



Preface

Revised: July 28, 2009, OL-4366-13

About this Preface

This preface describes the objectives, audience, organization, and conventions of this document and explains how to find additional information on related products and services.

Changes to this Document for Release 4.5.x

Cisco BTS 10200 Softswitch Release	Changes
Release 4.5.x	The following information was updated for version OL-4366-13
	• The Announcement Provisioning section in the “No Solicitation Announcement (NSA)” section on page 7-88. • Updated the Think Engine/IPUnity Ann ID for Release Cause Number 1172 in Appendix A, “Release Cause Codes and Announcement IDs”.
	The following information was updated for version OL-4366-12 • Automatic Recall Office Provisioning steps were enhanced. • Announcement ID for Release Cause Code 1145 was updated. • Provisioning steps in “Provisioning for IVR Collection of Account/Authorization Codes” section on page 7-62 were enhanced.
	The following information was added for version OL-4366-10: • “Two-Level AR Activation” section on page 7-24—Provisioning steps in this section were enhanced.
	The following information was added for version OL-4366-09: • Added information regarding Block All Inbound Calls Provisioning. See the “Block All Inbound Calls (Release 4.5.x and Later)” section on page 28

Cisco BTS 10200 Softswitch Release	Changes
	The following information was added for version OL-4366-08: • “8XX (Toll-Free Calling)” section on page 7-7—Provisioning steps in this section were enhanced for clarity. • “Provisioning a Multiline Hunt Group” section on page 8-9—Provisioning steps in this section were enhanced for clarity.
	The following information was added or enhanced for Release 4.5.x: • Preservation of Provisioning Order, page 1-8 • Retrieval of Transaction Information, page 1-8 • Automatic Call Back (AC) and A/D (AC_ACT, AC_DEACT), page 7-17 • Automatic Recall (AR) and A/D (AR_ACT, AR_DEACT), page 7-20 • Call Forward Busy (CFB) and A/D/I (CFBA, CFBD, CFBI), page 7-28 • Call Forwarding Combination (CFC) and A/D/I (CFC_ACT, CFC_DN_CHG_ACT, CFC_DEACT, CFCI, CFCI_NO_DN_VRFY), page 7-33 • Hotline (HOTLINE), page 7-72, Hotline—Variable (HOTV) and ADI (HOTVA, HOTVD, HOTVI), page 7-73, and Warmline (WARMLINE), page 7-133 • Local Number Portability (LNP) for ANSI/North America, page 7-77 and Local Number Portability (LNP) for ITU Local BTS Database Query, page 7-80 • Remote Call Forwarding (RCF), page 7-112 • T.38 Fax Relay, page 7-120 • ISUP Transparency on the BTS-PGW Interface, page 12-12 • Throughout—References to information on keepalive parameters • Throughout—Provisioning of signaling gateway resources

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Document Objective

This document provides the information you need and describes procedures for provisioning your Cisco BTS 10200 Softswitch.

Audience

The primary audience for this document is Cisco BTS 10200 Softswitch users, network operators, and administrators who have experience in the following areas:

- Telecommunications network operations
- Data network operations
- SS7 protocols, switching, and routing
- Telecommunications hardware
- Data network hardware

In addition, the following audiences may find this document useful:

- Software and hardware installers
- Network designers

Document Conventions



Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.



Note

Means *reader take note*. Notes contain helpful suggestions or references to materials not contained in this manual.



Tip

Means *the following information might help you solve a problem*.



Timesaver

Means the *described action saves time*. You can save time by performing the action described in the paragraph.

Documentation Suite

The complete documentation set for Release 4.5.x is located at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/voice/bts10200/bts4_5/index.htm

At the above site, you can see related documentation about the Cisco BTS 10200 Softswitch software, including:

- [The documentation roadmap for Release 4.5.x](#)
- *Cisco BTS 10200 Softswitch Release Notes*
- *Cisco BTS 10200 Softswitch Command Line Interface Reference Guide*
- *Cisco BTS 10200 Softswitch System Description*
- *Cisco BTS 10200 Softswitch Network and Subscriber Descriptions*
- *Cisco BTS 10200 Softswitch Operations and Maintenance Guide*
- *Cisco BTS 10200 Softswitch Troubleshooting Guide*
- *Cisco BTS 10200 Softswitch Billing Interface Guide*

Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and access to other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

<http://www.cisco.com/univercd/home/home.htm>

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco web sites can be accessed from this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

Registered Cisco.com users can order the Documentation CD-ROM (product number DOC-CONDOCCD=) through the online Subscription Store:

<http://www.cisco.com/go/subscription>

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:
<http://www.cisco.com/en/US/partner/ordering/index.shtml>
- Registered Cisco.com users can order the Documentation CD-ROM (Customer Order Number DOC-CONDOCCD=) through the online Subscription Store:
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can submit comments electronically on Cisco.com. On the Cisco Documentation home page, click **Feedback** at the top of the page.

You can e-mail your comments to bug-doc@cisco.com.

You can submit your comments by mail by using the response card behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com, which includes the Cisco Technical Assistance Center (TAC) Website, as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from the Cisco TAC website. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC website, including TAC tools and utilities.

Cisco.com

Cisco.com offers a suite of interactive, networked services that let you access Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com provides a broad range of features and services to help you with these tasks:

- Streamline business processes and improve productivity
- Resolve technical issues with online support

- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

To obtain customized information and service, you can self-register on Cisco.com at this URL:

<http://www.cisco.com>

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC website and the Cisco TAC Escalation Center. The avenue of support that you choose depends on the priority of the problem and the conditions stated in service contracts, when applicable.

We categorize Cisco TAC inquiries according to urgency:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Cisco TAC Website

You can use the Cisco TAC website to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC website, go to this URL:

<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC website. Some services on the Cisco TAC website require a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

<http://tools.cisco.com/RPF/register/register.do>

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC website, you can open a case online at this URL:

<http://www.cisco.com/en/US/support/index.html>

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC website so that you can describe the situation in your own words and attach any necessary files.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- *The Cisco Product Catalog* describes the networking products offered by Cisco Systems as well as ordering and customer support services. Access the *Cisco Product Catalog* at this URL:
http://www.cisco.com/en/US/products/products_catalog_links_launch.html
- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary*, *Internetworking Technology Handbook*, *Internetworking Troubleshooting Guide*, and *the Internetworking Design Guide*. For current Cisco Press titles and other information, go to Cisco Press online at this URL:
<http://www.ciscopress.com>
- *Packet* magazine is the Cisco monthly periodical that provides industry professionals with the latest information about the field of networking. You can access *Packet* magazine at this URL:
http://www.cisco.com/en/US/about/ac123/ac114/about_cisco_packet_magazine.html
- *iQ Magazine* is the Cisco monthly periodical that provides business leaders and decision makers with the latest information about the networking industry. You can access *iQ Magazine* at this URL:
http://business.cisco.com/prod/tree.taf%3fasset_id=44699&public_view=true&kbns=1.html
- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in the design, development, and operation of public and private internets and intranets. You can access the *Internet Protocol Journal* at this URL:
http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html
- Training—Cisco offers world-class networking training, with current offerings in network training listed at this URL:
http://www.cisco.com/en/US/learning/le31/learning_recommended_training_list.html

Document Change History

Table 1 *Change History*

Subject	Document Number, Change Date	Change Summary
Enhanced the information for the remote call forwarding (RCF) feature and the T.38 fax feature. Added additional guidance on provisioning of keepalive tokens.	OL-4366-06, August 29, 2006	In Chapter 7, “Feature Provisioning,” added the following information: - RCF provisioning steps and guidance. - T.38 fax provisioning information for Release 4.5.x. In the chapters for IAD, ATA, Cable Subscriber, Announcement, CAS, and H.323, added a link to the endpoint-audit and keepalive details in the Troubleshooting Guide.
Added new trigger detection point to Call Forwarding Busy feature.	OL-4366-05, July 13, 2006	Added an additional trigger detection point to the Call Forwarding Busy feature in Chapter 7, “Feature Provisioning.”
Added new cause code to Appendix A.	OL-4366-04, July 11, 2006	Added cause code 1350 to Appendix A, “Release Cause Codes and Announcement IDs” .
Corrected values for tokens for CFU and CFUA	OL-4366-04, June 27, 2006	Values for FDT and SDT tokens have been changed. Corrected the provisioning examples in Chapter 7, “Feature Provisioning” .
Corrections to Screen List Editing provisioning.	OL-4366-04, June 12, 2006	Added note to trunk group provisioning step for Screen List Editing provisioning in Chapter 7, “Feature Provisioning” .
Corrections to CNAM provisioning	OL-4366-04, June 12, 2006	Added subsystem group to CNAM provisioning in Chapter 7, “Feature Provisioning” .
Added note indicating that term-id must be unique for each subscriber.	OL-4366-04, May 26, 2006	Added notes to Chapter 3, “IAD Residential Subscriber Provisioning” and Chapter 4, “ATA 18x Residential Subscriber Provisioning” indicating that the term-id must be unique for each subscriber.
Added H.323 return code notes to Appendix A.	OL-4366-04, April 27, 2006	Added notes reference H.323 return codes to Appendix A “Release Cause Codes and Announcement IDs.”
Corrected incorrect information in Chapter 4.	OL-4366-04, April 21, 2006	Chapter 4 incorrectly stated that the DN2Subscriber table cannot be provisioned. Corrected this error.

Table 1 **Change History (continued)**

Subject	Document Number, Change Date	Change Summary
Corrected typos in Cable Subscriber chapter.	OL-4366-04, March 23, 2006	Corrected typos in Chapter 5, “Cable Subscriber Provisioning.”
Added subscriber ring cadence information.	OL-4366-04, March 23, 2006	Added procedure to “Change Subscriber Ring Cadence (Optional)” .
Corrected digit-string for CWD	OL-4366-04, March 21, 2006	Corrected digit-string provisioning example for CWD in Chapter 7, “Feature Provisioning.”
Changed digit-map provisioning to permit 2 and 3 digit VSCs.	OL-4366-04, March 21, 2006	Changed digit-map provisioning in Chapter 2, “Initial Softswitch Provisioning” to allow 2 and 3 digit VSCs.
Added note about CALEA surveillance to MDN section.	OL-4366-04, March 15, 2006	Added note in Chapter 7, “Feature Provisioning,” MDN section about CALEA surveillance.
Corrected broken hyperlinks	OL-4366-04, March 15, 2006	Relinked hyperlink in Chapter 7, “Feature Provisioning.”
Added note that CNAB is not supported over SIP trunks.	OL-4366-04, March 15, 2006	Added note in Caller Name Blocking (CNAB) section indicating that CNAB feature is not supported over SIP trunks.
Corrected broken hyperlink	OL-4366-04, January 18, 2006	Relinked hyperlink in Chapter 7, “Feature Provisioning.”
Added note that VSCs used in this book are for illustration only.	OL-4366-04, January 10, 2006	Added Vertical Service Codes section in Chapter 7, “Feature Provisioning.”
Added Cause Code to SIP Response Code mapping	OL-4366-04, January 3, 2006	Added Cause Code 79 to SIP Response Code mapping in Appendix H, “Session Initiation Protocol Cause Code Mapping” .
Updated CAS provisioning chapter	OL-4366-04, November 14, 2005	Updated a provisioning step in Provisioning Channel-Associated Signaling .
Updated ANSI LNP provisioning	OL-4366-04, November 4, 2005	Updated Local Number Portability (LNP) for ANSI/North America, page 77 .
Updated Cause Codes, Appendix A	OL-4366-04, September 26, 2005	Added two new cause codes 1003 and 1004, to Appendix A.
Updated Features descriptions.	OL-4366-04, September 9, 2005	Updated feature descriptions in Chapter 7, “Feature Provisioning” . Added links to appropriate sections of <i>Network and Subscriber Features Description</i> .

Table 1 **Change History (continued)**

Subject	Document Number, Change Date	Change Summary
Updated SCTP-assoc-profile provisioning.	OL-4366-04, September 9, 2005	Note added to SCTP association profile provisioning indicating that the hb-timeout and max-path-retrans tokens cannot be changed via the CLI change command. A new SCTP association profile must be added.
Updated CFB, CFNA, and CFU sections.	OL-4366-04, August 30, 2005	Added a caution to the Call Forward Busy (CFB) and A/D/I (CFBA, CFBD, CFBI) , Call Forward No Answer (CFNA) and A/D/I (CFNAVA, CFNAVD, CFNAI) , and Call Forwarding Unconditional (CFU) and A/D/I (CFUA, CFUD, CFUI) sections of Chapter 7, “Feature Provisioning.”
Updated ITU LNP feature provisioning information.	OL-4366-04, August 19, 2005	Updated “Local Number Portability (LNP) for ITU Local BTS Database Query” .
Changed token mgcp-dialtone-to-supp to mgcp-to-supp.	OL-4366-04, August 18, 2005	Changed token mgcp-dialtone-to-supp to mgcp-to-supp in Chapter 7, “Feature Provisioning.”
Added note to CHD, CW, and CFNA sections of feature provisioning chapter.	OL-4366-04, August 3, 2005	Added notes to CHD, CW, and CFNA sections of Chapter 7, “Feature Provisioning.”
Added ITU LNP feature provisioning section, new in Release 4.5.	OL-4366-04, August 2, 2005	Beginning in Release 4.5, added the Local Number Portability (LNP) for ITU Local BTS Database Query section.
Added note to bulk provisioning section.	OL-4366-04, August 2, 2005	Added note to bulk provisioning section, page 1-10, recommending several small provisioning scripts.
Added procedure to provision office service ID in Release 4.5	OL-4366-04, July 20, 2005	Added procedure to Chapter 6 to Provision an Office Service ID for a POP (Release 4.5) .
Modified Appendix B, Use-dial-plan information.	OL-4366-03, July 7, 2005	Added and modified information in Appendix B, “USE-DIAL-PLAN Token Routing Impact” .
Added line to AS5400 configuration	OL-4366-03, July 5, 2005	Added mgcp-rsipstar-supp=y to AS5400 factory installed script on page D-6.
Added Cause Code 166 to Appendix A.	OL-4366-03, June 28, 2005	Added Cause Code 166, new for Release 4.5.
Changed Appendix A for Cause Codes 1300 through 1307.	OL-4366-03, June 24, 2005	Cause Codes 1300 through 1307 are new for Release 4.5 forward.

Table 1 **Change History (continued)**

Subject	Document Number, Change Date	Change Summary
Added reference to SIP Protocol User Guide in Features provisioning chapter.	OL-4366-03, May 31, 2005	Beginning with Release 4.2, added a reference to Appendix A, MGCP vs. SIP features, in Chapter 7, “Feature Provisioning”
Moved configuration information from OCB feature to COS feature.	OL-4366-03, May 31, 2005	Moved Office provisioning information indicating that the timer to play the prompt tone for account and authorization codes on the media gateway is configurable via CLI from OCB feature to COS feature in Chapter 7, “Feature Provisioning.”
Added note to CALEA provisioning chapter.	OL-4366-03, May 20, 2005	Beginning with Release 4.4.1, es-intercept-profile token in Call-agent-profile table is no longer valid and was removed from Chapter 7.
Added note to trunk provisioning.	OL-4366-03, May 3, 2005	Added note to trunk provisioning in Chapter 10, “Announcement Server Provisioning” and Chapter 12, “SS7 Provisioning.”
Made formatting changes to CALEA provisioning information.	OL-4366-03, April 13, 2005	Reformatted Chapter 6, “CALEA Provisioning” .
Added note to DB license provisioning section.	OL-4366-03, April 6, 2005	Beginning with Release 4.5, the DB license procedure will be performed automatically during installation.
Added note to Feature Server provisioning.	OL-4366-03, March 15, 2005	Added note for provisioning the port of the tsap address when Provisioning a Feature Server .
Added new announcement IDs to Appendix A	OL-4366-03, January 17, 2005	Added revised announcements 1115-1117 and new announcement IDs 1220-1307, to Appendix A.
Removed auto answer token from announcement provisioning examples	OL-4366-03, January 11, 2005	Removed AUTO_ANSWER=Y from ann-cg-profile provisioning example in Chapter 10.
Added Query On Release LNP	OL-4366-03, November 3, 2004	Added procedure for Local Number Portability (LNP) for ITU Local BTS Database Query .
Added 911 Region (County) Routing and ODR Routing	OL-4366-03, October 20, 2004	Added information for Provisioning 911 Region (County) Routing, Provisioning Origin Dependent Routing (ODR), and Combining ODR and Region Based Routing .
Added prefix screening.	OL-4366-03, October 14, 2004	Added prefix screening information to Chapter 3, “IAD Residential Subscriber Provisioning” .

Table 1 **Change History (continued)**

Subject	Document Number, Change Date	Change Summary
Updated MLHG provisioning section in Provisioning a Multiline Hunt Group .	OL-4366-03, October 11, 2004	Add the mlgh-id to every subscriber in the MLHG in order for account codes to work.
Updated toll-free feature.	OL-4366-03, September 22, 2004	Changed ROUTE_TYPE token from ROUTE to SUB in toll-free feature section of Chapter 7, “Feature Provisioning” .
Updated OCB feature for Release 4.4 authorization tone configuration.	OL-4366-03, September 17, 2004	Beginning in Release 4.4, the timer to play the prompt tone for account and authorization codes on the media gateway is configurable via CLI. Information was added in the OCB provisioning section of Chapter 7, “Feature Provisioning” .
Updated MLHG Subscriber table provisioning information	OL-4366-03, September 13, 2004	Added information to Subscriber provisioning section of Chapter 8, “Centrex, MLHG, and Voice Mail Provisioning” .
Updated Multiple Directory Number (MDN) subscriber provisioning procedure.	OL-4366-03, September 3, 2004	Changed token name in MDN, Office Provisioning section of Chapter 7, “Feature Provisioning” .
Updated SSH information.	OL-4366-02, September 2, 2004	Added SSH version procedure in Chapter 1, “Activating SSH Versions 1 and 2” .
Updated IAD termination information.	OL-4366-02, September 1, 2004	Added trailing slash to the add termination prefix step in Chapter 3, “Provisioning an IAD Subscriber” .
Updated Speed Dial token information.	OL-4366-02, July 28, 2004	Changed speed dial token name from SPEED-CODE to SPEED-CALL.
Added CAS provisioning information.	OL-4366-02, June 16, 2004	Added a new chapter, Provisioning Channel-Associated Signaling .
Modified 911 Feature provisioning.	OL-4366-02, June 8, 2004	Added destination provisioning to 911 Feature provisioning.
Modified CALEA provisioning for Release 4.4 and later.	OL-4366-02, May 19, 2004	Beginning with Release 4.4, the steps for Electronic Surveillance provisioning have been modified.
For Release 4.4, optiuser is no longer valid.	OL-4366-02, April 19, 2004	Beginning with Release 4.4, optiuser is no longer valid. Use btuser for provisioning.
For Release 4.4, no longer necessary to specify port on report interface.	OL-4366-02, April 19, 2004	Beginning with Release 4.4, it is no longer necessary to specify a port number to view reports.

Table 1 ***Change History (continued)***

Subject	Document Number, Change Date	Change Summary
New mandatory token in Technical Prefix Group table.	OL-4366-01, March 22, 2004	The SP-ID token in the Technical Prefix Group table is mandatory in Release 4.2.
	OL-4366-01	Initial release.