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Microsoft  
Assessment and  
Planning (MAP)  
Toolkit Version 9.x

# Microsoft Assessment and Planning (MAP) Toolkit Version 9.x

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## Introduction

Whether you're an IT professional, a partner or a consultant, the Microsoft Assessment and Planning (MAP) Toolkit helps you understand your organization's IT infrastructures and assets. It helps you determine the right Microsoft technologies for your needs. This free Solution Accelerator (a "helper" tool) can quickly inventory small or large IT environments and provides insight into your ability to migrate to the latest versions of Microsoft products. MAP is an ideal assessment and planning tool for the following key benefits.

## Key Benefits

- No cost, free download
- Provides a fast, scalable and agentless inventory with low overhead
- Discovery of Devices and Applications
- Integrated Automated Toolkit for migration planning from desktops to servers
- Multi-Product Planning and Assessment Tool & Technology for migration and readiness assessment and proposal generation
- Readiness reports and proposals for the Windows 8.x, Windows 7 operating systems, Microsoft Office 2013 and 2010, and Windows Server 2012 R2 and 2008 R2
- Server Consolidation and Virtualization Assessment to help you identify underused resources and determine server virtualization candidates
- Capacity planning for server, desktop and virtualization projects
- SQL Server inventory and database discovery for consolidation
- Reduces time and administrative costs for managing software, servers, and CAL licensing assets
- Public and private cloud capacity and migration planning
- Software usage and performance tracking

## What is MAP?

The Microsoft Assessment and Planning (MAP) Toolkit is Version 9.1 as of this writing. The MAP Toolkit is a free Microsoft download that is an agentless (meaning there is nothing to install on the client machines) inventory, assessment, and reporting tool that can securely assess your IT environments. I like it for its simplicity to take a hardware and software inventory without any of the political or financial constraints sometime involved with a "fee-based" inventory tool; often involving a debate as to what needs to be purchased and from whom. No discussion, it doesn't cost anything.

MAP toolkit uses commonly found IT technologies, that are usually already in place, for its assessment and reporting such as Windows Management Instrumentation (WMI), Active Directory Domain Services (AD DS), SMS Provider, and typical networking technologies (such as IP subnets, etc.) to collect data in your environment for computer inventories, computer hardware, software, and operating systems in small or large IT environments without installing any agent software on the target computers.

The data and analysis provided by MAP streamline the planning process for software migration, help assess device driver availability, and allow you to make hardware upgrade recommendations. The MAP Toolkit also gathers performance metrics from computers you are considering for virtualization and includes a feature to model a library of potential host and storage hardware configurations. Use the MAP Toolkit to simplify the planning process for migration to Windows 8.1, Windows Server 2012 R2, Windows 7, Microsoft Office 2010, Microsoft Office 2013, Microsoft Office 365, Internet Explorer 11, Windows Azure Platform, Windows Server 2008 R2, Microsoft SQL Server 2012, Hyper-V, Hyper-V R2, and Microsoft Private Cloud Fast Track.

After you have installed the MAP Toolkit, you can begin the data collection process. There are two wizards that are used to collect the data required for most scenarios. These are:

- Inventory and Assessment Wizard
- Performance Metrics Wizard

The **Inventory and Assessment Wizard** is your starting point with MAP based on different inventory scenarios. The scenarios you use determine the technologies used to collect information from your environment. The scenarios are listed in figure 1.

It's important to note that the MAP Toolkit uses collection protocols to communicate with computers in a network in order to collect information to use in the various assessments. The communication is subject to specific administration and security settings on the target computers and is based upon many things including the operating system, firewall and anti-virus settings as well as the information that you are trying to collect. In this scenario you will gather the user accounts and passwords needed to connect and successfully inventory your environment in advance of running the toolkit.

The **Performance Metrics Wizard** is used to collect specific performance-related information such as CPU, memory, network and disk utilization for Windows servers and clients as well as Linux-based servers. The information gathered through this collection mechanism allows for the capacity planning features for server consolidation, desktop virtualization, Microsoft Private Cloud Fast Track, and Azure VM Capacity Planning. The number of clients per host, what and how many applications a server can support, can now properly be planned ahead of time before the actual rollout of your infrastructure.

# Using MAP

## The Network Inventory

Launch the Inventory and Assessment Wizard as shown in figure 1. Select the Inventory Scenarios check boxes as appropriate to your network infrastructure. Then select Next. You can see from the left console pane the list of selections MAP can use for the Discovery Methods.

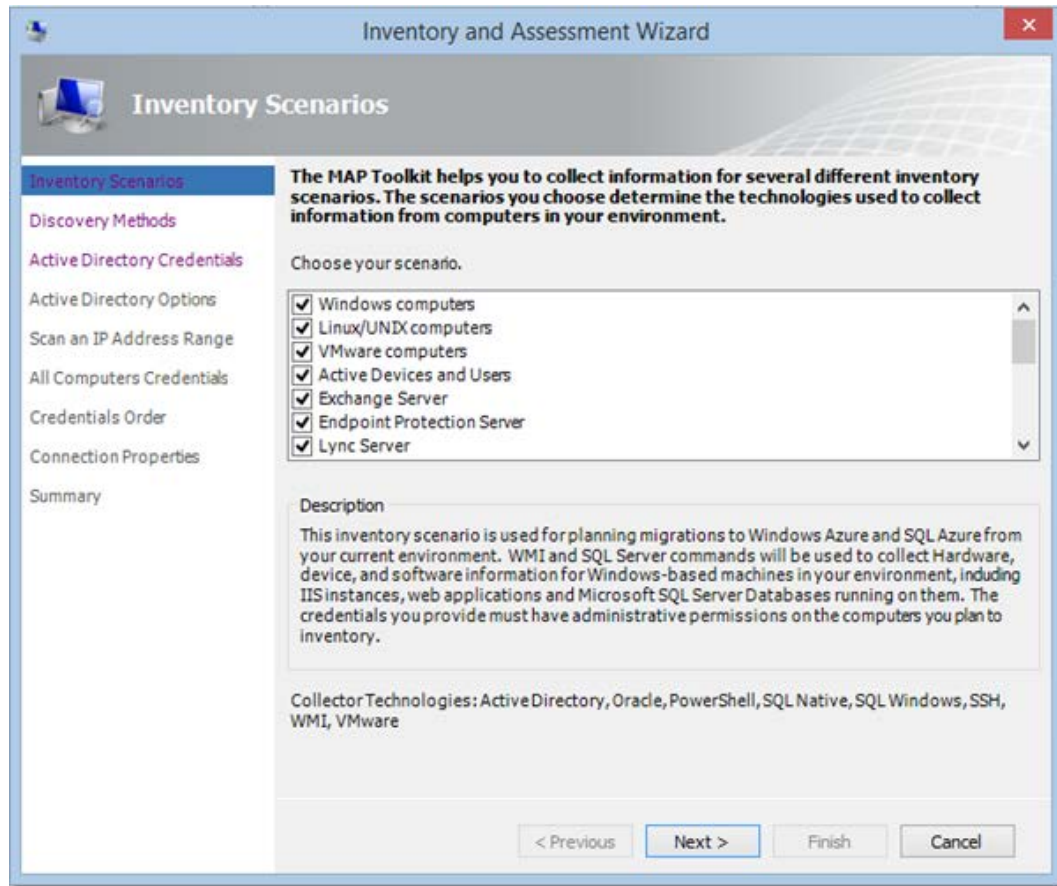


Figure 1: Inventory Scenarios

## Discovery Methods

In preparation for using the MAP Toolkit, it is important to understand how the Discovery Methods are used. Your selections are based on Credential Requirements, network protocols, network IP address ranges, optional use System Center Configuration Manager (SCCM) to leverage the use of collections, and what credentials might be required. Your choices are:

- Import computer names from a file; max list up to 120,000
- Scan an IP address range; scans 100,000 IP addresses at a time
- Manually enter computer names
- System Center Configuration Manager
- Administrator credentials

Other requirements that might be needed are:

- Set password for local accounts (UAC disabled)
- Configure network access policy where appropriate

- Enable Remote Administration exception (TCP Port 135)
- Windows Firewall: Allow remote administration exception by configuring:
  - Computer Configuration\Administrative Templates\Network\Network Connections\Windows Firewall\Domain Profile
  - netsh advfirewall set currentprofile settings remotemanagement enable
- Enable File and Printer Sharing exception
  - TCP 139 and 445 and UDP 137 and 138
- Other WMI connectivity information where required

## The Environment

Figure 2 shows the environment of the collection. Notice that although the environment was scanned, not all devices were assessed for hardware and software. The MAP Toolkit uses collection protocols to communicate with computers in a network in order to collect information to use in the various assessments. The communication is subject to specific administration and security settings on the target computers and is based upon many things including the operating system, firewall and anti-virus settings as well as the information that you are trying to collect. These administration specific items can be adjusted and mitigated for subsequent scans.

Scenarios from figure 2 are Inventory Results, Windows Environment (Servers and Clients), Linux Environment and Performance Metrics. You can continue to get more detail on your Environment by running the Collect Inventory Data and the Collect Performance Data links located at the top of the main window under Steps to Complete.

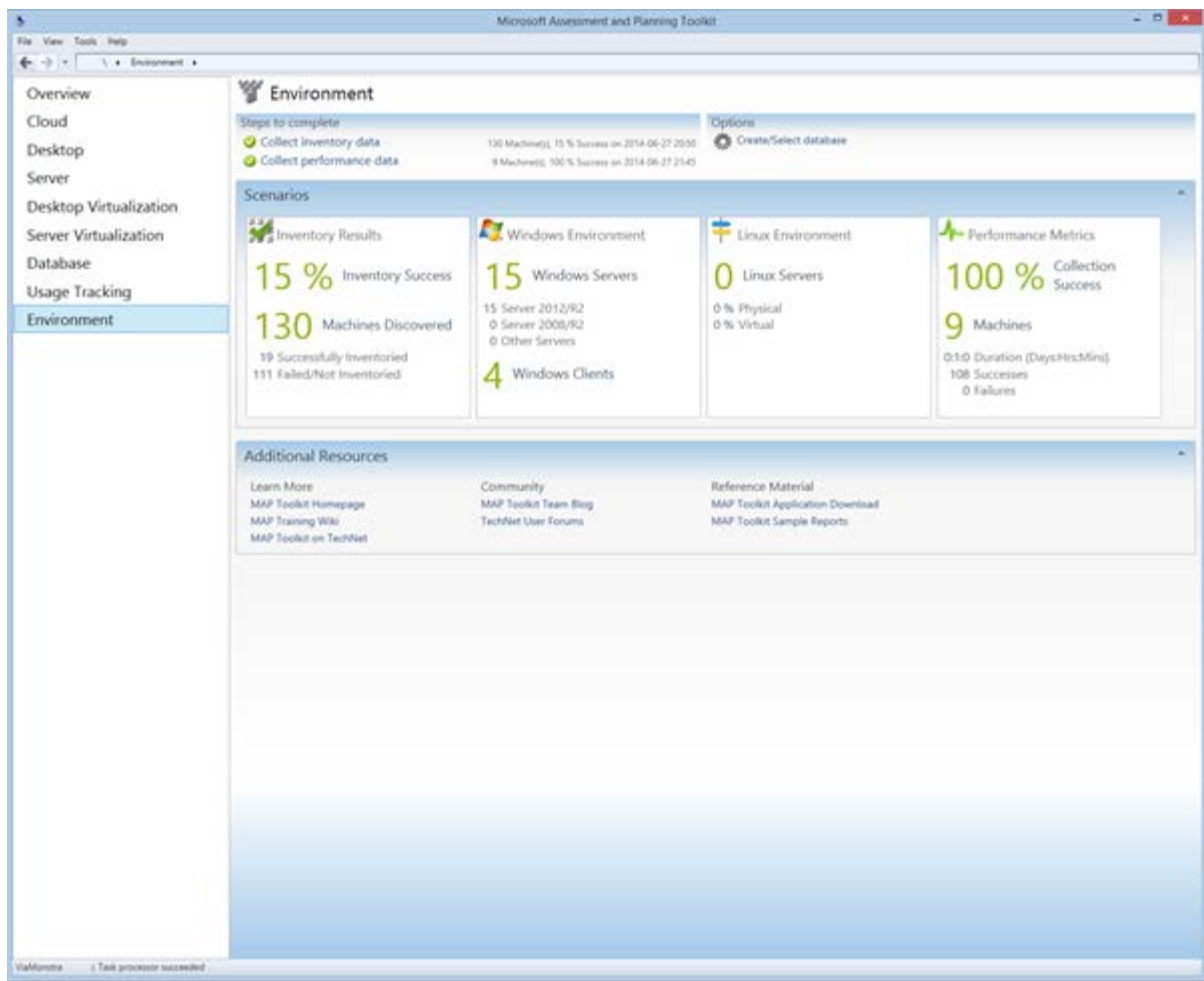


Figure 2: The Environment

## Usage Tracking

Click the Usage Tracking link on the left console pane shown in figure 3. You can see what the tool finds in your environment. The Usage Tracking scenario found shows: Total Devices and Users found, Windows Devices and Total Devices per User, Server and Cloud Enrollment and which Software as a Service (SaaS) applications are hosted, Windows Servers with User data, SharePoint Server tracking, SQL Server tracking, Configuration Manager tracking, Endpoint Protection tracking, Lync Server tracking, Windows Volume Licensing showing the number of licensing per operating system, and Remote Desktop Licensing tracking User and Device CALs.

The Collect Inventory Data link located at the top left of the main results screen will produce a result of hardware and software inventory of each device scanned.

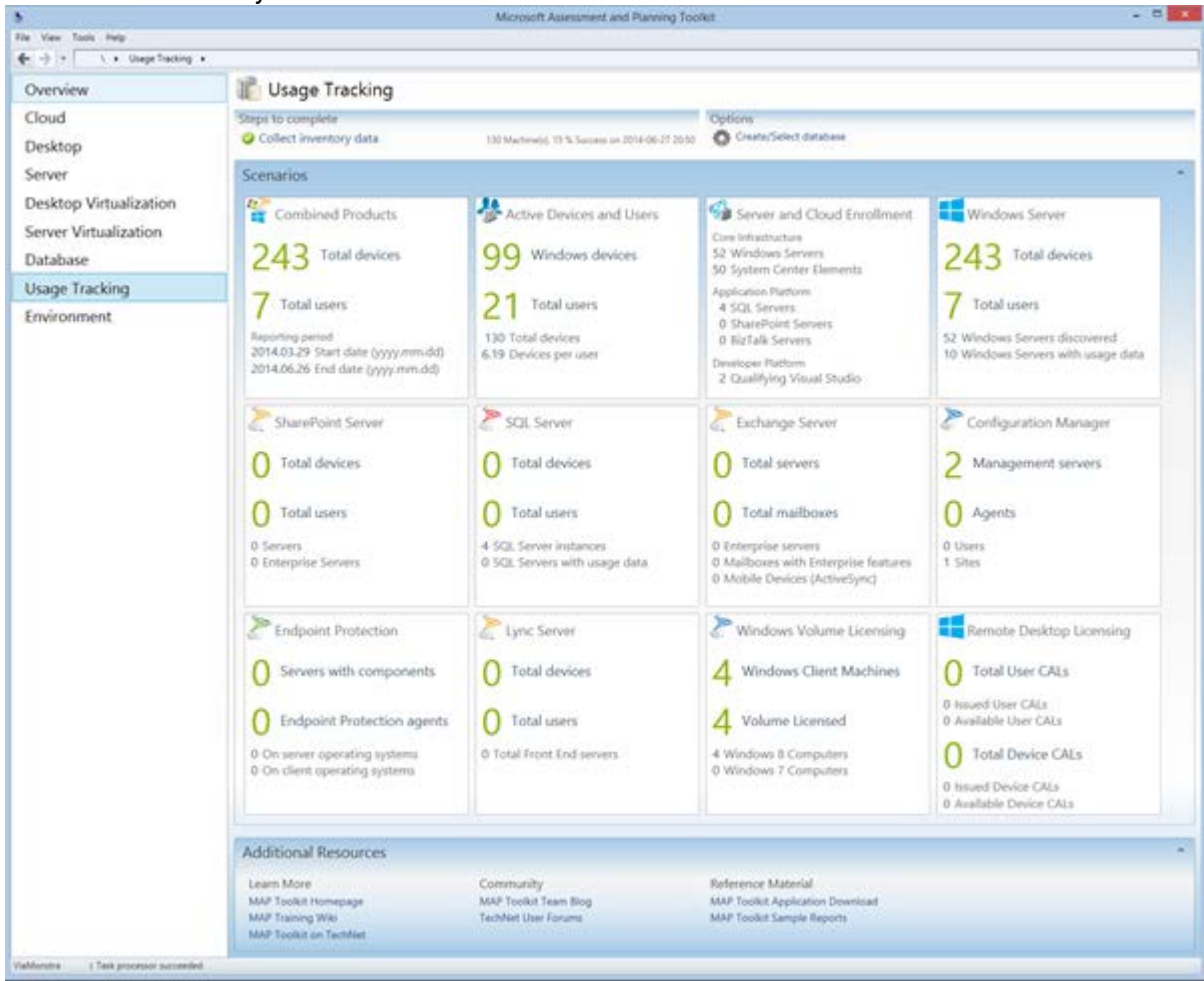


Figure 3: Usage Tracking

## Server Virtualization

This scenario in figure 4 is extremely useful in analyzing of the state of your virtualization environment and helping to plan migration of physical to virtual (P to V).

The scenarios are:

- **Server Consolidation:**  
Provides a view of how many hosts will be required for the machines chosen and how many private clouds will be required for the machines selected.
- **Private Cloud Fast Track:**  
Helps your planning of physical to virtual ("P2V") migration to Microsoft Private Cloud Fast Track. You get a quick analysis of server consolidation and the number of clouds selected on Microsoft Private Cloud Fast Track Infrastructures.
- **Virtual Machine Discovery:**  
Provides a discovery of Hyper-V, VMware, and other hosts with their guests VMs.
- **VMware Migration:**  
When there is a need to migrate VMware to Hyper-v, MAP shows a count of which machines can and cannot be migrated as well as how many VMware hosts it found in your inventory.
- **Hardware Library for Server Virtualization:**  
Provides a Hardware Library of Hosts configurations (see figure 4 below). At the top of the main screen there are a several links for Wizard Tools used to complete Server Virtualization scenarios such as: Collect Inventory Data, Collect Performance Data, Create Hardware Configuration, Run the Server Consolidation Wizard, and Run the Private Cloud Fast Track Wizard.

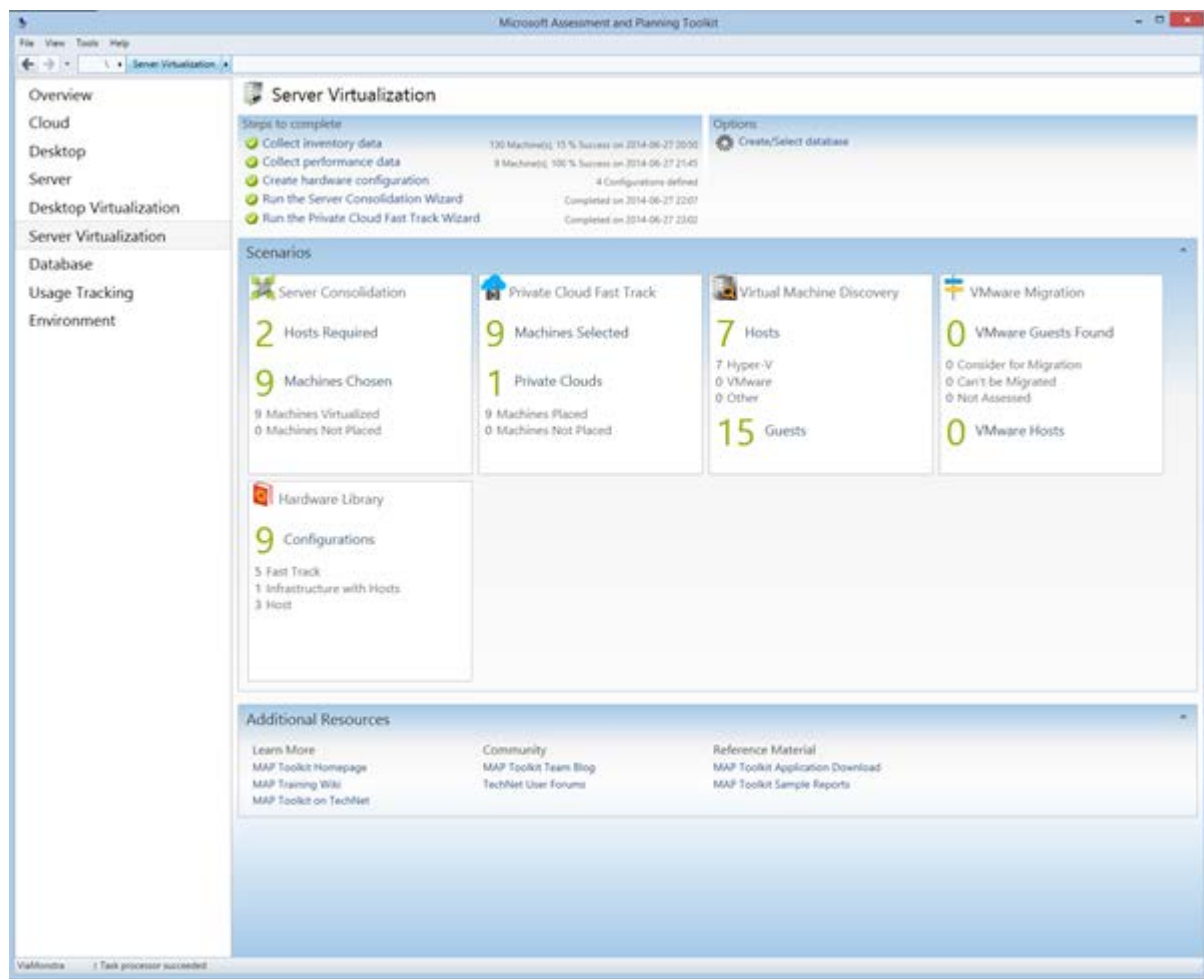


Figure 4: Server Virtualization

## Desktop

This Desktop scenario helps your infrastructure with a determination of upgrade compatibility to the newer operating systems and Office applications—by analyzing readiness scenarios.

Results shown in figure 5 show a readiness of clients capable of upgrading to Windows 8.1, Window 7, Office 2013, and Office 2010 Readiness. Inventory of Internet Explorer Discovery and the versions of the browser that MAP found is shown. As with other scenarios, the Collect Inventory Data link is at the top of the main screen.



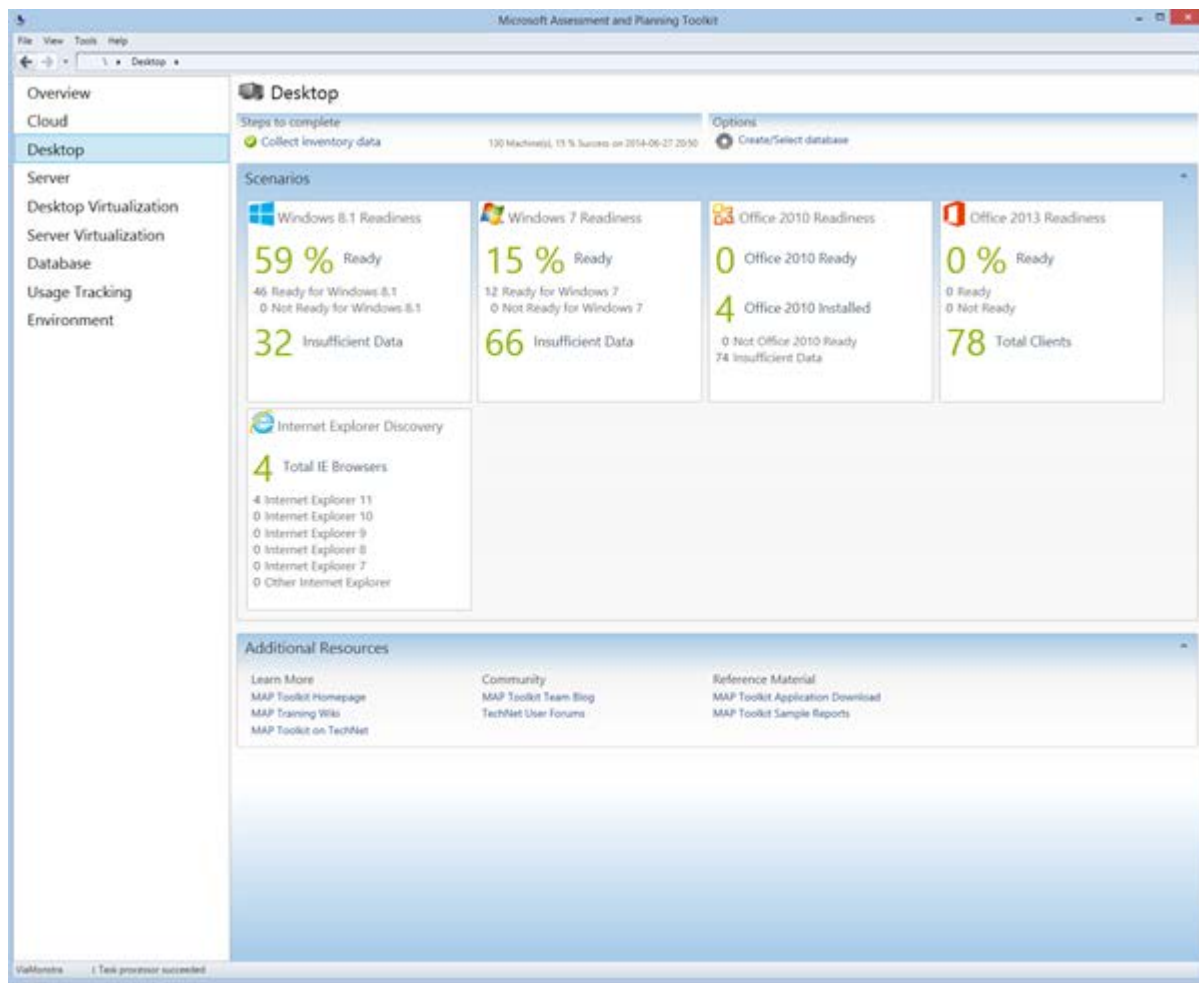


Figure 6: Desktop Inventory

## MAP Reports

Each scenario comes with the report generator. This is valuable in creating a listing in spread sheet format that shows results of your particular scenarios selected.

These Excel spreadsheet reports are MAP's way of saving your results for later viewing and can be used as your own benchmark comparisons of an assessment of your network taken at a later time and date.

Figures 7 and 8 show inventory and hardware inventory reports of the scenarios taken.

Virtual Machine Name	Guest Operating System	CPU Utilization (%)	Memory Utilization (MB)	Disk I/O Utilization (IOPS)	Disk Space Utilization (GB)	Network Utilization (Mbps)	Last Placement Failed
Host1	Microsoft Windows Server 2012 R2 Standard	0.45	1882.38	5.44	28.24	0	0.02
Host1	Microsoft Windows Server 2012 R2 Standard	0.37	1566.56	3.77	31.88	0	0
Host1	Microsoft Windows Server 2012 R2 Standard	0.81	3461.3	54.33	31.09	0	0
Host1	Microsoft Windows Server 2012 R2 Standard	0.93	3238.83	3.79	254.04	0	0
Host1	Microsoft Windows Server 2012 R2 Standard	1.23	3103.72	3.08	537.34	0.02	0
Host2	Microsoft Windows Server 2012 R2 Standard	27.25	2298.54	86.46	325.76	0.34	Business
Host2	Microsoft Windows Server 2012 R2 Standard	0.31	813.14	2.09	30.90	0	0
Host2	Microsoft Windows Server 2012 R2 Standard	1.04	2328.83	2.5	80.78	0.07	0
Host2	Microsoft Windows Server 2012 R2 Standard	18.44	3009.43	54.50	37.43	0.18	0
Host2	Microsoft Windows Server 2012 R2 Standard	0.54	1280.77	3.81	200.82	0	0

Figure 7: Server Virtualization Report

## Hardware Report

Computer Name	Computer Model	Current Operating System	Service Pack Level/Version	Active Directory Member	IP Address	MAC Address	DNS Server	Subnet Mask	Registered User Name	Domain/Workgroup	Days Since Domain Account	Number of Processors	Number of Cores	Logical CPU Count	System Memory (MB)	Video Card	Video Card Memory (MB)	Sound Card	Disk Drive	Disk Drive Size (GB)	Optical Drive	BIOS	BIOS Serial Number	BIOS Manufacturer	BIOS Release Date	Machine Type
MEGAP001L-network.local	HP Z420	Microsoft Windows R1 Enterprise	SP1	Member	192.168.133.10	0C:4B:4E:FE:4B:10	192.168.133.10	255.255.255.0	Administrator	network.local	0	2	2	4	4096	Intel(R) HD Graphics 3000	2048	Intel(R) Display Audio	Microsoft Virtual Disk	32	32	Microsoft Hyper-V Virtual Disk	WUPT001L.06A.0013.20.12.0013.2115 (INTEL...)	Intel Corp.	2013.05.18	Physical
PUTTEL-network.local	HP Z1	Microsoft Windows R1 Enterprise	SP1	Member	192.168.133.10	0E:03:85:93:C6:34	192.168.133.10	255.255.255.0	Administrator	network.local	0	4	8	8	32768	NVIDIA Quadro K3000	2048	Realtek High Definition Audio	Microsoft Virtual Disk	447	351	Microsoft Hyper-V Virtual Disk	CC2179F8E-1107009	Hewlett-Packard	2013.08.16	Physical
SCAZ01-network.local	Virtual Machine	Microsoft Windows Server 2012 R2 Standard	SP1	Member	192.168.133.82	00:15:0D:85:A2:17	192.168.133.10	255.255.255.0	Administrator	network.local	0	2	2	2	4096	Microsoft Hyper-V Video	N/A	Microsoft Virtual Disk	38	38	Microsoft Hyper-V Virtual Disk	9294-7415-3434-4815-7758-4646-71	Microsoft Corporation	2012.11.26	Virtual	
SCVMS01-network.local	Virtual Machine	Microsoft Windows Server 2012 R2 Standard	SP1	Member	192.168.133.82	00:15:0D:85:A2:17	192.168.133.10	255.255.255.0	Administrator	network.local	0	2	2	2	4096	Microsoft Hyper-V Video	N/A	Microsoft Virtual Disk	38	38	Microsoft Hyper-V Virtual Disk	3260-7340-2381-9546-6936-5083-33	Microsoft Corporation	2012.11.26	Virtual	
SPRO-02-network.local	Surface Pro 2	Microsoft Windows R1 Enterprise	SP1	Member	192.168.133.10	90:5A:C3:0B:29:4A	192.168.133.10	255.255.255.0	Administrator	network.local	0	2	4	4	4096	Intel(R) HD Graphics Family	2040	Realtek High Definition Audio	Microsoft Virtual Disk	113	113	Microsoft Hyper-V Virtual Disk	2.64.0950 (026A) SD USB Device (SAM050E) MEM21238A1V-0000V	American Megatrends Inc.	2014.05.12	Physical
SCVMS01-network.local	Virtual Machine	Microsoft Windows Server 2012 R2 Standard	SP1	Member	192.168.133.12	00:15:0D:85:A2:18	192.168.133.10	255.255.255.0	Onyx Lepus	network.local	0	2	2	2	4096	Microsoft Hyper-V Video	N/A	Microsoft Virtual Disk	79	79	Microsoft Hyper-V Virtual Disk	0138-4243-6123-9969-4848-0368-25	Microsoft Corporation	2012.11.26	Virtual	
SCVMS01-network.local	Virtual Machine	Microsoft Windows Server 2012 R2 Standard	SP1	Member	192.168.133.20	00:15:0D:85:8F:0E	192.168.133.10	255.255.255.0	Administrator	network.local	0	1	1	1	4096	Microsoft Hyper-V Video	N/A	Microsoft Virtual Disk	126	126	Microsoft Hyper-V Virtual Disk	8077-2943-2267-4915-1280-4436-09	American Megatrends Inc.	2012.05.23	Virtual	

Figure 8: Hardware Inventory Report

## Conclusion

The Microsoft Assessment and Planning (MAP) Toolkit is a free inventory, assessment, and reporting tool from that helps you assess your current IT infrastructure and determine the right Microsoft technologies for your IT needs.

And, here is your list of MAP Toolkit Resources:

- Access MAP Toolkit technical information and download links : <http://www.microsoft.com/map>
- For how-to videos and case studies, visit the Microsoft TechNet MAP Toolkit webpage : <http://go.microsoft.com/fwlink/?LinkId=199271>
- For answers to FAQ about the MAP Toolkit : <http://go.microsoft.com/fwlink/?LinkId=157860>
- MAP Community Forum : <http://social.technet.microsoft.com/Forums/en-US/map>

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[Installing and Configuring Windows Server 2012 \(M20410\)](#)

[Configuring Windows 8.1 \(M20687\)](#)

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## About the Author

Mark Mizrahi has been a Microsoft Certified Systems Engineer (MCSE) since Windows NT3.51. He holds a CEH Certified Ethical Hacker Security Certification and is a CEI Certified EC-Council Instructor. He is a Microsoft Certified Trainer (MCT) and MCSA/MCSE for Windows Server 2008, Vista, Windows 7, Windows 8.1 and Server 2012 R2. He currently teaches Microsoft curriculum for Global Knowledge and other training vendors. Mark is president of Standard Computer Services and consults for various Fortune 500 companies. He designs and implements web-based Internet Security and Video Surveillance Systems for a diversified customer base. Keeping up the various hacking methods is part of his daily intake of information, and he loves sharing it with his clients and students. He may be contacted at [mark@markmizrahi.com](mailto:mark@markmizrahi.com).