Implementation and Best Practice Guide

HP Multiseat Computing Solution

©Copyright 2011 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice.

Microsoft, Internet Explorer, MultiPoint, and Windows are U.S. registered trademarks of Microsoft Corporation.

Adobe and Adobe Flash Player are trademarks or registered trademarks of Adobe systems Incorporated.

Intel and Intel Active Management Technology (AMT) are trademarks of Intel corporation in the U.S. and other countries.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

This document contains proprietary information that is protected by copyright. No part of this document may be photocopied, reproduced, or translated to another language without the prior written consent of Hewlett-Packard Company.

First Edition (March 2011)

Document Part Number: 656125-001

Table of contents

1 Fundamentals 1

Offerings of Microsoft® Windows® MultiPoint™ Server 2011 1

OEM Standard 1

OEM Premium 1

Academic Volume License 1

Description of Modes 2

Maintenance 2

Normal 2

Remapping Stations 2

Topology 2

Topology Examples 3

Private USB 3

Qualified USB Hubs 3

2 Best Practices for Installation of Drivers with the Academic Volume License Operating System 4

Recommended Method (Automatic Driver Installation) 4

Manual Driver Installation 4

3 Performance Considerations 5

4 Licensing and Support 6

5 External Links 7

1 Fundamentals

Offerings of Microsoft® Windows® MultiPoint™ Server 2011

OEM Standard

- HP MultiSeat ms6005 or ms6200 Desktop (the host PC) ships preinstalled from the factory with Windows MultiPoint Server 2011, which includes the server Certificate of Authenticity (COA)
- HP MultiSeat t100 series clients sell separately; include the client operating system Client Access License (CAL)
- Available in 13 languages
- Domain join not allowed
- Operating system maximum number of users: 10 (see Performance Considerations on page 5)
- Maximum memory: 8GB

OEM Premium

- HP MultiSeat ms6005 or ms6200 Desktop (the host PC) ships preinstalled from the factory with Windows MultiPoint Server 2011, which includes the server Certificate of Authenticity (COA)
- HP MultiSeat t100 series clients sell separately; include the client operating system Client Access License (CAL)
- Available in 13 languages
- Domain join allowed
- Operating system maximum number of users: 20 (see Performance Considerations on page 5)
- Maximum memory: 32GB

Academic Volume License

- HP MultiSeat ms6005 or ms6200 Host PC sold with FreeDOS installed
- Requires the purchase of the Academic Volume License version of MultiPoint Server 2011
- Device drivers must be downloaded from HP and installed
- MultiSeat t100 series clients do not include the user CAL
- Available in multiple languages: 17 standard, 20 extended
- Domain join allowed
- Maximum number of users: 20 (see Performance Considerations on page 5)

Description of Modes

Microsoft Windows MultiPoint Server 2011 can operate in two different modes described below:

- Maintenance, see Maintenance on page 2
- Normal, see Normal on page 2

Maintenance

Maintenance mode is the state of the MultiPoint Server 2011 system in which the administrative user performs maintenance tasks. No stations switch to this mode—this mode ends all user sessions. All software and driver installations are performed in Maintenance mode, including updating system settings.

Maintenance Mode can be accessed by choosing "Switch to Maintenance Mode" from within the MultiPoint Manager.

Normal

Normal mode is the default mode. Users normally log in and perform individual task on each station in Normal mode. Each session runs a separate RDP session. Software updates and driver installations should not be performed in Normal mode.

Remapping Stations

MultiSeat uses an auto-mapping function to associate each attached MultiSeat t100 series client. If the auto-mapping function fails to work, then the user can manually associate their workstation with this function. Auto-mapping does not apply to the host PC station. The remap function could be used to reconfigure the host PC station's association if the configuration has changed (for example, if the host station's mouse and keyboard were moved to a different port or USB hub.)

To perform this action, choose "Remap all stations" from the MultiPoint Manager.

Topology

- Windows MultiPoint Server 2011 now supports PS/2 keyboard/mouse on the host system.
- Windows MultiPoint Server 2011 now supports audio and microphone on the host PC station.

NOTE: For this to function, the host stations must be configured using PS2 keyboard and mouse. It will not function with USB keyboard or mouse.

- All HP MultiSeat t100 series client devices are connected by USB cable directly to the host system.

  The MultiSeat t100 client has ports for PS/2 keyboard/mouse, microphone, speakers/ headphones, and a VGA monitor.

  The MultiSeat T150 client adds 2 USB ports and a power connector, which can be used with an AC adapter or with the HP LE1851wt monitor which is specially-designed with a power cable to power the T150 client. (AC adapter and monitor are sold separately.)

- Windows MultiPoint Server 2011 now supports daisy-chaining of client devices. HP recommends no more than 3 hubs and/or client devices per chain. All hubs or devices in the chain must be AC

powered. Daisy-chaining can simplify cabling and extend the distance between the host and a station without additional USB hubs.

NOTE: The maximum cable length supported by USB 2.0 specification is 5 meters.

Topology Examples

- 6 sessions: 5 HP MultiSeat t100 series clients connected directly to the host station + host
- 8 sessions: 7 MultiSeat t100 series clients connected directly to the host station + host
- 10 sessions: 9 MultiSeat t100 series clients connected directly to the host station + host (configured with PS2 mouse and keyboard)

Private USB

Windows MultiPoint Server 2011 now provides private USB functionality on client stations. For example, a USB flash drive connected to a T150's USB port will be accessible only to the user on that station. A USB flash drive connected to the host PC, however, will be accessible to all users. Refer to the Microsoft TechNet page for details of the behavior with various USB device types.

Qualified USB Hubs

- Belkin 4-port, powered USB 2.0 hub: HP p/n A519110
- Belkin 7-port, powered USB 2.0 hub: HP p/n A519109
- Belkin 7-port, lighted hub: vendor p/n F5U700-BLK
- Belkin Hi-Speed USB 2.0 4-port lighted hub: vendor p/n F5U403TTBLK

2 Best Practices for Installation of Drivers with the Academic Volume License Operating System

Recommended Method (Automatic Driver Installation)

Before installing the Windows MultiPoint Server 2011 Academic Volume License operating system from DVD, go to www.hp.com and search for drivers for your host PC model. Choose the MultiPoint 2011 OS then locate and download the "HP Install Assistant" Softpaq. (Using this method, you will not need to download any other driver Softpaqs.) Extract the Softpaq contents and carefully follow the included PDF instructions. This will create a USB flash drive that when inserted during the DVD install of the OS, will automatically install all of the necessary drivers.

Manual Driver Installation

If manual installation of the drivers is required, heed the following advice:

- Perform all driver and software installations in Maintenance mode.
- Do not connect the client to the host system until all drivers are installed.
- Install the graphics driver BEFORE installing the DisplayLink driver; otherwise, the solution may not operate correctly.
- Install all system drivers (drivers for each HP host PC models are available on the HP.com website). You do not need to download the "HP Install Assistant" Softpaq when installing drivers manually.
- Switch back into Maintenance mode as necessary until all drivers are installed.
- Use the 32-bit version of Internet Explorer® to install browser add-ons (e.g., Adobe® Flash® Player).
- Ensure that the latest Microsoft updates are installed.
- Verify that the BIOS on the HP MultiSeat host PC is the latest version to be found on HP.com.
- Follow the Quick Setup Poster sequence to connect the clients after the drivers are loaded.
- Re-launch into Normal mode when all drivers and software are installed.

NOTE: Some driver Softpaqs are designed not to automatically install the driver when the Softpaq is run. These drivers must be manually installed by pointing the device (using Device Manager) to the location of the driver files (this assumes the associated softpaqs have already been run). For example:

• The PCI Serial Port is the Intel AMT device; point to this folder: c:\swsetup\sp47388.

• The PCI Simple Communications Controller is the HECI device; point to this folder: c:\swsetup\sp47389.

3 Performance Considerations

Consider the following when evaluating performance on a MultiSeat solution:

- Each client session, including the host system, will offer native resolution of the monitor attached to the client/host. The MultiPoint operating system does not attempt to reduce the resolution or color depth of each session.
- Performance will be a factor of the application running in each session and the number of client sessions running per host system.
- Some Flash-enabled websites can be highly CPU-intensive, even for a single-desktop system. Understandably, running several MultiSeat terminals with Flash will cause the CPU to run very high. This in turn can cause performance degradation at the clients including, but not limited to, slow mouse and keyboard response. If this happens, reduce the number of clients until you get an acceptable response.
- The best and simplest path to gain better performance is to ensure the best fit of the MultiSeat host system, Essential or Extended configurations, with the main use of the MultiSeat solution.
- MultiPoint operating system user sessions have the Internet Explorer 8 browser installed. It is strongly recommend that compatibility mode is used to mitigate any compatibility issues with older websites.
- Next, you must ensure the best fit for the number of clients attached to each host system. The best reference for this is the Microsoft TechNet. See External Links on page 7.

4 Licensing and Support

Several support options are available—these must be purchased separately:

- WMS VL Support Link for Professional Customers
- Microsoft Volume Licensing Service Center (VLSC)

5 External Links

- HP MultiSeat Solution
- Microsoft Windows MultiPoint Server Forum
- Microsoft TechNet for Windows MultiPoint Server 2011
- Microsoft Partner Network