Technical white paper

Best Practices for Memory Management

HP Thin Clients

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Introduction

If there is not enough memory available on a thin client, the system might become unstable. This happens if there are too many applications for the available RAM. HP recommends upgrading the RAM size. If that is not possible, the following are best practices to make more RAM available for use.

Before you begin

To follow these procedures, you must first disable HP Write Manager and log on as an administrator. Be sure to re-enable HP Write Manager after you are done making changes.

To disable or enable HP Write Manager, use one of the following methods:

1. Right-click the notification icon and select the desired state.
2. Restart the thin client.

–or–

1. Open the **HP Write Manager Configuration** app.
2. Select an option to set the desired state.
3. Restart the thin client.

Reducing the BIOS video memory size

Desktop thin clients

1. Turn on or restart the computer.
2. When the HP logo appears, press **f10** to enter Computer Setup.
3. Select **Advanced**, and then select **Device Options**.
4. Under **Integrated Graphics**, select **Force**.
5. After this option is selected, **UMA Frame Buffer Size** is displayed. Use the arrow keys to select the optimal size for your setup, based on the number of monitors and configured resolutions.
6. To save your changes and exit Computer Setup, press **f10**, select **Save Changes and Exit**, and then select **Yes**.

Mobile thin clients

1. Turn on or restart the computer.
2. When the HP logo appears, press **f10** to enter Computer Setup.
3. Select **Advanced**, and then select **Built-in Device Options**.
4. Under **Video Memory Size**, use the arrow keys to select the optimal size for your setup, based on the number of monitors and configured resolutions.
5. To save your changes and exit Computer Setup, select **Main**, select **Save Changes and Exit**, and then select **Yes**.

Reducing the RAMDisk size

1. In Control Panel, select **HP RAM Disk Manager**.
2. Select **160 MB**.

By default, the size is 224 MB.

Reducing the HP Write Manager overlay size

1. In Control Panel, select **HP Write Manager**.
2. In the **Overlay size** text box, type **512** MB.
3. Select **OK**.
4. Restart the computer.

Additional methods

If you have reduced the size of the BIOS video memory, the RAMDisk, and the HP Write Manager overlay, and still need more available memory, use the following procedures.

Changing the TEMP and TMP environment variables

When you make more RAM available, you can move the tempory usage, event logs, and such to the c:\hpwmtemp folder. When these files are moved, HP RAMDisk is not used anymore and can be disabled. In addition, HP Write Manager can purge its own overlay, and you can move the purged files to the c:\hpwmtemp folder.

Users

To change the TEMP and TMP environment variables to point to C:\temp for all users:

1. Select **Start**, type `regedit`, and then select **regedit** to open Registry Editor.
2. Navigate to the `HKCU\Environment` file.
3. Change the `TEMP` string value to `C:\temp`.
4. Change `TMP` string value to `C:\temp`.
5. Mount each user's registry hive.
   A. Select **HKEY_USERS**.
   B. Select **File**, and then select **Load Hive**.
   C. In the **Filename** box, type `c:\users\user\ntuser.dat`.
   D. In the **Key Name** box, type `userkey`.
   E. Repeat steps A through D for each user.
6. Navigate to the `HKEY_USERS\userkey\environment` file.
7. Change the `TEMP` string value to `C:\temp`.
8. Change `TMP` string value to `C:\temp`.
9. Select **HKEY_USERS\userkey**.
10. Select **File**, and then select **Unload Hive**.

System

To change the 'TEMP' environment variable to point to C:\temp for the system:

1. Select **Start**, type `regedit`, and then select **regedit** to open Registry Editor.
2. Navigate to the `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Environment` file.
3. Change the `TEMP` string value to `C:\temp`.
4. Change `TMP` string value to `C:\temp`.
5. Create a new HP Write Manager rule to clean up the system. Type the following line:
   `c:\temp\*.* c:\temp\*\*.* c:\temp\*\*\*.* c:\temp\*\*\*\*.* c:\temp\*\*\*\*\*.*`
6. Restart the thin client.

Disabling HP RAM Disk Manager

1. In Control Panel, select **HP RAM Disk Manager**.
2. Select **16 MB**, the smallest size possible.
3. From the desktop, select **Start**, type `regedit`, and then select **regedit** to open Registry Editor.
4. Navigate to `HKLM\System\CurrentControlSet\Services\Ramdrive`.
5. Change the `Start DWORD` value to 4.

> **Note**
> 4 means that HP RAM Disk Manager is disabled.

Reducing the HP Write Manager overlay size

Reduce to 512 Mb

For more information

For more information, go to http://www.hp.com/support.

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