



The Map of Migration Tool for Huawei Cloud

C-POMC

Version 1.0

27 Sep 2023

What's New?

| No. | Version | Description | Phase | Modified By | Audited By | Document Name |
|-----|---------|--|-------------|-------------|------------|--|
| 1 | V1.0 | <ul style="list-style-type: none">• Reorganize the document structure• Add the “Ecosystem Tool Framework”• Update the “Discovery Tools”• Update “Packer / RiverMeadow / Disk2VHD / qemu-img-hw / image-migrator / kclone / i2active / DMS / DRS / UGO ”• Update “OMS / Fastcopy / RCLONE / RSYNC / FPSYNC”• Add LLD2Terraform | 27 Sep 2023 | Liu Shaowei | lichang | The Map of Migration Tool for Huawei Cloud |

Preface

Currently, the public cloud is widely used, and HUAWEI CLOUD is also used by more and more users in Latin America. To help HUAWEI CLOUD users quickly migrate services to HUAWEI CLOUD, Huawei Latin America cloud team prepares this manual.

We hope to help you:

First, you can quickly find efficient and available tools, including open-source tools, Huawei tools, and third-party tools, based on migration scenarios.

Second, you can quickly master how to use the tool based on the tool introduction.

Third, share tool usage experience within your team, provide feedback, and help HUAWEI CLOUD optimize tool capabilities.

Disclaimer for Tool Use

| No. | Topic | Description | Remark |
|-----|-------------------------------------|--|--------|
| 1 | To Which the Document Is Applicable | Huawei Cloud engineers HUAWEI CLOUD partner engineers and HUAWEI CLOUD customers | |
| 2 | Compliance Suggestion | The use of Open Source tools must comply with relevant open source license agreements. The use of Commercial tools must comply with relevant commercial software license requirements. | |
| 3 | Disclaimer | This document is for reference only. HUAWEI CLOUD is not responsible for data loss and service interruption caused by the use of the tool. Users must have basic technical capabilities. Before operating the production environment, fully evaluate and verify the tools to prevent service interruption caused by improper tool operations. | |

Inventory 1 - Huawei Cloud Migration Tools

| Domain | SN | Tool Name | Online or Offline? | Global or Region level? | Santiago Region | Sao Paulo1 Region | MexicoCity 2 Region | Product Manager | Discovery | Assessment | Resource orchestration | Host Migration | K8S Migration | Docker image | File Migration | DB Migration | OS Upgrading | Others | Remarks |
|------------------------|----|----------------|--------------------|-------------------------|-----------------|-------------------|---------------------|-----------------|-----------|------------|------------------------|----------------|---------------|--------------|----------------|--------------|--------------|-------------------------------------|---------|
| Migration Management | 1 | MgC | Online | Global | 2023/9/28 | | | | Yes | Yes | | | | | | | | | |
| | 2 | Haydn | Online | Region | Available | TBD | TBD | | | | Yes (Pending on RFS) | | | | | | | Soluton Design / Project Management | |
| Discovery & Assessment | 3 | RDA | Offline | NA | Available | Available | Available | | Yes | Yes | | | | | | | | | |
| | 4 | KSPIDER | Offline | NA | Available | Available | Available | | Yes | Yes | | | | | | | | | |
| Resource orchestration | 5 | RFS | Online | Region | 2023/12/30 | 2023/9/30 | 2023/12/30 | | | | Yes | | | | | | | | |
| Server Migration | 6 | SMS | Online | Global | Available | Available | Available | | | | | Yes | | | | | | | |
| | 7 | qemu-img-hw | Offline | NA | Available | Available | Available | | | | | Yes | | | | | | | |
| Container Migration | 8 | K8CLONE | Offline | NA | Available | Available | Available | | | | | | Yes | | | | | | |
| | 9 | image-migrator | Offline | NA | Available | Available | Available | | | | | | | Yes | | | | | |
| Database Migration | 10 | DRS | Online | Region | Available | Available | Available | | | | | | | | | Yes | | | |
| | 11 | UGO | Online | Region | Available | NA | NA | | | | | | | | | Yes | | | |
| Storage Migration | 12 | OMS | Offline | NA | Available | Available | Available | | | | | | | | Yes | | | | |
| | 7 | | Online | Region | Available | 2023/10/30 | Available | | | | | | | | Yes | | | | |

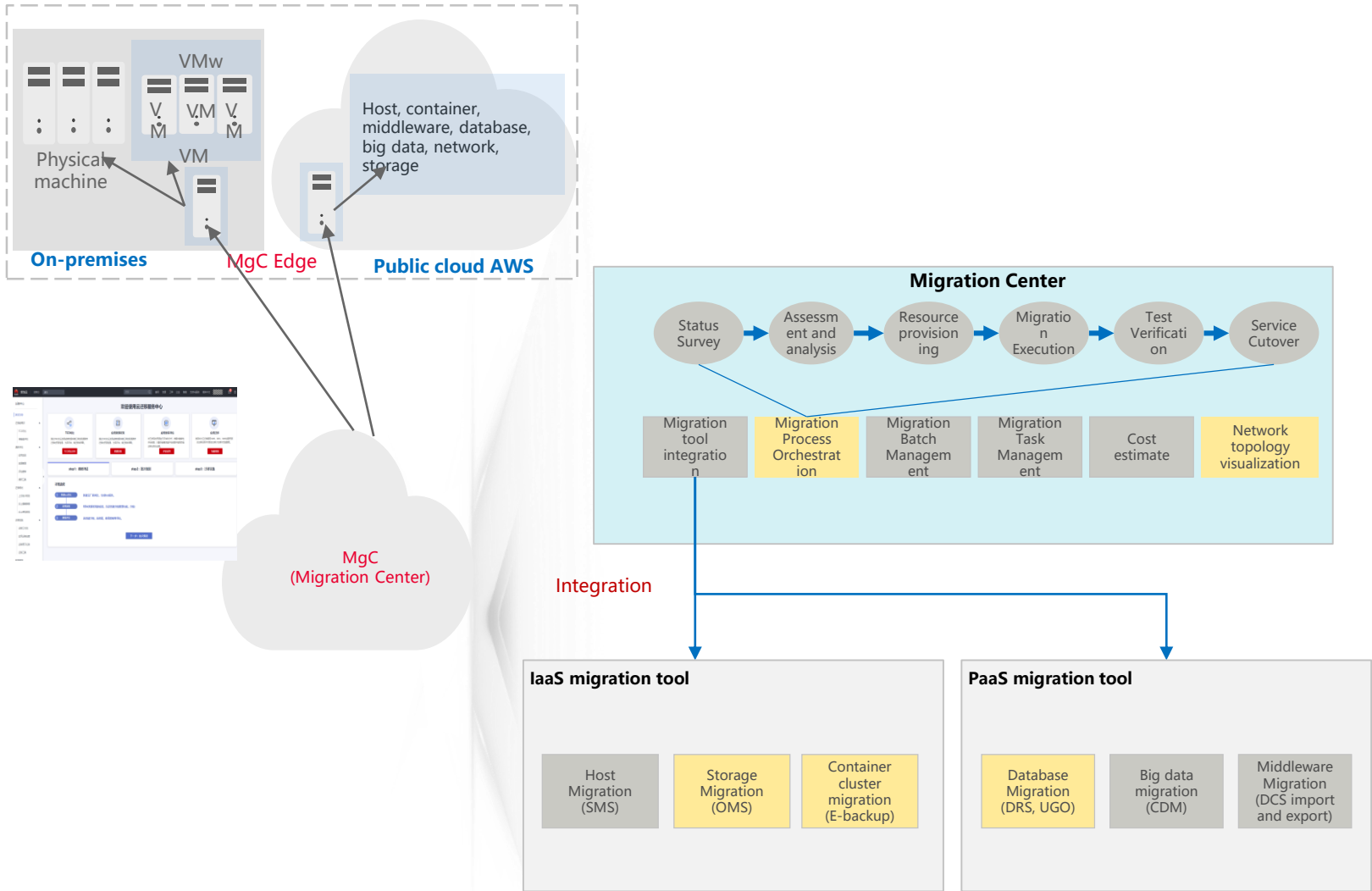
Inventory 2 - 3rd party Migration Tools

| Domain | SN | Tool Name | Status | Provider | Business Type | Charged or not | Necessary to authorize? | Discovery | Assessment | Resource orchestration | Host Migration | K8S Migration | Docker image | File Migration | DB Migration | OS remodeling | Others | Remarks |
|------------------------|----|----------------------------------|------------|--------------|--------------------------------|---|-------------------------|-----------|------------|------------------------|----------------|---------------|--------------|----------------|--------------|---------------|--------|--|
| Discovery & Assessment | 1 | RVTools | available | Rob de Veij | Closed source (free of charge) | No charge. | Unlimited | Yes | | | | | | | | | | |
| | 2 | ARI (Azure Resource Inventory) | available | Azure | open source | No charge. | Unlimited (MIT) | Yes | | | | | | | | | | |
| | 3 | ADE (aws-discovery-export) | available | GCP | open source | No charge. | Unlimited (Apache 2.0) | Yes | | | | | | | | | | |
| | 4 | FADDOM | available | FADDOM | Commerce | Charged | N/A | | | | Yes | | | | | | | |
| Resource orchestration | 5 | packer | available | hashicorp | open source | No charge. | Unlimited (BUSL) | | | Yes | | | | | | | | |
| Server Migration | 6 | I2move | available | i2soft | Commerce | Charged | N/A | | | | Yes | | | | | | | Win2003 / Centos 5.X |
| | 7 | disk2vhd | available | microsoft | Closed source (free of charge) | No charge. | Unlimited | | | | Yes | | | | | | | Windows Image Migration |
| | 8 | RiverMeadow OSM | Adaptation | RiverMeadow | Commerce | Charged | N/A | | | | Yes | | | | | Yes | | Windows/Linux upgrade and reconstruction |
| Database Migration | 9 | DMS (Database Migration Service) | available | AWS | Cloud service | Charged | N/A | | | | | | | | Yes | | | Migrating AWS RDS to HUAWEI CLOUD |
| | 10 | i2Active | available | i2soft | Commerce | Charged | N/A | | | | | | | | Yes | | | |
| Storage Migration | 11 | fastcopy | available | FastCopy Lab | Closed source | No charge (individual) Charged (Working) | N/A | | | | | | | Yes | | | | Windows SMB File |
| | 12 | Rclone | available | N/A | open source | No charge. | Unlimited (MIT) | | | | | | | Yes | | | | Linux |
| | 13 | Rsync | available | N/A | open source | No charge. | Unlimited (GPL 3.0) | | | | | | | Yes | | | | Linux |
| | 14 | fpsync | available | N/A | open source | No charge. | Unlimited (BSD) | | | | | | | Yes | | | | Linux |

Inventory 3 - Huawei Latin Cloud developed tools

| Domain | SN | Tool Name | Online or Offline? | Global or Region level? | Santiago Region | Sao Paulo1 Region | MexicoCity2 Region | Product Manager | Discovery | Assessment | Resource orchestration | Host Migration | K8S Migration | Docker image | File Migration | DB Migration | OS Upgrading | Others | Remarks |
|------------------------|----|---------------|--------------------|-------------------------|-----------------|-------------------|--------------------|-----------------|-----------|------------|------------------------|----------------|---------------|--------------|----------------|--------------|--------------|--------|---------|
| Resource orchestration | 1 | LLD2Terraform | Offline | NA | Available | Available | Available | | | | Yes | | | | | | | | |

Positioning: Integrates migration tools to cover the entire migration process and domain, and supports one-stop migration service, including Discovery & Assessment , orchestration of migration processes and management of migration tasks.



Application Scenarios

- VMware (Available)
- AWS (In development)
- Azure (In development)
- GCP (In development)
- OCI (In development)

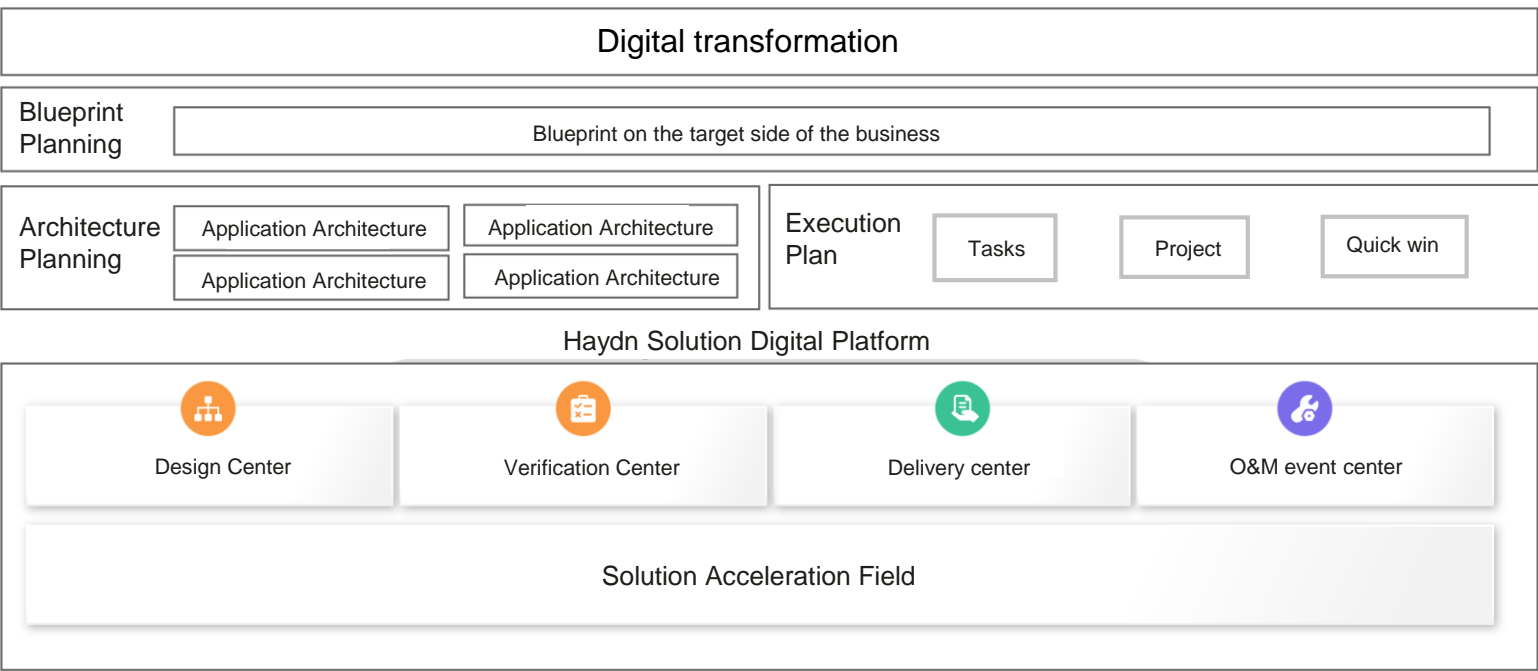
Major Features

- Survey and Assessment
- Migration Planning
- Migration implementation



Positioning: Haydn Cloud Solution Factory (HaydnCSF) is a one-stop digital platform for solution full lifecycle management. It digitalizes objects, workflows, and rules to help partners and end users design, deploy, verify, deliver, and manage solutions online in a collaborative manner, accelerating solution monetization.

Overall Diagram for Haydn Solution Digital Platform



Application Scenarios

- Solution Design
- Baseline Verification
- Certification Test
- Project PoC
- Solution Delivery
- O&M Event Management

[Haydn Document](#)

Limitation: Haydn is available in Santiago Region, partner could use the Solution Design function. (Delivery function will be available until the RFS is available in Santiago Region.)



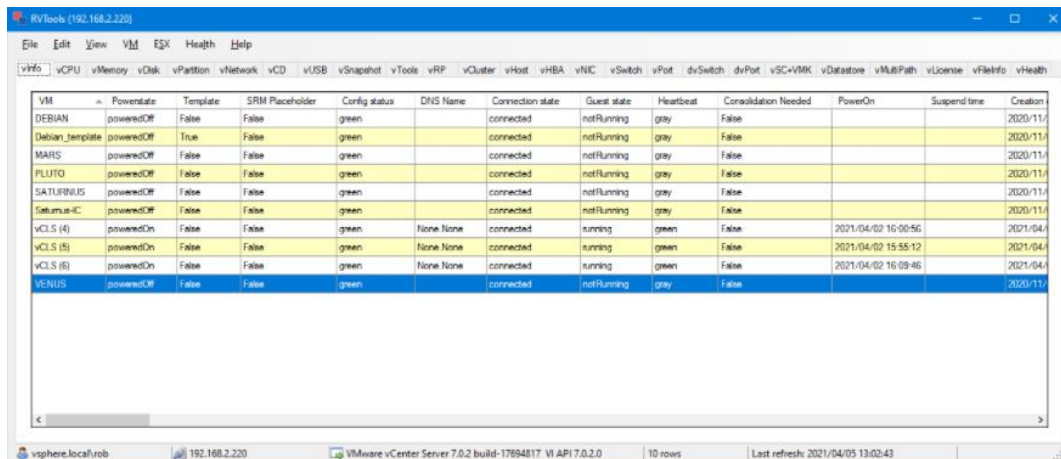
Positioning: RVTools is a discovery tool for VMware Platform, it can export the Virtual Machine List with one command

RVTools Introduction

RVTools is a Windows .NET 4.6.1 application which uses VMware vSphere Management SDK 7.0 and CIS REST API to display information about your virtual environments.

VirtualCenter 4.x, ESX Server 4.x, VirtualCenter 5.x, ESX Server 5.x, VirtualCenter 6.x, ESX Server 6.x, VirtualCenter 7.0 and ESX server 7.0.

<https://www.robware.net/rvtools/>



| VM | Powerstate | Template | SRM Placeholder | Config status | DRS Name | Connection state | Guest state | Heartbeat | Consolidation Needed | PowerOn | Suspend time | Creation |
|-----------------|------------|----------|-----------------|---------------|-----------|------------------|-------------|-----------|----------------------|---------------------|--------------|----------|
| DEBIAN | poweredOff | False | False | green | | connected | notRunning | gray | False | | | 2020/11/ |
| Debian_template | poweredOff | True | False | green | | connected | notRunning | gray | False | | | 2020/11/ |
| MARS | poweredOff | False | False | green | | connected | notRunning | gray | False | | | 2020/11/ |
| PLUTO | poweredOff | False | False | green | | connected | notRunning | gray | False | | | 2020/11/ |
| SATURJUS | poweredOff | False | False | green | | connected | notRunning | gray | False | | | 2020/11/ |
| Saturnus-IC | poweredOff | False | False | green | | connected | notRunning | gray | False | | | 2020/11/ |
| vCLS (4) | poweredOn | False | False | green | None None | connected | running | green | False | 2021/04/02 16:00:50 | | 2021/04/ |
| vCLS (5) | poweredOn | False | False | green | None None | connected | running | green | False | 2021/04/02 15:55:12 | | 2021/04/ |
| vCLS (6) | poweredOn | False | False | green | None None | connected | running | green | False | 2021/04/02 16:09:46 | | 2021/04/ |
| VENUS | poweredOff | False | False | green | | connected | notRunning | gray | False | | | 2020/11/ |

Suggest to export all information to xlsx file, then you can import the xlsx file to RDA.

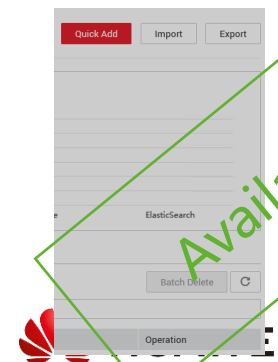
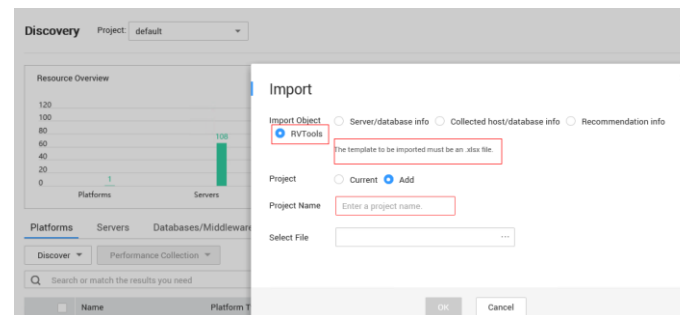
1. Export Guide: Start RVTools with userid password, and export all to xlsx

Start RVTools connect to a specific virtualcenter or ESX server, pass userid and password, start export all to xlsx and write the xlsx files to the given directory with the given filename.

- Command Format: `RVTools.exe -s virtualcenter.domain.local -u userid -p password -c ExportAll2xlsx -d directory -f filename`
- Command Example: `RVTools.exe -s 192.168.2.220 -u Administrator -p password -c ExportAll2xlsx -d c:\temp -f rvtools.xlsx`

2. Import Guide: Import xlsx file to RDA for further analysis and migration

RDA Console -> Discovery -> Import -> RVTools -> Select xlsx File -> OK



Positioning: Resource Discovery Assessment (RDA) is a tool deployed on Windows hosts for resource discovery and migration assessment.

Scenario 1: Resource Discovery

With the cloud discovery and information collection functions of the RDA, resource information about the cloud platform, host, database, container, big data, and middleware can be collected and exported.

Scenario 2: Migration Evaluation

Analyze collected resource information before migration, identify migration risks, provide migration suggestions, and evaluate the driving force and readiness for cloud migration.

Support cloud platform

Supported the cloud platform VMware, AWS.

Support cloud services

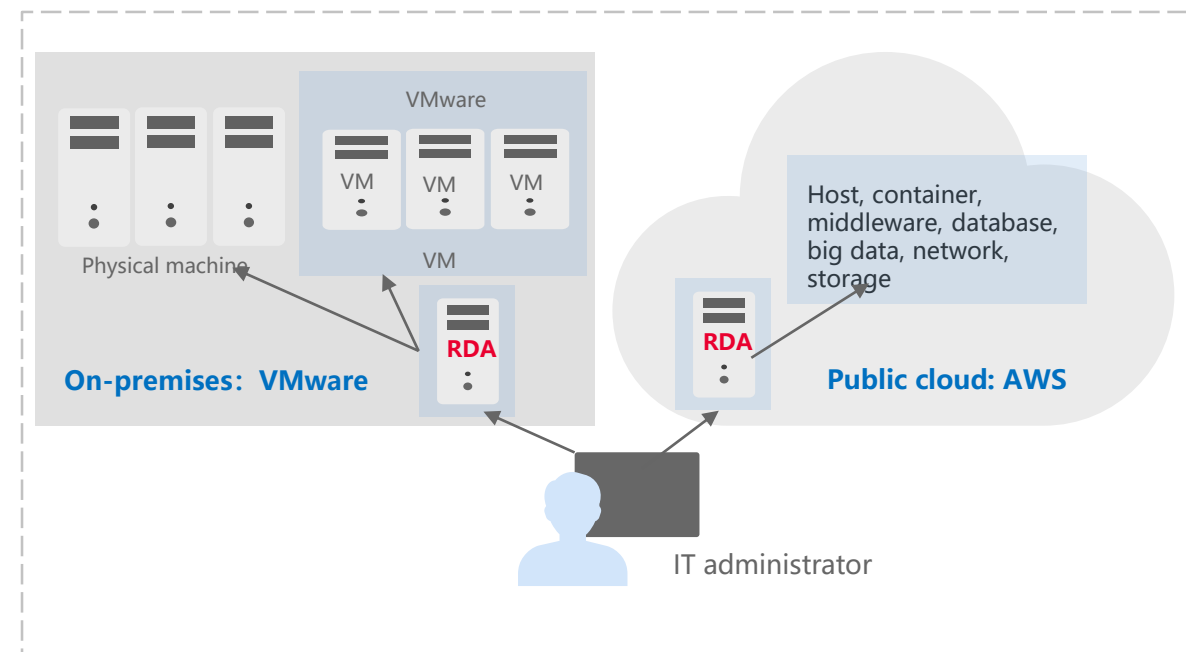
Host, container, middleware, database, big data, network, and storage (7 types)

Support Group and Team

Technical support

- Luo Junlin
- Xie Peicai
- Tang Fa

RDA用户交流群 (RDA Users Communication Gr...)



Installation Procedure

Step 1 Download the RDA installation package to the Windows computer, double-click the RDA installation package, and click Next.

Step 2 On the License Agreement page, read the license agreement carefully, select I accept the terms in the license agreement, and click Next.

Step 3 Select an installation directory and click Next.

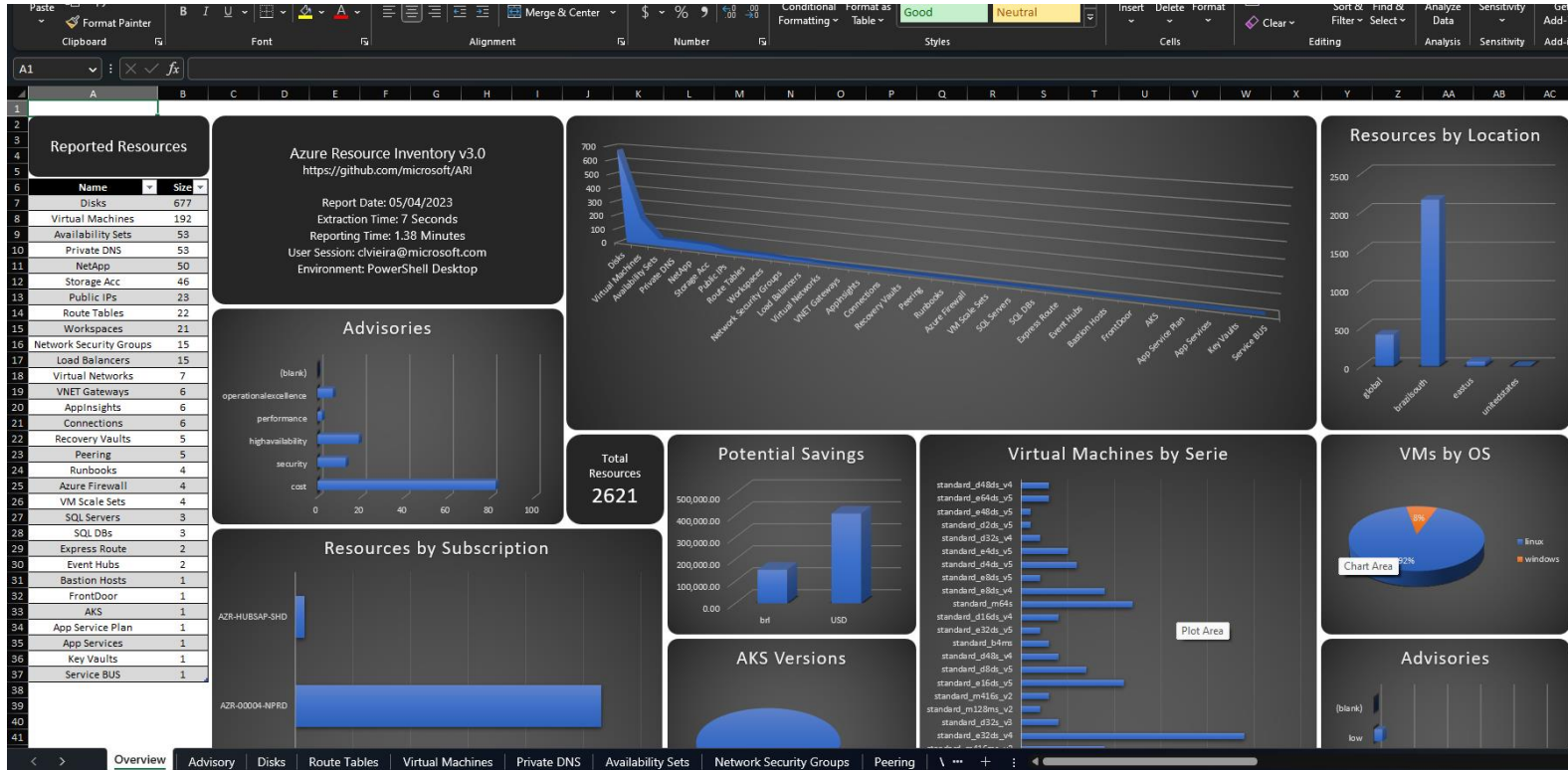
Step 4 After the installation is complete, click Finish to enter the RDA console.

Available



Positioning: Azure Resource Inventory - It's a Powerful tool to create EXCEL inventory from Azure Resources with low effort

<https://github.com/microsoft/ARI>



Application Scenarios

- Azure



Major Features

- Survey

Available



Positioning: aws-discovery-export is a discovery tool to create inventory from AWS Resources with low effort.

<https://github.com/GoogleCloudPlatform/aws-discovery-export>



Application Scenarios

- AWS 29 Cloud Services

By default resources from following services are collected: ec2, s3, route53, apigatewayv2, appconfig, appstream, appconfigdata, application-autoscaling, autoscaling, eks, efs, ebs, lambda, rds, sns, cloudfront, elasticbeanstalk, iam, glacier, kinesis, dynamodb, elasticache, redshift, sagemaker, sqs, lightsail, cloudwatch, chime, clouddirectory

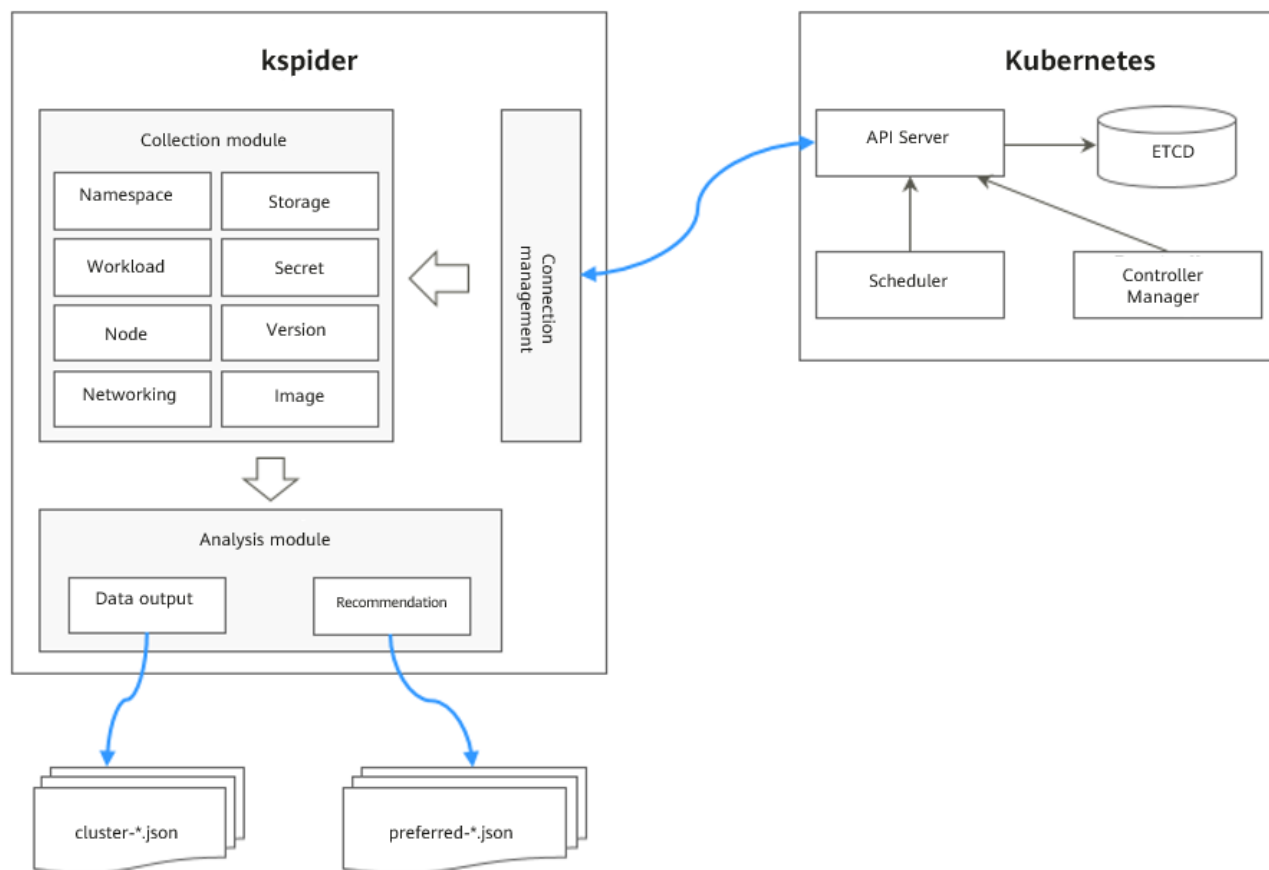
Features

- Discovery

Available

Positioning: kspider is a tool used to collect information about the source cluster.

It provides cluster-related data such as the Kubernetes version, scale, workload quantity, storage, and in-use images. The data helps you understand the current status of the cluster and evaluate migration risks, and select a proper destination cluster version and scale.



Application Scenarios

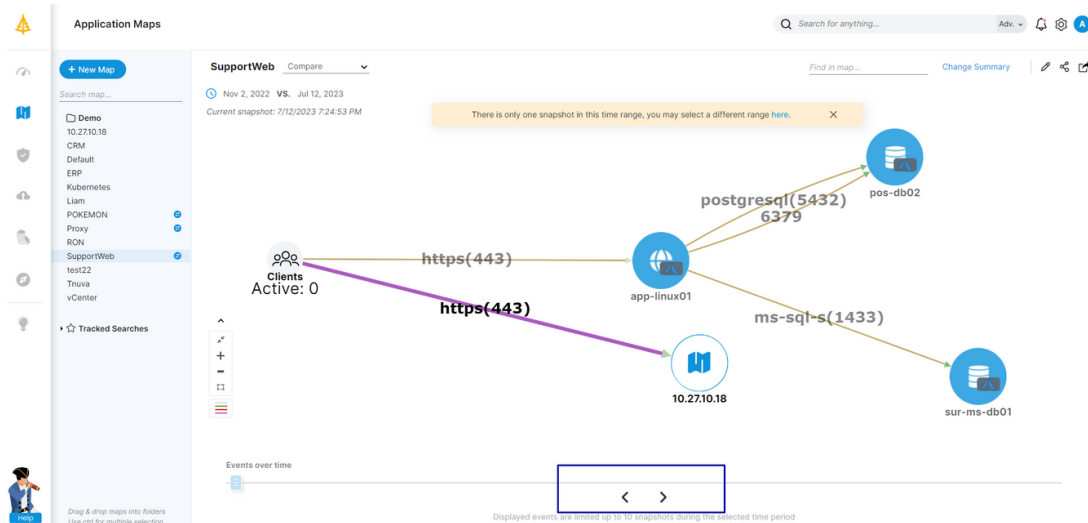
- Kubernetes
- AWS EKS
- Azure AKS
- GCP GKS
- Huawei Cloud CCE

Major Features

- Collect information from source cluster
- Evaluate the destination cluster

[KSPIDER Document](#)

Positioning: FADDOM is a tool that Map all your on-prem servers and cloud instances, applications, and dependencies in under 60 minutes.



Application Scenarios

- VMware / Hyper-V / Nutanix
- AWS / Azure / GCP

Major Features

- Discovery
- Recommendation (Sizing)
- Change Management
- Cybersecurity

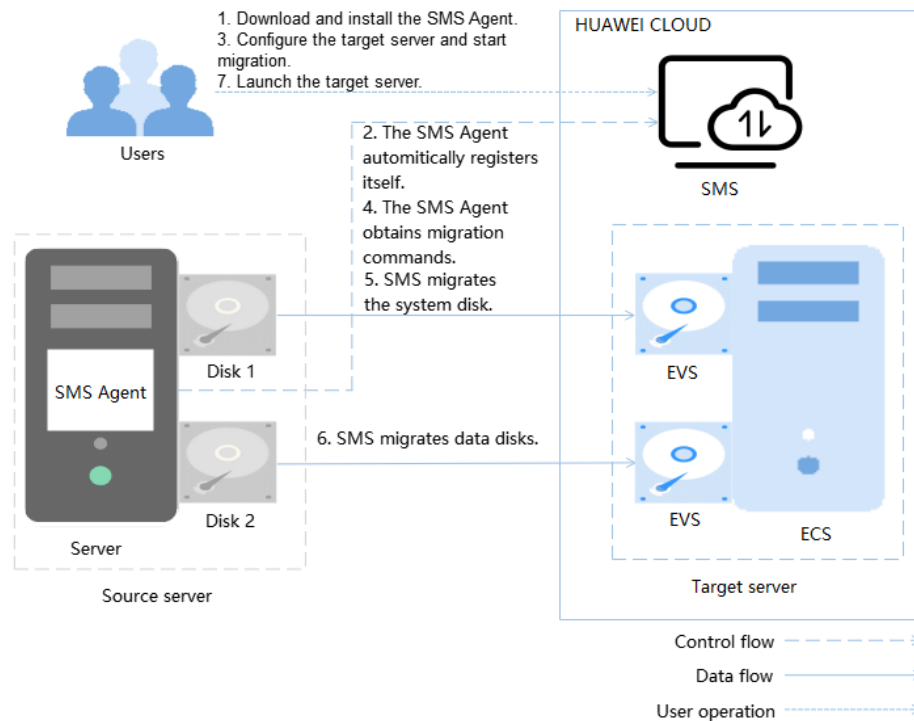
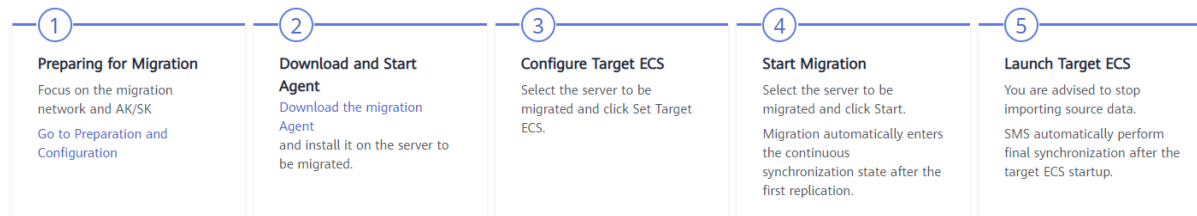


[FADDOM Help Center](#)



Positioning: SMS (Server Migration Service) is a Cloud Service which is provided by Huawei for online server migration.

SMS Workflow



Application Scenarios

- P2V (physical machine to virtual machine)
- V2V (virtual machine to virtual machine)
- AWS EC2 / Azure Machine / GCP Compute Engine / Vmware VM / Hyper-V VM / Nutanix VM etc.

Major Features

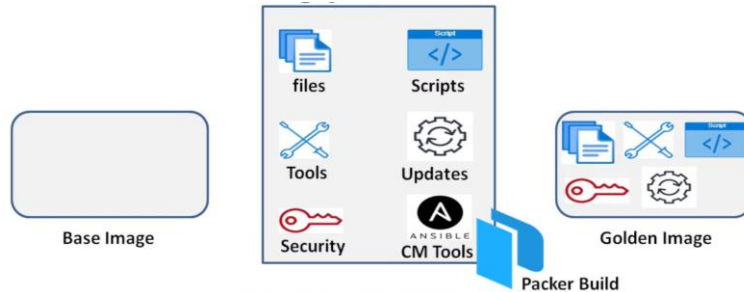
- Windows: Windows Server 2008 and higher OS version
- CentOS / Redhat / Oracle Linux 6.0 or higher Version
- Debian 6 / Ubuntu 12 / Suse 11 or higher OS version

Refer to the [SMS Guide](#)

Available

Packer for Image Creation

Positioning: Packer is an open-source tool for creating custom images for multiple cloud platforms in parallel.

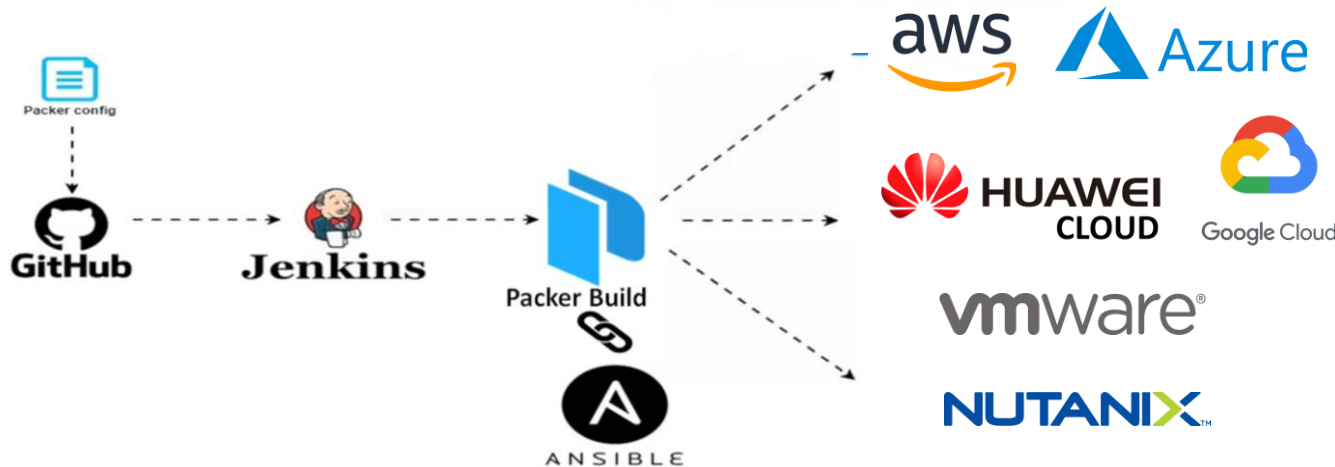


Application Scenarios

- Automatic image creation

Major Features

- Simplifies private image creation by using manageable code



[Creating a Private Image Using Packer](#)

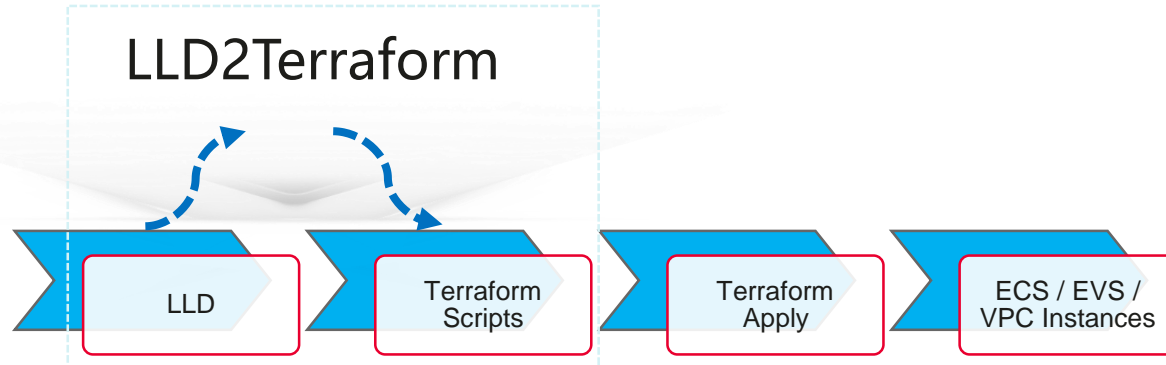
[Huawei Cloud Packer Provider Manual](#)

<https://developer.hashicorp.com/packer>

LLD2Terraform for Resource Provisioning

Positioning: LLD2Terraform is a Python script tool to convert Low-Level Design (LLD) to Huawei Cloud Terraform code

LLD2Terraform Workflow



Python tool that reads LLD information and converts to Terraform code

Available at

<<https://github.com/huaweicloud-latam/lld-to-terraform>>

Application Scenarios

- Resource Provisioning on Huawei Cloud

Major Features

- Creating Resources in Batches Based on LLD Information

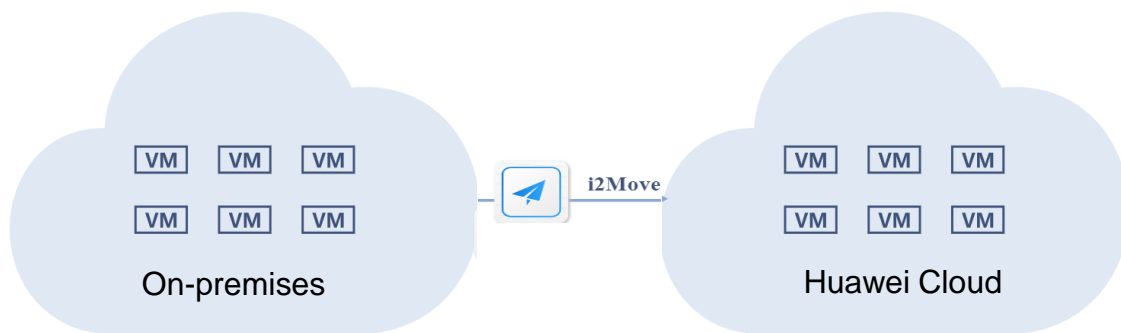


Available



Positioning: I2MOVE is a commercial migration tool provided by I2Soft for online server migration.

I2MOVE Workflow



Official Website

<https://www.info2soft.com/en/product/i2move>

KooGallery

<https://marketplace.huaweicloud.com/intl/product/00301-173035-0--0>

Application Scenarios

- P2V (physical machine to virtual machine)
- V2V (virtual machine to virtual machine)
- V2P (virtual machine to physical machine)
- P2P (physical machine to physical machine)

Major Features

- Windows: Windows Server 2003 R2, Windows Server 2008 and above system, Windows XP, Windows 10, etc.
- Linux: CentOS 4.4(*) and above system, including CentOS 6.5, 7.0, 7.1, etc.
- Others: Redhat 4.8 (*) and above system, SUSE10sp1 and above system; NeoKylin 6.5, NeoKylin 7.2 and so on.
- Various virtualization platforms, Hyper-V, Citrix Xen Server, VMware, KVM.

Remark:

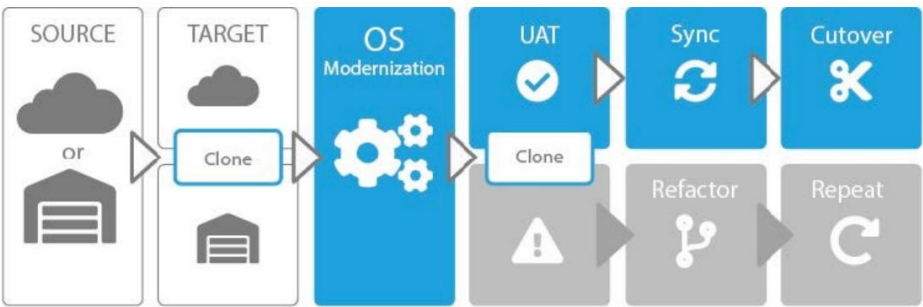
* Huawei Cloud ECS needs KVM driver, some old Operating Systems don't have

KVM (VirtIO) Driver, such as Centos 4.X – 5.0 / 5.1

Positioning: RiverMeadow’s Multi-Cloud Migration Platform is quick to implement and will safely upgrade your source OS versions as part of the migration.



OS Modernization Workflow



OS Modernization Workflow

| Items | MANUAL OS upgrade - Standard - | AUTOMATED OS Upgrade - RiverMeadow - |
|--------------------------------|--|---|
| Time to Execution | 4-5 hours per manual process | Minutes |
| Speed of Process | Slow & not sustainable eg 5 per week | Fully Automated and built for scale eg 75-100 per week |
| Downtime (Source Applications) | Excessive - Process must be done in a maintenance window | No downtime required on the source |
| Single-hop or multi-hop? | Single-hop only eg n-2 to n-1 | Multi-hop - For example, choose to go from Windows Server 2003 (64bit) to Windows Server 2019 or any version in between |
| Pre-Flight Compatibility Scan? | None | Pre-flight scan identifies known compatibility issues before migration start |
| Certification by Microsoft? | No | Yes - Microsoft has certified the OSM process for Windows Server teams and Azure Product Owners |

Application Scenarios

- AWS / Azure / GCP
- Huawei Cloud (Doesn't support*)

Major Features

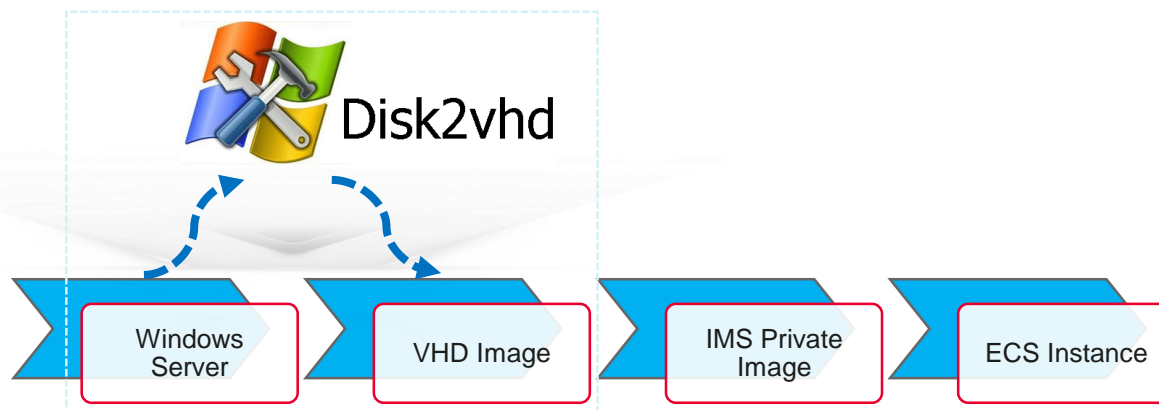
- Project Management
- Server Migration
- OS Modernization (Highly recommended)

* Remark: If you have Project requirement, please contact Huawei Cloud team.




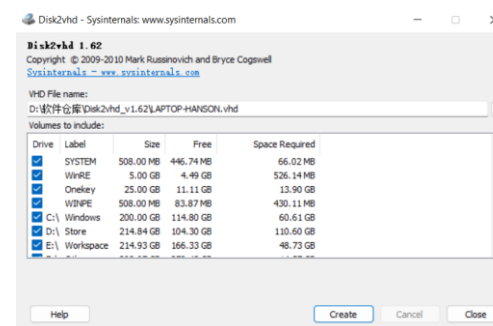
Positioning: Disk2vhd is a utility that creates VHD (Virtual Hard Disk)

Disk2vhd Workflow



Software Version and Console

| Version | Compatible OS List | Download Link |
|---------|---|---|
| V1.62 | Windows XP SP2 Windows Server 2003 SP1, and higher, including x64 systems. |  Disk2vhd_v1.62.zip |
| V2.02 | Windows Vista, Windows Server 2008, and higher, including x64 systems. | https://learn.microsoft.com/en-us/sysinternals/downloads/disk2vhd |



Application Scenarios

- Windows 2003 or later(*)

Major Features

- Server Migration (Offline mode)

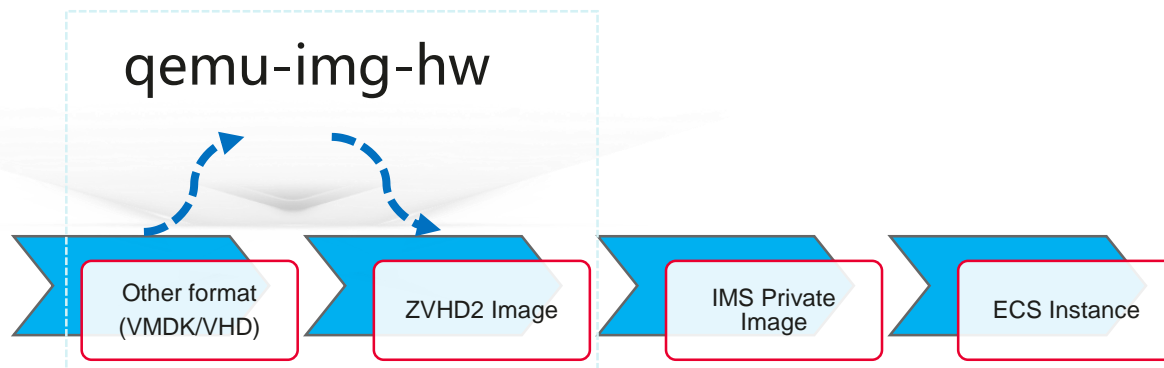
REMARK

- Huawei Cloud doesn't support Windows XP, because Windows XP doesn't have KVM Driver
- ** V2.02 doesn't support Windows 2003, so please download the previous version V1.62.

[Disk2vhd Document](#)

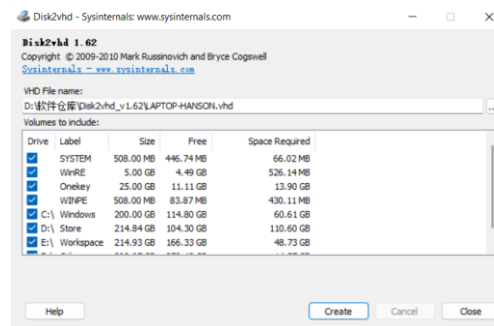
Positioning: qemu-img-hw is developed by Huawei and is used for converting image formats from other formats to RAW or ZVHD2 format.

qemu-img-hw Workflow



Software Version and Console

| Version | Compatible List | Download Link |
|---------|--|---|
| V2.3.0 | VHD, VMDK, QCOW2, RAW, VHDX, QCOW, VDI, QED, ZVHD or ZVHD2 | Converting the Image Format Using qemu-img-hw |



Application Scenarios

- Server Image in formats: VHD, VMDK, QCOW2, RAW, VHDX, QCOW, VDI, QED, ZVHD or ZVHD2

Major Features

- Image Format Converting

REMARK

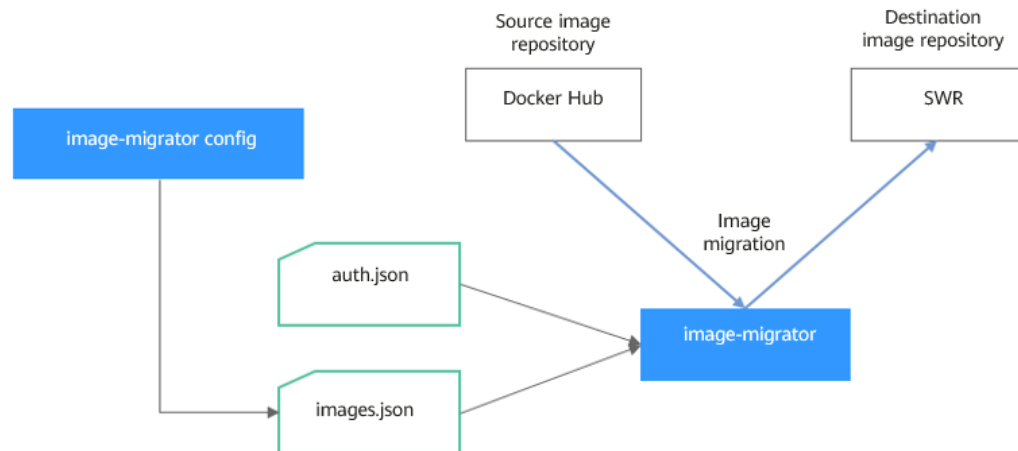
- The Image size of IMS Service has limitation, so it's mandatory to convert the image to RAW or ZVHD2 first, then import the image through fast import feature.

[Qemu-img-hw Document](#)

image-migrator for docker image migration

Positioning: image-migrator is an image migration tool that can automatically migrate images from the Docker image repository built on Docker Registry v2 to SWR.

Image-migrator Workflow



Application Scenarios

- AWS Elastic Container Registry (ECR)
- Azure Container Registry
- GCP Artifact Registry
- Huawei Cloud SWR

Major Features

- Docker Image Migration in parallel

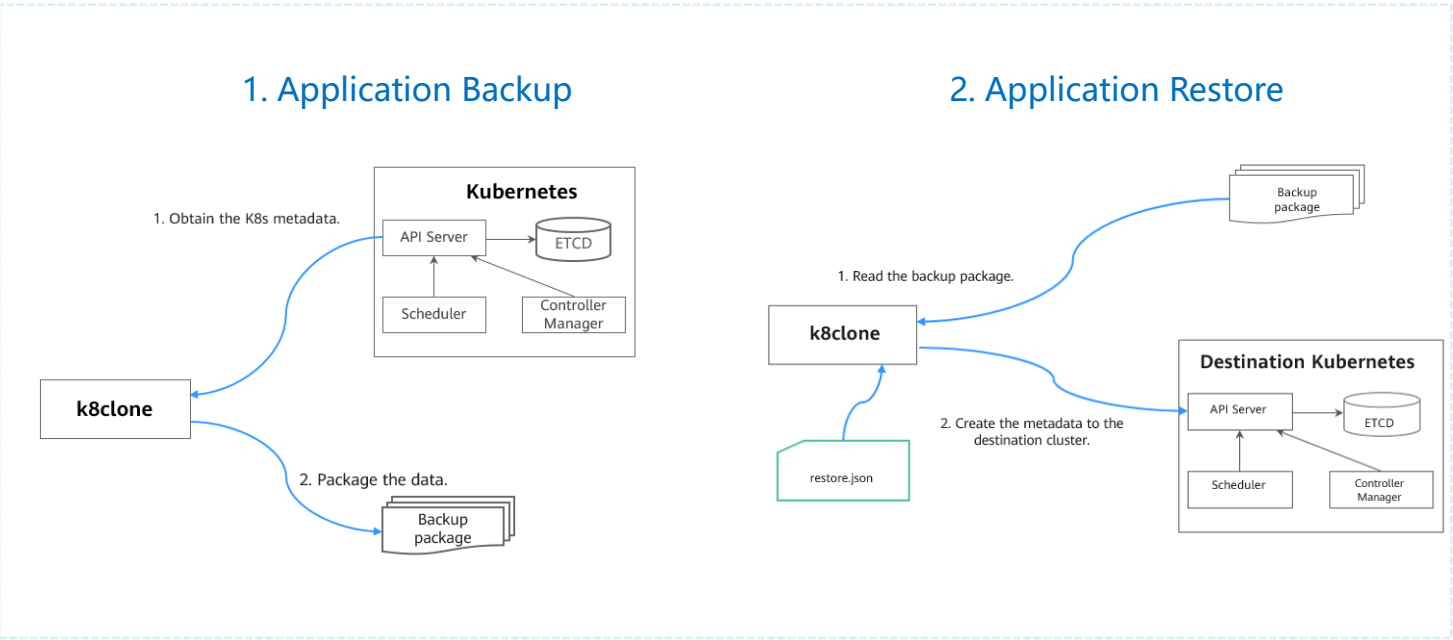
Docker Image Migration Guide

Available

K8CLONE for kubernetes metadata migration

Positioning: k8clone is a simple Kubernetes metadata cloning tool. It can save Kubernetes metadata (objects) as a local package and restore the metadata to the destination cluster.

K8CLONE Migration Workflow



Application Scenarios

- AWS EKS
- Azure AKS
- GCP GKS
- Huawei Cloud CCE

Major Features

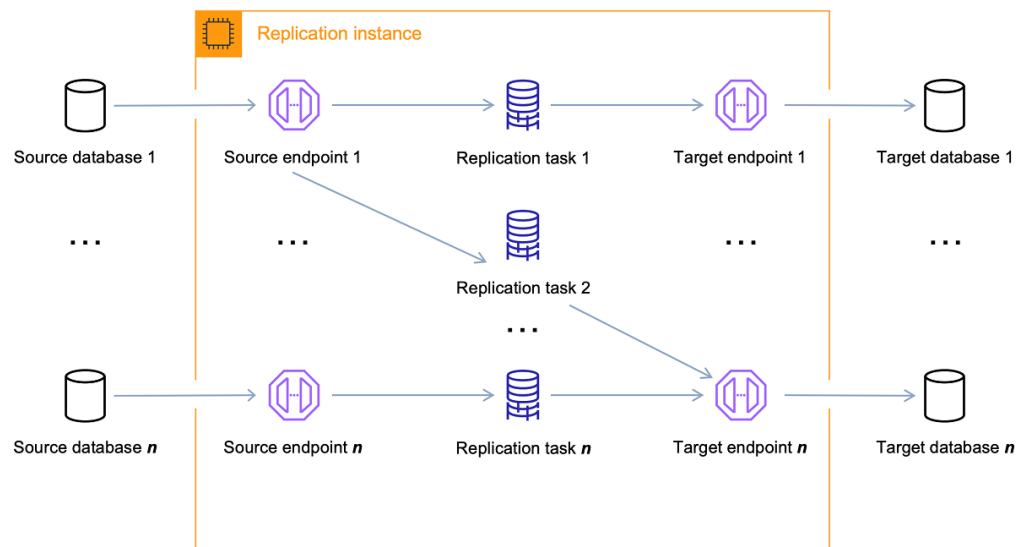
- application migration

[k8clone Document](#)



Positioning: DMS is a Database Migration Service developed by AWS, supports the database migration from AWS RDS to Huawei Cloud RDS (MySQL / PGSQL / SQLSERVER engine).

DMS Migration Workflow



Application Scenarios

- AWS RDS to Other Clouds

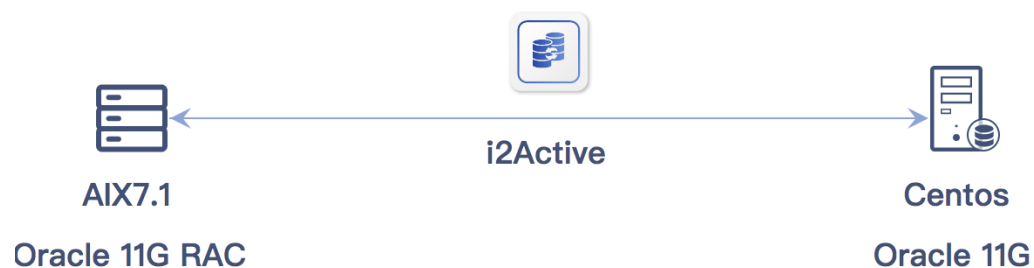
Major Features

- Database migration

[AWS DMS Document](#)

Positioning: i2Active is a database transaction-level real-time synchronization software. It supports Oracle Database online migration.

i2Active Oracle Migration Workflow



Application Scenarios

- Oracle on other Cloud to Huawei Cloud
- Oracle on AIX to Oracle on Huawei Cloud
- Single / Active-Standby / Oracle RAC



Major Features

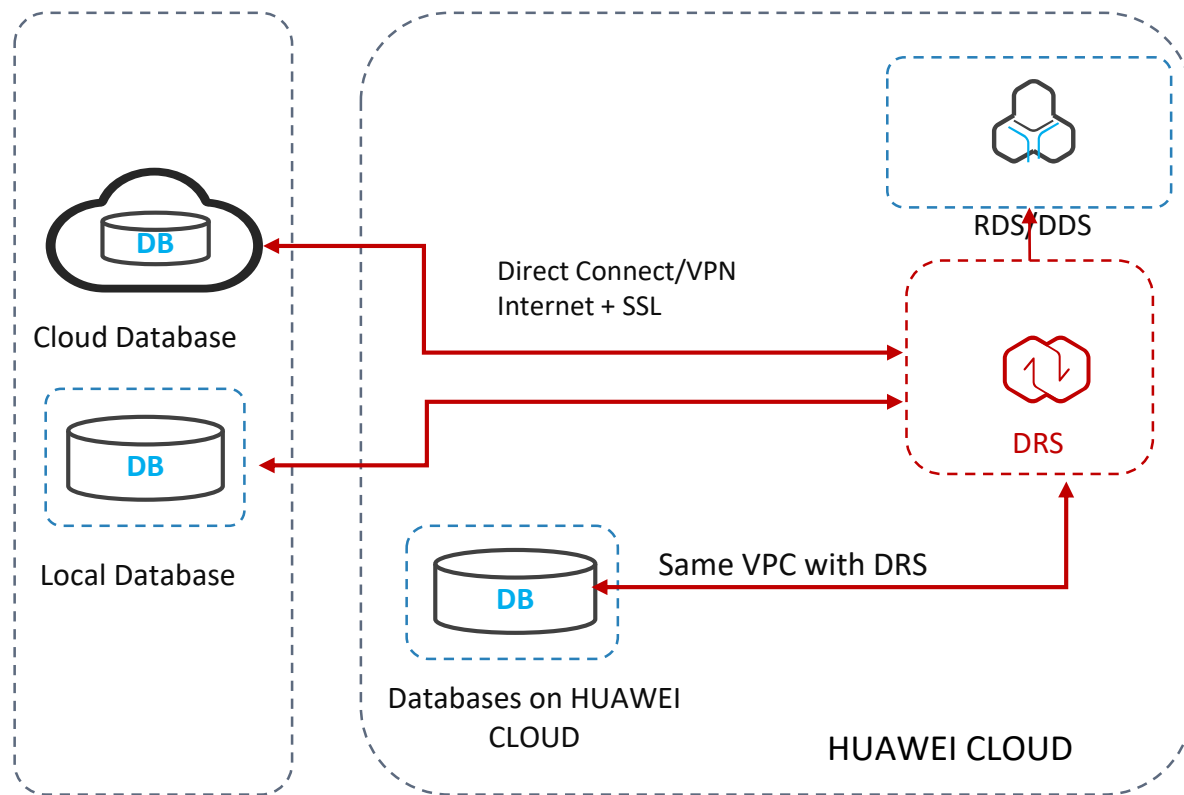
- Oracle Database Migration (Online)

[Koogallery Product Link](#)

[i2Active-HWY](#)

Positioning: Data Replication Service (DRS) is a stable, efficient, and easy-to-use cloud service for real-time database online migration and synchronization.

DRS Migration Workflow



Application Scenarios

- MySQL / PGSQL / SQLSERVER to RDS
- MongoDB to DDS
- AWS RDS / Azure SQL / GCP Cloud SQL

Major Features

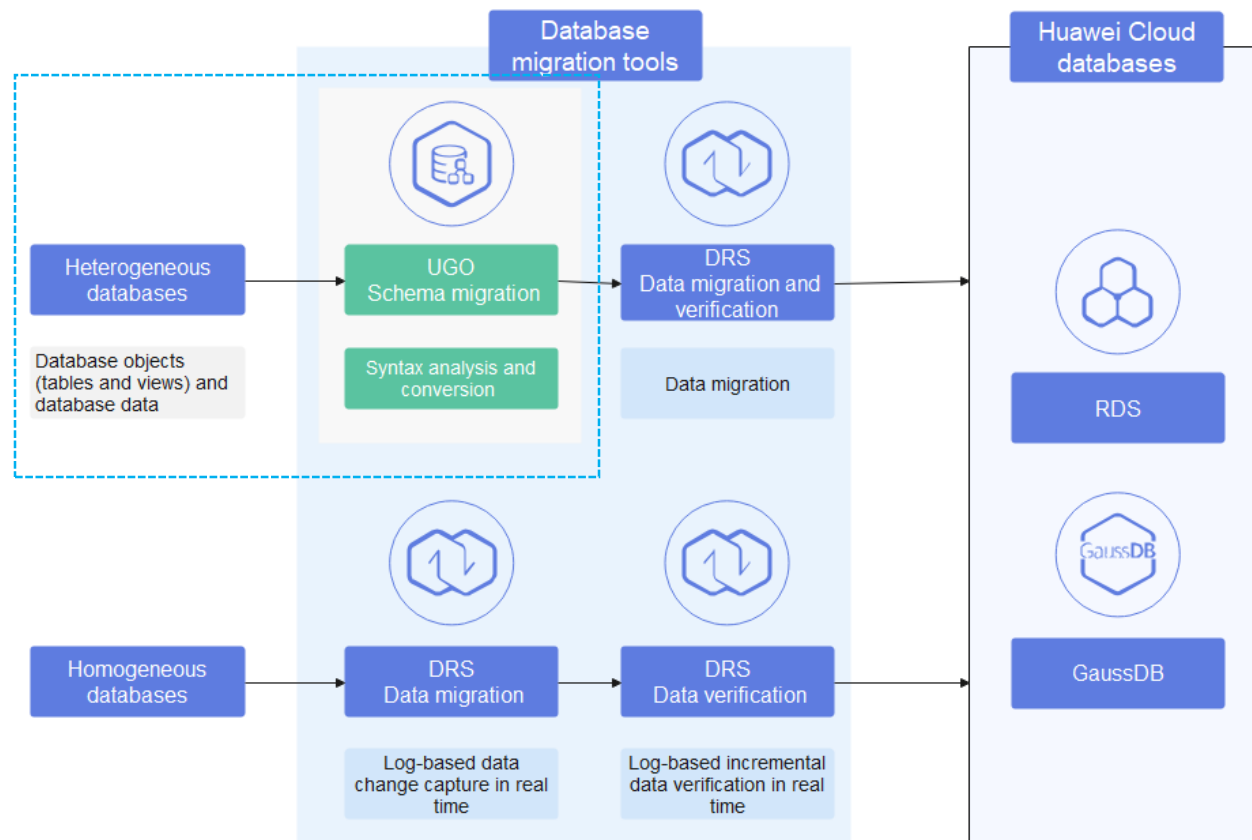
- Database Migration

Product Link

- [DRS Document](#)

Positioning: Database and Application Migration UGO, referred to as UGO, is a professional cloud service focused on heterogeneous database schema migration.

UGO Migration Workflow



Application Scenarios

- On-premises Oracle Database
- AWS Oracle Database

Major Features

- Oracle to PGSQL Schema Migration
- Oracle to GaussDB Schema Migration

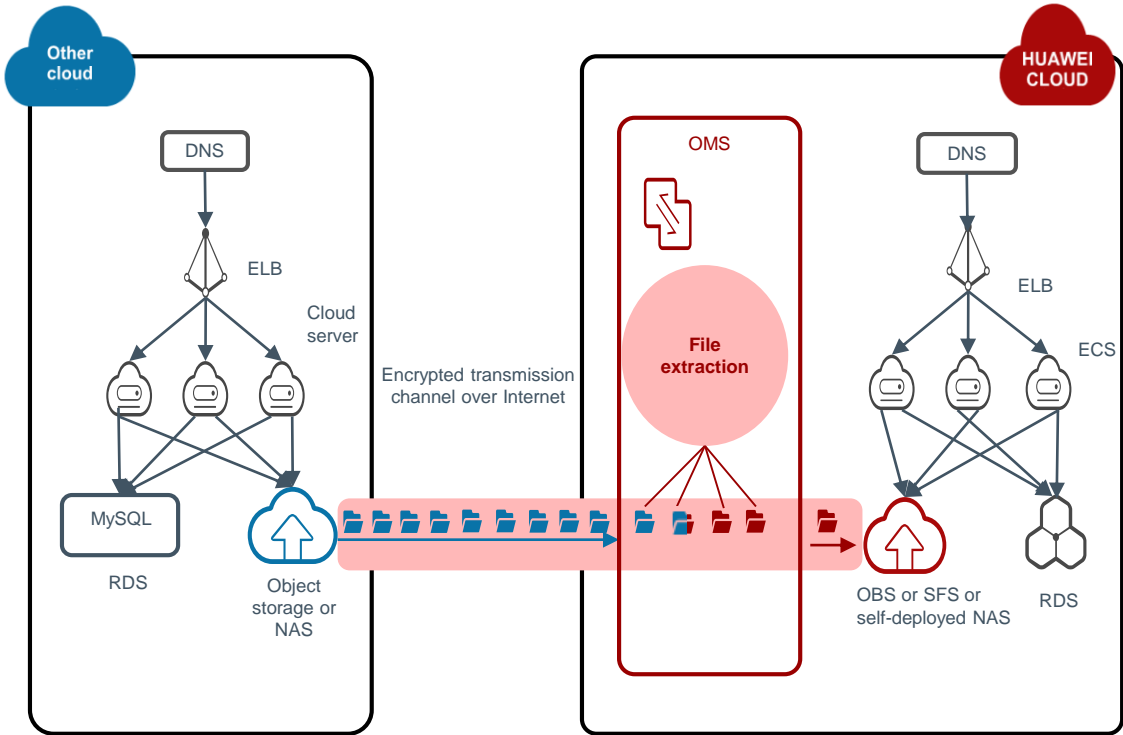
Product Link

[UGO Document](#)

Available

Positioning: Object Storage Migration Service (OMS) migrates object storage data and file storage data from AWS, Azure, or GCP to HUAWEI CLOUD.

OMS Migration Workflow



Scenario 1: OBS File Migration

- 1. Migrating AWS S3 to OBS on HUAWEI CLOUD
- 2. Migrating AWS S3 to HUAWEI CLOUD SFS Turbo

Scenario 2: NFS File Storage Migration

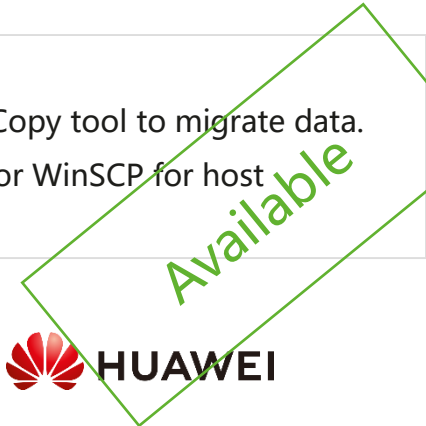
- 1. Migrating AWS EFS to HUAWEI CLOUD OBS
- 2. Migrating AWS EFS to HUAWEI CLOUD SFS Turbo

Supported storage types

| Deployment Mode | RDA + OMS plug-in (offline deployment version) | OMS (cloud service edition) |
|------------------------|--|-----------------------------|
| Object Storage Support | AWS S3 / Azure Blob / GCP Cloud Storage | AWS S3 / Azure Blob |
| File storage support | NFS V3 and SMB protocol (AWS / Azure / GCP) | Not supported |

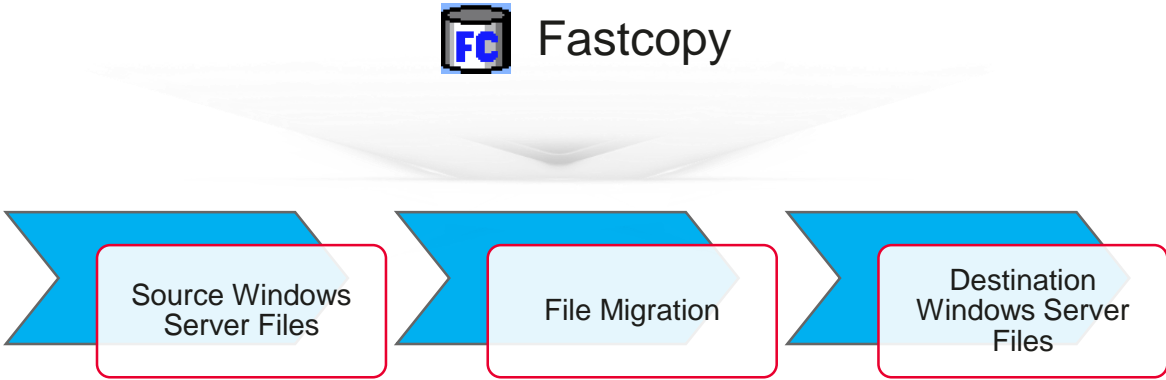
Typical Unsupported Scenarios

- 1. CIFS file storage. Recommended solution: Use the FastCopy tool to migrate data.
- 2. FTP file storage. Recommended solution: Use the SMS or WinSCP for host migration.



Fastcopy for Windows File copy

Positioning: FastCopy is a Fast Copy/Backup Software on Windows.




Application Scenarios

- SMB File Copy in Windows
- CIFS File Copy in Windows

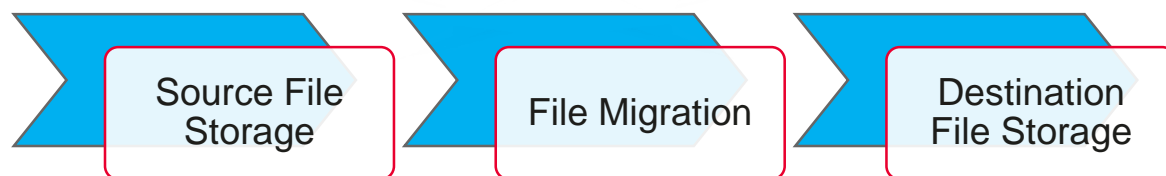
Major Features

- Windows file copy

| Version | License Mode | Compatiable OS List | Download Link |
|---------------|-----------------------------------|--|--|
| V5.x.x | Business Software | Windows 7/8/8.1/10/11 Windows Server 2012(&R2)/2016/2019/2022 | https://fastcopy.jp/ |
| V3.x.x-V4.x.x | Freeware | Windows Vista/7/8/8.1/10 Windows Server 2008(&R2)/2012(&R2)/2016/2019 |  FastCopy381_installer.exe |



Positioning: Rclone is a command-line program to manage files on cloud storage.



Does rclone preserve file permissions?

Currently when copying or syncing files with Rclone, it **DOES NOT PRESERVE** the permissions of those files.

Rclone is multi threaded with a user definable number of simultaneous transfers.

Application Scenarios

Windows / Linux / macOS / BSD

- Backup (and encrypt) files to cloud storage
- Restore (and decrypt) files from cloud storage
- Mirror cloud data to other cloud services or locally
- Migrate data to the cloud, or between cloud storage vendors

Major Features

- Transfers
 1. MD5, SHA1 hashes are checked at all times for file integrity
 2. Timestamps are preserved on files
 3. Operations can be restarted at any time
 4. Can be to and from network, e.g. two different cloud providers
 5. Can use multi-threaded downloads to local disk
- Copy new or changed files to cloud storage
- Sync (one way) to make a directory identical
- Move files to cloud storage deleting the local after verification

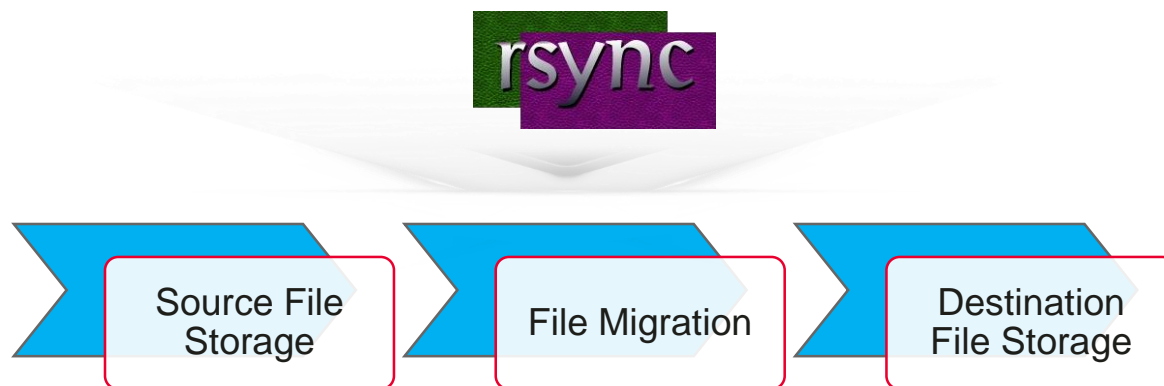
Product Link

RCLONE

Available



Positioning: RSYNC is a fast, versatile, remote (and local) file-copying tool. It can copy locally, to/from another host over any remote shell, or to/from a remote rsync daemon.



One Command:

```
# rsync -avHPX --sparse --one-file-system --numeric-ids --stats /data/  
root@<DESTINATION_IP>:/data
```

Application Scenarios

Synchronize Files / Folders from one Linux Server to another Linux Server

Major Features

1. Rsync supports incremental synchronization.
2. Rsync preserves file attributes and permissions (owners, groups, and permissions)

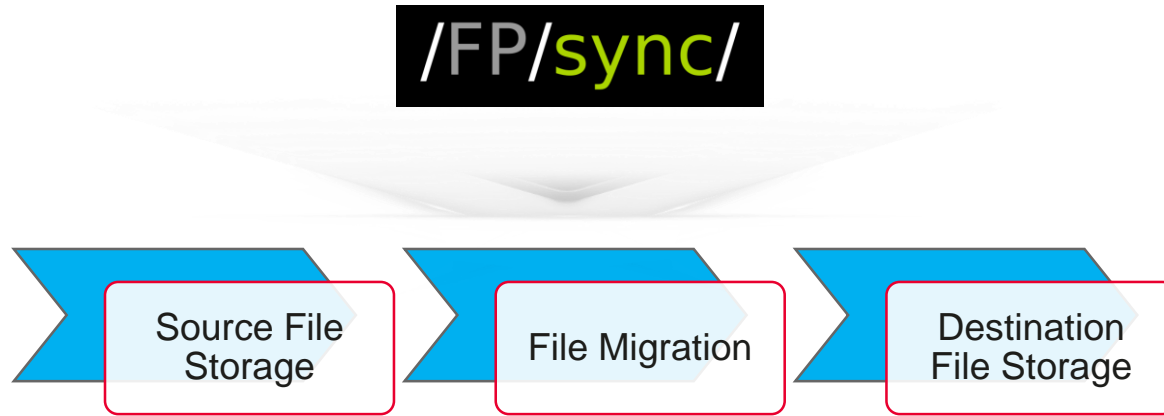
Limitation

- Rsync is single threaded, doesn't support multiple threads.
- The RSYNC synchronization efficiency is lower than FPsyc for multi-level directories with a large number of small files.

Product Link

[RSYNC Website](#)

Positioning: FPSYNC is a shell script that wraps FPART and RSYNC, CPIO or TAR to launch several synchronization jobs in parallel



One Command:

```
# fpsync -n 4 -f 1000 -s $((100 * 1024)) /data/src/ root@XXX:/data/dest/
```

Application Scenarios

Synchronize Files / Folders from one Linux Server to another Linux Server

Major Features

1. FPSYNC supports incremental synchronization.
2. FPSYNC preserves file attributes and permissions (owners, groups, and permissions)
3. FPSYNC supports concurrent tasks.

Limitation

- FPSync supports multiple threads.
- The FPSync synchronization efficiency is higher than RSYNC for multi-level directories with a large number of small files.

Product Link

[FPSYNC Website](#)

Available

How to obtain the support from LATAM Cloud Regional Team?

Huawei Internal Support Channel

Please Huawei staff use WeLink to scan and join the group

LATAM Migration Tool Support Group



1. After you join the group, the Latin America Cloud Regional Work Team will provide support.
2. Tool contact person:
 - lichang /
 - liushaowei /
 - Nestor Joel /
3. If your partner has requirements on migration tools, you can contact the Latin America cloud team for tool training and support.

External Support Channel

If you (Huawei Cloud Customers or Partners) have any questions or suggestions, please feel free to contact us by email.

 latamhwcloud@huawei.com

Service Time: 5x8 hours (UTC-6)

Thank you.