

# Day 1 - Create SSH Key Pair for Azure VM

## Overview

The Nautilus DevOps team is strategizing the migration of a portion of their infrastructure to the Azure cloud. Recognizing the scale of this undertaking, they have opted to approach the migration in incremental steps rather than as a single massive transition. To achieve this, they have segmented large tasks into smaller, more manageable units. This granular approach enables the team to execute the migration in gradual phases, ensuring smoother implementation and minimizing disruption to ongoing operations. By breaking down the migration into smaller tasks, the Nautilus DevOps team can systematically progress through each stage, allowing for better control, risk mitigation, and optimization of resources throughout the migration process.

For this task, create an SSH key pair with the following requirements:

- The name of the SSH key pair should be `xfusion-kp`.
- The key pair `type` must be `rsa`.

## What is an Azure SSH Key

An Azure SSH key is a secure alternative to passwords for accessing cloud servers, working like a digital lock-and-key system where you keep a private key on your computer and place a matching public key on your Azure servers. For the Nautilus DevOps team, creating the `xfusion-kp` SSH key pair provides a foundational security layer that allows engineers to safely access and manage their cloud infrastructure without the risks of traditional password-based authentication.

## Solution

First we search for SSH keys in the portal

The screenshot shows the Azure portal search interface. A search bar at the top contains the text "SSH Keys". Below the search bar, there are four tabs: "All" (selected), "Services (9)", "Marketplace (2)", and "More (4)". Under the "Services" tab, a list of services is shown, including "SSH keys", "BitLocker Keys", "Key vaults", and "QnA makers". There are also three dots indicating more items. At the bottom left, it says "Searching all subscriptions." and at the bottom right, there is a "Give feedback" link.

Now we click on the create button

The screenshot shows the "SSH keys" list page in the Azure portal. The top navigation bar includes "SSH keys", "Identify recently modified SSH keys using ARG.", "Filter SSH keys by resource group and location.", and "How many SSH keys do I have in total?". Below the navigation, there are buttons for "+ Create", "Manage view", "Refresh", "Export to CSV", "Open query", "Assign tags", and "Add to service group".

After we fill out the relevant information in the basics settings:

- **Subscription:** Select your Azure subscription
- **Resource group:** Select an existing resource group or create a new one
- **Region:** Choose your preferred Azure region (e.g., East US, West Europe)
- **Key pair name:** xfusion-kp
- RSA SSH Format

The screenshot shows the "Create SSH key" form in the Azure portal, specifically the "Basics" tab. It includes sections for "Project details" and "Instance details".

**Project details:**  
Subscription: Azure Free Labs  
Resource group: kml\_rg\_main-aaafe56610e44c3f (selected)  
Create new

**Instance details:**  
Region: (US) West US  
Key pair name: xfusion-kp (highlighted with a green checkmark)  
SSH public key source: Generate new key pair  
SSH Key Type:

- RSA SSH Format
- Ed25519 SSH Format

(Info) Ed25519 provides a fixed security level of no more than 128 bits for 256-bit key, while RSA could offer better security with keys longer than 3072 bits.

Now we Review + Create

Once doing this we will get a message "validation pass" and once again we will click create

Create an SSH key ... X

✓ Validation passed

Basics Tags Review + create

**Basics**

Subscription	Azure Free Labs
Resource group	kml_rg_main-aaafe56610e44c3f
Region	West US
Key pair name	xfusion-kp
SSH Key format	RSA

**Create** < Previous Next > Download a template for automation

A prompt will appear where the key needs to be downloaded.

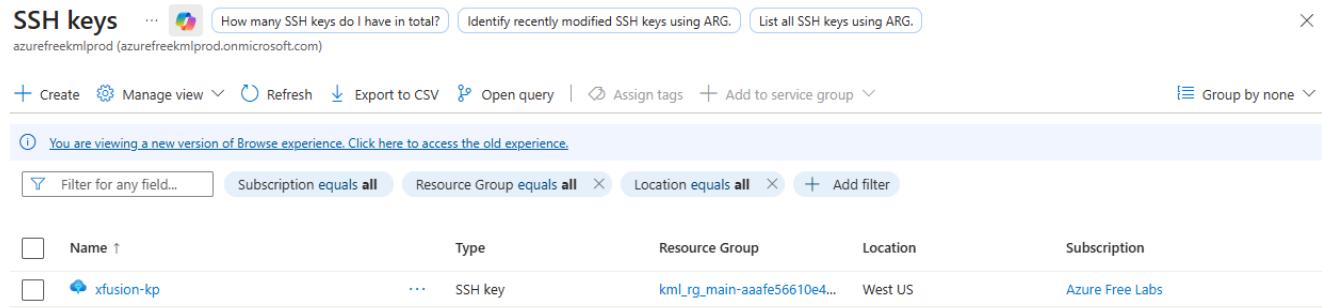
### Generate new key pair

**i** An SSH key pair contains both a public key and a private key. **Azure doesn't store the private key.** After the SSH key resource is created, you won't be able to download the private key again. [Learn more](#)

**Download private key and create resource**

[Return to create an SSH key resource](#)

After this has been downloaded, we can refresh the portal and see our key has fully been created



The screenshot shows the Azure portal interface for managing SSH keys. At the top, there are several tabs: 'SSH keys' (selected), 'How many SSH keys do I have in total?', 'Identify recently modified SSH keys using ARG.', and 'List all SSH keys using ARG.'. Below the tabs are standard navigation buttons: '+ Create', 'Manage view', 'Refresh', 'Export to CSV', 'Open query', 'Assign tags', 'Add to service group', and a 'Group by none' dropdown. A message banner at the top says, 'You are viewing a new version of Browse experience. Click here to access the old experience.' Below the banner is a search bar with the placeholder 'Filter for any field...' and three filters: 'Subscription equals all', 'Resource Group equals all', and 'Location equals all'. The main table lists one item:

Name ↑	Type	Resource Group	Location	Subscription
xfusion-kp	SSH key	kml_rg_main-aaafe56610e4...	West US	Azure Free Labs

## Security Best Practices

- Store the private key securely and never share it
- Set proper permissions on the private key file: `chmod 600 ~/.ssh/xfusion-kp`
- Back up your private key in a secure location
- Consider using Azure Key Vault for additional key management