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Agile Product Lifecycle Management

Database Installation Guide

v9.3.0.3

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CONTENTS

Oracle Copyright	ii
Overview of Agile Database Installation.....	1
Task Overview	1
Obtaining Software from Oracle E-delivery	1
Obtaining Software from Oracle Support	2
Agile System Requirements.....	3
Operating System Requirements	3
Hardware Requirements.....	4
Database Hardware Configuration	6
RAID Configuration.....	8
Disk I/O Configurations	8
One-Disk	9
Four-Disk Configuration	9
Nine-Disk Configuration.....	10
Twelve-Disk Configuration.....	11
Installing Oracle Database Server	13
Related Documentation	13
Before Installing Oracle Database Server on Windows	13
Network Check	14
Confirming Computer Name and Hostname	14
Confirming the Server Date.....	14
Checking the Windows File System.....	15
For Servers Configured with DHCP.....	15
Installing the Agile Database on Windows.....	17
Installation Notes.....	17
Using the Agile Database Configuration Utility	17
Adding and Configuring the Listener	19
Configuring Oracle Enterprise Manager (Optional)	20
Installing the Agile Database on UNIX.....	23
Overview.....	23
System Requirements.....	23
Preparing the Host Computer	23

Creating the Agile Database.....	26
Post-Installation Tasks	29
Configuring the listener.ora File.....	30
Configuring the tnsnames.ora File (Optional).....	30
Setting Up Oracle Net Manager (Optional).....	31
Setting Up Automatic Shutdown and Startup for the Database (Optional).....	31
Creating a RAC Database and Schema for Agile PLM.....	33
Creating an Oracle RAC Database Instance for Agile PLM.....	33
Creating an Agile PLM Schema in an Existing RAC or Standalone Database Instance ...	34
Database Management	37
Database Maintenance	37
Fine-Tuning Index Settings.....	37
Monthly Maintenance.....	37
Checking Database Space Allocation.....	37
Dynamic Versus Static IP Addresses.....	38
Database Backup	38
Backup and Recovery Strategy.....	39
Implementing Backup Procedures	40
Useful Information for Backup and Maintenance Tools	41
Types of Backups.....	41
Performing System Backups.....	42
Using Standby Databases	42
Performing Database Backups	42
Performing Cold Backups	43
Performing Hot Backups.....	43
Database Import and Export.....	43
Creating the Agile Schema and Importing the Database.....	44
Import Parameters	46
Deleting an Instance and the Database Files	47
Running SQL Scripts Against the Agile PLM Schema	48
Exporting the Database.....	49
Exporting the Agile Schema from Oracle.....	49
Exporting the Full Oracle Database	50
Export Parameters	51
Database Recovery.....	51
Using Oracle Recovery Manager	52

Preface

Oracle's Agile PLM documentation set includes Adobe® Acrobat PDF files. The [Oracle Technology Network \(OTN\) Web site](http://www.oracle.com/technetwork/documentation/agile-085940.html) <http://www.oracle.com/technetwork/documentation/agile-085940.html> contains the latest versions of the Agile PLM PDF files. You can view or download these manuals from the Web site, or you can ask your Agile administrator if there is an Agile PLM Documentation folder available on your network from which you can access the Agile PLM documentation (PDF) files.

Note To read the PDF files, you must use the free Adobe Acrobat Reader version 9.0 or later. This program can be downloaded from the [Adobe Web site](http://www.adobe.com) <http://www.adobe.com>.

The [Oracle Technology Network \(OTN\) Web site](http://www.oracle.com/technetwork/documentation/agile-085940.html) <http://www.oracle.com/technetwork/documentation/agile-085940.html> can be accessed through **Help > Manuals** in both Agile Web Client and Agile Java Client. If you need additional assistance or information, please contact My Oracle Support (<https://support.oracle.com>) for assistance.

Note Before calling Oracle Support about a problem with an Agile PLM manual, please have the full part number, which is located on the title page.

TTY Access to Oracle Support Services

Oracle provides dedicated Text Telephone (TTY) access to Oracle Support Services within the United States of America 24 hours a day, 7 days a week. For TTY support, call 800.446.2398. Outside the United States, call +1.407.458.2479.

Readme

Any last-minute information about Agile PLM can be found in the Readme file on the [Oracle Technology Network \(OTN\) Web site](http://www.oracle.com/technetwork/documentation/agile-085940.html) <http://www.oracle.com/technetwork/documentation/agile-085940.html>.

Agile Training Aids

Go to the [Oracle University Web page](http://www.oracle.com/education/chooser/selectcountry_new.html) http://www.oracle.com/education/chooser/selectcountry_new.html for more information on Agile Training offerings.

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Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

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Overview of Agile Database Installation

This chapter includes the following:

▪ Task Overview	1
▪ Obtaining Software from Oracle E-delivery	1
▪ Obtaining Software from Oracle Support.....	2

This chapter outlines the requisite tasks for successful installation of the Agile PLM Database and provides information on accessing the necessary software.

Task Overview

The sequence of actions required for the installation process is as follows:

1. Prepare the installation environment. See [Agile System Requirements](#) on page 3.
2. Download the appropriate Oracle Database Server software. For download instructions, see [Obtaining Software from Oracle Support](#) on page 2 (for a Patchset/Minipack), or [Obtaining Software from Oracle E-delivery](#) on page 1 (for a major release).
3. Install Oracle Database Server.
4. Install Oracle Database Server Companion (for 10g) or Examples (for 11g) products.
5. Download the Agile PLM Database Installer, which is part of the Agile PLM software distribution. See [Downloading the Agile PLM Software](#).
6. Run the Agile PLM Database Installer. See [Installing the Agile Database on Windows](#) or [Installing the Agile Database on UNIX](#) on page 23.

Obtaining Software from Oracle E-delivery

Major Oracle product releases are distributed as Media Packs on [Oracle E-Delivery](#) (<http://edelivery.oracle.com>). Refer to the Media Pack description or the list of products that you purchased on your Oracle Ordering Document. Then, view the Quick Install Guide License List to help you decide which Product Pack you need to select in order to search for the appropriate Media Pack(s) to download. Prior to downloading, verify that the product you are looking for is in the License and Options section of the E-Pack README. Oracle recommends that you print the README for reference.

There will be an itemized part list within each of the packs and you will need to download all items in order to have the complete download for the desired Oracle Agile release.

All Oracle E-Delivery files have been archived using Info-ZIP's highly portable Zip utility. After downloading one or more of the archives, you will need the UnZip utility or the WinZip utility to extract the files. You must unzip the archive on the platform for which it was intended. Verify that the file size of your downloaded file matches the file size displayed on E-Delivery. Unzip each Zip file to its own temporary directory.

Obtaining Software from Oracle Support

Oracle minor release products are distributed as a Patchset/Minipack, which is an electronic version of the software. To download the Product Patchset/Minipack, go to the [My Oracle Support](https://support.oracle.com) <https://support.oracle.com> web site and search for the product. Refer to the description and review the Readme. After you review the Readme, download the Product Patchset/Minipack.

There will be one zip file which contains all Product binaries, documentation, and database files. Follow the installation instructions from the Install Guide to install the product.

Agile System Requirements

This chapter includes the following:

▪ Operating System Requirements.....	3
▪ Hardware Requirements.....	4
▪ Database Hardware Configuration	6
▪ RAID Configuration.....	8
▪ Disk I/O Configurations.....	8

Agile PLM 9.3.0.3 may be deployed in different configurations. The amount of time required to complete an installation depends on the complexity of your Agile PLM deployment.

Note For installations using a certified localized language, all server components must be installed on computers running the same localized OS. Clients can be running on the same localized OS or English OS. For detailed information about using Agile with international operating systems, refer to the Agile [support](http://www.oracle.com/agile/support.html) <http://www.oracle.com/agile/support.html> web site (<http://www.oracle.com/agile/support.html>).

Agile can be distributed over a wide-area network with multiple servers or can be limited to one or two server computers with several client computers. In the latter case, Agile can usually be installed within a half day. However, network-based systems are inherently complex, and some installations require additional time.

Agile recommends installing Oracle Database Server on a separate computer from the other Agile components.

It is acceptable to install multiple server components on the same computer if sufficient hardware resources are available. However, the minimum hardware requirements must be increased based on the number of server components installed on a single computer.

Operating System Requirements

You should install only supported versions of Agile components that are within the same release. You should not attempt to install Agile components on unsupported operating systems. Contact your Agile Solutions Consultant or Agile Technical Support for special requirements.

Operating System	Version
Microsoft Windows	Windows Server 2003 SP2 (32-bit and 64-bit), Windows Server 2008 SP1 (32-bit, 64-bit)
Solaris	Sun Solaris 9 (SPARC 64-bit) and 10 (SPARC 64-bit, x86-64)
Linux	Oracle Enterprise Linux 4 and 5 (32-bit, 64-bit)

Operating System	Version
	Red Hat Enterprise Linux 4 and 5 (32-bit, 64-bit)
AIX	IBM AIX 5.3 and 6.1 (POWER 64-bit)
HP-UX	Hewlett-Packard HP-UX 11.31 (Itanium 64-bit)
VM	Oracle VM 2.1.2 with OEL 4 and 5 (32-bit, 64-bit), Windows Server 2003 SP2 (32-bit, 64-bit)

Hardware Requirements

Before you can install Agile server components, you must have at least 1 GB of disk space available on the drive where the OS is installed, in addition to the minimum disk space requirements specified in the *Capacity Planning Guide*.

Important Agile computers and databases should be dedicated to Agile and should not have other software installed, unless otherwise specified. Do not attempt to include other database schemas or use the Agile host server as the primary domain controller (PDC) or dynamic host configuration protocol (DHCP) server.

Note Disk compression must be disabled on the computers where Agile components are installed.

When choosing a hardware configuration, consider the number of total users, the number of concurrent users, the size of your database, the number of ECOs processed per day, and overall activity level. If you have questions about your system, Agile Technical Support or your Agile Solutions Consultant can give guidance on whether you should choose a small, medium, large, or extra-large configuration.

It is recommended that the computer on which you are installing Agile components and the Oracle database have at least two physical drives or two partitions. This allows you to place the operating system on one drive and use the other drive for Agile or Oracle components.

The tables below provide summary information for minimum hardware requirements based on database size.

Small database system (less than 1 GB)

Hardware	Windows, Linux and Solaris (x86)	Solaris (SPARC)	AIX	HP-UX
CPU	Two 1.8 GHz Intel Xeon or equivalent	Two 1.1 GHz UltraSPARC-III	Two 1.1 GHz POWER4	Two 1.42 GHz Intel Itanium
RAM (GB)	1	1	1	1
Number and size of disks (partitions)	Four 18 GB	Four 18 GB	Four 18 GB	Four 18 GB

Medium database system (1 GB to 5 GB)

Hardware	Windows, Linux and Solaris (x86)	Solaris (SPARC)	AIX	HP-UX
CPU	Two 1.8 GHz Intel Xeon or equivalent	Two 1.1 GHz UltraSPARC-III	Two 1.1 GHz POWER4	Two 1.42 GHz Intel Itanium
RAM (GB)	2	2	2	2
Number and size of disks (partitions)	Four 18 GB	Four 18 GB	Four 18 GB	Four 18 GB

Large database system (2 GB to 16 GB)

Hardware	Windows, Linux and Solaris (x86)	Solaris (SPARC)	AIX	HP-UX
CPU	Four 1.8 GHz Intel Xeon or equivalent	Four 1.1 GHz UltraSPARC-III	Four 1.1 GHz POWER4	Four 1.42 GHz Intel Itanium
RAM (GB)	4	4	4	4
Number and size of disks (partitions)	Nine 18 GB	Nine 18 GB	Nine 18 GB	Nine 18 GB

Extra-large database system (5 GB to 38 GB)

Hardware	Windows, Linux and Solaris (x86)	Solaris (SPARC)	AIX	HP-UX
CPU	Eight 1.8 GHz Intel Xeon or equivalent	Eight 1.1 GHz UltraSPARC-III	Eight 1.1 GHz POWER4	Eight 1.42 GHz Intel Itanium
RAM (GB)	8	8	8	8
Number and size of disks (partitions)	Twelve 18 GB	Twelve 18 GB	Twelve 18 GB	Twelve 18 GB

Agile PLM is certified with Oracle Database Server 11g R1, 11g R2, 10g R2 and 10g R3. An email system based on SMTP or SMTP gateway is also required. Recommended database hardware depends on your Agile system configuration.

If you have only single processor computers and anticipate high network traffic, then the database and Agile Application Server should be installed on two different computers to avoid competition for resources on a single computer, which would outweigh any advantage gained from reduced network traffic.

Oracle recommends separate disks for the operating system and database.

Database Hardware Configuration

Agile uses four database configurations (A through D), as shown in the following table. In addition, the previous tables provide the minimum hardware configuration based on the database sizing model. Each database configuration provides necessary hardware resources to support the Agile database sizing model, for supported platforms.

Taking into account the hardware requirements specified in the following table, each configuration is intended for a specific database sizing model. The minimum hardware requirements should be followed to satisfy the Agile database installation. To increase the scalability and concurrency for any configuration, provide additional CPUs, RAM, and disk space.

- Configuration A provides the initial hardware resources for implementing the small database sizing model.
- Configuration B provides the minimum hardware resources for implementing the medium (regular) database sizing model.
- Configuration C provides the minimum hardware resources for implementing the large database sizing model.
- Configuration D provides the minimum hardware resources for implementing the extra-large database sizing model.

Agile PLM Database Sizing Matrix

Agile DB Configuration	Logged In Peak-time Active Users	Database Server Hardware											
		CPU	RAM	DISKS	CPU	RAM	DISKS	CPU	RAM	DISKS	CPU	RAM	DISKS
D	1000	8	8 GB	9	12	12 GB	9	16	16 GB	12	24	24 GB	15
C	500	4	4 GB	4	8	8 GB	9	8	8 GB	11	12	12 GB	12
B	250	4	2 GB	4	8	4 GB	4	4	4 GB	9			
A	100	2	1 GB	4	2	2 GB	4						
Demo	1	1	.5 GB	1									
Database Sizing Model		Small						Medium			Large		

Depending on the database sizing and configuration model you follow, the database could potentially support the following:

- Small database model
 - Configuration A supports up to 100 concurrent users
 - Configuration B supports up to 250 concurrent users
 - Configuration C supports up to 500 concurrent users
 - Configuration D supports up to 1,000 concurrent users
- Medium (regular) database model
 - Configuration A supports up to 100 concurrent users
 - Configuration B supports up to 250 concurrent users
 - Configuration C supports up to 500 concurrent users
 - Configuration D supports up to 1,000 concurrent users
- Large database model
 - Configuration B supports up to 250 concurrent users

- Configuration C supports up to 500 concurrent users
- Configuration D supports up to 1,000 concurrent users
- Extra-large database model
 - Configuration C supports up to 500 concurrent users
 - Configuration D supports up to 1,000 concurrent users

RAID Configuration

RAID 1 mirroring is recommended because of its increased tolerance for hardware fault and minimal impact on write speed. RAID 0 is recommended for its potential to improve disk read/write performance.

Although the following section refers to one-disk, four-disk, nine-disk, and twelve-disk configurations, a RAID 1 configuration may double the number of disks required. It should also be noted that a combination of RAID 0 and RAID 1 (for example, RAID 10) is often the best configuration. In fact, such a hardware configuration normally requires an external disk storage enclosure.

RAID 5 is not recommended as a storage configuration for the Database Server transaction logs. Instead, choose a storage configuration with mirroring and striping that does not adversely affect write speed.

Disk I/O Configurations

While the proper sizing of extents minimizes dynamic extensions in the same segments, disk I/O contention within the same logical tablespace or physical data file can also be harmful.

You can improve disk I/O performance for multiple disk configurations by spreading the I/O burden across multiple disk devices. The following sections describe the use of multiple disks for the Oracle database server. It is always advisable to use more disks.

There are eight tablespaces in the Agile PLM database configuration: AGILE_DATA1, AGILE_DATA2, AGILE_DATA3, and AGILE_DATA4 for storage of Agile tables, and AGILE_INDX1, AGILE_INDX2, AGILE_INDX3, and AGILE_INDX4 for storage of Agile indexes.

Disks (no RAID)	Disks (RAID 1)	Drive/ Mount Point	Oracle Home	Tablespaces	Redo Logfiles	Control files
Disk 0	Disk 0/1	D or /u01	ORACLE_HOME	SYSTEM TOOLS UNDO TEMP USERS INDX AGILE_DATA1 AGILE_DATA2 AGILE_DATA3 AGILE_DATA4 AGILE_INDX1 AGILE_INDX2 AGILE_INDX3 AGILE_INDX4	LOG1 LOG2 LOG3 LOG4	Control file01 Control file02 Control file03

One-Disk

A one-disk configuration is best for a demonstration environment. This configuration can produce the highest disk I/O contention. In addition, as both usage and database size increase, performance significantly declines. The one-disk configuration is intended for demo database applications only, and the configuration can be implemented as shown.

There is no beneficial gain from Optimal Flexible Architecture (OFA) for the one-disk configuration from the perspective of disk I/O contention.

Four-Disk Configuration

A four-disk configuration is best for an enterprise-level implementation of Agile. A four-disk configuration spreads the various data files, control files, and redo log files across multiple disk devices.

First of all, the three control files can be mirrored onto three different disks for best recovery protection.

Second, all potential I/O demand-intensive data files can be distributed onto their own separate disk. Redo log files are partially isolated from the rest of the data files, as the log files can cause significant I/O contention during transactions if they are sharing disks with other data files. The UNDO data file is separated from the schema data files and log files as well, so I/O contention during import and upgrade can be minimized.

Third, the Agile schema tablespaces can be isolated from the rest of the SYSTEM, TEMP, TOOLS, and UNDO data files.

Disks (no RAID)	Disks (RAID 1)	Drive/ Mount Point	Oracle Home	Tablespaces	Redo Logfiles	Control files
Disk 0	Disk 0/1	D or /u01	ORACLE_HOME	SYSTEM/TOOL/UNDO		Control file01
Disk 1	Disk 2/3	E or /u02		TEMP/USERS/INDX	Archive log file	Control file02
Disk 2	Disk 4/5	F or /u03		AGILE_INDX1 AGILE_INDX2 AGILE_INDX3 AGILE_INDX4	LOG1/2/3/4	Control file03
Disk 3	Disk 6/7	G or /u04		AGILE_DATA1 AGILE_DATA2 AGILE_DATA3 AGILE_DATA4		

The four-disk configuration shown is recommended. For production database sites, the four-disk configuration represents the minimum requirements for an OFA implementation and provides the minimum hardware configuration for performance tuning.

Nine-Disk Configuration

In addition to the advantages associated with a four-disk configuration, a nine-disk configuration supports an enterprise-level implementation of Agile by further spreading various data files and redo log files across multiple disk devices.

Application schema can obtain additional performance gains in terms of I/O load spread by further separating the AGILE_DATA1, AGILE_DATA2, AGILE_DATA3, AGILE_DATA4 and AGILE_INDX1, AGILE_INDX2, AGILE_INDX3, AGILE_INDX4 data files because of potential I/O contention between the AGILE_DATA data files and AGILE_INDX data files. For supporting a full text search content index, a complete separation of potential large datafiles in its own disk spindle should help I/O contention as physical disk I/O is inevitable, due to the increasing amount of data, as shown in the following table.

Disks (no RAID)	Disks (RAID 1)	Drive/ Mount Point	Oracle Home	Tablespaces	Redo Logfiles	Control files
Disk 0	Disk 0/1	C or /u01	ORACLE_HOME	SYSTEM/TOOL/UNDO		
Disk 1	Disk 2/3	D or /u02		TEMP/USERS/INDX		Control file01

Disks (no RAID)	Disks (RAID 1)	Drive/Mount Point	Oracle Home	Tablespaces	Redo Logfiles	Control files
Disk 2	Disk 4/5	E or /u03			LOG 1/2/3/4	Control file02
Disk 3	Disk 6/7	F or /u04			Archive log file	Control file03
Disk 4	Disk 8/9	G or /u05		AGILE_DATA1 AGILE_INDX2		
Disk 5	Disk 10/11	H or /u06		AGILE_DATA2 AGILE_INDX3		
Disk 6	Disk 12/13	I or /u07		AGILE_DATA3 AGILE_INDX1		
Disk 7	Disk 14/15	J or /u08		AGILE_DATA4		
Disk 8	Disk 16/17	K or /u09		AGILE_INDX4		

Twelve-Disk Configuration

Further separating the AGILE_DATA and AGILE_INDX tablespaces, twelve-disk configurations can be implemented as shown. This results in completely independent spindles for AGILE_DATA1, AGILE_DATA2, AGILE_DATA3, AGILE_DATA4 and AGILE_INDX1, AGILE_INDX2, AGILE_INDX3, AGILE_INDX4.

Disks (no RAID)	Disks (RAID 1)	Drives/Mount Points	Oracle Home	Tablespaces	Redo Logfiles	Control files
Disk 0	Disk 0/1	C or /u01	ORACLE_HOME			
Disk 1	Disk 2/3	D or /u02		SYSTEM/TOOL/ UNDO/TEMP/ IN DX		Control file01
Disk 2	Disk 4/5	E or /u03			LOG 1/2/3/4	Control file02
Disk 3	Disk 6/7	F or /u04		USERS	Archive logfile	Control file03
Disk 4	Disk 8/9	G or /u05		AGILE_DATA1		
Disk 5	Disk 10/11	H or /u06		AGILE_DATA2		
Disk 6	Disk 12/13	I or /u07		AGILE_DATA3		

Disks (no RAID)	Disks (RAID 1)	Drives/ Mount Points	Oracle Home	Tablespaces	Redo Logfile s	Control files
Disk 7	Disk 14/15	J or /u08		AGILE_DATA4		
Disk 8	Disk 16/17	K or /u09		AGILE_INDX1		
Disk 9	Disk 18/19	L or /u10		AGILE_INDX2		
Disk 10	Disk 20/21	M or /u11		AGILE_INDX3		
Disk 11	Disk 22/23	N or /u12		AGILE_INDX4		

Installing Oracle Database Server

This chapter includes the following:

- Related Documentation 13
- Before Installing Oracle Database Server on Windows 13

Before you install the Agile database, you must install the Oracle Database Server. You can download the Oracle Database Server Installer for major releases from [Oracle E-Delivery](http://edelivery.oracle.com) (<http://edelivery.oracle.com>), and for a Patchset/Minipack, you can download from [Oracle Support](https://support.oracle.com) (<https://support.oracle.com>). Download instructions for each Oracle version/operating system are provided on the download page.

For detailed instructions on how to install a particular Oracle Database Server version, refer to the appropriate Installation Guides listed in the [Oracle Documentation](http://www.oracle.com/technology/documentation/index.html) (<http://www.oracle.com/technology/documentation/index.html>) web page.

Note After you install Oracle Database Server, you must install the Companion products (for 10g) or Example products (for 11g) into your ORACLE_HOME, available at the download location. In a RAC environment, these products should be installed on all nodes. These products include some files required to create the Agile schema successfully.

Note Make sure you select the database binaries that are compatible with the hardware you are using.

Related Documentation

Before you begin, it is important to be familiar with all the information about installing the Oracle database on different operating systems, and with the Optimal Flexible Architecture (OFA) reference material for administrators. You can review the information pertaining to your Oracle database server version at [Oracle Documentation](http://www.oracle.com/technology/documentation/index.html) (<http://www.oracle.com/technology/documentation/index.html>).

Agile has made every attempt to be OFA-compliant. Any deviations from OFA guidelines are noted.

Before Installing Oracle Database Server on Windows

Before installing Oracle, you must:

- Verify that Windows has been configured correctly.
- Check to see that the Microsoft NTFS file system is used instead of FAT or FAT32, and convert

the file system if necessary. See [Checking the Windows File System](#) on page 15 for directions.

- Determine the name of the Windows computer where Oracle is to be installed.

Note It is recommended that the computer on which you are installing the Oracle database have at least two physical drives or two partitions. This allows you to place the operating system on the C drive and use the D drive for Oracle components. The examples in this chapter use a C and D drive.

- Be sure that you have Administrator privileges within Windows on the computers where you are installing Oracle and Agile PLM.
- Disable disk compression, if you are using it.
- Disable virus protection, if you are using it. Components used in the installer can be falsely identified as being infected and lock up the installation. You can turn the virus protection on after the installation is complete.

The following sections provide more information about these procedures.

Network Check

Before proceeding, it is important to confirm two settings to prevent difficulties from occurring.

Confirming Computer Name and Hostname

The computer where Oracle is installed must use the same value as both its computer name and its DNS hostname. The following procedures can be used to identify the current values.

To determine the computer name for Windows:

1. Right-click the **My Computer** icon on the desktop, and choose **Properties** in the shortcut menu.
2. In the System Properties dialog box, click the **Computer Name** tab.
3. Note the name listed in the **Full Computer Name** field.

Note Windows uses the same name for the computer name and DNS hostname.

Confirming the Server Date

It is important to adjust the date and time of the computer. The date and time need to be correct when you work with your production data.

To confirm the date and time, click the **Date/Time** icon in the Windows Control Panel. Be sure to verify the **Time Zone** setting, too.

<p>Caution If you change the date or time after Agile PLM has been installed and started, you need to stop and restart the server immediately after the change.</p>

Checking the Windows File System

Agile recommends that servers use NTFS (NT File System) rather than FAT or FAT32 (File Allocation Table), as NTFS is more robust.

To determine the file system type:

1. Check the file system used on the computer. Choose **Start > Administrative Tools > Computer Management**. Under **Computer Management** in the left pane, expand **Storage** and select **Disk Management**.

The Disk Administration window opens.

There must be at least two partitions or hard drives. If your computer uses NTFS, proceed with the Oracle installation. If your computer uses a FAT or FAT32 file system, Agile recommends converting it to NTFS before proceeding.

Important Converting the file system deletes all current files on the drive. Backup all necessary files before converting the file system to NTFS.

2. Right-click on the drive you want to reformat and choose **Format** in the shortcut menu.
3. In the File System field, change the file system type to **NTFS**.
4. Click **Start**.

The process takes several minutes. On completion, restart the system. You can proceed with the Oracle installation.

For Servers Configured with DHCP

If your server is configured with DHCP (Dynamic Host Configuration Protocol), there is a known issue with the Oracle Database Server installation. The installation fails and a warning message displays.

There are two possible solutions:

- Copy the Oracle Database Server installation software to your local disk and perform an off-network installation.
- Install the Microsoft Loopback adapter on the DHCP server, then add one entry to the hosts file.

To install the Microsoft Loopback adapter:

1. Click **Start > Control Panel > Add Hardware**.

The Add Hardware wizard appears.

2. Click **Next**.

Note If you are using Windows 2008, skip the next two steps.

3. Choose **Yes, I have already connected the hardware**, and then click **Next**.
4. Scroll to the bottom of the list and choose **Add a new hardware device**, then click **Next**.

5. Choose **Install the hardware that I manually select from a list (Advanced)**, and then click **Next**.
6. In the Common Hardware Types list, select **Network adapters**, then click **Next**.
7. In the Manufacturers list, select **Microsoft**.
8. In the Network Adapter list, select **Microsoft Loopback Adapter**, and then click **Next**.
9. Click **Next** to install the adapter.
10. Click **Finish**.

To configure the hosts file:

1. Open the hosts file, located at C:\Windows\System32\drivers\etc.
2. Add the following entry to the hosts file: 10.10.10.10 hostname.domain hostname
For example, if the full machine name of your database server is db1.agile.agilesoft.com, the entry in the hosts file would be:

```
10.10.10.10 db1.agile.agilesoft.com db1
```
3. Save the file.

To configure the loopback IP address on the network:

1. On the database server, right-click the My Network Places icon.
2. Choose **Properties** to display the Network and Dial-up Connections window.
3. Locate a connection with the device name of Microsoft Loopback Adapter. This connection is usually Local Area Connection 2.
4. Right-click this connection icon.
5. Choose **Properties** to display the Local Area Connection 2 Properties dialog box.
6. On the General tab, select **Internet Protocol (TCP/IP)**, then click **Properties** to display the Internet Protocol (TCP/IP) properties dialog box.
7. On the General tab, choose **Use the following IP Address**.
8. Enter the following values:
IP address: 10.10.10.10
Subnet mask: 255.255.255.0
9. Click **OK**.
10. Click **Close**.

On completion, restart the system. You can proceed with the Oracle installation.

Installing the Agile Database on Windows

This chapter includes the following:

- Installation Notes 17
- Using the Agile Database Configuration Utility 17
- Adding and Configuring the Listener 19
- Configuring Oracle Enterprise Manager (Optional) 20

To install the Agile database on Windows:

1. Extract the contents of the media pack and navigate to the **DB_Installer** folder. DB installers for all platforms are made available within the **DB_Installer** folder, regardless of the operating system on which you have chosen to install Agile PLM.
2. Within the installation folder, double-click the **agile9303db_oracle10g11g.exe** file to start the installation on Windows. The Agile Database Configuration Utility appears.
3. Follow the instructions in Using the Agile Database Configuration Utility to configure the database.

Note Unless specified otherwise, all references to Windows specifically require Windows 2003 with Service Pack 2. Service Packs are available on Microsoft's Web site, www.microsoft.com

Installation Notes

For best results, as you install:

- Follow directions in the order in which they are given. Do not attempt to install any components out of sequence.
- Oracle passwords are not case-sensitive. Agile passwords are case-sensitive. All other text entries, such as schema names and folder names, are not case-sensitive. To avoid confusion, all passwords and text entries in this guide appear in lowercase and should be typed as shown.
- When prompted for a hostname, type the fully qualified name for the host, not the short name. For example, if a host is named `dbo`, type **dbo.agile.com**, not **dbo**.

Using the Agile Database Configuration Utility

The Agile Database Configuration Utility creates and configures the database used by Agile. This utility appears when you double-click the database installer executable file.

Note The installer creates and configures an Agile database using the default values.

Drop-down lists that allow disk selection show the available disk space. If the space is a negative value, you must select another drive.

Important If you change a default value, you must click in the field to ensure that the change is activated.

To configure the database:

1. In the Destination Location dialog box of the Database Configuration Utility, accept the default location, **Agile9Tmp**, or click **Browse** to specify a destination of your choice. This is the location where template files are placed during the database installation. Throughout this document, this location is referred to as **Agile9Tmp**. Click **Next**.

2. In the Database Size Estimate dialog box, choose a database sizing model. New Agile customers without an existing database to migrate should accept the default (**Small**). Click **Next**.

Note Refer to the *Capacity Planning Guide* for database sizing information.

3. In the Oracle Home dialog box, choose the appropriate ORACLE_HOME. This is the location where the Oracle software was installed. If you have multiple Oracle Homes, make sure the correct Oracle Home is selected in the list before continuing with the Database Configuration Utility. Click **Next**.

4. In the Oracle SID dialog box, accept the default **agile9** SID. If you want to change the SID, you must use an ID that is 4 to 8 characters in length to uniquely identify the Oracle SID. If you want to use an existing SID, you must remove it before you can re-use it. Click **Next**.

Note If you only want to generate database scripts (for example, to upgrade an existing Agile schema), select the **Generate database scripts only** option. In this case, you should use an existing SID. Follow onscreen directions to generate scripts.

5. In the Database Security and Agile User Information dialog box, accept the following default values or change passwords as required:

- Internal/Sys Password is **oracle**
- SYSTEM Password is **manager**
- CTXSYS password is **ctxsys**
- Agile Schema Name is **agile**
- Agile Schema Password is **tartan**

Click **Next**.

Note Use the tables in the section Disk I/O Configurations for guidance while performing steps 6 through 9.

6. In the Tablespaces dialog box, accept the default, unless you have additional hard drives with sufficient space available that allow you to distribute the files across multiple hard drives. If you change the selection to a different drive location, click the letter of the drive to make sure it is selected. Click **Next**.

7. In the Redo Log Files and Control Files dialog boxes, accept the default, unless you have additional hard drives with sufficient space available that allow you to distribute the files across

multiple hard drives. Click **Next**.

8. If you accept the default location for the files on one drive, a message appears notifying you about distributing the files across multiple drives (mirroring protection). If this is not an option, click **Next**. Otherwise, click **Back** and reassign files to different hard drives.
9. In the Archive Log File dialog box, accept the default, unless you have additional hard drives with sufficient space available that allow you to store the file on a different hard drive. Click **Next**.
10. In the Oracle Language Support dialog box, accept the default character set UTF8. Click **Next**.

Note For additional information about language support, refer to the *Oracle Globalization Support Guide*.

A Command Prompt window displays briefly.

11. You are prompted to install the Agile database. Click **Next**.
The script runs in a Command Prompt window for a while.
12. When instance creation is complete, a confirmatory message appears. Click **OK** to complete the process and exit.

Important Oracle recommends that you change all Oracle database user passwords after you have created the Agile database. It is recommended to change these passwords periodically for security purposes.


Agile supports Full Text Search (FTS). FTS is a feature enabled through Oracle Text. Because of this feature, there is a fixed account, CTXSYS, referenced by some objects in the Agile schema. For security purposes, you can change the CTXSYS account password from its default, CTXSYS, to one of your own choice after Agile database creation and configuration.

Adding and Configuring the Listener

If this is the first time Oracle has been installed on the current computer, you need to add and configure a new database listener.

Note If you are creating a new Agile database on the same machine, you only need to add the new database to the existing listener.

To add and configure a new Listener on Oracle 10g or 11g:

1. Start the Oracle Net Manager by choosing **Start > All Programs > oracle_home > Configuration and Migration Tools > Net Manager**.
2. In the Oracle Net Manager window, double-click the **Local** folder and select the **Listeners** folder.
3. Click **Create**  in the toolbar to add a listener.
The Choose Listener Name dialog box appears.
4. Click **OK**.
5. In the **Listening Locations** drop-down list, select **Database Services**.

6. Click **Add Database**.

In the dialog box that appears, make the following changes:

- **Global Database Name:** agile9
- **Oracle Home Directory:** oracle_home
- **SID:** agile9

Note If you used a different global database name or different home directory during the database installation, change the information as appropriate.

7. Choose **File > Save Network Configuration** to save your changes.
8. Open a Command Prompt window and type **lsnrctl reload** to restart the database listener.

Configuring Oracle Enterprise Manager (Optional)

You can use Database Control to perform many database administration and management tasks including SQL performance tuning.

To configure the Oracle network connection:

1. Choose **Start > All Programs > Oracle - oracle_home > Configuration and Migration Tools > Database Configuration Assistant**.
The Welcome screen appears.
2. Click **Next**.
3. Choose **Configure Database Options** on the Operations page. Click **Next**.
The Database page appears
4. Select the agile9 database you just created. Click **Next**.
The Management Options page appears.
5. Check **Configure the Database with Enterprise Manager**. Click **Next**.
The Database Content page appears.
6. Accept the defaults. Click **Next**.
The Database Credentials page appears.
7. Enter a password for the DBSNMP and SYSMAN users. Click **Next**.
The Connection Mode page appears.
8. Select **Dedicated Server Mode**. Click **Finish**.
9. Click **OK** for confirmation. Database configuration begins.
When configuration completes, the Database Control URL displays. Make a note of this URL because it is used to log in to the database.
10. Click **OK** to close the Database Configuration Assistant.
11. Open a web browser and enter the Database Control URL.

12. Type the User Name and Password of the Agile database. Click **Login**.
13. Click **I agree** to accept the license agreement and display the Database Control page.

You have finished installing and configuring the Agile PLM database.

Installing the Agile Database on UNIX

This chapter includes the following:

- Overview..... 23
- Post-Installation Tasks..... 29

Overview

This chapter provides information for installing Oracle and creating the Agile database on Sun Solaris, Red Hat Enterprise Linux, Oracle Enterprise Linux, or IBM AIX. Before you begin, make sure that you have reviewed all relevant Oracle documentation and ensured the computer meets the minimum system requirements.

Important For best results, start with a clean system (no previous installations of Oracle).

The installation process consists of the following major steps:

- Preparing an installation environment.
- Installing Oracle Database Server.
- Running the Agile database scripts to create the Agile database.
- Configuring Oracle network connectivity and setting additional Oracle functionality.

System Requirements

Before installing Oracle, ensure that your system configuration meets the minimum hardware requirements. If you are using a standalone system or hosting multiple instances, consider using the recommended hardware requirements for the specific environment to ensure acceptable performance. For information on specific system requirements, see the *Capacity Planning Guide*.

It is suggested that a system administrator and Oracle database administrator are available to monitor system activity and determine resource requirements.

Preparing the Host Computer

This section describes how to prepare the installation environment on UNIX, such as creating the necessary groups and user accounts.

Preparation of the installation environment involves the following:

- Creating the Oracle user account
- Copying the Agile database utilities

- Modifying system kernel parameters (for Solaris only)
- Setting up Oracle environment variables

Note The term Oracle user is used in this document only as an example. The username need not be Oracle.

To create the Oracle user account:

1. Log in to the system as root.
2. Create a home directory for the Oracle user:
`# mkdir -p /home/oracle [Enter]`
3. Create the Unix group “dba”:
`# groupadd dba [Enter]`
4. Create the Oracle user:
`# useradd -d /home/oracle -s /bin/sh -g dba oracle [Enter]`
where:
/home/oracle is the Oracle user home directory
/bin/sh is the Oracle user login shell
dba is the primary group for the Oracle user
5. Set the Oracle user password, and change the Oracle home file ownership:
`# passwd oracle [Enter]`
Enter password:
`# chown oracle:dba /home/oracle [Enter]`
6. Create the Oracle installation directory:
`# mkdir -p /u01/app/oracle [Enter]`
`# chown oracle:dba /u01/app/oracle [Enter]`

You must now copy the Agile database scripts.

To copy the Agile database utilities:

1. Change to the Oracle user, and create a temporary directory named “**agile9303db**”:
`# su - oracle [Enter]`
`$ mkdir /home/oracle/agile9303db [Enter]`
2. Download the appropriate Agile PLM media pack for your operating system to the **agile9303db** directory. For more information on obtaining the media pack, see [Obtaining Software from Oracle Support](#) on page 2 (for a Patchset/Minipack), or [Obtaining Software from Oracle E-delivery](#) on page 1 (for a major release).
3. Change to the **agile9303db** directory, and extract the files from the **agile9303db_Oracle10g11g.tar.gz** file:
`$ cd /home/oracle/agile9303db [Enter]`

```
$ gunzip -c agile9303db_oracle10g11g.tar.gz|tar xvf - [Enter]
```

The agile9303db_oracle10g11g.tar file contains the following files:

- agile9database.sh — Bourne shell script for creating the database instance and schema or generating the database maintenance scripts only.
- profile.txt — oracle user .profile template
- system.txt — system kernel parameters
- dbora — setup for the database automatic shutdown and startup
- agile9schema.dmp — schema dump file
- Readme.txt — readme file

For Solaris systems only, you must now modify system kernel parameters, as described below.

To modify the system kernel parameters:

1. Change to the root user, and back up the /etc/system file:

```
$ su - [Enter]
```

```
# cp /etc/system /etc/system_save [Enter]
```

2. Verify the following /etc/system kernel parameters. If the parameters do not exist, go to the next step.

```
set shmsys:shminfo_shmmax=4294967295
```

```
set shmsys:shminfo_shmmin=1
```

```
set shmsys:shminfo_shmmni=100
```

```
set shmsys:shminfo_shmseg=10
```

```
set semsys:seminfo_semmns=1024
```

```
set semsys:seminfo_semmni=100
```

```
set semsys:seminfo_semmsl=500
```

```
set semsys:seminfo_semopm=100
```

```
set semsys:seminfo_semvmx=32767
```

```
set noexec_user_stack=1 (Note: On Oracle 10g only)
```

Important If you have been running the host computer as an Oracle database server, you have to check with your Solaris system administrator before changing these parameters. For these parameter settings, you can also refer to the Oracle documentation.

Note Reboot the computer if you modify the /etc/system file.

3. The kernel parameter settings above are stored in the file system.txt included with the Agile database utilities. You can append system.txt to /etc/system if this is the first time you are configuring the host computer as the database server.

```
# cat /home/oracle/agile9303db/system.txt >> /etc/system
```

Note Use >> to append. If you have accidentally used >, you need to recover the original /etc/system file by using cp system_save system.

4. Reboot the system to make the new kernel configuration take effect.

Note If you do not reboot the system, the kernel may not be reconfigured and the database creation may fail. You may need to check with your Solaris system administrator for support.

To set up Oracle environment variables:

1. Log in to the system as the Oracle user.

2. Create the environment parameter file `.profile` to include:

```
PATH=$PATH:/usr/local/bin:/usr/ccs/bin:/usr/openwin/bin:/usr/bin/X11
```

```
export PATH
```

```
ORACLE_HOME=<Location where you installed Oracle Database Server>
```

```
export ORACLE_HOME
```

For example:

```
(Oracle 11g)ORACLE_HOME=/u01/app/oracle/product/11.1.0/db_1; export ORACLE_HOME
```

```
ORACLE_BASE=<Oracle base folder location>; export ORACLE_BASE
```

For example:

```
ORACLE_BASE=/u01/app/oracle; export ORACLE_BASE
```

```
PATH=$PATH:$ORACLE_HOME/bin; export PATH
```

```
ORACLE_SID=agile9; export ORACLE_SID
```

```
TNS_ADMIN=/var/opt/oracle; export TNS_ADMIN
```

Note Setting the `TNS_ADMIN` parameter is optional.

```
NLS_LANG=American_America.UTF8; export NLS_LANG
```

3. The environment variables settings above are stored in the file `profile.txt` included with the Agile database utilities. If this is the first time you are configuring the host computer as a database server, copy the `profile.txt` file to `.profile`:

```
$ cat agile9303db/profile.txt > .profile [Enter]
```

4. Set environment variables:

```
$ ./.profile [Enter]
```

Creating the Agile Database

This section describes how to create the default database instance and schema used by Agile using the Agile database creation utility.

To start the installation:

1. Log in to the computer as the user you created while preparing the installation environment. For example, Oracle.
 - a. If necessary, edit the `.profile` file to change Oracle SID. By default, Agile uses `agile9` as the Oracle SID:

```
$ vi .profile [Enter]
```

- b. Modify the value where ORACLE_SID=agile9 by replacing agile9 with the SID you want to use.

Important Check the `/var/opt/oracle/oratab` file and make sure that the specified Oracle SID has not been used. Specifying an existing Oracle SID can corrupt that database instance.

Note The recommended SID length is 4-8 alphanumeric characters. (The default SID 'agile9' is six characters.)

- c. Source `.profile` to make the SID changes take effect:

```
./profile [Enter]
```

2. In a second terminal session, log in to the computer as the root user.
3. Create a directory named "oradata."

Note The `agile9database.sh` file uses a placeholder mount point `/mpt`. You must change `/mpt` to match your mount points. For OFA compliance, it is highly recommended that you create at least four mount points (preferably on four different disks across multiple controllers) to optimize disk I/O.

For example, if you have mount points at `/u01` and `/u02`, you can create an `oradata` folder on each mount point.

```
# mkdir -p /u01/oradata
```

```
# chown oracle:dba /u01/oradata
```

4. In the session where you are logged in as the Oracle user, create a `$ORACLE_BASE/admin` directory:

```
$ mkdir -p /u01/app/oracle/admin [Enter]
```

(Assuming `ORACLE_BASE` is set to `/u01/app/oracle`.)

You must now run the `agile9database.sh` script.

5. Change to the `/home/oracle/agile9303db` directory.
6. Modify the `agile9database.sh` script to match the mount points on your computer.

Note Make sure `ORACLE_SID` matches the one you set for `.profile`, which should have taken effect after you ran `./profile`.

Note The `agile9database.sh` file uses a placeholder mount point `/mpt`. You must change `/mpt` to match your mount points. For OFA compliance, it is highly recommended that you create at least four mount points (preferably on four different disks across multiple controllers) to optimize disk I/O. Or use a storage subsystem with RAID 1 and RAID 0 to distribute disk I/O activity and provide fault tolerance.

The values in the script that can be modified appear in bold. You should limit your editing only to these bold values.

Note The following code lists variables in bold that you may want to revise besides placeholder mount point `/mpt`.

```
#!/bin/sh
#
# Oracle_sid default as agile9
#
ORACLE_SID=agile9 # Oracle SID for the database
AASYS_PW=oracle # Oracle sys password for the database
AASYS_TEMP_PW=manager # Oracle system password for the database
ACTXSYS_PW=ctxsys # Oracle database password for user 'ctxsys'
AGILE=agile # Oracle account for AGILE schema
AGILE_PW=tartan # Oracle passwd for AGILE
#
# AGILE9DB_BASE is the base directory for the OFA directories and maintenance scripts
# (create the directory before running this script)
# (default is $ORACLE_BASE/admin/$ORACLE_SID)
#
AGILE9DB_BASE=$ORACLE_BASE/admin/$ORACLE_SID
# Parameters determine location of datafiles,
# controlfiles and logfiles
#
DATABASE_SYSTEM=/mpt/oradata/${ORACLE_SID} # SYSTEM tablespace
DATABASE_TOOLS=/mpt/oradata/${ORACLE_SID} # TOOLS tablespace
DATABASE_UNDO=/mpt/oradata/${ORACLE_SID} # RBS tablespace
DATABASE_TEMP=/mpt/oradata/${ORACLE_SID} # TEMP tablespace
DATABASE_USERS=/mpt/oradata/${ORACLE_SID} # USERS tablespace
DATABASE_INDX=/mpt/oradata/${ORACLE_SID} # INDX tablespace
DATABASE_AGILE_DATA1=/mpt/oradata/${ORACLE_SID}
DATABASE_AGILE_INDX1=/mpt/oradata/${ORACLE_SID}
DATABASE_AGILE_DATA2=/mpt/oradata/${ORACLE_SID}
DATABASE_AGILE_INDX2=/mpt/oradata/${ORACLE_SID}
DATABASE_AGILE_DATA3=/mpt/oradata/${ORACLE_SID}
DATABASE_AGILE_INDX3=/mpt/oradata/${ORACLE_SID}
DATABASE_AGILE_DATA4=/mpt/oradata/${ORACLE_SID}
DATABASE_AGILE_INDX4=/mpt/oradata/${ORACLE_SID}
DATABASE_LOGFILES1=/mpt/oradata/${ORACLE_SID} # REDOLOG file 1
DATABASE_LOGFILES2=/mpt/oradata/${ORACLE_SID} # REDOLOG file 2
```

```

DATABASE_LOGFILES3=/mpt/oradata/${ORACLE_SID} # REDOLOG file 3
DATABASE_LOGFILES4=/mpt/oradata/${ORACLE_SID} # REDOLOG file 4
DATABASE_CONTROL1=/mpt/oradata/${ORACLE_SID} # CONTROL file 1
DATABASE_CONTROL2=/mpt/oradata/${ORACLE_SID} # CONTROL file 2
DATABASE_CONTROL3=/mpt/oradata/${ORACLE_SID} # CONTROL file 3
DATABASE_ARCHIVE=/mpt/oradata/${ORACLE_SID}/arch #ARCHIVELOGS
#
# Parameters determine character set used
#
CHARACTER_SET=UTF8
NATIONAL_CHARACTER_SET=UTF8

```

7. Run the agile9database.sh script from the current directory:

```
$ chmod u+x agile9database.sh
```

```
$ ./agile9database.sh [Enter]
```

8. Choose the installation mode that you want:
 - Enter **I** to create a new database instance. This generates and executes the database scripts.
 - Enter **S** to generate maintenance scripts only. This generates the database scripts but does not execute them.
9. You are prompted to specify the database size that you want to install.

You should use the regular database size unless you have consulted with an Agile Solutions Consultant or database administrator to ensure that the computer meets the minimum requirements for the specified database size.

Note If you are unable to create files, make sure that all Oracle environment variables are set correctly and that the 'oracle' user has full (read, write, and execute) privileges on all directories referenced by agile9database.sh.

The script will run for a while.

Note Oracle recommends that you change all Oracle database user passwords after you have created the Agile database. It is recommended to change these passwords periodically for security purposes.

Continue to the next section for post-installation tasks.

Post-Installation Tasks

This section describes how to configure Oracle Net Manager, and set the automatic startup and shutdown features for the database.

Configuring the listener.ora File


If you are upgrading your Agile database on the same machine, you only need to add the new database to the existing listener.

To configure the listener.ora file:

1. Start Net Manager:
\$ netmgr &
2. Within the **Local** folder, open the **Listeners** folder and select **LISTENER**.
 1. Check to see if the following settings appear in one of the **Address** tabs:
 - **Protocol:** TCP/IP
 - **Host:** the host computer where the Oracle database is installed
 - **Port:** 1521
 2. If the information does *not* appear, click **Add Address**. A new **Address** tab appears.
 3. Type these settings:
 - **Protocol:** TCP/IP
 - **Host:** the host computer where the Oracle database is installed
 - **Port:** 1521
 4. Select **Database Service** in the **Listener Location** drop-down list.
 5. Click **Add Database**.
 6. In the dialog box that appears, make the following changes:
 - **Global Database Name:** agile9
 - **Oracle Home Directory:** Oracle_Home
 - **SID:** agile9

Note If you used a different global database name or different home directory during the database installation, change the information as appropriate.
3. Choose **File > Save Network Configuration** to save your changes.
4. Close Net Manager.

Configuring the tnsnames.ora File (Optional)

1. In the Oracle Net Manager window, double-click the **Local** folder and select the **Service Naming** folder.
2. Click **Create**  in the toolbar to add a service name.
The Net Service Name Wizard starts.
3. In the **Net Service Name** field, type the name of the computer where the Oracle database is located (usually the current computer). Click **Next**.
4. You are prompted to select a network protocol. Select **TCP/IP (Internet Protocol)** and click **Next**.
5. Type the name of the computer where Oracle is located in the **Hostname** field (the same name you typed in step 3). Accept **1521** as the default port number. Click **Next**.

6. Select **Oracle8i or later** as the service name, and type **agile9** in the field. Click **Next**.
7. Click **Test** to test the service.
The test initially fails because the default uses the incorrect login.
8. Click **Change Login** to reset the username and password.
9. Type **agile** in the **Username** field and **tartan** in the **Password** field. Click **OK**.
10. Click **Test**. You should now see a message indicating that the test was successful.
11. Click **Close**.
12. Click **Finish** to exit the Net Service Name Wizard.
13. From the Net Manager menu, choose **File > Save Network Configuration** to save the service name.

This completes the installation and configuration for Oracle on UNIX.

Setting Up Oracle Net Manager (Optional)

To set up Oracle Net Manager:

If you use the TNS_ADMIN environment variable to specify the location of Oracle Network Services configuration files (such as tnsnames.ora), move the files located in the \$ORACLE_HOME/network/admin directory to the directory specified by TNS_ADMIN.

1. Log in as **root** and change the ownership of the /var/opt/oracle directory:
`# chown -R oracle:dba /var/opt/oracle [Enter]`
2. Switch to the Oracle user, and change to the \$ORACLE_HOME/network/admin directory:
`# su - oracle [Enter]`
`$ cd $ORACLE_HOME/network/admin [Enter]`
3. Move all the files to the directory defined by environment parameter TNS_ADMIN, which is /var/opt/oracle:
`$ mv * /var/opt/oracle [Enter]`

Setting Up Automatic Shutdown and Startup for the Database (Optional)

To set up the Oracle database to automatically shut down and start up when the host computer starts up and shuts down:

1. Log in the system as **root**.
2. Create a file named “dbora” in the /etc/init.d directory:
`# cat /home/oracle/agile9303db/dbora > /etc/init.d/dbora [Enter]`
3. Link to the dbora file:
`# ln -s /etc/init.d/dbora /etc/rc0.d/K10dbora [Enter]`
`# ln -s /etc/init.d/dbora /etc/rc2.d/S99dbora [Enter]`

Creating a RAC Database and Schema for Agile PLM

This chapter includes the following:

- Creating an Oracle RAC Database Instance for Agile PLM 33
- Creating an Agile PLM Schema in an Existing RAC or Standalone Database Instance 34

You can create a Real Application Clusters (RAC) database instance for Agile PLM using the Oracle Database Configuration Assistant (DBCA), and then create an Agile PLM schema in that database instance.

Creating an Oracle RAC Database Instance for Agile PLM

To create a RAC database instance:

1. Start the Oracle Database Configuration Assistant. (From the **Start** menu, navigate to **All Programs > Oracle – <Oracle Home> > Configuration and Migration Tools**, and choose **Database Configuration Assistant**). The Database Configuration Assistant:Welcome dialog appears.
2. Select the **Oracle Real Application Clusters** database option. Click **Next**.
3. In the Operations dialog, select **Create a Database**. Click **Next**.
4. In the Node Selection dialog, select all RAC nodes. Click **Next**.
5. In the Database Templates dialog, select **Custom Database**. Click **Next**.
6. In the Database Identification dialog, enter values for the Global Database Name and SID Prefix. For example, RAC.WORLD and RAC. Click **Next**.
7. In the Management Options dialog, click **Next** to accept the default selections. For more information on Oracle Enterprise Manager, see related documentation on the [Oracle Technology Network \(OTN\) Web site](http://www.oracle.com/technetwork/documentation/agile-085940.html) <http://www.oracle.com/technetwork/documentation/agile-085940.html>.
8. In the Database Credentials dialog, choose the **Use the Same Password for All Accounts** option. You can change the passwords later. Enter a password and confirm it. Click **Next**.
9. In the Storage Options dialog, select your preferred storage option. The storage option that you have on your system is automatically detected and appears selected. Click **Next**. Based on your selection, the Database Configuration Assistant will present further options. Follow onscreen directions to configure storage details.
10. Next, select the database components you require. In the Database Content dialog, under Database Components, select the following:
 - **Oracle Data Mining**
 - **Oracle Text**

- **Enterprise Manager Repository (Optional)**

Click **Next**.

11. In the Database Services dialog, to accept the current configuration details, click **Next**.

Note At any stage, to change your selections, click **Back** and navigate to the appropriate dialog.

12. In the Initialization Parameters dialog, under **Memory**, select **Custom**. Provide desired SGA and PGA sizes or accept the default. Click **Next**.

13. In the Database Storage dialog, select the **Tablespaces** node. Create the following tablespaces in the instance.

- AGILE_DATA1
- AGILE_DATA2
- AGILE_DATA3
- AGILE_DATA4
- AGILE_INDX1
- AGILE_INDX2
- AGILE_INDX3
- AGILE_INDX4

Note Data files should be sized at least 1GB each with autoextend enabled, and must be named as listed above. You can store the datafile at any location on your hard drive. For guidance on sizing, refer to the tables in Disk I/O Configurations.

14. Review the storage parameters and click **Next** to accept.

15. In the Creation Options dialog, **Create a Database** is the default selection. Click **Finish** to accept database creation settings.

16. In the Summary screen, click **OK** to start the database creation process.

17. Once the database creation is complete, a dialog appears with details of the newly created database instance. Make a note of the information for your records. Within this dialog, click **Password Management** and do the following:

- a. Make sure that the CTXSYS account is not locked. If it is locked, log into Oracle as 'sys' or 'system' and execute the SQL command:

alter user ctxsys account unlock;

- b. Set the following account passwords:
 - sys / oracle
 - system / manager
 - ctxsys / ctxsys

You can change the passwords after schema creation is complete.

18. Click **Exit**. The RAC database instance creation is now complete.

Creating an Agile PLM Schema in an Existing

RAC or Standalone Database Instance

The Oracle database stores data in virtual containers known as schemas. The Agile Database Configuration Utility creates the database, user account, and schema used by Agile. Additional schemas are not necessary; however, you can create additional Agile schemas with different user names if necessary.

Note You should not use the Oracle Security Manager to create users.

To create a schema in the RAC Database Instance:

On UNIX:

1. Run `agile9database.sh`. When prompted to choose the installation mode, enter **S** to generate the Agile PLM 9.3.0.3 schema maintenance scripts.
2. Run `recreateagile.sh` to create the schema.

On Windows:

1. Run the database installer as described in Installing the Agile Database on Windows.
2. In the installer screen where you specify the Oracle SID, select the **Generate Database Scripts Only** check box. See Step 4 under Using the Agile Database Configuration Utility.
3. Follow onscreen instructions to generate scripts.
4. Run `recreateagile.bat` to create the schema.

There are three requirements around the package SYS.DBMS_SHARED_POOL for an Agile database. If the requirements are not met, and the package DBMS_SHARED_POOL does not exist in the SYS schema, you may receive a DBMS shared pool error or AGILE9_UTILS error.

To ensure that DBMS_SHARED_POOL requirements are met:

1. Log into the database as 'sys' user.
2. Run the following command:


```
SQL> describe SYS.DBMS_SHARED_POOL
```
3. If you receive an error indicating that the object SYS.DBMS_SHARED_POOL does not exist, run the SQL script `dbmspool.sql` located at `ORACLE_HOME/RDBMS/admin`.

4. As 'sys' user, grant execute privileges to the agile schema user.

```
SQL> grant execute on SYS.DBMS_SHARED_POOL to AGILE;
```

Where `AGILE` is the agile schema user.

5. Connect to the database as the agile schema user, and run the following command:

```
SQL> create synonym DBMS_SHARED_POOL for SYS.DBMS_SHARED_POOL;
```

6. When the process completes, run the following command to compile the AGILE9_UTILS package:

```
SQL> alter package agile9_utils compile body;
```

The package should compile without errors. If the package compiles with errors, run the following command and correct the same:

```
SQL> show errors
```

Database Management

This chapter includes the following:

▪ Database Maintenance.....	37
▪ Database Backup	38
▪ Database Import and Export.....	43
▪ Database Recovery	51

It is important to protect your Agile data and system files from loss. This section describes basic backup and recovery strategies and gives specific information about applying them to your Agile system used with Oracle products.

The instructions in this section are for system and database administrators who need to manage the Agile database.

Database Maintenance

This section provides database maintenance procedures.

Fine-Tuning Index Settings

Depending on your database server and the fields most frequently searched at your site, you may speed up searches by using an SQL script to create additional database indexes. If you are experiencing noticeably slow performance when searching on certain fields, contact Agile Technical Support to see if index modifications might help. Note that an added index needs to be analyzed for statistics, otherwise, the cost-based optimizer may not use it.

Monthly Maintenance

As part of monthly maintenance activities, Oracle recommends the following:

- Rebuilding domain indexes to improve performance.
- Running Averify to check database integrity as well as tablespace free space.

Checking Database Space Allocation

Checking the tablespace data files in your Oracle database on a monthly basis can help determine how close your database storage is to maximum capacity. If any or all of the tablespaces are at least 90 percent, you should increase the disk space allocation for the specific tablespaces. One method for accomplishing this is to increase the data file size for the corresponding tablespaces, as follows:

1. Check the disk space for the hard drive where the Oracle database is located.
2. If there is less than 500 MB available, it is recommended that you increase disk space by adding to or replacing the hard drive.

3. To check the tablespace data files, start the **Enterprise Manager Console**. The Oracle Enterprise Manager Login dialog box appears.
4. Select **Launch standalone** and click **OK**.
5. Double-click the Databases folder and the name of the database.
6. Log in as follows, and then click **OK**:

Username: system

Password: manager

Service: hostname (remote) or blank (local)

Connect As: normal

Note Type the fully qualified hostname of the computer in the **Service** field (or **Host String** in some cases) if you are not logging in on the same computer where you have installed Oracle or if you receive a TNS error message.

7. Under **Storage > Tablespaces**, select **System**, **Temporary**, **Agile_DATA1-4**, and **Agile_INDX1-4**. Determine if the amount of disk space each tablespace is using exceeds 90 percent. Make sure **Agile_INDX4** has enough space for file content index synchronization.

Note If you need to increase the amount of available disk space, double-click the value in the **Size** field.

8. The Edit Datafile dialog box appears. Increase the amount of available disk space, and then click **OK**.

If possible, you should double the current disk space. If the disk space is not available on the hard drive, you should consider upgrading your hardware.

Note This is a preventive and proactive measure, but is not required. All Agile tablespaces automatically extend by 10MB whenever additional disk space is needed and available.

Dynamic Versus Static IP Addresses

You can use dynamic IP addresses with “long-term lease” assignments, as well as static addresses, for Oracle systems. For best results, do not change the hostname of computers in the system, and use static IP addresses.

Database Backup

You should institute a routine backup of all file systems on all servers.

Database losses are unfortunate, but they can and do occur. They can result from hardware failures, natural disasters, fire, power surges, and problems with administration and configuration. Whatever their cause, your best protection against business disruption and permanent data loss is an effective backup and recovery plan, applied as automatically as possible.

This chapter introduces several ways to back up and recover data. You will need additional information to adequately administer and protect your database. You may need to do a cost/benefit

analysis to determine how often to back up critical data and to justify the labor, hardware, software, and storage costs involved. The following documents may be helpful:

- *Oracle Database Backup and Recovery Basics* (see Oracle Database Backup and Recovery Basics - http://www.oracle.com/pls/db111/portal.portal_db?selected=4&frame=#backup_and_recovery)
- *Oracle Database Recovery Manager User's Guide* (see Oracle Database Backup and Recovery Basics - http://www.oracle.com/pls/db111/portal.portal_db?selected=4&frame=#backup_and_recovery)
- *Oracle Database Concepts* (see Oracle Database Concepts - http://download.oracle.com/docs/cd/B28359_01/server.111/b28318/toc.htm)

Note The documents are available on the [Oracle Technology Network \(OTN\) Web site](http://www.oracle.com/technetwork/documentation/agile-085940.html) <http://www.oracle.com/technetwork/documentation/agile-085940.html>.

You must be a member of the Oracle Technology Network to have access to the site (becoming a member requires simply that you register at the site to gain access).

Backup and Recovery Strategy

When you are planning a backup and recovery strategy, you need to consider the following factors:

- **Database availability**

What is the database availability requirement for business operations? Is it required for 7X24X365 availability or only during standard business hours?

According to the availability requirement, different database backup methods can be adopted. If the database cannot be shut down, a hot online backup is the only choice.

- **ARCHIVELOG and NOARCHIVELOG mode**

A database can run in ARCHIVELOG or NOARCHIVELOG mode. It is a best practice is to have your PRODUCTION database in archive log mode. DEVELOPMENT and TEST environments need not be in archive log mode since they can be refreshed using PRODUCTION.

When the database is in operation, all database changes are recorded in redo log files. If the database is running in ARCHIVELOG mode, these redo log files are archived in the database archive log destination and are referred to as archived redo log files. A database running in ARCHIVELOG mode provides better protection from data loss. It can be recovered up to the point of failure. To perform a hot backup, a database must be running in ARCHIVELOG mode.

The default configuration for the Agile database is NOARCHIVELOG mode. You can change the database to ARCHIVELOG mode following the instructions available in the initagile9.ora file. It is recommended that an Oracle DBA or Oracle support be available.

- **Data loss tolerance**

How much data can you afford to lose due to a database crash?

Can you afford to lose one day or one week's worth of data in the event of a database crash?
Can you re-enter user data if there is a database failure?

If your database cannot tolerate data loss due to failure, then a good data protection backup method needs to be adopted, such as hot or cold backup using ARCHIVELOG mode.

▫ **Recovery time**

How much time can you afford to spend recovering a database in the event of a crash?

Different backup methods have different recovery times. Physical methods for backup and recovery are much faster than logical backups, and backups to disk are much faster than to tape. Recovery is also much faster from disk than from tape.

▫ **Technical skills**

What are the technical skills of your database or systems administrator?

Some backup methods require more database knowledge than others. Standby databases require more technical skill than cold or hot backup.

▫ **Hardware or software investment**

How much hardware or software investment do you want to put into the system?

Some advanced features, such as high availability, require more of an investment in hardware and software.

You can determine the safest backup method for your environment based on database requirements, database running mode, and your recovery scenario (as described in the following table). However, the final decisions about the backup and recovery strategy you use are beyond the scope of this chapter. For detailed information to help you make these decisions, see the books listed on the previous page.

Scenario	Backup methods
The database requires 7X24 uptime and cannot be shut down	Hot backup Export Database must be running in ARCHIVELOG mode
The database is available during regular business hours and can be shutdown	Hot backup Cold backup Export Database can running in NOARCHIVELOG or ARCHIVELOG mode
To recover up to the point of failure	Hot backup Cold backup with ARCHIVELOG mode
To recover an individual user or table	Export
For fast recovery	Hot backup Cold backup

Implementing Backup Procedures

For best backup results, follow these guidelines:

- Schedule online backups when there is minimal database access.

- Test your backup strategy to see if it is effective; make changes if any area is weak.
- Plan to save at least one version back; choose to retain enough versions for your business needs.
- Perform database consistency checks just before export or after import.
- Back up the master database before and after it is altered; if you save the original database creation scripts, you can use the same scripts to recreate it.
- For a distributed system, plan on coordinating backup procedures so each site can be backed up individually without destroying the integrity of the data at other sites.

Useful Information for Backup and Maintenance Tools

If you use Oracle tools such as SQL Plus or third-party backup tools, you need to enter information about the Oracle database installation. The table below lists default data; these names might differ if custom names were used instead of the defaults.

Oracle Field	Default Data	Custom Data
Oracle Sys account password	oracle	
Oracle System account password	manager	
Oracle Ctxsys account password	ctxsys	
Oracle database Agile account username	agile	
Oracle database Agile account password	tartan	
Oracle database host name	<Agile server hostname>	
Oracle database instance	agile9	

Types of Backups

This section describes the following types of backups:

- Registry file backups
- System backups
- Standby database backups
- Standard database backups

System administrators often perform the first two types of backups, and database administrators (DBAs) perform the last two types of backups.

Backup procedures using third-party tools are not described in this chapter. However, if you are using one, see [“Useful Information for Backup and Maintenance Tools on page 41”](#) for the default username and other Oracle database information.

Performing System Backups

You typically perform a system backup on a small system. You bring down the entire system, including all the programs, data files, and log files. Typically, a system backup is run each night.

To perform a system backup, shut down the system, start it up again in single-user or maintenance mode, then copy system files to tape, as follows:

1. Shut down active applications.
2. Shut down the relational database.
3. Stop the Agile Application Server process.
4. Back up all file systems to an alternate storage device.
5. Start the Agile Application Server process.
6. Start the system in multi-user mode.
7. Restart the database.
8. Restart applications as needed.

Using Standby Databases

The standby database feature maintains a duplicate database of your primary online database at the same location or at a remote site. (Both the standby database and the primary database must be running on the same hardware platform, operating system, and Oracle patch release.) A standby database acts as a backup when it resides locally, and is implemented as part of a database disaster recovery strategy when it resides at a remote site. The standby database has the following features:

- It is copied from the primary or current production database onto a system residing locally or remotely.
- It is mounted, but not open, and is in constant recovery mode.
- Redo log files generated from the primary database can be transported to the standby database, and the standby database can apply these logs to recover the database.
- In the event of a disaster, a standby database can be activated and fully functional as a new production database.

A standby database takes time to set up and configure. For more information on standby databases, see [Oracle Data Guard Overview](http://www.oracle.com/technology/deploy/availability/htdocs/DataGuardOverview.html) <http://www.oracle.com/technology/deploy/availability/htdocs/DataGuardOverview.html>.

Performing Database Backups

Typically, you run a standard database backup daily. Databases backups can be:

- Cold or offline, where the database is shut down before copying database-related files: control files, data files, redo log files, initial parameter file (initagile9.ora), spfileagile9.ora, and password file (pwdagile9.ora). A database running in ARCHIVELOG or NOARCHIVELOG mode can be backed up by a cold backup (NOARCHIVELOG mode permits only cold backups).

- Hot or online, where a backup is performed while the database is open and users are accessing it. To perform a hot backup, a database must be running in ARCHIVELOG mode. When performing a hot backup, the database tablespace must first be put in backup mode, then the datafile can be copied by the operating system. Once the datafile has been copied, the database tablespace can be placed online again. This allows the database to be backed up tablespace by tablespace. The archived log files must be backed up regularly as these are needed for database recovery.
- A logical backup creates logical copies of database objects in a binary export file. Logical backups use the agile9 database utilities, agile9exp and agile9imp. When performing logical backups, a database must be open and running.

Note Oracle EXP and IMP utilities do not export the ctxsys account. So, FTS objects will be recreated during an agile9 import.

For best results, you should timestamp backups and generate scripts to perform them automatically using the operating system task schedule command.

Performing Cold Backups

Cold backups should be done on all the database-related files, including data files, control files, redo log files, the initial parameter file (initagile9.ora), the password file (pwdagile9.ora), and the server parameter file (spfileagile9.ora).

To perform a cold backup on all database-related files:

1. Shut down the database.
2. Use the operating system copy command to copy all of the database data files, the control file, the initial parameter file, the password file, and the archived redo log file (if the database is running in ARCHIVELOG mode) to the backup destination.
3. Restart the database.

Performing Hot Backups

The archived log files must be backed up regularly as these are needed for database recovery.

Database Import and Export

You can import and export a database using either of the following means, based upon your requirement:

- **Oracle Data Pump** - Ideal for very large Agile PLM databases. Enables very fast bulk data and metadata movement between Oracle databases. Uses high-speed, parallel 'expdp' and 'impdp' utilities to move data. The following utilities are included in the Agile PLM installation folder for import/export using Oracle Data Pump:
 - agile9impdp
 - agile9expdp
- **Import / Export Utilities**- Ideal for relatively small initial 'schema dumps' and for small databases. Uses the Oracle Database Server 'imp' and 'exp' utilities to move data. The following utilities

are included in the installation folder for traditional import/export:

- agile9imp
- agile9exp

The import or export procedure for the Agile database remains the same in both cases. Only the utilities called are different, as listed above. These procedures are outlined in the following sections.

The import process broadly includes the following actions:

1. Creating the Agile schema.
2. Organizing the schema.
3. Defining import parameters.
4. Running the import utility.

Creating the Agile Schema and Importing the Database

Before you import, ensure that you have taken a full backup of your Oracle database or of the Agile schema, as described in [Exporting the Database](#) on page 49.

Note If you are prompted for the service name or host string, you must provide the fully qualified computer name.

To create the Agile schema and import the database on Windows:

1. Confirm that the schema is valid.
2. Run the Agile PLM 9.3.0.3 database installer.
3. In the Oracle SID dialog box, ensure that the **Generate database scripts only** option is selected as described in Using the Agile Database Configuration Utility. Follow onscreen prompts to complete script generation.
4. Next, to ensure that the schema is organized correctly, type the following in a Command Prompt window:

```
cd oracle\admin\<Oracle_SID>\create\<agile schema user>
recreateagile.bat
```

Note Running this command will drop the existing Agile schema (if any) as well as any data that it contains.

5. Check import parameters in the *.par* file:
 - For traditional import: **agile9imp.par**

For Oracle Data Pump import: **agile9impdp.par** and **agile9impdp_seq_trig.par**

These parameters are described in [Import Parameters](#) on page 46.

6. To import the database and recreate indexes and statistics, run the following batch file:
 - For traditional import: **agile9imp.bat**
 - For Oracle Data Pump import: **agile9impdp.bat**
7. After the batch file finishes running, type **Exit** to close the Command Prompt window.

Note For file content index synchronization, call Agile Technical Support.

To create the Agile schema and import the database on UNIX:

1. Log in as the Oracle user.
2. Confirm that the database schema is valid.
3. Confirm that the user account name is new.
4. Make a backup of the existing database schema.
5. Change to the oracle user directory:

```
$ cd
```
6. Copy agile9db from the agile9303db directory:

```
$ cp ./agile9303db/agile9database.sh
```
7. Edit the agile9db shell script, and find AGILE=agile.
8. Change agile to the new, unused account name.
9. Save and close the file.
10. Run agile9db:

```
$ chmod u+x agile9database.sh
```

```
$ ./agile9database.sh
```
11. You are prompted to choose the installation mode. Enter **S** to generate the maintenance scripts.
12. You are prompted to choose a database size. Enter **R** for regular or **L** for large, based on how you created the database initially.

The script creates several SQL scripts and Bourne shell scripts in the following directory:
`$ORACLE_BASE/admin/$ORACLE_SID/create/<agile schema user>`.
13. When the script finishes running, enter the following:

```
$ cd $ORACLE_BASE/admin/$ORACLE_SID/create/<agile schema user>
```
14. Run recreateagile:

```
$ chmod u+x recreateagile.sh
```

```
$ ./recreateagile.sh
```

Note Running this command will drop the existing Agile schema (if any) as well as any data that it contains.

15. Check import parameters in the `.par` file:
 - For traditional import: `agile9imp.par`
 - For Oracle Data Pump import: `agile9impdp.par`

These parameters are described in [Import Parameters](#) on page 46.
16. To import the database and recreate indexes and statistics, run the following batch file:
 - For traditional import: `agile9imp.sh`

- For Oracle Data Pump import: **agile9impdp.sh**
17. To import the schema and recreate indexes and statistics, run the following commands:
- For traditional import:


```
$ chmod u+x agile9imp.sh
$ ./agile9imp.sh
```
 - For Oracle Data Pump import:


```
$ chmod u+x agile9impdp.sh
$ ./agile9impdp.sh
```

For file content index synchronization, call Agile Technical Support.

Import Parameters

Import parameters are specified within the files listed in the table below. These files are located in the database instance folder along with the import utilities.

agile9imp.par	
Parameter	Description
file	The file to import. The dump file schema version must match the latest agile schema version.
log	The import log file.
fromuser	The user account in the file that contains the data that will be imported. fromuser must exist in the dump file specified by the file.
touser	The user account where the data is being imported. touser must match the current value of %AGILE%; otherwise, importing the data may cause data corruption.

Note Other parameters such as **indexes**, **rows**, **ignore**, **grants**, **constraints**, and **statistics** specify other import settings. Do not modify these parameters, and these settings should only be used when using the **agile9imp** utility. If a standalone **imp** is used, do not use these settings.

agile9impdp.par	
Parameter	Description
directory	The directory object that identifies the location of the import files.
dumpfile	The dump file to import. The dump file schema version must match the latest agile schema version.
logfile	The import log file.

content	The data to import. The default value is <code>data_only</code> . To import to a new schema, first generate maintenance scripts for that schema, run recreateagile to create the schema objects, and then add the parameter <code>remap_schema=<fromuser>:<touser></code> .
parallel	The number of import processes that should be run in parallel. Note This parameter is supported only for Oracle Enterprise Edition. For other versions, this parameter must be removed from the <code>.par</code> file.

agile9impdp_seq_trig.par	
Parameter	Description
directory	The directory object that identifies the location of the import files.
dumpfile	The dump file to import. The dump file schema version must match the latest agile schema version.
logfile	The import log file.
include	Specifies that sequences and triggers are to be imported.

Deleting an Instance and the Database Files

Before creating a new instance, you must delete the existing instance (such as agile9).

1. Make sure the Oracle Listener and Agile9 service are running. (Agile9 is the Oracle service if your SID is Agile9.)
2. Start the **Database Configuration Assistant**.
3. Select **Delete a Database**, and click **Next**.

The instance you want to delete (Agile9) should appear in the **Available Instances** field.

4. Select the instance.
5. Type the username (**sys**) and password (**oracle**), if necessary.
6. Click **Finish**.
7. You are prompted to confirm the deletion, and then a message appears confirming that the instance has been removed.
8. Confirm that the agile9-related password file, spfile, and init files in the `$ORACLE_HOME/dbs` folder on Solaris have been deleted.
9. Confirm that the agile9-related password file, spfile, and init files in the `%ORACLE_HOME\database` folder on Windows have been deleted.

Note After dropping a database instance using the Database Configuration Assistant, the TEMP tablespace must be removed manually.

Running SQL Scripts Against the Agile PLM Schema

Important Before running a script, make sure you have a current backup (export) of your Agile database. For instructions on exporting (creating a DMP backup of your Agile database), refer to your Oracle documentation or Help system.

To run an SQL script against an Oracle database on Windows:

1. Create a new directory called "scripts" under the `oracle\admin\agile9\create\<agile schema user>` directory. Where `agile9` is your Oracle SID.
2. Copy the SQL script to the `scripts` folder.
3. On the computer where Oracle is installed, start SQL Plus in a command prompt window.
4. Type the login ID and password (the defaults are `agile` and `tartan`).
5. Before running the script, create a spool file to record and contain the results from issuing the SQL script. At the SQL prompt type:

`spool d:\oracle\admin\agile9\create\<agile schema user>\scripts\<file name>.lst`

For example: `spool d:\oracle\admin\agile9\create\<agile schema user>\scripts\verifyresults.lst`

Note The file with the LST extension is any filename that you want to use to identify the file that will contain these results. It is best and easiest to give the LST file the same name as the filename that is attached to the SQL file.

For example, if the SQL file to be run is `oracle_averify90.sql`, then name the spool file `oracle_averify90.lst`. You can also specify a drive or location other than what is shown in the previous example.

The drive and location specified are where the spool file will be saved.

6. Issue the command to run the SQL script by typing the following at the SQL prompt:

`@d:\oracle\admin\agile9\create\<agile schema user>\scripts\<file name>.sql`

For example: `@d:\oracle\admin\agile9\create\<agile schema user>\scripts\oracle_averify90.sql`

Note The @ symbol must be typed directly in front of this command line.

The file with the SQL extension is the name of the specific SQL file to be issued against the database. Depending on where the SQL file is located on the server, you will also specify the drive and location, which could be something other than the `d:\oracle\admin\agile9\create\scripts` shown in the example.

Notice the process of the script being executed. When it is complete, there will be an indication of "commit, complete."

7. At the SQL prompt, type the following: `spool off`
8. Close the SQL Plus window and exit SQL Plus.

Note In some cases where a change is being made to the database, you may need to stop and restart both Agile services for the change to take effect. If this is necessary, you will be advised at the time the script is provided. In the case of issuing scripts that do not make changes to the database scripts (for example, `oracle_averify.sql` scripts), restarting the Agile services is not necessary.

9. Locate and open the spool file created in step 5, if necessary.

The file can be opened within an application such as Notepad so that results can be viewed and printed, if necessary.

Exporting the Database

For maximum data security, you should use a cold backup. You can import the Agile schema DMP file whenever you need to restore a database or replicate it on another computer with the exception of file content index synchronization because of its dependence on the file system.

If you are copying or moving the Agile schema to another computer, you need to set up the computer before importing the Agile schema.

You can perform either of the following types of export:

- **Export the Agile schema alone** - This is much faster than exporting the whole database.
- **Full export** - Export all the schemas in the Oracle database.

Important If you are prompted for the service name or host string during the export, you must provide the fully qualified computer name.

Exporting the Agile Schema from Oracle

To export only the Agile schema on Windows:

1. Ensure that all users are logged off before shutting down the application server.

Note The following commands use the D drive. If you have installed agile9303db or Oracle on another drive, specify that drive letter.

2. Open a Command Prompt window, and type the following:

d:

```
cd \oracle\admin\<Oracle SID>\create\<agile schema user>
```

3. Check export parameters in the *.par* file.

- For traditional export: **agile9exp.par**
- For Oracle Data Pump export: **agile9expdp.par**

These parameters are described in [Export Parameters](#) on page 51.

4. To export the database, run the following batch file:

- For traditional export: **agile9exp.bat**
- For Oracle Data Pump export: **agile9expdp.bat**

To export only the Agile schema on UNIX:

1. Ensure that all users are logged off. The easiest way to do this is to disconnect the server from the network.

2. Change to the directory where the Agile scripts are located:
`$ cd $ORACLE_BASE/admin/$ORACLE_SID/create/<agile schema user>`

3. Check export parameters in the `.par` file.
 - For traditional export: `agile9exp.par`
 - For Oracle Data Pump export: `agile9expdp.par`

These parameters are described in [Export Parameters](#) on page 51.

4. To export the database, run the following commands:

- For traditional import:
`$ chmod u+x agile9exp.sh`

```
$ ./agile9exp.sh
```

- For Oracle Data Pump import:

```
$ chmod u+x agile9expdp.sh
```

```
$ ./agile9expdp.sh
```

The database export takes awhile. When it is complete, open the log file and see if the export was successful. If there were problems, call Agile Technical Support.

You can copy the successful export of `expdat.dmp` to another secure computer as a backup.

Exporting the Full Oracle Database

To export the full Oracle database on Windows:

1. Ensure that all system users are logged off. The easiest way to do this is to disconnect the server from the network.
2. Open a Command Prompt window.
3. Set the character set:

```
set NLS_LANG=American_America.utf8
```

4. Type the following text with spaces and a triple set of quotes as indicated (do not press Enter until you have typed the whole text string):

```
exp system/manager full=y file=""<drive>:\Agile9Tmp\<exp_filename>.dmp""  
log=""<drive>:\Agile9Tmp\<exp_filename>.log""
```

Agile recommends naming the export file `expfull.dmp`. For example:

```
exp system/manager full=y file=""d:\Agile9Tmp\expfull.dmp"" log=""d:\Agile9Tmp\expfull.log""
```

To export the full Oracle database on UNIX:

1. Ensure that all system users are logged off. The easiest way to do this is to disconnect the server from the network.
2. Enter the following command:

```
$ exp system/manager full=y file/home/oracle/agile9303db/ <exp_filename>.dmp  
log=/home/oracle/agile9303db/<exp_filename>.log
```

Agile recommends naming the export file `expfull.dmp`. For example:

```
exp system/manager full=y file=/home/oracle/agile9303db/expfull.dmp
log=/home/oracle/agile9303db/expfull.log
```

The database export takes a while. When it completes, open the log file and see if the export was successful. If there were problems, call Agile Technical Support.

You can copy the successful export of expfull.dmp to another secure computer as a backup.

Export Parameters

agile9exp.par	
file	The file to export.
log	The export log file.
owner	The user account that contains the data to export.

agile9expdp.par	
directory	The directory object that identifies the location of the import files.
dumpfile	The dump file to export.
logfile	The export log file.
schemas	The names of the schemas to export.
parallel	The number of export processes that should be run in parallel. Note This parameter is supported only for Oracle 10g Enterprise Edition. For other versions, this parameter must be removed from the .par file.

Database Recovery

In the case of failure, database recovery uses a previous database backup to recreate a database that is as complete, accurate, and up-to-date as possible. Database recovery depends on the database backup method. Two backup methods are standard backup and logical backup.

- For standard backup, including cold and hot backup, database recovery requires the use of the operating system copy command to restore backed up datafiles.
 - If the database is running in NOARCHIVELOG mode, there are no backed up archive log files. Recovery is to restore a previously backed up data file, control file, initial parameter file, and password file. No redo log files are applied and no database roll forward is needed. In this scenario, a database can be recovered up to the last backup.
 - If the database is running ARCHIVELOG mode, database recovery is to restore previous backed up database files up to the last archived log files. When recovering a database, these archived log files are applied and the database is rolled forward. In this scenario, a

database can be recovered up to the point of database failure.

- For a logical backup, a database recovery involves importing the database or schema from a previous export DMP file. For a logical backup, there is no roll forward involved.

Database recovery can be performed by using Oracle Recovery Manager.

Using Oracle Recovery Manager

You can use the Oracle Recovery Manager to perform an automatic recovery, restore the full database, restore a data file, or restore a control file.

The major advantage for Oracle Recovery Manager (RMAN) is that it can perform incremental database backup and recovery. Incremental backup and recovery is much faster than a full database backup and recovery, especially for large database systems. RMAN is more complicated to setup compared with a standard backup.