Installation Guide

iPlanet BillerXpert 4.6 B2B Edition

May 2002

Contents

Preface

This guide gives instructions for installing iPlanet BillerXpert B2B Edition. It also lists the system prerequisites and describes the preinstallation and postinstallation tasks you must perform to ensure a successful installation.

This preface discusses the intended audience, the organization of the guide, the typographic conventions used throughout this document, as well as the lists of documents related to this publication.

The following topics are covered in this section:

- Before You Begin
- Audience
- Organization
- Conventions
- Related Publications

Before You Begin

This guide is written with the assumption that you have an understanding of relational databases and the operating system on which you are running this software. The documentation is also written with the assumption that you have some basic background including:

- a general understanding of the Internet and the World Wide Web
- experience in setup and management of web services
- experience in setup and administration of relational databases
- experience with UNIX administration as the *root* user

- In addition to the documentation provided by iPlanet, you may find it helpful to read and review:
  - your operating system manuals
  - your relational database manuals

Audience

The intended audience for this guide is the system administrator who will install the BillerXpert product. This system administrator will be responsible for maintaining the various servers and will also need to have access to `root` user ID and some experience with UNIX administration as the `root` user.

Organization

This guide is divided into the following parts:

Chapter 1, “Introducing BillerXpert B2B Edition" provides a high level overview of the product as well as the list of features

Chapter 2, “BillerXpert Product Deployment" describes the pre-planning and sample configurations for deployment.

Chapter 3, “Preinstallation Tasks" describes the system requirements for installing BillerXpert.

Chapter 4, “Express Installation" describes the express installation steps for pilot or standalone configurations for BillerXpert B2B Edition.

Chapter 5, “Custom Installation" describes the installation steps for each of the required products and configuration options needed for installation of the BillerXpert B2B Edition.

Chapter 6, “Post Installation Tasks" describes postinstallation configuration, starting and stopping installed servers, and testing BillerXpert connections.

Appendix A, “Remote Installation of BillerXpert B2B Edition" describes the steps of the installing the BillerXpert B2B Edition with remote iPlanet Web Server (iWS) via iPlanet Applcation Server (iAS) web connector.

Conventions

A number of typographic conventions are used throughout this document to help you recognize special terms and instructions. These conventions are summarized in the table below:

Document Conventions

Convention	Description
Boldface	This typeface is used for the following: • Items on the screen • Names of keys Examples: • Click **Configure** to configure the card processor • Press **Submit** to apply changes
Italics	This typeface is used for the following: • Key words, such as terms that are defined in the text • Names of books • Variables in code for which you need to substitute a literal • Important URL's Examples: • The notices posted on an electronic BBS are called *articles.* • For more information, refer to the *Getting Started with Netscape Navigator* manual • {*name1=value1*, *name2=value2*, ... • Click *Sun.com* to return to Sun's homepage
`courier font`	This typeface is used for the following: • Command line input or output Examples: • <TITLE>Password Check</TITLE> <IMG SRC="/ui/icons/hd_svcs.gif">

Document Conventions

Convention	Description
Boldface courier font	This typeface is used for the following: • Code samples • Path and File Names Example: • **Syntax: const char* getName() const** • **/var/opt/oracle/tnsnames.ora**

Related Publications

The following publications listed in the table below are also available for the iPlanet BillerXpert 4.6 B2B Edition system:

Related Publications

Publication Name	Description
Administrator Guide	This book provides reference and procedural information for administering iPlanet BillerXpert.
Customization Guide	This book contains reference information and examples about how to customize the product's front-end components (Servlets, JSPs, templates, and views).
Integration Guide	This book provides information on how to integrate additional functionality to BillerXpert with other business applications.
API & Schema Reference Manual	This book describes the interfaces to component business objects you can use when you customize BillerXpert and describes database schemas of which you may need to be aware.
Company Administrator Guide	This book provides the Company Administrator with detailed information that describes how to properly administer and manage the system, including profiles, departments, members and activities.

Related Publications

Publication Name	Description
Biller Administrator Guide	This book provides the Biller Administrator with detailed information that describes how to properly administer and manage the system.
BSP Administrator Guide	This book provides the Billing Service Provider (BSP) Administrator with detailed information that describes how to properly administer and manage the system.

Chapter 1

Introducing BillerXpert B2B Edition

This chapter provides an overview of iPlanet BillerXpert B2B Edition. BillerXpert is an Internet invoice presentment and payment application designed to enable enterprise service providers to enhance the invoicre process, strengthen customer relationships and create new revenue streams.

This chapter contains the following sections:

- Product Overview
- Architecture Overview

Product Overview

The iPlanet BillerXpert B2B Edition application is a comprehensive electronic invoice presentment and payment (EIPP) solution that allows an enterprise to provide electronic presentment of invoices to customers. EIPP allows the billing company to reduce costs, accelerate payment times by efficiently managing the entire invoice process from presentment to payment, and improving customer relationships. The buying companies benefit from a streamlined approval and dispute process, more control over invoice due dates and able to take advantage of discounts on payment and reducing late charges, and reducing expenses.

Built on the iPlanet E-Commerce-Ready Infrastructure, iPlanet BillerXpert includes iPlanet™ Application Server, iPlanet™ Process Manager, iPlanet™ Directory Server, and iPlanet™ Web Server. It provides high performance, scalability, high availability, and integration with enterprise applications and systems. And by leveraging the iPlanet Application Server, enterprises can easily incorporate Enterprise JavaBeans™ to encapsulate customized business logic.

Architecture Overview

The iPlanet BillerXpert B2B Edition brings many key technical features that make it a solid platform for business invoice presentment and payment. A high level architecture overview is depicted in Figure 1-1.

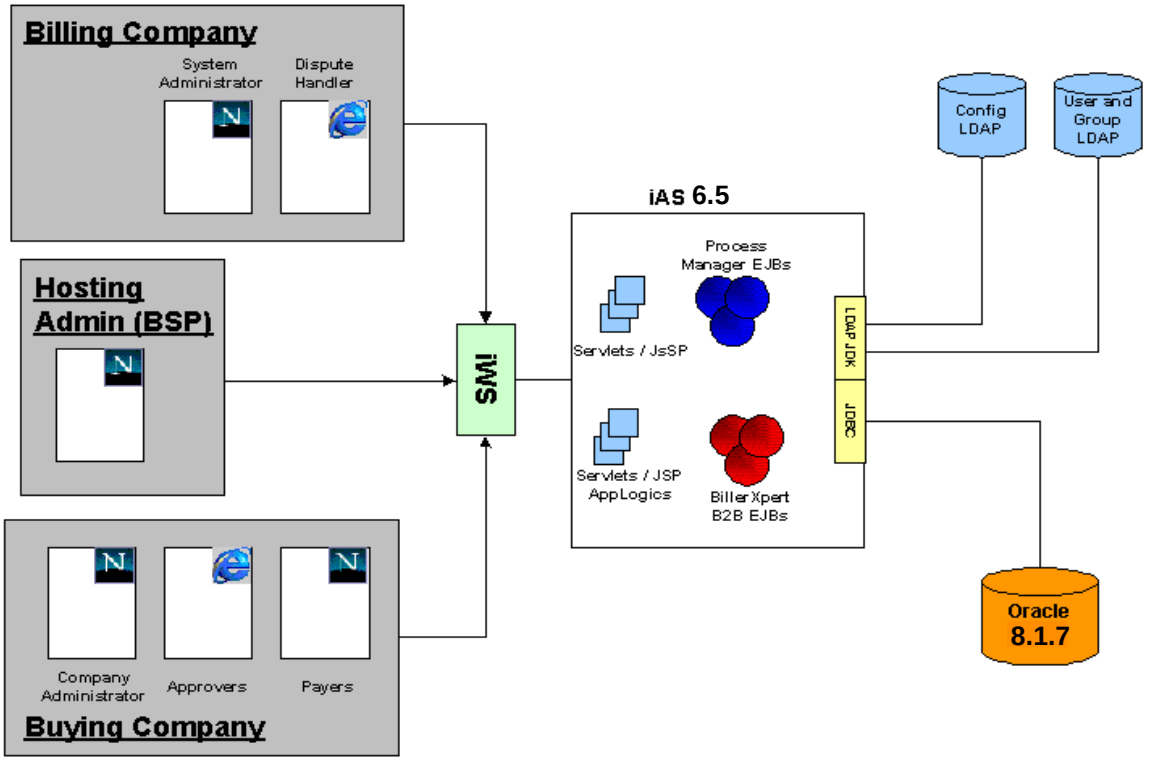


Figure 1-1 Billerxpert B2B Architectural Diagram

The BillerXpert main components are each complex in nature, the following sections will describe these components in high level terms. For more details, consult the *iPlanet BillerXpert Customization Guide B2B Edition*. The main components are described in the following sections.

Billing Service Provider (BSP) Company

This is the company who *hosts* Billing Companies. The players that we identify within the BSP are: The BSP administrator, who performs the essential administration on the system (like loading invoices, etc.). The Billing companies that are *managed* by the BSP; these billers present the bills to their customers in the form of invoices. Users who handle all disputes from the buying companies are refered as Dispute Handlers.

Billing Company

This is the company who presents bills to its customers in the form of invoices. The players that we identify within the Billing Company are: The Biller administrator who performs the essential administration on the system. The Billing Company or better known as the Company Administrator who manages the access to the system for the Buying companies and performs other business functions like adding buying companies and buying company information. Users who handle all disputes from the buying companies are refered as Dispute Handlers.

Buying Company

There can be several Buying Companies within the system. Each of these companies are being invoiced by the Billing Company. The users within the buying company include: The Company Administrator who manages users, company, and organization information. Approvers, theses are the people who are assigned invoices for approval. Users who have the ability to pay invoices are called Payers.

iPlanet Web Server (iWS)

The iPlanet Web Server acts as a proxy for requests coming from the Billing and Buying companies. The Web Server is an active participant who passes the requests onto the appropriate iPlanet Application Server (iAS) that is running the BillerXpert product.

Configuration LDAP Server

This LDAP (Lightweight Directory Access Protocol) server stores information the system requires for proper operations. It stores information regarding the Enterprise Java Beans (EJBs) within the system, database configuration information, and process manager application definitions.

Users and Groups LDAP Server

This LDAP server stores information about all of the users and groups within the system. It also stores information about company organizations and the people responsible for approving invoices.

Oracle Database

The Oracle database is used for storage within the BillerXpert solution. It holds information on the invoices, billing and buying companies, payment information, plus process state information.

iPlanet Process Manager

iPlanet Process Manager is a web based workflow system used to manage the routing of workflow through a predefined process. BillerXpert leverages Process Manager for invoice approval routing, dispute handling, enrollment processing, and invoice distribution. Process Manager also gives the ability to alter any of these processes to better model the requirements of an individual business. Process Manager includes a “builder” tool for creating and deployment of new workflows. For more information see *iPlanet Process Manager Builder Guide.*

iPlanet BillerXpert B2B EJB's

BillerXpert is responsible for managing the data access and data manipulation of the invoice data within the system. These tasks are accomplished through the Enterprise Java Beans (EJB’s) that are included in the product. The EJB’s access, return or manipulate invoice line item data, invoice summary level data (header data) and other relevant information. For more information see the *iPlanet BillerXpert Customization Guide* and *iPlanet Billerxpert API & Schema Reference Guide.*

HTML Based User Access

All users (administrators and end-users) access the system is through a standard browser at the appropriate location. Both Netscape 4.77 or higher and IE 5.0 are supported.

Chapter 2

BillerXpert Product Deployment

This section provides planning information and guidelines for product deployment. It also describes two sample product installation configurations that sites can reference when planning their own BillerXpert installations.

This section presents the following topics:

- Planning for Deployment
- Sample Installation Configurations

Planning for Deployment

In an industry that offers multi-tier products and solutions, one can commonly find a single product installation spread over multiple machines. Some of the fundamental benefits associated with distributed installation is a site's ability to:

- Install different software components on separate systems
- Move software components from one system to another with a very high degree of transparency.

For example, in a two-tier client server environment, client and server components are almost always installed on different machines. A three-tier environment may take this distribution model even further. The client, which consists of the presentation part of the software as well as its associated APIs, will typically run on one machine, while the middle tier (containing the application logic) runs on another. The data management tier, which contains the database, will often be installed and executed on a third machine.

The three-tier option is not limited to the above example. A site might alternatively run the application tier and data tier on the same machine, if the performance expectations are optimistic.

If a site is planning a distributed installation in a multi-tier environment, it must decide how the product will be deployed. There are various ways a site can deploy a product in this environment.

BillerXpert supports a four-tier architecture:

- Client browser tier
- Web server tier
- Application server tier
- Data storage tier

By extending the deployment scenarios described in the two-tier and three-tier environments, a site can spread its product installation out along these four tiers and across multiple machines.

Additionally, some components must run inside the firewall that separates a company's intranet from the internet. End users may access a biller site through the internet via a browser from all over the world.

User traffic will be handled by one or more web servers positioned typically, but not necessarily, outside the firewall. The web server in turn directs the incoming traffic through the firewall to the appropriate application server environment.

NOTE The iPlanet Application Server that hosts the BillerXpert components, the Directory Server (which stores user information), and the Oracle database (which stores billing information) must reside inside the site's firewall.

Also, since a large number of end users may connect to your site, you may want to install and deploy multiple Enterprise Server instances on multiple machines for load balancing user traffic. The site may later evolve to support multiple Application Server instances running across multiple machines. One can further extend this concept of multiple instances, and apply it to databases, payment server, directory servers, and so forth.

Besides the load balancing benefit, multiple instances help achieve higher application availability. For example, it is possible to configure and deploy two Application Server instances running on two different machines such that:

- They balance the load of incoming traffic

- Each instance acts as a standby for the other in case one of them becomes unavailable

In summary, when deciding on a specific installation configuration, a site must determine the following:

- What components to install and where to install them
- How many instances of each component are running
- Fail over set up and rules
- The host of parameters associated with the different components

In BillerXpert, the term configuration refers to one or more instances of various components running on one or more machines.

Deployment Considerations

Following is a list of items the site must consider when determining how to deploy BillerXpert:

- *Number of machines available.* A site might be constrained by the number and capacity of the machines available.
- *Testing vs. Production.* Often a site may want to install a pilot system to try out the product and test its capabilities before setting it up for production. In this case, a fast and easy installation is the primary goal. Other considerations become more important when the site is ready to install a full production system.
- *Load considerations.* In a production environment, load considerations become an important determinant of product deployment. These considerations include but are not limited to the following:
    - Data size
    - Maximum number of concurrent users
    - Maximum number of concurrent transactions
    - Offline reporting requirements
    - High availability requirements
    - Archiving requirements

The following list is intended as a guideline. The specific requirements of your production environment may require additional considerations or variations on those presented here.

- For smaller sites with low scalability or availability requirements, or for test environments, your site should consider installing BillerXpert, with all of its components and associated services on a single machine.
- It is generally beneficial to host your database on a dedicated machine. You can then enhance this system for further scalability and availability. Application server environments can remotely connect to the database.
- It may also be beneficial to install the directory server and the admin server onto a separate system, again for scalability and availability considerations.

Additional Suggestions

Another consideration for a scalable deployment is to install the Application Server on multiple machines where they can access the Oracle or Directory Server on other machines. These Application Server machines will run separate instances of BillerXpert.

As the user traffic increases, more front-end machines may be added to balance this traffic load. If there is a need to create a separate Administration console resident in a special operator / system administrator area on the floor, it is recommended that the Administration console be hosted on a separate (relatively lower-end) system.

Web servers and static templates should be resident on their own systems and contain no "sensitive" data, especially if the web servers are to live outside the firewall.

Deployment Rules

Please note the following important rules as your site determines its product deployment strategy:

- The Administration console must run inside the firewall.
- Multiple instances of the Directory Server must be registered through the Application Server in order for manage permission levels of users, administrators and payers.

Sample Installation Configurations

This section describes two different BillerXpert installation configurations which can be used for planning purposes. These configurations are meant as examples only. Your own site requirements may use a variation of any of these configurations, depending on your specific needs.

The BillerXpert application uses the following:

- BillerXpert Components
- Directory Server
- iPlanet Process Manager and Builder
- iPlanet Enterprise Server
- iPlanet Application Server
- Oracle

You can install a new directory instance or use an existing one. The iPlanet Application Server hosts the BillerXpert application.

NOTE If you are installing the Directory Server, Administration Server, or BillerXpert on separate machines, you will need to run the installer on each machine in order to install the required components.

Pilot Configuration

As illustrated in Figure 2-1 this configuration features all of the BillerXpert components installed on one machine, including the Oracle RDBMS, inside the firewall. This installation is not recommended for a production environment but can be used by sites who wish to test the BillerXpert product.

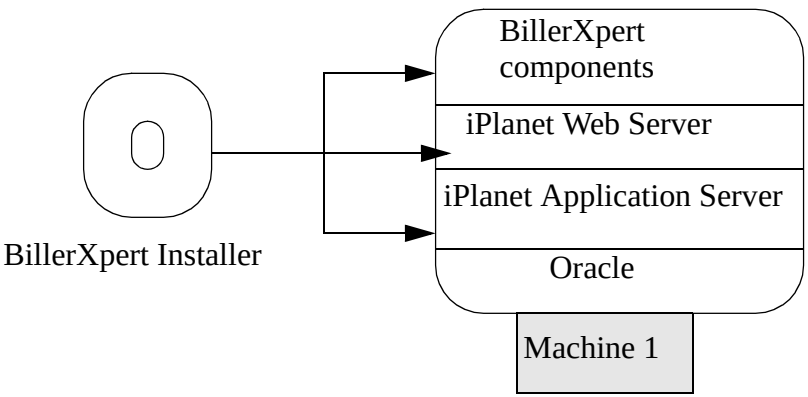


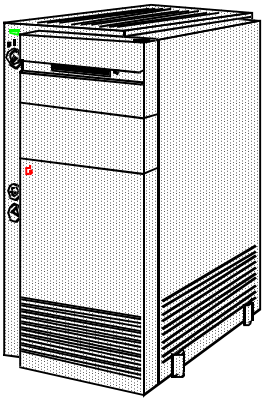
Figure 2-1 Pilot Configuration

Custom Configuration

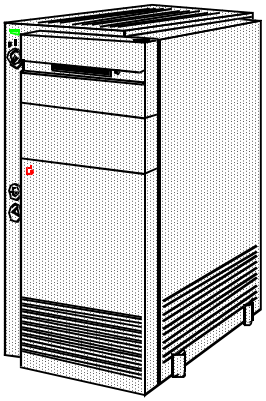
As illustrated in Figure 2-2 this configuration features the components of the BillerXpert system installed in the following manner:

- Oracle on Machine 1
- BillerXpert Components, iPlanet Application Server on Machine 2.
- iPlanet Web Server on Machine 3

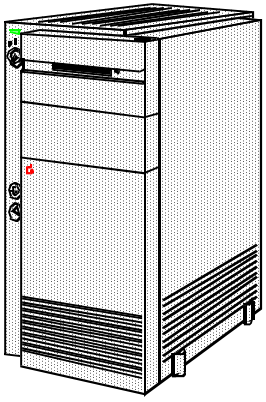
Planet



Host 1: Oracle Database



Host 2: iAS, LDAP, BillerXpert, iPM



Host 3: iWS (Web Server)

Figure 2-2 Custom Distributed Configuration

Chapter 3

Preinstallation Tasks

This chapter describes planning and tasks you must perform before you can install BillerXpert Version B2B Edition. It includes installation and configuration tasks for the Oracle RDBMS that stores the BillerXpert information.

- Unix System Tuning
- Hardware and Software Requirements
- Installation Overview
- Installing Oracle Enterprise Server 8.1.7

Unix System Tuning

In applications like BillerXpert 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 3-1 lists some of the Unix utilities available for measuring system activities:

Table 3-1 Unix System Utilities

Utility	Descriptions
sar	System Activity Reporter
vmstat	Report Virtual Memory Statistics
netstat	Show Network Statistics

Table 3-1 Unix System Utilities

Utility	Descriptions
iostat	Show I/O Statistics
nfsstat	Show Network File System Statistics

Hardware and Software Requirements

Table 3-2 shows the hardware and software requirements for installing and using BillerXpert:

Table 3-2 Hardware and Software Requirements

Hardware Platform:	Sun 4u
Operating Systems:	Sun Solaris Version 8
Memory:	512 MB RAM minimum for the Sun workstation. Limited to one BillerXpert Server per machine. It is recommended to install the maximum number of memory for multi-tier configurations.
Software Requirements:	Oracle8 Enterprise Server Release 8.1.7
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 BillerXpert. 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 BillerXpert components, install the BillerXpert components in the following order:

- Oracle
- iWS (Web Server)

- iAS
- BillerXpert / iPM (Process Manager)

Installation Preparation

To successfully install BillerXpert:

- Confirm disk space
- Unload distribution media
- Extract Software

Confirm Disk Space

It is recommended that 3 GB of disk space be available for installing BillerXpert components. To verify that 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/bx_stage
```

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

Extract Software

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

```
# tar xvf /cdrom/billerxpert-b2b- domestic.tar
/export/bx_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

BillerXpert 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

Configure Shared Memory

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

- 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 the 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.

  ```
  # group add 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 Environment Variables.

Setting Environment Variables

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

ORACLE_BASE

This is the main Oracle directory that contains all the releases and administration scripts. For example:

```
% setenv ORACLE_BASE /export/oracle/app/oracle
```

ORACLE_HOME

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

```
% setenv ORACLE_HOME /export/Oracle/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 `B2B`. For example:

```
% setenv ORACLE_SID B2B
```

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 session 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/Expan
ded/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` `(/export/Oracle/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 8.1.7**
- 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 **B2B**
- You will be asked to provide a file location for the actual data.

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

NOTE Depending on your deployment and database size requirements,a dedicated directory may be 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 -fu oracle
```

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@B2B;
```

- 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>
```

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

```
SQL> exit
```

Tablespaces

The following steps complete the preparation of Oracle for BillerXpert.

Create Tablespaces

You must create two tablespaces (TS01 and TS02) and the associated data files must be generated so that the BillerXpert installer can create the database tables required. To accomplish these 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 BillerXpert.

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 BillerXpert.

For standalone or *Demo* systems, continue with Chapter 4, “Express Installation".

For distributed or *Production* systems, it is recommended you proceed to Chapter 5, “Custom Installation".

Chapter 4

Express Installation

BillerXpert B2B Edition includes a program that simplifies the installation experience. The express installation program is designed for a standalone or pilot configuration and will create a default set of Oracle users, install the required products such as iPlanet Web Server (iWS), iPlanet Application Server (iAS) and iPlanet Process Manager (iPM), and BillerXpert. Upon completion of the installation, the system will display all port information, assigned directories, users and password assignments.

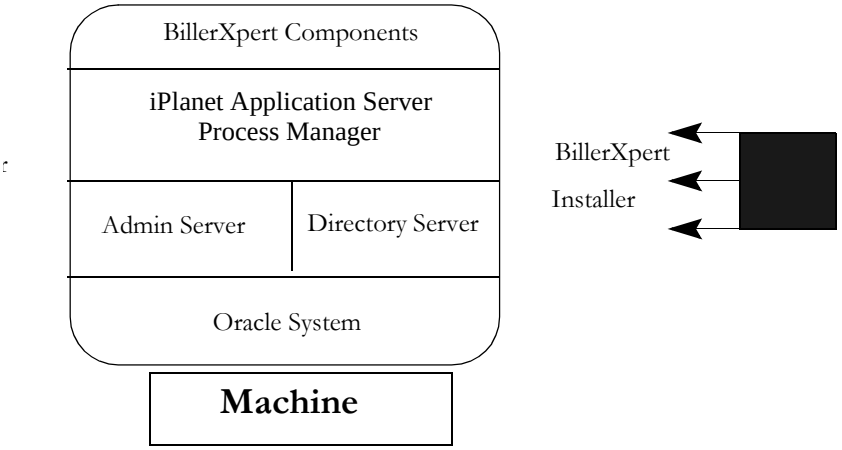
This chapter presents the following topics:

- Pilot Configuration
- Environment Settings
- Installation steps
- Verifying Installation

Pilot Configuration

Standalone or pilot configuration is the recommended configuration for the Express install option as it install and configures all components on a single machine. It expects the Oracle Relational Database Management System (RDBMS) to be previously installed in the system. Figure 4-1 describes the configuration.

Figure 4-1 Pilot or Standalone Configuration.



Environment Settings

The Express install requires setting the Oracle environment variables prior to running the Express install program. Table 4-1 below lists the required environment variables with example values.

Table 4-1 Required Environment Variables

Environment Variable	Example Value
ORACLE_HOME	/export/Oracle/app/oracle/product/817
ORACLE_SID	B2B

Installation steps

This section describes the step by step procedure for installing under the Express Install program. The installation begins from the BillerXpert Staging directory as described in the Extract Software section in Chapter 3.

As Super User

NOTE You must be root user in order to begin the installation procedure.

- Become super (root) user. For example,

  ```
  hostname% su
  ```

  passwd: (input the root password)

- Set the ORACLE_HOME. For example:

  ```
  hostname# setenv
  ORACLE_HOME/export/Oracle/app/oracle/product/817
  ```

- Set the `ORACLE_SID`. For example:

  ```
  hostname# setenv ORACLE_SID B2B
  ```

- Go to the BillerXpert staging directory. For example,

  ```
  # cd /export/bx_stage
  ```

- Invoke the ezSetup script. For example,

  ```
  # ./ezSetup
  ```

The ezSetup script will begin by displaying the following screen:

```
>>> iPlanet iWS/iAS/BillerXpert Express install <<<

    This program will extract the server files and install
them into a directory you specify. That directory is
called the server root in the product documentation and
will contain the server programs, the Administration
Server, and the server configuration files.

    To accept the default shown in brackets, press the
Enter key.

    Install location [/export/iplanet]:
```

- Enter an install location. For example,

  ```
  /export/bxdir
  ```

The script will continue by creating the **bx** default user and will request a password for this user as follows:

```
Please choose a new password for User bx
```

```
New password:
```

- Enter a password. For example, **bx**
- Confirm the password and continue.

The ezSetup program will update the system and display the following message:

```
Please relogin as user bx and run the ezSetup again:
```

Login As bx User

To continue with the installation, you need to login or switch as the **bx** user, and invoke the ezSetup program. The steps are:

- Become the bx user. For example,

  ```
  # su - bx
  ```

  hostname%

- Go to the BillerXpert staging directory. For example,

  ```
  hostname% cd /export/bx_stage
  ```

- Invoke the Express install script. For example,

  ```
  # ./ezSetup
  ```

The *ezSetup* script will continue the installation and display the following message:

```
>>> iPlanet iWS/iAS/BillerXpert Express install <<<

This program will extract the server files and install
them into a directory you specify. That directory is
called the server root in the product documentation and
will contain the server programs, the Administration
Server, and the server configuration files.

Install location [/export/bxdir]:
```

Confirm the install location by hitting the **Enter** key.

- Enter your BSP name [BSP]

  For example, `ISP`

- Enter your BSP Domain [iplanet.com]

  For example, `isp.com`

The *ezSetup* program will proceed with the installation and provide various status messages such as:

- `Patch verification`

  Program verifies and / or installs required OS and Java patches in the system

- `Connected to Oracle successfully`

  Program verifies Oracle connectivity

- `Oracle User table Space`

  Program checks / creates Oracle tablespaces as required by BillerXpert

- `Oracle User creation`

  Program creates the Oracle users as required by BillerXpert

- `Starting installation...checking for free ports`

  Program checks for free ports required by BillerXpert

- `Extracting Server Core`

  Program begins to extract items as required by BillerXpert, such as:

  - `Java Runtime Environment...`
  - `Java Support...`
  - `SSJS Support...`
  - `SSJS Database Support...`
  - `Web Publishing Support...`
  - `SNMP Support...`
  - `Upgrade Files...`

You will then see messages that each of the above items have been installed successfully.

- `Installing Web Server`

  Program installs iPlanet Web Server (iWS) with a set of default ports.

- `Installing iPlanet Application Server 6.x Core Binaries`

  Program installs Application Server in the default location

- `Installing iPlanet Process Manager 6.x SPx, BillerXpert Edition`

  Program installs Process Manager in the default Application Server directory.

- `Installing iPlanet BillerXpert`

  Program installs BillerXpert and configures the Application Server for Oracle connectivity.

The program completes the installation and displays port and directory assigments as well as user and password information. Below is an example of the information displayed.

```
Done: Setting Biller Environment Variables. Express
Installation Port and Directory Assigmnents

================================================

iPlanet Webserver Port        : 8080

iPlanet Webserver admin Port  : 8001

Admin Name : admin

Password   : admin

iPlanet Directory Server Port : 11024

iPlanet Admin Server Port     : 11025

Admin User Name : admin

Password   : admin

Directory Manager Password    : DManager

iPlanet Application Server Admin Server Port : 11817

iPlanet Application Server Engine Ports :

Executive Server : 10818

Java Engine #1 : 10820

C++ Engine #1 : 10821


Oracle Users/Passwords Created :

================================

Biller Install   b2bbsp/b2bbsp

Biller Payments b2bpay/b2bpay

Installation User/Group   bx/bx

Directories :

=============
```

```
Web Server    :
/export2/iplanet/server4/https-poppy.red.iplanet.com

Nas Home      : /export2/iplanet/ias6/ias

Biller Home   : /export2/iplanet/ias6


Please Scroll Up or see /tmp/express.log for any possible
Error Messages.

If no errors found Please proceed to the Post Installation
Steps outlined in Installation Manual.
```

NOTE The ezSetup program creates a file containing the port assignments and default settings. This file location and name is `/tmp/defaults`.

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

Verifying Installation

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

Log File	Description
express.log	Overall log file
BillerXpert.oracle.verify	BillerXpert - Oracle access log
BillerXpertInstall.log.<*mmdd*>	BillerXpert Installation log
BillerXpertInstall.oracle.<*mmdd*>	Oracle output log
BillerXpertInstall.ldap_err.<*mmdd*>	LDAP error log
BillerXpertInstall.ldap.<*mmdd*>	LDAP output log
ipm_postinstall_bx_.log	Process Manager post install logs.

The *ezSetup* installer creates an output file named `express.log` which captures the entire installation procedure. In the event an error or problem, review the listed logs. All of these files are under `/tmp` directory. It is highly recommended you begin with the `BillerXpert.oracle.verify` log file as it may point out the root cause of subsequent errors. The `BillerXpertInstall.log.<date>` file will contain BillerXpert specific errors . The `BillerXpert.ladp_err.<date>` file will contain Directory Server information while the `BillerXpertInstall.ladp.<date>` will contain any errors encountered during the installation of the Directory Server.

Proceed to Chapter 6, “Post Installation Tasks".

Chapter 5

Custom Installation

BillerXpert B2B Edition 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
- Installing BillerXpert and Process Manager
- Verifying Installation

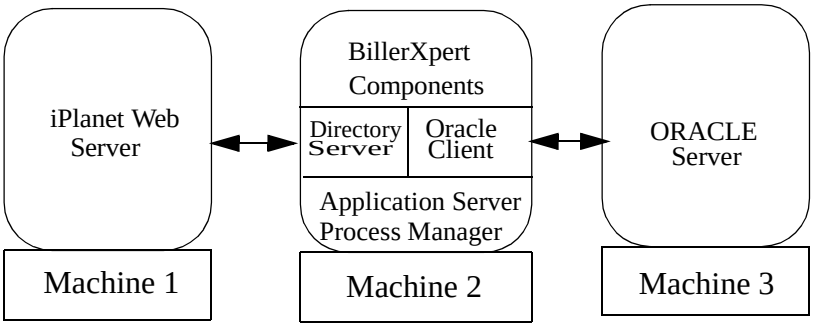
Distributed Configuration

The Distributed Configuration, as shown in Figure 5-1, is an example of a typical BillerXpert deployment. Each product is installed individually, on separate 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: BillerXpert Components, Directory Server, Application Server and Process Manager.

- Machine 3: Oracle RDBMS

Figure 5-1 Distributed Configuration Option



Environment Variables

Plan your environment variables before starting the BillerXpert installation. The BillerXpert installer creates an environment variable shell script using the directory paths you specify during the installation. Table 5-1 lists the BillerXpert environment variables with example values used throughout this guide.

Table 5-1 Billerxpert Environment Variables

Environment Variable	Example Value
BX_HOME	/export/bxdir/billXpert

If you have previously set some of the environment variables in the BillerXpert 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 5-2:

Table 5-2 Component Environment Variables

Environment Variable	Example Value
ORACLE_HOME	/export/oracle/app/oracle/product/817
ORACLE_SID	B2B

Table 5-2 Component Environment Variables

Environment Variable	Example Value
NAS_HOME	/export/ias6
DOC_ROOT	/export/suitespot/docs
WEB_SERVER	/export/suitespot/https-b2b
PATH	$ORACLE_HOME/bin:/bin:/usr/bin:/usr/sbin:/usr/ccs/bin:/usr/X/bin:/usr/openwin/bin/X11:${PATH}

Component Installation

In Chapter 3, “Preinstallation Tasks" of this guide, the BillerXpert files and required components were extracted unto a “stage” directory. In the same chapter, the Oracle Server was set for BillerXpert, however, the Oracle client needs to be installed in order to sucessfully install BillerXpert. This section continues in the following manner:

- Installation of Oracle Client 8.1.7
  - Creating a Unix Oracle User
  - Setting Environment Variables
  - Installing Oracle Client
- Oracle Users
- iPlanet Web Server Installation
- iPlanet Application Server Installation
- Installing BillerXpert and Process Manager
- Verifying Installation

NOTE For a successful installation, you must install BillerXpert and Process Manager in the NS directory.

Installation of Oracle Client 8.1.7

In this section, you will begin the component installatoin process as described in the following subsection.

NOTE You must remove any existing Oracle data from the system prior to 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 user. The command is:

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

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

- Change the 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 Environment Variables.

Setting Environment Variables

It is recommended that you 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 /export/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 BX45. For example:

```
% setenv ORACLE_SID B2B
```

Installing Oracle Client

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 that you read the Oracle Installation manual for the specifics of these options and installation selections.

An example installation session begins with:

- Access the Oracle installation files from the 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/Expanded/
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 Client**
- You will be asked to select Installation types.

  Select **Programmer**.
- Hit **Next** key

The system will load the required programs to proceed with the installation.

A Summary screen will be shown, Select the **Install** key to proceed. The Install screen will be displayed and the progress of the installation will be shown.

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
```

Net Configuration Assistant

- Select `No, I will create...`
- Hit Next to continue
- Select `Oralce8si database`
- Hit Next to continue
- Service Name:`B2B`
- Hit Next to continue
- Select `TCP`
- Hit Next to continue
- Type hostname

  For example, `poppy`
- Use standard port number 1521 (accept default)
- Hit Next to continue
- Select Yes, Perform Test
- Hit Next to continue
- Check for success
- Net Service Name `B2B`
- Hit Next to continue
- Select No
- Hit Next to continue
- Net Service Name Configuration Complete
- Hit Next to continue
- Net Configuration complete
- Hit Next to continue

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

Oracle Users

The following steps complete the preparation of Oracle for BillerXpert.

Oracle Users

BillerXpert requires two (2) Oracle users in order to install successfuly. In this section, the Oracle users are created and assigned the TS01 tablespace. The user names are only examples. Whatever names are chosen, please record them as the BillerXpert 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@ORACLE_SID` as follows.

For example,

```
hostname% $ORACLE_HOME/bin/sqlplus system/manager@B2B
```

- 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, *bsp*

```
SQL> create user bsp identified by bsp;

SQL> grant connect to bsp;

SQL> grant resource to bsp;

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

- Payment user. For example, *pay*.

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

SQL>grant connect to pay;

SCL>grant resource to pay;

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

- Exit SQL

```
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 bsp/bsp@B2B;
  ```

- 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>
  ```

- 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 BillerXpert B2B Edition. This section describes the installation of iPlanet Web Server.

To start the installation you need to access the B2B "stage" directory as noted in the Extract Software section. Under the iWS directory, invoke the setup script to begin the installation. The steps are:

- Go to the B2B "stage" iWS directory. For example:

  ```
  hostname% cd /export/b2b_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 B2B 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 Installation.

iPlanet Application Server Installation

iPlanet's Application Server is the core component and key requirement of BillerXpert B2B Edition. 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 B2B "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 B2B "stage" iAS directory. For example:

  ```
  hostname% cd /export/b2b_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 BilerXpert B2B Edition, 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 The Native Driver

- Perform 'Connectivity Setup' using `db.setup.sh`

  For example:

```
cd /export/ias6/ias/bin

# db_setup.sh
```

The connectivity script will begin and display the following message:

```
Sun-Netscape Alliance

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]:
```

Hit Enter. Accepting Native drivers for Oracle.

- `Do you want to configure iAS with Oracle connectivity [n]?  (y/n)`

  Type `yes`. Hit Enter. Selecting Oracle connectivity.

- `Enter the Oracle home directory [/export/home/Oracle/app/Oracle/product/816]:`

  Hit Enter. Accepting default value.

- `Enter the ORACLE_SID [B2B]?`

  Hit Enter. Accepting default value.

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

  Database Connectivity Setup for Native Drivers

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

- `Do you want to configure iAS with Sybase connectivity [n]?  (y/n)`

  Type `no`. Hit Enter. Rejecting the connectivity.

- `Do you want to configure iAS with Informix connectivity [n]? (y/n)`

  Type `no`. Rejecting the connectivity.

- `Do you want to configure iAS with db2 connectivity [n]?  (y/n)`

  Type `no`. Rejecting the connectivity.

- `Do you want to configure Resource Manager (y/n) [n]?`

  Hit Enter. Resource manager is not a requirement.

The script will proceed setting up the Oracle drivers for the Application Server. As a result, the following message is displayed.

```
Sun-Netscape Alliance

Database Connectivity Setup for Native Drivers

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

Registering Datasources keys...
```

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 BillerXpert and Process Manager

- iPlanet's BillerXpert B2B Edition is the core component which brings Invoice presentment and payment to the Enterprise. iPlanet Process Manager has been included, bundled with the Application Server and installation program modified to install it. This section describes the installation procedure.

NOTE For a successful installation, you must install BillerXpert and Process Manager in the NS directory.

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

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

```
hostname% cd /export/bx_stage/bxinstall
```

- Set the Oracle environment variables. For example:

```
hostname% setenv ORACLE_HOME
/export/home/Oracle/app/oracle/product/817

hostname% setenv ORACLE_SID B2B
```

- Invoke the installation script `setup`. For example:

```
hostname% ./setup -k
```

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

```
iPlanet BillerXpert Installation/Uninstallation

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

Welcome to the iPlanet BillerXpert 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/bxdir/ias6**

NOTE *T*he install location should be the same as Application Server if both BillerXpert and Process Manager are installed together. In this case, `/export/ias6`. Otherwise, installation will not be successful. If you wish to install in a different directory, you must install only Process Manager. BillerXpert should be ideally installed after Process Manager in such a situation.

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

  Hit **Enter** to install the BillerXpert components.

  `iPlanet Process Manager 6.xSPx, BillerXpert Edition components:`

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

  Hit **Enter**. Accepting the required Process Manager components.

- `Computer name [poppy.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**.

- `BSP Name [BSP]:`

Hit **Enter** to accept the default name.

- `Enter your Biller Domain:`

  Type the Biller domain name. For example, **bsp.com**

- Enter the location of binary files, for example: **/export/bxdir/ias6/ias**

  Hit **Enter**. Accepting the location you have specified.

- `WEB_SERVER [/export/suitespot/https-b2b]:`

  Hit **Enter**. Accepting the example location.

- `DocRoot [/export/suitespot/docs]:`

  Hit **Enter**. Accepting the example location.

- `URL [http://poppy.red.iplanet.com:80]:`

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

- `ORACLE_HOME [/export/Oracle/app/oracle/product/817]:`

  Hit **Enter**. Accepting the previously set environment variable.

- `ORACLE_SID [B2B]:`

  Hit **Enter**. Accepting the previously set environment variable.

- `BSP ORACLE_USER:`

  Type the System Oracle user. For example, the user is **b2bbsp**.

- `Password:`

  Type the System Oracle user password. For example, the password is **b2bbsp**.

- `Enter the Oracle Server Host Name [poppy.red.iplanet.com]:`

  Hit **Enter**. Accepting the host name, or, update to the correct host name. For example: **paybill.red.iplanet.com**

- `Enter the Oracle Server Port Number [1521]:`

  Hit **Enter**. Accepting the default port number.

- `Enter the Oracle Server Host ID [B2B]:`

  Hit **Enter**. Accepting the default server host ID.

- `Enter the Oracle Thin Driver Name configured in iAS [Driver1]:`

Hit **Enter**. Accepting the default oracle driver name.

- `LDAP_SERVER_HOST [poppy.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:`

  Enter the Distinguished name (DN). For example, **o=iplanet.com**.

- `Payments ORACLE_USER:`

  Type the Payment Oracle user. For example, the user is **b2bpay**

- `Password:`

  Type the Payment Oracle user password. For example, the password is **b2bpay**

```
iPlanet BillerXpert Installation/Uninstallation

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

Extracting iPlanet Process Manager Server (BillerXpert
Edition)...

Extracting iPlanet Process Manager Builder (BillerXpert
Edition)...

Extracting BillerXpert Parameters...

Extracting BillerXpert Ora Parameters...

Extracting BillerXpert LDAP Parameters...

Extracting BillerXpert Core Components...

Extracting BillerXpert Application Logic...

Extracting BillerXpert Administation Services...

Extracting Consolidator Interface Module...
```

```
Extracting Payment Module...

. . .

Press Return to continue...

Go to /export2/bxdir/ias6 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 BillerXpert install program generates the following log files in the `/tmp` directory.

Log File	Description
BillerXpertInstall.log.<*mmdd*>	Installation log
BillerXpertInstall.oracle.<*mmdd*>	Oracle output log
BillerXpertInstall.ldap_err.<*mmdd*>	LDAP error log
BillerXpertInstall.ldap.<*mmdd*>	LDAP output log
BillerXpert.oracle.verify	BillerXpert - Oracle access log

The installer also runs a verification script and creates an output file named `BillerXpert.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 BillerXpert.

To create or populate the system with Billers and Companies, proceed to *Chapter 6, "Post Installation Tasks"*.

To separate BillerXpert into a 3-tier model, proceed to Appendix A, “Remote Installation of BillerXpert B2B Edition”.

Chapter 6

Post Installation Tasks

This chapter describes the post installation tasks to successful deploy BillerXpert. These tasks consist of setting the BillerXpert environment necessary to create the Process Manager cluster as well as the deployment of the sample workflows. In addition, the topics of verification and uninstallation are discussed.

This chapter covers the following topics:

- Setting up the Environment
- Post Installation
- Verifying The Installation
- Restarting BillerXpert
- Uninstalling of BillerXpert

Setting up the Environment

BillerXpert provides a set of environment scripts which prepare the system for initialization of the Directory Server, Application Server and Process Manager. This section provides the steps to setup and initialize the BillerXpert system.

BillerXpert Environment

To setup the environment:

- Go to the BillerX directory. For example:

hostname% **cd /export/ias6/billXpert**

The installer generated two environment shell scripts in this directory.

`billxpert_env.csh` (for `C shell`) and

`billxpert_env.sh` (for `Bourne shell`).

Select the appropriate script for your environment. For our example, the C shell script is selected as follows:

- From the command line, source the environment. For example,

  hostname% **source billxpert_env.csh**

NOTE	The shell scripts set up environment variables such as `CLASSPATH` and `$LD_LIBRARY_PATH`.

Browser Requirement

Access to a browser is a product requirement. If Netscape is your browser of choice, make sure it accessible through your command path. For the following example, Netscape is located under the `/tools/bin` directory

- To add this directory to the command path, type the following command.

  hostname% **setenv PATH /tools/bin:$PATH**

Directory Server Initialization

The next steps initiliaze the Directory Server.

- Go to the Directory Server directory. For example,

  hostname% $NAS_HOME/..

- Stop the Directory Server. For example,

  hostname% **./slapd-poppy/stop-slapd**

- Start the Directory Server. For example,

  hostname% **./slapd-poppy/start-slapd**

Application Server Initialization

The next steps initiliaze the Application Server.

- Go to the Directory Server directory. For example,

  hostname% $NAS_HOME/bin

- Stop the Application Server. For example,

  hostname% **./KIVAes.sh stop**

- Start the Application Server. For example,

  hostname% **./KIVAes. sh start**

Post Installation

BillerXpert B2B Edition provides a new program that simplifies the post installation tasks. This program is called *Ezpostinstall*. It's main purpose is to quickly create Billers, Companies, Process Manager (PM)clusters and selection of workflows, as well as load sample data for product demonstration or quick verification.

NOTE For Custom or Distributed configurations, running *EzPostinstall* might be a proper way to begin a quick deployment. If not, please refer to the *BSP Admin* manual for procedures on Biller creation and the *Biller Admin* manual for Company creation steps.

In the following steps, you will be creating one sample Biller (California Telecom) and two sample Billing companies (Company22 and Company44), as well as loading sample data (four invoices and a defined set of users).

EzPostInstall Script

To continue with the postinstallation tasks, one needs to run the *EzPostinstall* program. The steps are:

- Go to the $BX_HOME/demo directory. For example,

  hostname% **cd $BX_HOME/demo**

- Invoke the program as follows:

hostname% **./ezPostInstall.sh**

Biller Creation

The program will ask for a Biller name and proceed with deploying the workflow as follows:

- Enter the Biller Name you Want to Create [Q - to Quit] [Q].

  For example, type **California Telecom**

- Enter Biller Domain for your Biller

  For example. type **ct.com**

- Enter the Biller Oracle user name [myuser]

  For example, type **telco**

- Enter the Biller Oracle Password [password]

  For example, type **telco**

- Re-Enter the Biller Oracle Password [password]

  Type **telco**

```
Creating New Biller California Telecom with id
CaliforniaTelecom...

Creating Oracle User telco...

Creating Schema for California Telecom...

Creating Cluster for Biller...
```

Company Creation

1. `Enter the Company Name you Want to Create [Q - to Quit] [Q]:`

   For example, type **company22**

2. `Enter the Company Domain Name you Want to Create [company22.iplanet.com]`

   For example, type **company22.com**

```
>>> Select The Company Template You want to Use <<<

[1] Invoice Manager Approval

[2] Invoice Amount Approval

[3] Invoice Approver Approval
```

```
[4] Invoice Delegator Approval

Select One Profile [1, 2, 3, 4 ]
```

For example, type **1**

- `Do you want to load demo data [NO]`

NOTE 4 sample invoices are loaded along with a defined set of users with a predefined company hierarchy.

Type **yes** to load demo data.

```
****************************************

*******Your Template name is company22*******

Your companyId is 2001

Loading Company in LDAP...
```

Creating Second Company

- `Enter the Company Name you Want to Create [Q - to Quit] [Q]:`

  Type **company44**

- `Enter the Company Domain Name you Want to Create [company44.iplanet.com]:`

  Type **company44.com**

```
>>> Select The Company Template You want to Use <<<

[1] Invoice Manager Approval

[2] Invoice Amount Approval

[3] Invoice Approver Approval

[4] Invoice Delegator Approval

Select One Profile [1, 2, 3, 4 ]
```

Type **2**

- `Do you want to load demo data [NO]`

NOTE 4 sample invoices are loaded along with a defined set of users with a predefined company hierarchy.

Type **yes** to load demo data.

```
*******Your Template name is company44*******

Your companyId is 2003

Loading Company in LDAP...
```

- Enter the Company Name you Want to Create [Q - to Quit] [Q]:

  Type **Q** to quit.

  ```
  End of Company Creation
  ```

- Enter the Biller Name you Want to Create [Q - to Quit] [Q]:

  Type **Q** to quit.

  ```
  End of Biller Creation
  ```

  Proceed to the *Verifying The Installation* and *Product Demo Verification* sections to see an example of approval and payment of a sample invoice.

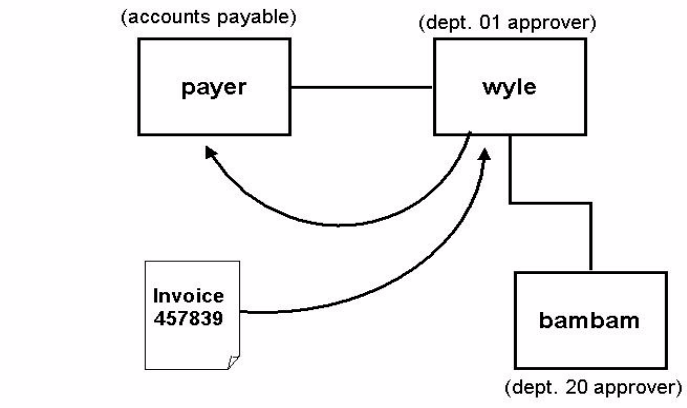
Verifying The Installation

Once the EzPost Install is completed, BillerXpert is ready for use. The Product Demo verification is a basic walkthrough of an approval process by predefined users.

Product Demo Verification

In the following example, we will be walking through a “Manager Approval” process for invoice 42790. This invoice has several line items which must be approved by user *‘bambam@company22.com’* (approver of department 20). Subsequently and once approved, the approved line items are routed to the manager of *‘bambam’*, which is *‘wyle@company22.com’*. Once *‘wyle’* approves the items, the example continues by having the accounts payable user *(‘payer@company22.com’)* review the invoice. A diagram depicting this process can be seen in Figure 6-1.

Figure 6-1 Sample of Manager Approval process



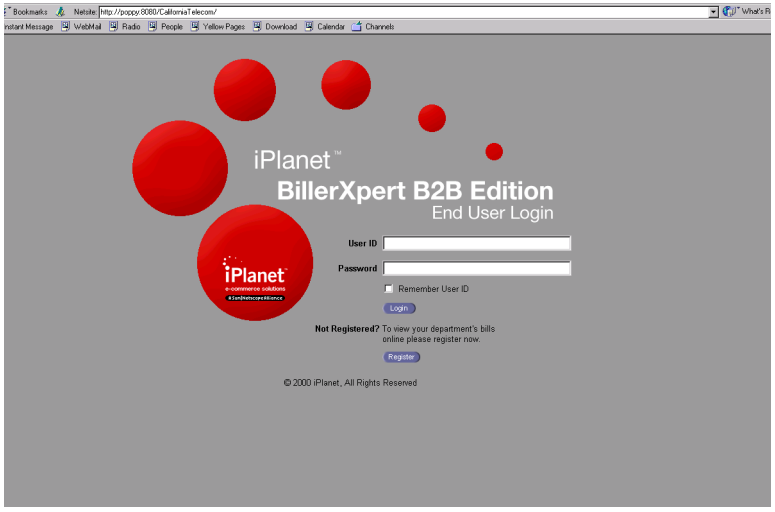
To begin the process, you must go the BillerXpert URL, login as each user and approve a specific invoice. The specific steps are as follows:

- Go to the BillerXpert URL. For example:

  http://poppy.red.iplanet.com:8080/CaliforniaTelecom

The End User screen appears as shown in Figure 6-2.

Figure 6-2 End User Screen



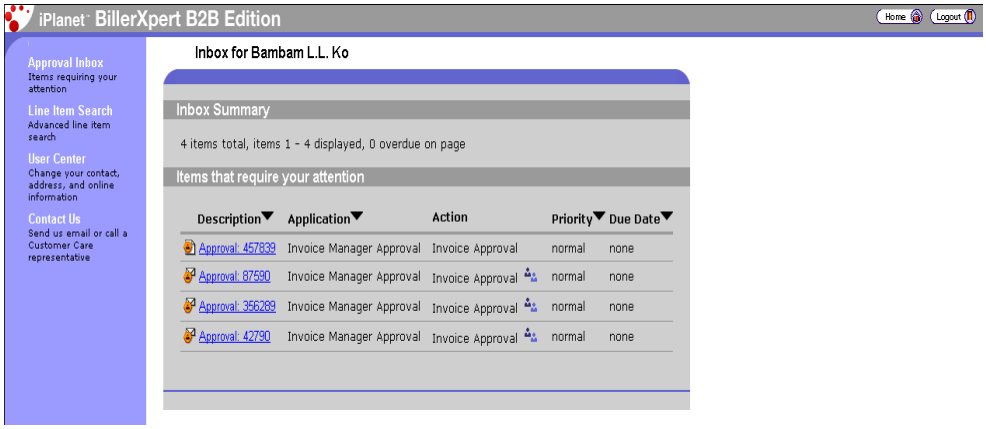
Approver bambam

Login as the bambam sample user. For example,

- Type **bambam@company22.com** in the Online Name field
- Type **bambam** in the Password field.
- Press **Sign On** button.

Shortly after, the *Approval inbox* screen as shown in Figure 6-3.

Figure 6-3 Approval Inbox

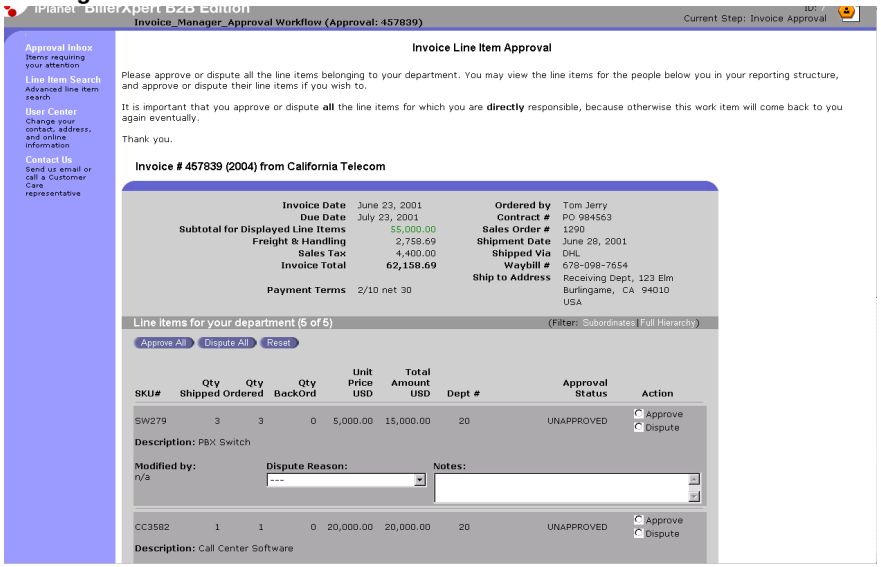


- Continue the process by selecting and clicking on,

  Approval for invoice 457839

Upon selecting invoice **457839**, the line item details for the user bambam are displayed as shown in Figure 6-4.

Figure 6-4 Line Item Details



The next step is to Approve the line items. For this example,

- Select

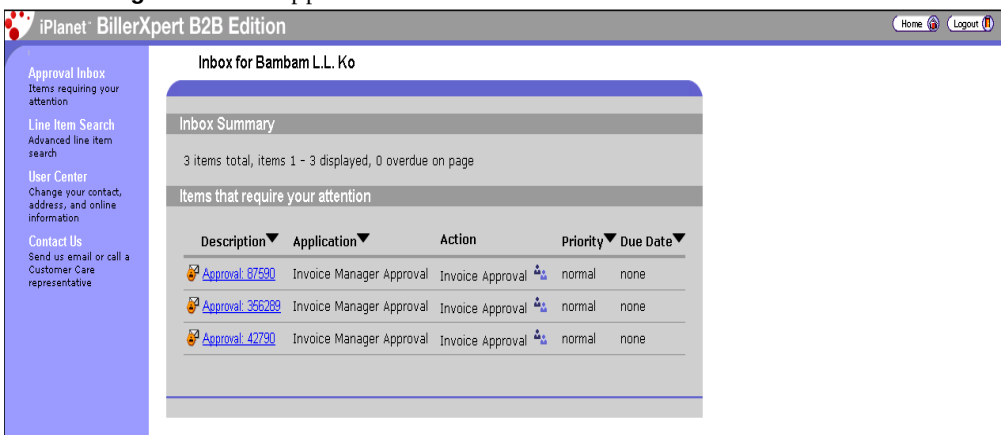
  Approve All button

- Select

  Submit button at the bottom of the page.

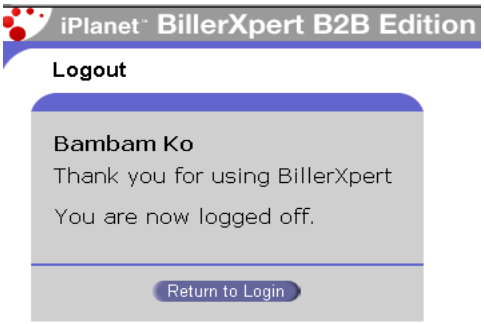
At this point, the system will revert to the Approval Inbox page and invoice **457839** is removed from the list of *Items that require your attention*. Figure 6-5 displays the results.

Figure 6-5 Approval Inbox



At this point invoice 457839 has been routed to the next user, *wyle@company22.com*. To continue the procedure select the logout. As a result the system display the logout page as shown in Figure 6-6.

Figure 6-6 Logout Page



At this point, select the **Return to Login** button to exit the BillerXpert system. The system reverts to the end user login page as shown in Figure 6-1.

Approver wyle

The next set of steps to approve the invoice are to login as the next user, *wyle@company22.com*, and repeat the same procedure. The steps are:

- Login to the system as **wyle@company22.com**. Password is **wyle**
- Select the **Approval for Invoice 457839**
- Select **Approve All** button
- Select **Submit** button at the bottom of the page
- Logout of the system.

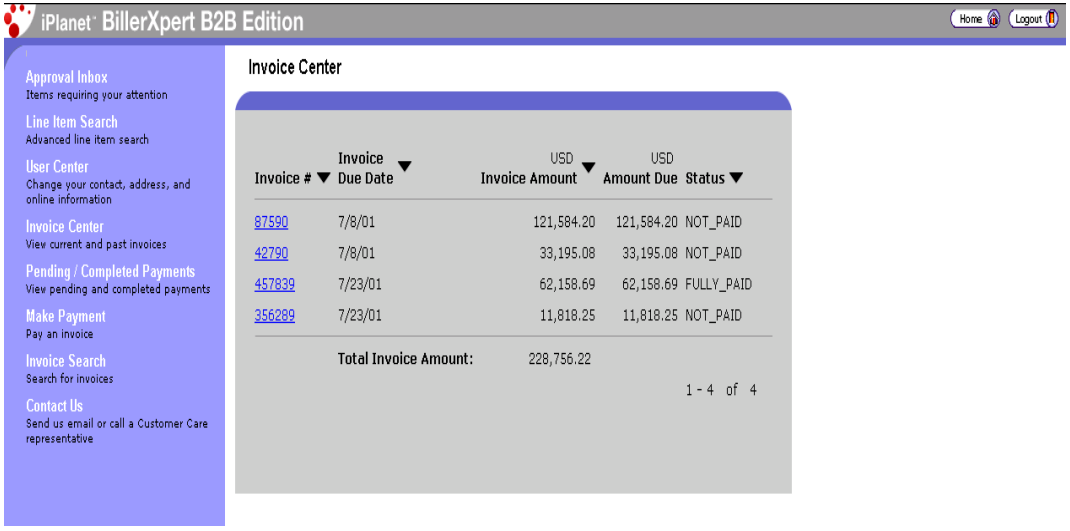
Payment By Payer

The next set of steps to pay the invoice are to login as the next user, *payer@ecompany.com*, select the make payment link . The Invoice Screen is displayed in Figure 6-7. The steps are:

- Login to the system as **payer@ecompany.com**. Password is **payer**
- Select **Invoice Center.**

  Note that the Invoice **457839** is paid by the status of 'FULLY_PAID'.
- Select **Invoice 457839** link and verify that all the items are approved.

Figure 6-7 Invoice Screen



NOTE To pay 'UNPAID' invoices, the system must be setup for payments. Refer to the *BSP Admin Guide* for how to setup the System for Payments.

Restarting BillerXpert

In the event the BillerXpert system needs to be shutdown and in order to restart the BillerXpert application, all components must be restarted in the following sequence.

- Oracle System
- Web Server
- BillerXpert environment / iAS / LDAP

The specific steps of each component are explained in the following section.

Oracle System

To start the Oracle system, log into the system as the Oracle Unix user, set the `$ORACLE_HOME` and `$ORACLE_SID` variables and invoke the startup and listener programs. The specific steps are as follows:

- Login as the Oracle Unix user. For example,

  hostname% **su - oracle**

- Set $ORACLE_HOME and $ORACLE_SID. For example,

  hostname% **setenv ORACLE_HOME /export/Oracle/app/oracle/product/817**

  hostname% **setenv ORACLE_SID B2B**

- Run svrmgrl and start the database. For example,

  hostname% **$ORACLE_HOME/bin/svrmgrl**

  SVRMGR> **connect internal**

  connected to an idle instance

  SVRMGR> **startup**

  Startup message displayed.

  SVRMGR> **exit**

- Start the listener program. For example,

  hostname% **$ORACLE_HOME/bin/lsnrctl start**

  Listener messages displayed.

To continue the restart sequence, proceed to the next section.

Web Server

To start the Web Server, log into the system as the BillerXpert Unix user and startup the Web Server. The specific steps are as follows:

- Login as the BillerXpert Unix user. For example,

  hostname% **su - bx**

- Go to the Web Server directory. For example,

  hostname% **cd /export/suitespot**

- Start the iWS Admin Server. For example:

  % hostname **./https -admserver/start**

- Start the Web Server. For example,

  hostname% **./https-poppy.red.iplanet.com/start**

To continue the restart sequence, proceed to the next section.

BillerXpert Environment

To properly restart the Application and Directory Server, the BilleXpert environment must be set. To begin, log into the system as the BillerXpert Unix user, source the environment, start the Directory Server and Application Server. The specific steps are as follows:

- Login as the BillerXpert Unix user. For example,

  hostname% **su - bx**

- Go to the BillerXpert directory. For example,

  hostname% **cd /export/ias6/billXpert**

- Source the environment. For example,

  hostname% **source billxpert_env.csh**

NOTE	The shell scripts set up environment variables such as `CLASSPATH` and `$LD_LIBRARY_PATH`.

Proceed to the next section as the BillerXpert Unix user.

Directory Server

The next steps initiliaze the Directory Server.

- Go to the Directory Server directory. For example,

  hostname% **cd /export/ias6** (or $NAS_HOME/.)

- Stop the Directory Server. For example,

  hostname% **./slapd-poppy/stop-slapd**

- Start the Directory Server. For example,

  hostname% **./slapd-poppy/start-slapd**

Proceed to the next section as the BillerXpert Unix user.

Application Server Initialization

The next steps initiliaze the Application Server.

- Go to the Application Server bin directory. For example,

  hostname% **cd /export/ias6/ias/bin** (or $NAS_HOME/bin)

- Stop the Application Server. For example,

  hostname% **./KIVAes.sh stop**

- Start the Application Server. For example,

  hostname% **./KIVAes. sh start**

To verify BillerXpert is working properly, refer to the *Simple Verification* section of this chapter.

Uninstalling of BillerXpert

In order to remove BillerXpert or any of the required components. One needs to go to each individual directory and invoke the *uninstall* script of the respective product. The following provides the location of the script for each product. In addition, the order of removal is noted below.

For BillerXpert

- Go to `$BX_HOME/..` For example

  hostname% **cd $NAS_HOME/..**

- Invoke the uninstall script. For example,

  %hostname **./uninstall**

The script will list the components removed and may request password information. To complete the uninstallation, you may be required to remove the installation directory.

For Application Server/Process Manager

- Go to $NAS_HOME/.. For example

  hostname% **cd $NAS_HOME/..**

  Invoke the uninstall script. For example,

  hostname# **./uninstall**

The script will list the components removed and may request password information. To complete the uninstallation, you may be required to remove the installation directory.

For Web Server:

- Go to $WEB_SERVER/.. For example

  hostname% **cd $WEB_SERVER/..**

  Invoke the uninstall script. For example,

  hostname# **./uninstall**

The script will list the components removed and may request password information. To complete the uninstallation, you may be required to remove the installation directory.

Appendix A

Remote Installation of BillerXpert B2B Edition

This Appendix provides the steps to installing and configuring iWS and B2B for a complete Distributed system (as explained in Chapter 5).

Overview

In order to complete the installation, it is assumed you have installed the following on Machine 2:

- iPlanet Application Server (iAS)
- BillerXpert B2B Edition
- iPlanet Web Server (iWS).

Perform post installation steps in order to:

- Create billers
- Create clusters
- Deploy the applications.

You will need to install the following on Machine 1:

  - iWS
  - iAS Web Connector
- Copy the corresponding templates and `cgi-bin/gx.cgi` file from the Web Server documents directory on machine1 to the Web Server documents directory on machine2.

- Copy `$NAS_HOME../bmp` directory from machine1 to machine2
- Modify `obj.conf` file on machine2
- Stop Web Server on machine1
- Start WebServer on machine2
- Restart iAS.

Installation Steps

As mentioned, the assumption is that the system has been installed as described in Chapter 5. The system is operational, and the Billers and Companies have been created.

Installing Web Server and Web Connector on machine1

To properly install the Web Server and Web Connector on machine1, follow these steps:

- Acquire the B2B installation software

  (See Chapter 3, “Installation Preparation”)

- Install iWS

  See Chapter 5, “iPlanet Web Server Installation”)

- Install the iAS Web Connector component in accordance with the following script:

NOTE Be sure to install *only* the web connector.

- Continue with install:

  Type **Yes**.

- Agree w/license:

  Type **Yes**.

- Select Netscape servers:

Type **1**

- Select custom install:

  Type **3**

- Install location:

  Type **/export/home/webcon**

- Specify components:

  Type **4** (Netscape Application Server Suite)

- Specify components:

  Type **1** (NAS Web Connector component)

- Specify computer name:

  Type **<machine1 full name>**

- Specify system user:

  Type **bxuser**

- Specify system group:

  Type **bxgroup**

- URL of Directory Serv.:

  Type **ldap://<machine2 full name>:<port number (15000)>/**

- Administration domain:

  Type **iplanet.com**

- Configuration admin ID:

  Type **admin**

- Passwd:

  Type **admin**

- Directory identifier:

  Type **<machine2>**

- Directory hostname:

  Type **<machine2 full name>**

- Directory port:

  Type **<port number (15000)>**

- Directory user:

  Type **cn=Directory Manager**

- Dir. user passwd:

  Type **dmanager**

- Global config name:

  Type **iasconfig (default)**

- Full Path to instance:

  Type **<Web Server home>(instance on machine2)**

- IP add. Of iAS machine:

  Type **<IP address of machine1>**

- Enter port# of KXS:

  Type **<10818 (KXS of machine1)**

To verify proper installation, Run the *fortune* application on *http://machine1:port/GXApp*

Copying Required Fields

In order to decouple the local Web Server from BillerXpert, one must copy the corresponding files for each Biller. In short, copy the following into machine1:

- html templates
- `gx.cgi` files
- `bpm` directory

NOTE Make sure you can run the zip & unzip command.

- Zip the `html` templates

  machine2% cd `<Web Server docs root>`

  For example, /export/suitespot/docs.

  ```
  machine1% zip –r admin.zip admin
  ```

This will compress the needed Admin templates

machine2% zip –r <biller name1>*.zip* <biller name1>

For example **zip -r Cal.zip CaliforniaTelecom**

machine2% zip –r <biller name2>*.zip* <biller name2>

For example **zip -r bxapp.zip bxappm**

- Compress the bpm files from the Application Server as follows:

  machine2% cd $NAS_HOME/..

  machine2% tar cvf bpm.tar bpm

- Copy the gx.cgi file on machine 1 as follows:

  machine1% cd <Web Server docs root>/cgi-bin

  machine1% cp gx.cgi gx.cgi.bak

- Copy the needed files from machine 2 to machine 1 as follows:

  machine1% cd <Web Server docs root>

- Change directories to your web server docs root on machine 1

  machine1% ftp machine2

- Change directories to your web server docs root on machine 1

  ftp> cd <Web Server docs root>

  For example, **cd /export/suitespot/docs**

- You must set to binary transfer

  ftp> bin

- Copy zips to machine 1

  ftp> mget *.zip

- Change to the cgi-bin directory

  ftp> cd cgi-bin

- Get the web connector cgi file

  ftp> get gx.cgi

- Copy the bpm directory from iAS. For example: **hostname# cd/export/webcon**

  machine2# ftp machine1

  ftp> cd export/ias6 (or $NAS_HOME)

```
ftp> get bpm.tar

ftp> bye
```

- Unpack the zip, tar files

  machine1% cd <Web Server docs root>

- Unzip all zip files. For example, **machine1# unzip admin.zip**

```
machine1% cd $NAS_HOME/..

machine1% tar xvf bpm.tar
```

- Modify `obj.conf` file as follows:

  machine1% cd < Web Server Home>/config.

  For example **cd /export/suitespot/https_machine1/config**

  machine1# vi obj.conf

  Under the line "<Object name-default>" insert the following lines: replacing the <iAS Server Root> location to, for example, **/export/webcon**

```
NameTrans fn="pfx2dir" from="/PMResources" dir="<iAS  Server
Root>/bpm/resources"

NameTrans fn="pfx2dir" from="/BPM" dir="<iAS Server
Root>/bpm/clusters"

NameTrans fn="pfx2dir" from="/Administrator.apm" dir="<iAS
Server Root>/bpm/Administrator.apm"

NameTrans fn="pfx2dir" from="/Business.apm" dir="<iAS Server
Root>/bpm/Business.apm/en"

NameTrans fn="pfx2dir" from="/Express.npm" dir="<iAS Server
Root>/bpm/Express.npm/en"
```

Double check the entries and exit the editor.

Testing The Installation

In order to test the installation, follow these steps:

- Stop the Web Server on machine 2
- Restart the Web Server on machine 2
- Restart iAS

- Run through the example demo as noted in the “Product Demo Verification” section.

Adding New Billers

In the event one needs to add additional Billers or Companies, the system needs to be reverted to having the Web Server running on the local system (machine2). The list of steps are:

- Stop the Web Server on machine1
- Start the Web Server on machine2
- Restart iAS
- Add new billers, clusters, deploy applications
- Repeat the steps as noted in “Copying Required Files” section.

Appendix B

Installing BillerXpert With Remote iPlanet Web Server (iWS)

This appendix provides instructions that will enable you to install BillerXpert B2B Edition with a remote version of iPlanet Web Server (iWS) using the iPlanet Application Server (iAS) Web Connector.

This Appendix refers to procedures contained in the *BillerXpert B2B Edition Installation Guide*. The document can be found online at:
`http://www.iplanet.com/docs/manuals`

This appendix contains the following sections:

- Overview
- Install BillerXpert B2B Edition in a Pilot configuration on machine1
- Install Web Server and Web Connector on machine2
- Copy the following from machine1 to machine2:

Overview

The following diagram illustrates the architecture for the installing BillerXpert With Remote iWS via iAS Web Connector.

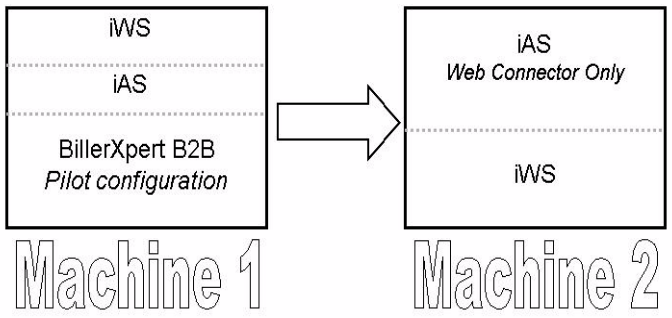


Figure B-1 BillerXpert Installation With Remote iWS via iAS Web Connector

The procedures are explained in the following sections.

- Machine 1 Installation
- Machine 2 Installation
- Copy Files From Machine 1 To Machine 2
- Testing The Installation
- Add New Billers After Installation

Machine 1 Installation

1. Install BillerXpert B2B Edition in a Pilot configuration on machine1
2. Install Web Server
3. Install iAS
4. Install BillerXpert B2B Edition

5. Perform the post installation steps. (Create billers, clusters, deploy applications)

   The procedures for each of these steps are listed in the *BillerXpert B2B Edition Installation Guide*. The document can be found online at:
   `http://www.iplanet.com/docs/manuals`

Machine 2 Installation

1. Install Web Server and Web Connector on machine2
2. Install Web Server
3. Install the iAS Web Connector component.

   You should install *only the Web Connector Component* on Machine 2. The procedure is as follows:

   - `Continue with install?`
   - Type **`Yes`**
   - `Agree w/license:?`
   - Type **`Yes`**
   - `Select Netscape servers:`
   - Type **`1`**
   - `Select custom install:`
   - Type **`3`**
   - `Install location:`
   - Type: **`/export/home/webcon`**
   - `Specify components:`
   - Type **`4`** (Netscape Application Server Suite)
   - `Specify components:`
   - Type **`1`** (NAS Web Connector component)
   - `Specify computer name:`
   - Type **`<Machine2 full name>`**
   - `Specify system user:`

- Type **bxuser**
- Specify system group:
- Type **bxgroup**
- URL of Directory Serv.:
- Type **ldap://<machine1 full name>:<port number (15000)>**
- Administration domain:
- Type **iplanet.com**
- Configuration admin ID:
- Type **admin**
- Passwd:
- Type **admin**
- Hostname (this machine):
- Type **<machine2 full name>**
- Directory identifier:
- Type **<machine1**>
- Directory hostname:
- Type **<machine1full name>**
- Directory port:
- Type **<port number (15000)>**
- Directory user:
- Type **cn=Directory Manager**
- Dir. user passwd:
- Type **dmanager**
- Global config name:
- Type **nasconfig** (default)
- Full Path to instance:
- Type **<Web Server home>** (Instance on machine2)
- IP add. Of iAS machine:
- Type **<IP address of machine1>**

- Enter port# of KXS:
- Type **10818** (KXS of machine1)

Copy Files From Machine 1 To Machine 2

1. Copy the following from machine1 to machine2:
   - html templates
   - gx.cgi file
   - bpm directory
2. Modify the obj.conf file on machine2
3. Make sure you can run the zip & unzip command

   This is located in tools/ns/bin or /bin directory.
4. Zip the html templates. For example:

   machine1% cd <Web Server docs root>

   machine1% zip –r admin.zip admin

   (usage: zip –r newzipfile directory)

   machine1% zip –r <biller name1>*.zip* <biller name1>

   machine1% zip –r <biller name2>*.zip* <biller name2>

……..

5. Tar the bpm/resources directory. For example:

   machine1% cd $NAS_HOME/../bpm

   machine1% tar cvf resources.tar resources
6. Backup the gx.cgi file on machine 2. For example:

   machine2% cd <Web Server docs root>/cgi-bin

   machine2% mv gx.cgi gx.cgi.bak
7. Copy the needed files from machine 1 to machine 2. For example:

   machine2% cd <Web Server docs root>

   Change directories to your web server docs root on machine 2

   machine2% ftp machine1

   Login as B2B user

ftp> cd <Web Server docs root>

change directories to your web server docs root on machine 1

```
ftp> bin
```

You must set to binary transfer

```
ftp> mget *.zip
ftp> cd cgi-bin
```

Change to the cgi-bin directory

```
ftp> lcd cgi-bin
ftp> get gx.cgi
```

Get the web connector cgi file

```
ftp> lcd < Web Server docs root.>
ftp> cd <iAS Home/..>
ftp> get resources.tar
ftp> by
```

8. Unpack the zip, tar files. For example:

```
machine2% cd <Web Server docs root>
machine2% unzip all zip files
```

(usage: unzip zipfile. This will create the appropriate directory and files)

```
machine2% tar xvf resources.tar
machine2% mv resources PMResources
```

Testing The Installation

1. Stop the Web Server on machine 1
2. Start the Web Server on machine 2
3. Restart iAS
4. Login

Add New Billers After Installation

1. Stop the Web Server on machine2
2. Start the Web Server on machine1
3. Restart iAS
4. Add new billers, add clusters, deploy applications
5. Archive new templates in the WebServer docs directory on Machine 1

   Archive `$NAS_HOME/../bpm/resources` directory
6. Copy the archives from Step 5 from machine1 to the machine2 at the correspondent directories.
7. Stop the Web Server on machine1
8. Start the Web Server on machine2
9. Restart iAS