# Oracle Cloud Infrastructure - Application Validation

**ISV:** None  
**Application:** None  
**Statement of Work**  
**Date:** None  
**Version:** None

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## Introduction

# 1. Document Header

* ISV: **TGW**
* Application: **WERX**
* Type: **Statement of Work**
* Date: **2024-09-16**
* Version: **0.1**
* Include Oracle’s standard **Confidentiality Disclaimer**: This document contains confidential information and is intended only for authorized persons. Recipients are obliged to maintain the confidentiality of the information and not disclose it to any third party without prior written consent from Oracle.

# 2. SoW Version History Table

|  |  |  |  |
| --- | --- | --- | --- |
| Version # | Date | Revised By | Description of Change |
| 0.1 | 2024-09-01 | John Doe | Initial draft of the Statement of Work for WERX validation |
| 0.2 | 2024-09-08 | Jane Smith | Added technical specifications for OCI services and security |
| 0.3 | 2024-09-12 | Bob Brown | Included high availability and disaster recovery details |
| 0.4 | 2024-09-15 | John Doe | Updated with feedback from TGW and Oracle teams |

# 3. Status and NEXT STEPS

* Current project status: *In Progress*
* Next 3 actions required:
  1. **Owner: Oracle Cloud Architect**, **Description**: Finalize Terraform scripts for Openshift Cluster deployment.
  2. **Owner: TGW Technical Lead**, **Description**: Provide access to the development environment for Oracle team.
  3. **Owner: Oracle Project Manager**, **Description**: Schedule a meeting with TGW stakeholders to review project progress.

# 4. Project Participants Table

Oracle Team | Name | Role | Email | |————-|———————-|——————–| | John Doe | Cloud Architect | [johndoe@oracle.com](mailto:johndoe@oracle.com) | | Jane Smith | Security Specialist | [janesmith@oracle.com](mailto:janesmith@oracle.com) | | Bob Brown | Project Manager | [bobbrown@oracle.com](mailto:bobbrown@oracle.com) |

Client (TGW) Team | Name | Role | Email | |————-|———————-|——————–| | Mike Davis | Technical Lead | [mikedavis@tgw.com](mailto:mikedavis@tgw.com) | | Emily Chen | Infrastructure Manager| [emilychen@tgw.com](mailto:emilychen@tgw.com) | | David Lee | Security Officer | [davidlee@tgw.com](mailto:davidlee@tgw.com) |

# 5. Project Framework

The collaboration mode between Oracle and TGW will involve bi-weekly meetings to review progress, discuss challenges, and align on the project roadmap. Oracle will be responsible for the technical validation of WERX on OCI, while TGW will provide the necessary resources, access, and feedback. The expected validation duration is 3 weeks, with the following milestones: kickoff, infrastructure setup, application deployment, testing, and final review.

# 6. Required Contribution From Client

TGW must provide the following: - Technical resources: Access to the development environment, technical documentation, and support from the TGW technical team. - Diagrams or architectural artifacts: Current architecture diagrams, network topology, and any relevant system documentation. - Access to dev/test environment: TGW will provide Oracle with access to a non-production environment for testing and validation purposes.

# 7. Expected Deliverables From Oracle ISV Labs

Oracle will deliver the following: - Terraform modules for the deployment of Openshift Cluster, GPU VM, and Oracle 19c on IaaS. - Target architecture in OCI, including a detailed design document and architecture diagram. - Technical documentation, including setup instructions, troubleshooting guides, and best practices. - CI/CD integration examples using Oracle Cloud DevOps services.

# 8. Cloud Environment Used

The proof of concept (PoC) will run in a temporary test tenancy provided by Oracle for the duration of the project.

# 9. TGW Company Profile

* Legal Name: TGW Inc.
* Country of Operations: United States
* Company Overview: TGW is a leading provider of logistics and material handling solutions, operating globally with a focus on innovation and customer satisfaction.
* Website link: [www.tgw.com](http://www.tgw.com)

# 10. In-Scope Application: WERX

* Application Name: WERX
* General Description: WERX is a logistics management application designed to streamline warehouse operations, improve efficiency, and reduce costs.
* Key Technologies: Java, PostgreSQL, Docker, Kubernetes
* Current Hosting: On-premises data center

# 11. Project Overview

**Validation Summary**: The goal of this project is to successfully validate WERX on Oracle Cloud Infrastructure (OCI), ensuring functional compatibility, performance, and readiness for future enhancements. The validation will involve deploying WERX in a replicated environment on OCI, using Openshift Cluster, GPU VM, and Oracle 19c on IaaS. - Desired outcome: - Validate WERX on OCI without significant modifications. - Achieve comparable or better performance than the current on-premises deployment. - Scope boundaries: - The project focuses on the technical validation of WERX on OCI. - It does not include production migration, licensing setup, or SLA support. - Joint goals: - Collaborate to ensure a smooth validation process. - Identify and address any technical challenges or limitations.

# 12. Scope

* **In-Scope Items**:
  + Deployment of Openshift Cluster on OCI.
  + Configuration of GPU VM for simulation workloads.
  + Setup of Oracle 19c on IaaS for database services.
  + Integration of WERX with OCI services.
* **Out-of-Scope Items**:
  + Production migration of WERX to OCI.
  + Licensing and support for WERX on OCI.
  + Setup of disaster recovery solutions.
* Validation boundaries and limitations: The validation will focus on the technical aspects of deploying and running WERX on OCI, without considering production-scale deployments or long-term support requirements.

# 13. Major Project Milestones

|  |  |  |  |
| --- | --- | --- | --- |
| Milestone | Target Date | Completed | Comments |
| Kickoff with Cloud Architect | 2024-09-10 |  |  |
| OCI Network Setup | 2024-09-12 |  |  |
| Terraform Code Finalization | 2024-09-15 |  |  |
| Application Deployment in OCI | 2024-09-18 |  |  |
| Final Validation & Review | 2024-09-22 |  |  |

# 14. Acceptance Criteria

|  |  |  |
| --- | --- | --- |
| Capability/Metric | Acceptance Criteria | Status |
| Kubernetes Deployment | WERX runs successfully on OCI OKE | TBD |
| OCI Streaming | Kafka integration tested using OSS workloads | TBD |
| PostgreSQL | DB deployed, configured, accessible | TBD |
| Monitoring | Basic metrics visible in OCI Monitoring dashboard | TBD |
| Security | IAM + NSG + Encryption in Transit & At Rest | TBD |

# 15. Current State Architecture

* **Diagram Description**: The current architecture consists of on-premises Kubernetes clusters, PostgreSQL database, and Java-based application servers.
* **Tech Stack**: Docker, Helm, PostgreSQL, Java, Kubernetes
* **Known Issues/Pain Points**: Manual deployment processes, scaling issues, and limited monitoring capabilities.

# 16. Target OCI Architecture

The target architecture will utilize the following OCI services: - Openshift Cluster for container orchestration. - GPU VM for simulation workloads. - Oracle 19c on IaaS for database services. - **Service Mapping**: - WERX Application -> Openshift Cluster. - Simulation Workloads -> GPU VM. - Database Services -> Oracle 19c on IaaS. - **Component Interaction**: The WERX application will interact with the database services through JDBC, while the simulation workloads will utilize the GPU VM for processing. - **Diagram Placeholder**: A detailed architecture diagram will be provided, illustrating the components and their interactions.

# 17. Implementation Details and Configuration Settings

* **Openshift Cluster**:
  + Provisioning shape: VM.Standard.E4.Flex
  + Node pools: 3 worker nodes, 1 master node
  + Helm/Terraform usage: Terraform for infrastructure provisioning, Helm for application deployment.
* **GPU VM**:
  + Provisioning shape: VM.GPU4.8
  + Configuration: 4 GPUs, 28 cores, 224 GB RAM
  + Usage: Simulation workloads.
* **Oracle 19c on IaaS**:
  + Provisioning shape: VM.Standard.E4.Flex
  + Configuration: 2 cores, 16 GB RAM, 1 TB storage
  + Usage: Database services for WERX.

# 18. Security Considerations

* **IAM Policy**: A custom policy will be created to manage access to OCI resources.
* **NSG Configuration**: Network security groups will be configured to control inbound and outbound traffic.
* **Data Encryption**: Data at rest will be encrypted using Oracle Cloud Infrastructure Vault, while data in transit will be encrypted using SSL/TLS.
* **Audit Logs**: Audit logs will be enabled for all OCI resources, with logs stored in Oracle Cloud Infrastructure Logging Analytics.

# 19. High Availability & Disaster Recovery

* **OKE NodePools**: Node pools will be configured across multiple availability domains to ensure high availability.
* **PostgreSQL HA**: A standby database will be configured for high availability, with automatic failover in case of primary database failure.
* **Object Storage**: Object storage will be used for backups, with cross-region replication for disaster recovery.
* **DNS Failover**: DNS failover will be configured using Oracle Cloud Infrastructure Traffic Management to route traffic to available resources.

# 20. Closing Feedback

* **Oracle Feedback**: The Oracle team will provide feedback on the technical validation of WERX on OCI, including any challenges or limitations encountered.
* **TGW Feedback**: The TGW team will provide feedback on the validation process, including any suggestions for improvement or additional requirements.

# 21. Sign-Off Section

* **Client Acceptance**: TGW accepts the validation results and acknowledges that the project has met its objectives.
* **Oracle Confirmation**: Oracle confirms that the validation has been completed successfully and that WERX is compatible with OCI.
* **Final Next Steps**: The final next steps will be discussed and agreed upon, including any additional work required for production migration or support.

## **Version Tagging**: This document will be version-tagged as “Final” upon completion of the project.