



CHAPTER 2

Initial Softswitch Provisioning

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This chapter describes how to provision the Cisco BTS 10200 Softswitch Call Agent and Feature Server and is organized into the following sections:

- [Call Agent Provisioning, page 2-1](#)
- [Provisioning a Feature Server, page 2-4](#)

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*.

Call Agent Provisioning

The Call Agent (CA) provides signaling and call processing (call setup and teardown) for the Cisco BTS 10200 Softswitch. This section describes the steps necessary to add the Call Agent and associated office tables to the system.

[Table 2-1](#) provides an example of the steps required to provision the Cisco BTS 10200 Softswitch Call Agent and lists examples of CLI commands with mandatory tokens. Click on each step for a description of the step.

Table 2-1 Call Agent Provisioning Steps

Step	Description	CLI Command
Step 1	Add a Call Agent, page 2-2	add call-agent id=CA101;
Step 2	Add a Call Agent Profile, page 2-2	add call-agent-profile id=CA146; cms-id=12345; mgc-supp=y; mgc-id=12345; feid=financial-entity-id1; cdb-billing-supp=y; em-billing-supp=n;
Step 3	Change a Call Agent Configuration, page 2-3	show ca-config type=susp-tmr; change ca-config type=susp-tmr; datatype=integer;value=300 Note The add command is used during installation but additional parameters cannot be added.
Step 4	Add a National Destination Code, page 2-3	add ndc digit-string=469;

Table 2-1 Call Agent Provisioning Steps (continued)

Step	Description	CLI Command
Step 5	Add an Exchange Code, page 2-3	add exchange-code ndc=469; ec=255;
Step 6	Add an Office Code, page 2-3	add office-code call-agent-id=CA146; ndc=469; ec=255; dn-group=xxxx;
Step 7	Add a Digit Map, page 2-4	add digit-map id=default; digit-pattern=0T 00 [2-9]1 [2-9]xx[2-9]xxxxxx 1 [2-9]xx[2-9]xxxxxx 0 [2-9]xx[2-9]xxxxxx 011xxxxxxxxxxxxx.T 101xxxx # *[4-9]x *[2-3]xx 11xx [2-9]# [2-4]x#[2-9]T [2-4]xT 01xxxxxxxxxxxxx; Note This digit pattern permits the creation of both 2- and 3-digit VSCs. If the first digit is 2 or 3, the length is 3 digits. If first digit is 4–9, the length is 2 digit. For example: *2-3xxx *4-9xx
Step 8	Add a Point of Presence, page 2-4	add pop id=1; state=tx; country=usa; timezone=CST;

Add a Call Agent

The Call Agent (call-agent) table contains the domain name and tsap addresses of the Call Agent as well as the primary and secondary IP addresses of the Element Management System (EMS).

Command	Purpose
add call-agent id=CA101;	Adds a Call Agent

Add a Call Agent Profile

The Call Agent Profile (call-agent-profile) table defines the properties (functionality) of the Call Agent. The BTS Call Agent reads the call-agent-profile table once in 20 calls (for efficiency). When the call-agent is processing 20 calls per second (cps), any change to parameters in call-agent-profile table takes effect in a second.

Command	Purpose
add call-agent-profile id=CA146; cms-id=12345; mgc-supp=y; mgc-id=12345; feid=financial-entity-id1; cdb-billing-supp=y; em-billing-supp=n;	Adds a Call Agent profile

Change a Call Agent Configuration

The Call Agent Configuration (ca-config) table defines the defaults for each Call Agent. The defaults are prepopulated at installation. Only change and show commands are valid. See the *Cisco BTS 10200 Command Line Interface Reference Guide*, Appendix A, “Call Agent and Feature Server Configurable Parameters,” for a complete list of configurable parameters.

Command	Purpose
change ca-config type=susp-tmr; datatype=integer;value=300;	Configures Call Agent parameters



Note

The add command is used during installation; additional parameters cannot be added.

Call Agent Configuration Base Table

The Call Agent Configuration Base (ca-config-base) table is a static table in the EMS to perform constraint checks. This table is not provisionable. Only the show command is allowed. Use the show command in this table to change information in the Call Agent Configuration table. Information in the Call Agent Configuration Base table must match the information in the Call Agent Configuration table.

Add a National Destination Code

The National Destination Code (ndc-code) table defines the home area codes supported by the Call Agent.

Command	Purpose
add ndc digit-string=469;	Adds a national destination code

Add an Exchange Code

The Exchange Code (exchange-code) table specifies the office codes assigned to a particular Call Agent. This table defines the office-code-index (normalized office code) that is used as an index in the DN2Subscriber table.

Command	Purpose
add exchange-code ndc=469; ec=255;	Adds an exchange code

Add an Office Code

The Office Code (office-code) table specifies the office codes assigned to a particular Call Agent. The office codes defined in this table normally terminate to a subscriber. This table defines the office-code-index (normalized office code) that is used as an index in the DN2Subscriber table.

Command	Purpose
<code>add office-code call-agent-id=CA146; ndc=469; ec=255; dn-group=xxxx;</code>	Adds an office code

Add a Digit Map

The Digit Map (digit-map) table tells a media gateway (MGW) how to collect and report dialed digits. The Call Agent uses a default digit map ID for normal digit collection unless a specific digit map ID is assigned to the subscriber. POTS subscribers use a public dialing plan. Centrex subscribers use a customized dialing plan.

Command	Purpose
<code>add digit-map id=default; digit-pattern=0T 00 [2-9]11 [2-9]xx[2-9]xxxxxx 1[2-9]xx[2-9]xxxxxx 0[2-9]xx[2-9]xxxxxx 011x xxxxxxxxxxxx.T 101xxxx # *[4-9]x *[2-3]xx 11 xx [2-9]# [2-4]x#[2-9]T [2-4]xT 01xxxxxxxxxxxx;</code>	Adds a digit map



Note

This table is case-sensitive.

Add a Point of Presence

The Cisco BTS 10200 Softswitch Call Agent can serve several geographical regions or Metropolitan Statistical Areas (MSAs) simultaneously. Each geographical region is referred to as a point of presence (POP). Each POP has its own unique dialing and routing characteristics. The Point of Presence (pop) table contains a default dialing and routing characteristics. Each originating entity (subscriber or trunk group) is assigned to a POP. The POP also performs policy routing, for example, it routes the call to the nearest announcement server in the POP or to the nearest interLATA carrier location within a POP.

Command	Purpose
<code>add pop id=1; state=tx; country=usa; timezone=CST;</code>	Adds a point of presence

Provisioning a Feature Server

The Feature Server provides access to features through a well-defined interface, Feature Control Protocol (FCP). Cisco BTS 10200 Feature Server architecture separates feature control from call control with a clear interface defined between them. The Call Agent uses FCP to provide an effective environment for interfacing with multiple feature servers. This provides AIN, POTS, Centrex, and 800 services as required during call processing.

A Feature Server is invoked from a detection point (DP). At the DP, the Call Agent checks if any triggers are armed. If they are, the Call Agent checks if the trigger applies to a subscriber, group, or office, in the order specified. If the trigger is applicable, the Call Agent invokes the feature associated with that trigger.

Table 2-2 lists the steps for provisioning a Cisco BTS 10200 Softswitch Feature Server and provides commands with mandatory tokens. Click on each step for a description of the step.

Table 2-2 Feature Server Provisioning Steps

	Description	CLI Command
Step 1	Add a Feature Server, page 2-5	add feature-server id=FSAIN201; tsap-addr-sidea=trn1AIN.trnglab.cisco.com:11205; type=AIN;
Step 2	Add a Feature, page 2-8	add feature fname=CFU; tdp1=termination-attempt-authorized; tid1=termination-attempt-authorized; ttype1=r; tdp2=collected-information; tid2=vertical-service-code; ttype2=r; feature-server-id=FSPTC231; fname1=CFUA; fname2=CFUD;
Step 3	Add a Vertical Service Code, page 2-8	add vsc digit-string=*72; fname=CFUA;
Step 4	Add a Service, page 2-9	add service id=1; fname1=CFU; fname2=CFB; fname3=CFNA; fname4=CW;

Add a Feature Server

The Feature Server (feature-server) table identifies the location and type of Feature Server (POTS or AIN). It also identifies the IP address of the primary and secondary EMS and MGWs used by the Feature Server. It is updated at both the Call Agent and the applicable Feature Server. The Feature Server can be prepopulated during installation using a script, and it is used to automatically provision the Service Trigger table.

Command	Purpose
add feature-server id=FSAIN201; tsap-addr-sidea= trn1AIN.trnglab.cisco.com:11205; type=AIN;	Adds a Feature Server Note The socket port provisioning for the tsap address of the feature server must be 11235 for FSPTC and 11205 for FSAIN, without regard to what instance has been defined for the FSAIN and the FSPTC.

Table 2-3 lists the service types and features available on a POTS or Centrex or Tandem Feature Server.

Table 2-3 *Service Types and Features on POT/Centrex/Tandem Feature Server*

Service Type	Feature Name
Class of Service Restrictions	Number Blocking Restrictions based on category of service: <ul style="list-style-type: none"> • 900 Blocking • Directory Assistance Blocking • International Blocking • 976 Blocking • National Black/White List • International Black/White List • Casual Black/White List • Account Codes • Authorization Codes
Screening features	Selective Call Forwarding Selective Call Acceptance Selective Call Rejection, Call Block Distinctive Ringing/Call Waiting
POTS features	Analog DID for PBX (FXO) DOD for PBX Multiple Directory Numbers (Teen Service)

Table 2-3 *Service Types and Features on POT/Centrex/Tandem Feature Server (continued)*

Service Type	Feature Name
Common features (POTS and Centrex)	Call Forwarding Unconditional
	Remote Activation of Call Forwarding
	Remote Call Forwarding
	Call Forwarding On Busy
	Call Forwarding No Answer
	Call Forwarding Redirection
	Calling Number Delivery Blocking
	Calling Name Delivery Blocking
	Calling Identity Delivery and Suppression
	Calling Number Delivery
	Calling Name Delivery (No External Query)
	Calling Identity Delivery on Call Waiting
	Anonymous Call Rejection
	Automatic Callback (Repeat Dialing)
	Automatic Recall (Call Return)
	Call Block (Reject Caller)
	Call Waiting
	Cancel Call Waiting
	Customer-Originated Trace
	Do Not Disturb
	Hotline Service
	Warmline Service
	Interactive Voice Response Functions
	Multiline Hunt Group (MLHG)
	Speed Call (1-digit and 2-digit)
	Three-Way Calling
Usage-Sensitive Three-Way Calling	
Visual Message Waiting Indicator	

Table 2-3 Service Types and Features on POT/Centrex/Tandem Feature Server (continued)

Service Type	Feature Name
Basic Centrex features	Customized Dialing Plan
	Intercom Dialing
	Semi/Fully Restricted Lines
	Direct Inward Dialing (DID)
	Distinctive Alerting/Call Waiting Indication on DID
	Direct Outward Dialing (DOD)
	Incoming/Outgoing Simulated Facility Group
	Call Transfer
	Call Hold
	Call Park and Call Retrieve
	Directed Call Pickup (With and Without Barge-in)
Group Speed Call	
Tandem features	ANI Screening

**Note**

When adding a Feature Server, add the entries to the Call Agent as well as the Feature Server tables in the respective Feature Servers. The POTS Feature Server has the Feature Server table, but the AIN Feature Server does not.

Add a Feature

The Feature (feature) table defines characteristics for the features supported by the Cisco BTS 10200 Softswitch. Repeat this step for each feature you want to add to the system.

Command	Purpose
<pre>add feature fname=CFU; tdp1=termination-attempt-authorized; tid1=termination-attempt-authorized; ttype1=r; tdp2=collected-information; tid2=vertical-service-code; ttype2=r; feature-server-id=FSPTC231; fname1=CFUA; fname2=CFUD;</pre>	Adds a feature

Add a Vertical Service Code

The Vertical Service Code (vsc) table translates a vertical service code, also known as a star code (*XX), to a feature name. This table is preprovisioned, based on the Feature table customer records, during installation.

Command	Purpose
<code>add vsc digit-string=*72, fname=CFUA;</code>	Adds a VSC

Add a Service

A service is a collection of one or more features that are invoked when a trigger is reached. Each feature within a service can have one or more triggers. Services can be dynamically created within the Cisco BTS 10200 Softswitch. The service provider defines a service and the features associated with it. Up to 10 commonly used features can be grouped into a service, and up to 50 services can be provisioned per subscriber. The subscriber is then provisioned with a service-id instead of individual features.

Command	Purpose
<code>add service id=1; fname1=CFU; fname2=CFB; fname3=CFNA; fname4=CW;</code>	Adds a service

