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Azure and Linux

1/17/2017 • 7 min to read • <u>Edit on GitHub</u>

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VM Sizes

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Here are some basic guidelines for selecting a VM size from one of our series (A, D, DS, G and GS).

- A-series VMs are our value priced entry-level VMs for light workloads and Dev/Test scenarios. They are widely available in all regions and can connect and use all standard resources available to virtual machines.
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RancherOS - Azure Marketplace - RancherOS

Bitnami - Bitnami Library for Azure

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Docker - Azure Marketplace - Azure Container Service with Docker Swarm

Jenkins - Azure Marketplace - CloudBees Jenkins Platform

Getting Setup on Azure

To begin using Azure you need an Azure account, the Azure CLI installed, and a pair of SSH public and private keys.

Sign up for an account

The first step in using the Azure Cloud is to sign up for an Azure account. Go to the Azure Account Signup page to get started.

Install the CLI

With your new Azure account, you can get started immediately using the Azure portal, which is a web-based admin panel. To manage the Azure Cloud via the command-line, you install the `azure-cli`. Install the Azure CLI on your Mac or Linux workstation.

Create an SSH key pair

Now you have an Azure account, the Azure web portal, and the Azure CLI. The next step is to create an SSH key pair that is used to SSH into Linux without using a password. Create SSH keys on Linux and Mac to enable password-less logins and better security.

Getting Started with Linux on Microsoft Azure

With your Azure account setup, the Azure CLI installed and SSH keys created you are now ready to start building out an infrastructure in the Azure Cloud. The first task is to create a couple of VMs.

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Creating a Linux VM using the CLI is a quick way to deploy a VM without leaving the terminal you are working in. Everything you can specify on the web portal is available via a command-line flag or switch.

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The VM is now running on Azure and you are ready to log in. Using passwords to log in via SSH is insecure and time consuming. Using SSH keys is the most secure way and also the quickest way to login. When you create you

Linux VM via the portal or the CLI, you have two authentication choices. If you choose a password for SSH, Azure configures the VM to allow logins via passwords. If you chose to use an SSH public key, Azure configures the VM to only allow logins via SSH keys and disables password logins. To secure your Linux VM by only allowing SSH key logins, use the SSH public key option during the VM creation in the portal or CLI.

- Disable SSH passwords on your Linux VM by configuring SSHD

Related Azure components

Storage

- Introduction to Microsoft Azure Storage
- Add a disk to a Linux VM using the azure-cli
- How to attach a data disk to a Linux VM in the Azure portal

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- Virtual Network Overview
- IP addresses in Azure
- Opening ports to a Linux VM in Azure
- Create a Fully Qualified Domain Name in the Azure portal

Containers

- Virtual Machines and Containers in Azure
- Azure Container Service introduction
- Deploy an Azure Container Service cluster

Next steps

You now have an overview of Linux on Azure. The next step is to dive in and create a few VMs!

- Create a Linux VM on Azure using the Portal
- Create a Linux VM on Azure by using the CLI

About Windows virtual machines in Azure

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> **NOTE**
>
> Azure has two different deployment models for creating and working with resources: Resource Manager and classic. This article covers using both models, but Microsoft recommends that most new deployments use the Resource Manager model.

Azure Virtual Machines is one of several types of on-demand, scalable computing resources that Azure offers. Typically, you'll choose a virtual machine if you need more control over the computing environment than the other choices offer.

An Azure virtual machine gives you the flexibility of virtualization without having to buy and maintain the physical hardware that runs the virtual machine. However, you still need to maintain the virtual machine -- configuring, patching, and maintaining the software that runs on the virtual machine. You can also learn about Linux virtual machines in Azure.

This table helps you compare the choices offered by Azure.

COMPUTE OPTIONS	AUDIENCE
App Service	Scalable Web Apps, Mobile Apps, API Apps, and Logic Apps for any device
Cloud Services	Highly available, scalable n-tier cloud apps with more control of the OS
Virtual Machines	Customized Windows and Linux VMs with complete control of the OS

Tell me about virtual machines

Azure Virtual Machines lets you create and use virtual machines in the cloud. Providing what's known as *Infrastructure as a Service (IaaS)*, virtual machine technology can be used in variety of ways. Some examples are:
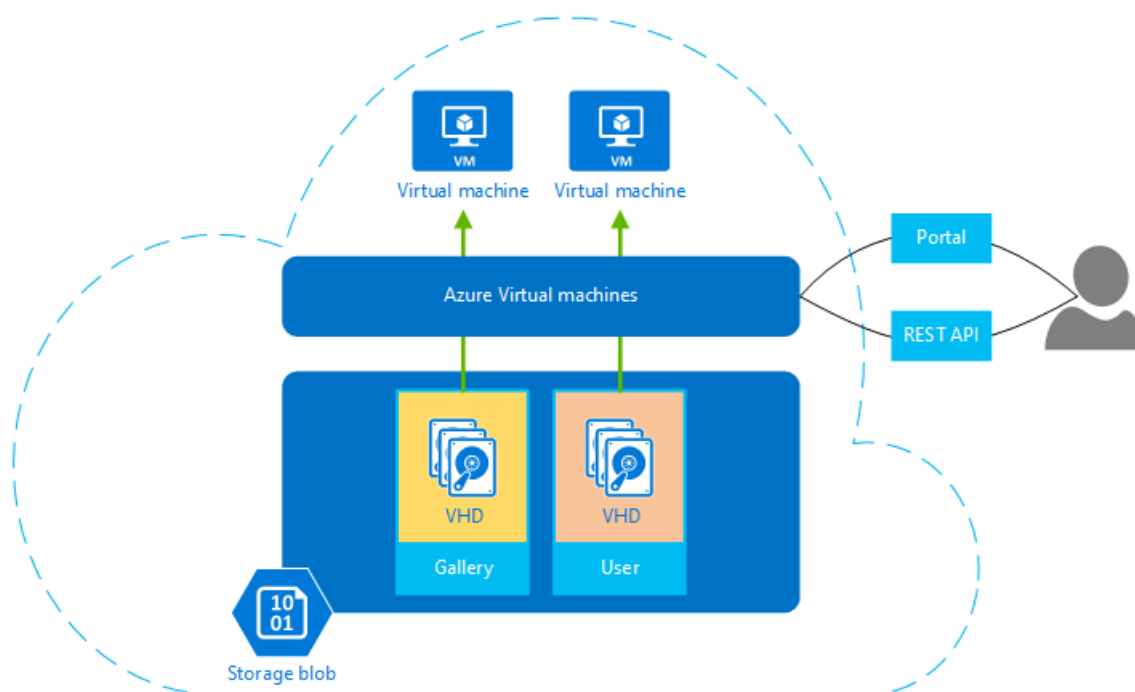
- **Virtual machines (VMs) for development and test.** Development groups commonly use VMs because they offer a quick, easy way to create a computer with specific configurations required to code and test an application. Azure Virtual Machines provides a straightforward and economical way to create these VMs, use them, then delete them when they're no longer needed.
- **Running applications in the cloud.** It makes economic sense to run some applications in the public cloud. One example is an application that has large spikes in demand. Although you could equip your own data center with enough hardware to handle peak demand, that hardware might be underutilized much of the time. Running this application on Azure lets you pay for extra VMs only when you need them and shut them down when you don't. Or, suppose you're a start-up that needs on-demand computing resources quickly and with no commitment. Once again, Azure can be the right choice.
- **Extending your own datacenter into the public cloud.** When you use Azure Virtual Network, your organization can create a virtual network (VNET) that's an extension of your own on-premises network and add VMs to that VNET. This allows running applications such as SharePoint, SQL Server and others on an Azure VM. This approach might be easier to deploy or less expensive than running them in VMs in your own datacenter.

- **Disaster recovery.** Rather than paying continuously for a backup datacenter that's rarely used, IaaS-based disaster recovery lets you pay for the computing resources you need only when you really need them. For example, if your primary datacenter goes down, you can create VMs running on Azure to run essential applications, then shut them down when they're no longer needed.

Like other virtual machines, a VM in Azure has an operating system, storage and networking capabilities and can run a wide variety of applications. You can use an image provided by Azure or one of it's partners, or use your own. Examples include various versions, editions and configurations of:

- Linux servers such as Suse, Ubuntu and CentOS
- Windows Server
- SQL Server
- BizTalk Server
- SharePoint Server

Virtual machines use virtual hard disks (VHDs) to store their operating system (OS) and data. VHDs are also used for the images you can choose from to install an OS. The following figure shows this, as well as two of the tools for creating and managing your VMs.

Figure: Azure Virtual Machines provides Infrastructure as a Service.

VMs can be managed using a browser-based portal, command-line tools with support for scripting, or directly through the REST API. Microsoft partners such as RightScale and ScaleXtreme also provide management services that rely on the REST API.

Along with the OS, other configuration choices you have with VMs include:

- The size, which determines factors such as how many disks you can attach and the processing power. Azure offers a wide variety of sizes to support many types of uses. For details, see Sizes for Virtual Machines.
- The Azure region where your new VM will be hosted, such as in the US, Europe, or Asia.
- VM extensions, which give your virtual machine additional capabilities, such as running anti-virus or using the Desired State Configuration feature of Windows PowerShell.

Other benefits to consider for VMs include:

Pay-as-you-go -- Azure charges an hourly price based on the VM's size and operating system. For partial hours,

Azure charges only for the minutes of use. Storage is priced and charged separately. For details, see Virtual Machines Pricing.

Resiliency -- Azure monitors the physical hardware that hosts each running VM. If a physical server running a VM fails, Azure notices this, moves the VM to new hardware and restarts the VM. This process is sometimes called service healing. Azure also protects a virtual machine's data, by keeping redundant copies of the VHDs in blob storage.

Next steps

Try out a virtual machine by creating a simple virtual machine quickly. For instructions, see Create a virtual machine running Windows in the Azure portal.

Because the tutorial helps you create a virtual machine quickly, it only shows you one way to do it instead of describing the various tools you can use to create virtual machines. For a summary of these tools and links to instructions, see Different ways to create a Windows virtual machine.

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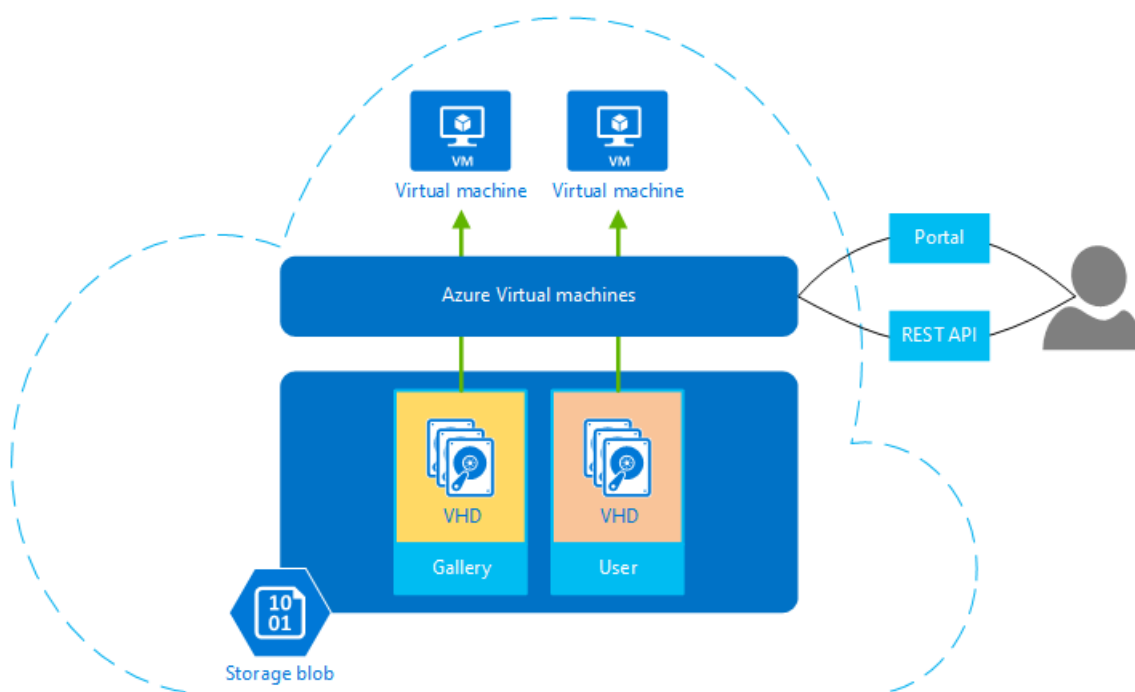
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