

# Data migration to and between OCI storage services using Resilio Connect

March 2, 2024

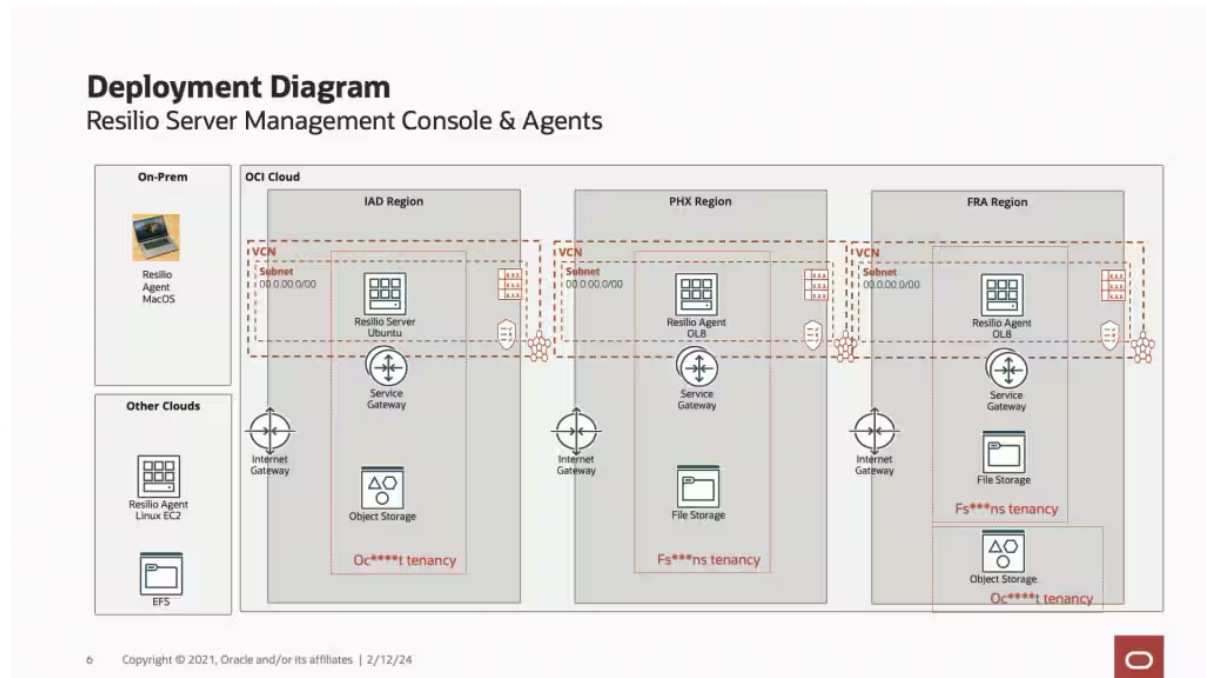
Oracle Cloud Infrastructure (OCI) customers are looking to migrate increasingly larger amounts of data from on-premises or other cloud vendors into OCI File Storage service and OCI Object Storage service. They also want to be able to move data between these services in the same or different regions and tenancies. They want to be able to start off data transfer jobs and monitor progress periodically. To help our customers with the data migration challenge, OCI has partnered with Resilio, who offer Resilio Connect for high-speed data transfer at wire speed.

The OCI Storage Outbound PM team recently conducted validation of using [Resilio Connect](#) for various data migration scenarios for OCI customers and recommended it to be listed in Oracle Cloud Marketplace for download. This blog post provides a high-level overview of the tests, results, and recommendation.

## Resilio Connect tests

For the validation tests, we deployed the Resilio server and Management Console in the Ashburn (IAD) region, while Resilio Connect agents were

deployed on-premises and on Compute instances in OCI Phoenix (PHX) and Frankfurt (FRA) regions. These agents were connected to the Object Storage and File Systems in the regions for data transfer. The Resilio Connect agent was also deployed in Amazon Web Services (AWS)'s Ohio region for transferring data from AWS Elastic File System (EFS) to OCI File Storage. The following diagram provides the deployment overview.



We evaluated Resilio Connect solution from the partner to test various data migration scenarios and measure time taken. We also compared this measurement against the time taken by open source tools, such as rclone, rsync, and fpsync, and OCI internal features like file and object replication. The Resilio Management Console makes it very easy to deploy and configure agents, configure OCI Object Storage endpoint as S3-compatible cloud object storage and mount File Storage shares on the agent. You can create jobs for data transfer and sync. You can run these jobs on a schedule and monitor them through the console as shown in the following screenshots.

## Resilio Management Console

The screenshot shows the 'Agents' page in the Resilio Management Console. At the top, there is a navigation bar with 'OVERVIEW', 'EVENTS', 'JOBS', 'AGENTS', 'GROUPS', 'PROFILES', 'BANDWIDTH', and 'SETTINGS'. Below the navigation bar, a red banner indicates 'Your evaluation license expired 22 hours 59 minutes ago'. The main content area is titled 'Agents' and contains a table with columns: Agent name, Agent version, WAN optimization, License, Status, Groups, Username, Last seen, and Jobs in progress. The table lists several agents, including 'Management Console emilio@server-ns...', 'armaze-mac', 'oib-fra-ad1', 'oib-jhxad2-2', 'vinodkr-mac', and 'ip-172-31-1-246.us-east-2.compute.amz...'. Each row includes a checkbox for selection and a 'Jobs in progress' count.

Agent name	Agent version	WAN optimization	License	Status	Groups	Username	Last seen	Jobs in progress
Management Console emilio@server-ns...	3.7.1.2203	10.0 Gbps enabled	Trial Agent	Restart required	1	root		0
armaze-mac	3.7.1.2203	10.0 Gbps enabled	Trial Agent	Offline for 9 min...	0	Ashuash...	Today, 1:23 PM	0
oib-fra-ad1	3.7.1.2203	10.0 Gbps enabled	Trial Agent	Restart required	2	root		3
oib-jhxad2-2	3.7.1.2203	10.0 Gbps enabled	Trial Agent	Restart required	0	root		3
vinodkr-mac	3.7.1.2203	10.0 Gbps enabled	Trial Agent	No active Job Run	0	Vinodh Kr...		0
ip-172-31-1-246.us-east-2.compute.amz...	3.7.1.2203	10.0 Gbps enabled	Trial Agent	Offline for 21 ho...	0	root	Jan 30, 4:07 PM	0

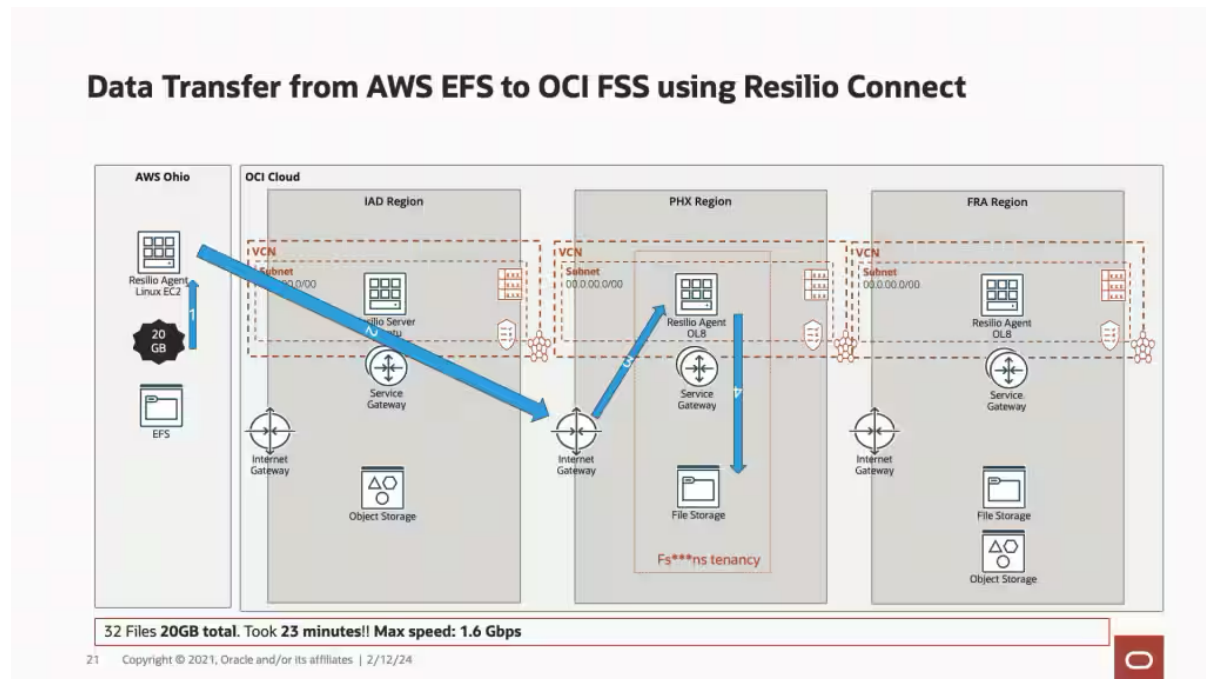


The screenshot shows the 'Edit storage' dialog box in the Resilio Connect console. The background shows the 'Cloud storage' section with a table of storage configurations. The dialog box has the following fields and options:

- Name:** OCI OSS
- Description:** OCI Object Storage
- Endpoint:** ocisammot.compat.objectstorage.us-ashburn-1.oraclecloud.com
- Access key ID:** 9c32f61f849dbde5eae0de7efe8e7b5da2317a62
- Secret access key:** [Redacted]
- Region:** us-ashburn-1
- Use SSL
- Use bucket

At the bottom of the dialog, there are three buttons: 'Test connection...', 'Save', and 'Cancel'.





## Test results

Tests were conducted with data sets from single 10-GB file to file system with thousands of files totaling 462 GB. Tests also included data sets with hundreds of files totaling 100GB and a bucket with hundreds of objects totaling 107 GB.

The data transfer scenarios tested with Resilio Connect included the following examples:

- From on-premises to OCI Object Storage and File Storage in different regions
- Between File Storage and File Storage in different regions (one time and periodic sync)
- Between Object Storage and Object Storage in different regions
- Between File Storage and Object Storage across different regions and tenancies
- From AWS EFS to OCI Object Storage

Transfer scenario	Transfer speed
On-premises to OCI Object Storage or File Storage	20–373 Mbps
AWS EFS to OCI File Storage	1.6 Gbps
OCI File Storage to OCI File Storage in another region	980–1.5 Gbps

OCI File Storage to OCI Object Storage in another	932 Mbps
OCI Object Storage to OCI Object Storage in another	1.3 Gbps

Our finding was that Resilio Connect data migration times are comparable to tools like rclone. OCI internal features like crossregion copy and replication are faster than Resilio Connect because they use OCI backbone. The network speed and bandwidth have the biggest impact on overall data transfer performance.

## Our recommendation

Based on the evaluation conducted, we have provided Resilio Connect in Oracle Cloud Marketplace as a recommended, tested data migration solution for the following reasons:

- Resilio Connect provides intuitive GUI management console to deploy agents, create profiles, optimize performance settings, run and monitor jobs, and create support tickets if needed.
- Resilio is responsible for supporting large data migration projects for key OCI storage customers.
- Provides easy-to-use GUI, CLI, and APIs for data migration with Resilio instead of open source rclone CLI

## About Cloudsway

Cloudsway is a subsidiary of Wangsu Science and Technology (stock code: 300017), established in March 2023. Wangsu Science and Technology is a global leading provider of information infrastructure platform services, with business spread across more than 70 countries and regions worldwide.

Cloudsway is one of the three innovation engines in Wangsu's "2+3" strategy, providing enterprises with integrated products and solutions, such as cloud strategy consulting, modernized application construction, generative AI, and enterprise-grade cloud hosting services. solutions based on AWS.

Cloudsway is committed to become a leading provider of hybrid cloud solutions, offering secure, efficient, and convenient cloud services to enterprises, helping them with digital and intelligent transformation, and boosting their operational efficiency.

