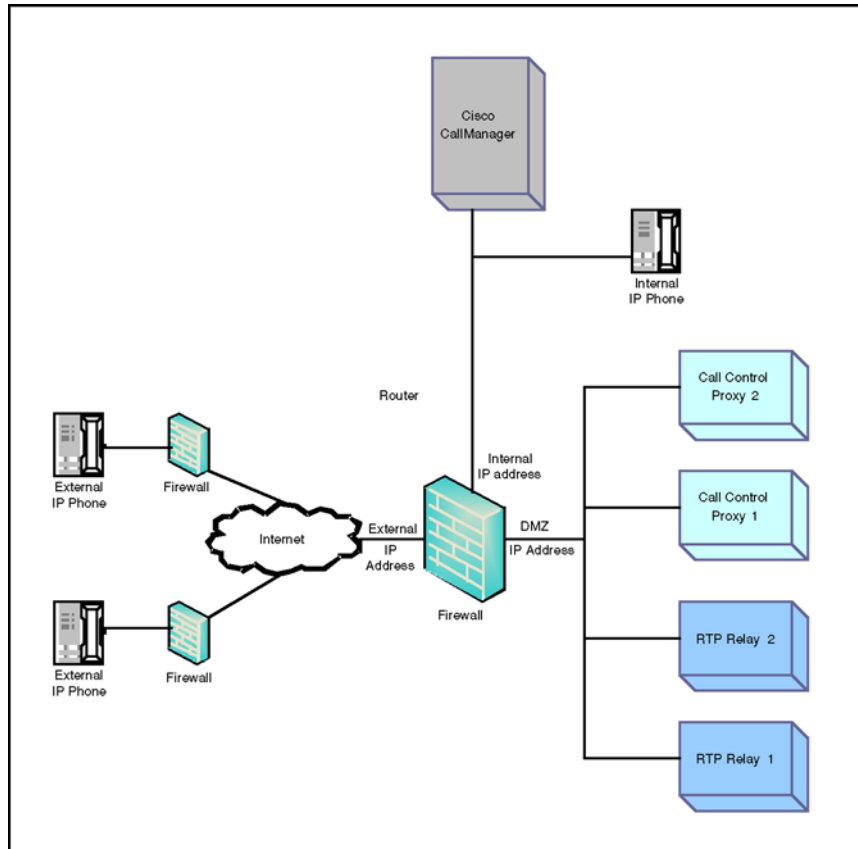


Figure 89: RTP Relay Network Diagram

When a call is received through a SCCP connection, the call is noted by SccpProxyProvider. SccpProxyProvider then defers authentication of the call to Cisco CallManager and seamlessly proxies the device registration and the response.

The *only* SCCP messages that SccpProxyProvider modifies are those related to media. In such cases it replaces the endpoint media addresses with media addresses on the RTP relay server. The RTP relay server then relays media information between the call endpoints.

Click the **RTP Relay** link from the Main Control Panel to configure the RTP relay server.

Management Console

The application server is **running**.

[Logout](#)

Main Control Panel > RTP Relay

RTPRelay

Configuration

Control IP Address/Mask	<input type="text"/>	(Optional) ip address of host (net if mask is specified) allowed to control (e.g. 192.168.10.0/24)
DMZ IP Address	<input type="text"/>	(Optional) ip address to use for 'dmz' references
External IP Address	<input type="text"/>	(Optional) ip address to use for 'external' references
Internal IP Address	<input type="text"/>	(Optional) ip address to use for 'internal' references
Relay Channel Inactivity Timeout	<input type="text"/>	time in seconds to hold relay open without any traffic Valid Range: 1 - 120
Max Channels	<input type="text"/>	maximum number of concurrent channels Valid Range: 1 - 9999
Log URL	<input type="text"/>	(Optional) url for the logging service
Control Port	<input type="text"/>	port number of the control connection Valid Range: 0 - 65535
Num Workers	<input type="text"/>	number of selector workers Valid Range: 1 - 100
Default Max Packet Size	<input type="text"/>	default maximum packet size to relay Valid Range: 1 - 65535
Default TOS	<input type="text"/>	default type of service (see rfc 1349, 2474, 3246) Valid Range: 0 - 255
Port Start	<input type="text"/>	start of the range of ports to assign to relays Valid Range: 1024 - 65534
Port Limit	<input type="text"/>	limit of the range of ports to assign to relays Valid Range: 1024 - 65534
Priority Boost	<input type="text"/>	priority boost given to selector workers Valid Range: -1 - 1

[Update](#) [Done](#)

Figure 90: RTP Relay Configuration Page

The **Control IP Address** field allows increased security by adding a bit mask to the DMZ IP address. To add the bit mask, append a forward slash (/) followed by the bit mask number to the DMZ address as shown in the following example: 12.1.10.0/32.

All parameters on the configuration page are initially set to a default value except for the IP addresses, which you provide. Metreos recommends using these default values.

Metreos Logs

The MCE provides three logs containing diagnostic information:

- **Server Logs** — Containing information about server activity.
- **Event Log** — Containing information about system events (e.g. H.323 stack is unavailable).
- **Audit Log** — All MCE activity.

MCE supports the concept of log level filtering. The log level determines the amount of recorded detail about logged events. The following table describes the supported Log Levels.

Log Level	Description
Off	No logging
Error	Writes only error messages to the log
Warning	Writes only warning and error messages to the log
Information	Writes warning, error, and terse information messages about events to the log
Verbose	Writes warning, error, and detailed information messages about events to the log

Table 1: Log Level Settings

Index

A

- about this guide
 - notational conventions v
 - notes, cautions, and warnings v
 - typographical conventions vi
- application environment 5
 - configure 10
- application manager 5
 - configure 11
- application server 4
 - configure 10

B

- backup and restore 25

C

- call route groups, gateways 52
- core components
 - configure 9
- create new partition 34
- CTI telephony devices 56

D

- date and time
 - configure 22

L

- log level settings 73
- logger 6
 - configure 12
- login screen 7
- logs, Metreso 72

M

- management console 3
 - configure 8
 - login screen 7
- management interface 5
 - configure 12
- managing applications 31
- managing users 15
- MCE

- core components 3
- MCE environment 3
- media firmware license 21
- media servers
 - managing 37
- Metreos Application Suite
 - overview 1
- Metreos environment 8
- Metreos logs 72

N

- notes
 - definition v

P

- partition
 - create 34
- Provider
 - MediaControlProvider 49
- provider
 - configure 44
 - H323Provider 44
 - HTTP 46
- provider manager 4
 - configure 13
- providers
 - JTapiProvider 44
 - managing 43

R

- release notes 24
- restore system 30
- router 4
 - configure 14
- RTP relay 71

S

- sandboxing 4
- SCCP devices 66
- service control 20
- system configuration and control 18
- system update 23

T

- telephony manager 4

configure 14
telephony servers
configure 50

