

# ORACLE COHERENCE 12C

## KEY FEATURES AND BENEFITS

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

### KEY FEATURES

- Fault-tolerant partitioned data caching and processing
- Capacity on demand
- True linear scalability
- JCache (JSR-107) Compliant
- Native C++/Java/.Net clients, memcached client support, REST clients, JCache API
- Parallel grid-wide agents, data processing, and calculation
- Parallel query, Coherence Query Language, cache indexing and explain plans
- Real-time continuous query
- Read-through, Write-Through and Write-Behind Caching
- Automatic, Dynamic and Transparent Partitioned and Replicated Data Management
- Configurable client near caching
- Managed Coherence Servers
- LiveEvents server-side programming model
- GoldenGate HotCache
- Elastic Data
- Full range of security features
- Transaction Management
- Free Eclipse Plug-ins
- Developer to Data Center management and monitoring solutions.
- Oracle TopLink, Hibernate, and Java Persistence API (JPA) support
- Coherence\*Web – Java EE Http session management provider
- Session Provider for the Microsoft .NET Framework

*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 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 12c

Oracle Coherence 12c is designed to deliver efficiencies in both 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** - Integrate seamlessly with the WebLogic Management Framework to provide a managed, templated environment for dynamic scaling. This feature streamlines application lifecycle management and provides a single stop for management of both WebLogic and Coherence instances.

**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

**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 make Cloud Application Foundation possible, Oracle brings together key industry-leading technologies:

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

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.

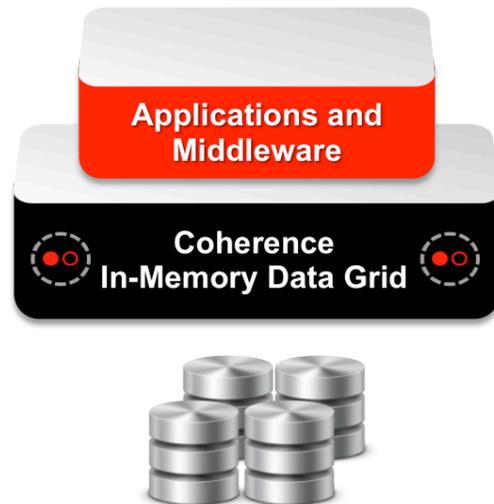
**The Oracle Coherence Advantage**

**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 and computation also 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 extreme transaction processing 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 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 Cross-Platform Client Connectivity

Oracle Coherence extends the power of the data grid to a wide range of applications hosted either within or external to the data center via a suite of Oracle Coherence Clients and through REST. Coherence enables real-time access to both Java and cross-platform applications by providing native clients for Java, C++ and .NET with transparent data conversion to and from Java, C++ and .NET data types, including custom application user types.

The current suite of Oracle Coherence Clients includes:

- **Data Client** - Stateless Data Grid client for use anywhere. May be used with all Coherence Server Editions.
- **Real Time Client** - Stateful Data Grid client, configured as an Extend/TCP client — This real time desktop client may be used only with Coherence Grid Edition.
- **Real Time Client configured as a Compute Client** -The server-class client providing key manageability, monitoring, Quality of Service, and performance capabilities. The Compute Client may be used only with Coherence Grid Edition and supported only in Java environments.

### 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 all other mainstream application servers.

### Oracle Coherence Editions

Oracle Coherence offers three different [editions](#): Standard Edition, Enterprise Edition and Grid Edition.

**Standard Edition** is focused primarily on distributed caching usage, and provides unlimited access for Data Clients.

**Enterprise Edition** offers all the features of Standard, and 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, WorkManager, and transaction support.

**Grid Edition** offers all the features of Enterprise, and adds features for WAN

networking, GoldenGate HotCache and stateful Real-Time 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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