

IBM DB2 Everyplace



Installation and User's Guide

Version 8.14

IBM DB2 Everyplace



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Note:

Before using this information and the product it supports, read the general information under "Notices" on page 103.

Second Edition (October 2003)

This edition applies to Version 8.1 of DB2 Everyplace (product number 5724-D04) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Table of contents

About this book	v
Who should read this book	v
How this book is structured	v
Conventions and terminology used in this book	vi
How to send your comments	vi

Part 1. Introduction 1

Chapter 1. DB2 Everyplace product overview	3
What is DB2 Everyplace?	3
Components of the DB2 Everyplace solution.	3
The DB2 Everyplace mobile database	3
The DB2 Everyplace Sync Server	4
The DB2 Everyplace Sync Client.	4
The DB2 Everyplace Mobile Application Builder	5
The DB2 Everyplace sample applications	5
An example DB2 Everyplace scenario	6

Part 2. Installing DB2 Everyplace . . . 7

Chapter 2. Installing DB2 Everyplace . . . 9	9
Migration considerations for Version 8.1.4	9
DB2 Everyplace installation requirements	10
DB2 Everyplace Express installation requirements	11
Installing on the server	12
Pre-installation tasks	12
Installing on the server	14
Installing on a server for Windows	14
Installing on a server for UNIX.	18
Installing DB2 Everyplace Express on a server for Windows	21
Installing DB2 Everyplace Express on a server for Linux	23
Installing on mobile devices	25
Installing mobile devices	25
Installing using the Install on Mobile Devices tool	25
Installing manually on a mobile device	27
Updating the Sync Client software with the Update tool	39
Post installation tasks for the server	43
Creating a DB2 Everyplace instance on UNIX	44
Mapping a source database to a mid-tier server	44
Enabling replication	45
Setting up sample databases and applications	45
Testing the Sync Server servlet	46
Configuring Sync Server to use with IBM WebSphere Application Server	47
Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0	49
Configuring a multiple server environment.	59
Post installation tasks on the mobile device.	65

Part 3. Synchronization setup 67

Chapter 3. Setting up a mobile device for synchronization	69
Setting up a Palm mobile device or emulator for synchronization	69
Setting up a Palm OS mobile device for synchronization	69
Setting up the Palm OS mobile device or emulator	69
Installing files on a Palm OS mobile device or emulator	70
Synchronizing and verifying data on a Palm OS mobile device or emulator	72
Setting up a Symbian OS v6.0 mobile device for synchronization	73
Setting up and configuring a Symbian OS V6.0 mobile device for synchronization	73
Configuring m-Router Connect on a workstation	74
Configuring m-Router Connect on the device	74
Configuring ISync on the device	75
Synchronizing data on a Symbian OS V6.0 device	75

Part 4. Sample applications 77

Chapter 4. Overview of DB2 Everyplace sample applications	79
--	-----------

Chapter 5. The IBM Sync application	83
Overview of IBM Sync	83
Configuring IBM Sync for Palm OS	83
IBM Sync menu options	84
Synchronizing data using IBM Sync	86

Chapter 6. The CLP application	89
Overview of the CLP application	89
CLP commands	89
Entering and executing SQL statements using CLP	91
Importing and exporting data using the CLP	92

Chapter 7. The Visiting Nurse sample application	97
Overview of the Visiting Nurse sample application	97
Running the Visiting Nurse application	98
Visiting Nurse sample application tables	100

Notices	103
Trademarks	106

Glossary	107
---------------------------	------------

Index	111
------------------------	------------

Contacting IBM 113

Product Information 113

About this book

This book provides instructions on how to install and use IBM DB2 Everyplace. This book covers:

- Installing DB2 Everyplace components to a workstation.
- Installing the DB2 Everyplace database and sample applications to a mobile or embedded device or emulator.
- Using the DB2 Everyplace sample applications.
- Using the Command Line Processor.
- Using Query-by-Example.
- Using IBM Sync.

This book does not cover application development using DB2 Everyplace. Application development is covered in the *DB2 Everyplace Application Development Guide*.

This book does not cover configuration and administration of the DB2 Everyplace Sync Server. Configuration and administration of the Sync Server is covered in the *DB2 Everyplace Sync Server Administration Guide*.

Who should read this book

This book is written for application developers, system administrators, or information technology personnel who are involved in developing or deploying applications using DB2 Everyplace.

You should use this book if you want to install or use DB2 Everyplace on one of the supported platforms.

This book does not explain some basic operations of the mobile or embedded devices that you might need to perform when using DB2 Everyplace. Refer to the documentation included with the mobile or embedded device for instructions on performing these operations. Basic knowledge of how to use the mobile or embedded devices is required to use DB2 Everyplace.

How this book is structured

This book is divided into the following parts:

- **Part 1** gives a brief introduction to DB2 Everyplace and the DB2 Everyplace solution for mobile computing.
- **Part 2** explains how to install DB2 Everyplace on a Windows workstation and how to install DB2 Everyplace applications and samples on your mobile device.
- **Part 3** explains how to set up and configure a mobile device or emulator, and how to use the sample applications included with DB2 Everyplace.
- **Part 4** contains information about the DB2 Everyplace library, language enablers on mobile devices, sample application tables, glossary, and how to contact IBM.

Conventions and terminology used in this book

The following highlighting conventions are used in this book.

Table 1. *Highlighting conventions*

Text property	Definition
Bold	Indicates commands, keywords, and other items whose names are predefined by the system.
<i>Italics</i>	Indicates one of the following things: <ul style="list-style-type: none">• The introduction of a new term• Names or values (variables) that must be supplied by the user• A reference to another source of information• General emphasis
Monospace	Indicates one of the following things: <ul style="list-style-type: none">• Files and directories• Information that you are instructed to type at a command prompt or in a window• Examples of specific data values• Examples of text similar to what might be displayed by the system• Examples of system messages

How to send your comments

Your feedback helps IBM to provide quality information. Please send any comments that you have about this book or other DB2 Everyplace documentation. You can use any of the following methods to provide comments:

- Send your comments from the Web. Visit the Web site at <http://www.ibm.com/software/data/db2/everyplace/>. The Web site has a feedback page that you can use to enter and send comments.
- Complete the readers' comment form at the back of the book and return it by mail, by fax (800-426-7773 for the United States and Canada), or by giving it to an IBM representative.

Part 1. Introduction

Chapter 1. DB2 Everyplace product overview	3
What is DB2 Everyplace?	3
Components of the DB2 Everyplace solution.	3
The DB2 Everyplace mobile database	3
The DB2 Everyplace Sync Server	4
The DB2 Everyplace Sync Client.	4
The DB2 Everyplace Mobile Application Builder	5
The DB2 Everyplace sample applications	5
An example DB2 Everyplace scenario	6

Chapter 1. DB2 Everyplace product overview

This section provides an introduction to DB2 Everyplace, a description of the components that make up the DB2 Everyplace solution, and an example of a typical DB2 Everyplace scenario. This section contains the following topics:

- “What is DB2 Everyplace?”
- “Components of the DB2 Everyplace solution”
 - “The DB2 Everyplace mobile database”
 - “The DB2 Everyplace Sync Server” on page 4
 - “The DB2 Everyplace Sync Client” on page 4
 - “The DB2 Everyplace Mobile Application Builder” on page 5
 - “The DB2 Everyplace sample applications” on page 5
- “An example DB2 Everyplace scenario” on page 6

What is DB2 Everyplace?

DB2 Everyplace is part of IBM’s solution for pervasive computing. With DB2 Everyplace, mobile professionals (such as sales people, inspectors, auditors, field service technicians, doctors, realtors, and insurance claim adjusters) can keep in touch with vital data that they need when away from the office.

Organizations are now able to deliver their DB2 enterprise data to mobile and embedded devices. With DB2 Everyplace, you can access and perform updates to a database on your mobile device. With DB2 Everyplace Sync Server, you can synchronize data from the mobile device to other data sources in your enterprise. The File Adapter capability enables you to distribute files and applications to mobile users.

The DB2 Everyplace database is a relational database that resides on your mobile device. To access data on the mobile device, you can write applications using rapid application development tools, the supported set of DB2 Call Level Interface (CLI) functions, Java Database Connectivity (JDBC) methods, or ADO.NET methods.

Components of the DB2 Everyplace solution

The DB2 Everyplace solution has the following key features and components:

- The DB2 Everyplace mobile database.
- The DB2 Everyplace Sync Server.
- The DB2 Everyplace Sync Client.
- The DB2 Everyplace Mobile Application Builder.
- The DB2 Everyplace sample applications.

The DB2 Everyplace mobile database

This database resides on the mobile device. The mobile database is included with DB2 Everyplace Database Edition, DB2 Everyplace Enterprise Edition, and DB2 Everyplace Software Development Kit. Another component associated with the mobile database is:

- The sample application (engine side)

The DB2 Everyplace mobile database is available for:

- Palm OS
- Symbian OS
- Windows CE/Pocket PC
- Win32 (Windows[®] 95, Windows[®] 98, Windows[®] NT[®], Windows[®] 2000[®], and Windows[®] XP[®])
- QNX Neutrino, Linux, and embedded Linux devices.

DB2 Everyplace also supports MIDP mobile devices that use the MIDP database.

The DB2 Everyplace Sync Server

DB2 Everyplace Sync Server is included with DB2 Everyplace Enterprise Edition. Other important components that are associated with the Sync Server include:

- The DB2 Everyplace Mobile Device Administration Center
- The sample applications (server side)

You can synchronize data and applications between DB2 Everyplace mobile devices and enterprise data sources using the DB2 Everyplace Sync Server and DB2 Everyplace Sync Client.

Data synchronization can be bi-directional or uni-directional. Data can be updated at the DB2 Everyplace mobile device or the enterprise database. For example, users could download a subset of data from a DB2 for z/OS database to a DB2 Everyplace database on the mobile device, view the data, make changes to the data, and then synchronize the changed data back to the z/OS server. The DB2 Everyplace Sync Server also provides a mechanism for conflict resolution.

The DB2 Everyplace Sync Server provides an administration tool that helps you manage and deliver synchronization services to groups of users with similar data synchronization needs. More information about the Mobile Devices Administration Center is available in the Sync Server Administration Guide.

DB2 Everyplace Sync Server supports synchronizing relational data with any data source that has a JDBC interface, such as DB2 Universal Database.

DB2 Everyplace Sync Server supports synchronizing relational data with the following data sources:

- DB2 Universal Database for z/OS
- DB2 Universal Database for iSeries
- DB2 Universal Database for Linux, UNIX and Windows
- Any data sources with a JDBC interface

The DB2 Everyplace Sync Client

The DB2 Everyplace Sync Client is included with DB2 Everyplace Enterprise Edition.

The DB2 Everyplace Sync Client, which runs on mobile devices, is comprised of applications that work with the DB2 Everyplace Sync Server. It handles bi-directional synchronization of enterprise relational data with the DB2 Everyplace mobile database on the mobile device. The mobile device also manages operations related to file subscriptions for easy distribution of mobile applications to the device and can execute stored procedures stored on a DB2 database.

The Sync Client is available for the following operating systems:

- Palm OS
- Symbian OS
- Windows CE/Pocket PC
- Win32 (Windows[®] 95, Windows[®] 98, Windows[®] NT[®], Windows[®] 2000[®], and Windows[®] XP[®])
- QNX Neutrino, Linux, and embedded Linux devices

For information about the Application Programming Interfaces (APIs) provided with the Sync Client, see *DB2 Everyplace Application Development Guide*.

The DB2 Everyplace Mobile Application Builder

The DB2 Everyplace Mobile Application Builder is included with the Software Development Kit and is also downloadable from the IBM Web site.

You can use the DB2 Everyplace Mobile Application Builder to develop DB2 Everyplace applications for Palm OS, WinCE, Symbian OS, and other platforms that support a user interface and a Java Virtual Machine. With the Mobile Application Builder, you can build applications without writing a single line of code. For information on how to get the Mobile Application Builder, visit the DB2 Everyplace Web site.

Other development tools include WebSphere Studio Device Developer, Visual Age Micro Edition, Metrowerks CodeWarrior, and the GNU Software Developer's Kit.

The DB2 Everyplace sample applications

The sample applications provide an example of an application using DB2 Everyplace. You can use the Visiting Nurse sample application to quickly test bi-directional synchronization between the mobile database and the Sync Server. The sample applications has two parts, one that runs on the Sync Server and another that runs on the mobile database. This mobile database sample application demonstrates the database engine functionality in stand-alone environment. When the Sync Server sample application and the database engine sample application are used together, they work as a complete application that invokes all components of the DB2 Everyplace.

The IBM Sync is also a sample application which demonstrates how to use the DB2 Everyplace Sync Client API to synchronize tables of the subscriptions defined in MDAC.

The Command Line Processor is an application development tool provided as an example application using DB2 Everyplace on platforms with a command line interface. The Command Line Processor is used for the DB2 Everyplace database on mobile devices. It is not used by the Sync Server.

The SQL statements supported by DB2 Everyplace enable you to create and drop a table and index, and delete, insert, and update the rows of a table.

See the *DB2 Everyplace Application Development Guide* for more information about supported SQL statements.

An example DB2 Everyplace scenario

Insurance claims adjusters are responsible for inspecting the damaged property of customers who file claims. In many companies, the adjuster visits the claimant's property, fills out paper forms to validate or refute the claim, and assesses the amount of the damages to be paid to the claimant. Later, when the adjuster returns to the office, the forms are manually entered into the company's computer system in a tedious and expensive process.

Equipping the adjusters with a mobile device running a DB2 Everyplace application can considerably streamline this process. Using their mobile devices wherever they are, the adjusters can access their inspection schedule, route, and claimant policy information. The adjusters can also complete the adjustment form on the mobile device. When the adjusters return to the office, they can synchronize the data on their mobile devices with the company's computer system by uploading the new adjustment form data to the company's enterprise database. If the adjusters need information in the field, they can synchronize the data on their mobile devices with the company's computer system immediately via modem. The claims adjustment process can now be completely paper free, which translates into significant cost savings for the insurance company. Claims are also settled faster because adjusters can have instant access to their company's enterprise databases.

Part 2. Installing DB2 Everyplace

Chapter 2. Installing DB2 Everyplace	9
Migration considerations for Version 8.1.4	9
DB2 Everyplace installation requirements	10
DB2 Everyplace Express installation requirements	11
Installing on the server	12
Pre-installation tasks	12
Adjusting operating system parameters for Linux	12
Adjusting operating system parameters for Solaris	13
Adjusting operating system parameters for AIX	14
Installing on the server	14
Installing on a server for Windows	14
Installing on a server for UNIX.	18
Installing DB2 Everyplace Express on a server for Windows	21
Installing DB2 Everyplace Express on a server for Linux	23
Installing on mobile devices	25
Installing mobile devices	25
Installing using the Install on Mobile Devices tool	25
Installing manually on a mobile device	27
Installing DB2 Everyplace files manually	27
Installing DB2 Everyplace files on a Palm OS device	27
Installing files on a Windows CE device.	29
Installing files on a Symbian OS Version 6 device	30
Installing files on a Symbian OS Version 7 device	31
Verifying Symbian OS Version 7 device installation	32
Installing files on a QNX Neutrino or embedded Linux mobile device.	33
Installing files on a Sharp Zaurus device	34
Installing files on a MIDP supported device	35
Installing files on a Win32 client	37
Updating the Sync Client software with the Update tool	39
Updating Sync Client software using the DB2 Everyplace Update Tool	39
Setting up the DB2 Everyplace Update Tool on the Sync Server	40
Installing the DB2 Everyplace Update Tool on a mobile device	41
DB2 Everyplace Update Tool error messages	42
Post installation tasks for the server	43
Creating a DB2 Everyplace instance on UNIX	44
Mapping a source database to a mid-tier server	44
Enabling replication	45
Setting up sample databases and applications	45
Testing the Sync Server servlet	46
Configuring Sync Server to use with IBM WebSphere Application Server	47
Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0	49
Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0	49
Gathering configuration information	50
The WAS installation scripts.	51
Installation and configuration overview	51
Creating and installing an application server	52
Creating a cluster environment	53
Adding the server nodes	54
Creating the cluster.	55
Adding new servers to the cluster.	55
Administrative tasks	56
Uninstalling DB2 Everyplace from WAS.	56
Starting and stopping the DB2 Everyplace application server	57
Deleting the Cluster	58
Regenerating the Web Server plugin	58
Configuring a multiple server environment.	59
Configuring a multiple server environment.	59
Server groups and clones.	60
Planning considerations and tips	61
Setting up to create application server clones	61
Creating application server clones	62
Post-configuration tasks	64
Post installation tasks on the mobile device.	65

Chapter 2. Installing DB2 Everyplace

This chapter provides information about installing DB2 Everyplace. The topics covered are:

- “Migration considerations for Version 8.1.4”
- “DB2 Everyplace installation requirements” on page 10
- “DB2 Everyplace Express installation requirements” on page 11
- “Installing on the server” on page 12
- “Installing on mobile devices” on page 25
- “Post installation tasks for the server” on page 43
- “Post installation tasks on the mobile device” on page 65

Migration considerations for Version 8.1.4

This section describes Version 8.1.4 migration issues and provides the necessary instructions for the DB2 Everyplace Sync Server and Sync Client:

- For the Sync Server:

The infrastructure that supports the replication of JDBC subscriptions is different in DB2 Everyplace 8.1.4. In order for it to function properly, DB2 Everyplace 8.1.4 needs to migrate JDBC subscriptions that were created with a previous version of DB2 Everyplace. This migration should take place before the newly installed DB2 Everyplace Sync Server is started. You should replicate all mirror databases before upgrading an existing DB2 Everyplace installation to DB2 Everyplace 8.1.4. If the mirror databases are replicated immediately before installation and migration is performed immediately after installation, then migration will not require much time. Otherwise, it may take an extended period of time to complete. Before you install DB2 Everyplace 8.1.4, it is highly recommended that all source databases, mirror databases, and the DSYCTLDB database be backed up. After installation, when migration is performed, it is necessary that all source tables in a JDBC subscription be quiescent. Activity on the tables may resume once migration has completed.

Prerequisites:

- Ensure that the CLASSPATH contains the JDBC drivers of all source databases referred to in a JDBC subscription.
- Ensure that all tables included in a JDBC subscription are quiescent.

Procedure:

During the installation of DB2 Everyplace, this task can be performed for you. If you choose not to have the installation Setup Wizard perform this task, you must perform the following steps **after** DB2 Everyplace is installed.

1. Invoke the migration utility:
 - For Windows, execute %DSYINSTDIR%\Server\bin\dsyjdbcmigration.bat.
 - For UNIX, execute \$DSYINSTDIR/Server/bin/dsyjdbcmigration.sh.
2. Check the log file dsyjdbcmigration.log in %DSYINSTDIR%\Server\logs or \$DSYINSTDIR/Server/logs for errors.
3. If there are errors, correct them and repeat steps 1 and 2. If problems persist, contact IBM software support.

- For the Sync Client:

Procedure:

If you have previously synchronized using Linux or QNX Neutrino Sync Client, you must migrate the Sync Client configuration files by running `migrate.sh` in the target directory. The target directory is where the Sync Client configuration files (For example, `CONFIG1`, `MISC1`) are stored. The script simply changes the file names to lowercase. The file `migrate.sh` is located in the `/bin` directory. If you try to synchronize using a Linux or QNX Neutrino 8.1.4 Sync Client and the previous configuration files (which are all upper case), then the API function `iscConfigOpen()` with return `ISCRTN_Failed`.

Related tasks:

- “Installing on a server for Windows” on page 14

DB2 Everyplace installation requirements

Prerequisites:

Hardware requirements:

To use DB2 Everyplace, your system must meet the following hardware requirements:

- Intel Pentium III or comparable processor
- 512 MB of memory
- 300 MB of free disk space
- 700 MB of free disk space (if you do not have DB2 Universal Database installed)

Software requirements:

To use DB2 Everyplace Sync Server, you must have the following software installed:

- DB2 Everyplace supports DB2 Universal Database Version 7 FixPak 3, FixPak 4, FixPak 5, FixPak 6, FixPak 7, and FixPak 8. We recommend that you have FixPak 5 or later for Windows, AIX, and Linux. For Solaris, we recommend that you install FixPak 7 or later. If you do not have DB2 Universal Database installed on Windows, an embedded copy with limited functionality will be installed.
- DB2 Everyplace supports DB2 Universal Database Version 8, FixPak 1 through FixPak 4.
- A Web server with Java Servlet API 2.0 support. IBM WebSphere Application Server Version 4.0 FixPak 4 or later (including IBM WebSphere Application Server 5.0 – be sure to install FixPak 2 if you are using WAS 5.0.) is required for production. A limited-use license of Application Server -Express is installed on your machine during the DB2 Everyplace installation.
- Workstation to mobile device connection software, such as Palm HotSync.
- JDK 1.3.1 (Solaris only)

Operating system requirements:

DB2 Everyplace runs on the following operating systems:

- For the DB2 Everyplace Sync Server:
 - Microsoft Windows 2000, Windows NT, or Windows XP
 - Redhat Linux Version 7.3 or later

- Mandrake Version 8.2 or later
- Solaris Version 8
- For the client:
 - Win32 mobile devices
 - Palm OS mobile devices
 - Symbian6 and Symbian7 mobile devices
 - WinCE / PocketPC mobile devices
 - QNX Neutrino mobile devices
 - 7.0 Windows CE Version 3.0, 4.0
 - Linux with gcc 3.2.1 and glib 2.2 for x86,
 - Monta Vista Linux 2.1 and 3.0 for ARM

Related tasks:

- “Migration considerations for Version 8.1.4” on page 9
- “Testing the Sync Server servlet” on page 46

DB2 Everyplace Express installation requirements

Prerequisites:

Hardware requirements:

To use DB2 Everyplace, your system must meet the following hardware requirements:

- Intel Pentium III or comparable processor (Windows and Linux)
- 512 MB of memory (1GB of memory is recommended if you are using IBM WebSphere Application Server)
- 300 MB of free disk space (700 MB of free disk space if you do not have DB2 Universal Database installed on your computer)

Software requirements:

To use DB2 Everyplace Sync Server, you must have the following software installed:

- DB2 Everyplace supports DB2 Universal Database Version 7.2 with FixPak 5 or later.

Note: If you do not have DB2 Universal Database installed, DB2 Everyplace 8.1.4 Setup Wizard will install an embedded version of DB2 Universal Database Express Edition on your computer to be used with DB2 Everyplace.

- A Web server with Java Servlet API 2.0 support. When you install DB2 Everyplace, an embedded version of Application Server – Express will be installed on your system. If you want DB2 Everyplace to be an application server running in the WebSphere Application Server Version 5 environment, you must install FixPak 2.
- Workstation to mobile device connection software (for example, Palm HotSync). This is needed for the DB2 Everyplace database engine and Sync Client installation on the mobile device.

Operating system requirements:

DB2 Everyplace runs on the following operating systems:

- For the DB2 Everyplace Sync Server:
 - Microsoft Windows 2000, Windows NT, or Windows XP
 - Redhat Linux Version 7.3 or later
 - Mandrake Version 8.2 or later
- For the client:
 - Win32 mobile devices
 - Palm OS mobile devices
 - Symbian6 and Symbian7 mobile devices
 - WinCE / PocketPC mobile devices
 - Linux mobile devices
 - QNX Neutrino mobile devices

Related tasks:

- “Testing the Sync Server servlet” on page 46

Installing on the server

This chapter provides information about installing DB2 Everyplace on a server. The topics covered are:

- “Pre-installation tasks”
- “Installing on a server for Windows” on page 14
- “Installing on a server for UNIX” on page 18
- “Installing DB2 Everyplace Express on a server for Windows” on page 21
- “Installing DB2 Everyplace Express on a server for Linux” on page 23

Pre-installation tasks

This chapter provides information about the pre-installation steps that you need to perform before installing DB2 Everyplace on a server. The topics covered are:

- “Adjusting operating system parameters for Linux”
- “Adjusting operating system parameters for Solaris” on page 13
- “Adjusting operating system parameters for AIX” on page 14

Adjusting operating system parameters for Linux

In order for DB2 Everyplace to operate with the highest degree of efficiency, system parameters in DB2 Universal Database need to be adjusted. Failure to do so, can result in the inability to create a new connection to the database on Linux. It is recommended that the kernel parameters are adjusted.

Note: Only 32 bit DB2 Universal Database instances are supported.

Prerequisites:

Modify the login profile to include the following:

```
export DISPLAY=<workstation>:0.0
```

Where *<workstation>* is the UNIX workstation where you want to use the Mobile Devices Administration Center.

Procedure:

For Linux systems running kernel 2.4 or higher, issue the following commands on the command line as the root user:

- `sysctl -w kernel.msgmni=2048`
- `sysctl -w kernel.shmmax=1073741824`
- `sysctl -w fs.file-max=32768`
- `sysctl -w kernel.sem="512 32000 32 1024"`
- `sysctl -w kernel.threads-max=20480`

To execute the commands automatically, edit the file `/etc/rc.d/rc.local`, and place the above commands at the end of the file. On every subsequent system boot, the values will be set automatically. Additional setting recommendations can be found in the Linux 7.2 Release Notes for the fix pack you are running.

Related tasks:

- “Creating a DB2 Everyplace instance on UNIX” on page 44
- “Adjusting operating system parameters for Solaris”
- “Adjusting operating system parameters for AIX” on page 14

Adjusting operating system parameters for Solaris

In order for DB2 Everyplace to operate with the highest degree of efficiency, system parameters in DB2 Universal Database need to be adjusted. Failure to do so, can result in unexpected interruptions. It is recommended that the kernel parameters are adjusted.

Note: Only 32 bit DB2 Universal Database instances are supported.

Prerequisites:

Modify the login profile to include the following:

```
export DISPLAY=<workstation>:0.0
```

Where `<workstation>` is the UNIX workstation where you want to use the Mobile Device Administration Center.

Procedure:

For Solaris systems, the default system kernel parameters are insufficient to run DB2 Universal Database and DB2 Everyplace. These values can be added or edited in the file, `/etc/system`.

The format for setting these values is:

```
set parameter_name = value
```

The suggested parameters in the DB2 Universal Database should be further adjusted to include the following minimum values:

- `set shmsys:shminfo_shmseg = 256`
- `set semsys:seminfo_semume = 256`

After modification of any kernel parameters, reboot the system to make the kernel settings effective.

Related tasks:

- “Creating a DB2 Everyplace instance on UNIX” on page 44

- “Adjusting operating system parameters for Linux” on page 12
- “Adjusting operating system parameters for AIX”

Adjusting operating system parameters for AIX

In order for DB2 Everyplace to operate with the highest degree of efficiency, system parameters in DB2 Universal Database need to be adjusted. Failure to do so, can result in the inability to create a new connection to the database. The extended shared memory segments should be enabled.

Note: Only 32 bit DB2 Universal Database instances are supported.

Prerequisites:

Modify the login profile to include the following:

```
export DISPLAY=<workstation>:0.0
```

Where *<workstation>* is the UNIX workstation where you want to use the Mobile Devices Administration Center.

Procedure:

For each DB2 instance running DB2 Everyplace:

1. Modify the login profile (most likely `/home/<username>/.profile`), to include the following:

```
export EXTSHM=ON
```
2. Exit the user shell.
3. Login as the user (to make the changes effective) and open a new shell.
4. From the shell prompt, execute the following command:

```
db2set DB2ENVLIST=EXTSHM
```
5. Restart the DB2 Universal Database instance.

Related tasks:

- “Creating a DB2 Everyplace instance on UNIX” on page 44
- “Adjusting operating system parameters for Linux” on page 12
- “Adjusting operating system parameters for Solaris” on page 13

Installing on the server

You need to install DB2 Everyplace on a server and on each mobile device or emulator that connects to the server.

Related tasks:

- “Installing mobile devices” on page 25

Installing on a server for Windows

Complete the following steps to install DB2 Everyplace on a Windows server.

Procedure:

1. Run the setup program:
 If you are installing from a CD-ROM:
 - For Windows, insert the DB2 Everyplace CD-ROM in your CD-ROM drive. The DB2 Everyplace installer opens. If the DB2 Everyplace installer does not

open, begin installation by double-clicking the DB2Everyplace.exe file located on the DB2 Everyplace CD-ROM.

If you are installing from the DB2 Everyplace Web site:

- For Windows, run DB2Everyplace.exe

The Welcome panel opens.

2. Click **Next** to read the Install Notes. After reading the Install Notes, click **Next** to view the License Agreement. After accepting the License Agreement, click **Next** to open the Destination directory panel.
3. Type the directory where you would like to install DB2 Everyplace or click **Browse** to select a directory. After selecting the destination directory, click **Next**. The Select the installation type panel opens.
4. Select the installation setup type:
 - **Typical:** For most users who want to install DB2 Everyplace with the most functionality and features using a typical configuration with default values.
 - **Custom:** For advanced users who want to choose the features to be installed.
 - **Multiple Server:** Installs DB2 Everyplace on multiple servers for high availability and load balancing environments.
 - **Control Database only:** Installs the DB2 Everyplace Control database only.
 - **DB2 Everyplace Sync Server only:** Installs the DB2 Everyplace Sync Server only.

Click **Next**.

5. If you select Typical, the DB2 Everyplace Setup Wizard:
 - will *not* create a response file during the installation
 - creates the DB2 Everyplace sample databases, server sample application, and installs the pre-configured windows client application for demonstrating synchronization.
 - starts the windows service for DB2 Everyplace Sync Server at the end of the installation.

Proceed to Step 10 on page 17.

6. If you select the Custom installation setup type:
 - a. A panel opens where you can select the features that you want to install. Click **Next**. The Select install actions panel opens.
 - b. Select the check box next to the installation action that you want to enable. You can select both options, but you must select at least one. If you do not select an installation action, you will receive an error. Specify whether you would like the Setup Wizard to install DB2 Everyplace on your computer or to generate a response file. A response file is used to record the user responses required during an interactive installation. It can be used for automating installation on other computers. After selecting the appropriate installation actions, click **Next**. The Select sample actions panel opens.
 - c. Select the check box next to the sample action that you want to enable. You can specify whether you would like the Setup Wizard to create the DB2 Everyplace sample databases and Visiting Nurse sample application, or to install a pre-configured windows client for demonstrating synchronization with the DB2 Everyplace Sync Server. Click **Next**. The Select Service action panel opens.

- d. Select the check box if you want the Setup Wizard to start the Windows Service for DB2 Everyplace Sync Server at the end of the installation. Click **Next**.

Proceed to Step 10 on page 17.

7. If you select Multiple server:
 - a. A panel opens where you can select the features that you want to install. Click **Next**. The Select Installation actions panel opens.
 - b. Select the check box next to the installation action that you want to enable. You can select both options, but you must select at least one. If you do not select an installation action, you will receive an error. Specify whether you would like the Setup Wizard to install DB2 Everyplace on your computer or to generate a response file. A response file is used to record the user responses required during an interactive installation. It can be used for automating installation on other computers. After selecting the appropriate installation actions, click **Next**. The Select sample actions panel opens.
 - c. Select the check box next to the sample action that you want to enable. You can specify whether you would like the Setup Wizard to create the DB2 Everyplace sample databases and Visiting Nurse sample application, or to install a pre-configured windows client for demonstrating synchronization with the DB2 Everyplace Sync Server. Click **Next**. The Select Control database action panel opens.
 - d. A panel opens where you can select whether you would like the Setup Wizard to create control database on this computer. Select the check box next to Create DB2 Everyplace Sync Server control database if you would like this server to have the control database and Click **Next**. If you choose not to create the control database on this server, Remote Control database information panel opens. If you choose to create the control database on this server, Proceed to Step 10 on page 17.
 - e. Type the hostname of the machine on which the remote control database resides, the connection port for the DB2 instance, the name of the node which will be created in the local node directory to catalog the remote control database, user name and the password to connect to the remote control database. Click **Next**. Proceed to Step 10 on page 17.
8. If you select Control database only:

Proceed to Step 13 on page 17.
9. If you select DB2 Everyplace Sync Server only:
 - a. A panel opens where you can select the features that you want to install. Click **Next**. The Select install actions panel opens.
 - b. Select the check box next to the installation action that you want to enable. You can select both options, but you must select at least one. If you do not select an installation action, you will receive an error. Specify whether you would like the Setup Wizard to install DB2 Everyplace on your computer or to generate a response file. A response file is used to record the user responses required during an interactive installation. It can be used for automating installation on other computers. After selecting the appropriate installation actions, click **Next**. The Select service action panel opens.
 - c. Select the check box if you want the Setup Wizard to start the Windows Service for DB2 Everyplace Sync Server at the end of the installation. Click **Next**. The Remote Control database information panel opens.
 - d. Type the hostname of the machine on which the remote control database resides, the connection port for the DB2 instance, the name of the node which will be created in the local node directory to catalog the remote

control database, and the user name and password to connect to the remote control database. Click **Next**. Proceed to 14.

10. Informational panels open if you *do not* have DB2 Universal Database installed on your computer. If you have DB2 Universal Database installed on your computer, proceed to Step 11.
 - a. You will be required to specify the directory where you would like to install the embedded version of DB2 Universal Database. Type the name of the directory, or click **Browse** to select the directory name. After specifying the directory, click **Next**
 - b. You will be required to specify the user information for the DB2 UDB Database Administration Server. You can either use an existing Administrative user or specify a new user that will be created on your computer. Select the check box in order to use the same authentication information for the DB2 Everyplace Sync Server. Click **Next**. If you select the check box, proceed to Step 14.
11. The JDBC migration panel opens. Select **Yes** if would you like to migrate the JDBC subscriptions at the end of the DB2 Everyplace installation. The migration process requires that the sources databases used in the JDBC subscriptions be active during the migration process. In addition, you must perform the steps listed “Migration considerations for Version 8.1.4” on page 9. If you select **No**, you must migrate the JDBC subscriptions before you can start the DB2 Everyplace Sync Server. Click **Next**. The User reset panel opens.
12. This panel lists the users with unfinished synchronizations sessions or cancelled synchronizations. When DB2 Everyplace migrates the message store table, the data in this table is deleted. Users with unfinished synchronization sessions will receive an error when they try to synchronize again after DB2 Everyplace is migrated to Version 8.1.4. To avoid receiving this error, the users must be reset. Select **Yes** if you would like to have the users reset at the end of the installation. Click **Next**.
13. The Specify DB2 UDB logon information panel opens. Type the authentication information that DB2 Everyplace Sync Server will use to logon to the DB2 UDB DAS. After specifying the required information, Click **Next**.
14. The Pre-Install summary panel opens which lists the features that will be installed on your computer and the configuration information for the DB2 Everyplace Sync Server. It will also list the configuration information for the embedded Application Server. The Server port and the SSL port listed on this panel is used by the clients to synchronize with the DB2 Everyplace Sync Server. After reading the pre-install summary, click **Next**.
15. The Installation begins as the progress bar charts the progress of the installation.

Note: The following list applies to the typical installation type only. For other installations types, the installation Setup Wizard performs a subset of these tasks.

During the installation of the typical installation type, the installation Setup Wizard:

- Installs the following:
 - the embedded version of DB2 Universal Database. (if DB2 UDB is not installed). If the installation is unsuccessful, the Setup Wizard opens the error log and will abort. If the installation of the embedded version of DB2 UDB is successful, then the Setup Wizard continues.

- DB2 Everyplace. During this installation, the files for the selected setup type and features will be copied into the destination directory that was specified previously
 - the embedded version of the Application Server.
 - Performs post-installation configuration tasks, which include:
 - updates the classpath for the Mobile Devices Administration Center (if you are using DB2 Universal Database Version 8)
 - creates the DB2 Everyplace Sync Server control database
 - creates the DB2 Everyplace sample databases
 - creates the server sample application
 - Starts the Windows Service for the DB2 Everyplace Sync Server.
 - Opens the post-install summary panel. This panel contains instructions for the post-install verification. It also provides instructions on how to synchronize with the DB2 Everyplace Sync Server that you installed using the pre-configured panels client. After reading the information, click **Finish**.
16. Congratulations! You've successfully installed DB2 Everyplace.

Related tasks:

- “Migration considerations for Version 8.1.4” on page 9
- “Testing the Sync Server servlet” on page 46

Installing on a server for UNIX

Complete the following steps to install DB2 Everyplace on a UNIX server.

Procedure:

1. Run the setup program `DB2Everyplace.bin` as the root user. The Welcome panel opens.
2. Click **Next** to read the Install Notes. After reading the Install Notes, click **Next** to view the License Agreement. After accepting the License Agreement, click **Next** to open the Select the installation type.
3. Select the installation setup type:
 - Typical: For most users who want to install DB2 Everyplace with the most functionality and features using a typical configuration with default values
 - Custom: For advanced users who want to choose the features to be installed
 - Multiple Server: Installs DB2 Everyplace on multiple servers for high availability and load balancing environments.
 - Control Database only: Installs the DB2 Everyplace Control database only.
 - DB2 Everyplace Sync Server only: Installs the DB2 Everyplace Sync Server only.

Click **Next**.

4. If you select Typical, the DB2 Everyplace Setup Wizard:
 - will *not* create a response file during the installation
 - creates the DB2 Everyplace Sync Server instance, creates the DB2 Everyplace sample databases, and the server sample application.

Proceed to Step 10 on page 20.

5. If you select the Custom installation setup type:
 - a. A panel opens where you can select the features that you want to install. Click **Next**. The Select install actions panel opens.

- b. Select the check box next to the installation action that you want to enable. You can select both options, but you must select at least one. If you do not select an installation action, you will receive an error. Specify whether you would like the Setup Wizard to install DB2 Everyplace on your computer or to generate a response file. A response file is used to record the user responses required during an interactive installation. It can be used for automating installation on other computers. After selecting the appropriate installation actions, click **Next**. The Select UNIX post install actions panel opens.
 - c. Select the check box next to the post install actions that you want to enable. You can specify whether you would like the Setup Wizard to create the DB2 Everyplace Sync Server instance or to create the DB2 Everyplace sample databases and Visiting Nurse server sample application. Click **Next**.
6. If you select Multiple server:
 - a. A panel opens where you can select the features that you want to install. Click **Next**. The Select install actions panel opens.
 - b. Select the check box next to the installation action that you want to enable. You can select both options, but you must select at least one. If you do not select an installation action, you will receive an error. Specify whether you would like the Setup Wizard to install DB2 Everyplace on your computer or to generate a response file. A response file is used to record the user responses required during an interactive installation. It can be used for automating installation on other computers. After selecting the appropriate installation actions, click Next. The Select UNIX post install actions panel opens.
 - c. Select the check box next to the post install actions that you want to enable. You can specify whether you would like the Setup Wizard to create the DB2 Everyplace Sync Server instance. You can also specify whether you would like the Setup Wizard to create the control database for this DB2 Everyplace Sync Server instance. You can also specify whether you would like the Setup Wizard to create the DB2 Everyplace sample databases and Visiting Nurse server sample application for the DB2 Everyplace Sync Server instance being created. After selecting the appropriate Post install actions, Click **Next**.
 - d. If you chose not to create the DB2 Everyplace Sync Server control database for the DB2 Everyplace Sync Server instance, Remote control database information panel opens. Type the hostname of the remote machine which hosts the control database, connection port for the DB2 instance and the name for the local node being created to catalog the remote control database. Click **Next** to proceed to Step 9 on page 20.
7. If you select Control database only:

Proceed to Step 11 on page 20.
8. If you select DB2 Everyplace Sync Server only:
 - a. A panel opens where you can select the features that you want to install. Click **Next**, the Select install actions panel opens.
 - b. Select the check box next to the installation action that you want to enable. You can select both options, but you must select at least one. If you do not select an installation action, you will receive an error. Specify whether you would like the Setup Wizard to install DB2 Everyplace on your computer or to generate a response file. A response file is used to record the user responses required during an interactive installation. It can be used for

automating installation on other computers. After selecting the appropriate installation actions, click **Next**. The Select UNIX post install actions panel opens.

- c. Select the check box next to the post install action that you want to enable. You can specify whether you would like the Setup Wizard to create the DB2 Everyplace Sync Server instance. Click **Next**.
 - d. The Specify DB2 Everyplace Sync Server instance information panel opens. Type the user name, password, and the locale for the DB2 Everyplace Sync Server instance. After specifying the required information, click **Next**. The Remote Control database information panel opens.
 - e. Type the hostname of the machine on which the remote control database resides, the connection port for the DB2 instance, the name of the node which will be created in the local node directory to catalog the remote control database, user name and the password to connect to the remote control database. Click **Next** to proceed to Step 12.
9. Informational panels open if you *do not* have DB2 Universal Database installed on your computer. If you have DB2 Universal Database installed on your computer, proceed to Step 6.
- a. You will be required to specify the user information for the DB2 Database Administration Server instance. Type the name of the user, the password, the name of the primary group and the users home directory. Click **Next**.
 - b. You will be required to specify the user information for the DB2 instance owner. Type the name of the user, the password, the name of the primary group and the user's home directory. Click **Next**.
 - c. You will be required to specify the user information for the DB2 fenced user. Type the name of the user, the password, the name of the primary group and the user's home directory. Click **Next**.
10. The Sync Server instance migration panel opens. Select **Yes** if you would like the Setup Wizard to migrate the JDBC subscriptions for the existing DB2 Everyplace Sync Server instances. Select **Yes** if you would you like the Setup Wizard to reset the users at the end of the installation.

The reason for these choices:

- The JDBC Subscriptions defined for these DB2 Everyplace instances need to be migrated prior to starting DB2 Everyplace Sync Server. For more information, see "Migration considerations for Version 8.1.4" on page 9.
 - When DB2 Everyplace migrates the message store table, the data in this table is deleted. Users with unfinished synchronization sessions will receive an error when they try to synchronize again after DB2 Everyplace is migrated to Version 8.1.4. To avoid receiving this error, the users must be reset
11. The Specify DB2 Everyplace Sync Server instance information panel opens. Type the user name, password, and the locale for the DB2 Everyplace Sync Server instance. After specifying the required information, click **Next**.
 12. The Pre-Install summary panel opens which lists the features that will be installed on your computer and the configuration information for the DB2 Everyplace Sync Server. It will also list the configuration information for the embedded Application Server – Express. The Server port and the SSL port listed on this panel is used by the clients to synchronize with the DB2 Everyplace Sync Server. After reading the pre-install summary, click **Next**.
 13. The Installation begins as the progress bar charts the progress of the installation. During the installation, the installation Setup Wizard:
 - Installs the following:

- the embedded version of DB2 Universal Database (if DB2 UDB is not installed). If the installation is unsuccessful, the Setup Wizard opens the error log and will abort. If the installation of the embedded version of DB2 Universal Database is successful, then the Setup Wizard continues.
 - DB2 Everyplace. During this installation, the files for the selected setup type and features will be copied into the destination directory that was specified previously
 - the embedded version of the Application Server – Express
 - Performs post-installation configuration tasks, which include:
 - updates the classpath for the Mobile Devices Administration Center (if you are using DB2 Universal Database Version 8)
 - creates the DB2 Everyplace Sync Server control database
 - creates the DB2 Everyplace sample databases
 - creates the server sample application
 - Opens the post-install summary panel. This panel contains instructions for the post-install verification. It also provides instructions on how to synchronize with the DB2 Everyplace Sync Server that you installed using the pre-configured panels client. After reading the information, click **Finish**.
14. Congratulations! You’ve successfully installed DB2 Everyplace.

Related tasks:

- “Migration considerations for Version 8.1.4” on page 9
- “Testing the Sync Server servlet” on page 46

Installing DB2 Everyplace Express on a server for Windows

Complete the following steps to install DB2 Everyplace Express on a Windows server.

Procedure:

1. Run the setup program:

If you are installing from a CD-ROM:

- For Windows, insert the DB2 Everyplace CD-ROM in your CD-ROM drive. The DB2 Everyplace installer opens. If the DB2 Everyplace installer does not open, begin installation by double-clicking the `DB2Everyplace.exe` file located on the DB2 Everyplace CD-ROM.

If you are installing from the DB2 Everyplace Web site:

- For Windows, run `DB2Everyplace.exe`
2. Click **Next** to read the Install Notes. After reading the Install Notes, click **Next** to view the License Agreement. After accepting the License Agreement, click **Next** to open the Destination directory panel.
 3. Type the directory where you would like to install DB2 Everyplace Express or click **Browse** to select a directory. After selecting the destination directory, click **Next**. The Select the installation type window opens.
 4. Select the installation setup type:
 - Typical: For most users who want to install DB2 Everyplace Express Edition with the most functionality and features using a typical configuration with default values
 - Custom: For advanced users who want to choose the features to be installed
 Click **Next**.

5. If you select the Custom installation setup type:
 - a. A panel opens where you can select the features that you want to install. Click **Next**. The Select install actions panel opens.
 - b. Select the check box next to the installation action that you want to enable. You can select both options, but you must select at least one. If you do not select an installation action, you will receive an error. Specify whether you would like the Setup Wizard to install DB2 Everyplace Express on your computer or to generate a response file. A response file is used to record the user responses required during an interactive installation. It can be used for automating installation on other computers. After selecting the appropriate installation actions, click **Next**. The Select sample actions panel opens.
 - c. Select the check box next to the sample action that you want to enable. You can specify whether you would like the Setup Wizard to create the DB2 Everyplace sample databases and Visiting Nurse sample application, or to install a pre-configured windows client for demonstrating synchronization with the DB2 Everyplace Sync Server. Click **Next**. The Select Service action panel opens.
 - d. Select the check box if you want the Setup Wizard to start the Windows Service for DB2 Everyplace Sync Server at the end of the installation. Click **Next**. Proceed to Step 7.

6. If you select Typical, the DB2 Everyplace Setup Wizard:

- will *not* create a response file during the installation
- creates the DB2 Everyplace sample databases, server sample application, and installs the pre-configured windows client application for demonstrating synchronization
- starts the windows service for DB2 Everyplace Sync Server at the end of the installation.

Proceed to Step 7.

7. Informational panels open if you *do not* have DB2 Universal Database installed on your computer. If you have DB2 Universal Database installed on your computer, proceed to Step 8.
 - a. You will be required to specify the directory where you would like to install the embedded version of DB2 Universal Database - Express. Type the name of the directory, or click **Browse** to select the directory name. After specifying the directory, click **Next**
 - b. You will be required to specify the user information for the DB2 UDB Database Administration Server. You can either use an existing Administrative user or specify a new user that will be created on your computer. Select the check box in order to use the same authentication information for the DB2 Everyplace Sync Server. Click **Next**. If you select the check box, proceed to Step 9.
8. The Specify DB2 UDB logon information panel opens. Type the authentication information that DB2 Everyplace Sync Server will use to logon to the DB2 UDB DAS. After specifying the required information, Click **Next**.
9. The Pre-Install summary panel opens which lists the features that will be installed on your computer and the configuration information for the DB2 Everyplace Sync Server. It will also list the configuration information for the embedded Application Server Express. The Server port and the SSL port listed on this panel is used by the clients to synchronize with the DB2 Everyplace Sync Server. After reading the pre-install summary, click **Next**.

10. The Installation begins as the progress bar charts the progress of the installation. During the installation, the installation Setup Wizard:
 - Installs the following:
 - the embedded version of DB2 Express (if DB2 UDB is not installed). If the installation is unsuccessful, the Setup Wizard opens the error log and will abort. If the installation of the embedded version of DB2 Express is successful, then the Setup Wizard continues.
 - DB2 Everyplace Express. During this installation, the files for the selected setup type and features will be copied into the destination directory that was specified previously
 - the embedded version of the Application Server Express
 - Performs post-installation configuration tasks, which include:
 - updates the classpath for the Mobile Devices Administration Center (if you are using DB2 Universal Database Version 8)
 - creates the DB2 Everyplace Sync Server control database
 - creates the DB2 Everyplace sample databases
 - creates the server sample application
 - Starts the Windows Service for the DB2 Everyplace Sync Server.
 - Opens the post-install summary panel. This panel contains instructions for the post-install verification. It also provides instructions on how to synchronize with the DB2 Everyplace Sync Server that you installed using the pre-configured panels client. After reading the information, click **Finish**.
11. Congratulations! You've successfully installed DB2 Everyplace Express.

Related tasks:

- "Testing the Sync Server servlet" on page 46

Installing DB2 Everyplace Express on a server for Linux

Complete the following steps to install DB2 Everyplace Express on a Linux server.

Procedure:

1. Run the setup program `DB2Everyplace.bin` as the root user. The Welcome panel opens.
2. Click **Next** to read the Install Notes. After reading the Install Notes, click **Next** to view the License Agreement. After accepting the License Agreement, click **Next** to open the Select the installation type.
3. Select the installation setup type:
 - Typical: For most users who want to install DB2 Everyplace Express Edition with the most functionality and features using a typical configuration with default values
 - Custom: For advanced users who want to choose the features to be installedClick **Next**.
4. If you select the Custom installation setup type:
 - a. A panel opens where you can select the features that you want to install. Click **Next**. The Select install actions panel opens.
 - b. Select the check box next to the installation action that you want to enable. You can select both options, but you must select at least one. If you do not select an installation action, you will receive an error. Specify whether you would like the Setup Wizard to install DB2 Everyplace Express on your computer or to generate a response file. A response file is used to record

the user responses required during an interactive installation. It can be used for automating installation on other computers. After selecting the appropriate installation actions, click **Next**. The Select UNIX post install actions panel opens.

- c. Select the check box next to the post install actions that you want to enable. You can specify whether you would like the Setup Wizard to create the DB2 Everyplace Sync Server instance or to create the DB2 Everyplace sample databases and Visiting Nurse server sample application. Click **Next**. Proceed to Step 6.
5. If you select Typical, the DB2 Everyplace Setup Wizard:
 - will *not* create a response file during the installation
 - creates the DB2 Everyplace Sync Server instance, creates the DB2 Everyplace sample databases, and the server sample application.

Proceed to Step 6

6. Informational panels open if you *do not* have DB2 Universal Database installed on your computer. If you have DB2 Universal Database installed on your computer, proceed to Step 6.
 - a. You will be required to specify the user information for the DB2 Database Administration Server instance. Type the name of the user, the password, the name of the primary group and the user's home directory. Click **Next**.
 - b. You will be required to specify the user information for the DB2 instance owner. Type the name of the user, the password, the name of the primary group and the user's home directory. Click **Next**.
 - c. You will be required to specify the user information for the DB2 fenced user. Type the name of the user, the password, the name of the primary group and the user's home directory. Click **Next**.
7. The Specify DB2 Everyplace Sync Server instance information panel opens. Type the user name, password, and the locale for the DB2 Everyplace Sync Server instance. After specifying the required information, .Click **Next**.
8. The Pre-Install summary panel opens which lists the features that will be installed on your computer and the configuration information for the DB2 Everyplace Sync Server. It will also list the configuration information for the embedded Application Server Express. The Server port and the SSL port listed on this panel is used by the clients to synchronize with the DB2 Everyplace Sync Server. After reading the pre-install summary, click **Next**.
9. The Installation begins as the progress bar charts the progress of the installation. During the installation, the installation Setup Wizard:
 - Installs the following:
 - the embedded version of DB2 Express (if DB2 UDB is not installed). If the installation is unsuccessful, the Setup Wizard opens the error log and will abort. If the installation of the embedded version of DB2 Express is successful, then the Setup Wizard continues.
 - DB2 Everyplace Express. During this installation, the files for the selected setup type and features will be copied into the destination directory that was specified previously
 - the embedded version of the Application Server Express
 - Performs post-installation configuration tasks, which include:
 - updates the classpath for the Mobile Devices Administration Center (if you are using DB2 Universal Database Version 8)
 - creates the DB2 Everyplace Sync Server control database
 - creates the DB2 Everyplace sample databases

- creates the server sample application
 - Opens the post-install summary panel. This panel contains instructions for the post-install verification. It also provides instructions on how to synchronize with the DB2 Everyplace Sync Server that you installed using the pre-configured panels client. After reading the information, click **Finish**.
10. Congratulations! You've successfully installed DB2 Everyplace Express.

Related tasks:

- "Testing the Sync Server servlet" on page 46

Installing on mobile devices

This section provides information about installing DB2 Everyplace. The topics covered are:

- "Installing mobile devices"
- "Installing using the Install on Mobile Devices tool"
- "Installing manually on a mobile device" on page 27
- "Updating the Sync Client software with the Update tool" on page 39

Installing mobile devices

There are several ways to transfer files to the client device. You can:

- use the Install on Mobile Devices tool
- Install manually
- use the Update tool

Related tasks:

- "Installing on the server" on page 14
- "Updating Sync Client software using the DB2 Everyplace Update Tool" on page 39

Installing using the Install on Mobile Devices tool

The Install on Mobile Devices tool is available only in the SDK version of DB2 Everyplace.

The Install on Mobile Devices tool for Windows workstations supports mobile devices that use the following operating systems:

- Palm OS 3.5 or higher, with a minimum of 16M required for Palm OS 4.0 and higher
- Windows CE
- Symbian OS Version 6 and Version 7

Prerequisites:

Before you install the DB2 Everyplace libraries and sample applications, you need to perform the following steps:

1. On your Windows workstation, install and configure the connection software that came with the mobile device.
2. Connect the mobile device to the Windows workstation. Use the device's documentation to ensure that it is connected correctly.

If you use the JDBC DB2 interface or ISync4J API, you need to install a Java Virtual Machine on your mobile device prior to installing DB2 Everyplace. This process applies to all client platforms.

Procedure:

To install the DB2 Everyplace libraries and sample applications using the install tool:

1. Click **Start -> Programs -> IBM DB2 Everyplace -> Install on Mobile Device**. The Install on Mobile Devices tool opens.
2. In the Select a Mobile Device Platform window, select the operating system of your mobile device and click **OK**.
3. For Palm OS mobile devices, select the user that you want to install DB2 Everyplace.
4. For Palm OS mobile devices, select the **Check this if this device displays colors** check box if the mobile device has a color display.
5. Select the DB2 Everyplace components that you want to install.
6. If you installed DB2 Everyplace Sync Server and plan to use it for this mobile device, select the DB2 Everyplace Sync Server components to install on that device.
7. Click **OK**.
8. Ensure that the necessary files are installed:

For Symbian mobile devices

The tool will automatically install the necessary files using the mobile device's connection software. Click **OK**. Then, click **Finish** when the connection software asks you if you want to install another file.

For Palm OS and Windows CE mobile devices

You must perform the following sync function to transfer the files to the mobile device:

- For Palm OS, perform a HotSync operation to transfer the files to the mobile device.
- For the Palm OS emulator, you can drag and drop the files from your HotSync install directory to the emulator. The name of the directory that contains the files is:

For Palm:

Palm desktop *directory*\username\install

For workpad:

Workpad *directory*\username\install

For a Windows CE mobile device, perform a sync function to transfer the files to the mobile device.

9. Use the DB2 Everyplace Visiting Nurse sample application to verify that DB2 Everyplace installed successfully on a Palm or WinCE mobile device.

More information on working with the sample application is available in the section called "Overview of the Visiting Nurse sample application" in the *DB2 Everyplace Application Development Guide*.

Related tasks:

- "Post installation tasks on the mobile device" on page 65
- "Setting up the DB2 Everyplace Update Tool on the Sync Server" on page 40

- “Installing DB2 Everyplace files manually”

Related reference:

- “DB2 Everyplace Update Tool error messages” on page 42

Installing manually on a mobile device

This section provides information about manually installing DB2 Everyplace on a mobile device. The topics covered are:

- “Installing DB2 Everyplace files manually”
- “Installing DB2 Everyplace files on a Palm OS device”
- “Installing files on a Windows CE device” on page 29
- “Installing files on a Symbian OS Version 6 device” on page 30
- “Installing files on a Symbian OS Version 7 device” on page 31
- “Verifying Symbian OS Version 7 device installation” on page 32
- “Installing files on a QNX Neutrino or embedded Linux mobile device” on page 33
- “Installing files on a Sharp Zaurus device” on page 34
- “Installing files on a MIDP supported device” on page 35
- “Installing files on a Win32 client” on page 37

Installing DB2 Everyplace files manually

You can manually install the DB2 Everyplace libraries and sample applications on a mobile device. The operating systems that support this type of installation are:

- Palm OS
- Windows CE
- Symbian OS
- QNX Neutrino and embedded Linux
- MIDP
- Win32

Related tasks:

- “Installing using the Install on Mobile Devices tool” on page 25
- “Updating Sync Client software using the DB2 Everyplace Update Tool” on page 39
- “Post installation tasks on the mobile device” on page 65

Installing DB2 Everyplace files on a Palm OS device

This section describes how to manually install DB2 Everyplace libraries and sample applications on a Palm OS mobile device.

Prerequisites:

Before you install the libraries and sample applications, you need to perform the following steps:

1. On your Windows workstation, install and configure the HotSync connection software that came with the Palm OS device.
2. Connect the Palm OS mobile device to the Windows workstation. Use the mobile device’s documentation to ensure that it is connected correctly.

Procedure:

To install the DB2 Everyplace libraries and sample application files manually:

1. On the workstation, use the Install Tool of the HotSync connection software that is included with the Palm OS mobile device to install the following files. The sample .prc files are optional for production, and can be deleted when you no longer need them. Table 2 contains the Palm OS database and sample files. These files are located in \DB2everyplace\Clients. In the following tables, *lang* is a language code.

Table 2. Palm OS database and sample files

File Name	Description
PalmOS\database\DB2eCat.prc	DB2 Everyplace database engine
PalmOS\database\DB2eCLI.prc	DB2 Everyplace database engine
PalmOS\database\DB2eComp.prc	DB2 Everyplace database engine
PalmOS\database\DB2eRunTime.prc	DB2 Everyplace database engine
PalmOS\database\DB2eDMS.prc	DB2 Everyplace database engine
PalmOS\database\PBSPkcs11.prc	Encryption library
utilities\lang\DB2eImport	DB2 Everyplace Import tool
PalmOS\database\Samples\lang\SampleCLP\ DB2eCLP.prc	DB2 Everyplace Command Line Processor
PalmOS\database\Samples\lang\Phone\Phone.prc	Phonebook sample program
PalmOS\database\Samples\lang\Nurse\Nurse.prc	Visiting Nurse sample program
PalmOS\database\Samples\lang\NurseInit\ NurseInit.prc	Visiting Nurse initialization program
PalmOS\database\JDBC\cldc\sample\DB2eApp1.prc	Sample JDBC app for use with J9 CLDC
PalmOS\database\JDBC\xtr\sample\DB2eApp1.prc	Sample JDBC app for use with J9 XTREME

See Chapter 4, “Overview of DB2 Everyplace sample applications,” on page 79 for information on the location of the sample applications.

2. If you plan to use the DB2 Everyplace Sync Server, install the following SyncClient files. Table 3 contains the Palm OS SyncClient files. These files are located in \DB2Everyplace\Clients\PalmOS\Sync\.

Table 3. Palm OS SyncClient files

File Name	Description
dsyagent.prc	IBM Sync Remote Stored Procedure adapter
imsaconfig.prc	IBM Sync Configuration adapter
imsadb2e.prc	IBM Sync DB2 Everyplace adapter
imsafile.prc	IBM Sync File adapter
isyncconf.prc	IBM Sync engine
isyncore.prc	IBM Sync engine
isyncui.prc	IBM Sync interface
wbxmllib.prc	IBM Sync WBXML library
iUpgrade.prc	IBM Sync Auto Deploy
isyncxpt.prc	IBM Sync transport library
SSLlib.prc	IBM Sync SSL library

Encryption support is available only on Palm OS 3.5 devices or later. The PBSPkcs11.prc file must be installed to use encryption between a Palm OS mobile device and the DB2 Everyplace Sync Server.

3. Perform a HotSync function to complete the installation of the DB2 Everyplace libraries and application files to the Palm OS mobile device.

Related tasks:

- “Installing using the Install on Mobile Devices tool” on page 25
- “Installing DB2 Everyplace files manually” on page 27
- “Post installation tasks on the mobile device” on page 65
- “Setting up the DB2 Everyplace Update Tool on the Sync Server” on page 40

Related reference:

- “DB2 Everyplace Update Tool error messages” on page 42

Installing files on a Windows CE device

This section describes how to install the DB2 Everyplace libraries and sample applications on a Windows CE mobile device.

Prerequisites:

Before you install the files, you need to perform the following steps:

1. On your Windows workstation, install and configure the Windows CE Services software (also known as ActiveSync in later versions) that came with the Windows CE mobile device.
2. Connect the Windows CE mobile device to the Windows workstation. Use the device’s documentation to ensure that it is connected correctly.

Procedure:

To install the DB2 Everyplace libraries and sample application files manually:

1. Use the Install Tool from the Windows CE Services connection software (or ActiveSync) that is included with the Windows CE device to install the following files. Table 4 contains the Windows CE device files. These files are located in `\DB2Everyplace\Clients\WinCE\database`. In the following tables:

devtype is the WinCE device type
proc is the processor type

Table 4. Windows CE device files

File Name	Description
wce300\proc\db2e.dll	DB2 Everyplace database engine
wce300\proc\CryptoPlugin.dll	DB2 Everyplace database engine for data encryption
wce300\proc\db2ejdbc.dll	DB2 Everyplace JDBC driver
jdbc\db2ejdbc.jar	DB2 Everyplace JDBC driver

See Chapter 4, “Overview of DB2 Everyplace sample applications,” on page 79 for information on the location of the sample files.

2. If you plan to use the DB2 Everyplace Sync Server, install the following Sync Client files. Table 5 on page 30 contains the SyncClient files. These files are located in `\DB2Everyplace\Clients\WinCE\Sync\lang\ver\proc` where *lang* is the language code, *ver* is the WinCE version, and *proc* is the processor type.

Table 5. Windows CE SyncClient files

File Name	Description
dsyagent.dll	IBM Sync Remote Stored Procedure adapter
imsaconfig.dll	IBM Sync Configuration adapter
imsadb2e.dll	IBM Sync DB2 Everyplace adapter
imsaf1e.dll	IBM Sync File adapter
isynconf.dll	IBM Sync engine
isyncore.dll	IBM Sync engine
isyncxpt.dll	IBM Sync transport library
isync4j.dll	IBM Sync Java adapter
isync4j.jar	IBM Sync Java
isyncui.exe	IBM Sync interface
wbxml1ib.dll	IBM Sync WBXML library
upgrade\iupgrade.exe	IBM Sync Auto Deploy

3. Perform a sync function to complete the installation of the DB2 Everyplace libraries and application files to the Windows CE mobile device.

Note: The following table indicates where to obtain Sync Client libraries for various emulators:

Table 6. Sync Client libraries for emulators

File Name	Description
\Clients\WinCE\sync\lang\wce300\X86EMRe1	Pocket PC emulator
\Clients\WinCE\sync\lang\wce300\X86Re1	Pocket PC 2002 emulator
\Clients\WinCE\sync\lang\wce400\emulatorRe1	WinCE .NET emulator

Encryption support for Pocket PC 2000 is available only with the Microsoft High Encryption Pack for Pocket PC V1.0 available from www.microsoft.com/mobile/pocketpc/downloads/ssl128.asp. Encryption support for Pocket PC 2002 is available with the Pocket PC 2002 SDK under \Windows CE Tools\wce300\Pocket PC 2002\support\EnhancedCrypto. The Microsoft High Encryption Pack for Pocket PC must be installed to use encryption between Windows CE or Pocket PC mobile devices and the DB2 Everyplace Sync Server.

Related tasks:

- “Installing using the Install on Mobile Devices tool” on page 25
- “Installing DB2 Everyplace files manually” on page 27
- “Post installation tasks on the mobile device” on page 65
- “Setting up the DB2 Everyplace Update Tool on the Sync Server” on page 40

Related reference:

- “DB2 Everyplace Update Tool error messages” on page 42

Installing files on a Symbian OS Version 6 device

This section describes how to install the DB2 Everyplace libraries and sample applications on a Symbian OS Version 6 mobile device.

Prerequisites:

Before you install, you need to perform the following steps:

1. On your Windows workstation, install and configure the connection software that came with the Symbian OS Version 6 mobile device.
2. Connect the Symbian OS mobile device to the workstation. Use the mobile device's documentation to ensure that it is connected correctly.

Procedure:

To install the DB2 Everyplace libraries and sample application files manually, use the Install Tool from the connection software that is included with the Symbian OS Version 6 mobile device. Install the following files. Table 7 contains the DB2 Everyplace libraries and sample application files. They are located in `\DB2Everyplace\Clients\Symbian6\database`. In the following table, *lang* is a language code.

Table 7. DB2 Everyplace libraries and sample application files

File Name	Description
<code>armi\DB2e.sis</code>	DB2 Everyplace database engine
<code>armi\DB2eJDBC.sis</code>	DB2 Everyplace JDBC driver
<code>install\lang\Crystal\armi\DB2e_Symbian6.sis</code>	DB2 Everyplace package (all the above in a single package)
The IBM Sync Client <code>ISync.sis</code> is located in <code>%DSYINSTDIR%\Clients\Symbian6\Sync\lang\proc\</code>	IBM Sync Client

See Chapter 4, "Overview of DB2 Everyplace sample applications," on page 79 for information on the location of the sample applications.

Related tasks:

- "Installing using the Install on Mobile Devices tool" on page 25
- "Installing DB2 Everyplace files manually" on page 27
- "Post installation tasks on the mobile device" on page 65
- "Setting up the DB2 Everyplace Update Tool on the Sync Server" on page 40

Related reference:

- "DB2 Everyplace Update Tool error messages" on page 42

Installing files on a Symbian OS Version 7 device

This section describes how to install the DB2 Everyplace libraries and sample applications on a Symbian OS Version 7 mobile device.

Prerequisites:

Before you install you need to perform the following steps:

1. On your Windows workstation, install and configure the connection software that came with the Symbian OS Version 7 mobile device.
2. Connect the Symbian OS mobile device to the workstation. Use the mobile device's documentation to ensure that it is correctly connected.

Procedure:

To install the DB2 Everyplace libraries and the sample application files manually, use the Install Tool from the connection software that is included with the Symbian OS Version 7 mobile device. The files that you need to install are listed in "DB2 Everyplace libraries and sample application files for the database" and "IBM Sync

Client libraries". The DB2 Everyplace libraries and sample application files are located in \DB2Everyplace\Clients\Symbian7\database. In the following table, *lang* is a language code.

Table 8. DB2 Everyplace libraries and sample application files for the database

File Name	Description
armi\DB2e.sis	DB2 Everyplace database engine
armi\DB2eJDBC.sis	DB2 Everyplace JDBC driver
samples\lang\SampleCLP\UIQ\armi\SampleCLP.sis	Command Line Processor (for the device)
samples\lang\SampleCLP\UIQ\wins\SampleCLP.sis	Command Line Processor (for the emulator)
samples\lang\PersonList\UIQ\armi\PersonList.sis	Sample application (for the device)
samples\lang\PersonList\UIQ\wins\PersonList.sis	Sample application (for the emulator)
install\lang\NurseInit\UIQ\wins\NurseInit.sis	Sample application (for the device)
install\lang\UIQ\armi\DB2e_Symbian7.sis	DB2 Everyplace package] This package includes: <ul style="list-style-type: none"> • DB2e.sis • DB2eJDBC.sis • SampleCLP.sis • NurseInit.sis • PersonList.sis

The IBM Sync Client libraries are located in \DB2Everyplace\Clients\Symbian7\sync\lang\proc\.

Table 9. IBM Sync Client libraries

File Name	Description
ISync.sis	IBM Sync Client
<ul style="list-style-type: none"> • upgrade\IUpgrade.app • upgrade\IUpgrade.rsc 	IBM Update Tool

Related tasks:

- "Installing DB2 Everyplace files manually" on page 27

Verifying Symbian OS Version 7 device installation

To test the synchronization on the device, make sure that the device is connected to the workstation using its connectivity software.

Procedure:

1. From the applications list, select **ISync**.
2. From the **File**—>**Settings** dialog, enter the IP, port, user ID, and password.
3. Test synchronization by going to **File**—>**Synchronize**.

Related tasks:

- "Installing using the Install on Mobile Devices tool" on page 25
- "Installing files on a Symbian OS Version 6 device" on page 30
- "Installing DB2 Everyplace files manually" on page 27
- "Post installation tasks on the mobile device" on page 65
- "Setting up the DB2 Everyplace Update Tool on the Sync Server" on page 40

Related reference:

- "DB2 Everyplace Update Tool error messages" on page 42

Installing files on a QNX Neutrino or embedded Linux mobile device

This section describes how to install DB2 Everyplace on a QNX Neutrino or embedded Linux mobile device. These mobile devices take various forms. Depending on the type of mobile device that you have, there are several installation options:

- Serial connection between the mobile device and your workstation using XModem or Kermit protocols.
- Ethernet connection between the mobile device and your workstation using FTP software.
- Floppy disk, if supported by your mobile device.

For additional information on transferring files to your mobile device, see the documentation provided with the mobile device. QNX Neutrino users can also consult the QNX Neutrino Software Developer's Kit (SDK).

Procedure:

1. Install the DB2 Everyplace database files. DB2 Everyplace database files for QNX Neutrino and embedded Linux mobile devices are located in the following directory:

```
%DSYINSTDIR%/Clients/Linux/database/proc
```

where *proc* is your processor type.

2. Install the DB2 Everyplace Sync Server and sample application files. To use the DB2 Everyplace Sync Server, you need to install the DB2 Everyplace Sync Server files with the DB2 Everyplace files included in the library path. Sync Server and sample application files are located in the following directories:

For QNX Neutrino mobile devices:

```
%DSYINSTDIR%/Clients/neutrino/sync
```

For Linux mobile devices:

```
%DSYINSTDIR%/Clients/linux/sync
```

3. Copy the following library files and the goISync sample application for the appropriate processor into user\lib\DB2e\:

```
libisyncxpt.so  
libimsaconfig.so  
libimsadb2e.so  
libimsafile.so  
libisyncore.so  
libisyncconf.so  
libwbxml.so  
goISync
```

Setting the environment variable:

Set the environment variable, **LD_LIBRARY_PATH**, to the path where the DB2 Everyplace CLI shared library (`libdb2e.so`) was installed. For example, if the DB2 Everyplace CLI shared library is stored in `/DB2e/database/x86`, append `/DB2e/database/x86` to your existing **LD_LIBRARY_PATH** using the following statement:

```
export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/DB2e/database/x86
```

Setting up encryption support:

This section applies only to QNX Neutrino mobile devices. To enable encryption on a QNX Neutrino device, the `mqueue` process must be started.

1. To ensure the `mqueue` process is running, type: `ps`. A list of active processes is displayed on the device.
2. Verify that `mqueue` is listed. If not, use the `mqueue` command to start the process.

If the application terminates unexpectedly after you initialized the encryption library, the library could be corrupted.

Running sample applications:

Sample applications are included with the DB2 Everyplace database and the DB2 Everyplace Sync Server packages.

See Chapter 4, “Overview of DB2 Everyplace sample applications,” on page 79 for more information on DB2 Everyplace sample applications for QNX Neutrino and Linux.

You can run the DB2 Everyplace Sync Server sample, `goISync`, from the directory where it is installed. After the first run, a subdirectory `/data` is created in this directory.

When you launch `goISync` for the first time, configure the settings for synchronization. To configure the settings:

1. When `goISync` starts for the first time, select **Change server settings**.
2. Enter values that are associated with your Sync Server or Sync Server client Neutrino device for **Server IP**, **Server Port**, **Username**, and **Password** fields.

You are now ready to synchronize.

Related tasks:

- “Installing using the Install on Mobile Devices tool” on page 25
- “Installing DB2 Everyplace files manually” on page 27
- “Post installation tasks on the mobile device” on page 65
- “Setting up the DB2 Everyplace Update Tool on the Sync Server” on page 40

Related reference:

- “DB2 Everyplace Update Tool error messages” on page 42

Installing files on a Sharp Zaurus device

This section describes how to install the DB2 Everyplace library and sample files on a Sharp Zaurus device.

Procedure:

The installation package `db2e-libs_8.1.4_arm.ipk` can be found in the `%DSYINSTDIR%\Clients\linux\install` directory. The `db2e-libs_8.1.4_arm.ipk` file contains the DB2 Everyplace and Sync Client libraries.

Use the Zaurus Manager software to install `db2e-libs_8.1.4_arm.ipk` onto the device. All `*.so` and `*.jar` will be installed under `/usr/lib`. The applications (`goISync` and `SampleCLP`) will be installed under `/usr/bin`.

- `goISync` - Sample Sync Application

- SampleCLP - DB2 Everyplace Command Line Processor

You can also copy the DB2 Everyplace engine files and Sync Client files onto the device. For ARM the files are located:

- For DB2 Everyplace engine files,
%DSYINSTDIR%/Clients/linux/database/proc
- For the Sync Client libraries,
%DSYINSTDIR%/Clients/linux/sync

Related tasks:

- “Installing files on a QNX Neutrino or embedded Linux mobile device” on page 33

Installing files on a MIDP supported device

This section describes how to install the DB2 Everyplace library and sample files on a MIDP supported device.

Prerequisites:

You need to install a Web application server on your workstation before installing the DB2 Everyplace libraries and sample files. WebSphere Application Server 5.x, the embedded version of the IBM WebSphere® Application Server - Express V5.0, or Apache Tomcat can be configured to run with DB2 Everyplace You must install one of these application servers before continuing.

MIDP for DB2 Everyplace has been tested on several different devices including RIM, Nokia, and Motorola. The following section describes how to install if your carrier is Nextel. Some devices load their applications over a data cable, some using infrared ports. Refer to the manufacturer’s documentation for details. Before you install the DB2 Everyplace libraries and sample files on one of these devices, you must download an update application, which enables you to transfer files to your phone. To download this application:

1. Go to the Nextel Developer Program Web site at <http://developer.nextel.com>.
2. Apply to the Nextel Developer Program.
3. After you are registered for the program, download and install the iDEN Update application on your mobile phone.
4. Connect a Motorola RS232 or USB data cable from your computer to your phone.
5. Use the iDEN WebJAL to install the DB2 Everyplace libraries and sample files on your phone.
 - Enter your developer username and password when you launch the iDEN WebJAL application. A series of instructions appears under the heading “Developer Loading Utility.”
 - Follow the instructions and click **Continue**.
 - Browse to DB2e\Clients\Midp\lib and select the VNurse.jad file.
 - Click **OK**. The installation begins.

Both the VNurse.jad and VNurse.jar files are sent to the device during installation. The names of these files must match. If the file names are different, the installation will not succeed.

Procedure:

To install the DB2 Everyplace libraries and sample application files:

Install the following files on the MIDP supported device. Table 10 contains the DB2 Everyplace library files. The files are located in \DB2Everyplace\Clients:

Table 10. DB2 Everyplace library files

File Name	Description
Midp\lib\VNurse.jad	Visiting Nurse jad file
Midp\lib\VNurse.jar	Visiting Nurse non-debug jar file

You can use these files to develop your own MIDP applications or work with the sample application:

- The startup script for the Sun Microsystem Wireless Toolkit can be found in \DB2Everyplace\Clients\Midp\bin\run.bat
- MIDP API for ISync Java. Table 11 contains the files for Isync Java. They are located in \DB2Everyplace\Clients\Midp\lib

Table 11. Isync Java files

File Name	Description
ISyncMidp.jar	MIDP ISync/Java API non-debug archive
ISyncMidpDebug.jar	MIDP ISync/Java API debug archive

- Sample JAD and JAR files. Table 12 contains sample JAD and JAR files. They are located in \DB2Everyplace\Clients\Midp\lib

Table 12. Sample JAD and JAR files

File Name	Description
Dump.jad	Dump utility jad file
Dump.jar	Dump utility jar file for Dump.jad file
Dump1.jad	Dump utility jad file
DumpDebug.jar	Debug version of Dump utility
VNurseDebug.jad	Vistiting Nurse jad file
VNurseDebug.jar	Vistiting Nurse non-debug jar
VNurseDebug1.jad	jad file for user1/user1/221 device id
VNurseDebug2.jad	jad file for user2/user2/222 device id
VNurseDebug3.jad	jad file for user3/user3/223 device id
VNurseDebug4.jad	jad file for user4/user4/224 device id
VNurseDebugt5.jad	jad file for user5/user5/225 device id

- Sample Source Code. Table 13 contains the sample source code. They are located in \DB2Everyplace\Clients\Midp\samples

Table 13. Sample source code

File Name	Description
com\ibm\mobileservices\demo\Dump.java	Sample Source
com\ibm\mobileservices\demo\NursesAid.java	Aid to VNurse
com\ibm\mobileservices\demo\VNurse.java	Sample Source
ISyncSample.java	Simple MIDP Synchronization examples
ISyncWorker.java	Simple MIDP Synchronization examples

- Filter Servlet JAR file and Tomcat setup files. Table 14 contains the filter servlet JAR and Tomcat setup files. These files are located in \DB2Everyplace\Clients\Midp\

Table 14. Filter servlet setup files

File Name	Description
lib\FilterServlet.jar	MIDP Servlet non-debug jar file
lib\FilterServletDebug.jar	MIDP Servlet debug jar file
bin\dsytomcat.bat	Tomcat startup file

The Debug files are too large to fit on most devices, and display lots of trace output. They are intended for debugging your application during development in your IDE of choice. The numbered VNurse.jad files define various user, and password combinations that can run from the Sun Wireless Toolkit emulator (Midp/bin/run.bat). If you want to use one of these files on a phone, the root file name must match the JAR file. For example, VNurse3.jad must be renamed to VNurse.jad before you load it on a phone.

If you want to develop your own applications using the MidpISync.jar and the enclosed build.bat (ANT script) file, you can download and install the following software programs:

- Sun Microsystem’s Java™ 2 Platform Micro Edition, Wireless Toolkit. The toolkit provides a GUI or command line tool to compile and verify your midlet code.
- Apache ANT, used to build midlets and libraries from the Wireless Toolkit.

Related tasks:

- “Installing using the Install on Mobile Devices tool” on page 25
- “Installing DB2 Everyplace files manually” on page 27
- “Post installation tasks on the mobile device” on page 65
- “Setting up the DB2 Everyplace Update Tool on the Sync Server” on page 40

Related reference:

- “DB2 Everyplace Update Tool error messages” on page 42

Installing files on a Win32 client

You can install the DB2 Everyplace client on a Win32 client where you will write application programs for DB2 Everyplace.

Procedure:

1. Copy the following files from your Windows server to a folder on your Win32 client. Install the following files. Table 15 contains the application program files. They are located in %DSYINSTDIR%\Clients\Win32\database. In the following table, lang is a language code.

Table 15. Application program files

File Name	Description
x86\DB2e.dll	DB2 Everyplace database engine
x86\CryptoPlugin.dll	DB2 Everyplace database engine for data encryption

Table 15. Application program files (continued)

File Name	Description
x86\DB2eJDBC.dll	DB2 Everyplace JDBC driver
jdbc\DB2eJDBC.jar	DB2 Everyplace JDBC driver
jdbc\DB2eAppl.class	Sample Java application
jdbc\DB2eJavaCLP.class	Command Line Processor written in Java
samples\lang\sampleCLP\Release\SampleCLP.exe	Command Line Processor (ANSI version)
samples\lang\sampleCLP\ReleaseU\SampleCLPU.exe	Command Line Processor (UNICODE version)
samples\VisualBasic\DB2eSample.exe	Sample application written in Visual Basic

- If you plan to use the DB2 Everyplace Sync Server, copy the following Sync Client files to the same folder as above. Table 16 contains the SyncClient files. They are located in \DB2Everyplace\Clients\Win32\Sync\lang\.

Table 16. SyncClient files

File Name	Description
dsyagent.dll	IBM Remote Stored Procedure adapter
testisync.exe	IBM Sync interface
imsaconfig.dll	IBM Sync Configuration adapter
imsadb2e.dll	IBM Sync DB2 Everyplace adapter
imsafile.dll	IBM Sync File adapter
isyncconf.dll	IBM Sync Configuration adapter
isyncore.dll	IBM Sync DB2 Everyplace adapter
isync4j.dll	IBM Sync Java adapter
isync4j.jar	IBM Sync Java
wbxmllib.dll	IBM Sync WBXML library
isyncxpt.dll	IBM Transport library

Encryption support is available only with the Microsoft Strong Encryption download available from www.microsoft.com/TechNet/security/crypload.asp. The Microsoft Strong Encryption download for your operating system must be installed to use encryption between Win32 clients and the DB2 Everyplace Sync Server.

- Optional: install your own DB2 Everyplace applications in the same folder as above.

Related tasks:

- “Installing using the Install on Mobile Devices tool” on page 25
- “Installing DB2 Everyplace files manually” on page 27
- “Post installation tasks on the mobile device” on page 65
- “Setting up the DB2 Everyplace Update Tool on the Sync Server” on page 40

Related reference:

- “DB2 Everyplace Update Tool error messages” on page 42

Updating the Sync Client software with the Update tool

This section provides information about how to update your Sync Client software using the Update tool. The topics covered are:

- “Updating Sync Client software using the DB2 Everyplace Update Tool”
- “Installing the DB2 Everyplace Update Tool on a mobile device” on page 41
- “Setting up the DB2 Everyplace Update Tool on the Sync Server” on page 40
- “DB2 Everyplace Update Tool error messages” on page 42

Updating Sync Client software using the DB2 Everyplace Update Tool

The DB2 Everyplace Update Tool provides a user-friendly solution for Sync Client users who want to upgrade their client software. Instead of physically bringing your mobile device into a service station to retrieve files, you can launch the DB2 Everyplace Update Tool to download new IBM Sync files for you. This tool is available on the following platforms:

- Palm OS
- Symbian OS
- WinCE

Prerequisites:

Before you update Sync Client software using the DB2 Everyplace Update Tool, you must complete the following steps:

1. Set up the DB2 Everyplace Update Tool on the Sync Server.
2. Install the DB2 Everyplace Update Tool on a mobile device.

Procedure:

To run the update tool from your mobile device:

1. Tap the **IBM Update** icon. The DB2 Everyplace Update Tool window opens.
2. Activate the menu bar and select **Settings**.
3. In the Settings window, fill in the **Server IP**, **Port #**, **User ID**, and **Password** fields. The information in these fields must be consistent with the settings in the IBM Sync program.
4. Tap **OK**.
5. Tap the **Update** icon to begin the update process. When the update is complete, the message “update succeeded” appears in the DB2 Everyplace Update Tool window.

On Symbian operating systems, the update tool places all IBM Sync Client DLLs into C:\System\Libs and the sample application into C:\System\Apps\ISync by default. These paths can be changed in the **Advanced** panel. If the files are downloaded from the server successfully, a dialog window prompts you to specify the new target directory as part of the final update process. The target directory is where configuration and data files will be stored in the version 8 client, which by default is C:\System\Data\ISync. Configuration files from IBM Sync Client version 7 will be copied over to this new target directory for version 8. The update tool does not update the versions of DB2 Everyplace and Sync Server applications in the **Install/Remove** programs on the Control Panel. Instead of downloading individual DLLs, you may choose to download only ISync.sis and DB2e.sis by modifying the DSYDeploy.properties file on your server. Once these two files are

received and placed into C:\System\Libs, you can manually install them on the device, and the proper versions will be reflected.

On WinCE operating systems, the update tool places all IBM Sync Client DLLs into \Windows and the sample application into \Windows\Start by default. These paths can be changed in the **Advanced** panel. If the files are downloaded from the server successfully, a dialog window prompts you to specify the new target directory as part of the final update process. The target directory is where configuration and data files will be stored in the version 8 client, which by default is the root directory (\). Configuration files from IBM Sync Client version 7 will be copied over to this new target directory for version 8.

Related tasks:

- “Installing on the server” on page 14

Related reference:

- “DB2 Everyplace Update Tool error messages” on page 42
- “Post installation tasks on the mobile device” on page 65

Setting up the DB2 Everyplace Update Tool on the Sync Server

Before you install and run the DB2 Everyplace Update Tool, you need to modify the DSYDeploy.properties file on your server. This properties file tells the server where to locate the updates that are being sent to a client device.

This task is part of the main task of Updating Sync Client software using the DB2 Everyplace Update Tool. After you complete these steps, return to “Updating Sync Client software using the DB2 Everyplace Update Tool” on page 39.

Restrictions:

You must have the DB2 Everyplace Synchronization Server Version 8.1 or later to use the update tool.

Procedure:

1. Open the DSYDeploy.properties file from **DB2e -> Server -> properties -> com -> ibm -> mobileservices**.
2. Locate the entry for the type of mobile device that you are updating. For example,
`Palm.M68.prc.syncserver=`
3. Update the entry to point to the directory where the file is located on the server. For example,
`Palm.M68.prc.syncserver=c:\db2everyplace\Clients\PalmOS\Sync\upgrade\`

iUpdate will send all the files with the .prc extension in this directory to the device.
4. Save your changes.

Related tasks:

- “Installing on the server” on page 14
- “Installing the DB2 Everyplace Update Tool on a mobile device” on page 41
- “Installing DB2 Everyplace files manually” on page 27
- “Post installation tasks on the mobile device” on page 65

Related reference:

- “DB2 Everyplace Update Tool error messages” on page 42
-

Installing the DB2 Everyplace Update Tool on a mobile device

You must install the DB2 Everyplace Update Tool after you install DB2 Everyplace on a server and mobile device. The DB2 Everyplace Update Tool can be installed manually or by creating a file subscription that is synchronized to one or more mobile devices.

This task is part of the main task of Updating Sync Client software using the DB2 Everyplace Update Tool. After you complete these steps, return to “Updating Sync Client software using the DB2 Everyplace Update Tool” on page 39.

Procedure:

To install the DB2 Everyplace Update Tool manually:

1. On your workstation, install and configure a connection software program that is compatible with your mobile device. In some cases, the mobile device already includes connection software.
2. Connect the mobile device to the workstation.
3. The connection software program on your mobile device includes an Install Tool. Use the Install Tool to download the iUpgrade file to your mobile device. For example:
 - For Palm OS devices, download
 \Clients\PalmOS\Sync\lang\upgrade\iUpgrade.prc
 - For WinCE devices, download
 \Clients\WinCE\Sync\lang\ver\proc\upgrade\iUpgrade.exe
 - For Symbian6 devices, download
 \Clients\Symbian6\Sync\lang\proc\upgrade\iUpgrade.app
 - For Symbian6 devices, download
 \Clients\Symbian6\Sync\lang\proc\upgrade\iUpgrade.rsc
 - For Symbian7 devices, download
 \Client\Symbian7\sync\lang\proc\upgrade\iUpgrade.app
 - For Symbian7 devices, download
 \Client\Symbian7\sync\lang\proc\upgrade\iUpgrade.rsc

proc is the processor type

ver is the Windows CE version number of your mobile device.

For information about installing DB2 Everyplace files manually on Palm OS, WinCE, and Symbian6 platforms, see “Installing DB2 Everyplace files manually” on page 27.

To install the update tool using a file subscription:

1. Start the Mobile Devices Administration Center. For Windows, click **Start** → **Programs** → **DB2 Everyplace** → **Start Servlet for Sync Server** from the Start menu. On UNIX, login as the DB2 Everyplace Sync Server instance owner and change directory to \$DSYINSTDIR/Server/bin and execute dsyadmin.sh.
2. Right-click the **Subscriptions** folder on the object tree and select **Create** → **File Subscription** from the pop-up menu. The Create File Subscription notebook opens.
3. On the Identification page of the Create File Subscription notebook:

- Specify a name, description, and encryption level for the file subscription.
 - Specify the name of the source file. The source file is the DB2 Everyplace Update Tool executable file that you are synchronizing to a mobile device. See 41.
 - Select the check box for each device type that you want to receive the subscription.
4. On the Subscription sets page of the Create File Subscription notebook, assign the file subscription to a subscription set.
 5. Click **OK**.

Before you close the Mobile Devices Administration Center, make sure that the correct groups and users are assigned to the subscription set that contains the new file subscription.

For more information on creating a file subscription, see the *Sync Server Administration Guide*.

Related tasks:

- “Installing on the server” on page 14
- “Setting up the DB2 Everyplace Update Tool on the Sync Server” on page 40
- “Installing DB2 Everyplace files manually” on page 27
- “Post installation tasks on the mobile device” on page 65

Related reference:

- “DB2 Everyplace Update Tool error messages”
-

DB2 Everyplace Update Tool error messages

Table 2 below lists all of the error messages that can be generated by the DB2 Everyplace Update Tool. Table 17 displays the error message and a possible remedy for the problem.

Table 17. Troubleshooting Guide

Error message	Possible remedy
Authentication failed (invalid encryption key) - update aborted	Verify that the client settings match the user’s settings defined in the Mobile Device Administration Center.
File size exceeds available memory	Delete any applications or files that are no longer needed on the device and try again.
Internal server error	This is an internal error that you need to report to IBM Software Support with the trace file.
Failed to open connection	Check your network connection and the SyncServer. Make sure that the host is connected and the server is running.
Failed to establish connection	Check your network connection and the SyncServer. Make sure that the host is connected and the server is running.
Failed to send request	Try to synchronize again when there is less traffic on the network or try to synchronize from a faster network.

Table 17. Troubleshooting Guide (continued)

Error message	Possible remedy
Failed to receive reply	Try to synchronize again when there is less traffic on the network or try to synchronize from a faster network.
Timeout while receiving reply	Specify a larger timeout value or try to synchronize when there is less traffic on the network.
Failed to receive acknowledge	Try to synchronize again when there is less traffic on the network or try to synchronize from a faster network.
Failed to open Net library	Verify that the network library exists on the device. Try to reinstall the library.
Failed to resolve hostname	Verify that the hostname and the DNS addresses are correct.
Failed to allocate working buffer for transport	Delete any applications or files that are no longer needed on the device and try again.
Unknown network error	This is an internal error that you need to report to IBM Software Support with the trace file.
Failed to create target file	Verify that the target file is not being used by another application. If the target file is being used, unlock it and synchronize again.
No files received for update	This is an informational message stating that the server does not have an update for the mobile device.

Related tasks:

- “Updating Sync Client software using the DB2 Everyplace Update Tool” on page 39
- “Setting up the DB2 Everyplace Update Tool on the Sync Server” on page 40
- “Installing the DB2 Everyplace Update Tool on a mobile device” on page 41
- “Installing DB2 Everyplace files manually” on page 27

Post installation tasks for the server

This section provides information about tasks you need to complete after you install DB2 Everyplace on a server. The topics covered are:

- “Creating a DB2 Everyplace instance on UNIX” on page 44
- “Mapping a source database to a mid-tier server” on page 44
- “Enabling replication” on page 45
- “Setting up sample databases and applications” on page 45
- “Testing the Sync Server servlet” on page 46
- “Configuring Sync Server to use with IBM WebSphere Application Server” on page 47
- “Configuring a multiple server environment” on page 59

Creating a DB2 Everyplace instance on UNIX

If you did not create a DB2 Everyplace instance during installation or you would like to create additional instances outside of the installation process, use the `dsyicreate.sh` command.

Note: A DB2 Everyplace instance must be a DB2 Universal Database instance as well. Therefore, only user IDs which are DB2 instance owners can host a DB2 Everyplace instance.

Procedure:

To create a DB2 Everyplace Sync Server instance, use the `dsyicreate.sh` command located in the instance directory of the root installation directory (`/opt/DB2Everyplace81` on Linux and Solaris and `/usr/lpp/DBEveryplace81` on AIX). Execute the `dsyicreate.sh` command as root user.

You will receive a list of parameters that you need to provide in order to create a DB2 Everyplace Sync Server Instance. These parameters are specific to the setup type that you selected during the DB2 Everyplace installation.

Related tasks:

- “Adjusting operating system parameters for Linux” on page 12
- “Adjusting operating system parameters for Solaris” on page 13
- “Adjusting operating system parameters for AIX” on page 14

Mapping a source database to a mid-tier server

Procedure:

If your source database exists on a different workstation than the mid-tier server, link to the source database from the DB2 Universal Database Control Center. In the Control Center, you must add the host system, create an instance for the host system, and if necessary, add the database to the host system using an alias for the name of the mid-tier database. You can create the mid-tier database from a DB2 Universal Database command line (use the command: `db2 create db`), or use the Database Create wizard in the DB2 Universal Database Control Center. To create a mid-tier database on your local machine and on the Sync Server instance, both the mid-tier database and the Sync Server control database (DSYCTLDB) must use the same code page.

For more information on the DB2 Everyplace server, see the *IBM DB2 Everyplace Sync Server Administration Guide*.

Related tasks:

- “Migration considerations for Version 8.1.4” on page 9
- “Installing on a server for Windows” on page 14
- “Enabling replication” on page 45
- “Setting up sample databases and applications” on page 45
- “Configuring Sync Server to use with IBM WebSphere Application Server” on page 47
- “Testing the Sync Server servlet” on page 46

Enabling replication

Procedure:

To replicate between the mirroring server and DB2 Universal databases, you must create a table subscription for your databases. Replication is set up automatically when you install the Sync Server. For Data Propagator subscriptions, replication must be run on the server hosting the mirror database.

For detailed information about propagating data, see the *DB2 Universal Database Replication Guide and Reference*.

Related tasks:

- “Migration considerations for Version 8.1.4” on page 9
- “Installing on a server for Windows” on page 14
- “Mapping a source database to a mid-tier server” on page 44
- “Setting up sample databases and applications”
- “Configuring Sync Server to use with IBM WebSphere Application Server” on page 47
- “Testing the Sync Server servlet” on page 46

Setting up sample databases and applications

If you did not choose to create the sample databases during installation, you can install them at any time.

If you do not want to install the sample applications, see the *DB2 Everyplace Sync Server Administration Guide* for more information on creating a mirror database, enabling replication, and testing the Sync Server servlet.

The DB2 Everyplace Sync Server samples and sample database configuration include:

- VNURSE
- M_VN2
- A sample JDBC subscription named JDBCSUB1, a sample subscription set named SUBSCRIPTION_SET1, and a sample group named GROUP1, which includes 3 users nurse1/nurse2/nurse3.

Procedure:

To install the sample on a Windows operating system:

1. Open a DB2 UDB command Window, change the directory to %DSYINSTDIR%\Server\Sample.
2. Type dsysample.bat and the user name and password. Execute the command.

To install the sample on a UNIX operating system:

1. Login as the DB2 Everyplace instance owner
2. Open a shell window and change the directory to \$DSYINSTDIR/Server/sample
3. Run dsysample.sh *db2userid db2password* where *db2userid* is a valid DB2 Universal Database user ID, and *db2password* is the corresponding password.

Related tasks:

- “Migration considerations for Version 8.1.4” on page 9
- “Installing on a server for Windows” on page 14
- “Mapping a source database to a mid-tier server” on page 44
- “Enabling replication” on page 45
- “Configuring Sync Server to use with IBM WebSphere Application Server” on page 47
- “Testing the Sync Server servlet”

Testing the Sync Server servlet

To ensure that the Sync Server can successfully communicate with clients, you should check the servlet. You do not need to have any clients installed in order to perform a check.

Procedure:

- To test the servlet on Windows:
 1. Start the DB2 Everyplace Sync Server.
 2. In a Web browser, go to `http://yourhostname.yourdomain:8080/db2e/db2erdb`. 8080 is the default HTTP port number. Substitute port 8080 with the correct port number of the DB2 Everyplace Sync Server which is listed in the Post-install summary panel which is displayed at the end of the DB2 Everyplace installation.
- To test the servlet on UNIX:
 1. Login as the DB2 Everyplace instance owner
 2. Open a shell window and change the directory to `$DSYINSTDIR/Server/bin`
 3. Run `dsysync.sh`.
 4. In a Web browser, go to `http://yourhostname.yourdomain:8080/db2e/db2erdb`. 8080 is the default HTTP port number. Substitute port 8080 with the correct port number of the DB2 Everyplace Sync Server which is listed in the Post-install summary panel which is displayed at the end of the DB2 Everyplace installation.

You should receive the following message for both Windows and UNIX:

```
DB2e SyncServer <datetime string>
```

For the Application Server – Express that ships with DB2 Everyplace, you might receive a message in the server log files located in `[DSYINSTDIR]/Server/logs/[servername]` that port is already taken by another program. If you receive this message, change the port number.

The embedded Application Server – Express has been changed between DB2 Everyplace 8.1.2 and 8.1.4. The default value during installation for Server name is `IBMDB2eServer`. The default value during installation for the server IP address is `127.0.0.1`.

To change the port number:

1. Windows:


```
cd [DSYINSTDIR]\Server\installableApps\common
[DSYINSTDIR]\WAS\bin\stopServer.bat DB2eServer
[DSYINSTDIR]\WAS\bin\wsadmin.bat -conntype NONE -f dsyConfigEmbedded.jac1
DefaultNode default_host DB2eServer 127.0.0.1 [DSYINSTDIR] [new http port] [new https port]
```
2. Linux or UNIX:

```
cd [DSYINSTDIR]/Server/installableApps/common
[DSYINSTDIR]/WAS/bin/stopServer.sh DB2eServer
[DSYINSTDIR]/WAS/bin/wsadmin.sh -conntype NONE -f dsyConfigEmbedded.jacI
DefaultNode default_host DB2eServer 127.0.0.1 [DSYINSTDIR] [new http port] [new https port]
```

Related tasks:

- “Migration considerations for Version 8.1.4” on page 9
- “Installing on a server for Windows” on page 14
- “Mapping a source database to a mid-tier server” on page 44
- “Enabling replication” on page 45
- “Setting up sample databases and applications” on page 45
- “Configuring Sync Server to use with IBM WebSphere Application Server”

Configuring Sync Server to use with IBM WebSphere Application Server

This section describes how to configure the DB2 Everyplace Sync Server so you can use it with the IBM WebSphere Application Server 4.0 Advanced Edition and Advanced Single Server edition. The following topics are covered in this section:

- Configuring Sync Server to use with WebSphere Application Server 4.0 Advanced Edition
- Configuring Sync Server to use with WebSphere Application Server 4.0 Advanced Single Server Edition

Prerequisites:

Before you start, make sure that you have WebSphere Application Server 4.0, FixPak 2 or higher installed on your workstation. You can download the FixPak from the IBM Web site. You will also need the following information:

- The directory in which WebSphere Application Server is installed
- The WebSphere Application Server node name under which you plan to install DB2 Everyplace (Sync Server)
- The Sync Server instance name (UNIX only)

The WebSphere Application Server Administration Server must use the default port number 900. If not, configure the WebSphere Application Server Administration Server to use 900 now. After you finish configuring the Sync Server, you can change it back.

For Windows 2000, Windows NT, and Windows XP, if you are using DB2 UDB Version 7, you must first configure WebSphere Application Server to use JDBC 2.0. To configure WebSphere Application Server to use JDBC 2.0:

1. Stop the DB2 Universal Database JDBC Applet Server service.
2. Stop WebSphere Application Server if it is running.
3. Open a Command Prompt window.
4. Change the directory to %DSYSQLLIBINSTDIR%\java12.
5. Type usejdbc2.bat. If errors messages appear, you need to verify that the DB2 Universal Database JDBC Applet Server service has stopped.
6. Start the DB2 Universal Database JDBC Applet Server service.
7. Start the WebSphere Application Server.

You must also have the DB2 Universal Database administrator's authority for Windows NT, Windows 2000, or Windows XP operating systems; or the root user authority for the UNIX operating system.

Procedure:

To configure Sync Server to use with WAS 4.0 Advanced Edition:

1. Start the IBM HTTP Server.
2. Start the Administration Server for WAS 4.0.
When you start the Administration Server, you must log in as a DB2 Universal Database administrator on a Windows NT, Windows 2000, or Windows XP operating system, or as root user on the UNIX operating system. The administration server must use the default port number 900 now, but you can change the server to use another port at a later time.
3. Run the `dsy_was40_install` script. This script will create an application server under your WebSphere node, install the IBM DB2 Everyplace Enterprise Application, and regenerate the Web server plug-in. To start the script:

- For Windows 2000, Windows NT, and Windows XP:
 - a. Open a Command Prompt window.
 - b. Change the directory to `%DSYINSTDIR%\installableApps\NT`.
 - c. Enter the following command:

```
dsy_was40_install.bat "WAS_installation_directory" "WAS_node_name"  
"%DSYINSTDIR%" "%DSYSQLLIBINSTDIR%" "UDB Version number" dsyusername
```

where:

- *WAS_installation_directory* is the directory in which the WebSphere Application Server is installed
- *WAS_node_name* is the node name of the WebSphere Application Server
- *UDB Version Number* is "7" or "8"

- For UNIX operating systems:
 - a. Open a terminal window.
 - b. Enter the following command:

```
dsy_was40_install.sh "WAS_installation_directory" "WAS_node_name"  
"$DSYINSTDIR" "$DSYSQLLIBINSTDIR" "UDB Version number" dsyusername
```

where

- *WAS_installation_directory* is the directory in which the WebSphere Application Server is installed
- *WAS_node_name* is the node name of the WebSphere Application Server
- *UDB Version Number* is "7" or "8"

- c. You will be prompted to provide a node under which to install the Sync Server application, and the name of the DB2 Everyplace instance that you created.

To configure Sync Server to use with WAS 4.0 Advanced Single Server Edition:

This section describes how to configure Sync so you can use it with WAS 4.0 Advanced Single Server Edition. There are two parts to configuring the Sync Server so you can use it with WAS 4.0 Advanced Single Server Edition. You need to update the classpath for the default application server and install the `IBM_DB2_Everyplace.ear` file on the WebSphere Application Server.

To update the classpath for the IBM DB2 Everyplace Server:

1. In the WebSphere Administration Domain tree, expand the components **Nodes -> Node name -> Application Server -> IBM DB2 Everyplace Server -> Process Definition -> JVM Settings**. The JVM Settings page opens.
2. In the Properties panel, type a classpath for the default application server and click **OK**.
3. In the JVM Settings page, click the **Configuration needs to be saved** link.
4. Click **OK** to save the configuration.
5. Stop the WebSphere Application Server.
6. Restart the WebSphere Application Server. When the WebSphere Application Server is restarted, the new JVM classpath is effective.
7. Restart the WebSphere Application Server Administrative Console.

Related tasks:

- “Migration considerations for Version 8.1.4” on page 9
- “Installing on a server for Windows” on page 14
- “Mapping a source database to a mid-tier server” on page 44
- “Enabling replication” on page 45
- “Setting up sample databases and applications” on page 45
- “Testing the Sync Server servlet” on page 46

Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0

This section describes how to configure and install DB2 Everyplace as a server application which runs in the WebSphere environment. The topics covered are:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0”
- “Gathering configuration information” on page 50
- “Installation and configuration overview” on page 51
- “Creating and installing an application server” on page 52
- “Creating a cluster environment” on page 53
- “Adding the server nodes” on page 54
- “Creating the cluster” on page 55
- “Adding new servers to the cluster” on page 55
- “Administrative tasks” on page 56
- “Uninstalling DB2 Everyplace from WAS” on page 56
- “Starting and stopping the DB2 Everyplace application server” on page 57
- “Deleting the Cluster” on page 58
- “Regenerating the Web Server plugin” on page 58

Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0

Installing DB2 Everyplace into WebSphere Application Server (WAS) provides a robust runtime environment for DB2 Everyplace and other applications. DB2 Everyplace is shipped with the Embedded Version of the WebSphere Application Server Version 5. If full support for a J2EE environment is desired for DB2 Everyplace and your own applications, WebSphere Application Server is recommended.

This section describes how to configure and install DB2 Everyplace as a server application which runs in the WebSphere environment. These instructions are applicable to WAS Version 5.0. This topic includes:

- Gathering configuration information
- Installation and configuration overview
- Creating and installing an application server
- Creating a cluster environment
- Regenerating the Web Server plugin
- Administrative tasks

Related concepts:

- “The WAS installation scripts” on page 51

Gathering configuration information

Procedure:

This topic lists the information that you need to gather and provide during various configuration tasks.

- *<was_home>* the installation directory for the WAS. For example, C:\WebSphere\AppServer for NT systems, /opt/WebSphere for some UNIX systems.
- *<nodename>* the name of the WebSphere node that DB2 Everyplace will install.
- *<virtualhost>* an existing virtual host on the system. For example, default_host
- *<servername>* a unique server name. An existing server name will be replaced and re-configured. The server name "server1" is not allowed.
- *<ipaddress>* an IP address for the server name.
- *<dsyinstidir>* the installation directory for DB2 Everyplace. For example, c:/DB2Everyplace for NT systems, /home/dsyinstance/db2everyplace for UNIX systems.
- *<DB2 UDB version number>* this can be integer values 7 or 8.
- *<dsysqllibstidir>* the installation directory for the DB2 Everyplace instance. For example, c:/SQLLIB for NT systems, /home/dsyinstance/sqllib for UNIX systems.
- *<username>* the dsyinstance username under which the JVM runs as. This is required if WebSphere is started as a root in UNIX.
- *<groupname>* the group name under which the user belongs to, and the JVM should run (optional).

Related concepts:

- “The WAS installation scripts” on page 51

Related tasks:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0” on page 49
- “Creating a cluster environment” on page 53
- “Administrative tasks” on page 56
- “Creating the cluster” on page 55
- “Adding new servers to the cluster” on page 55
- “Regenerating the Web Server plugin” on page 58

- “Uninstalling DB2 Everyplace from WAS” on page 56
- “Starting and stopping the DB2 Everyplace application server” on page 57
- “Deleting the Cluster” on page 58
- “Installation and configuration overview”
- “Creating and installing an application server” on page 52

The WAS installation scripts

DB2 Everyplace provides three scripts to help you install DB2 Everyplace into WAS:

- `dsyInstallDB2e.jacl` (for creating an application server and installing the enterprise application in WAS).
- `dsyCreateCluster.jacl` (converts a server that was created with the `dsyInstallDB2e.jacl` script into a server that can be used in a clustered environment).
- `dsyCreateClusterMember.jacl` (adds a new server to a cluster).

A fourth script is available to uninstall DB2 Everyplace from WAS (`dysUnInstallDB2e.jacl`). The script files are all executed from within the following directory, *<DB2 Everyplace installation root>/Server/installableApps/common*. We recommend that you use the command line environment with these scripts for most of your installation and administrative needs. In a few cases, we refer you to the WAS Administrative Console.

Related tasks:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0” on page 49
- “Creating a cluster environment” on page 53
- “Administrative tasks” on page 56
- “Creating the cluster” on page 55
- “Adding new servers to the cluster” on page 55
- “Gathering configuration information” on page 50
- “Regenerating the Web Server plugin” on page 58
- “Uninstalling DB2 Everyplace from WAS” on page 56
- “Starting and stopping the DB2 Everyplace application server” on page 57
- “Deleting the Cluster” on page 58
- “Installation and configuration overview”

Installation and configuration overview

Procedure:

The main tasks involved in setting up your system to work with WAS Version 5.0 are as follows:

- For the single server environment:
 1. Creating and installing an application server
 2. Regenerating the web server plugin
 3. Administrative tasks (as needed)
- For a cluster environment:
 1. Creating a cluster (use a server that is created with script, `dsyInstallDB2e.jacl`)

2. Regenerating the web server plugin
3. Administrative tasks (as needed)

Related concepts:

- “The WAS installation scripts” on page 51

Related tasks:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0” on page 49
- “Creating a cluster environment” on page 53
- “Administrative tasks” on page 56
- “Creating the cluster” on page 55
- “Adding new servers to the cluster” on page 55
- “Gathering configuration information” on page 50
- “Regenerating the Web Server plugin” on page 58
- “Uninstalling DB2 Everyplace from WAS” on page 56
- “Starting and stopping the DB2 Everyplace application server” on page 57
- “Deleting the Cluster” on page 58
- “Creating and installing an application server”

Creating and installing an application server

The DB2 Everyplace application server is created by the following steps, with the appropriate configuration parameters. If a copy of the DB2 Everyplace server is already running, stop the server before continuing.

Prerequisites:

For UNIX environments, complete the following tasks:

- Set up the current shell environment variable LD_LIBRARY_PATH for your JDBC drivers that call out to native code. Type the following command:

```
LD_LIBRARY_PATH=JDBC_NATIVE_LIBRARY_PATH export LD_LIBRARY_PATH
```

This must be done prior to starting each component of WebSphere to ensure that the libraries needed by the JDBC drivers are available for use.

- Add the JDBC Java code manually to the JVM classpath using the AdminConsole. The location to add is Admin Console —> Servers —> Application Servers —> *servername*, on the right workspace —> Process Definition —> Java Virtual Machine.

If multiple servers will be made, such as in a cluster or multiple DB2 Everyplace installs, it may be desirable to modify a setup jac1 file to automatically enter the JDBC classpath. The file is located here:

```
%DSYINSTDIR%/Server/installableApps/common/dsySetupEnv.jac1
```

Add semicolon-delimited paths and driver classpath to the entry:

```
set db2ejdbcdrivercp "entry1;/your/class/path/entry2"
```

Note that the path entries should use forward slashes "/" even in Windows environments.

Procedure:

To create the server, type:

- For NT platforms: `<was_home>\bin\wsadmin.bat -f dsyInstallDB2e.jacl <nodename> <virtualhost <servername> <ipaddress> <dsyinstdir> <dsysqllibinstdir> <UDB Version Number> <username> <groupname>`
- For Linux or UNIX platforms: `<was_home>/bin/wsadmin.sh -f dsyInstallDB2e.jacl <nodename> <virtualhost> <servername> <ipaddress> <dsyinstdir> <dsysqllibinstdir> <UDB Version Number> <username> <groupname>`

Related concepts:

- “The WAS installation scripts” on page 51

Related tasks:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0” on page 49
- “Creating a cluster environment”
- “Administrative tasks” on page 56
- “Creating the cluster” on page 55
- “Adding new servers to the cluster” on page 55
- “Gathering configuration information” on page 50
- “Regenerating the Web Server plugin” on page 58
- “Uninstalling DB2 Everyplace from WAS” on page 56
- “Starting and stopping the DB2 Everyplace application server” on page 57
- “Deleting the Cluster” on page 58
- “Installation and configuration overview” on page 51

Creating a cluster environment

Procedure:

For cluster environments:

- To configure a DB2 Everyplace Server Cluster in WAS Version 5.0, the Network Deployment manager needs to be installed and started. Network Deployment is installed as a separate package, and care should be taken to ensure that the ports assigned to the deployment manager will not conflict with existing or future servers if it will be installed on the same machine as the base installation of WAS.
- Each node in a cluster must have a copy of DB2 Everyplace installed with the **Multiple Server Configuration** installation option before creating the cluster.
- Ensure that your mirror databases, source databases, the Sync Server message database, and the DB2 Everyplace Sync Server control database are configured before continuing.

Creating DB2 Everyplace in a cluster environment involves three steps:

- Adding the server nodes
- Creating the cluster
- Adding new servers to the cluster

Related concepts:

- “The WAS installation scripts” on page 51

Related tasks:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0” on page 49
- “Administrative tasks” on page 56
- “Creating the cluster” on page 55
- “Adding new servers to the cluster” on page 55
- “Gathering configuration information” on page 50
- “Regenerating the Web Server plugin” on page 58
- “Uninstalling DB2 Everyplace from WAS” on page 56
- “Starting and stopping the DB2 Everyplace application server” on page 57
- “Deleting the Cluster” on page 58
- “Installation and configuration overview” on page 51
- “Creating and installing an application server” on page 52

Adding the server nodes

Procedure:

To add the server nodes:

1. Open the Administrative Console.
2. From the Navigation Tree, click **System Administration --> Nodes**.
3. In the Workspace, click **Add Node** to add the server nodes that will be in the cluster. Use the fully qualified name to specify each node to be added in the host field. If the node is not found, make sure that server1 is started on each node, which services the configuration request from the WAS Deployment Manager.

The Node Agent will be started for the node, and the node will be added to a network named `<hostnameNetwork> Network`. Once you add the nodes, you can create the cluster.

Related concepts:

- “The WAS installation scripts” on page 51

Related tasks:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0” on page 49
- “Creating a cluster environment” on page 53
- “Administrative tasks” on page 56
- “Creating the cluster” on page 55
- “Adding new servers to the cluster” on page 55
- “Gathering configuration information” on page 50
- “Regenerating the Web Server plugin” on page 58
- “Uninstalling DB2 Everyplace from WAS” on page 56
- “Starting and stopping the DB2 Everyplace application server” on page 57
- “Deleting the Cluster” on page 58
- “Installation and configuration overview” on page 51
- “Creating and installing an application server” on page 52

Creating the cluster

Procedure:

To create a DB2 Everyplace cluster, use the `dsyCreateCluster.jacl` script:

- For NT platforms, type: `<was_home>\bin\wsadmin.bat -f dsyCreateCluster.jacl <nodename> <virtualhost> <servername> <ipaddress> <dsyinstdir> <dsysqllibinstdir> <DB2 UDB Version><username> <groupname>`
- For Linux or UNIX platforms, type: `<was_home>\bin\wsadmin.sh -f dsyCreateCluster.jacl <nodename> <virtualhost> <servername> <ipaddress> <dsyinstdir> <dsysqllibinstdir> <DB2 UDB Version><username> <groupname>`

After execution, a new cluster with the name "DB2Everyplace_Cluster" is created.

Related concepts:

- "The WAS installation scripts" on page 51

Related tasks:

- "Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0" on page 49
- "Creating a cluster environment" on page 53
- "Administrative tasks" on page 56
- "Adding new servers to the cluster"
- "Gathering configuration information" on page 50
- "Regenerating the Web Server plugin" on page 58
- "Uninstalling DB2 Everyplace from WAS" on page 56
- "Starting and stopping the DB2 Everyplace application server" on page 57
- "Deleting the Cluster" on page 58
- "Installation and configuration overview" on page 51
- "Creating and installing an application server" on page 52

Adding new servers to the cluster

Procedure:

To add a new clusterMember to the cluster created above:

1. Refer to the instructions in the "Enabling replication" on page 45.
2. Issue the following commands:
 - For NT platforms, type: `<was_home>\bin\wsadmin.bat -f dsyCreateCluster.jacl <nodename> <virtualhost> <servername> <ipaddress> <dsyinstdir> <dsysqllibinstdir> <DB2 UDB Version><username> <groupname>`
 - For Linux or UNIX platforms, type: `<was_home>\bin\wsadmin.sh -f dsyCreateCluster.jacl <nodename> <virtualhost> <servername> <ipaddress> <dsyinstdir> <dsysqllibinstdir> <DB2 UDB Version><username> <groupname>`

Note: Please refer to the DB2 Everyplace Installation topics for important information regarding cluster environments.

Related concepts:

- "The WAS installation scripts" on page 51

Related tasks:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0” on page 49
- “Creating a cluster environment” on page 53
- “Administrative tasks”
- “Creating the cluster” on page 55
- “Gathering configuration information” on page 50
- “Regenerating the Web Server plugin” on page 58
- “Uninstalling DB2 Everyplace from WAS”
- “Starting and stopping the DB2 Everyplace application server” on page 57
- “Deleting the Cluster” on page 58
- “Installation and configuration overview” on page 51
- “Creating and installing an application server” on page 52

Administrative tasks

There are three administrative task that you can perform:

- Installing DB2 Everyplace from WAS
- Starting and stopping the DB2 Everyplace Application Server
- Deleting the cluster

Related concepts:

- “The WAS installation scripts” on page 51

Related tasks:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0” on page 49
- “Creating a cluster environment” on page 53
- “Creating the cluster” on page 55
- “Adding new servers to the cluster” on page 55
- “Gathering configuration information” on page 50
- “Regenerating the Web Server plugin” on page 58
- “Uninstalling DB2 Everyplace from WAS”
- “Starting and stopping the DB2 Everyplace application server” on page 57
- “Deleting the Cluster” on page 58
- “Installation and configuration overview” on page 51
- “Creating and installing an application server” on page 52

Uninstalling DB2 Everyplace from WAS**Procedure:**

To uninstall the DB2 Everyplace application, issue the following command:

- `<was_home>\wsadmin.bat -f dsyUnInstallDB2e.jacl <nodename> <servername>.`

The Virtual Host may still have the ports associated with the removed DB2 Everyplace application server `db2everyplaceapplication` after that application server has been uninstalled. These remaining ports can be safely removed.

Related concepts:

- “The WAS installation scripts” on page 51

Related tasks:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0” on page 49
- “Creating a cluster environment” on page 53
- “Administrative tasks” on page 56
- “Creating the cluster” on page 55
- “Adding new servers to the cluster” on page 55
- “Gathering configuration information” on page 50
- “Regenerating the Web Server plugin” on page 58
- “Starting and stopping the DB2 Everyplace application server”
- “Deleting the Cluster” on page 58
- “Installation and configuration overview” on page 51
- “Creating and installing an application server” on page 52

Starting and stopping the DB2 Everyplace application server

There are two ways you can start and stop the DB2 Everyplace server. You can use the command prompt. If you are running in a Network Deployment environment, it is recommended that you use the Administrative Console.

Prerequisites:

Before you issue the commands, you must set the DISPLAY environment variable in the shell in which the command to start the server is issued. For example, `export DISPLAY=:0.0`.

Procedure:

To start and stop the DB2 Everyplace application server using the command prompt, enter the following commands:

- For Windows platforms: `<was_home>\bin\dsysync.bat <servername>`.
- For LINUX or UNIX platforms: `<was_home>/bin/dsysync.sh <servername>`.

The server name is an exact string match of the server that was created. The `stopServer` command stops the server.

In cluster environments, starting and stopping, or otherwise manipulating the created cluster is simplest in the Administrative Console. To start and stop a cluster, go to `<your network> --> Servers --> Clusters`. Select the cluster by clicking the check box to the left of the cluster name, and then click **Start** or **Stop**.

If the console lists a cluster member as unavailable, make sure the node agent is started on the node, and the node configuration is synchronized with the deployment manager configuration. The node synchronization status can be viewed under **System Administration -> Nodes**.

Related concepts:

- “The WAS installation scripts” on page 51

Related tasks:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0” on page 49
- “Creating a cluster environment” on page 53

- “Administrative tasks” on page 56
- “Creating the cluster” on page 55
- “Adding new servers to the cluster” on page 55
- “Gathering configuration information” on page 50
- “Regenerating the Web Server plugin”
- “Uninstalling DB2 Everyplace from WAS” on page 56
- “Deleting the Cluster”
- “Installation and configuration overview” on page 51
- “Creating and installing an application server” on page 52

Deleting the Cluster

Procedure:

To delete the cluster:

1. Open the Administrative Console.
2. Stop and remove the DB2 Everyplace enterprise application by navigating to *<your network>* **Applications** --> **Enterprise Applications**.
3. Click the check box to the left of the application server name. Stop any running server that is a cluster member of the DB2 Everyplace cluster by clicking **Stop** servers.
4. Remove the stopped DB2 Everyplace cluster by navigating to *<your network>* **Servers** --> **Clusters**. Select the check box to the left of the server cluster name and click **Delete**.

Related concepts:

- “The WAS installation scripts” on page 51

Related tasks:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0” on page 49
- “Creating a cluster environment” on page 53
- “Administrative tasks” on page 56
- “Creating the cluster” on page 55
- “Adding new servers to the cluster” on page 55
- “Gathering configuration information” on page 50
- “Regenerating the Web Server plugin”
- “Uninstalling DB2 Everyplace from WAS” on page 56
- “Starting and stopping the DB2 Everyplace application server” on page 57
- “Installation and configuration overview” on page 51
- “Creating and installing an application server” on page 52

Regenerating the Web Server plugin

The WebSphere plugin configuration file provides configuration information to redirect requests to the appropriate application server running in WebSphere.

Procedure:

To update the web server plugin configuration for DB2 Everyplace, issue the following command:

- For NT platforms:<was_home>\bin\GenPluginCfg.bat
- For LINUX or UNIX platforms:<was_home>/bin/GenPluginCfg.sh

Note: For LINUX and UNIX, you must use forward slashes (/) instead of backward slashes (\).

After generating the new plugin configuration file, you may have to copy the file elsewhere depending on the location of your web server. If the front end HTTP Servers are located on separate servers (other than where WAS is installed), be sure to copy it to the correct server where it was configured. The generated plugin configuration file is usually located in <was_home>/config/cells/plugin-cfg.xml. If you are running a WebSphere Network Deployment configuration, the plugin file is located in the network deployment directory as [ND home]/config/cells/plugin-cfg.xml.

Note: You can also regenerate the plugin in the Administrative Console. Navigate to <your network>**Environment --> Update Web Server Plugin**. Click **OK**.

Related concepts:

- “The WAS installation scripts” on page 51

Related tasks:

- “Configuring and Installing DB2 Everyplace with WebSphere Application Server Version 5.0” on page 49
- “Creating a cluster environment” on page 53
- “Administrative tasks” on page 56
- “Creating the cluster” on page 55
- “Adding new servers to the cluster” on page 55
- “Gathering configuration information” on page 50
- “Uninstalling DB2 Everyplace from WAS” on page 56
- “Starting and stopping the DB2 Everyplace application server” on page 57
- “Deleting the Cluster” on page 58
- “Installation and configuration overview” on page 51
- “Creating and installing an application server” on page 52

Configuring a multiple server environment

This section provides information about configuring a multiple server environment. The topics covered are:

- “Configuring a multiple server environment”
- “Server groups and clones” on page 60
- “Planning considerations and tips” on page 61
- “Setting up to create application server clones” on page 61
- “Creating application server clones” on page 62
- “Post-configuration tasks” on page 64

Configuring a multiple server environment

In a multiple server environment, DB2 Everyplace exploits WebSphere Application Server (WAS) technology to dynamically manage user loads across servers by distributing the load between different servers. Incoming work requests are

distributed to the application server and other objects that can most effectively process that request. WAS implements workload management by using server groups and clones.

Prerequisites:

You must have the following software installed in order to use a multiple server environment:

- DB2 Universal Database, Version 7.2.1 (FixPak 5), JDBC 2.0 enabled
- DB2 Everyplace, Version 8.1
- WebSphere Application Server , Version 4.0 (FixPak 2 and FixPak 3 or later)

Procedure:

1. Set up to create application server clones.
2. Create application server clones.
3. Complete post-configuration tasks.

Related concepts:

- “Server groups and clones”
- “Planning considerations and tips” on page 61

Server groups and clones

A *server group* contains a template of an application server (and it’s contents). It is based upon a server that you have set up and it is used for creating and managing copies of that server. The copies are called *clones*. The act of creating the clones is called *cloning*.

Cloning is an advanced technique for improving the performance and availability of an application server. Cloning allows the workload management system to transparently balance the application server workload among the clones in the server group and automatically switches users from failed application instances to active clones with no interruption in service. The transparency of cloning to the user makes cloning an invaluable technique for maintaining a highly efficient and reliable production environment.

The server group is a logical representation of the application server. It has the same structure and attributes as the real application server, but it is not associated with any nodes, and does not correspond to any real server process running on any node. In contrast, clones created from a server group represent real application server processes running on real nodes.

Clones are identical to the server group from which they are created, allowing identical application servers to be created. These copies can be used for workload management, since a request for a server resource can be handled by any of the server clones. Starting or stopping the server group will automatically start or stop the server clone. Changes to a server group will be propagated to its clones when the server group is restarted.

For more information, see *IBM WebSphere V4.0 Advanced Edition Scalability and Availability*. You can find this and other Redbooks at <http://www.redbooks.ibm.com/>.

Related concepts:

- “Planning considerations and tips” on page 61

Related tasks:

- “Setting up to create application server clones”
- “Creating application server clones” on page 62
- “Post–configuration tasks” on page 64

Planning considerations and tips

In order to exploit the benefits of load balancing in a server group, it is important to consider how to set up this complex environment. You should consider:

- Installing the source database, the DB2 Everyplace control (DSYCTLDB) and message database (DSYMSGDB), and the WebSphere Application Server database repository (WAS40) on a remote server. Running one or more of these databases on separate servers is one way to prevent a single point of failure.
- Cataloging the DB2 Everyplace control and message database, and the WebSphere Application Server database repository before you install WAS and DB2 Everyplace. If you do this in advance, extra configuration tasks can be avoided.
- Cataloging each mirror database as a local database as required by DPropR for replication purposes.
- Installing the HTTP Server on another physical machine for security purposes. An easy way to do this, is to install WAS on the server with a local WAS database only, and copy the plug-in configuration into WebSphere after everything is setup.

Related concepts:

- “Server groups and clones” on page 60

Related tasks:

- “Setting up to create application server clones”
- “Creating application server clones” on page 62
- “Post–configuration tasks” on page 64

Setting up to create application server clones

This topic describes some setup tasks you must perform before you can create server clones from your server group.

This task is part of the main task of Configuring a multiple server environment. After you complete these steps, return to “Configuring a multiple server environment” on page 59.

Procedure:

1. Ensure that all servers in your server group have a static IP address with a fully qualified host name.
2. Install DB2 Universal Database, Version 7.2.1:
 - a. Install DB2 Universal Database, Version 7.2.1 on each physical server.
 - b. After rebooting the server, install FixPak 5. Where possible, accept the defaults.
 - c. Stop all DB2 services.
If you are using a Windows NT workstation, switch the JDBC level to 2.0. Change the usejdbc2.bat file in the \Program Files\java12 directory.
 - d. Restart the DB2 services.
3. Install WebSphere Application Server, Version 4.0 with FixPak 2 and FixPak 3.

4. Install IBM DB2 Everyplace on each physical server. Select the Multiple Server Environment installation type.
5. Repeat steps 1– 5 for each additional physical server in your server group.
6. Choose a WAS server and Install the IBM_DB2_Everyplace.ear file into the WAS server that you selected.
 - a. Run the scripts:
 - If the WAS server is on a UNIX platform, run the scripts in
`${DSYINSTDIR}/Server/installableApps/unix`
`dsy_was40_install.sh "$(WebSphere Application Server installation home)" adminnodename "$DSYINSTDIR" "$DSYQLLIBINSTDIR" "<7 or 8>" "<dsyusername>"` where <7 or 8> is the version number of DB2 UDB and <dsyusername> is the DB2 Everyplace instance user name.
 - If the WAS server is on a Windows platform, run the scripts in
`%DSYINSTDIR%\Server\installableApps\nt`
`dsy_was40_install.bat "WebSphere Application Server installation home" adminnodename "%DSYINSTDIR%" "%DSYQLLIBINSTDIR%" "<7 or 8>" "<dsyusername>"` where <7 or 8> is the version number of DB2 UDB and <dsyusername> is the DB2 Everyplace instance user name.

This command creates an Application Server on the DB2 Everyplace Server, installs the DB2 Everyplace EAR file, regenerates the plug-in configuration that the servlet redirector uses to route requests, and starts the DB2 Everyplace Sync Server.

- b. Verify the installation of the DB2 Everyplace EAR file by opening a Web browser. Type `http://hostname/db2e/db2erdb`. If the server running a message will be returned with the servlet name and other relevant information.

Related concepts:

- “Server groups and clones” on page 60
- “Planning considerations and tips” on page 61

Related tasks:

- “Creating application server clones”
- “Post–configuration tasks” on page 64

Creating application server clones

This section contains a high-level description of how to create server groups and clones.

Note: If you are using your server for replication purposes only, it is recommended that you do not add your clones into the DB2 Everyplace Server Group. The synchronization requests might be sent to the replication server, which will not reply to the client.

This task is part of the main task of Configuring a multiple server environment. After you complete these steps, return to “Configuring a multiple server environment” on page 59.

Prerequisites:

Before you create application server clones, you must complete some setup tasks as described in “Setting up to create application server clones” on page 61.

Procedure:

To create application server clones:

1. Stop the application server that you want to clone.
 - a. Open the WebSphere Administrative Console, and go to **WebSphere Administrative Domain** —> **Node** —> *domain name* —> **Application Servers** —> **IBM DB2 Everyplace Application Server**.
 - b. Right-click the application server and select **stop**.
2. Create a new server group by right-clicking on the application server and select **Create Server Group**. In the **Create Server Group** window, type a name for the new server group (for example, DB2 Everyplace Server Group). Click **OK**.

A server group is created, and the original application server is now a clone in the server group.

3. Copy the expanded EAR files to the other application servers when prompted by the Administrative Console.
4. Right-click each node, and select **Regenerate Plugin Config** so that the system will recognize each clone.
5. Select one node, and copy the \$WAS_HOME/config/plugin-cfg.xml file to your front-end IBM HTTP Server.
6. Specify a different server port and IP for each clone.
 - a. Select **Nodes** —> **nodename**—> *Application server clone name*.
 - b. In the right pane, go to **Services** and select **Web Container**. Click **Edit**.
 - c. Click the **Transport** tab on the properties window and note the port number.
 - d. Go to **System Properties** in the right pane, and enter or modify the following name value pair: DSYGdflt.Server.Port, transport_port_number for the application server clone. Also, enter or modify the server IP to specify a valid static IP address: DSYGdflt.Server.IP, ip_address.
7. You must also define a unique value for each of the servers in the same server group for the following properties:
 - DSYGdflt.Trace.Path = *log_directory*
For the logs directory, the directory should exist, and be writable by the dsyinstance running the DB2e Server clone.
 - DSYGdflt.Server.Name = *UniqueName* (type a unique name without spaces)

8.

9. The same port numbers found in the previous step must be added to the list of virtual hosts.
 - a. Select **WebSphere Administrative Domain** -> **Virtual Hosts**
 - b. Select a virtual host (in general, this is default_host). In the right pane, click **add** and type the port number that you obtained previously. The host alias and the corresponding port may be entered one at a time as *"*.<port_number>".*
 - c. Click **Apply**.
10. Right-click each node, and select **Regenerate Plugin Config** so that the system will recognize each clone.
11. Select one node, and copy the \$WAS_HOME/config/plugin-cfg.xml file to your front-end IBM HTTP Server.

After you complete these tasks, you can start the multiple server environment.

To start the multiple server environment, right-click on the new server group and select **start**. All clones that belong to that server group should start, and the front-end HTTP server with the servlet redirector will begin to receive all the requests.

Related concepts:

- “Server groups and clones” on page 60
- “Planning considerations and tips” on page 61

Related tasks:

- “Setting up to create application server clones” on page 61
- “Post-configuration tasks”

Post-configuration tasks

This topic contains post configuration tasks that will help you manage a multiple server environment.

This task is part of the main task of Configuring a multiple server environment. After you complete these steps, return to “Configuring a multiple server environment” on page 59.

Procedure:

- Configure the number of database connections for every mirror, control, and source database on each server. If the number of JDBC database connections on the source database is smaller than the sum of all the database connections on the control and mirror databases, the source database will start denying database requests.
 1. Configure the MAXAPPLS parameter for each source database so that the value is greater than the maximum total number of connections from all Sync Servers. The default value for the number of connections a Sync Server will issue is defined in the
`%DSYINSTDIR%\Server\properties\com\ibm\mobileservices\` directory.
 - Issue the following command from a DB2 command line for each source and control database:
`update database configuration for databasename using MAXAPPLS new_value`
 - In the DSYGdflt.properties value, set the parameter **Jdbc.MaxConnections** to a value that does not exceed the value that you set for MAXAPPLS in the previous command.
 2. Configure the global maximum number of database connections a database manager will allow using the MAXAGENTS parameter. MAXAGENTS should be greater than or equal to the total number of MAXAPPLS, or database connections, each Sync Server will attempt to use.
`update dbm cfg using MAXAGENTS sum of MAXAPPLS for each mirror and source database + MAXAPPLS for dsyctldb + MAXAPPLS for DSYMSGDB`
- Ensure that content caching in the HTTP server is disabled. To do this, change the following settings in *IBM HTTP Server\conf\httpd.conf* file:

```
#AfpEnable  
#AfpCache on  
#AfpLogFile "C:/IBMHTT~1/logs/afpalog" V-ECLF
```

Related concepts:

- “Server groups and clones” on page 60

- “Planning considerations and tips” on page 61

Related tasks:

- “Setting up to create application server clones” on page 61
- “Creating application server clones” on page 62

Post installation tasks on the mobile device

This section describes post installation tasks for your mobile devices.

Procedure:

Downloading the DB2 Everyplace Mobile Application Builder:

You can develop DB2 Everyplace applications on a workstation with off-the-shelf C/C++ and Java development tools like the DB2 Everyplace Mobile Application Builder. This development tool allows you to build and test DB2 Everyplace applications for mobile devices. If you plan to use the DB2 Everyplace Mobile Application Builder, you can download it from the Web at www.ibm.com/software/data/db2/everyplace/downloads.html or install it from the Software Development Kit CD.

Testing DB2 Everyplace sample applications:

You can test and use the DB2 Everyplace sample applications. For more information, see “Overview of the Visiting Nurse sample application” on page 97. This topic provides a description of the Visiting Nurse sample application and explains how to work with the sample on a Palm OS mobile device.

Related tasks:

- “Installing mobile devices” on page 25

Related concepts:

- “Overview of the Visiting Nurse sample application” on page 97

Part 3. Synchronization setup

Chapter 3. Setting up a mobile device for synchronization	69
Setting up a Palm mobile device or emulator for synchronization	69
Setting up a Palm OS mobile device for synchronization	69
Setting up the Palm OS mobile device or emulator	69
Installing files on a Palm OS mobile device or emulator	70
Synchronizing and verifying data on a Palm OS mobile device or emulator	72
Setting up a Symbian OS v6.0 mobile device for synchronization	73
Setting up and configuring a Symbian OS V6.0 mobile device for synchronization	73
Configuring m-Router Connect on a workstation	74
Configuring m-Router Connect on the device	74
Configuring ISync on the device	75
Synchronizing data on a Symbian OS V6.0 device	75

Chapter 3. Setting up a mobile device for synchronization

This chapter provides information about setting up a mobile device for synchronization. The topics covered are:

- “Setting up a Palm mobile device or emulator for synchronization”
- “Setting up a Symbian OS v6.0 mobile device for synchronization” on page 73

Setting up a Palm mobile device or emulator for synchronization

This section provides information about setting up a Palm mobile device or emulator for synchronization. The topics covered are:

- “Setting up a Palm OS mobile device for synchronization”
- “Setting up the Palm OS mobile device or emulator”
- “Installing files on a Palm OS mobile device or emulator” on page 70
- “Synchronizing and verifying data on a Palm OS mobile device or emulator” on page 72

Setting up a Palm OS mobile device for synchronization

This section describes steps involved in setting up, configuring, and synchronizing a Palm OS mobile device for synchronization.

Procedure:

To set up a Palm OS mobile device for synchronization:

1. Set up and configure the Palm OS mobile device or emulator.
2. Install files on the Palm OS mobile device or emulator.
3. Synchronize and verify data on the Palm OS mobile device or emulator.

Related tasks:

- “Setting up and configuring a Symbian OS V6.0 mobile device for synchronization” on page 73

Setting up the Palm OS mobile device or emulator

This topic describes how to set up and configure a Palm OS mobile device or emulator for synchronization.

This task is part of the main task of Setting up a Palm OS mobile device for synchronization. After you complete these steps, return to “Setting up a Palm OS mobile device for synchronization.”

Procedure:

Palm OS mobile device:

Before you can test synchronization using a Palm OS device, you need a TCP/IP connection to the device. You can set up a TCP/IP connection by using either Windows Remote Access Service, or Mocha W32 PPP, which is a shareware utility. The Windows Remote Access Service or Mocha W32 PPP must be running on your workstation when your Palm OS device attempts to establish a TCP/IP connection.

Palm OS devices come with the HotSync Manager application, which runs on your workstation to synchronize personal information such as contacts and to-do lists. Most Palm OS devices connect to a workstation through a COM port. HotSync Manager, Mocha W32 PPP, or Remote Access Service must have access to this COM port to work properly. To avoid conflict, before you start Remote Access Service or Mocha W32 PPP, you must exit the HotSync Manager. Similarly, if you want to use the HotSync Manager, you must terminate Remote Access Service or exit Mocha W32 PPP.

To install and configure Mocha WP2 PPP:

1. Download W32 PPP from <http://www.mochasoft.dk/>.
2. Install Mocha W32 PPP on your workstation.
3. Configure the Palm OS device using the directions in “Installing files on a Palm OS mobile device or emulator.”

Palm OS emulator:

The Palm OS emulator is available to download from the Palm OS Web site at:

<http://www.palmos.com/dev/tech/tools/emulator/>

After you download the emulator, unzip the files to a directory.

The Palm OS emulator requires a ROM image file to run. You can obtain ROM image files from Palm by joining the Palm Solution Provider Program, or you can download a ROM image from your Palm OS device. For information on the Palm Solution Provider Program, visit www.palmos.com/dev/.

To transfer a ROM image from your Palm OS device:

1. Use the install tool included with your Palm OS device to install ROM Transfer.prc and then synchronize with the Palm OS device to install this program. The ROM Transfer.prc file is included with the Palm OS emulator.
2. Start the Palm OS emulator by running Emulator.exe.
3. Click **Download** in the Palm OS emulator window.
4. Complete the transfer of the ROM image by following the instructions displayed by the Palm OS emulator.

After you have a ROM image, configure the emulator to test synchronization.

Related tasks:

- “Installing files on a Palm OS mobile device or emulator”
- “Synchronizing and verifying data on a Palm OS mobile device or emulator” on page 72
- “Setting up and configuring a Symbian OS V6.0 mobile device for synchronization” on page 73

Installing files on a Palm OS mobile device or emulator

This topic describes how to install files on your Palm OS mobile device or emulator.

This task is part of the main task of Setting up a Palm OS mobile device for synchronization. After you complete these steps, return to “Setting up a Palm OS mobile device for synchronization” on page 69.

Procedure:

Palm OS mobile device:

After the Palm OS device is connected to the DB2 Everyplace Sync Server, you can install the necessary files on your Palm OS device:

1. Use the DB2 Everyplace Install on Mobile Device tool to install DB2 Everyplace. The Install on Mobile Device tool is available from the **IBM DB2 Everyplace** folder of Windows Start menu.
2. Perform a HotSync operation to complete the installation of the files to the Palm OS device, then close the HotSync manager.
3. Start the Palm OS **Prefs** application.
4. Tap the menu title in the upper right corner of the Preference window, and select **Network**.
5. Tap **Connect**. If the device fails to connect, verify that you correctly configured Mocha W32 PPP or Windows Remote Access Service.
6. Tap **OK**. The Properties window closes.

Palm OS emulator:

After you set up the Palm OS emulator and obtain a ROM image, install the DB2 Everyplace Sync Client, sample files, and the IBM Sync application on the Palm OS emulator. To install files on a Palm OS emulator:

1. Start the Palm OS emulator.
2. Right-click the emulator and select **New**.
3. Click the **ROM File** push button and select **Other**. Open the ROM file that you obtained.
4. Select a **Device**, **Skin**, and **RAM Size** for the emulator. The **Device** type must be the compatible with the ROM image that you obtained.
5. Click **OK**. The Palm OS device emulation begins.
6. Right-click on the Palm OS emulator window and select **Install Application/Database -> Other**. Alternatively, you can drag and drop or copy and paste the files to the Palm OS emulator window.
7. Install applications from the DB2 Everyplace installation directory as described in "Installing DB2 Everyplace files on a Palm OS device" on page 27.
8. Right-click on the Palm OS emulator and select **Reset**. The Palm OS emulator resets.
9. Right-click on the Palm OS emulator and select **Settings -> Properties**.
10. Select **Redirect NetLib calls to host TCP/IP** and click **OK**. The Properties window closes.

Related tasks:

- "Setting up the Palm OS mobile device or emulator" on page 69
- "Synchronizing and verifying data on a Palm OS mobile device or emulator" on page 72
- "Setting up and configuring a Symbian OS V6.0 mobile device for synchronization" on page 73

Synchronizing and verifying data on a Palm OS mobile device or emulator

This task is part of the main task of Setting up a Palm OS mobile device for synchronization. After you complete these steps, return to “Setting up a Palm OS mobile device for synchronization” on page 69.

Procedure:

To synchronize and verify your synchronization:

1. Start the Sync Server. For Windows, click **Start -> Programs -> DB2 Everyplace -> Start Servlet for Sync Server** from the Start menu. On UNIX, login as the DB2 Everyplace Sync Server instance owner and change directory to `$DSYINSTDIR/Server/bin` and execute `dsysync.sh`

To verify that the Sync Server is running, go to

`http://127.0.0.1:<port>/db2e/db2erdb` and ensure that you see the following message:

```
DB2eSyncServer<datetime string>
```

Note: Replace the port with the actual port of the DB2 Everyplace Sync Server.

2. Start the mobile device or emulator.
3. Click **IBM Sync**.
4. Click **Synchronize**. The synchronization begins. You can stop a synchronization at any time by clicking the **Cancel** button. When the synchronization ends, one of the following messages will appear as the final synchronization status:
 - Synchronization succeeded
 - Synchronization failed
 - Synchronization cancelled

For more information on synchronizing your data, see the *DB2 Everyplace Sync Server Administration Guide*.

5. When the Palm OS emulator or device displays the message Synchronization succeeded, open QBE.
6. Specify a user name and password.
7. Click the **Select Table** menu and select the **VNMEDICALRECORD** table. The contents of the table show on the screen.
8. Open the Mobile Devices Administration Center and DB2 Control Center. For Windows, select **Start -> Programs -> IBM DB2 Everyplace -> Start Mobile Devices Administration Center**.
For UNIX, login as the DB2 Everyplace Sync Server instance owner and change the directory to `$HOME/db2everyplace81/Server/bin` and execute `dsyadmin.sh`.
9. Expand the object tree in the DB2 Control Center until you see the VNURSE database. Select the **Tables** folder of the VNURSE database to show the VNURSE tables.
10. Right-click the **VNMEDICALRECORD** table and select **Sample Contents** from the menu.
11. Compare the contents of the table on the Palm OS emulator or device to the sample contents of the table in the DB2 Control Center.

You have successfully synchronized data between your mobile device and DB2 Everyplace Sync Server.

Related tasks:

- “Setting up the Palm OS mobile device or emulator” on page 69
- “Installing files on a Palm OS mobile device or emulator” on page 70
- “Setting up and configuring a Symbian OS V6.0 mobile device for synchronization”

Setting up a Symbian OS v6.0 mobile device for synchronization

This section provides information about setting up a Symbian OS v6.0 mobile device for synchronization. The topics covered are:

- “Setting up and configuring a Symbian OS V6.0 mobile device for synchronization”
- “Configuring m-Router Connect on a workstation” on page 74
- “Configuring m-Router Connect on the device” on page 74
- “Configuring ISync on the device” on page 75
- “Synchronizing data on a Symbian OS V6.0 device” on page 75

Setting up and configuring a Symbian OS V6.0 mobile device for synchronization

Prerequisites:

Before you can test synchronization on a Symbian OS V6.0 device, you need a TCP/IP connection to the device. You can set up a TCP/IP connection from a mobile device to a workstation running on a Win32 platform by using m-Router Connect from Intuwave. You can find information about obtaining a beta version of m-Router Connect from the Intuwave Web site www.intuwave.com.

The m-Router Connect consists of two parts: m-Router Connect for the workstation and m-Router Connect for the device. For the device to connect to the workstation, m-Router Connect must be installed both on the device and on the workstation.

Procedure:

To use m-Router Connect to establish a connection between the mobile device and the workstation:

1. Install m-Router Connect on the device using the documentation that comes with the device.
2. Install m-Router Connect on the workstation.
3. Configure m-Router Connect on the workstation.
4. Configure m-Router Connect on the device.

To finish your setup and configuration:

1. Configure ISync.
2. Test synchronization to ensure that the Sync Server is running.

Related tasks:

- “Setting up a Palm OS mobile device for synchronization” on page 69

Configuring m-Router Connect on a workstation

The steps listed below might vary depending on the version of m-Router that you are using.

This task is part of the main task of Setting up and configuring a Symbian OS V6.0 mobile device for synchronization. After you complete these steps, return to “Setting up and configuring a Symbian OS V6.0 mobile device for synchronization” on page 73.

Procedure:

To configure m-Router Connect on a workstation:

1. Connect the Symbian OS V6.0 device to a COM port in the workstation using a serial cable.
2. Start mRouterDeluxe.exe on your workstation. A program icon appears in the system tray of the desktop.
3. Right-click the icon. The m-Router Overview window opens.
4. In the m-Router Overview window, click the icon that represents the COM port that your device connects to. If you connected properly and the m-Router detects the connection, the icon is shown as a plug that has been plugged into a socket.
5. On the General page of the Properties of COM *x* window, select **serial port** from the **Mode** list. *x* is the port number.
6. Select **115200** from the **Baud** list.

Related tasks:

- “Setting up and configuring a Symbian OS V6.0 mobile device for synchronization” on page 73
- “Configuring m-Router Connect on the device”
- “Configuring ISync on the device” on page 75
- “Synchronizing data on a Symbian OS V6.0 device” on page 75

Configuring m-Router Connect on the device

This task is part of the main task of Setting up and configuring a Symbian OS V6.0 mobile device for synchronization. After you complete these steps, return to “Setting up and configuring a Symbian OS V6.0 mobile device for synchronization” on page 73.

Procedure:

To configure m-Router Connect on the device:

1. Press the **Extras** button on the keyboard of the device. The Extras window opens.
2. Select **m-Router Connect** from the list.
3. Press **Open**. The m-Router Connect window opens.
4. Press **Configure**. The Settings window opens.
5. In the Settings window, select **Cable**.
6. Press **OK** to exit the window.
7. Press **Disconnect**, then press **Exit** to exit m-Router Connect..

Related tasks:

- “Setting up and configuring a Symbian OS V6.0 mobile device for synchronization” on page 73
- “Configuring m-Router Connect on a workstation” on page 74
- “Configuring ISync on the device”
- “Synchronizing data on a Symbian OS V6.0 device”

Configuring ISync on the device

The DB2 Everyplace Sync Server provides ISync, a sample synchronization client application. You must configure ISync before its first synchronization with the Sync Server.

This task is part of the main task of Setting up and configuring a Symbian OS V6.0 mobile device for synchronization. After you complete these steps, return to “Setting up and configuring a Symbian OS V6.0 mobile device for synchronization” on page 73.

Procedure:

To configure ISync on the device:

1. Press the **Extras** button on the keyboard of the device. The Extras window opens.
2. Select **Isync** from the applications list.
3. Press **Open** to start ISync. The ISync window opens.
4. Press **Settings**. The User Info window opens.
5. Type the IP address or host name of the workstation in the **Server IP** field.
6. Type 8080 in the **Port** field. This is the default port used by the application server of Sync Server.
7. Type nurse1 in the **User ID** field. This is the sample user created by the Create Sync Server Sample program.
8. Optional: Select the **Detailed Log** check box to have ISync register detailed logs during synchronization. Detailed logs are useful in troubleshooting.
9. Press **Set Password**. The Set Password window opens.
10. Type nurse1 in the **Enter Password** field. This is the sample password set by the Create Sync Server Sample program.
11. Press **OK**. The Set Password window closes.
12. In the User Info window, press **OK** to save the changes and exit.

The Symbian OS V6.0 device and software are now ready to synchronize.

Related tasks:

- “Setting up and configuring a Symbian OS V6.0 mobile device for synchronization” on page 73
- “Configuring m-Router Connect on a workstation” on page 74
- “Configuring m-Router Connect on the device” on page 74
- “Synchronizing data on a Symbian OS V6.0 device”

Synchronizing data on a Symbian OS V6.0 device

Complete the following steps to verify that the DB2 Everyplace Sync Server is running

This task is part of the main task of Setting up and configuring a Symbian OS V6.0 mobile device for synchronization. After you complete these steps, return to “Setting up and configuring a Symbian OS V6.0 mobile device for synchronization” on page 73.

Procedure:

1. Follow the directions in “Configuring m-Router Connect on a workstation” on page 74 to navigate to the General page of the COM port properties window.
2. On the Symbian OS V6.0 device, press **Extras**, select **m-Router Connect** and press **Open**. The m-Router Connect window opens.
3. Press **Connect**. m-Router attempts to establish a connection with the workstation.
4. With m-Router Connect still running, press **Extras**, select **ISync** and press **OK**. The ISync screen opens.
5. Press **Sync**.
6. In the COM port properties window on your workstation, go to the **Mode** list and select **serial port** again to start the communication between the device and the workstation. When communication between the device and workstation is established, the message “connected” appears in the COM port properties window. The synchronization begins.
7. After the synchronization ends, press the **Menu** button on the device, highlight **Close** on the **File** menu, and press **Select** to exit ISync.
8. Press **Extras** on the keyboard.
9. Select **m-Router Connect** from the list and press the **open** button to switch to the application.
10. Press **Disconnect**, then press **Exit** to exit m-Router Connect..

You successfully synchronized data between your mobile device and DB2 Everyplace Sync Server.

Related tasks:

- “Setting up and configuring a Symbian OS V6.0 mobile device for synchronization” on page 73
- “Configuring m-Router Connect on a workstation” on page 74
- “Configuring m-Router Connect on the device” on page 74
- “Configuring ISync on the device” on page 75

Part 4. Sample applications

Chapter 4. Overview of DB2 Everyplace sample applications

DB2 Everyplace includes sample applications for each target platform, as described in the following tables. Some samples are only included in the SDK version of DB2 Everyplace.

Table 18. DB2 Everyplace sample applications by target platform

Target platform	Type	Sample applications
Palm	Client	<ul style="list-style-type: none"> • DB2eCLP • VNurse • NurseInit • DB2eAppl • Sync GUI
Palm	MAB	<ul style="list-style-type: none"> • PersonList • VNApp • VNPlus
Symbian 6	Client	<ul style="list-style-type: none"> • DB2eCLP • VNurse • NurseInit • DB2eAppl • DB2eJavaCLP • Sync GUI • Common
Symbian 6	MAB	<ul style="list-style-type: none"> • PersonList • VNApp
Symbian 7	Client	<ul style="list-style-type: none"> • DB2eCLP • NurseInit • Sync GUI • PersonList • DB2eJavaCLP
Symbian 7	MAB	<ul style="list-style-type: none"> • PersonList • VNApp
WinCE	Client	<ul style="list-style-type: none"> • DB2eCLP • VNurse • VNurseInit • DB2eAppl • DB2eJavaCLP • Sync GUI
WinCE	MAB	<ul style="list-style-type: none"> • PersonList • VNApp • DB2eJavaCLP

Table 18. DB2 Everyplace sample applications by target platform (continued)

Target platform	Type	Sample applications
Win32	Client	<ul style="list-style-type: none"> • DB2eCLP • DB2eAppl • DB2eJavaCLP • Sync GUI
MIDP	Client	<ul style="list-style-type: none"> • DB2eCLP • VNurse • DB2eJavaCLP
Linux and Neutrino (including Sharp Zaurus)	Client	<ul style="list-style-type: none"> • Command Line CLP • NurseInit • Sync GUI • PersonList • DB2eJavaCLP
Linux and Neutrino (including Sharp Zaurus)	MAB	<ul style="list-style-type: none"> • PersonList • VNApp

The following table describes where the DB2 Everyplace sample applications are located and which edition of DB2 Everyplace includes each sample. Abbreviations for each edition are as follows:

- EE = Enterprise Edition
- DE = Database Edition
- SDK = Software Development Kit Edition

Table 19. DB2 Everyplace sample applications by version and location

Application	Description	Edition	Directory
DB2eCLP	Utility file	EE/DE/SDK	Clients\platform\database\lang\proc\DB2eCLP
VNurse	Up and running sample, combination of NurseInit and Nurse	EE/DE/SDK	Clients\platform\database\lang\Samples\VNurse
Sync GUI C <ul style="list-style-type: none"> • testisync.exe • isyncui.prc • isyncui.exe • isync.sis • goISync Java and ISync.NET <ul style="list-style-type: none"> • ISyncSample • goISyncConsole 	Up and running synchronization samples (binaries)	EE/SDK	For C: Clients\platform\sync\lang\proc\ For Java: Clients\clientapisample\Java_API For ISync.NET: Clients\clientapisample\NMP
Zaurus package Contains: <ul style="list-style-type: none"> • goISync • DB2eCLP 	Contains both samples and also contains DB2 Everyplace and Sync Client libraries	EE/DE/SDK	Clients\linux\install

Table 19. DB2 Everyplace sample applications by version and location (continued)

Application	Description	Edition	Directory
Client API Samples C <ul style="list-style-type: none"> • testisync • isyncui • goISync Java and ISync.NET <ul style="list-style-type: none"> • ISyncSample • GoISyncConsole 	Synchronization samples (source)	SDK	For C: Clients\clientapisample\C_API For Java: Clients\clientapisample\Java_API For ISync.NET: Clients\clientapisample\NMP
NurseInit	Creates and populates tables	SDK	SDK\Samples\platform\language\NurseInit
Common <ul style="list-style-type: none"> • DB2eEng.cpp • DB2eEng.h 	A code sample for Symbian 6	SDK	SDK\Samples\Symbian6\language\Common
JDBC Sample <ul style="list-style-type: none"> • DB2eApp1 • DB2eJavaCLP 	JDBC sample application	SDK	Clients\platform\database\JDBC\lang
MIDP	MIDP sample applications com.ibm.mobileserves.demo	SDK	Clients\MIDP\Samples\lang
Source code for all samples in the Clients directory		SDK	SDK\Samples\platform
PersonList	Sample MAB application	SDK	SDK\ApplicationBuilder\Projects\Samples\platform
VNApp	Sample MAB application	SDK	SDK\ApplicationBuilder\Projects\Samples\platform\
VNPlus	Sample MAB application	SDK	SDK\Samples\platform\

Chapter 5. The IBM Sync application

This chapter provides a description of the IBM Sync application. It contains the following topics:

- “Overview of IBM Sync”
- “Configuring IBM Sync for Palm OS”
- “IBM Sync menu options” on page 84
- “Synchronizing data using IBM Sync” on page 86

Overview of IBM Sync

IBM Sync works with the DB2 Everyplace Sync Server to synchronize data and applications between mobile devices and enterprise data sources. Before you configure IBM Sync, you need to define a user, group, subscription, and subscription set in the Mobile Devices Administration Center.

See the *Sync Server Administration Guide* for more information about these tasks.

IBM Sync is a synchronization application with a graphic interface, which utilizes the IBM Sync Client C-API. It is available for Palm OS, Windows CE, and the Symbian platforms. A command line program (testisync) is also provided to test synchronization on Win32, Neutrino, and Linux platforms.

You can use the command line program (testisync) to test synchronization on Win32, Neutrino, and Linux platforms. Both the IBM sync and testisync are sample programs which demonstrate how to use the IBM Sync Client C-API. IBM sync and testisync are open source and available in the DB2 Everyplace Software Development Kit.

Note: Be sure to read the license agreement before using the source code.

For information on the IBM Sync library, see the *DB2 Everyplace Application Development Guide*.

During every synchronization, the client software checks whether the client's configuration (the subscription sets and subscriptions assigned to the client's group) must be updated. For example, when you refresh a file referenced in a subscription, a flag indicating that the subscription has changed is set so that the new version is downloaded to all subscribed users on the next synchronization.

Related concepts:

- “IBM Sync menu options” on page 84

Related tasks:

- “Configuring IBM Sync for Palm OS”
- “Synchronizing data using IBM Sync” on page 86

Configuring IBM Sync for Palm OS

Prerequisites:

Before you configure the IBM Sync applications, you need to set up the Palm OS mobile device or emulator and install all of the necessary files for synchronization as described in the section called "Setting up and configuring a Palm OS mobile device or emulator for synchronization" in the *Installation and User's Guide*.

Procedure:

To configure IBM Sync on your Palm OS mobile device or emulator:

1. Locate the IBM Sync application in the Palm OS mobile device or emulator.
2. Click **IBM Sync**.
3. Click **Menu** and select **Settings** from the menu.
4. Type the IP address or host name of the workstation in the **Server IP** field.
5. Type the port number of the Sync Server in the **Port #** field. The default port used by the Sync Server basic application server is 8080.
6. Type a user ID in the **user ID** field. The user ID is created in the DB2 Everyplace Mobile Devices Administration Center by the Sync Server administrator.
7. Type a password in the **Password** field. The user's password is created in the DB2 Everyplace Mobile Devices Administration Center by the Sync Server administrator.
8. Click **OK**.

Related concepts:

- "Overview of IBM Sync" on page 83
- "IBM Sync menu options"

Related tasks:

- "Synchronizing data using IBM Sync" on page 86

IBM Sync menu options

After you set up IBM Sync, you can configure other IBM Sync menu options. Be sure that you have installed DB2 Everyplace on the client device and that the client device or emulator is set up for network connections.

In the upper left-hand corner of the IBM Sync dialog, click the **IBM Sync** menu. A drop-down menu appears with the following options:

- **Subs Sets**
- **Server Settings**
- **Client Settings**
- **Network Settings**
- **About IBM Sync**

Subs Sets (Subscription sets):

You can view the subscription sets that the Sync Client subscribes by selecting the **Subscription Sets** option from the menu. In the subscription set panel, the check box next to a subscription set indicates if the subscription set is enabled for synchronization. Thus, you can disable synchronization on those subscription sets that you are interested in by unchecking a check box. All the command buttons and their actions in the panel are explained as follows:

OK After changing the synchronization options of the subscriptions, you can save your changes by clicking the **OK** push button.

Cancel

In case you want to discard your changes, click the **Cancel** button.

Details

When you click the **Details** push button, the **Details** panel displays detailed information about the selected subscription set (for example, the complete name of the subscription set and the status of the last synchronization). In addition, if you want to discard the client data and perform a refresh of a subscription set, simply select the **Reset** check box. The next time when you synchronize, the Sync Client will then perform a refresh (drop the client data and re-fetch the source data from the server) on that subscription set.

Purge This push button will drop the current subscription set information, and the next time when you synchronize, the Sync Client will refresh the subscription set information, and then refresh each subscription set.

Note: If you made changes to the local tables, but have not synchronized these changes with the source, the refresh after you perform the purge operation will cause all those changes to be lost.

Server Settings:

If you click the **Server Settings** menu option, the Setting dialog opens. In this dialog, you can configure some of the IBM Sync settings. The settings that can be configured are:

URL Tap the drop-down list next to **URL**, then select **-enter-** and type the Sync Server URL (for example, **http://127.0.0.1**). If the Sync Server is configured on a port other than 80, say 8080, the port number should be specified in the URL (for example, **http://127.0.0.1:8080**). Each new server URL that you enter is stored in the drop-down list so that the next time you synchronize, you can simply select the server URL from the list.

User Type a user name in the User ID field. The user name that you enter must be defined in the DB2 Everyplace Mobile Devices Administration Center. For information on creating a user in the Mobile Devices Administration Center, see the Sync Server Administration Guide.

Password

Type a password in the Password field. The password that you enter must be defined in the DB2 Everyplace Mobile Devices Administration Center. For information on creating a user in the Mobile Devices Administration Center, see the Sync Server Administration Guide. Select the **Save Password** check box, if you want to save the password for subsequent.

Client Settings:

You can configure the client-specific settings by selecting the **Client Settings** from the menu. The client settings that can be configured are:

Trace Tap the drop-down list next to **Trace**, and select **Detailed** to generate detailed tracing information for service when you encounter problems during synchronization.

Memory slot

Tap the drop-down list next to **Memory slot**, and select the target memory

expansion card, if any, where you want to save the client information and synchronized data. The default **Device** setting is the main memory on the mobile device. When a memory slot other than **Device** is selected, you can also specify the exact target path in the **Target Path** field, for which the default is the root.

Network Settings:

You can configure the network-specific settings by selecting the **Network Settings** from the menu. The network settings that can be configured are:

Timeout

In this drop-down list, you can specify a time out duration for synchronization. You should select a longer duration if the server is busy or there is a large amount of data to be synchronized. If you frequently encounter time out error messages during synchronization, contact your system administrator for the proper setting of this value. The default is 1 minute

Network Speed

Tap the drop-down list next to **Network Speed**, and select the proper network speed. This setting allows the Sync Client to adjust the actually message size when communicating with the Sync Server to achieve the best network performance.

Use Proxy

If your system uses a proxy server, you should select the **Use Proxy** check box, and then type in the IP and the port number of the proxy server.

About IBM Sync:

When you select **About IBM Sync**, you can view the device information including the version number and the build date for the DB2 Everyplace client, and device ID.

Related concepts:

- “Overview of IBM Sync” on page 83

Related tasks:

- “Configuring IBM Sync for Palm OS” on page 83
- “Synchronizing data using IBM Sync”

Synchronizing data using IBM Sync

For more information on synchronizing your data, see the DB2 Everyplace Sync Server Administration Guide.

Prerequisites:

Before you use the IBM Sync application, you need to configure the IBM Sync application as described in “Configuring IBM Sync for Palm OS” on page 83.

Procedure:

To synchronize data:

1. Start the mobile device.

2. Start the IBM Sync application. The system displays the main IBM Sync window.
3. Tap **Synchronize**. The synchronization begins. The panel will display the status and the progress of the synchronization. You can cancel a synchronization at any time by clicking the **Cancel** button. When the synchronization ends, the following messages will appear to indicate the synchronization succeeds, fails, or get cancelled respectively.
 - Synchronization succeeded
 - Synchronization failed
 - Synchronization cancelled

If the synchronization fails, you can click the **Log** button to see the cause (error) of the failure. If the synchronization is successful, then you can go on to verify that the synchronized data is correct.

To Verify the data:

- On the client:
 1. Start DB2eCLP on the mobile device.
 2. Enter an SQL statement which selects all the records from the table with which you recently synchronized (for example VNMEDICALRECORD).
- On the data source:

There are two ways to view the source table data:

 - The DB2 Command Line Processor:
 1. Open the DB2 CLP on the source database.
 2. Enter an SQL statement to select all the records of the subscribed table (for example, dsysample.VNMEDICALRECORD).
 - DB2 UDB Control Center

You can also use DB2 Control Center to locate the subscribed table from the Tables folder in the database (for example, table dsysample.VNMEDICALRECORD is in the VNURSE database) Then, you select the table, right-click, and select Sample Contents to browse the contents of the table.
- Compare the contents of the table on the mobile device to that of the data source.

Related concepts:

- “Overview of IBM Sync” on page 83
- “IBM Sync menu options” on page 84

Related tasks:

- “Configuring IBM Sync for Palm OS” on page 83

Chapter 6. The CLP application

This chapter provides information about CLP sample application. The topics covered are:

- “Overview of the CLP application”
- “CLP commands”
- “Entering and executing SQL statements using CLP” on page 91
- “Importing and exporting data using the CLP” on page 92

Overview of the CLP application

The Command Line Processor (CLP) is an application development tool provided as an example application for using DB2 Everyplace on platforms with a command line interface. The CLP is used for the DB2 Everyplace database on mobile devices. It is not used by the Sync Server.

The CLP application is a separate tool on all platforms.

The following list explains how the CLP application was developed for each platform:

- For Palm OS, the application was developed in C using Metrowerks CodeWarrior for Palm Computing Platform.
- For QNX Neutrino, the application was developed in C using the QNX Neutrino Developers Kit.
- For embedded Linux, the application was developed in C using tools included with BlueCat Linux from Lynuxworks.
- For Windows CE, the application was developed in C using Microsoft eMbedded Visual C++ 3.0.
- For Windows NT and Windows 2000, the application was developed in C using Microsoft Visual C++ Version 6.
- For Symbian OS Version 6, the application was developed in C++ using Microsoft Visual C++ Version 6 and Symbian C++ Software Developers Kit.

Related tasks:

- “Importing and exporting data using the CLP” on page 92

Related reference:

- “CLP commands”

CLP commands

This application is a simple Command Line Processor (CLP) for working with DB2 Everyplace tables and data. Application developers can directly execute SQL statements from this command line interface. For example:

```
SELECT * FROM PHONEBOOK
```

On some platforms, each statement must end in a semicolon. For example:

```
SELECT * FROM PHONEBOOK;
```

The Command Line Processor also supports some extended commands.

\$file [input file] [output file]

Executes SQL statements from an input file, and writes the result to an output file. This command is not supported on Palm OS, Symbian OS, or Windows CE. For all other platforms, you can specify the full path.

AUTOCOMMIT OFF | ON

Changes the transaction mode to autocommit (the default for the DB2 engine). AUTOCOMMIT OFF changes the transaction mode to manual. Applications can either roll back or commit work.

BLASTDB

Drops all user tables in the database.

COMMIT WORK (or COMMIT)

Commits all previous update, delete, insert operation, and starts a new transaction scope.

CONNECT TO arg1

where arg1 is the database path

Automatically disconnects the application from the current connection and reconnects the application to a local database. The specification is in the SQLConnect() CLI call. The delimiter for the paths for CLI-SQLConnect is either \ (backslash) or / (slash). Both delimiters are understood on all platforms and mapped to the appropriate delimiter when the file system is accessed, thus allowing databases to reside in different directories. For example,

```
connect to c:\temp \  
create table t (a int)  
insert into t values (10)  
select *from t
```

CONNECT TO arg1 USER arg2 USING arg3

where

arg1 database path

arg2 user

arg3 password

Automatically disconnects the application from the current connection and reconnects the application to a local database using the provided user name and password. This information is needed for accessing and operating encrypted tables.

Usage note: A directory name can include a space. For example, C:\System\program files\ is a valid directory structure, but you must use the same directory structure that exists on your machine.

DESCRIBE SELECT

Describe the type, column, and name length of the data returned by a SELECT statement. For example:

```
DESCRIBE SELECT * FROM PHONEBOOK
```

DISABLE APPLICATION SET DIRTY

Disables setting dirty bit by the Command Line Processor.

DISABLE LONG FILENAME

Creates files in 8.3 file name format.

DISABLE PHYSICAL DELETE

Disables physical delete mode (default).

DISABLE READ DELETED

Disables reading deleted rows.

DISABLE REORG

Disables table reorganization.

ENABLE APPLICATION SET DIRTY

Enables setting dirty bit by the Command Line Processor.

ENABLE LONG FILENAME

Creates files in long file name format (default).

ENABLE PHYSICAL DELETE

Enables physical delete mode. Deleted rows will no longer be readable.

ENABLE READ DELETED

Enables reading deleted rows.

ENABLE REORG

Enables table reorganization automatically (default).

HELP Lists all available commands.

LIST COLUMNS

List all user table columns in the database.

LIST INDEX

List all indexes created on a specified table.

LIST TABLES

List all user tables in the database.

ROLLBACK WORK (or ROLLBACK)

Rolls back all previous update, delete, insert operations, and starts a new transaction scope.

VERSION

Prints the DB2 Everyplace Database version string. It returns the same string as the SQLGetInfo() function.

Related tasks:

- “Importing and exporting data using the CLP” on page 92

Related concepts:

- “Overview of the CLP application” on page 89

Entering and executing SQL statements using CLP

The QBE command line processor (CLP) is no longer supported. The standalone Command Line Processor is recommended for entering and executing SQL statements.

Procedure:

To enter and execute SQL statements:

1. Tap the **MENU** icon, then select **CLP** from the **Tools** menu. The DB2 Everyplace CLP window opens.
2. In the query field, specify an SQL statement. For example, to select the contents of the VNPERSO^N table enter:

```
SELECT * FROM VNPERSON
```
3. Tap **Run SQL**.

For more information on the SQL statements supported by DB2 Everyplace, see the *DB2 Everyplace Application Development Guide*.

Related tasks:

- “Importing and exporting data using the CLP”

Related concepts:

- “Overview of the CLP application” on page 89

Related reference:

- “CLP commands” on page 89
- “Overview of IBM Sync” on page 83

Importing and exporting data using the CLP

The DB2 Everyplace Command Line Processor for Palm OS, Symbian OS, Windows CE, Win32 platforms, Neutrino, and embedded Linux supports importing data from a file to DB2 Everyplace and exporting DB2 Everyplace data to a file. Importing and exporting data on the Palm OS uses the memo files on the device.

Procedure:

Importing data from a file to DB2 Everyplace:

To import data from a file on the mobile device to DB2 Everyplace, type:

```
IMPORT FROM file_name OF DEL INSERT INTO table_name [(column list)]
```

file_name is the name of the file to import from.

On Palm OS, *file_name* is the name of the memo to import from. The file name must appear on the first line of the memo. Palm memos have a limitation of storing 4K bytes text. *table_name* is the name of an existing table to import into. For example, to import data from a file named mydata.txt to an existing table named mytable, type:

```
IMPORT FROM mydata.txt OF DEL INSERT INTO mytable
```

Exporting data from DB2 Everyplace to a file:

To export data from DB2 Everyplace to a file, type:

```
EXPORT TO file_name OF DEL stmt
```

file_name is the name of the file to write the data to. *stmt* is the SELECT statement to select the data to export. For example, to export all data from the table named mytable to a file named myfile.txt, type:

```
EXPORT TO myfile.txt OF DEL SELECT * FROM mytable
```

Importing and exporting data on Palm OS mobile devices:

DB2 Everyplace for Palm OS uses a set of command line tools for Windows and a Palm OS application to import and export data as PDB files.

The Import/Export tools include the following executable files, which are installed on the Windows workstation. These files are located in DB2Everyplace\Clients\utilities:

CSV2DB2e.exe

This file imports data from a Comma Separated Values file (with file extension of .csv) into a DB2 Everyplace table. A DB2e table (for example, named PERSON) is represented by two files, DSY_PERSON and DSY_iPERSON. The DSY_PERSON file contains the data, and DSY_iPERSON contains the indexing information.

DB2e2PDB.exe

This program converts a DB2 Everyplace table into Palm OS PDB format. It then copies the files into the user's directory and informs the HotSync program that there are files to install. If more than one user is defined in the system, a user list will be displayed so that you can select the intended user.

PDB2DB2e.exe

PDB2DB2e.exe converts Palm OS PDB files from the user backup area into a DB2 Everyplace table. If more than one user is defined in the system, a user list will be displayed so that you can select the intended user.

DB2e2CSV.exe

DB2e2CSV exports a DB2 Everyplace table into a CSV file. It also makes use of the DB2 Everyplace system catalog files named DB2eSYSTABLES and DB2eSYSCOLUMNS.

PalmImport.bat

PalmImport.bat combines the operations of CSV2DB2e.exe and DB2e2PDB.exe.

PalmExport.bat

PalmExport.bat combines the operations of PDB2DB2e.exe and DB2e2CSV.exe.

The Import/Export tools include the following Palm OS application:

DB2eImport.prc

This program registers the DB2 Everyplace files transferred by the HotSync program to the local DB2 Everyplace system.

To import data to the Palm OS device:

1. Create two files with the same name (for example, VNPERSON), one with a .csv extension and one with a .sch extension. The .csv file contains the data, and the .sch file contains the schema for the table to be imported. Note that the file name cannot contain any blank spaces. Sample .csv and .sch files are located in the DemoImport\ folder. The files are named VNPERSON.csv and VNPERSON.sch.

Table 20 on page 94 lists the supported data types and their representation in the CSV file.

Table 20.

Data type	Represented as
integer (or int)	1234
smallint	1234
decimal(n,p)	12.34
char(n)	"John"
varchar(n)	"John"
date	yyyymmdd
time	"14.05.48"
timestamp	"2001-05-01-16.16.51.000000"

To represent a null value for a column, enter nothing between the commas of the CSV file. For example, three integer columns with a null in the second column would be represented as 1,,3 in the CSV file and become 1, null, 3 in the database.

2. Start the import tool, PalmImport.bat, providing the schema of the table as a parameter. The schema should be in an associated .sch file. Use the following syntax to start the Import tool:

```
PalmImport.bat path_name file_name
```

where *path_name* is the path to the CSV file, and *file_name* is the CSV file name in uppercase without an extension. The CSV file name cannot be enclosed in double quotation marks or contain any blank spaces. For example:

```
PalmImport.bat DemoImport VNPERSO
```

The imported tables are automatically added to the Palm Install Tool to be installed after the next HotSync operation.

3. Install the DB2eImport.prc to the Palm OS device using the Palm Install Tool.
4. Perform a HotSync operation to complete the installation of the imported tables and DB2eImport.prc.
5. Start the DB2eImport program on the Palm OS device to complete the import.

To export data from the Palm OS device:

1. Perform a HotSync operation to back up the Palm OS device. Always back up and remove the DB2 Everyplace files (files starting with DSY) from the Palm OS user's backup directory before starting a HotSync operation. The backup area on Windows workstations is usually located at:

```
PalmDir\user_name\Backup
```

where *PalmDir* is the directory where the Palm OS software is installed, and *user_name* is the user name of the Palm OS user.

2. Start the export program, PalmExport.bat, with the following syntax:

```
PalmExport.bat path_name file_name
```

where *path_name* is the output path, and *file_name* is the DB2 Everyplace table name in uppercase. The DB2 Everyplace table name cannot be enclosed in double quotation marks or contain any blank spaces. For example:

```
PalmExport.bat DemoExport VNPERSO
```

The resulting file is in the same path as the source file.

When an error is encountered, the Import/Export tools reports the number of records processed.

A sample using the Import/Export tools is included in the DB2Everyplace\Clients\utilities directory. The batch files PalmExport.bat and PalmImport.bat provide examples of how to use the CSV2DB2e.exe and DB2e2CSV.exe tools.

Related concepts:

- “Overview of the CLP application” on page 89

Related reference:

- “CLP commands” on page 89

Chapter 7. The Visiting Nurse sample application

This chapter provides information about the Visiting Nurse sample application. The topics covered are:

- “Overview of the Visiting Nurse sample application”
- “Running the Visiting Nurse application” on page 98
- “Visiting Nurse sample application tables” on page 100

Overview of the Visiting Nurse sample application

The Visiting Nurse application provides an example of an application that uses DB2 Everyplace. For Palm OS, the application was developed in C using Metrowerks CodeWarrior for Palm Computing Platform. For Windows CE, the application was developed in C using Microsoft eMbedded Visual C++ 3. For Symbian OS v6, the application was developed in C++ using Microsoft Visual C++ Version 6 and Symbian C++ Software Developers Kit.

This sample application is designed for nurses who visit patients at their homes. Without this DB2 Everyplace application, the nurses would have to take notes on paper, then later transcribe their notes into a database on a workstation in their offices. After performing an initial synchronization with the server, the visiting nurses can:

- Access a patient’s general information, such as name, address, phone number, and medical condition.
- Collect a patient’s medical status, such as blood pressure, pulse rate, temperature, and weight.
- Get an automatic time and date stamp on the new medical record.
- Access a list of people to contact in case of an emergency.

At the end of the day, the visiting nurse can synchronize the data on the mobile device with a central database to:

- Update the central database with the patient status
- Obtain a list of patients to visit the next day

The database for this example includes five tables.

VNSCHEDULE

Contains the nurse’s appointments. This table contains information such as patient ID and time of the appointment.

VNPERSON

Contains data about the patients. This table contains information such as name, Social Security Number, address, and phone numbers. The Social Security Number is used as the primary key.

VNMEDICALRECORD

Contains the patients’ medical records. This table contains information such as blood pressure, pulse rate, and temperature. The medical record ID is used as the primary key.

VNCONTACT

Contains the list of emergency contacts for each patient. This table contains information such as the patient Social Security Number, emergency contact name, and relationship to the patient.

VNSIGNATURE

Contains binary signature data. This table is empty when created by the NurseInit application. This table is used with the Visiting Nurse Plus application and DB2 Everyplace Mobile Application Builder.

Related tasks:

- “Running the Visiting Nurse application”

Related reference:

- “Visiting Nurse sample application tables” on page 100

Running the Visiting Nurse application

You can view the Visiting Nurse sample application on your mobile device. The examples in this section show how the Visiting Nurse sample application looks on the Palm OS emulator or mobile device.

Procedure:

To run the Visiting Nurse application:

1. Tap the **Nurse** icon to start the Visiting Nurse sample application. The Schedule window opens with a list of the patients to visit that day.



Figure 1. The Schedule window

2. Select a patient's name from the list and tap the **Info** button to view general information about the patient.

Person Information (Log)

Records Contacts Back

Name Clay, Harris

Address 517th Street

City Seattle, WA 20005

Home Phone (202)783-4946

Work Phone (202)749-7506

Mobile (202)442-3030

Figure 2. The Patient Information window

3. Enter a new medical record:
 - a. Tap the **Records** button. The Medical Record List window opens with a list of all of the records previously created for the patient.

Medical Record List (Log)

Add View Delete Back

Clay, Harris

2000-05-07 17:54 Medical Record

2000-06-13 18:42 Medical Record

1999-07-19 19:53 Medical Record

1999-07-20 09:10 Medical Record

Figure 3. The Medical Record List window

- b. Tap the **Add** button. The Medical Record window opens.

Medical Record (Log)

Save Back

Clay, Harris

2000-03-10 01:53

Blood Pressure

Pulse Rate

Temperature

Weight

Comment

.....

.....

.....

Figure 4. The Medical Record window

- c. Fill in the patient's vital statistics and tap the **Save** button to save the medical record. The medical record will be saved with the current date and time. Tap the **Back** button to return to Person Information window.
4. View the patient's emergency contact list:
 - a. Tap the **Contacts** button. The Emergency Contact List window opens with a list of the patient's emergency contacts.
 - b. View information about a contact person by selecting the person's name from the list and tapping the **Info** button.

Related concepts:

- "Overview of the Visiting Nurse sample application" on page 97

Related reference:

- "Visiting Nurse sample application tables"

Visiting Nurse sample application tables

This topic contains a description of each sample application table for the Visiting Nurse. See "Overview of the Visiting Nurse sample application" on page 97 for an example of a Visiting Nurse application that uses DB2 Everyplace.

VNSCHEDULE

Contains the nurse's appointments. This table contains information such as patient ID and time of the appointment. The table schema is:

```
CREATE TABLE VNSchedule (PatientID Char(9) NOT NULL,
                          Time_C Time PRIMARY KEY)
```

VNPERSON

Contains data about the patients. This table contains information such as name, Social Security Number, address, and phone numbers. The Social Security Number is used as the primary key. The table schema is:

```
CREATE TABLE VNPerson (ID Char(9) PRIMARY KEY,
                        Name Varchar(40),
                        Address Varchar(50),
                        City Varchar(30),
                        HomePhone Varchar(20),
                        WorkPhone Varchar(20),
                        MobilePhone Varchar(20))
```

VNMEDICALRECORD

Contains the patients' medical records. This table contains information such as blood pressure, pulse rate, and temperature. The medical record ID is used as the primary key. The table schema is:

```
CREATE TABLE VNMedicalRecord (RecordID Integer PRIMARY KEY,
                               Date_C Date,
                               Time_C Time,
                               PatientID Char(9) NOT NULL,
                               BloodPressure Char(7),
                               PulseRate Smallint,
                               Temperature Decimal(4,1),
                               Weight Decimal(5,2),
                               Comment Varchar(100))
```

VNCONTACT

Contains the list of emergency contacts for each patient. This table contains information such as the patient Social Security Number, emergency contact name, and relationship to the patient. The table schema is:

```
CREATE TABLE VNContact (PatientID Char(9) NOT NULL,  
                          ContactID Char(9) NOT NULL,  
                          Relationship Varchar(20),  
                          PRIMARY KEY (PatientID, ContactID))
```

VNSIGNATURE

Contains binary signature data. This table is empty when created by the NurseInit application. This table is used with the Visiting Nurse Plus application and DB2 Everyplace Mobile Application Builder. The table schema is:

```
CREATE TABLE VNSignature (RecordID Integer not null PRIMARY KEY,  
                           NurseName Varchar(40),  
                           Signature Blob(2000))
```

Related tasks:

- “Running the Visiting Nurse application” on page 98

Related concepts:

- “Overview of the CLP application” on page 89

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Glossary

A

Apply qualifier. A character string that identifies subscription definitions that are unique to each instance of the DataPropagator Apply program.

authentication. The process of validating a user's ID and password against entries in the administration control database to ensure that the user is authorized to use the Sync Server to synchronize data.

authorization. In computer security, the right granted to a user to communicate with or make use of a computer system.

B

binary large object (BLOB). A sequence of bytes, where the size of the sequence ranges from 0 to 2 gigabytes. This byte sequence does not have an associated code page and character set. Image, audio, and video objects are stored in BLOBs.

bind. In SQL, the process by which the output from the SQL precompiler is converted to a usable structure called an access plan. During this process, access paths to the data are selected and some authorization checking is performed.

BLOB. See *binary large object*.

C

client. A program or user that communicates with and accesses a database server. You define clients using the Administrator.

conflict detection. The process of detecting an out-of-date row in a target table that was updated by a user application. When a conflict is detected, the transaction that caused the conflict is rejected.

Control Center. A graphical interface that shows database objects (such as databases and tables) and their relationship to each other. From the Control Center, you can perform the tasks provided by the DBA Utility, Visual Explain, and Performance Monitor tools.

D

data filter. See *filter*.

data synchronization. See *mobile data synchronization*.

database management system (DBMS). A computer program that manages data by providing the services of centralized control, data independence, and complex physical structures for efficient access, integrity, recovery, concurrency control, privacy, and security.

database server. A functional unit that provides database services for databases.

DB2 Control Center. See *Control Center*.

DB2 DataPropagator. A replication product that provides an automated method of replicating data from sources to targets. During mobile data synchronization, the mirror and remote databases serve as both source and target. DataPropagator replicates clients' changes from the mirror to the remote database, and also replicates changes from the remote database to the mirror database.

DBCS. See *double-byte character set*.

DHCP. See *Dynamic Host Configuration Protocol*.

DPROP. See *DB2 DataPropagator*.

double-byte character set (DBCS). A set of characters in which each character is represented by two bytes.

Dynamic Host Configuration Protocol (DHCP). An Internet protocol for automating the configuration of computers that use TCP/IP.

E

enterprise database. See *source database*.

enterprise server. See *source server*.

F

filter. A device or program that separates data, signals, or material in accordance with specified criteria.

G

group. A collection of clients that have similar mobile data synchronization needs. You define synchronization characteristics for each group, such as which applications the users in the group need to access to perform their jobs and what subsets of enterprise data they need to access.

H

handheld device. Any computing device that can be held in the hand. Handheld devices include palm-sized PCs and personal digital assistants (PDAs).

I

IBM Sync. The name for the icon representing the client component of the DB2 Everyplace Sync Server software.

J

join. A relational operation that allows for retrieval of data from two or more tables based on matching column values.

K

key. A column or an ordered collection of columns that are identified in the description of a table, index, or referential constraint.

L

large object (LOB). A sequence of bytes, where the length can be up to 2 gigabytes. It can be any of three types: BLOB (binary), CLOB (single-byte character or mixed), or DBCLOB (double-byte character).

LOB. See *large object*.

local database. A database that is physically located on the computer in use. Contrast with *remote database*.

log. A Administrator object containing synchronization error messages and their descriptions.

M

master database. See *source database*.

MDAC. See *Administrator*.

mid-tier system. The machine where the DB2 Everyplace Sync Server is installed. In a two-tier synchronization configuration, the mid-tier and source systems refer to the same machine.

mirror database. A database that the Sync Server uses internally to store the data that is required for synchronization and replication.

mobile. Pertaining to computing that is performed on a portable computer or a handheld device by a user who is frequently moving among various locations and using different types of network connections (for example, dial-up, LAN, or wireless).

mobile data synchronization. A two-step process whereby mobile users, or *clients*, submit changes that they made to local copies of source data and receive any changes that were made to source data (in a remote database) since the last time they synchronized.

Administrator (MDAC). A graphical interface that allows you to create, edit, and view synchronization objects and their relationships to each other. The Administrator also allows you to view synchronization status of individual clients and error messages.

O

object.

1. Anything that can be created or manipulated with SQL—for example, tables, views, indexes, or packages.
2. In object-oriented design or programming, an abstraction consisting of data and operations associated with that data.

ODBC. See *Open Database Connectivity*.

Open Database Connectivity (ODBC). An API that allows access to database management systems using callable SQL, which does not require the use of an SQL preprocessor. The ODBC architecture allows users to add modules, called database drivers, that link the application to their choice of database management systems at run time. Applications do not need to be linked directly to the modules of all the supported database management systems.

P

PDA. See *personal digital assistant*.

persistent. Pertaining to data that is maintained across session boundaries, usually in nonvolatile storage such as a database system or a directory.

personal digital assistant (PDA). A handheld device that is used for personal organization tasks (such as managing a calendar and note-taking) and includes telephone, fax, and networking features.

pervasive computing (PVC). The use of a computing infrastructure that includes specialized appliances, known as information appliances, from which users can access a broad range of network-based services (including services that are typically offered through the Internet). These information appliances include televisions, automobiles, telephones, refrigerators, and microwave ovens. Pervasive computing provides convenient access to relevant information and the ability to take action on that information.

primary key. A unique key that is part of the definition of a table. A primary key is the default parent key of a referential constraint definition. With

the DB2 Everyplace Sync Server Version 7, each replication source must have one and only one primary key.

privilege. The right to access a specific database object in a specific way. These rights are controlled by users with SYSADM (system administrator) authority or DBADM (database administrator) authority or by creators of objects. Privileges include rights such as creating, deleting, and selecting data from tables.

PVC. See *persuasive computing*.

Q

QBE. See *Query-by-Example*.

query. A request for information from the database based on specific conditions; for example, a request for a list of all customers in a customer table whose balance is greater than \$1000.

Query-by-Example. An application that allows a user to dynamically view and modify the data stored in a DB2 Everyplace table.

R

RAS. See *Remote Access Service*.

refresh. A process in which all of the data of interest in a user table is copied to the target table, replacing existing data.

remote database. A database that is physically located on a computer other than the one in use. Contrast with local database. The remote computing device can be stationary and nonportable, or it can be portable.

Remote Access Service (RAS). A Windows program that manages connections between two systems.

replication. The process of taking changes that are stored in the database log or journal at a source server and applying them to a target server.

replication source. A database table that is defined as a source for replication. After you define a database table as a replication source, the table can accept copy requests.

S

SQL. See *Structured Query Language*.

source database. A database residing on a source server containing data to be copied to a target system.

source server. The database location of the replication source.

source table. A table that contains the data that is to be copied to a target table. The source table must be a replication source table. Contrast with *target table*.

subscription. A specification for how the information in a source database is to be replicated to a target database. A subscription allows you to define which subsets of data and files can be copied from the source database. You can create two types of subscriptions: file subscriptions for files stored at the source server and table subscriptions for tables in the source database.

subscription set. A Administrator object containing replication subscriptions. To provide group members with access to the data and files defined in replication subscriptions, you create a subscription set and assign subscriptions to it, then assign the subscription set to a group. The subscription set object replaces the application object.

synchronization. See *mobile data synchronization*.

synchronization object. A manageable item within the Administrator that contains information about aspects of the synchronization process in your organization. There are five types of synchronization objects: group, client, subscription set, subscription, and log.

synchronization session. A transaction in which mobile users, or *clients*, submit changes that they made to local copies of source data and receive any changes that were made to source data (residing on the remote server) since the last time they synchronized.

Structured Query Language (SQL). A programming language that is used to define and manipulate data in a relational database.

T

target database. A DB2 Everyplace database residing on a mobile device to which data from a source database is copied.

target table. A table to which data from a source table is copied. Mirror tables on the mid-tier server are targets, and DB2 Everyplace tables on the mobile device are targets.

tap. To use a stylus to interact with a handheld device.

temporary table. A table created during the processing of an SQL statement to hold intermediate results.

V

view. A logical table that consists of data that is generated by a query.

W

wireless LAN. In wireless uses, a mobile user can connect to a local area network (LAN) through a radio connection. Wireless technologies for LAN connection include speed spectrum, microwave, and infrared light.

Index

A

- application server clones
 - creating 62
 - setting up to create 61
- applications
 - sample 97
 - Command Line Processor 89
 - Visiting Nurse 100
 - applications, sample 79

C

- clones 60
- Command Line Processor 89
- commands
 - CLP 89

D

- DB2 Everyplace
 - installation requirements 10
- DB2 Everyplace CLP 91
 - commands 89
 - importing and exporting data 92
- DB2 Everyplace Express
 - installation requirements 11
- DB2 Everyplace sample applications,
 - testing 65
- DB2 Everyplace Update Tool 39
 - error messages 42
- DB2 UDB
 - enabling replication with 45

E

- embedded Linux, installing files on 33
- error messages
 - DB2 Everyplace Update Tool 42

H

- hardware requirements 3

I

- IBM Sync
 - settings menu 85, 86
 - subscription sets menu 85
- IBM Sync application
 - configuring 84
 - menu options 84
 - overview 83
 - synchronizing data 86
- importing and exporting data 92
- Install on Mobile Devices tool 25
- installation, configuration and setup requirements 11

- installation, hardware requirements 10, 11
- installation, software requirements 10, 11
- installation, supported operating systems 10, 11
- installing DB2 Everyplace Express on a server
 - steps 21, 23
- installing DB2 Everyplace on a mobile device
 - manually 27
 - overview 25
 - using the Install on Mobile Devices tool 25
- installing DB2 Everyplace on a server
 - overview 14
 - steps 14, 18
- ISync
 - configuring on a Symbian OS v6.0 device 75

L

- Linux
 - hardware requirements 11
 - installing DB2 Everyplace 18, 23

M

- m-Router Connect
 - configuring on a device 74
 - configuring on a workstation 74
- migration to version 8.1.2
 - steps 9
- Mobile Application Builder,
 - downloading 65
- mobile device
 - installing DB2 Everyplace 25
- multiple server environment
 - configuring 59
 - planning considerations and tips 61
 - post configuration tasks 64

P

- Palm OS
 - installing DB2 Everyplace libraries 27
 - installing DB2 Everyplace sample applications 27
 - installing DB2 Everyplace synchronization files 70
- Palm OS device
 - setting up for synchronization 69
 - synchronization setup overview 69
 - synchronizing and verifying data 72
- Palm OS emulator
 - setting up for synchronization 70
 - synchronization setup overview 69

- Palm OS emulator (*continued*)
 - synchronizing and verifying data 72
- Personal Information Manager
 - prerequisites 10

Q

- QNX Neutrino, installing files on 33
- queries with CLP 91

R

- replication, enabling 45
- running SQL statements 91

S

- sample applications
 - CLP 89
 - setting up 45
 - Visiting Nurse 97
 - overview 97
 - running 98
 - tables 100
- sample applications, description and locations 79
- sample databases
 - setting up 45
- server groups 60
- servlet
 - testing 46
- setting up DB2 Everyplace Express on a server
 - steps 21, 23
- setting up DB2 Everyplace on a mobile device
 - manually 27
 - overview 25
 - using the Install on Mobile Devices tool 25
- setting up DB2 Everyplace on a server
 - overview 14
 - steps 14, 18
- source database
 - mapping 44
- SQL statements
 - running with CLP 91
- Symbian OS v6.0 device
 - setting up and configuring for synchronization
 - configuring ISync on the device 75
 - configuring m-Router Connect on a workstation 74
 - configuring m-Router Connect on the device 74
 - overview 73
 - synchronizing data 76
- Symbian OS Version 7, installing files on 31

- Symbian OS, installing files on 30
- Sync Client
 - upgrading software 39
- Sync Server
 - configuring to use with WebSphere Application Server 47
 - testing the servlet 46
- synchronization
 - Palm OS setup 69
- synchronizing data using IBM Sync 86

U

- UNIX
 - hardware requirements 10
 - setting up sample databases and applications 45
 - testing the Sync Server servlet 46

V

- Visiting Nurse application
 - overview 97
 - running 98
 - tables 100

W

- WebSphere Application Server
 - configuring Sync Server to use 47
- Win32, installing files on 37
- WinCE, installing files on 29
- Windows
 - hardware requirements 10, 11
 - installing DB2 Everyplace 14, 21
 - installing DB2 Everyplace on mobile devices 25
 - setting up sample databases and applications 45
 - testing the Sync Server servlet 46

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