Real work With Microsoft Nano Server

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Introduction

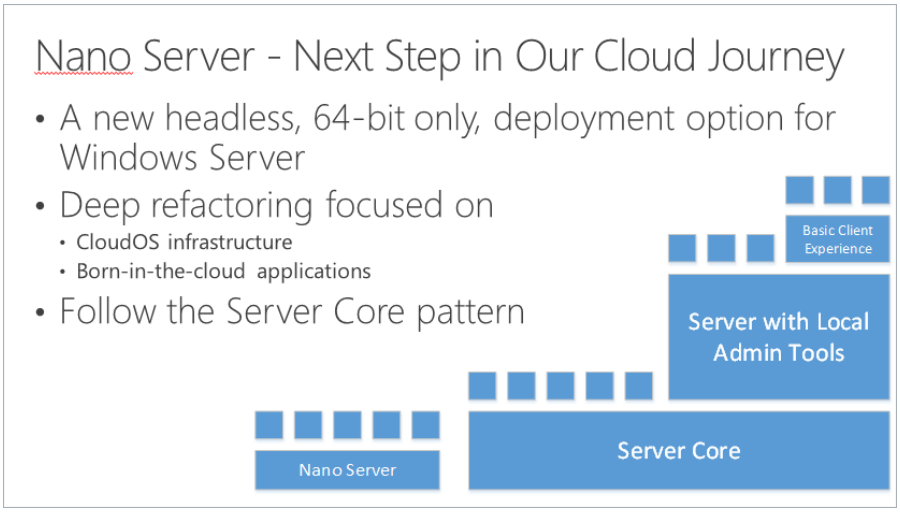
Windows Server 2016 offers a new installation option: Nano Server. Nano Server is a remotely administered server operating system optimized for private clouds and datacenters. It is similar to Windows Server in Server Core mode, but significantly smaller, has no local logon capability, and only supports 64-bit applications, tools, and agents. It takes up far less disk space, sets up significantly faster, and requires far fewer updates and restarts than Windows Server. When it does restart, it restarts much faster. The Nano Server installation option is available for Standard and Datacenter editions of Windows Server 2016.

Nano Server is ideal for a number of scenarios:

As a "compute" host for Hyper-V virtual machines, either in clusters or not
As a storage host for Scale-Out File Server.
As a DNS server
As a web server running Internet Information Services (IIS)

As a host for applications that are developed using cloud application patterns and run in a container or virtual machine guest operating system

These topics describe how to configure a Nano Server image with the packages you'll need, add additional device drivers, and deploy it with an Unattend.xml file. It also explains the options for managing Nano Server remotely, managing the Hyper-V role running on Nano Server, and setup and management of a failover cluster of computers that are running Nano Server.



The nano server in the Microsoft server OS portfolio

Installation scenarios

Evaluation

You can obtain a 180-day-licensed evaluation copy of Windows Server from Windows Server Evaluations. To try out Nano Server, choose the Nano Server | 64-bit EXE option, and then come back to either Nano Server Quick Start or Deploy Nano Server to get started.

Clean installation

Because you install Nano Server by configuring a VHD, a clean installation is the quickest and simplest deployment method.

To get started quickly with a basic deployment of Nano Server using DHCP to obtain an IP address, see the Nano Server Quick Start

If you're already familiar with the basics of Nano Server, the more detailed topics starting with Deploy Nano Server offer a full set of instructions for customizing images, working with domains, installing packages for server roles and other features both online and offline, and much more.

Upgrade

Since Nano Server is new for Windows Server 2016, there isn't an upgrade path from older operating system versions to Nano Server.

Migration

Since Nano Server is new for Windows Server 2016, there isn't migration path from older operating system versions to Nano Server.

For Nano Server (a more cut down version of Core), you can run these services:

- DCB (Data Center Bridging)
- DNS Server (Domain Naming Server)
- DSC (Desired State Config) push mode
- Failover Clustering
- File Server
- Hyper-V
- IIS (web) Server
- MPIO (Multi PathIO)
- NPDS (Network Perf Diag Service)
- Reverse Forwarders (for Ruby, Node.js etc)

- SCOM
- VMM agent (Virtual Machine Manager)
- Windows Server Installer
- WMI (Windows Management Interface)

To install roles you can use the Powershell commands:

a) Get-WindowsFeature - List all Roles and Features

b) Install-WindowsFeatures - Install a Role or Feature

c) Uninstall-WindowsFeatures - Remove a Role or Feature

Or use normal Command Prompt:
a) ***Dism /online /get-features /format:table - List roles and features***
b) ***Dism /online /enable-feature /featurename:<name of feature> - Install a role or featuree.g. Dism /online /enable-feature /featurename:DHCPServerCore***
c) ***Dism /online /disable-feature /featurename:<name of feature> - Remove a feature or role***

What You Need to Know about Microsoft Nano Server

The top ten questions and answers about nano server

With all of the excitement about Windows 10 it's easy to overlook some of the new changes that Microsoft has planned for the server side of the business. One of the biggest pieces of news is Microsoft's announcement about the new Nano Server. In this column I'll cover the top ten things you need to know about Microsoft's upcoming Nano Server operating system.

1. What is Nano Server?

Nano Server is a pared down headless version of Windows Server that Microsoft has been developing under the code name Tuva. It is designed to run services and to be managed completely remotely. Microsoft describes Nano Server as "a purpose-built operating system designed to run born-in-the-cloud applications and containers."

2. How is Nano Server different from Windows Server?

First, Nano Server will be completely headless – there's no GUI. Next, Nano will be will have a much smaller footprint than Windows Server – even significantly smaller than Windows Server Core. Microsoft states Nano Server will have a 93% smaller VHD size, 92% fewer critical bulletins and 80% fewer required reboots. A smaller OS results in fewer operating system components to maintain with less security exposures than the current Windows Server operating system. This can also improve scalability. This Microsoft Channel 9 video shows a Nano Server with 1TB of RAM running 1000 Nano Server VMs.

3. Will Nano server have any sort of graphical user interface or local management?

Nano will not have a graphical user interface and unlike Windows Server Core it will also have no command prompt and no PowerShell console. Even more, Nano Server will not have a local login. It is designed entirely to support services.

4. Can Nano Server run regular Windows applications?

No. You cannot run traditional Windows GUI applications on Nano Server. Instead, Nano Server is designed to provide infrastructure services.

5. If Nano Server doesn't run Windows applications what does it run?

Microsoft puts forwards two core scenarios for Nano Server. Server Cloud infrastructure services such as Hyper-V, Hyper-V cluster, and Scale-Out File Servers (SOFSs) and born-in-the-cloud applications that are running in virtual machines, containers, or on development platforms that do not require a UI on the server. Nano Server will support a number of different runtimes including: C#, Java, Node.js, and Python. Nana Server will be API-compatible with Windows Server within the subset of components Nano provides.

6. Besides the GUI and command shell what else did Microsoft remove from Windows Server to make Nano Server?

In addition to dropping the graphical user interface and command shells Microsoft also eliminated 32-bit support (WOW64), MSI installer support and many default Server Core components.

7. How do you manage Nano Server if there's no GUI and no command prompt?

All management of Nano will be performed remotely using WMI and PowerShell. Microsoft has also stated that Nano will have Windows Server Roles and Features support using Features on Demand and DISM (Deployment Image Servicing and Management). Nano will also support remote file transfer, remote script authoring and remote debugging including remote debugging from Visual Studio. Microsoft also stated that they will provide a new Web-based management tool for Nano Server.

8. Will Nano Server replace Windows Server?

No. Nano Server is designed to be a specialized infrastructure server. It will be installed as an installation option from the Windows Server setup program much like Server Core. Microsoft will continue to release new versions of Windows Server as a general purpose server operating system for the foreseeable future.

9. When will Nano server be released?

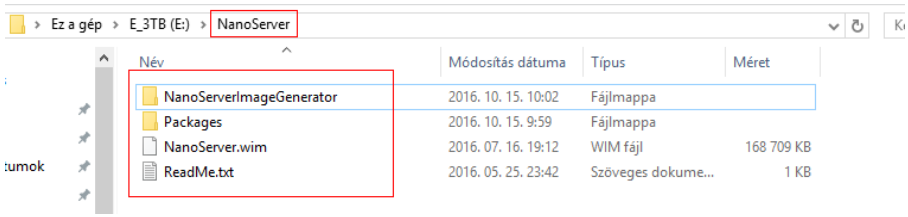
Microsoft has not stated when Nano Server will be available. However, since its a Windows Server option it is expected to be released with the next version of Windows Server in 2016.

10. Where can I find more information about Nano Server?

You can learn more about the upcoming Windows Nano Server at the Windows Server Blog. In addition, Microsoft will be releasing more information about Nano Server at BUILD and Ignite.

Installation

First copy NanoServerImageGenerator folder from the **\NanoServer** folder in the Windows Server 2016 ISO to a folder on your hard drive!



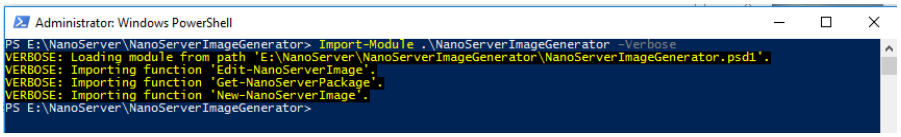
Start Windows PowerShell as an administrator, change directory to the folder where you have placed the NanoServerImageGenerator folder and then import the module with

Import-Module .\NanoServerImageGenerator –Verbose

If you have error message, as the command execution disabled, run this command first:

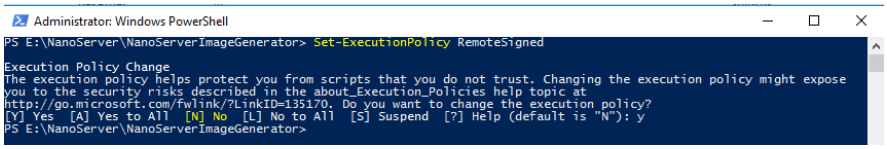
Set-ExecutionPolicy RemoteSigned

and after the module import command.



You might have to adjust the Windows PowerShell execution policy:

Set-ExecutionPolicy RemoteSigned



Create a VHD for the Standard edition that sets a computer name and includes the Hyper-V host drivers by running the following command which will prompt you for an administrator password for the new VHD:

New-NanoServerImage -Edition Standard -DeploymentType Host -MediaPath <path to root of media> -BasePath .\Base -TargetPath .\NanoServerVM\NanoServerVM.vhd -ComputerName <computer name>

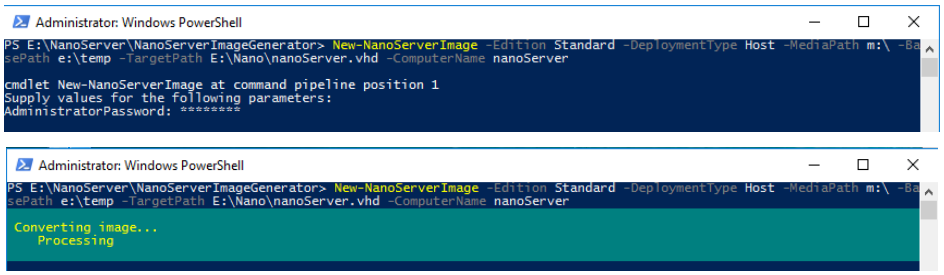
where

-MediaPath specifies a path to the root of the contents of the Windows Server 2016 ISO. For example if you have copied the contents of the ISO to d:\TP5ISO you would use that path.
-BasePath (optional) specifies a folder that will be created to copy the Nano Server WIM and packages to.
-TargetPath specifies a path, including the filename and extension, where the resulting VHD or VHDX will be created.
-Computer_name specifies the computer name that the Nano Server virtual machine you are

creating will have.

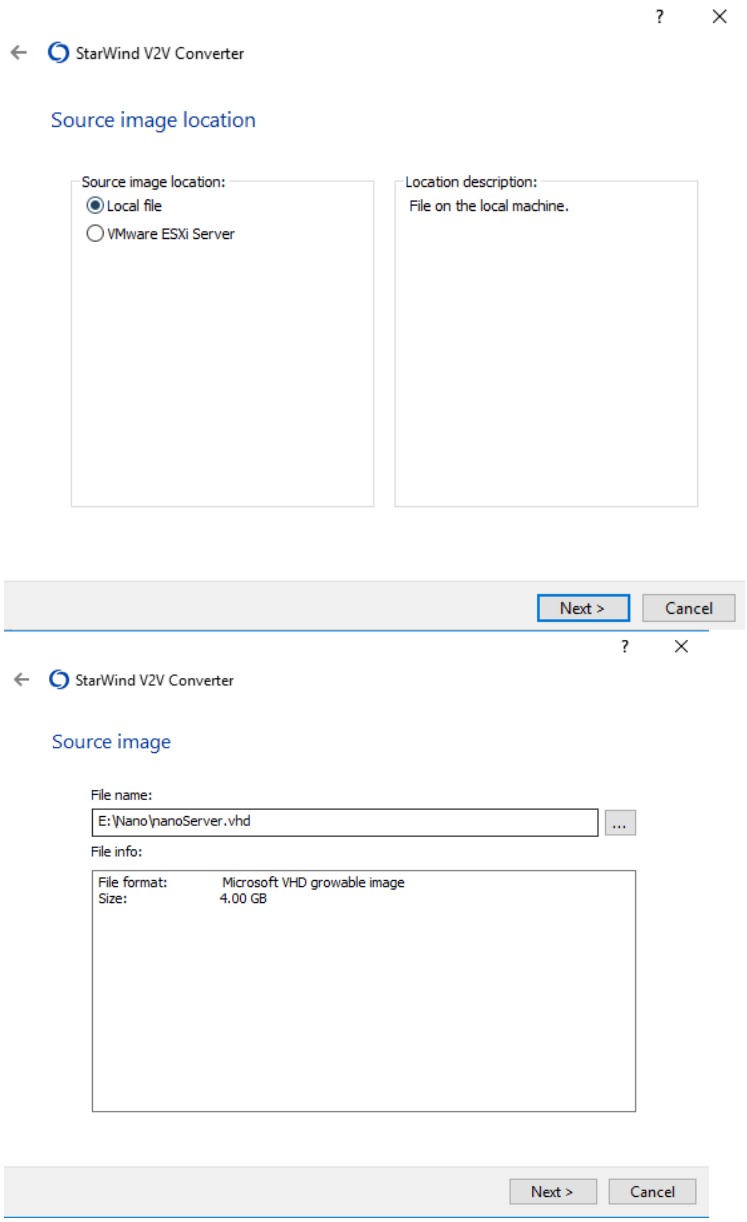
Example:

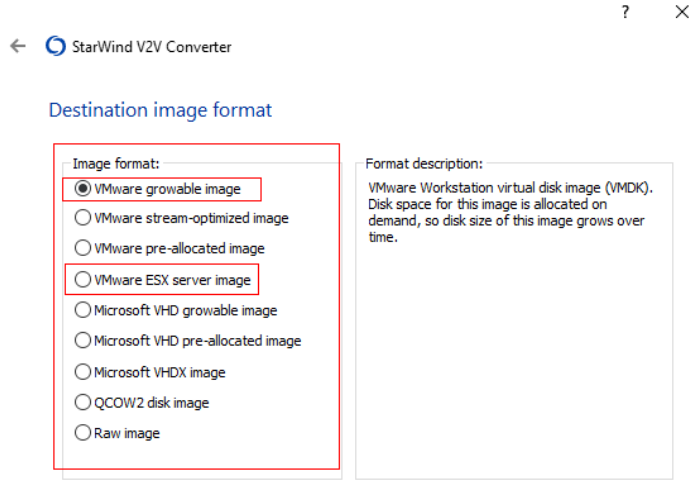
New-NanoServerImage -Edition Standard -DeploymentType Host -MediaPath m:\ -BasePath e:\temp -TargetPath E:\Nano\nanoServer.vhd -ComputerName nanoServer

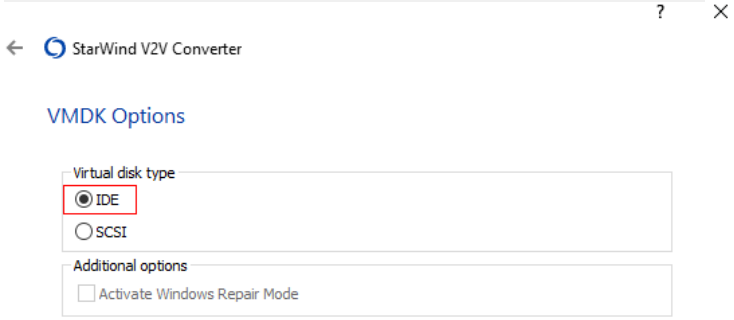


This *DeploymentType* need to create vhd for the physical servers, as a Hyper-v host, file server, Failover Cluster node, DNS server, osr Internet Information Server. Fort he guest VM-s VHD file use the *DeploymentType Guest* option!

Now we have to convert it to vmdk format for VMWare.




StarWind V2V Converter
Destination image format
Image format:
VMware growable image
VMware stream-optimized image
VMware pre-allocated image
VMware ESX server image
Microsoft VHD growable image
Microsoft VHD pre-allocated image
Microsoft VHDX image
QCOW2 disk image
Raw image
Format description:
VMware Workstation virtual disk image (VMDK). Disk space for this image is allocated on demand, so disk size of this image grows over time.
Next >
Cancel


StarWind V2V Converter
VMDK Options
Virtual disk type
IDE
SCSI
Additional options
Activate Windows Repair Mode