

**Oracle® Coherence**

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# Preface

This document describes changes and enhancements that have been made to Oracle Coherence for the 3.6.1 release.

## Audience

This document is intended for users of Oracle Coherence.

## Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible to all users, including users that are disabled. 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. Accessibility standards will continue to evolve over time, and Oracle 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 more information, visit the Oracle Accessibility Program Web site at <http://www.oracle.com/accessibility/>.

### Accessibility of Code Examples in Documentation

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.

### Accessibility of Links to External Web Sites in Documentation

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## Related Documents

For more information, see the following documents in the Oracle Coherence documentation set:

- *Getting Started with Oracle Coherence*
- *Developer's Guide for Oracle Coherence*
- *Client Guide for Oracle Coherence*
- *Tutorial for Oracle Coherence*
- *User's Guide for Oracle Coherence\*Web*
- *Integration Guide for Oracle Coherence*

## Conventions

The following text conventions are used in this document:

<b>Convention</b>	<b>Meaning</b>
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	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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# Technical Changes and Enhancements

This chapter describes the changes and enhancements made to the Oracle Coherence product for the 3.6.1 release. This document is accurate at the time of publication. Oracle updates the release notes periodically after the software release.

- [Download and Install the Latest Software Patch](#)
- [Oracle Coherence for Java 3.6.1](#)
- [Oracle Coherence for .NET 3.6.1](#)
- [Oracle Coherence for C++ 3.6.1](#)
- [Known Problems and Workarounds](#)

## Download and Install the Latest Software Patch

Go to My Oracle Support to download the latest software patches.

<https://support.oracle.com>

See the README file in the patch distribution for up-to-date information on the software fixes provided by the patch.

1. Login to My Oracle Support.
2. Click the **Patches & Updates** tab.
3. Under the Patch Search tab, select **Product or Family (Advanced Search)**, and select the **Include all patches in a product family** check box.
4. Enter **Oracle Coherence** as the product, select the platform and release, and click **Search**.

The list of currently available patches for Oracle Coherence is returned.

## Oracle Coherence for Java 3.6.1

New features, improvements, and bug fixes have been added to these Oracle Coherence for Java components:

- [Management and Monitoring Enhancements and Fixes](#)
- [Partitioned Cache Enhancements and Fixes](#)
- [TCMP Enhancements and Fixes](#)
- [Coherence\\*Extend Framework Enhancements and Fixes](#)
- [Coherence\\*Web Enhancements and Fixes](#)

- [Management Framework Enhancements and Fixes](#)
- [Serialization Framework Enhancements and Fixes](#)
- [Other Enhancements and Fixes](#)

## Management and Monitoring Enhancements and Fixes

- Fixed an issue where concurrent management invocable execution and `CacheFactory.shutdown()` caused a deadlock.
- Fixed an issue where MBeans registered by `SafeCluster` were not unregistered when cluster stopped abnormally.

## Partitioned Cache Enhancements and Fixes

- Fixed an issue that can cause a filter-based `invoke()` method calls to hang when the filter throws an exception.
- Fixed issue causing endless "Repeating \*Request due to the re-distribution of `PartitionSet{...}`" messages during concurrent `destroyCache()` method calls.
- Fixed an issue causing indices built by the `IndexAwareExtractor` method to not be transferred correctly during failback.
- Fixed a bug that could result in indexes (and `keySet` iterators) becoming corrupt or missing entries under heavy eviction.
- Fixed a bug that could cause spurious "null" aggregation results during a cache server shutdown.
- Fixed an issue that could result in storage-disabled clients being unable to communicate with storage nodes.
- Fixed an issue on sorted indices that could cause a `NullPointerException` during filter-based queries.

## TCMP Enhancements and Fixes

- Fixed an issue that caused well known address (WKA) clusters to combine or panic due to socket address re-use.
- Increased the ping-timeout used by the `IPMonitor` class to accommodate some Windows environments.
- The `IPMonitor` senior member ping on startup is now bypassed for co-located members, to accommodate some Windows environments.
- Fixed an issue to ensure that default address selection is deterministic in multi-network interface card (NIC) environments.

## Coherence\*Extend Framework Enhancements and Fixes

- Fixed an issue where abnormal termination of a cache service could cause Coherence\*Extend clients to lose events.
- Hardened the `ProxyService` class against exceptions thrown by custom proxy implementations.
- Resolved an intermittent issue where a new TCMP/SSL connection could trigger a `BufferOverflowException`.

- Fixed an issue that prevented clients from transparently reconnecting after being rejected by a proxy server.
- Provided a more detailed exception message when a client fails to connect to a proxy server.

## Coherence\*Web Enhancements and Fixes

- Fixed an issue causing the `LimitFilter` class to return an inconsistent set of results.
- Coherence Web now supports IBM WebSphere 7.
- Fixed the issue preventing session information for each session from being displayed in session tab.
- The `Session.isNew()` method is not consistent with other session persistence types in WebLogic Server.

## Management Framework Enhancements and Fixes

- Fixed an issue that could lead to version dependency becoming orphaned if commit/rollback fails after updating entries but before releasing dependency.

## Serialization Framework Enhancements and Fixes

- Removed validation logic in Portable Object Format (POF) date deserialization that limited the year range to between 1582 and 2199.
- Fixed the issue where `AbstractInvocable` result was not required to implement the `Serializable` interface.
- Fixed the issue where `CompositeKey` had no entry in the `coherence-pof-config.xml` file.

## Other Enhancements and Fixes

- Fixed an issue with Coherence Query Language's `backup` and `restore` commands so that it now supports objects in Portable Object Format (POF).
- Fixed race condition that could result in spurious wrong results appearing in a `ContinuousQueryCache` call.
- Fixed an issue that results in NPE during cluster start up if the system parameter `port-auto-adjust=false` and the unicast listener port is unavailable.
- Reduced contention on `BackingMapManagerContext.getBackingMap()` method.
- Fixed an issue that could result in `NullPointerException` after Guardian recovery or termination.
- Fixed issue causing the maintenance of sorted indices to be extremely slow.
- Fixed an issue causing service-level Guardian configuration to be ignored.
- Corrected the `listener` element definition in `cache-config.dtd`.
- Fixed an issue that caused aggressive write-behind operations to miss one entry per batch.

## Oracle Coherence for .NET 3.6.1

The following is a list of new features, improvements, and bug fixes in Oracle Coherence for .NET 3.6.1:

- Fixed an issue where port `PofExtractor` failed to extract values from uniform collections to C++ and .NET.
- Provided a more detailed exception message when a client fails to connect to a proxy server.
- Introduced user-defined indexes, which can be used to control what entries are added to an index. User-defined indexes are typically used to reduce the memory and processing overhead required to maintain an index.
- Fixed an issue that prevented clients from transparently reconnecting after being rejected by a proxy server.
- Fixed an issue that prevented the `EmbeddedResource` class from being able to load assemblies installed in the GAC.
- Optimized the `PofHelper.ResizeArray()` implementation.
- Fixed an issue in `CacheFactory` that could cause an exception during concurrent `EnsureLogger()` calls.
- Fixed an issue in the `CoherenceSessionStore` that caused an exception when accessing an expired session.
- Added a new `CompositeKey` utility class.
- Fixed an issue in `PofStreamReader` that prevented reading a uniform POF collection into a generic collection object.
- Removed validation logic in POF date deserialization that limited the year range to between 1582 and 2199.

## Oracle Coherence for C++ 3.6.1

The following is a list of new features, improvements, and bug fixes in Oracle Coherence for C++ 3.6.1:

- Provided a more detailed exception message when a client fails to connect to a proxy server.
- Added a new `AbstractEvolvable` base class for simplifying the creation of evolvable classes.
- Introduced user-defined indexes, which can be used to control what entries are added to an index. User-defined indexes are typically used to reduce the memory and processing overhead required to maintain an index.
- Fixed an issue that prevented the `Managed<T>` class from wrapping types with custom memory allocators.
- Fixed an issue that prevented clients from transparently reconnecting after being rejected by a proxy server.
- Fixed an issue that caused a segmentation fault (segfault) when creating a string from invalid UTF-8 input.
- Fixed an issue that caused the truncation of a non-ASCII string when converted to a `std::string`.

- Fixed incorrect POF mappings for the `RequestTimeoutException` and `ConnectionException` classes.
- Added a new `CompositeKey` utility class.
- Removed validation logic in POF date deserialization that limited the year range to between 1582 and 2199.

## Known Problems and Workarounds

This section describes bugs that are known at the time of release.

### Sharing Coherence\*Web Sessions Between WebLogic Server and Other Application Servers

If you have a cluster with WebLogic Server nodes and nodes running other types of application servers, such as Apache Tomcat Server, then the session cookie created by WebLogic Server will not be decoded correctly by Coherence\*Web on the other servers. This is because WebLogic Server adds a session affinity suffix to the cookie which is not part of the session ID stored in Coherence\*Web. If the other application server type receives a request for the cookie, it will not be found and a new session cookie will be created.

To work around this problem, you must remove the session affinity suffix from the session ID when it is processed by the other application server.

For example, to allow Tomcat Server to remove the session affinity suffix:

1. Create a subclass of the `com.tangosol.coherence.servlet.tomcat55.CookieHelper` class.

For example, name the subclass `CustomCookieHelper`. Implement the `decodeCookie` and `decodeUrl` methods to remove the session affinity information from the session cookie, for example:

```
package com.example;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import com.tangosol.coherence.servlet.SessionHelper;

public class CustomCookieHelper extends SessionHelper {
    protected static final char WLS_JVM_ID_SUFFIX = '!';

    public CustomCookieHelper(Factory factory, ServletContext ctx){
        super(factory, ctx);
    }

    public String decodeCookie(HttpServletRequest req){
        String sSessionId = super.decodeCookie(req);
        if (sSessionId != null){
            int ofSeparator = sSessionId.indexOf(WLS_JVM_ID_SUFFIX);
            if (ofSeparator >= 0){
                sSessionId = sSessionId.substring(0, ofSeparator);
            }
        }
        return sSessionId;
    }
}
```

2. Create a subclass of the `com.tangosol.coherence.servlet.tomcat55.DefaultFactory`. For example, name the subclass `CustomDefaultFactory`. Overload the `instantiateSessionHelper` or the `setSessionHelper` method to use the `CustomDefaultFactory` class, for example:

```
package com.example;

import javax.servlet.ServletContext;

import com.tangosol.coherence.servlet.SessionHelper;

public class CustomDefaultFactory extends com.tangosol.coherence.servlet.api25.
DefaultFactory {
    public SessionHelper instantiateSessionHelper(ServletContext ctx){
        CustomCookieHelper helper = new CustomCookieHelper(this, ctx);
        setServletContext(ctx);
        setSessionHelper(helper);
        return helper;
    }

    public String toString() {
        return "CustomDefaultFactory (2.5)\n" + indentString(getDescription(), "
");
    }
}
```

3. Configure the Web application on the Tomcat Server to use the `CustomDefaultFactory`. In the Web application's `web.xml` file, set the `coherence-factory-class` context parameter to `CustomDefaultFactory`, for example:

```
<context-param>
  <param-name>coherence-factory-class</param-name>
  <param-value>com.tangosol.coherence.servlet.tomcat55.
CustomDefaultFactory</param-value>
</context-param>
```

4. If you want to configure the session to share data across the applications, you must also configure the `coherence-scopecontroller-class` context parameter to use global scope, for example:

```
<context-param>
  <param-name>coherence-scopecontroller-class</param-name>
  <param-value>com.tangosol.coherence.servlet.
AbstractHttpSessionCollection$GlobalScopeController</param-value>
</context-param>
```

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## Documentation Errata

This chapter describes changes, enhancements, and corrections made to the Oracle Coherence documentation library for the 3.6.1 release. This chapter describes the following issues:

- [Typo in the manifest.mf File in the ActiveCache Documentation](#)
- [Installing Coherence\\*Web 3.6 on WebLogic Server 9.2 MP3](#)
- [Using Coherence\\*Web on the IBM WebSphere 7.n Application Servers](#)
- [Enabling Coherence\\*Web Sticky Sessions for Apache Tomcat Application Servers](#)
- [Revised Instructions for Configuring Cluster Nodes for Coherence\\*Web](#)

The Coherence documentation library can be found at the following URL:

[http://download.oracle.com/docs/cd/E15357\\_01/index.htm](http://download.oracle.com/docs/cd/E15357_01/index.htm)

### Typo in the manifest.mf File in the ActiveCache Documentation

There is a typo in the `manifest.mf` file in Example 6-3 in the *Oracle® Fusion Middleware Using ActiveCache 11g Release 1 (10.3.3)* documentation. "Implementation" was mis-spelled. Following is the corrected configuration:

```
Extension-List: active-cache
active-cache-Extension-Name: active-cache
active-cache-Specification-Version: 1.0
active-cache-Implementation-Version: 1.0
```

### Installing Coherence\*Web 3.6 on WebLogic Server 9.2 MP3

If you want to use Coherence\*Web 3.6 with applications running on the WebLogic Server 9.2 MP3 release, you must also install the WebLogic Server LP7B software patch. See "[Download and Install the Latest Software Patch](#)" on page 1-1 for more information on downloading software patches.

### Using Coherence\*Web on the IBM WebSphere 7.n Application Servers

The current release allows you to use Coherence\*Web on the IBM WebSphere 7.n application server. See "General Instructions for Installing Coherence\*Web Session Management Module" and "Decoding URL Session IDs for IBM WebSphere 7.n Servers" in *User's Guide for Oracle Coherence\*Web* for more information.

## **Enabling Coherence\*Web Sticky Sessions for Apache Tomcat Application Servers**

You can enable sticky sessions for applications that run on the Apache Tomcat application server. See "General Instructions for Installing Coherence\*Web Session Management Module" and "Enabling Sticky Sessions for Apache Tomcat Servers" in *User's Guide for Oracle Coherence\*Web* for more information.

## **Revised Instructions for Configuring Cluster Nodes for Coherence\*Web**

The instructions for configuring application-, EAR-, and WAR-scoped cluster nodes have been revised. See "Configure Cluster Nodes (WebLogic Server 10.3.3 and Later)" and "Configure Cluster Nodes (WebLogic Server 10.3.2 and Earlier)" in *User's Guide for Oracle Coherence\*Web*.

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