

Oracle Maximum Availability Architecture (MAA)

Data Sheet

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Public

Introduction

Enterprises use Information Technology (IT) to gain competitive advantages, reduce operating costs, enhance customer communication, and increase management insights into their business.

Thus, enterprises become increasingly dependent on their IT infrastructure and its continuous availability. Oracle Maximum Availability Architecture (MAA) consists of a set of best practices blueprints for the integrated use of Oracle's High Availability (HA) and Disaster Recovery (DR) technologies that ensure this level of availability.

Oracle Maximum Availability Architecture (MAA)

MAA best practices are created and maintained by a team of Oracle developers that continually validate the integrated use of Oracle Database High Availability features using chaos engineering techniques and other testing methodologies. Real-world customer experience is also fed back into the validation performed by the MAA team, spreading lessons learned to other customers.

MAA includes best practices for critical infrastructure components, including servers, storage, and network, combined with configuration and operational best practices for the Oracle Database's high availability capabilities deployed on it. MAA resources (on oracle.com/goto/maa) are continually updated and extended.

Although not all applications have the same high availability and data protection requirements, MAA best practices describe standard architectures designed to achieve different service-level objectives. Details are provided in [Oracle MAA Reference Architectures](#).

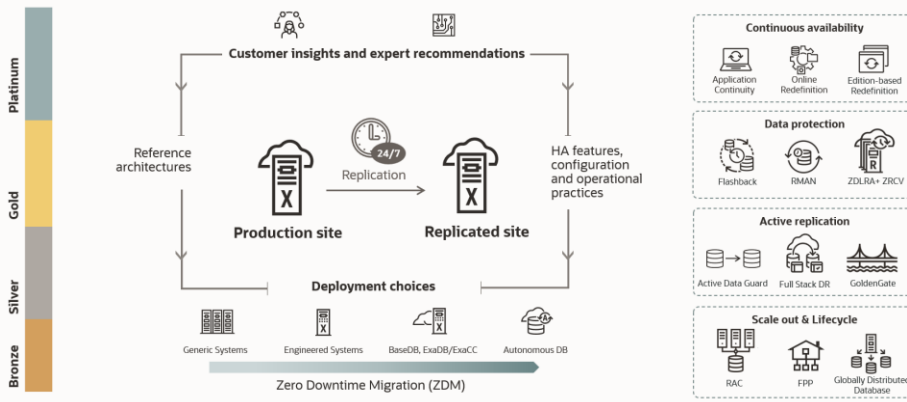


"The goal for us at Epsilon is to have 99.999% availability. We found out that a lot of our processing time was being done by the reporting process. We used Active Data Guard to offload reporting to another set of servers that had a huge impact on our production database as there was enough capacity to run OLTP transactions."

Keith Wilcox
VP, Database
Epsilon

Oracle Maximum Availability Architecture (MAA)

Standardized Reference Architectures for Never-Down Deployments



Maximum Availability Architecture Fundamentals

Over the years, Oracle MAA has evolved in multiple directions. For example, Oracle MAA on Engineered Systems now provides the MAA best practices and blueprint recommendations as part of the engineered and, hence, integrated deployment that one will find on Engineered Systems such as the Oracle Exadata Database Machine. For Oracle Database Services in the Oracle Cloud, Oracle MAA is not only integrated into the deployment; the Oracle Cloud, especially the Platform as a Service offering, is operated following those standards that have ensured maximum availability for many of Oracle's customers for decades.

Key features

- Tiered high availability and disaster recovery reference architecture blueprints
- Business continuity with protection for both committed and in-flight transactions
- Data protection for unexpected outages or disasters
- Minimized downtime for unforeseen outages as well as planned maintenance for both the database and application

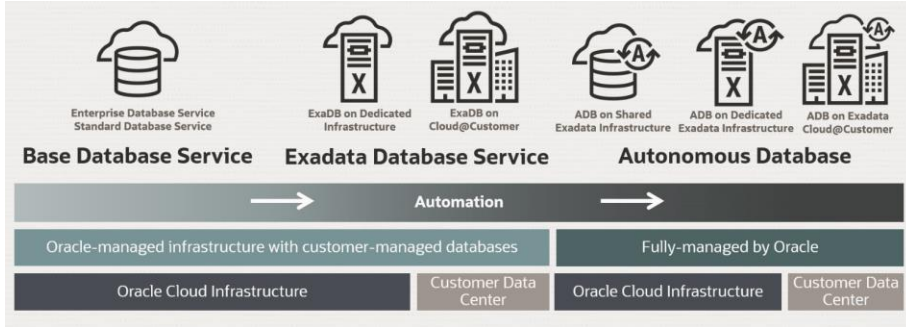
Bronze	Silver	Gold	Platinum
Dev, test, prod	Prod/departmental	Business critical	Mission critical
	Bronze +	Silver +	Gold +
Single instance DB	Database HA with RAC	DB replication with Active Data Guard	GoldenGate
Restartable	Application continuity		Edition based redefinition
Backup/restore			

Maximum Availability Architecture Tiers and Technology

Last, but not least, Oracle MAA has evolved into the new de facto High Availability standard for database technologies without any other comprehensive literature on this subject. Oracle MAA acts as general guidance for any database operator wanting to meet the highest level of availability. MAA blueprints consider and discuss the various failure scenarios affecting any database. For Oracle Databases, Oracle MAA goes a step further in that it also provides a solution based on Oracle's integrated high availability features.

Thereby, Oracle MAA addresses not only Oracle customers who want to improve their existing database availability but also those who are preparing to run on Oracle and would like to review failure scenarios regarding what types of failures and planned maintenance operations must be covered. In this context, Oracle MAA is also an interesting topic for application developers, as it provides guidance on which failures the application may have to tailor to and which failures an application can ignore, or even better, for which failures the application can

rely on Application Continuity to keep them completely transparent.



Maximum Availability Architecture (MAA) in the Oracle Cloud

For Oracle Cloud, MAA is automated into the various Oracle Database Service PaaS offerings, including Oracle Base Database Service, Oracle Exadata Database Service, Oracle Exadata Cloud at Customer, and Oracle Autonomous Database. These services have various flexible options with high availability and disaster recovery built directly into the infrastructure, following best practices with different options (see the above diagram) aligned with each of the MAA tiers depending on the selected service offering.

Related products

The following products are components in Oracle Maximum Availability Architecture (MAA):

- Oracle Real Application Clusters (RAC)
- Oracle Active Data Guard
- Oracle GoldenGate
- Oracle Multitenant
- Oracle Application Continuity
- Oracle Edition-based Redefinition

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