



CHAPTER 11

Session Initiation Protocol

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This chapter describes some of the Session Initiation Protocol (SIP) commands and their associated tables. For complete information regarding SIP commands, provisioning, and troubleshooting, see the *Cisco BTS 10200 Softswitch SIP Protocol Guide* and the *Cisco BTS 10200 Softswitch SIP Protocol Provisioning Guide*.



Note

In this chapter, an asterisk preceding a token name means the token is mandatory. A token without an asterisk is optional.

Authentication Realm

The Authentication Realm (auth-realm) table defines the authentication realm IDs supported by the Cisco BTS 10200 Softswitch. An auth-realm-id is assigned to subscribers using the Serving Domain Name table. All subscribers in a specific serving domain share a common auth-realm-id. This table is used primarily for Session Initiation Protocol (SIP) provisioning.

Table Name: AUTH-REALM

Table Containment Area: Call Agent

Command Types

Show, add, change, and delete

Examples

```
show auth-realm id=rcdn-cisco;  
add auth-realm id=rcdn-cisco; description=This realm id is for rcdn5 cisco.  
change auth-realm id=rcdn-cisco; description=This realm id is for all of cisco in  
Richardson.  
delete auth-realm id=rcdn-cisco;
```

Usage Guidelines

Primary Key Token(s): id

Add Rules: None.

Change Rules: None.

Delete Rules: Foreign key constraints.

Syntax Description		
* ID		Primary key. The realm ID. VARCHAR(64): 1–64 ASCII characters.
AUTO-REFRESH		Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable.
DESCRIPTION		Described by the service provider. VARCHAR(64): 1–64 ASCII characters.
DISPLAY		Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
LIMIT		Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1–100000000 (Default = 100000000). Note The actual maximum number of rows displayed is currently lower than 100000000 due to software limitations.
ORDER		Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
START-ROW		Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1–100000000 (Default = 1).

HTTP Feature Server

The HTTP Feature Server (http-feature-server) table manages the services supported for Session Initiation Protocol (SIP)-based IP phones. This table also identifies the TSAP address associated with the HTTP Feature Server.

Table Name: HTTP-FEATURE-SERVER

Table Containment Area: FSPTC

Command Types

Show, add, change, and delete

Examples

```
show http-feature-server id=FSHTT002;
add http-feature-server id=FSHTT002; tsap-addr-sidea=190.101.100.103:11025; type=HTTP;
change http-feature-server id=FSHTT002; type=HTTP; tsap-addr-sidea=test.cisco.com;
delete http-feature-server id=FSHTT002;
```

Usage Guidelines

Primary Key Token(s): id

Add Rules: None

Change Rules: None

Delete Rules: None

Syntax Description

* ID	Primary key. The HTTP Feature Server id. The format of the id is FSHTTnnn where <i>nnn</i> = 000 to 999. VARCHAR(8): 1–8 ASCII characters.
AUTO-REFRESH	Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable.
DESCRIPTION	Described by the service provider. VARCHAR(64): 1–64 ASCII characters.
DISPLAY	Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

LIMIT	Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1–100000000 (Default = 100000000). Note The actual maximum number of rows displayed is currently lower than 100000000 due to software limitations.
ORDER	Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
START-ROW	Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1–100000000 (Default = 1).
TSAP-ADDR-SIDEA	TSAP address of the Feature Server.
TSAP-ADDR (Release 4.4.1)	VARCHAR(64): 7–64 ASCII characters in formats ranging from n.n.n.n to nnn.nnn.nnn.nnn.
TYPE	Type of Feature Server. VARCHAR(4): 1–4 ASCII characters. Permitted value is: HTTP—HTTP Feature Server used for the SIP phone.

Serving Domain Name

The Serving Domain Name (serving-domain-name) table defines serving domain names supported by the Cisco BTS 10200 Softswitch. This table is also used to define authentication requirements for subscribers served by the serving domain. This table is used primarily for Session Initiation Protocol (SIP) provisioning.

Table Name: SERVING-DOMAIN-NAME

Table Containment Area: Call Agent, EMS

Command Types

Show, add, change, and delete

Examples

```
show serving-domain-name;
add serving-domain-name domain-name=rcdn.cisco.com; auth-realm-id=rcdn-cisco; auth-reqd=Y;
change serving-domain-name domain-name=rcdn.cisco.com; auth-realm-id=" "; auth-reqd=N;
delete serving-domain-name domain-name=rcdn.cisco.com;
```

Usage Guidelines

Primary Key Token(s): domain-name

Foreign Key Token(s): auth-realm-id

Add Rules:

- auth-realm-id is required if auth-reqd=Y.
- auth-realm-id is null if auth-reqd=N.

Change Rules: Same as add rules.

Syntax Description	
* DOMAIN-NAME	Primary key. The domain name supported by the Cisco BTS 10200 Softswitch. This field is case insensitive. VARCHAR(64): 1–64 ASCII characters.
* AUTH-REQD (Mandatory as of Release 4.5.1)	Specifies whether SIP messages from the serving domain must be authenticated or not. CHAR(1): Y/N (Default = Y).
AUTH-REALM-ID	Foreign key: Authentication Realm table. Specifies the Auth Realm ID to use if authentication is required. VARCHAR(64): 1–64 ASCII characters. Note auth-realm-id is required if auth-reqd=Y auth-realm-id is null if auth-reqd=N
AUTO-REFRESH	Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable.
DESCRIPTION	Described by the service provider. VARCHAR(64): 1–64 ASCII characters.
DISPLAY	Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
LIMIT	Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1–100000000 (Default = 100000000). Note The actual maximum number of rows displayed is currently lower than 100000000 due to software limitations.
ORDER	Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
START-ROW	Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1–100000000 (Default = 1).

SIP Timer Profile (Release 4.5)

The Session Initiation Protocol (SIP) Timer Profile (sip-timer-profile) table defines a SIP timer profile for a Softswitch Trunk Group Profile or a default SIP timer profile at the system level.

**Caution**

Deviation from default timer values can significantly influence system performance and reliability. Exercise great caution and consult with Cisco TAC prior to making changes.

Table Name: SIP-TIMER-PROFILE

Table Containment Area: CA, EMS

Command Types

Show, add, change, and delete

Examples

```
show sip-timer-profile;  
add sip-timer-profile id=default;  
change sip-timer-profile id=default; timer-t1-milli=4000; timer-t2-secs=5;  
timer-t4-secs=6;  
delete sip-timer-profile id=default;
```

Usage Guidelines

Primary Key Token(s): id

Add Rules: None.

Change Rules: None.

Delete Rules: Foreign key constraints.

Other Rules:

- Timer-b-secs times 1000 must be greater than timer-a-milli.
- Timer-f-secs times 1000 must be greater than timer-e-milli.
- Timer-t2-secs times 1000 must be greater than timer-t1-milli and timer-t2-secs times 1000 must be greater than timer-g-milli.
- Timer-t4-secs must be greater than timer-t2-secs.

Syntax Description

* ID (Release 4.5)	Primary key. Identifies the primary key of the records in this table. VARCHAR(16): 1–16 ASCII characters.
AUTO-REFRESH	Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable.

DISPLAY	Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
INVITE-INCOMPLETE-TIMER-SECS	Specifies whether to clean up user agent client (UAC) invite transactions when a provisional response of less than 180 is received, but no ringing or final response is received within a reasonable period of time. INTEGER: 15–600 (Default = 40).
LIMIT	Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1–100000000 (Default = 100000000). Note The actual maximum number of rows displayed is currently lower than 100000000 due to software limitations.
MIN-SE (Release 4.5)	Specifies the minimum number of session-expires allowed, in seconds, to be sent or received. INTEGER: 100–1800 (Default = 900).
ORDER	Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
SESSION-EXPIRES-DELTA-SECS (Release 4.5)	SIP session timer, in seconds, for SIP auditing purposes. Specifies when to send a periodic refresh for each session to check the liveness of the session. This conveys the session interval for a SIP call. INTEGER: 100–7200 (Default = 1800).
START-ROW	Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1–100000000 (Default = 1).
TIMER-A-MILLI (Release 4.5)	The SIP RFC3261 timer, in milliseconds, for the INVITE request retransmit interval, for User Datagram Protocol (UDP) only. INTEGER: 0, 100–5000 (Default = 0). Note A default value of zero means that values for those timers are computed automatically from TimerT1, TimerT2, and TimerT4.
TIMER-B-SECS (Release 4.5)	The SIP RFC3261 timer, in seconds, for INVITE transaction timeout. INTEGER: 0–3600 (Default = 0). Note A default value of zero means that values for those timers are computed automatically from TimerT1, TimerT2, and TimerT4.
TIMER-D-SECS (Release 4.5)	The SIP RFC3261 timer, in seconds, for the wait time for response retransmits. INTEGER: 33–65 (Default = 33).

TIMER-E-MILLI (Release 4.5)	The SIP RFC3261 timer, in milliseconds, for non-INVITE request retransmit interval, UDP only. INTEGER: 0, 100–5000 (Default = 0). Note A default value of zero means that values for those timers are computed automatically from TimerT1, TimerT2, and TimerT4.
TIMER-F-SECS (Release 4.5)	The SIP RFC3261 timer, in seconds, for non-INVITE transaction timeout. INTEGER: 0–3600 (Default = 0). Note A default value of zero means that values for those timers are computed automatically from TimerT1, TimerT2, and TimerT4.
TIMER-G-MILLI (Release 4.5)	The SIP RFC3261 timer, in milliseconds, for INVITE response retransmit interval. INTEGER: 0, 100–5000 (Default = 0). Note A default value of zero means that values for those timers are computed automatically from TimerT1, TimerT2 and TimerT4.
TIMER-H-SECS (Release 4.5)	The SIP RFC3261 timer in seconds for the wait time for ACK receipt. INTEGER: 0–3600 (Default = 0). Note A default value of zero means that values for those timers are computed automatically from TimerT1, TimerT2, and TimerT4.
TIMER-I-SECS (Release 4.5)	The SIP RFC3261 timer in seconds for wait time for ACK retransmits. INTEGER: 0–10 (Default = 0) Note A default value of zero means that values for those timers are computed automatically from TimerT1, TimerT2, and TimerT4.
TIMER-J-SECS	The SIP RFC3261 timer in seconds for wait time for non-INVITE request retransmits. INTEGER: 0–3600 (Default = 0) Note NOTE: Default value of zero means that values for those timers will be computed automatically from TimerT1, TimerT2 and TimerT4.
TIMER-T1-MILLI (Release 4.5)	Specifies the SIP RFC3261 timer, in milliseconds, for RTT estimate. INTEGER: 100–5000 (Default = 500).
TIMER-T2-SECS (Release 4.5)	Specifies the SIP RFC3261 timer, in seconds, for the maximum retransmit interval for SIP non-INVITE requests and INVITE responses. INTEGER: 1–10 (Default = 4).
TIMER-T4-SECS (Release 4.5)	The SIP RFC3261 timer, in seconds, for the maximum duration a SIP message remains in the network. INTEGER: 1–10 (Default = 5).

SIPT ISUP Version Alias (Release 4.2)

The SIPT ISUP Version Alias (sipt-isup-ver-alias) contains the aliases to the SIP-T ISUP version names defined in the SIP-T ISUP Version Base table.

Table Name: SIPT-ISUP-VER-ALIAS

Table Containment Area: EMS, Call Agent

Command Types

Show, add, change, and delete

Examples

```
show sipt-isup-vers-alias id=Q761_HONGKONG;
add sipt-isup-ver-alias id=Q761_HONGKONG; alias=hongkong;
change sipt-isup-ver-alias id=Q761_HONGKONG; alias=HONGKONG;
delete sipt-isup-ver-alias id=Q761_HONGKONG;
```

Usage Guidelines

Primary Key Token(s): id

Foreign Key Token(s): id

Unique Key Token(s): alias

Add Rules: None.

Change Rules: None.

Delete Rules: id cannot exist in any dependency table.

Syntax Description

* ID (Release 4.2)	Primary key. Foreign key: SIPT ISUP Version Base table. The SIP-T ISUP version name. VARCHAR(32): 1–32 ASCII characters.
* ALIAS (Release 4.2)	Unique key. The alias for the SIP-T ISUP version name. VARCHAR(32): 1–32 ASCII characters
AUTO-REFRESH	Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable.
DISPLAY	Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

LIMIT	Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1–100000000 (Default = 100000000). Note The actual maximum number of rows displayed is currently lower than 100000000 due to software limitations.
ORDER	Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
START-ROW	Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1–100000000 (Default = 1).

SIPT ISUP Version Base (Release 4.2)

The SIPT ISUP Version Base (sipt-isup-ver-base) table contains the list of all supported SIP-T ISUP versions and their base family names. The SIPT ISUP Version Base table is used to validate the ISUP version information stored in the Softswitch Trunk Group Profile table.

Table Name: SIPT-ISUP-VER-BASE

Table Containment Area: EMS

Command Types

Show

Examples

```
show sipt-isup-ver-base id=Q761-HONGKONG;
```

Usage Guidelines

Primary Key Token(s): id

Syntax Description

ID (Release 4.2)	Primary key. The SIP-T ISUP or SIP-GTD version name. VARCHAR(32): 1–32 ASCII characters. Permitted values are: GTD (Release 4.5)
AUTO-REFRESH	Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable.

BASE (Release 4.2)	The SIP-T ISUP base or SIP-GTD version name. VARCHAR(32): 1–32 ASCII characters. Permitted values are: SIPT-GTD (Release 4.5)
DISPLAY	Specifies what token information to display on the screen. VARCHAR(1024): 1–1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
LIMIT	Specifies the number of rows to display on the screen. INTEGER: 1–100000000 (Default = 100000000). Note The actual maximum number of rows displayed is currently lower than 100000000 due to software limitations.
ORDER	Specifies whether to display data on the screen in a sorted order. VARCHAR(1024): 1–1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
START-ROW	Specifies to begin displaying data on the screen at a specific row. INTEGER: 1–100000000 (Default = 1).

Static Contact

The Static Contact (static-contact) table defines the static contact id to use when dynamic registration is not supported. This table is used primarily for Session Initiation Protocol (SIP) provisioning.

Table Name: STATIC-CONTACT

Table Containment Area: Call Agent

Command Types

Show, add, change, delete

Examples

```
show static-contact aor-id=joe@rcdn.cisco.com;
add static-contact aor-id=joe@rcdn.cisco.com; user-type=IP; static-contact-user=joe;
static-contact-host=rcdn.cisco.com;
delete static-contact aor-id=joe@rcdn.cisco.com;
```

Usage Guidelines

Primary Key Token(s): aor-id

Foreign Key Token(s): aor-id

Add Rules: None.

Change Rules: None.

Delete Rules: None.

Syntax Description	* AOR-ID	Primary key. Foreign key: AOR to Subscriber table. The address of record (AOR) ID. VARCHAR(64): 1–64 ASCII characters.
	AUTO-REFRESH	Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable.
	DISPLAY	Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
	LIMIT	Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1–100000000 (Default = 100000000). Note The actual maximum number of rows displayed is currently lower than 100000000 due to software limitations.
	ORDER	Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
	START-ROW	Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1–100000000 (Default = 1).
	STATIC-CONTACT-HOST	Hostname portion of the contact id as in user@hostname. VARCHAR(32): 1–32 ASCII characters.
	STATIC-CONTACT-PORT	Port number if different from default SIP port number (5060). INTEGER: 1–4 numeric characters (Default = 5060).
	STATIC-CONTACT-USER	User portion of the contact id as in user@hostname. VARCHAR(32): 1–32 ASCII characters.
	USER-TYPE	Defines the type of user. VARCHAR(16): 1–16 ASCII characters. Permitted values are: IP (Default) PHONE

User Authentication

The User Authentication (user-auth) table identifies the subscriber address of record (AOR) based on the authentication credentials supplied by the user during registration or call setup. When a SIP user attempts to register or set up a call, the Cisco BTS 10200 Softswitch challenges the SIP subscriber based on information from the Serving Domain Name table. If the Serving Domain Name Table indicates that authentication is required, the Cisco BTS 10200 Softswitch challenges the SIP user to send a user ID and password (HA1) based on the auth-realm-id. If the Cisco BTS 10200 Softswitch receives a valid user ID and password, the AOR in this table is used to identify the subscriber based on the AOR to Subscriber table.

Table Name: USER-AUTH

Table Containment Area: CA, EMS

Command Types

Show, add, change, and delete

Examples

```
show user-auth auth-user=joe; auth-realm-id=rcdn-cisco;
add user-auth auth-user=joe; auth-realm-id=rcdn-cisco; password=mhallwfmesw;
aor-id=joe@rcdn.cisco.com
change user-auth auth-user=joe;password=joe2seven;
delete user-auth auth-user=joe; auth-realm-id=rcdn-cisco;
```

Usage Guidelines

Primary Key Token(s): auth-user, auth-realm-id

Foreign Key Token(s): aor-id

Add Rules: None

Delete Rules: None

Syntax Description

* AUTH-USER	Primary key. The authentication user name. VARCHAR(32): 1–32 ASCII characters.
AOR-ID	Foreign key: AOR to Subscriber table. The aor-id. VARCHAR(64): 1–64 ASCII characters.
AUTH-REALM-ID	Primary key. The authentication realm id. VARCHAR(64): 1–64 ASCII characters.
AUTO-REFRESH	Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable.

DISPLAY	Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
HA1	Represents a Hashed Password–MD5 of USER:REALM:PASSWORD according to RFC 2617. This value is computed and automatically provisioned by the Element Management System. CHAR(32): 1–32 characters.
LIMIT	Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1–100000000 (Default = 100000000). Note The actual maximum number of rows displayed is currently lower than 100000000 due to software limitations.
ORDER	Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1–1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
PASSWORD	The password for this auth-user. VARCHAR(64): Not stored.
START-ROW	Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1–100000000 (Default = 1).