

KOFAX



Kofax OmniPage Server Installation Guide

Contents

- Introduction4
 - OmniPage Server components4
 - Abbreviations used4
 - External components4
- Installation Overview5
 - License Requirement5
 - Minimum Hardware Requirements5
 - Storage6
 - System requirements6
 - Required Windows Features6
- What to decide before the installation of OmniPage Server7
 - Installation Types7
 - Simple7
 - Advanced8
 - Authentication9
 - How to authenticate to MS SQL server9
- OPS Installation10
 - General Installation Steps10
 - Simple Installation10
 - Advanced Installation12
 - Check the Installation15
 - Service API15
 - Swagger API documentation16
 - Administration console16
- Licensing16
 - Activate license with internet access16

- Download and Activation without Internet Connection16
- Moving licenses to another machine.....17
- SQL Server Configuration.....19
 - Firewall settings.....20
 - Configuration.....20
 - SQL Login Creation Configuration.....23
 - Database Creation23
- Cloud environment.....24
 - SQL Azure.....25
 - Configuration26
- Kerberos network authentication29
- High Availability installation and configuration.....30
 - Installation steps for Microsoft NLB, Microsoft Failover Clustering and Citrix NetScaler VPX32
- Troubleshooting36
 - Windows Server Configuration.....36
- The Manager Service restarted regularly39
 - The Web Services (Service and AdminConsole) returns 503 HTTP status code.39
 - The windows services couldn't be started39
- Log level settings40

Introduction

OmniPage Server is a client - server application. For installation, it is recommended to have a basic knowledge of the Microsoft Internet Information Services (IIS) and SQL Server products and, if necessary, the Windows Domain Authentication.

Installation and configuration of the IIS and SQL server is required before installing the OmniPage Server components.

OmniPage Server components

Master: the main service component that manages the conversion jobs.

Worker: the OCR conversion processing unit.

Folder Watcher: monitors network folders for new input documents and gets conversion results into output sub-folders.

Conversion Client: a web application that utilizes OPS to process users' documents for results right in the web browser.

Abbreviations used

AD – Active Directory

OPS – OmniPage Server

OPSHA – OmniPage Server High Availability

HA – High Availability

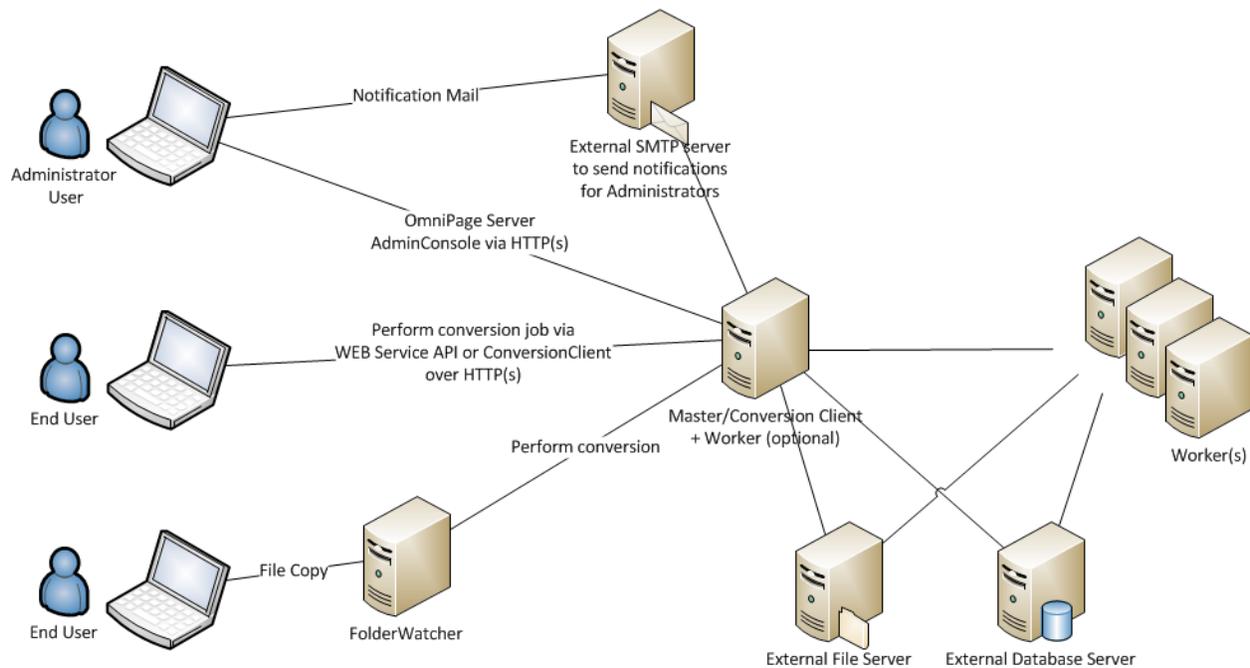
WG – Work Group

OS – Operating System

External components

- Database server contains the operational database of OPS. The external database is optional; it can be installed on the server where the Master is running.

- File Server is the file storage responsible for the safe and systematic storage of conversion related documents. This component is optional; the file system of the Master can be used to store the documents.
- SMTP Mail Server is required to send notifications to the configured administrator user.



Installation Overview

The OPS installation consists of the following steps:

- Installing and configuring the Windows Server operating systems, accounts and access rights
- Installing and configuring the SQL server
- Installing and configuring the OmniPage Server.

License Requirement

OmniPage Server v2.1 requires v2.0 license. The v1.0 licenses cannot be used.

Minimum Hardware Requirements

The hardware requirements mainly depend on the amount of data to be converted. The minimum hardware requirements for any configuration are:

- 20 GB free disk space
- 8 GB RAM
- Quad-Core CPU

Storage

The file storage is responsible for the safe and systematic storage of the conversion related documents. Files can be stored in a local folder of the Master machine or on a network share.

Storage size depends on the amount of data to be converted. The minimum size is 100 GB for stable operation.

System requirements

Supported operating systems for OmniPage Server Master and Conversion Client

- Windows Server 2012,
- Windows Server 2012 R2,
- Windows Server 2016.

Supported operating systems for OmniPage Server in Simple Mode, OmniPage Server Worker, Folder Watcher

- Windows Server 2012,
- Windows Server 2012 R2,
- Windows Server 2016,
- Windows 8.1 (x64),
- Windows 10 (x64)

Server Core installations (without UI) are not supported.

Required Windows Features

To run the Installation Assistant your Windows Operating System needs to have .NET Framework 4.5 (or higher) and PowerShell 2.0 installed. The rest of the necessary windows features are installed from the OS image. In case of installation error see the Troubleshooting section at the end of this document.

Required Windows Features for OPS Master / Conversion Client / Folder Watcher

- PowerShell 2.0
- PowerShell 2.0 Engine
- IIS-WebServer
- NET Framework 4.5
- Web-Common-Http
- Web-Basic-Auth
- IIS-WindowsAuthentication
- Web-Net-Ext45
- Web-Asp-Net45
- Web-ISAPI-Ext
- Web-ISAPI-Filter
- Web-Includes
- Web-Http-Redirect

Required Windows Features and Roles for OPS Worker

- PowerShell 2.0
- PowerShell 2.0 Engine
- NET Framework 4.5

What to decide before the installation of OmniPage Server

Installation Types

Simple

Choosing this installation type, you can quickly install everything you need to get OmniPage Server up and running on a single machine. This mode is recommended for lower-volume applications that do not require load balancing or failover. It is important to note that you cannot extend this installation later and cannot make a multi-server environment out of it.

Advanced

Choosing this installation type, you have a wider flexibility setting up the different components of OPS. You can customize the OPS installation to your exact needs even for high-volume, high-availability applications.

In the advanced installation you can choose from the following installation modes:

- **Lite Mode (Recommended for small businesses)**

No SQL server installation is required. The configuration, the operational and historical data are stored on the file system of the Master server.

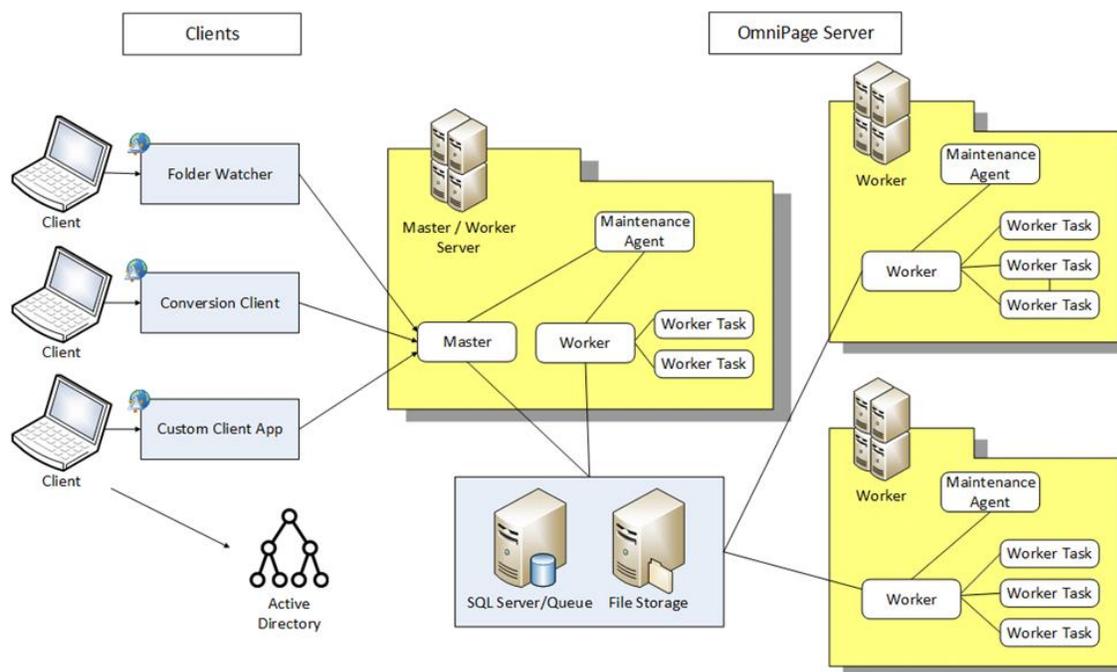
This mode is recommended only if the deployment contains only one or two machines.

This mode cannot be used in high-availability cluster or failover cluster environments.

- **Robust Mode (Recommended where higher loads expected, or a failover clustering is a requirement)**

Requires MS SQL server. The configuration, the operational and historical data are stored in a central MS SQL database.

Recommended for multi-server environments. For an example see the figure below:



Authentication

OmniPage Server components can be installed with either using Windows Domain Authentication based on Windows Active Directory or Windows Authentication without Active Directory.

Windows Domain Authentication

OmniPage Server requires a domain account with the following conditions:

- Password of the account should not expire.
- The account should have the required rights.

Windows Authentication (Without Active Directory)

In this case there is no central authentication; you need to create an account on all machines where OmniPage Server components (Master, Worker, Folder Watcher service) are installed.

- Accounts must have the same account name and same password on all the machines.
- The password of the account must not expire.
- The account must have the required rights.

OmniPage Server components will run under this account. The password of this account is required during the installation.

Note: OPS does not store the password in any form.

How to authenticate to MS SQL server

In case you are installing OmniPage Server in Robust mode you need to decide the authentication mode of the SQL server.

Integrated Windows authentication

This way the user of the service needs to have the right to log on and authenticate to the MS SQL server and the database of the OmniPage Server.

SQL Server authentication

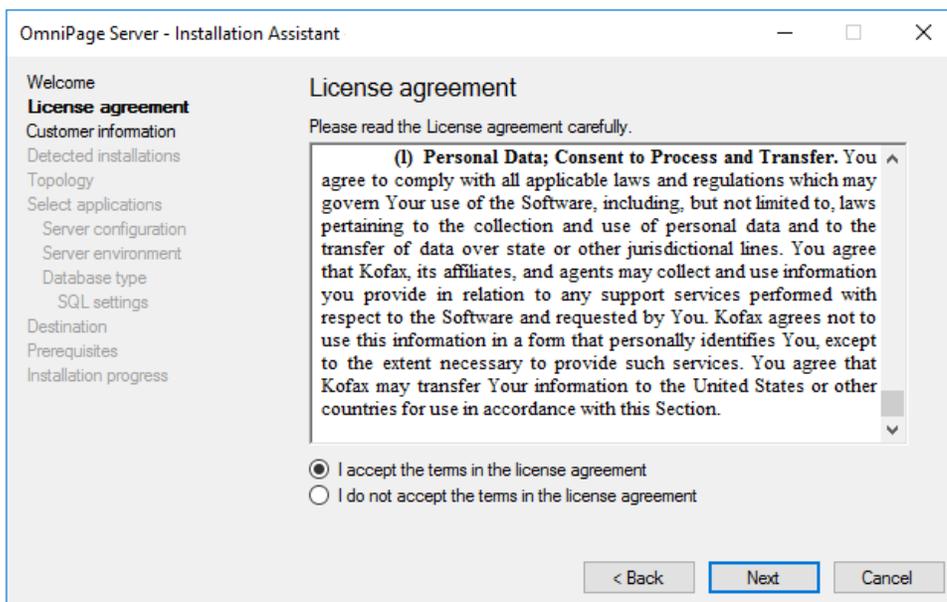
SQL server system administrator must create a SQL user that has the right to log on and authenticate to the MS SQL server and the database of the OmniPage Server.

For further information, please read the SQL Server Configuration section in this document.

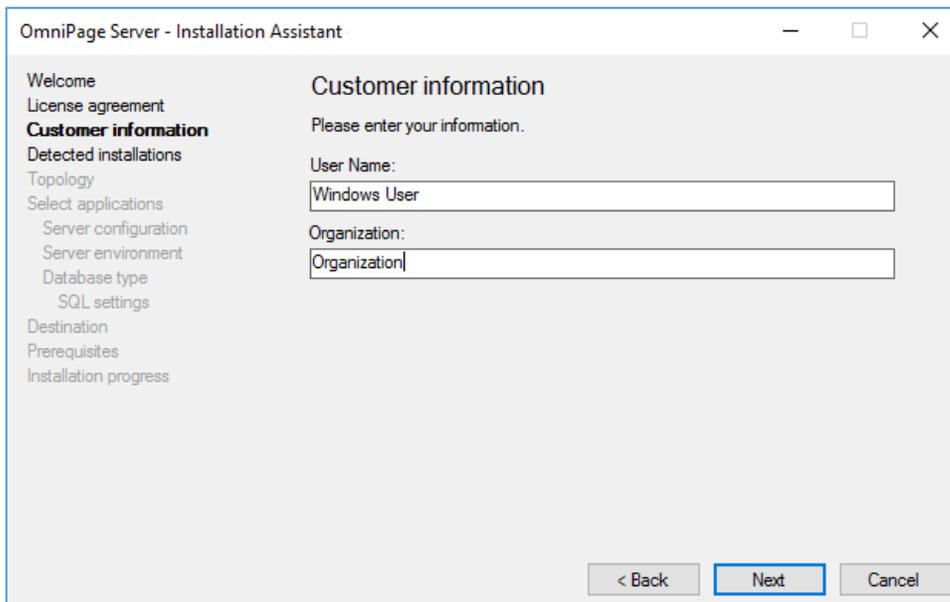
OPS Installation

General Installation Steps

1. Scroll to the bottom and read it through to accept License agreement.

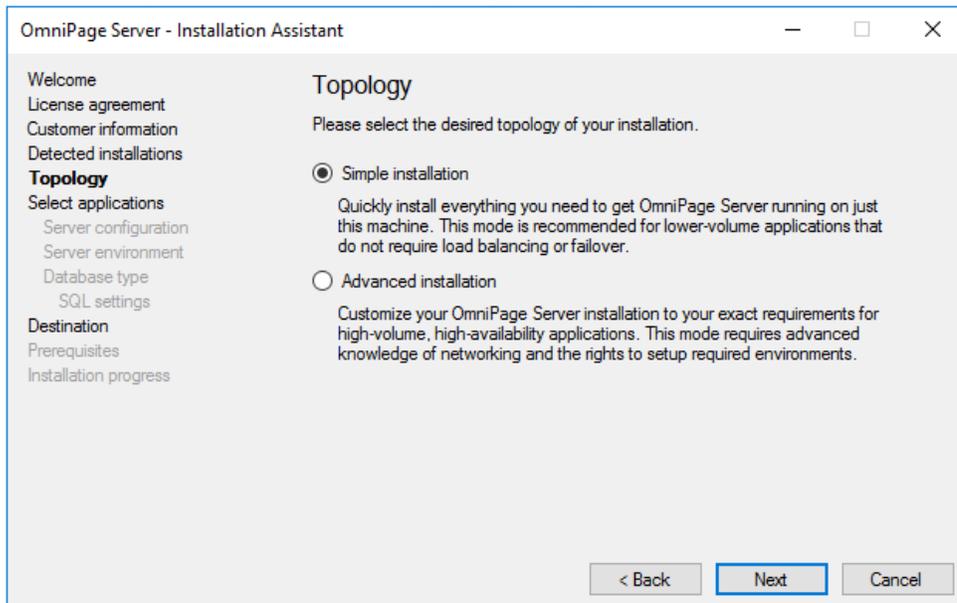


2. Enter Customer information.

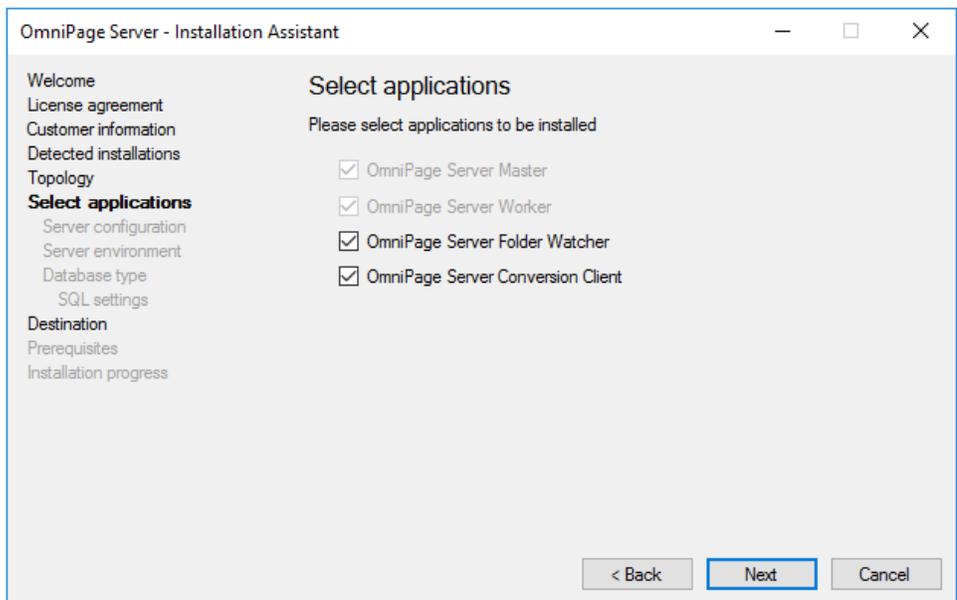


Simple Installation

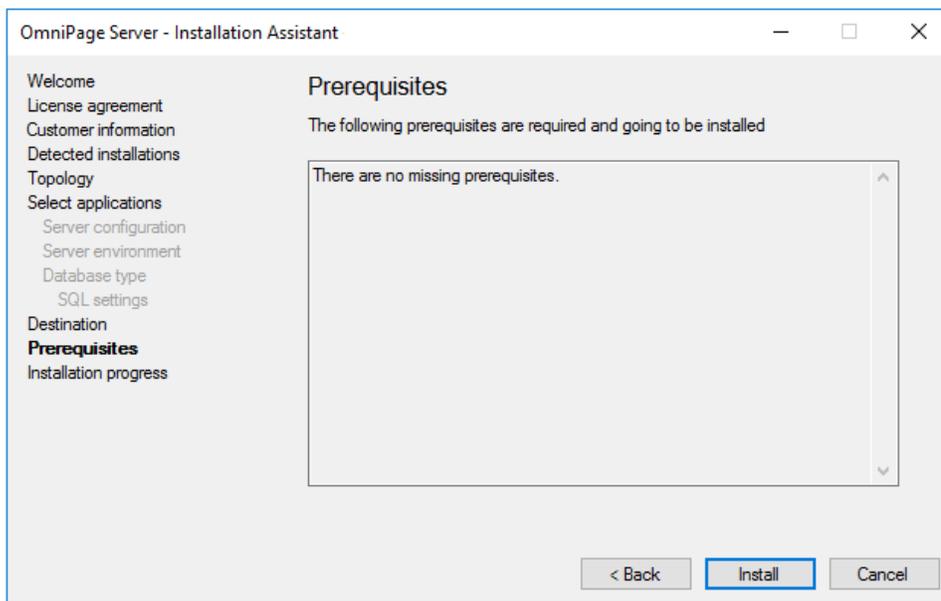
- Choose Simple Installation on the Topology dialog.



- Select applications you would like to install. OmniPage Server Master and Worker are preselected by default. If you need Folder Watcher and Conversion Client, you can select them at this step.



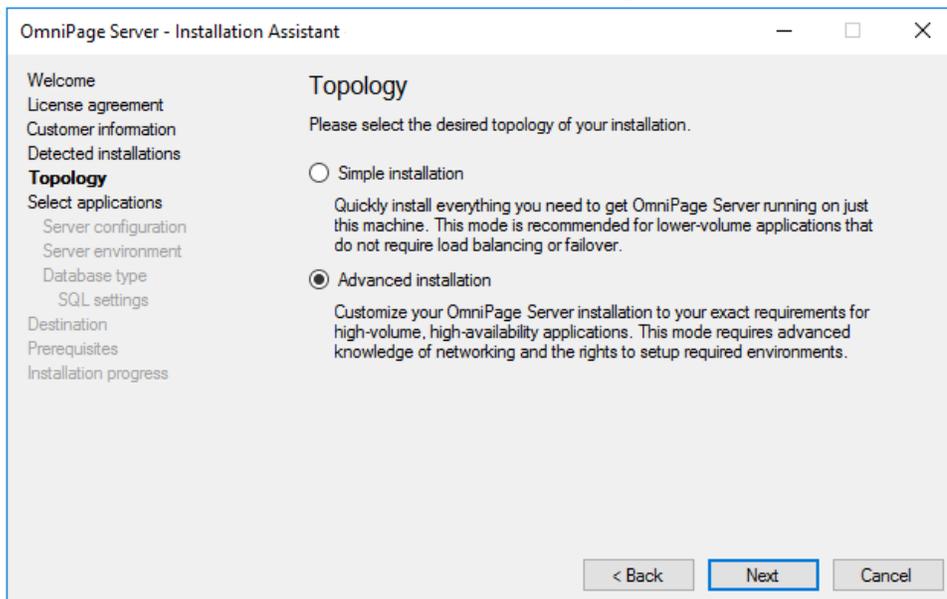
- Click **Next** button to detect the missing Windows features.



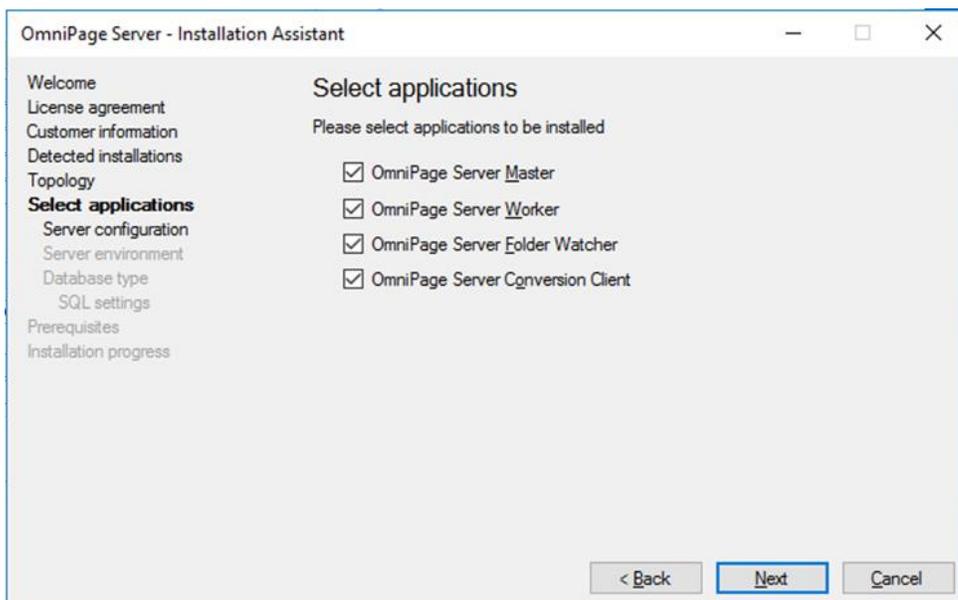
6. Click **Install** button to install all the required and selected pieces.

Advanced Installation

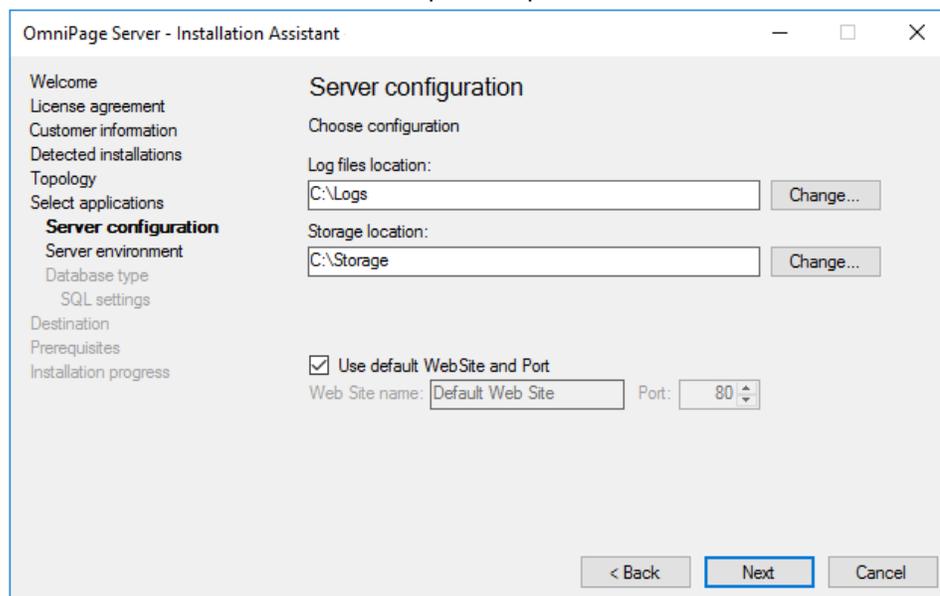
3. Chose **Advanced Installation** on the Topology dialog.



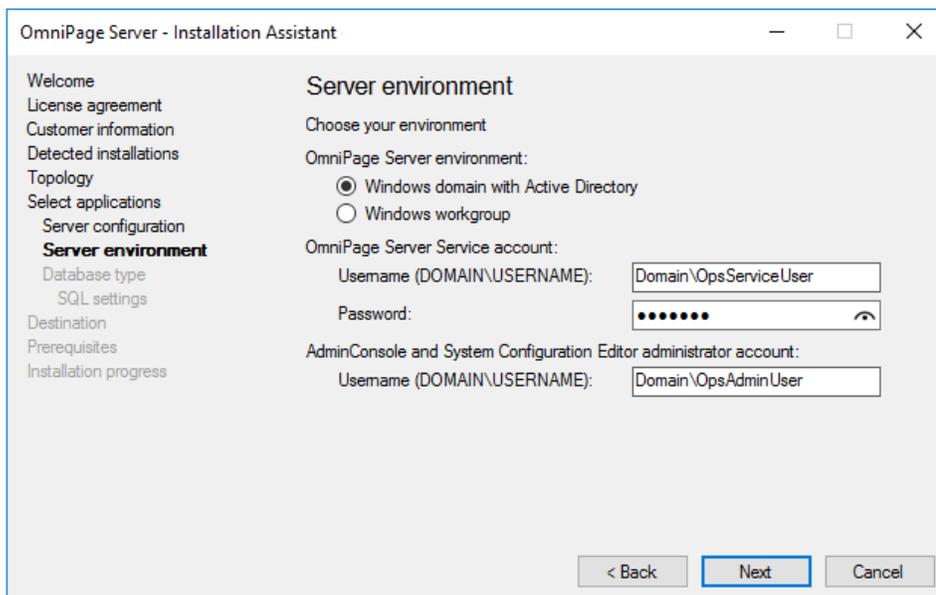
4. Select all the applications you want to install to this server.



5. Choose here the location of the Log files, the Storage, and if needed the URL of the Server where the Master is installed.
6. Select which website the web services should be installed on if necessary. The specified site must exist on a webserver and the specified port must be bound to it.

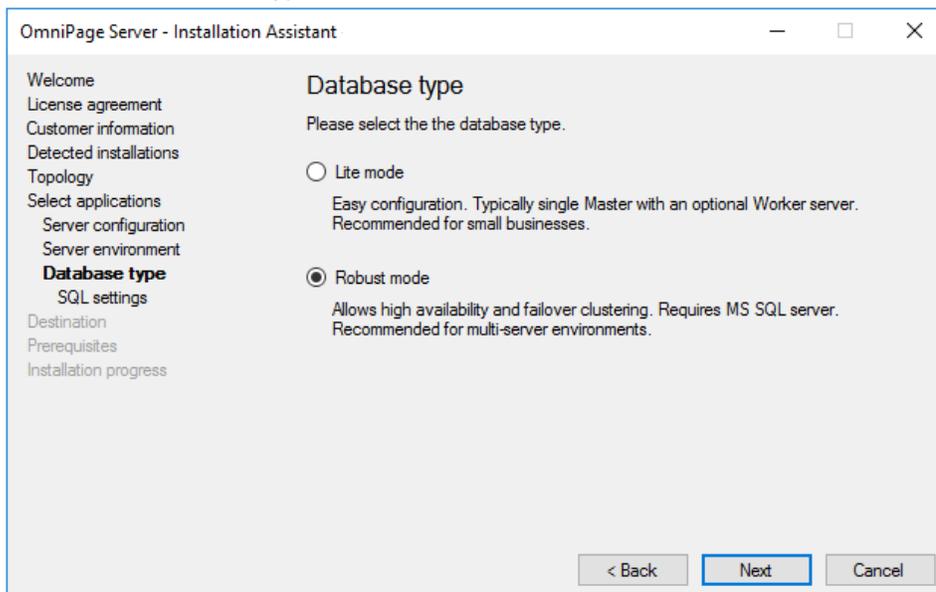


7. Choose Server Environment
8. On the Server Environment dialog, specify the service user account that will run the components.

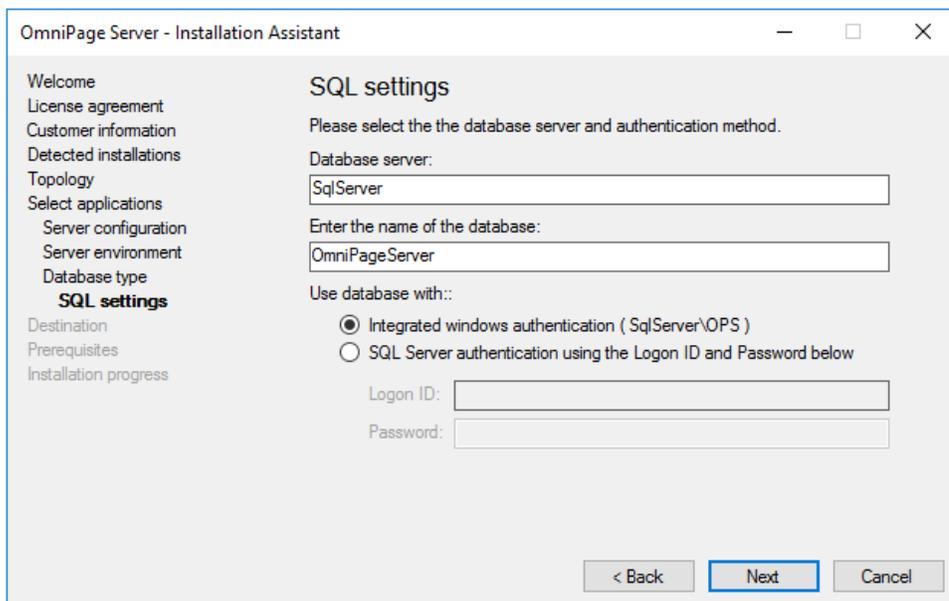


9. In the AdminConsole administrator input fields, specify the domain user who can access the AdminConsole.

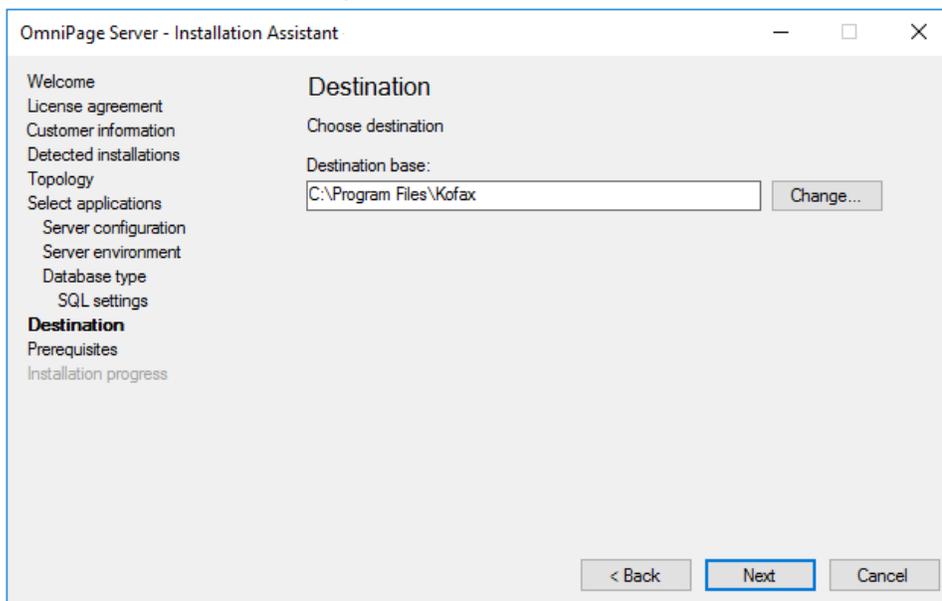
10. Choose the Database type



- **Lite mode**
Selecting this mode to have fields pre-populated with default values. The installation can start after detecting the required prerequisites. No SQL server installation is required.
- **Robust mode**
In Robust mode you need to specify the SQL settings to be used.



11. Enter the destination directory for the installation.



12. Click **Next** to start the installation after detecting the required prerequisites.

Check the Installation

Service API

To check if the Service API component is installed properly, navigate to the following location

[http://\[server_name\]/OmniPage.Server.Service](http://[server_name]/OmniPage.Server.Service) The [http://\[server_name\]/OmniPage.Server.Service/api/Job/GetJobTypes](http://[server_name]/OmniPage.Server.Service/api/Job/GetJobTypes) calls of the Web API returns for the available job types. It also tests the connection to the SQL server.

Swagger API documentation

The main page of the swagger based API documentation is available at [http://\[server_name\]/OmniPage.Server.Service/swagger/](http://[server_name]/OmniPage.Server.Service/swagger/).

On this page you can discover the API functions and test them in your browser without any implementation.

Any simple conversion job can be performed from this API documentation page, except uploading the input files, which is not a part of the REST API, but this can be accomplished using another tool.

Administration console

The administration console of the service is available at the following URL:

[http://\[server_name\]/OmniPage.Server.AdminConsole](http://[server_name]/OmniPage.Server.AdminConsole)

Licensing

OmniPage Licensing Tool is required to license OPS. It is installed along with the Master components of the OPS.

Activate license with internet access

1. Start OmniPage Licensing Tool on your runtime machine.
2. Select File > Download... > Enter your license key and press Download
3. Your license appears in the Licenses panel.
4. Select your license file and click on the **Functions > Activate** menu item to activate your license.
5. If the license has been activated successfully, **OK** is displayed next to the product name.
6. OPS is functional.

Download and Activation without Internet Connection

If your development computer does not have an internet connection, license download and activation can be performed manually. To do this, use a computer with internet connection and proceed as follows:

1. Go to the following link: <http://licenses.kofax.com/csdkactivation/download.aspx>

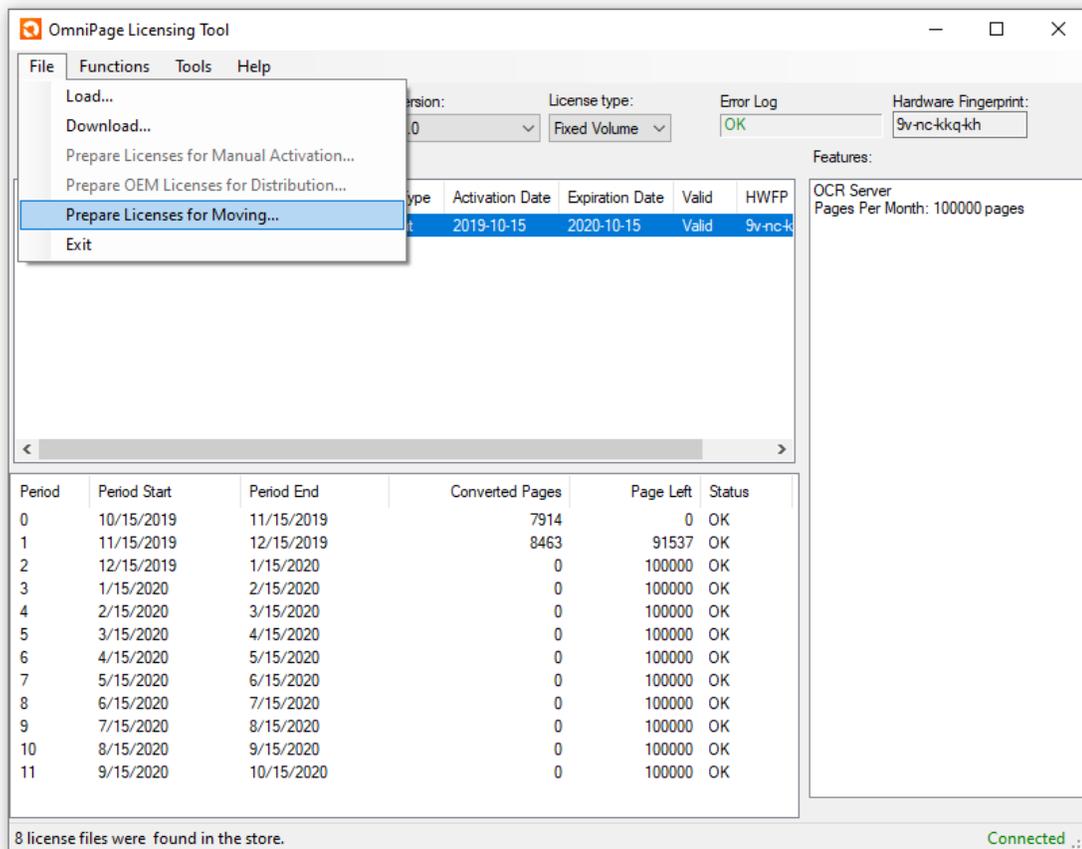
7. Enter your license key(s) and download the license file(s).
8. Move your downloaded license file(s) to the target computer (the one where you have installed the 'Master' component of the OPS).
9. Run OmniPage Licensing Tool on the target computer (Start > All Programs > Kofax > Licensing > OmniPage Licensing Tool).
10. Load each license file separately with the **File > Load...** menu command.
11. Use the **File > Prepare License for Manual Activation...** menu command to save your licenses in a .zip file.
12. Move your saved file back to the other computer with internet connection.
13. Go to the following link: <http://licenses.kofax.com/csdkactivation>
14. Follow the instructions on that web page.
15. Download and save the received .lcxz file to a portable media and move it to the target computer.
16. Run OPLT on the target computer again.
17. Import the license set with the **File > Load...** menu command.
18. As a result, you should see your licenses in the Licenses window of the OmniPage Licensing Tool. The activation dates should be filled in.
19. Once you have downloaded and activated all your license keys you can check your licenses in the Admin Console of OPS.

Moving licenses to another machine

Moving licenses is also possible, for example in case of a hardware upgrade. To do this, your users must use the Licensing Tool.

The procedure takes the following steps:

1. Start the Licensing Tool and select **File > Prepare Licenses for moving...**



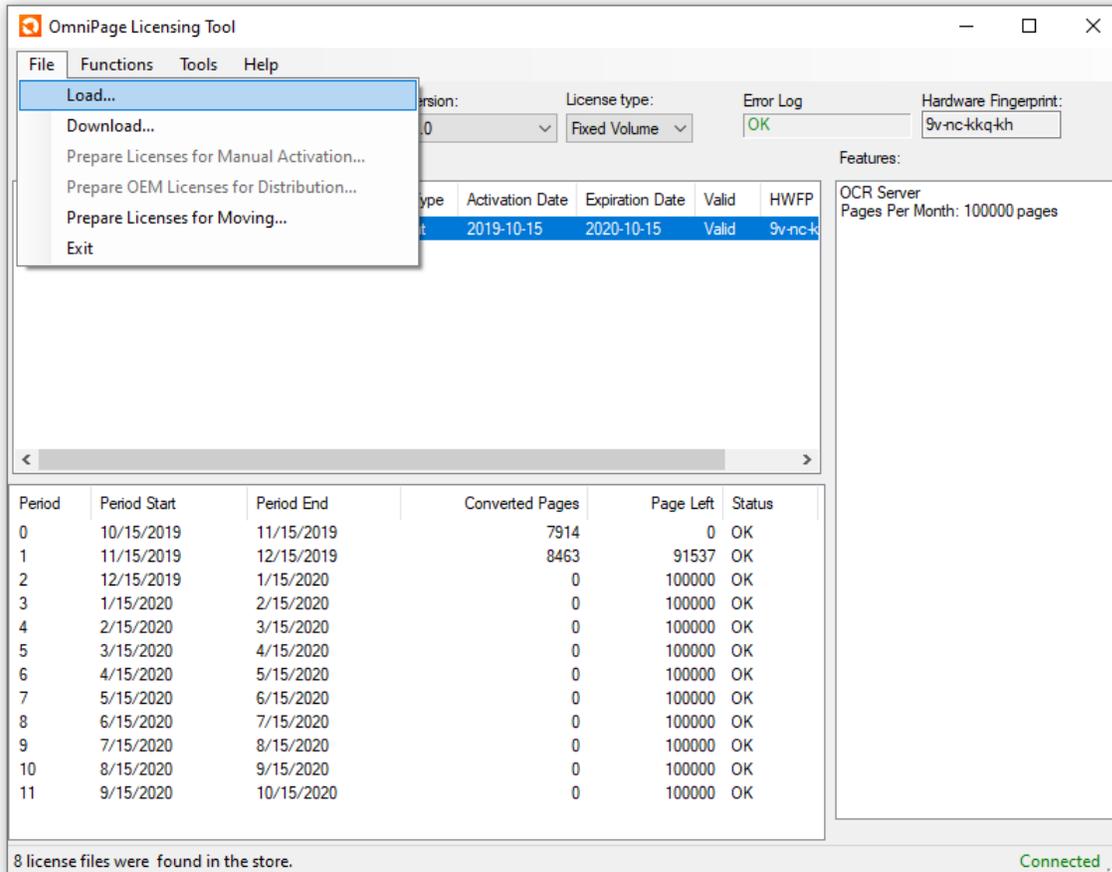
20.

1. Provide a name for the .lcxpfile pack in the Export License Files To dialog. Click **Save**.
2. Take the .lcxp file to the new computer.

The remaining steps depend on whether your user's new machine has network connection or not.

With internet connection

4. Select **File > Load...** to load your license pack.



Without internet connection

4. Select **File > Load...** to load your license package.

License package file is updated with the information of the new machine information.

6. Move the updated package to the computer with internet connection.
7. Go to the following link: <http://licenses.kofax.com/csdkactivation> and upload the updated package file.
8. Download and save the received .lcxp file and move it to the target computer.
9. Start the Licensing Tool and import the downloaded .lcxp license package with the **File > Load...** menu command.

As a result, you should see your moved licenses in the Licenses window.

SQL Server Configuration

If you have an installed Microsoft SQL Server/SQL Express instance to use with OPS, you can skip this section.

If you install the OPS environment in a Robust deployment mode, then an MS SQL server or SQL Express is a required component.

We recommend that you install the SQL Server with SQL Server Management Studio. The SQL Server Management Studio is the official client user interface which can be used to manage the SQL Server instance. The following samples are based on the pre-installed SQL Express and Management Studio.

If you install Microsoft SQL Express, verify that the install package includes the SQL Management Studio.

Firewall settings

If you have firewall between the OPS machines and your database server, please check if the ports are opened. By default, it is 1433 for the default SQL server instance and 1343 for the SQL Server Browser.

Configuration

SQL Authentication

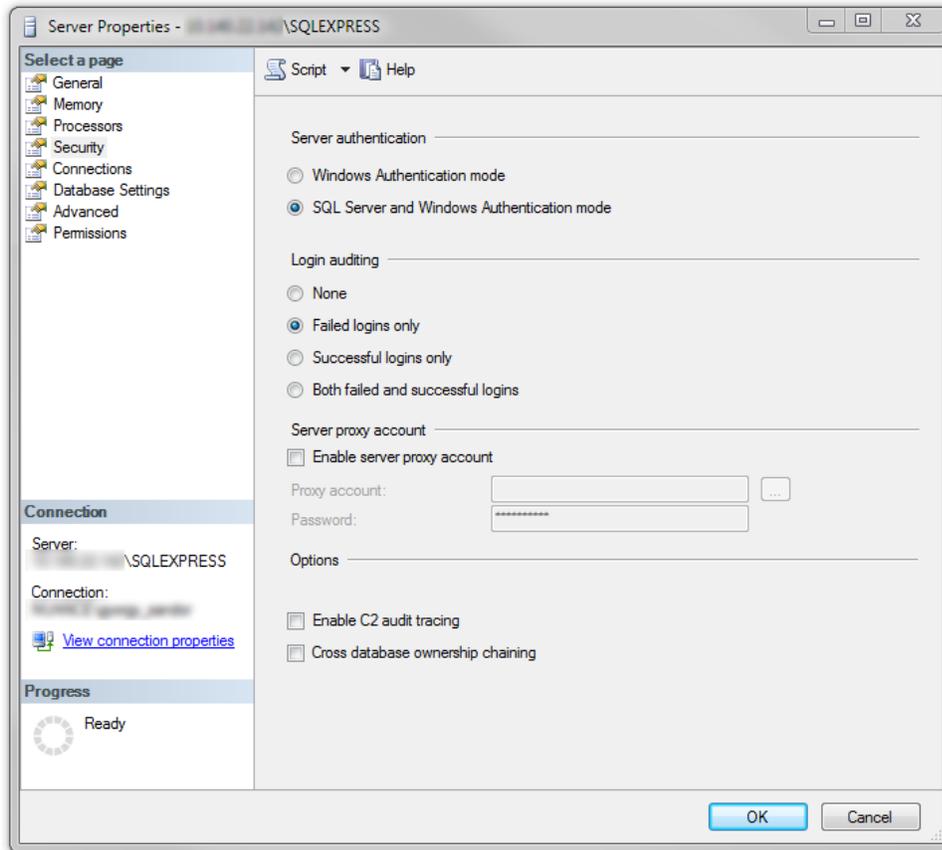
The SQL server can be accessed with two authentication models.

Windows Authentication means that the user identity is managed as part of the windows handshaking, so the user username and password are not handled by the client applications.

SQL Authentication means that you must store a username and a password in the client applications. In this case no Active Directory service is necessary.

If you want to access the SQL server with SQL user authentication (not with Window Authentication), then you must enable the **SQL Server and Windows Authentication mode**. It is asked at install time, but you can set it later from the Microsoft SQL Server Management Studio.

1. Select your SQL instance in the Object Explorer of the Microsoft SQL Server management Studio.
2. Right-click on the instance and select the **Properties** menu item.
3. Select the Security page and mark the SQL Server and Windows Authentication mode radio button.



Remote Connection to the SQL server

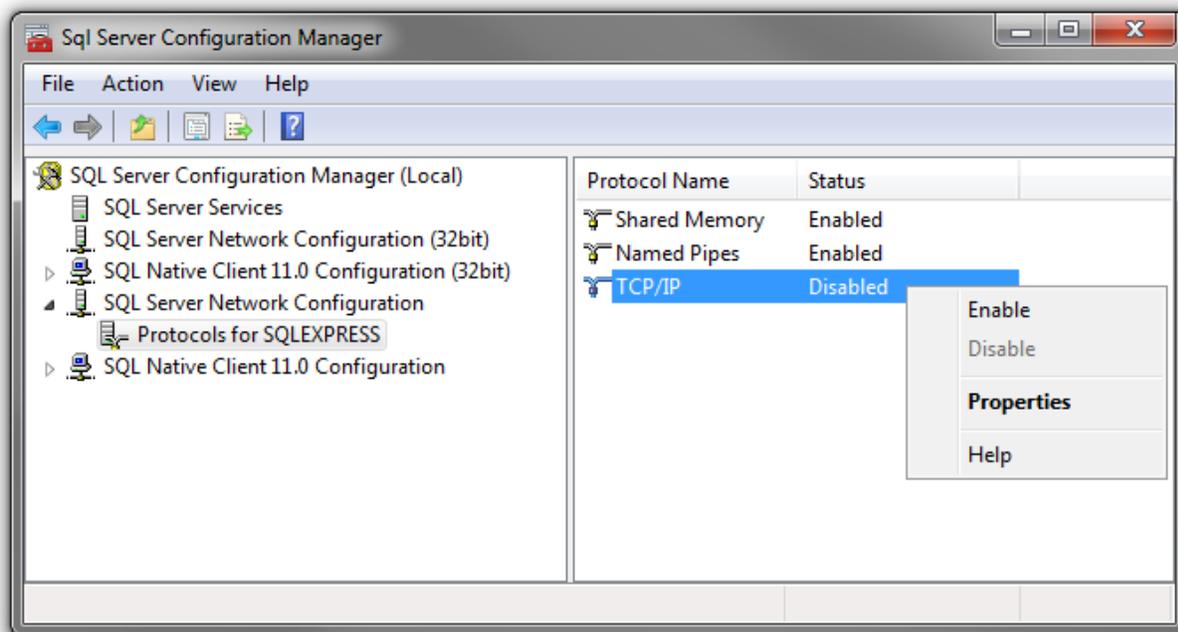
If you want to access the SQL server remotely, for example, in case of OPS multi-server installation, you must enable the TCP/IP communication to the SQL server and start the SQL Server Browser service which is a part of your SQL server installation.

Enable TCP/IP protocol

1. Start the SQL Server Configuration Manager.
 - a. Select your SQL instance from the SQL Server Network Configurations.
 - b. Set the **TCP/IP** protocol to **Enabled**.
 - c. Restart SQL Server instance.

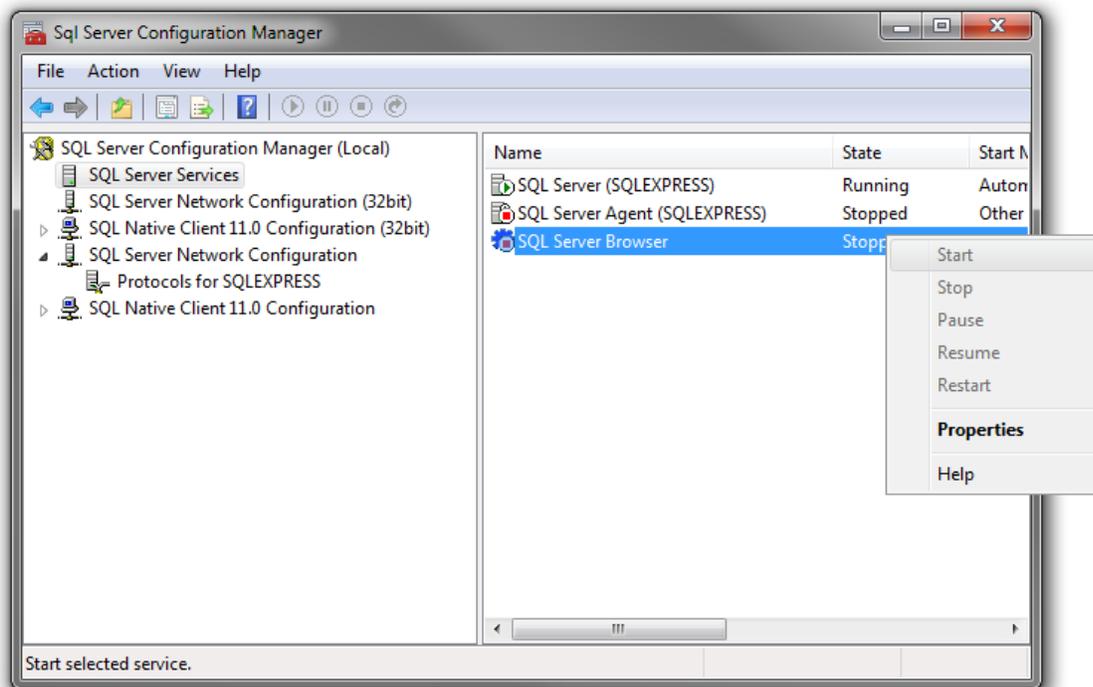
Start SQL Server Browser

1. Start the SQL Server Configuration Manager.
 - a. Select SQL Server Services.
 - b. Right click on the **SQL Server Browser** and select **Properties**.



Start SQL Server Browser

21. Start the SQL Server Configuration Manager.
22. Select SQL Server Services.
23. Right click on the **SQL Server Browser** and select **Properties**.



24. On the **Properties** page, select the **Service Tab**.
25. Set the startup mode to **Automatic**.
26. Right click on the **SQL Server Browser** and select **Start**.
- 27.

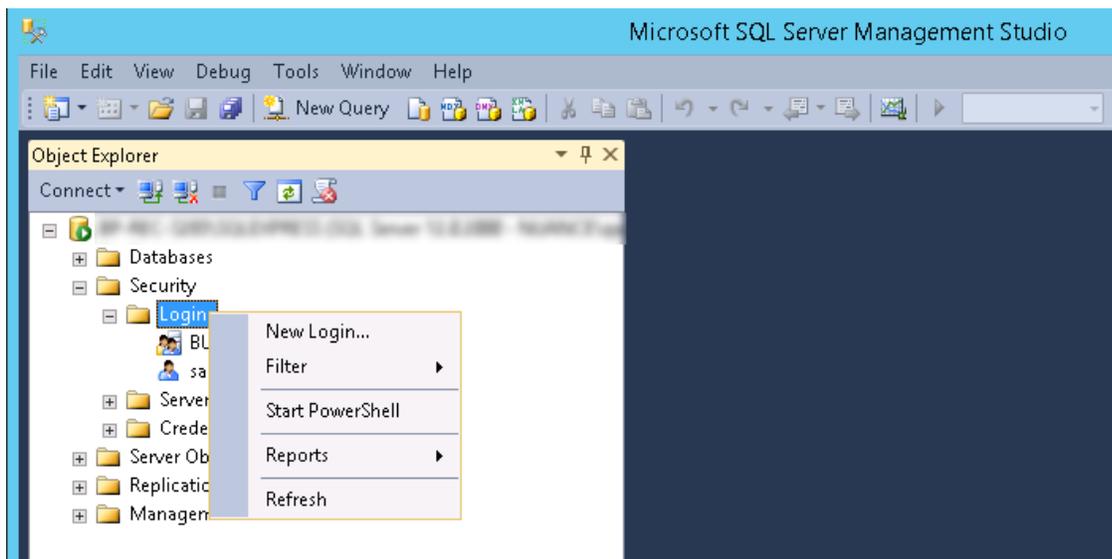
SQL Login Creation Configuration

To connect to the SQL database, you must create Login and User or use an existing one.

A Login grants the principal entry into the SQL Server. A User grants a login entry into an SQL Database.

Create Login

1. Start the Microsoft SQL Server Management Studio.
2. Select the New **Login** menu item under **Security/Login**.

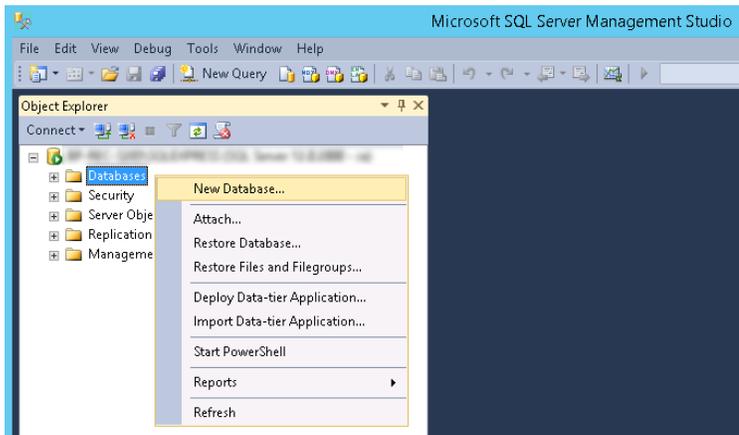


3. Select the Windows authentication or the SQL Server authentication.
4. Enter the **Login name**.
5. In case of SQL Server authentication, enter the password and uncheck the **Enforce password expiration**.

Database Creation

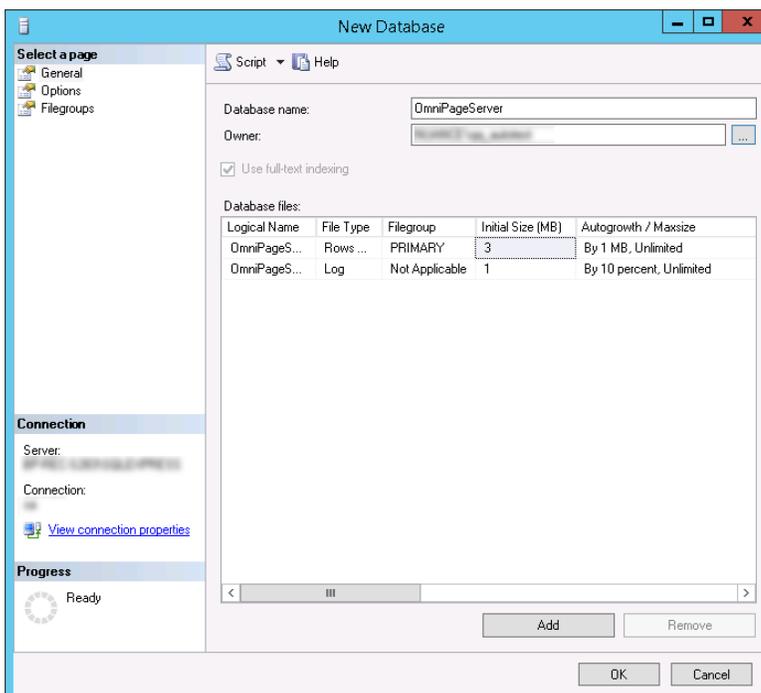
For the OPS you must create a Database instance.

1. Start the Microsoft SQL Server Management Studio.
1. Select Databases > New Database.



- 28.
2. On the New Database page, specify the **Database name**, for example, OmniPageServer.
3. At the Owner of the database, select the login created in a previous step, so you can give access to the database for the previously created SQL Login.

The path of the database file appears in the Database files panel.



OPS can run in cloud environments like Azure and Amazon Cloud. It is possible to use Master, Worker, Conversion Client and Folder Watcher. You can also setup a scale set for Worker servers based on the load of the environment. You can install the server in Lite or Robust mode. If you select a Robust mode, you can use SQL Azure database.

SQL Azure

If you want to use SQL Azure database in your OPS deployment, you must create a database user for OPS service. The following scripts give you an example how to create and configure your database user for OPS.

1. Connect to the SQL server (for example, with SQL Management Studio) with the server administrator user.
2. Switch to the master database and open a **New Query**.
Note: In the SQL Azure the sql USE statement is not supported to switch between databases so you must open a Query Window on the correct database. If you connect to the database with the "Microsoft SQL Server Management Studio" select a "New Query" button from the right database (check the database name on the caption of the query window or using the 'select db_name()' command).
3. In master database, create a login and then add a user for that login to the master database. Change the `opslogin` login `opsuser` in the following scripts.

```
CREATE LOGIN opslogin
    WITH PASSWORD = 'YOUR_OPS_LOGIN_PASSWORD'
GO

CREATE USER opsuser
    FOR LOGIN opslogin
```

Open a new query window on your OmniPage Server's database.

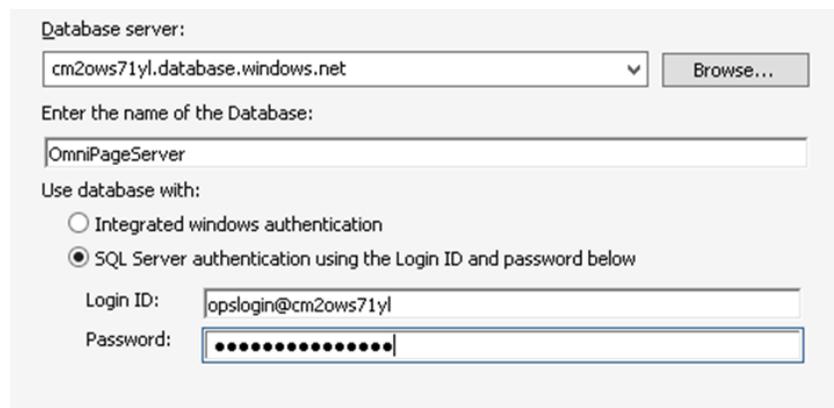
Connect to your database service with the user and create a user for this database.

```
CREATE USER opsuser
    FOR LOGIN opslogin
    WITH DEFAULT_SCHEMA = dbo
GO

EXEC sp_addrolemember N'db_owner', 'opsuser'
GO
```

In the **Database Server** dialog in the Installer, the sql user login should be entered in the following format:

opslogin@servername where the servername is the first part of the azure database name.



Database server:
cm2ows71yl.database.windows.net

Enter the name of the Database:
OmniPageServer

Use database with:
 Integrated windows authentication
 SQL Server authentication using the Login ID and password below

Login ID: opslogin@cm2ows71yl
Password: ●●●●●●●●●●

Configuration

You can configure the OPS on the Configuration page of the Administration Console. The following parameters can be set:

Configuration

Service Users:	<input type="text" value="MyDomain1\User1,MyDomain2\User2"/>
Service User Groups:	<input type="text" value="MyDomain1\ConverterUserGroup"/>
Admin Users:	<input type="text"/>
Admin User Groups:	<input type="text" value="MyDomain\Administrator"/>
Admin User Mail Address:	<input type="text" value="Administrator@MyCompany.com"/>
Sender Mail Address:	<input type="text" value="TestUser@MyCompany.com"/>
SMTP Server Address:	<input type="text" value="Smtp.MyCompany.com"/>
SMTP User's Domain:	<input type="text"/>
SMTP User's Name:	<input type="text"/>
SMTP User's Password:	<input type="password"/>
SMTP Server Port:	<input type="text" value="25"/>
SMTP Enable SSL Flag:	<input type="text" value="false"/>
[BP-REC-S280]\Worker Task Count:	<input type="text" value="2"/>
[BP-REC-S283]\Worker Task Count:	<input type="text" value="2"/>
Storage Path:	<input type="text" value="C:\Storage\"/>
[BP-REC-S280]\Log File Path:	<input type="text" value="C:\Logs"/>
[BP-REC-S283]\Log File Path:	<input type="text" value="C:\Logs"/>

Service Users

Comma-separated list of authorized domain users, who can access the OPS WEB API to perform conversions.

For example, domain1\user1,domain2\user2

Service User Groups

Comma-separated list of Active Directory Groups whose members are authorized to access the OPS WEB API to perform conversions.

For example, domain1\group1,domain2\group2

Note: Specifying a non-existent group degrades performance.

Admin Users

Comma-separated list of authorized domain users, who can access the Administration Console UI.

For example, domain1\user1,domain2\user2

Admin User Groups

Comma-separated list of Active Directory Groups whose members are authorized to access the Administration Console UI.

For example, domain1\admingroup1,domain2\admingroup2

Admin User Mail Address

The e-mail address of the administrator user is set to get notifications from the system in case of an emergency or if the expiration date of the licenses approaches.

Sender Mail Address

OPS system will send a message on behalf of this user to avoid the spam filters.

SMTP Server Address

The machine name or IP address of the host used for SMTP transactions.

SMTP user configuration:

Specifies the user credentials to use for authentication to the SMTP mail server. If you leave it blank, the server tries to authenticate with the user who runs the service.

SMTP User's Domain

SMTP User's domain name.

SMTP User's Name

The user name of the server.

SMTP User's Password

Password of the SMTP server user. This password will be stored in the database.

SMTP Server Port

The port used for SMTP transactions.

SMTP Enable SSL Flag

SMTP Server enable SSL flag. Its value can be true or false.

Worker Task Count

The count of the worker tasks. It is limited due to memory size and processor count of the current machine.

Local Storage Path

The file storage of the conversion related documents. It can be a local folder of the Service machine or a network share.

Log File Path

The path of the log files:

Kerberos network authentication

The current version of the OPS supports NTLM protocol for network authentication by default. The Kerberos authentication must be set up manually.

Service names for the registration of Service Principal Name of Kerberos:

On the Master installation:

{MASTER HOST MACHINE}/OmniPage.Server.Service

{MASTER HOST MACHINE}/OmniPage.Server.AdminConsole

{MASTER HOST MACHINE}/OmniPage.Server.StatusService

{MASTER HOST MACHINE}/ConversionClient

On the Folder Watcher installation:

{FOLDER WATCHER HOST MACHINE}/SystemConfigurationEditor

{FOLDER WATCHER HOST MACHINE}/FolderConfigurationEditor

{FOLDER WATCHER HOST MACHINE}:8080/Configuration

{FOLDER WATCHER HOST MACHINE}:8080/Notification

High Availability installation and configuration**Recommendations and warnings:**

- This documentation is only a guide, therefore the steps to create failover environments should be completely different. Please use this document only as a help to create highly available environments.
- We recommend creating high availability environment with the advice of already experienced person in HA and with the help of experienced IT person.
- To have the full highly available feature of OPS please use SQL Server in Clustered mode, and cluster the Common File Storage for OPS too. If these services do not have high availability, OPS cannot operate properly in high availability.
- OPSHA installation clusters only OPS Master server and its web services. It does not clusters workers, folder watchers or anything else.

About high availability in brief:

This means that one or more services can operate even if one or more computer gets unavailable in the cluster for any reason. In very brief, the cluster means the group of computers which have the same service installed and configured to collaborate to present services together for the end user. If one of the computers can serve queries which is in the group of computers participating in the high availability environment, then the whole service appears to be available for the end-user. A computer in cluster called node. The cluster offers their services on a dedicated virtual address called cluster IP. This endpoint is visible for end-users.

The main concept:

OPS can run in high availability environments to ensure the best availability at any time. This means that the front-end applications, like “Conversion Client” can be clustered. Because of the general architecture of the software, the only services that needs to be clustered are located on OPS Master server. The workers and folder watchers can run parallel without any clustering. Therefore, the only needed component for clustering is OPS Master server. In practice this

means two or more separate installation of OPS Master Server which will be clustered later. Workers and folder watchers run on different machines.

OPS clustered services are:

All the clustered services are located on each node in each OPS Master installation. These are the following:

OmniPage.Server.Service – Main OPS API as web service

OmniPage.Server.AdminConsole – OPS Administration Console as web application

ConversionClient – OPS UI for converting documents as web application

Node Diagnostic service for OPS:**Status service**

The status service retrieves information about the current status of the master services and its backends.

You can get the full status information in a following way:

http://{OPS_SERVER_NAME}/OmniPage.Server.StatusService/GetStatus/all results:

```
ServerStatus: Not OK
Version: 2.1.0.0
HasDatabaseAccess: True
HasStorageAccess: True
HasLicense: False
QueueLength: 0
Messages:
    No valid license found for the OmniPage Server!
```

or one particular information if you select a specific parameter, for example:

http://{OPS_SERVER_NAME}/OmniPage.Server.StatusService/GetStatus/ServerStatus

results:

```
Not OK
```

http://{OPS_SERVER_NAME}/OmniPage.Server.StatusService/GetStatus/HasLicense

results:

False

http://{{OPS_SERVER_NAME}}/OmniPage.Server.StatusService/GetStatus/HasDatabaseAccess

results:

True

On the configuration page of the AdminConsole, set the name or IP of the clustering server in **the Clustering Server Name** text box.

Installation steps for Microsoft NLB, Microsoft Failover Clustering and Citrix NetScaler VPX

Common part for all installation types

1. Make sure you have
 - an accessible Domain Controller and at least 2 machines dedicated to OPS as a member of the domain.
 - access to MS SQL Database server.
 - a dedicated user for OPS, who is part of the domain and has administrative rights on the dedicated OPS Servers.
2. Create the OPS Database in SQL and grant access to it for the user created above. It is recommended to allow DBO privileges only on OPS database.
3. Install IIS on OPS nodes using the previously described options (in brief: check everything in **Common IIS Features** and in **Application Development** section, add **Basic** and **Windows** authentication methods).
4. Grant “Logon as a service” right for the dedicated OPS user in **Local Security Policy > User rights assignment**.
5. Install OPS Server as a single seat deployment. Use the dedicated OPS user. Use the SQL Database created above for all OPS Server installation. Optionally install Conversion Client and Folder Watcher if you need it.
6. Create a network file share which can be accessed on all OPS nodes.
7. Open OPS AdminConsole and change the Storage path in configuration.
8. Apply OPS licenses.
9. Restart Windows on all OPS nodes.

Microsoft Network Load Balancer

1. Install Network Load Balancing feature with the required additional components on OPS nodes.
2. Start Network Load Balancing Manager.
3. Click **Cluster > New**.
4. Enter first node **IP > Connect**.
5. Click **Next**.
6. Click **Next**.
7. Add a new **Cluster IP**. This will be the high availability address of the NLB Cluster. Users will enter this IP in browser when calling OPS Server URL.
8. Click **Next**.
9. Enter **Full Internet Name** if you want.
10. Choose **Multicast** in **Cluster operation mode**.
11. Click **Next**.
12. Define port rules if it necessary, or leave the default settings. This is the ports what NLB clustering while it operates.
13. Click **Finish**.

Wait till operation pending. If everything ok, then first node icon gets green and status turns to Converged.
14. Right-click on the **Cluster IP** and choose **Add Host To Cluster**.
15. Add each OPS node to the Cluster.
16. Access OPS services through Cluster IP. Optionally test node stopping and starting.

Microsoft Windows Failover Clustering

IIS Handler Script located on this link:

<https://support.microsoft.com/en-us/help/970759/configuring-iis-7.0-or-later-world-wide-web-publishing-service-in-a-windows-server-2008,-windows-server-2008-r2,-or-windows-server-2012-failover-cluster>

Please read and understand the script above.

Remark: The script located in the article above does not run correctly on Windows 2016 Server.

The customized script can be found in the install package (Installer\Scripts\Failover\OPSHA.vbs).

1. Install Failover Clustering feature on OPS nodes.

2. Create a folder in file system for IIS Handler Script located on the website above. This will switch between IIS services. Create a folder and put this script into the folder on each OPS node individually. Do not place it to the network or to network mapped drive, we need to access it even if network has interrupted.
3. Start **Failover Cluster Manager**.
4. Create a **New Cluster**.
5. Enter each **OPS Node** names.
6. It is recommended to run all tests and verify the results.
7. Enter **Cluster name** and **Cluster IP address**. This will be the high availability address of the Failover Cluster. Users will enter this IP in browser when calling OPS Server URL.
8. In the next screen, OPS needs no common storage to add.
9. Finish wizard and check that all nodes are listed in the Nodes list.
10. Go to **Roles > Configure Role**.
11. Choose **Generic Script**.
12. Enter the path of the script. We did this in Step 2.
13. Enter any name for the role and give IP address for the role.
10. No storage required. Finish the wizard.

Note: This wizard indicates error at this point if you are trying to use it on Windows 2016 server.

Wait till the script status goes to “Running” state.
14. Access OPS services through Cluster IP. Optionally test node stopping and starting.

Citrix NetScaler VPX

1. Login NetScaler web interface.
2. Go to **Traffic Management > Load Balancing > Servers** and add each of you OPS servers to the list. Be sure its state gets enabled.
3. Go to **Traffic Management > Load Balancing > Monitors**.
 - a) Add a new with name: “OPS1_HTTP_CODE” and type “HTTP”.
 - b) Configure IP address and the desired values on **Standard Values** tab.
 - c) Go to **Special Parameters**.
 - d) Add **HTTP Request**: “HEAD /OmniPage.Server.Service”
 - e) Define your response code meaning good state (by default 200 is enough).
 - f) Create.
 - g) Repeat step **Error! Reference source not found.-Error! Reference source not found.** for each OPS node. Change values identically wherever it is necessary.

Remark: You can easily create monitor clones by selecting previously created than Add.
 - h) Add new monitor with name: “OPS1_HTTP_STATUS” and type “HTTP-ECV”.
 - i) Configure IP address and the desired values on **Standard Values** tab.

- j) Go to **Special Parameters**.
 - k) Add HTTP Request: "GET /OmniPage.Server.StatusService/GetStatus/all"
 - l) Receive string: "ServerStatus: OK".
 - m) Create.
 - n) Repeat step **Error! Reference source not found.-Error! Reference source not found.** for each OPS node. Change values identically wherever it is necessary.
 - o) Check every newly created monitor for status "Enabled".
4. Go to **Traffic Management > Load Balancing > Services**.
 - a) Add new with name "OPS_WEB_Node1".
 - b) Select first server from existing ones, select HTTP protocol and port 80 (or what you have been set up previously).
 - c) Click on **Monitors** to add new bindings.
 - d) Add the simple "tcp" binding with Weight=1.
 - e) Add "OPS1_HTTP_CODE" binding with Weight=2.
 - f) Add "OPS1_HTTP_STATUS" binding with Weight=3.
 - g) Repeat point **Error! Reference source not found.-Error! Reference source not found.** for each OPS Node. Change values identically wherever it is necessary.
 5. Go to **Traffic Management > Load Balancing > Virtual Server**.
 - a) Add a new one with name "OPS_LB_WEB".
 - b) Protocol should be "HTTP" and the IP address will be the load balanced endpoint for end-user. Port should be the previously setup OPS webpage port, by default 80.
 - c) Enable LB feature in NetScaler if it is asked.
 - d) Click on **No Load Balancing Virtual Server Service Binding**.
 - e) Click **Add Binding**.
 - f) Click **Select Service** field.
 - g) Select all OPS node and click **OK**.
 - h) Weight should be 1 and click **Bind**.
 - i) Click **Close**.
 - j) Click **Persistence** on the pane on the right.
 - k) Choose **SOURCEIP** as persistence method.
 - l) Click **OK**.
 - m) Click **Done**.
 - n) Wait till State and Effective State gets Up and green.
 6. Our recommendation is to use the default load balancing method: **LEASTCONNECTION**.
 7. Open any browser and access OPS webpage using the Load Balanced IP.
 8. Optionally test the failure scenarios for **Load Balancing > Services** (test the bindings).

OmniPage Worker installation

When the worker installation runs, the installer asks you about the service endpoint of the OPS Server. Make sure you are passing the Cluster address of the service at this step.

Troubleshooting

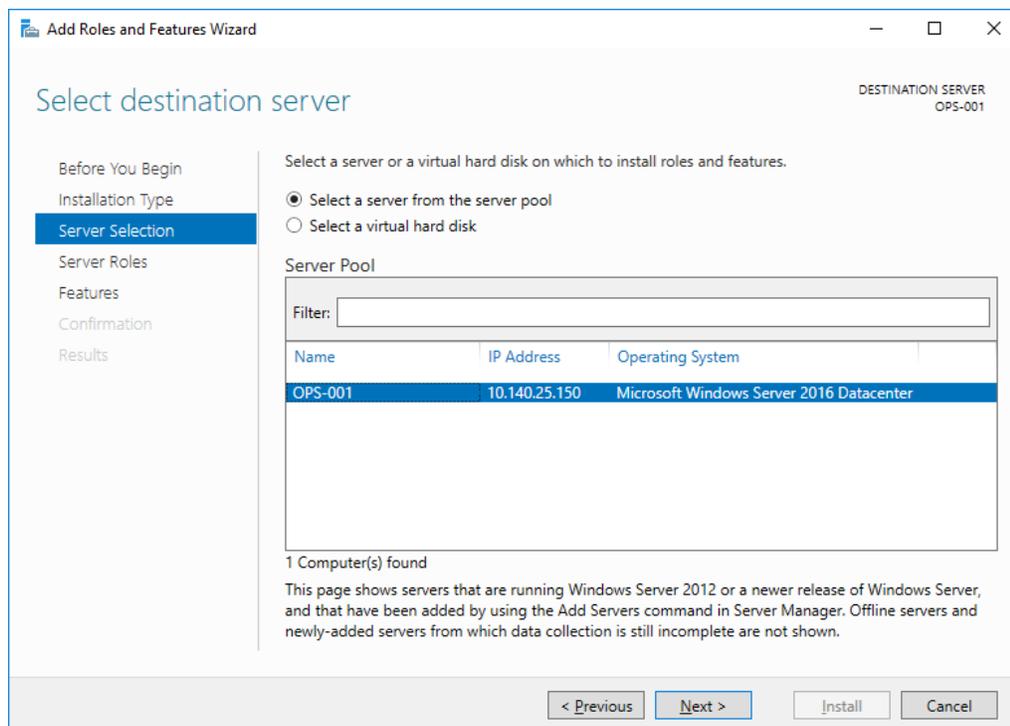
This section provides the information needed to troubleshoot the OPS.

Windows Server Configuration

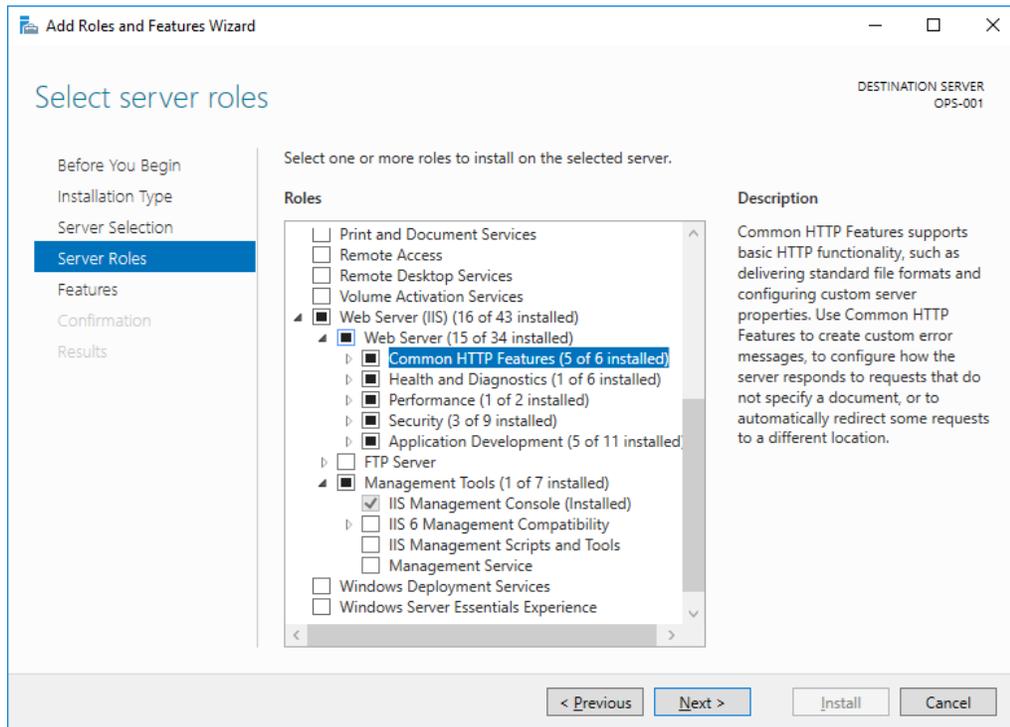
The IIS Web server has a modular design that enables you to customize your server by adding or removing modules. This section describes which modules are required for the OmniPage Master Server.

Installation of the Web Server (IIS) role

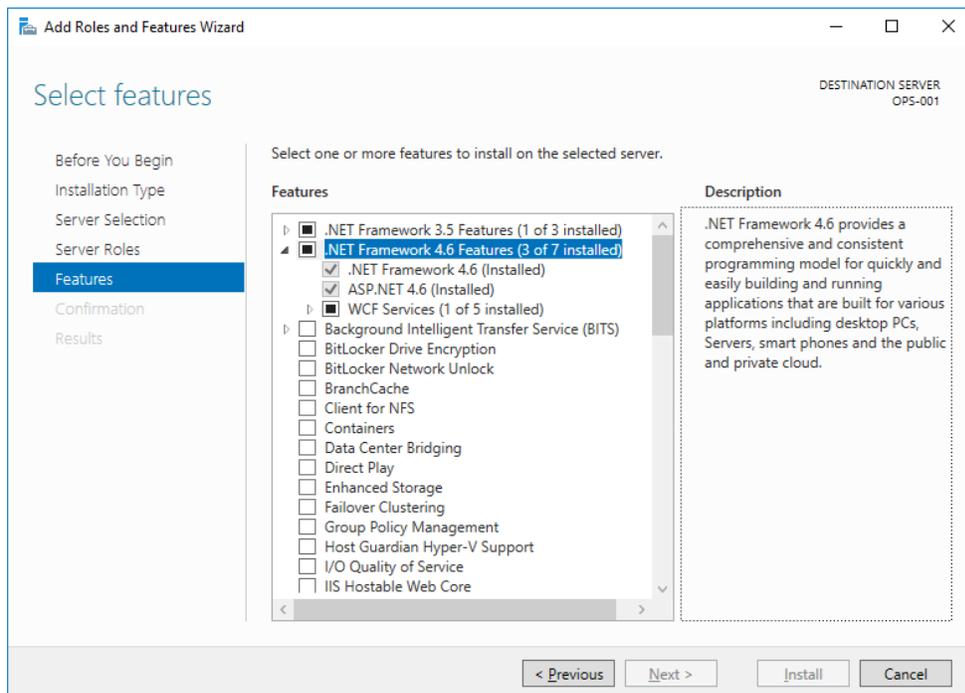
1. Open Server Manager, go to **Server Selection** if necessary and select the current server, click **Next**.



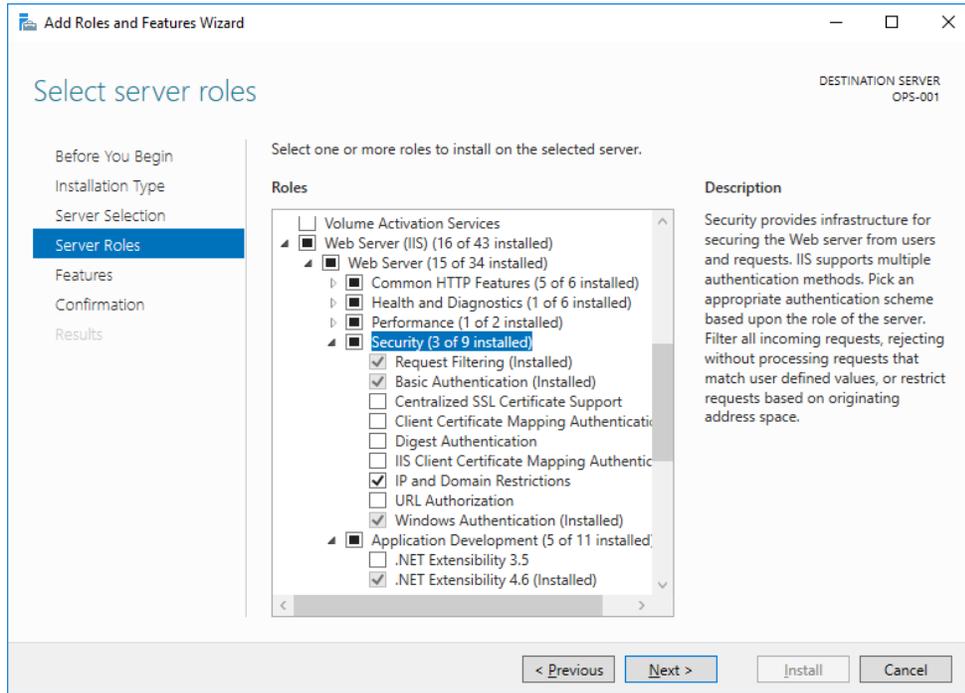
2. Select **Web Server** from **Roles Checklist**.



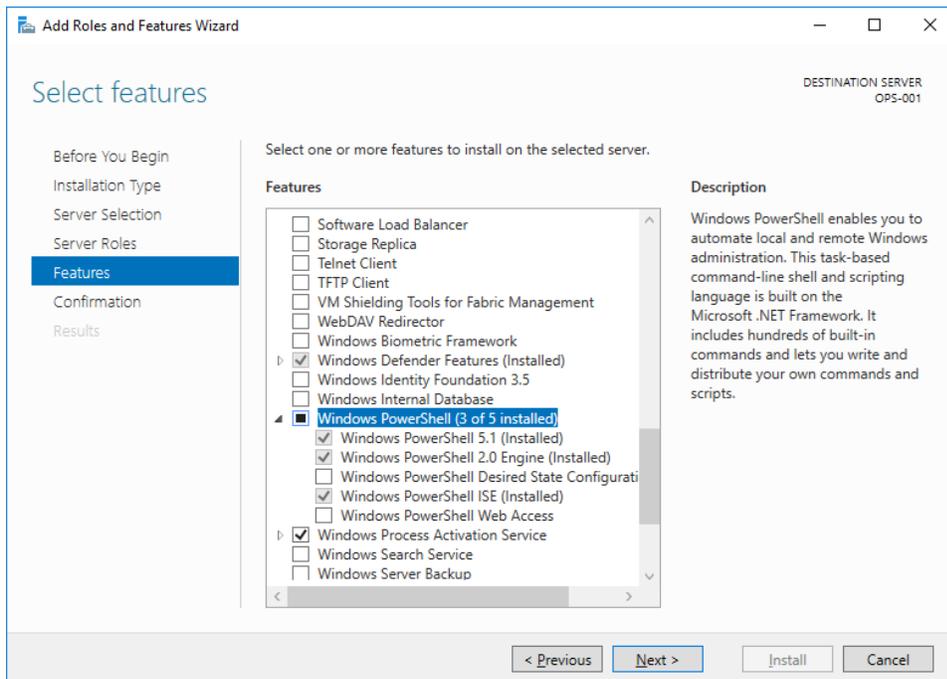
3. Add the **.NET Framework 4.5** (or higher) Feature. Click **Next**.



4. Select **Role Services > Security features** to support the authentication methods. Click **Next**.



5. Add **Windows PowerShell** feature under **Features**. Click **Next**.



The Manager Service restarted regularly

In such cases, check the log files or the Admin Console's Message page. If you find "*The service user hasn't got enough privileges to perform service startup/shutdown*" entries, then your service user does not have permissions to manage OPS services.

You must set the appropriate permissions to start/stop windows services to your service user. The simplest way to do this is to add your service user to the local Administrators group.

The Web Services (Service and AdminConsole) returns 503 HTTP status code.

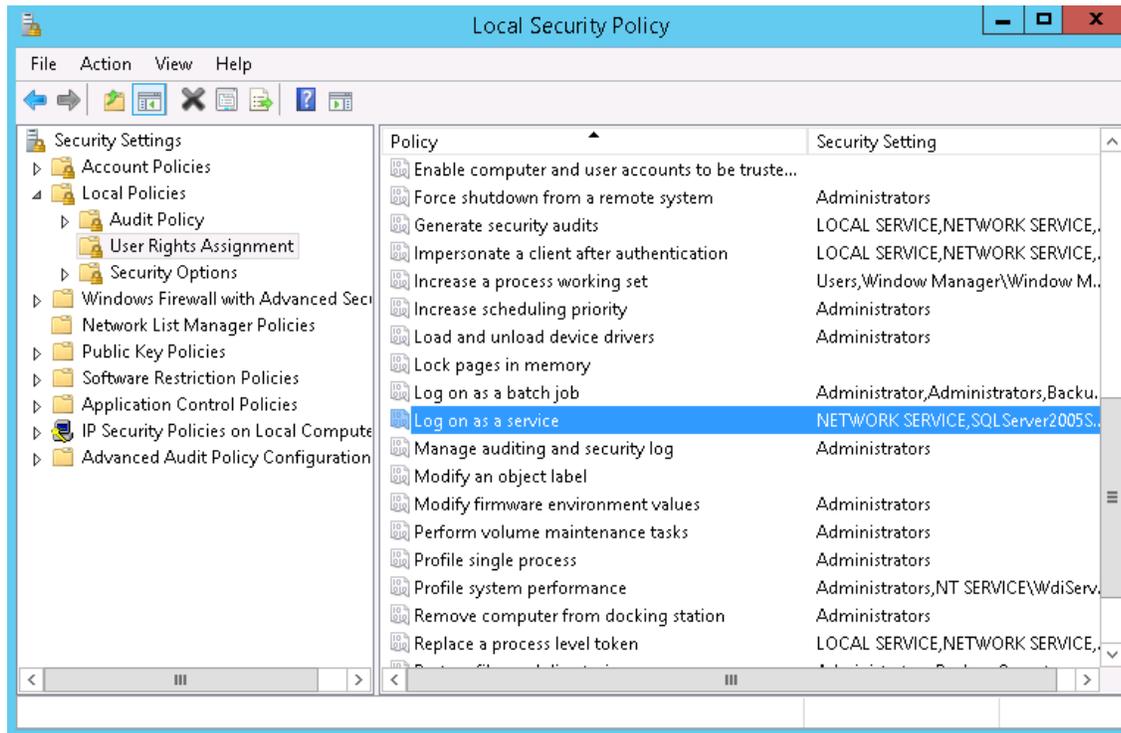
The IIS wasn't configured properly. Please check if the install steps are performed properly and the roles and features are installed correctly, as described in the Windows Server Configuration chapter.

The windows services couldn't be started

The service user must register processes as a service. You can check if your service user account has rights to run windows service.

- Start a **Local Security Policy** from the **Administrative Tools**.
- Select **Local Policies**, and then click **User Rights Assignment**.
- Check if your service user or group is in a list of accounts that has a Log on as a service right.

- If the service user is not in the Log on as a service group, then add it.



Log level settings

The log levels are configured in the configuration files of the windows or web services.

The log level is set to error level by default. You can change it in the configuration file in case of issues.

The following levels are supported:

- ERROR
- WARN
- INFO

If you want to change the log levels, you can do it manually in the following configuration files:

- APP_ROOT\OmniPage.Server.Service\Web.config
- APP_ROOT\OmniPage.Server.Worker\OmniPage.Server.Worker.exe.config

- APP_ROOT\OmniPage.Server.Manager\OmniPage.Server.Manager.exe.config
- APP_ROOT\OmniPage.Server.CSDKServiceHost\OmniPage.Server.CSDKServiceHost.exe.config

Where the APP_ROOT is by default the C:\Program Files\Kofax\OmniPage Server\2.1 folder.

The information level (INFO) is only recommended for diagnostic case because it can significantly slow down your system.

Services must be restarted to enforce the changes of the log level settings.