Install and configure xrdp to use Remote Desktop with Ubuntu

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In this article

Applies to: ✔ Linux VMs ✔ Flexible scale sets

Linux virtual machines (VMs) in Azure are usually managed from the command line using a secure shell (SSH) connection. When new to Linux, or for quick troubleshooting scenarios, the use of remote desktop may be easier. This article details how to install and configure a desktop environment (xfce) and remote desktop (xrdp) for your Linux VM running Ubuntu.

The article was writen and tested using an Ubuntu 18.04 VM.

Prerequisites

This article requires an existing Ubuntu 18.04 LTS VM in Azure. If you need to create a VM, use one of the following methods:

- The Azure CLI
- The Azure portal

Install a desktop environment on your Linux VM

Most Linux VMs in Azure do not have a desktop environment installed by default.

Linux VMs are commonly managed using SSH connections rather than a desktop environment. There are various desktop environments in Linux that you can choose. Depending on your choice of desktop environment, it may consume one to 2 GB of disk space, and take 5 to 10 minutes to install and configure all the required packages.

The following example installs the lightweight xfce4 desktop environment on an Ubuntu 18.04 LTS VM. Commands for other distributions vary slightly (use `yum` to install on Red Hat Enterprise Linux and configure appropriate `selinux` rules, or use `zypper` to install on SUSE, for example).

First, SSH to your VM. The following example connects to the VM named *myvm.westus.cloudapp.azure.com* with the username of *azureuser*. Use your own values:

Bash Copy

```
ssh azureuser@myvm.westus.cloudapp.azure.com
```

If you are using Windows and need more information on using SSH, see How to use SSH keys with Windows.

Next, install xfce using `apt` as follows:

Bash Copy

```
sudo apt-get update
sudo apt-get -y install xfce4
sudo apt install xfce4-session
```

Install and configure a remote desktop server

Now that you have a desktop environment installed, configure a remote desktop service to listen for incoming connections. xrdp is an open source Remote Desktop Protocol (RDP) server that is available on most Linux distributions, and works well with xfce. Install xrdp on your Ubuntu VM as follows:

Bash Copy

```
sudo apt-get -y install xrdp
sudo systemctl enable xrdp
```

Tell xrdp what desktop environment to use when you start your session. Configure xrdp to use xfce as your desktop environment as follows:

```bash
echo xfce4-session >~/.xsession
```

Restart the xrdp service for the changes to take effect as follows:

```bash
sudo service xrdp restart
```

Set a local user account password

If you created a password for your user account when you created your VM, skip this step. If you only use SSH key authentication and do not have a local account password set, specify a password before you use xrdp to log in to your VM. xrdp cannot accept SSH keys for authentication. The following example specifies a password for the user account *azureuser*:

```bash
sudo passwd azureuser
```

> **Note**
>
> Specifying a password does not update your SSHD configuration to permit password logins if it currently does not. From a security perspective, you may wish to connect to your VM with an SSH tunnel using key-based authentication and then connect to xrdp. If so, skip the following step on creating a network security group rule to allow remote desktop traffic.

Create a Network Security Group rule for Remote Desktop traffic

To allow Remote Desktop traffic to reach your Linux VM, a network security group rule needs to be created that allows TCP on port 3389 to reach your VM. For more information about network security group rules, see What is a network security

group? You can also use the Azure portal to create a network security group rule.

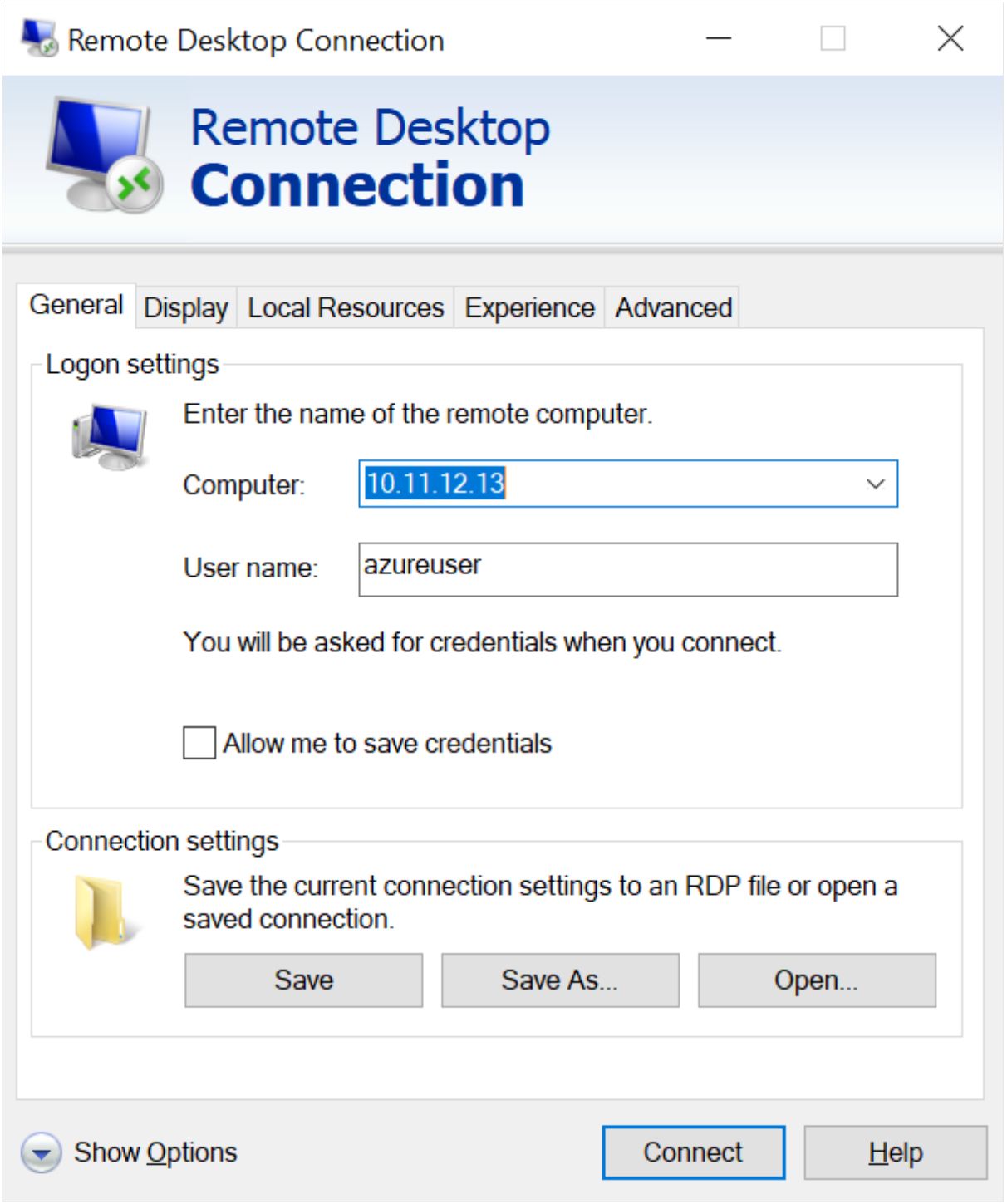
The following example creates a network security group rule with az vm open-port on port *3389*. From the Azure CLI, not the SSH session to your VM, open the following network security group rule:

Azure CLI | Copy

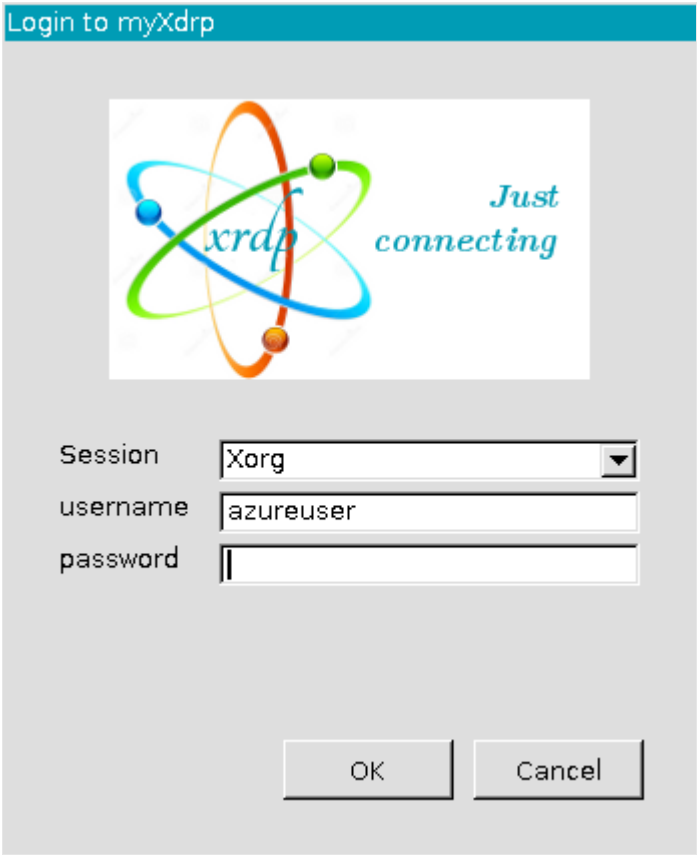
```
az vm open-port --resource-group myResourceGroup --name myVM --port
3389
```

Connect your Linux VM with a Remote Desktop client

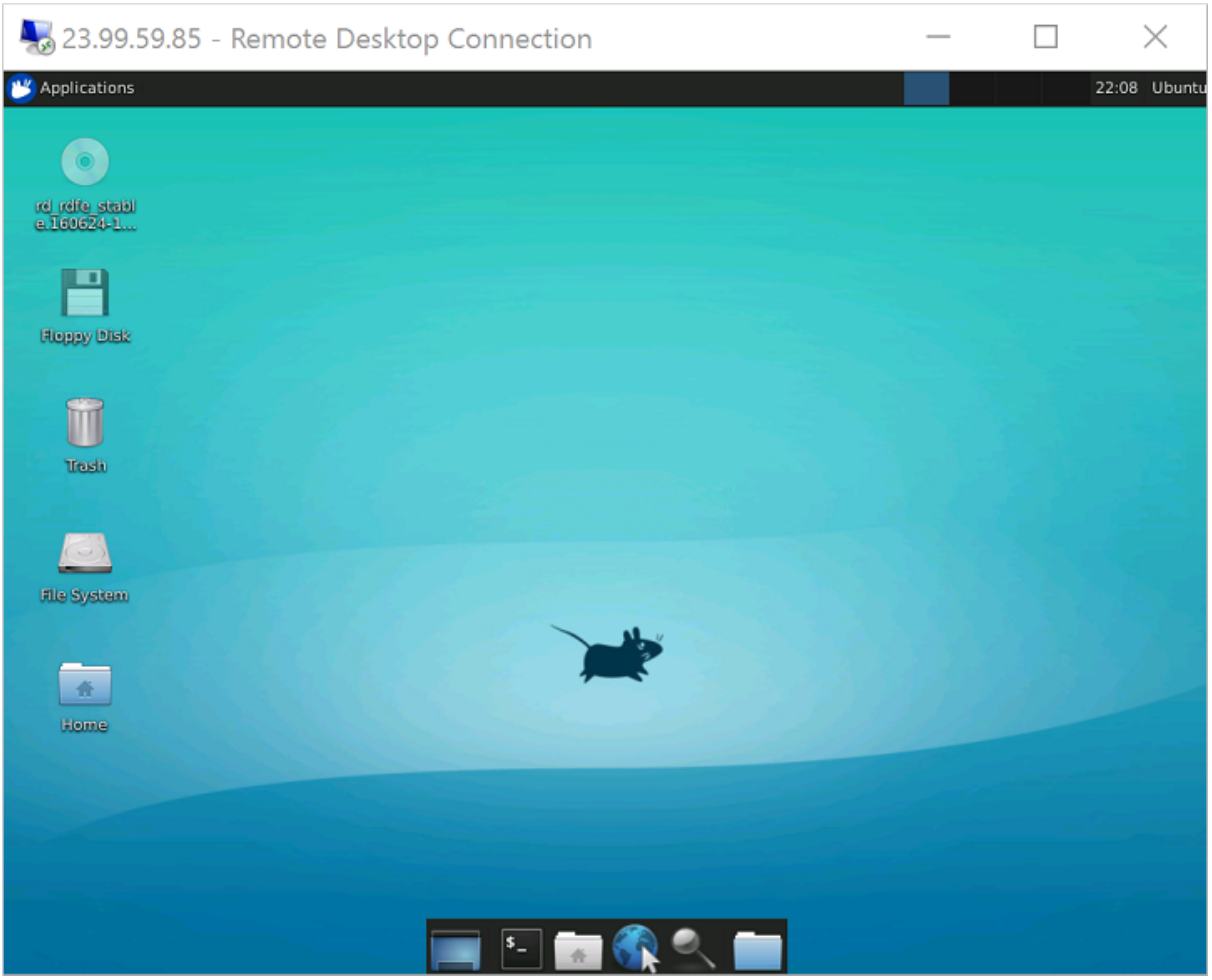
Open your local remote desktop client and connect to the IP address or DNS name of your Linux VM.



Enter the username and password for the user account on your VM as follows:



After authenticating, the xfce desktop environment will load and look similar to the following example:



If your local RDP client uses network level authentication (NLA), you may need to disable that connection setting. XRDP does not currently support NLA. You can also look at alternative RDP solutions that do support NLA, such as FreeRDP .

Troubleshoot

If you cannot connect to your Linux VM using a Remote Desktop client, use `netstat` on your Linux VM to verify that your VM is listening for RDP connections as follows:

Bash Copy

```
sudo netstat -plnt | grep rdp
```

The following example shows the VM listening on TCP port 3389 as expected:

Bash Copy

```
tcp     0     0      127.0.0.1:3350     0.0.0.0:*     LISTEN
53192/xrdp-sesman
tcp     0     0      0.0.0.0:3389       0.0.0.0:*     LISTEN
53188/xrdp
```

If the *xrdp-sesman* service is not listening, on an Ubuntu VM restart the service as follows:

Bash Copy

```
sudo service xrdp restart
```

Review logs in */var/log* on your Ubuntu VM for indications as to why the service may not be responding. You can also monitor the syslog during a remote desktop connection attempt to view any errors:

Bash Copy

```
tail -f /var/log/syslog
```

Other Linux distributions such as Red Hat Enterprise Linux and SUSE may have different ways to restart services and alternate log file locations to review.

If you do not receive any response in your remote desktop client and do not see any events in the system log, this behavior indicates that remote desktop traffic cannot

reach the VM. Review your network security group rules to ensure that you have a rule to permit TCP on port 3389. For more information, see Troubleshoot application connectivity issues.

Next steps

For more information about creating and using SSH keys with Linux VMs, see Create SSH keys for Linux VMs in Azure.

For information on using SSH from Windows, see How to use SSH keys with Windows.

Recommended content

Use SSH keys to connect to Linux VMs - Azure Virtual Machines

Learn how to generate and use SSH keys from a Windows computer to connect to a Linux virtual machine on Azure.

SSH to virtual machine - Azure

Use SSH to connect to your Linux virtual machine. If you are using a modern Mac, Windows, or Linux operating system, the terminal-based client SSH should already be installed.

Create and use an SSH key pair for Linux VMs in Azure - Azure Virtual Machines

How to create and use an SSH public-private key pair for Linux VMs in Azure to improve the security of the authentication process.

Quickstart - Create a Linux VM in the Azure portal - Azure Virtual Machines

In this quickstart, you learn how to use the Azure portal to create a Linux virtual machine.

Detailed steps to create an SSH key pair - Azure Virtual Machines

Learn detailed steps to create and manage an SSH public and private key pair for Linux VMs in Azure.

Create SSH keys in the Azure portal - Azure Virtual Machines

Learn how to generate and store SSH keys in the Azure portal for connecting the Linux VMs.

Troubleshoot SSH connection issues to an Azure VM - Virtual Machines

How to troubleshoot issues such as 'SSH connection failed' or 'SSH connection refused' for an Azure VM running Linux.

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