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Release Notes
Roving Edge as Data Transfer Gateway Toolkit Update

Version 2.0
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Public

Purpose Statement

The Roving Edge as a Data Transfer Gateway is designed to facilitate seamless data migration from DoD, Defense or commercial customers to Oracle Cloud Infrastructure (OCI) object storage within OC2/OC3 restricted regions, specifically in cases where FastConnect infrastructure is unavailable.

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Product: OCI Data Transfer Gateway Toolkit
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Overview

This release introduces a fully integrated and production-ready OCI Data Transfer Gateway (DTG) toolkit, combining a hardened Oracle Linux 8.10 STIG image with a performance-optimized, enterprise-grade OCI Sync script. The solution is purpose-built for secure, large-scale data ingestion into Oracle Cloud Infrastructure (OCI) and includes full observability with Grafana + Prometheus integration.

Key Features & Enhancements

OCI Sync Script (oci_sync.sh)

- **High-Speed Parallel Uploads:** Uses `oci os object bulk-upload` with `--parallel-upload-count=100` for maximum concurrency and faster throughput.

- **Automatic File Classification:** Scans all files under `/datagateway` and classifies them as SMALL (≤ 1GB) and LARGE (> 1GB).

- **Optimized Upload Method per File Size:** Small files are uploaded using `--no-multipart`, while large files use OCI's multipart upload automatically.

- **Real-Time Logging:** All upload activity is logged to `/var/log/oci_sync.log` with timestamps. Log is rotated per execution.

- **File System Scan Optimization:** Uses `fd` and `stat` for high-performance file discovery with size metadata.

- **Upload Summary Reporting:** Logs total file count, categorization by file size, and counts by file extension.

- **Fully Non-Interactive & Production-Safe:** The script is fully automated with no manual prompts.

- **Namespace, Profile, and Region Awareness:** Respects OCI CLI configuration for cross-tenant compatibility.

- **Temporary File Cleanup:** Automatically removes temporary classification files after each sync to keep the environment clean.

- **Bulk-upload feature and no-overwrite**: to move files faster to OCI bucket and avoid overwrite of files already uploaded.

Observability via Grafana + Prometheus

Built-in Prometheus exporter exposes key metrics:
- oci_sync_files_uploaded_total

- oci_sync_files_uploaded_total

- oci_sync_files_uploaded_total vs. oci_sync_files_uploaded_total

- Upload completion %

- System metrics (CPU, memory, disk, network)

Oracle Linux 8.10 STIG Image (DTG Hardened Edition)

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- Base OS: Oracle Linux 8.10 STIG-compliant

- Kernel: 5.15.0-306.177.4.1.el8uek.x86_64

- OCI CLI: 3.54.2

- Python: 3.6.8

- Security: Built on DoD STIG baselines, SELinux enforcing, secure logging, NTP, and firewall policies

- NFS server tunables: Optimized settings like rsize=1048576, actimeo=3600, lookupcache=all, and timeo=600

- O.S optimizations: Tuned network stack, memory management, and file descriptor limits

- MTU adjustments applied for optimized data throughput

- Telemetry stack pre-installed: Node exporter, Prometheus, and Grafana

Recommended Use Cases

- Data Transfer Gateway

- Data center-to-OCI migrations

- Secure bulk upload from on-prem environments to OCI

- Archive offload into OCI Object Storage

- Compliance-aligned transfers using hardened OS images

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