# 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 recipients. The contents of this document may not be disclosed to any third party without the prior written consent of Oracle. By accepting this document, the recipient agrees to hold it in confidence and not to disclose any part of it to any third party.

# 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 application validation |
| 0.2 | 2024-09-08 | Jane Smith | Added technical specifications for OCI services and security considerations |
| 0.3 | 2024-09-12 | John Doe | Included high availability and disaster recovery strategies |
| 0.4 | 2024-09-15 | Jane Smith | Finalized implementation details and configuration settings for each service |

# 3. Status and NEXT STEPS

* Current project status: *In Progress*
* Next 3 actions required:
  1. **Owner: Oracle**, **Description**: Complete the setup of the Openshift Cluster and GPU VM in the OCI environment.
  2. **Owner: TGW**, **Description**: Provide access to the development environment for the WERX application.
  3. **Owner: Oracle**, **Description**: Conduct a preliminary review of the WERX application for potential compatibility issues with OCI services.

# 4. Project Participants Table

**Oracle Participants** | Name | Role | Email | |———–|——————-|———————| | John Doe | Cloud Architect | [john.doe@oracle.com](mailto:john.doe@oracle.com)| | Jane Smith| Solution Engineer | [jane.smith@oracle.com](mailto:jane.smith@oracle.com)|

**TGW Participants** | Name | Role | Email | |———–|——————-|———————| | Michael Brown | IT Manager | [michael.brown@tgw.com](mailto:michael.brown@tgw.com)| | Emily Chen | Developer | [emily.chen@tgw.com](mailto:emily.chen@tgw.com)|

# 5. Project Framework

The collaboration between Oracle and TGW will be based on a cooperative model, where both parties share responsibility for the success of the project. Oracle will be responsible for the technical implementation and validation of the WERX application on OCI, while TGW will provide the necessary resources and information about the application. The project is expected to last approximately 3 weeks, with regular feedback loops and progress updates.

# 6. Required Contribution From Client

TGW must provide the following contributions to the project: - Technical resources: Access to the WERX application code and documentation. - Diagrams or architectural artifacts: High-level architecture diagrams of the current on-premise environment. - Access to dev/test environment: Temporary access to the development and testing environments for the WERX application.

# 7. Expected Deliverables From Oracle ISV Labs

The expected deliverables from Oracle ISV Labs include: - Terraform modules for the OCI infrastructure setup. - Target architecture in OCI, including the Openshift Cluster, GPU VM, and Oracle 19c on IaaS. - Technical documentation for the implementation and configuration of each service. - CI/CD integration examples for automating the deployment of the WERX application.

# 8. Cloud Environment Used

The project will utilize a temporary test tenancy in OCI for the validation of the WERX application.

# 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.
* 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 developed by TGW.
* Key Technologies: Java, PostgreSQL, Docker
* Current Hosting: On-premise

# 11. Project Overview

The objective of this project is to validate the WERX application on Oracle Cloud Infrastructure (OCI), utilizing the Openshift Cluster, GPU VM, and Oracle 19c on IaaS services. The desired outcome is to ensure functional compatibility, performance, and readiness for future automation or cloud-native enhancements. - Desired outcome: - Successful deployment of the WERX application on OCI. - Verification of the application’s performance and scalability. - Scope boundaries: - The project focuses on the validation of the WERX application on OCI. - It does not include the migration of the application to production or the setup of licensing and SLA support. - Joint goals: - To collaborate on the technical implementation and validation of the WERX application. - To identify and address potential compatibility issues and performance bottlenecks.

# 12. Scope

**In-Scope Items**: - Deployment of the WERX application on the Openshift Cluster. - Configuration of the GPU VM for simulation workloads. - Setup of Oracle 19c on IaaS for database services. **Out-of-Scope Items**: - Migration of the WERX application to production. - Licensing setup and SLA support. - Custom development or modification of the application code.

# 13. Major Project Milestones

|  |  |  |  |
| --- | --- | --- | --- |
| Milestone | Target Date | Completed | Comments |
| Kickoff with Cloud Architect | 2024-09-01 |  |  |
| OCI Network Setup | 2024-09-05 |  |  |
| Terraform Code Finalization | 2024-09-10 |  |  |
| Application Deployment in OCI | 2024-09-15 |  |  |
| 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

The current architecture of the WERX application consists of an on-premise OpenShift environment with 6 nodes (3 masters, 3 workers), PostgreSQL database, and Kafka for messaging. The application is developed using Java and Docker. - **Diagram Description**: The current setup includes K8s clusters, Kafka, DB, and Java-based application components. - **Tech Stack**: Docker, Helm, PostgreSQL, Java, Kafka - **Known Issues/Pain Points**: Manual deployments, scaling issues, and limited monitoring capabilities.

# 16. Target OCI Architecture

The target architecture for the WERX application on OCI will utilize the following services: - Openshift Cluster for container orchestration - GPU VM for simulation workloads - Oracle 19c on IaaS for database services **Service Mapping**: | Current Service | Target OCI Service | |—————–|——————–| | On-premise OpenShift | Openshift Cluster | | Simulation Workloads | GPU VM | | PostgreSQL | Oracle 19c on IaaS | **Component Interaction**: The Openshift Cluster will manage the deployment and scaling of the WERX application containers. The GPU VM will be used for simulation workloads, and Oracle 19c on IaaS will provide database services. **Diagram Placeholder**: The target architecture diagram will include the Openshift Cluster, GPU VM, Oracle 19c on IaaS, and the WERX application components, showcasing their interactions and data flows.

# 17. Implementation Details and Configuration Settings

* **Openshift Cluster**: Will be provisioned with 3 master nodes and 3 worker nodes, using the Oracle-provided OpenShift template.
* **GPU VM**: Will be configured with 2 NVIDIA V100 GPUs, 16 CPU cores, and 64 GB of memory.
* **Oracle 19c on IaaS**: Will be provisioned with a single instance, using the Oracle-provided database template.
* **Helm/Terraform usage**: Terraform will be used for infrastructure provisioning, and Helm will be used for application deployment.
* **OKE Node Pools config**: Node pools will be configured with 3 worker nodes, using the Oracle-provided OKE template.
* **PostgreSQL shape, version**: Oracle 19c on IaaS will be used, with a shape of VM.Standard.E2.1.
* **Streaming configuration**: Kafka will be configured with 3 brokers, using the Oracle-provided Kafka template.
* **Object Storage for backups or Helm registry**: Object Storage will be used for backups, with a bucket named “werx-backups”.

# 18. Security Considerations

* **IAM Policy examples**: Policies will be created to restrict access to the WERX application and its components.
* **NSG configuration**: NSGs will be configured to allow incoming traffic to the Openshift Cluster and GPU VM.
* **Data encryption approach**: Data at rest will be encrypted using Oracle’s encryption services, and data in transit will be encrypted using SSL/TLS.
* **Audit logs or Logging Analytics setup**: Audit logs will be enabled for the WERX application, and Logging Analytics will be used for log analysis.

# 19. High Availability & Disaster Recovery

* **OKE NodePools across ADs**: Node pools will be distributed across 3 availability domains.
* **PostgreSQL HA with replica**: A replica of the Oracle 19c database will be created, using Oracle’s Data Guard.
* **Object Storage cross-region replication**: Object Storage will be configured to replicate data across 2 regions.
* **DNS failover via Traffic Management**: Traffic Management will be used to route traffic to the available instance of the WERX application.
* **DR architecture summary**: The DR architecture will include a secondary region, with a standby instance of the WERX application.

# 20. Closing Feedback

Placeholder for feedback from Oracle and TGW.

# 21. Sign-Off Section

* Client Acceptance: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Oracle Confirmation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Final next steps: The project will be considered complete after the final validation and review of the WERX application on OCI.

## Version tagging: This document will be versioned and updated as necessary, with changes tracked and approved by both Oracle and TGW.