



## High Availability Failover

Version 1.0

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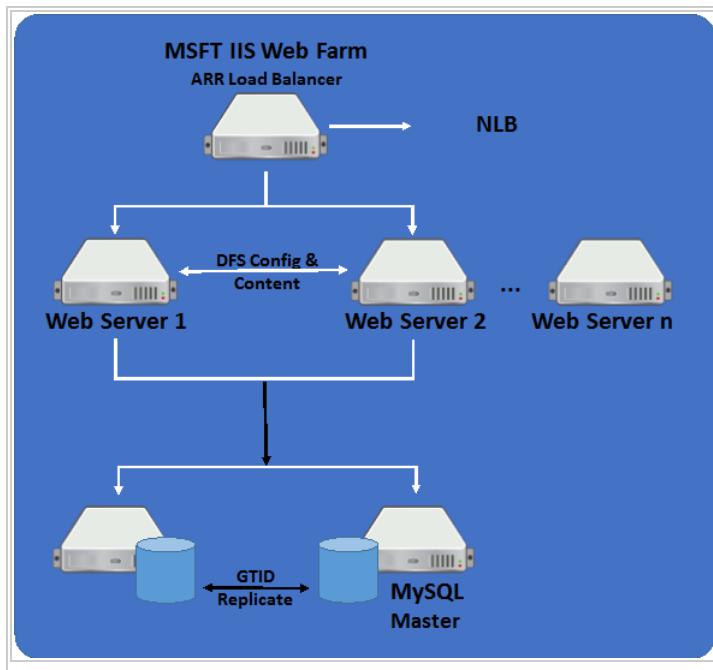
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# High Availability Failover

Failover ensures Printer Installer availability in the event of the primary server's failure.

The High Availability failover eliminates the potential for lost data by using multiple nodes to automate the failover. The process for setting up High Availability is more complicated than that of warm standby failover because you are following steps on several servers, but the end-result is worth it. The following diagram shows the workflow for High Availability failover.



The following sections provide steps for setting up failover for Printer Installer.

# High Availability Failover (Active/Active)



**NOTE:** If you would like to set up High Availability failover, we recommend you work directly with your PrinterLogic representative.

## Prerequisites

To get started, make sure you have five clean Windows 2012r2 64-bit servers.

- Two servers are for Master/Master MySQL DB replication
- At least two servers for IIS Web servers
- One server for IIS Farm/ARR (application request routing)

## STEP 1: DB Replication Server Setup

1. Install the following on both DB servers.

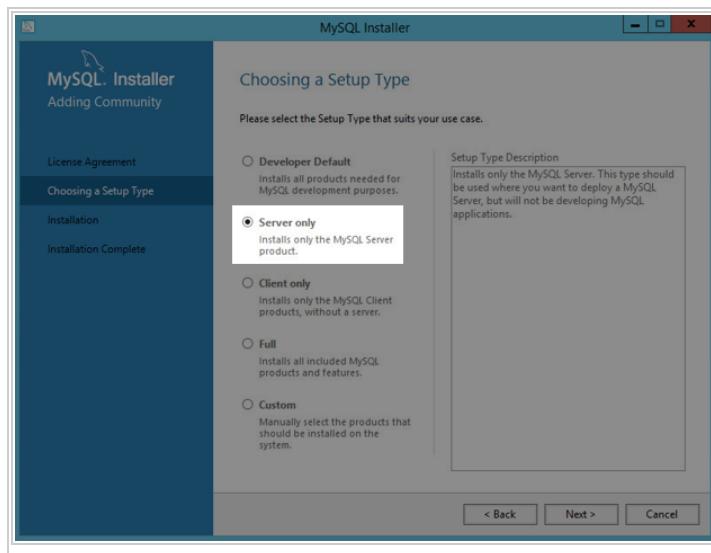
[Visual C++ Redistribution 2013](#)

[Visual C++ Redistribution 2015](#)

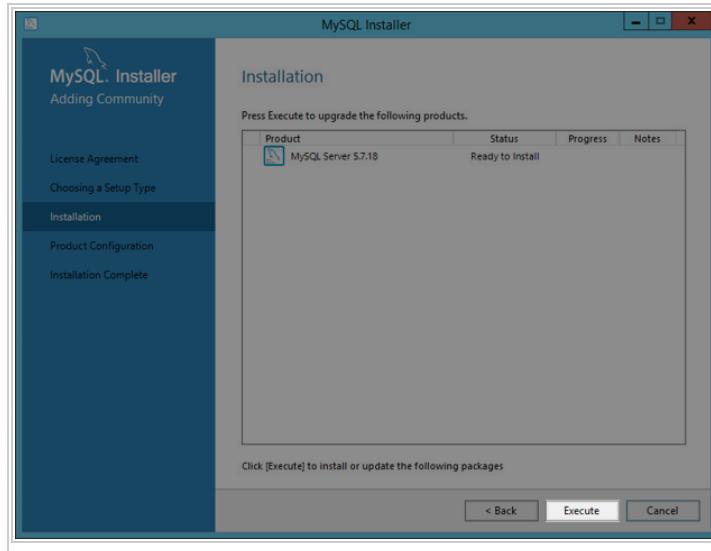
2. On both DB servers, download MySQL installer 5.7.18 ref.

<https://dev.mysql.com/doc/refman/5.7/en/mysql-installer-.html>

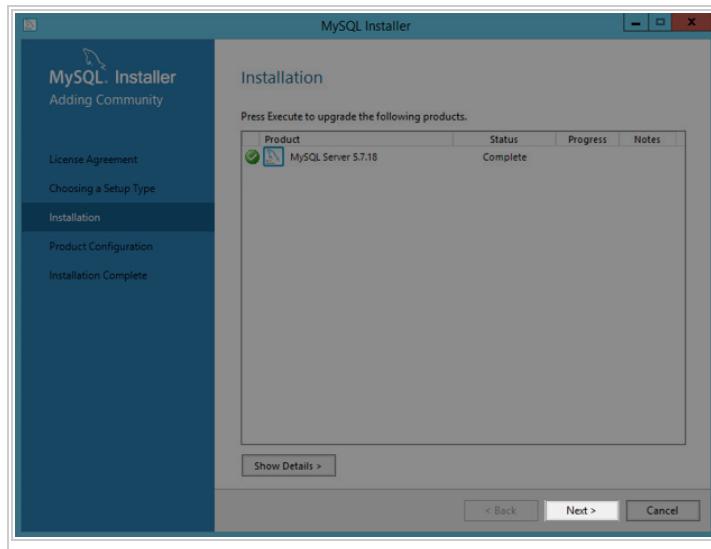
3. When you run the installer, select **Server only**.



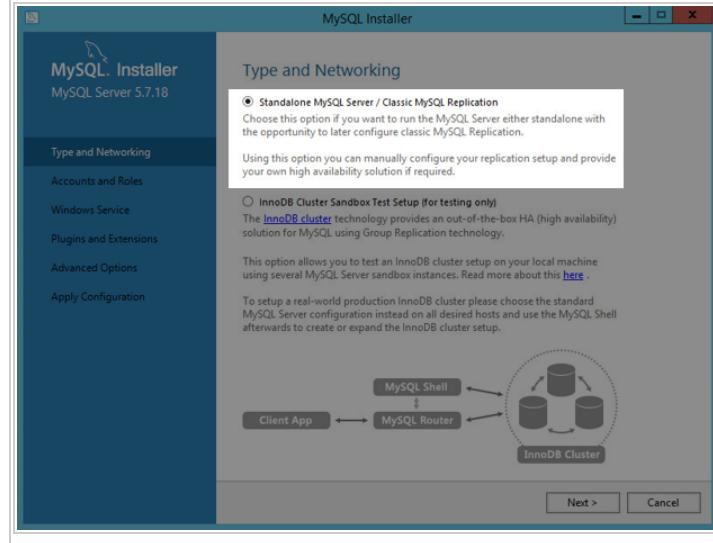
4. Click **Next**.
5. Verify the MySQL server.
6. Click **Execute**.



7. When the installation finishes, click **Next**.

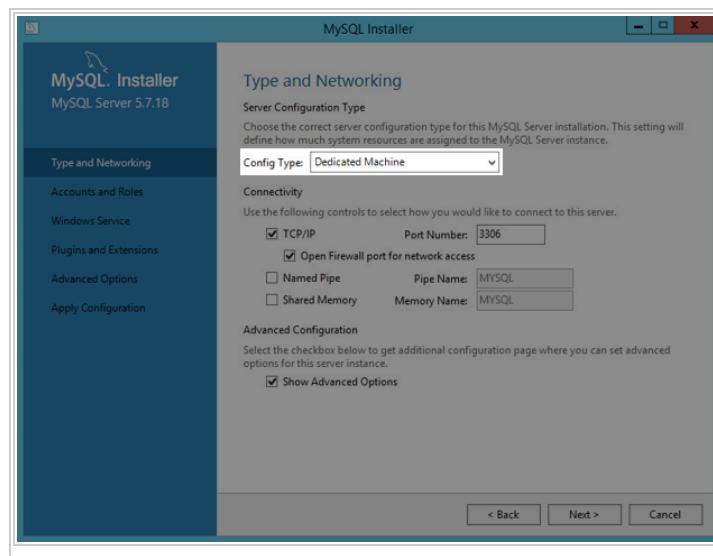


8. In the Product Configuration window, click **Next**.
9. Select **Standalone MySQL Server/Classic MySQL Replication**.

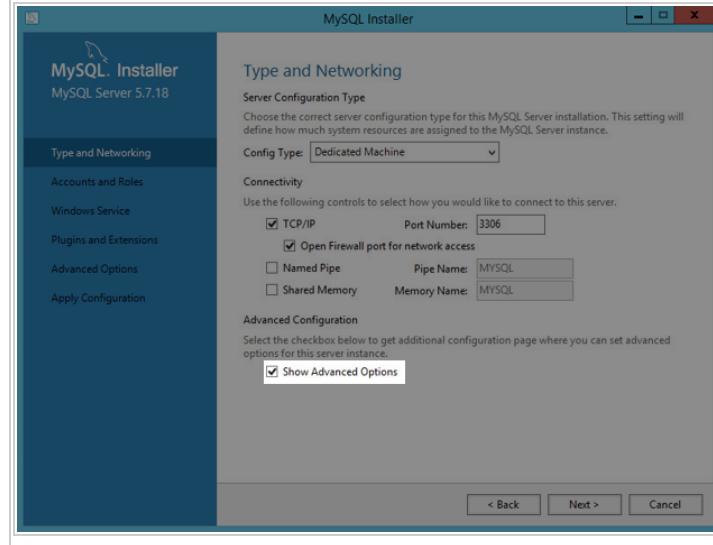


10. Click **Next**.

11. In the Config Type field, select **Dedicated Machine**.

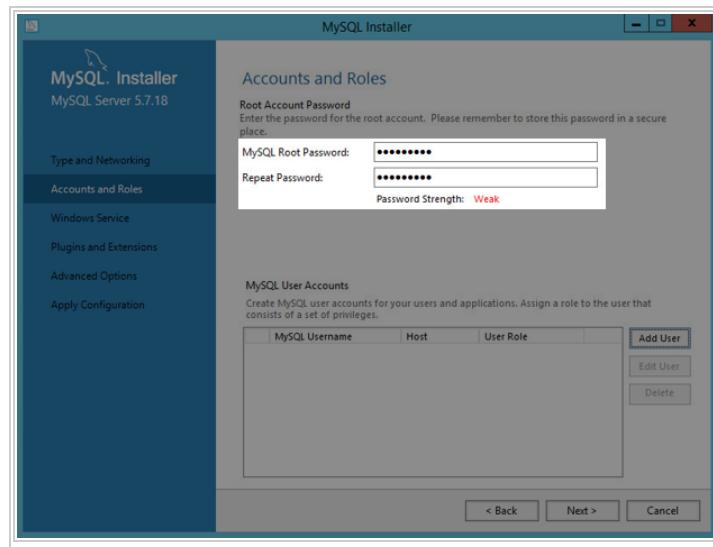


12. Click **Show Advanced Options**.



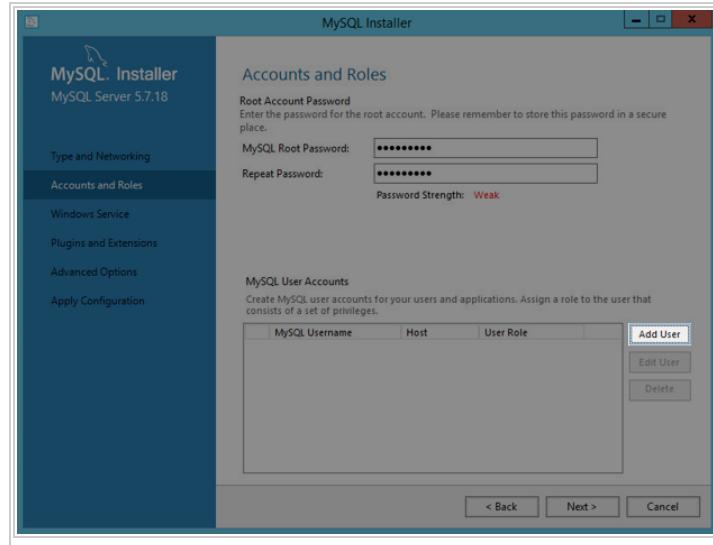
13. Click **Next**.

14. Enter and re-enter a password for the root account.

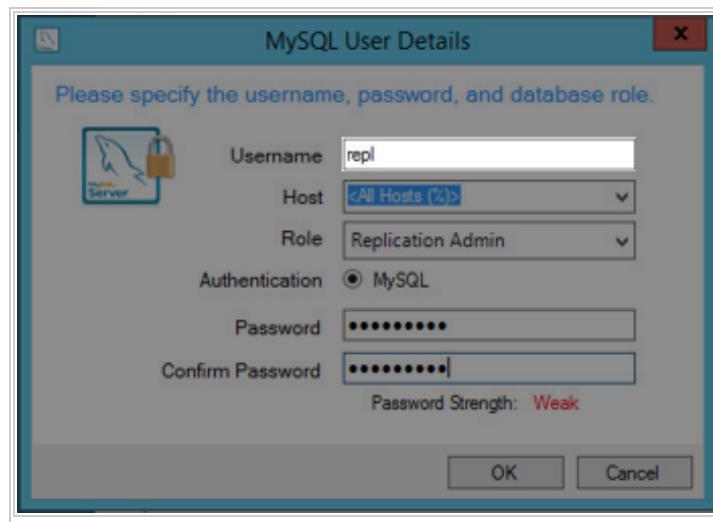


**NOTE:** Make sure you commit this password to memory as it will be used to connect Printer Installer to the DB.

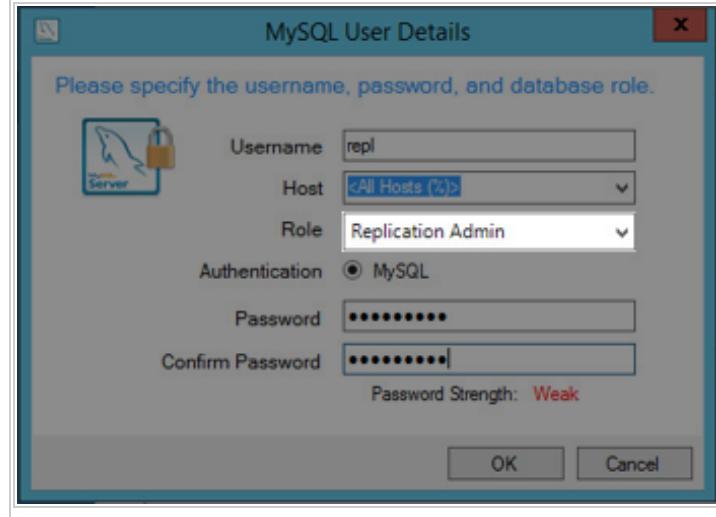
15. Click **Add User** to add a user for GTID replication.



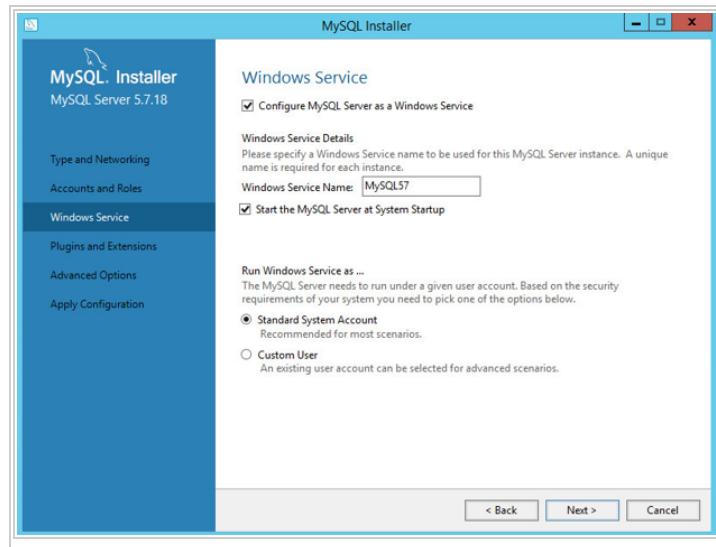
16. In the MySQL User Details window, add a username.



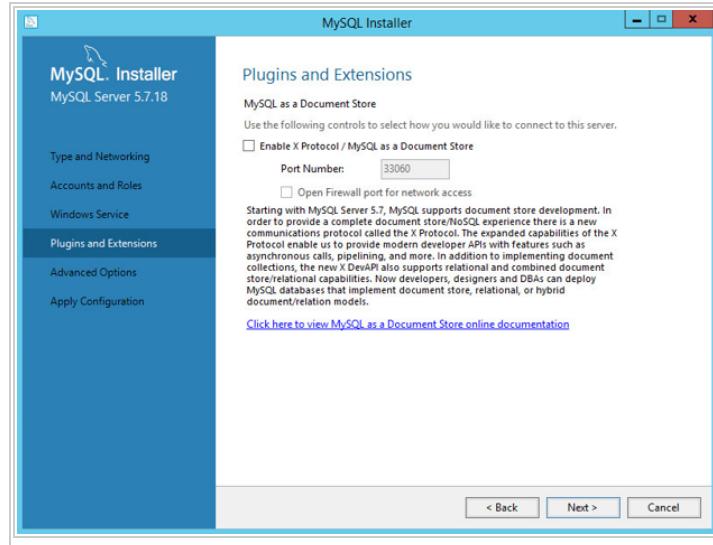
17. In the Role field, select **Replication Admin**.



18. Provide a password and a repeat password.
19. Click **OK**.
20. Click **Next**.
21. When the Windows Service window appears, just use the defaults as identified in the image below.

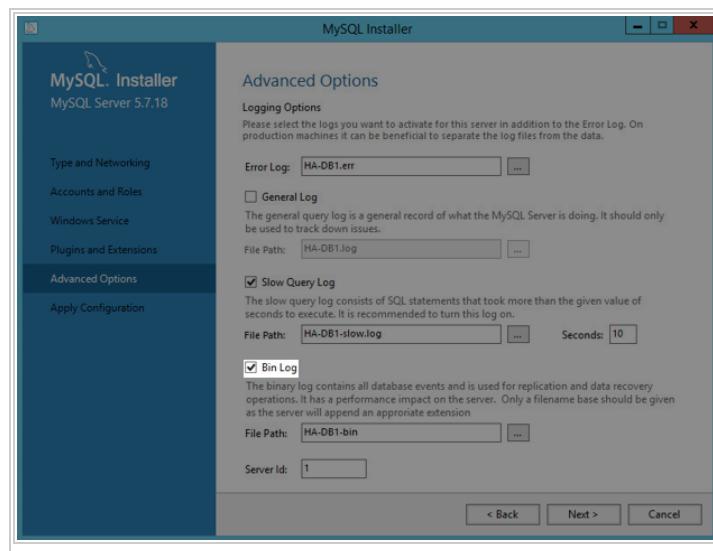


22. Click **Next**.
23. When the Plugins and Extensions window appears, just use the defaults as identified in the image below.



24. Click **Next**.

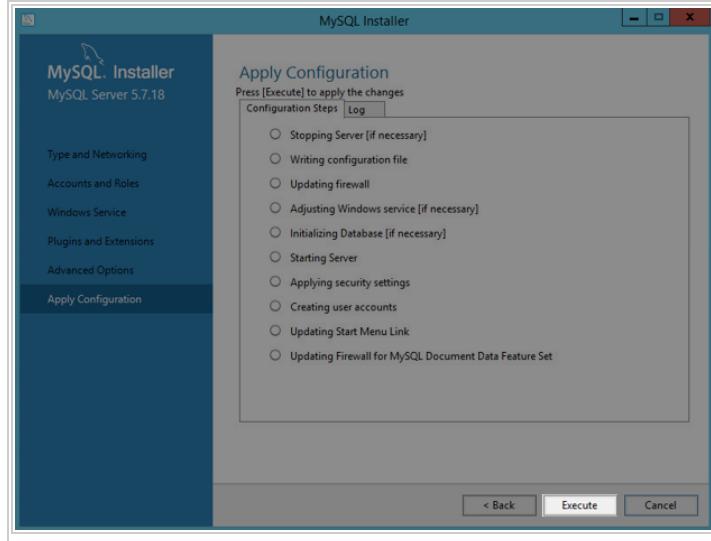
25. Select **Bin Log**.



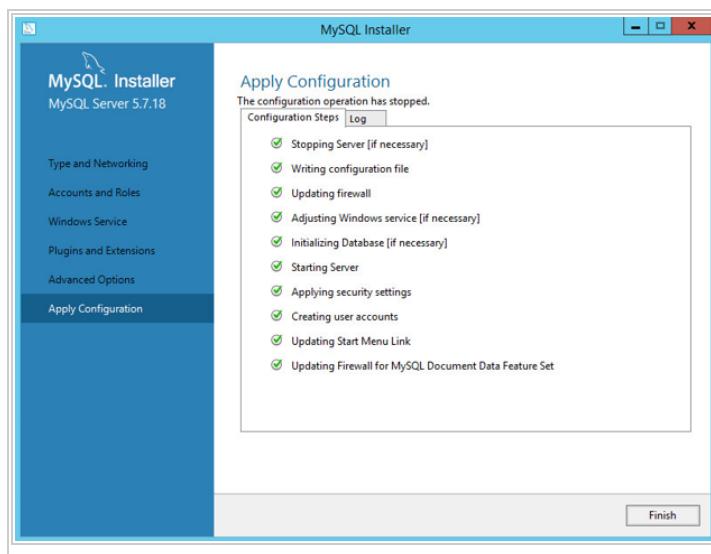
Also note the **Server ID**. For DB Server 1, you can use id: 1. For DB Server, use id: 2. The IDs must be different for GTID replication to work correctly.

26. Click **Next**.

27. Click **Execute**.



28. When the operation is complete, click **Finish**.



29. Click **Next**.

30. Click **Finish** to complete the installation.

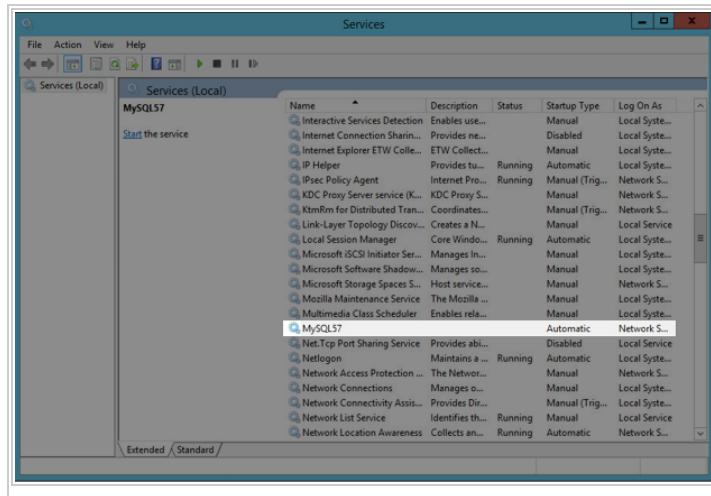


**NOTE:** These steps complete the installation process on the first DB server. Follow these steps again on the second DB server. Make sure you give that server the Server ID: 2. When you have finished that installation process, you can then move to the following section, GTID Replication Configuration.

## STEP 2: Configure the MySQL Servers for GTID Replication

Complete these steps on both DB servers.

1. Open the Service Manager.
2. Click MySQL57 to select it.

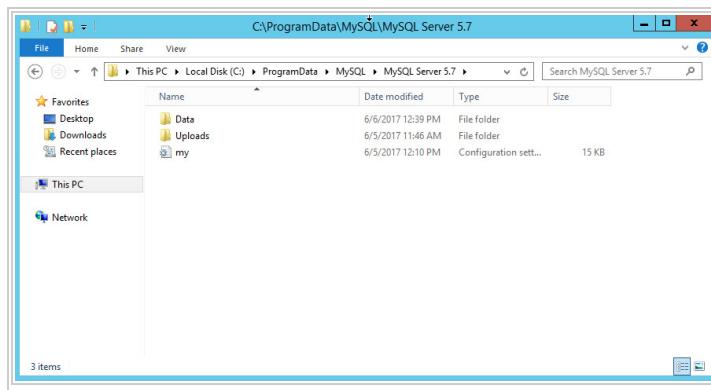


3. Stop the service by right-clicking it and selecting **Stop** or by clicking the Stop icon in the toolbar.

Do not close the Service Manager as you will be coming back to it further along in the process.

4. Open Windows Explorer.
5. Navigate to c:\programdata\mysql\mysql server 5.7.

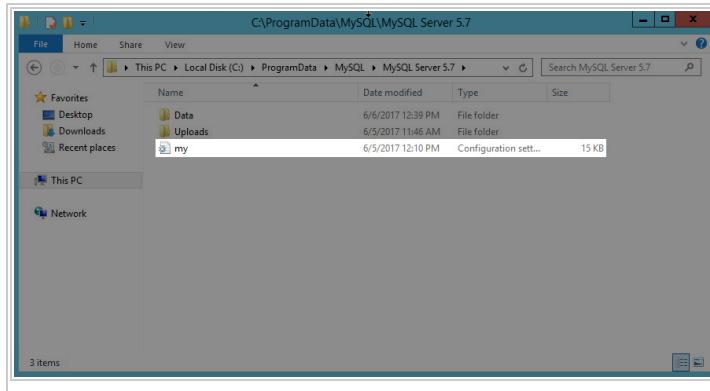
The programdata folder may be a hidden directory. If so, change the folder settings to show the hidden files/folders.



6. Open the configuration settings file (my.ini) in your text editor.



**NOTE:** Make sure you open the file in administrator mode.



7. Add the following lines to the bottom of the [mysqld] section of the my.ini file:

```
# enabling GTID replication  
enforce-gtid-consistency  
gtid-mode=on
```

This addendum is used to enable GTID replication.

8. Save the my.ini file and close it.
9. In the Service Manager, right-click the MySQL57 service and select **Start**, or click the service and press the start icon in the toolbar.



**NOTE:** Make sure you complete these steps on both DB servers before configuring Master/Master.

### STEP 3: Configure the Master/Master Replication

1. On DB Server 1, launch a MySQL5.7 command line client and then enter the password to root user.
2. Type the following commands at the **mysql>** line.



**NOTE:** Make sure you add the commas where indicated.

```
CHANGE MASTER TO  
> MASTER_HOST = "host",
```



**NOTE:** This should be DB Server 2 host name

```
> MASTER_PORT = port,
```



**NOTE:** 3306 is the default port.

```
> MASTER_USER = "user",
```



**NOTE:** This should be the replication user created during install.

```
> MASTER_PASSWORD = "password",
```



**NOTE:** This should be the replication user's password.

```
> MASTER_AUTO_POSITION = 1;
```

The following image shows the commands as they should be entered.

A screenshot of the MySQL 5.7 Command Line Client window. The command line shows the following sequence of commands:

```
mysql> change master to
      > master_host = "192-DB2",
      > master_port = 3306,
      > master_user = "rep1",
      > master_password = "password1",
      > master_auto_position = 1;
Query OK, 0 rows affected, 2 warnings (0.09 sec)

mysql> 
```

3. Start the Slave on DB Server 1 by typing the following command.

```
START SLAVE;
```

A screenshot of the MySQL 5.7 Command Line Client window. The command line shows the following sequence of commands:

```
mysql> 
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 5
Server version: 5.7.18-log MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> change master to
      > master_host = "192-DB2",
      > master_port = 3306,
      > master_user = "rep1",
      > master_password = "password1",
      > master_auto_position = 1;
Query OK, 0 rows affected, 2 warnings (0.09 sec)

mysql> Start slave;
Query OK, 0 rows affected (0.02 sec)

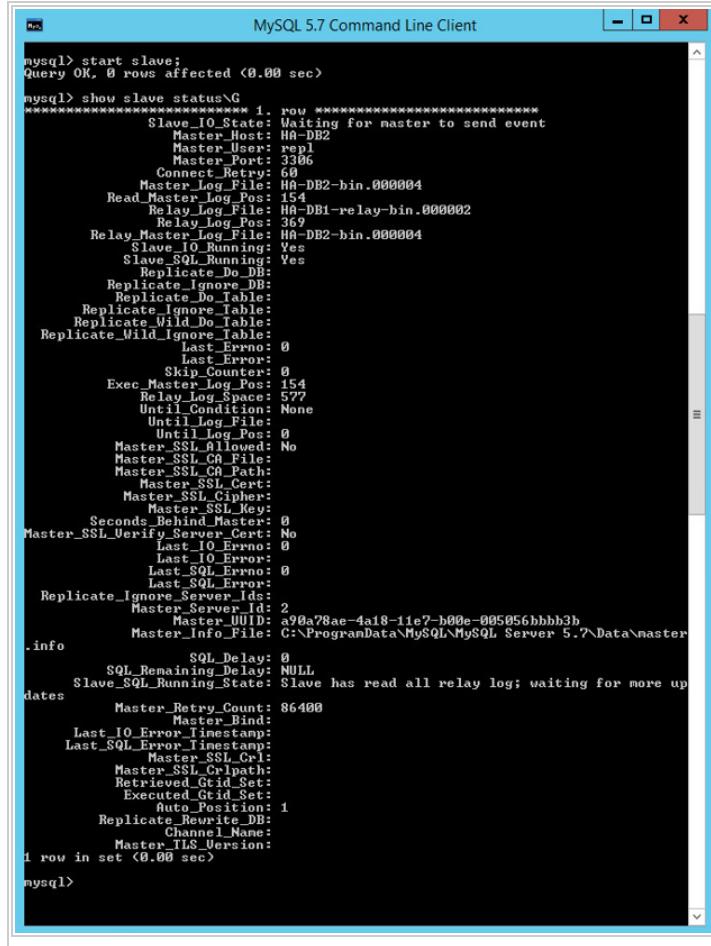
mysql> 
```

4. Repeat the Configuration Master/Master steps again on DB Server 2.

The steps should be the same as DB Server 1, except you should put DB Server 1 host name for Master\_Host.

5. Verify that Master/Master replication is working by executing the following on each DB server.

`show slave status\G`

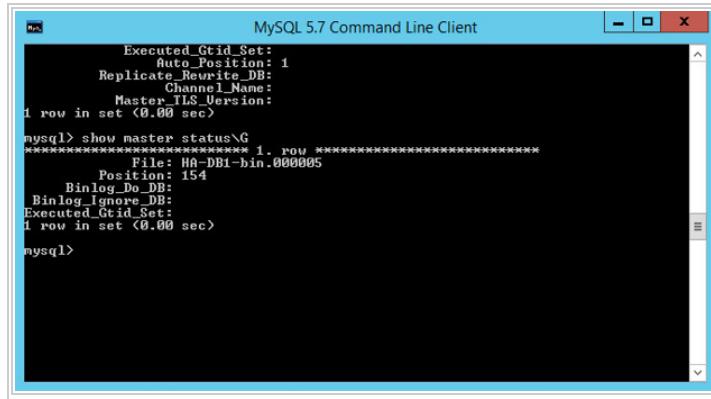


```
mysql> start slave;
Query OK, 0 rows affected (0.00 sec)

mysql> show slave status\G
***** 1. row *****
Slave_IO_State: Waiting for master to send event
Master_Host: HA-DB2
Master_Port: 3306
Connect_Retry: 60
Master_Log_File: HA-DB2-bin.000004
Read_Master_Log_Pos: 154
Relay_Log_File: HA-DB1-relay-bin.000002
Relay_Log_Pos: 369
Relay_Master_Log_File: HA-DB2-bin.000004
Slave_IO_Running: Yes
Slave_SQL_Running: Yes
Replicate_Do_DB:
Replicate_Ignore_DB:
Replicate_Do_Table:
Replicate_Ignore_Table:
Replicate_Wild_Do_Table:
Replicate_Wild_Ignore_Table:
Last_Error: 0
Last_IO_Error:
Skip_Counter: 0
Exec_Master_Log_Pos: 154
Relay_Log_Space: 577
Until_Condition: None
Until_Log_File:
Until_Log_Pos: 0
Master_Replicate_Access: No
Master_SSL_Cert:
Master_SSL_Cipher:
Master_SSL_Key:
Seconds_Behind_Master: 0
Master_SSL_Verify_Server_Cert: No
Last_IO_Error: 0
Last_SQL_Error: 0
Last_SQL_Error: 0
Replicate_Ignore_Server_Ids:
Master_Server_Id: 2
Master_UUID: a90a78ae-4a18-11e7-b00e-005056bbbb3b
Master_Info_File: C:\ProgramData\MySQL\MySQL Server 5.7\Data\master.info
SQL_Delay: 0
SQL_Remaining_Delay: NULL
Slave_SQL_Running_State: Slave has read all relay log; waiting for more updates
Master_Retry_Count: 86400
Master_Bind:
Last_IO_Error_Timestamp:
Last_SQL_Error_Timestamp:
Master_SSL_Crl:
Master_SSL_Crlpath:
Retrieved_Gtid_Set:
Executed_Gtid_Set:
Auto_Position: 1
Replicate_Rewrite_DB:
Channel_Name:
Master_TLS_Version:
1 row in set (0.00 sec)

mysql>
```

`show master status\G`



```
mysql> show master status\G
***** 1. row *****
Executed_Gtid_Set: 1
Auto_Position: 1
Replicate_Rewrite_DB:
Channel_Name:
Master_TLS_Version:
1 row in set (0.00 sec)

mysql> show master status\G
***** 1. row *****
File: HA-DB1-bin.000005
Position: 154
Binlog_Do_DB:
Binlog_Ignore_DB:
Executed_Gtid_Set:
1 row in set (0.00 sec)

mysql>
```

6. Grant remote access to the DB servers for Printer Installer by executing the following commands in the MySQL command prompt on DB Server 1.

```
GRANT ALL PRIVILEGES ON *.* TO 'root'@'%' IDENTIFIED BY  
'password';
```

```
Flush PRIVILEGES;
```



**NOTE:** The password should be the password for the root user.

The screenshot shows a Windows command-line interface window titled "MySQL 5.7 Command Line Client". It displays two MySQL commands being run:  
1. `grant all privileges on *.* to 'root'@'%' identified by 'password';`  
2. `Flush privileges;`  
Both commands return "Query OK" and "0 rows affected" with execution times of 0.00 sec and 0.02 sec respectively. The MySQL prompt "mysql>" is visible at the bottom.

7. Close the command prompt.

## STEP 4: Set up the IIS Web Farm



**TIP:** For more information on setting IIS/ARR and Web Servers, see [https://technet.microsoft.com/en-us/library/jj129385\(v=ws.11\).aspx](https://technet.microsoft.com/en-us/library/jj129385(v=ws.11).aspx).

### Install IIS

Install IIS on all servers in your web farm except your back-end file servers (content server and certificate store server). The ARR server requires only a default install of IIS with Centralized SLL Certificate Support. All the web servers require you to install IIS and all IIS modules that support the types of web applications you intend to run.

#### To install IIS on an ARR server

1. On the Start page, click the Server Manager tile, and then click OK.

2. In Server Manager, select **Dashboard**, and click **Add roles and features**.
3. In the Add Roles and Features Wizard, on the **Before You Begin** page, click **Next**.
4. On the Select Installation Type page, select **Role-based or Feature-based Installation** and click **Next**.
5. On the Select Destination Server page, select **Select a server from the server pool**.
6. Select the name of your computer and click **Next**.
7. On the Select Server Roles page, select **Web Server (IIS)** and then click **Next**.
8. On the Select Features page, notice the preselected features, and then click **Next**.
9. On the Web Server Role (IIS) page, click **Next**.
10. On the Select Features page, take note the preselected features that are installed by default and then click **Next**.
11. On the Web Server Role (IIS) select **Next**.
12. On the Select role services, select **Centralized SSL Certificate Support** under the Security node if you plan to setup a Centralized SSL Certificate Support. You can alternatively install the SSL cert on the ARR and on each web server.
13. Click **Next**.
14. On the Confirm Installation Selections page, confirm your selections and then click **Install**.
15. On the Installation Progress page, confirm that your installation of the Web Server (IIS) role and required role services completed successfully and then click **Close**.
16. To verify that IIS installed successfully, enter the following into a web browser:

`http://localhost`

You see the default IIS Welcome page.

To install IIS and IIS modules on ALL web servers

1. On the Start page, click the Server Manager tile and then click **OK**.
2. In Server Manager, select **Dashboard** and then click **Add roles and features**.
3. In the Add Roles and Features Wizard, on the **Before You Begin** page, click **Next**.
4. On the Select Installation Type page, select **Role-based or Feature-based Installation** and then click **Next**.
5. On the Select Destination Server page, select **Select a server from the server pool**, select your server, and then click **Next**.
6. On the Select Server Roles page, select **Web Server (IIS)** and then click **Next**.
7. On the Select Features page, take note of the preselected features that are installed by default and then select additional role services for the type of web applications you plan to support.  
Default is all that is needed for Printer Installer.
8. Click **Next**.
9. On the Web Server Role (IIS) page, click **Next**.
10. On the Select Role Services page, take note of the preselected role services that are installed by default, and then click **Next**.
11. On the Confirm Installation Selections page, confirm your selections, and then click **Install**.
12. On the Installation Progress page, confirm that your installation of the Web Server (IIS) role and required role services completed successfully, and then click **Close**.
13. To verify that IIS installed successfully, type the following into a web browser:

`http://localhost`

You should see the default IIS Welcome page.

## Install ARR for Load Balancing

Once you have a default installation of IIS on a server, you can use Web Platform Installer to install the current version of Application Request Routing (ARR). To install ARR load balancing and its dependencies:

1. Open a browser to the Application Request Routing website, and click the **Install** button.
2. Click **Allow** and then click **Yes**.
3. In the Web Platform Installer window, click **Install**.
4. Look over the components to be installed, and then click **I Accept**.
5. When the installer completes the installation, it displays a summary showing what was installed.
6. Click **Finish** and then click **Exit**.

## Set up your Website on One Web Server

Install Printer Installer on All IIS Web Servers. Printer Installers requires .Net 3.5 to be installed on the server.

## Install .Net 3.5 on all IIS Web Servers

1. On the Start page, click the Server Manager tile and then click **OK**.
2. In Server Manager, select **Dashboard** and then click **Add roles and features**.
3. In the Add Roles and Features Wizard, on the **Before You Begin** page, click **Next**.
4. On the Select Installation Type page, select **Role-based or Feature-based Installation** and then click **Next**.
5. On the Select Destination Server page, select **Select a server from the server pool**, select your server, and click **Next**.
6. On the Select Server Roles page, click **Next**.
7. On the Select Features page, select **.Net framework 3.5 features**.
8. Click **Next**.

9. On the Confirm Installation Selections page, confirm your selections, and then click **Install**.
10. On the Installation Progress page, confirm that your installation of the Web Server (IIS) role and required role services completed successfully and then click **Close**.



**NOTE:** Be sure and install .Net 3.5 on all IIS web servers.

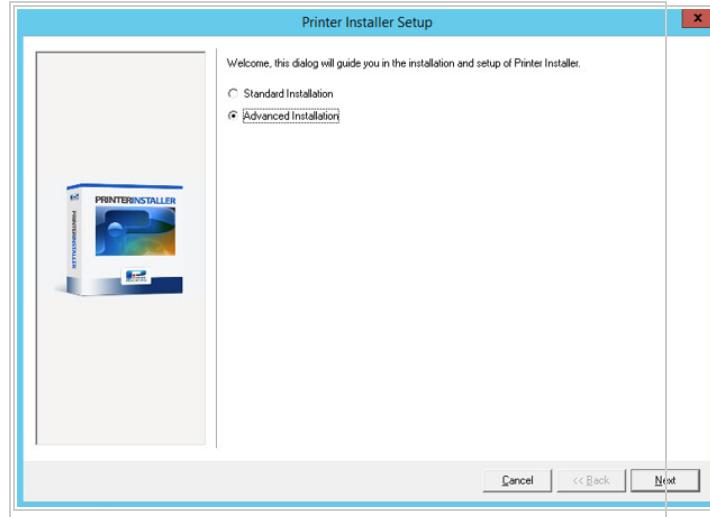
Install Printer Installer to all IIS web servers (one server at a time)

1. Download PrinterInstallerSetup-17-1-1-x.exe.

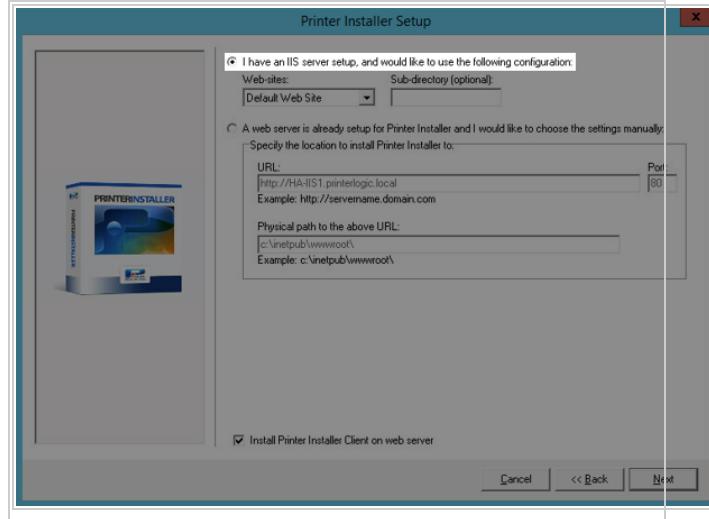


**NOTE:** HA – active/active is only support on Printer Installer 17.1+.

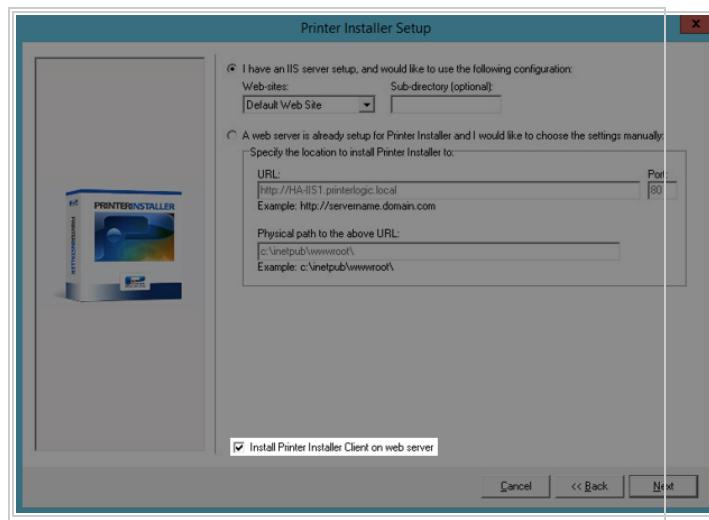
2. Run PrinterInstallerSetup-17-1-1-x.exe.
3. On the Printer Installer Setup page, select **Advanced Installation** and then select **Next**.



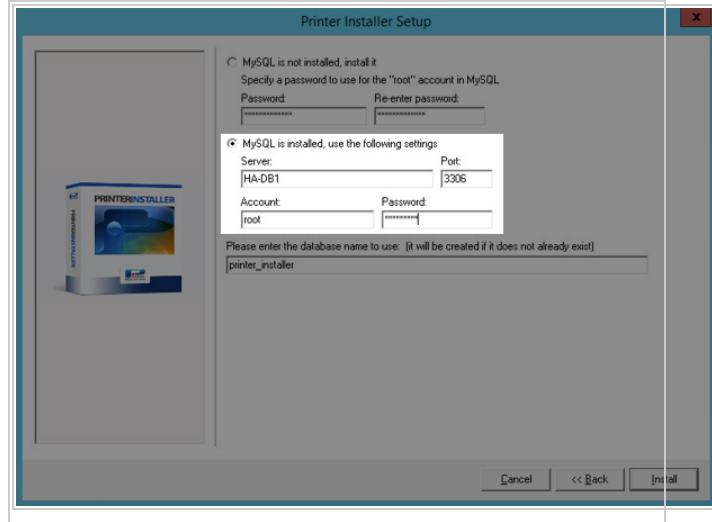
4. On the Printer Installer Setup IIS server page, select **I have an IIS server setup....**



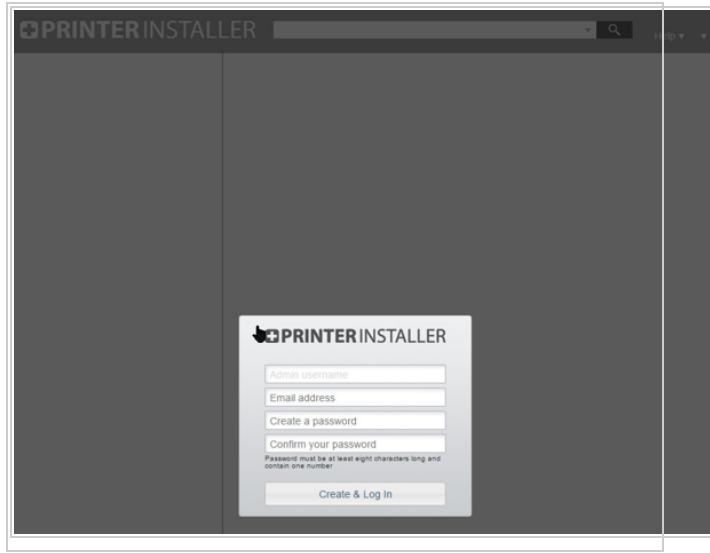
5. Leave the Web-sites field as **Default Web Site**.
6. Click **Install Printer Installer Client on web server**.



7. Click **Next**.
8. Select **MySQL is installed**, use the following settings.



9. In the Server field, type the DB Server 1 that has been set up and configured for the server.
10. In the Port field, type **3306** (unless changed).
11. In the Account field, type **Root**.
12. In the Password field, type the password for Root.
13. In the Please enter the database name to use field, type **printer\_installer**.
14. Click **Install**.
15. On the Printer Installer Setup finish page, verify that Launch Printer Installer Admin is selected.
16. Click **Done**.
17. When the Printer Installer credentials window appears, create a root Printer Installer account.



18. Close the browser.
19. Repeat the steps above on each IIS web server.

### Set up Shared Configuration and Content

To configure shared configuration, export the configuration files to the back-end file server. Then point the web server to the shared configuration location.

#### Set up Shared Configuration

1. Create a folder on a Printer Installer IIS web servers.

We will create c:\IIS-Shared-Config.

2. Open IIS Manager, select your server name, and double-click **Shared Configuration**.
3. In the Actions pane, click **Export Configuration**.
4. In the Physical path box, type c:\IIS-Shared-Config.
5. Under Encryption Keys, type a password for encryption the configuration files, and confirm the password.



**NOTE:** Remember this password as you will need it for each IIS Web Server during initial setup as well as any Printer Installer upgrades.

6. Click **OK**.
7. On the Shared Configuration page, select the **Enable shared configuration** check box.
8. In the Physical path box, type `c:\IIS-Shared-Config`.
9. Leave the User name box blank as you will be using a local folder.
10. Leave the Password and Confirm Password boxes blank as you are using a local folder.
11. In the Actions pane, click **Apply**.
12. In the Encryption Keys Password dialog, type the encryption keys password and click **OK**.
13. Click **OK** on object instance warnings.
14. Close IIS Manager and then reopen it.

IIS is now using the configuration files that are located of the file server. The next step is to set up DFS replication before enabling **Shared Configuration** on the other IIS servers.

#### Install DFS Using Server Manager on ALL Webservers

1. Open Server Manager and click **Manage**.
2. Click **Add Roles and Features** to display the Add Roles and Features Wizard.
3. On the Server Selection page, select the server or virtual hard disk (VHD) of an offline virtual machine on which you want to install DFS.
4. Select the role services and features that you want to install.

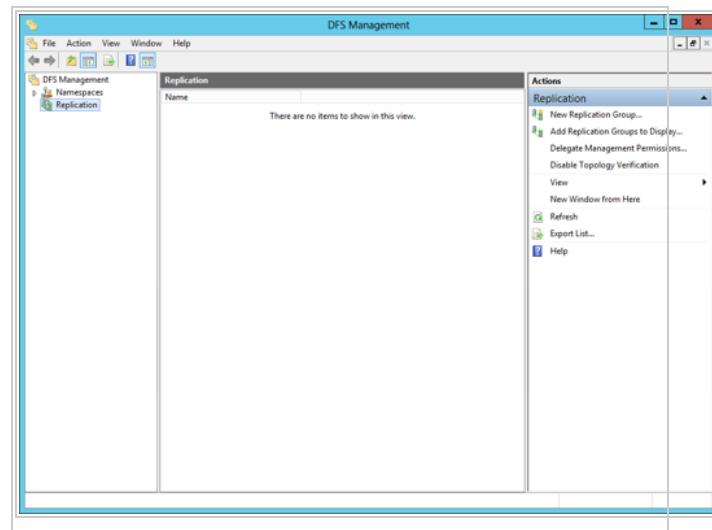
To install DFS Replication services, on the Server Roles page under File and Storage Services, in File and iSCSI Services , select **DFS Replication**.

5. Review the Add Roles and Features Wizard and then click **Add Feature**.
6. Click **Next**.
7. Click **Next** on Features.
8. Click **Install**.

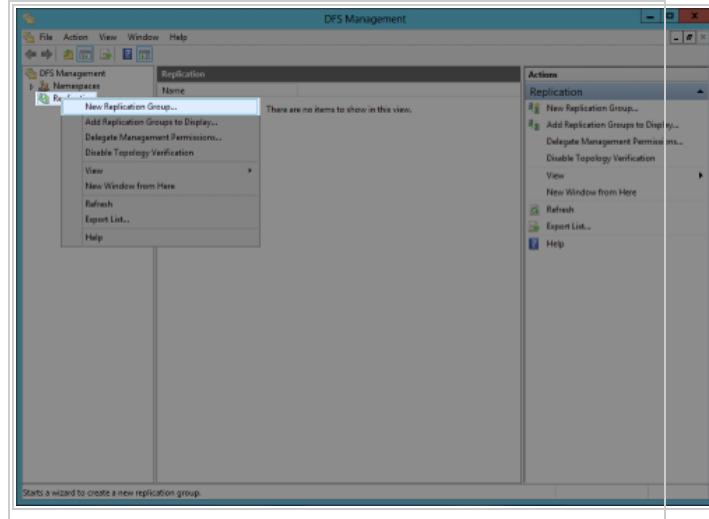
Be sure and install DFS on ALL IIS Web Servers before continuing.

### Configure DFS Replication for IIS-Shared-Config

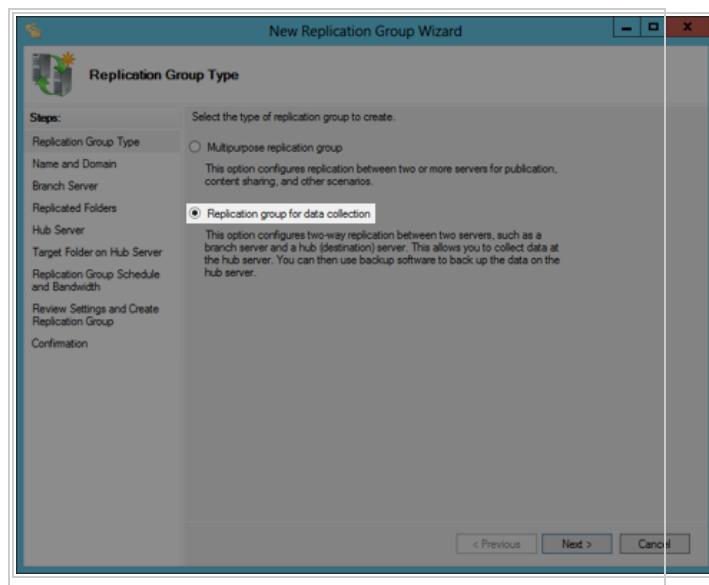
1. Launch DFS Manager from Server Manager.



2. Right-click **Replication** in the left pane of the DFS Replication Management Console.
3. Select **New Replication Group** to launch the new Replication Group Wizard.

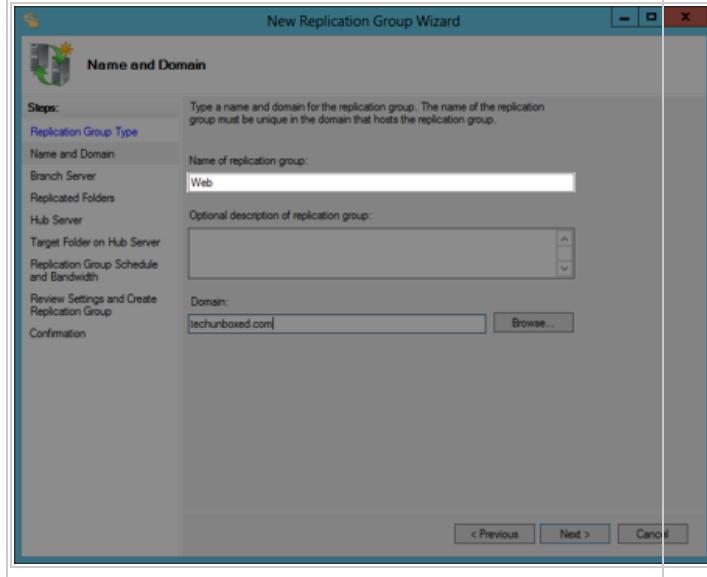


4. Click **Replication group for data collection**.

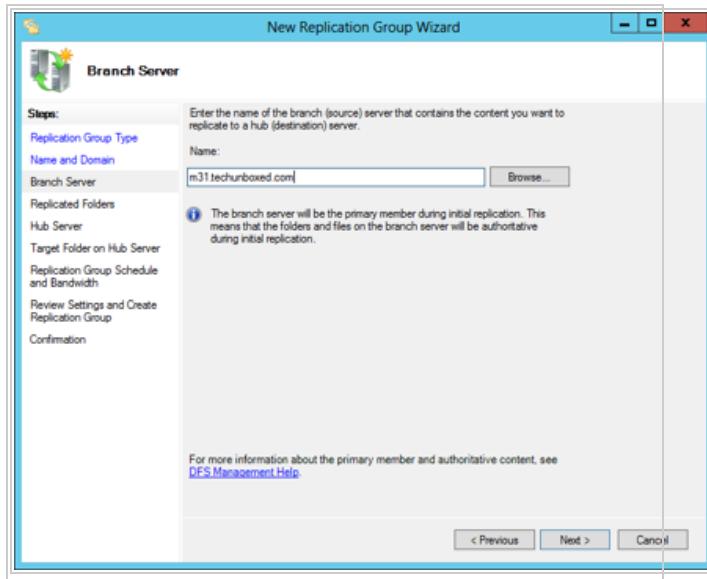


5. Click **Next**.

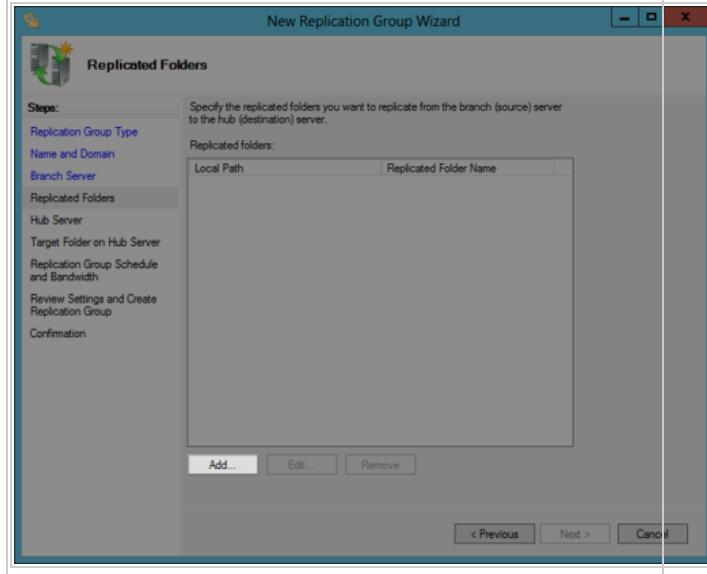
6. In the Name of replication group field, type a descriptive and unique name.



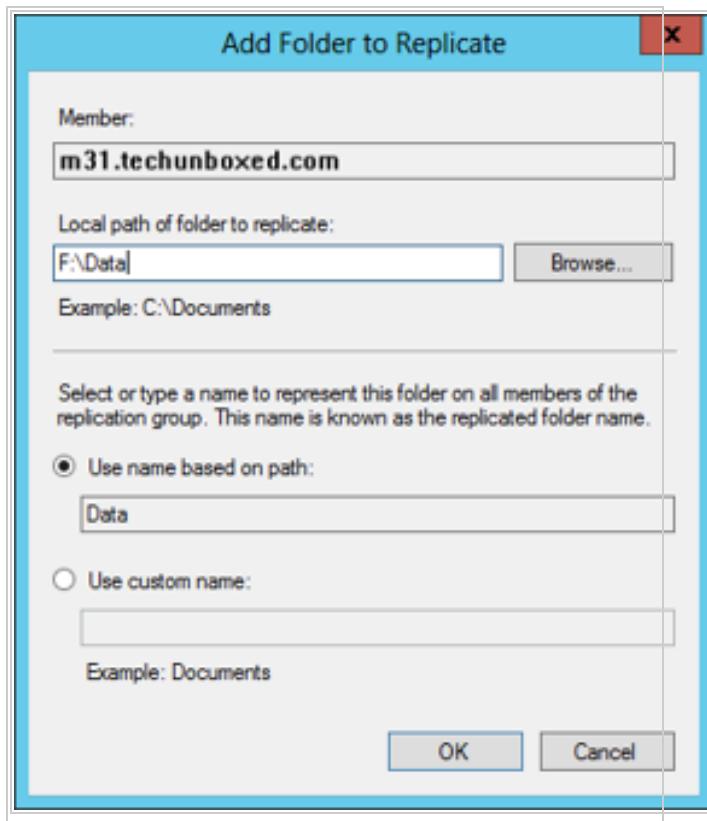
7. (Optional) In the Domain field, enter a domain other than the default, which shows the domain name of the server with which you are working.
8. Click **Next**.
9. In the Name field, type the name of the server (the first Printer Installer server) containing the data you wish to replicate.



10. Click **Next**.
11. Click **Add** to define the folders that contain the data you want to replicate.



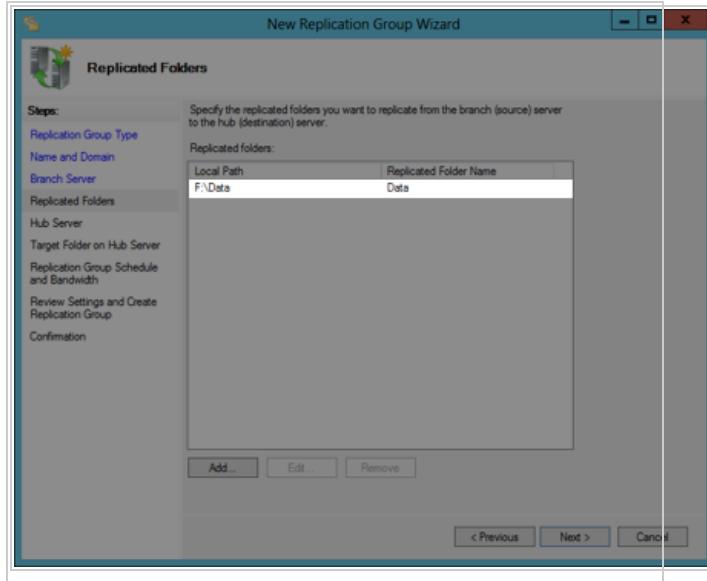
12. When the Add Folder to Replicate window appears, enter or browse to the path of a folder to replicate.



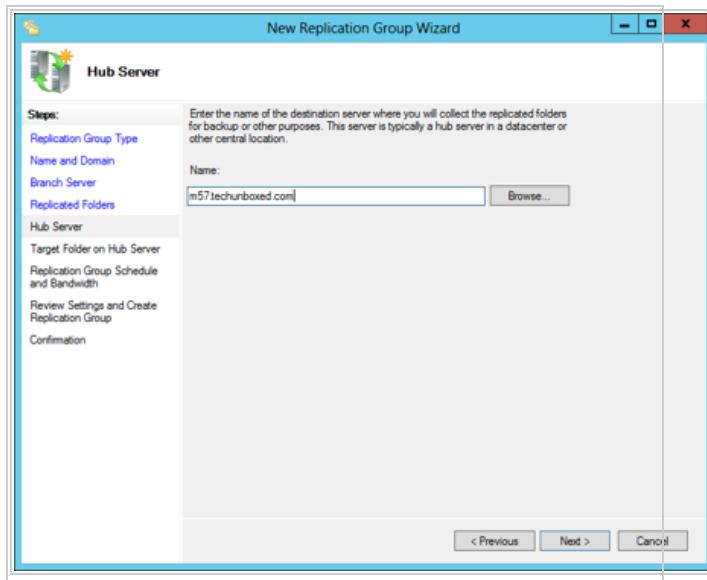
Make sure you select the folder you exported, specifically c:\IIS-Shared-Config.

13. Click **OK**.

The folder you just added should be listed in the Replicated Folders box.



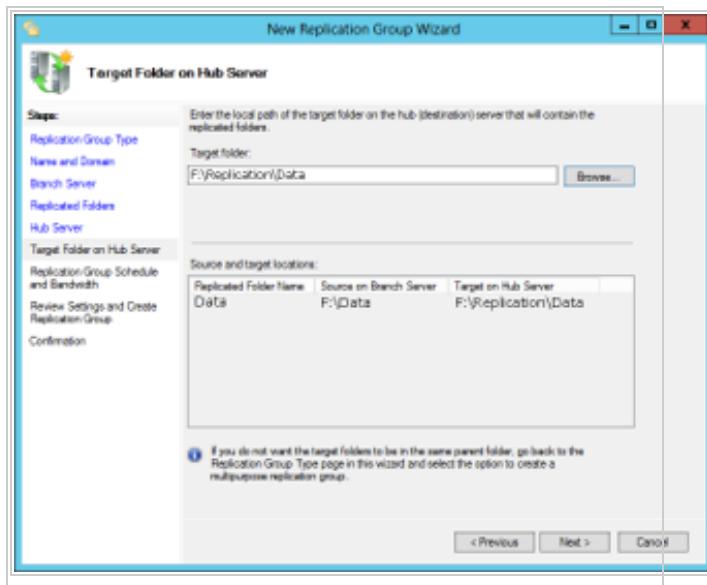
14. Click **Add** to add more folder to replicate.
15. When all folder have been added, click **Next**.
16. Enter the name of the server (second Printer Installer Web Server or even a third if needed) that will be the target for the replicated data.



Servers in replication groups must be in the same Active Directory domain.

17. Click **Next**.
18. In the Target folder field, type or browse to the path on the destination server where the replicated data is to reside.

Should be c\$ - c:\IIS-Shared-Config may need to be created on the target servers.

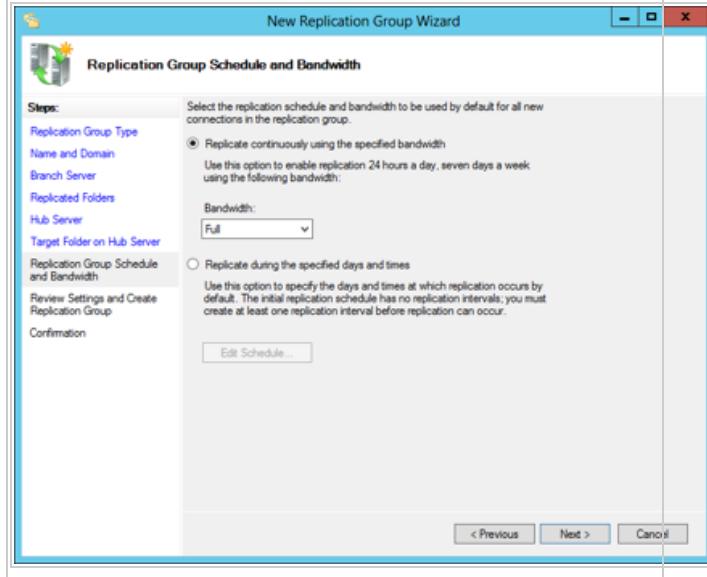


19. Verify the replication flow in the Source and target locations section.
20. Click **Next**.



**NOTE:** Be careful not to include the final folder; otherwise, a subfolder is created.

21. Set the replication bandwidth.

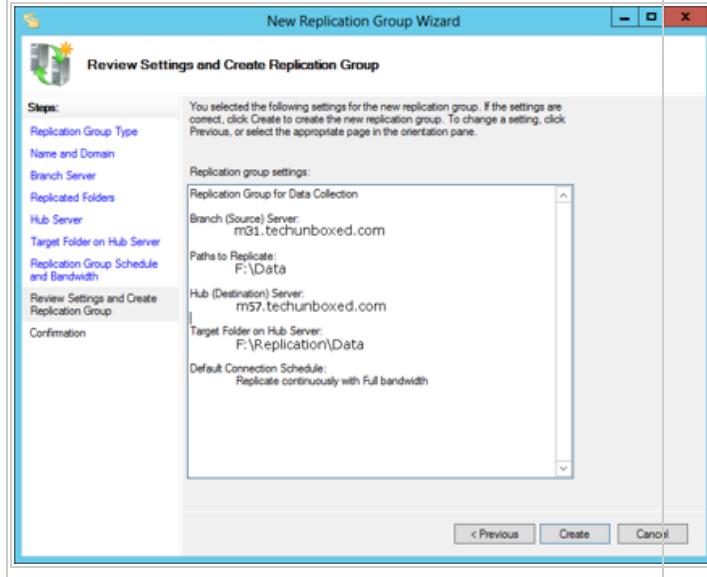


There are two methods of bandwidth utilization that DFS Replication can use.

- **Continuous Replication** where replication takes place 24/7. The amount of bandwidth that replication consumes can be set to full or one of a few other selections.
- **Schedule Replication** can be set to not replicate data during certain times and/or days of the week or at full or limited bandwidths. Replication can be set to replicate at a lower bandwidth during business hours, when network utilization is high, and full bandwidth at night and weekends for example.

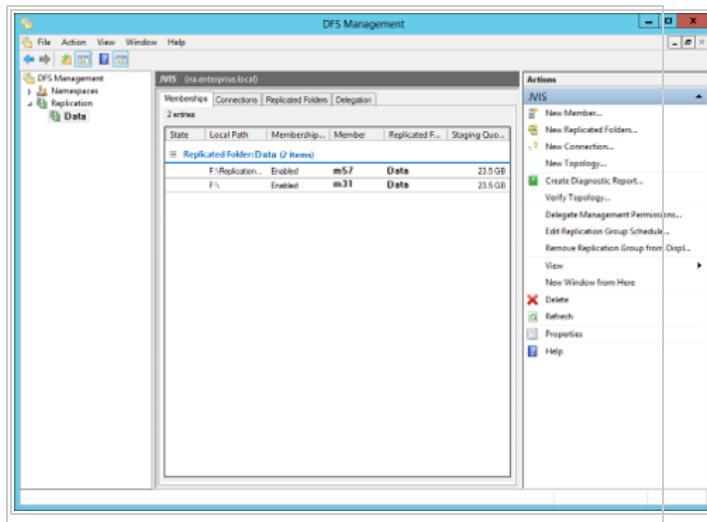
Replication bandwidth tuning can be broad with continuous replication or finely tuned by scheduling. It should not be needlessly complex. Try and keep it as simple as possible and only as complex as needed.

22. Review the replication group settings and then click **Create**.



22. Read the dialog about replication delay and then click **OK**.

In the DFS Management Console, you will see the newly created replication group.



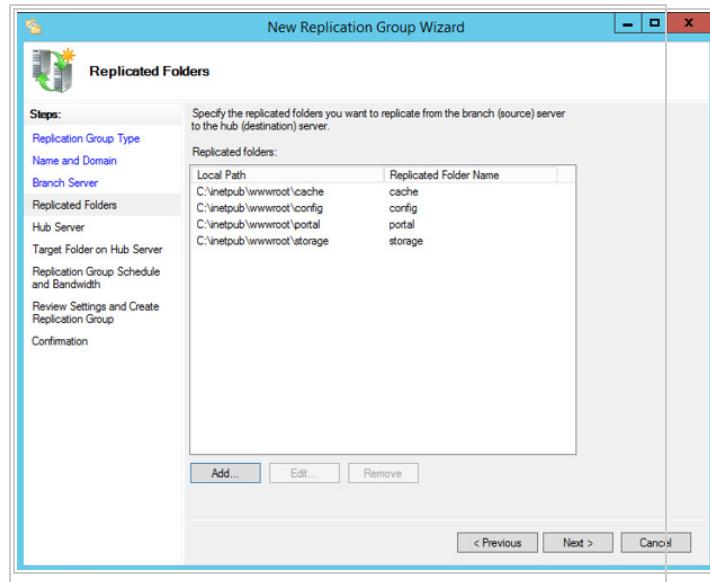
Replication will begin once the changes have been pushed to all the servers. Eventually, depending on bandwidth, etc., data will start showing up in the target folder on the destination server.

Set up the DFS Replication for the Content (wwwroot/cache, wwwroot/config, wwwroot/portal, wwwroot/storage)

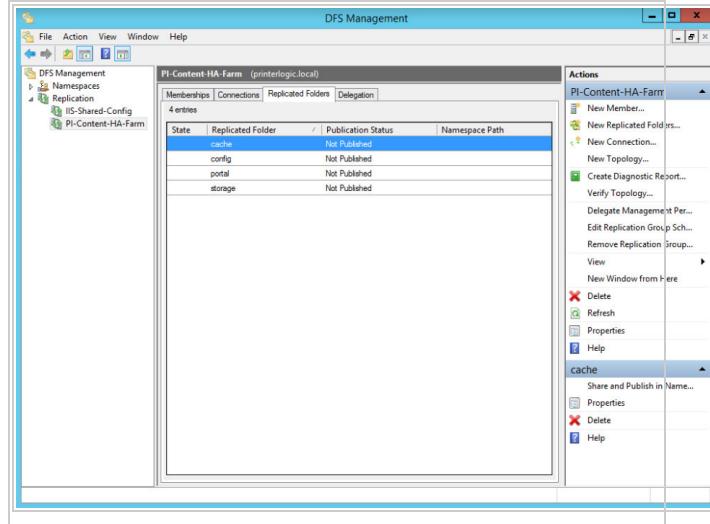
1. Follow the same process above creating a PI-Content DFS replication selecting the following folders to be replicated:

- c:\inetpub\wwwroot\cache
- c:\inetpub\wwwroot\config
- c:\inetpub\wwwroot\portal
- c:\inetpub\wwwroot\storage

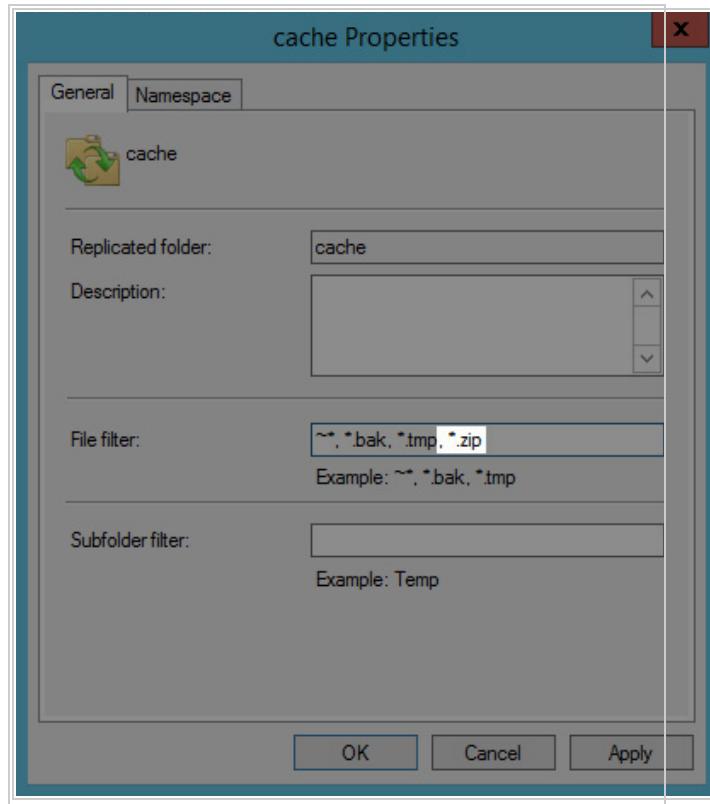
The following image shows the window as it should appear.



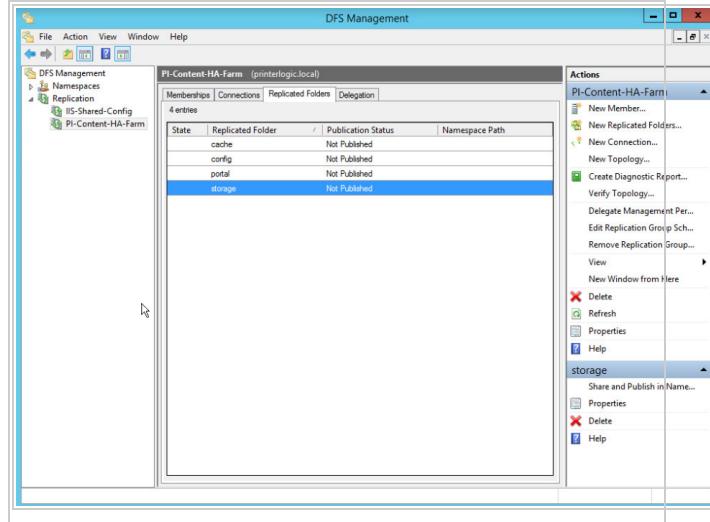
2. Add a few DFS filter rules for the PI-Content folders.
  - Exclude the package and profile files by adding \*.zip to the DFS file filter on the c:\inetpub\wwwroot\cache folder.
  - Exclude the logs and the framework directory in the c:\inetpub\wwwroot\storage folder sub-folder filter.
3. Open the DFS Manager.
4. Click the Replicated Folders tab.



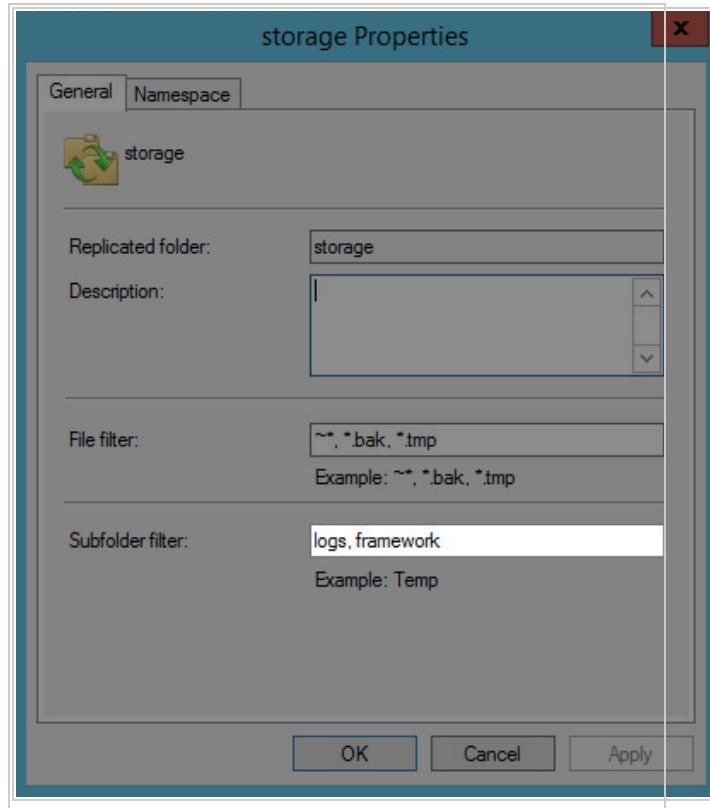
5. Right-click **cache** and select **Properties**.
6. When the cache Properties window appears, add a comma followed by a \*.zip to the File filter field as shown below.



7. Click **OK**.
8. In the Replicated Folders tab, click **storage**.



9. When the storage Properties window appears, add **logs, framework** to the Subfolder filter.



10. Click **OK**.

Give the replication a few minutes to establish and then verify on the second IIS web server. To force

DFS replication, type the following command in a command prompt.

```
prompt : dfsrdiag PollAD
```



**NOTE:** \inetpub\wwwroot\.env is not replicated, so if you make changes, then it will need to be changed on all IIS web servers.

### Configure Master/Master Failover for Printer Installer Using Shared Content

To configure PrinterInstaller DB Master/Master failover, add the following to the c:\inetpub\wwwroot\config\settings.php file following the primary DB settings group.

```
/* Failover Database Settings */
GLOBALS:::$SECONDARYDBSERVER-
R="DBServer";
/* */
```

DBServer should be the name of the MySQL DB server that is not listed as the \$DBSERVER in the settings.php file.



**NOTE:** If DFS replication is working, this update will be replicated to all IIS Web servers.

## STEP 5: Shared Configuration for All Web Servers

Add a web server to your farm by using this procedure that retrieves shared configuration information from c:\IIS-Shared-Content.

1. Open IIS Manager, select your server name, and double-click **Shared Configuration**.
2. On the Shared Configuration page, select the Enable shared configuration check box.
3. In the Physical path box, type c:\IIS-Shared-Config (this is the DFS Replication).
4. Leave the User name box blank.

5. Leave the Password and Confirm password boxes blank.
6. In the Actions pane, click **Apply**.
7. In the Encryption Keys Password dialog, type the encryption keys password and click **OK**.
8. Close and reopen IIS Manager.

## STEP 6: Configure the IIS Web Farm Load Balancing

Follow the steps below on the Windows 2012R2 server on which you install ARR.

### Create a Server Farm with ARR

1. Open IIS Manager.
2. In the Connections pane, expand the server node, and select **Server Farms**.
3. In the Actions pane, click **Create Server Farm**.
4. The Create Server Farm wizard opens to the Specify Server Farm Name page.
5. In the Server farm name box, type a name for your server farm and click **Next**.
6. The Add Server page is displayed.
7. In the Server address box, type the IP address of FQDN of the first server and click **Add**.
8. Continue typing IP addresses and clicking **Add** until all web servers are entered.
9. Click **Finish**.
10. Select **Yes**.



## Configure Load Balancing with ARR

This procedure configures ARR load balancing with an algorithm that distributes incoming request evenly among the web servers. It then sets up the server-farm health test feature.

1. Open IIS Manager.
2. In the Connections pane, expand the server.
3. Under the server node, expand **Server Farms**, and then select the server farm that you created.
4. In the Server Farm pane, double-click **Load Balance**.
5. On the Load Balance page, select **Weighted round robin** from the Load balance algorithm list, and then click **Apply**.
6. In the Connections pane, select the server farm that you created.
7. In the Server Farm pane, double-click **Health Test**.
8. On the Health Test page, in the URL box, enter a URL that you want ARR to test by sending a GET request to determine the health of the servers. Use <http://farmwebserver/tools/tests/tests.php>.



**NOTE:** "farmwebserver" should be replaced with the hostname.domain.com of the ARR server.

9. Click **Apply**.
10. To verify the health of your farm, click **Verify URL Test**.

## Change Application Pool Settings

Because all HTTP requests and responses go through ARR, delays or errors occur if the application pool times out or recycles unexpectedly. Set the idle time-out and application pool recycle settings to zero to avoid problems.

1. On one of the web servers in your farm, open IIS Manager.
2. In the Connections pane, select **Application Pools**.

3. In the Application Pools pane, select the application pool for your website, and then click **Advanced Settings** in the Actions pane.
4. In the Advanced Settings dialog box, expand **Process Model**, and change the Idle Time-out (minutes) value to 0.
5. Expand Recycling, and change the Regular time intervals (in minutes) value to 0.
6. Click **OK**.

## Configure Client Affinity with ARR

1. Open IIS Manager.
2. In the Connections pane, expand the server.
3. Under the server node, expand **Server Farms**, and then select the server farm that you created.
4. In the Server Farm pane, double-click **Server Affinity**.
5. Select the Client Affinity check box in the Server Affinity page.
6. Click **Apply** in the actions.

## Configure Proxy Timeout with ARR

1. Open IIS Manager.
2. In the Connections pane, expand the server.
3. Under the server node, expand Server Farms, and then select the server farm that you created.
4. In the Server Farm pane, double-click **Proxy**.
5. Increase Time-out (seconds): to 60.
6. Click **Apply** in the actions.

## Conclusion

Printer Installer is now set up as an HA active/active solution. You can access the admin console and continue to

configure by loading [http://-farmwebserver.domain.com/admin](http://farmwebserver.domain.com/admin). You will need to install your clients using the same URL or hitting the portal at <http://farmwebserver.domain.com>.

You will also have request in Printer Installer license that will need to be put on all Printer Installer Web Servers in the wwwroot directory. Please be sure and request a HA license as it will need to include the hostname of the webfarm and all PI IIS web servers.



**NOTE:** "farmwebserver" should be replaced with the hostname.domain.com of the ARR server.

## Additional Information

### Using SSL Certificates for HTTPS

To use SSL Certificates, you will need to upload the SSL Certificate to the IIS Farm/ARR server and each of the Printer Installer IIS web servers. You will then need to bind HTTPS port 443 to the SSL Certificate.

### Upload a Certificate to the ISS Farm/ARR Server

1. Open IIS Manager, select your server name, and double-click **Server Certificates**.
2. On Actions menu, select **Import**.
3. In the Import Certificate dialog select the Certificate file, enter the Password and select **Personal** for the Certificate Store.
4. Click **OK**.
5. In connections, select **Default Web Site** and click **Bindings....** In the Actions menu.
6. In the Site Binding dialog, Click **Add**.

7. In the Add Site Binding dialog, select **HTTPS** as the Type, select the SSL Certificate imported above as the SSL Certificate, and click **OK**.
8. Click **Close**
9. In the Connections, select your webfarm and double click **Routing Rules**.
10. Deselect **Enable SSL offloading** and then click **Apply** in the Actions menu

The ISS Farm/AAR server is now configuring to use HTTPS, but it won't work until you import and bind HTTPS port 443 on each Printer Installer IIS Web server. Follow these steps on each server:

1. Open IIS Manager, select your server name, and double-click **Server Certificates**.
2. On Actions menu, select **Import**.
3. In the Import Certificate dialog select the Certificate file, enter the Password and select **Personal** for the Certificate Store.
4. Click **OK**.
5. In Connections, select **Default Web Site** and click **Bindings....** In the Actions menu.
6. In the Site Binding dialog, Click **Add**.
7. In the Add Site Binding dialog, select **HTTPS** as the Type, and select the SSL Certificate imported above as the SSL Certificate, click **OK**.
8. Click **Close**.
9. Repeat these steps on each Printer Installer IIS Web Server.

To verify you should be able to access Printer Installer Admin from <https://farmwebserver.domain.com/admin>.

For more advanced SSL Certificate management, you can setup a Central Certificate Store on the IIS Farm/ARR server. Reference instructions.

[https://technet.microsoft.com/en-us/library/jj129387\(v=ws.11\).aspx](https://technet.microsoft.com/en-us/library/jj129387(v=ws.11).aspx)

[https://technet.microsoft.com/en-us/library/jj134044\(v=ws.11\).aspx](https://technet.microsoft.com/en-us/library/jj134044(v=ws.11).aspx)

If you want to have redundancy on the IIS Farm/ARR you will need to setup and config NLB.

<https://docs.microsoft.com/en-us/iis/extensions/configuring-application-request-routing-arr/achieving-high-availability-and-scalability-arr-and-nlb>

#### Good Practices

Master/Master replication is now configured and running. It is still good practice to do regular backups of the MySQL DB. It is recommending that these backups happen on the secondary server. To determine which MySQL DB that Printer Installer is using you can look in the connection.txt file located in the \inetpub\wwwroot\storage\app directory.

### Upgrade Printer Installer in an HA Active/Active Environment

HA active/active setup is a very involved setup and will require a little more work to upgrade. Follow these steps when upgrading.

1. Be sure that you have a recent backup of the MySQL database
2. Following good practices, schedule a maintenance period when the Printer Installer servers can be done for a brief time.
3. Take Printer Installer Web IIS servers offline
  - a. Open IIS Manager on the IIS Farm/ARR and select servers under your farm name.
  - b. In the Servers window, right-click each server and select **Take Server Offline**.
4. On each of the Printer Installer servers complete the following:
  - a. Open IIS Manager, select your server name, and double-click **Shared Configuration**.

- b. Deselect **Enable shared configuration** and click **Apply** in the Actions menu.
  - c. Click **Yes** on the Shared Configuration dialog.
  - d. Click **OK** to confirm changes.
  - e. Download PrinterInstallerUpdate-17-1-1-x.exe and launch.
  - f. In the Printer Installer install, select **Advanced install** and then click **Next**.
  - g. Select Printer Installer is hosted on the following IIS Website and click **Next**.
  - h. Deselect **Backup website files** and **Backup database** for Backup Options.
  - i. Deselect **Enable automatic upgrade.....** for Client Upgrade. You can configure this in the admin console after upgrade.
  - j. Click **Install**.
  - k. When the install completes, click **Close**.
  - l. Verify that the browser comes up and you can log into the Printer Installer admin console
  - m. Open IIS Manager, select your server name, and double-click **Shared Configuration**.
  - n. Select **Enable Shared Configuration** and then select c:\IIS-Shared-Config (or the directory that contains the replication shared configuration) in the Physical path field and
  - o. Click **Apply** in the Actions menu.
  - p. Enter the password in the Encryption Keys Password dialog and click **OK**.
  - q. Click **OK** to confirm changes
  - r. Click **OK** on object reference warning dialogs
  - s. Click **OK** to confirm changes
  - t. Repeat steps 4, a-r on all PrinterInstaller IIS Web servers
5. Bring Printer Installer Web IIS servers online

- a. Open IIS Manager on the IIS Farm/ARR and select servers under your farm name.
  - b. In the Servers window, right-click each server and select **Bring Server Online**.
6. To verify you should be able to access Printer Installer Admin from <https://farmwebserver.domain.com/admin>.



**NOTE:** "farmwebserver" should be replaced with the hostname.domain.com of the ARR server.