Installation Guide

iPlanet BillerXpert 4.6
Consolidator Edition

April 2002

Contents

An Introduction to BXCE

This chapter provides an overview of iPlanet's BillerXpert Consolidator Edition (BXCE) product.

This chapter contains the following sections:

- Introduction
- BXCE Features
- Internet E-Commerce Advantages

Introduction

The BXCE application enables a consolidator to receive bill summaries from multiple billers and display them for the customer in a consolidated manner. This enables consolidators to reach a wider audience, strengthen customer relationships, and create new revenue streams by giving their customers one place to pay all their bills online. Some of the benefits associated with BXCE are:

- Increased customer base
- Increased customer satisfaction
- Unlimited Access
- Streamlined bills
- Customer-specific profiles
- Convenient one-click payment

BXCE Features

iPlanet's BXCE offers the following features:

- Convenient one-click payment

- Bill Summaries of combined Billers displayed for the customer

- Customer self-service

In addition these features, BXCE also offers:

- Net Economy Features

- End User Features

- Administration Features

You can read more about these in the following sections.

Net Economy Features

iPlanet's BXCE enables companies to provide bill presentment and payment services required to compete in the Net Economy. The benefits of these services include:

- Offering customers increased financial control and bill payment convenience

- Building customer loyalty through service personalization and customer interaction

- Presenting significant new revenue opportunities such as targeted marketing, up-selling and cross-selling of additional products and services

End User Features

iPlanet's BXCE offers the following end-user features:

- Customer registration and login and logout fields

- Customer-managed profile information and bill payment information

- Customer bills based on specific search criteria

- Customer account status

- Customer payment history

- Customer Demand and Deposit Account (DDA)
- Customer-specific bill summary
- OFX Payment and payment vendor support.

Administration Features

iPlanet's BXCE offers the following administration features:

- Payment management
- Automatic Data-loading from existing OFX compliant billers
- Customer profile management

Internet E-Commerce Advantages

iPlanet's BXCE enables you to provide bill presentment and payment services required to compete in a global Net Economy. These benefits are:

- User Enrollment and Registration
- iPlanet's BXCE supports flexible registration processes so a customer can manage their own account information securely. Customers can provide payment information and change preferences based on their personal requirements.
- Consolidated Bill Presentment
- iPlanet's BXCE enables a consolidator to present the customer with a statement that combines customer-specific billers in one convenient location. This eliminates the confusion of multiple statements and allows the customer to make one payment to cover a variety of expenses.
- Increased User Traffic
- Once installed, iPlanet's BXCE increases user traffic providing the opportunity for target-specific advertising and marketing.

Preinstallation Tasks

This chapter describes planning and tasks you must perform before you can install BillerXpert Consolidator Edition (BXCE). It includes installation and configuration tasks for the Oracle RDBMS that stores the BXCE information.

This chapter contains the following sections:

- Unix System Tuning

- Hardware and Software Requirements

- Installation Overview

- Installing Oracle Enterprise Server 8.1.7

Unix System Tuning

In applications like BXCE where Client/Server connections are TCP/IP, it is sometimes necessary to re-adjust the values of the WAIT-QUEUE (i.e. listen backlog queue) for incoming TCP/IP connections. Consult your Unix vendor documentation for proper tuning of related system parameters.

Table 2-1 lists some of the Unix utilities available for measuring system activities:

Table 2-1 Unix System Utilities

Utility	Description
sar	System Activity Reporter
vmstat	Report Virtual Memory Statistics
netstat	Show Network Statistics
iostat	Show I/O Statistics
nfsstat	Show Network File System Statistics

Hardware and Software Requirements

The following table shows the hardware and software requirements for installing and using BXCE:

Table 2-2 Hardware and Software Requirements

Hardware Platform:	Sun 4u
Operating Systems:	Sun Solaris Version 2.6 and 2.8
Memory:	512 MB RAM minimum for the Sun workstation. Limited to one BXCE Server per machine. It's recommended to install the maximum number of memory for multi-tier configurations.
Software Requirements:	Oracle8 Enterprise Server Release 8.1.6

Table 2-2 Hardware and Software Requirements

Disk Space:	Approximately:
	• 500MB for Staging area
	• 500MB for Installation of all components
	• 2 GB hard disk space available for database
	(Oracle database installation. Note: this size may vary depending on the amount of data in an existing database)
	Additional Suggestions:
	• 4 GB for production after reclaiming the staging area (Disk space for data is in addition to this total)
Peripherals:	CD-ROM drive for installation.

Installation Overview

This section provides an overview of the tasks required to install BXCE. The tasks are defined as:

- Installation Checklist
- Installation Order
- Installation Preparation

Installation Checklist

The checklist below lists the tasks you should implement to ensure a successful installation. You can refer back to this checklist as you complete each stage of your installation. Be sure to perform each task in the order presented in the checklist.

- Make sure your system meets all hardware and software requirements.
- Make sure you have sufficient disk space and memory.
- Make sure you have `root` user access.
- Make sure you extract the software from the distribution media.
- Modify the /etc/system configuration parameters for Oracle.
- Make sure you install Oracle.

- Make sure Oracle is running.

- Make sure you install all components in the correct order.

Installation Order

For a successful installation of BXCE components, install the BXCE components in the following order:

- Oracle

- iWS (Web Server)

- iAS (Application Server)

- BXCE

Installation Preparation

To successfully install BXCE

- Confirm disk space

- Unload distribution media

- Extract Software

Confirm Disk Space

It is recommended that 3 GB of disk space be available for installing BXCE components. To verify hat you have sufficient disk space, enter the following command:

```
# df -k
```

Based on the results, select the appropriate partition (directory) which contains sufficient disk space in order to proceed with the installation.

Unload Distribution Media

Depending on the system configuration and deployment, you may need to work in a temporary directory called a staging area to extract the contents of the distribution area. To create a staging area directory, for example, enter the following command:

```
# mkdir /export/csx_stage
```

The result will be a directory in which to extract the BXCE CD contents.

Extract Software

Install BXCE CD in the CDROM system unit. From a UNIX window, extract the contents from the CDROM location using the `tar` command. Below is an example of extracting the software in the example stage area.

```
# tar xvf /cdrom/csxinstall-4.5- domestic.tar/export/csx_stage/.
```

The system creates an installation directory named *bxinstall* in your staging directory as well as directories for the required products (iAS, iWS, install scripts).

Installing Oracle Enterprise Server 8.1.7

BXCE requires and is configured to use Oracle8 Enterprise Server. Some sites may already have an Oracle8 Enterprise Server installed, in which case, if your Oracle license allows additional applications, you can use your existing Oracle installation. The installation and configuration tasks are:

- Configure Shared Memory

- Oracle Server Instance Procedures

- Tablespaces

Each section details the substasks associated with each configuration tasks in the following sections.

Configure Shared Memory

The following describes how to configure system shared memory for use with BXCE.

- Switch to `root` user

    ```
    # su root
    ```

- Make a backup copy of the /etc/system file.

    ```
    # cd /etc
    ```

    ```
    # cp system system.backup
    ```

- Edit the /etc/system file to add the following lines near the end of the file. These lines should added after the comments about "set". This is a critical system file. Caution should be taken when editing and it is recommended to double check the edits prior to rebooting the system.

    set shmsys:shminfo_shmmax=4294967295

    set shmsys:shminfo_shmmin=1

    set shmsys:shminfo_shmmni=100

    set shmsys:shminfo_shmseg=10

    set semsys:shminfo_semmns=200

    set semsys:shminfo_semmni=70

- After you edit /etc/system, you must reboot your machine. Type the following at command line:

    ```
    # init 6
    ```

Oracle Server Instance Procedures

This section describes the typical Oracle procedures. These procedures supplement but are not intended to replace the RDBMS installation documentation included with your Oracle software. Refer to the RDBMS documentation and *README files* for detailed installation and configuration issues concerning the database. The information in this section covers a simple and example installation

Creating a UNIX Oracle User

To create a UNIX Oracle user, enter the following commands:

- Switch to root (super) user)

    ```
    # su - root
    ```

- Make a directory for the Oracle user

    ```
    # mkdir <Oracle-dir>
    ```

    For example, mkdir /export/Oracle

- Create the dba group. This is a requirement for Oracle.

    ```
    # groupadd dba
    ```

- Create the Oracle user, assign the working directory, the Unix shell and add the user to the dba group. The command is:

  ```
  # useradd -d <Oracle_dir> -g dba -s /bin/csh <UNIX_Oracle>
  ```

  For example,

  ```
  useradd -d /export/Oracle -g dba -s /bin/csh oracle
  ```

  In this example, the user oracle is added with /export/Oracle as the working directory and is assigned to the dba group.

- Grant ownership of the Oracle installation directory to the Unix oracle user. The command is:

  ```
  # chown <UNIX_Oracle> <Oracle_dir>
  ```

  For example, chown oracle /export/Oracle provides the directory ownership.

- Change group ownership of the Oracle installation directory to the dba group. The command is:

  ```
  # chgrp dba <Oracle_dir>
  ```

  For example, chgrp dba /export/Oracle.

- Set the Oracle user Unix password. The command is:

  ```
  # passwd <Unix_Oracle>
  ```

  For example, passwd oracle. Enter and record the password which you will need in order to login as the Unix Oracle user.

- Exit the system and login as the Oracle Unix user

Proceed to Setting up the Oracle Environment variables.

Setting Environment Variables

It is recommended Set the following environment variables as the Oracle Unix user. These variables are required as part of the Oracle8 installation.

ORACLE_HOME - This variable defines the directory where Oracle software is installed. For example:

```
% setenv ORACLE_HOME /export2/oracle8/app/oracle/product/817
```

ORACLE_SID - This is the unique identifier for a physical Oracle database. Pick a value for ORACLE_SID that is unique, such as *CSX*. For example:

```
% setenv ORACLE_SID CSX
```

Installing Oracle

For purposes of providing an example, the *typical* installation option will be selected and the appropriate responses provided. This section is not intended to replace the installation instructions provided with the Oracle Installation manual. It is recommended you read the Oracle Installation manual for the specifics of these options and installation selections.

An example installation sessions begins with:

- Access the Oracle installation files from CDROM or your system. For example,

```
hostname% cd /export4/oracle817
```

- Invoke the runInstaller program For example,

```
hostname% ./runInstaller
```

The system will display:

```
Initializing Java Virtual Machine
from./stage/Components/oracle.swd.jre/1.1.8.10/1/DataFiles/Ex
panded/jre/solaris/bin/jre.

Please wait...
```

- After a few moments, the *Oracle Universal Installer* window will appear

- On the Installer window, select `Next`

- A dialog will appear asking to verify the source and destination of the Oracle files.

  For our example, the Source directory is `/export4/oracle817` and the destination directory is `$ORACLE_HOME` `(/export2/oracle8/app/oracle/product/817)`

- If the locations are correct, select `Next`.

- Type in the Unix group name, **dba** and select `Next`.

- For first time installation, you will be required to run a script as `root`.

  For our example,

```
% cd /tmp/OraInstall
```

```
% su
```

```
# ./orainstRoot.sh
```

```
# exit
```

Select the `Retry` button

- You will be asked to select the available products,

  Select Oracle8i Enterprise Edition 8.1.6

- You will be asked to select Installation types,

  Select typical.

- Continue with the installation by selecting the Next button.

- You will be asked to provide a *Global database name.*

  For our example, type `CSX`

- You will be asked to provide a file location for the actual data.

  In our example, we select the same location as `$ORACLE_HOME`
  `(/export2/oracle8/app/oracle/product/817)`

NOTE   Depending on your deployment and database size requirements, a
             dedicated directory may the appropriate selection.

- Begin the installation by selecting the Install button.

- Upon completion of the installation, you will be asked to run the `root.sh`
  script which creates links to specific directories.

  For our example, we navigate to the Oracle install location, switch as root and
  invoke the script as follows:

```
% cd $ORACLE_HOME
```

```
# su
```

```
# ./root.sh
```

```
# exit
```

- The *Configuration Tools* dialog displays and the *Net8 Configuration Assistant* is
  launched as well as the *Database Configuration Assistant.*

- A *Database Creation Progress* dialog is displayed which completes the installation. Upon success, press the OK button on the Database Configuration Assistant.

- On the Oracle Universal Installer, select the Exit button to exit the Installer.

Stopping and Restarting the Oracle Listener Program

To ensure Oracle is installed and running properly, it is recommended you start and stop the Oracle listener program as follows:

```
% $ORACLE_HOME/bin/lsnrctl stop

% $ORACLE_HOME/bin/lsnrctl start
```

Several messages are displayed on the screen as the listener program is started. Read the messages to verify that your ORACLE_SID is being listened to successfully.

Stopping and Restarting Oracle

To ensure Oracle is installed and running properly, it is recommended you shutdown and restart Oracle by entering the following commands,

- Shutdown

```
% $ORACLE_HOME/bin/svrmgrl

SVRMGR> connect internal

connected

SVRMGR> shutdown immediate

SVRMGR> exit

% $ORACLE_HOME/bin/lsnrctl stop
```

- Startup

```
% $ORACLE_HOME/bin/svrmgrl

SVRMGR> connect internal

connected to an idle instance

SVRMGR> startup

SVRMGR> exit

% $ORACLE_HOME/bin/lsnrctl start
```

To ensure that the Oracle database is running, enter the following command:

```
% ps -ef | grep ora_
```

The system displays the process status list. Look for the Oracle processes. Not meant to be a complete list, below are sample processes that should display from the process query,

```
ora_reco_B2B
```

```
ora_lgwr_B2B
```

```
ora_pmon_B2B
```

```
ora_dbw0_B2B
```

```
ora_smon_B2B
```

```
ora-db-ckpt-B2B
```

```
...
```

```
...
```

Verifying Oracle

To verify that Oracle database is accessible and working properly, use the sqlplus command and open the database as system/manager. The following example demonstrates how to verify this. The steps are:

- $ORACLE_HOME/bin/sqlplus system/manager@$ORACLE_SID

  For example,

  hostname% $ORACLE_HOME/bin/sqlplus system/manager@CSX;

- The database opens a connection and you should see the following:

```
SQL*Plus: Release 8.1.7.0.0
```

```
(c) Copyright 1999 Oracle Corporation. All rights reserved.
```

```
Connected to:
```

```
Oracle8i Enterprise Edition Release 8.1.7.0.0 - Production
```

```
With the Partitioning option
```

```
JServer Release 8.1.7.0.0 - Production
```

```
SQL>
```

- Log out of the database by typing the exit command. For example,

  SQL> exit

Tablespaces

The following steps complete the preparation of Oracle for BXCE.

Create Tablespaces

You must create two tablespaces (TS01 and TS02) and the associated data files must be generated so that the BXCE installer can create the database tables required. To accomplish this tasks, enter the following commands:

- Check to see if the Oracle tablespaces TS01 and TS02 already exist.

- Login as the UNIX Oracle user and then use `sqlplus system/manager` to enter the following inquiries:

```
SQL> select * from SYS.DBA_TABLESPACES where TABLESPACE_NAME =
'TS01';

SQL> select * from SYS.DBA_TABLESPACES where TABLESPACE_NAME =
'TS02';
```

If neither query returns any rows, the corresponding tablespaces *do not* exist and must be created before installing BXCE.

Enter the following SQL statements to create the required tablespaces. For this example, 256MB will be allocated to each tablespace. The *<datafile path>* represents the absolute path for the new tablespace filename. For our example, we select `$ORACLE_HOME./dbs` as the location for the tables. The example steps are:

- Create Oracle tablespaces TS01 and TS02

```
SQL> create tablespace TS01 datafile '$ORACLE_HOME/dbs/TS01' size
256M;

SQL> create tablespace TS02 datafile '$ORACLE_HOME/dbs/TS02' size
256M;

SQL> exit
```

This concludes the pre-installation Oracle setup that is required by BXCE. For distributed or Production systems, it is recommended you proceed to the Production Install chapter.

Production Install

Billerxpert Consolidator Edition (BXCE) provides all the required components as part of the product offering. Each individual component contains an installation program which provides installation flexibility for a distributed configuration. This chapter describes the installation steps for each of the required products and configuration options needed for installation.

This chapter presents the following topics

- Distributed Configuration
- Environment variables
- Component Installation
- BXCE Installation
- Verifying Installation

Distributed Configuration

The Distributed Configuration, as shown below, is an example of a typical BXCE deployment. Each product is installed individually, on separateBXCE machines and configured to communicate over the network through the Network File System (NFS). In this scenario, the installation will be done as follows:

• Machine 1: Web Server (iWS)

• Machine 2: BXCE Components, Directory Server, Application Server.

• Machine 3: Oracle RDBMS

Figure 3-1   Distributed Configuration Option
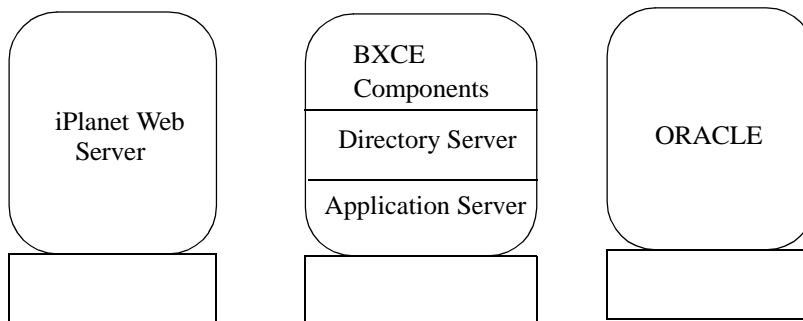
Environment Variables

Plan your environment variables before starting the BXCE installation. The BXCE installer creates an environment variable shell script using the directory paths you specify during the installation. The table below lists two of the BXCE environment variables with example values used throughout this guide.

Table 3-1 BXCE Environment Variables

Environment Variable	Example Value
CSX_HOME	/export/csx/csxpert

If you have previously set some of the environment variables in the BXCE user's shell, the values appear as default values in the installer screens. You can accept the default values shown or enter the required values for the following:

Table 3-2 Component Environment Variables

Environment Variable	Example Value
ORACLE_HOME	/export/oracle/app/oracle/product/817
ORACLE_SID	CSX
NAS_HOME	/export/ias6
DOC_ROOT	/export/suitespot/docs
WEB_SERVER	/export/suitespot/https-csx
PATH	$ORACLE_HOME/bin:/bin:/usr/bin:/usr/sbin:/usr/ccs/bin:/usr/X/bin:/usr/openwin/bin/X11:${PATH}

Component Installation

In the Production Install section of this guide, the BXCE files and required components were extracted unto a "stage" directory. In the same chapter, the Oracle system was pre-set for the BXCE install program, however, the Oracle system requires further preparation as well as installation of the various components in order to sucessfully install BXCE. This section continues in the following manner:

- Oracle Users

- iPlanet Web Server Installation

- iPlanet Application Server and Process Manager Installation

Oracle Users

Figure 3-1 depicts a system containing the Oracle system. It is assumed the Oracle software has been installed as noted in the Installing Oracle Enterprise Server 8.1.7 section of Chapter 2. The following steps complete the preparation of Oracle for BXCE.

Oracle Users

BXCE requires two (2) Oracle users in order to install successfully. In this section, the Oracle users are created and assigned the TS01 tablespace. The user names are only examples and not requirements for the system. Whatever names are chosen, please record them as the BXCE Installation program will request each of these names. The following steps create the users in Oracle:

Login as the UNIX Oracle user and then use `sqlplus system/manager` as follows. For example,

```
hostname% $ORACLE_HOME/bin/sqlplus system/manager
```

• The database opens a connection and you should see the following:

```
SQL*Plus: Release 8.1.7.0.0

(c) Copyright 2000 Oracle Corporation. All rights reserved.

Connected to:

Oracle8i Enterprise Edition Release 8.1.7.0.0 - Production

With the Partitioning option

JServer Release 8.1.7.0.0 - Production

SQL>
```

Proceed to create the user by entering the following SQL commands:

• System user. For example, `csp`.

SQL> create user csp identified by `csp`;

SQL> grant connect to `csp`;

SQL> grant resource to `csp`;

SQL> alter user `csp` default tablespace TS01 temporary tablespace temp;

• Payment user. For example, `vsign`.

SQL> Create user `vsign` identified by `vsign`;

SQL>grant connect to `vsign`;

SCL>grant resource to vsign;

SQL>alter user vsign default tablespace TS01 temporary tablespace temp;

• Exit sqlplus

```
SQL> exit;
```

Verifying Oracle Users

To verify that each user can access the Oracle database, use the `sqlplus` command and open the database as each user. The following example demonstrates how to verify the `bsp` user. The steps are:

- `$ORACLE_HOME/bin/sqlplus user/user@$ORACLE_SID`

  For example,

  ```
  hostname% $ORACLE_HOME/bin/sqlplus csp/csp@CSX
  ```

- The database opens a connection and you should see the following:

  ```
  SQL*Plus: Release 8.1.7.0.0

  (c) Copyright 2000 Oracle Corporation. All rights reserved.

  Connected to:

  Oracle8i Enterprise Edition Release 8.1.6.0.0 - Production

  With the Partitioning option

  JServer Release 8.1.7.0.0 - Production

  SQL>
  ```

- Log out of the database by typing the `exit` command

  For example,

  ```
  SQL> exit
  ```

- The database will disconnect and you will be returned to the system prompt

Repeat the above procedure for each of the Oracle Users ensuring that each can access the database.

iPlanet Web Server Installation

iPlanet's Web Server is an integral part and a requirement by BXCE. This section describes the installation of iPlanet Web Server.

To start the installation you need to access the BXCE "stage" directory as noted in the *Extract Software* section in Chapter 3. Under the iWS directory, invoke the setup script to begin the installation. The steps are:

- Go to the BXCE "stage" iWS directory. For example:

  ```
  hostname% cd /export/csx_stage/iWS
  ```

- Invoke the installation script `setup`. For example

  ```
  hostname% ./setup
  ```

The setup script will begin the installation and display the following message:

```
Sun Netscape Alliance

iPlanet Web Server Installation/Uninstallation

-----------------------------------------------------------

Welcome to the iPlanet Web Server installation program
This program will install iPlanet Server Products and the
iPlanet Console on your computer.

It is recommended that you have "root" privilege to
install the software.

Would you like to continue with installation? [Yes]:
```

Hit `Enter` and proceed with the installation.

Continue with the installation keeping in mind your environment and deployment considerations. For ease of installation and reminder of this section, the majority of the default settings will be accepted and noted as examples.

The installation proceeds with the following:

- ```
  Do you agree to the license terms? [No]:
  ```

  Type yes and hit `Enter`.

- ```
  Choose an installation type [2]:
  ```

  Hit `Enter`. Accepting the *Typical* installation.

- ```
  Install location [/usr/netscape/server4]:
  ```

  Type an install location. For example `/export/suitespot`

- ```
  Specify the components you wish to install [All]:
  ```

  Hit `Enter`. Accepting all the components

- ```
  Specify the components to install [1,2,3,4,5]:
  ```

  Hit `Enter`. Accepting all the components

- `Computer name [northgate.red.iplanet.com]:`

  Hit `Enter`. Ensuring the machine name and domain are correct.

- `System User [nobody]:`

  Type the system User. For example `root`.

- `System Group [nobody]:`

  Type user's group. For example `other`.

- `Run iWS Administration Server as [root]:`

  Hit `Enter`. Accepting the default user.

- `iWS Admin Server User Name [admin]:`

  Hit `Enter`. Accepting the default user.

- `iWS Admin Server Password:`

  Enter an admin password. For example `webadmin`. Confirm the password.

- `iWS Admin Server Port [8888]:`

  For example, enter `8001`

- `Web Server Port [80]:`

  Hit `Enter` to accept the default port or change to a different number. Record the port number as it will be requested during BXCE installation. In our example, we will be using 8080.

- `Web Server Content Root [/export/suitespot/docs]:`

  Hit `Enter`. Accepting the default setting.

- `Do you want to use your own JDK [No]:`

  Hit `Enter`. Accepting the default setting.

The install script will proceed with the installation and will display the following screen:

```
iPlanet Web Server Installation/Uninstallation

---------------------------------------------------------

Extracting Server Core...

Extracting Java Runtime Environment...

Extracting Java Support...
```

```
Extracting SSJS Support...

Extracting SSJS Database Support...

Extracting Web Publishing Support...

Extracting SNMP Support...

Extracting Upgrade Files...

. . .

Press Return to continue...

Go to /export/suitespot and type startconsole to begin
managing your servers.
```

As noted above, proceed to the iWS install directory and activate the Web server as follows:

• Go to the iWS install location. For example

```
hostname% cd /export/suitespot
```

• Activate the administration port. For example

```
hostname% https-admserv/start
```

The system will print the following:

```
iPlanet-WebServer-Enterprise/6.0 B05/18/2001 11:18

startup: listening to http://northgate, port 8001 as root
```

• Activate the Web Server port. For example

```
hostname% https-northgate.red.iplanet.com/start
```

The system will print the following:

```
iPlanet-WebServer-Enterprise/6.0 B05/18/2001 11:18

startup: listening to http://northgate.red.iplanet.com,
port 8080 as root
```

Several steps could be taken to verify that all ports are active such as searching for the processes of the Web Server and Administrator ports. To continue with the installation, proceed to the next section.

iPlanet Application Server

iPlanet's Application Server is the core component and key requirement of BXCE. iPlanet Process Manager has been included, bundled with the Application Server and installation program modified to install it. This section describes the steps.

To start the installation you need to access the BXCE "stage" directory as noted in the Extract Software section in Chapter 3.

NOTE	The $ORACLE_HOME and $ORACLE_SID must be set prior to this installation.

For example,

```
hostname% setenv ORACLE_HOME /export2/Oracle/app/oracle/product/817
hostname% setenv ORACLE_SID CSX
```

Under the iAS directory, invoke the setup script. The steps are:

* Go to the BXCE "stage" iAS directory. For example:

  ```
  hostname% cd /export/csx_stage/Solaris/iAS
  ```

* Invoke the installation script setup. For example

  ```
  hostname% ./setup
  ```

The setup script will begin the installation and display the following message:

```
iPlanet E-Commerce Solutions, A Sun-Netscape Alliance

iPlanet Server Products Installation/Uninstallation

----------------------------------------------------

Welcome to the iPlanet Server Products installation
program This program will install iPlanet Server Products
and the iPlanet Console on your computer.

It is recommended that you have "root" privilege to
install the software.

Would you like to continue with installation? [Yes]:
```

Hit Enter and proceed with the installation.

Continue with the installation keeping in mind your environment and deployment considerations. For ease of installation and reminder of this section, the majority of the default settings will be accepted and noted as examples.

The installation proceeds with the following:

- `Do you agree to the license terms? [No]:`

  Type yes and hit Enter.

- `Select the component you want to install [1]:`

  Hit Enter. Accepting the *iPlanet Servers.*

- `Choose an installation type [2]:`

  Hit Enter. Accepting the *Typical* installation.

- `Install location [/usr/iplanet/ias6]:`

  Type an install location. For example **/export/ias6**

- `Specify the components you wish to install [All]:`

  Hit Enter. Accepting the Server Product components.

- `Specify the components you wish to install [All]`

  Hit Enter. Accepting the Server Core components

- `Specify the components you wish to install [1, 2, 3]:`

  Hit Enter. Accepting Directory Suite components

- `Specify the components you wish to install [1, 2]:`

  Hit Enter. Accepting Administration Services components

- `Specify the components you wish to install [1, 2]:`

  Hit Enter. Accepting the Suite components

- `Specify the components you wish to install [1, 2, 3, 4, 5]:`

  Type **1, 2, 3, 4** and press Enter. Accepting most of the Suite Server components

- `Computer name [northgate.red.iplanet.com]:`

  Hit Enter. Ensuring the machine name and domain are correct.

- `System User [root]:`

  Hit Enter. Accepting root as the system user.

- `System Group [other]:`

  Hit `Enter`. Accepting other as the system group.

The iAS installer will proceed to verify and check for the proper and required OS patches. Upon success, the installer will continue as,

- `Do you want to register this software with an existing.`
  `iPlanet configuration directory server? [No]:`

  Hit `Enter`. Accepting the default setting.

- `Do you want to use another directory to store your data?`
  `[No]:`

  Hit `Enter`. Accepting the default setting

- `Directory server network port [389]:`

  Type a port number. For example **11024**

- `Directory server identifier [northgate]:`

  Hit `Enter`. Accepting the default setting.

- `iPlanet configuration directory server administrator ID`
  `[admin]:`

  Hit `Enter`. Accepting the default setting

- `Password:`

  Type a password. For example **admin**

- `Suffix [dc=red, dc=iplanet, dc=com]:`

  Enter `o=domainname`. For example, `o=iplanet.com`

- `Directory Manager DN [cn=Directory Manager]:`

  Hit **`Enter`**. Accepting the default setting

- `Password:`

  Type a password. For example **DManager**

- `Administration Domain [iplanet.com]:`

  Hit `Enter`. Accepting the default setting

- `Administration port [23428]:`

  Type a port number. For example **11025**

- Run Administration Server as [root]:

  Hit `Enter`. Accepting the default setting

- Product Key:

  Enter the iAS Product key which is noted on your BXCE cover letter.

- Enter the FULL PATH of the Web Server Instance to be used

  Type path to the Web Server. For example

  /export/suitespot/https-northgate

The system will display the following:

```
Application Server Installation/Uninstallation

------------------------------------------------

Configuring the iPlanet Web Server

Press ENTER to continue:
```

Hit Enter to continue.

- Username [admin]:

  Hit Enter. Accepting the default setting

- Password:

  Type a password. For example admin

- Do you want to enable I18N support for iAS? [No]:

  Type No. Accepting the domestic option.

- Press ENTER to continue:

  Hit Enter to continue.

The system will display the following:

```
iPlanet E-Commerce Solutions, A Sun-Netscape Alliance

iPlanet Server Products Installation/Uninstallation

--------------------------------------------------------

Extracting iPlanet core components...

Extracting iPlanet Server Products Core Components...

Extracting iPlanet Core Java classes...
```

```
Extracting Java Runtime Environment...

Extracting iPlanet Directory Server...

. . . .


Go to /export2/iplanet/ias6 and type startconsole to begin
managing your servers.
```

To complete the installation proceed to the next section, Configuring Application Server for Oracle Connectivity, as the Application Server needs to be configured to use Oracle as its database system.

Configuring Application Server for Oracle Connectivity

In order to complete the installation of the Application Server and setup for BXCE, a configuration script needs to be executed. This script is part of the Application Server and is located under the bin directory. This section describes the steps

To invoke the setup script, one must go to the iAS bin directory. The steps are:

- Go to the iAS bin directory. For example

  ```
  hostname% cd /export/ias6/ias/bin
  ```

- Invoke the connectivity script db_setup.sh. For example

  ```
  hostname% ./db_setup.sh
  ```

The connectivity script will begin and display the following message

```
iPlanet E-Commerce Solutions

Database Connectivity Setup

-----------------------------------------------

Please enter the iAS installation root directory:
```

Type the Application Server install location. For example /export/ias6

- Select the component you want to install ? (1/2) [1]:

  Type **2**. Selecting Third Party drivers for Oracle.

The script will continue by displaying the following message

```
iPlanet E-Commerce Solutions

Database Setup - Third Party JDBC drivers
```

```
-----------------------------------------------
```

- `Enter JDBC Driver Name [Driver1]:`

  Hit **Enter**. This will accept the default name

- `Enter Driver Classpath [Example:`
  `/export2/Oracle/app/oracle/product/817/jdbc/lib/classes12.zip]:`

  Enter the classpath. For our example it is,
  $ORACLE_HOME/jdbc/lib/classes12.zip.

- `Enter Pooled Datasource Classname [Example:`
  `oracle.jdbc.pool.OracleConnectionPoolDataSource]:`

  Cut and paste the example classname
  (`oracle.jdbc.pool.OracleConnectionPoolDataSource`).

  Hit **Enter**

The script will proceed to register the Oracle driver for the Application Server. As a result, the following message is displayed.

```
Registering the Third Party Drivers ...
```

Several steps can be taken to verify that all ports are active, the Application Server is working properly and Oracle connectivity exists. Running the iAS GXApp and iAS Administration tool is recommended for verification. Please consult the appropriate iAS documentation and proceed to the next section.

Installing BXCE

To begin the installation you need to access the BXCE "stage" directory as noted in the Extract Software section in Chapter 2. Under the bxinstall directory, invoke the setup script to begin the installation. The steps are:

- Go to the BXCE "stage" directory. For example:

  ```
  hostname% cd /export/csx_stage/csxinstall
  ```

- Setup Oracle environment variables. $ORACLE_HOME and $ORACLE_SID. For example:

  ```
  hostname% setenv $ORACLE_HOME
  /export/oracle/app/oracle/product/817

  hostname% setenv $ORACLE_SID CSX
  ```

- Invoke the installation script setup. For example

```
hostname% ./setup
```

The setup script will begin the installation and display the following message:

```
iPlanet BXCE Installation/Uninstallation

---------------------------------------------------------

Welcome to the iPlanet BXCE installation program

It is recommended that you have "root" privilege to
install the software.

Would you like to continue with installation? [Yes]:
```

Hit Enter and proceed with the installation.

Continue with the installation keeping in mind your environment and deployment considerations. For ease of installation and reminder of this section, the majority of the default settings will be accepted and noted as examples.

The installation proceeds with the following:

- `Do you agree to the license terms? [No]:`

  Type yes and hit Enter.

- `Select the component you want to install [1]:`

  Hit Enter. Accepting the Netscape Servers.

- Install location [/usr/netscape/server4]:

  Type an install location. For example /export/csxdir

- `Specify the components you wish to install [All]:`

  Hit Enter to install the BXCE components.

- `Specify the components you wish to install [1, 2, 3, 4]:`

  Hit Enter. Accepting the required BXCE components.

- `Computer name [northgate.red.iplanet.com]:`

  Hit Enter. Ensuring the machine name and domain are correct.

- `System User [nobody]:`

  Type the system User. For example root.

- `System Group [nobody]:`

  Type user's group. For example other.

- Enter the Consolidator Name [California Telecom]:

  Hit Enter to accept the default name or input the CSP's name

- Installation Type (Demo/Production) [Demo]:

  Enter Production. Accepting to install BXCE without any test data.

NOTE	The demo version will create Billers with sample users and bills, and will populate the LDAP and Oracle databases. The production version creates a medium size database that can support a sizable number of customer profiles, accounts and invoice data.

- NAS_HOME [/export/ias6/ias]:

  Hit Enter. Accepting the example location

- WEB_SERVER [/export/suitespot/https-northgate]:

  Hit Enter. Accepting the example location

- DocRoot [/export2/Bx/suitespot/docs]:

  Hit Enter. Accepting the example location.

- URL [http://www.csxpert.com:7000]:

  Type the correct URL. For example,
  http://northgate.red.iplanet.com:8080.

- ORACLE_HOME [/export2/Oracle/app/oracle/product/817]:

  Hit Enter. Accepting the previously set environment variable.

- ORACLE_SID [CSX]:

  Hit Enter. Accepting the previously set environment variable

- ORACLE_USER:

  Type the System Oracle user. For example, the user is csp.

- Password:

  Type the System Oracle user password. For example, the password is csp.

- LDAP_SERVER_HOST [northgate.red.iplanet.com]:

  Hit Enter. Accepting the default server.

- LDAP_SERVER_PORT [389]:

  Enter the port number. For example, the port number is **11024**

- LDAP_USER_NAME [cn=directory manager]:

  Hit Enter. Accepting the default name.

- LDAP_USER_PASSWD:

  Enter a user password. For example, **DManager**.

- LDAP BASE DN [o=mcom.com]:

  Enter the Base DN. For example **o=iplanet.com**.

- Payment Services User:

  Type the Payment Oracle user. For example, the user is **vsign**

- Password:

  Type the Payment Oracle user password. For example, the password is **vsign**

  ```
  iPlanet BillerXpert for Consolidators
  Installation/Uninstallation

  ------------------------------------------------

  Extracting iPlanet Core Components...

  Extracting iPlanet Server Family Core Components...

  Extracting iPlanet Core Java classes...

  Extracting Java Runtime Environment...

  Extracting BXCE Core Components...

  . . .

  Press Return to continue...

  Go to /export/csxdir and type startconsole to begin
  managing your servers.
  ```

To ensure the installation completed correctly, examine the installation logs located in the temporary directory. The following section describes the details.

Verifying Installation

The BXCE install program generates the following log files in the `/tmp` directory.

Log File	Description
`ConsolidatorXpertInstall.log.<mmdd>`	Installation log
`ConsolidatorXpertInstall.oracle.<mmdd>`	Oracle output log
`ConsolidatorXpertInstall.ldap.err.<mmdd>`	LDAP error log
`ConsolidatorXpertInstall.ldap.<mmdd>`	LDAP output log

The installer also runs a verification script and creates an output file named `BXCE.oracle.verify` under the `/tmp` directory. The installer looks for Oracle-related errors in this file and in the Oracle output log, and it looks for LDAP errors in the LDAP error log. If any errors are present in any of these files, the installer outputs a message pointing to the file containing the errors and aborts the installation. You must then correct the Oracle or LDAP problem as appropriate and reinstall BXCE.

Postinstallation Tasks

This chapter describes the following postinstallation steps for Billerxpert Consolidator Edition (BXCE).

- Postinstallation Tasks

- Directory Server Initialization

- Application Server Initialization

- Verifying the Installation

Postinstallation Tasks

After installing the BXCE components you must set up the BXCE environment. These steps enable you to configure and verify the installation.

Setting up the Environment

To set up the environment, enter the following commands:

1. Go to the $CSX_HOME directory. For example:

   ```
   % cd /export/csxdir/csxpert
   ```

2. Enter the following command:

   For the Bourne shell:

   ```
   % . /csxpert_env.sh
   ```

   The shell scripts set up environment variables. For example:

   ```
   CLASSPATH and $LD_LIBRARY_PATH.
   ```

Directory Server Initialization

1. After installing BXCE, one needs to re-initialize the Directory server as.

   ```
   % cd $NAS_HOME/..
   ```

2. Stop/Start the directory server:

   ```
   % ./slapd-northgate/stop-slapd
   ```

   ```
   % ./slapd-northgate/start-slapd
   ```

Application Server Initialization

1. After re-starting the Directory Server, one needs to re-initialize the Application server as:

   ```
   % cd $NAS_HOME/bin
   ```

2. Stop/Start the Application Server:

   ```
   % ./KIVAes.sh stop
   ```

   ```
   % ./KIVAes.sh start
   ```

Verifying the Installation

After the installation is completed, open the Administration Consolidator page. To do this, go to your browser and specify your hostname and domain name in the location field. For example:

```
http://northgate.red.iplanet.com:8080/csxadmin
```

```
The Administration page should be displaye. Login as the
Administrator as:
```

```
User: bxadmin
```

```
Password: bxadmin
```

At this point, you should be able to see the Consolidator Administration screen where one can setup Billers, add members, schedule events.

This completes the procedures for the BXCE Installation.