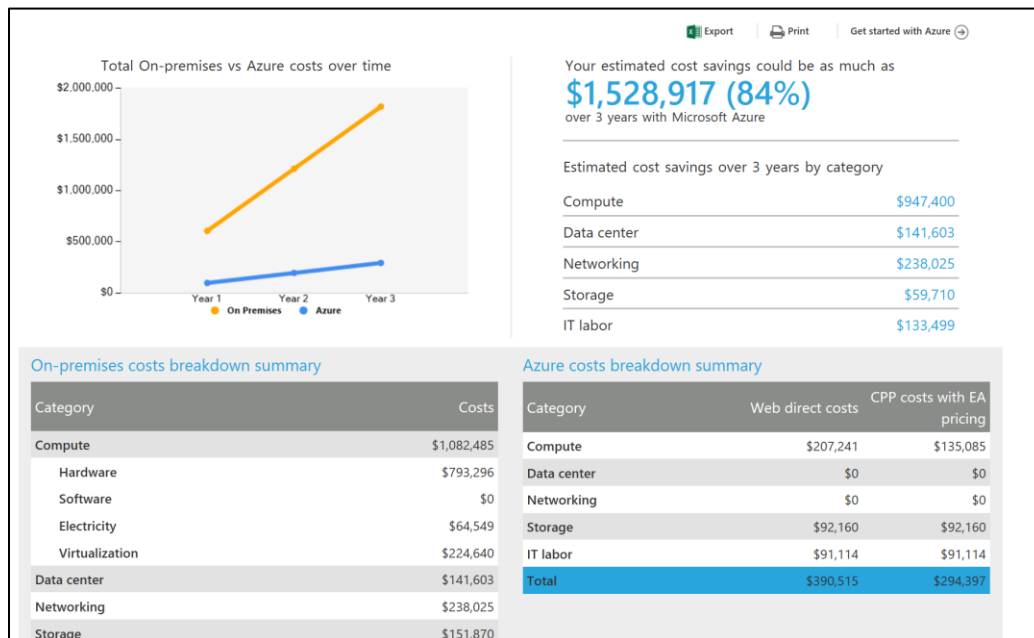


Cloud Migration Assessment

Introduction

This guide provides step-by-step instructions on how to use the Azure TCO tool to understand initial cost comparison in migrating your on-premises workloads to Azure. Through one of three input mechanisms, you can model the cost of your on-premises physical and virtual servers. Further inputs for storage and networking usage offers deeper costing analysis, providing an initial comparison report to identify savings when moving your on-premises environment to Azure.



Getting Started

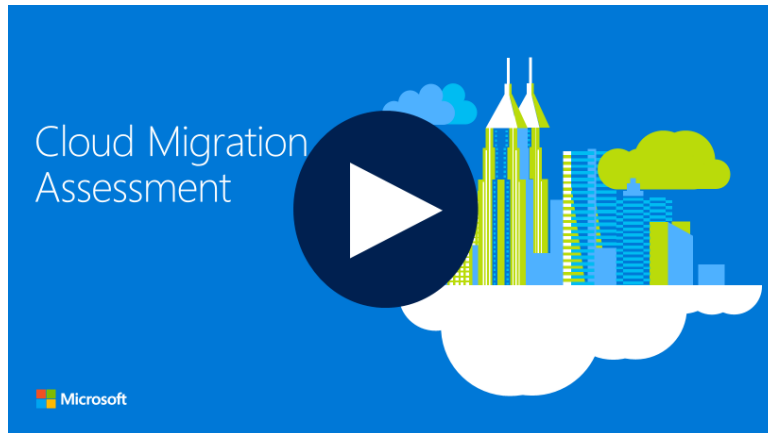
Getting started is easy, simply choose the best way to input your server and workload data

- [Manual Import](#)
The manual assessment enables you to enter in information about your server environment such as procs, cores and memory directly into the Azure TCO analysis tool.
- [Custom Import](#)
Custom inventory assessment enables you to use your existing discovery tools output, providing the Azure TCO calculator with the required data to enable the assessment. In this scenario, you would use the custom inventory template provided by the Azure TCO tool, and import your existing data to this.

- [Automated discovery and import](#)

The automated inventory assessment uses the Microsoft Assessment and Planning toolkit to automatically collect your server hardware configuration, and enable this for input into the Azure TCO tool.

You can also watch the step-be-step video guide showcasing examples of all Azure TCO Tool input types, setup and automated discovery.



[Watch the Cloud Migration Assessment video guide](#)

Manual Input and TCO analysis

The manual assessment enables you to enter in information about your server environment such as procs, cores and memory directly into the Azure TCO analysis tool.

Manually inputting in your server configurations

In this section, you will manually input in data for your Windows and Linux servers including CPU, Cores, and memory. You will also can select if your servers migrating to Azure can take advantage of the [Azure Hybrid Use Benefit](#).

1. In your favorite browser, navigate to <http://tco.microsoft.com/> and click **Start Now**

The screenshot shows the Microsoft Azure Total Cost of Ownership (TCO) Calculator interface. The top navigation bar includes links for Home, Calculator, About, and Feedback. The main header displays "Total Cost of Ownership (TCO) Calculator" with a "PREVIEW" badge. Below the header, the "Inputs & Assumptions" section is active, showing tabs for "Inputs" and "Assumptions". The "Assumptions" tab is selected, and a "Reset" button is visible. The interface is divided into three main sections: "Compute", "Storage", and "Networking". The "Compute" section has a radio button for "Manual Input" selected, with fields for Environment (Physical Servers), Operating system (Windows), Server count (1-99999), Proc(s) per server (1), Core(s) per proc (1), and RAM (GB) (0.75). The "Storage" section has fields for Storage type (DAS/SAN), Disk Type (HDD), Capacity (1 TB), Backup (0 TB), Archive (0 TB), and an "Enable GRS" checkbox. The "Networking" section has a field for Outbound bandwidth (GB)/Month (5). A "Calculate" button is located at the bottom right of the input section. Below the input section, there is a "CERTIFIED BY" logo for Nucleus Research, followed by a statement about the tool's accuracy and transparency. At the bottom, there are links for Contact Us, Feedback, Trademarks, and Privacy & Cookies, along with the Microsoft logo and copyright notice.

2. For the radio button under Compute, ensure **Manual Input** is selected

This close-up screenshot focuses on the "Compute" section of the TCO Calculator. It shows the "Manual Input" radio button selected, with the "Bulk Input" option unselected. The "Environment" dropdown is set to "Physical Servers", and the "Operating system" dropdown is set to "Windows". The "Server count" field contains the value "1". The "Proc(s) per server" dropdown is set to "1", and the "Core(s) per proc" dropdown is set to "4". The "RAM (GB)" dropdown is set to "7". An "Add row" button is visible to the right of these fields. Below the "Compute" section, the "Storage" section is partially visible, showing fields for "Storage type", "Disk Type", "Accessability %", "Capacity", "Backup", "Archive", and "IOPS".

3. Choose the best region and currency to fit your needs

This close-up screenshot shows the "Region" and "Currency" selection fields. The "Region" dropdown is set to "US East 2", and the "Currency" dropdown is set to "US Dollar". Both dropdowns have a small information icon to their left and a downward arrow to their right.

- Start to enter in your server configuration using the environment (physical or virtual), the OS, server count for this configuration, procs, cores and RAM. You can add new configurations by selecting **Add Row**. Only enter in the servers you want to model cost for in Azure (i.e. do not enter in your base physical Hyper-V servers, only the physical and virtual workloads you plan to run in Azure)

Compute

☒ Manual Input ☐ Bulk Input

Environment ⓘ	Operating system ⓘ	Server count ⓘ	Proc(s) per server ⓘ	Core(s) per proc ⓘ	RAM (GB) ⓘ
Physical Servers ▾	Windows ▾	50	2 ▾	4 ▾	16 ▾
Environment ⓘ	Operating system ⓘ	Number of VMs ⓘ	Core(s) ⓘ	RAM (GB) ⓘ	
Virtual Machines ▾	Windows ▾	100	2 ▾	4 ▾	✕
Virtual Machines ▾	Linux ▾	20	1 ▾	2 ▾	✕

+ Add row

Note: Every Windows Server Standard or Datacenter customer with Software Assurance is eligible for the [Azure Hybrid Use Benefit](#). The Azure Hybrid Use Benefit helps you get the most value from licenses on-premises and in the cloud. It lets you use your Windows Server licenses with Software Assurance for virtual machines at the base compute rate, resulting in up to 40 percent savings or more, across all Azure regions. If you are now a Software Assurance customer for Windows Server Standard and Datacenter, you can calculate AHUB as part of this tool. Simply choose AHUB in the Operating System dropdown.

☒ Manual Input ☐ Bulk Input

Environment ⓘ	Operating system ⓘ	Server count ⓘ	Proc(s) per server ⓘ	Core(s) per proc ⓘ	RAM (GB) ⓘ
Physical Servers ▾	AHUB ▾	50	2 ▾	4 ▾	16 ▾
Environment ⓘ	Operating system ⓘ	Number of VMs ⓘ	Core(s) ⓘ	RAM (GB) ⓘ	
Virtual Machines ▾	AHUB ▾	100	2 ▾	4 ▾	✕
Virtual Machines ▾	Linux ▾	20	1 ▾	2 ▾	✕

+ Add row

- At this stage, you can also enter details regarding your storage and networking configurations manually.

Storage

Storage type ⓘ	Disk Type ⓘ	Accessibility % ⓘ	Capacity ⓘ	Backup ⓘ	Archive ⓘ	IOPS ⓘ
DAS/SAN ▾	HDD ▾	100	100 TB ▾	20 TB ▾	5 TB ▾	0

+ Add row

☐ Enable GRS

Networking

Outbound bandwidth (GB)/Month ⓘ

5 GB ▾

- Click the **Calculate** button to access the final report

Inputs

Assumptions

Reset

Region

US East 2

Currency

US Dollar

Compute

Manual Input

Bulk Input

Environment

Physical Servers

Operating system

AHUB

Server count

50

Proc(s) per server

2

Core(s) per proc

4

RAM (GB)

16

Environment

Virtual Machines

Operating system

AHUB

Number of VMs

100

Core(s)

2

RAM (GB)

4

Environment

Virtual Machines

Operating system

Linux

Number of VMs

20

Core(s)

1

RAM (GB)

2

Add row

Storage

Storage type

DAS/SAN

Disk Type

HDD

Accessability %

100

Capacity

100

TB

Backup

20

TB

Archive

5

TB

IOPS

0

Add row

Enable GRS

Networking

Outbound bandwidth (GB)/Month

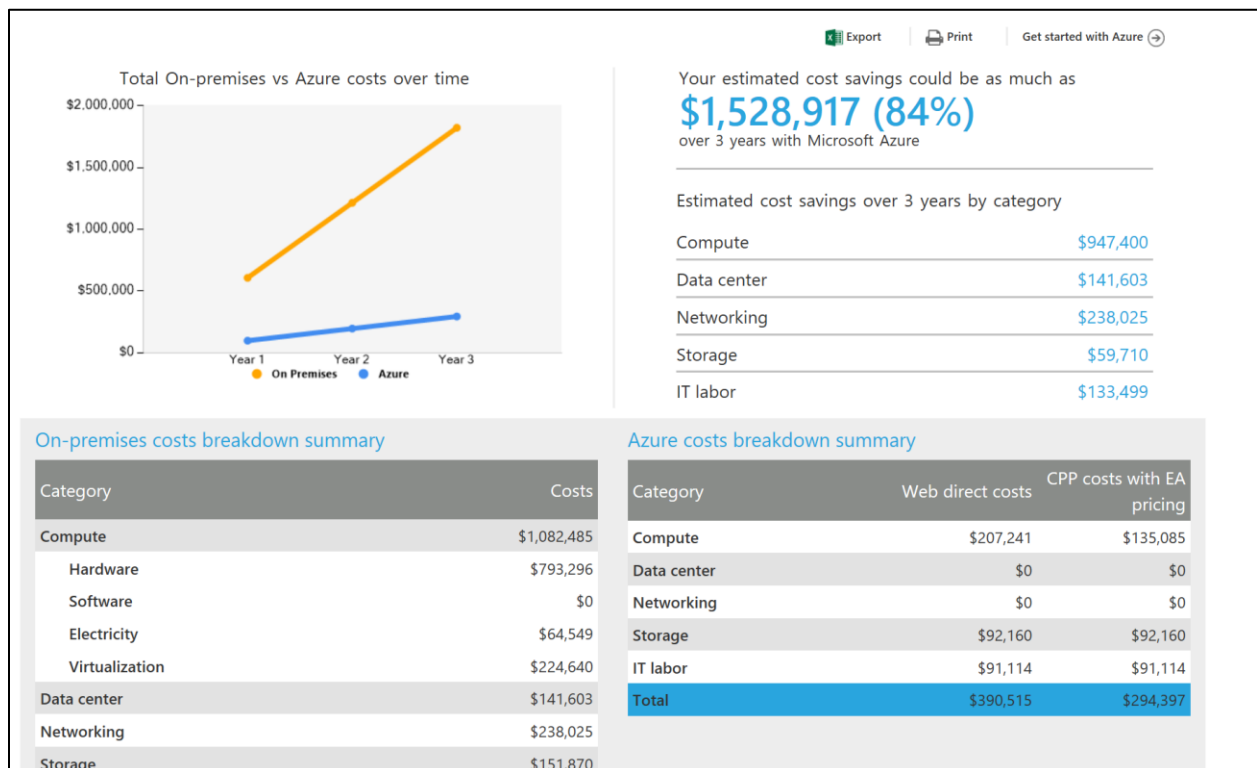
5

GB

Calculate

Based on the number on entries in your final discovery, this can take up to 60 seconds to calculate.
(There is a maximum number of 500 servers).

7. Your report can now be viewed, exported, or printed



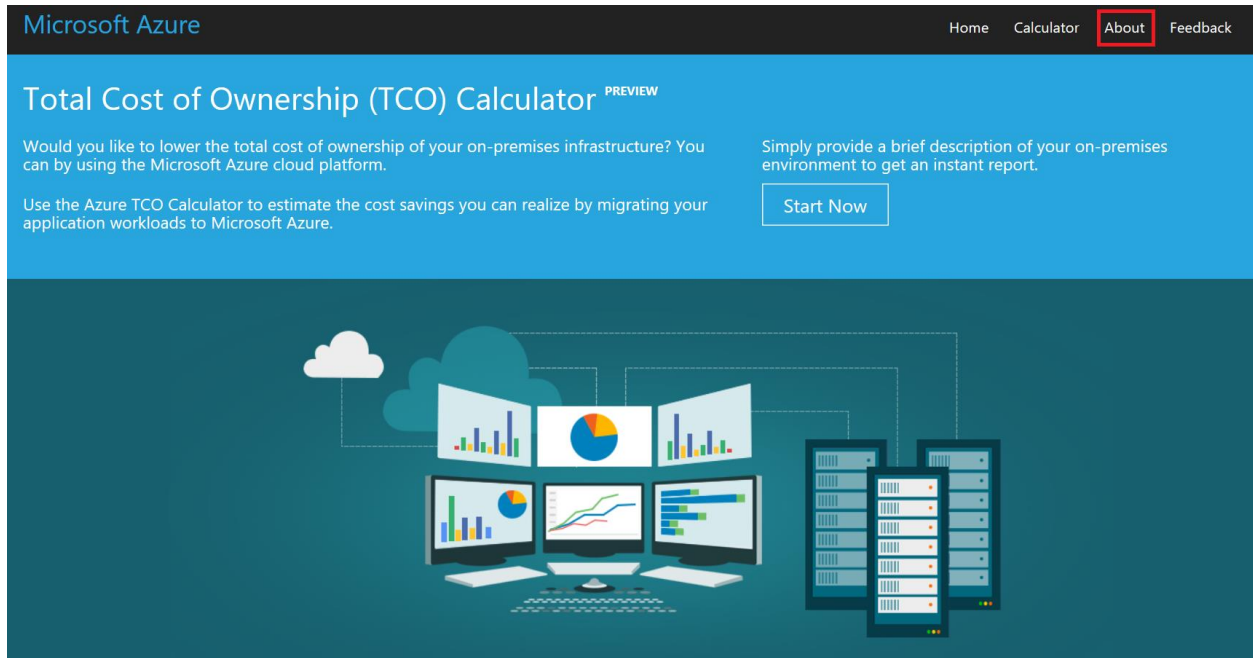
Custom inventory discovery and TCO analysis

Custom inventory assessment enables you to use your existing discovery tools output, providing the Azure TCO calculator with the required data to enable the assessment. In this scenario, you would use the custom inventory template provided by the Azure TCO tool, and import your existing data to this.

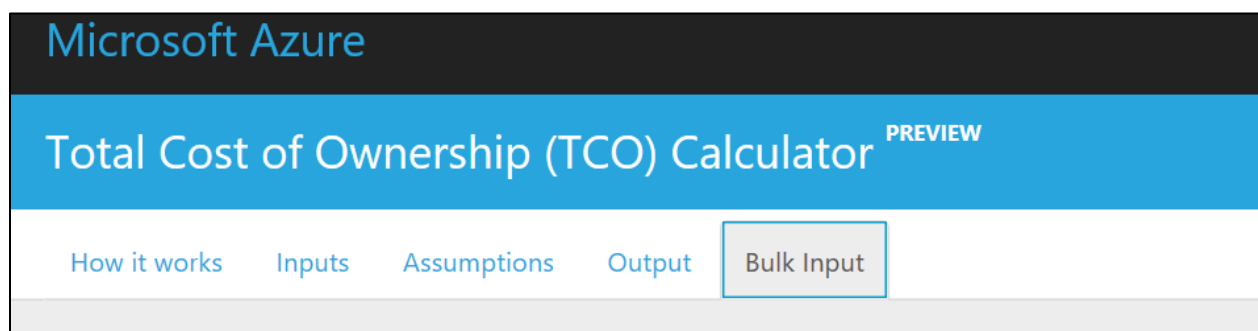
Part 1 – Importing your custom data to the template

In this section, you will download the custom import excel file and enter in your data for bulk import

1. In your favorite browser, navigate to <http://tco.microsoft.com/> and click **About**



2. Click on the **Bulk Import** tab



3. Scroll down until you see the **Custom File** section, and select the link to download the custom excel template.

How it works Inputs Assumptions Output **Bulk Input**

Bulk Input

Bulk Input enables the import of data to populate the Compute section of the TCO Calculator. This is intended to be used if you have an automated scan of your physical or virtual datacenter environment. This allows for creating a TCO model for moving large computing environments to Azure.

The Bulk Input feature currently supports two import file formats:

MAP Inventory file

The Microsoft Assessment and Planning Toolkit (MAP) is an agentless, automated, multi-product planning and assessment tool for quicker and easier desktop, server and cloud migrations. MAP provides detailed readiness assessment reports and executive proposals with extensive hardware and software information, and actionable recommendations to help organizations accelerate their IT infrastructure planning process, and gather more detail on assets that reside within their current environment.

The **download** site for this utility is located [here](#). Run the MapSetup.exe file and follow the included documentation to run a scan of your environment.

For further guidance, download the [step-by-step guide](#) overviewing how to install and configure MAPs to perform the scanning, and upload this to the TCO calculator. There is also a [demonstration video](#) available showcasing the MAPs configuration and assessment, including the final upload to the TCO calculator.

To upload a MAP file

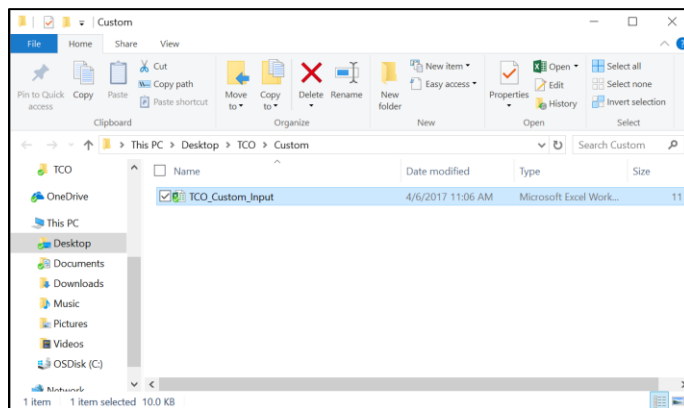
1. Identify the "InventoryResults.xlsx" file.
2. Delete the top 3 rows with plain text and save the file.
3. At the **Inputs** screen, select the **Bulk Input** radio button and select the **MAP** radio button.
4. Press the **Upload File** button
5. Confirm that the filename is shown on screen indicating that it is ready for upload. Enter the remaining **Storage** and **Networking** parameters and press **Calculate**.

Custom file

A custom file allows for outputs from other utilities (discovery tools, system management tools, etc) to be manipulated in Excel to provide the TCO Calculator with: (i) required columns and (ii) correct column order. The following is an example empty file which specifies the columns and order. [Please download here.](#)

To upload a custom file

4. Save this to your desired location



5. Open the file and view the template

AutoSave TCO_Custom_Input [Read-Only] - Excel Michael Leworthy

File Home Insert Draw Page Layout Formulas Data Review View Inquire Tell me what you want to do Share

Calibri 11 A A Wrap Text Number

B I U Font Merge & Center Alignment Number Conditional Format as Cell Insert Delete Format Sort & Find & Filter Select

Clipboard Font Alignment Number Styles Cells Editing

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Environment	Operating System	Server/VM cost	Proc(s) per server	Core(s)	RAM (GB)							
2	Physical Servers	Windows	1	2	2	56							
3	Virtual Machines	Linux	20	4	4	64							
4	Physical Servers	AHUB	4	2	2	28							
5	Virtual Machines	Windows	2	2	4	64							
6													
7													
8													
9													
10													

TCO Input Help

Ready

The template follows the same format as the manual input. You can cut/paste custom exported data from your 3rd party discovery toolset using this taxonomy.

Note: Every Windows Server Standard or Datacenter customer with Software Assurance is eligible for the [Azure Hybrid Use Benefit](#). The Azure Hybrid Use Benefit helps you get the most value from licenses on-premises and in the cloud. It lets you use your Windows Server licenses with Software Assurance for virtual machines at the base compute rate, resulting in up to 40 percent savings or more, across all Azure regions. If you are now a Software Assurance customer for Windows Server Standard and Datacenter, you can calculate AHUB as part of this tool. Simply choose AHUB for the value in the Operating System column for the servers this applies to.

6. Once you have completed our data import to the excel sheet, it is ready to upload.

Part 2 – Uploading the customer data template file and exported the TCO report

In this section, you will upload the completed custom data template, and use this to deliver the Azure TCO report.

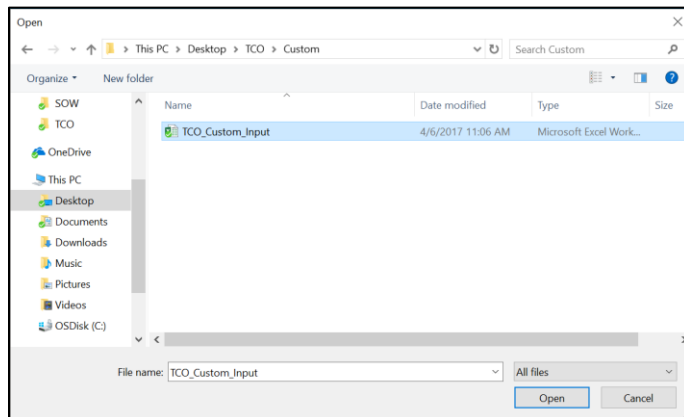
1. Return to <http://tco.microsoft.com/> and click **Start Now**

The screenshot shows the Microsoft Azure Total Cost of Ownership (TCO) Calculator interface. The top navigation bar includes links for Home, Calculator, About, and Feedback. The main heading is "Total Cost of Ownership (TCO) Calculator" with a "PREVIEW" label. Below this is a tabbed interface with "Inputs & Assumptions" selected. The "Inputs" tab is active, showing fields for Region (US East 2), Currency (US Dollar), and a "Reset" button. The "Compute" section has two radio buttons: "Manual Input" (selected) and "Bulk Input". Below these are fields for Environment (Physical Servers), Operating system (Windows), Server count (1-99999), Proc(s) per server (1), Core(s) per proc (1), and RAM (GB) (0.75). The "Storage" section includes Storage type (DAS/SAN), Disk Type (HDD), Capacity (1 TB), Backup (0 TB), Archive (0 TB), and an "Enable GRS" checkbox. The "Networking" section has Outbound bandwidth (GB)/Month (5) and a unit dropdown (GB). A "Calculate" button is at the bottom right. A footer section mentions "Nucleus Research Certified" and provides a disclaimer about the tool's accuracy. Microsoft's logo and copyright information are at the bottom right.

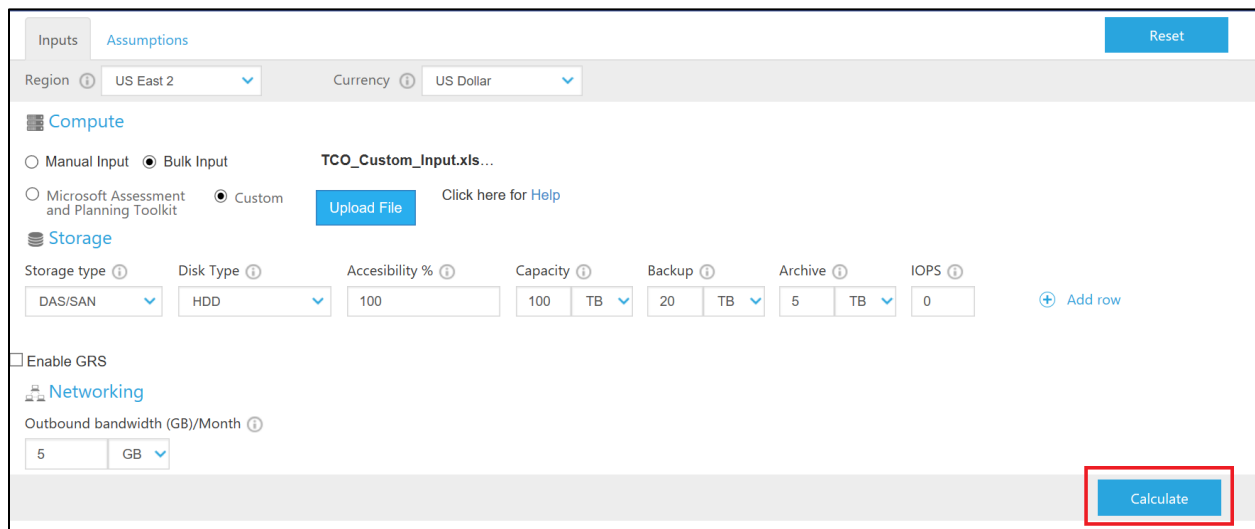
2. Click on the **Bulk Input** radio button, and select **Custom**

This close-up view of the "Compute" section shows the "Bulk Input" radio button selected. Below it, the "Microsoft Assessment and Planning Toolkit" radio button is also selected, and the "Custom" radio button is highlighted with a blue border. A blue "Upload File" button is positioned to the right of the "Custom" option. A link "Click here for Help" is located to the right of the "Upload File" button. The "Manual Input" radio button is unselected.

3. Click the Upload file button, and browse to where the customer temple excel file (TCO_Custom_Input.xlsx) is located



4. Click on the **Open** button (or double click the file) to return to the TCO analysis tool.
5. Click the **Calculate** button to access the final report



Inputs Assumptions Reset

Region Currency

Compute

☐ Manual Input ☒ Bulk Input TCO_Custom_Input.xls...
☐ Microsoft Assessment and Planning Toolkit ☒ Custom [Upload File](#) [Click here for Help](#)

Storage

Storage type	Disk Type	Accessability %	Capacity	Backup	Archive	IOPS
DAS/SAN	HDD	100	100 TB	20 TB	5 TB	0

[+ Add row](#)

☐ Enable GRS

Networking

Outbound bandwidth (GB)/Month

Calculate

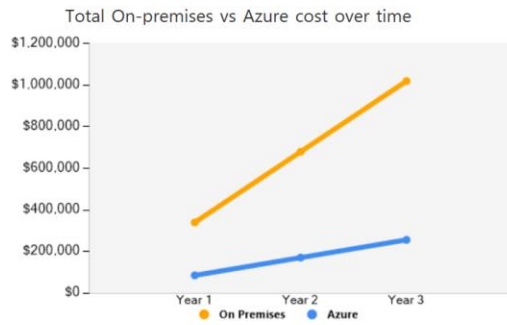
Based on the number on entries in your final discovery, this can take up to 60 seconds to calculate. (There is a maximum number of 500 servers).

6. Your report can now be viewed, exported, or printed

Export
Bulk Report

Print

Get started with Azure



Your estimated cost savings could be as much as
\$764,537 (75%)
over 3 year(s) with Microsoft Azure

Estimated cost savings over 3 years by category

Compute	\$426,124
Data center	\$64,180
Networking	\$138,371
Storage	\$59,710
IT labor	\$67,472

On-premises costs breakdown summary

Category	Costs
Compute	\$544,545
Hardware	\$449,541
Software	\$11,576
Electricity	\$42,244
Virtualization	\$41,184

Azure costs breakdown summary

Category	Web direct costs	CPP costs with EA pricing
Compute	\$201,342	\$118,421
Data center	\$0	\$0
Networking	\$0	\$0
Storage	\$92,160	\$92,160
IT labor	\$69,931	\$69,931

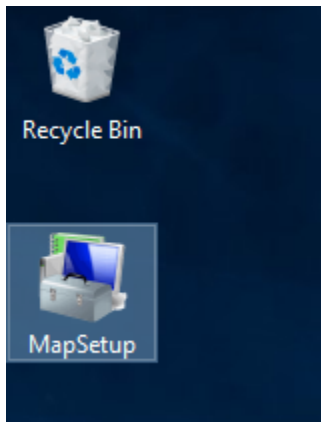
Automated inventory discovery and TCO analysis

The automated inventory assessment uses the Microsoft Assessment and Planning toolkit to automatically collect your server hardware configuration, and enable this for input into the Azure TCO tool.

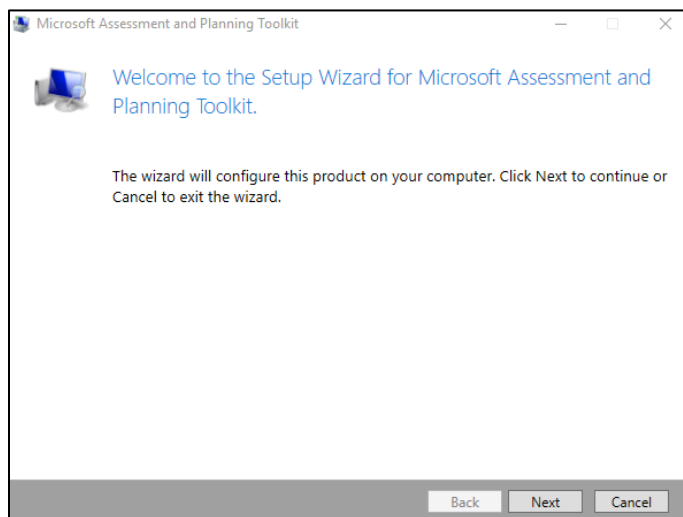
Part 1 - Installing the Microsoft Assessment and Planning toolkit

In this section, you will download and install Microsoft Assessment and Planning toolkit to ready for your automated hardware data collection across both Windows Server and Linux.

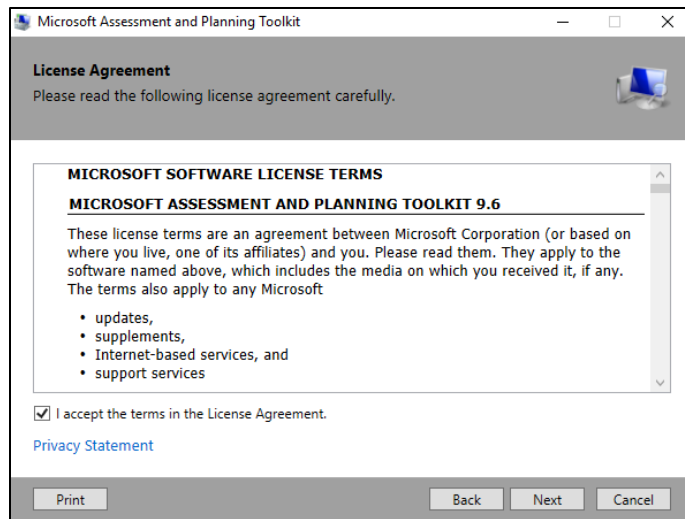
1. Download the Microsoft Assessment and Planning toolkit from <https://aka.ms/mapdiscovery>
2. When has completed, double-click the **MapSetup** installation file to start the install process



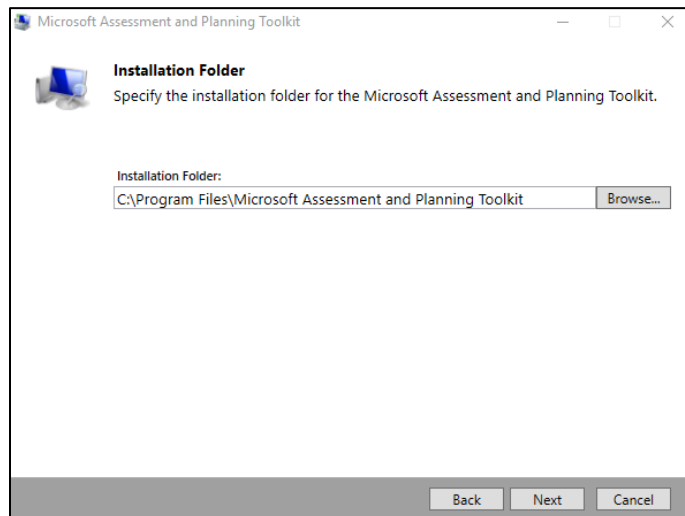
3. Click next to continue the installation wizard



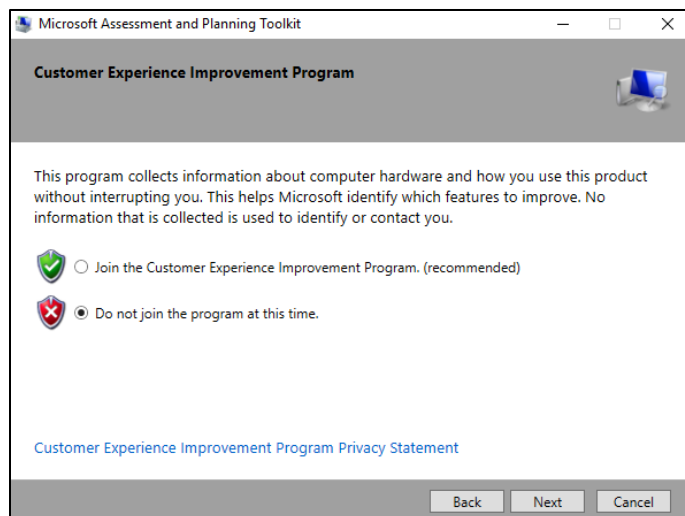
4. Click **I Agree** to accept the license terms, and click next to continue



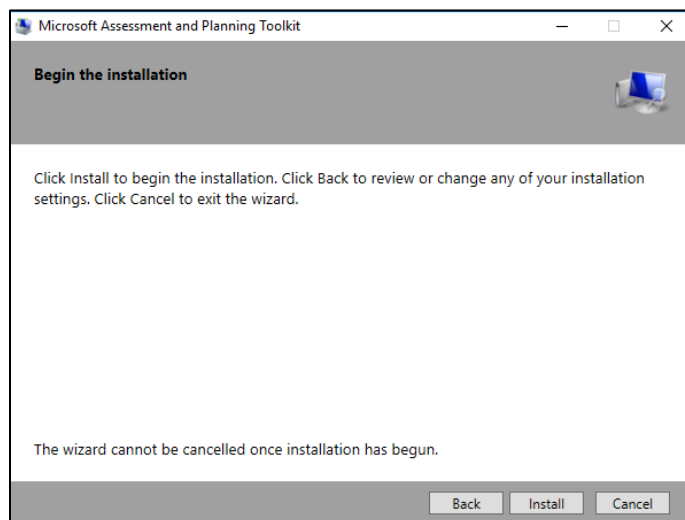
5. Select the default (or custom) installation folder and select next



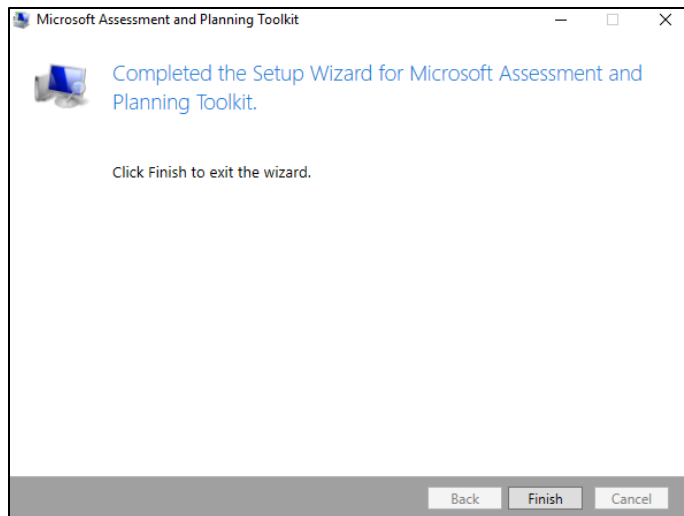
6. Select to join the customer experience improvement program and select next



7. Select next to begin the installation



8. Select finish to complete the install.



Part 2 – Configuring the MAPs tool for data collection

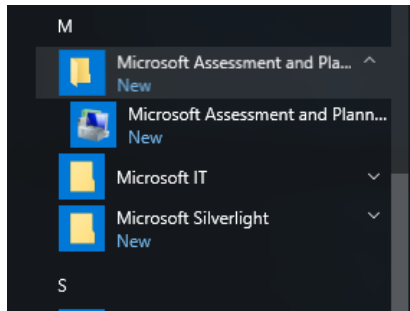
To successfully collection hardware inventory in the MAPs tool there are many options. MAPs can source information from Windows and Linux based servers, Hyper-V, and VMware environments, as well as using source targets such as Active Directory, IP addresses and direct server names. The MAP Toolkit primarily uses Windows Management Instrumentation (WMI) to collect hardware, device, and software information from Windows based servers. For the MAP Toolkit to successfully connect and inventory computers in your environment, you must configure your machines to inventory through WMI and enable WMI remote access through their firewalls. In addition to enabling WMI, you need accounts with administrative privileges for the servers in your environment. Please refer to the below based on your environment for further information

- For Windows Server 2008 R2 and below, refer to <https://social.technet.microsoft.com/wiki/contents/articles/8657.map-prepare-the-environment-wmi.aspx>
- For Linux based system, refer to <https://social.technet.microsoft.com/wiki/contents/articles/12157.map-prepare-the-environment-ssh.aspx>
- For Windows Server 2012 and above, please refer to the [Windows Server WMI setup guide](#), contained in the appendix

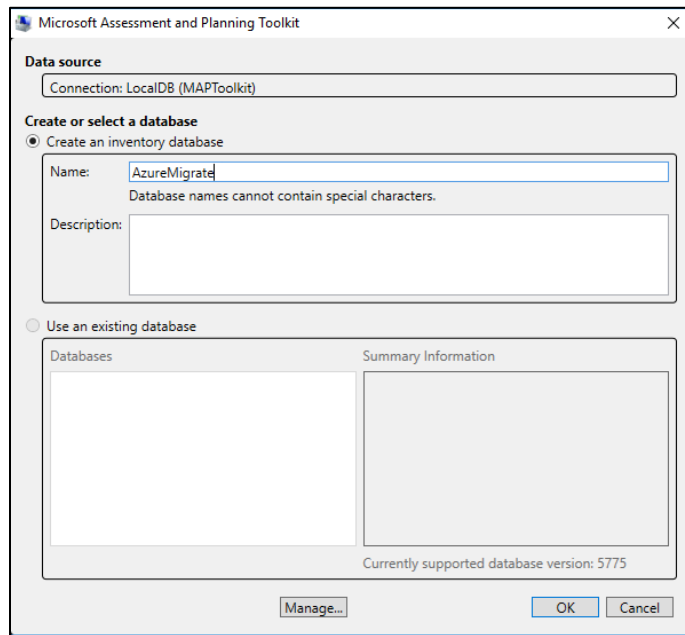
Part 3 – Data Collection

In this section, you will configure the collection database for MAPs, as well as kick off your hardware data collection ready to export the data into the Azure TCO tool.

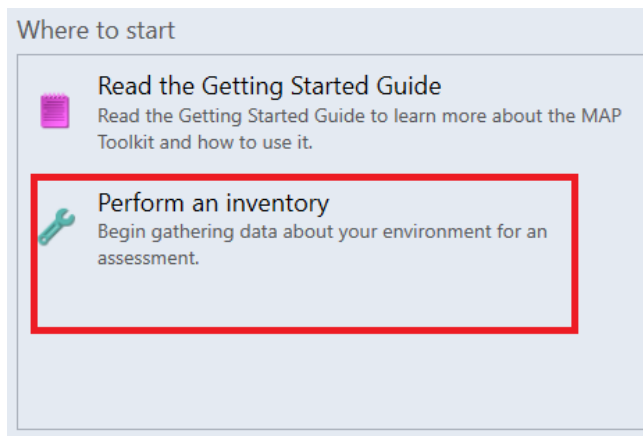
1. Start the MAPs tool from your Start Menu



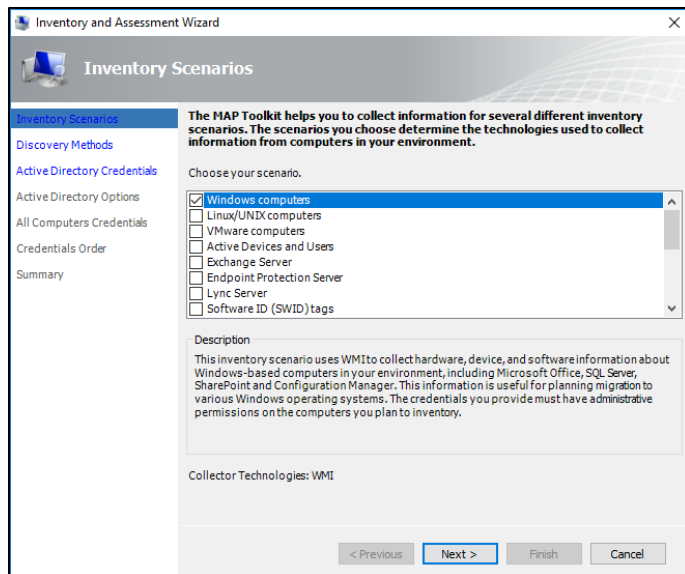
2. Enter in a suitable collection database name (for this example, we have used AzureMigrate) and select OK



3. On the homepage of the MAPs tool, select the “Perform an inventory” to start



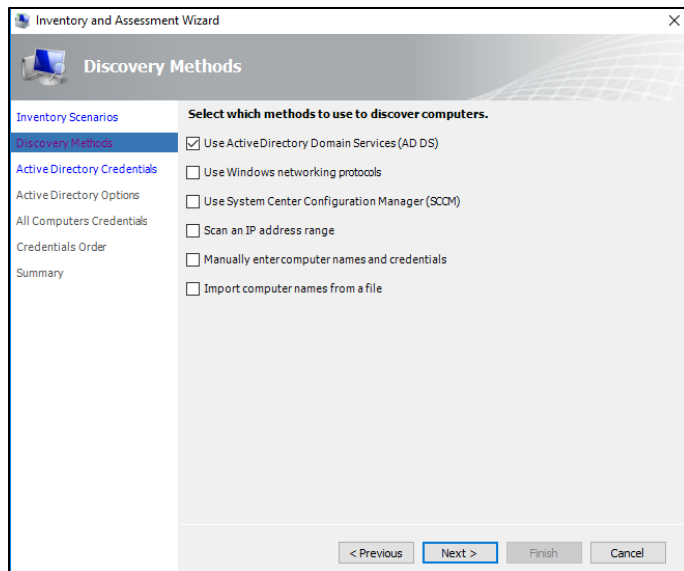
4. Select the server OS type you wish to collect, in this case we will show collection of Windows Server via Active Directory. Ensure the checkbox is active for Windows computers and select next



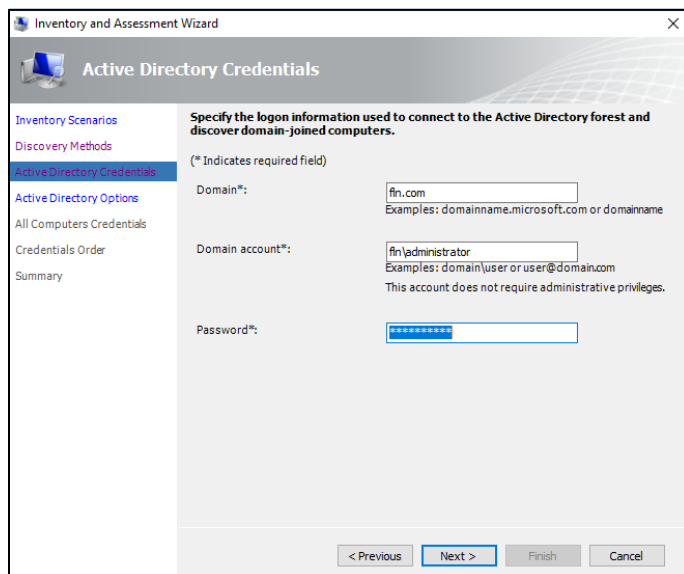
In this example, we will be using Active Directory for server discovery. This enables the use of OU's that help filter for server's vs PC's (this can be edited via the exported excel file), or filter a specific choice of servers. Many other forms of collection are available including

- Use Active Directory Domain Services — This method enables you to query a domain controller and select computers in all or specific domains, containers, or OUs. Use this method if all computers and devices are in AD DS.
- Windows networking protocols — This method uses the WIN32 LAN Manager to query the Computer Browser service for computers in workgroups and Windows NT 4.0–based domains.
- System Center Configuration Manager (SCCM) — This method enables you to inventory computers managed by System Center Configuration Manager (SCCM). You need to provide credentials to the System Center Configuration Manager server to inventory the managed computers.
- Scan an IP address range — This method enables you to specify the starting address and ending address of an IP address range. The wizard will then scan all IP addresses in the range and inventory only those computers.
- Manually enter computer names and credentials — Use this method if you want to inventory a small number of specific computers.
- Import computer names from a file — Using this method, you can create a text file with a list of computer names.

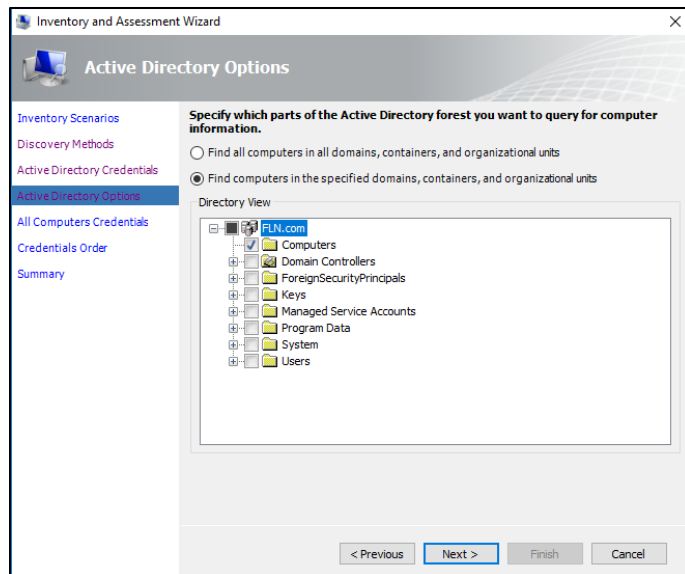
5. Ensure **Use Active Directory Domain Servers (AD DS)** is selected and click next



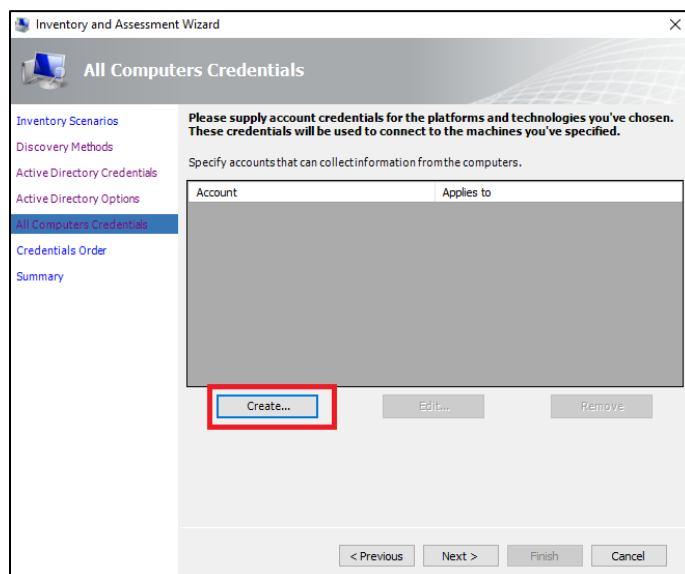
6. Enter in the relevant domain credentials with the rights to query the computers from Active Directory



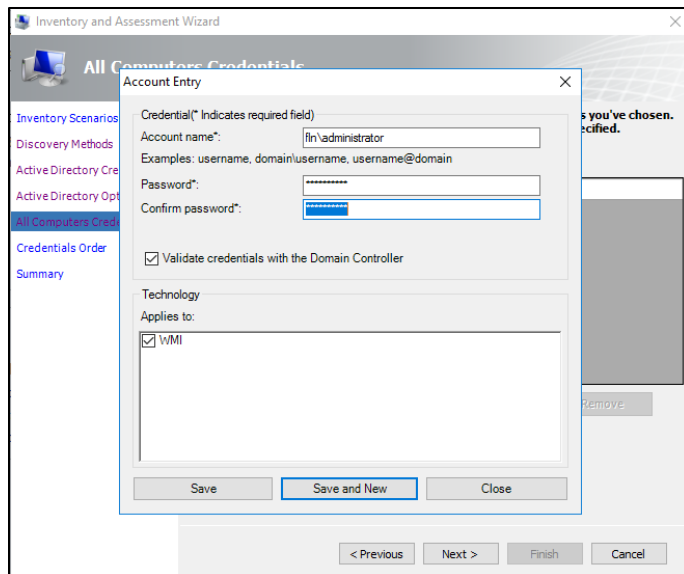
7. Select the correct OU which has the servers you wish to use for the TCO analysis. In this case we are using the Computers OU, which may mean we will need to filter our workstations manually in a later step.



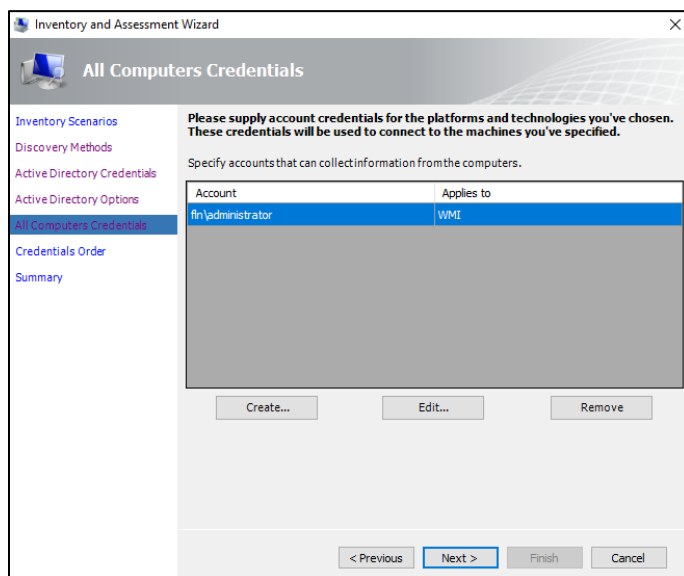
8. Click on the create button to apply an account to query the Windows Servers through WMI



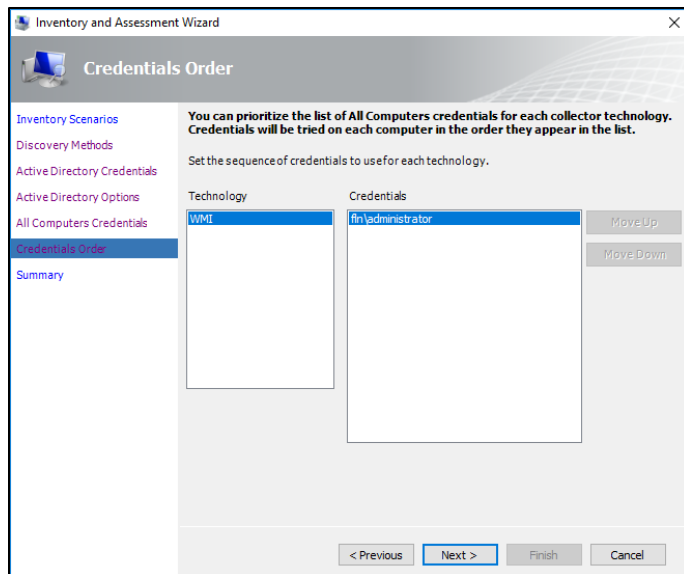
9. Enter in a suitable account for WMI querying, and select save



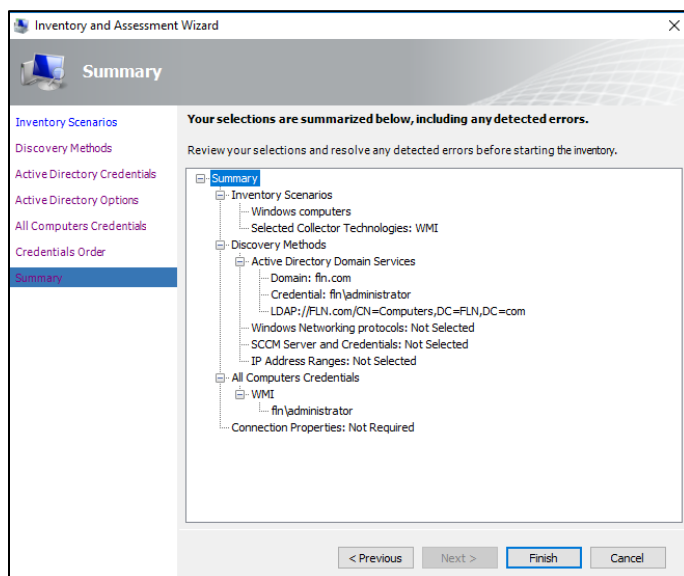
10. Select next to continue with the collection wizard



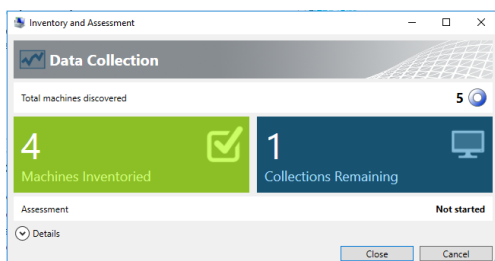
11. Ensure the values are correct, and select next to continue



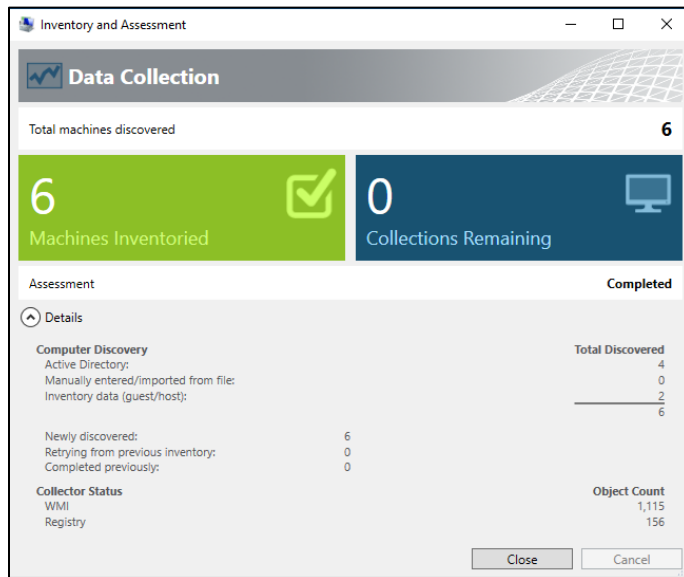
12. Click finish to start the discovery



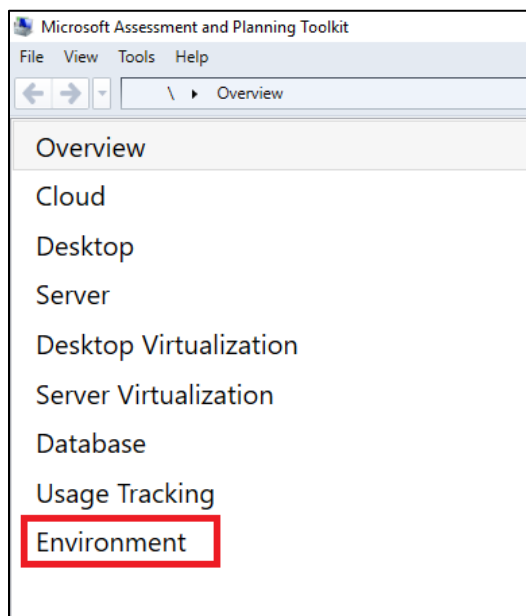
The discovery will start, and you should see a screen like below



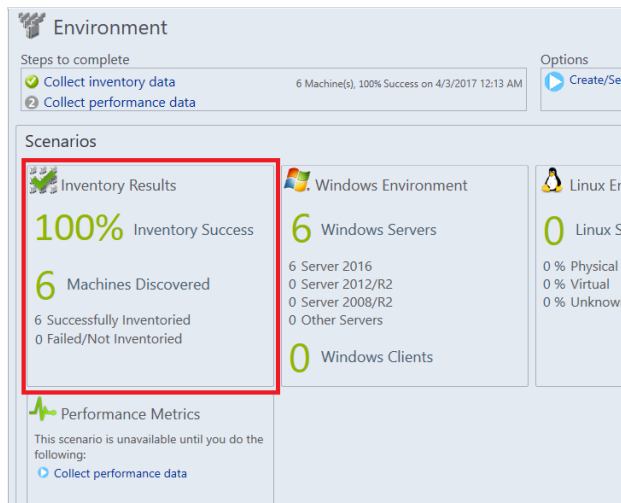
By clicking on the details button, further discovery information can be viewed. When completed, click close.



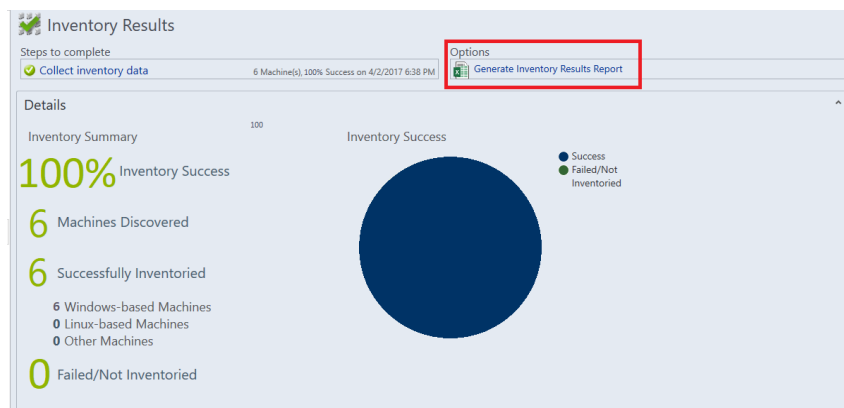
13. When completed, select the Environment shortcut from the left-hand menu



14. In the Environment summary screen, select **Inventory Results**



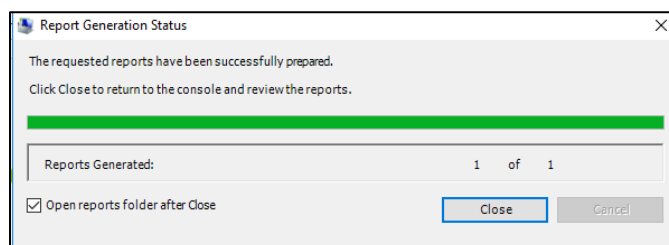
15. To prepare the results for export, click on **Generate Inventory Results Report**



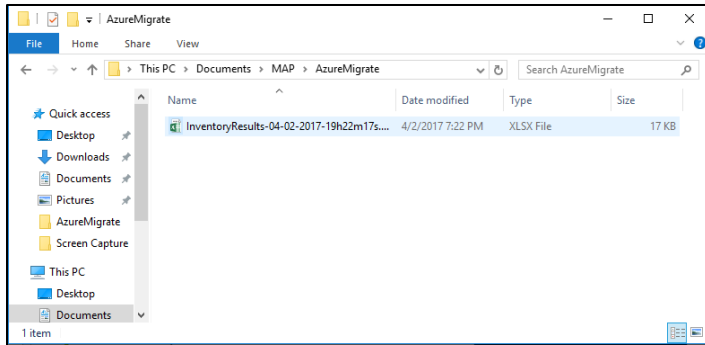
(If you have any failures, you can click on the links below this summary screen to learn more)



16. When prompted click close to access the generated excel report



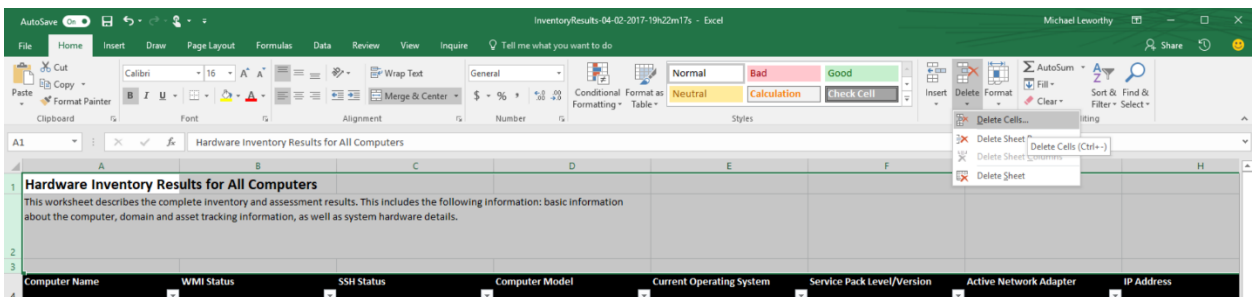
17. The file can now be opened in excel



Computer Name	WMI Status	SSH Status	Computer Model	Current Operating System	Service Pack Level/Version	Active Network Adapter	IP Address
FLN-APP001-01.FLN.com	Success	N/A	Virtual Machine	Microsoft Windows Server 2016 Datacenter			
FLN-APP001-02.FLN.com	Success	N/A	Virtual Machine	Microsoft Windows Server 2016 Datacenter			
FLN-INFADD-01.FLN.com	Success	N/A	Virtual Machine	Microsoft Windows Server 2016 Datacenter Evaluation		Microsoft Hyper-V Network Adapter (Ethernet)	192.168.100.1;fe80::c8a1:7c5d
FLN-NET-01.FLN.com	Success	N/A	Virtual Machine	Microsoft Windows Server 2016 Datacenter			
FLN-NET-02.FLN.com	Success	N/A	Virtual Machine	Microsoft Windows Server 2016 Datacenter			
MININT-PS4SG7F	Success	N/A	2436CT0	Microsoft Windows Server 2016 Datacenter		Hyper-V Virtual Ethernet Adapter #2 (vEthernet (vswitch (Internal)))	169.254.229.99;fe80::1dc06:e563
						Hyper-V Virtual Ethernet Adapter (Ethernet)	192.168.100.2;fe80::ad4a:fafa

At this stage, you can simply sort the **Current Operating System** column, and remove any machines (i.e. desktops) that you do not want to be part of your TCO analysis (if they exist in this report via simple all computers ADDS collection).

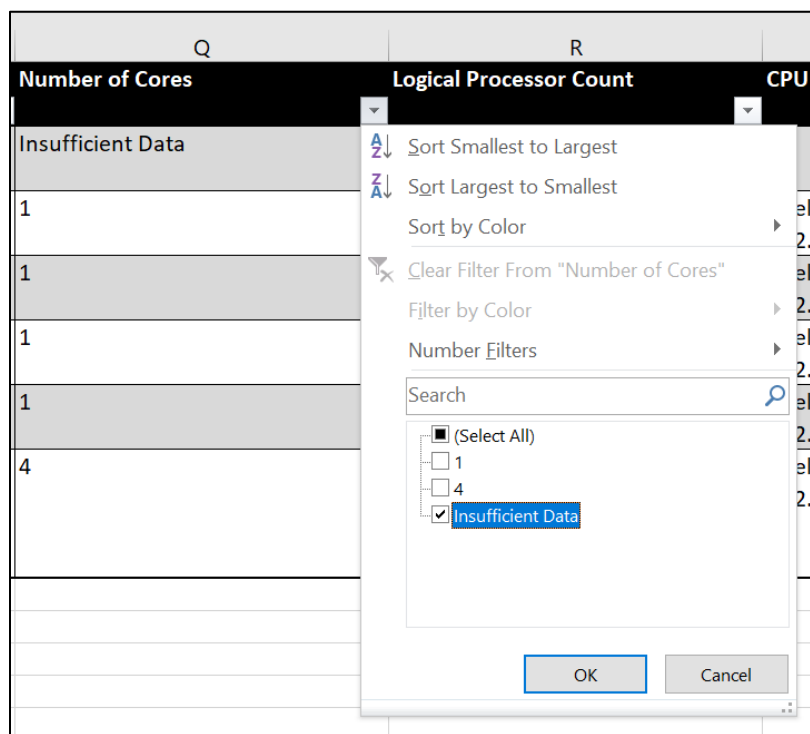
18. To successfully import the file into the Azure TCO tool, the first three lines must be removed. Simply highlight row 1 – 3 and select **Delete** from the main menu, and then click **Delete Cells**



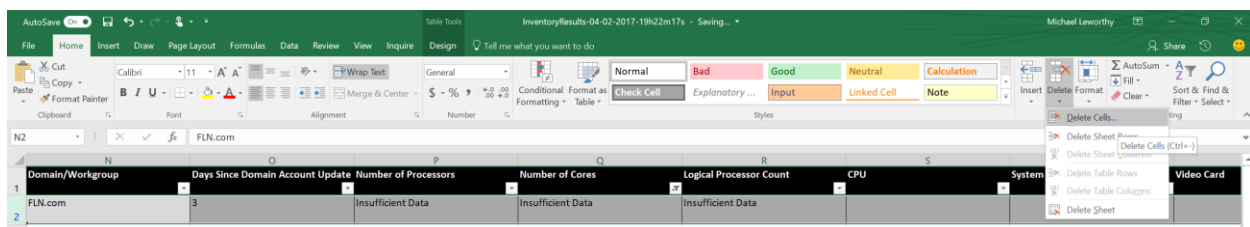
19. While the excel sheet is still open, insufficient results will need to be removed. This is a straightforward process and is done within the excel sheet. Scroll over in the excel report until you see **Number of Processors**, **Number of Cores** and **Logical Processor Count** as shown below.

P	Q	R
Number of Processors	Number of Cores	Logical Processor Count
Insufficient Data	Insufficient Data	Insufficient Data
1	1	1
1	1	1
1	1	1
1	1	1
1	4	8

20. For the **Number of Cores** column, filter (by clicking the small down arrow next to the column name). Under the search box, you can manually select/deselect values. Select the **Select All**, to deselect all the values, scroll down until you see **Insufficient Data** and tick the box to select it. Click **OK** to apply the filter



21. For the filtered rows, select them and delete (as you did in above for the first three rows)



22. Select the small down-arrow filter button again for **Number of Cores**, and click on the **Select All** to remove the filter. Select **OK**.

The screenshot shows the 'Filter by Number of Cores' dialog box in the AWS Management Console. The dialog is used to filter a list of instances based on the number of cores. The 'Number of Cores' column is selected for filtering. The filter criteria are set to 'Sort Smallest to Largest'. The 'Number of Cores' column is checked, and the filter is applied. The 'OK' button is highlighted.

23. Save the file to be ready to input into the Azure TCO analysis tool

Part 4 – Performing the TCO analysis

In this simple step, you will be importing the discovery file you created in the earlier section and performing the TCO analysis for your Azure migration assessment.

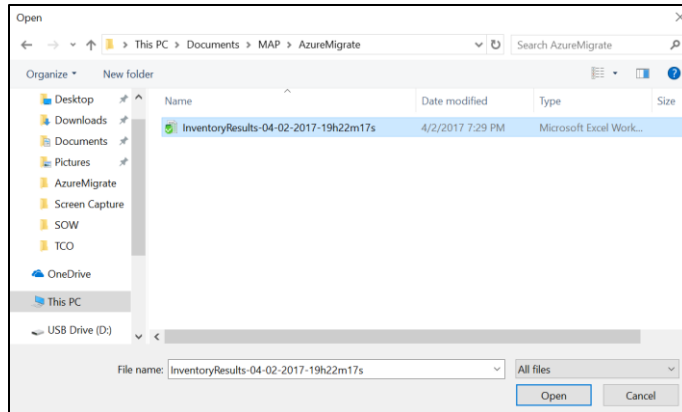
1. In your favorite browser, navigate to <http://tco.microsoft.com/> and click **Start Now**

The screenshot shows the Microsoft Azure Total Cost of Ownership (TCO) Calculator interface. The top navigation bar includes links for Home, Calculator, About, and Feedback. The main header displays "Total Cost of Ownership (TCO) Calculator" with a "PREVIEW" label. Below the header, the "Inputs & Assumptions" section is active, showing tabs for "Inputs" and "Assumptions". The "Assumptions" tab is selected, and a "Reset" button is visible. The interface is divided into three main sections: "Compute", "Storage", and "Networking". The "Compute" section includes fields for "Manual Input" (selected) and "Bulk Input", "Environment" (Physical Servers), "Operating system" (Windows), "Server count" (1-99999), "Proc(s) per server" (1), "Core(s) per proc" (1), and "RAM (GB)" (0.75). The "Storage" section includes fields for "Storage type" (DAS/SAN), "Disk Type" (HDD), "Capacity" (1 TB), "Backup" (0 TB), "Archive" (0 TB), and an "Enable GRS" checkbox. The "Networking" section includes a field for "Outbound bandwidth (GB)/Month" (5 GB). A "Calculate" button is located at the bottom right of the input section. Below the input section, there is a "CERTIFIED BY" logo for Nucleus Research, followed by a statement: "The underlying calculations in this total cost of ownership assessment tool have been independently reviewed and tested by Nucleus Research for accuracy and transparency. Nucleus Research certifies that this tool is built on accurate calculations that generate a fair assessment of actual value a customer will achieve given the data entered." At the bottom, there are links for "Contact Us", "Feedback", "Trademarks", and "Privacy & Cookies", along with the Microsoft logo and copyright notice "© 2017 Microsoft".

2. Select the radio button next to **Bulk Import**. You should now see a screen like this

The screenshot shows the "Compute" section of the Microsoft Azure TCO Calculator. The "Bulk Input" radio button is selected. Below it, there are two options: "Microsoft Assessment and Planning Toolkit" (selected) and "Custom". A blue "Upload File" button is positioned to the right of the "Custom" option. To the right of the "Upload File" button, there is a link that says "Click here for Help". The "Storage" section is visible below the "Compute" section.

3. Select the **Upload File** button, and navigate to your previously saved excel file



4. Double click the file, or click open to return to the TCO calculator.

At this stage, you can also enter details regarding your storage and networking configurations manually.

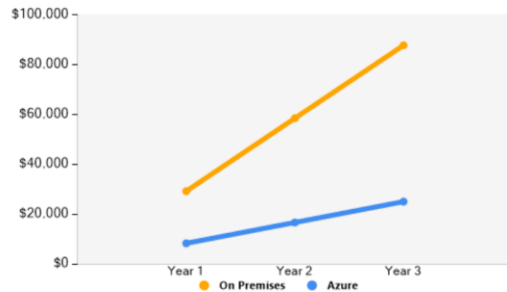
5. Click the **Calculate** button to access the final report

 A screenshot of the TCO calculator interface. The 'Assumptions' tab is active. At the top right is a 'Reset' button. Below the tab are dropdowns for 'Region' (US East 2) and 'Currency' (US Dollar). The 'Compute' section has radio buttons for 'Manual Input' and 'Bulk Input' (selected), with a file selection area showing 'InventoryResults-04-02...' and an 'Upload File' button. The 'Storage' section includes dropdowns for 'Storage type' (DAS/SAN), 'Disk Type' (HDD), and input fields for 'Accessability %' (100), 'Capacity' (1 TB), 'Backup' (0 TB), 'Archive' (0 TB), and 'IOPS' (0). There is an 'Add row' button. The 'Networking' section has a checkbox for 'Enable GRS' and an input field for 'Outbound bandwidth (GB)/Month' (5 GB). A red box highlights the 'Calculate' button at the bottom right.

Based on the number on entries in your final discovery, this can take up to 60 seconds to calculate. (There is a maximum number of 500 servers).

6. Your report can now be viewed, exported, or printed

Total On-premises vs Azure cost over time



Your estimated cost savings could be as much as

\$62,786 (71%)

over 3 year(s) with Microsoft Azure

Estimated cost savings over 3 years by category

Compute	\$36,039
Data center	\$10,188
Networking	\$13,460
Storage	\$410
IT labor	\$5,507

On-premises costs breakdown summary

Category	Costs
Compute	\$57,546
Hardware	\$39,538
Software	\$5,209
Electricity	\$3,439
Virtualization	\$9,360
Data center	\$10,188
Networking	\$13,460
Storage	\$1,331
IT labor	\$8,437
Total	\$87,905

Azure costs breakdown summary

Category	Web direct costs	CPP costs with EA pricing
Compute	\$30,486	\$21,507
Data center	\$0	\$0
Networking	\$0	\$0
Storage	\$921	\$921
IT labor	\$2,930	\$2,930
Total	\$34,336	\$25,119

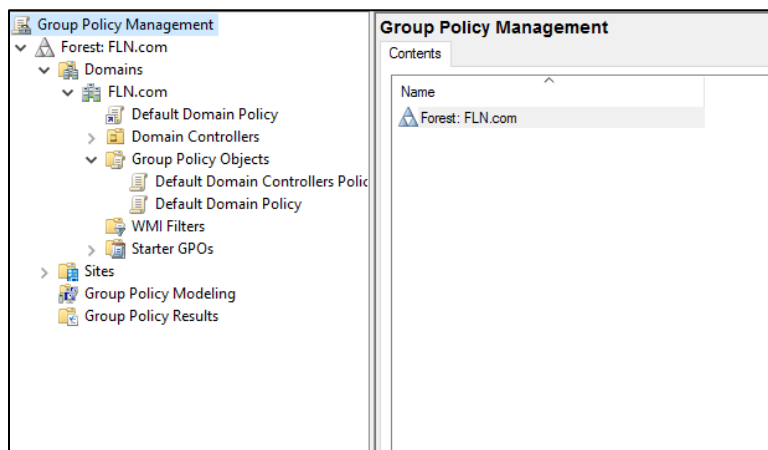
Appendix

Preparing a Windows Server 2012 and above based environment

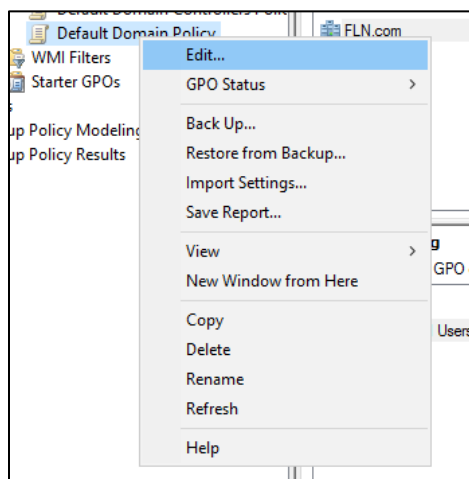
The easiest way to prepare for MAPs collection is to create a group policy to enable WMI for the servers you want to query. This can be performed manually or via PowerShell. This example uses Group Policy

Make sure you are editing your group policy object from a Windows 7 or Windows Server 2008 R2 or above machine to ensure you are editing the policy with the same client-side extension present.

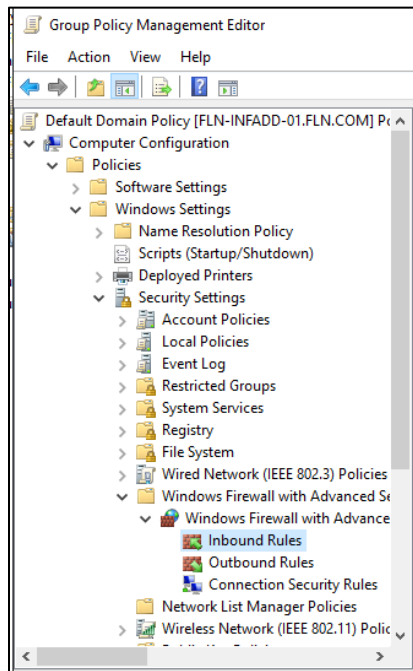
1. Edit the group policy object you wish to put these settings into. In this example, we are using the Default Domain Group policy, or you can create your own specific one to focus specially on AD joined servers (which is the best practice). As you can restrict the WIM reporting to a single management server, this will enable strong permissions in collecting data.



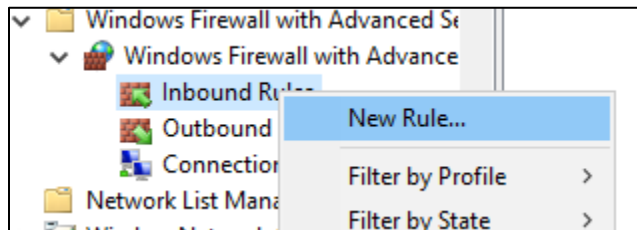
2. Open the **Group Policy Manager** from Server Tools
3. Expand the **Group Policy Objects** list
4. Right Click Default Domain Policy (or the policy object you will use) and select **edit**



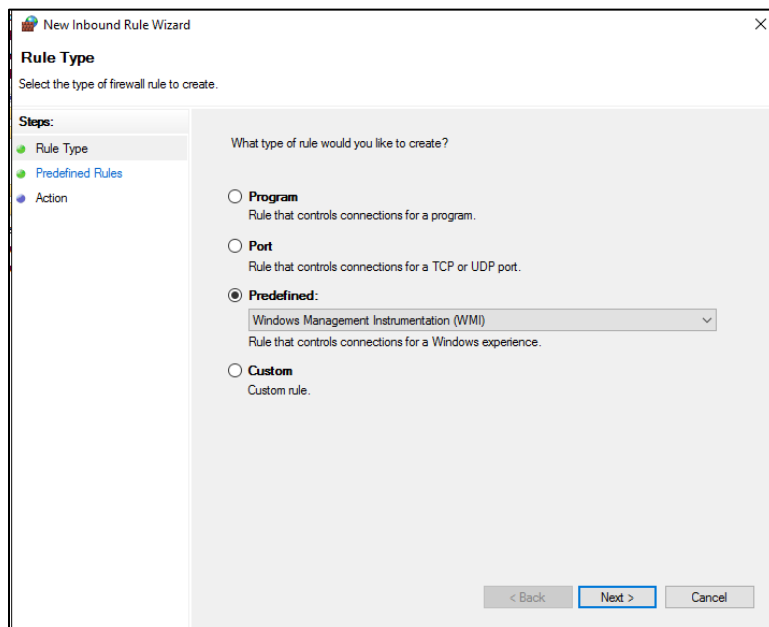
5. Expand the Computer Config > Policies > Windows Settings > Security Settings > Windows Firewall with Advanced Security > Windows Firewall with Advanced Security > Inbound Rules node.



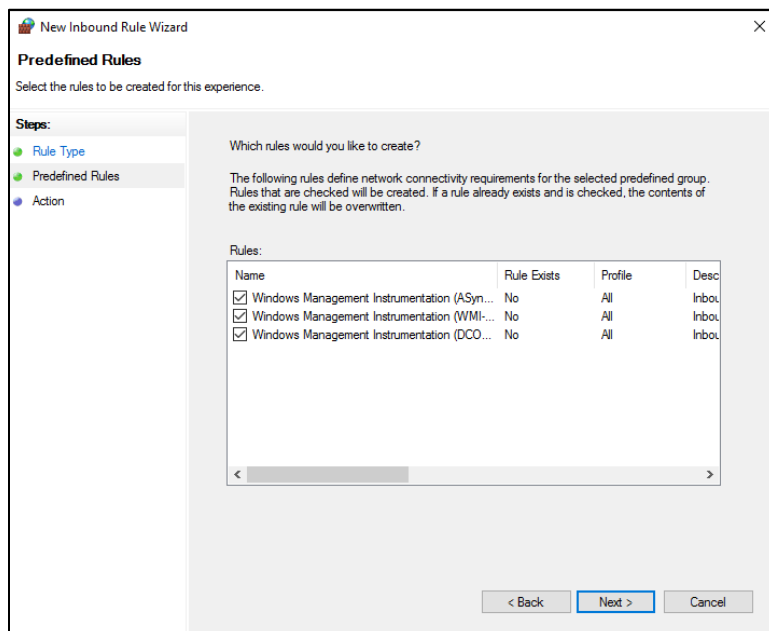
6. Right-click Inbound Rules, and select New Rule



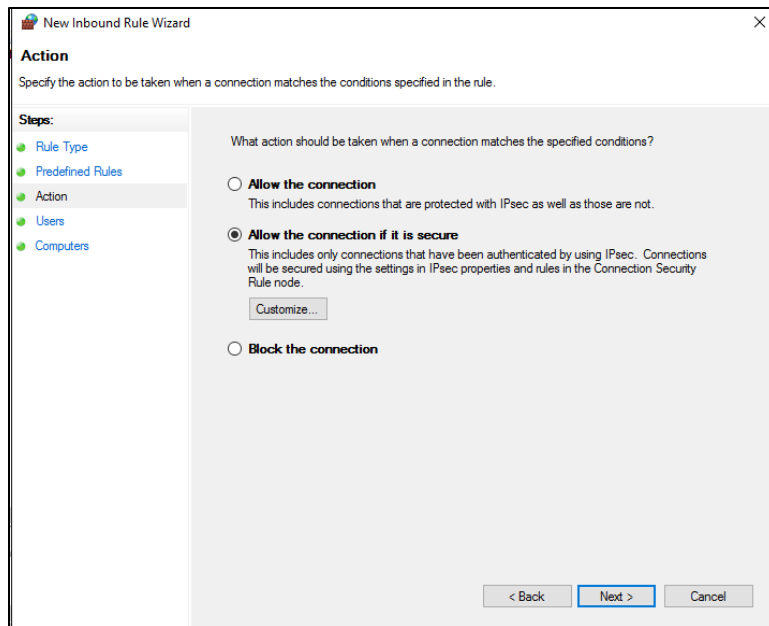
7. Choose the Predefined option, and select **Windows Management Instrumentation (WMI)** from the drop-down list and select next.



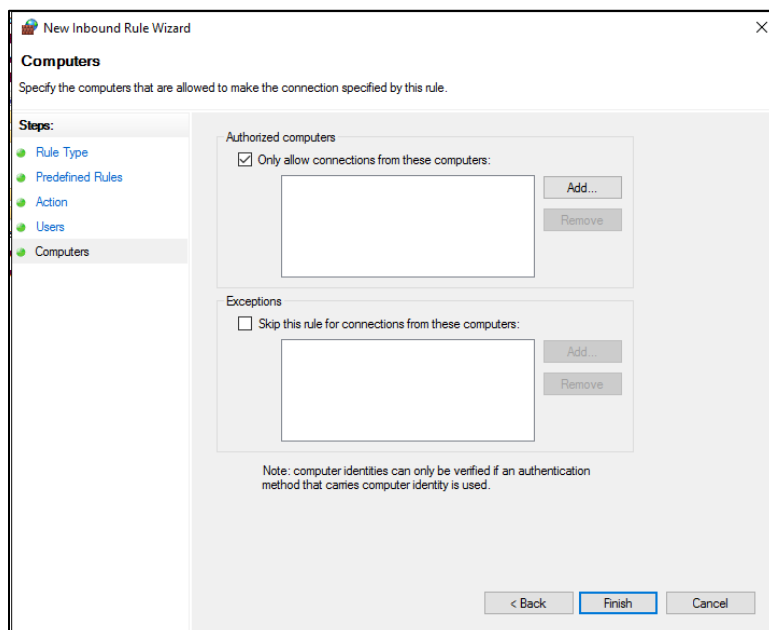
8. Leave the default choice (all three boxes checked) and select Next.



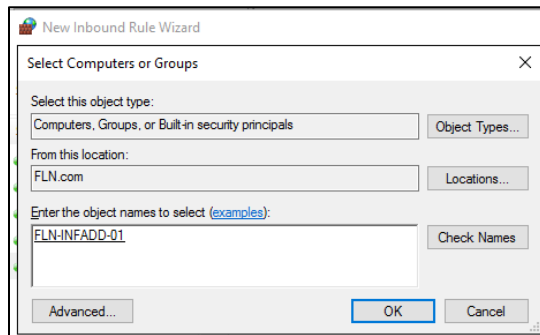
9. For the next choice, for ease you can simply select the first radio box (allow the connection) and select finish. This will enable WMI collection for any machine across your organization. If you were planning to only enable this rule for a brief time and wanted ease of setup this choice can help. If you wanted to add further security and ensure the WMI collection can only be accepted by the management machine you are using for MAPs, select the second radio button (allow the connection if it is secure) and select next.



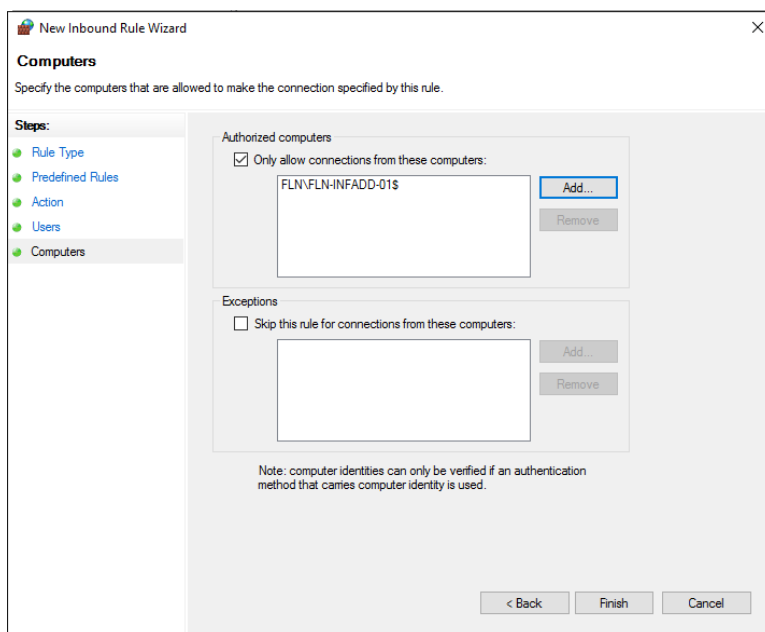
10. Click next to skip the Authorized users tab and move to the Authorize computers tab. Check the box next to Only allow connections from these computers and select Add



11. Add the selected management PC or Server you are using for MAPs and select Check Name. Click OK to continue



12. Select Finish to complete the setup



13. The GP update will take up to 2 hours to take effect on all your end-points.