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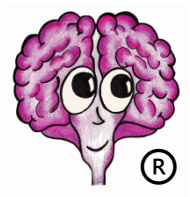
DocuBrain® TechDoc Render Installation Guide



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DocuBrain® TechDoc Render Installation Guide

By Prevo Technologies, Inc.

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Revision History

Revision	Date	Comments
11	06/21/2023	Initial Render 11 Release
11-1	02/07/2025	Updated Product Versions Supported

Assumptions

This guide provides instructions on how to setup a TechDoc render virtual machine using Microsoft's Hyper-V virtualization, VMware's ESXi virtualization, or a physical machine. It is assumed that you already have a good working knowledge of Hyper-V and/or VMware management and related technologies.

The Hyper-V rendering features may work on other versions of Windows, but it has only been tested with the Hyper-V role on Windows Server 2016, Windows Server 2019, Windows Server 2022, and Windows Server 2025.

The VMware rendering features may work on other versions of Windows with other VMware versions and/or products that are compatible with VMware's SOAP API, but it has only been tested with Windows Server 2016, Windows Server 2019, Windows Server 2022, Windows Server 2025, and VMware ESXi 6.5 through VMware ESXi 8.

Introduction to Rendering

TechDoc optionally supports a process called rendering. Rendering is the automatic conversion of a document to a Portable Document Format (PDF or PDF/A) after it has been released. PDF is a file format that captures all the elements of a printed document as an electronic image that you can view, navigate, print, or forward to someone else without the need to have the original product that the document was created with.

PDF/A is a variation of PDF that is intended for long term preservation. However, PDF/A documents tend to be larger than normal PDF files and may have visual discrepancies from the original document because of various limitations placed on PDF/A, which make it easier to support than normal PDF.

There are two actions on a Document Manager that submit generations for rendering:

- Release Document
- Resubmit Rendition

When either of these commands is issued, a record is added to the Render Request table for a specific generation of a document. The Render Request table is a "holding place" for generations that need to be rendered to PDF.

If, for technical reasons, the rendering process needs to be stopped, records can still continue to be added to the Render Request table through normal Document Manager activities. The rendering process can then be started up at a later time when the technical issues are resolved and it will then begin processing the pending request records in the table.

For server security and stability reasons, rendering is performed using a separate render machine, which can be physical or virtual. Various products are installed and configured on the render machine. Thus, preventing the need to install end-user products such as Microsoft Office on the Document Manager itself.

Two rendering modes are supported; normal and manual. In normal mode, a virtual machine must be used in conjunction with a snapshot of the virtual machine in it's ready to render state. In manual mode, a physical or virtual machine is always expected to be up and running to perform render requests. There are tradeoffs to both and are discussed in more detail below.

The render task on the Document Manager periodically "wakes up" and checks the Render Request table for any records. The render task reads each Render Request that is not stalled, and attempts to create the rendition for the specified generation using the render machine. If the rendition cannot be created, the Retry Count for the specific

Render Request is incremented, or stalled if it's at the maximum number of times to retry rendering as set in the System Properties. Once a Render Request record has been stalled, no further attempts will be made to render the generation unless the request is restarted on the Document Manager.

Overview of the Rendering Process

As stated earlier, rendering is the process of converting a document into a watermarked PDF. Rendering can be performed in normal mode or manual mode.

In normal mode, rendering is performed using a virtual machine. The rendering process supports a rendering virtual machine running under Hyper-V or VMware. The rendering virtual machine does not need to be running on the same server as the Document Manager. The Document Manager must have network connectivity to the rendering virtual machine and to the virtualization host the rendering virtual machine is running on.

In manual mode, rendering can be performed on a physical or virtual machine. TechDoc expects that the render machine is always running and does not attempt to stop or start the render machine in manual mode. The Document Manager must have network connectivity to the rendering machine. Even if a virtual machine is used in manual mode, TechDoc will not attempt to communicate with the virtualization host the rendering virtual machine is running on.

Here is a step-by-step overview of the rendering process:

- The render task on the Document Manager is controlled through the Admin menu's Background Tasks screen. It must be running for any rendering to take place.
- The render task continuously checks for requests to render documents. This occurs when a user releases a document or a user resubmits a rendition.
- In normal render mode, the render task asks the virtualization host to turn on the render virtual machine from its saved snapshot.
- The render task sends a copy of the Document's generation file to the render agent running on the render machine.
- The render agent uses the document's native application or viewer to print or save the file to a PDF file. A watermark is applied to the PDF file in the process.
- The render agent returns the PDF file to the render task or it returns an error in the event that the file could not be rendered. A render alert will be sent to the individuals on the system alert group in the latter case.

- In normal render mode, the render task asks the virtualization host to stop the render virtual machine without saving any changes. This accomplishes several things.
    - The most important is that it stops viruses dead in their tracks by losing any changes on the virtual machine that a virus might have made. Should a virus make it through a server's defenses, this prevents a file from passing the virus on to the next file that is rendered.
    - The second thing is that this prevents long running resource issues. Various third-party applications that are used in the rendering process have had resource issues in the past. This prevents them from freeing all the resources they allocate during the rendering process. Eventually, this could affect the rendering process. However, using a virtual machine from a saved snapshot ensures that the process always starts fresh with no buildup of resources.

Manual Versus Normal Rendering Mode

Rendering can run in manual mode. In this mode, TechDoc will expect that the render machine is already running and will not attempt to shut it down after a render request is done. This mode allows the customer to more easily apply security patches to the render machine. It also allows a customer to run render on a physical machine. If preferred, a virtual machine can still be used for manual mode rendering. We do feel that manual mode introduces more risk to the customer and their documents.

In normal mode (the only mode available prior to TechDoc 10), with each render request, the render virtual machine is restored from a previously saved state (checkpoint), the document is rendered, and then the render virtual machine is turned off without saving any changes to the virtual machine. Normal mode provides several important characteristics that are lost with manual mode. Differences include:

1. Because normal mode starts each and every render begins from a fresh known state, the previous document render cannot affect the next document render. Office applications, for example, have had many memory leak problems. In manual mode, over repeated runs of the application, system memory could become exhausted and one or more of the Office applications wouldn't function without rebooting the render machine to clear out the problem.

2. If an application used for rendering hangs for any reason, the render will timeout causing that single request to fail. In manual mode, if that happens, no other documents that are rendered by that application may be able to render until

after the render machine is rebooted.

3. If a document contains a virus and the security installed on the render virtual machine does not detect and stop the virus, the effects of that virus will at most affect the single PDF that is produced by that specific render request. Also, if the virus is trying to spread itself on the network, the render virtual machine is halted as soon as the render is completed; thus, killing the virus. With manual mode, if the virus affects PDF files, each PDF file produced after that initial infection occurs may also contain the virus. In addition, if the virus is trying to spread itself on the network, it will continue to do so. This will continue until an Admin detects the issue and disinfects the virus from the render machine.

4. If manual mode is used and updating is enabled, at any time the render machine could be updated at the OS or Application level, and rendering by one or more applications may suddenly be broken. If there is no saved state (checkpoint), there may not be an easy way to return rendering to a functioning state.

For these reasons, we strongly recommend that normal rendering mode continue to be used by most customers. However, we realize there are times when a customer feels these trade-offs are worth the risk so this is why manual rendering mode was added.

Supported Render File Types

The rendering process can only create watermarked PDF or PDF/A files for file types that are specifically supported. The following is a list of applications and the file types that they support for rendering:

* iGrafx FlowCharter Origins and below:
  FLO, IGT, IGX

* Microsoft Excel 2019 and below:
  XLS, XLSB, XLSM, XLSX, XLT, XLTM, XLTX

* Microsoft Outlook 2019 and below:
  MSG

* Microsoft PowerPoint 2019 and below:
  POTX, PPSX, PPT, PPTM, PPTX

* Microsoft Project 2019 and below:
  MPP, MPT

* Microsoft Publisher 2019 and below:

PUB

* Microsoft Visio 2019 and below:
  VDX, VSD, VSDM, VSDX

* Microsoft Word 2019 and below:
  DOC, DOCM, DOCX, DOT, DOTM, DOTX, HTM, HTML, RTF, SHTML

Images:
  BMP, DIB, GIF, J2C, J2K, JP2, JPC, JPE, JPEG, JPG,
  PCX, PNG, RLE, SVG, TIF, TIFF

Others:
  PDF, TEXT, TXT

* Each of the file extensions listed under an asterisked product are only supported if that specific product has been installed, configured, and activated on the render machine.

Disabling the Render Task on the DM

If the Document Manager is already installed and configured to use render, you should always disable the render background task on the DM to prevent the DM from trying to use the render machine while you are working on it. There are several reasons for doing so. First, a document may be improperly rendered if you have not finished installing or making changes to the render machine. Second, the DM may try to shut down the render machine in normal rendering mode losing anything you are working on. Third, if the DM tries to render a document before you are ready, it may fail and send an alert to the user that their document could not be rendered, needlessly generating a support call to the help desk. Finally, you don't want to save a "clean" state of your render virtual machine later while it is in the middle of rendering someone's document!

It is always safe to disable the render task, even during production hours when users are working. If the render task is busy rendering a document, it will complete that request before honoring your request to stop. Users can still continue to work on the DM and generate render requests. The render requests will simply wait in the render request queue until you restart the render task after you have finished working on the render machine.

☐ Open a browser and log in to the Document Manager with a username and password that has TechDoc Admin privileges.

- ☐ Click on the Admin menu, click on Background Tasks under Miscellaneous, and click on the task icon for the Render task.
- ☐ If the state of the render task is not Disabled, click Disable on the side menu. If the render task was busy processing a request, you must wait for that request to complete before continuing with the steps below. If this is the case, periodically refresh the browser until it shows that the render task is now disabled.
- ☐ You can now log out of the Document Manager and close the browser.

Creating the Render Machine

A preinstalled render disk is no longer provided. As virtualization has become more prevalent, software vendors have added licensing restrictions that no longer permit the distribution of a preinstalled render disk. While this creates a little more work for you up front, it does permit the render machine to be more tailored to your environment.

Render can run in manual mode. This means that the TechDoc server will not attempt to stop and start the render machine. In this mode, render can be installed on a physical or virtual machine. See section Manual Versus Normal Rendering Mode for more details.

The first step is to create the render machine (if using a virtual machine) and install a Windows 10 or 11 operating system on it. Render must be installed on a 64-bit version of the operating system.

- ☐ For a virtual machine, create the virtual machine on your Hyper-V or VMware server to be used for rendering. The following are guidelines for the minimum resources needed for the render virtual machine.
  - 1 Virtual processor (preferably 2 or more for better performance)
  - 3GB RAM (preferably 4GB or more for better performance)
  - One 40GB disk drive (preferably fixed instead of expanding for better performance)
  - One DVD drive (if necessary, for software installation)
  - One network adapter
- ☐ For a physical machine in manual rendering mode, the following are guidelines for the minimum resources needed for the render physical machine.
  - 1 processor (preferably with multiple cores for better performance)
  - 3GB RAM (preferably 4GB or more for better performance)
  - One 40GB disk drive
  - One DVD drive (if necessary, for software installation)
  - One network adapter

- ☐ Install a 64-bit edition of Windows 10 or 11 on the render machine. The following subsections can be used as guidance for installing the various supported operating systems.

Guidance for installing Windows 10 or 11

Here are tips while installing Windows 10 or 11 for smoother and better performing render operations. Installation requirements for customers vary widely so this document does not attempt to provide a step-by-step installation of the Render machine's operating system. During OS installation, the following recommendations are offered:

- ☐ Turn off all "Personalization" and "Location" settings.
- ☐ Turn off all "Connectivity" and "Error reporting" settings.
- ☐ When asked if you want to allow your PC to be discoverable by other PCs and devices on the network, click No.
- ☐ Install the latest Hyper-V Integration Services or VMware Tools if desired/necessary
- ☐ Go to the Desktop, right click on the time on the task bar, and click Adjust date/time.
  - Adjust the time zone to the correct one if necessary.
  - Close the settings.
- ☐ Adjust the properties on the Network Adapter so that they are correct for your networking environment.
- ☐ Live tiles on the start screen can cause a lot of unintended network traffic and will slow the rendering process with the additional CPU and I/O needed to update them.
  - Go to the desktop and right click on the Windows start button.
  - Type gpedit.msc and press Enter.
  - Navigate to User Configuration\Administrative Templates\Start Menu and Task Bar\Notifications in the left panel.
  - In the right pane, double click on Turn off tile notification, check the Enabled button, and click OK.
- ☐ To prevent the App Store from installing something or doing something that might disrupt rendering, it is best to disable it.
  - Go to the desktop and right click on the Windows start button.
  - Type gpedit.msc and press Enter.
  - Navigate to Computer Configuration\Administrative Templates\Windows Components\Store in the left panel.

Installing Microsoft Office 2019 on the Render Machine

If you wish to render Microsoft Office files, you must install Microsoft Office 2019, Microsoft Office Professional 2019, or Microsoft Office Professional Plus 2019. The 32-bit version is recommended for rendering since many add-ons only support the 32-bit version of Office. The 2016 version may be used instead but we recommend installing the Professional Plus 2019 version in order to support all the latest file formats and features.

- ☐ You should be logged into the render machine as the user RenderUser. If not, please log out and log back in as RenderUser.
- ☐ Install Microsoft Office.
- ☐ Run Word and activate Office via an email address or product key. If activation is not successful, Office file rendering will fail.
- ☐ Configure Outlook for a profile without an email:
  - Hold the Windows key and press R to open the Run window, enter the command outlook.exe /pim NoEmail and click OK.
  - After Outlook creates the necessary files and opens, exit Outlook.
  - Hold the Windows key and press R to open the Run window, enter the command outlook.exe /profiles and click OK.
  - Once the Choose Profile dialog is displayed:
    - Select the NoEmail profile in the Profile Name drop down.
    - Click Options >>.
    - Check Set as default profile and click OK.
  - After Outlook opens, exit Outlook.
- ☐ Run Outlook normally to see that it starts without any prompts and then exit the product.
- ☐ Run Excel and then exit the product.
- ☐ Run PowerPoint and then exit the product.
- ☐ Run Publisher and then exit the product.

Installing Microsoft Project 2019 on the Render Machine

If you wish to render Microsoft Project files, you must install Microsoft Project Standard 2019 or Microsoft Project Professional 2019. The 2016 version may be used instead but

we recommend installing the Professional 2019 version in order to support all the latest file formats and features.

- ☐ You should be logged into the render machine as the user RenderUser. If not, please log out and log back in as RenderUser.
- ☐ Install Microsoft Project.
- ☐ Run Project and activate it via an email address or product key. If activation is not successful, Project file rendering will fail.

Installing Microsoft Visio 2019 on the Render Machine

If you wish to render Microsoft Visio files, you must install Microsoft Visio Standard 2019 or Microsoft Visio Professional 2019. The 2016 version may be used instead but we recommend installing the Professional 2019 version in order to support all the latest file formats and features.

- ☐ You should be logged into the render machine as the user RenderUser. If not, please log out and log back in as RenderUser.
- ☐ Install Microsoft Visio.
- ☐ Run Visio and activate it via an email address or product key. If activation is not successful, Visio file rendering will fail.

Installing iGrafx FlowCharter on the Render Machine

If you wish to render iGrafx FlowCharter files, you must install iGrafx FlowCharter. The versions prior to Origins may be used instead but we recommend installing at least the Origins version in order to support all the latest file formats and features.

- ☐ You should be logged into the render machine as the user RenderUser. If not, please log out and log back in as RenderUser.
- ☐ During the install, it is recommended that you choose the Custom install and click the Activate Now… button, and complete activation.
- ☐ When the Select Features dialog is shown, click on the disk icon beside Optional Diagrams and select Entire feature will be installed on local hard drive. Everything else on the dialog can be left as it is.

- ☐ Run FlowCharter and make sure that it is activated. If activation is not successful, FlowCharter file rendering will fail.

Checking for and then Disabling Windows Updates

For the least interruptions to production, it is recommended that Windows Updates be disabled and only performed manually outside normal business hours. If you wish to leave automatic updates enabled or use something like Windows Server Update Services (WSUS) to coordinate when updates are applied, feel free to skip this section.

- ☐ Now that all the products have been installed, you should run Windows Update to ensure that Windows and all supported products and components on the render machine are up-to-date.
- ☐ Remember that it may be necessary to reboot and/or rerun Windows Update multiple times before everything has been applied.
- ☐ Automatic updates should be disabled to prevent interfering with the rendering process. In normal rendering mode, updates wouldn't be retained anyway since the render virtual machine is always restarted from the saved state; losing any changes made to the virtual machine during the session. You should periodically apply updates as described in the section Periodic Maintenance of the Render Machine below. To disable the Windows Update service:
  - Right click on the Start button and then click on Computer Management.
  - Expand Services and Applications in the left panel, if necessary.
  - Click on Services in the left panel.
  - Double click on the Windows Update service in the center panel.
  - Click on Stop to stop the service if it is running.
  - Change the Startup type to Disabled if necessary.
  - Click OK.
  - Close Computer Management.

Installing Render 10 on the Render Machine

The last thing to install on the render machine is the render software. If you skipped installing one of the products (such as Microsoft Project) and you decide to install it later, it is important that you reinstall the render software and create a new snapshot after installing the product if normal rendering mode is used. The render installer is not

able to properly prepare for using some software products until after the products have been installed.

- ☐ You should be logged into the render machine as the user RenderUser. If not, please log out and log back in as RenderUser.
- ☐ Copy Render10Setup.exe to the render machine. The executable is available for download from the DocuBrain® web site using the URL https://docubrain.com/products/TechDoc/downloads if you have a license and have been authorized for download privileges.

  * Note: At the time of this writing, Render 11 has not been released yet as we are still working with Microsoft in an attempt to start using Microsoft 365 instead of a fixed version of Office. For now, please continue to use the Render 10 Setup as TechDoc 11 family still fully supports a render machine using Render 10 software.
- ☐ Run Render10Setup.exe.
- ☐ If the User Access Control dialog comes up, click Yes to allow the setup to run.
- ☐ On the Welcome screen, click Next.
- ☐ On the License Agreement screen, read the license agreement. If you do not accept the terms of the agreement, click Cancel and terminate installation of the render software. If you do accept the terms of the agreement, check the box, click Next, and continue with installation of the render software.
- ☐ On the Choose Components screen, all components will be checked by default. The one component that you may or may not want to uncheck on this screen is Output as PDF/A. When this component is checked, the rendering process will attempt to produce PDF/A files as output whenever possible. If unchecked, the rendering process will attempt to produce normal PDF files instead.

  PDF/A files are an ISO-standardized version of PDF that are specifically designed for the digital preservation of electronic documents. PDF/A does so by limiting PDF features that are not suitable for long-term archival. PDF/A files are normally larger and may have visual discrepancies due to the limitations of the PDF/A format. Organizations like NARA prefer to accept PDF/A over regular PDF documents so you will need to weigh the pros and cons and decide for yourself whether you want PDF/A or not.
- ☐ After you have checked or unchecked the PDF/A component as desired, click Install.
- ☐ After the render setup is complete, click Finish.

- ☐ If Render10Setup.exe was copied onto the render machine, it can now be deleted off the render machine's disk.

Creating the Render Machine Saved State

In manual rendering mode, TechDoc does not make use of saved states. If you are using manual mode, you may skip this section. See section Manual Versus Normal Rendering Mode for more details.

TechDoc's normal rendering mode relies on a saved state (also known as a checkpoint or snapshot) of the render virtual machine. TechDoc does this for increased performance, reliability, and security. Every time TechDoc renders a document, it tells the VM Host to start the render virtual machine from its saved state. Then TechDoc sends the document for rendering to the render virtual machine. After the render completes, fails, or times out, TechDoc tells the VM Host to stop the render virtual machine without saving changes.

Starting from a saved state is much faster than booting. Also, stopping without saving changes prevents any resources from any product from building up in memory (or on disk) and destroys any potential virus that may have been carried in with a file before the next file is rendered.

- ☐ Make sure that all Windows Updates have been applied.
- ☐ Reboot the render virtual machine.
- ☐ Log in as RenderUser.
- ☐ View the desktop and make sure that a Render Agent window was automatically started upon logon. Rendering will not work if the render software is not running in that window. The last line in the Render Agent window should read as follows if the render software is running:

  ```
  *I* Render Agent 10, Build date/time initialized!
  Type EXIT to shutdown the Render Agent…
  ```

  If you see this, it means the render virtual machine is in its Render Ready State. Note that the italicized date/time on the second to the last line will vary depending on the actual build date and time of the version you are running.
- ☐ If the machine is still busy, wait a minute or two for all final boot activities to complete and for the render virtual machine's CPU to become idle. Doing so will speed up each render request that is processed later.
- ☐ If you are hosting the render virtual machine on Hyper-V:

- While the render virtual machine is in its Render Ready State, open the Hyper-V Manager, right click on the render virtual machine under the Virtual Machines panel, and click Save.
- After the save completes, right click on the render virtual machine under the Virtual Machines panel, and click on Checkpoint or Snapshot (newer versions of Hyper-V call it checkpoint and older versions of Hyper-V call it a snapshot).
- After the checkpoint/snapshot completes, click on the render virtual machine under the Virtual Machines panel, then click on the new checkpoint/snapshot that you just created in the Checkpoints/Snapshots panel, and rename the checkpoint/snapshot to SavedState (without any spaces).

☐ If you are hosting the render virtual machine on VMware:

- While the render virtual machine is in its Render Ready State, take a snapshot of the running virtual machine. Make sure to enter SavedState (without any spaces) for the name of the snapshot, leave the description blank, check the Snapshot the virtual machine's memory check box, and click OK.
- After the snapshot is finished, shutdown the render virtual machine.

Configuring Render on the DM

The Document Manager must be configured to use rendering before render requests can be successfully sent to the render machine. If the Document Manager is already configured, you can skip to the next section.

A command line utility called ConfigTechDoc.exe is provided with TechDoc. In order to run it, you must log into a Windows session on the server running the Document Manager.

☐ Log into Windows on the server running the Document Manager using a Windows account having administrator privileges.

☐ Open a CMD prompt or use Run on the Start menu to run ConfigTechDoc.exe.

☐ Once the ConfigTechDoc windows opens, click on the Render Settings button.

☐ When the Render Setting dialog opens:

- Check the Render Enable option, if necessary, to enable rendering.
- Select the Microsoft Hyper-V, VMware ESX, or Manual radio button depending on which technology is being used to host the render machine.

- Enter the Server Address (not needed for manual mode): This is the IP address or host name of the computer running Hyper-V or VMware where the render virtual machine will be hosted. The DM must be able to make a connection to this address in order to control the render virtual machine. If using VMware, be sure to put in the address of an ESX or ESXi server not a vCenter server. Render does not support the vCenter protocol, which is much slower than talking directly to an ESX/ESXi server.
- Enter the Username (not needed for manual mode): This is the username of the account that TechDoc should use when connecting to Hyper-V or VMware server to control the render virtual machine. For security purposes, this field is always blank when the dialog opens and must be reentered any time changes are made.
- Enter the Password (not needed for manual mode): This is the password of the account that TechDoc should use when connecting to the Hyper-V or VMware server to control the render virtual machine. For security purposes, this field is always blank when the dialog opens and must be reentered any time changes are made.
- Enter the Render VM IP Address: This is the IP address or host name that was given to the render physical or virtual machine itself when it was created. The DM must be able to make a connection to this address in order to send documents to be rendered on the render machine.
- Enter the Render VM Name: This is the name that was given to the virtual machine when it was created on the Hyper-V or VMware server, or the name you want TechDoc to use to refer to the physical machine as. TechDoc will tell the Hyper-V or VMware server to start and stop the render virtual machine using this name.
- Click OK to save the changes.

☐ Click Exit to close ConfigTechDoc.

☐ For a Hyper-V hosted virtual machine, you can now test for connectivity to the Hyper-V server where the render virtual machine is hosted. Let's say that you answered rendervm a couple steps back for the Render VM Name. From a CMD prompt, you can type the following command:

```
tdvmctrl-hyperv status rendervm
```

Change rendervm to be whatever name you used above. If everything is good so far, the command should output a success message.

☐ For a VMware hosted virtual machine, you can now test for connectivity to the VMware server where the render virtual machine is hosted. Let's say that you answered rendervm a couple steps back for the Render VM Name. From a CMD prompt, you can type the following command:

```
tdvmctrl-vmware status rendervm
```

Change rendervm to be whatever name you used above. If everything is good so far, the command should output a success message.

- ☐ For a manual mode physical or virtual machine, you can attempt to ping the machine to check for network connectivity.
- ☐ You may now log out of the Windows session on the server where the DM is installed.

Enabling the Render Task on the DM

If the render background task on the Document Manager has been disabled, the task must be re-enabled and started before the DM will attempt to process any pending render requests.

- ☐ Open a browser and log in to Document Manager Account with a username and password that has TechDoc Admin privileges.
- ☐ Click on the Admin menu, click on Background Tasks under Miscellaneous, and click on the task icon for the Render task.
- ☐ If the state of the render task is Disabled, click Enable on the side menu.
- ☐ If the state of the render task is Stopped, click Start on the side menu.
- ☐ If the state of the render task is Sleeping, you can click Wake on the side menu if you would like to force the render task to immediately start processing any pending render requests.
- ☐ You can now log out of the Document Manager and close the browser.

Final Testing

- ☐ The setup and configuration for TechDoc rendering is now complete. However, it is very important to perform testing to verify full network connectivity and operation of all rendering components on the render machine.
- ☐ If you log in to the DM as a TechDoc Admin, you can go to the Admin screen and click on Email Render Information under Render. This will email you information about the render machine and the products installed on it. This is a quick way to verify that the Hyper-V/VMware/Manual communications are

good, the render machine is responding, and what products (Office, FlowCharter, etc.) that the render machine can see and communicate with.

- ☐ Log into the DM, then create and release a few documents to see that everything is working properly. If you already have some test documents in the DM, you can simply explore to a generation of a document that is released and click Resubmit Rendition on the side menu to cause a new render request to be submitted to the render machine.

  It is highly recommended that you test each file extension that you wish to have rendered on your DM. It is the only way to know that all applications were successfully installed and activated on the render machine.

Periodic Maintenance of the Render Machine

For the best security and product compatibility, you should periodically perform Windows Updates and apply any product patches as needed. Also, this section can be used to apply updates to the render software itself.

Do not jump to a new major version of a product without checking with DocuBrain support for compatibility. For example, changes had to be made in the render software when going from Microsoft Office 2016 to Microsoft Office 2019 (and for every version of Office prior to that). The following are guidelines on how to perform maintenance on your render machine.

- ☐ Follow the directions under Disabling the Render Task on the DM to stop any new render requests from being processed on the DM while you are performing maintenance on the render machine.
- ☐ If you are using normal rendering mode:
  - Apply the SavedState snapshot to the render virtual machine.
  - Delete the SavedState snapshot after it has been applied.
  - Start the render virtual machine.
- ☐ You should be logged into the render machine as the user RenderUser. If not, please log out and log back in as RenderUser.
- ☐ You should see that the Render Agent window is running on the desktop. Click inside that window, press Enter, type EXIT, and press Enter again. The Render Agent window should close.
- ☐ If necessary, enable the Windows Update service, run Windows Update, apply any product patches, update virus software, etc. This may require multiple reboots before all updates can be applied.

- ☐ If desired, disable the Windows Update service. Automatic updates interfere with the rendering process. In normal mode, updates wouldn't be retained anyway since the render virtual machine is always restarted from the saved state; losing any changes made to the virtual machine during the session.
- ☐ If you wish to update the render software, follow the directions under Installing Render 10 on the Render Machine to reapply the updated render software to the render machine. As noted above, make sure that the products currently installed on the render machine (Microsoft Office, iGrafx, etc.) are compatible with the render software that is being installed.
- ☐ If you are using normal rendering mode:
  - After you have completed the maintenance, follow the directions under Creating the Render Machine Saved State to recreate the SavedState snapshot.
- ☐ Follow the directions under Enabling the Render Task on the DM to re-enable rendering on the DM.
- ☐ Follow the directions under Final Testing to make sure that everything is working, including your new SavedState snapshot of the render virtual machine if running in normal rendering mode.