# Oracle® Fusion Middleware

## What's New in Oracle WebLogic Server

14c (14.1.2.0)
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Oracle Fusion Middleware What's New in Oracle WebLogic Server, 14c (14.1.2.0)

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# Preface

This document describes new features for all components of Oracle WebLogic Server 14c (14.1.2.0.0).



## Audience

System administrators and operators responsible for monitoring and managing a WebLogic Server installation should use this document as a resource for understanding new features for all components of Oracle WebLogic Server 14c (14.1.2.0.0).

This document is relevant to all phases of a software project, from development through test and production phases.

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## Conventions

The following text conventions are used in this document:

| Convention | Meaning |
| --- | --- |
| **boldface** | Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary. |
| *italic* | Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values. |
| `monospace` | Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter. |

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# What's New in Oracle WebLogic Server 14.1.2.0.0

This document describes the new features and changed functionality in Oracle WebLogic Server 14.1.2.0.0.
This chapter includes the following topics:

- JDK 17 and 21 Certification
  Oracle WebLogic Server 14c (14.1.2.0.0) is certified for use with JDK 17, in addition to JDK 21. Supported Oracle WebLogic Server 14c (14.1.2.0.0) clients are certified for use with JDK 17.0.12 and JDK 21.0.4. A certified JDK is required for running the WebLogic Server installation program.
- Upgrade Improvements
  Oracle WebLogic Server 14c (14.1.2.0.0) provides new upgrade tools that simplify and automate the upgrade of WebLogic applications.
- Runtime Improvements
  Oracle WebLogic Server 14c (14.1.2.0.0) builds on support from prior WebLogic Server versions to improve the reliability, availability, scalability, and performance of WebLogic Server applications with regard to the use of clustered environments, Oracle database features, and multi data center architectures.
- Manageability Improvements
  Oracle WebLogic Server 14c (14.1.2.0.0) continues to provide new management features that simplify the configuration, monitoring, and ongoing management of WebLogic Server domains and applications.
- Documentation Update History
  The update history of the Oracle WebLogic Server documentation library summarizes the updates that have been made to various user and reference guides, as well as online help, for 14c (14.1.2.0.0).
- Standards Support, Supported Configurations, and WebLogic Server Compatibility
  Oracle WebLogic Server 14c (14.1.2.0.0) provides Jakarta EE 8 full platform support, Java SE 17 and 21 certification, support for web services standards, support on multiple operating system and JVM platforms, and support for several security standards.

## JDK 17 and 21 Certification

Oracle WebLogic Server 14c (14.1.2.0.0) is certified for use with JDK 17, in addition to JDK 21. Supported Oracle WebLogic Server 14c (14.1.2.0.0) clients are certified for use with JDK 17.0.12 and JDK 21.0.4. A certified JDK is required for running the WebLogic Server installation program.

JDK 17 introduces many new features, optimizations, and bug fixes that can enhance the performance and stability of your applications. These enhancements stem from a better garbage collector, enhancements to the JIT compiler, and improved class data sharing, leading to faster startup times and better overall performance. JDK 21 ushers in 15 features, including a key encapsulation mechanism API, and previews of string templates and structured concurrency. JDK 21 is the latest long-term support release of Java SE Platform.

See the following topics:

- The Oracle Fusion Middleware Supported System Configurations page on Oracle Technology Network.
- The Java Downloads page on Oracle Technology Network from which Oracle JDK 17 and JDK 21 are available, including release notes and installation instructions: `https://www.oracle.com/java/technologies/downloads/`.

  See also the Java Platform Group Product Management blog, Understanding the Server JRE.
- Roadmap for Verifying Your System Environment in *Installing and Configuring Oracle WebLogic Server and Coherence*.

# Upgrade Improvements

Oracle WebLogic Server 14c (14.1.2.0.0) provides new upgrade tools that simplify and automate the upgrade of WebLogic applications.

These features are described in the following sections:

- WebLogic Migration Analysis Tool
  The WebLogic Migration Analysis Tool identifies classes and APIs that are no longer used so that you can address any changes required for the application to successfully deploy.
- OpenRewrite Recipes
  Use OpenRewrite recipes to simplify migrating your WebLogic applications to a new version of WebLogic and Java.

## WebLogic Migration Analysis Tool

The WebLogic Migration Analysis Tool identifies classes and APIs that are no longer used so that you can address any changes required for the application to successfully deploy.

The new WebLogic Migration Analysis Tool is a command line utility that identifies APIs in a WebLogic application that have been removed or are no longer used in Oracle WebLogic Server 14c (14.1.2.0.0).

For more information, see Identifying Unused APIs in *Upgrading Oracle WebLogic Server*.

## OpenRewrite Recipes

Use OpenRewrite recipes to simplify migrating your WebLogic applications to a new version of WebLogic and Java.

Oracle WebLogic OpenRewrite recipes implement a Rewrite module that performs common tasks when migrating your WebLogic applications to a new version of WebLogic and Java.

For more information about using these recipes for your own WebLogic applications, see the Getting Started README located in the public WebLogic Rewrite GitHub repository at the WebLogic OpenRewrite Project.

# Runtime Improvements

Oracle WebLogic Server 14c (14.1.2.0.0) builds on support from prior WebLogic Server versions to improve the reliability, availability, scalability, and performance of WebLogic Server

applications with regard to the use of clustered environments, Oracle database features, and multi data center architectures.

These improvements are described in the following topics:

- Security
- Jakarta Messaging (JMS)
- JDBC Data Sources
- Intelligent Load Balancing

# Security

The new security features provided in Oracle WebLogic Server 14c (14.1.2.0.0) are described in the following sections:

- Secured Production Mode Enabled by Default
  WebLogic Server provides different domain modes that determine default settings for security. In order from least to most secure, the domain modes are development, production, and secured production mode. As of Oracle WebLogic Server 14c (14.1.2.0.0), when you select production mode, it automatically enables the more secure default settings of secured production mode.
- OpenID Connect Authentication
  Oracle WebLogic Server 14c (14.1.2.0.0) adds a new authentication and identity assertion provider, the WebLogic OpenID Connect provider.
- Per Domain CA
  Oracle WebLogic Server 14c (14.1.2.0.0) overhauls the demonstration certificate authority (CA) to provide a more secure keystore implementation.
- SAML Single Sign On Enhancements
  Oracle WebLogic Server 14c (14.1.2.0.0) improves its SAML Single Sign On (SSO) functionality with the following enhancements:
- Jipher JCE Provider
  Oracle WebLogic Server 14c (14.1.2.0.0) adds Jipher, an Oracle developed JCE provider.
- WLST Support for Two-Way TLS
  Oracle WebLogic Server 14c (14.1.2.0.0) adds support for WLST clients to connect to WebLogic Server instances with two-way TLS enabled.
- Local Domain Security for JTA Communication
  Oracle WebLogic Server 14c (14.1.2.0.0) enhances the security options for protecting JTA communication between servers within the same domain.

## Secured Production Mode Enabled by Default

WebLogic Server provides different domain modes that determine default settings for security. In order from least to most secure, the domain modes are development, production, and secured production mode. As of Oracle WebLogic Server 14c (14.1.2.0.0), when you select production mode, it automatically enables the more secure default settings of secured production mode.

For more information on the different default values for each domain mode, see Understand How Domain Mode Affects the Default Security Configuration in *Securing a Production Environment for Oracle WebLogic Server*.

## OpenID Connect Authentication

Oracle WebLogic Server 14c (14.1.2.0.0) adds a new authentication and identity assertion provider, the WebLogic OpenID Connect provider.

The WebLogic OpenID Connect provider combines authentication and identity assertion into a single provider and allows WebLogic Server to delegate authentication for web applications to external authorization servers that follow the OAuth 2.0 and OpenID Connect standards. For more information, see Configuring the OpenID Connect Provider in *Administering Security for Oracle WebLogic Server*.

## Per Domain CA

Oracle WebLogic Server 14c (14.1.2.0.0) overhauls the demonstration certificate authority (CA) to provide a more secure keystore implementation.

The demo CA is now unique to each new domain rather than shared across all installations of WebLogic Server. Additionally, the identity and trust keystores are now in PKCS12 format.

The validity periods for the new demo CA and keystores are shortened compared to previous releases. They now expire after 5 years and 6 months, respectively.

The demo CA and keystores continue to be for development and testing purposes only. We strongly discourage you from using them in production environments.

For more information on configuring keystores, see Using Keystores and Certificates in a Development Environment in *Administering Security for Oracle WebLogic Server*.

## SAML Single Sign On Enhancements

Oracle WebLogic Server 14c (14.1.2.0.0) improves its SAML Single Sign On (SSO) functionality with the following enhancements:

- Support for using WLST Offline to configure SAML SSO. For more information, see Configuring SAML Single Sign On in *Understanding the WebLogic Scripting Tool*.
- Support for configuring SAML Single Logout on WebLogic Server instances that act as Service Providers. For more information, see Configure SAML Single Logout in *Administering Security for Oracle WebLogic Server*.

## Jipher JCE Provider

Oracle WebLogic Server 14c (14.1.2.0.0) adds Jipher, an Oracle developed JCE provider.

The Jipher JCE provider is included with WebLogic Server by default. It is based on OpenSSL 3.0 and is natively FIPS compliant. The Jipher JCE provider is located in `jipher-jce.jar`, which is in the WebLogic Server classpath by default.

For more information, see Using the Jipher JCE Provider in *Administering Security for Oracle WebLogic Server*.

## WLST Support for Two-Way TLS

Oracle WebLogic Server 14c (14.1.2.0.0) adds support for WLST clients to connect to WebLogic Server instances with two-way TLS enabled.

By default, WebLogic Server is configured with one-way TLS, where only the server must present a certificate to the client. When two-way TLS is enabled, clients (including WLST) are required to present a certificate to the server to complete the TLS connection.

For information on how to configure WLST, see Connecting to Servers with Two-Way TLS Enabled in *Understanding the WebLogic Scripting Tool*.

### Local Domain Security for JTA Communication

Oracle WebLogic Server 14c (14.1.2.0.0) enhances the security options for protecting JTA communication between servers within the same domain.

Local domain security for JTA uses a credential mapping provider to establishe trust between servers within a domain so that global transactions may occur across secure communication channels.

For more information on local domain security, see Local Domain Security in *Developing JTA Applications for Oracle WebLogic Server*.

## Jakarta Messaging (JMS)

Oracle WebLogic Server 14c (14.1.2.0.0) continues to provide enhancements to the JMS component, including support for .Net Core on Linux and Windows, and automatic rebalancing of running, cluster-targeted JMS instances.

These features are described in the following sections:

- Cluster-Targeted JMS Automatic Rebalance
- Support for .Net Core on Linux and Windows

### Cluster-Targeted JMS Automatic Rebalance

Oracle WebLogic Server 14c (14.1.2.0.0) provides a new WebLogic JMS option to automatically rebalance running, cluster-targeted JMS instances that are configured with a Migration Policy of `Always` or `On-Failure` when the system is idle and the instances are unevenly distributed. See `RebalancedEnabled` in Table 5-1 of Additional Configuration Options for JMS Services in *Administering JMS Resources for Oracle WebLogic Server*.

### Support for .Net Core on Linux and Windows

Oracle WebLogic Server 14c (14.1.2.0.0) adds full support for .Net Core on Linux and Windows.

See Installing the WebLogic JMS .NET Client and Client Side in *Developing JMS .NET Client Applications for Oracle WebLogic Server*.

## JDBC Data Sources

Oracle WebLogic Server 14c (14.1.2.0.0) includes the following new and changed features:

- TNSnames and OraWallet Management
- Oracle DB Sharding with UCP Native Data Source
- Diagnostic and Logging Enhancements
- Support for JDBC Driver Extensions

## TNSnames and OraWallet Management

Oracle WebLogic Server 14c (14.1.2.0.0) provides enhancements to manage multiple Oracle wallet files and configure JDBC data sources to handle domains connecting to connecting to Oracle Databases and Autonomous Databases and allow the domain to be easily migrated.

Now, JDBC data sources can employ DBClientData modules, which may contain `tnsnames.ora` files, wallet files, server trust keystores, client identity keystores, basically all the database client connection data used by a data source, collocated in a new type of deployment module. DBClientData modules make it easy to update database connection strings and passwords without requiring WebLogic data source configuration changes; they make it easier to do failover and switchover for disaster recovery, high availability, for moving domains and database client data, and for migrating domains to OCI.

Using WebLogic deployment tools, you can deploy, distribute, undeploy, and redeploy DBClientData modules. For more information, see Use DBClientData Modules for Portability in *Administering JDBC Data Sources for Oracle WebLogic Server* and Deploying Oracle Wallet Files for JDBC Modules in *Deploying Applications to Oracle WebLogic Server*.

## Oracle DB Sharding with UCP Native Data Source

Oracle WebLogic Server 14c (14.1.2.0.0) provides support for sharding with native UCP. For more information, see Using Universal Connection Pool Data Sources and Oracle Sharding Support in *Administering JDBC Data Sources for Oracle WebLogic Server*.

## Diagnostic and Logging Enhancements

Oracle WebLogic Server 14c (14.1.2.0.0) provides support to diagnose failures by setting the property values. For more information, see Diagnosing First Failure in *Administering JDBC Data Sources for Oracle WebLogic Server*.

## Support for JDBC Driver Extensions

Oracle WebLogic Server 14c (14.1.2.0.0) provides support for JDBC Driver Extensions that can be extended through a Java Service Provider Interface (SPI) which provides the URL, user, password, and JDBC parameters from an external source. The benefits of using JDBC Extensions is that it centralizes where the database information can be updated with no change to the application or the WebLogic Data Source configuration. For more information, see Using Oracle JDBC Driver Extensions in *Administering JDBC Data Sources for Oracle WebLogic Server*.

# Intelligent Load Balancing

Oracle WebLogic Server 14c (14.1.2.0.0) provides support for Oracle HTTP Server (OHS) intelligent load balancing that's based on the overall health of server instances, while making routing decisions.

Intelligent load balancing allows Oracle HTTP Server to more evenly distribute traffic across a pool of servers according to their actual capacity, for improved reliability. WebLogic Server provides a default health score calculation based on CPU load, heap usage, Work Manager stuck threads count, and data source pending connection request count. When requested, WebLogic Server instances send a health score to OHS based on metrics and MBeans. OHS then routes requests to the healthiest sever instance. For more information, see Support for

Intelligent Load Balancingin *Using Oracle WebLogic Server Proxy Plug-Ins* and Health Score-Based Intelligent Routing in *Administering Server Environments for Oracle WebLogic Server*.

# Manageability Improvements

Oracle WebLogic Server 14c (14.1.2.0.0) continues to provide new management features that simplify the configuration, monitoring, and ongoing management of WebLogic Server domains and applications.

These features are described in the following section:

- WebLogic Remote Console
  Oracle WebLogic Server 14c (14.1.2.0.0) provides the WebLogic Remote Console, a lightweight, open source console that you can use to manage domain configurations of WebLogic Server Administration Servers or WebLogic Deploy Tooling (WDT) metadata models.

## WebLogic Remote Console

Oracle WebLogic Server 14c (14.1.2.0.0) provides the WebLogic Remote Console, a lightweight, open source console that you can use to manage domain configurations of WebLogic Server Administration Servers or WebLogic Deploy Tooling (WDT) metadata models.

The WebLogic Remote Console provides a WebLogic Server administration GUI that enables REST-based access to WebLogic management information, in alignment with current cloud-native trends.

For more information, see the Oracle WebLogic Remote Console Online Help. WebLogic Remote Console does not follow the same release schedule as WebLogic Server. To stay up-to-date on the latest features and fixes, refer to the WebLogic Remote Console GitHub Repository.

> **Note:**
>
> The WebLogic Server Administration Console, a GUI for managing WebLogic domains, was removed in 14.1.2.0.0. The WebLogic Remote Console provides comparable functionality to the removed Administration Console.

# Documentation Update History

The update history of the Oracle WebLogic Server documentation library summarizes the updates that have been made to various user and reference guides, as well as online help, for 14c (14.1.2.0.0).

The following table summarizes updates made to the Oracle WebLogic Server documentation library for its initial 14.1.2.0.0 release:

| Date | Description of Updates |
|---|---|
| December 2024 | Initial release. Library changes include:<br>• Added the topic, "Use DBClientData Modules for Portability," in *Administering JDBC Data Sources for Oracle WebLogic Server*. DBClientData modules provide a way to transfer `tnsnames.ora` files, wallet files, keystore and truststore files, basically all the database client connection data used by a data source, to the machine or Kubernetes Pod where a WebLogic domain is running.<br>• Added the topic, "Health Score-Based Intelligent Routing," in *Administering Server Environments for Oracle WebLogic Server*, which describes how the default health score of a clustered Managed Server instance is calculated.<br>• Enhanced the topic, "Configure Secured Production Mode," in *Securing a Production Environment for Oracle WebLogic Server*, to describe how changes to production mode now automatically enable the stricter security settings of secured production mode, by default.<br>• Added the topic, "Configuring SAML Single Sign On," in *Understanding the WebLogic Scripting Tool*, which describes using WLST Offline to configure SAML SSO.<br>• Added the topic, "Configuring the OpenID Connect Provider," in *Administering Security for Oracle WebLogic Server*, which describes the new OpenID Connect authentication and identity assertion provider.<br>• Added the topic, "Identifying Unused APIs" in *Upgrading Oracle WebLogic Server*, which describes a new command-line utility that identifies APIs in WebLogic applications that are no longer used in Oracle WebLogic Server.<br>• Added the topic, "Diagnosing First Failure " in *Administering JDBC Data Sources for Oracle WebLogic Server* which describes how to diagnose failures by setting the property values<br>• Added a new guide, *Oracle WebLogic Remote Console Online Help*. |

# Standards Support, Supported Configurations, and WebLogic Server Compatibility

Oracle WebLogic Server 14c (14.1.2.0.0) provides Jakarta EE 8 full platform support, Java SE 17 and 21 certification, support for web services standards, support on multiple operating system and JVM platforms, and support for several security standards.

The following sections describe WebLogic Server standards support, supported system configuration, WebLogic Server compatibility, WebLogic Server installation support:

- Standards Support
- Supported Configurations
- Licensing Information
- WebLogic Server Compatibility
- Database Interoperability

## Standards Support

WebLogic Server 14c (14.1.2.0.0) supports the following standards and versions:

- Jakarta Standards
- Web Services Standards

- Other Standards
- Jython Version

## Jakarta Standards

Table 1-1 lists currently supported Jakarta standards.

> **Note:**
>
> See WebLogic Server Security Standards in *Administering Security for Oracle WebLogic Server* for the currently supported security standards, such as JAAS, JASPIC, JACC, JCE, the Jakarta Security API, and so forth.

**Table 1-1 Jakarta Standards Support**

| Standard | Version |
|---|---|
| Jakarta JSON Binding | 1.1 |
| Jakarta Security | 1.0 |
| Jakarta Batch | 1.0 |
| Jakarta Contexts and Dependency Injection | 2.0, 1.1 |
| Jakarta Dependency Injection | 1.0 |
| Jakarta Concurrency | 1.1 |
| Jakarta Expression Language (EL) | 3.0, 2.2, 2.1, 2.0<br>Only JSP 2.0 and greater supports Expression Language 2.x. |
| Jakarta JSON Processing | 1.1, 1.0 |
| Jakarta XML Web Services | 2.3, 2.2, 2.1, 2.0 |
| Jakarta RESTful Web Services (JAX-RS) | 2.1, 2.0 |
| Jakarta WebSocket (WebSocket) | 1.1 |
| JavaBeans Activation Framework | 1.1 |
| Jakarta EE | 8.0 |
| Jakarta Deployment | 1.2 |
| Jakarta Bean Validation | 2.0, 1.1 |
| Jakarta Annotations | 1.3, 1.2 |
| Jakarta Connectors | 1.7 |
| Jakarta Enterprise Beans (EJB) | 3.2, 3.1, 3.0, 2.1, 2.0, and 1.1 |
| Jakarta Enterprise Web Services | 1.4, 1.3, 1.2, 1.1 |
| Jakarta Interceptors | 1.2 |
| JDBC | 4.3 |
| Jakarta Messaging (JMS) | 2.0, 1.1, 1.0.2b |
| Java Naming and Directory Interface (JNDI) | 1.2 |
| Jakarta Server Faces (JSF) | 2.3, 2.2, 2.1.*, 2.0, 1.2, 1.1 |

**Table 1-1 (Cont.) Jakarta Standards Support**

| Standard | Version |
|---|---|
| Jakarta Server Pages | 2.3, 2.2, 2.1, 2.0, 1.2, and 1.1<br>JSP 1.2. and 1.1 include Expression Language (EL), but do not support EL 2.x or greater. |
| Jakarta Managed Beans | 1.0 |
| Jakarta Servlet | 4.0, 3.1, 3.0, 2.5, 2.4, 2.3, and 2.2 |
| Java RMI | 1.0 |
| Jakarta Mail | 1.6, 1.5 |
| Jakarta Transactions (JTA) | 1.3 |
| JAX-P | 1.4.4 |
| JAX-R | 1.0 |
| JDKs | 17.0 and 21.0<br>See JDK 17 and 21 Certification for details. |
| JMX | 1.4 |
| JPA | 2.2, 2.1, 2.0., 1.0 |
| Jakarta Management (JSR-77) | 1.1 |
| Jakarta Standard Tag Library (JSTL) | 1.2 |
| Managed Beans | 1.0 |
| OTS/JTA | OTS 1.2 and JTA 1.3 |
| RMI/IIOP | 1.0 |
| Jakarta SOAP with Attachments (SAAJ) | 1.3, 1.2 |
| Streaming API for XML (StAX) | 1.0 |
| Web Services Metadata for the Java Platform | 2.1, 2.0, 1.1 |

## Web Services Standards

For the current list of standards supported for WebLogic web services, see Features and Standards Supported by WebLogic Web Services in *Understanding WebLogic Web Services for Oracle WebLogic Server*.

## Other Standards

Table 1-2 lists other standards that are supported in WebLogic Server 14c (14.1.2.0.0).

> **Note:**
>
> See WebLogic Server Security Standards in *Administering Security for Oracle WebLogic Server* for additional information on standards relating to security, such as SSL, TLS, and XACML, and so forth.

**Table 1-2 Other Standards**

| Standard | Version |
|---|---|
| X.509 | v3 |
| LDAP | v3 |
| TLS | v1.1, v1.2 |
| HTTP | 2.0, 1.1 |
| SNMP | SNMPv3 |
| xTensible Access Control Markup Language (XACML) | 2.0 |
| Partial implementation of Core and Hierarchical Role Based Access Control (RABC) Profile of XACML | 2.0 |
| Internet Protocol (IP) | Versions:<br>• v6<br>• v4 |

For more information about IPv6 support for all Fusion Middleware products, see the Oracle Fusion Middleware Supported System Configurations page on Oracle Technology Network.

## Jython Version

WLST supports Jython. As of Oracle WebLogic Server 14.1.1.0.0, the Jython version has been upgraded from version 2.2.1 to the current version 2.7.1. See Behavior Changes in Jython version 2.7 in *Release Notes for Oracle WebLogic Server* for issues caused by the Jython version upgrade and their workarounds.

# Supported Configurations

For the most current information on supported configurations, see the Oracle Fusion Middleware Supported System Configurations page on Oracle Technology Network.

# Licensing Information

For the most current information on Oracle Fusion Middleware Licensing, see *Licensing Information User Manual*.

# WebLogic Server Compatibility

For the most current information on compatibility between the current version of WebLogic Server and previous releases, see WebLogic Server Compatibility in *Understanding Oracle WebLogic Server*.

# Database Interoperability

The certification matrices and My Oracle Support Certifications define the following terms to differentiate between types of database support:

- Application Data Access
- Database Dependent Features

## Application Data Access

Application Data Access refers to those applications that use the database for data access only and do not take advantage of WebLogic Server features that are database dependent. WebLogic Server support of databases used for application data access only are less restrictive than for database dependent features.

WebLogic Server provides support for application data access to databases using JDBC drivers that meet the following requirements:

- The driver must be thread safe.
- The driver must implement standard JDBC transactional calls, such as `setAutoCommit()` and `setTransactionIsolation()`, when used in transactional aware environments.

Note the following restrictions:

- JDBC drivers that do not implement serializable or remote interfaces cannot pass objects to an RMI client application.
- Simultaneous use of automatic database connection failover and load balancing and global transactions (XA) with a highly-available (HA) DBMS architecture is supported with Oracle DB RAC only, and only for the Oracle DB RAC versions indicated on the **System** worksheet. These HA capabilities are only supported by Active GridLink for RAC and Multi Data Sources with RAC. These HA capabilities are not supported on other Oracle DB RAC versions or with other HA DBMS technologies on other non-Oracle DB products. Multi Data Sources are supported on other Oracle DB versions, and with non-Oracle DB technologies, but not with simultaneous use of automatic failover and load balancing and global transactions.
- Application data access to databases meeting the restrictions articulated above is supported on other Oracle DB versions, in addition to those documented in the certification matrix.
- WebLogic Type 4 JDBC drivers also support the following databases. For these databases, WebLogic Server supports application data access only, and does not support WebLogic Server database dependent features:
  - IBM DB2 11.5

## Database Dependent Features

When WebLogic Server features use a database for internal data storage, database support is more restrictive than for application data access. The following WebLogic Server features require internal data storage:

- Container Managed Persistence (CMP)
- Rowsets
- JMS/JDBC Persistence and use of a WebLogic JDBC Store
- JDBC Session Persistence
- RDBMS Security Providers
- Database Leasing (for singleton services and server migration)
- JTA Logging Last Resource optimization
- JDBC TLog

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# Deprecated and Removed Functionality

This document describes the deprecated and removed functionality in Oracle WebLogic Server 14c.

This chapter includes the following topics:



## Deprecated Functionality in Oracle WebLogic Server 14c (14.1.x)

The following functionality and components have been deprecated in WebLogic Server 14c (14.1.x).

For the functionality and components deprecated in WebLogic Server 12c (12.2.1.x), see Deprecated Functionality in Oracle WebLogic Server 12c (12.2.1.x) in *What's New in Oracle WebLogic Server*.



### SAML 1.1

The SAML 1.1 Identity Assertion provider, the SAML 1.1 Credential Mapping provider, and related configuration and services for SAML 1.1 federation services, are deprecated as of WebLogic Server 14.1.2.0.0. Oracle recommends using SAML 2.0.

### Shared Pooling Data Sources

Shared Pooling Data Sources is deprecated as of WebLogic Server 14.1.2.0.0.

# Communication Between OAM Servers and WebGates

The Oracle Access Protocol (OAP) over TCP communication between OAM Servers and 14.1.2.0.0 WebGates has been deprecated in 14.1.2.0.0. Previous Webgates versions, such as 12.2.1.4.0, can continue to use all communication modes with OAM Server 14.1.2.0.0. Note that OAM Server continues to support all communication modes using OAP over TCP, as well as OAP over REST.

## Oracle WebLogic Server SCA

Support for Oracle WebLogic Server SCA is deprecated in WebLogic Server 14c (14.1.2.0.0).

## ServletServlet

`ServletServlet` is deprecated as of version 14.1.1.0.0.

## WebLogic Authorization and WebLogic Role Mapping Providers

The WebLogic Authorization provider, which is referred to as the DefaultAuthorizer, and the WebLogic Role Mapping provider, which is referred to as the DefaultRoleMapper, have been deprecated in WebLogic Server 14c (14.1.1.0.0). Beginning with WebLogic Server 9.1, the XACML Authorization provider and the XACML Role Mapping provider are the default providers. For more information, see Configuring Authorization and Role Mapping Providers in *Administering Security for Oracle WebLogic Server*.

## WebLogic HTTP Proxy Servlet

WebLogic `HttpProxyServlet` is deprecated as of version 14.1.1.0.0.

Oracle recommends to use external load balancers such such HTTP load balancing functionality. Options include use of Oracle HTTP Server, Apache Web Server, hardware load balancers, OCI load balancer, or native Kubernetes load balancers when running in Kubernetes.

## WebLogic JMS Reconnect

The WebLogic JMS Automatic Reconnect feature is deprecated as of version 14.1.1.0.0. The JMS Connection Factory configuration, `javax.jms.extension.WLConnection` API, and `javax.jms.extension.JMSContext` API for this feature will be removed or ignored in a future release. Oracle recommends that client applications handle connection exceptions as described in Client Resiliency Best Practices in *Administering JMS Resources for Oracle WebLogic Server*.

## HTTP Publish-Subscribe Server

The HTTP Publish-Subscribe Server is deprecated in WebLogic Server 14c (14.1.2.0.0).

## Oracle Enterprise Metadata Management (OEMM)

Oracle Enterprise Metadata Management (OEMM) has been deprecated. OEMM 12.2.x will be the last released version. OEMM will not be included in FMW 14.1.2.0.0.

# Removed Functionality and Components

Several components, deprecated in previous versions of WebLogic Server, are removed from Oracle WebLogic Server 14c (14.1.2.0.0).



## ServletServlet

`ServletServlet` has been removed from WebLogic Server as of version 14.1.2.0.0.

## Node Manager Properties

Node Manager properties `startscriptname` and `startscriptenabled`, which were deprecated in WebLogic Server 12.1.3.0 but remained fully supported in WebLogic Server 14.1.1.0.0, have been removed from WebLogic Server as of version 14.1.2.0.0.

## WebLogic JMS Reconnect

The configurable WebLogic JMS Reconnect settings on JMS Connection Factories and the corresponding reconnection `weblogic.jms.extension.WLConnection` and `weblogic.jms.extension.JMSContext` APIs have been removed from WebLogic Server as of version 14.1.2.0.0.

## SNMPv1 and SNMPv2

SNMPv1 and SNMPv2 protocols have been removed from WebLogic Server. As of version 14.1.2.0.0, only SNMPv3 is supported. For more information, see Security for SNMP in *Monitoring Oracle WebLogic Server with SNMP*.

## Log4j

Log4j v1 has been removed from WebLogic Server 14.1.2.0.0. The replacement of the WebLogic Server Logging Service by Log4j logging is not supported.

## WebLogic Server Administration Console

The WebLogic Server Administration Console has been removed from WebLogic Server as of version 14.1.2.0.0. For an overview of other WebLogic Server administration tools, see Summary of System Administration Tools and APIs in *Understanding Oracle WebLogic Server*.

For the most similar experience to the Administration Console, use the WebLogic Remote Console. See the *Oracle WebLogic Remote Console Online Help*.

## Dell (RSA) BSAFE Security Providers

The Dell BSAFE security providers, Cert-J, Crypto-J, and SSL-J, are no longer supported in WebLogic Server and have been removed from WebLogic Server as of version 14.1.2.0.0.

> **Note:**
>
> Dell BSAFE was formerly known as RSA BSAFE.

## nCipher JCE Provider

The nCipher JCE provider does not support JDK 17 or 21 and therefore is not compatible with WebLogic Server 14.1.2.0.0.

## Unsupported LDAP Authentication Providers

The Oracle Virtual Directory, iPlanet (for Oracle Directory Server Enterprise Edition), and Novell LDAP authentication providers were removed in WebLogic Server 14.1.2.0.0.

For a list of supported, alternative LDAP providers, see LDAP Authentication Providers Included in WebLogic Server in *Administering Security for Oracle WebLogic Server*.

## Oracle Kodo JPA

Oracle Kodo JPA has been removed in WebLogic Server 14.1.2.0.0.

## WebLogic SIP Server

The WebLogic SIP Server (`weblogic_sip.jar`) has been removed from WebLogic Server 14.1.2.0.0.