C H A P T E R 3

Subscribers

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Introduction

This chapter explains how to provision the BTS to communicate with different subscriber types.

IAD Subscribers

The following table has steps to provision the BTS to communicate with an integrated access device (IAD) subscriber and example CLI commands with required tokens.

Table 3-1   **IAD Subscriber Provisioning**

	Task	Description and CLI Command
Step 1	Adding MGW profiles.	A profile is a template for provisioning MGWs by vendor. It has settings for communications between the CA and each type of MGW.
		Several tokens have values that can be overwritten after the CA queries the MGW for supported capabilities. If the MGW returns a different value from that provisioned, the returned value automatically replaces it.
		If necessary, change the value of other keepalive tokens in the mgw-profile table.
		`add mgw-profile id=IAD2421; vendor=cisco;`
Step 2	Adding MGWs.	The MGW table has information about each MGW the CA manages. Address the MGW uniquely by domain name, IP address, or TSAP address. The MGW table has the following associated commands:
		• **RGW**—provisions a residential gateway, with the type token set to RGW.
		• **TGW**—provisions a trunking gateway, with the type token set to TGW.
		Both commands provision the MGW table, but you can use them to provide user security to individuals.

		`add mgw id=c2421.192;`
		`tsap-addr=c2421.192.trnglab.cisco.com;`
		`call-agent-id=CA101; mgw-profile-id=IAD2421; type=rgw;`

Step 3	Adding terminations.	The Termination (termination) table has information about each termination the CA manages. Terminations include analog ports, DS0 ports, ISDN circuits, ISDN PRI, and multiline hunt groups (MLHGs).
		Termination events and signals are grouped into packages supported by termination types. The gateway determines the package type.
		If you enter the prefix token, the termination ID is generated by concatenating prefix and port-start values and incrementing the termination port number until the port number values reach port-end. The prefix, port-start, and port-end tokens are not in the table as individual fields. Enter:
		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)
		`add termination prefix=aaln/S1/; port-start=1;` `port-end=16; type=line; mgw-id=c2421.192;`

Table 3-1 **IAD Subscriber Provisioning (continued)**

	Task	Description and CLI Command
Step 4	Adding call types and routing for dialed digits.	The Destination (destination) table defines call type and routing information for dialed digits. Multiple digit strings in the Dial Plan table can use the same destination ID. `add destination dest-id=local-call; call-type=local; route-type=sub;`
Step 5	Adding dial plan profiles.	A profile is a template for provisioning dial plans. 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. Assign different dial-plan-profile-ids to subscribers and trunk groups. `add dial-plan-profile id=dp1; description=dialing plan profile id;`
Step 6	Adding dial plans.	Dial plans analyze, screen, and route calls using dialed digits. The Dial Plan (dial-plan) table has information for a specific call type; it defines valid dialing patterns and determines call routing. `add dial-plan id=sub; digit-string=469255; noa=national; dest-id=local_call;`
Step 7	Adding subscriber profiles.	The Subscriber Profile (subscriber-profile) table groups shared subscriber properties. Because CAs have several points of presence (POPs), and POPs are a subcriber profile token, you must create POP-specific subscriber profiles. `add subscriber-profile id=subpf1; dial-plan-id=dp1; pop-id=1;`
Step 8	Adding subscribers.	The Subscriber (subscriber) table defines subscribers and subscriber groups on a CA. `add subscriber id=sub1; category=individual; name=Richardson1; term-id=aaln/S1/3/; mgw-id=c2421.192; dn1=4692551231; sub-profile-id=subpf1;` Table 3-6 lists subscriber types and their required tokens. Each subscriber must have a unique term-id. Do not use double quotation marks (""), single quotation marks ('), dashes (-), or underscores (_) in subscriber names. For PBX-DID subscribers, manually provision the PBXDID table. See the PBX-DID Subscribers, page 3-4 for more details. Also set up the following as subscribers: • Termination numbers reached by DNs • Termination numbers originating in the CA • Termination numbers to customers, such as MLHG or Centrex See the "PBX-DID Subscribers" section on page 4 for more information.

Table 3-1   IAD Subscriber Provisioning (continued)

	Task	Description and CLI Command
Step 9	Changing subscriber DNs.	The EMS automatically generates the DN2Subscriber table. This table determines the subscriber ID of a DN during termination processing; it populates when a subscriber DN is added to the Subscriber table. When a called number is translated by the dial plan, this table is queried; it maps a DN to a subscriber.
		You can view data or change the Status field to VACANT if it is in the disconnected (DISC) or connected (CN) state.
		`add dn2subscriber office-code-index=1;dn=1321; status=assigned;`
Step 10	Changing subscribers profiles.	Prefix screening tokens in the Subscriber Profile table determine whether a subscriber must dial 1 when dialing local or long distance calls:
		• LOCAL_PFX1_OPT—Controls calls with call type set to LOCAL.
		• TOLL_PFX1_OPT—Controls interLATA and toll calls.
		Valid values are RQ (required), NR (not required), and OPT (optional).
		`change subscriber-profile ID=sp1; DIAL_PLAN_ID=cdp1; LOCAL_RFX1_OPT=NR; TOLL_PFX1_OPT=RQ; INTERLATA_PFX1_OPT=RQ; POP_ID=69;`
		Note For Service Access Code calls such as 500, 700, 800, and 900, subscribers must dial 1. The flags LOCAL_PFX1_OPT, INTERLATA_PFX1_OPT, and TOLL_PFX1_OPT, do not affect such calls.
Step 11	Placing MGWs in service.	`control mgw id=c2421.192; target-state=INS; mode=forced;`
Step 12	Preparing subscriber trunk terminations for service.	`equip subscriber-termination ID=sp1;`
Step 13	Placing subscriber trunk terminations in service.	`control subscriber-termination ID=sp1; target-state=INS; mode=FORCED;`

PBX-DID Subscribers

Table 3-2 has steps to provision the Cisco BTS 10200 to communicate with a DID trunk board in the PBX over an analog DID one-way trunk.

Note that you need to have provisoned trunk group profile, trunk groups, routes, and dial plan before provisioning the PBXDID table. See the "Trunk Routing" section on page 7-1 for more details.

Now, perform the following steps to provision the PBX-DID feature.

Table 3-2   PBX-DID Subscriber Provisioning

	Task	Description and CLI Command
Step 1	Adding National Destination Code.	The national destination code (ndc) table defines the home area codes supported by the CA. Setup the NDC for the DN as shown below. `add ndc digit_string=420;`
Step 2	Adding Exchange Code.	Setup the EC for the DN as shown below. `add exchange_code ndc=420; ec=255; office_code_index=48888;`
Step 3	Adding Office Code.	The Office Code (office-code) table specifies the office codes assigned to a particular CA. 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. `add office_code ndc=420; ec=255; call_agent_id=CA146; dn_group=xxxx;`
Step 4	Adding Subscriber Profile.	The Subscriber Profile (subscriber-profile) table groups shared subscriber properties. Because CAs have several points of presence (POPs), and POPs are a subscriber profile token, you must create POP-specific subscriber profiles. `add subscriber-profile id=subpf1; dial-plan-id=dp1; pop-id=1;`
Step 5	Adding Subscriber.	The Subscriber (subscriber) table defines subscribers and subscriber groups on a CA. `add subscriber ID=pbx1sub; category=PBX; name=pbx1; TGN_ID=17; SUB_PROFILE_ID=subpf1; TERM_TYPE=TG;` Each subscriber must have a unique term-id. Do not use double quotation marks (""), single quotation marks ('), dashes (-), or underscores (_) in subscriber names. For PBX-DID subscribers, manually provision the PBXDID table. The PBXDID table supports groups of 10, 100, 1000, or 10,000 DNs. The DN format is nnnn, where n = 0–9. For a range of DNs, replace n with lowercase x. If the last digit is replaced with a lowercase x, it represents a group of 10 DNs. 100 = xx, 1000 = xxx, and 10,000 = xxxx.
Step 6	Configuring PBX-DID.	The PBXDID table determines the subscriber ID for a range of DNs during termination processing. After creating a subscriber with category=PBX, the PBXDID table is provisioned to define range (or ranges) of DNs assigned to the subscriber. `add pbxdid id=4202553xxx; from_fdn=4202553000; to_fdn=4202553025; status=ASSIGNED; sub_id=pbx1@ipcell.com;`

Note   See the Cisco BTS 10200 Softswitch CLI Database for more details on the PBXDID command and tokens.

ATA 18x Residential Subscribers

.Table 3-3 has steps to provision the BTS to communicate with a Cisco Analog Telephone Adaptors (ATAs) as residential gateway and support local subscribers.

Table 3-3   *ATA 18X Residential Susbscriber Provisioning*

	Task	Description and CLI Command
Step 1	Adding MGW profiles.	A profile is a template for provisioning MGWs by vendor. It has settings for communications between the BTS Call Agent (CA) and each type of MGW.
		Several tokens have values that can be overwritten after the CA queries the MGW for supported capabilities. If the MGW returns a different value from that provisioned, the returned value automatically replaces it.
		If necessary, change the value of other keepalive tokens in the mgw-profile table.
		`add mgw-profile id=ATA186; vendor=cisco; packet-type=IP; mgcp-version=mgcp_1_0; description=Cisco ATA186;`
		Tip See the *Cisco BTS 10200 Softswitch Troubleshooting Guide* for how tokens impact audit-endpoint and keepalive processes.
Step 2	Adding MGWs.	The MGW table has information about each MGW the CA manages. Address the MGW uniquely by domain name, IP address, or TSAP address. The MGW table has the following associated commands:
		• **RGW**—provisions a residential gateway, with the type token set to RGW
		• **TGW**—provisions a trunking gateway, with the type token set to TGW.
		Both commands provision the MGW table, but you can use them to provide user security to individuals.
		`add mgw id=ATA1; tsap-addr=ATA1.trnglab.cisco.com; call-agent-id=CA101; mgw-profile-id=ATA186; type=rgw;`

Table 3-3   ATA 18X Residential Susbscriber Provisioning (continued)

	Task	Description and CLI Command
Step 3	Adding terminations.	The Termination (termination) table has information about each termination the CA manages. Terminations include analog ports, DS0 ports, ISDN circuits, ISDN PRI, and multiline hunt groups (MLHGs).
		Termination events and signals are grouped into packages supported by termination types. The gateway determines the package type.
		If you enter the prefix token, the termination ID is generated by concatenating 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. Enter:
		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)
		`add termination prefix=aaln/; port-start=1; port-end=2; mgw-id=ATA-1; type=line;`
Step 4	Adding call types and routing for dialed digits.	The Destination (destination) table defines call type and routing information for dialed digits. Multiple digit strings in the Dial Plan table can use the same destination ID.
		`add destination dest-id=local-call; call-type=local; route-type=sub;`
Step 5	Adding dial plan profiles.	A profile is a template for provisioning dial plans. 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. Assign different dial-plan-profile-ids to subscribers and trunk groups.
		`add dial-plan-profile id=dp1; description=dialing plan profile id;`
Step 6	Adding dial plans.	Dial plans analyze, screen, and route calls using dialed digits. The Dial Plan (dial-plan) table has information for a specific call type; it defines valid dialing patterns and determines call routing.
		`add dial-plan id=sub; digit-string=469-255; noa=national; dest-id=local_call;`
Step 7	Adding subscriber profiles.	The Subscriber Profile (subscriber-profile) table groups shared subscriber properties. Because CAs have several points of presence (POPs), and POPs are a subcriber profile token, you must create POP-specific subscriber profiles.
		`add subscriber-profile id=subpf1; dial-plan-id=dp1; pop-id=1;`

Table 3-3   ATA 18X Residential Susbscriber Provisioning (continued)

	Task	Description and CLI Command
Step 8	Adding subscribers.	The Subscriber (subscriber) table defines subscribers and subscriber groups on a CA. `add subscriber id=sub1; category=individual; name=Richardson1; term-id=aaln/S1/3/; mgw-id=c2421.192; dn1=4692551231; sub-profile-id=subpf1;` Table 3-6 lists subscriber types and their required tokens. Each subscriber must have a unique term-id. Do not use double quotation marks (""), single quotation marks ('), dashes (-), or underscores (_) in subscriber names. For PBX-DID subscribers, manually provision the PBXDID table. The PBXDID table supports groups of 10, 100, 1000, or 10,000 DNs. The DN format is nnnn, where n = 0–9. For a range of DNs, replace n with lowercase x. If the last digit is replaced with a lowercase x, it represents a group of 10 DNs. 100 = xx, 1000 = xxx, and 10,000 = xxxx. Also set up the following as subscribers: • Termination numbers reached by DNs • Termination numbers originating in the CA • Termination numbers to customers, such as MLHG or Centrex
Step 9	Viewing subscribers DN status.	The EMS automatically generates the DN2Subscriber Table. A user can show data or change the Status field to VACANT if it is in the disconnected (DISC) or connected (CN) state. The DN2Subscriber (dn2subscriber) table determines the subscriber ID of a DN during termination processing. The table is populated when a subscriber DN is added to the Subscriber table. It is queried when the called number is translated using the dial plan and the type of subscriber field indicates "Subscriber," that is, it takes a DN and maps it to a subscriber. The DN2Subscriber table also includes the administrative states of the DN. Table 3-7 lists the possible administrative states of the DN.
Step 10	Placing MGWs in service.	`control mgw id=ATA-1; target-state=INS; mode=forced;`
Step 11	Preparing subscriber trunk terminations for service.	`equip subscriber-termination ID=sub2;`
Step 12	Placing subscriber trunk terminations in service.	`control subscriber-termination id=sub2; target-state=INS; mode=FORCED;`

Cable Subscribers

Table 3-4 has steps to provision the BTS to communicate with a cable subscriber.

Tip   For information on BTS network elements that support PacketCable-based features and protocols, refer to the *PacketCable and Event Message Provisioning and Operations Guide*

Table 3-4   Cable Subscriber Provisioning

	Description	CLI Command
Step 1	Adding MGW profiles.	A profile is a template for provisioning MGWs by vendor. It has settings for communications between the BTS Call Agent (CA) and each type of MGW.
		Several tokens have values that can be overwritten after the CA queries the MGW for supported capabilities. If the MGW returns a different value from that provisioned, the returned value automatically replaces it.
		If necessary, change the value of other keepalive tokens in the mgw-profile table.
		`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;` Tip See the *Cisco BTS 10200 Softswitch Troubleshooting Guide* for how tokens impact audit-endpoint and keepalive processes.
Step 2	Adding MGWs.	The MGW table has information about each MGW the CA manages. Address the MGW uniquely by domain name, IP address, or TSAP address. The MGW table has the following associated commands: • RGW—provisions a residential gateway, with the type token set to RGW • TGW—provisions a trunking gateway, with the type token set to TGW. Both commands provision the MGW table, but you can use them to provide user security to individuals. `add mgw id=<MGW ID>; tsap-addr=<TSAP-ADDR>; call-agent-id=<CA ID>; mgw-profile-id=UBR925; type=rgw; aggr-id=aggr01;`

Table 3-4   Cable Subscriber Provisioning (continued)

	Description	CLI Command
Step 3	Adding terminations.	The Termination (termination) table has information about each termination the CA manages. Terminations include analog ports, DS0 ports, ISDN circuits, ISDN PRI, and multiline hunt groups (MLHGs).
		Termination events and signals are grouped into packages supported by termination types. The gateway determines the package type.
		If you enter the prefix token, the termination ID is generated by concatenating 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. Enter:
		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)
		`add termination prefix=aaln/; port-start=0; port-end=1; mgw-id=<MGW ID>; type=line;`
Step 4	Adding call types and routing for dialed digits.	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.
		`add destination dest-id=local-call; route-type=sub; call-type=local;`
Step 5	Adding dial plan profiles.	A profile is a template for provisioning dial plans. 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. Assign different dial-plan-profile-ids to subscribers and trunk groups.
		`add dial-plan-profile id=dp1; description=NA_Default;`
Step 6	Adding dial plans.	Dial plans analyze, screen, and route calls using dialed digits. The Dial Plan (dial-plan) table has information for a specific call type; it defines valid dialing patterns and determines call routing.
		`add dial-plan id=dp1; digit-string=919-392; dest-id=sub; noa=national;`
Step 7	Adding subscriber profiles.	The Subscriber Profile (subscriber-profile) table groups shared subscriber properties. Because CAs have several points of presence (POPs), and POPs are a subcriber profile token, you must create POP-specific subscriber profiles.
		`add subscriber-profile id=subpf1; dial-plan-id=dp1; pop-id=1;`

Table 3-4   Cable Subscriber Provisioning (continued)

	Description	CLI Command

Step 8	Adding subscribers.	The Subscriber (subscriber) table defines subscribers and subscriber groups on a CA.
		
		`add subscriber id=sub1; category=individual;`
		`name=Richardson1; term-id=aaln/S1/3/; mgw-id=c2421.192;`
		`dn1=4692551231; sub-profile-id=subpf1;`
		
		Table 3-6 lists subscriber types and their required tokens.
		
		Each subscriber must have a unique term-id.
		
		Do not use double quotation marks (""), single quotation marks ('), dashes (-), or underscores (_) in subscriber names.
		
		For PBX-DID subscribers, manually provision the PBXDID table. The PBXDID table supports groups of 10, 100, 1000, or 10,000 DNs. The DN format is nnnn, where n = 0–9. For a range of DNs, replace n with lowercase x. If the last digit is replaced with a lowercase x, it represents a group of 10 DNs. 100 = xx, 1000 = xxx, and 10,000 = xxxx.
		
		Also set up the following as subscribers:
		
		• Termination numbers reached by DNs
		• Termination numbers originating in the CA
		• Termination numbers to customers, such as MLHG or Centrex

Step 9	Setting subscriber rings.	Assign one of the following rings:
		
		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
		
		`change subscriber id=sub11; sub-profile-id=subpf1;`
		`ring_type_dn1=3;`

Step 10	Placing MGWs in service.	`control mgw id=<MGW ID>; target-state=INS; mode=FORCED;`
Step 11	Preparing subscriber trunk terminations for service.	`equip subscriber-termination id=sub11;`
Step 12	Placing subscriber trunk terminations in service.	`control subscriber-termination id=sub11; target-state=INS;` `mode=FORCED;`

SIP Subscribers

SIP subscribers are SIP phones registered directly to the BTS and for which the BTS maintains subscriber information.

The following table has steps to provision the BTS to communicate with SIP subscriber and example CLI commands with required tokens. Only commands for tables specific to SIP subscribers are in this procedure. Commands for other tables, such a sub_service_profile, dial_plan, which are required for the subscriber, are not included.

Table 3-5   SIP Subscriber Provisioning

	Task	Description and CLI Command
Step 1	Adding authentication realm IDs.	The Authentication Realm (AUTH-REALM) table defines supported authentication realm IDs. BTS uses realm-based authentication when another network entity challenges it for information.Assign auth-realm-ids to subscribers using the Serving Domain Name table. All SIP subscribers in a serving domain share an auth-realm-id. `add auth_realm id=ciscolab; description=sample_authrealm;`
Step 2	Adding serving domains.	The Serving Domain Name (SERVING-DOMAIN-NAME) table defines serving domain names the BTS supports. This table also lists authentication requirements for subscribers served by serving domains. **Note** TheDNS must resolve the domain name value to logical IP addresses assigned by the SIP adaptor during BTS installation. The resolution for the serving domain must match the resolution of the fully-qualified domain name (FQDN) specified as the BTS contact. Add the domain name or IP address as the DomainName. If the SIP phones require authentication, set AUTH_REQD=Y. `add serving-domain-name domain_name=domainname.com; auth_reqd=y; auth_realm_id=ciscolab; description=sample_name;`
Step 3	Adding SIP subscribers.	`add subscriber ID=sip_sub1; CATEGORY=INDIVIDUAL; NAME=SipSub1; STATUS=ACTIVE; LANGUAGE=english; BILLING-DN=469-555-1111; DN1=469-555-1111; RING-TYPE-DN1=1; SUB-PROFILE-ID=sub_profile; TERM-TYPE=SIP; AOR-ID=4695551111@cisco.com; privacy=user;` **Note** Set privacy=user to have the BTS apply user-provided privacy information. This works for SIP endpoints capable of displaying privacy information.

Table 3-5   SIP Subscriber Provisioning (continued)

	Task	Description and CLI Command

Step 4	Assigning off-hook service to SIP subscribers.	This trigger allows a SIP subscriber's device to tell the BTS which type of off-hook service the subscriber has. From the BTS' perspective, it is dealing with a SIP user agent (UA); this is true whether the subscriber's device is a SIP eMTA, ATA, or PAP2.
		
		Sample OHD provisioning:
		
		`add feature fname=OHD; tdp1=COLLECTED_INFORMATION; tid1=OHT_TRIGGER; TTYPE1=R; tdp2=O_EXCEPTION; tid2=REROUTE_TRIGGER`
		`add service id=oht; fname1=OHD;`
		`add subscriber-service-profile sub-id=206-722-1804; service-id=oht;`
		`add sip-trigger-profile id=siptrgprof_ohd; NEXT_ROUTE_HEADER_HOSTNAME=sia-SYS106CA146.ipclab.cisco.com; route-guide-id=ss_rg_5565;`
		`add subscriber-sip-trigger-profile fname=OHD; sip-trigger-profile-id=siptrgprof_ohd; sub-id=206-722-1804;`
		`change subscriber id=206-722-1804; privacy=none; offhook-trigger-type=OHD;`
		
		Note ohd-timer is not relevant for SIP subscribers, because the provisioning on the subscriber's device tracks the OHD timer.
		
		Sample usage-based (subscriber manually enters the VSC from their device) VSC provisioning:
		
		`add feature fname=OHD; tdp1=COLLECTED_INFORMATION; tid1=OHT_TRIGGER; TTYPE1=R; tdp2=O_EXCEPTION; tid2=REROUTE_TRIGGER`
		`add vsc fname=OHD; digit-string=*40;`
		`add sip-trigger-profile id=siptrgprof_ohd; NEXT_ROUTE_HEADER_HOSTNAME=sia-SYS106CA146.ipclab.cisco.com; route-guide-id=ss_rg_5565;`
		`add subscriber-sip-trigger-profile fname=OHD; sip-trigger-profile-id=siptrgprof_ohd; sub-id=206-722-1804;`
		`change subscriber id=206-722-1804; privacy=none; offhook-trigger-type=none;`

Table 3-5   SIP Subscriber Provisioning (continued)

	Task	Description and CLI Command
Step 5	Adding subscriber AORs.	The User Authentication (USER-AUTH) table identifies subscriber address of record (AOR) based on authentication credentials supplied by the user during registration or call setup.
		When a SIP user attempts to register or setup a call, the BTS challenges the SIP REQUEST specifying the AUTH-REALM ID on the Serving Domain Name table, if the Serving Domain Name Table indicates that authorization is required.
		If the BTS receives valid credentials, the user ID in those credentials is used to look up the AOR ID in from this table. The AOR ID is then used to look up the subscriber from the AOR2SUB table.
		This is used only if Auth-Reqd in the serving_domain_name is set to Y.

		`add user_auth`
		`auth_user=sipsub1; auth_realm_id=ciscolab;`
		`aor_id=4695551111@domainname.com; password=cisco_sipsub1;`

Step 6	Setting REGISTER expiration timers.	If you do not enter values, BTS uses defaults. See Cisco BTS 10200 Softswitch CLI Database > CA-CONFIG.

		`add ca-config`
		`type=SIA_REG_MIN_EXPIRES_SECS; datatype=INTEGER;`
		`value=1800;`
		
		`add ca-config`
		`type=SIA_REGISTER_DEFAULT_EXPIRES; datatype=INTEGER;`
		`value=3600;`
		
		`add ca-config`
		`type=SIA_REG_MAX_EXPIRES_SECS; datatype=INTEGER;`
		`value=36000;`

Step 7	Placing AORs in service.	`change aor2sub` `aor_id=4695551111@domainname.com; status=INS;`

Tokens and States

Table 3-6   Subscriber Type and Required Tokens

Subscriber Type	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

Table 3-6   Subscriber Type and Required Tokens (continued)

Subscriber Type	Required Tokens
CTXG-TG	CTXG-ID, TGN-ID
PBX	TGN-ID

Table 3-7   DN Administrative States

State	Definition
VACANT	The DN is unassigned. An Unassigned DN announcement is played. A typical announcement is "The number you dialed is not in service. Please check the number and try again." The cause code for this state is #1.
ASSIGNED	The DN is assigned to a subscriber.
CN	The DN status is marked as a changed number (CN) when the subscriber requests a new number. A Changed Number announcement is played in this state. A typical announcement is "The called number has changed. The new number is …." The cause code for this state is #22.
DISC	The DN is disconnected. A Disconnected Number announcement plays. A typical announcement is "We're sorry, you have reached a number that has been disconnected or is no longer in service…" The cause code for this state is #27.
ANNC	The DN points to an announcement (ANNC) ID.
PORTED-OUT	The subscriber ported (moved) out of the Call Agent and chose to keep his or her DN (local number portability).

Table 3-8   Subscriber Trunk Termination States

State	Definition
ADMIN-INS	In Service
ADMIN-OOS	Out of Service
ADMIN-MAINT	Maintenance Mode