QoreStor Refcount Migration Script Documentation

# Overview

This script automates the process of scanning, copying, verifying, and updating QoreStor refcount data when migrating between standard and alternate repository layouts. It provides dry-run, scan-only, and live modes, ensuring safe execution with backup, logging, and verification steps.

# TL;DR (Quick Summary)

- Detects whether QoreStor is in Standard layout (`.ocarina\_hidden/refcnt`) or Alternate layout (`refcnt`).  
- Scans refcount directories and computes total sizes.  
- Copies refcount data with rsync (with dry-run, progress bar, or live modes).  
- Verifies copied data optionally with checksum.  
- Edits `/etc/oca/oca.cfg` safely (backup first, replace-or-insert `TGTSSDDIR`, toggle PLATFORM\_DS\_REFCNTS\_ON\_SSD=1).  
- Provides clean logs and summary banners.  
- Supports test mode and debug mode for safe experimentation.

# Detailed Operation

## 1. Layout Detection

The script detects whether QoreStor is running in Standard or Alternate layout by inspecting /etc/oca/oca.cfg:  
- Standard layout: refcount path is `.ocarina\_hidden/refcnt` under /QSdata/ocaroot/<repo\_id>.  
- Alternate layout: refcount path is `refcnt` under /QSmetadata/qs\_metadata/<repo\_id>/refcnt.  
Detection is done by checking for:  
 - PLATFORM\_DS\_REFCNTS\_ON\_SSD=1  
 - TGTSSDDIR=${R3\_DISK\_JOURNAL\_PATH}  
If both are true, the repo root is taken from R3\_DISK\_JOURNAL\_PATH.

## 2. Modes

- Scan-only (`--scan-only`): Only scans and sums sizes of refcnt directories.  
- Dry-run (`--dry-run`): Simulates copy/verify, shows progress bar, previews config edits.  
- Live (default): Performs actual copy, verification (optional), and updates config.

## 3. Copy and Verification

- Uses rsync with archive/safe flags, sparse support, numeric IDs.  
- Progress bar is shown in live copy.  
- Empty directories are ensured with `--dirs`.  
- Verification step uses rsync again, optionally with `--checksum`.  
- Dry-run mode gathers stats without writing.

## 4. Config Handling

- Backs up /etc/oca/oca.cfg before edits.  
- Updates or inserts `export TGTSSDDIR=<mountpoint>/ssd/`:  
 - Replaces existing `TGTSSDDIR` if present.  
 - Otherwise inserts after `export TGTDIR`, or appends if missing.  
- Toggles `PLATFORM\_DS\_REFCNTS\_ON\_SSD=0` → `=1`, avoiding duplicates.  
- Provides dry-run preview with colored diff output.

## 5. Service Control

- Stops `ocards` service before copy.  
- Waits for System State=Stopped with timeout.  
- Restarts service after copy and config change.  
- Waits until system is fully operational.

## 6. Logging and Debugging

- Logs all stdout and stderr to /var/log/oca\_edit/oca\_edit\_TIMESTAMP.log.  
- Debug mode (`--debug`) writes messages via FD3 to avoid contaminating captured variables.  
- Summary banner printed at the end of every run.

# Notes

The script ensures data safety by backing up configs, verifying copy operations, and preventing accidental live runs without user confirmation. Dry-run and scan-only modes make it suitable for testing and planning before executing a live migration.