WHITE PAPER

SETTING UP AND USING ESTATE MASTER ON THE CLOUD

INTRODUCTION

Cloud Computing can provide great flexibility for the Estate Master user. You can access your feasibilities, manage you projects or evaluate your assets on-site, at meetings or at home. All you require is a reliable internet connection and a device that can connect to a remote desktop.

Running Estate Master on the Cloud is essentially installing Estate Master on your own 'virtual machine' (or 'VM') that is hosted by a Cloud Computer provider and connecting to it over the internet. Think of it as your own private 'webspace' with an interactive installation of Estate Master running on it.

Estate Master has found Microsoft's Azure platform to be the best Cloud-based Virtual Machine option for both ease of configuration and use, but there are other providers available as listed in this document. Virtual Machine configurations more often than not come with Windows already pre-installed and can cost as little as $0.15/hour to run[1] (excludes the cost of purchasing an Estate Master software license[2]).

We have provided the following documentation to show how you can configure and set up your own Virtual Machine in the Cloud. By all means, if you'd like your Estate Master software running in the Cloud but are not comfortable setting it up, please contact the Estate Master Support Department for a quote on setting this up for you.

[1] Based on An Azure 'Medium' VM. Prices are indicative only and are quoted in USD. For the latest pricing, including any ancillary services required, please check the vendors websites.

[2] Only Estate Master CAS Licences can be activated on VM's in the Cloud due to their Windows Operating systems being server-based.

OVERVIEW

PROS & CONS OF USING ESTATE MASTER IN THE CLOUD

There are many advantages to running Estate Master via Cloud Computing.

- **Cost:** Cloud Computing can be very cost efficient, often costing a fraction of what it would to purchase and set up your own physical hardware (i.e. a PC or Server). It also removes the burden of hardware maintenance, as this will all be managed by your Cloud Computing provider.
- **Disaster Recovery:** Backup and recovery is much easier, as work can be saved both locally and on the cloud, and many Cloud Computing providers include data backup as part of their service. There is also a significant reduction of downtime if hardware failure occurs, as Cloud Computing providers usually have redundancy that far outweighs what individuals and corporations could afford to implement and manage. For example, Microsoft Azure guarantees through their SLA[3] that you will have external connectivity at least 99.95% of the time for their Virtual Machines.
- **Scalability:** This is one of the main benefits of Cloud Computing, allowing you to easily scale your virtual hardware or data storage up or down at a click of a few buttons to instantly respond to your usage and data requirements, without any large upfront capital costs.
- **Flexibility:** Most importantly, Cloud Computing provides great flexibility in allowing the user to access Estate Master anywhere they can get an internet connection. As long as you are online, you should be able to use Estate Master via a VM in the Cloud.
- **Cross-Platform Compatibility:** Microsoft has developed free applications that allow you to connect to Windows VM running on the Cloud via multiple platforms and devices, whether it be a PC, Mac or even an iPad.

The main disadvantage is the increased dependence on the internet. The very internet connection that provides this flexibility is also something you will now be dependent on. If for any reason your internet connection gets lost, or becomes unreliable, it will directly affect your use of Estate Master via a VM in the Cloud.

FAQ'S

1. CAN CLOUD COMPUTING HELP ME USE ESTATE MASTER ON A MAC?

You can only run Estate Master on a Mac with the use of a Windows VM (whether you run one locally using programs such as Parallels or VMWare Fusion or run one online via Cloud Computing), as it is designed in the Microsoft .NET Framework and requires a Windows Operating System to function.

This is where taking advantage of Cloud Computing can be ideal; setting up a Windows VM in the Cloud without having to worry about purchasing third-party programs or Microsoft Windows licenses.

Running Estate Master on an Apple Mac can be easily achieved through setting up the Estate Master software on Windows VM running on the Cloud and then connecting to it via the 'Microsoft Remote Desktop Connection Client for Mac' utility. http://goo.gl/gQQVsa

Later in this document we will show you how this can be configured on both an Apple Mac and iPad.

[3] Microsoft Azure Service Level Agreements http://azure.microsoft.com/en-us/support/legal/sla/

2. WHAT ARE THE SYSTEM REQUIREMENTS?

System requirements for running Estate Master on a VM in the Cloud do not vary from our standard PC or Notebook specifications.

- Intel Core 2 Duo (3GHz) or Quad (2.4Ghz) minimum processor (or equivalent)
- 1GB RAM recommended minimum.

In the context of Microsoft Azure VMs, Basic Windows '**Medium VM**' meets Estate Master's Minimum Specifications, and costs just over 15 cents per hour[4] to run. You can investigate your options in Azure using the following pricing calculator:
https://azure.microsoft.com/en-us/pricing/calculator/?scenario=virtual-machines

3. WHAT TYPE OF LICENSE IS REQUIRED TO RUN ESTATE MASTER IN THE CLOUD?

The Windows Operating Systems that VM's in the Cloud are built on are Server-based. Therefore, you will require an Estate Master Terminal Server CAS (Concurrent Access Session) License to be able to install and activate your Estate Master software on a Cloud VM, which also provides the benefit of multi-user access. User/PC Licenses will not be suitable.

For more information about Estate Master Licensing, please visit our website:
http://www.estatemaster.com/help-support/getting-started/software-licensing

4. CAN I SAVE TO MY LOCAL MACHINE AND PRINT TO A LOCAL PRINTER?

In most VMs running in the Cloud, it is easy to configure so that files are saved and printed locally. Later in this document we will show you have to configure this in a Microsoft Azure VM.

5. HOW SAFE AND SECURE IS MY DATA?

The security of your data that is stored in the cloud is down to many different factors, predominantly the security features of the Cloud Computing provider you choose and the practices of the user.

All cloud providers will provide details on security measure they implement, and you can always avoid any security concerns by configuring your VM to save files locally.

Please bear in mind though when using a VM managed by a Cloud Computing, the user is still responsible for installing and maintaining security components such as:

- Anti-virus/malware/spyware software: making sure that suitable security software is installed on the Windows OS running in the VM to protect against threats while web browsing, running applications, opening email attachments, etc.
- Windows Updates: making sure that the Windows OS running in the VM is patched on a frequent basis to protect against known vulnerabilities.
- Firewalls: Ensuring that proper Windows Firewall settings are configured to avoid unauthorized intrusion.

[4] Prices are indicative only and are quoted in USD. For the latest pricing, including any ancillary services required, please check the vendors websites.

CONFIGURING MICROSOFT WINDOWS AZURE

WHAT IS MICROSOFT WINDOWS AZURE?

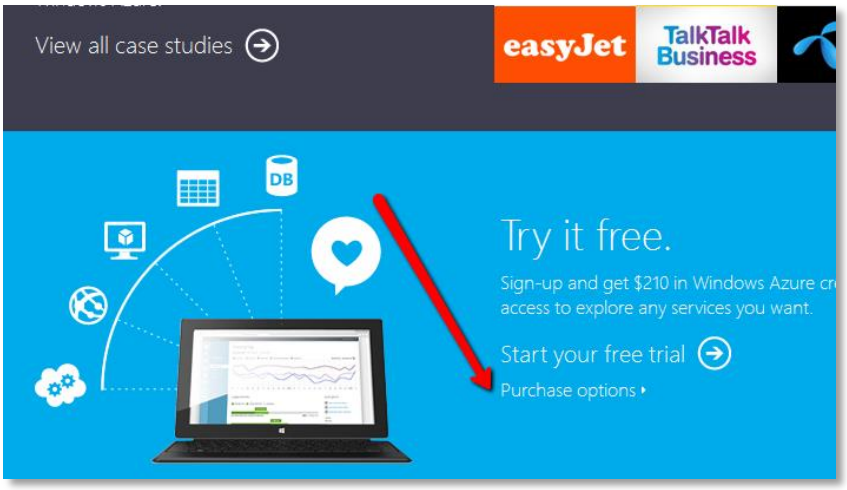
Microsoft Azure is Microsoft's cloud computing platform that allows users to build and deploy applications through a global network of Microsoft-managed datacenters.

Once you have created your own account is Azure, you can create and Virtual Machine of your choice for use on the Cloud.

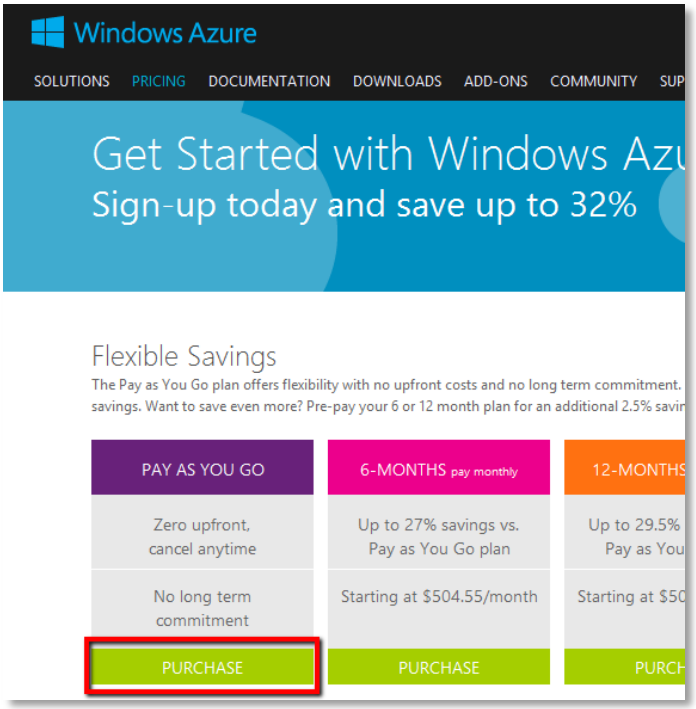
SETTING UP AN AZURE ACCOUNT

To begin creating your own Microsoft Windows Azure Virtual Machine:

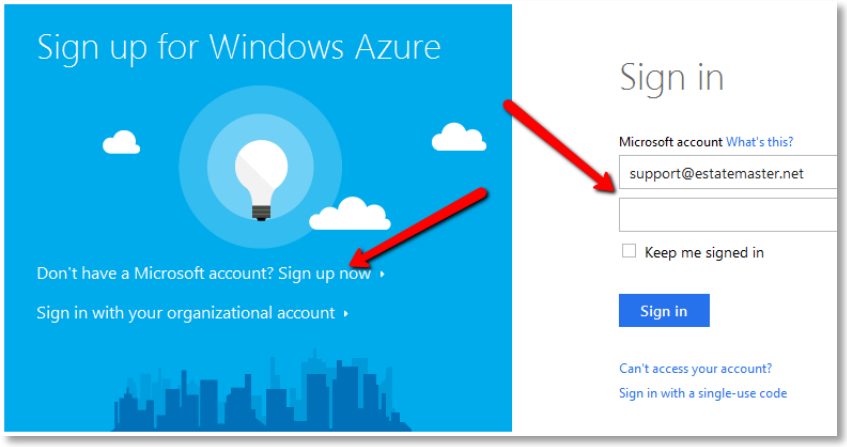
1. Open a new web browser, and go to http://www.windowsazure.com
2. Scroll down the page to where it asks to start a free trial. Click on [Purchase Options] to proceed.



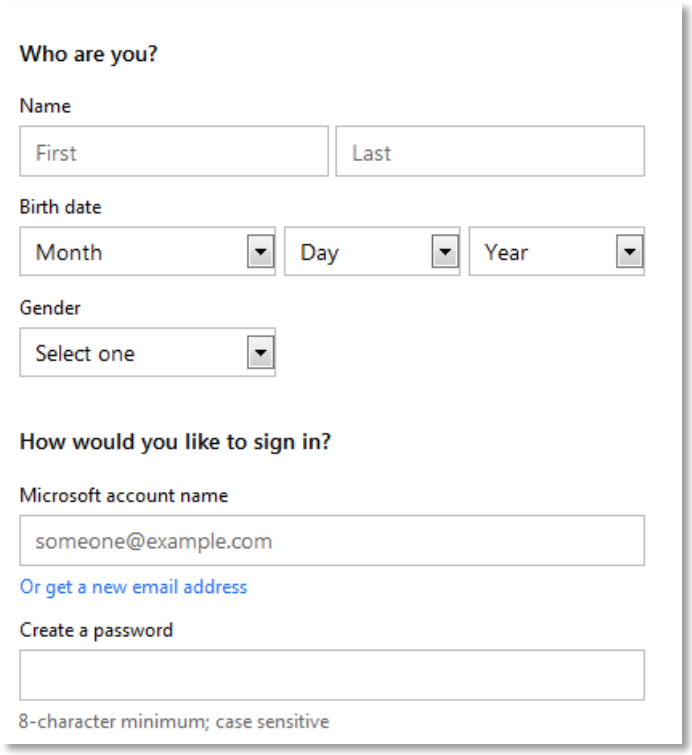
3. The next screen will display which type of account you wish to sign up for. To start off with, we suggest the 'Pay as you Go' plan. Click on [Purchase] in that column.



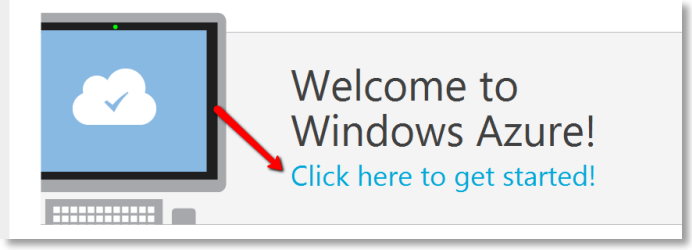
4. Next you will be prompted to either login with your Microsoft account ID or to create a new one (any Hotmail.com or Outlook.com account login will work here).



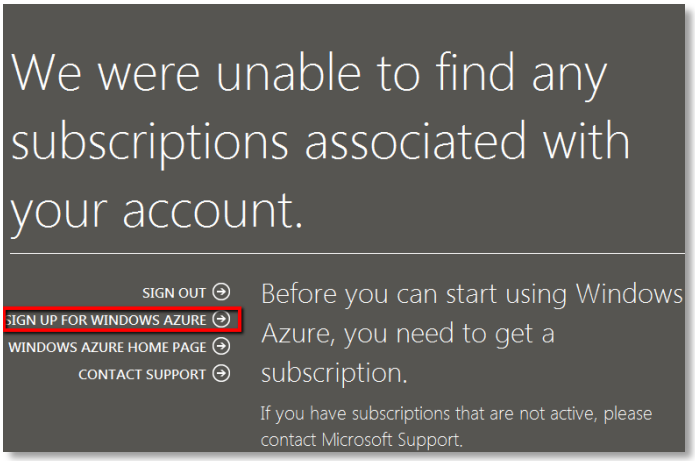
5. If you select to create a new account, you will be prompted to enter information and password details etc.



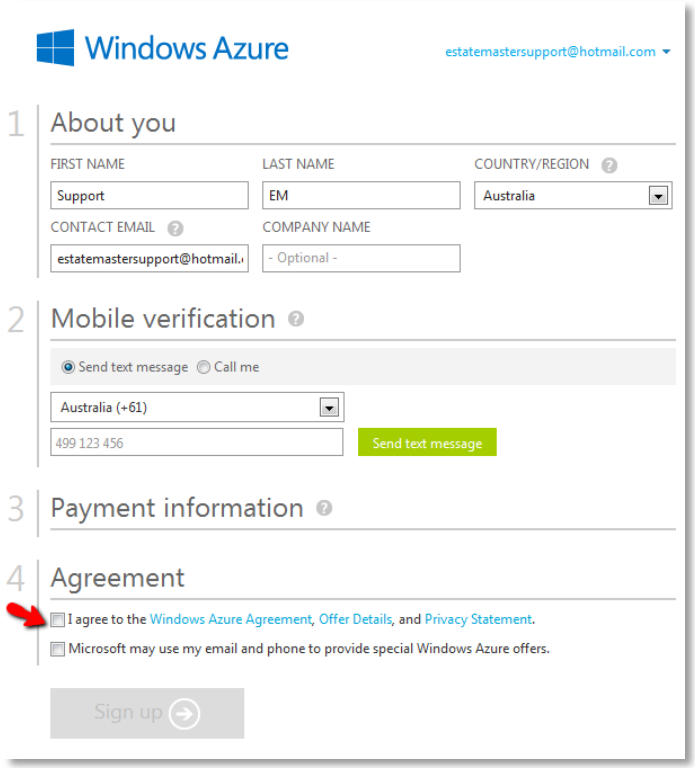
6. Once you have created your new Azure Account then click the [Click here to get started!] link.



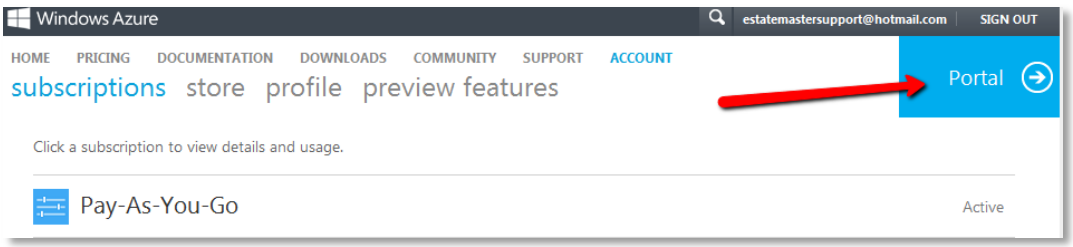
7. The below screen will be displayed - click on the [Sign up for Windows Azure] link.



8. This will display a screen requiring user input into the actual Azure account creation. Fill out all relevant details including payment details. (Please note that you will need to provide a phone number to receive an automated call giving you a verification code). Check the box to agree to the Terms and Conditions, and click the [Sign Up] button.



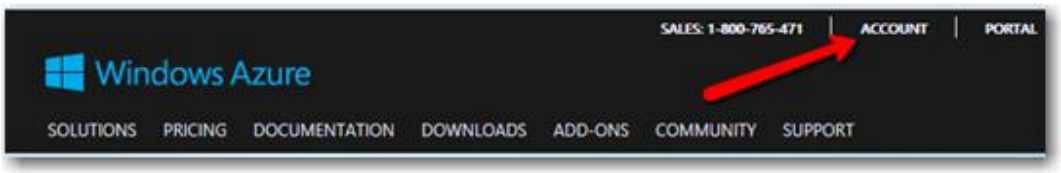
9. Once this has been successful, you will see your login name in the top right corner of the screen - click [Portal] to go to the Management Portal where you can create and manage your Virtual Machines.



CREATING AN AZURE VIRTUAL MACHINE

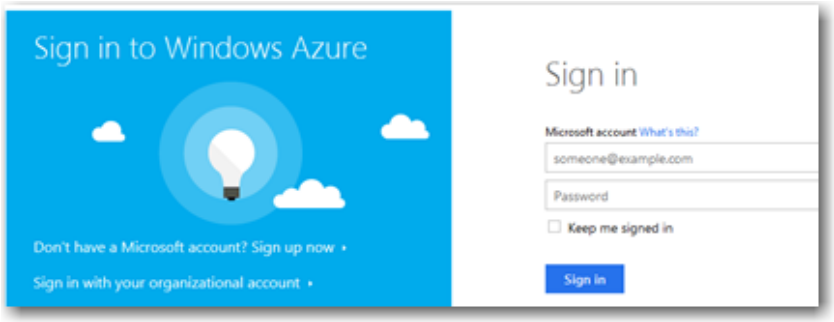
Once you have created your Azure account:

1. Go to http://www.windowsazure.com and click on [Account] at the top of the page.

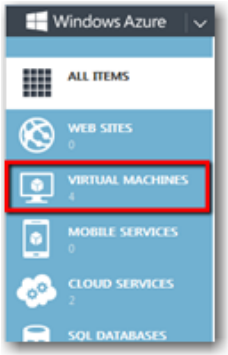


2. Then click on [Management Portal].

3. Login to Azure (as you should already have an account set up).



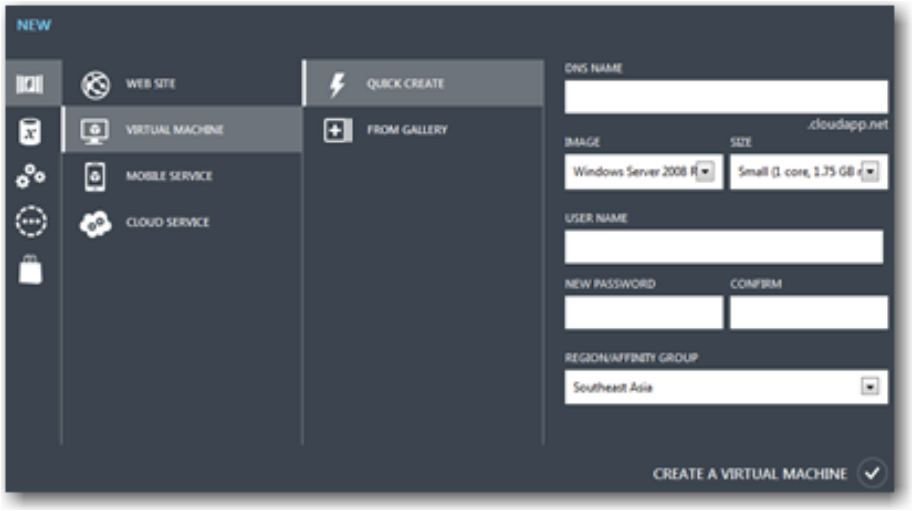
4. In the management portal on the left, select [Virtual Machines].



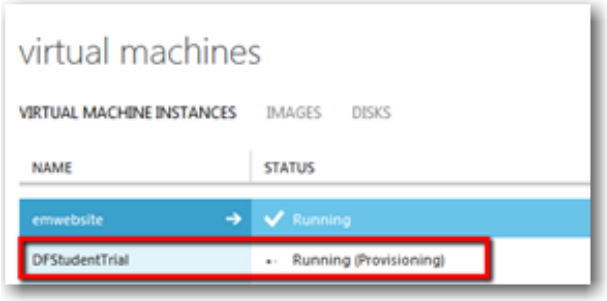
5. Once this screen loads, click on the [+NEW] button on the bottom left of the screen.

6. Click on [Virtual Machine > Quick Create]. Fill out / select:
    a. DNS Name: The name of the machine (in our example below we have created a Virtual machine called 'DFStudentTrial')
    b. Image: We recommend you select 'Windows Server 2008 R2'
    c. Size: We recommend you select 'Small' or 'Medium'
    d. Username and Password: This will be the user's windows login details for the running virtual machine.
    e. Region: The location in which the Virtual Machine will be provisioned (select the closest region to your own location).

    When done, click on [Create a Virtual Machine].

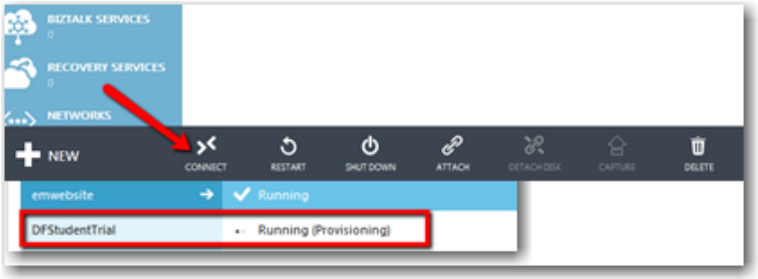


7. You will now be back at the console screen, with the machine status as in provisioning.

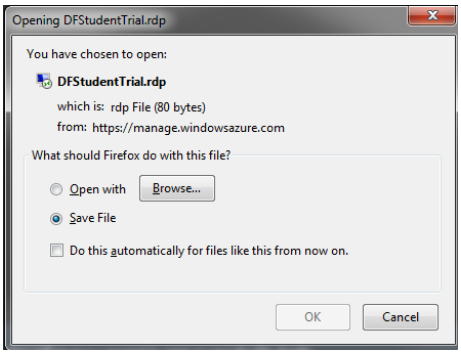


8. You will have to wait until this has completed (will take a few minutes). Once done the status will change to 'Running'.

9. Click on the machine to make it highlighted as in the image above, then click on [Connect] at the bottom of the screen.

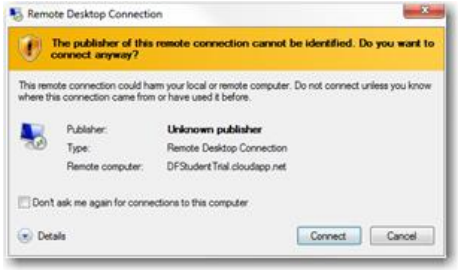


10. This will generate a Remote Desktop Protocol (.rdp) file. Save this file to your PC. This file is used to connect to the Virtual Machine you created.

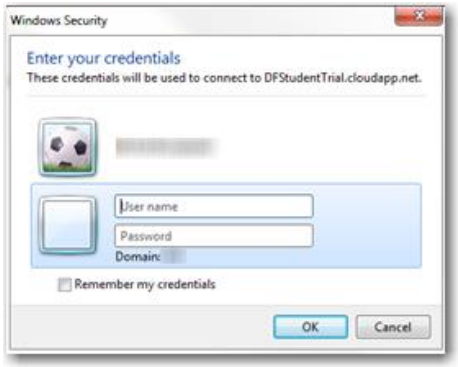


11. As long as the machine is in a 'running' state on Azure, you can simple click on the same icon to launch the remote connection. Click the Remote Desktop Protocol (RDP) icon.

12. Then click on [Connect].



13. You will need to login using the Username and Password entered during step 6.

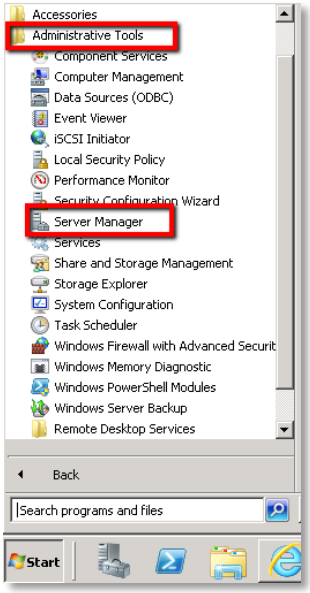


14. The machine will then try to connect, however there will be a verification popup. Check the box at the bottom saying 'Don't ask me again' and then click on [Yes] to connect to your machine.

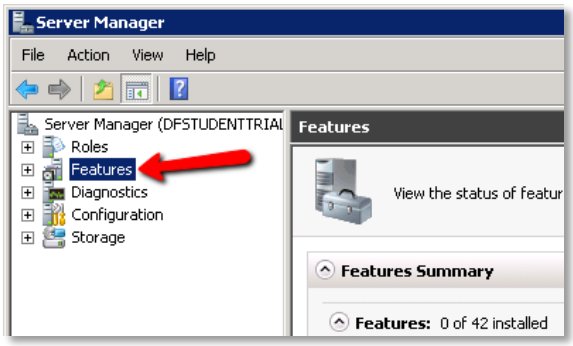
CONFIGURING YOUR AZURE VIRTUAL MACHINE

Please note, the following instructions are based on using a 'Windows Server 2008 R2' Virtual Machine, as per our recommendations. If you use a different Windows Server OS, the screenshots may be slightly different.

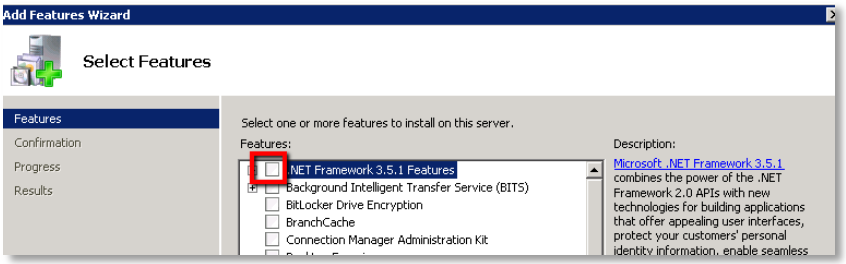
1. Click on the Windows 'Start' button, and click [Administrative Tools > Server Manager].



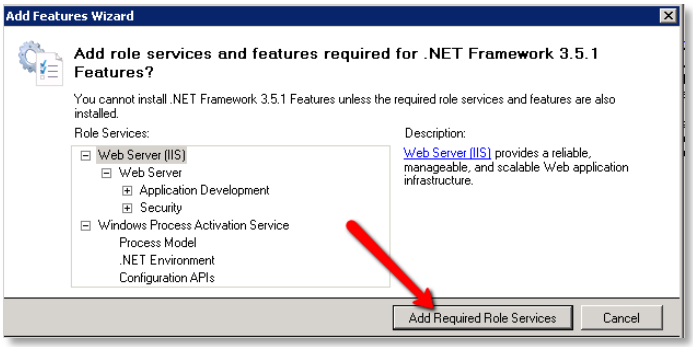
2. Right-click on [Features] in the menu on the left, and select to [Add Features]



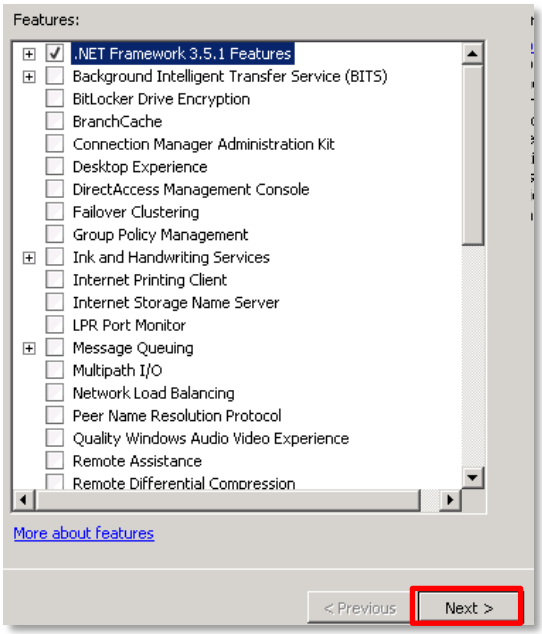
3. Select the '.NET frameworks 3.5.1' Feature.



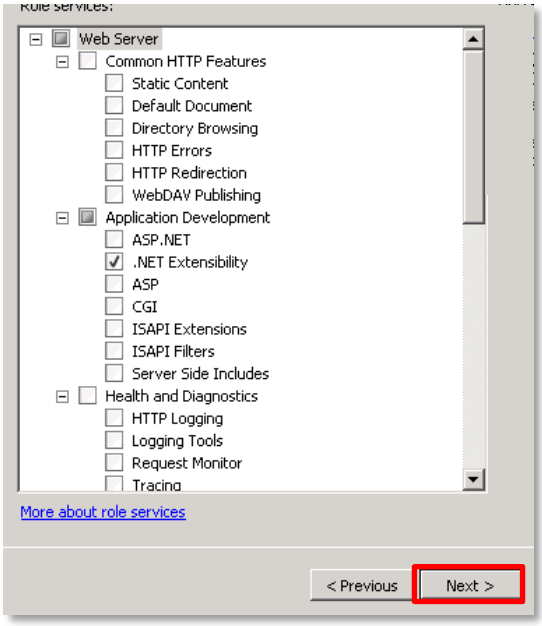
4. Then click [Add Require Role Services].



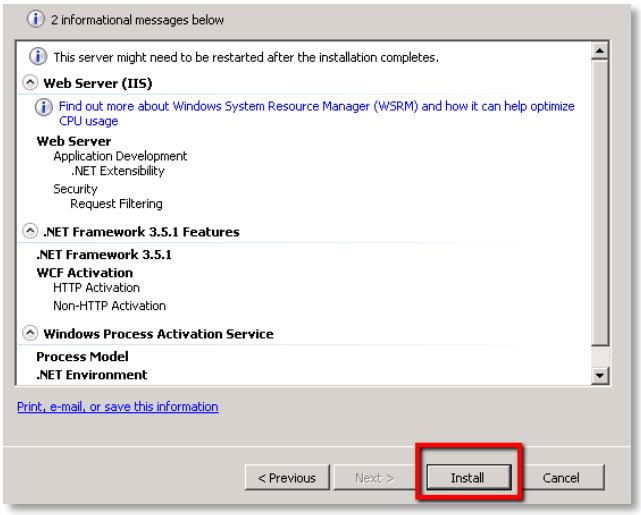
5. Click [Next]



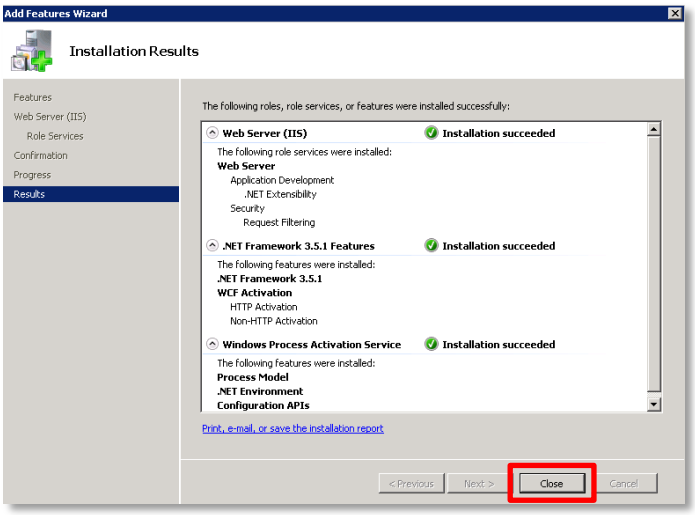
6. Click [Next] again.



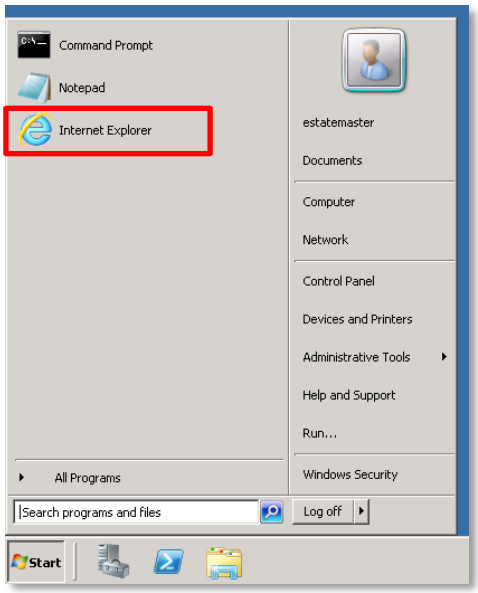
7. Then click [Install]



8. Once this has installed, click [Close].

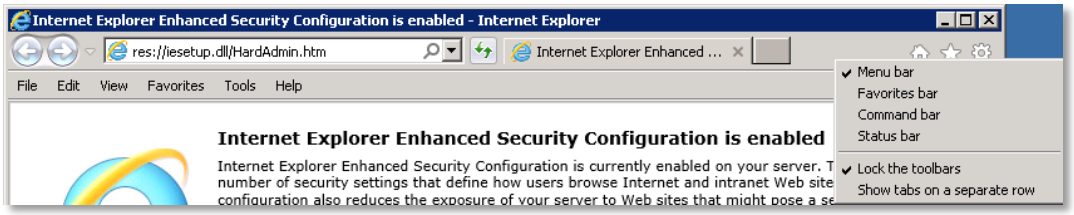


9. This has activated a pre-requisite for our software running. Once done, click on [Start], and open Internet Explorer (IE).

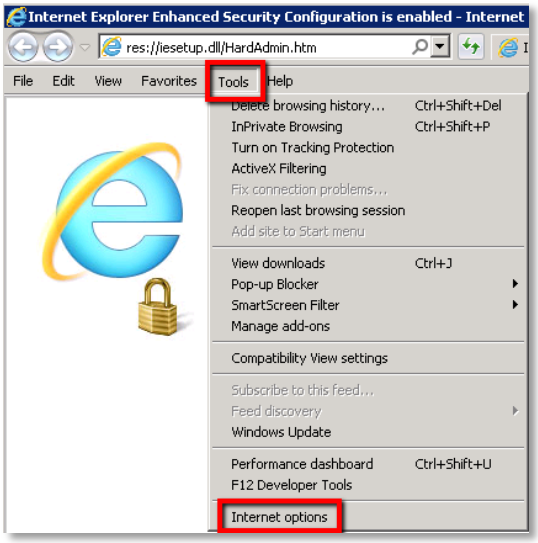


Please note, the following screenshots may be slightly different depending on the version of Internet Explorer you are using.

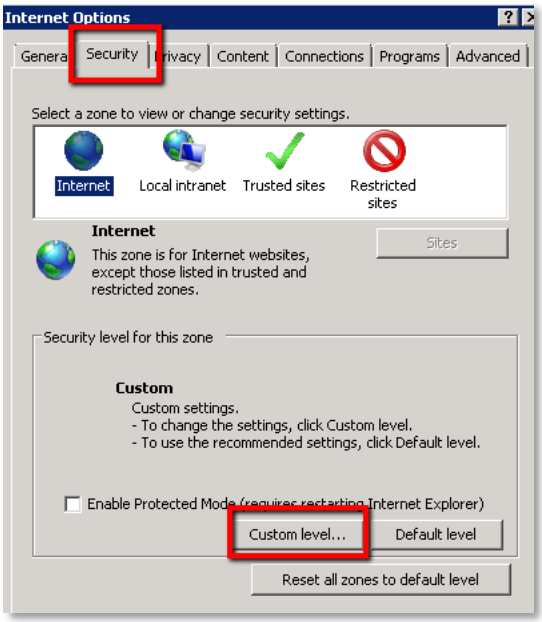
10. Once IE is loaded, right click on the grey bar next to the open tab, and select [Menu bar] to have the IE menu displaying.



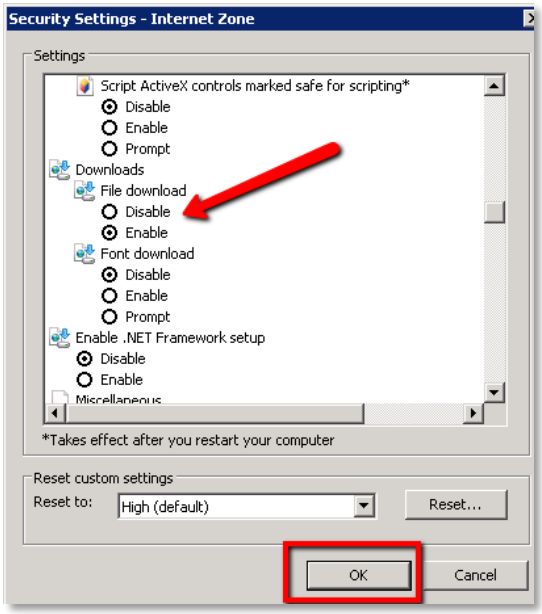
11. Once you can see the menu, select [Tools > Internet Options] from the drop-down menu.



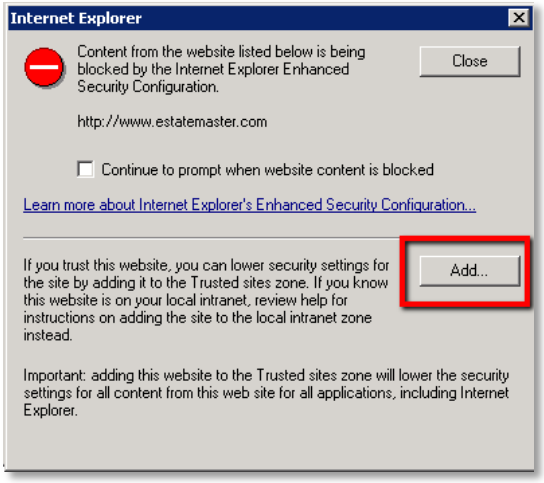
12. Click on the [Security] tab, and then click [Custom Level].



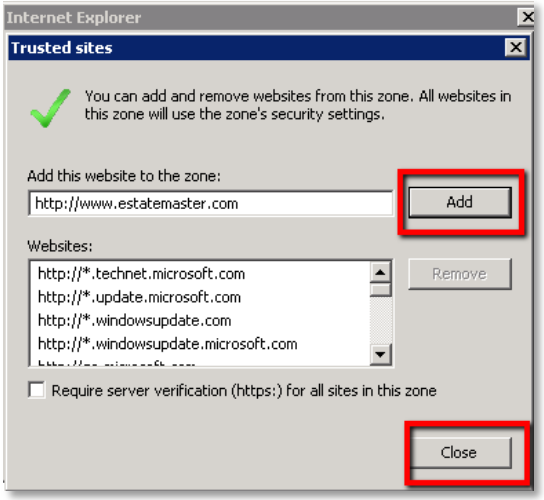
13. Scroll down to the 'Downloads' section – check the 'Enabled' option, and then press [OK].



14. Press [OK] again to close these options.
15. Go to the Estate Master website (http://www.estatemaster.com) - by default the internet security is quite high on these machines, so when then below message appears, click [Add] to add the Estate Master website as a 'trusted site'.



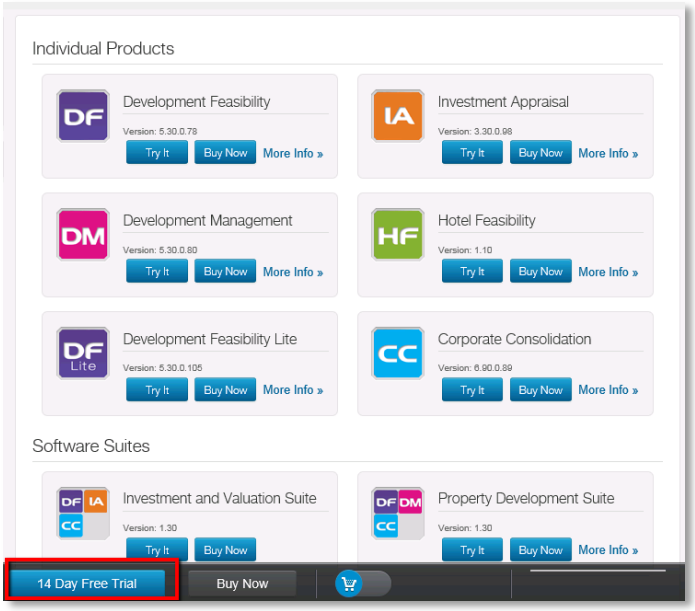
16. When the configuration screen appears, click on [Add] and then [Close]. (this process will be needed to be repeated 3 times for the first 3 popup warnings)



17. If this message pops up again after this, un-check the 'Continue to prompt' option, and click [Close].

18. You can now download the required software onto this machine and install it as per normal with any normal PC.

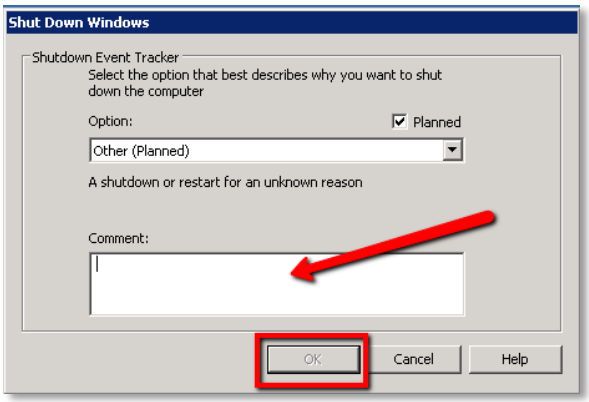
19. Click on the [14 day Trial] button along the bottom of the website and select the [Try It] button associated with the desired software. Follow the subsequent process as indicated on the website to download and save the installer file on your virtual machine. (Please do not close the Estate Master website).

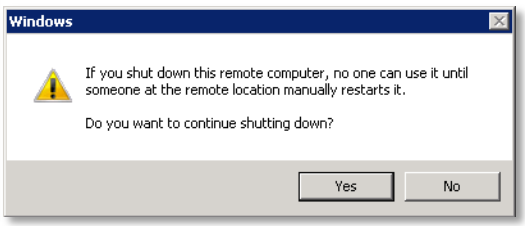


20. Double click and run the saved file from your Virtual Machine to install the Estate Master software.
21. Once this has been done, please do not close our Estate Master website, but contact the Estate Master Support Team via support@estatemaster.net or 02 8198 7623 as they will need to remote onto your machine and register your software for you.

IMPORTANT NOTES

- When you are finished using your Virtual Machine, log out as you would any normal PC (by shutting it down via the Windows Start button and selecting shut down)- a popup will occur – simply enter any text in the comments field, and click [OK], then click [Yes] to the warning message regarding the machine being restarted next time.





- The machine will still be in a 'Running' state and as such, accruing charges on a per hour basis. You can at any time however, reconnect to the virtual machine at any time via the RDP link saved on your machine (as shown above).

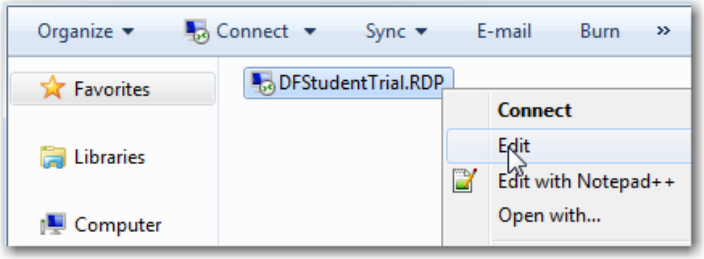
- To minimise costs you can click on the machine in the Azure management console, and select [Shut Down] from the menu options at the bottom of the screen to stop the machine running.

- This will stop the machine running, and so reduce costs. However the next time you wish to connect to this same machine, you will need to first log in to the Azure management console, and 'restart' the machine (by clicking on the machine in the list and clicking [Restart]), and only once the machine is up and running, click [Connect] to download a new RDP file, as the previous one you had will no longer work.

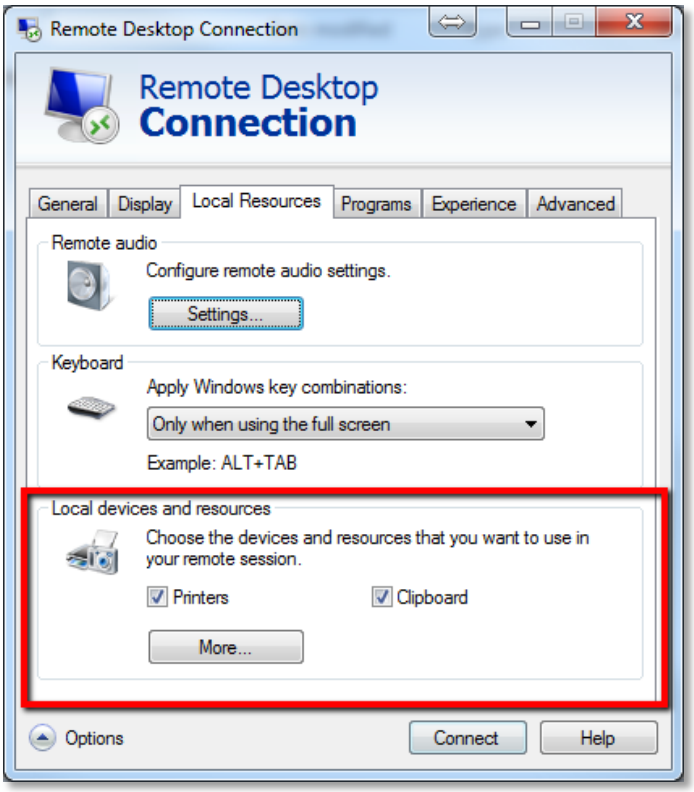
CONFIGURE LOCAL DRIVES AND PRINTERS

Although Estate Master is running on an Azure Cloud Virtual Machine, it can still be easily configured to save to your local drives and use local printers and resources.

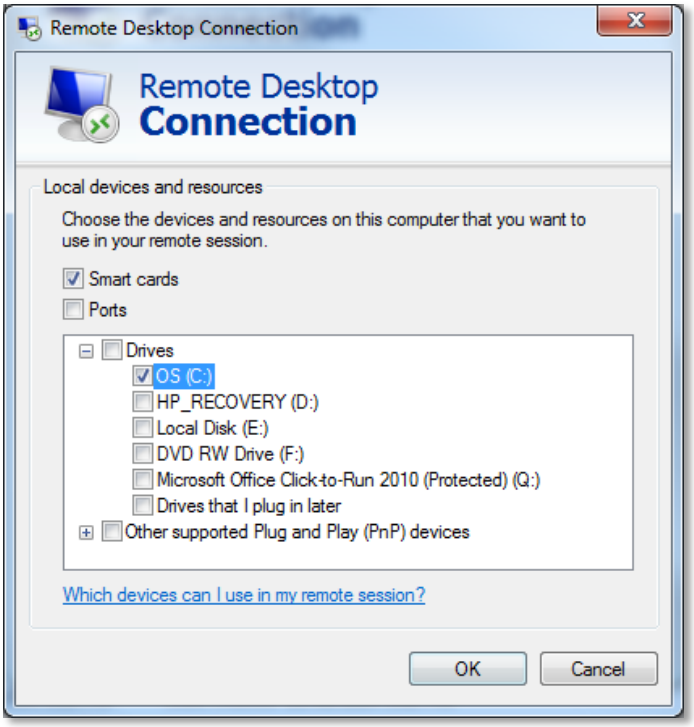
1. Locate the RDP file you use to connect to your Cloud Virtual Machine (the .rdp file saved in Step 10 of 'Configuring Your Azure Virtual Machine' above) and click [Edit].



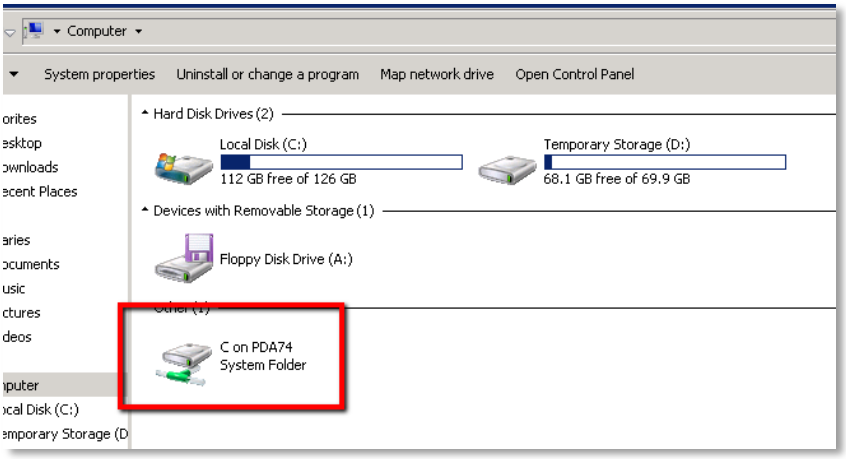
2. In the 'Local Resources' tab, under 'Local Devices and Resources', ensure that both 'Printers' and ' 'Clipboard' are checked and press [More…].



3. Here you will the opportunity to configure your Virtual Machine directly to your local drives, ensuring that the work you do on the cloud can be saved locally.



4. Once you have done that, you will have the option to save on a drive in the 'Other' section of your Cloud VM.

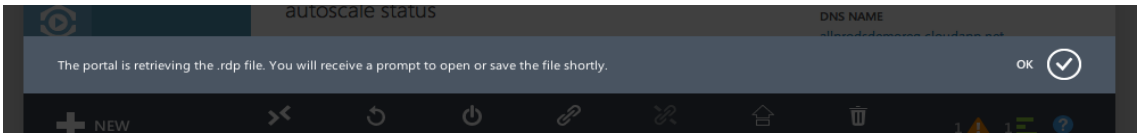


ACCESSING AN AZURE VM VIA AN APPLE MAC

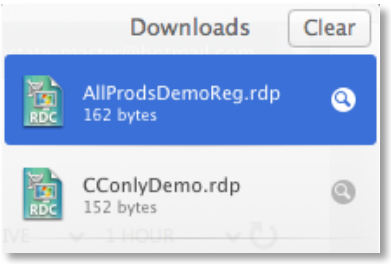
Setting up Estate Master in an Azure Virtual Machine is ideal for Apple Mac users. Even though Azure is a Microsoft platform, they have created an app called '**Remote Desktop Connection for Mac**' that allows Mac users to connect to any Windows-based machine remotely, whether it is on a local network or on the cloud.

The app simply allows you to open the Windows RDP files mentioned earlier on a Mac and connect to a Azure VM.

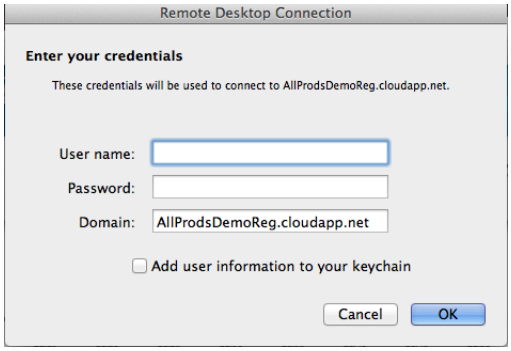
1. Download and install the **Remote Desktop Connection for Mac** app from Microsoft: http://www.microsoft.com/en-au/download/details.aspx?id=18140
2. Login to your Azure account at Azure on the Mac and startup the machine you require and press [Start].
3. When you press 'Connect', you will be prompted to download a RDP file, just like on a Windows machine.



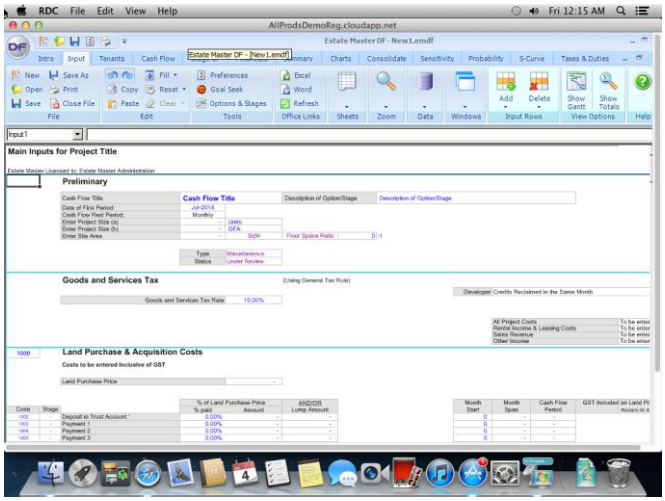
4. Open your RDP file from your downloads.



5. If you have 'Remote Desktop Connection for Mac' installed, you should be able to login.



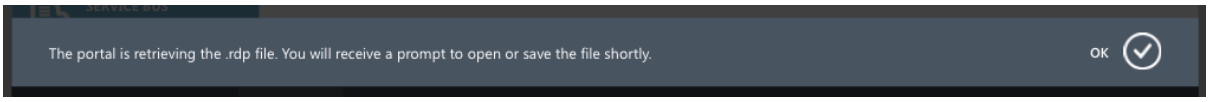
6. You can then use Estate Master on your Virtual Machine as easily as you would on a Windows PC.



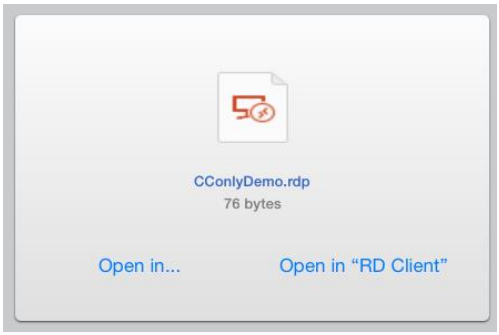
ACCESSING AN AZURE VM VIA AN APPLE IPAD

You can also use a similar method as above to run Estate Master in an Azure Virtual Machine using an Apple iPad.

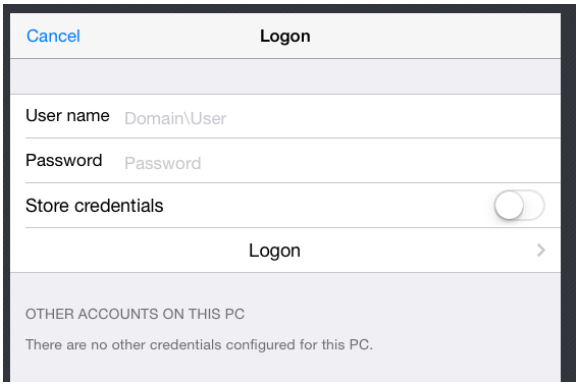
1. Download and install the free '**Microsoft Remote Desktop'** app from the Mac Store: http://goo.gl/gQQVsa
2. Login to your Azure account at Azure on the Mac and startup the machine you require and press [Start].
3. When you press [Connect], you will be prompted to download a RDP file, just like on a Windows or Mac machine.



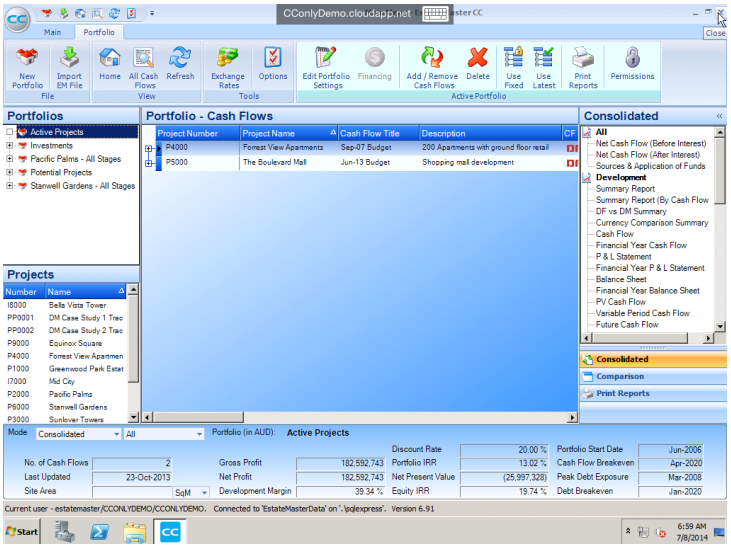
4. Once downloaded, you will be prompted to open an RDP file. Press [Open in "RD Client"].



5. If you have **'Microsoft Remote Desktop'** installed, it will prompt you to log into the VM.



6. Once logged in, you can then use Estate Master on your VM as easily as you would on a Windows PC.



OTHER CLOUD COMPUTING PROVIDERS

Apart from Microsoft Azure, there are several other Cloud Solution providers, including the solutions below.

AMAZON EC2

Amazon Web Services (AWS) provides a cloud computing platform called the **Amazon Elastic Compute Cloud (EC2).**

One benefit of Amazon EC2, is that they have what is called a 'Free Tier', where new customers can get started with Amazon EC2 for free for 1 year. See what's included here: http://aws.amazon.com/free/

Find out more here: http://aws.amazon.com/ec2/

RECOMMENDED MINIMUM VIRTUAL MACHINE TYPE

For the purposes of running Estate Master, Amazon's ***t2.medium*** machine will meet our minimum specifications, and can be run from approx. $0.10 per hour [5].

GOOGLE CLOUD PLATFORM

The Google Cloud Platform provides a cloud solution called **Google Compute Engine.**

Find out more here: https://cloud.google.com/products/compute-engine/

RECOMMENDED MINIMUM VIRTUAL MACHINE TYPE

For the purposes of running Estate Master, Google's ***n1-standard-2***, machine will meet our minimum specifications; and can be run from approx. $0.14 per hour [4].

FOR ASSISTANCE

If you'd like more assistance in finding or configuring a Cloud Installation of Estate Master, or if you'd like Estate Master to configure this for you, please contact us at our Sydney or Dubai offices.

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[5] Prices are indicative only and are quoted in USD. For the latest pricing, including any ancillary services required, please check the vendors websites. The recommendation was based on the machine/instance type available as at June 2014 and may change if the configuration of those machines/instances change.