



ORACLE DATABASE@ A BLUEPRINT FOR MULTICLOUD DATA PLATFORMS

ORACLE | Partner

Harnessing Exadata performance, Autonomous simplicity and Terraform automation across Azure, OCI and Google Cloud

EXECUTIVE SUMMARY

Oracle Database@Azure/AWS/GCP delivers Exadata Database Service, Autonomous Database and Base Database Service natively inside hyperscaler data centers, enabling organizations to modernize Oracle workloads without refactoring applications and with microsecond latency to native Azure, AWS, or GCP services.

By coupling the service with Terraform-based “multicloud landing-zone” modules, platform teams gain an auditable, repeatable way to provision complete stacks, from Exadata infrastructure to pluggable databases, across any environment.

By engaging DSP-DSP-Eclipsys Solutions, a certified Oracle Cloud Solutions Provider, with more than a hundred successful Oracle cloud migrations, customers gain access to prebuilt Terraform landing zones, license optimization expertise, and 24×7 managed services that collectively de-risk the project, accelerate time-to-production, and ensure the new multicloud data platform delivers measurable business value from day one.

1. INTRODUCTION

Oracle Multicloud Vision

Over the past five years, Oracle has systematically delivered fully managed database services in every venue where applications already reside: public hyperscalers, private data centers, and cross-cloud interconnects. The result is a run-anywhere data platform in which the same database engine, features, and pricing follow the workload. Today, customers no longer debate whether a multicloud strategy is necessary; they ask how to implement it without complexity, latency, or loss of control.

Oracle Database@ Azure/AWS/GCP answers that question by embedding Exadata infrastructure directly within, for example, their Azure regions and exposing it through Azure Portal, CLI, and Terraform.

Common Customer Scenarios

1. Reunite applications and databases in the Cloud
2. Build new applications on a hyperscaler development stack
3. Modernize from IaaS VMs to managed database services
4. Deploy database services on-premises
5. Integrate SaaS, custom apps and data across Clouds
6. Build real-time analytics and AI

2. BUSINESS DRIVERS FOR ORACLE DATABASE@AZURE/AWS/GCP

Performance & Latency

Co-locating Exadata within Azure/AWS/GCP regions removes network hair-pins and delivers single-digit-millisecond round-trips between application tiers and Oracle data.

Operational Simplicity

Moving from DIY IaaS databases to fully-managed services shifts responsibility for patching, backups and scalability to Oracle, freeing DBAs to focus on data architecture.

Cost & Commercial Leverage

Purchasing Options Across All Three Hyperscalers

Microsoft Azure Marketplace

Draw down your existing Microsoft Azure Consumption Commitment (MACC) while the same spend simultaneously earns Oracle Support Rewards (OSR), offsetting up to 33¢ of every Oracle license-support dollar. Because OracleDatabase@Azure runs natively inside the Azure VNet, all database traffic stays on Microsoft's backbone, eliminating double egress fees.

Google Cloud Marketplace

OracleDatabase@GoogleCloud (currently live in 13 regions, with 11 more announced) can be transacted through the Google Cloud Marketplace, allowing customers to apply existing Committed Use Discounts (CUDs) or new FinOps-friendly Flexible CUDs. Network charges are avoided in exactly the same way: data moves inside Google's private backbone rather than across public internet links.

AWS Marketplace & EDP

Oracle Database Service for AWS (ODSA) is available as a metered service billed through the AWS Marketplace. Spend counts toward your Enterprise Discount Program (EDP) thresholds, and—for customers that also hold on-prem licenses—still qualifies for Oracle Support Rewards. Oracle's private OCI-to-AWS interconnect keeps latency in the low milliseconds and removes egress fees in both directions.

By aligning Cloud-commitment programs with Oracle's OSR and Universal Credits, enterprises can finance migrations without new capital spend, achieve predictable run-rate costs, and avoid the "double taxation" of cross-Cloud data transfers.

Innovation Velocity

Microsoft Azure

Deploying OracleDatabase@Azure inside the same VNet as AzureAI Studio, MicrosoftFabric, Synapse Analytics and AzureOpenAIService lets developers run GenAI prompts, build vector-search indexes, and stream operational data into Fabric Lakehouses without ETL pipelines or egress fees. Real-time inference workloads benefit from <5 ms round-trips between Exadata and Azure Kubernetes Service or Functions.

Google Cloud

OracleDatabase@GoogleCloud sits next to VertexAI, BigQuery, DuetAI, and CloudRun. Data scientists can train models in VertexAI against transactional data—using Oracle's in-database machine learning or BigQuery Omni—while application teams call the same data via Cloud Run micro-services. The shared private backbone eliminates batch exports and reduces AI experimentation cycles from days to minutes.

Amazon Web Service (AWS)

With Oracle Database Service for AWS (ODSA) running on the private OCI-AWS interconnect, organizations can pair Oracle data with AmazonBedrock, SageMaker, and Kinesis Analytics. Developers invoke Bedrock Foundation Models or SageMaker endpoints against Oracle JSON and vector data in milliseconds, bypassing S3 staging and Glue jobs. This architecture powers real-time personalization, fraud detection, and generative APIs while maintaining Oracle ACID guarantees.

Across all three Clouds, the proximity of Oracle data to each hyperscaler's native AI and analytics stack collapses ETL overhead, accelerates ML ops, and shortens the ideation-to-production cycle, turning the database from a back-office asset into a real-time innovation engine.

3. TECHNICAL ARCHITECTURE

Across every Cloud, the experience is identical: same database engine, feature set (RAC, In-Memory, JSON, vectors), license metrics and pricing model, eliminating re-platform risk and preserving skills investments. Executives gain the freedom to place each workload on the Cloud that offers the best commercial terms, compliance posture, or proximity to AI and analytics services, while IT teams maintain a single operational playbook.

For clarity and depth, the remainder of this paper will illustrate the architecture, Terraform modules, and operational run-books using Azure terminology and resource names, e.g., virtual networks, delegated subnets, AzureRM, and AzAPI providers.

3.1 Service Overview

Oracle Database@Azure/GCP/AWS offers three service tiers depending on the hyperscaler:

- Exadata Database Service – dedicated Exadata X9M racks providing RAC, In-Memory and maximum scale
- Autonomous Database – serverless, auto-scaling database with built-in machine learning and JSON/vector support
- Base Database Service – cost-optimized VM-based databases for small footprints or legacy workloads

3.2 Networking Model

Each deployment requires a delegated client subnet (e.g., 10.1.1.0/24) and a backup subnet (e.g., 192.168.252.0/22). Oracle manages the service network while customers manage the surrounding Azure vNet, Network Security Groups, and DNS zones.

3.3 Landing Zone Components

- Azure Resource Group and vNet
- Primary and backup subnets with NSGs
- OCI Virtual Cloud Network (VCN) and Dynamic Routing Gateway (DRG)
- Service Gateway (SGW) for Oracle-managed traffic
- Azure Verified Modules (AVMs) for repeatable resource creation

4. INFRASTRUCTURE AS CODE WITH TERRAFORM

4.1 Foundation and Tools

Terraform $\geq$ 1.9 is required by Azure Verified Modules. Authentication is performed via Azure CLI/Service Principal and OCI CLI/API keys. State files are typically stored in Azure Blob or OCI Object Storage for durability.

4.2 Module Landscape

- Network – avm-res-network-virtualnetwork
- Autonomous DB – azurerm-oci-adbs-quickstart, azurerm-ora-adbs
- Exadata Infrastructure – azurerm-ora-exadata-infra or avm-res-oracledatabase-cloudexadatainfrastructure
- VM Cluster – azurerm-ora-exadata-vmc or avm-res-oracledatabase-cloudvmcluster
- Database Homes and PDBs – oci-database-db-home

4.3 Variables and Parameterisation

Key variables include `tenancy_ocid`, `subscription_id`, `compartment_ocid`, `region`, `vnet_cidr`, `subnet_cidrs`, `database_edition`, and `workload_type`. Variable files can be encrypted with Azure Key Vault.

4.4 CI/CD Workflow

- 1.Clone (or fork) the multicloud landing-zone repository
- 2.Create or edit `terraform.tfvars`
- 3.Terraform init
- 4.Authenticate to Azure and OCI
- 5.Terraform plan & apply

5. DEPLOYMENT EXAMPLE – AUTONOMOUS DATABASE@AZURE

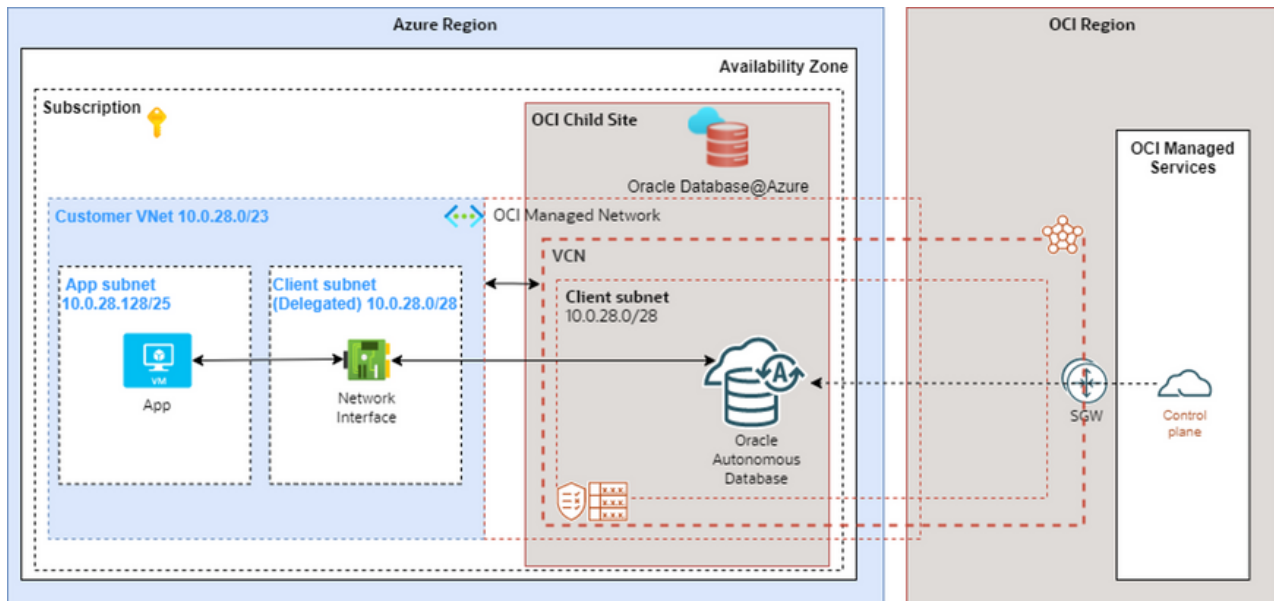
Example `main.tf`:

```
module "adb_network" {
  source = "github.com/oracle/avm-res-network-virtualnetwork"
  name = "vnet-oci"
  address_space = ["10.1.0.0/16"]
  subnet_prefix = "10.1.1.0/24"
}

module "autonomous_db" {
  source = "github.com/oracle/azurerem-oci-adbs-quickstart"
  compartment_ocid = var.compartment_ocid
  display_name = "finance-adb"
  cpu_core_count = 2
  data_storage_size_in_tbs = 1
}
```

Architecture Highlights

- Single vNet (`vnet-oci`) with delegated subnet (`snet-delegate-oci`).
- Autonomous Database reachable within Azure via low-latency service network.
- Automatic scaling and patching reduce operational overhead.



6. DEPLOYMENT EXAMPLE – EXADATA@AZURE

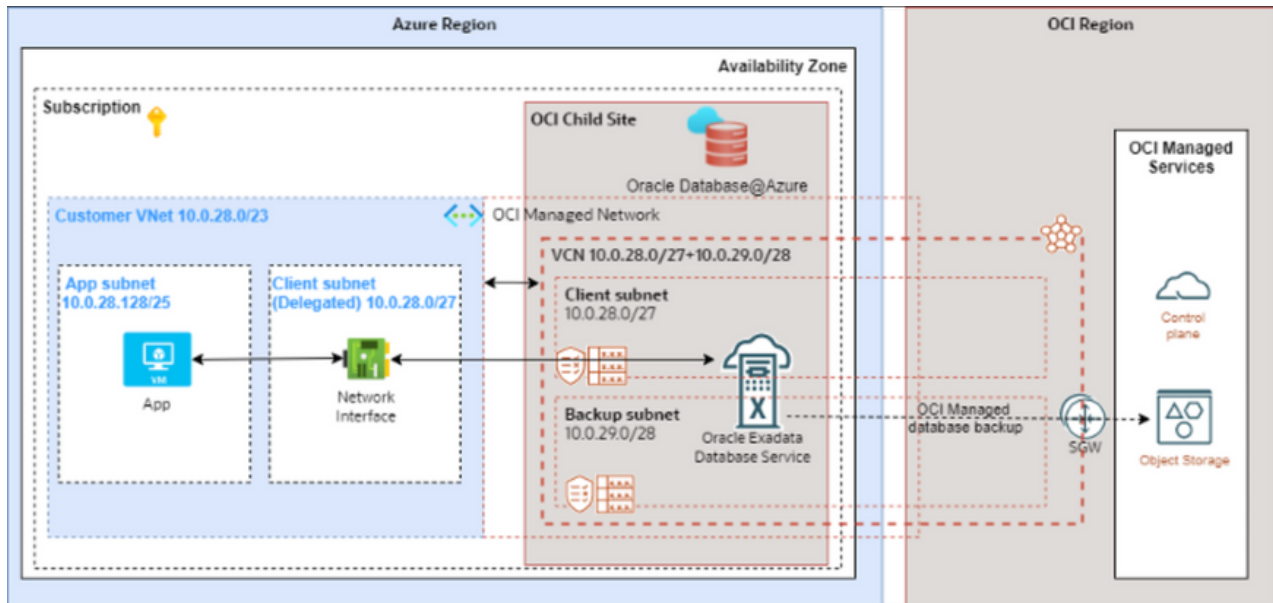
Example main.tf (excerpt):

```
module "exadata_infra" {
  source = "github.com/oracle/azurerm-ora-exadata-infra"
  infra_shape = "X9M"
  primary_subnet_cidr = "10.1.1.0/24"
  backup_subnet_cidr = "192.168.252.0/22"
}

module "vm_cluster" {
  source = "github.com/oracle/azurerm-ora-exadata-vmc"
  cpu_core_count = 48
  data_storage_size_tb = 64
  db_home_version = "19c"
}
```

Architecture Highlights

- Dedicated Exadata X9M infrastructure with separate primary and backup subnets
- VM Cluster hosts container databases and pluggable databases (PDBs)
- Resources created through AzAPI and AzureRM providers to ensure Azure policy compliance



7. HIGH AVAILABILITY & DISASTER RECOVERY

Oracle Database@Azure inherits Maximum Availability Architecture (MAA) tiers. Patterns include Data Guard standbys in a secondary Azure availability zone, cross-region Active Data Guard, and GoldenGate multi-master replication.

8. SECURITY CONSIDERATIONS

- Role-based access control via Azure AD and OCI IAM federation
- Transparent Data Encryption (TDE) with customer-managed keys
- Network isolation using NSGs and private DNS zones
- Database firewall and audit capabilities
- Secret rotation automated through Terraform

9. OPERATIONS & MONITORING

Store Terraform state remotely, enable drift detection with Terraform Cloud or Atlantis, and integrate database telemetry into Azure Monitor and OCI Logging.

10. COST OPTIMIZATION & COMMERCIAL PROGRAMS

Procurement through Azure Marketplace applies spend toward Azure MACC commitments and accumulates Oracle Support Rewards to offset license costs. Workload consolidation on Exadata cuts core counts and reduces ongoing TCO.

11. BEST PRACTICES & RECOMMENDATIONS

1. Design the vNet early and reserve CIDR blocks for future expansion
2. Fork the landing-zone repository and pin module versions to immutable release tags
3. Incorporate Terraform fmt, validate, and security scanning in CI pipelines
4. Perform Data Guard switch-over drills quarterly
5. Automate patching Windows using Autonomous or Fleet Patching & Provisioning

12. CONCLUSION

Oracle Database@Azure is the fastest and lowest-risk route to bring mission-critical Oracle workloads into Microsoft Azure. By embedding dedicated Exadata infrastructure and Autonomous Database automation inside Azure regions, organizations eliminate cross-cloud latency, gain up-to-99.995 percent availability, and consolidate databases at ratios of up to 40:1 compared with traditional VM estates—outcomes already validated by customers such as Conduent (13 million toll transactions per day) and TIM Brasil (15 PB of data migrated, two data centers closed).

When provisioned through Oracle's Multicloud Landing Zone Terraform modules, enterprises achieve:

- Accelerated time-to-value—automated builds shrink deployment from months to hours.
- Lower total cost of ownership—Azure MACC offsets and Oracle Support Rewards reduce cloud and license spend.
- Future-proof architecture—a single IaC code-base that can reproduce the same services in OCI, Google Cloud or on-prem Exadata Cloud@Customer.

Together, these capabilities deliver a run-anywhere Oracle data platform ready for real-time analytics, GenAI and next-generation applications.

13. WHY CHOOSE DSP-ECLIPSYS SOLUTIONS AS YOUR MIGRATION PARTNER

Deep Oracle DNA + Multicloud Credentials

Certified Oracle Cloud Solutions Provider and Microsoft Solutions Partner with over 50 combined certifications. Executed hundreds of Oracle cloud migrations.

Terraform Landing-Zone Accelerators

Security-hardened Terraform stacks with Key Vault, Sentinel policies and FinOps dashboards reduce cut-over timelines from 12 weeks to around 4 weeks.

End-to-End Delivery – Strategy to Run

Discovery workshops, license optimization, PoC, production migration and 24x7 managed services under one SOW.

Proven MOVE Methodology

Map workloads, Optimize licenses, Validate performance with ZDM dry-runs, Execute cut-over and automate Data Guard fail-over.

Risk Mitigation & Governance

DSP-Eclipsys combines tight engineering relationships with Oracle and Microsoft, a bilingual 24x7 managed-services center and an unbeaten track record of zero-downtime migrations. Partnering with us accelerates value realization, reduces risk and provides a clear roadmap to an agile, Cloud-native data estate.

NEXT STEPS WITH DSP- ECLIPSYS

1. Book a no-cost discovery workshop to inventory candidate workloads and map MACC / Support-Reward offsets
2. Launch a production-grade pilot (Autonomous or Exadata) in a non-critical subscription
3. Execute phased migration using Zero Downtime Migration (ZDM) and Data Guard Transition to Managed Services with KPI-driven SLOs and quarterly cost-governance reporting

LETS GET TO WORK

DSP-DSP-Eclipsys Solutions helps organizations like yours leverage Oracle Cloud, managed services, and multicloud strategies to drive transformation.



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"Over the last 5 years, we've seen a staggering change in our system performance, and by continuing to work with the support of DSP, we are confident that we will be able to achieve our growth plans using their state of the art systems."

fairbanks

BUUK Infrastructure: Oracle Managed Services

Recognising the challenges of managing a complex database environment, BUUK approached DSP to deliver an **Oracle Managed Services** solution to support their systems and staff.



Root-5: Oracle Managed Services

Root-5 approached DSP to deliver an **Oracle APEX** and **Oracle Database** in **Oracle Cloud Infrastructure (OCI)** project to support their application 'Tracker'.

