Basic MGCP Configuration

This chapter provides basic configuration information for Media Gateway Control Protocol (MGCP) and related protocols.

For more information about related Cisco IOS voice features, see the following:

- "Overview of MGCP and Related Protocols" on page 3

- Finding Feature Information, page 1
- How to Configure MGCP and Related Protocols, page 1
- Configuration Examples for MGCP and Related Protocols, page 10
- Additional References, page 15
- Feature Information for Basic MGCP Configuration, page 16

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

How to Configure MGCP and Related Protocols

Note

RGWs are configured only with MGCP.
Configuring a TGW for MGCP

To configure a trunking gateway (TGW) for MGCP, perform this task:

**SUMMARY STEPS**

1. `mgcp`
2. `mgcp call-agent [ipaddr|hostname] [port] service-type mgcp`
3. `controller t1 number`
4. `ds0-group channel-number timeslots range type none service mgcp`
5. `exit`
6. `mgcp restart-delay value`
8. `mgcp default-package {as-package | dtmf-package | gm-package | rtp-package | trunk-package}`
9. `mgcp dtmf-relay {codec | low-bit-rate} mode {cisco | out-of-band}`
10. `mgcp modem passthru {cisco | ca}`
11. `mgcp sdp simple`
12. `exit`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>mgcp</td>
</tr>
<tr>
<td></td>
<td>Example: Router(config)# mgcp</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>`mgcp call-agent [ipaddr</td>
</tr>
<tr>
<td></td>
<td>Example: Router(config)# mgcp call-agent [ipaddr</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td><code>controller t1 number</code></td>
</tr>
<tr>
<td></td>
<td>Example: Router(config)# controller t1 number</td>
</tr>
<tr>
<td>Step</td>
<td>Command or Action</td>
</tr>
<tr>
<td>------</td>
<td>-------------------</td>
</tr>
<tr>
<td>4</td>
<td><code>ds0-group channel-number timeslots range type none service mgcp</code></td>
</tr>
<tr>
<td></td>
<td>Example:</td>
</tr>
<tr>
<td></td>
<td><code>Router(config-controller)# ds0-group channel-number timeslots range type none service mgcp</code></td>
</tr>
<tr>
<td>5</td>
<td><code>exit</code></td>
</tr>
<tr>
<td></td>
<td>Example:</td>
</tr>
<tr>
<td></td>
<td><code>Router(config-controller)# exit</code></td>
</tr>
<tr>
<td>6</td>
<td><code>mgcp restart-delay value</code></td>
</tr>
<tr>
<td></td>
<td>Example:</td>
</tr>
<tr>
<td></td>
<td><code>Router(config)# mgcp restart-delay value</code></td>
</tr>
<tr>
<td>7</td>
<td>`mgcp package-capability {s-package</td>
</tr>
<tr>
<td></td>
<td>Example:</td>
</tr>
<tr>
<td></td>
<td>`Router(config)# mgcp package-capability {trunk-package</td>
</tr>
<tr>
<td>8</td>
<td>`mgcp default-package {as-package</td>
</tr>
<tr>
<td></td>
<td>Example:</td>
</tr>
<tr>
<td></td>
<td>`Router(config)# mgcp default-package {as-package</td>
</tr>
<tr>
<td>9</td>
<td>`mgcp dtmf-relay {codec</td>
</tr>
<tr>
<td></td>
<td>Example:</td>
</tr>
<tr>
<td></td>
<td>`Router(config)# mgcp dtmf-relay {codec</td>
</tr>
</tbody>
</table>
### Configuring a TGW for SGCP

Perform this task to configure a trunking gateway (TGW) for Simple Gateway Control Protocol (SGCP):

**SUMMARY STEPS**

1. `mgcp`
2. `mgcp call-agent [ipaddr | hostname] [port] service-type sgcp`
3. `controller t1 number`
4. `ds0-group channel-number timeslots range type {none | fgdos} [tone_type] [addr_info] service {sgcp | voice}`
5. `exit`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> mgcp</td>
<td>Initiates the MGCP application.</td>
</tr>
</tbody>
</table>

![Image](image-url)
### Purpose

Command or Action | Purpose
--- | ---
**Step 2** \texttt{mgcp call-agent \{ipaddr | hostname\} [port] service-type sgcp} | Specifies the call agent’s IP address or domain name, the port, and gateway control service type.

\textbf{Example:}

Router(config)# mgcp call-agent \{ipaddr | hostname\} [port] service-type sgcp

**Step 3** \texttt{controller t1 number} | Specifies the channel number of the T1 trunk to be used for analog calls and enters controller configuration mode.

\textbf{Example:}

Router(config)# controller t1 number

**Step 4** \texttt{ds0-group channel-number timeslots range type \{none | fgdos\} [tone_type] [addr_info] service \{sgcp | voice\}} | Configures the channelized T1 time slots to accept the analog calls. For type **none**, use service \texttt{sgcp}. For type \texttt{fgdos}, use service \texttt{voice}.

\textbf{Example:}

Router(config-controller)# ds0-group channel-number timeslots range type \{none | fgdos\} [tone_type] [addr_info] service \{sgcp | voice\}

**Step 5** \texttt{exit} | Exits the current mode.

\textbf{Example:}

Router(config-controller)# exit

---

### Configuring an RGW

To configure a residential gateway (RGW), perform this task:

**SUMMARY STEPS**

1. \texttt{mgcp}
2. \texttt{mgcp call-agent \{ipaddr | hostname\} [port] service-type sgcp}
3. \texttt{dial-peer voice number pots}
4. \texttt{application MGCPAPP}
5. \texttt{exit}
6. \texttt{mgcp package-capability \{line-package | dtmf-package | gm-package | rtp-package\}}
7. \texttt{mgcp default-package \{line-package | dtmf-package | gm-package\}}
8. \texttt{exit}
## DETAILED STEPS

<table>
<thead>
<tr>
<th>Step</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>mgcp</td>
<td>Initiates the MGCP application.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note</strong> RGWs are configured only with MGCP.</td>
</tr>
<tr>
<td></td>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Router(config)# mgcp</td>
</tr>
<tr>
<td>Step 2</td>
<td>mgcp call-agent</td>
<td>Specifies the call-agent IP address or domain name, port, and gateway</td>
</tr>
<tr>
<td></td>
<td>[ipaddr</td>
<td>hostname] [port]</td>
</tr>
<tr>
<td></td>
<td>service-type mgcp</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Router(config)# mgcp call-agent [ipaddr</td>
</tr>
<tr>
<td>Step 3</td>
<td>dial-peer voice</td>
<td>Sets up the dial peer for a voice port.</td>
</tr>
<tr>
<td></td>
<td>number pots</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Router(config)# dial-peer voice number pots</td>
</tr>
<tr>
<td>Step 4</td>
<td>application MGCPAPP</td>
<td>Selects the MGCP application to run on the voice port.</td>
</tr>
<tr>
<td></td>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Router(config-dial-peer)# application MGCPAPP</td>
</tr>
<tr>
<td>Step 5</td>
<td>exit</td>
<td>Exits the current mode.</td>
</tr>
<tr>
<td></td>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Router(config-dial-peer)# exit</td>
</tr>
<tr>
<td>Step 6</td>
<td>mgcp package-capability</td>
<td>(Optional) Specifies event packages that are supported on the</td>
</tr>
<tr>
<td></td>
<td>[line-package</td>
<td>dtmf-package</td>
</tr>
<tr>
<td></td>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Router(config)# mgcp package-capability [line-package</td>
</tr>
<tr>
<td>Step 7</td>
<td>mgcp default-package</td>
<td>(Optional) Specifies the default event package. Overrides the mgcp</td>
</tr>
<tr>
<td></td>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Router(config)# mgcp default-package [line-package</td>
</tr>
</tbody>
</table>
### Configuring a SDP Aware NSE Mode

The Cisco IOS MGCP gateway relies only on the local modem or fax configuration to determine whether Named Signaling Event (NSE) should be used or not for the current call. SDP-aware NSE mode enables the Cisco IOS MGCP gateway to negotiate NSE-based modem and fax features by considering both the local configuration and the remote support for NSE.

Note
---
Cisco Unified Call Manager (UCM) does not support modem or fax passthrough. This feature should not be enabled when Cisco UCM is the call agent.

### SUMMARY STEPS

1. `mgcp`
2. `mgcp behavior negotiate-nse enable`
3. `exit`

### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **Step 1**

- `mgcp`

  **Example:**
  
  Router(config)# mgcp

| **Step 2**

- `mgcp behavior negotiate-nse enable`

  **Example:**
  
  Router(config)# mgcp behavior negotiate-nse enable

- Exits the current mode. | Initiates the MGCP application. | Enables SDP-aware NSE mode. |
Verifying NSE Mode Configuration

SUMMARY STEPS

1. show mgcp

DETAILED STEPS

show mgcp
Use this command to display the state of the mgcp behavior command.

Example:

Router# show mgcp
MGCP Admin State ACTIVE, Oper State ACTIVE - Cause Code NONE
MGCP call-agent: 10.7.0.200 Initial protocol service is MGCP 0.1

The following lines show that the mgcp behavior negotiate-nse enable command is enabled:

Example:

mgcp modem passthrough voip mode nse
mgcp codec q723ar53 packetization-period 30
mgcp package-capability rtp-package
mgcp package-capability sst-package
mgcp package-capability pre-package
mgcp package-capability mdste-package
mgcp package-capability srtp-package
mgcp package-capability fm-package
no mgcp package-capability res-package
no mgcp timer receive-rtcp
mgcp sdtp simple
mgcp sdtp mdcx-ack
mgcp fax t38 ecm
mgcp fax t38 ls_redundancy 5
mgcp fax t38 hs_redundancy 2
mgcp behavior mdcx-sdp ack-with-sdp
mgcp behavior dynamically-change-codec-pt disable
mgcp behavior negotiate-nse enable
mgcp rtp payload-type nte 101
Verifying the TGW or RGW Configuration

SUMMARY STEPS

1. show running-configuration

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 show running-configuration</td>
<td>Displays the current configuration settings.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router(config)# show running-configuration</td>
<td></td>
</tr>
</tbody>
</table>

Blocking New Calls

You can block all new MGCP calls to the router (Step 1) and terminate all existing active calls (Step 2), which means that an active call is not terminated until the caller hangs up.

To block all new calls, use the following commands in global configuration mode:

SUMMARY STEPS

1. mgcp block-newcalls
2. no mgcp block-newcalls

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 mgcp block-newcalls</td>
<td>Prevents the gateway from accepting new calls.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router(config)# mgcp block-newcalls</td>
<td></td>
</tr>
<tr>
<td>Step 2 no mgcp block-newcalls</td>
<td>Restarts normal MGCP call operation.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>Router(config)# no mgcp block-newcalls</td>
<td></td>
</tr>
</tbody>
</table>
Configuring a Cisco AS5300 as a TGW with MGCP Example

The following example illustrates a configuration only for MGCP calls. FGD-OS calls are not supported.

```
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname A
!
resource-pool disable
!
ip subnet-zero
ip ftp username smith
ip host B 209.165.200.225
ip host C 209.165.200.226
ip domain-name cisco.com
ip name-server 209.165.202.129
!
mgcp
mgcp request timeout 10000
mgcp call-agent 192.168.10.10 2302
mgcp restart-delay 5
mgcp package-capability gm-package
mgcp package-capability dtmf-package
mgcp package-capability trunk-package
mgcp package-capability rtp-package
mgcp package-capability as-package
mgcp package-capability mf-package
mgcp package-capability script-package
mgcp default-package trunk-package
mta receive maximum-recipients 0
!
controller T1 0
  framing esf
  clock source line primary
  linecode b8zs
  ds0-group 0 timeslots 1-24 type none service mgcp
!
controller T1 1
  framing esf
  clock source line secondary 1
  linecode b8zs
  ds0-group 0 timeslots 1-24 type none service mgcp
!
controller T1 2
  framing esf
  linecode b8zs
  ds0-group 0 timeslots 1-24 type none service mgcp
!
controller T1 3
  framing esf
  linecode b8zs
  ds0-group 0 timeslots 1-24 type none service mgcp
!
voice-port 0:0
!
voice-port 1:0
!
voice-port 2:0
!
voice-port 3:0
!
```
Configuring a Cisco AS5300 as a TGW with SGCP Example

The following example illustrates a configuration that supports MGCP and FGD-OS calls:

```plaintext
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname A
!
resource-pool disable
!
ip subnet-zero
ip ftp username smith
ip host B 209.165.200.225
ip host C 209.165.200.226
ip domain-name cisco.com
ip name-server 209.165.202.129
!
mgcp
mgcp request timeout 10000
mgcp call-agent 192.168.10.10 2302 sgcp
mta receive maximum-recipients 0
!
controller T1 0
  framing esf
  clock source line primary
  linecode b8zs
  ds0-group 0 timeslots 1-24 type none service mgcp
!
controller T1 1
  framing esf
  clock source line secondary 1
  linecode b8zs
  ds0-group 0 timeslots 1-24 type fgd-os mf dnis-ani service voice
!
controller T1 2
  framing esf
  linecode b8zs
  ds0-group 0 timeslots 1-24 type none service mgcp
!
controller T1 3
  framing esf
```
Configuring a Cisco 3660 as a TGW with MGCP Example

The following example illustrates a platform that does not support FGD-OS calls.

```
!linecode b8zs
ds0-group 0 timeslots 1-24 type none service mgcp
!voice-port 0:0
!voice-port 1:0
!voice-port 2:0
!voice-port 3:0
!interface Ethernet0
   ip address 192.168.10.9 255.255.255.0
   no ip directed-broadcast
!interface FastEthernet0
   ip address 172.22.91.73 255.255.255.0
   no ip directed-broadcast
   shutdown
   duplex auto
   speed auto
   no ip classless
   ip route 0.0.0.0 0.0.0.0 172.22.91.1
   ip route 209.165.200.225 255.255.255.255 192.168.0.1
   no ip http server
   !line con 0
   exec-timeout 0 0
   transport input none
   line aux 0
   line vty 0 4
   login
   !
   end

Configuring a Cisco 3660 as a TGW with MGCP Example

The following example illustrates a platform that does not support FGD-OS calls.

```
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname A
!
memory-size iomem 40
voice-card 1
!
ip subnet-zero
!
mgcp 4000
mgcp call-agent 209.165.202.129 4000
mgcp package-capability gm-package
mgcp package-capability dtmf-package
mgcp package-capability rtp-package
mgcp package-capability as-package
isdn voice-call-failure 0
cns event-service server
!
controller T1 1/0
framing esf
clock source internal
ds0-group 1 timeslots 1-24 type none service mgcp
!
controller T1 1/1
framing esf
clock source internal
```
Configuring a Cisco uBR924 as an RGW Example

The following example illustrates a platform that does not support FGD-OS calls.

```
version 12.2
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname A
!
logging buffered 200000 debugging
!
clock timezone -8
ip subnet-zero
no ip routing
no ip domain-lookup
ip host A 192.168.147.91
ip host C 209.165.200.224
ip host D 209.165.200.225
!
mgcp
mgcp call-agent 192.168.10.10 2490
mgcp package-capability gm-package
mgcp package-capability dtmf-package
mgcp package-capability line-package
mgcp default-package line-package
!
voice-port 0
```
input gain -3

voice-port 1
  input gain -3

dial-peer voice 1 pots
  application MGCPAPP
  port 1

dial-peer voice 2 pots
  application MGCPAPP
  port 0

interface Ethernet0
  ip address 192.168.147.91 255.255.255.0
  no ip directed-broadcast
  no ip route-cache
  no ip mroutecache

interface cable-modem0
  ip address negotiated
  no ip directed-broadcast
  no ip route-cache
  no ip mroutecache
  cable-modem downstream saved channel 459000000 20
  cable-modem downstream saved channel 699000000 19 2
  cable-modem mac-timer t2 100000
  no cable-modem compliant bridge
  bridge-group 59
  bridge-group 59 spanning-disabled

  ip default-gateway 10.1.1.1
  ip classless
  no ip http server

  line con 0
    exec-timeout 0 0
    transport input none
  line vty 0 4
    login

end

Configuring a Cisco 2620 as an RGW Example

The following example illustrates a platform that does not support FGD-OS calls.

version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption

hostname D

memory-size iomem 10
ip subnet-zero

mgcp
  mgcp call-agent 172.20.5.20
  mgcp package-capability gm-package
  mgcp package-capability dtmf-package
  mgcp package-capability line-package
  mgcp package-capability rtp-package
  mgcp default-package line-package
  cns event-service server

  voice-port 1/0/0

  voice-port 1/0/1
dial-peer voice 1 pots
  application MGCPAPP
  port 1/0/0
!
dial-peer voice 2 pots
  application MGCPAPP
  port 1/0/1
!
interface Ethernet0/0
  no ip address
  no ip directed-broadcast
  shutdown
!
interface Serial0/0
  no ip address
  no ip directed-broadcast
  no ip mroute-cache
  shutdown
  no fair-queue
!
interface Ethernet0/1
  ip address 172.20.5.25 255.255.255.0
  no ip directed-broadcast
!
interface Serial0/1
  no ip address
  no ip directed-broadcast
  shutdown
!
ip default-gateway 209.165.202.130
ip classless
ip route 209.165.200.225 255.255.255.224 Ethernet0/1
no ip http server
!
line con 0
  exec-timeout 0 0
  transport input none
line aux 0
line vty 0 4
  login
!
end

See the "Additional References for MGCP and SGCP" section on page x for related documents, standards, and MIBs.

- See the "Glossary" for definitions of terms in this guide.

## Additional References

### Related Documents

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<thead>
<tr>
<th>Related Topic</th>
<th>Document Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco IOS Voice commands</td>
<td>Cisco IOS Voice Command Reference</td>
</tr>
</tbody>
</table>
Feature Information for Basic MGCP Configuration

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to . An account on Cisco.com is not required.

**Table 1: Feature Information for MGCP Basic Configuration**

<table>
<thead>
<tr>
<th>Feature Name</th>
<th>Releases</th>
<th>Feature Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuring a TGW and RGW for MGCP</td>
<td>12.4(22)Y</td>
<td>Support was added for negotiating remote NSE support by configuring modem pass through on the gateway.</td>
</tr>
<tr>
<td>SDP Aware NSE Mode</td>
<td>15.1(3)T</td>
<td></td>
</tr>
</tbody>
</table>