

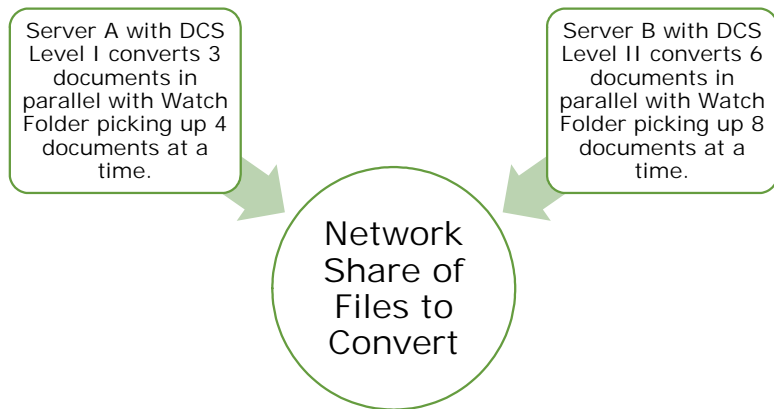


## Clustered Conversion Quick Start Guide

A clustered conversion approach works well when you have a large existing collection of files to be converted, or a need to convert a significant number of files on a daily basis. If your conversion needs are smaller but 100% uptime on your conversion turnaround is required then a clustered solution is also a good choice.

Document Conversion Service uses the included Watch Folder Service to provide clustered conversion with multiple installations of Document Conversion Service.

Each computer in the cluster will need a separate license of Document Conversion Service. Different levels of licensing can be combined to balance the conversion load based on the resources available for each computer in the cluster.



On each computer, the Watch Folder Service tool will monitor the shared collection of files and pick up a designated number of files for conversion on that computer. Once completed, the converted files are copied to the final location.

## Setting up the Shared Data Location

The shared data location will be used by all computers in the cluster and is commonly a set of folders on a shared drive on the network. These folders will contain the files you want to convert as well as store the final converted files.

On the network share you will need to create the following four folders. Replace the sample names below with your actual network share name and paths. Each of these folders maps to a folder setting in the Watch Folder Service.

Folder on Network	Watch Folder Setting
\\DataServer\Share\Input  Folder that is watched for files (and folders if IncludeSubfolders is true) to convert.	InputFolder
\\DataServer\Share\Output  The converted files are copied into this folder when the conversion is done.	OutputFolder
\\DataServer\Share\Failed  If any file fails to convert, they are copied into a folder under this location.	FailedFolder
\\DataServer\Share\Completed  Optionally keep a copy of all files placed into the InputFolder to be converted. If set to an empty string ("") the source files are deleted.	CompletedFolder



## Set up a Node in the Cluster



The following steps need to be repeated on each computer (node) in your cluster. Before starting, ensure you have the following:

- a Document Conversion Service license for each computer
- access to an account that has full permissions to the network share location.

### Step 1: Install Document Conversion Service

Install Document Conversion Service and when prompted for the Logon Account allow the install to create and use the local administrator account DCSAdmin.

**Choose Logon Account**

The application requires its own user account with administrative privileges to run the conversion services.  
This user will be granted the "Log On As a Service" right if required.

**Create or use an existing .\DCSAdmin user account.**  
**This is the recommended setup.**

Enter an existing user account and domain (e.g. Domain\User).

Do not use the account you use when logging in; use a separate account that can be assigned to Document Conversion Service only.

**Create the local DCSAdmin account**

### Step 2: Update Watch Folder Service Credentials

The install initially sets the Watch Folder Service Log On credentials using the DCSAdmin account. This needs to be changed to use the domain or other account that has full access to the network share so that Watch Folder Service can read, write and lock the files as part of the clustered conversion.

Open the Services Panel via Start - Control Panel - System and Security - Administrative Tools - Services and double-click the service *PEERNET Watch Folder Service* to open its Properties dialog.

On the *Log On* tab, set the service account to the domain or other account that has access to the network share.

This account will also need the Logon As A Service right. When possible this privilege is automatically granted through the services panel. If it is not talk to your Network Admin to have this privilege added to the account.

General Log On Recovery Dependencies

Log on as:

Local System account

Allow service to interact with desktop

This account: domain\OtherAccount

Password: .....

Confirm password: .....

**Change the Log On account for the service**

Click Apply and close the Services panel.



Do not start the service at this point!



## Step 3: Set the Folder Paths in Watch Folder Service

The Watch Folder Service includes several sample watch folder configurations. Modifying one of the sample folders that is similar to what you want to do will get you started quickly.

Open the configuration file using the shortcut Programs - PEERNET Document Conversion Service 3.0 – Watch Folder - Configure Watch Folder Settings.

In the chosen watch folder section, update the InputFolder, OutputFolder and FailedFolder locations to use your network share paths. If you are using the CompletedFolder, set the network path for that as well.

```
<WatchFolder Name="ConvertToTIFF">
  <Settings>
    <!-- Folder options -->
    <add Name="Enabled" Value="true" />
    <add Name="InputFolder" Value="C:\PEERNET\WatchFolders\ConvertToTIFF\Input"/>
    <add Name="SearchFilter" Value="*.*"/>
    <add Name="InputFolder" Value="\\DataServer\Share\Input"/>
    <add Name="DeleteInputSubFolders" Value="true"/>
    <add Name="StagingFolder" Value="C:\PEERNET\WatchFolders\ConvertToTIFF\Staging"/>
    <add Name="WorkingFolder" Value="C:\PEERNET\WatchFolders\ConvertToTIFF\Working"/>
    <add Name="FailedFolder" Value="C:\PEERNET\WatchFolders\ConvertToTIFF\Failed"/>
    <add Name="CompletedFolder" Value="C:\PEERNET\WatchFolders\ConvertToTIFF\Completed"/>
    <add Name="OutputFolder" Value="C:\PEERNET\WatchFolders\ConvertToTIFF\Output"/>
    <add Name="PollingInterval" Value="15000"/>
    <add Name="FailedFolder" Value="\\DataServer\Share\Failed"/>
    <add Name="CompletedFolder" Value="\\DataServer\Share\Completed"/>
    <add Name="OutputFolder" Value="\\DataServer\Share\Output"/>
  </Settings>
</WatchFolder>
```

The StagingFolder and WorkingFolder locations should be local to the computer if possible and must be unique for each computer in the cluster. If you set these folders to the same location then your conversion will fail; do not do it!

```
<add Name="InputFolder" Value="\\DataServer\Share\Input"/>
<add Name="SearchFilter" Value="*.*"/>
<add Name="IncludeSubFolders" Value="True"/>
<add Name="DeleteInputSubFolders" Value="true"/>
<add Name="StagingFolder" Value="C:\PEERNET\WatchFolders\ConvertToTIFF\Staging"/>
<add Name="WorkingFolder" Value="C:\PEERNET\WatchFolders\ConvertToTIFF\Working"/>
<add Name="FailedFolder" Value="\\DataServer\Share\Failed"/>
<add Name="StagingFolder" Value="C:\PEERNET\WatchFolders\ConvertToTIFF\Staging"/>
<add Name="WorkingFolder" Value="C:\PEERNET\WatchFolders\ConvertToTIFF\Working"/>
<add Name="PollingInterval" Value="15000"/>
```

## Step 4: Turn on Clustering

The last step is to turn on clustered processing for this watch folder by setting ClusteredProcessing.Enabled to *true*.

This step is critical as otherwise the watch folder will act as a simple drop folder and will try to convert all of the files it finds in the InputFolder, preventing any conversion from other nodes in the cluster.

```
<!-- Clustered Processing -->
<!-- This forces batch mode pickup with optional synchronous wait and -->
<!-- no date time stamp used in the Failed\Completed folders. Files are -->
<!-- locked so other servers can process files from the same folder. -->
<add Name="ClusteredProcessing.Enabled" Value="false" />
<!-- Override this for clustering to customize the number of files picked up. -->
<!-- <add Name="ClusteredProcessing.Enabled" Value="true" />
```

## Load Balancing Each Computer

The number of files picked up by each computer can be adjusted to match the resources available and the Document Conversion Service license level installed on that computer.

This allows you to maximize the conversion throughput for each computer while also providing fail over protection if one of the computers in the cluster goes down.

See the section on [Adjusting the Conversion Throughput for Each Node](#) to learn more.

```
<!-- Clustered Processing -->
<!-- This forces batch mode pickup with optional synchronous wait and -->
<!-- no date time stamp used in the Failed\Completed folders. Files are -->
<!-- locked so other servers can process files from the same folder. -->
<add Name="ClusteredProcessing.Enabled" Value="false" />
<!-- Override this for clustering to customize the number of files picked up. -->
<!-- <add Name="ClusteredProcessing.MaxFilesToPickup" Value="4"/> -->
<add Name="ClusteredProcessing.MaxFilesToPickup" Value="8"/>
```

# PEERNET Document Conversion Service 3.0



## Step 5: Starting the Services

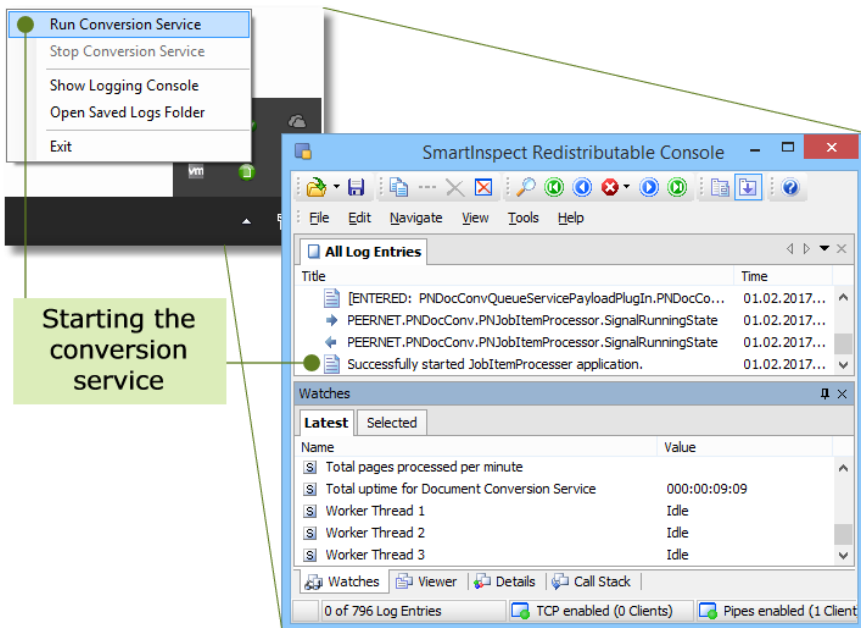
### Using the Logging Console

The logging console shows live logging for both Document Conversion Service and the Watch Folder Service. It is useful for monitoring service start up, intermediate troubleshooting and loading saved logging files. Do not leave the console open for extended periods of time.

### Starting Document Conversion Service

Document Conversion Service needs to be running to convert files. The Watch Folder Service can be started but will not pick up any files to convert until Document Conversion Service is running and ready to convert files.

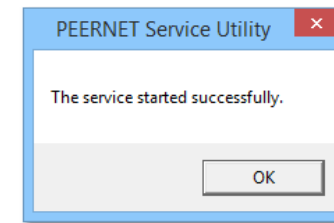
Start the service from the Run Conversion Service menu item in the system tray icon's menu.



### Starting Watch Folder Service

With Document Conversion Service started, next start the Watch Folder Service from the menu shortcut Start - All Programs - PEERNET Document Conversion Service 3.0 - Watch Folder - Start Watch Folder Service.

A message box will be displayed when the service has been started.



If no messages appear in the logging console then the Watch Folder Service failed to start. This can happen when changes to the configuration file break the file so that it cannot be read. Common causes are quotes (") or angle brackets(<, >) accidentally deleted during editing.

## Step 6: Repeat for Each Computer

Repeat the above steps 1-5 for each computer in your cluster.



## Tips for Faster Conversion

### Adjust Conversion Throughput for Each Computer

Each computer in a cluster can be individually configured to match its available CPU, cores and memory (RAM) along with the license level of Document Conversion Service installed to maximize the document conversion throughput.

Complete details on determining the maximum throughput for each machine can be found in the how to article [Configure DCS and Watch Folder for Optimal Performance](#).

### Faster PDF Conversion

Document Conversion Service will default to using Adobe Reader (or Adobe Acrobat) to convert PDF files if these applications are found on the computer.

In some cases, switching Document Conversion Service to use Ghostscript instead of Adobe can increase the conversion speed of PDF documents. Care must be taken to test sample sets of the anticipated type of PDF documents to ensure that Ghostscript can render the documents correctly.

### Step 1: Download Ghostscript

Download and install the latest 32-bit version of Ghostscript from [here](#). If you have an internal version vetted by your IT department, you can use that provided it is 32-bit and version 9.05 or higher.



Do not download the 64-bit version even for a 64-bit machine. Document Conversion Service only supports 32-bit versions of Ghostscript starting with version 9.05 or higher.

### Step 2: Edit Document Conversion Service Configuration

Open the configuration file by going to Start – All Programs – PEERNET Document Conversion Service 3.0 – Edit DCS Configuration File.

Adobe Reader processing for PDF files is turned off by disabling the Adobe Acrobat Reader conversion module. Look for the *Adobe Acrobat Reader* AppFactory section and set Enabled to *False*. Ghostscript is automatically used to convert PDF files when Adobe Reader is disabled.

```
<!-- Adobe Acrobat Reader -->
<AppFactory Name="Adobe Acrobat Reader" Type="PEERNET.PNDDocConv.Applic
<Settings>
  <add Name="Enabled" Value="false"/>
  <add Name="MaxInstances" Value="auto"/>
  <add Name="Enabled" Value="false"/>
  <add Name="RecycleVirtualSizeThreshold" Value="600000"/>
  <add Name="RecycleGDIandUserHandleCountThreshold" Value="2000"/>
</Settings>
</AppFactory>
```

Document Conversion Service 3.0.014 and later versions will auto-detect the highest version of Ghostscript installed. You can also manually set which installed version of Ghostscript to use through the GS\_DLL and GS\_LIB settings in the *Ghostscript* AppFactory section. Remove the comment markers and modify the paths for your version of Ghostscript.

```
<!-- Ghostscript Converter -->
<AppFactory Name="Ghostscript" Type="PEERNET.PNDDocConv.Applications.PNGhostscriptApplicationFactory" Assembly="PN
<Settings>
  <add Name="Enabled" Value="auto"/>
  <add Name="MaxInstances" Value="auto"/>
  <add Name="RecycleThreshold" Value="0"/>
  <!-- If you are using a different version of Ghostscript, change the paths to your installed version -->
  <!-- <add Name="GS_DLL" Value="C:\Program Files (x86)\gs\gs9.18\bin\gsdll132.dll" /> -->
  <!-- <add Name="GS_LIB" Value="C:\Program Files (x86)\gs\gs9.18\bin;C:\Program Files (x86)\gs\gs9.18\lib" /> -->
</Settings>
</AppFactory>
<!-- If you are using a different version of Ghostscript, change the paths to your installed version -->
<add Name="GS_DLL" Value="C:\Program Files (x86)\gs\gs9.20\bin\gsdll132.dll" />
<add Name="GS_LIB" Value="C:\Program Files (x86)\gs\gs9.20\bin;C:\Program Files (x86)\gs\gs9.20\lib" />
```

The last thing to do is to save your changes and restart Document Conversion Service. The service settings are only read in the beginning on service start; you will need to restart will pick up your changes.



## Get Other Quick Start Guides

### Document Conversion Service Quick Start Guide

A short and quick guide to help you get the conversion service running and converting documents on your server. The [Document Conversion Service Quick Start Guide](#) covers starting the conversion service for the first time, using the logging console and converting documents.

### Watch Folder Conversion

Monitor any number of folders for documents to convert with the included Watch Folder Service utility. The [Watch Folder Quick Start Guide](#) introduces you to setting up folders, handling large volumes of files and running custom commands and other handy features. Perfect for companies with a small to medium volume of daily conversions on a single server.

### Client Server Conversion Quick Start Guide

See how easy it is to setup client-server, or remote, conversion with Document Conversion Service. Remote conversion allows one or more client applications on separate computers to convert files by 'talking' to a server computer, where the actual file conversion takes place. Read through the [Client Server Conversion Quick Start Guide](#) to see how this can work for your company.

### Command Line Tools Guide

For Java programmers and adding conversion into scheduled tasks, batch files, or any program that can call an external program, command line tools for converting files and folders are included. If this is what you are looking for, the [Command Line Tools Quick Start Guide](#) will get you started.

### .NET API Utility Quick Start Guide

With the included .NET library you can add document conversion directly into your own programs with as little as a single line of code. Have a look at the sample programs provided or follow the steps in the [.NET API Utility Quick Start Guide](#).

### Our Support Team is Here to Help

Not sure where to go from here? Have questions? Our support team is always available to help you choose the correct solution for your conversion needs. Please [contact us](#) and we'll be in touch via e-mail, telephone or web meeting to help answer your questions.