

USING VIRTUAL MACHINES

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Web location for this
presentation:

<http://aztcs.org>

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SUMMARY

Using a "virtual machine program" such as the free "VMware Player" running inside your real "Windows.." or "Linux" computer, you can create "virtual machines" that act like separate computers for running "guest operating systems".

TOPICS

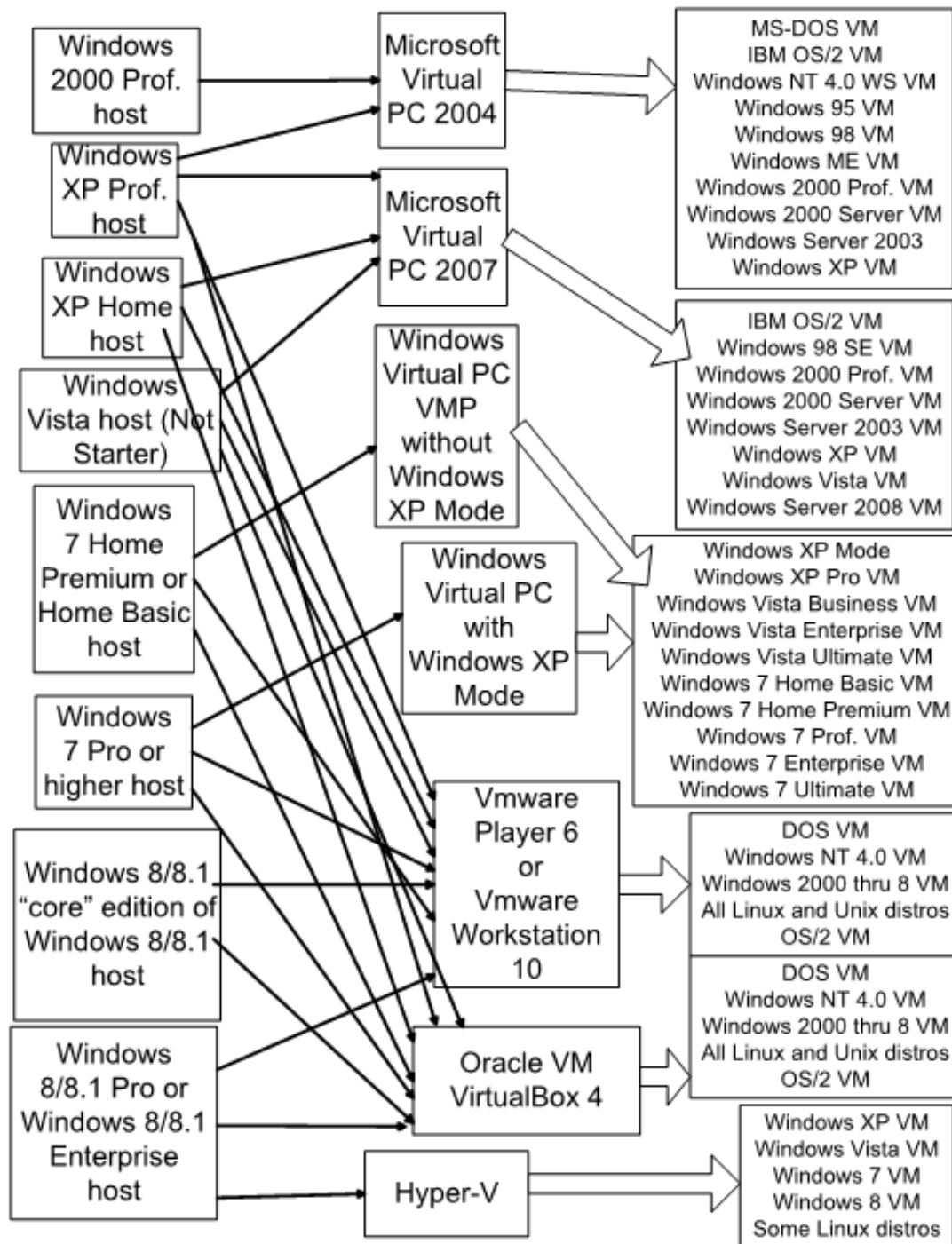
- "Virtual Machine" Concept
- Selecting a "Virtual Machine Program"
- Benefits of Using "Virtual Machines"
- Components of a "Virtual Machine"
- Implementing "Virtual Machines"

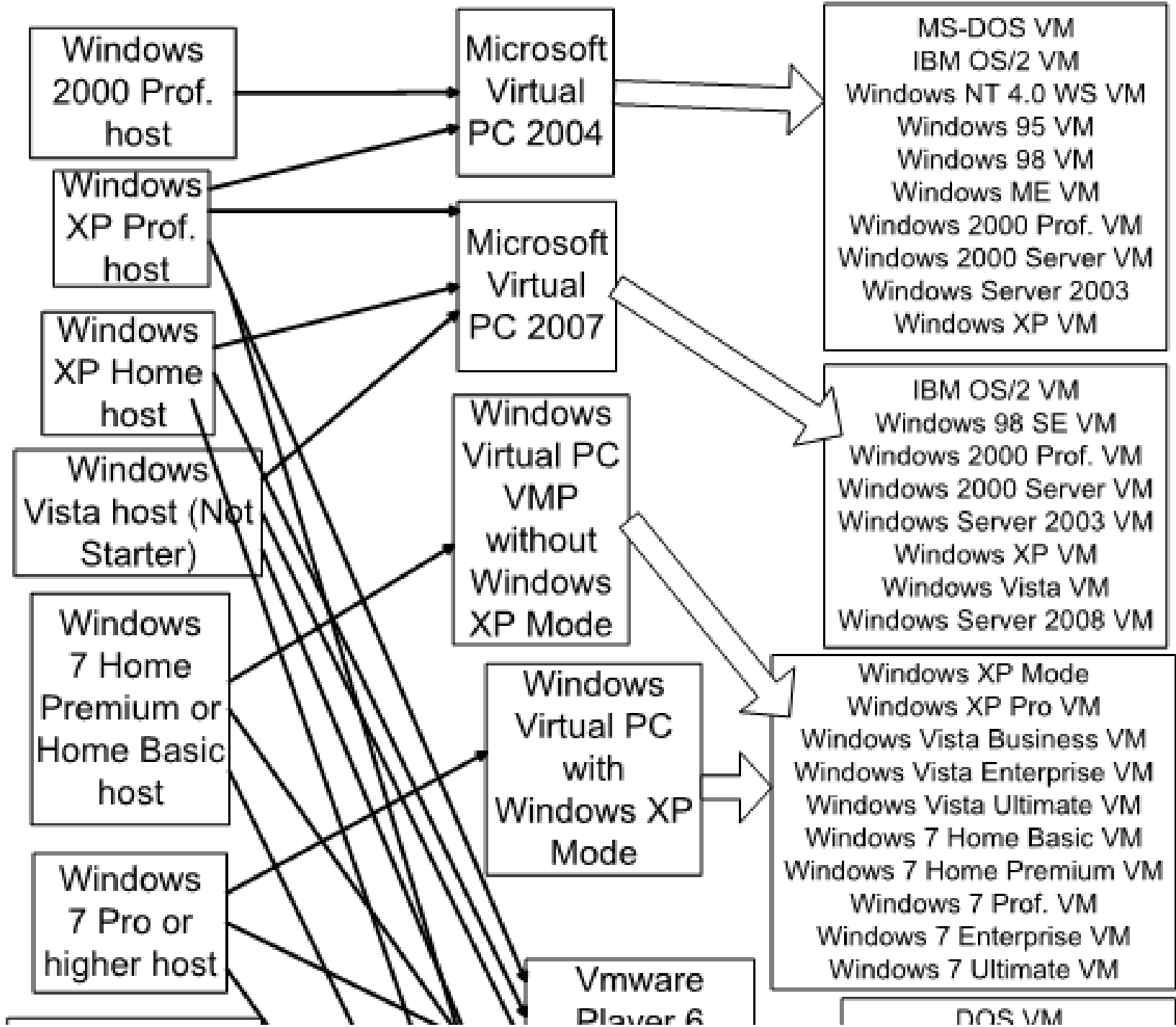
"VIRTUAL MACHINE" CONCEPT

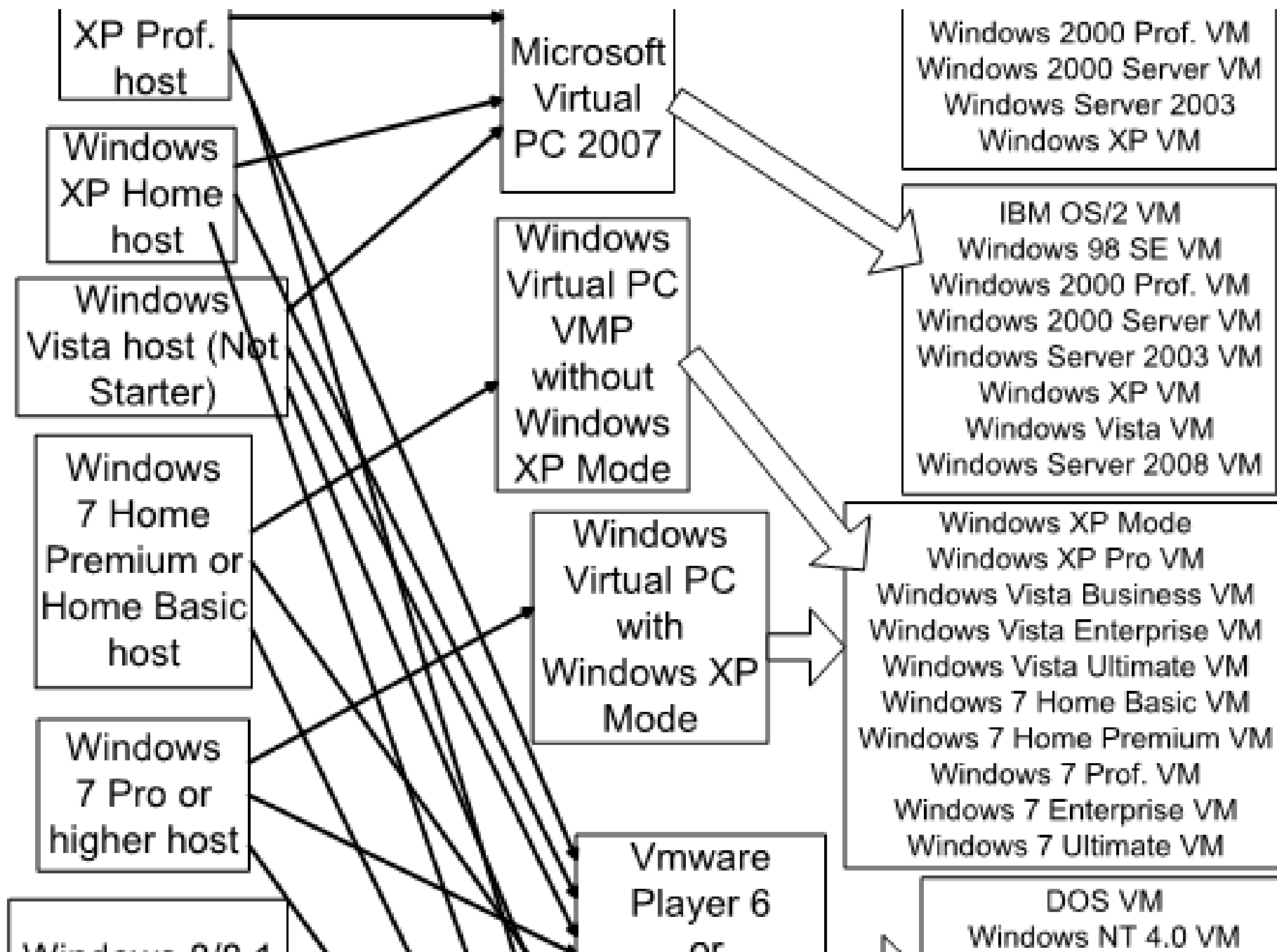
- A "virtual machine" is a single window inside your existing computer that acts like an entire separate computer.

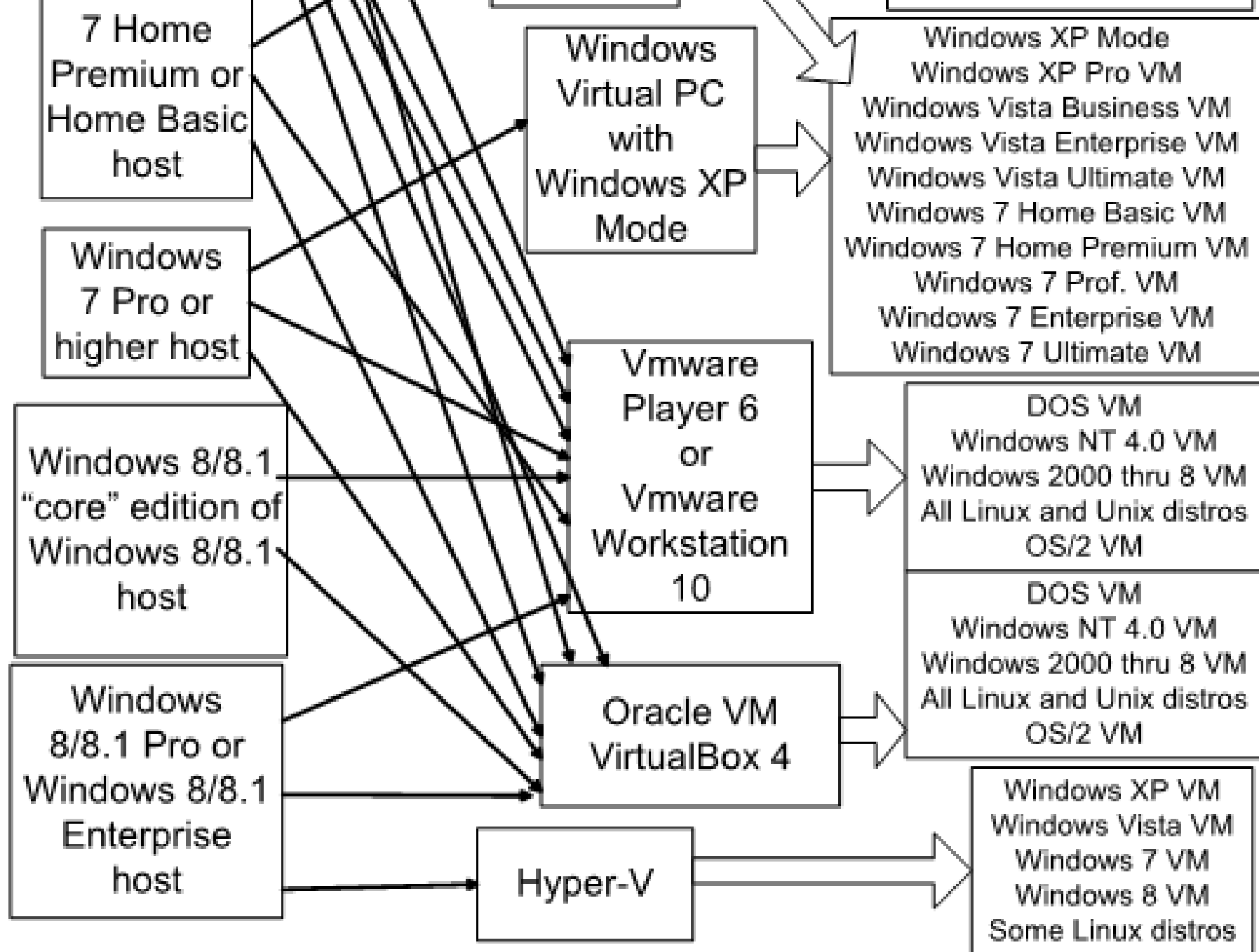
SELECTING A "VIRTUAL MACHINE PROGRAM"

- Your selection of a "virtual machine program" is constrained by the specific host hardware and host operating system requirements of the various "virtual machine programs":



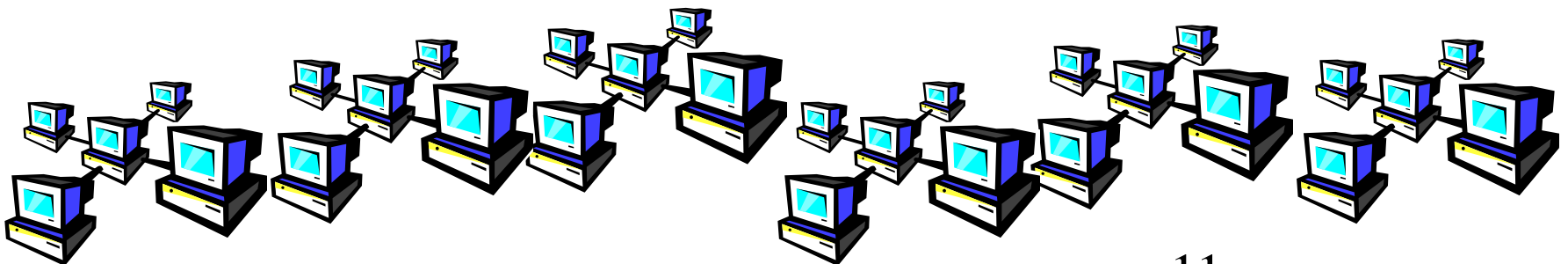






BENEFITS OF USING "VIRTUAL MACHINES"

–When you use "virtual machines" in free "virtual machine programs", it is like **getting a pile of computers to use for free** with all of them residing inside your existing physical "host" computer.



BENEFITS OF USING "VIRTUAL MACHINES" (continued)

- You can use "virtual machines" to **reduce the number of physical computers that you operate** and this can help you to avoid buying additional computers:



BENEFITS OF USING "VIRTUAL MACHINES" (continued)

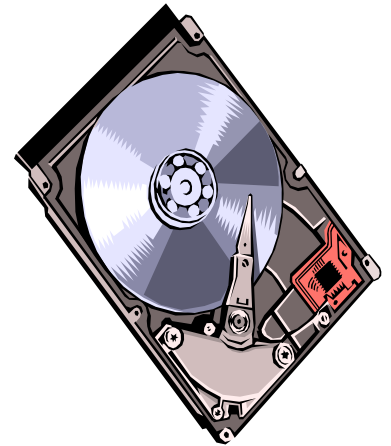
- **Thin Provisioning** of hard drives: Virtual machines can help you to avoid buying more hard drives because, by default, they are set up to "fool" their guest operating systems into "seeing" more hard drive space than is actually physically available:

BENEFITS OF USING "VIRTUAL MACHINES" (continued)

- In a virtual machine system, each guest operating system can be "shown" a much larger amount of hard drive space than is actually utilized by it, but the actual usage of physical hard drive space is just the "used" space--not the "free space" that the virtual machines "see".

BENEFITS OF USING "VIRTUAL MACHINES" (continued)

–You can use a virtual machine to attempt to repair failed hard drives.



- See

http://aztcs.org/meeting_notes/winhardsig/harddrives/repairing/030-HDsoftrepairs.pdf

BENEFITS OF USING "VIRTUAL MACHINES" (continued)

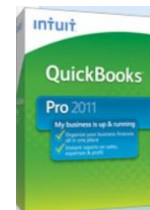
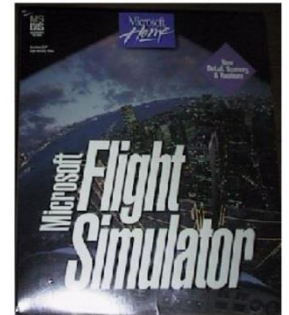
- You can easily **run software that normally conflicts with each other** or slows each other down (such as multiple versions of “Microsoft Office”) in separate virtual machines so that they do not "see" each other.

BENEFITS OF USING "VIRTUAL MACHINES" (continued)

- You can **test beta software** such as the prolific "Mozilla Firefox" betas without causing permanent problems with the production version of the same software, since many betas inactivate or remove the existing production version of the same program.

BENEFITS OF USING "VIRTUAL MACHINES" (continued)

- With virtual machines, you no longer need to keep older computers around in order to run those beloved MS-DOS games or to run prior year versions of income tax software or old versions of financial software such as "Quicken", "QuickBooks" or "Turbotax".



BENEFITS OF USING "VIRTUAL MACHINES" (continued)

- You can **clone existing "virtual machines"** in a fraction of the **time** that it takes to set up, "reload", or "re-image" real, physical computers.

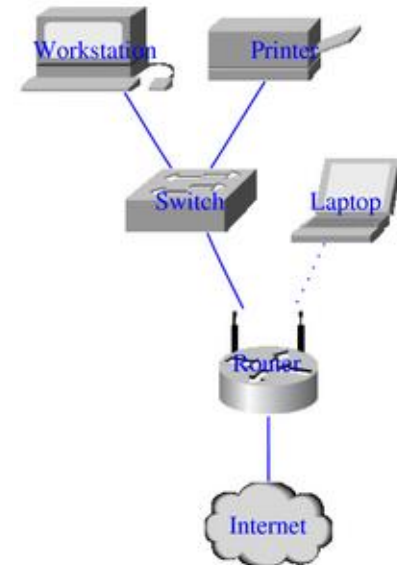
BENEFITS OF USING "VIRTUAL MACHINES" (continued)

- If you use a cloned "virtual machine" for accessing the Web and it catches a virus/malware/trojan, you can delete the cloned "virtual machine" and create a fresh new virtual machine in tens of minutes.

BENEFITS OF USING "VIRTUAL MACHINES" (continued)

- All virtual machine programs provide you with "virtual networks":

- You can practice and demonstrate setting up shared files, folders, and printers without using real computers and without using real network equipment.



COMPONENTS OF A "VIRTUAL MACHINE"

- A "virtual machine" has
 - ✓ a virtual "processor"
 - ✓ some virtual "RAM"

COMPONENTS OF A "VIRTUAL MACHINE" (continued)

- ✓ a virtual "BIOS" or a virtual "UEFI"

"BIOS" =

"BASIC INPUT/OUTPUT
SYSTEM"

"UEFI =

"Unified Extensible Firmware
Interface"

COMPONENTS OF A "VIRTUAL MACHINE" (continued)

- ✓ a virtual "desktop",
- ✓ one or more the virtual "hard drives"
- ✓ some virtual "RAM",
- ✓ a virtual "keyboard", and
- ✓ a virtual "mouse".

IMPLEMENTING "VIRTUAL MACHINES"

- ✓ Big Step 0:
Learn about "virtual machines"
- ✓ Big Step 100:
Install a "virtual machine" program
- ✓ Big Step 200:
Create a new "virtual machine"

IMPLEMENTING "VIRTUAL MACHINES" (continued)

- ✓ Big Step 300:
Install a guest operating system into the virtual machine
- ✓ Big Step 400:
Start up the guest operating system and install drivers provided by the "virtual machine program"

**START OFF WITH YOUR
EXISTING
"WINDOWS..",
MAC "OS X", OR
"LINUX" COMPUTER:**

**Real computer (= "host computer")
runs 64-bit version of "Windows 7"**

**BIG STEP 100:
INSTALL A
"VIRTUAL MACHINE
PROGRAM":**

**(USE ONLY THE FREE
"VIRTUAL MACHINE
PROGRAMS" UNLESS
YOU CAN JUSTIFY THE
EXPENSE OF PAYING
FOR ONE)**

**Real computer (= "host computer")
runs 64-bit version of "Windows 7"**

**Install the free
"VMware Workstation Player"
program
= "virtual machine program"**

**BIG STEP 200:
CREATE A NEW
"VIRTUAL MACHINE"
USING THE
"VIRTUAL MACHINE
PROGRAM**

**= "CREATE VIRTUAL
HARDWARE"**

**= A FOLDER OR TWO
FULL OF FILES**

**Real computer (= "host computer")
runs 64-bit version of "Windows 7"**

**"VMware Workstation Player"
= "virtual machine program"**

Create a new "virtual machine"

**BIG STEP 300:
INSTALL A "GUEST
OPERATING SYSTEM"
INTO THE
"VIRTUAL MACHINE"**

**Real computer (= "host computer")
runs 64-bit version of "Windows 7"**

**"VMware Workstation Player"
= "virtual machine program"**

**Install "Linux Mint"
as a
"guest operating system"
inside the "virtual machine"**

**BIG STEP 400:
INSTALL THE VIRTUAL
MACHINE PROGRAM'S
DRIVERS INTO THE
"VIRTUAL MACHINE"**

= THE "VIRTUAL MACHINE PROGRAM" PROVIDES (GUEST) OPERATING SYSTEM-SPECIFIC DRIVERS TO MAKE THE VIRTUAL MACHINE WORK BETTER

**= INSTALL
"VMWARE TOOLS"
INTO THE
"GUEST OPERATING
SYSTEM"**

**Real computer (= "host computer")
runs 64-bit version of "Windows 7"**

**"VMware Workstation Player"
= "virtual machine program"**

**"Virtual machine"
runs "Linux Mint"
as a "guest operating system"**

Install "VMware Tools"