



VisionVPM Technology Overview And Installation Recommendations

16/03/2010

These technology and implementation recommendation should be discussed with your IT consultant. Your IT consultant is also advised to consult the Provet IT service desk prior to implementation and discuss your current and future needs including your current and future IT architecture to ensure the right technology and product fit.

Installation Recommendations

VisionVPM LAN/WAN Installation Recommendations

1. Architectural Overview

VisionVPM has been developed as a Client Server application for standard Local Area Network (LAN) environment. In a standard LAN environment with client server model, virtually all application data processing takes place on the client, while the server acts as a simple file storage location and data repository.

VisionVPM is also deployed over Wide Area Networks (WAN) using thin client technology such as Microsoft Terminal Server, Citrix or third party thin client technology such as that provided by [ThinSoft](http://www.thinsoftinc.com) (<http://www.thinsoftinc.com>) or [Elusiva](http://www.elusiva.com) (<http://www.elusiva.com>). A word of caution though, Provet has only tested the operation of VisionVPM on Windows Terminal Server and WinConnect, any other third party Terminal Server products should only be installed on a TRIAL BASIS only, with progression to proper implementation only after thorough operational and performance tests.

2. Database Configuration

Database connectivity is achieved using Microsoft SQL ODBC drivers. ODBC connections are recommended for fast to medium speed and low latency Ethernet (LAN) environments. It is not advisable to use ODBC connections with client server architecture over low speed, high and variable latency networks such as ADSL or BDSL networks.

3. Operating System Support

Client Platforms

Fully tested and supported client platforms include:

- Windows 2000 SP4
- Windows XP (Professional edition)
- Windows Vista (Business or Ultimate)
- Windows 7 Professional or Ultimate

Server Platforms

Fully tested and supported server platforms include:

- Windows 2000 Server and Terminal Server with SP4
- Windows 2003 Server standard edition.
- Windows Server 2008 R2 Standard edition or Foundation.
- Windows 2003 SBS (note does not have Terminal Server functionality)
- Windows Server 2008 Standard or Enterprise Edition
- Windows Server 2008 foundation for up to 15 users only. Read limitation of this edition [here](#).

Note : *always consult your IT professional to determine the Operating system that is suited to your business requirements.*

Protocols

Fully tested and supported network protocols include:

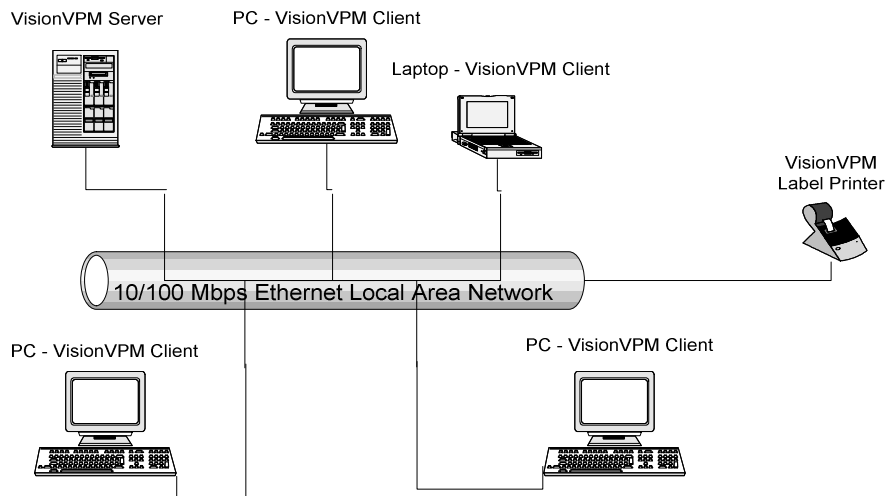
- TCP/IP (LAN or WAN environment)
- NetBIOS (only for LAN environments)

4. Printing

Provet recommends using Dymo label printers for printing labels from Vision. It is recommended that these label printers be installed directly on the network via Dymo recommended print servers for reliability and trouble free printing. Alternatively these Dymo label printers can be installed on a PC (ie. a print server) and shared. More information about what print servers to use with Dymo label printers can be found [here](http://global.dymo.com/enAU/HowTo/LabelWriter_400_Turbo.html) (http://global.dymo.com/enAU/HowTo/LabelWriter_400_Turbo.html).

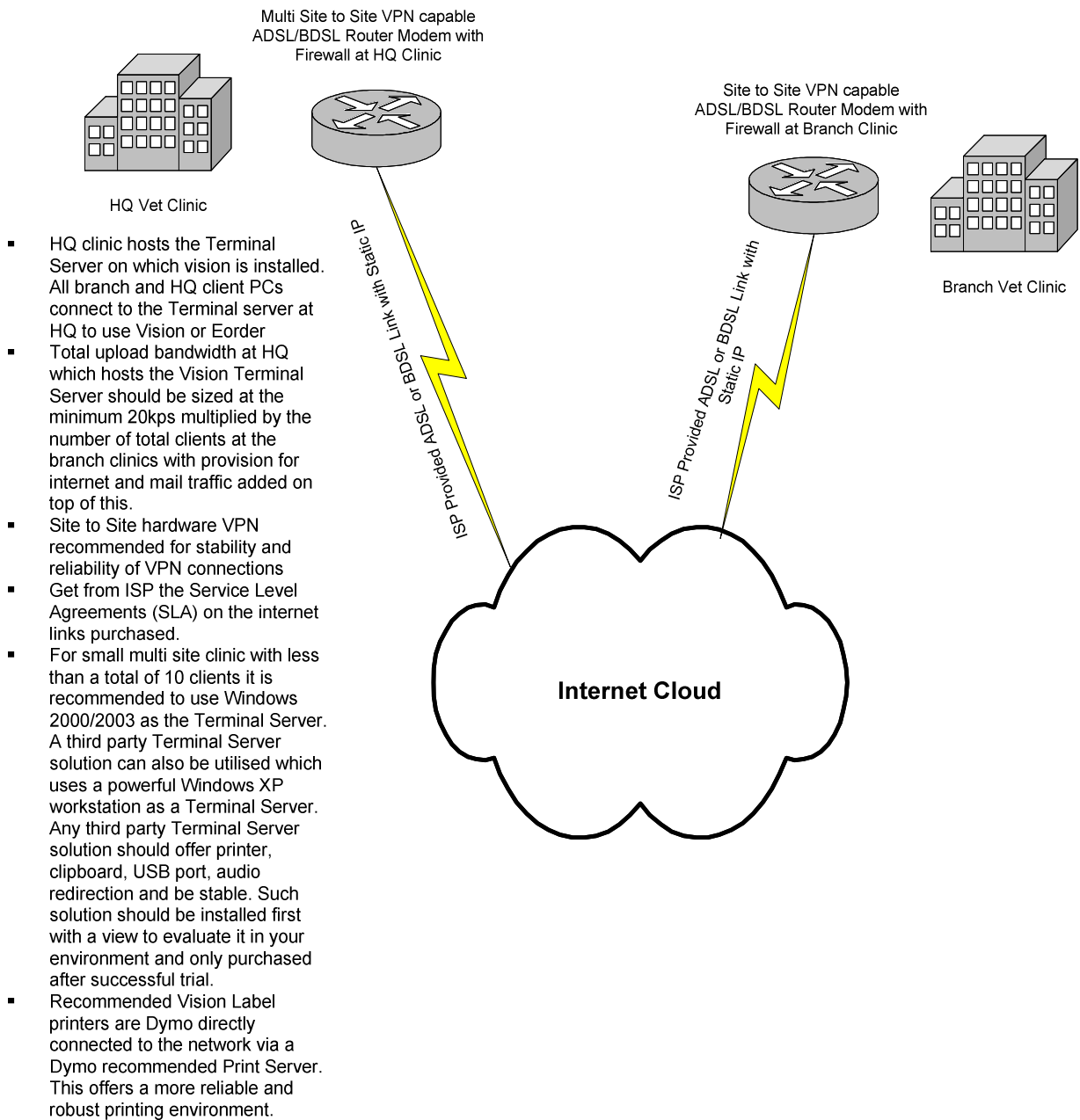
5. VisionVPM Installation Scenarios

Scenario 1 Recommended Vision Setup for a Single Clinic Client Server Solution

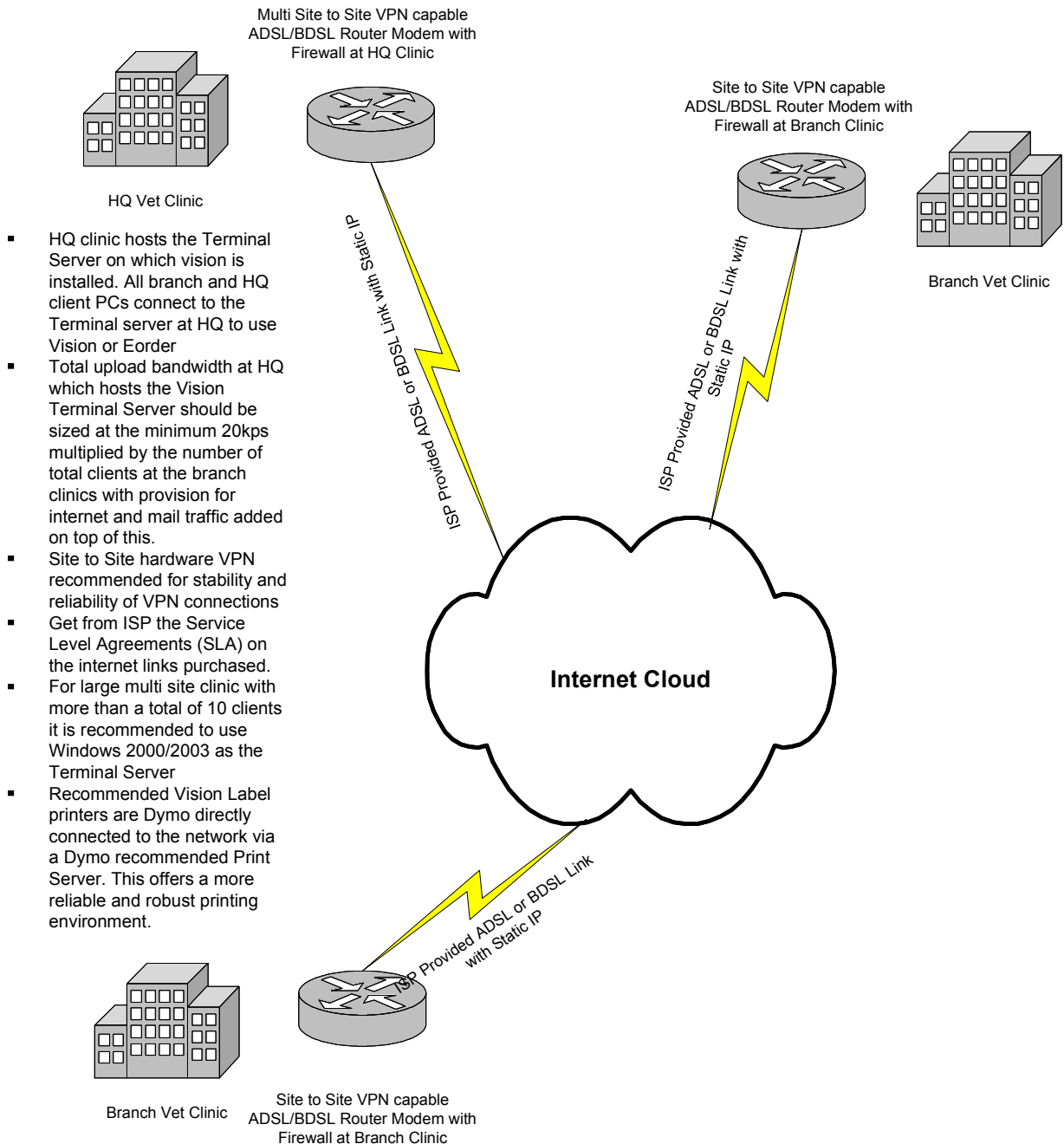


- VisionVPM installed on the Server with Vision SQL database residing on the server. VisionVPM client can also be installed on the server
- Vision client applications installed on the client PCs connecting to the VisionVPM database on the server using SQL ODBC connection.
- Label printer installed on network (preferred). Else the label printer can be installed on a PC and shared on the network.

Scenario 2
Recommended Vision Setup for Small Multi Site Clinics
Terminal Server Solution



Scenario 3
Recommended Vision Setup for Large Multi Site Clinics
Terminal Server Solution



- HQ clinic hosts the Terminal Server on which vision is installed. All branch and HQ client PCs connect to the Terminal server at HQ to use Vision or Eorder
- Total upload bandwidth at HQ which hosts the Vision Terminal Server should be sized at the minimum 20kps multiplied by the number of total clients at the branch clinics with provision for internet and mail traffic added on top of this.
- Site to Site hardware VPN recommended for stability and reliability of VPN connections
- Get from ISP the Service Level Agreements (SLA) on the internet links purchased.
- For large multi site clinic with more than a total of 10 clients it is recommended to use Windows 2000/2003 as the Terminal Server
- Recommended Vision Label printers are Dymo directly connected to the network via a Dymo recommended Print Server. This offers a more reliable and robust printing environment.

6. Recommended Configuration for Client Server Install

This is Provet's hardware, software and configuration recommendation for a better end user experience with the VisionVPM application. Please note that this is a recommendation. VisionVPM application will run on lower end hardware configuration but at the cost of compromising performance values. Your IT service and support provider should be able to assist you with the requirements and configuration in this document. Provet IT may be able to provide the service (chargeable) recommended in this document but this will need to be directed via your appropriate Provet Account Managers.

Disclaimer : The assumption is that no other application is running on the server, the following are general performance enhancements only, and the user should consult their IT provider before making any change so that impact on other applications or the specific configuration can be assessed. Provet IT Pty Ltd does not accept any responsibility for any hardware, software or any other issues arising from the application of these recommendations

A. Recommended Hardware for Server

- I. Intel dual core 2.0 GHz Processor with 2.0 GB of RAM.
- II. SAS or SATA hard drive configured in RAID 1 or 1+0 for speed and recovery
- III. Video – standard on board video card with minimum of 128 MB Video memory
- IV. USB 2.0 – for offline data backup
- V. DVD ROM

B. Recommended Hard drive Partitioning Strategy for Server

- I. C (Operating System Drive) :30GB RAID 1 or RAID 1+0 : use hardware RAID if possible.
- II. Data Drive (Partition) : RAID 1 or RAID 1+0
- III. For larger enterprises (30 or more concurrent users) it is recommended for performance reasons to have the following configuration.

Four Hard drives :

- a. 2 hard drive in RAID 1 with 30GB C drive partition and the rest for backups or programs
- b. Another 2 in a separate RAID 1 : for SQL Databases and logs

C. Recommended Operating System for Server

- I. Windows 2003 with most recent service pack.
- II. Windows 2000 with SP4.
- III. Windows Small Business server with most recent service pack. Please note, small business server does not come with a Terminal Server component.
- IV. Windows XP Professional edition with service pack 2, Windows Vista Business or Ultimate with service pack 1 or Windows 7 Professional or Ultimate. Please note that XP and Vista are Workstation Operating System

and the total number of concurrent connections to a Workstation Operating systems is limited to 10.

V. Microsoft .NET Framework V2.0.

D. Recommended Hardware/OS for Client

- I. Any Pentium CPU greater than 1.2GHz speed and 512MB of RAM with XP professional, or 256 MB of RAM with windows 2000 service pack 4.
- II. Intel 2.0 GHz CPU or greater and 1 GB of RAM with Vista Business or Ultimate.
- III. Intel 2.0 GHz CPU or greater and 1 GB of RAM with Windows 7 Professional or Ultimate
- IV. Greater than 2 GB of free space.
- V. Microsoft .NET Framework V2.0.

E. Antivirus

- I. As recommended by your IT supplier.
- II. The antivirus **should not** be scheduled to perform full scan of data drive during business hours.
- III. The antivirus should **exclude** the VisionVPM installation folders on the server from “on access” scanning including the SQL database.

F. Server Fine Tuning

- I. The server should be set for optimum performance (see Figure 1 below).

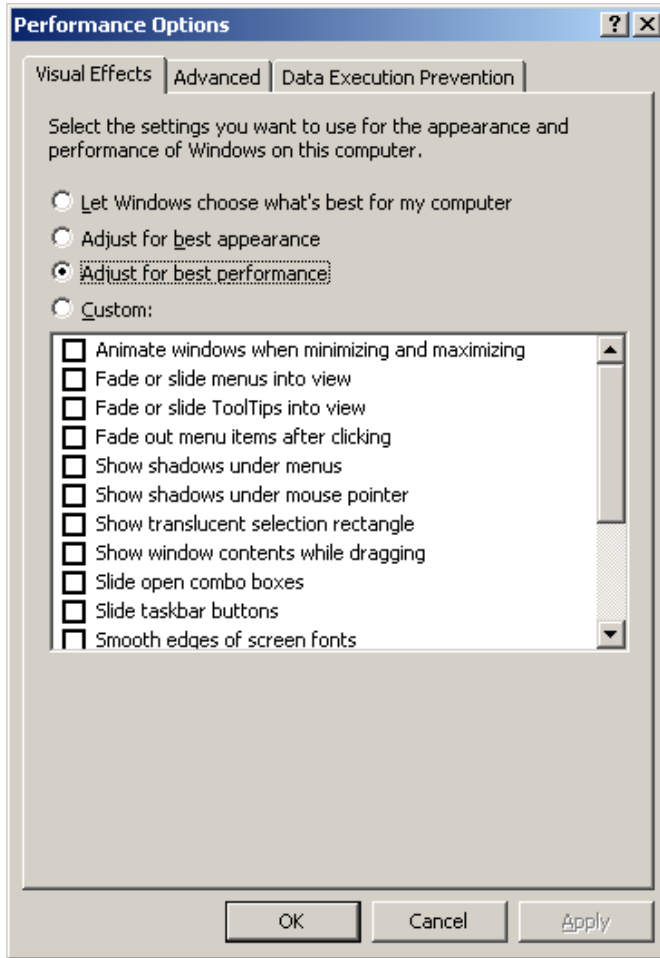


Figure 1: Adjust for Best Performance

- II. Server Page file should be set for optimum performance. See Figure 2 below. Page file should be set to 2.5 times the size of installed RAM and the initial and final size should be same. Only install page file on individual physical hard drives and not on individual partitions as this will degrade the performance instead of improving it.

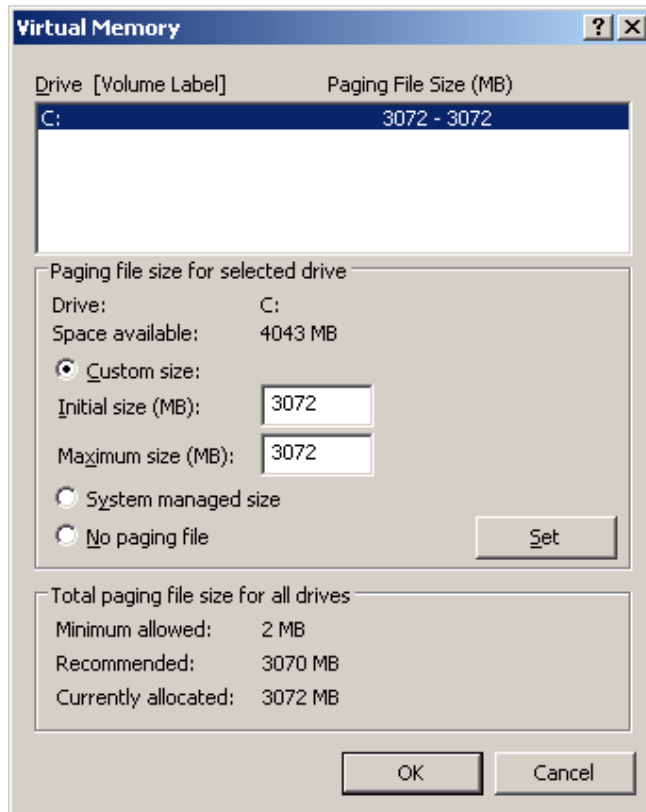


Figure 2: Page File

- III. Server Page file should be defragmented at least once a quarter out of business hours. This can be scheduled using a Microsoft utility available freely on this [website](#). Your IT service provider can set this up for you.
- IV. Processor Scheduling and Memory Usage for server Operating Systems should be set as illustrated in Figure 3 below. If you have a Windows XP (Professional) or Vista (Business or Ultimate) Operating System acting as your server than please refer to [this](#) Microsoft article before applying these settings.

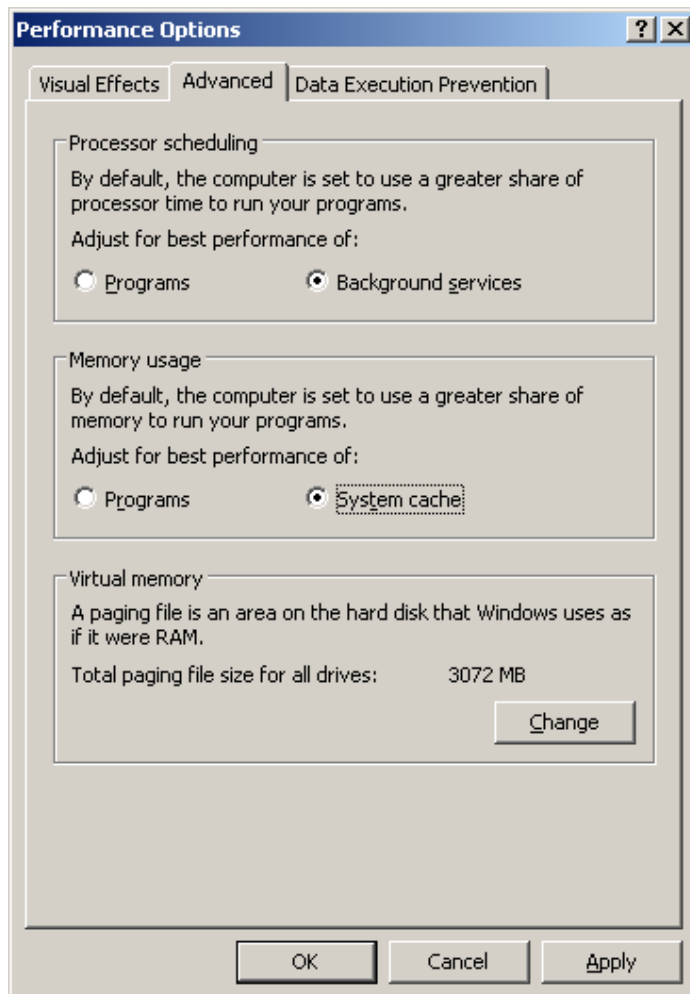


Figure 3: Processor Scheduling and Memory Usage

G. Printers

- I. Install network supported printers if possible. Any Parallel port printer can be converted to a network printer by using an external print server. Use a reliable external print server.
- II. Alternatively the printer installed on a workstation needs to be shared out and installed as a network printer on all workstations and the server if required.

H. Backup

- A. Ensure that your critical data including VisionVPM database is backed up on a daily basis and transferred **offline** on to a USB key, external USB Drive or DVD RAM.

I. Remote Support to Server or Workstations

I. Provet provides remote support where needed. This involves connecting remotely to your server or workstations. The remote sessions can only be initiated by the client (that is you) and therefore are secure. For this remote access you need to ensure that windows firewall and your antivirus do not block the executables on the following website:

II. <http://sup.provet.com.au/HelpBeamSupport/>

III. Enabling this will ensure that Provet is able to provide premium quality IT service, in other words a faster turnaround and resolution.

J. SQL Server 2005 Express:

I. If your VisionVPM installation package is packaged with SQL server 2005 Express, then the server Operating System prerequisites for installing SQL server 2005 Express are:

- All editions of Microsoft Windows 2000 with Service Pack 4 (see Note 9. below)
- Microsoft Windows XP professional with Service Pack 2
- Microsoft Windows Vista Business or Ultimate with Service Pack 2
- All editions of Microsoft Windows Server 2003 Service Pack 1
- All editions of Microsoft Windows Small Business Server 2003 Service Pack 1
- Windows 2008 with SP1
- Microsoft .NET Framework V2.0.

Further reading on SQL Server 2005 Express requirements can be done [here](#).

Please Note: Minimum SQL 2005 service pack required for successful install on windows server 2008 is sp2 and on Windows 7 is sp3.

K. MDAC ODBC Drivers (only if using Windows 2000 with Service Pack 4)

I. If you are installing VisionVPM (client or server) on Windows 2000 service pack 4, then upgrade the MDAC drivers to the latest as the minimum version required is 2.6 SP2. Windows XP and Windows 2003 are pre-packaged with MDAC version 2.7 and 2.8 respectively. The latest MDAC drivers can be downloaded from [here](#).

7. Recommended Configuration for VisionVPM Terminal Server Install

This is Provet's hardware, software and configuration requirement for a better end user experience of the VisionVPM application. Please note that this is a recommendation. VisionVPM application will run on lower end hardware configuration but at the cost of compromising performance values. Your IT service and support provider would be able to assist you with the requirements and configuration in this document. Provet IT may be able to provide the service (chargeable) recommended in this document but this will need to be directed via your appropriate Provet Account Managers.

Please Note: there are cheaper alternatives to Microsoft Terminal Server on the market now and this may or may not serve your needs. You are encouraged to discuss these technologies to ensure that the platform you acquire will support Provet's VisionVPM application.

Disclaimer : the assumption is that no other application is running on TS, the following are general performance enhancements only, and the user should consult their IT provider before making any change so that impact on other applications or the specific configuration can be assessed. Provet IT Pty Ltd does not accept any responsibility for any hardware, software or any other issues arising from the application of these recommendations.

A. Recommended Hardware

- I. Intel dual core 2.0 GHz Processor or with 2.5 GB of RAM for up to 20 concurrent users. If you will also run office productivity applications such as Microsoft Office on the Terminal Server in conjunction with VisionVPM then it is recommended to have 4GB of RAM. To support more concurrent users and applications please contact your IT service provider to adequately size your Terminal Server hardware.
- II. SAS or SATA hard drive configured in RAID 1 or 1+0 for speed and recovery
- III. Video – standard on board video card with minimum of 128 MB Video memory
- IV. USB 2.0 – for offline data backup
- V. DVD ROM

B. Client Bandwidth

- I. Ensure that each client connection to the Terminal server has at least 20kb of bandwidth available when using it via a wide area network.

C. Recommended Hard drive Partitioning Strategy

- I. C (Operating System Drive) :30GB RAID 1 or RAID 1+0 : use hardware RAID if possible.
- II. Data Drive (Partition) : RAID 1 or RAID 1+0
- III. For larger enterprises (30 or more concurrent uses) it is recommended for performance reasons to have the following configuration.

Four Hard drives :

- a. **2** hard drive in RAID 1 with 30GB C drive partition and the rest for backups or programs
- b. Another 2 in a separate RAID 1 : for SQL Databases and logs

D. Recommended Operating System

- I. Windows 2003 standard edition with most recent service pack.
- II. Windows 2000 with SP4
- III. Windows Server 2008 standard edition with recent service pack

E. Antivirus

- I. As recommended by your IT supplier.
- II. The antivirus **should not** be scheduled to perform full scan of data drive during business hours.
- III. The antivirus should **exclude** the VisionVPM installation folders on the server from “on access” scanning including the SQL database.
- IV. The antivirus should only perform an on **write** scanning on the VisionVPM folders on the users H drive.

F. Server Fine Tuning

- I. The server should be set for optimum performance (see Figure 2 below).

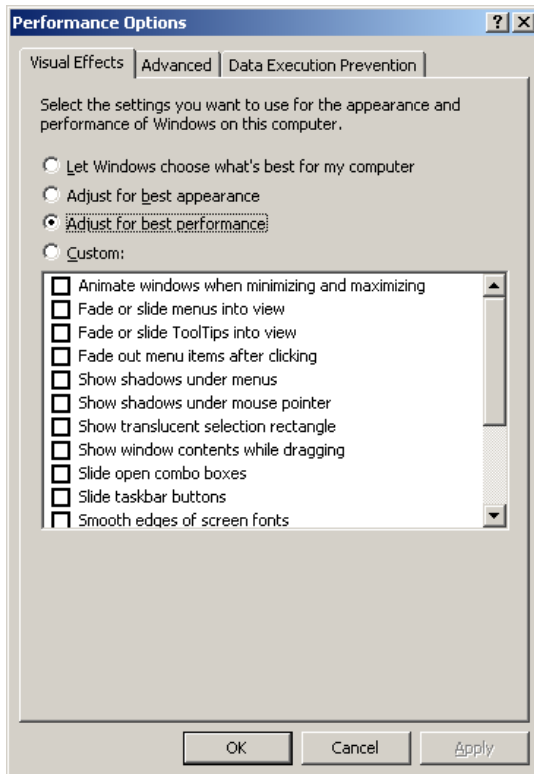


Figure 1: Adjust for Best Performance

- II. Server Page file should be set for optimum performance. See Figure 2 below. Page file should be set to 2.5 times the size of installed RAM and the initial and final size should be same. Only install page file on individual physical hard drives and not on individual partitions as this will degrade the performance instead of improving it.

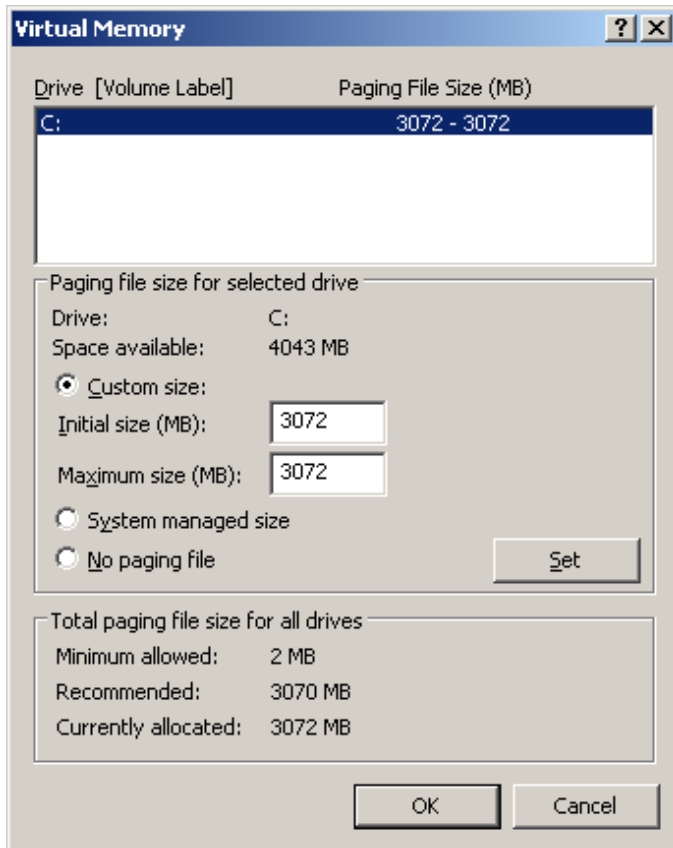


Figure 2: Page File

- III. Server Page file should be defragmented at least once a quarter out of business hours. This can be scheduled using a Microsoft utility available freely on this [website](#). Your IT service provider can set this up for you.
- IV. Processor Scheduling and Memory Usage should be set as illustrated in Figure 3 below.

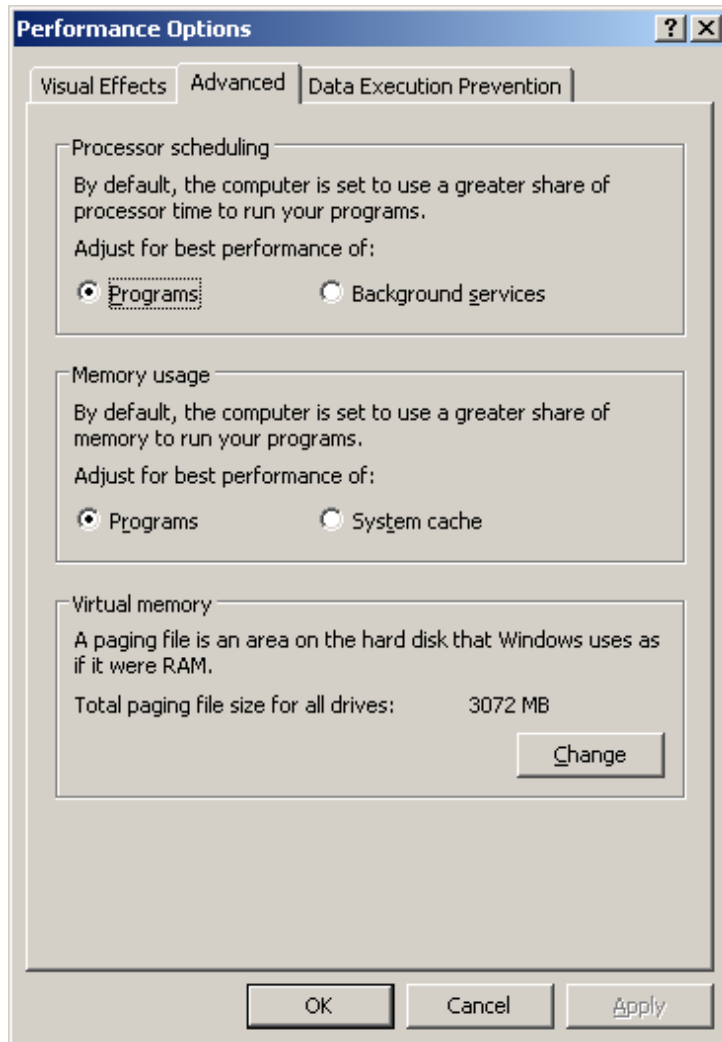


Figure 3: Processor Scheduling and Memory Usage

V. Terminal Services Configuration Settings. For performance reasons it is advisable to reduce the colour depth to 15bit and disable what you do not need. See Figure 4 below. Consult your IT support provider for these configuration settings.

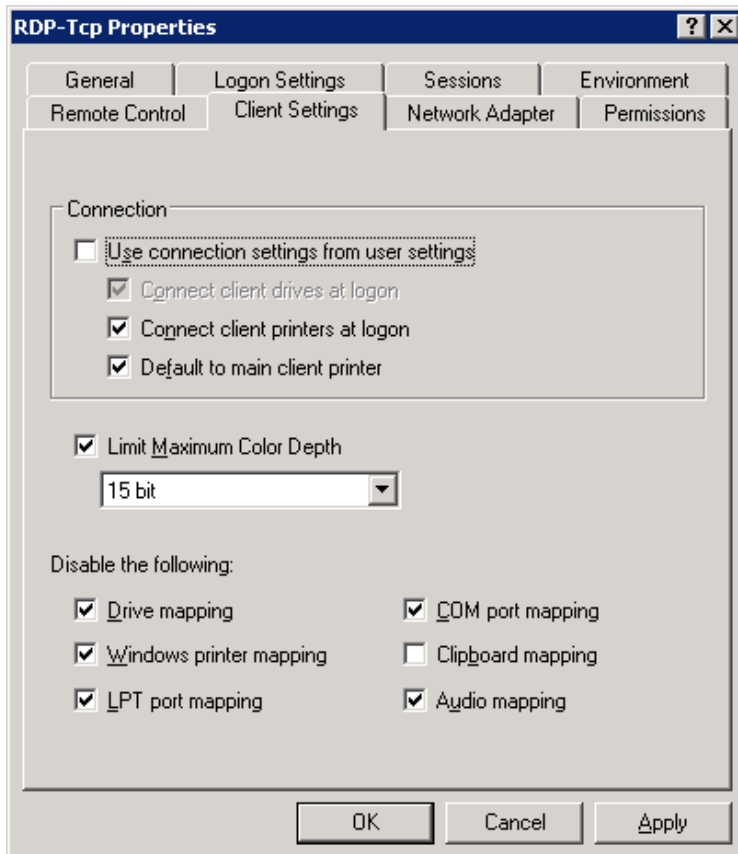


Figure 4: Terminal Services Configuration

VI. Terminal Server Session Settings. Configure your Terminal Servers client sessions so that there are not too many disconnected sessions which take up memory and degrade performance. Again this will depend on your environment and needs so please consult your IT support provider. Disable what you don't need. See Figure 5.

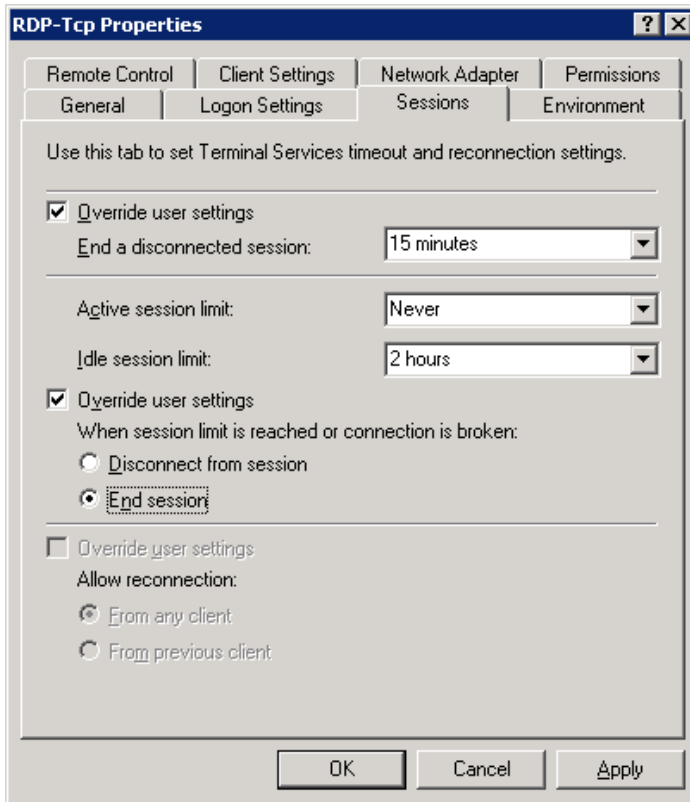


Figure 5: Client Session Settings

VII. Server Settings. Disable active desktop. See settings Figure 6 below.

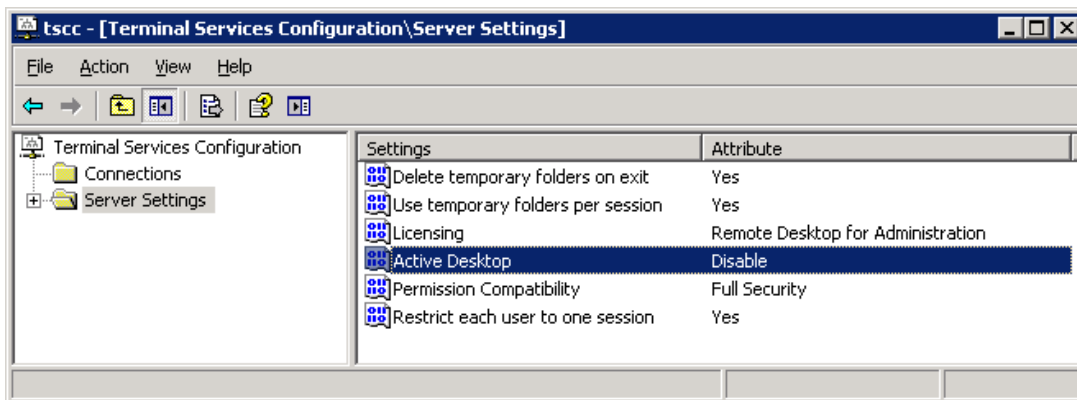


Figure 6: Server Settings

G. Printers

1. Recommendation is to install network supported printers when using Terminal Servers. Any Parallel port printer can be converted to a network printer by using an external print server. Use a reliable external print server recommended by the manufacturer for the particular printer. These network printers should be installed on the Terminal Server locally so that they are available to all connected users.
2. Alternatively the printer installed on a workstation needs to be shared out and installed as a network printer on the Terminal server.

H. Backup

1. Ensure that your critical data including VisionVPM database is backed up on a daily basis and transferred **offline** on to a USB key, external USB Drive or DVD RAM.

NOTE

The backup of the SQL database needs to be done using SQL backup command. A file level file will not ensure complete data recovery.

I. Remote Support to Server or Workstations

1. Provet provides remote support where needed. This involves connecting remotely into your server or workstations. The remote sessions can only be initiated by the client (that is you) and therefore are secure. For this remote access you need to ensure that windows firewall and your antivirus does not block the executables on the following website:

<http://sup.provet.com.au/HelpBeamSupport/>

Enabling this will ensure that Provet is able to provide premium quality IT service, in other words a faster turnaround and resolution.

VisionVPM IT Implementation Checklist

Check	Requirement	Resources	Points	
<input type="checkbox"/>	Mandatory	Do you have the recommended server hardware and Operating System for your scenario?	10	10
<input type="checkbox"/>	Mandatory	Do you have the recommended client hardware and Operating System for your scenario?	10	10
<input type="checkbox"/>	Mandatory	Is the server on a UPS?	10	10
<input type="checkbox"/>	Mandatory	Do you have 10/100 MB 0r better local area network within your branch(s)?	10	10
<input type="checkbox"/>	Mandatory	For multiple clinics – do you have a hardware VPN configured?		10
<input type="checkbox"/>	Optional	Do you have your ISP's Service Level for your Internet connection?	5	5
<input type="checkbox"/>	Mandatory	For Terminal Server and multiple clinic setup - do you have the recommended bandwidth available for remote desktop connection from all the clinics to the server.		10
<input type="checkbox"/>	Mandatory	If you are using the Terminal Server to deploy VisionVPM to clients to multiple clinics– do you have the 2000 SP4 or Windows 2003 or Windows Server 2008?		10
<input type="checkbox"/>	Mandatory	If you are using the Terminal Server to deploy VisionVPM to clients within a single clinic– do you have the 2000 SP4 or Windows 2003, or Windows server 2008. Alternatively Windows XP Professional or Vista Business or Ultimate with WinConnect?	10	
<input type="checkbox"/>	Mandatory	If using third party Terminal Server – have you tested it fully in a test environment for stability, performance, feature requirements and functionality?	10	10
<input type="checkbox"/>	Optional	Do you have the recommended Label printer?	5	5
<input type="checkbox"/>	Optional	If the Dymo USB printer is installed on a PC and shared out – is it on a reliable PC and will it be turned on always	5	5
<input type="checkbox"/>	Optional	For larger clinics do you have the printer connected via a Dymo recommended USB print server?	5	5
<input type="checkbox"/>	Mandatory	Do you have a removable USB had drive for a daily offsite backup? USB flash drive would suffice for small databases.	10	10
<input type="checkbox"/>	Mandatory	Do you have an onsite daily backup regimen?	10	10
Minimum mandatory points required to proceed with a recommended single clinic setup is			70	
Minimum mandatory points required to proceed with a recommended multisite clinic setup is				90



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