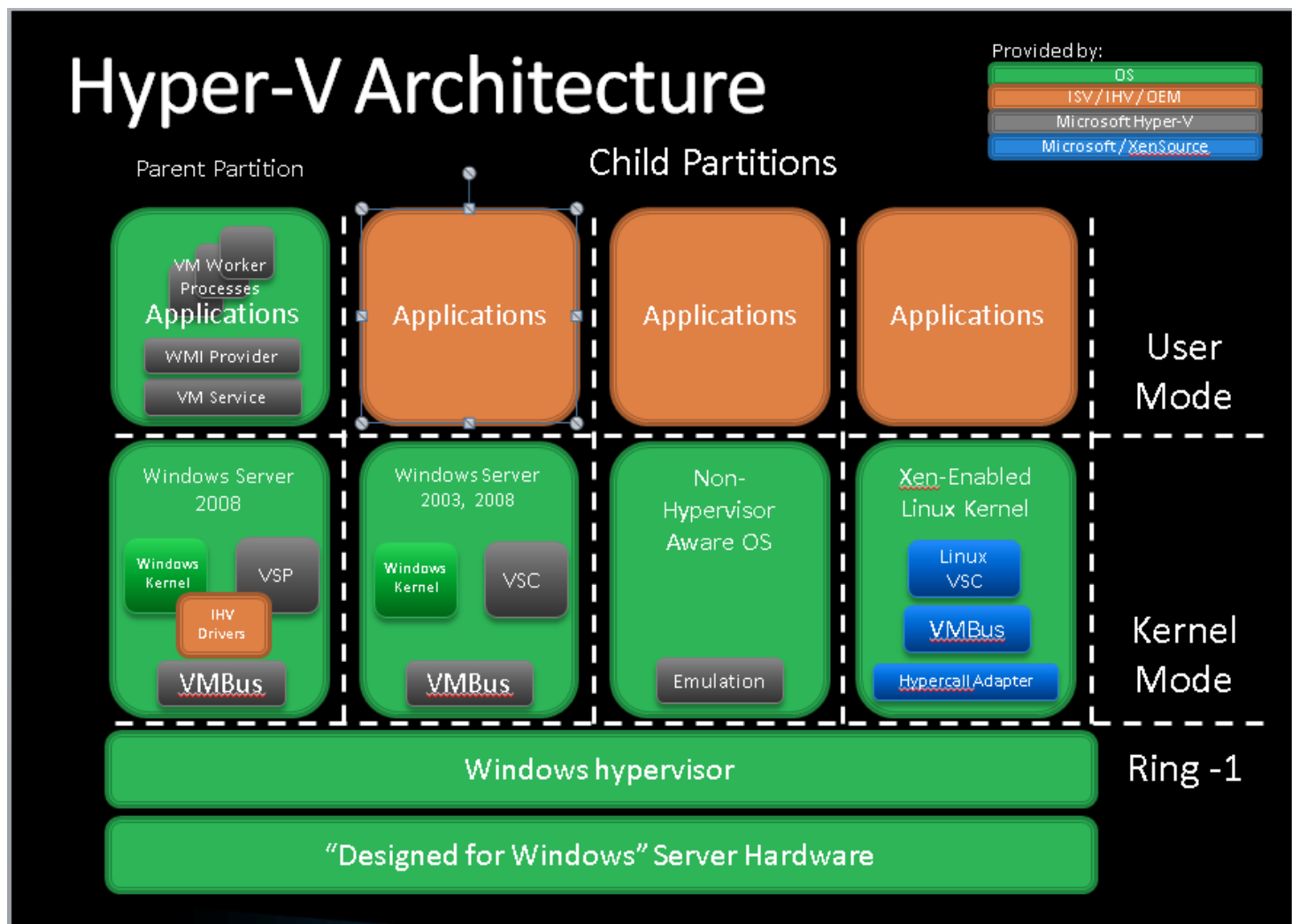


RUNNING LINUX, "WINDOWS..", AND "MS-DOS" AS GUEST OPERATING SYSTEMS IN VIRTUAL MACHINES IN "HYPER-V" IN "WINDOWS 8"

HIGH-LEVEL EXECUTIVE SUMMARY:

We have had mixed success with running various versions of "Windows..", "MS-DOS", and Linux in virtual machines in the "Hyper-V" virtual machine program that is bundled with the "Windows 8 Release Preview".



VIRTUAL "NETWORK ADAPTER" VERSUS VIRTUAL "LEGACY NETWORK ADAPTER"

When you create a virtual machine inside "Hyper-V" in "Windows 8", you have a choice between providing the virtual machine with either a virtual "Network Adapter" or a virtual "Legacy Adapter".

A virtual "Network Adapter" communicates with other virtual machines and the "host partition" by means of Microsoft's VMbus.

A virtual "Legacy Network Adapter" communicates with other virtual machines and the "host partition" by means of an emulation module that is supplied by the "Hyper-V" program.

- **virtual "Network Adapter"**
 - It runs at 10 Gigabits per second
 - It attaches to virtual machine's virtual VMbus
 - = "synthetic network adapter" in Microsoft tech literature
 - = "Microsoft Hyper-V network adapter" from viewpoint of guest OS
 - It has no real analog in real physical devices

Microsoft Hyper-V Network Adapter Properties



General

Advanced

Driver

Details



Microsoft Hyper-V Network Adapter

Device type: Network adapters

Manufacturer: Microsoft

Location: on Microsoft Hyper-V Virtual Machine Bus

Device status

This device is working properly.

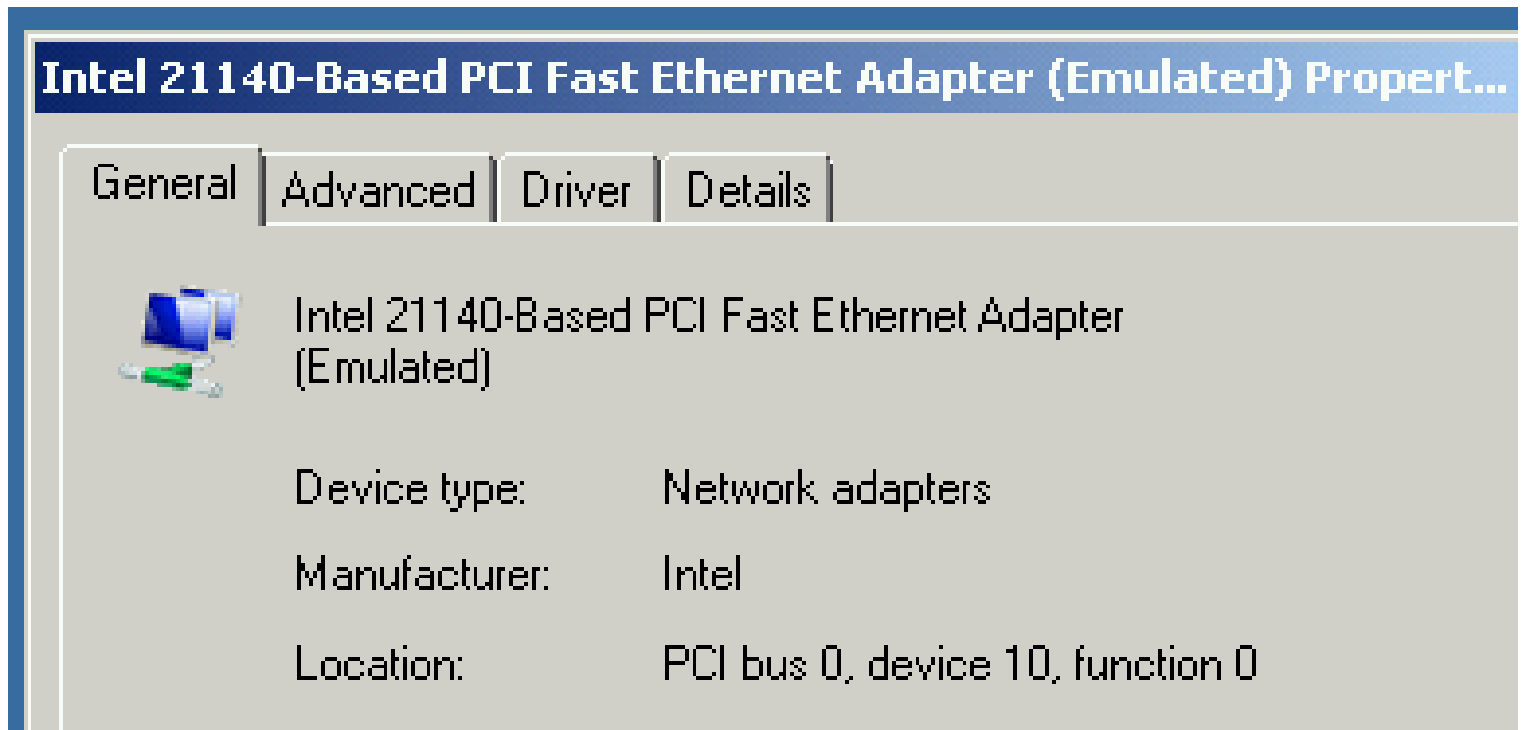
OK

Cancel

- virtual "Legacy Network Adapter"

- It runs at 100 Megabits per second
- It attaches to virtual machine's emulated/virtual PCI bus
- = virtual "Intel 21140 PCI Fast Ethernet adapter" which is a virtual analog of a real wired network adapter that really existed 10 years ago

*



The screenshot shows the 'Properties' window for a network adapter in Windows. The title bar reads 'Intel 21140-Based PCI Fast Ethernet Adapter (Emulated) Propert...'. Below the title bar are four tabs: 'General', 'Advanced', 'Driver', and 'Details'. The 'General' tab is selected. On the left side of the 'General' tab is an icon of a network adapter. To the right of the icon, the text reads 'Intel 21140-Based PCI Fast Ethernet Adapter (Emulated)'. Below this, there are three lines of information: 'Device type: Network adapters', 'Manufacturer: Intel', and 'Location: PCI bus 0, device 10, function 0'.

Device type:	Network adapters
Manufacturer:	Intel
Location:	PCI bus 0, device 10, function 0

SUCCESSSES WITH "HYPER-V"

We successfully created guest virtual machines with:

Debian 6.0.1 32-bit Gnome

(Prior to installing the OS, attach a "Legacy Network Adapter" to the virtual machine.)

Debian 6.0.4 64-bit Gnome

(Prior to installing the OS, attach a "Legacy Network Adapter" to the virtual machine.)

Fedora 17

(Prior to installing the OS, attach a "Legacy Network Adapter" to the virtual machine.)

Linux Mint 13 Mate 64-bit

(Prior to installing the OS, attach a regular "Network Adapter" to the virtual machine.)

Linux Mint 13 Cinnamon 32-bit

(Prior to installing the OS, attach a regular "Network Adapter" to the virtual machine.)

Ubuntu 12.04 64-bit

(Prior to installing the OS, attach a regular "Network Adapter" to the virtual machine.)

Ubuntu 12.04 32-bit

(Prior to installing the OS, attach a regular "Network Adapter" to the virtual machine.)

Puppy Linux 5.28.005 32-bit Lucid (Ubuntu-compatible version of Puppy Linux)

(Prior to installing the OS, attach a "Legacy Network Adapter" to the virtual machine.)

Puppy Linux 5.28.004 32-bit Lucid (Ubuntu-compatible version of Puppy Linux)

(Prior to installing the OS, attach a "Legacy Network Adapter" to the virtual

machine.)

Fedora 16 64-bit

(Prior to installing the OS, and attach a "Legacy Network Adapter" to the virtual machine.)

MS-DOS 6.00

Windows Vista Business 32-bit

(Prior to installing the OS, attach a "Legacy Network Adapter" to the virtual machine.)

Windows XP Home Edition

(Prior to installing the OS, attach a "Legacy Network Adapter" to the virtual machine.)

Windows 7 Enterprise

(Prior to installing the OS, attach a "Legacy Network Adapter" to the virtual machine.)

Windows 8 Release Preview 64-bit

(Prior to installing the OS, attach a "Legacy Network Adapter" to the virtual machine.)

Windows 8 Release Preview 32-bit

(Prior to installing the OS, attach a "Legacy Network Adapter" to the virtual machine.)

FAILURES WITH "HYPER-V"

We failed to create guest virtual machines with:

Ubuntu 11.10 64-bit

Ubuntu 11.10 32-bit

Ubuntu 11.04 64-bit

Ubuntu 11.04 32-bit

Ubuntu 9.04 64-bit

Ubuntu 9.04 32-bit

Windows NT 4 32-bit

Windows 98 Second Edition

Zorin OS 64-bit (a Linux distro)

CenOS 6 64-bit

After creating guest virtual machines with

CentOS 6 64-bit we were able to connect to the local network and the Internet with the virtual "Network Adapter" by following Jared Heinrich's fix. See

<http://jaredheinrichs.com/how-to-install-centos-on-hyper-v-with-networking.html>

and <http://www.microsoft.com/en-us/download/details.aspx?id=28188>

All Linux virtual machines in Hyper-V in "Windows 8.." cannot be started or accessed by means of "Remote Desktop Connection" because of the loss of mouse and keyboard control when one attempts to do so. Because of this, we cannot use "Remote Desktop Protocol" to "passthrough"/"loan" a sound controller, a USB drive-like device such as a flash drive, or a hard drive from a "Windows.." computer to a "GNU/Linux" computer.

In order to successfully run a distro of Linux in a virtual machine guest inside "Hyper-V" (of a "Windows 8..Preview), either various Microsoft-supplied drivers have to be inserted by developer of the Linux distro or you have to download them from Microsoft's Web site and install them into the distro.

The ability of Ubuntu 12.04 to run inside "Client Hyper-V" is demonstrated at http://blogs.msdn.com/b/virtual_pc_guy/archive/2012/05/02/ubuntu-12-04-under-hyper-v-on-windows-8.aspx

The ability of OpenSUSE 12.1 to run inside "Client Hyper-V" is demonstrated at <http://www.eightforums.com/tutorials/5078-hyper-v-create-linux-virtual-machine-windows-8-a.html>

Microsoft's official list of supported guest operating systems is located at [http://technet.microsoft.com/en-us/library/cc794868\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc794868(WS.10).aspx)

This document is for the "Windows 2008 Server" version of Hyper-V.
There is no official document for the "Windows 8" version of Hyper-V yet.