# It's a Virtual World

# What is a virtual machine?

A virtual machine (VM) is a "completely isolated guest operating system installation within your normal host operating system"

# The Old Way

Each physical machine dedicated to one function

File Server

Mail Server

SQL Server

Application Server

# Or another more common way

File Server
SQL Server
Mail Server
Application Server

Everything on one server

Adding or updating the one server affects everything on the server.

# The Virtual Way

One physical machine running a virtual machine for each specific or related function

File Server
Mail Server
SQL Server
Application Server

- Each virtual machine runs independently from the other virtual machines
- Updating one VM does not affect the other virtual machines

# Benefits

- Consolidation – decrease hardware costs, physical space, electricity, air conditioning
- Isolation – keep applications from each other
- Ease of testing – using snapshots and roll back
- Mobility – single file that can be copied and moved between physical machines

# Drawbacks

- Concentration Risk – ‘putting all of your eggs into a few baskets’
- Cost – initial outlay for licensing depending upon the virtual server product you have chosen
- Performance penalty – adding one more layer
- Hardware support – USB ports not supported by Microsoft Hyper-V

# Supported Platforms

- VMWare
  - Customers are successfully running halFILE on this platform
  - We have little experience with this platform
  - Expensive startup costs if you are not already using
- Hyper-V
  - We use this platform internally in Austin and Dallas
  - Low startup costs

# Microsoft Hyper-V

- Windows 2008 R2 Standard comes with 2 product keys, one for the host and another for the first virtual machine
- Processor : x64 compatible processor with Intel VT or AMD-V technology enabled
- Hardware Data Execution Prevention (DEP), specifically Intel XD bit (execute disable bit) or AMD NX bit (no execute bit), must be available and enabled.

# Hyper- V (continued)

- RAM : Minimum: 1 GB RAM; Recommended: 2 GB RAM or greater (additional RAM is required for each running guest operating system); Maximum 1 TB

# Windows 7

- XP mode available today for Windows 7 PRO
- Allows one to run old, outdated software that will not run under Windows 7
- Completely isolated from the host, like running a machine within a machine
- Bootable VHD option

# Windows 8

- Hyper-V will be built into the core of the operating system
- Allows one to run multiple virtual machines in order to support older software

# halFILE Configuration

- Virtual SQL Server
  - Minimum 4GB RAM
- Virtual Application Server
  - May be used as image file server
  - Minimum 2GB RAM
- Launch halFILE
  - Thick client on each workstation
  - RDP connection
  - TS RemoteApp

# e.halFILE Configuration

- Virtual IIS Server
  - Minimum 2GB RAM
- Connect “Anywhere”
  - iPad or Tablet PC
  - Browsers: IE, Chrome, Firefox, Safari
  - Smart Phone
    - iOS or Android
    - Keep in mind limited screen size