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1 - Microsoft Terminal Services Overview

Terminal Services delivers Windows-based applications to virtually any computing device—including those that cannot run Windows. When a user runs an application on a Terminal Server, the application execution takes place on the server, and only keyboard, mouse and display information is transmitted over the network. Each user sees only his or her individual session, which is managed transparently by the server operating system, and is independent of any other client session.

2 - Installing the Terminal Services – PHM Suite

The Terminal Services – PHM Suite installation updates your version of Microsoft Remote Desktop Connection to the latest supported version for the HBSASB Terminal Services environment and installs the standard Terminal Services – PHM Suite.RDP shortcut onto your Desktop used to connect to the Terminal Services environment.

The installation does require local administrative privileges on the workstation. For internal MTO clients, this installation can be requested to be installed onto your workstation by your local IT Desktop Services by contacting the OPS Service Desk - 1-888-OPS-ITSD - or via email - opssd@ontario.ca.
The installation can be downloaded from the MTO Public Downloads Site – http://www.xfer.mto.gov.on.ca – and selecting HBSASB Applications. For internal Deskside services, it is available on your Regional S Drive Software repository.

3 - Starting the Terminal Services Session

You can use the provided shortcut to access the Terminal Services environment. Your computer must be connected to the network before connecting to terminal services. Double click the icon to connect to the Terminal Services environment.

** External clients/consultants and internal MTO clients who are not directly connected into the MTOAD network (Remote users), must first connect to the MTOAD domain network via VPN – Virtual Private Network Remote Access Client first.

You may receive the following security warning. This message indicates that your local drives will be available for saving or retrieving documents in your terminal services session. Check the “Don’t prompt me again for connections to this remote computer” checkbox and then click “OK” to continue.
- If you do not allow this option, you will not be able to save files from your Terminal Services session to your local hard drive.

The following message will be displayed. Click “OK” to continue.
At the log on screen, enter your MTOAD Network Username and Password. Make sure the “Log on to:” field is set to “MTOAD”. Click “OK” to login to the terminal services session.

Once you have connected to Terminal Services you will see a desktop. At this point you can run your applications that you have access to the same as running them on your own local workstation via the Start Menu.
4 - Creating your own custom desktop shortcuts

Once you are on your Terminal Services desktop and see the list of programs from your start menu, choose the program that you want to create an icon for on your desktop and right click on the icon and choose the create shortcut option – this will create a shortcut for that particular app on your desktop.

- You may receive a question message appear stating Windows cannot create a shortcut here. Click Yes to place the shortcut on the desktop.
5 - Managing Remote Sessions

After you have initiated a terminal session, you will notice the Connection Bar at the top of the screen. This bar indicates that the current window is a Terminal Services session and not a local desktop. This bar also enables you to move easily between the remote Terminal Services session and your local desktop.

By clicking the Minimize ‘-‘ button on the connection bar you can minimize the Terminal Session and move to your local desktop. To move back to the Terminal Session, from your local desktop click on the Terminal Session icon on your Taskbar.
6 - Logging Out

Please do not log out of Terminal Services using the Disconnect 'X' button on the Connection bar. This does not actually log you out of Terminal Services. This function disconnects your network connection between your computer and the server and your session will still remain open on the server.

- This method of disconnection does not close down your session and applications/processes that are running. This could cause your session to not close down properly, thus not saving your work and last session state and possibly also corrupting your Terminal Services profile. This also uses up valuable system resources for others that may be also working on the server.
- The disconnect function is enabled in the Terminal Services environment in case your network connection becomes broken (power outage, accidental severed connection). In this scenario, your session remains active when you log back into Terminal Services you can continue working from where you last left off.

When logging out, you click on the Log Off option from the Start Menu from within the Terminal Services session. Then click the Log Off button.

- You can also log out by clicking the shutdown button on the start menu. This will again give you the option to log off.
7 – Terminal Services ‘My Documents’ Folder

Accessing the My Documents folder from within the Terminal Services session accesses only the My Documents folder on the Terminal Server and not your own local My Documents folder on your workstation.

When saving/modifying documents in this folder, remember when you wish to transfer it to your local workstation, use the method below ‘8 - Saving Files’.

8 - Saving Files to your Local Workstation

When saving documents in your terminal services session, you will notice drives are listed differently. You may save to any locations listed as ‘(Drive Letter) on (ComputerName)’. These items indicate an available drive located on your pc.

ex. ‘C on (ComputerName)’ represents your local C:\ drive.

Note: if you do not allow your local Disk Drives to be made available through your Remote Desktop Connection (see section 3 - Starting the Terminal Services Session), you will not be able to access any of your local drives from Terminal Services.
9 - Your Terminal Services Profile

When you successfully log out of Terminal Services, your session state - Profile - is captured and saved to a central server location. This allows anything profile specific (settings, application preferences, My Documents, Desktop shortcuts, etc.) to be saved so that the next time you log in to Terminal Services, that all your settings and files in your session remain the same as when you were last on the server.

Your profile from your last session is retrieved when you log onto a Terminal Server and used for your session. Any changes/updates to your profile during your session are then saved back when you properly log out (see section 6 – Logging Out).

Profile Limits: All the contents of your profile – this includes your ‘My Documents’ folder in your session – are stored centrally. The maximum size of a Terminal Services profile is 30MB. You should receive a warning when you are approaching this limit.

** Your profile’s My Documents should only be used as a temporary location for any files that are created within your profile during your session, and should be saved down to your local workstation or network location as the permanent solution.

Login and logout times are affected by the actual size of your profile that has to be retrieved or saved during login and logout.

10 - Copy and Pasting

You have the ability to copy the contents from your Terminal session and paste it in an app on your local desktop and vice versa using your current methods.
11 - Printing

After logging onto Terminal Services, the same printers you have installed/mapped on your local workstation is duplicated in your Terminal Services session. The printer with the checkmark is your current Default Printer.

- To view your current printers within Terminal Services go to Start-Printers and Faxes.
- To set your default printer manually, right click on the printer and select ‘Set as Default Printer’

In order to print within Terminal Services you *must* have the same printer mappings showing within your session to be able to print to the same printers that you have locally. Terminal Services does not have the ability to send the raw print job data down to your local workstation to be rendered on the local workstation. It must render the print job on the server and send the rendered print job back to the local workstation to send the print job to the printer (either local or network) (refer to diagram below).
**Printing via Terminal Services**

In order for Terminal Services to render the print job correctly, the same printer drivers must be installed on the servers. If the printer drivers are not installed on the server or do not match the model of the printer that is on your local workstation, your printer will not appear and you will not be able to map the printer.

This is the technology that is built within Microsoft Windows Terminal Server and is enforced by Microsoft security policies.

If your printer does not show or you cannot map to it, and you suspect that your printer drivers are not installed on the servers, please contact the OPS Service Desk to have your incident routed (see Support).

**Printer Redirection:**

Upon successful login to Terminal Services, the active session connection scans the printers that you have mapped locally on your workstation and makes an attempt to automatically map the same printers one by one within your session and assigning the default printer. Thus, when you print from within Terminal Services, the print job is rendered on the server using the same drivers as your

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designated default printer, and is then sent back down to your local workstation’s connection to the printer. This is a Terminal Services function called Printer Redirection (see diagram above).

**Manually mapping network printers within your Terminal Services session:**

There are two big advantages with manually mapping your network printers within your own Terminal Services session…
- Print jobs are sent directly to the network print server from the Terminal Server (see above diagram). This provides better speed and reliability for your printout to be delivered to the printer.
- Any manually mapped printers that you create in your session are saved back to your own Terminal Services Profile when you log out. This means that next time you log back in to Terminal Services, your manually mapped printer is set up right away in your session to provide much better reliability for printing and does not rely on Printer Redirection.

** In general, manually mapped printers are more reliable than those created through Printer Redirection.
** This method only applies to printers that are on the MTO network

**Steps to Manually Map a Network Printer:**

Find out your network printer’s correct name in order to locate it on the network. To get the network name of the printer, there should be a sticker (Asset Tag) located visibly on the printer itself. The name should follow a standard of 4 alphabetic (location) and a 3 digit number – ex. STPQ420, WRPQ022, etc.
Go to ‘Start-Printers and Faxes’ to bring up the Printers and Faxes window

Double click on ‘Add Printer’ to launch the Add Printer Wizard.

Click Next.
The option ‘A network printer, or a printer attached to another computer’ should already be selected. Click Next.

Select the ‘Connect to this printer…’.
Type in your Region’s print server name with a double backslash before it and a backslash after it (ex. \mtopscatshps001\), followed by the printer’s network name (ex. stpq710). The printer should be revealed in the drop down box for you to select for the full path and name.

Here is the list of all the Regional Print Servers:
- St. Catharines - MTOPSCATSHPS001
- Downsview - MTOPDOWNSHPS001
- Eastern - MTOPKINGSHPS001
- Northeastern – MTOPNOBASHPS001
- Northwestern – MTOPTHBASHPS001
- Southwestern – MTOPLONDSHPS001

Click Next.

Select if you wish to have the added printer as the Default printer or not. Click Next.

Click Finish.

Your printer should be added to the list of printers within your session.
You can distinguish now the printers that are mapped through Printer Redirection and the ones that are manually mapped in your session by the printer icon…

<table>
<thead>
<tr>
<th>Manually mapped printer</th>
<th>Printer Redirection</th>
</tr>
</thead>
<tbody>
<tr>
<td>STPQ710 - HP LaserJet 42...</td>
<td>STPQ714 - HP Colour Laser...</td>
</tr>
</tbody>
</table>

Now you should have the ability to select the printer you wish to print out to.

** Do not forget to log off properly in order to save your profile settings to the server (section 6 – Logging Out). Printer settings/mappings are also saved to your profile.

**Local Printers:**

Local printers that are attached directly to your workstation can only be accessed from within Terminal Services through the use of Printer Redirection (see above diagram ‘Printing via Terminal Services’).
Known Issues regarding Terminal Services Printing and Recommended Tips:

- **Map your network printers:** Printer Redirection is not always reliable. There have been reported instances where client mapped printers disappear or do not appear at all within their session. Attempting to rectify by repeatedly logging off and back on does not reliably bring the printers back. This is the reason why manually mapping the printers within your session is recommended. Your mapped printer is hard set within your profile so that you do not have to rely on Printer Redirection. Printer Redirection has to remain a function in Terminal Services in order to support Local Printers.

- **Check your printers:** Sometimes before you are going to print a large report or document, it may be a good practise to verify that your printer is available in your session. Go to Start-Printers and Faxes and review your printers and which is the default printer.

- **Give it some time (Printer Redirection):** If you do need to rely on Printer Redirection you may need to wait a number of seconds (some cases up to a couple minutes) for your printers to automatically map within your session. Printer Redirection is a service that runs on the server, and with the high number of clients and several printers that have to be refreshed/mapped/verified on a constant basis, this can take a little time. This is most apparent when first logging onto the Terminal Server and when there are higher loads of clients and processes running on the server at the time.

- **When no printers are accessible:** At rare times the service that controls printers on the server may be down. This can happen when many clients are logging in at the same time or when a printing error occurs. There are monitors in place to watch for this occurrence, and when the service does go down it is automatically restarted and brought back up. Once it is back up, it can take up to a minute or two to have all the printers refreshed to the before state.
  - *Possible workaround* – There is a printer titled ‘Adobe PDF’ that is available to everyone on Terminal Services. You can select the Adobe PDF as your printer and it will prompt where to save your .pdf file to. This will render your print job on the server and save it as a .pdf document. Choose to save it to your ‘My Documents’ in your session. When complete, save it down to your local workstation. Open it and print it from your local workstation.

- **External Networks and Printers:** For external / remote clients (outside the MTO network), VPN – Virtual Private Network Remote Access Client is used to gain access to the MTO network via an encrypted network tunnel. If your workstation is already joined to a local network, the VPN will disconnect any
devices that you have accessible within your own local network and only allow connections through the tunnel. This means that any network printers that you may have mapped locally from within your own local personal/business network will not be accessible by the Terminal Services session or your own workstation. The only supported method for printing for external/remote clients is to have a local printer attached and have Printer Redirection detect the printer.

12 - Session States and Time Limits

**Active session:**
Open connection between client workstation and Terminal Server and actively working.
There are no time limits in this state. As long as you keep working and your network connection is stable, you will not be interrupted.

**Active but Idle session:**
Open connection between client workstation and Terminal Server, but no work is happening. No keystrokes or mouse movements are being triggered within the session (Idle). This can occur when you have left your workstation or if you leave your session minimized to your taskbar.
There is a 3 hour time limit for this state, where your session will be automatically disconnected and logged off of Terminal Services.
To help avoid being automatically logged off from this state, remember to simply perform a mouse movement within the session before the time limit is reached.

**Disconnected session:**
Severed connection between the client workstation and Terminal Server. Your session still remains alive on the server and in the same exact state as when the disconnection occurred. This occurs when your network connection may have been dropped or you disconnect your own session by using the Disconnect 'X' button on the Connection bar.
There is a 3 hour time limit for this state, where your session will be automatically logged off of Terminal Services.
If you do get accidentally disconnected from the Terminal Server due to a network issue, you have until the time limit is reached to be able to reconnect to the Terminal Server session where you left off.
13 - Support

For any issues with operability in Terminal Services – PHM Suite (accessibility, printing, errors), please contact the OPS IT Service Desk to have an incident ticket created and routed to the proper support.

OPS IT Service Desk:
Telephone: 1-888-OPS-ITSD/1-888-677-4873, or 416-246-7171 within the GTA
Fax: 416-246-7116
E-mail: opssd@ontario.ca