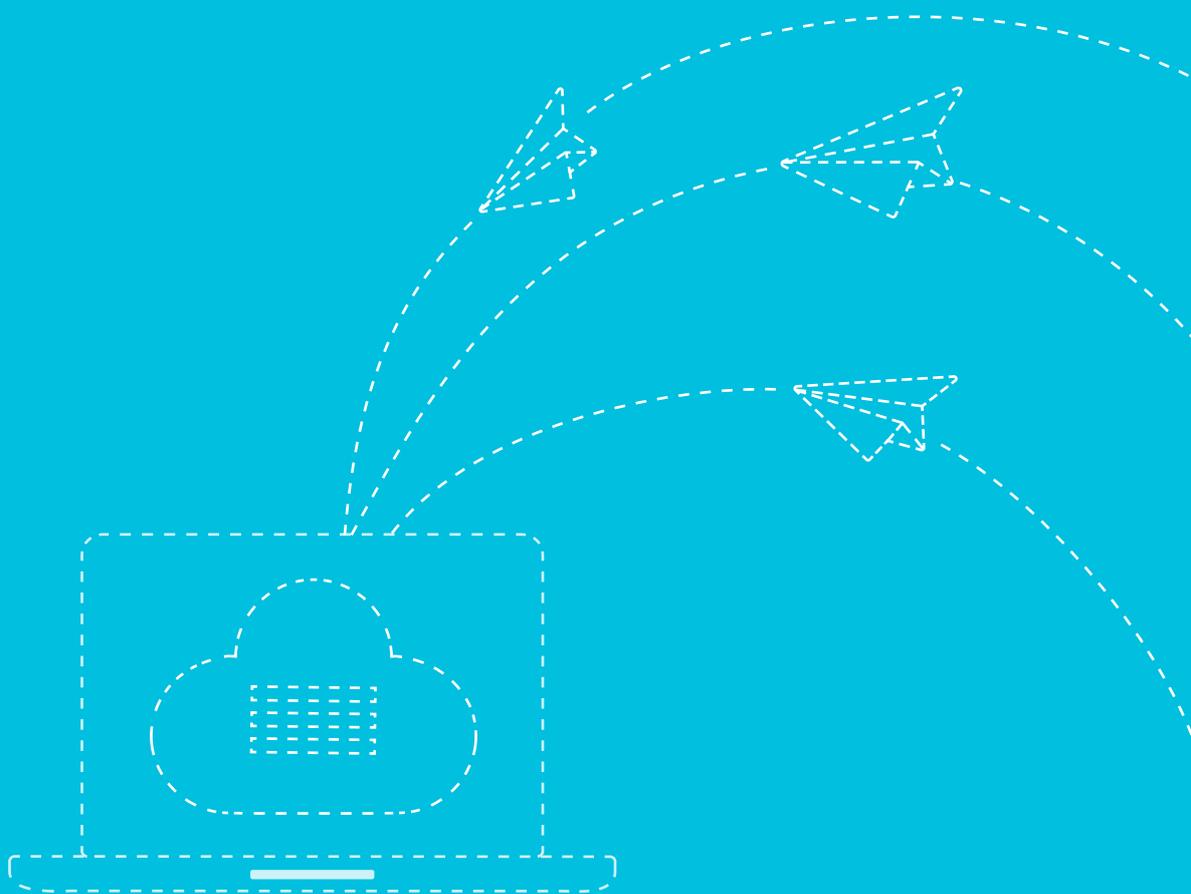


# Data Migration to an ECS Linux Instance via Migration Script

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## 01 Abstract

This document introduces how to migrate data from an instance running on Linux on premise or other cloud service providers to an ECS Linux instance.

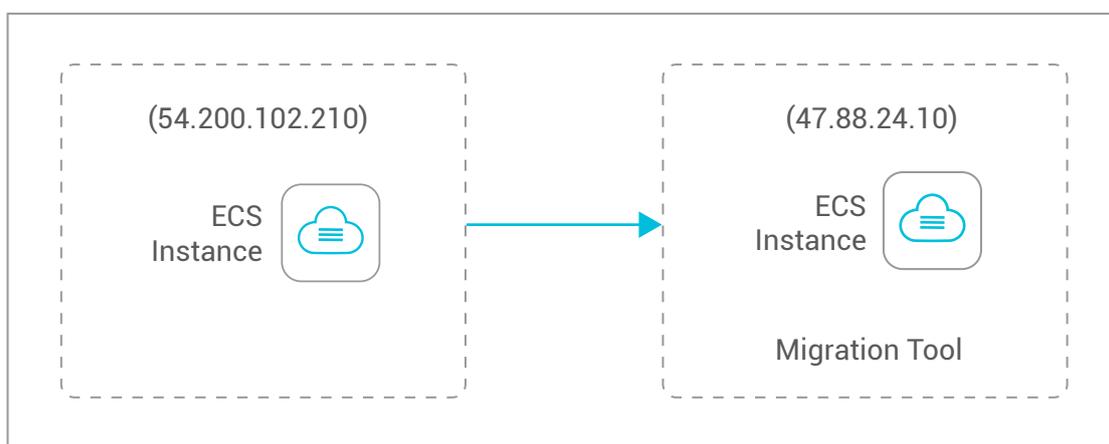
## 02 Prerequisites

1. Ensure that you have created the instances running on the same version of OS on Alibaba Cloud and other cloud service providers
2. Ensure that the instances have access to internet
3. The below Linux OSs are supported:
  - Red Hat Enterprise Linux (RHEL) 5, 6, 7
  - CentOS 5, 6, 7
  - Ubuntu 10, 12, 13, 14
  - Debian 6, 7
  - OpenSUSE 13.1
  - SUSE Linux 10, 11, 12
  - CoreOS 681.2.0+

## 03 Application Scenario

The scenario taken into consideration here is the migration script support to migrate data from an instance running on Linux on premise or other cloud service providers to an ECS Linux instance. For the sake of reference, we will demonstrate migration of EC2 to ECS instance. In this scenario, we have created two instances: One is an EC2 instance (54.200.102.210) as the source instance, and the other is an ECS instance (47.88.24.10) as the target instance. Here, we will migrate the data from the EC2 instance to the ECS instance.

Migration Diagram



## 04 Introduction to Migration Script

We use migration script to enable synchronous data migration between two instances running the same version of OS. Prerequisites for migration script are as follows:

- Ensure that you establish an SSH channel between the source instance and the destination instance
- Ensure that you activate the Root user right on the source instance and the destination instance. Otherwise, the Root user cannot read nor can it receive the system files.
- Run rsync for remote file synchronization.

Operation procedure on remote file synchronization:

1. Synchronize the files in the root partition of the destination host to the /rootfs\_azure directory of the local host, except for Runtime files like /sys, /proc, and /dev
2. Synchronize the files in the /rootfs\_azure directory of the local host to the root partition of the local host, except for platform-related settings like network, grub, and fstab.
3. Reboot the local host. As a result, the local host will run the same OS as the destination host with parameters configured (for instance, network).

## 05 Operation Procedure

### Step 1: Authorize Root to Log on to the EC2 instance

1. Configure the `/etc/ssh/sshd_config` file, then find and uncomment these two lines to allow root to log on by password.

```
vim /etc/ssh/sshd_config
#Find and uncomment these two lines
PermitRootLogin yes
PasswordAuthentication yes
```

2. Set the root password

```
passwd root
```

3. Ensure that you have stopped the running application on your EC2 instance before migration

### Step 2: Log on to the ECS Instance via SSH and Install the Migration Tool

apt-get install rsync.

1. Download the migration tool to `/tmp` and execute the tool. For example, download the migrate tool to `/tmp/migrate_tool`.

```
chmod +x migrate
root@iZu1e533scsZ:/tmp/migrate_tool# ./migrate migrate 54.200.102.210
[Thu Jan 14 12:13:22 UTC 2016] [INFO] "begin to prepare"
The authenticity of host '54.200.102.210 (54.200.102.210)' can't be established.
ECDSA key fingerprint is 7c:3b:7d:43:cf:5a:2c:2e:2d:e2:e5:05:31:bd:4d:c7.
Are you sure you want to continue connecting (yes/no)? yes
```

Warning: Permanently added '54.200.102.210' (ECDSA) to the list of known hosts.  
root@54.200.102.210's password:

### Step 3: Enter the EC2 Root Password

After you have entered the EC2 root password, the migration tool starts transferring all files of the system disk on the EC2 instance, except for the run-time files.

```
...
...
var/log/mysql/
var/log/mysql/error.log
var/log/upstart/
var/log/upstart/console-setup.log
var/log/upstart/container-detect.log
var/log/upstart/cryptdisks.log
var/log/upstart/network-interface-eth0.log
var/log/upstart/networking.log
var/log/upstart/pollinate.log
var/log/upstart/procps-static-network-up.log
var/log/upstart/procps-virtual-filesystems.log
var/log/upstart/rsyslog.log
var/log/upstart/systemd-logind.log
```

After migration is complete, the system prints the progress information in **stdout** and run **postcheck**.

```
sent 277,016,651 bytes received 161,051 bytes 17,882,432.39 bytes/sec
total size is 1,194,098,631 speedup is 4.31
[Thu Jan 14 12:17:00 UTC 2016] [INFO] "end of migrate"
[Thu Jan 14 12:17:00 UTC 2016] [INFO] "begin to postcheck"
[Thu Jan 14 12:17:04 UTC 2016] [INFO] "end of postcheck"
```

Sometimes, postcheck may end with a prompt "**failed to re-install grub, you must do it manually.**" In this case, execute the below command to complete the migration:

```
grub-install /dev/xvda >/dev/null 2>&1
```

As for the ECS instance running **CentOS (7uX)**, run the below command instead:

```
Grub2-install /dev/xvda >/dev/null 2>&1
```

Log files are put in the **/tmp** named **aliyun\_migrate.log**.

### Step 4: Resume Your Applications and Verify the Results on Both the EC2 Instance and the ECS Instance



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