



## CHAPTER 5

# Cable Subscriber Provisioning

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This chapter describes how to provision subscribers in a cable network.

For a more detailed description of all Cisco BTS 10200 Softswitch tables, tokens, and value ranges, refer to the *Cisco BTS 10200 Softswitch Command Line Interface Reference Guide*.

For information about how to provision the Cisco BTS 10200 Softswitch network elements to support PacketCable-based features and protocols, refer to the [PacketCable and Event Message Provisioning and Operations Guide](#).

## Provisioning a Cable Subscriber

[Table 5-1](#) provides an example of the steps required to provision the Cisco BTS 10200 Softswitch to communicate with a cable network and lists command examples with mandatory tokens. Click on each step for a complete description of the step.

**Table 5-1** Cable Subscriber Provisioning Steps

|        | Description                                           | CLI Command                                                                                                                                                                        |
|--------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 | <a href="#">Add a Media Gateway Profile, page 5-2</a> | add mgw-profile id=UBR925; vendor=cisco; packet-type=IP; ec_supp=y; mgcp-version=mgcp_1_0; termination-prefix=aaln/; port-start=0; mgcp-variant=ncs-1-0; description=Cisco UBR925; |
| Step 2 | <a href="#">Add an MGW, page 5-2</a>                  | add mgw id=<MGW ID>; tsap-addr=<TSAP-ADDR>; call-agent-id=<CA ID>; mgw-profile-id=UBR925; type=rgw; aggr-id=aggr01;                                                                |
| Step 3 | <a href="#">Add a Termination, page 5-3</a>           | add termination prefix=aaln/; port-start=0; port-end=1; mgw-id=<MGW ID>; type=line;                                                                                                |
| Step 4 | <a href="#">Add a Destination, page 5-3</a>           | add destination dest-id=local-call; route-type=sub; call-type=local;                                                                                                               |
| Step 5 | <a href="#">Add a Dial Plan Profile, page 5-4</a>     | add dial-plan-profile id=dp1; description=NA_Default;                                                                                                                              |
| Step 6 | <a href="#">Add a Dial Plan, page 5-4</a>             | add dial-plan id=dp1; digit-string=919-392; dest-id=sub; noa=national;                                                                                                             |

**Table 5-1** Cable Subscriber Provisioning Steps (continued)

|                | Description                                                         | CLI Command                                                                                                                                                                                  |
|----------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step 7</b>  | <a href="#">Add a Subscriber Profile, page 5-4</a>                  | add subscriber-profile id=subpf1; dial-plan-id=dp1; pop-id=1;                                                                                                                                |
| <b>Step 8</b>  | <a href="#">Add a Subscriber, page 5-4</a>                          | add subscriber id=sub11; sub-profile-id=subpf1; category=individual; term-id=aaln/0; mgw-id=c925.172;dn1=919-392-1235; name=RTP5;<br><b>Note</b> Each subscriber must have a unique term-id. |
| <b>Step 9</b>  | <a href="#">Change Subscriber Ring Cadence (Optional), page 5-5</a> | change subscriber id=sub11; sub-profile-id=subpf1; ring_type_dn1=3;                                                                                                                          |
| <b>Step 10</b> | <a href="#">Control a Media Gateway, page 5-5</a>                   | control mgw id=<MGW ID>; target-state=INS; mode=FORCED;                                                                                                                                      |
| <b>Step 11</b> | <a href="#">Equip a Subscriber Termination, page 5-6</a>            | equip subscriber-termination id=sub11;                                                                                                                                                       |
| <b>Step 12</b> | <a href="#">Control a Subscriber Termination, page 5-6</a>          | control subscriber-termination id=sub11; target-state=INS; mode=FORCED;                                                                                                                      |

## Add a Media Gateway Profile

A media gateway (MGW) profile provides a template for provisioning one or more MGWs. It identifies the specifications and settings necessary for communications between the Call Agent and each type of MGW. Execute this command once for each gateway.

| Command                                                                                                                                                                            | Purpose                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| add mgw-profile id=UBR925; vendor=cisco; packet-type=IP; ec_supp=y; mgcp-version=mgcp_1_0; termination-prefix=aaln/; port-start=0; mgcp-variant=ncs-1-0; description=Cisco UBR925; | Adds a media gateway profile |



### Tip

The mgcp-max1-retries and mgcp-max2-retries tokens in the mgw-profile table can be adjusted, if necessary, to improve response if there are network bandwidth or reliability issues, or if an MGW is slow in responding to commands from the CA. For a detailed explanation of how these and other parameters affect the audit-endpoint and keepalive processes, see the applicable appendix ("[Release 5.0 Keepalive](#)") in the *Cisco BTS 10200 Softswitch Troubleshooting Guide*.

## Add an MGW

The Media Gateway (mgw) table holds information about each MGW managed by the Call Agent. The MGW can be uniquely addressed by domain name, an IP address, or the TSAP address.

The Media Gateway table has two associated commands: RGW and TGW. The RGW command provisions a gateway as only a residential gateway, with the type token automatically set to RGW. The TGW command provisions a gateway as a trunking gateway only, with the type token automatically set to TGW. Both of these commands provision the Media Gateway table, but a service provider can use these commands to provide user security to certain individuals based on their roles.

| Command                                                                                                                   | Purpose              |
|---------------------------------------------------------------------------------------------------------------------------|----------------------|
| add mgw id=<MGW ID>;<br>tsap-addr=<TSAP-ADDR>; call-agent-id=<CA ID>; mgw-profile-id=UBR925; type=rgw;<br>aggr-id=aggr01; | Adds a media gateway |

**Note**

The RGW command could also be used to provision the MGW in this instance. Refer to the *Cisco BTS 10200 Softswitch Command Line Interface Reference Guide* for detailed information about the RGW and TGW commands.

## Add a Termination

The Termination (termination) table holds information about each termination or endpoint managed by the Call Agent. Termination structure uniformly addresses analog ports, DS0 ports, ISDN circuits, and allows termination groupings for ISDN PRI and multiline hunt groups (MLHGs) for a single subscriber. Termination events and signals are grouped into packages. Packages are groupings of events and signals supported by a particular type of endpoint. For instance, one package supports a certain group of events and signals for analog access lines, and another package supports another group of events and signals for video lines. One or more packages can exist for a given endpoint type. The package type is determined by the gateway used.

The Termination table can use commands that do not match command-to-field of the database. If the prefix token is used during provisioning, the termination ID is generated by concatenating a prefix and port-start value and incrementing the termination port number until the port number value reach port-end. The prefix, port-start, and port-end are not in the table as individual fields.

The user enters:

prefix: 1–32 ASCII characters

port-start: 0000–9999 (1–4 numeric characters) (default = 1)

port-end: 0000–9999 (1–4 numeric characters) (default = 24)

| Command                                                                                | Purpose            |
|----------------------------------------------------------------------------------------|--------------------|
| add termination prefix=aaln/; port-start=0;<br>port-end=1; mgw-id=<MGW ID>; type=line; | Adds a termination |

## Add a Destination

The Destination (destination) table defines the call type and the routing information for the dialed digits. Multiple digit strings in the Dial Plan table can use the same destination ID.

| Command                                                                 | Purpose            |
|-------------------------------------------------------------------------|--------------------|
| add destination dest-id=local-call;<br>route-type=sub; call-type=local; | Adds a destination |

## Add a Dial Plan Profile

The Dial Plan Profile (dial-plan-profile) table creates dial-plan-profile-ids before they are assigned to subscribers or trunk groups. The dial-plan-profile-id links digit-string entries in the Dial Plan table within a dial plan. Different dial-plan-profile-ids are assigned to subscribers and trunk groups. A dial-plan-id must be created in this table before entries can be added to the Dial Plan table.

| Command                                                  | Purpose                  |
|----------------------------------------------------------|--------------------------|
| add dial-plan-profile id=dp1;<br>description=NA_Default; | Adds a dial plan profile |

## Add a Dial Plan

You can use a dial plan to analyze, screen, and route calls based on dialed digits. The Dial Plan (dial-plan) table holds dial plan information for a specific type of call. It defines valid dialing patterns and determines call routing. All records that share a common dial-plan-profile-id are considered a dial plan.

| Command                                                                   | Purpose          |
|---------------------------------------------------------------------------|------------------|
| add dial-plan id=dp1; digit-string=919-392;<br>dest-id=sub; noa=national; | Adds a dial plan |

## Add a Subscriber Profile

The Subscriber Profile (subscriber-profile) table groups properties that are shared by a number of subscribers. For example, a Centrex group consisting of several subscribers can share a subscriber profile. Because a Call Agent consists of several points of presence (POPs), and POP is one of the tokens in the subscriber profile, POP-specific subscriber profiles must be created.

| Command                                                          | Purpose                   |
|------------------------------------------------------------------|---------------------------|
| add subscriber-profile id=subpf1;<br>dial-plan-id=dp1; pop-id=1; | Adds a subscriber profile |

## Add a Subscriber

The Subscriber (subscriber) table defines the characteristics of a subscriber or group of subscribers in a Call Agent. All termination numbers reached by a directory number (DN) must be set up as a subscriber. Any termination that can originate in the primary Call Agent must be set up as a subscriber (residential, PBX, business, and Centrex). All terminations to customers, such as MLHG and Centrex, must be defined as well.

[Table 5-2](#) lists the required tokens for each value.

| Command                                                                                                                                     | Purpose                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| add subscriber id=sub11; sub-profile-id=subpf1;<br>category=individual; term-id=aaln/0;<br>mgw-id=c925.172; dn1=919-392-1235;<br>name=RTP5; | Adds a subscriber<br><br><b>Note</b> Each subscriber must have a unique term-id. |

**Table 5-2 Required Tokens Per Category**

| Value           | Required Tokens                             |
|-----------------|---------------------------------------------|
| INDIVIDUAL      | TERM-ID, MGW-ID                             |
| MLHG            | MLHG-ID                                     |
| MLHG-INDIVIDUAL | TERM-ID, MGW-ID, MLGH-ID                    |
| MLHG-PREF-INDIV | TERM-ID, MGW-ID, MLHG-ID, MLHG-PREF-LIST-ID |
| CTXG-MLHG       | MLHG-ID, CTXG-ID                            |
| CTXG            | CTXG-ID                                     |
| CTXG-INDIVIDUAL | TERM-ID, MGW-ID, CTXG-ID                    |
| CTXG-TG         | CTXG-ID, TGN-ID                             |
| PBX             | TGN-ID                                      |

## Change Subscriber Ring Cadence (Optional)

When changing the subscriber ring cadence, permitted values 1–7 are available. The cadence of each of these ringing cycles is

1 = 2 seconds ringing, 4 seconds off

2 = .5sec ringing, .5sec ringing, 4sec off

3 = .5sec ringing, .5sec ringing, .5sec ringing, 4sec off

4 = .3sec ringing, .2sec ringing, .3sec ringing, 4sec off

5 = .5sec ringing, 6sec off

6 = .5sec ringing, 1sec ringing, .5sec ringing, 4sec off

7 = .5sec ringing, 6sec off

| Command                                                                | Purpose                         |
|------------------------------------------------------------------------|---------------------------------|
| change subscriber id=sub11;<br>sub-profile-id=subpf1; ring_type_dn1=3; | Changes subscriber ring cadence |

## Control a Media Gateway

The control command sets the administrative state (OOS, INS) of media gateways, subscribers terminations, trunks, and trunk groups.

| Command                                                    | Purpose                           |
|------------------------------------------------------------|-----------------------------------|
| control mgw id=c925.172; target-state=INS;<br>mode=FORCED; | Places a media gateway in-service |

Enter a CLI status command similar to the following to verify that the media gateway is in-service:

```
status mgw id=c925.172;
```

```
Reply : Success:
```

```
MGW ID -> c925.172
RESULT -> ADM configure result in success
REASON -> ADM executed successful
ADMIN STATE -> ADMIN_INS
OPER STATE -> Media gateway in working status
```

## Equip a Subscriber Termination

The equip command enables the subscriber trunk termination to be placed in-service.

| Command                                | Purpose                                                  |
|----------------------------------------|----------------------------------------------------------|
| equip subscriber-termination id=sub11; | Enables a subscriber termination to be placed in-service |

## Control a Subscriber Termination

The control command sets the administrative state (OOS, INS) of media gateways, subscribers terminations, trunks, and trunk groups.

| Command                                                                    | Purpose                                    |
|----------------------------------------------------------------------------|--------------------------------------------|
| control subscriber-termination id=sub11;<br>target-state=INS; mode=FORCED; | Places a subscriber termination in-service |

Verify that the subscriber termination is in-service by using the status command:

```
status subscriber-termination id=sub11;
```