

# ORACLE COHERENCE 12CR2

## KEY FEATURES AND BENEFITS

ORACLE COHERENCE IS THE #1 IN-MEMORY DATA GRID.

### KEY FEATURES

- Fault-tolerant in-memory distributed data caching and processing
- Persistence for fast recovery from planned or unplanned outage
- True linear scalability and capacity on demand
- JCache (JSR-107) Compliant
- Native C++/Java/.Net clients, memcached client support, REST clients, JCache API
- Parallel grid-wide query, data processing and map/reduce aggregation
- Distributed support for Java 8 Lambdas and Streams
- Real-time continuous query
- Read-through, Write-Through and Write-Behind Caching
- Client near-caching
- Managed Coherence Servers
- LiveEvents server-side programming model
- HotCache provides real-time database to cache updates
- Elastic Data tiered-storage improves density of large data grids
- Full range of security features including audit capabilities
- Transaction Management
- Developer to Data Center management and monitoring solutions.
- Oracle TopLink, Hibernate, and JPA support
- Coherence\*Web – Java EE Http session management
- Session Provider for the Microsoft .NET Framework
- Federated Caching provides multi-datacenter support
- Multitenant support improves density and reduces operational cost

*Oracle Coherence is an in-memory data grid solution that enables organizations to predictably scale mission-critical applications by providing fast access to frequently used data. As data volumes and customer expectations increase, driven by the “internet of things”, social, mobile, cloud and always-connected devices, so does the need to handle more data in real-time, offload over-burdened shared data services and provide availability guarantees.*

*Oracle Coherence comes with a rich set of processing and event capabilities so applications can scale processing with increased data volumes. By automatically and dynamically partitioning data, Oracle Coherence ensures continuous data availability and transactional integrity, even in the event of a server or site failure.*

*Oracle Coherence provides organizations with a robust scale-out data abstraction layer that brokers the supply and demand of data between applications and data sources. This cost-effectively offloads shared data services such as databases, mainframes, and partner services.*

### Introducing Oracle Coherence 12cR2

Oracle Coherence 12cR2 provides automated recovery from partial or complete outages, increased developer productivity, operational efficiency and density, and improved support for multi-datacenter deployments.

**Persistence** – A new persistence mechanism enables automated recovery from partial or complete cluster outage. The solution can be used with local storage for speed or network-attached storage for the ultimate in availability.

**Multitenancy** – Coherence, when deployed with WebLogic Server Multitenant, allows customers to host multiple tenants within a single Coherence cluster with complete isolation, allowing for resource consolidation and lower operating costs.

**Federated Caching** – Supports complete built-in multi-datacenter deployments. Customers can choose from out-of-the-box multi-way active-active, active-passive, and hub-and-spoke topologies, or define their own custom topology.

**Developer Productivity and API Enhancements** – Coherence now offers one-of-a-kind distributed support for Java 8 lambdas and streams. Developers can now program against Coherence with standard Java APIs to take advantage of cluster-

## BENEFITS

- Fast, reliable access to application data
- Offloading shared data services
- Enables in-memory data analytics and event processing
- Native integration with Oracle Fusion Middleware products
- Automatically detects and corrects service disruptions
- Optimized for Oracle's Engineered Systems - ExaLogic
- Seamlessly manage data across memory and disk-based devices
- Built-in load balancing of client connections
- Simplifies the configuration of large-scale environments

## RELATED PRODUCTS

Oracle Coherence enables in-memory data management for clustered applications and application servers. Coherence makes sharing and managing data in a cluster as simple as on a single server.

## RELATED PRODUCTS

To provide seamless support for cloud to on-premise deployments, Oracle brings together key industry-leading technologies:

- Oracle WebLogic Suite
- Oracle WebLogic Server
- Oracle Enterprise Manager
- Oracle ExaLogic Elastic Cloud
- Java Technology

wide lambdas and map-reduce aggregations without deploying classes on the cluster. You have to see this in action! Enhanced generic support for new default methods further improve developer productivity and reduces time to market.

**Security Enhancements** – New Authorization and Audit capabilities provide complete fine-grain control of who can access or modify cached objects, and optionally records those operations for full regulatory and traceability purposes.

### Oracle Coherence 12cR2 is Built on an Oracle Coherence 12cR1 Base

Oracle Coherence 12cR1 delivered efficiencies in performance and management, while allowing you to scale your applications to meet increasing mobile and cloud demands on your infrastructure.

**GoldenGate HotCache** - Keeps your database and Coherence cached data in sync so "stale data" is never delivered to your applications from an outdated cache.

**Managed Coherence Servers** - Provides a managed, templated environment for Coherence clusters and application. This feature streamlines application lifecycle management and provides an integrated solution for management of standalone Coherence or combined WebLogic Server and Coherence applications.

**JCache (JSR-107) Compliance and Memcached Protocol Support** – Complement native Java/C++/.NET and REST client support to offer developers even more flexibility when integrating with in-memory data grids or sharing data among applications. JCache is the standard for distributed caching on the Java Platform; by using Coherence as the provider, you get access to the breadth and depth of Coherence features such as HotCache, flexible topology support, and the robustness of the market leading distributed caching platform. Memcached protocol support allows developers to integrate with popular memcached clients, as well as upgrade your memcached servers to the more resilient, scalable, and feature-rich Coherence platform.

**Enhanced Deployment Options for High Availability** - Coherence clusters that spans multiple racks or data centers can be configured to allow the loss of multiple machines, racks or sites while providing continuous availability. Customers can also trade consistency for speed by configuring asynchronous backups.

**Coherence Live Events** - Allows you keep customer experiences rich and lag-free by powering application with always-accurate, real-time data.

**Coherence on the Oracle Exalogic Elastic Cloud** - Overarching simplification of operations through leveraging Oracle Exalogic Elastic Cloud to obtain cost and performance benefits of engineered systems.

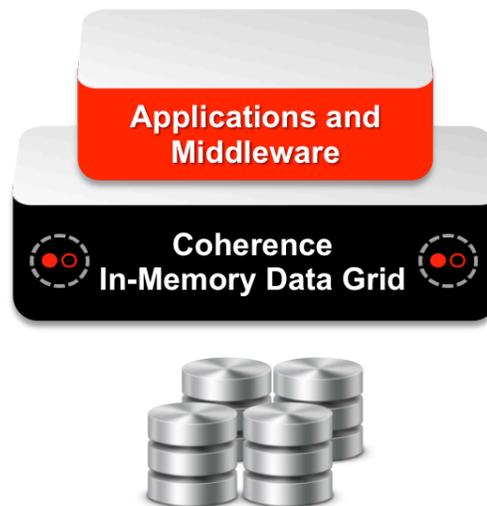
### The Oracle Coherence Advantage

**Performance** – Oracle Coherence solves latency problems and drives dramatic increases in performance by caching and processing data in real time. In-memory performance alleviates bottlenecks and reduces data contention, improving application responsiveness. Parallel query, computation and map-reduce computation improves performance and scalability of real-time calculations.

**Reliability** – Oracle Coherence is built on a fault-tolerant mesh that provides data reliability and consistency. Organizations can meet data availability demands in mission-critical environments with Oracle Coherence support for data tolerance and continuous operation. The reliability of the data grid minimizes the need for applications to compensate for server and network failures, streamlining the development and deployment process.

**Scalability** – Oracle Coherence enables applications to scale linearly and dynamically for predictable cost and improved resource utilization (the processing power of the grid scales linearly with data capacity). For many applications, it offers a straightforward approach to increasing the effective capacity of shared data sources. Oracle Coherence handles continually growing application loads without risking data loss or interruption of service.

**Disaster Recovery** – With its capability to replicate data and maintain transactional integrity, Coherence can serve as a great tool for disaster recovery. Coherence clusters maintained throughout the enterprise and across geographies constitute an automatic ‘backup store’ for organizational data. Individual machines, racks and data centers can all be flexibly backed up to ensure continuous availability.



### Oracle Coherence at Work

**Caching** – Applications cache data in the data grid, avoiding expensive requests to back-end data sources. The shared data cache provides a single, consistent view of cached data. Reading from the cache is faster than querying back-end data sources and scales naturally with the application tier.

**Analytics** – Applications query and analyze data in memory, leveraging the massive parallel capabilities of the data grid. Oracle Coherence provides out-of-the-box support for searching, aggregating, and sorting data, with support for custom analytical functions. It parallelizes operations across the entire data grid, ensuring that server failures or slowdowns do not affect calculation results.

**Transactions** – Applications manage transactional data in memory inside the data

grid. A combination of unparalleled scalability and performance makes Oracle Coherence optimal for high-performance computing and fast data workloads. Its best-of-breed in-memory replication and guaranteed data consistency mean that it is suitable for managing transactions in memory until they are persisted to an external data source for archiving and reporting.

**Events** – Applications respond in real time to data changes throughout the data grid. Every transaction can potentially trigger many events, each of which may need to be processed in a matter of milliseconds. Oracle Coherence provides event-handling technologies capable of handling intense event rates, including server-side stream processing and interactive technologies such as “continuous query” for real-time desktop applications.

### Oracle Coherence Fusion Middleware Integration

An ever-growing number of Oracle Fusion Middleware products provide native integrations with Oracle Coherence out of the box to provide linearly scalable, fault tolerant, in-memory data management. Such integrations include Oracle WebLogic Server, Oracle PeopleSoft, Oracle Event Processing (OEP), Oracle SOA Suite, Oracle Service Bus and Oracle Commerce/ATG.

Coherence’s management functionality is bolstered by Oracle Enterprise Manager, which supports all Oracle Fusion Middleware management. Users don’t have to learn new management tools and efficiency is improved by looking at a ‘single pane of glass’.

### Oracle Coherence Application Server Integration

Oracle Coherence provides a number of integration points with the leading application server technologies to bring the power of the data grid to your applications without requiring any code changes.

Coherence\*Web manages HTTP session state in clustered environments, bringing Oracle Coherence’s data scalability, availability, reliability and performance to in-memory session management and storage. Coherence\*Web provides support for WebLogic Server, Tomcat and other mainstream application servers.

### Oracle Coherence Editions

Oracle Coherence offers three different editions: Standard Edition One, Enterprise Edition and Grid Edition.

**Standard Edition One** is a new low-priced offering for smaller Coherence deployments. Oracle Coherence Standard Edition One provides for 1- or 2-node Hot-Standby, and provides the full Coherence API. Standard Edition One is included in Java SE Advanced Edition, meaning that customers who Java SE Advanced Edition can now deploy Coherence for free.

**Enterprise Edition** is a scale-out solution. It adds application lifecycle support (packaging, deployment, monitoring and management) via the Managed Coherence Servers feature, which leverages the WebLogic Management Framework. Also included are a number of data management features, like parallel queries, parallel

processing, and WorkManager.

**Grid Edition** offers all the features of Enterprise, and adds features for multi-datacenter support via Federated Caching, GoldenGate HotCache, Elastic Data, multitenancy, and Real-Time Compute Clients.

### Contact Us

For more information about Oracle Coherence, please visit [oracle.com](http://oracle.com) or call +1.800.ORACLE1 to speak to an Oracle representative.



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