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## **Cisco BTS 10200 Softswitch Application Installation**

Release 3.3

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## Introduction

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This document details the Cisco BTS 10200 Softswitch application installation procedure for Release 3.3.

## Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

### World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

- <http://www.cisco.com>
- <http://www-china.cisco.com>
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If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

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

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

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

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

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

### **Contacting TAC by Telephone**

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

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

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

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## Application Installation for Duplex Systems

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This procedure is used to install the Cisco Broadband Telephony Services (BTS) 10200 Softswitch application software, Release 3.3, and Oracle software, on Cisco BTS 10200 Softswitch hardware that is currently not carrying live traffic. The specific units on which this application will be installed are

- Side A (primary) Element Management System (EMS)
- Side B (secondary) EMS
- Side A (primary) call agent/feature server (CA/FS)
- Side B (secondary) CA/FS



### Caution

This is not an upgrade procedure. Performing the steps in this procedure brings the platform down and stops call processing. Do not start this procedure unless you have authorization from your supervisor. Do not run it on an active system that is carrying live traffic. If you have questions, contact Cisco TAC.

---

This installation cleans out all existing applications and data. There is no backout once this procedure is executed. Before starting this procedure, perform a data backup using the applicable procedure in the *Cisco BTS 10200 Softswitch Operations Manual*.



### Note

Close all CLI and Oracle sessions before attempting to install the Cisco BTS 10200 Softswitch software.

---

If you are reinstalling an existing Cisco BTS 10200 Softswitch software version, Cisco BTS 10200 Softswitch data that was previously backed up can be restored using the procedure in the *Cisco BTS 10200 Softswitch Operations Manual*.

If you are installing a new software version, data that was previously backed up will become obsolete and cannot be restored on the new software. Data must be reprovisioned. Data backups performed after the software installation can be restored in the usual manner.



### Note

Cisco recommends that you back up data that has been restored or reprovisioned following software installation.

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## Prerequisites

The following prerequisites must be satisfied before Cisco can prepare and ship the Cisco BTS 10200 Softswitch software to your site.

Obtain a copy of the network site survey that Cisco provides, fill in the network configuration data you want your system to have, and return the survey to Cisco. The Cisco BTS 10200 Softswitch uses this information to communicate with your network. Cisco uses this information to create the customized configuration file for your system.

Cisco will provide you with a network installation data sheet (NIDS). The system administrator must ensure that the applicable DNS domain names and IP addresses from the NIDS have been entered into the primary and secondary DNS servers. DNS lookup of host names is required for this procedure. This ensures that the system can resolve all qualified domain names.

If you would like to enter any parameters different than the values on the NIDS network 1, or use a different DNS server, contact Cisco TAC for an evaluation of the potential impact of the changes. Obtain Cisco TAC concurrence of any changes to these data sheets.

**Caution**

Do not continue with this procedure until the system administrator has confirmed the DNS server has the correct IP addresses and host or domain names. Otherwise, the Cisco BTS 10200 Softswitch platforms will not be able to communicate properly.

After your Cisco BTS 10200 software arrives, the following prerequisites must be satisfied before starting this application installation procedure.

**Note**

This installation procedure should be performed by a user experienced in basic Unix commands. Some of the prerequisites require the involvement of the system administrator.

Verify that there is sufficient disk space on each host machine for this installation. Each EMS and CA require 5 GB.

You must have copies of the completed network site survey and NIDS provided by Cisco for your specific system. If you would like to enter any parameters different than the values on these data sheets, contact Cisco TAC for an evaluation of the potential impact of the changes. Obtain Cisco TAC concurrence on any changes.

Verify that you have the correct Cisco BTS 10200 application CD-ROM and Oracle application CD-ROM, as specified on the data sheets.

## Before You Start

Perform the following steps before starting the installation procedure:

- Step 1** Check with your system administrator to ensure that the requirements in the “Prerequisites” section on page 1-2 have been satisfied.
- Step 2** Ensure that the Cisco BTS 10200 Softswitch hardware components have been set up and turned on in accordance with manufacturer recommendations.

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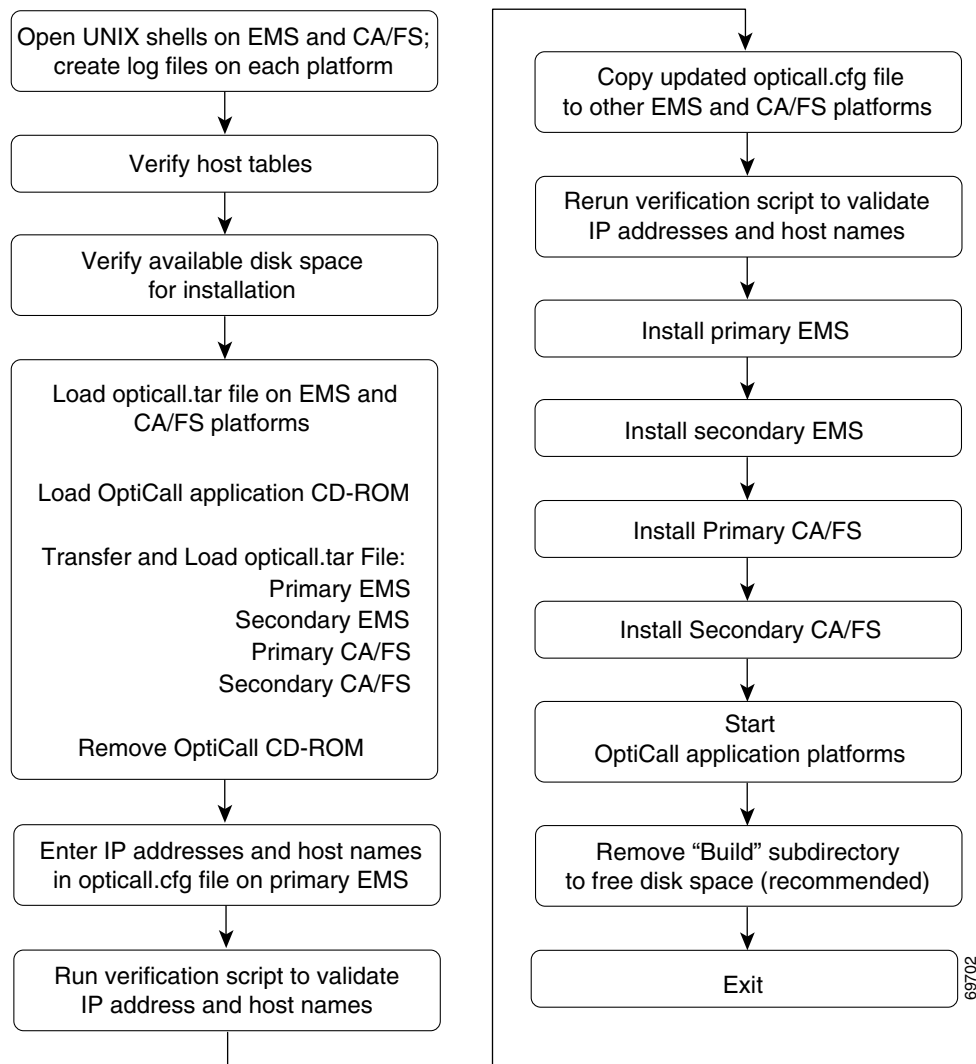
# Overview of the Installation Procedure

This procedure is used to install the Cisco BTS 10200 Softswitch application software, Release 3.3, and Oracle software, on Cisco BTS 10200 hardware that is currently not carrying live traffic. The phases of the procedure are as follows:

- Transfer the application files to each of the specified platforms
- Enter the IP addresses and host names in the `optical.cfg` file
- Run the verification script to validate IP addresses and host names
- Install the application files on each of the specified platforms
- Start all Cisco BTS 10200 application platforms
- Remove the *Build* subdirectory to free disk space (recommended)

Cisco recommends that you completely read through this procedure before starting any steps.

The basic flow of this procedure is illustrated in Figure 1.

**CISCO CONFIDENTIAL****Figure 1 Cisco BTS 10200 Softswitch Application Installation Procedure****Note**

In all the steps in this procedure, enter the commands as shown; some commands are case sensitive. Press **Enter** at the end of each command.

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# Open Unix Shells and Create Log Files

Perform the following steps to open Unix shells on the primary and secondary EMS platforms and on the primary and secondary CA/FS platforms. These four shells will be used throughout the application installation procedure.

You will need the network site survey and NIDS (referred to in this procedure as *data sheets*) that were provided to you by the system administrator.

**Step 1** Ensure that your local PC or workstation has connectivity via TCP/IP to communicate with the primary EMS unit.

**Step 2** Open four separate Unix shells or XTerm windows. Each window will be dedicated to one of the four units: primary EMS, secondary EMS, primary CA/FS, and secondary CA/FS.

As an alternative, if using a Windows system, select Start/Run and enter **cmd** to open a command prompt. The four separate host windows will appear as you perform Step 3.



**Note** Host names of the units are listed on the data sheets.

**Step 3** Enter **telnet** or **ssh** and the IP address or domain name of the applicable unit at the prompt in each of the four shells. This will be the unit to which this shell is dedicated. The system will respond with a login prompt.



**Note** Host names and IP addresses of the units are listed on the data sheets.

```
telnet xxx.xxx.xxx.xxx
or
ssh -l <CLI user name> ip address
```

**Step 4** Enter the user name **root** at the login prompt in each of the four shells.

```
root
```

**Step 5** Enter the root password for the applicable unit (these can be obtained from your system administrator) at the password prompt in each of the four shells. The system will respond with a command prompt.

**Step 6** Create a troubleshooting logfile at the command prompt in each of the four shells.

```
script /opt/mylog
```

## Verify Host Tables

Perform the following steps to verify the host tables.

**Step 1** At the command prompt in each of the four shells, display the host table stored in the unit.

```
more /etc/hosts
```

**Step 2** In each of the four shells, examine the display. Verify that the IP addresses and host names of both EMS units and both CA/FS units are displayed and that they match the entries on the NIDS network 1.

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If any entries are missing or do not match the NIDS network 1, stop and call your system administrator.



**Note** Press the spacebar to view additional segments of the display; enter **q** to quit the display. Ignore other entries in the display (other than those specified for EMS and CA/FS in this step).

- Step 3** System administrator—When there is a mismatch in Step 2, there are two possible solutions:
- Edit the host tables to match the NIDS network 1.
  - If values other than those in the NIDS network 1 are required, contact Cisco TAC before proceeding; Cisco TAC will assist you in evaluating the impact of these changes. Do not continue unless you have received concurrence from Cisco TAC.



**Note** If this step was performed, repeat the previous steps as needed to restart this procedure.

## Verify Available Disk Space For Installation

Perform the following steps to verify your disk space availability before the software installation.

- Step 1** At the command prompt in each of the four shells, display the available disk space of the host.

```
df -k
```



**Note** The available capacity of each disk partition will be shown in kilobytes.

- Step 2** For each EMS, verify that there is sufficient disk space in /opt (5 GB on each EMS) for this installation. If there is less than 5 GB available in /opt on any one of the EMS hosts, stop. Ask your system administrator to correct the problem.
- Step 3** For each CA, verify that there is sufficient disk space in /opt (5 GB on each CA) for this installation. If there is less than 5 GB available in /opt on any one of the CA hosts, stop. Ask your system administrator to correct the problem.
- Step 4** This step is necessary only if you had less than 5 GB free on an EMS, or a CA, in Step 2 or Step 3.—After your system administrator has freed up sufficient disk space, and notified you to proceed, repeat Step 1 through Step 3.



**Note** If you logged off, repeat the steps in the “Open Unix Shells and Create Log Files” section on page 1-5, then repeat the steps in the “Verify Available Disk Space For Installation” section on page 1-6.

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# Load the optcall.tar File on the EMS and CA/FS Platforms

This section describes how to transfer the software load from the CD-ROM to the host machine in preparation for software installation.

## Load the Cisco BTS 10200 Application CD-ROM

Perform these steps to install the application CD-ROM:

- 
- Step 1** Verify with the system administrator that you have the correct Cisco BTS 10200 application CD-ROM as specified on the data sheets. Do not proceed until you have verified this.
- Step 2** Insert the application CD-ROM into the CD-ROM drive of the primary EMS unit.

**Caution**

Do not remove the CD-ROM until directed to do so in this procedure. It must remain in the CD-ROM drive of the primary EMS, and not be moved from machine to machine. There is a step later in this procedure that indicates when it is time to remove the CD-ROM.

---

## Load the optcall.tar File on the Primary EMS

This section describes how to load the optcall.tar file on the primary EMS.

**Note**

Some steps indicate the time taken by the system to complete an operation. Actual times may vary depending on factors such as network speed and file size.

In the primary EMS XTerm or terminal window, perform the following steps to load optcall.tar on the primary EMS:

- 
- Step 1** At the command prompt of the primary EMS, navigate to the CD-ROM.
- ```
cd /cdrom/cdrom0
```
- Step 2** This troubleshooting step is only necessary if you received an error response while attempting to navigate to the CD-ROM. If you did not receive an error response, go to Step 3.
- If you receive the system response, cdrom not found, manually open and close the CD-ROM tray on the primary EMS unit. Wait 30 seconds and try the command again.
- ```
cd /cdrom/cdrom0.
```
- If you still receive an error response, it is possible that the CD-ROM driver is not yet mounted on the primary EMS. Enter the following command to create a directory:
- ```
mkdir -p /cdrom
```

**Note**

If the system responds that this directory already exists, you should ignore the response and continue with the next substep.

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- c. Navigate to the CD ROM.

```
cd /cdrom
```

- d. Make a new directory.

```
mkdir -p cdrom0
```

- e. Enter the following command to mount the CD-ROM drive:

```
mount -F hsfs -o ro /dev/dsk/c0t6d0s0 /cdrom/cdrom0
```

- f. At the command prompt of the primary EMS, navigate to the CD-ROM:

```
cd /cdrom/cdrom0
```

- Step 3** Check that the proper file (optical.tar) is present on the CD-ROM:

```
ls
```

The file optical.tar should be present.

- Step 4** Copy the file on the CD-ROM to the /opt directory:

```
cp K9-optical1.tar /opt
```

There will be a delay of 2 to 5 minutes while the file is copied and the command prompt reappears. Wait for the prompt.



**Note** If the system displays any error messages during (or at the end of) this process, stop immediately and notify your system administrator.

- Step 5** When the command prompt reappears, enter the command to expand the tar file:

```
cd /opt; tar xvf K9-optical1.tar
```

There will be a delay of 2 to 5 minutes while the file is being expanded, and the command prompt reappears. Wait for the prompt.

## Transfer and Load the optical.tar File on the Secondary EMS

This section describes how to transfer and load the optical.tar file on the secondary EMS.



### Caution

Do not remove the CD-ROM until directed to do so in this procedure. It must remain in the CD-ROM drive of the primary EMS and not be moved from machine to machine. There is a step later in this procedure that indicates when it is time to remove the CD-ROM.

Perform the following steps to transfer and load optical.tar on the secondary EMS. Refer to the data sheets for addresses and names of the applicable units.

- Step 1** Click the shell (window) for the secondary EMS.

- Step 2** At the command prompt of the secondary EMS, start an FTP session directed to the primary EMS.

```
cd /opt; ftp <hostname or IP address of primary EMS>
```



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**Step 3** When prompted for a name, enter **optiuser**.

**optiuser**

**Step 4** At the password prompt, enter the root password for the primary EMS. The password can be obtained from your system administrator. The system will respond with an FTP prompt.

**Step 5** When the FTP prompt appears, navigate to the CD-ROM.

**cd /cdrom/cdrom0**

**Step 6** Check that the proper file (optical.tar) is present on the CD-ROM.

**ls**

The file optical.tar should be present.

**Step 7** At the FTP prompt, enter **bin** to enable binary transfer.

**bin**

**Step 8** At the FTP prompt, transfer the application file to the /opt directory.

**get K9-optical1.tar**

There will be a delay of 2 to 5 minutes while the file is being transferred, and the command prompt reappears. Wait for the prompt.

**Note**

If the system displays any error messages during (or at the end of) this process, stop immediately and notify your system administrator.

**Step 9** After the transfer is complete and the FTP prompt reappears, exit the FTP session.

**bye**

**Step 10** When the command prompt of the secondary EMS reappears, enter the following command to expand the tar file:

**cd /opt; tar xvf K9-optical1.tar**

There will be a delay of 2 to 3 minutes while the file is being expanded, and the command prompt reappears. Wait for the prompt.

## Transfer and Load the optical.tar File on the Primary CA/FS

This section describes how to transfer and load the optical.tar file on the primary CA/FS.


**Caution**

Do not remove the CD-ROM until directed to do so in this procedure. It must remain in the CD-ROM drive of the primary EMS and not be moved from machine to machine. There is a step later in this procedure that indicates when it is time to remove the CD-ROM.

Perform the following steps to transfer and load optical.tar on the primary CA/FS. Refer to the data sheets for addresses and names of the applicable units.

**Step 1** Click the shell (window) for the primary CA/FS.

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- Step 2** At the command prompt of the primary CA/FS, start an FTP session directed to the primary EMS.  
`cd /opt; ftp <hostname or IP address of primary EMS>`
- Step 3** When prompted for a name, enter **optiuser**.  
`optiuser`
- Step 4** At the password prompt, enter the root password for the primary EMS. The system will respond with an FTP prompt.
- Step 5** When the FTP prompt appears, navigate to the CD-ROM.  
`cd /cdrom/cdrom0`
- Step 6** Check that the proper file (optical.tar) is present on the CD-ROM.  
`ls`  
 The optical.tar file should be present.
- Step 7** At the FTP prompt, enter **bin** to enable binary transfer.  
`bin`
- Step 8** At the FTP prompt, transfer the application file to the /opt directory.  
`get K9-optical1.tar`  
 There will be a delay of 1 minute while the file is being transferred, and the command prompt reappears. Wait for the prompt.
-  **Note** If the system displays any error messages during (or at the end of) this process, stop immediately and notify your system administrator.
- Step 9** After the transfer is complete and the FTP prompt reappears, exit the FTP session.  
`bye`
- Step 10** When the command prompt of the primary CA reappears, enter the following command to expand the tar file:  
`cd /opt; tar xvf K9-optical1.tar`  
 There will be a delay of 2 to 5 minutes while the file is being expanded, and the command prompt reappears. Wait for the prompt.

## Transfer and Load optical.tar File on the Secondary CA/FS

This section describes how to transfer and load the optical.tar file on the secondary CA/FS.




### Caution

Do not remove the CD-ROM until directed to do so in this procedure. It must remain in the CD-ROM drive of the primary EMS and not be moved from machine to machine. There is a step later in this procedure that indicates when it is time to remove the CD-ROM.

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Perform the following steps to transfer and load optcall.tar on the secondary CA/FS. Refer to the data sheets for addresses and names of the applicable units.

- 
- Step 1** Click the shell (window) for the secondary CA/FS.
- Step 2** At the command prompt of the secondary CA/FS, start an FTP session directed to the primary EMS.  
`cd /opt; ftp <hostname or IP address of primary EMS>`
- Step 3** When prompted for a name, enter **optiuser**.  
`optiuser`
- Step 4** At the password prompt, enter the root password for the primary EMS. The system will respond with an FTP prompt.
- Step 5** When the FTP prompt appears, navigate to the CD-ROM.  
`cd /cdrom/cdrom0`
- Step 6** Check that the proper file (optcall.tar) is present on the CD-ROM.  
`ls`
- Step 7** The optcall.tar file should be present.
- Step 8** At the FTP prompt, enter **bin** to enable binary transfer.  
`bin`
- Step 9** At the FTP prompt, transfer the application file to the /opt directory.  
`get K9-optcall.tar`
- Step 10** There will be a delay of 1 minute while the file is being transferred, and the command prompt reappears. Wait for the prompt.
-  **Note** If the system displays any error messages during (or at the end of) this process, stop immediately and notify your system administrator.
- 
- Step 11** After the transfer is complete and the FTP prompt reappears, exit the FTP session.  
`bye`
- Step 12** When the command prompt of the secondary CA reappears, enter the following command to expand the tar file:  
`cd /opt; tar xvf K9-optcall.tar`
- Step 13** There will be a delay of 2 to 5 minutes while the file is being expanded, and the command prompt reappears. Wait for the prompt.

**Caution**

Do not remove the CD-ROM until directed to do so in this procedure. It must remain in the CD-ROM drive of the primary EMS and not be moved from machine to machine. There is a step later in this procedure that indicates when it is time to remove the CD-ROM.

---

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## Remove Cisco BTS 10200 Application CD-ROM

Perform these steps to remove the Cisco BTS 10200 application CD-ROM from the CD-ROM drive of the primary EMS.

- 
- Step 1** Click the shell (window) for the primary EMS.
- Step 2** At the command prompt of the primary EMS, enter one of the following commands:
- a. If the CD was not manually mounted, eject it.  
`cd /; eject`
  - b. If the CD was manually mounted, manually unmount it.  
`umount /cdrom/cdrom0`
- Step 3** Manually eject the CD-ROM.
- Step 4** After the Cisco BTS 10200 application CD-ROM comes out of the CD-ROM drive, place it in the CD case.

## Load the oracle.tar File on the EMS Platforms

This section describes how to transfer the oracle database software from the CD-ROM to the EMS machines in preparation for installation.

## Load the Oracle Application CD-ROM

Perform these steps to install the Oracle application CD-ROM:

- 
- Step 1** Verify with the system administrator that you have the correct Oracle application CD-ROM as specified on the data sheets. Do not proceed until you have verified this.
- Step 2** Insert the Oracle CD-ROM into the CD-ROM drive of the primary EMS unit.

**Caution**

Do not remove the CD-ROM until directed to do so in this procedure. It must remain in the CD-ROM drive of the primary EMS and not be moved from machine to machine. There is a step later in this procedure that indicates when it is time to remove the CD-ROM.

---

## Load the oracle.tar File on the Primary EMS

In the primary EMS XTerm or terminal window, perform the following steps to load the oracle.tar file on the primary EMS:

- 
- Step 1** At the command prompt of the primary EMS, navigate to the CD-ROM.
- `cd /cdrom/cdrom0`

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If necessary, repeat the command `cd /cdrom/cdrom0`.

**Step 2** This troubleshooting step is only necessary if you received an error response while attempting to navigate to the CD-ROM. If you did not receive an error response, go to Step 3.

- a. If you receive a system response, `cdrom not found`, manually open and close the CD-ROM tray on the primary EMS unit. Wait 30 seconds and try the command again (`cd /cdrom/cdrom0`).
- b. If you still receive an error response, it is possible that the CD-ROM driver is not yet mounted on the primary EMS. Enter the following command to create a directory:

```
mkdir -p /cdrom
```



**Note** If the system responds that this directory already exists, you should ignore the response and continue with the next substep.

- c. Navigate to the CD-ROM

```
cd /cdrom
```

- d. Create a new directory.

```
mkdir -p cdrom0
```

- e. Enter the following command to mount the CD-ROM drive:

```
mount -F hsfs -o ro /dev/dsk/c0t6d0s0 /cdrom/cdrom0
```

- f. At the command prompt of the primary EMS, navigate to the CD-ROM.

```
cd /cdrom/cdrom0
```

**Step 3** Check that the proper file (`oracle.tar`) is present on the CD-ROM.

```
ls
```

The `oracle.tar` file should be present.

**Step 4** Copy the file on the CD-ROM.

```
cp K9-oracle.tar /opt
```

**Step 5** There will be a delay of approximately one hour while the file is copied and the command prompt reappears. Wait for the prompt.



**Note** If the system displays any error messages during (or at the end of) this process, stop immediately and notify your system administrator.

**Step 6** When the command prompt reappears, enter the following command to expand the tar file:

```
cd /opt; tar xvf K9-oracle.tar
```

**Step 7** There will be a delay of 2 to 5 minutes while the file is being expanded, and the command prompt reappears. Wait for the prompt.

**CISCO CONFIDENTIAL****Transfer and Load oracle.tar on the Secondary EMS**

In this section, you will transfer and load the oracle.tar file on the secondary EMS.

**Caution**

Do not remove the CD-ROM until directed to do so in this procedure. It must remain in the CD-ROM drive of the primary EMS and not be moved from machine to machine. There is a step later in this procedure that indicates when it is time to remove the CD-ROM.

Perform the following steps to transfer and load oracle.tar on the secondary EMS. Refer to the data sheets for addresses and names of the applicable units.

- 
- Step 1** Click the shell (window) for the secondary EMS.
- Step 2** At the command prompt of the secondary EMS, start an FTP session directed to the primary EMS.
- ```
cd /opt; ftp <hostname or IP address of primary EMS>
```
- Step 3** When prompted for Name, enter root.
- ```
root
```
- Step 4** At the password prompt, enter the root password for the primary EMS (can be obtained from your system administrator). The system will respond with an FTP prompt.
- Step 5** When the FTP prompt appears, navigate to the CD-ROM.
- ```
cd /cdrom/cdrom0
```
- Step 6** Check that the proper file (oracle.tar) is present on the CD-ROM.
- ```
ls
```
- Step 7** The oracle.tar file should be present.
- Step 8** At the FTP prompt, enter bin to enable binary transfer.
- ```
bin
```
- Step 9** At the FTP prompt, transfer the application file to the preselected directory.
- ```
get K9-oracle.tar
```

There will be a delay of approximately one hour while the file is being transferred, and the command prompt reappears. Wait for the prompt.

**Note**

If the system displays any error messages during (or at the end of) this process, stop immediately and notify your system administrator.

- 
- Step 10** After the transfer is complete and the FTP prompt reappears, exit the FTP session.
- ```
bye
```
- Step 11** When the command prompt reappears, enter the following command to expand the tar file:
- ```
cd /opt; tar xvf K9-oracle.tar
```

There will be a delay of 2 to 5 minutes while the file is being expanded, and the command prompt reappears. Wait for the prompt.

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## Remove Oracle Application CD-ROM

Perform these steps to remove the Oracle application CD-ROM from the CD-ROM drive of the primary EMS.

- 
- Step 1** Click the shell (window) for the primary EMS.
- Step 2** At the command prompt of the primary EMS, enter one of the following commands:
- a. If the CD was not manually mounted, eject it.  
`cd /; eject`
  - b. If the CD was manually mounted, manually unmount it.  
`umount /cdrom/cdrom0`
- Step 3** Manually eject the CD-ROM.
- Step 4** After the CD-ROM is ejected from the CD-ROM drive, place it in the CD case.

## Enter IP Addresses and Host Names in the optical1.cfg File

This section describes how to copy the optical1.cfg file from the install directory. It then describes how to edit the file with the data supplied in the optical1.cfg data sheet. Finally, the section describes how to copy the updated /etc/optical1.cfg file to the other three platforms (secondary EMS and primary and secondary CA/FS).

## Enter Addresses in the Primary EMS Configuration File

Perform the following steps to enter data into the configuration file on the primary EMS. You will need the data sheets provided to your system administrator by Cisco.

- 
- Step 1** In the primary EMS shell, navigate to the install directory.  
`cd /opt/Build`
- Step 2** Verify that the optical1.cfg file is present.  
`ls optical1.cfg`



---

**Note** If the system responds with file not found, stop immediately. Call Cisco TAC for assistance.

---

- Step 3** Copy the optical1.cfg file to the etc directory.  
`cp optical1.cfg /etc`
- Step 4** Open the file for editing.  
`vi /etc/optical1.cfg`

The system will display the contents of the file.

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**Note** If the system responds with file not found, stop immediately. Call Cisco TAC for assistance.

- Step 5** Verify that the parameters in the `optcall.cfg` file match the contents of the `optcall.cfg` data sheet, located in the NIDS. If there are any mismatches, or if data is not entered yet, update the values to match the `optcall.cfg` data sheet.
- Review the `optcall.cfg` data sheet for correct entries for each item. The system displays each parameter and its associated value in the format `PARAMETER=NAME`.
- Step 6** Save and exit the `optcall.cfg` file.

## Run Verification Script on Primary EMS

Perform the following steps to run the script to verify that the DNS server is configured correctly and that all the IP addresses entered in the DNS are reachable.

- Step 1** In the primary EMS shell, navigate to the install directory.
- Step 2** Run the following command:
- Step 3** The system will display a message Validating.... If no errors are found, the system will display the No errors found message.

Example of `checkCFG` validation run:

```
-----
---                CHECK DNS NAMES BEGIN                ---
-----
Validating optcall.cfg input file...

Checking installation list CA_SIDE_A_INSTALLING_LIST...
Checking installation list CA_SIDE_A_INSTALLING_LIST Complete...

No errors found...
The OptiCall System is configured as a DUPLEX system...
Validating optcall.cfg input file complete...
-----
---                CHECK DNS NAMES END                  ---
-----

-----
---                CHECK DNS NAMES BEGIN                ---
-----
Validating optcall.cfg input file...

Checking installation list CA_SIDE_A_INSTALLING_LIST...
Checking installation list CA_SIDE_A_INSTALLING_LIST Complete...

ping: unknown host red.ATR4CA.lab.ipcell.com
ERROR: red.ATR4CA.lab.ipcell.com domain name ping FAILED...
Please correct ERROR and try again...
Validating optcall.cfg input file complete...
-----
```



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--- CHECK DNS NAMES END ---  
 -----

- Step 4** If the system does display an error, repeat Step 4 through Step 6 of the “Enter Addresses in the Primary EMS Configuration File”. Make sure that all data has been entered exactly as shown on the supplied data sheets. Remember that values are case sensitive. Correct any values in `optical1.cfg` that differ from those on the data list.




**Note** Perform this step only once.

- Step 5** If the system still displays an error, stop and call your system administrator to resolve this problem. If necessary, call Cisco TAC for advice.

## Copy Updated `optical1.cfg` File to Other EMS and CA/FS Platforms

Perform the following steps to copy the updated `optical1.cfg` file from the primary EMS to the `/etc` directory on the other 3 platforms.

- Step 1** Click the shell (window) for the secondary EMS.
- Step 2** At the command prompt of the secondary EMS, start an FTP session directed to the primary EMS.
- ```
cd /etc; ftp <hostname or IP address of primary EMS>
```
- Step 3** When prompted for Name, enter **optiuser**.
- ```
optiuser
```
- Step 4** At the password prompt, enter the root password for the primary EMS. The password can be obtained from your system administrator. The system will respond with an FTP prompt.
- Step 5** When the FTP prompt appears, navigate to the `/etc` directory.
- ```
cd /etc
```
- Step 6** Check that the proper file (`optical1.cfg`) is present on the CD-ROM.
- ```
ls optical1.cfg
```
- The `optical1.cfg` file should be present.
- Step 7** At the FTP prompt, enter **bin** to enable binary transfer.
- ```
bin
```
- Step 8** At the FTP prompt, transfer the configuration file to the preselected directory.
- ```
get optical1.cfg
```
- 

**Note** If the system displays any error messages during (or at the end of) this process, stop immediately and notify your system administrator.
- Step 9** After the transfer is complete and the FTP prompt reappears, exit the FTP session.
- ```
bye
```

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**Step 10** Repeat Step 1 through Step 9 for the primary CA/FS (use primary CA/FS shell).

**Step 11** Repeat Step 1 through Step 9 for the secondary CA/FS (use secondary CA/FS shell).

---

## Run Verification Script to Validate Platform and DNS Data

This section describes how to run the script to verify that the DNS server is configured correctly and that all of the IP addresses entered in the DNS are reachable.

### Run the Verification Script on the Secondary EMS

Perform the following steps to run the verification script on the secondary EMS.

---

**Step 1** In the secondary EMS shell, navigate to the install directory.

```
cd /opt/Build
```

**Step 2** Run the following command:

```
./checkCFG
```

**Step 3** The system will display a message Validating.... If no errors are found, the system will display the No errors found message.

**Step 4** If the system does display an error, repeat Step 4 through Step 6 of the “Enter Addresses in the Primary EMS Configuration File”. Make sure that all data has been entered exactly as shown on the supplied data sheets. Remember that values are case sensitive. Correct any values in optcall.cfg that differ from those on the data list.



**Note** Perform this step only once.

---

**Step 5** If the system still displays an error, stop and call your system administrator to resolve this problem. If necessary, call Cisco TAC for advice.

**Step 6** Repeat Step 1 through Step 5 for the primary CA/FS.

**Step 7** Repeat Step 1 through Step 5 for the secondary CA/FS.

---

## Set Up Omni Cards

This section describes how to set up the omni cards.

This section describes how to set up the omni configuration.

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- 
- Step 1** If your system does not have omni cards installed and is not running SS7, follow substeps a. and b. below.
- a. Edit the `/etc/inittab` file and remove the following line:  
`DF:23:respawn:/opt/omni/bin/start_DFdaemon.`
  - b. Skip Step 2 and go to the Install the Primary EMS section below.
- Step 2** If your system has omni cards installed and is running SS7, follow the steps in Configure Signalware Platform to configure omni.
- 

## Install the Primary EMS

Perform the following steps to install the primary EMS.

**Caution**

Do not use the file extension `.orig` if you choose to backup your Solaris system files, such as `/etc/named.conf`. Doing so will create undesired results. Instead, use unique identifiers for these backup files, such as `<filename>.save` or `<filename>.mmddyy`.

---

**Note**

If this is a new installation start at Step 3. If you already have a previous version of the BTS 10200 software start at Step 1.

---

- 
- Step 1** At the prompt of the primary EMS, enter the command to stop the platform.

```
platform stop all
```

- Step 2** If the system prompts that the platform is running, or the platform is running in active mode and prompts to continue [y/n], respond with **y**.

**Note**

It will take 1 to 2 minutes for the platform to stop. Wait for the prompt to reappear.

---

- Step 3** At the prompt of the primary EMS, enter the following command to navigate to the install directory:

```
cd /opt/Build
```

- Step 4** Enter the following command:

```
./install.sh
```

**Note**

Refer to Appendix B, “General Software Installation Procedure Reference” for any additional information needed.

---

- Step 5** A banner will appear as follows:

```
You are installing xxxxx on yyyy with SUN OS 5.8
```

```
Read the banner to verify that you are about to install the correct version of Cisco
BTS 10200
```

```
Verify that xxxxx = <Opticall version specified on the CD-ROM label>
```

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and yyyyy = <host name of primary EMS as shown on the data sheets>

- a. If there is any mismatch between the display and the data sheets, enter **n** and press **Enter**. Stop immediately and locate the correct CD-ROM to install. Do not continue with this procedure until you have called Cisco TAC and confirmed that you have the correct CD-ROM.
- b. If there is a perfect match between the display and the data sheets, press **Enter**. (This accepts the default value of y to continue with the install.) Allow 20 to 30 minutes for this automatic installation to complete.

**Step 6** While the primary EMS is installing, proceed to the “Install Secondary EMS” section on page 1-20.

## Install Secondary EMS

Perform the following steps to install the secondary EMS:

**Note**

If this is a new installation start at Step 3. If you already have a previous version of the BTS 10200 software installed start at Step 1.

**Step 1** At the prompt of the secondary EMS, enter the command to stop the platform.

```
platform stop all
```

**Step 2** If the system prompts that the platform is running, or the platform is running in active mode and prompts to continue [y/n], respond with y.

**Note**

It will take 1 to 2 minutes for the platform to stop. Wait for the prompt to reappear.

**Step 3** At the prompt of the secondary EMS, enter the following command to navigate to the install directory:

```
cd /opt/Build
```

**Step 4** Enter the following command:

```
./install.sh
```

**Note**

Refer to Appendix B, “General Software Installation Procedure Reference” for any additional information needed.

**Step 5** A banner will appear as follows:

```
You are installing xxxxx on yyyyy with SUN OS 5.8
```

```
Read the banner to verify that you are about to install the correct version of Cisco  
BTS 10200™—
```

```
Verify that xxxxx = <Cisco BTS 10200 version specified on the CD-ROM label>  
and yyyyy = <host name of secondary EMS as shown on the data sheets>
```

- a. If there is any mismatch between the display and the data sheets, enter **n** and press **Enter**. Stop immediately and locate the correct CD-ROM to install. Do not continue with this procedure until you have called Cisco TAC and confirmed that you have the correct CD-ROM.

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- b. If there is a perfect match between the display and the data sheets, press **Enter**. This accepts the default value of y to continue with the install. Allow 20 to 30 minutes for this automatic installation to complete.

**Step 6** While the secondary EMS is installing, proceed to the “Install the Primary CA/FS” section on page 1-21.

## Install the Primary CA/FS

Perform the following steps to install the primary CA and FS.

**Note**

If this is a new installation start at Step 3. If you already have a previous version of the BTS 10200 software installed start at Step 1.

**Step 1** At the prompt of the primary CA/FS, enter the command to stop the platform.

```
platform stop all
```

**Step 2** If the system prompts that the platform is running, or the platform is running in active mode and prompts to continue [y/n], respond with y.

**Note**

It will take 1 to 2 minutes for the platform to stop. Wait for the prompt to reappear.

**Step 3** At the prompt of the primary CA/FS, enter the following command to navigate to the install directory:

```
cd /opt/Build
```

**Step 4** Enter the following command:

```
./install.sh
```

**Note**

Refer to Appendix B, “General Software Installation Procedure Reference” for any additional information needed.

**Step 5** A banner will appear as follows:

```
You are installing xxxxx on yyyyy with SUN OS 5.8
```

```
Read the banner to verify that you are about to install the correct version of Cisco  
BTS 10200™—
```

```
Verify that xxxxx = <Cisco BTS 10200 version specified on the CD-ROM label>  
and yyyyy = <host name of primary CA/FS as shown on the data sheets>
```

- a. If there is any mismatch between the display and the data sheets, enter **n** and press **Enter**. Stop immediately and locate the correct CD-ROM to install. Do not continue with this procedure until you have called Cisco TAC and confirmed that you have the correct CD-ROM.
- b. If there is a perfect match between the display and the data sheets, press **Enter**. This accepts the default value of y to continue with the install. Allow 5 to 10 minutes for this automatic installation to complete.

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- Step 6** While the primary CA/FS is installing, proceed to the “Install the Secondary CA/FS” section on page 1-22.

## Install the Secondary CA/FS

Perform the following steps to install the secondary CA and FS.

**Note**

If this is a new installation start at Step 3. If you already have a previous version of the BTS 10200 software installed start at Step 1.

- Step 1** At the prompt of the secondary CA/FS, enter the command to stop the platform.

```
platform stop all
```

- Step 2** If the system prompts that the platform is running, or the platform is running in active mode and prompts to continue [y/n], respond with **y**.

**Note**

It will take 1 to 2 minutes for the platform to stop. Wait for the prompt to reappear.

- Step 3** At the prompt of the secondary CA/FS, enter the following command to navigate to the install directory:

```
cd /opt/Build
```

- Step 4** Enter the following command:

```
./install.sh
```

**Note**

Refer to Appendix B, “General Software Installation Procedure Reference” for any additional information needed.

- Step 5** A banner will appear as follows:

```
You are installing xxxxx on yyyyy with SUN OS 5.8
```

```
Read the banner to verify that you are about to install the correct version of Cisco  
BTS 10200™—
```

```
Verify that xxxxx = <Cisco BTS 10200 version specified on the CD-ROM label>  
and yyyyy = <host name of secondary CA/FS as shown on the data sheets>
```

- a. If there is any mismatch between the display and the data sheets, enter **n** and press **Enter**. Stop immediately and locate the correct CD-ROM to install. Do not continue with this procedure until you have called Cisco TAC and confirmed that you have the correct CD-ROM.
- b. If there is a perfect match between the display and the data sheets, press **Enter**. (This accepts the default value of y to continue with the install.)

Allow 5 to 10 minutes for this automatic installation to complete. Wait for the prompt to reappear, indicating that the installation has completed.

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# CORBA Installation

This procedure describes how to install the Common Object Request Broker Architecture (CORBA) application on the primary (side A) Element Management System (EMS) of the Cisco BTS 10200 Softswitch. After completing the installation on the primary side you will repeat the steps on the secondary (side B) EMS. When the installation procedures are complete, refer to the appropriate related documents to provision your Softswitch system. The CORBA installation is intended for use by central office (CO) technicians and maintenance personnel who are responsible for maintaining CORBA applications. A familiarity with telco products and networking systems is recommended.

**Caution**

This CORBA installation removes any existing CORBA application on both EMS machines. Once you execute this procedure, it cannot be canceled. There is no backout. Do not start this procedure until you have proper authorization. If you have questions, contact Cisco TAC.

**Note**

The commands are case sensitive. Enter the following commands exactly as shown, and press **Enter** at the end of each command line.

## Open Unix Shell on the Primary (side A) EMS

Perform these steps to open a Unix shell on the primary (side A) EMS:

- 
- Step 1** Ensure that your local PC or workstation has connectivity via TCP/IP to communicate with the primary EMS unit.
- Step 2** Open a Unix shell or XTerm window.
- Step 3** At the prompt, type **telnet** or **shh** and the IP address or domain name of the primary EMS. For example:
- ```
telnet xxx.xxx.xxx.xxx
```
- The system will respond with a login prompt.
- Step 4** At the login prompt, type the following user name:
- ```
root
```
- Step 5** At the Password prompt, enter the root password for the primary EMS (this can be obtained from your system administrator). The system will respond with a command prompt.

**Note**

If the system displays any error messages during (or at the end of) this process, stop immediately and notify your system administrator.

## Install CORBA Application

The CORBA application files are available for installation once the Cisco BTS 10200 Softswitch is installed. Perform these steps to install the CORBA application on the primary EMS:

- 
- Step 1** At the primary EMS prompt, enter the following command to navigate to the **EMS install** directory:

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```
cd /opt/Build/
```

**Note**

If the EMS install area has been removed, follow the EMS install procedure to create the area.

**Step 2** Enter the `cis-install.ch` command:

```
./cis_install.sh
```

You should see the following questions and answer appropriately:

```
Should the ORB listen on a single interface? [Y,n]: y
Enter the network interface name [hme0]: qfe0
```

**Step 3** Allow up to one minute for this automatic installation to complete. The system will give several prompts before and during the installation process. Some prompts are repeated. Respond with a **y** to each prompt.

**Step 4** A VisiBroker GUI install shield appears. Follow the wizard screens to install VisiBroker:

- a. Click **Next** on the welcome screen.
- b. Click **Accept** on the license agreement.
- c. Click **Next** and enter the information as prompted by the dialog box:

**Note**

Be sure to enter the information exactly as described here. If you enter the data incorrectly, the application will not install.

- In the *User name* field, type the name of the person responsible for the installation.
  - In the *Company name* field, type **Inprise** (without the quotation marks).
  - In the *License key* field, type the license information provided by your system administrator.
- d. Click **Next**.

**Note**

The next dialog box should display the primary destination directory, `/opt/inprise/vbroker`. This is the default location for the VisiBroker product.

- e. Click **Next** to accept the default.
- f. In the next dialog box, click **Install**.
- g. When the installation is completed, click **Finish**.

## Verify CORBA Application Is Running On Primary EMS

Perform these steps to verify that the CORBA application is running on the primary EMS:

**Step 1** At the primary EMS prompt, enter the following command to verify that the **osagent** process is running:

```
pgrep osagent
```



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The system will respond by displaying the **osagent** process ID, which is a number between 2 and 32,000 assigned by the system during CORBA installation. By displaying this ID, the system confirms that the **osagent** process was found and is running.

- Step 2** At the prompt, enter the following command to verify that the CORBA interface servant (**cis3**) process is running:

```
pgrep cis3
```

The system will respond by displaying the **cis3** process ID, which is a number between 2 and 32,000 assigned by the system during CORBA installation. By displaying this ID, the system confirms that the **cis3** process was found and is running.



**Note** To see if the CORBA portable object adapter (POA) is running, use the **osfind** command.

- Step 3** If you do not receive both of the responses described in Step 1 and Step 2, or if you experience any verification problems, do not continue. Contact your system administrator. If necessary, call Cisco TAC for additional technical assistance.

## Install CORBA Application on Side B (Secondary) EMS

To install the CORBA application on the side B (secondary) EMS, repeat all of the steps in the “Install CORBA Application” section on page 23, except replace *side A* with *side B* and replace *primary* with *secondary* in all cases.

## Start All Cisco BTS 10200 Application Platforms

Perform the following steps to start all the Cisco BTS 10200 application platforms.

- Step 1** In each of the four Unix shells (primary EMS, secondary EMS, primary CA/FS, and secondary CA/FS), verify that the installation has completed successfully and that the host command prompt appears.

- Step 2** In all of the four shells, at the command prompt, enter the command to start all application platforms.

```
OptiCall start
```

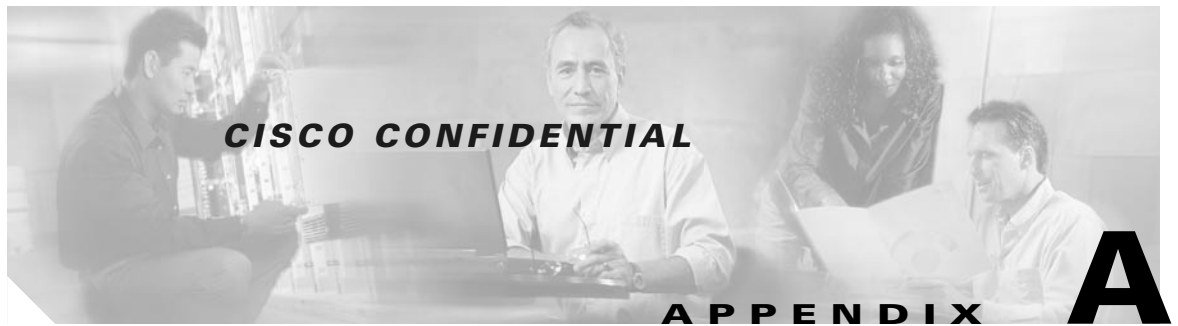
This will start all four platforms. It will take up to 5 minutes for each platform to start. If you see any error messages, contact your system administrator to evaluate the problem.

## Remove the Build Directory to Free Disk Space

Cisco recommends that you free the disk space occupied by the build directory that was generated during the installation process because it is no longer needed. Perform the following steps to free disk space.

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- 
- Step 1** In each of the four Unix shells, remove the Build directory.
- ```
rm -rf /opt/Build
```
- Step 2** In each of the four shells, verify that the Build directory is deleted.
- ```
cd /opt; ls
```
- The Build directory should not be in the list.
- Step 3** When finished, exit all hosts.
- ```
exit
```
-



## Configure Signalware Platform

Perform the following steps to configure the signalware platform for OMNI. This procedure must be performed on the primary and secondary sides. After you begin the configuration process, a series of questions will display that require your response.



### Note

If your system does not have OMNI SS7 boards, edit the `/etc/inittab` file and remove the following line: **DF:23:respawn:/opt/omni/bin/start\_DFdaemon**. If your system has SS7 boards, proceed with the steps in this section.

**Step 1** Logon to the primary call agent and enter your password.

```
prica01# <pwd>
```

**Step 2** Navigate to the `conf` directory:

```
cd /opt/omni/conf
```

**Step 3** Type the following command to begin configuring the signalware platform.

```
prica01# configurePlatform
```



### Note

The following information is an output example from the `configureplatform`. Important comments are marked with `<<<<<`. Your output may differ slightly based on your configuration, and the number of OMNI boards that are installed.

```
*****
***                                     ***
***          CONFIGURE Signalware PLATFORM          ***
***                                     ***
*****
```

```
+-----+ configurePlatform
| INFO | OMNI_HOME = /opt/omni
+-----+
```

```
Information Section
=====
```

Only information is gathered at this time.  
You can hit `<CNTRL>C` at anytime. All answers will be remembered and presented as defaults during the next execution.  
Default answers are presented in [square brackets].

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Continue with configurePlatform procedure (yes or no) [yes]?

```
*****
*** CE Configuration ***
*****
```

How many CEs (1 - 4) [2]? <<<<<<<<< dual CE configuration

The host file is /etc/hosts. The host file must contain a record for each IP address for each CE. See hosts(4) for details.

Example:

2 CE configuration with 3 LANs (3 IP addresses/CE), of which only two LANs are private LANs used for Signalware. (One LAN is a corporate/building LAN connecting to other unrelated computers.)

The canonical names (nodenames) of the CEs are "fred" and "wilma". The host file would have 6 records as follows:

```
192.53.200.1  fred fred-corp      # fred on corporate LAN
192.168.1.1   fred fred1         # fred on private LAN 1
192.168.2.1   fred fred2         # fred on private LAN 2
192.53.200.2  wilma wilma-corp   # wilma on corporate LAN
192.168.1.2   wilma wilma1       # wilma on private LAN 1
192.168.2.2   wilma wilma2       # wilma on private LAN 2
```

Note:

- 1: The canonical name MUST appear as the first name for each record which contains an IP address for the CE.
- 2: Each record used by omni must contain at least one unique alias name.

Enter name of CE1 [prica01]: <<<<<<<<< primary CA

Enter name of CE2 [secca01]: <<<<<<<<< secondary CA

```
*****
*** LAN Configuration ***
*****
```

How many Local Area Networks per CE (1 - 32) [2]?

Choose LAN 1 for prica01

- 1) prica01\_public
- 2) prica01\_red1
- 3) prica01\_red2

Enter choice [prica01\_red1]: <<<<<<<<< first LAN on primary is red1

Choose LAN 2 for prica01

- 1) prica01\_public
- 2) prica01\_red1
- 3) prica01\_red2

Enter choice [prica01\_red2]: <<<<<<<<< second LAN on primary is red2

Choose LAN 1 for secca01

- 1) secca01\_public
- 2) secca01\_red1
- 3) secca01\_red2

Enter choice [secca01\_red1]: <<<<<<<<< first LAN on secondary is red1

Choose LAN 2 for secca01

- 1) secca01\_public
- 2) secca01\_red1
- 3) secca01\_red2

Enter choice [secca01\_red2]: <<<<<<<<< second LAN on secondary is red2

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```

*****
*** Serial Port Configuration ***
*****

Enter the serial port 1 device name for prica01 [/dev/term/b]: <<<<<<<< serial port 1 is
/dev/term/b
Enter the serial port 2 device name for prica01 [none]: <<<<<<<<<< serial port 2 is none
+-----+ You have opted to disable serial port 2.
| WARNING |
+-----+ IT IS HIGHLY RECOMMENDED THAT SLAN BE CONFIGURED
          WITH TWO SERIAL LINE CONNECTIONS TO ELIMINATE A
          SINGLE POINT OF FAILURE IN THE SYSTEM.

Would you like to reconsider this selection? (yes or no) [yes]? n <<<<<< just say no! we
don't use SLAN anyway
Enter the serial port 1 device name for secca01 [/dev/ttyb]:
Enter the serial port 2 device name for secca01 [none]:
+-----+ You have opted to disable serial port 2.
| WARNING |
+-----+ IT IS HIGHLY RECOMMENDED THAT SLAN BE CONFIGURED
          WITH TWO SERIAL LINE CONNECTIONS TO ELIMINATE A
          SINGLE POINT OF FAILURE IN THE SYSTEM.

Would you like to reconsider this selection? (yes or no) [yes]? n

*****
*** Board Configuration ***
*****

*** Board Configuration for prica01 ***

How many boards on prica01 (0 - 16) [2]?
<<<<<<<< standard configuration has two boards on both primary and secondary
<<<<<<<< if you're not sure how many boards your system has do a
<<<<<<<< "grep pcimb /etc/path_to_inst" -- number of lines returned is number of boards.

Choose SS7 protocol for board 0 on prica01
1) A7
2) C7
3) CH7
4) J7
Select protocol [A7]: <<<<<<<<< always A7 (ANSI SS7 protocol)

Choose board type for board 0 on prica01
1) CC0200 <<<<<<<<<< always choose this board type for T1 cards
2) PC0200
3) CC0202
4) CC0203
5) PS0204
6) CC0205
Select board type: 1

Port Type for prica01, board 0, port 0
1) E1
2) T1
3) J1
Enter choice: 2 <<<<< always choose T1

Frame Format for prica01, board 0
1) ESF
2) D4
Enter choice: 1 <<<<<<<<<< always choose ESF

```

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Line Code for prica01, board 0

- 1) B8ZS
- 2) AMI

Enter choice: **1** <<<<<<<<< always choose B8ZS

T1E1\_1 Clock Source Mode for prica01, board 0

- 1) Master
- 2) Slave
- 3) Reference
- 4) None

Enter choice: **2** <<<<<<< always choose Slave clocking

Choose T1 application type for board 0 on prica01

- 1) DS-1
- 2) DSX-1

Select T1 application type: **1** <<<<<<< always choose DS-1

Choose SS7 protocol for board 1 on prica01

- 1) A7
- 2) C7
- 3) CH7
- 4) J7

Select protocol [A7]: **1** <<<<<<<< same questions for the second board

Choose board type for board 1 on prica01

- 1) CC0200
- 2) PC0200
- 3) CC0202
- 4) CC0203
- 5) PS0204
- 6) CC0205

Select board type: **1** <<<<<<<<<<< CC0200

Port Type for prica01, board 1, port 0

- 1) E1
- 2) T1
- 3) J1

Enter choice: **2** <<<<< T1

Frame Format for prica01, board 1

- 1) ESF
- 2) D4

Enter choice: **1** <<< ESF

Line Code for prica01, board 1

- 1) B8ZS
- 2) AMI

Enter choice: **1** <<<< B8ZS

T1E1\_1 Clock Source Mode for prica01, board 1

- 1) Master
- 2) Slave
- 3) Reference
- 4) None

Enter choice: **2** <<<<<<< Slave clock

Choose T1 application type for board 1 on prica01

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```

1) DS-1
2) DSX-1
Select T1 application type:  1  <<<<<< DS-1

*** Board Configuration for secca01 ***

How many boards on secca01 (0 - 16) [2]?
<<<<<<<< now repeat the whole process for the boards on the secondary side
<<<<<<<< A7 protocol, CC0200,
<<<<<<<< T1, ESF, B8ZS, Slave clocking, DS-1

Choose SS7 protocol for board 0 on secca01
1) A7
2) C7
3) CH7
4) J7
Select protocol [A7]:

Choose board type for board 0 on secca01
1) CC0200
2) PC0200
3) CC0202
4) CC0203
5) PS0204
6) CC0205
Select board type:  1

Port Type for secca01, board 0, port 0
1) E1
2) T1
3) J1
Enter choice:  2

Frame Format for secca01, board 0
1) ESF
2) D4
Enter choice:  1

Line Code for secca01, board 0
1) B8ZS
2) AMI
Enter choice:  1

T1E1_1 Clock Source Mode for secca01, board 0
1) Master
2) Slave
3) Reference
4) None
Enter choice:  2

Choose T1 application type for board 0 on secca01
1) DS-1
2) DSX-1
Select T1 application type:  1

Choose SS7 protocol for board 1 on secca01
1) A7
2) C7

```

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```

3) CH7
4) J7
Select protocol [A7]:
<<<<<<< one more time for the second board on the secondary side
<<<<<<< A7 protocol, CC0200,
<<<<<<< T1, ESF, B8ZS, Slave clocking, DS-1

Choose board type for board 1 on secca01
1) CC0200
2) PC0200
3) CC0202
4) CC0203
5) PS0204
6) CC0205
Select board type: 1
How many ports on board 1 on secca01 (1 - 16)? 4

Port Type for secca01, board 1, port 0
1) E1
2) T1
3) J1
Enter choice: 2

Frame Format for secca01, board 1
1) ESF
2) D4
Enter choice: 1

Line Code for secca01, board 1
1) B8ZS
2) AMI
Enter choice: 1

T1E1_1 Clock Source Mode for secca01, board 1
1) Master
2) Slave
3) Reference
4) None
Enter choice: 2

Choose T1 application type for board 1 on secca01
1) DS-1
2) DSX-1
Select T1 application type: 1

*****
*** Unix System Configuration ***
*****

/etc/profile needs to include the following lines:
. /etc/Signalware/SignalwareProfile
Do you want this automatically added? (yes or no) [yes]? <<<<<<<< always answer yes

/etc/services needs to include the following lines:
### Signalware will use a block of UDP ports after omni_mr.
### The number of ports used depends on the largest SHM value.
### The number of ports can be calculated by: (SHM * 4) + 4.
### Do not use UDP ports between omni_mr and (omni_mr + (SHM * 4) + 4).
sw_df      21000/udp  omni_df  # Signalware Distributed Files
sw_mr      21001/udp  omni_mr  # Signalware Message Relay

```



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```
sw_gui          10000/tcp          # Signalware Java GUI server
Do you want this automatically added? (yes or no) [yes]?

/etc/inetd.conf needs to include the following lines:
### Signalware Java GUI Server.
sw_gui          stream tcp        nowait  root    /opt/omni/bin/start_jguiserver
start_jguiserver
Do you want this automatically added? (yes or no) [yes]? <<<<<<<< always answer yes

Send configuration information to peer CEs (yes or no) [no]?

Configuration Section
=====
The actual configuration of Signalware will be done based on your answers.
Continue with the configuration (yes or no) [yes]?
+-----+
| INFO |   Completed configurePlatform successfully.
+-----+
prica01#                               prica01#
prica01#

<<<< That concludes configurePlatform.  Now it's time to run configureNodes.
prica01#
```

**Step 4** Copy configurePlatform to the secondary side:

```
scp configurePlatform.Conf <secca hostname>:/opt/omni/conf
```

**Step 5** Enter the root password when prompted.



**Note**

For the secondary CA, the ConfigurePlatform will ask if you want to use the configuration created on the primary CA. Answer **yes**.

**Step 6** Type the following command to run configureNodes.

```
prica01# configureNodes -f a7n1 a7

<<<<<<< The -f option does a "clean" first
+-----+ configureNodes /main/sw8/sw8spl/9
| INFO |   OMNI_HOME=/opt/omni
+-----+ SHM=225
+-----+
| INFO |   Cleanup was performed for shared memory files 225.
+-----+

Do you wish to configure A7IU? (yes or no) [yes]?
<<<<<<< CRITICAL STEP -- this sets up the omni ISUP manager process
<<<<<<< If you do not answer yes you will not be able to make SS7 calls.
<<<<<<< If the script does not prompt for this you do not have the
<<<<<<< correct omni software installed or the software was not properly
<<<<<<< installed.

prica01#
```

**Step 7** Return to the main body of the procedure, Install the Primary EMS section in Chapter 1.

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# General Software Installation Procedure Reference

---

Use this appendix as a reference when performing the Cisco BTS 10200 Softswitch Application Installation procedure.

## Installation Scenarios

This section describes the software installation scenarios that the installation process can support. Each installation scenario is determined by the options entered on the command line at the time the installation process is invoked. Scenarios are also determined by the parameter values supplied in the `optcall.cfg` configuration file.

Installation validates the system network interface, and DNS setup, at the beginning of the installation process. If no errors are found, the Cisco BTS 10200 Softswitch application software is installed on the Call Agent (CA), Feature Server (FS) AIN, and plain old telephone service (POTS). The Cisco BTS 10200 Softswitch application software, and Oracle databases (DB), are also installed on your EMS machines.

At the end of the installation, you should get a message indicating whether the installation completed successfully, or failed. If the installation was successful, invoke the platform control program to start the application. If the installation was not successful, an error message will result when you try to invoke the platform program.

## Supported Command Line Options

This section describes all available command line options in Release 3.3 for a customized installation. The entire installation process is controlled by `install.sh`. The available options are:

- `Install.sh`
- `Install.sh -aponly`
- `Install.sh -clearshm`
- `Install.sh -createdb`
- `Install.sh -dbonly`
- `Install.sh -force`
- `Install.sh -help`

**CISCO CONFIDENTIAL****Install.sh**

This is the default installation option. It validates system network interfaces and DNS setup, at the beginning of the installation process. If no errors are found, it installs all Cisco BTS 10200 Softswitch software packages on the CA, FS, and EMS machines, which includes all Oracle DB packages. The Cisco BTS 10200 Softswitch packages are described in the “Package Information” section.

**Install.sh –aponly**

This installation program validates system network interface, and DNS setup, at the beginning of the installation process. If there are no errors found, then it installs the Cisco BTS 10200 Softswitch:

- CA/FS application software, but keeps the Shared-Memory DB intact, which means no provisioning is needed.
- EMS/BDMS application software, and Mysql DB, but keeps the Oracle DB intact, which means no provisioning is needed absolutely.

**Install.sh –clearshm**

Installation program validates system network interface, and DNS setup, at the beginning of the installation process. If no errors are found, then clean the Shared-Memory DB as follows:

- CA/FS—Clears Shared-Memory DB
- EMS—Not applicable

If this option is used on the CA/FS, you must use “Install.sh –cleardb” or “Install.sh –createdb” to cleanup the Oracle DB.

**Install.sh –cleardb**

This installation program validates system network interface, and DNS setup, at the beginning of installation process. If no errors are found, then all provisioned data is removed from the Oracle DB as follows:

- CA/FS—Not applicable
- EMS—Remove all provisioned data with schema untouched

If this option is used on the EMS, you must use “Install.sh –clearshm” to cleanup CA/FS Shared-MemoryDB.

**Install.sh –createdb**

This installation program validates system network interface, and DNS setup, at the beginning of installation process. If no errors are found, it then re-creates the Oracle DB as follows:

- CA/FS—Not applicable
- EMS—Re-creates Oracle DB schema and data

If this option is used on the EMS, you must use “Install.sh –clearshm” to cleanup the CA/FS Shared-Memory DB.

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### Install.sh –dbonly

This installation program validates system network interface, and DNS setup, at the beginning of the installation process. If no errors are found, re-create Oracle DB as follows:

- CA/FS—Not applicable
- EMS—Installs Oracle DB and creates new DB schema

If this option is used on the EMS, you must use “Install.sh –clearshm” to cleanup CA/FS Shared-Memory DB.

### Install.sh –force

This installation bypasses validation process on all required parameters, system network interfaces, and DNS setup. It installs the Cisco BTS 10200 Softswitch application software on the CA, FS AIN and POTS; and installs the Cisco BTS 10200 Softswitch application software, and the Oracle D,B on the EMS machines.

This scenario is needed to support cases where systems must be installed before the network, and DNS, can be setup.

**Note**

The validation process can still run after installing the Cisco BTS 10220 Softswitch software. Run the *checkCFG* program to validate that the DNS configuration in the *optical.cfg* file is correct.

### Install.sh –help

This option prints help information when needed if you are not sure about choosing installation options.

## Package Information

The Cisco BTS 10200 Softswitch application software is divided into packages. Each package pulls files together according to their logical relationships and dependencies. The installation uses the SUN packaging utility to install packages to guarantee the correctness of software delivery.

Packages in a Call Agent/Feature Server system are listed below:

- BTSain—AIN Feature Server application platform
- BTSbase—EMS base directory structure
- BTSca—Call Agent application platform
- BTSscalib—Call Agent specific shared libraries
- BTSfalib—AIN Feature Server specific shared libraries
- BTSfplib—POTS/CTX Feature Server specific shared libraries
- BTSfslib—Common Feature Server shared libraries
- BTSfrg—Fault generator
- BTShmn—Hardware monitor
- BTSinst—Installation related programs
- BTSjava—SUN JDK package

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- BTSlib- Common shared libraries
- BTSoamp—Primary EMS applications (java classes)
- BTSoms—OMS hub related files and directories
- BTSspots—POTS/CTX Feature Server application platform
- BTSsmg—OMS system manager
- BTSsnmp—SNMP agent and its information base
- BTStools—CA/FS related utilities/tools
- BTSutil—Common java classes and libraries

Packages in an EMS system are:

- BTSbase—EMS base directory structure
- BTSbill—Prepopulated billing data
- BTSbdms—Bulk Data Management application platform
- BTSeams—EMS application platform
- BTSeamsql—Second mysql DB instance for logging activities
- BTSfmg—Fault manager
- BTSfrg—Fault generator
- BTShmn—Hardware monitor
- BTSinst—Installation related programs
- BTSjava—SUN JDK package
- BTSlib—Common shared libraries
- BTSmysql—Mysql database
- BTSoamp—Primary EMS applications (java classes)
- BTSoms—OMS hub related files and directories
- BTSora—Oracle database engine
- BTSorada—Oracle database schema and data
- TSoradm—Oracle administrative scripts and sql files
- BTSsec—Security and user account
- BTSsmg—OMS system manager
- BTSsnmp—SNMP agent and its information base
- BTSuti—Common java classes and libraries

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# Installation Steps and Utilities

This section describes the programs and utilities for software installation and application management.

## Install.sh

This script installs the EMS application software, provisioning database, and the billing database on the EMS machines with Solaris 2.8. It also installs partial EMS applications, such as OMS hub, Fault Generator, Hardware Monitor, Call Agent and Feature Server Application software on CA/FS machines with Solaris 2.8.

### Installing a Fresh Software Load With Jumpstart

- Make sure the DNS server and local cache daemon are configured and in service
- Make sure the optcall.cfg is configured according to the network site survey sheets
- Run checkCFG to validate parameters values in the optcall.cfg prior to installation (this is done by installation as well)
- Install the application software
  - `cd /net/yensid/rel30/<release>/Build`
  - `./install.sh`

### Upgrading a Software Load to a New Load Without Schema or Internal Data Structure Changes

Perform the following steps to upgrade a software load to a new load without any schema or internal data structure changes:

- 
- |               |                                                         |
|---------------|---------------------------------------------------------|
| <b>Step 1</b> | Type:                                                   |
|               | <code>cd /net/yensid/rel30/&lt;release&gt;/Build</code> |
| <b>Step 2</b> | Type:                                                   |
|               | <code>./install.sh -aponly</code>                       |
- 

### Upgrading a Software Load to a Newer Load With Schema or Internal Data Structure Changes

You have two choices available depending on what system is upgraded:

- For a lab system, a fresh installation is recommended since outage is not a concern and re-provisioning of data can be done afterwards in hours.
- For a production system, a comprehensive upgrade procedure must be followed. It may also involve OS and OMNI SS7 stack upgrades. This procedure is available only when the software release is ready to be shipped.

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# Platform

This section details the platform script.

### Usage:

```
/etc/init.d/platform -h  
/etc/init.d/platform start [-noping | -noirdp | -bypass] [-i PROCESS]  
/etc/init.d/platform stop [-f | -i PROCESS]
```

### Description:

start—start all BTS 10200 processes.  
stop—stop BTS 10200 application instances  
-bypass—start application without error checking (includes -noping, -noirdp).  
-noping—start application without mate pinging.  
-noirdp—start application using static routing.  
-h help—print this usage information.  
-f force—terminate all Cisco BTS 10200 Softswitch processes.  
-i instance—Cisco BTS 10200 Softswitch application instance.

### Location:

/opt/ems/utils/platform

This script is used for starting and terminating EMS, CA, and FS, applications. Applications include:

- omni
- mysqld (provisioning and BILLING)
- OMSHub
- platform processes
- a. On Element Manager:
  - EM01
  - BDMS01
- b. On Call Agent and Feature Server:
  - CAxxx where xxx is the instance number, default is CA146
  - FSAINyyy where yyy is the instance number, default is FSAIN201
  - FSPTCzzz where zzz is the instance number, default is FSPTC235

### Examples:

- 
- |               |                                                                                                                           |
|---------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Step 1</b> | To start all CA, FS, EMS Applications, plus omni, mysql, enter: <b>platform start</b>                                     |
| <b>Step 2</b> | To start all CA, FS, EMS Applications, plus omni, mysql, without error checking, enter: <b>platform start -bypass</b>     |
| <b>Step 3</b> | To start all CA, FS, EMS Applications, plus omni, mysql, without checking for irdp, enter : <b>platform start -noirdp</b> |
| <b>Step 4</b> | To stop all CA, FS, EMS Applications, plus omni, mysql, enter: <b>platform stop</b>                                       |



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**Step 5** To start an individual CA, FS, EMS Application, enter:

**platform start -i APP** -- where APP can be:

- a. omni
- b. mysql
- c. EM01
- d. BDMS01
- e. CA146
- f. FSAIN201
- g. FSPTC235

**Step 6** To stop an individual CA, FS, EMS Application, enter:

**platform start -i APP** -- where APP can be:

- a. omni
- b. mysql
- c. EM01
- d. BDMS01
- e. CA146
- f. FSAIN201
- g. FSPTC235

## nodestat

This utility prints useful information in a tabular format with primary and secondary information. Table B-1 explains what the nodestat command displays.

### Usage:

**nodestat** (at any commandline prompt)

**Table B-1 Nodestat Command Display**

| Status  | Explanation                                                                                            |
|---------|--------------------------------------------------------------------------------------------------------|
| N/A     | not applicable                                                                                         |
| OOS     | out of service: means the application is not running                                                   |
| INS     | in-service: means the application is running normally                                                  |
| UNDEF   | undefined (applicable to OMNI only): means the shared memory is not defined                            |
| UNCONF  | unconfigured (applicable to OMNI only): means the OMNI is not configured for the defined shared memory |
| ACTIVE  | an application instance is running in normal ACTIVCE state                                             |
| STANDBY | an application instance is running in normal STANDBY state                                             |
| FAULTY  | an application instance is running in abnormal FAULTY state                                            |
| UNKNOWN | nable to get application instance state information                                                    |

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## OptiCall

This utility properly orders each machine in a Cisco BTS 10200 Softswitch system when platforms are brought into service. This is an enhancement on top of the platform script. Use this utility only after an initial system installation and an upgrade.

**Usage:**

```
OptiCall {start | stop | status}
```