



# SIP Trunk Call Admission Control Feature Module

---

**Revised: February 2, 2009**

This document describes the SIP Trunk Call Admission Control feature for Release 6.0 of the Cisco BTS 10200 Softswitch and explains how to use it.

## Understanding the SIP Trunk Call Admission Control Feature

The SIP Trunk Call Admission Control (CAC) feature provides you with the flexibility of configuring and managing SIP soft trunks for incoming and outgoing calls. This allows you to monitor the performance of the system by monitoring the total number of sessions admitted through a SIP trunk. You can configure a SIP trunk can be configured as

- Inbound
- Outbound
- Common
- Any combination of the above

### Outbound

You can configure a trunk group with a pool of outbound SIP trunks to limit the number of outgoing calls the trunk group supports and help you manage the system. If the trunk has only one pool associated with it, and that pool is provisioned as outbound, the Cisco BTS 10200 Softswitch permits only outgoing calls across this trunk group.

If a trunk is available, the BTS 10200 links the trunk to the call. If a trunk is not available, the BTS 10200 either processes the call according to the group's route advancement parameters or rejects the call.

If no other pools are provisioned for the outbound trunk group, the BTS 10200 does not restrict the number of incoming calls permitted over the trunk group.



---

**Americas Headquarters:**  
**Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA**

© 2009 Cisco Systems, Inc. All rights reserved.

## Inbound

You can configure a trunk group with a pool of inbound SIP trunks to limit the number of incoming calls the trunk group supports. When the SIP trunk belonging to an inbound trunk group offers an invite to an incoming call, the BTS 10200 identifies the trunk group for the call. If the trunk has only one pool associated with it, and that pool is provisioned as inbound, the BTS 10200 determines whether a trunk is available and, if it is, links the trunk to the call. If a trunk is not available, the BTS 10200 rejects the call with a 503 response and retries.

If no other pools are provisioned for the inbound trunk group, the BTS 10200 does not restrict the number of outgoing calls permitted over the trunk group.

## Common

You can configure a common pool of SIP trunks to limit the combined number of incoming and outgoing calls permitted over the trunk group. If the trunk has only one pool associated with it, and that pool is common, the BTS 10200 permits either an inbound or outbound call if a trunk is available. If a trunk is not available, BTS 10200 either processes the call according to the group's route advancement parameters or rejects the call.

## Outbound and Common

You can configure outbound and common pools for one trunk group. For outbound calls, the BTS 10200 checks the outbound pool for an available trunk. If a trunk is available, the BTS 10200 links the call. If a trunk is not available, the BTS 10200 checks the common pool for an available trunk. If a trunk is not available from the common pool, the BTS 10200 processes the call according to the group's route advancement parameters or rejects the call.

## Inbound and Common

You can configure inbound and common pools for one trunk group. For inbound calls, the BTS 10200 offers an invite and checks the inbound pool for an available trunk. If a trunk is available, the BTS 10200 links the call. If a trunk is not available, the BTS 10200 checks the common pool for an available trunk. If a trunk is not available from the common pool, the BTS 10200 rejects the call with a 503 response and retries.

## Combination of Outbound, Inbound, and Common

You can configure a trunk group with any combination of the three pool types.

# Restrictions and Limitations

The SIP Trunk CAC feature limits only the number of calls for SIP trunk groups provisioned with SIP trunk pools. This means that

- The call limit for SIP trunk groups provisioned without SIP trunk pools is not affected.
- If a SIP trunk pool is applied to an operational or in-service SIP trunk group, existing calls are not counted against the pool call limit. The call limit applies only to new calls on the SIP trunk group after the pool is added.
- If the BTS 10200 has been provisioned with SIP trunk pools for a specific SIP trunk group but the association between the SIP trunk pools and SIP trunk is removed, then all calls made before the pools and trunk group were decoupled are managed by the pool until the calls are completed.
- If the BTS 10200 has been provisioned with SIP trunk pools for a specific SIP trunk group but the pool is deleted, then all calls made before the pool was deleted remain active and the trunk group returns to a state of supporting an unlimited number of calls.

We recommend that the SIP Trunk CAC feature not be used for 9-1-1 calls because emergency calls are treated without priority unless the user provisions trunk routes that can handle emergency traffic.

## Configuring

The following examples show how to provision and modify the SIP soft trunk feature using CLI commands.

### Provisioning a Soft Trunk Pool:

Use the following sample script to provision a SIP soft trunk pool.

```
add sfg id=pool1; sfg-count=100
add sfg id=pool2; sfg-count=110
add sfg id=pool3; sfg-count=120
```

### Modifying the Size of a Pool:

Use the following sample script to modify the size of a SIP soft trunk pool.

```
change sfg id=pool3; size=200
```

### Assigning Pools to Trunk Groups:

Use the following sample script to assign a SIP soft trunk pool to a trunk group.

```
change trunk-grp id=tg1; bothway-sfg-id=pool1; inbound-sfg-id=pool2;
outbound-sfg-id=pool3;
```

Use the following commands with the SIP Trunk CAC feature.

### Removing Association Between Trunk Group and Pool

Use the following sample script to remove the association between a SIP soft trunk pool and a trunk group:

```
change trunk-grp id=tg1; inbound-sfg-id=NULL;
```

### Deleting a Pool

Use the following sample script to delete a SIP soft trunk pool:

```
delete sfg id=pool1;
```

### QueryinG Active Calls in a Pool

```
status sfg id=pool1;
```

---

CCDE, CCENT, Cisco Eos, Cisco HealthPresence, the Cisco logo, Cisco Lumin, Cisco Nexus, Cisco StadiumVision, Cisco TelePresence, Cisco WebEx, DCE, and Welcome to the Human Network are trademarks; Changing the Way We Work, Live, Play, and Learn and Cisco Store are service marks; and Access Registrar, Aironet, AsyncOS, Bringing the Meeting To You, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, CCVP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Collaboration Without Limitation, EtherFast, EtherSwitch, Event Center, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, iQuick Study, IronPort, the IronPort logo, LightStream, Linksys, MediaTone, MeetingPlace, MeetingPlace Chime Sound, MGX, Networkers, Networking Academy, Network Registrar, PCNow, PIX, PowerPanels, ProConnect, ScriptShare, SenderBase, SMARTnet, Spectrum Expert, StackWise, The Fastest Way to Increase Your Internet Quotient, TransPath, WebEx, and the WebEx logo are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0812R)

---

Copyright © 2009 Cisco Systems, Inc. All rights reserved.