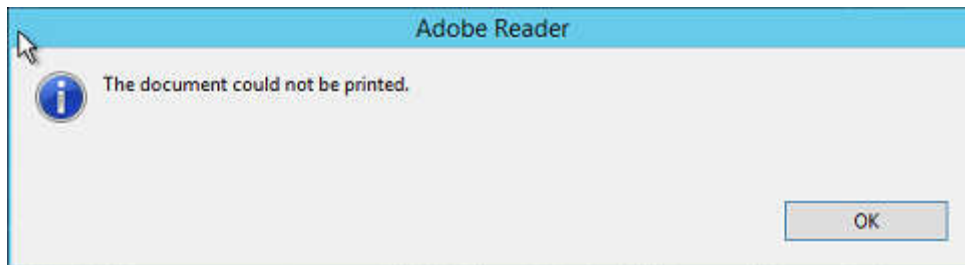


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Fix numerous print issues with RDS 2012 by cleaning up your print environment

[33 Replies](#)

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The Rub

Printers. Amirite? The bane of any system administrator. Devices so seemingly simple, yet so destructive to the calm and well-balanced demeanor of IT professionals throughout the land. “I want what is on my screen to be on a piece of paper.” Bingo bango lorem ipsum. It should just work. Why do they continue to cause such trouble in our lives? Well, my friends, I am here to tell you about the day I conquered the beast. What I am about to share with you is how I resolved the dreaded Adobe Reader “the document could not be printed” and “there were no pages selected to print” errors. This will also fix the issues with the same printer showing up multiple times for users, and it will return the missing default printer checkmark.

The setting of our story is a Windows Server 2012 R2 Standard Remote Desktop Services farm that nearly 200 people connect to using thinclients across multiple physical sites. It is not for the faint of heart, nor those who fear the registry. Now, let us begin...

[The Setup](#)

[The Symptoms](#)

[The Band-Aid](#)

[The Final Resolution](#)

The Setup

- (1) Windows 2012 R2 VM– Remote Connection Broker & Licensing Server ([RCB](#))
- (1) Windows 2012 R2 VM – Remote Web Access & Remote Desktop Gateway Server ([RWA](#))
- (4) Windows 2012 R2 VM – Remote Session Host Servers ([RSH](#))

- (1) Windows 2012 R2 VM – Windows Print Server ([WPS](#))
 - (1) Windows 2008 R2 SP1 VM – Thin Print Server ([TPS](#))
 - (1) Windows 2008 SP2 VM – Windows Print Server ([oldWPS](#))
 - (1) Group Policy Object ([GPO](#)) to handle computer policies.
 - (1) Group Policy Object ([GPO](#)) to handle user policies.
 - (1) Group Policy Object ([GPO](#)) to handle shared printer mappings using Group Policy Preferences ([GPP](#))
-

The Symptoms

Exhibit A - Adobe Reader

You are unable to print PDFs to a shared network printer on an RSH server. Yes, Outlook, Word, browsers, and your secret diary, which you mouse wrote with Paint so that hidden NSA OCR scanners couldn't read it, all print out just fine.

In Adobe Reader, when you try to print to the faulty printer, two error messages pop up.

First, this guy gives you the most specific of errors: The document could not be printed.

Once you click OK, this guy presents himself: There were no pages selected to print. (Thanks for the added false info, Adobe!)

Exhibit B - Foxit Reader

Since everything else prints fine, and Adobe is the only program you can't print from, you curse the gods, the Adobe developers, and Frank in accounting that didn't brew a new batch of coffee after taking the last cup. You install Foxit Reader, because you're going to stick it

to The Man, but now when Adobe Reader shoves the errors in your face, Foxit Reader just hides the printer in shame, and it isn't even an option from the drop down.

Exhibit C - Default printer check-mark

In Devices and Printers, you'll notice that if the troublesome printer is your default printer that he'll be missing the green little check-mark designating that he's won the affections of your heart for most of your printing needs. Don't worry, if you tickle him with a right-click, he'll still show his status of your love.

(Green check-mark shown here so you know what may be missing, and also because I wrote this up after I fixed the issue.)

Exhibit D - Event ID 365

You see errors on the RSH servers similar to the following in the Event Viewer -> Applications and Service Logs -> Microsoft -> Windows -> PrintService -> Admin

6/4/2014 – 8:31:27 AM – Error – RSH1.DOMAIN.com – Event ID 365 Microsoft-Windows-PrintService Initializing a print processor NT AUTHORITY\SYSTEM Windows could not load print processor **hpcpp160** because EnumDatatypes failed. Error code 126. Module: **3\hpcpp160.dll**. Please obtain and install a new version of the driver from the manufacturer (if available), or choose an alternate driver that works with this print device.

This here is the root cause of the problem. The print processor for your printer is not loading properly. It doesn't do this all the time, which makes troubleshooting this issue a royal flush of a pain, especially since non-PDFs print without issue.

The Band-Aid

Go on a silent rampage and destroy all printer connections at log off!

You will probably want to implement this temporary fix until you have a maintenance window to perform everything in [The Final Resolution](#).

I have setup a script at log off that deletes all printer connections. Just copy the below code and paste it into your favorite text editor, save it, rename the file extension to .cmd. Set it as a log off script using your User GPO for the RSH servers.

```
@echo off
```

```
reg delete "hkcu\printers\connections" /f
```

Why does this work? I'm not really sure. When it re-adds the printer instead of just reconnecting, it appears to have a higher chance of success to load the print processor correctly. Listen, it's magic, not science. Just drop your jaw and say "Ooooooh..." In an amazed way, not in a ghostly way.

Note: This will delete all GPP and manually added printers. The GPP printers will be recreated upon next logon (only adds 3-4 seconds to log on time in my environment), and the manually added printers will have to be manually re-added again, so it is recommended to only use GPP printers until the final resolution has been implemented.

The Final Resolution

<http://digitalzombies.com/wp-content/uploads/2014/07/fincount.mp3>

Alright, so you've followed along this far, or you figured "hey, this guy knows what he's talking about; take me to the quick fix!" and jumped ahead. Well, this fix is not so quick. You'll want to make sure to take backups/snapshots/checkpoints of your print servers, session hosts, and registries before making changes. Please only do the following if you get the logic behind it. I am not liable for you messing up your production equipment. I wish you the best of luck.

Now let us begin...

1. Minimize the number of print drivers on your print server.

A. Go out to the internet and download the appropriate *universal driver* for your printers' manufacturer and architecture of your RSH servers. Place the extracted drivers on your Print Server.

B. Open Print Management on your Print Server.

C. Install the drivers.

D. Go to the Printers page and change all of your printers to use the universal drivers.

E. **Important!** Ensure that all printers have the "Render print jobs on client computers" option on the Sharing tab of a printer's properties **unchecked!** While you're in the printer properties, you may as well fix any incorrect information on the General and Sharing tabs.

F. Now that all of your printers are using as few drivers as possible, let's remove the unused ones.

!!DO NOT DELETE THE REMOTE DESKTOP EASY PRINT DRIVER OR MICROSOFT ENHANCED POINT AND PRINT COMPATIBILITY DRIVERS!!

Once completed, you will have:

- Installed universal drivers per each manufacturer of printer that you use.
- Set all printers to use the appropriate universal driver.
- Ensured "Render print jobs on client computers" is unchecked on all printers.
- Deleted all unused print drivers.

2. Next, you will need to change the print processor for all of your printers and drivers to Winprint, and then remove the unused print processors.

We can quickly fix that with Powershell.

Courtesy of: <http://blogs.technet.com/b/askperf/archive/2011/10/04/two-minute-drill-change-print-monitors-processors-via-powershell.aspx>

Note: These commands only work on stand alone print servers. They will not work on clustered print servers.

A. Change Print Processor of all printers to Winprint with the following Powershell command:

```
set-itemproperty -path  
'HKLM:\SYSTEM\CurrentControlSet\Control\Print\Printers\*' -name 'Print  
Processor' -value WinPrint
```

B. Change Print Processor of all drivers to Winprint with the following Powershell command:

For 64-bit Drivers:

```
set-itemproperty -path  
'HKLM:\SYSTEM\CurrentControlSet\Control\Print\Environments\Windows  
x64\Drivers\Version-3\*' -name 'Print Processor' -value WinPrint
```

For 32-bit Drivers:

C. Change all Print Monitors to be blank with the following Powershell command:

For 64-bit Drivers:

```
set-itemproperty -path  
'HKLM:\SYSTEM\CurrentControlSet\Control\Print\Environments\Windows  
x64\Drivers\Version-3\*' -name 'Monitor' -value $null
```

For 32-bit Drivers:

D. Now, remove those pesky third-party print processors.

3. Set the driver isolated mode for all drivers to Isolated.

Open the Drivers page of Print Management, select all the drivers, right-click and set the Isolation mode to Isolated.

4. Restart the Print Spooler service for all changes to go into affect.

You should now only have the Winprint print processor and universal drivers listed in the registry print environment.

5. Check that everything is working by adding a new printer to the print server.

Add a printer using an IP address or hostname.

Use an existing port to add a printer.

B. Select the appropriate universal print driver from the “Use an existing printer driver on the computer” drop down.

C. Fill in the relevant sharing information.

D. Click Next to finish the installation.

E. Success!

F. Open the Advanced tab in the new printer's properties, and open the Print Processor button. Make sure that winprint is selected (it should also be the only item listed.)

That's it for the print server.

Time to get down and dirty with the RSH servers. Make sure to do this during a maintenance window when you have prevented people from logging on, and you are the sole person logged into the machine.

Before I did the following, and because we locally cache our roaming profiles for faster logon times, I removed all locally cached user profiles. You can use a tool like Delprof2.exe or find a powershell script to do this.

1. Let's remove existing drivers and print processors on the RSH servers.

A. Open an elevated command prompt and run "printui /s /t2". Then select Remove Driver and Driver Package for all of the print drivers, including any existing universal drivers (they will get downloaded again once you sign on as a user with an assigned printer). Leave the stuff alone like Remote Desktop Easy Print, PDF printers, Fax printers, Onenote, Microsoft enhanced Point and Print, etc... Restart the print spooler as necessary to release any locked drivers.

B. Remove the leftover print processors.

C. Restart the Print Spooler service.

You should now only have the print processors and drivers for winprint and software printers (PDF, Onenote, etc...) listed in the registry print hive.

2. Now we need to clear out the Client Side Rendering Print Providers keys in the registry.

A. Open your registry and find the following key:

```
HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Print\Providers\Client  
Side Rendering Print Provider\
```

B. Delete all sub-keys in this key. There will be a bunch of SIDs for your users that have connected, and then a Servers key. Delete all of them. Which ones?

3. Reboot all of your RSH and Print servers (if not able, at least restart the Print Spooler service), and you should be good to go, as long as no one adds a printer from a print server that you didn't clean up, or someone adds a printer and forgets to uncheck the "Render print jobs on client computers" box.

So let's prevent that with good ol' Group Policy.

Open up your GPO that you are using to define the Computer Configuration policies for your RSH servers.

Enable the following policy:

Computer Configuration\Policies\Administrative Templates\Printers\Always render print jobs on the server

Enable and configure the following policy:

Computer Configuration\Policies\Administrative Templates\Printers\Point and Print Restrictions

Reboot your RSH servers.

There you have it. After completing everything outlined above, I have not had an issue for three weeks, where it used to be a daily issue. Perhaps there are quicker ways, or shorter ways to fix these issues, such as updating drivers and setting the GPO to always print jobs on the print server, but that would leave a lot of gunk on the systems, and may not even resolve all of the problems. I've always been a subscriber to the "if you're going to do it, do it right" newsletter, and I feel I've provided a thorough guide for you to fix it right and for good. There are no half measures here. Let me know if any parts need clarification.

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This entry was posted in [Computers](#) and tagged [2012R2](#), [Adobe Reader](#), [Print Management](#), [Printers](#), [RDS](#), [Registry](#), [RSH](#) on [July 3, 2014](#) by [reluctantflux](#).

Post navigation

33 thoughts on "Fix numerous print issues with RDS 2012 by cleaning up your print environment"

1. [Tim Radza](#) [August 1, 2014 at 3:40 am](#)

We've been struggling with this issue for weeks. I will test this possible solution on monday! Thanks in advance!

[Reply](#) ↓

1.  [Kenneth Westergaard](#) [August 21, 2014 at 7:45 am](#)

Tim, did it work?

[Reply](#) ↓

2.  **running man ep 209 eng** [August 16, 2014 at 1:23 am](#)

Do you mind if I quote a few of your posts as long as I provide credit and sources back to your weblog? My website is in the very same niche as yours and my visitors would certainly benefit from a lot of the information you provide here. Please let me know if this alright with you. Many thanks!

[Reply](#) ↓

1.  **reluctantflux** *Post author* [August 22, 2014 at 11:01 am](#)

Certainly! If you have any questions about the process, please let me know.

[Reply](#) ↓

3.  **Taylor** [August 28, 2014 at 4:35 pm](#)

I have been debugging this for moths and have not found a solution. You seem to have found the right solution and I can not wait to try out your method. I will give an update when have tried it.

[Reply](#) ↓

1.  **reluctantflux** *Post author* [September 23, 2014 at 6:37 am](#)

Taylor,

Have you had a chance to fix your print issues? I'd be happy to answer any questions you have.

[Reply](#) ↓

1.  **Taylor** [September 24, 2014 at 10:30 am](#)

Unfortunately not yet, it seemed to have worked perfectly for the first day and then it slowly went back to having issues. I guess my first question is it possible for printer redirects to contribute to the problem?

[Reply](#) ↓

1.  **Taylor** [September 24, 2014 at 10:50 am](#)

Also, how are your printers deployed? I have deployed them through the print server by clicking on a printer and selecting "Deploy with Group Policy." This method seems to be different than deploying them through group policy preferences so I am wondering if that has something to do with it.

[Reply](#) ↓

1.  **reluctantflux** *Post author* [September 24, 2014 at 12:27 pm](#)


Taylor, I can't imagine why UPDs would affect this issue. You will want to shadow the person's session that is having the issue and look at the print processor from within the session. Check all the printers they have mapped, as any printers having a bad print processor can cause Adobe to not print, even if it's not the printer selected for the job.

Also, you will want to look in the event viewer. Look under Applications and Service logs -> Microsoft -> Windows -> PrintService -> Admin

You'll probably see a lot of Event ID error 365 with a similar description as:

```
Windows could not load print processor
hpcpp160 because EnumDatatypes failed. Error
code 126. Module:
C:\Windows\system32\spool\DRIVERS\x64\3\hpcpp
160.dll. Please obtain and install a new
version of the driver from the manufacturer
(if available), or choose an alternate driver
that works with this print device.
```

This may help you identify which .dll to search for. When you're doing a cleanup, make sure to delete the .dll files on both the print server and the session host. I also found that the "Remove and delete driver" from the "printui /s /t2" command is particularly important to remove unwanted drivers on the session host.

2.  **reluctantflux** *Post author* [September 24, 2014 at 11:02 am](#)

Printer redirection should not cause issues, as it should then be using the Microsoft enhanced Point and Print compatibility driver. My printers are being deployed through Group Policy Preferences. In theory, deploying through the print server, using the Deploy Through Group Policy feature shouldn't be that different, as that is only the mechanism of who gets which printer.

The underlying issue is that somehow your printers reverted back to an HP (or other) print processor instead of Winprint. If you didn't scrub your print server to remove the old print processor .dll files, and someone installed a new printer on the print server, I've seen that all the printers get reverted back to the HP print processor instead of Winprint. Even if the drivers tab in print manager is showing winprint for the driver that you are using, make sure to check the offending printers' properties.

What server OS versions are you running for your RDS environment and print server. Do you have any other print servers that you didn't clean up that people may have added a printer from?

[Reply](#) ↓

1.  **Taylor** [September 24, 2014 at 12:03 pm](#)

We are running Server 2012 R2 for both the print server and the RDS host. There is only one of each. Almost all clients connecting are using Win7 but we do have some who are using chrome books.

I have checked every print processor and all are showing winprint, but that is only for my session, correct? So there could be someone else who is logged in and using a different processor?

We are also using User Profile Disks, although I do not think it is necessary for us to do so. My initial though was that there was something going on with those but I do not know if you have any experience with them.

Like you mentioned, the problem is so sporadic that it makes this a nightmare. There doesn't seem to be just one printer that is having issues. It seems to jump around whenever it feels like it.

2.  **Taylor** [September 24, 2014 at 12:28 pm](#)

Is there a way to check what print processor all of the users are using?

Also, the User Profile Disks store user registry files so are those causing any problems?

3.  **Taylor** [September 24, 2014 at 3:01 pm](#)

I have been looking for that event ID but I have not been able to find it so I do not think that is happening. I do still have the symptoms described in exhibit A,B,C. Have you ever noticed multiple printers showing up when you right click one of them? Perhaps I also have a different problem.

4.  **reluctantflux** *Post author* [September 25, 2014 at 7:58 am](#)

Taylor,

I will contact you via e-mail to continue this discussion.

4.  **Ludovic** [September 23, 2014 at 4:02 am](#)

Thx for this article, nice work!

Anyway is it normal that the CSR key continues to populate even if the CSR is disabled ?

[Reply](#) ↓

1.  **reluctantflux** *Post author* [September 23, 2014 at 6:36 am](#)

The CSR key continues to populate, but there are no printers listed beneath them. It is safe to leave them.

[Reply](#) ↓

5.  **sofakingtiredoftsprinting** [September 24, 2014 at 7:29 am](#)

I've been fighting this for a month, and this article resolved my issue. Beautifully done, man.

[Reply](#) ↓

1.  **reluctantflux** Post author [September 24, 2014 at 7:52 am](#)

Thanks! This was a bear of a problem and I'm glad I'm able to help others dredge their way through it.

[Reply](#) ↓

6.  **Kenneth Westergaard** [October 21, 2014 at 5:32 am](#)

After using the solution, new desktops could not connect to the printer and get the drivers. So I had to revert back

Is that something you've noticed before?

Otherwise the solution seemed to Work before returning, except I had to continue using the script:

```
reg delete "hkcu\printers\connections" /f
```

I am afraid i've missed a bit, since this is required, and new computers can not add printers from the print server.

[Reply](#) ↓

1.  **reluctantflux** Post author [October 22, 2014 at 7:23 am](#)

I had this issue as well. Two things:

1) On the Print Server, you may not want to delete the .dll file for the print processor in the %WinDir%\System32\DriverStore\FileRepository folder. This is where the driver is loaded from. If any of your shared printers are set to use a non-winprint print procoessor, and that .dll isn't there, you won't be able to add the printer on a client machine.

2) This ultimately comes down to those printers having the wrong print processor. Until you get all non-winprint print processors off of your Print Server, there is a possibility of somebody adding a new printer, and that reverting some (or all) of your old printers using that driver to using the bad print processor, even if the driver tab of Print Manager is telling you that driver is set to winprint. This is where the powershell command really comes in handy.

```
set-itemproperty -path  
'HKLM:\SYSTEM\CurrentControlSet\Control\Print\Environments\Wind  
ows x64\Drivers\Version-3\' -name 'Print Processor' -value  
WinPrint
```

If you implement my fix again, and this occurs, as soon as it happens, log onto the Print Server and check that printer's print processor in Print Manager on the driver tab and the individual printer's properties, along with the registry at HKLM:\SYSTEM\CurrentControlSet\Control\Print\Environments\Windows x64\Drivers\Version-3\. I believe you'll find the culprit there. Good luck!

[Reply](#) ↓

1.  [**Kenneth Westergaard**](#) [March 30, 2015 at 1:21 am](#)

Sorry, I completely missed your response on this one. I have been struggling with this one ever since. I will give it a go again, and see how it turns out.

[Reply](#) ↓

7.  [**Cor**](#) [October 22, 2014 at 2:54 am](#)

Solved our problem too. Thanks!

[Reply](#) ↓

1.  [**reluctantflux**](#) *Post author* [October 22, 2014 at 6:54 am](#)

Excellent!

[Reply](#) ↓


8.  [**Raymond**](#) [October 29, 2014 at 2:58 am](#)

We sometimes have printproblems on a Windows 2012 RDS. Impossible to reproduce the problem. It comes and goes.

Only "solution" was to restart the printspooler and let the user log off and on again. It drives you crazy when you have to do that sometimes multiple times a day.

None of the tips here and on other sites helped, but I added your script to the logoff script, and now the users can fix it bij logging of and on. No more action needed bij the admin. Not a real solution, but good enough for now. So thanks for that!

[Reply](#) ↓

1.  **reluctantflux** Post author [October 29, 2014 at 12:58 pm](#)

What are some of the symptoms that you're seeing that you can't get resolved?

[Reply](#) ↓

1.  **Andee** [November 24, 2014 at 2:09 pm](#)

Hello,

Same story here. We have Windows 2012 R2 RDS up and running. Printer problems still come up. Followed the steps in your blog (nice post btw!). But still getting printers that show up twice etc. Really annoying that microsoft won't fix this problem.

Kind regards,

Andee

[Reply](#) ↓

1.  **Andee** [November 24, 2014 at 2:12 pm](#)

The real problem lies in the creation of double servers. For us, it creates two servers in the specifiek HKLM/./Client Side Rendering Print Provider/ So it creates:

Printserver
Printserver.xyz.local

Which results in two printers. And alas the problems with default printers and confused applications that refuse to print to one of those.

[Reply](#) ↓

2.  **Andee** [November 27, 2014 at 10:27 am](#)

Fixed the above by using "Replace" instead of "Update" in the GPP policies. I read somewhere, that Microsoft themselves considers "Replace" concerning printers the best practise. Since then, my default printers are working correctly and I'm not

seeing any double printers or Acrobat Reader issues. Which was caused by the default printer issue.

[Reply](#) ↓

9.  [**fit body** December 7, 2014 at 4:40 am](#)

Great delivery. Great arguments. Keep up the great work.

[Reply](#) ↓

10.  [**Flavio** December 10, 2014 at 2:37 pm](#)

Very nice man.

Best post i've found about this.

Microsoft workarounds for this problem sucks.

Thanks.

[Reply](#) ↓

11.  [**Vincent** January 16, 2015 at 7:35 am](#)


This article has been tremendously helpful.

The issues have dropped to about 10% of what they used to be after using winprint as print processor, cleaning up the registry and using an HP universal driver. I think I will still need to implement a Canon universal driver to fix it completely.

I've also successfully implemented the quick, temporary fix in a logoff script.

Thank you OP, greetings Belgium.

[Reply](#) ↓

12.  [**ScottK** March 12, 2015 at 7:30 pm](#)

After following your guide in a Citrix Xenapp 7.6/W2012R2 environment, it cleared up most issues. However I was still getting the odd complaint of PDFs not printing. I was also getting phantom printers at logon for all users on some server after completely purging the client side rendering cache and all user keys relating to printing under HKU.

Using RegShot and deleting one of these phantom printers showed a whole bunch of stale keys under the locations below. After going on a rampage on an example server and purging everything under those keys the phantom printers went away. Still awaiting confirmation of whether the PDF issues are completely solved. You will need to launch regedit as system user with PSEXEC to be able to delete these keys.

Delete the following:

HKLM\SYSTEM\CurrentControlSet\Control\Class\{1ed2bbf9-11f0-4084-b21f-ad83a8e6dcde} <- All numbered keys

HKLM\SYSTEM\CurrentControlSet\Control\DeviceClasses\{0ecef634-6ef0-472a-8085-5ad023ecbccd} <- All ##?#SWD#PRINTENUM# keys

HKLM\SYSTEM\CurrentControlSet\Control\DeviceContainers\ <- All keys containing SWD\PRINTENUM values under GUID\BaseContainers\GUID

HKLM\SYSTEM\CurrentControlSet\Enum\SWD\PRINTENUM\ <- All subkeys

[Reply](#) ↓



13. **Allan** [March 30, 2015 at 4:32 am](#)

Great article.

We have a number of issues regarding RDS 2012 and printing, so I look forward to implementing your suggestions.

We have a number of small offices on bandwidth limited xDSL lines, so we have enabled Branch Office Direct Printing. This is to my knowledge not compatible with server-side rendering of print jobs. Any thoughts on this?

[Reply](#) ↓