Oracle9*i* Enterprise Edition

Release Notes

Release 2 (9.2.0.1.0) for OS/390

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This document accompanies Oracle9*i* Release 2 (9.2.0.1.0) for OS/390. It contains supplemental information or supersedes corresponding information found in the *Oracle9i Enterprise Edition Installation Guide for OS/390*. Unless stated otherwise, the information in this document applies equally to OS/390, z/OS, and z/OS.e, the operating systems supported by Oracle9*i* Release 2 (9.2.0.1.0) for OS/390.

This chapter provides details about supported Oracle products, software and hardware requirements, and known problems or product issues.

The following topics are included:

Oracle Products on OS/390

Oracle products for OS/390 are the same products Oracle supports on other hardware environments, optimized to take advantage of native OS/390 system facilities such as the Subsystem Interface (SSI), Workload Manager (WLM), and cross-memory services.

Oracle9*i* Enterprise Edition

Oracle9*i* Release 2 is the centerpiece of the Oracle for OS/390 product offering. This implementation of the Oracle9*i* Database offers the same features and options as Oracle9*i* EE on other environments, providing the same SQL, PL/SQL, and Java language support as found on all other Oracle implementations. In addition, the standard utilities associated with the Oracle9*i* Database are provided, and most can be executed in all three modes available to OS/390: as batch jobs using JCL; as TSO commands (including via CLIST or REXX); from OS/390 UNIX System Services (USS). These utilities automatically detect the execution environment and adapt their default behavior to the environment. For example, when run in batch or TSO, the utilities attempt to access data sets and use DD names, but in USS accessing HFS files is the default behavior. Finally, the Oracle9*i* Database for OS/390 includes a programmatic interface called the Oracle Call Interface (OCI). This rich interface allows sophisticated C programs to access all Oracle9*i* Database features from TSO, batch, and USS environments.

Oracle Programmer

Oracle Programmer is an optional product that allows you to write application programs in C/C++, COBOL, and PL/I that access an Oracle9*i* Database. Your applications can contain embedded Oracle SQL and PL/SQL, which is translated into host language statements by the Oracle-supplied precompilers (Pro*C, Pro*COBOL, and Pro*PL/1). They can be built to run in TSO, batch, USS, CICS and IMS/TM.

Oracle Programmer includes two Oracle products unique to the OS/390 environment; the Oracle Access Manager for CICS, and the Oracle Access Manager for IMS. These products, used in conjunction with CICS and IMS TM (respectively) allow Oracle precompiler applications to run in the special transaction environments provided by CICS and IMS TM. Using the appropriate Access Manager, your CICS or IMS programs can update Oracle databases as well as non-Oracle resources (such as CICS-managed VSAM files, IMS data, or DB2 data) in a single transaction, and recover both consistently whenever necessary.

Oracle Net Services

Oracle Net Services is not a distinct product: it is a built-in capability of all Oracle-based clients and all Oracle Database servers. Using TCP/IP, Oracle Net Services allows any Oracle client program to connect to any Oracle9*i* Database running anywhere in your network. Remote clients can connect to an Oracle Database server running on OS/390, and clients running in any of the supported OS/390 execution environments can connect to an Oracle Database server on another system. Oracle Net Services provides seamless heterogeneous connectivity between dissimilar platforms, automatically converting data from one platform's format or character set to the other's, and also supports distributed database operations.

Oracle Enterprise Manager

Oracle Enterprise Manager is Oracle's integrated systems management product. Some components of Enterprise Manager need to run on OS/390—a few non-intrusive agents that execute tasks, monitor conditions and collect statistical data—but Enterprise Manager's distributed three-tier architecture allows all of your Oracle products to be managed from a single GUI-based management console without using significant OS/390 system resources. The base Enterprise Manager product includes a set of integrated applications and tools for administration of the entire Oracle Internet platform, and optional packs enhance Enterprise manager with sophisticated capabilities in tuning, diagnostic, or change management.

Oracle Gateways

These products integrate non-Oracle data sources on OS/390 with Oracle-based applications. With an Oracle Gateway, your Oracle application on OS/390 or on any other Oracle platform can access data in IMS/DB, VSAM, DB2 UDB for OS/390, and other OS/390 data sources. You can also integrate non-OS/390 sources seamlessly into your OS/390 environment.

Product Set

This product set is composed of the Oracle9*i* Server Enterprise Edition Release 9.2.0.1.0 for OS/390 with the following options:

Oracle9*i* Real Applications Clusters
Oracle Partitioning
Oracle Label Security
Oracle Advanced Security
Oracle Spatial
Oracle Programmer, which includes:
    Oracle Access Manager for CICS 9.2.0.1.0

Pro*C/C++ 9.2.0.1.0
Pro*COBOL 1.8.75.0.1 and 9.2.0.1.0
Pro*PL/1 1.6.28.0.1

Oracle9*i* for OS/390 Documentation

The OS/390-specific publications supporting the products included with this release are:

Part Number	Title	Release
A97311-01	*Oracle9i Enterprise Edition Installation Guide for OS/390*	9.2.0.1.0
A97314-01	*Oracle9i Enterprise Edition Messages Guide for OS/390*	9.2.0.1.0
A97310-01	*Oracle9i Enterprise Edition Release Notes for OS/390*	9.2.0.1.0
A97313-01	*Oracle9i Enterprise Edition System Administration Guide for OS/390*	9.2.0.1.0
A97312-01	*Oracle9i Enterprise Edition User's Guide for OS/390*	9.2.0.1.0

Before Installing Oracle9*i* Enterprise Edition for OS/390

Before installing Oracle9*i* Enterprise Edition for OS/390, please visit the Oracle Support Services web site at **`http://www.oracle.com/support/`**. There, you will find links to login or register to visit the Oracle MetaLink web site. At the MetaLink site, you should search for any software or documentation updates that may be available for the Oracle for OS/390 products you are installing.

After Installing Oracle9*i* Enterprise Edition for OS/390

After the software has been installed, you may need to take additional steps depending on which Oracle for OS/390 products are already in use at your installation.

- If you are new to Oracle for OS/390, you can proceed directly to configuring and using Oracle9*i* products
- If you are using Oracle9*i* Release 1 or Oracle8*i* (8.1.7.x.50), you may need to migrate your OS/390 resident application programs before they can access Oracle9*i* Release 2; refer to the chapter on "Migration Considerations" in the *Oracle9i Enterprise Edition User's Guide for OS/390*.
- If you are using Oracle8*i* (8.1.7.x.0) or an earlier Oracle version, refer to the *Oracle9i Enterprise Edition System Administration Guide for OS/390* to learn how to upgrade your existing MPM and TNS subsystems to

Oracle9*i* Release 2. In addition, you may need to migrate your OS/390-resident application programs before they can access Oracle9*i* Release2; refer to the chapter on "Migration Considerations" in the *Oracle9i Enterprise Edition User's Guide for OS/390*.

Distribution Kit

Before installing your Oracle software, verify that you have a complete distribution package.

Tapes

The Oracle9*i* for OS/390 software is distributed on six IBM 3480 cartridge tapes. The volume serial numbers for this release are OS022A through OS022F.

The data set names on these tapes are in the following format:

ORACLE.prodspec.Fn

where:

`prodspec`	is a product specification.
`n`	is a sequential number for each file type needed for the product.

Documentation

Verify you have the correct documentation for your installation:

- Oracle platform-specific documentation appropriate to Oracle9*i* for OS/390 is provided on a documentation CD-ROM and is available online at http://docs.oracle.com.
- Oracle product-specific documentation for the products that you ordered, including*Oracle9i Server, Release 9.2* is available online at http://docs.oracle.com.

Hardware Requirements

CPU

Oracle9*i* for OS/390 requires any processor capable of running the required OS/390 operating systems listed in the section Software Requirements.

Disk Space

Refer to Appendix A, "Data Set Names and Space Allocations" of the *Oracle9i Enterprise Edition Installation Guide for OS/390* to determine the total static Oracle non-database requirements, including code for the products on the tapes, JCL, and samples.

Dynamic requirements such as SQL files, host language programs, and output spool files depend on Oracle application usage.

Tape Drive

A tape device capable of reading 3480 cartridges is required for installation. A tape device is recommended for database backup and export operations.

Software Requirements

The system software configuration described in the following requirements is supported by Oracle Corporation as long as the underlying system software products are supported by their respective vendors. Verify the latest support status with your system software vendors.

Operating System

OS/390 V2R10 or any version of z/OS or z/OS.e currently supported by IBM is required.

UNIX System Services (USS)

An operational OS/390 UNIX System Services (USS) is required.

Java

IBM Java version 1.1.8 is used during the installation process.

REXX

The IBM REXX product is used during the installation process.

Oracle Access Manager for CICS

IBM CICS release 4.1 or higher is required when you install Oracle Access Manager for CICS. Oracle Access Manager for CICS supports Pro*C, Pro*COBOL, and Pro*PL/1.

Language Compilers

These compilers can be used to develop applications with Oracle9*i* for OS/390.

Precompiler	Compiler	Required Compiler Release
Pro*C	IBM C/C++	1.1 or higher
Pro*COBOL V9	VS COBOL II IBM COBOL for OS390 + VM	1.4 or higher (Access Manager) 2.2 (TSO, Batch, Access manager)
Pro*COBOL V1	VS COBOL II, IBM COBOL for OS/390 + VM	1.4 or higher (Access Manager) 2.2 (TSO, Batch, Access manager)
Pro*FORTRAN	VS FORTRAN	1.4 or higher
Pro*PL/1	IBM Visual Age PL/1 Compiler	2.2.1

IBM Maintenance

Oracle Corporation recommends running Oracle9*i* for OS/390 at the most current operating system service level. Apply the appropriate PTFs for the following IBM APARS:

APAR Number	Description
OW43816	Abend EC6 RSN083404P2 on socket() or accept() call from an SRB.
OW52769	STORAGE OBTAIN LOC=(EXPLICIT,64) CAUSES LOOP IN IGVSLOC. This occurs when an OS/390 system has greater than 2 GB of central storage.

New Features and Functions

This section describes features and functions that are new with the release of Oracle9*i* for OS/390, and have platform-specific implications. For a complete list of new features for Oracle9*i*, refer to *Oracle9i New Features*. Existing customers should also consult the *Oracle9i Enterprise Edition System Administration Guide for OS/390* for features or functions that should be taken into consideration during a migration or upgrade.

OS/390 Language Environment

Beginning with this release, all Oracle utilities, tools, and program interface code on OS/390 use IBM Language Environment for C program runtime services, replacing the Oracle MVS C runtime code used in past releases. Backward compatibility is provided for virtually all Oracle C runtime features that differ from Language Environment. For details on this change

and its implications for your existing applications and procedures, refer to Chapter 11, "Migration Considerations" in the *Oracle9i Enterprise Edition User's Guide for OS/390*.

Support for USS and Native OS/390 Environments

Oracle9*i* Release 2 introduces a significant internal change in the way Oracle tool, utility, and program interface code operates on OS/390. All Oracle tools and utilities are now built to use IBM's C/C++ and Language Environment (LE) runtime facilities and most can be executed in all three modes available to OS/390; as batch jobs, as TSO commands, or from OS/390 UNIX System Services (USS).

Tool and utility behavior differs across these environments, not based on the type of address space per se, but based on the LE POSIX indicator. When a tool or utility is invoked in batch JCL or in a non-OMVS TSO session, LE sets POSIX(OFF) automatically and the tool or utility exhibits native OS/390 ("non-UNIX") behavior. When invoked from BPXBATCH, an rlogin shell, or TSO OMVS session, LE POSIX(ON) is set and the tool or utility exhibits typical UNIX behavior.

The differences in behavior between POSIX(OFF) and POSIX(ON) mainly concern file processing: POSIX(OFF) tends to access OS/390 data sets by data set name or DD statement name while POSIX(ON) tends to access files in the USS Hierarchical File System (HFS), possibly relying on environment variables such as ORACLE_HOME to establish a file's directory path.

This multiple-environment capability extends to customer-written Oracle applications on OS/390. The Oracle9*i* R2 program interface code, which supports both OCI and precompiler (Pro*) applications, can operate in both USS and native OS/390 address spaces. As with Oracle tools and utilities, differences in internal processing are based on the LE POSIX indicator. In customer applications, however, the application developer can control the POSIX setting at application compile/bind time or at execution time. If desired, the same behavior as that of Oracle tools and utilities--where the POSIX setting is determined automatically based on where the program is invoked--can be adopted. This makes it possible to write a single application that exhibits expected behavior whether it runs in batch, TSO, or USS.

Support for Workload Manager (WLM) Reclassification

Remote clients that access an Oracle database server through Oracle Net are dispatched on a lightweight unit of work called an enclave SRB within the Oracle Net address space. The performance characteristics of such work can be managed when used with WLM in goal mode. New with this release is the reclassification feature. When the Oracle Net startup option ENCLAVE(CALL) is specified, Oracle Net creates a new WLM enclave for

each new request from the client, enabling the use of response time goals and making multiple-period service classes possible. Refer to the *Oracle9i Enterprise Edition System Administration Guide for OS/390* for more information.

Support for Direct Outbound Net Connections

Enhancements to the implementation of Oracle Net on the platform permit OS/390 client applications connecting to remote Oracle servers to make their outbound network connections directly rather than relying on the Network service address space. This also applies to outbound connections from an Oracle RDBMS for database links or UTL_HTTP connections to remote servers. For additional information refer to the *Oracle9i Enterprise Edition System Administration Guide for OS/390*.

Support for OCI Callbacks

All OCI callback functions are now supported.

Unzip Utility for Installing Oracle Patches

An unzip utility is provided with Oracle9*i* Release 2 (9.2.0.1.0) for uncompressing Oracle patches downloaded from Oracle MetaLink. The .tar file containing the utility is `$ORACLE_HOME/unz532x0.tar`; it must be extracted into `$ORACLE_HOME/bin/` before use.

Unsupported Features and Functions

This release of Oracle9*i* for OS/390 does **not** include support for the following features and functions. Existing customers should also consult the *Oracle9i Enterprise Edition System Administration Guide for OS/390* for unsupported features or functions that should be taken into consideration during a migration or upgrade.

- Generic Connectivity using ODBC
- Oracle Data Mining
- Oracle Dynamic Services Server
- Oracle HTTP Server
- Oracle *inter*Media Audio, Video, Image, and Locator
- Oracle Internet Directory
- Oracle Java Server Pages
- Oracle Messaging Gateway
- Oracle Real Application Clusters Guard

Known Restrictions

This release of Oracle9*i* for OS/390 has some restrictions in the following features:

- Advanced Queuing
- ALTER DATABASE...RESIZE
- Automatic Recall of database data sets
- Native Compilation
- On-Line Analytical Processing (OLAP) API
- Oracle Access Manager for CICS
- Oracle C++ Call Interface (OCCI)
- Oracle Enterprise Manager Intelligent Agent
- Oracle External Tables
- Oracle JDBC OCI Driver
- Oracle Programmer
- Oracle Security Server
- Oracle Transparent Gateway Support
- Oracle Utilities
- Use of SYSOUT as a DDname
- UTL_FILE Support
- XML Database (XML DB)
- CEEBXITA

Advanced Queuing

Non-repudiation of Advanced Queuing messages sent across a firewall using Internet Document Access Protocol (IDAP) is not supported in this release.

ALTER DATABASE...RESIZE

Oracle database files on OS/390 are implemented as VSAM linear data sets. IBM does not provide a space release function for VSAM data sets, so using ALTER DATABASE...RESIZE to make a database file smaller has no effect. Database files can be resized larger, both manually (with ALTER) and automatically as they fill (when a tablespace is defined with AUTOEXTEND).

Automatic Recall of database data sets

Currently no support is available for automatically recalling OS/390 data sets that are used by the Oracle server if they have been migrated to other media by IBM's DFSMShsm or a similar product. This applies to the VSAM linear data sets (LDS) comprising the database as well as to non-VSAM data sets such as parameter files. All such data sets must be on disk in their original form at the time that they are opened by the server.

Native Compilation

Native compilation of Java or PL/SQL programs is not supported.

On-Line Analytical Processing (OLAP) API

The BI Beans API of the Oracle9i On-Line Analytical Processing option (OLAP) is not supported on OS/390.

Oracle Access Manager for CICS

This release of the Oracle Access Manager for CICS has the following restrictions.

- You can access only an Oracle9*i* Release 2 database.
- Oracle Access Manager for CICS does not support the Oracle Call Interface.

Multiple versions of Oracle Access Manager for CICS can coexist in the same CICS region as discussed in the "Configuring Access Manager for CICS" chapter of the *Oracle9i Enterprise Edition System Administration Guide for OS/390*.

Oracle C++ Call Interface (OCCI)

OCCI classes using the STL (Standard Template Library) are currently not supported. The classes in this category include string, wstring, and vector.

Oracle Enterprise Manager Intelligent Agent

The Intelligent agent shipped with this release requires patch 2387811. Until this patch is applied you can launch the Console standalone to perform simple database tasks by connecting directly to the target database.

Oracle External Tables

External Tables is an Oracle feature that allows you to process non-Oracle operating system files as Oracle database tables. On OS/390, the External Tables feature is limited to accessing files in the USS hierarchical file system (HFS).

Oracle JDBC OCI Driver

The Oracle JDBC OCI driver is not available with this release of Oracle9*i* for OS/390.

Oracle Programmer

Two components of Oracle Programmer will be provided at a later date; Oracle Access Manager for IMS TM, and Pro*FORTRAN.

Oracle Security Server

For Oracle Security Server, an Oracle9*i* server or client on OS/390 cannot be a participant in an Oracle security connection. However, an Oracle database server on OS/390 can be the security repository.

Oracle Transparent Gateway Support

If you are using a Version 4 or Version 8 Oracle Transparent Gateway, you must use an Oracle Net connection between an Oracle8*i* integrating server and the Gateway agent; cross-memory connections are not supported in this configuration. The Oracle9*i* Release 2 Gateway, when released, will support cross-memory connections for an OSDI database server. Refer to the "Migration" chapter of the *Oracle Transparent Gateway for IBM DB2 Installation and User's Guide* for more information.

Oracle Utilities

Certain utilities are not supported on OS/390. In addition to those documented in the *Oracle9i Enterprise Edition User's Guide for OS/390* and *Oracle9i Enterprise Edition System Administrator's Guide for OS/390*, Oracle Trace, dbverify, and dbnewid are not available.

Use of SYSOUT as a DDname

When Oracle tools and utilities are run in MVS Batch or TSO, the following files are used:

`DD:SYSIN` for input (stdin)

`DD:SYSOUT` for normal message output (stdout)

`DD:SYSERR` for error message output (stderr)

This makes `DD:SYSOUT` unavailable as an output file, for instance as precompiler `LNAME.` If it is necessary to use `DD:SYSOUT` as an output file, standard file redirection can be used to redirect stdout to a different file. Refer to *Oracle9i Enterprise Edition User's Guide for OS/390* for further information on file redirection.

UTL_FILE Support

The UTL_FILE PL/SQL package supports only HFS files on Oracle9*i* for OS/390.

XML Database (XML DB)

Certain XML DB components are not supported in this release: WebDAV access; HTTP access; FTP access; XML parser for C++.

CEEBXITA

All Oracle tools and utilities on OS/390 utilize the Language Environment initialization exit CEEBXITA, which is statically linked into each load module. This means that any installation- written version of CEEBXITA, including one that is dynamically fetched and intended for all LE applications, will not run when Oracle tools or utilities are executed. Customer-written Oracle applications on OS/390 are not affected by this and can use a customer-provided version of the exit if desired.

Errata

The following errors in the OS/390 documentation should be noted.

A97312-01: Oracle9i Enterprise Edition User's Guide for OS/390

In chapter 7, "Oracle Precompilers", subsection "Administering Pro*COB Under UNIX System Services" on pages 7-15 and 7-16, all instances of "proc" in text and command examples should be corrected to "procob".

Deprecated Functions

The following functions are deprecated and will not be supported in a future release of the Oracle Database for OS/390. Some of these functions will be delivered in Oracle9*i* Release 2 only if customer demand exists; contact Oracle Corporation for further information.

Database Auditing to SMF Records

The ability to write database audit records to SMF records will be removed. Audit records may still be written to the database.

Oracle7 OCI from COBOL, PL/I, Assembler, FORTRAN

The OCI interface supported in Oracle7 was callable from all OS/390-supported languages. The OCI interface delivered in Oracle8 is limited to C/C++. With the switch to IBM's LE in Oracle9*i* Release 2, OCI

can be used only from C/C++, and not any of the previously-supported languages.

OCI from Access Managers

The OCI interface is designed for sophisticated applications that need to carefully control all aspects of the execution environment. Applications that run under CICS and IMS TM are not permitted to manage various aspects of their environment. Oracle will continue to support Precompiler applications running in CICS and IMS TM, but will not continue to support OCI from these environments.

3480-based Distribution Media

Oracle for OS/390 will begin to be delivered on CD-ROM, and installed using the Oracle Universal Installer. Customers will need access to a PC or UNIX workstation with a CD-ROM drive, and with X server software, to complete the installation.

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Standards will continue to evolve over time, and Oracle Corporation is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For additional information, visit the Oracle Accessibility Program Web site at `http://www.oracle.com/accessibility/`.

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