ABBYY FlexiCapture 10 System Administrator's Guide

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Installing ABBYY FlexiCapture 10

Before purchasing the product, analyze your document processing needs and select either the local or the distributed version. If you plan to process moderate amounts of documents (approximately 5,000 pages per day), employ one or two operators for the job, and do not require any sophisticated batch routing, then Local Installation is the best choice.

If you plan to automate data capture and processing, require sophisticated batch routing based on document or batch types, and need a scalable pool of centrally administered workstations, then select <u>Distributed Installation</u>.

Note: When installing the program under Windows Vista, Windows 7, Windows Server 2008 or Windows Server 2008 R2 operations systems, the UAC must be disabled before installation or the native administrator account must be used.

Important! The distributed and local versions cannot be installed on the same computer.

Standalone Installation

The following installation methods are available to install the standalone version of ABBYY FlexiCapture:

- manually (interactive installation)
- from the command line

Interaction of the system components

The following figure displays the system component interaction for standalone installation:



If you have one license and several operator stations, then for connecting operator stations to the Licensing Server, the 10040 port has to be opened manually in Firewall settings.

Manual (interactive) installation

To install the standalone version of ABBYY FlexiCapture:

- 1. In the Autorun menu, select Standalone Installation (you can run the autorun.exe file manually).
- 2. Select a setup language. The setup program will compare the locale of your system and the selected language. If the languages are incompatible, a warning message is displayed.
- 3. Next, the setup program checks the version of your operating system and the availability of the administrative permissions. If the version of the operating system is not supported by the program or you do not have the administrative permissions, a warning message is displayed and the setup program is terminated.
- 4. If all the checks are passed successfully, the end-user license agreement will be displayed. Read the license agreement carefully and if you agree with the terms of the agreement, select the corresponding option and click **Next**.
- 5. A dialog box will open prompting you to enter some information about yourself. Enter the required information and continue with the installation.
- 6. In the next dialog box, select one of the available installation modes:
 - Administrator Station The setup program installs the Administrator Station, FormDesigner 10, and FlexiLayout Studio 10.
 - **Operator Station** The setup program installs only the Operator Station. (The Administrator Station, FormDesigner 10 and FlexiLayout Studio 10 will not be installed).

- Administrator and Operator Station The setup program installs the Administrator Station, the Operator Station, FormDesigner 10 and FlexiLayout 10. By default this configuration is installed.
- 7. Next, select a destination folder. By default, the program is installed to %systemdrive%\Program Files\ABBYY FlexiCapture 10. If there is not enough space on the selected hard disk, a window is displayed showing your hard disks, the available free space, and the space required by the installation. Select a disk with sufficient free space and continue with the installation.
- 8. The program files will be copied onto your computer. Once the installation is finished, the setup program will display a message saying that the application has been successfully installed.
- 9. FlexiCapture 10 License Manager will be launched automatically so that you can activate your serial number. See the *Managing Licenses* section for details.

Note: For information about configuring multiple workstations to work with a single license server, see "Connecting stations to the Protection Server".

Command line installation

In the default configuration, all recognition languages are installed on the local computer and the interface language is selected automatically based on the regional settings of the computer on which the program is installed. The default configuration includes the Administrator and Operator stations, guides, help files, ABBYY FlexiLayout and ABBYY FormDesigner tools and FlexiCapture 10 License Manager.

Run the setup.exe file located in the administrative installation folder using the command line options described below.

Advertise installation

For advertise installation, type

Setup.exe /j

The stations icons will appear in the **Start** menu. Clicking this icon automatically installs the program in default configuration. Clicking the Administrator Station icon installs the Administrator Station, guides, help files, ABBYY FlexiLayout and ABBYY FormDesigner tools and FlexiCapture 10 License Manager.

Clicking the Operator Station icon installs the Operator Station, help files and FlexiCapture 10 License Manager.

Silent installation

In the case of silent installation, no setup dialog boxes are displayed and the program is installed in default configuration. Setup.exe /qn

Change "/qn" to "/qb" if you want an installation progress bar to be displayed.

No other dialog boxes will be displayed.

Additional command line options

/L<language code> disables auto selection of the interface language and installs the program with the interface language you specified.

The following language code values are available:

- 1033 English
- 1049 Russian
- 1031 German
- 1036 French
- 2052 Chinese simplified
- 1040 Italian
- 1034 Spanish
- 2074 Serbian
- 1029 Czech
- 1038 Hungarian
- 1045 Polish
- 1046 Portuguese (Brazilian)
- 1042 Korean

/V <command line> passes the specified command line directly to **msiexec.exe.** The <command line> string can be replaced with the following commands:

INSTALLDIR="<destination>" - the path to the folder where ABBYY FlexiCapture 10 is to be installed.

SETUPTYPE_CMD="<install mode>" – available installation modes.

The following modes are available:

Full – Full installation (the Administrator and the Operator Stations, guides, help files, ABBYY FlexiLayout and ABBYY Form-Designer as well as License Manager will be installed)

Admin – Administrator Station (the Administrator Station, guides, help files, ABBYY FlexiLayout and ABBYY FormDesigner as well as License Manager will be installed)

Operator - Operator Station

Example:

Setup.exe /qn /L1049 /v INSTALLDIR="D:\FC10" SETUPTYPE_CMD=Full

As a result, the Administrator and Operator Stations will be installed into D:\FC10, and Russian will be used the language of the interface.

Removing ABBYY FlexiCapture in silent mode

msiexec /x { FC100000-0004-0000-0000-074957833700}

Distributed Installation

For distributed installation, it is recommended that a server operating system should be used. Windows XP, Windows Vista and Windows 7 are not server operating systems. They support only a limited number of connections and are not well suitable for server use.

The following three steps are required to install the distributed version of ABBYY FlexiCapture:

- 1. Prepare the Application Server.
- 2. Install the servers.
- 3. Install the workstations.

Preparing the Application Server for installation on Windows 2008 R2

This instruction can also be used when installing the Application Server on Windows 2008, Windows 7 and Windows Vista. **Important!** Before you start, disable the UAC or perform all actions using the native administrator account.

To disable UAC:

1. In Control Panel open User Accounts.

at User Accounts				
🔾 🗢 🔀 🗸 Control Panel 🗸 User	r Accounts 👻 User Accounts 🔍 👻	Search Contro	l Panel	<u> </u>
Control Panel Home	Make changes to your user account			0
Manage your credentials	Change your password			
Create a password reset disk	Remove your password		Administrator	
Manage your file encryption certificates	Change your picture		Administrator Password protected	
Configure advanced user profile properties	Manage another account			
Change my environment variables	Change User Account Control settings			

2. Click **Change User Account Control settings** link and in the dialog box that opens, decrease the level of user control to **Never notify**.



3. For changes to take effect, restart the computer after turning off UAC.

The distributed installation of FlexiCapture 10 includes three servers:

- Application Server
- Protection Server
- Processing Server

The Application Server coordinates the work of the stations ensures the correct operation of ABBYY FlexiCapture 10. The following components must be installed on your computer before you can install the Application Server:

• Net Framework 3.5

By default this component is included in Windows 2008 R2 (except the version Core). It must be installed via Server Manager -> Features -> Add Features.

To install .Net Framework 3.5, do the following:

- 1. In My Computer local menu, choose Manage.
- 2. In the Server Manager console that opens, choose Features. In the right window click Add Features and from the features list select .Net Framework 3.5.1 Features.

🚆 Server Manager		
<u>File Action View Help</u>		
🗢 🔿 🔰 🖬 👔		
Server Manager (WIN-COSLCUOAF	Features	
Poles Features Diagnostics Configuration E Storage	View the status of features installed on this se	erver and add or remove features.
	• Features Summary	Features Summary Help
	Features: 1 of 41 installed Remote Server Administration Tools Role Administration Tools Web Server (IIS) Tools	Add Features
× >	Last Refresh: Today at 7:38 AM Configure refresh	

Add Features Wizard	<u>×</u>
Select Features	
Features Confirmation Progress Results	Set can can can be calculated on this server. Description Set control the layer of the ART in Set control to the ART in Set control t

3. The dialog box that opens will prompt you to add features required for installation of .Net Framework 3.5.1. In this window, click **Add Required Features**

Add Features Wizard			×
Add featu You cannot in	ures required for .NET Financial stall .NET Framework 3.5.1 Features	ramework 3.5.1 Features? unless the required features are also installed.	
Features:		Description:	
⊡ Windows Proc .NET Confi	Process Activation Service ss Model Environment guration APIs	Windows Process Activation Service generalizes the IIS process model, removing the dependency on HTTP. All the features of IIS that were previously available only to HTTP applications are now available to applications hosting Windows Communication Foundation (WCF) services, using non-HTTP protocols. IIS 7.0 also uses Windows Process Activation Service for me	
		Add Required Features Cancel	
(i) Why are these feat	ures required?		///

4. In the next step, click **Install**.

Add Features Wizard		X
Confirm Installat	ion Selections	
Features Confirmation Progress Results	To install the following roles, role services, or features, dick Install.	
	< <u>Previous</u> <u>Next</u> > <u>Install</u> Cancel	

5. During installation, Windows may ask for the source distribution files, so you need to have Windows installation CD. On other operating systems, (Windows 2008, Windows 2003) this component can be installed by selecting Install External Components in the Autorun menu.

Note: You can find information about the installed versions of Net.Framework in the registry. For more information, please refer to the <u>Microsoft web-site</u>.

IIS (Internet Information Services)

The Application Server can only be installed on a computer on which Microsoft Internet Information Server 5.1 or later is installed. IIS is required for the correct operation of the Application Server, the Administration and Monitoring Console and Web Data Verification Station.

To install IIS, do the following:

•

- 1. In My Computer local menu, choose Manage.
- 2. In the Server Manager console, that opens click Add Roles and from the roles list select Web Server (IIS).

Server Manager		
<u>File Action View H</u> elp		
🗢 🔿 🖄 🖬 👔		
Server Manager (WIN-COSLCUOAF	Roles	
Koles Features Diagnostics Configuration Storage	View the health of the roles installed on	your server and add or remove roles and features.
	Roles Summary	Roles Summary Help
	Roles: 0 of 17 installed	Add Roles
< >	Last Refresh: Today at 4:32 AM Configure refre	esh

Add Roles Wizard		×
Select Server Ro	les	
Before You Begin Server Roles Web Server (IIS) Role Services Confirmation Progress Results	Select one or more roles to install on this server. Roles: Active Directory Certificate Services Active Directory Domain Services Active Directory Federation Services Active Directory Rights Management Services Application Server DHCP Server DHCP Server Phyper-V Network Policy and Access Services Print and Document Services Print and Document Services Windows Deployment Services Windows Server Update Services Mindows Server roles	Description: Web Server (IIS) provides a reliable, manageable, and scalable Web application infrastructure. application infrastructure.

- 3. During installation, Windows may ask for the source distribution files, so you need to have Windows installation CD.
- 4. Enable installation of the following IIS internal components:
 - -> Web Management Tools
 - -> IIS Management Console
 - -> IIS 6 Management Compatibility
 - -> IIS 6 Metabase and IIS 6 configuration compatibility
 - -> IIS 6 Scripting Tools
 - -> World Wide Web Services
 - -> Application Development Features
 - -> ASP.NET
 - -> ISAPI Extensions
 - -> Common HTTP Features
 - -> Static Content
 - -> Security
 - -> Windows Authentication
 - -> Basic Authentication

Components associated with these internal components will also be enabled. Here is the list of components installed for IIS 7.5:

Web	Server
C	ommon HTTP Features
	Static Content
	Default Document
Ap	pplication Development
	ASP.NET
	.NET Extensibility
	ISAPI Extensions
	ISAPI Filters
Se	ecurity
	Basic Authentication
	Windows Authentication
	Request Filtering
Man	agement Tools
II	S Management Console
II	S 6 Management Compatibility
	IIS 6 Metabase Compatibility
	IIS 6 WMI Compatibility
	IIS 6 Scripting Tools
	· -

Other IIS components can be installed according to user preferences, e.g., perform a complete installation of IIS.

Preparing the Application Server for installation on Windows 2003

This instruction can also be used when installing the Application Server on Windows XP.

The following components must be installed on your computer before you can install the Application Server:

Net Framework 3.5 SP1

•

•

This component, together with a number of other components, can be installed by selecting Install External Components in the Autorun menu.

IIS (Internet Information Services)

To install IIS, select Add or Remove Programs-Add/Remove Windows Components.

🐻 Add or Remo	ve Programs		
	Currently installed programs:	Sort by: Name	
C <u>h</u> ange or Remove	🔀 Microsoft .NET Framework 1.1	Size	36,15MB 🔺
Programs	🔀 Microsoft .NET Framework 2.0 Service Pack 2	Size	184,00MB
2	🚯 Microsoft .NET Framework 3.0 Service Pack 2	Size	169,00MB
Add New	🔀 Microsoft .NET Framework 3.5 SP1	Size	28,23MB
Programs	🚯 Microsoft Device Emulator version 1.0 - ENU	Size	1,38MB
	🐻 Microsoft Document Explorer 2005	Size	26,61MB
Add/Remove	遲 Microsoft Firewall Client	Size	0,75MB
<u>W</u> indows Components	Standard Contraction Contraction Contraction State Pack	Size	137,00MB
*			

lindows Components	5-
Yindows Lomponents You can add or remove components of Windows.	
To add or remove a component, click the checkbox. A sh	aded box means that only
part of the component will be installed. To see what's inclu Details	ided in a component, click
Components:	
Accessories and Utilities	27.5 MB
✓ (■ Application Server	15.4 MB
🔲 📴 Certificate Services	1.4 MB
🗆 🛄 E-mail Services	1.0 MB
Asservices	8.8 MB 🔳
Description: Includes Internet Information Services (IIS) ar Console.	nd the Application Server
Total disk space required: 6.9 MB	Details
Space available on disk: 5700.7 MB	<u></u>
< Back Next >	Cancel Help
< <u>B</u> ack <u>N</u> ext >	Cancel Help
< <u>Back</u> <u>N</u> ext>	Cancel Help
Application Server To add or remove a component, click the check box. A sha	Cancel Help
Application Server To add or remove a component, click the check box. A sha of the component will be installed. To see what's included in	Cancel Help
<u>Application Server</u> To add or remove a component, click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server:	Cancel Help
< Back Next > Application Server Iteration Server To add or remove a component, click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server: □ Application Server Console	Cancel Help
< Back Next > Application Server To add or remove a component, click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server: □ The Application Server	Cancel Help
< Back Next > Application Server To add or remove a component, click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server: □<	Cancel Help
< Back Next > Application Server To add or remove a component, click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server: □ The Application Server Console	Cancel Help
< Back Next > Application Server Ite component click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server: □ Ite component of Application Server: □ Ite component of Application Server: □ Ite component click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server: □ Ite component click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server: □ Ite component click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server: □ Ite component click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server: □ Ite component click the check box. A sha of the component will be installed. To see what's included in Subcomponent will be installed. To see what's included in Subcomponent click the check box. A sha of the component will be installed. To see what's included in Subcomponent will be installed. To see what's included in Subcomponent click the check box. A sha of the component will be installed. To see what's included in Subcomponent will be installed. To see what's included in Subcomponent will be installed. To see what's included in Subcomponent will be installed. To see what's included in Subcomponent will be installed. To see what's included in Subcomponent will be installed. To see what's included in Subcomponent will be installed. To see what's included in Subcomponent wi	Cancel Help
< Back Next > Application Server To add or remove a component, click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server: Subcomponents of Application Server: [®] Application Server Console [®] Enable network COM+ access [®] Enable network DTC access [®] Message Queuing	Cancel Help
< Back Next > Application Server To add or remove a component, click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server: Subcomponents of Application Server: [®] Application Server Console [®] Enable network COM+ access [®] Enable network DTC access [®] Internet Information Services (IIS) [®] Message Queuing Description: IIS includes HTTP, FTP, SMTP, and NNTP stor Active Server Pages (ASP).	Cancel Help
< Back Next > Application Server To add or remove a component, click the check box. A sha of the component will be installed. To see what's included in Subcomponents of Application Server: □ 10 Application Server Console □ 10 Enable network COM+ access □ 10 Enable network DTC access	Cancel Help
< Back Next > Application Server To add or remove a component, click the check box. A sha of the component will be installed. To see what's included in Subgomponents of Application Server: Subgomponents of Application Server:	Cancel Help

Internet Information Services (IIS)	×
To add or remove a component, click the check box. A shaded box means of the component will be installed. To see what's included in a compone	ans that only part nt, click Details.
Sub <u>components of Internet Information Services (IIS):</u> Common Files File Transfer Protocol (FTP) Service File Internet Information Services Manager Sim Internet Printing Sim NTP Service Sim SMTP Service Sim SMTP Service Sim Source Servic	1.0 MB ▲ 0.1 MB 1.3 MB 0.0 MB 1.9 MB 1.9 MB 2.3 MB ▼
Description: Includes support for throttling and restarting data transfers management console extension. Total disk space required: 28.7 MB	s, and a BITS <u>D</u> etails
Space available on disk: 5828.6 MB	Cancel
World Wide Web Service	×
World Wide Web Service To add or remove a component, click the check box. A shaded box mea of the component will be installed. To see what's included in a component Subcomponents of Model (Mide) (ch Service)	ans that only part nt, click Details.
World Wide Web Service To add or remove a component, click the check box. A shaded box mean of the component will be installed. To see what's included in a component Subgroup on the components of World Wide Web Service: Subgroup on the Server Pages Image: Server Pages Image: Server Pages Image: Server Pages Image: Server Pages	ans that only part nt, click Details. 0.0 MB
World Wide Web Service To add or remove a component, click the check box. A shaded box means of the component will be installed. To see what's included in a component subgroup on the components of World Wide Web Service: Subgroup on the service of World Wide Web Service: Active Server Pages Internet Data Connector Remote Desktop Web Connection	ans that only part nt, click Details. 0.0 MB 0.0 MB 0.4 MB
World Wide Web Service To add or remove a component, click the check box. A shaded box means of the component will be installed. To see what's included in a component subcomponents of World Wide Web Service: Subcomponents of World Wide Web Service: Active Server Pages Internet Data Connector Remote Desktop Web Connection Server Side Includes	ans that only part nt, click Details. 0.0 MB 0.0 MB 0.4 MB 0.0 MB
World Wide Web Service To add or remove a component, click the check box. A shaded box means of the component will be installed. To see what's included in a component subgromponents of World Wide Web Service: Subgromponents of World Wide Web Service: Active Server Pages Active Server Pages Remote Desktop Web Connection Server Side Includes WebDAV Publishing	ans that only part nt, click Details. 0.0 MB 0.0 MB 0.4 MB 0.0 MB 0.0 MB
World Wide Web Service To add or remove a component, click the check box. A shaded box means of the component will be installed. To see what's included in a component subgroup on the components of World Wide Web Service: Subgroup on the service of World Wide Web Service: Active Server Pages Internet Data Connector Remote Desktop Web Connection Server Side Includes WebDAV Publishing World Wide Web Service	ans that only part nt, click Details. 0.0 MB 0.0 MB 0.4 MB 0.0 MB 0.0 MB 0.0 MB
World Wide Web Service To add or remove a component, click the check box. A shaded box mean of the component will be installed. To see what's included in a component subcomponents of World Wide Web Service: Subcomponents of World Wide Web Service: Active Server Pages Internet Data Connector Remote Desktop Web Connection Server Side Includes WebDAV Publishing World Wide Web Service Description: A core component of IIS that uses HTTP to exchange inf Web clients on a TCP/IP network.	ans that only part nt, click Details. 0.0 MB 0.0 MB 0.0 MB 0.0 MB 1.9 MB
World Wide Web Service To add or remove a component, click the check box. A shaded box means of the component will be installed. To see what's included in a component subgomponents of World Wide Web Service: Subgomponents of World Wide Web Service: Active Server Pages Active Server Pages Internet Data Connector Remote Desktop Web Connection Server Side Includes WebDAV Publishing ✓ World Wide Web Service Description: A core component of IIS that uses HTTP to exchange inf Web clients on a TCP/IP network. Total disk space required: 28.7 MB	ans that only part nt, click Details. 0.0 MB 0.0 MB 0.4 MB 0.0 MB 0.0 MB 1.9 MB
World Wide Web Service To add or remove a component, click the check box. A shaded box mea of the component will be installed. To see what's included in a component Subcomponents of World Wide Web Service: Active Server Pages Active Server Pages Internet Data Connector Remote Desktop Web Connection Server Side Includes WebDAV Publishing World Wide Web Service Description: A core component of IIS that uses HTTP to exchange inf Web clients on a TCP/IP network. Total disk space required: 28.7 MB Space available on disk: 5828.6 MB	ans that only part nt, click Details. 0.0 MB 0.0 MB 0.0 MB 0.0 MB 0.0 MB 1.9 MB

During installation, Windows may require files from the setup disk, therefore be sure to have the Windows disk ready at hand. If any of the components is missing on your computer, the setup program will display a warning message and the installation of the Application Server will stop.

Once the installation is complete, open the Administrator Console and make sure that the IIS service is running.

Important! In Windows 2003 ASP.NET is disabled by default for security reasons. This will cause "Error 404 File not found" when you attempt to start the Monitoring Station. To solve the problem, allow the ASP.NET v2.0 service extension in the IIS Manager:



This service extension will appear in the list only after you install NET Framework 3.5 SP1.

If ASP.net was installed before installation of IIS, registration of ASP.net must be performed:

%systemdrive%\Windows\Microsoft.NET\Framework\v2.0.50727\aspnet_regiis.exe -i

- If your computer runs Windows 2003 (64-bit) or Windows XP (64 bit), do the following:
 - Execute the following command from the command line: cscript % systemdrive% \Inetpub\AdminScripts\adsutil.vbs set W3SVC/AppPools/Enable32BitAppOnWin64 true This command switches the default pool to 32-bit mode, thus the default pool and the pools of the Administration and Monitoring Console run in the same mode which is required for registration of ASP.net. For this command to take effect, access to the Network Service account must be granted explicitly. To grand access to the Network Service account, execute the following command: aspnet_regiis -ga "NT Authority\Network Service".
 - 2. Make sure that the World Wide Web Publishing service is running in 32-bit mode:

World Wide Web P	ublishing Properties (Local Computer)
General Log On	Recovery Dependencies
Service name:	W3SVC
Display <u>n</u> ame:	World Wide Web Publishing
Description:	Provides Web connectivity and administration through the Internet Information Services snap-in
Pat <u>h</u> to executabl	e: ystem32\netsrv\inetinfo.exe
Startup typ <u>e</u> :	Automatic
Service status:	Started
<u>S</u> tart	Stop Pause Resume
You can specify t from here.	he start parameters that apply when you start the service
Start para <u>m</u> eters:	
	OK Cancel Apply

- Execute the following command from the command line: % systemdrive% \Windows\Microsoft.NET\Framework\v2.0.50727\aspnet_regiis.exe -i
- 4. The list of IIS service extensions (see below) will now include an entry for the 32-bit version of ASP.Net. Change its status to allowed:



Installing the servers

Once you have made the preparations for installing the Application Server, install the servers.

By default, all servers are installed on the same computer. However, you can install them on different computers by disabling the redundant servers in the setup program.

To install the ABBYY FlexiCapture servers:

- 1. In the Autorun menu, select Distributed Installation. Next, select Install Servers to start the installation.
- 2. Select a setup language. The setup program will compare the locale of your system and the selected language. If the languages are incompatible, a warning message is displayed.
- 3. Next, the setup program checks the version of your operating system and the availability of the administrative permissions. If the version of the operating system is not supported by the program or you do not have the administrative permissions, a warning message is displayed and the setup program is terminated.

- 4. If all the checks are passed successfully, the end-user license agreement will be displayed. Read the license agreement carefully and if you agree with the terms of the agreement, select the corresponding option and click **Next**.
- 5. A dialog box will open prompting you to enter some information about yourself. Enter the required information and continue with the installation.
- Next, select the servers to install. You can also specify a destination folder. By default, the program is installed to: %systemdrive%\Program Files (x86)\ABBYY FlexiCapture 10 Servers ((%systemdrive%\Program Files\ABBYY FlexiCapture 10 Servers if 32-bit OS version is used).
 - Processing Server the server that controls the operation of the Processing Stations
 - **Protection Server** the server that stores and manages licenses. When you install servers on different workstations, you must specify the address of this server or the Protection Server in the format server, without \\ or http://
 - Application Server the server that controls the operation of the other components. When you install servers on different workstations, you must specify the address of this server or the Application Server in the format server, without \\ or http://
 - Web Stations the Application Server components which allow operators to connect to the server and work using a web-browser.
 - Web Stations Authentication Module the Application Server component which allows operators of web stations to register with the system and create requests for access rights to the web station. Provides operators of web stations with a single entry point into the system. Installing this component is available on IIS 7 or later
 - Stations Installer selecting this option will copy the stations' setup files onto the Application Server so that you can then deploy them from the server. SMS and Active Directory deployment are supported. Once you select this component, you can specify the destination folder where to copy the setup files.
- 7. Next the setup program will check if Net Framework 3.5 SP1 and IIS are installed on your computer. If any of the components is missing on your computer, the setup program will display a warning message.
- 8. The program files will be copied onto your computer. Once the installation is finished, the setup program will display a message saying that the application has been successfully installed.
- 9. Once the installation is complete, FlexiCapture 10 License Manager will be launched automatically so that you can activate your serial number. See Managing Your Licenses section for details. The Monitoring Station will also be launched, where you can set up the installed Application Server.
- 10. After the installation is complete, in the IIS Manager console (Start -> Administrative Tools -> Internet Information Services (IIS) Manager), check if IIS server and Default Web Site are running:



If the server is stopped, in the Manage Server menu, choose Start. Similarly, check whether Default Web Site is running. **IMPORTANT!** The Application Server should be available on the Internet if you wish to use the remote stations over the Internet.

External components required for the correct operation of the system

• Ikey driver

This component is required if you are going to use a USB key license. On Windows 2008 R2 or another 64-bit operating system, it is necessary to install a 64-bit version of iKey driver manually. It can be installed by selecting Install External Components in the Autorun menu.

Note: On 32-bit operating systems, no additional steps are required to install the iKey driver. Installation will be done automatically.

Microsoft Core XML Services (MSXML6)

This component is required for the operation of the Application Server. It is installed automatically.

Crystal Reports

This component is used by the Administration and Monitoring Console to generate reports. Crystal Reports can be installed on the same computer where the Application Server is installed. Without this component, you will not be able to generate reports. However, all other Application Server management functionality will be available. ABBYY FlexiCapture 10 supports Crystal Reports 2008 and 2010. Crystal Reports is not installed automatically and should be installed manually. A 32-bit version of Crystal Reports 2008 can be installed by selecting Install External Components in the Autorun menu.

Note: Whether to install a 32- or 64-bit version of Crystal Reports is determined by the mode, in which the pool of the Administration and Monitoring Console is running in IIS (FlexiCapture 10 Monitoring). For details, see «<u>System components in IIS and their configuration</u>». By default the pool of Administration and Monitoring Console runs in 32-bit mode. However, it can be transferred to 64-bit mode, which allows you to use Crystal Reports 64-bit. For details, see «<u>Switching system components to 64-bit mode</u>».

If the bit does not match the following error message will appear:

A runtime error occurred: CrystalReports loading failed Details: Description Exception has been thrown by the target of an invocation. Source mscorlib Stack trace at System.RuntimeTypeHandle.CreateInstance(RuntimeType type, Boolean publicOnly, Boolean noCheck, Boolean& canBeCached, RuntimeMethodHandle& ctor, Boolean& bNeedSecurityCheck) at System.RuntimeType.CreateInstanceSlow(Boolean publicOnly, Boolean fillCache) at Sys-

tem.RuntimeType.CreateInstanceImpl(Boolean publicOnly, Boolean skipVisibilityChecks, Boolean fillCache) at System.Activator.CreateInstance(Type type, Boolean nonPublic) at System.RuntimeType.CreateInstanceImpl(BindingFlags bindingAttr, Binder binder, Object[] args, CultureInfo culture, Object[] activationAttributes) at Sys-

tem.Activator.CreateInstance(Type type, BindingFlags bindingAttr, Binder binder, Object[] args, CultureInfo culture, Object[] activationAttributes) at System.Reflection.Assembly.CreateInstance(String typeName, Boolean ignoreCase, BindingFlags bindingAttr, Binder binder, Object[] args, CultureInfo culture, Object[] activationAttributes) at ReportManager.loadCrystalReports()

System components in IIS and their configuration

Application pools

During the installation of the Application Server, the installer automatically adds two IIS application pools associated with ABBYY FlexiCapture 10. Application pools enable interaction with workflows bound to one or more applications and sharing data between them.

FlexiCapture 10 Monitoring - enables operation of the Administration and Monitoring Console

FlexiCapture 10 Web Services - enables operation of the Application Server.

Both pools are configured automatically during the installation of ABBYY FlexiCapture. Pool settings critical for correct operation of the Application Server, are listed below:

- .Net Framework Version = v2.0
- Managed Pipeline Mode = Integrated
- Identity = NetworkService

Besides, Web Data Verification Station, Web Scanning Station and Web Capture Station will be added to **DefaultAppPool** (default IIS pool).

ABBYY FlexiCapture 10 application pools work in 32-bit mode. In IIS Manager Console, you can check if 32-bit mode is enabled. For this, do the following:

 Run the IIS Manager Console from the menu: Start -> Administrative Tools -> Internet Information Services (IIS) Manager.



2. Choose Application Pools.



3. Choose a desired pool from the list. In the Actions menu, select Advanced Settings...

ework Version Bit Applications Pipeline Mode Igth matically	v2.0 True Integrated FlexiCapture 10 Monitoring 4000 True	
Bit Applications Pipeline Mode Igth matically	True Integrated FlexiCapture 10 Monitoring 4000 True	
Dir Applications Pipeline Mode Ingth matically	Integrated FlexiCapture 10 Monitoring 4000 True	
ngth matically	FlexiCapture 10 Monitoring 4000 True	
ngth matically	4000 True	
matically	True	
maucally	nue	
	0	_
	No Action	
val (minutes)	0	
Affinity Enabled	False	
Affinity Mask	4294967295	
Model	123 1307233	
IUUCI	NetworkService	
out (minutes)	20	
Profile	Falce	
Norker Processes	1	
ed	True	
um Response Time (second	90	
(seconds)	30	
Time Limit (seconds)	90	
	50	
	val (minutes) Affinity Enabled Affinity Mask Model Profile Worker Processes ed num Response Time (second d (seconds) Time Limit (seconds)	Nonconf val (minutes) 0 Affinity Enabled False Affinity Mask 4294967295 Model NetworkService put (minutes) 20 Profile False Worker Processes 1 ed True num Response Time (second 90 d (seconds) 30 Time Limit (seconds) 90

The value of Enable 32-Bit Application must be True. It means that the pool works in 32-bit mode.

Besides, the installer adds the following applications to Default Web Site (the set of applications depends on the configuration selected during the installation):

Default Web Site\FlexiCapture10 - the Administration and Monitoring Console

Default Web Site\FlexiCapture10\Server - the Application Server, including Default Web Site\FlexiCapture10\Server\WebServices.dll (a web service of the Application Server which supports both Windows and Basic authentication).

Default Web Site\DataVerification – Web Data Verification Station (will be added if the Web Stations component is selected during the installation of ABBYY FlexiCapture 10 Servers)

Default Web Site\Scanning – Web Scanning Station (will be added if the Web Stations component is selected during the installation of ABBYY FlexiCapture 10 Servers)

Default Web Site**Capture** – Web Capture Station (will be added if the Web Stations component is selected during the installation of ABBYY FlexiCapture 10 Servers)

Authentication settings for FlexiCapture 10 Web Applications

To control access to the applications via http protocol, it is necessary to configure authentication settings (login/password-based connection verification of a user's identity). For this, choose a desired application and then choose the Authentication item.



Then select a required authentication method from the list and enable it.

Nanage Internet Information Services (IIS) Manage	er			
	es 🕨 Default Web Site 🕨 FlexiCapture	e10 🕨		🔄 🖾 🚰 I 😨 👻
<u>Eile View H</u> elp				
Connections Start Page WIN-COSLCUOARGA (WIN-COSLCUOARG Application Pools Sites Default Web Site Sites Default Web Site Sites Conference of the site of th	Authentication Group by: No Grouping Name Anonymous Authentication ASP.NET Impersonation Basic Authentication Forms Authentication Windows Authentication Windows Authentication	Status Disabled Disabled Disabled Enabled Enabled	Response Type HTTP 401 Challe HTTP 302 Login HTTP 401 Challe	Alerts Click here to learn how to configure Extended Protection. Actions Disable Advanced Settings Providers Providers Advanced Settings Providers advanced Settings Advanced Setings Advanced Settings Advan
Configuration: 'localhost' applicationHost.config , <loc< td=""><td>ation path="Default Web Site/FlexiCaptur</td><td>e10"></td><td></td><td>S.:</td></loc<>	ation path="Default Web Site/FlexiCaptur	e10">		S.:

To access ABBYY FlexiCapture 10 applications, the 3 types of authentication are used:

Windows authentication – a user tries to login to the server using the same credential under which the user browser runs. **Basic authentication** – login and password are transmitted over the network in clear text.

Anonymous authentication - the server does not require the client to transfer the credential.

Authentication settings are configured by the installer automatically, however if you later change the settings manually, some parts of the system will become unavailable. In this case, modify them the following way:

Default Web Site\FlexiCapture10 (Administration and Monitoring Console) - only Windows authentication:

Server Manager		<u> </u>
<u>File Action View Help</u>		
🗢 🔿 🙍 🖬 🛛		
Server Manager (WIN-COSLCUAAF Roles Web Server (IIS) Internet Information Se Diagnostics Configuration Storage	Internet Information Services (II5) Manager Sites Default Web Site FlexiCapture 10 Connections Authentication Status Application Pools Sites App Browsers App Browsers CustomReport Heip CustomReports Server Actions	ep
I	Content View	
🎝 Start 👪 🛛 🧱	* P	5:04 AM 5:04 AM 11/7/2011

Default Web Site\FlexiCapture10\Server (Application Server) - both Windows authentication and Basic authentication are enabled:

E Server Manager			<u>_ 0 ×</u>
<u>File Action View H</u> elp			
🗢 🔿 🖄 📊 🛛			
Server Manager (WIN-COSLCUOAF Roles Role Roles Role Role Role Role Role Role Role Role	Internet Information Servi Image: Service of the s	efault Web Site FlexiCapture 10 Server Authentication Group by: No Grouping Name Status Anonymous Authentication Disabled Basic Authentication Enabled Windows Authentication Enabled Windows Authentication Enabled	Image: Construction of the second

Default Web Site\DataVerification (Web Data Verification Station) - only Anonymous authentication is enabled:



Default Web Site\Scanning (Web Scanning Station) - only Anonymous authentication is enabled.

Default Web Site\Capture (Web Capture Station) - only Anonymous authentication is enabled.

Web Clients Authentication Module

A new functionality, Web Clients Authentication Module, has been added in the 3^{rd} release of ABBYY FlexiCapture 10. By default, installation of this module is disabled. It can be enabled at the step of selecting installation components. If you make an upgrade from the previous releases of FlexiCapture 10, this component is not installed either, however it can be installed after upgrade by using the menu **Start**-**Control Panel**-**Programs and Features**-**Modify**.

Web Clients Authentication Module can be installed on the computer with the Application Server. For its installation, IIS 7 or later is required, besides Web Stations component of the server installation must be installed (or selected for installation).

Web Clients Authentication Module adds to IIS a new authentication type - ABBYY FlexiCapture Authentication which is to be used by operators who work at the Web Capture, Web Scanning and Web Data Verification Stations. Besides, a web application **Login** is installed, which allows operators of web stations to log into the system, register within the system and request the necessary access rights from the administrator.

In this module is installed, the following changes occur in IIS:

- 1. A new **Default Web Site****Login** application is added to **Default Web Site**. In the settings of this application, only **Anonymous** authentication is enabled.
- 2. This application is bound to the FlexiCaputre 10 Monitoring pool of the Administration and Monitoring Console.
- 3. A copy of the **Default Web SiteFlexiCapture10ServerWebServicesExternal.dll** web service which supports only **ABBYY FlexiCapture Authentication** is added to the Application Server.
- 4. Web Capture Station, Web Scanning Station and Web Data Verification Station are switched to the operating mode which uses **ABBYY FlexiCapture Authentication**. For this, in web.config application files, the value of the «UseCustomAuthentication» key is changed to **True** by the installer. (Without installing the Web Clients Authentication Module, the key value is **False**. In this case, the stations work without using **ABBYY FlexiCapture Authentication**). For these applications, only **Anonymous** authentication remains enabled in authentication settings of IIS.

Handler Mappings

In IIS services, handlers process requests to sites and applications. The handlers are mapped to resources on a web server and create responses to those requests. Like the modules, the handlers are implemented using native or managed components, such a dynamic DLL or managed code.

During the installation of ABBYY FlexiCapture 10 Application Server, mappings required for correct processing requests from the Application Server are added to IIS by the installer. These mappings can be view in the IIS Manager console. For this, select the Handler Mappings item for **Default Web Site\FlexiCapture10\Server** (the Application Server).

	Thternet Information Services (IIS) Manager					
🚱 📀 👔 🕈 WIN-COSLCUOARGA 🔸 Sites 🔸 Default Web Site 🔸 FlexiCapture 10 🔸 Server 🔸 🔤	• 🕥					
Ele View Help Default Web Site						
Image: Number of the start of the star	ning n n and st s; n file.					
WebServiceHandlerFactory-ISAPI-2.0 *.asmx Enabled Unspecified IsapiModu WebServiceHandlerFactory-ISAPI-2.0-64 *.asmx Enabled Unspecified IsapiModu .dll Enabled File IsapiModu						
Configuration: Default Web Site/Flex/Content 10/Server' web.config	6 3 -					

For correct operation of the Application Server, the installer creates a mapping «ABBYY FlexiCapture WebService» with the following parameters:

Request path = «*.dll»

 $Executable = \cite{C:\inetpub} www.root\FlexiCapture10\Server\WebServicesIsapi.dll \end{tabular}$

Edit Script Map		? ×
Request gath:		
°.dii Example: *.bas, wsvc.axd		
<u>Executable</u> :		
C:\inetpub\wwwroot\FlexiCapture10\Ser	ver\WebServicesIsapi.dll	
Name:		
ABBYY FlexiCapture WebService		
Request Restrictions		
	ОК	Cancel

Access = «Script» («Scripts and Executable» on IIS 6)

Re	quest Restrictions	? x
	Mapping Verbs Access	
	Specify the access required by the handler:	
	None	
	<u>R</u> ead	
	<u>W</u> rite	
	Script	
	<u>Execute</u>	
	ОК	Cancel

Note: It may happen that a third-party application is installed on the same computer as the Application Server, and it can intercept requests of ABBYY FlexiCapture 10. In this case, the following error message will occur when starting the Administration and Monitoring console:

A runtime error occurred:

Cannot get file storage path

Details:

Description Client found response content type of 'text/html; charset=utf-8', but expected 'text/xml'. The request failed with the error message: -- Server Error in Application "DEFAULT WEB SITE/FLEXICAPTURE10/SERVER"Internet Information Services 7.5

Error Summary

HTTP Error 500.0 - Internal Server Error

There is a problem with the resource you are looking for, so it cannot be displayed. Detailed Error InformationModule IsapiModule

Notification ExecuteRequestHandler

Handler Custom Handler

Error Code 0x8007007f

Requested URL http://127.0.0.1:80/FlexiCapture10/Server/WebServices.dll?Handler=Default

Physical Path C:\inetpub\wwwroot\FlexiCapture10\Server\WebServices.dll

Logon Method Negotiate

Logon User WORKGROUP\WIN-COSLCUOARGA\$

In this case, a handler which intercepts the request to the Application Server is called Custom Handler.

ISAPI and CGI Restrictions

The installer of FlexiCapture10 servers creates an allowance for the ISAPI-extension of the Application Server. To view the list of allowed ISAPI-extensions, at the upper level of the IIS Manager console (the level of IIS server) select ISAPI and CGI Restrictions.

internet Information Services (IIS) Man	ager	stream of the late is	and the second se	
COO 9 > ZYUZINAN >				😰 🖂 🚱 🗸
<u>File V</u> iew <u>H</u> elp				
Lite view gelp Connections 2YUZINAN (FINE\azyuzin) 2YUZINAN (FINE\az	ISAPI and CGI Res Use this feature to specify the ISAPI and Group by: No Grouping ~ Description Active Server Pages ASP.NET v2.0.50727 ASP.NET v2.0.50727 ASP.NET v4.0.30319 FlexiCapture 10 Web Services WebDAV	trictions Restriction Restriction Allowed Allowed Allowed Allowed Allowed Allowed Allowed Allowed Allowed A	can run on the Web server. Path C:\Windows\system32\inetsr\asp.dll C:\Windows\Microsoft.NET\Framework\v20.50727\aspnet_isapi.dll C:\Windows\Microsoft.NET\Framework\v4.0.30319\aspnet_isapi.dll C:\Windows\Microsoft.NET\Framework\v4.0.30319\aspnet_isapi.dll C:\Windows\Microsoft.NET\Framework\v4.0.30319\aspnet_isapi.dll C:\Windows\Microsoft.NET\Framework\v4.0.30319\aspnet_isapi.dll C:\Windows\Microsoft.NET\Framework\v4.0.30319\aspnet_isapi.dll C:\Windows\Microsoft.NET\Framework\v4.0.30319\aspnet_isapi.dll C:\Windows\Microsoft.NET\Framework\v4.0.30319\aspnet_isapi.dll C:\Windows\Microsoft.NET\Framework\v4.0.30319\aspnet_isapi.dll C:\Windows\Microsoft.NET\Framework\v4.0.30319\aspnet_isapi.dll C:\Windows\System32\inetsr\webdav.dll	Actions Add Deny Edit X Remove Edit Feature Settings Image: Help Online Help
	Features View Content View			
Configuration: 'localhost' applicationHost	.config			41.8

«FlexiCapture 10 Web Services» extension (path «C:\inetpub\wwwroot\FlexiCapture10\Server\WebServicesIsapi.dll») must be allowed.

Edit ISAPI or CGI Restriction		8 X
ISAPI or CGI path:		
C:\inetpub\wwwroot\FlexiCapture10\	Server\WebServi	cesIsapi.dl
Description:		
FlexiCapture 10 Web Services		
Allow extension path to execute		
	01	
L	UK	Cancel

Checking the operation of IIS

To check the operation of IIS, start IIS by selecting Start \rightarrow Control Panel \rightarrow Administrative Tools \rightarrow Internet Information Services. If a problem occurs when starting IIS, the following message will be displayed: "Unexpected error 0x8ffe2740 occurred" for v. 5.1 (Windows XP) or "The process cannot access the file because it is being used by another process" for v. 6.0 (Windows 2003), v. 7.0 (Windows 2008) and v. 7.5 (Windows 2008 R2).

This error message means that port 80 is in use. To find out which application is using the port, do the following:

1. In the command line (Start \rightarrow Run), type

netstat -anop TCP|find ":80"

The list of connections to port 80 will be displayed and the ID of the corresponding process in the following format:

TCP	0.0.0.0:80	0.0.0.0:0	LISTENING	1264
-----	------------	-----------	-----------	------

2. Type

tasklist /SVC /FI "PID eq 1264"

replacing 1264 with the ID of the process obtained at step 1. The result will be displayed in the following format: Image Name PID Services

Virus.exe 1264 KillMePlz

3. End the process that uses the port.

Important! Do not switch IIS over to another port, as you will not be able to start the Application Server in this case.

Working over https

To ensure safety, you can use https protocol. For this, you need to enable SSL support in IIS settings. To work with IIS over HTTPS protocol, you need to obtain a certificate for the server and connect it.

Managing certificates

To open the Certificates control panel, do the following:

1. Run Microsoft Management Console. For this, open Start->Run menu, type "mmc" and press Enter.

🚡 Console1 - [Console Root]	
🚡 Eile Action View Favorites	Window Help
Console Root	Name
	There are no items to show in this view.

2. In the console that opens, choose File->Add/Remove Snap-in. in the window that opens, click Add and from the list of available modules choose Certificates. Click Add.

Add Standalone Snap-in			
Available standalone snap-ins:			
Snap-in	Vendor		
and the second s	Microsoft Corporation		
🔩 .NET Framework 2.0 Configuration	Microsoft Corporation		
al ActiveX Control	Microsoft Corporation		
Certificates	Microsoft Corporation		
Component Services	Microsoft Corporation		
📃 Computer Management	Microsoft Corporation		
Bolevice Manager	Microsoft Corporation		
🚯 Disk Defragmenter	Microsoft Corp, Execut		
🗃 Disk Management	Microsoft and VERITAS		
😥 Event Viewer	Microsoft Corporation	-	
Description The Certificates snap-in allows you to bro certificate stores for yourself, a service,	owse the contents of the or a computer.		
[<u>A</u> dd <u>C</u> lose	,	

- 3. In the window that opens, choose "Computer account" and click Next. In the next window, choose Local Computer and click Finish.
- 4. Add the certificate to the Personal folder. On Windows XP, you can obtain a certificate in the following ways:
 - Import an existing certificate from file. For this, choose Action -> All Tasks -> Import and specify the path to the certificate file.
 - Request a certificate from the domain Certificate Authority (provided that Certificate Authority is a part of domain). For this, choose the menu item: Action -> All Tasks ->Request new certificate, in the certificate type, specify "Computer", then specify the name of the certificate.
 - You can also obtain a certificate from an online Certificate Authority (e.g. a free certificate can be obtained at <u>www.cacert.org</u>).

Connecting certificate in IIS on Windows XP

- 1. On the IIS Manager panel, open the Default Web Site properties dialog box.
- 2. In the Secure Communications section of the Security tab click "Server Certificate..."

3. In the window that opens, choose a certificate to be used by the server.

fault Web Si	te Properties
HTTP Head Web Site	ders Custom Errors ASP.NET Server Extensions ISAPI Filters Home Directory Documents Directory Security
Anonymous	access and authentication control Enable anonymous access and edit the authentication methods for this resource.
- IP address	and domain name restrictions
8	Grant or deny access to this resource using IP addresses or internet domain names.
	Edjt
Secure com	munications
	Require secure communications and enable client certificates when this resource is accessed.
	E <u>d</u> it
	OK Cancel Apply Help

After you choose a certificate, you can enable the option which allows only https connections to the Internet for a selected site or for Default Web Site. For this:

- 1. Open the **Security** tab of the site properties.
- 2. In the Secure Communications section click Edit.
- 3. In the window that opens select the option "Require secure channel (SSL)".

Secure Communications	x
Require secure channel (SSL)	
Require <u>1</u> 28-bit encryption	
Client certificates	
Ignore client certificates	
Accept client certificates	
C Require client certificates	
Enable client certificate mapping Client certificates can be mapped to Windows user accounts. This allows access control to resources using client certificates.	
Enable certificate trust list	
Current CTL:	
Ne <u>w</u> Edjt	
OK Cancel <u>H</u> elp	

Connecting certificate in IIS on Windows 7

In IIS settings, connect HTTPS protocol for Default Web Site. For this:

- 1. Run IIS Manager Console from the Control Panel.
- 2. Choose Default Web Site and on the Actions panel, click the **Bindings** link.

Internet Information Services (IIS) Manager						
Eile View Help						
Connections Image: Connections Image: Connections Image: Connections Image: Connections Image: Connections Image: Connections	Default Web Site Home	Actions Explore Edit Permissions				
 Sites Default Web Site Territorial aspnet_client FlexiCapture 	ASP.NET	Bindings Basic Settings View Applications View Virtual Directories				
	.NET Error .NET Pages Globalization	Restart Start Stop				
	.NET ProfileNET Roles	Browse Web Site Browse *:80 (http) Browse *:443 (https)				
Ready	Features View 🖓 Content View	Advanced Settings 👻				

- 3. In the dialog box that opens click Add and select "https" protocol from the "Type" drop-down list.
- 4. From the "SSL Certificate" drop-down list, select a desired certificate and click **Ok**.

Add Site Binding			[? ×
<u>I</u> ype: https ▼	IP address: All Unassigned		P <u>o</u> rt: ▼ 443	
Host name:				
<u>SSL</u> certificate:				
test		•	<u>V</u> iew	
		ОК	Ca	ncel

5. If you want the site to be available via https only, then choose it in the tree of sites, open SSL Settings and select the option «Require SSL».

Note: Verification of client certificates is not performed, so when configuring SSL, set the value of the «Client certificates» option to **Ignored**.

Switching system components to 64-bit mode

Important! This configuration is not recommended (e.g., pool of the Application Server (FlexiCapture 10 Web Services) does not work in 64-bit mode). In particular, when using Oracle as a database server, the Oracle client through which a connection to the database is performed must work in the same bit mode as both the pool of Administration and Monitoring console (FlexiCapture 10 Monitoring) and the pool of Application Server. If you switch the pool of Administration and Monitoring console to 64-bit mode, it will work in a different mode than the Application Server pool (which works in 32-bit mode). A possible solution is to install two identically configured Oracle clients one of which works in 32 bit mode and the other in 64 bit mode.

You may need to switch the pool of Administration and Monitoring console to 64-bit mode if you are using Crystal Reports x64 (a tool for generating reports), так как их разрядность должна совпадать, а использование Crystal Reports x32 невозможно.

By default, the pool of the Administration and Monitoring console works in 32-bit mode. To switch it to 64-bit mode, do the following:

1. Open IIS Manager Console: Start -> Administrative Tools -> Internet Information Services (IIS) Manager.

1 Internet Information Services	s (IIS) Manager	<u>_</u> _×
🚱 💽 🧐 🕨 WIN-COSLCU	DARGA 🕨	🛂 🖂 🔐 🗸
<u>Fi</u> le <u>V</u> iew <u>H</u> elp		
Lie view Liep Connections Start Page Start Page	WIN-COSLCUOARGA Home Fiter: • • •	Actions Manage Server Restart Start Stop View Application Pools View Sites Help Online Help
	ASP Authentication CGI Compression Default Document	
	Directory Error Pages FastCGI Handler HTTP	
	Features View	
Ready		• •

2. Choose Application pools.

Nanage Internet Information Services (IIS) Manage	ger	
CO CO I WIN-COSLCUOARGA > A	pplication Pools	🖸 🖂 🟠 I 🕑 -
<u>File View H</u> elp		
Connections	Application Pools This page lets you view and manage the list of application pools on the source applications, and provide isolation among different applications. There: The Source Show All Group by: The Name Status NET Framewor Managed Classic .NET AppPool Started v2.0 Classic PlexiCapture 10 Web Services Started No Managed Code Classic FlexiCapture 10 Web Services Started No Managed Code Classic	Actions Add Application Pool Set Application Pool Defaults Application Pool Tasks Start Stop Recycle Edit Application Pool Basic Settings Recycling Advanced Settings Rename Remove View Applications Help Online Help Online Help
Ready		S:

3. From the list of pools, choose FlexiCapture 10 Monitoring and in the Actions menu, select Advanced Settings...

	.NET Framework Version	v2.0		
	Enable 32-Bit Applications	False		
	Managed Pipeline Mode	Integrated	_	
	Name	FlexiCapture 10 Monitoring		
	Queue Length	4000		
	Start Automatically	True		
Ξ	СРО			
	Limit	0		
	Limit Action	NoAction		
	Limit Interval (minutes)	0		
	Processor Affinity Enabled	False		
	Processor Affinity Mask	4294967295		
Ξ	Process Model			
	Identity	NetworkService		
	Idle Time-out (minutes)	20		
	Load User Profile	False		
	Maximum Worker Processes	1		
	Ping Enabled	True		
	Ping Maximum Response Time (second	90		
	Ping Period (seconds)	30		
	Shutdown Time Limit (seconds)	90		

The value of **Enable 32-Bit Application** parameter must be **False**. It means that the Administration and Monitoring console works in 64-bit mode.

In addition, check if using of 64-bit version of ASP.net is allowed in IIS settings. For this, open the IIS Manager console and choose the IIS server. From the menu on the right, select ISAPI and CGI Restrictions.

Nanager 115 Manager					
G S ♥ WIN-COSLCUOARGA →					🖬 🖂 🔂 -
Ele View Help					
Connections					Actions
🔍 - 🗔 1 🖄 1 😪	N-COSLCUOARGA	Home			Manage Server
Start Page	- 🗛 Go - 🗸	Show All Group by: Area			👶 Restart
Application Pools	00-				Start
🖹 🔞 Sites			— ()		Stop
	404	S 💽	j= ab		View Application Pools
DataVerification .NET Authorizati	.NET .NET Error Compilation Pages	.NET .NET Trust Globalization Levels	Application Connection Settings Strings	Machine Key	A Help
App_Browsers					Online Help
App_Themes	M 😽				
CustomReports Controls	Providers Session State	SMTP E-mail			
Help					
Reports IIS					
E-P Server					
				404	
ASP	Rules	CGI Compression	Document Browsing	Error Pages	
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	- A	<u> </u>			
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Features Vie	w Content View				
Ready					€ <u>1</u> .:

Allow using ASP.NET v2.0.50727 for Framework 64-bit (path C:\Windows\ Microsoft.NET\ Framework64\ v2.0.50727\ asp-net_isapi.dll)



Database server

SQL

• For the Application Server to work, MS SQL Server version 2005 SP2, 2008 SP1 or 2008 R2 is required. On the server, the "Mixed Mode" ("SQL server and Windows authentication") must be enabled for authentication. The installation CD contains MS SQL Server 2005 Express. It can be used for demonstrative purposes and small projects. This version has a limitation on the database size of 4GB. If you already have an installed copy of MS SQL Server 2005 or 2008, you can use it.

Oracle

• Instead of SQL Server, the Oracle Server 10g or 11g can be used as a database server. For this, a 32bit client for the Oracle database must be installed.

Important! By default, an Oracle database allows a maximum of 40 processes and 49 sessions. When these limits are reached, the following error message occurs: "ORA-12516: TNS:listener could not find available handler with matching protocol stack". If required, increase the default values by using a script similar to the following: connect sys/<Login> as sysdba; alter system set sessions=<SessionCount> scope=spfile; alter system set processes=<ProcessCount> scope=spfile; shutdown immediate; startup;

Interaction of the system components

The following figure displays the system component interaction for distributed installation:



So the following ports have to be enabled:

- Application Server— 80 if HTTP is used or 443 if HTTPS is used
- Processing Server 10020
- Licensing Server 10040
- Processing Station 10021

Note. It is recommended that you should disable the iPv6 protocol in the adapter properties, otherwise addresses of the hosts are not displayed correctly in the Administration and Monitoring Console.

Installing the stations

The following installation methods are available to install the stations:

- manually (interactive installation)
- from the command line
- using Active Directory
 - using Microsoft Systems Management Server (SMS)

The automated installation methods give you speed and flexibility when installing ABBYY FlexiCapture 10 on a local area network, as you do not have to install the program manually on each individual workstation.

Manual (interactive) installation

To install ABBYY FlexiCapture stations:

- 1. In the Autorun menu, select **Distributed Installation**.
- 2. Select Install Workstations to start the installation.
- 3. Select a setup language. The setup program will compare the locale of your system and the selected language. If the languages are incompatible, a warning message is displayed.

- 4. Next, the setup program checks the version of your operating system and the availability of the administrative permissions. If the version of the operating system is not supported by the program or you do not have the administrative permissions, a warning message is displayed and the setup program is terminated.
- 5. If all the checks are passed successfully, the end-user license agreement will be displayed. Read the license agreement carefully and if you agree with the terms of the agreement, select the corresponding option and click **Next**.
- 6. A dialog box will open prompting you to enter some information about yourself. Enter the required information and continue with the installation.
- 7. Next, select a destination folder. By default, the program is installed to: **%systemdrive%\Program Files\ABBYY** FlexiCapture 10 Stations
- 8. Select the stations to install:
 - Scanning Station scans documents and sends them to the server for further processing
 - Processing Station automatically recognizes, imports, and exports documents; controlled by the Processing Server
 - **Project Setup Station** is used to set up projects on the server and local projects
 - Data Verification Station is used to verify uncertainly recognized characters
 - Verification Station is used to verify data, correct document assembly errors, handle exceptions
 - FlexiCapture Studio is a tool for creating FlexiLayouts
 - FormDesigner is a tool for creating forms

Just like the servers, the stations can be installed on the same or on different computers.

- 9. If a Processing Station is selected, a dialog box will appear where you must select the account under which the Processing Station service will run. By default, the service runs under the user NETWORK SERVICE. If you plan to import/export data on this station from/to a storage location with restricted user rights, or if this station is not in the domain, you can specify the user that has the appropriate rights. In this case, the Processing Station service will run under this user.
- 10. The program files will be copied onto your computer. Once the installation is finished, the setup program will display a message saying that the application has been successfully installed.
- 11. If **FlexiLayoutStudio**, **FormDesigner**, **Verification** or **Project Setup Station** is installed, provide the address of the Protection Server in the next dialog box. The Protection Server is installed via server installation. The address should not contain slashes, for example: MainServer

Command line installation

In the default configuration, all recognition languages are installed on the local computer and the interface language is selected automatically based on the regional settings of the computer on which the program is installed. All stations are installed, and the network name of the computer from which the setup program is run is used as the Protection Server (in the case of standalone installation, "localhost" is specified). The default user becomes the user of the Processing Station.

Run the setup.exe file located in the administrative installation folder using the command line options described below.

Advertise installation

For advertise installation, type

Setup.exe /j

The program icon will appear in the **Start** menu of the workstation. Clicking this icon automatically installs the program in default configuration.

Silent installation

In the case of silent installation, no setup dialog boxes are displayed and the program is installed in default configuration.

Setup.exe /qn

Change "/qn" to "/qb" if you want an installation progress bar to be displayed.

No other dialog boxes will be displayed.

Additional command line options

/L<language code> disables auto selection of the interface language and installs the program with the interface language you specified.

The following language code values are available:

- 1033 English
- 1049 Russian
- 1031 German

- 1036 French
- 2052 Chinese simplified
- 1040 Italian
- 1034 Spanish
- 2074 Serbian
- 1029 Czech
- 1038 Hungarian
- 1045 Polish
- 1046 Portuguese (Brazilian)
- 1042 Korean

/V <command line> passes the specified command line directly to **msiexec.exe.** The <command line> string can be replaced with the following commands:

INSTALLDIR="<destination>" - the path to the folder where ABBYY FlexiCapture 10 is to be installed.

STATIONS=0,1,2,3,4,5,6 - the list of stations to install.

The numbers 0 to 6 correspond to the following stations:

- 0 Scanning Station
- 1-Processing Station
- 2-Verification Station
- 3 Data Verification Station
- 4 Project Setup Station
- 5 FlexiLayout Studio
- 6 FormDesigner

ACCOUNTTYPE=Custom, LOGIN=user name, PASSWORD=password

You can specify an account under which to run the Processing Station service. Example:

Setup.exe /qn /L1049 /v INSTALLDIR="D:\FC10" STATIONS=1,4 ACCOUNTTYPE=Custom

LOGIN=Domain\UserLogin PASSWORD=PSWD

As a result, the Processing and Project Setup Stations will be installed into **D:\FC10**, and Russian will be used the language of the interface. The Processing Station service will run under the account Domain\UserLogin and the password will be PSWD.

PROTECTIONSERVER=ServerName - the name of the protection server.

Removing ABBYY FlexiCapture in silent mode

msiexec /x {FC10000C-0001-0000-074957833700}

Using Active Directory

Microsoft[©] Windows[©] 2000 Server and later include an integrated directory service, **Active Directory**, which in turn includes **Group Policy**. The Software Installation snap–in, which is part of Group Policy, allows you to install a software application on several workstations simultaneously.

Three major installation methods are implemented in Active Directory: Publish to User, Assign to User, and Assign to Computer. ABBYY FlexiCapture 10 can be installed using the Assign to Computer method. ABBYY FlexiCapture 10 will be installed on the specified workstation after the workstation is restarted.

The Publish to User and Assign to User methods are not supported.

When deploying ABBYY FlexiCapture 10 using Active Directory[®], the account of the computers in the Domain Computers domain must have read right to the administrative installation folder.

Example: Deploying ABBYY FlexiCapture 10 using Active Directory

The program is installed on one domain computer or on a group of domain computers:

- 1. During Server Installation, install the Station Installer. If you did not install the Station Installer when installing the Application Server, install the Station Installer by selecting **Control Panel**->Add or **Remove Programs**->Change.
- 2. Select Start-Control Panel-Administrative and then select the Active Directory Users and Computers item.
| line the sectory laters and Computer Active Directory Users and Computer Sector | uters | | | |
|--|---|--|---|--|
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| Active Directory Users and Computer | qag.ru 10 objects | | Treesalization and | |
| Saved Queries | Name Builtin Computers Domain Controllers ForeignSecurityPrincipals LostAndFound NTDS Quotas Program Data System Users Tim Infrastructure | Type
builtinDomain
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lostAndFound
msD5-QuotaCo
Container
Container
infrastructureU | Description
Default container for upgr
Default container for dom
Default container for secu
Default container for orph
Quota specifications cont
Default location for storag
Builtin system settings
Default container for upgr | |
| | | | | |

3. Right-click the site, domain, or another organized unit that contains the computer or group of computers onto which ABBYY FlexiCapture 10 is to be installed.

Active Direc	tory Users and Computer gag,ru Queries Name	10 objects	Type	Description	
Bi	Delegate Control Find Connect to Domain Controller Qonnect to Domain Controller Rajse Domain Functional Level Operations Masters New All Tasks Yiew New Window from Here Refresh Export List Properties Help	ecurityPrincipals Found Jotas Data Joture	builtinDomain Container Organizational Container IostAndFound msDS-QuotaCo Container Container infrastructureU	Default container for upgr Default container for dom Default container for secu Default container for orph Quota specifications cont Default location for storag Builtin system settings Default container for upgr	

4. On the shortcut menu, select **Properties** and click the **Group Policy** tab:

	1		?
ieneral Manage	ed By Object S	Security Group Po	blicy
To improve Grou Management Co SCurr	p Policy manager nsole (GPMC). ent Group Policy I	ment <u>upgrade</u> to th Object Links for qag	e Group Policy 9
Group Policy 0	bject Links	No	Override Disabled
\iint Default Dor	nain Policy		
1			
Group Policy Ob This list obtained <u>N</u> ew	ects higher in the from: ShadowDC <u>Ad</u> d	: list have the highe Cqag.ru <u>E</u> dit	st priority.
Group Policy Obj This list obtained <u>N</u> ew <u>O</u> ptions	ects higher in the from: ShadowDC <u>Ad</u> d Dele <u>t</u> e	list have the highe Cqag.ru <u>E</u> dit <u>P</u> roperties	st priority.
Group Policy Obj This list obtained <u>N</u> ew Options	ects higher in the from: ShadowDC <u>Add</u> Dele <u>t</u> e	list have the highe Cqag.ru <u>E</u> dit <u>P</u> roperties	st priority.

- 5. Click New, enter a descriptive name, and click OK.
- 6. Right-click the Group Policy Object you have created and select Edit...
- 7. In the Group Policy window, right-click Computer Configuration/Software Settings/Software Installation.
- 8. On the shortcut menu, select New/Package.



- 9. Provide the path to the file **ABBYY FlexiCapture 10 Stations.msi**, which is located in the administrative installation folder on the server.
- 10. Select the Advanced deployment method.

Deploy Software			<u>? ×</u>
Select deployment me	ethod:		
${f C}$ Eublished			
C Assigned			
Advanced			
Select this option to c and to apply modifica	onfigure the Put tions to a packa	olished or Assi ge. OK	gned options,

11. In the dialog box that opens, click the Modifications tab and then click the Add button.

YY FlexiCapture 8.0 Professional Pro	perties	1
eneral Deployment Upgrades Categor	ies Modification	ns Security
fodifications or transforms allow you to cus applied to the package in the order shown i	tomize the packa n the following lis	age and are It:
1odifications:		
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		Mo <u>v</u> e Dowr
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Add <u>R</u> emove mportant! Do not press OK until all transform	ms are added and	d ordered
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Add <u>R</u> emove mportant! Do not press OK until all transfor correctly. For more information, right-click o hen click What's this?	ms are added and n the Modificatio	d ordered ns list box, an

12. Select the interface language to be used in ABBYY FlexiCapture 10. The language files are located in the administrative installation folder on the server.

The list of available files and their corresponding languages: 1033.mst English 1049.mst Russian

Using SMS

Microsoft Systems Management Server automates software deployment and eliminates the need to go directly to the locations where the software is to be installed (computers, groups, or servers).

SMS deployment includes the following three stages:

1. Creating an ABBYY FlexiCapture 10 deployment package.

- 2. Creating a deployment script (contains installation parameters: names of computers, time of installation, conditions for installation, etc.).
- 3. Deployment of the program on the workstations by SMS based on the script settings.

Example: Deploying ABBYY FlexiCapture 10 using Microsoft SMS

- 1. When installing the Application Server, create an installation package for ABBYY FlexiCapture 10 stations.
- 2. In the SMS Administrator console, select the **Packages** node.
- 3. In the Action menu, select New/Package.



4. In the Package Properties dialog box, fill out the required fields.

ABBYY FlexiCaptur	e 9.0 English Package Properties	<u>? x</u>
Distribution S General	ettings Reporting Data Source	Security Data Access
💾 АВВҮҮ	' FlexiCapture 9.0 English	Change <u>I</u> con
<u>N</u> ame:	FlexiCapture	
<u>∨</u> ersion:	9.0	
<u>P</u> ublisher:	АВВҮҮ	
Language:	English	
<u>C</u> omment:		
	DK Cancel Apply	Help

- 5. Click the **Data Source** tab.
- 6. Make sure that **This package contains source files** is cleared and click **OK**.
- 7. Expand the node of the newly created package and select **Programs**.
- 8. In the Action menu, select New/Program.

🚡 sms - [Systems Management Server\Site Database (001 - Abb	yy)\Packages\ABB	YY ABBYY FlexiCaptur	e 8.0 English\Progr	rams]		_ & ×
Eile <u>A</u> ction <u>Vi</u> ew <u>H</u> elp						
Systems Management Server	Name	Run Time (hh:mm)	Disk Space Co	omment		
🖻 🛄 Site Database (001 - Abbyy)	8	01 06	There are no items to	a show in this view		
E Le Hierarchy						
ABBYY ABBYY FlexiCapture 8.0 English						
Access Accounts Distribution Boints						
Advertisement Open						
Benorting						
Product Compli View						
E Queries Print						
Software Upda –						
Security Rights Export List						
E Tools Help						
Creates a new object in this container.						
🏄 Start 🛛 🚱 🥭 🔛 🎦 My Documents 🛛 📸 sms - [Systems Mana	🦉 untitled - Paint			EN	1/ 📩 🗊 🍂 22:41

- 9. In the **Program Properties** dialog box, click the **General** tab and on this tab:
 - In the Name field, type a descriptive name of the program
 - In the Command Line field, type setup.exe /q
 - In the Start in field, provide the network path to the ABBYY FlexiCapture administrative installation folder (e.g. \\MyFileServer\Programs Distribs\ABBYY FlexiCapture 10).
- 10. In the **Program Properties** dialog box, click the **Environment** tab and on this tab:
 - Clear the User input required option
 - Select the Runs with administrative rights option
 - Make sure that the Run with UNC name option is selected
- 11. Adjust the running parameters if required and click OK.
- 12. You can also use the **Distribute Software Wizard**. In the **Action** menu of the package, select **Distributive Software** and follow the instructions of the wizard.

Distribute Software Wizard		×
	Welcome to the Distribute Software Wizard	
	This wizard helps you distribute software to clients.	
	You can select or create a software package and copy the package to distribution points on your network.	
	You can then advertise a program to collections that clients are members of, or create a new collection to advertise the program to.	
	To distribute software, click Next.	
	< Back Next > Cancel	

Important! You cannot create Distribution Points.

Installing Remote Stations

Using Remote Stations allows you to connect to the Protection Server from the computers which are not part of the LAN. Remote Stations include the Data Verification and Scanning stations. The Verification station can be both regular and remote. Remote Stations can connect to the Application Server via HTTP.

To install Remote Stations:

- 1. Select Distributed Installation.
- 2. Select a menu item corresponding to a station to be installed.
- 3. Select a setup language. The setup program will compare the locale of your system and the selected language. If the languages are incompatible, a warning message is displayed.
- 4. Next, the setup program checks the version of your operating system and the availability of the administrative permissions. If the version of the operating system is not supported by the program or you do not have the administrative permissions, a warning message is displayed and the setup program is terminated.
- 5. If all the checks are passed successfully, the end-user license agreement will be displayed. Read the license agreement carefully and if you agree with the terms of the agreement, select the corresponding option and click **Next**.
- 6. A dialog box will open prompting you to enter some information about yourself. Enter the required information and continue with the installation.
- 7. Next, select a destination folder. By default, the program is installed to: %systemdrive%\Program Files\ABBYY FlexiCapture 10 <Station>\. If there is not enough space on the selected hard disk, a window is displayed showing your hard disks, the available free space, and the space required by the installation. Select a disk with sufficient free space and continue with the installation.
- 8. The program files will be copied onto your computer. Once the installation is finished, the setup program will display a message saying that the installation has completed successfully.

IMPORTANT!

- 1. The Application Server should be published to the Internet if you wish to use the remote stations over the Internet.
- 2. The Processing Server should be started to use remote stations.
- 3. Basic-authentication should be enabled in IIS in the Default Web Site\FlexiCapture10\Server folder to use such authentication type when connect to the Application Server.

Upgrading from ABBYY FlexiCapture 9.0

If you are installing ABBYY FlexiCapture 10 as an upgrade from version 9.0 you can use ABBYY FlexiCapture and ABBYY FlexiLayout projects as well as FlexiLayouts from the previous version.

Using ABBYY FlexiCapture 9.0 Professional projects (*.fcproj)

All ABBYY FlexiCapture 9.0 local projects (.fcproj) can be opened and used in ABBYY FlexiCapture 10. Please note the following:

- It is impossible to open an .fcproj-project in ABBYY FlexiCapture 9.0 once it was opened in ABBYY FlexiCapture 10, so you should create a copy of the project before opening it in ABBYY FlexiCapture 10 if you still need to open it in ABBYY FlexiCapture 9.0
- After opening ABBYY FlexiCapture 9.0 project in ABBYY FlexiCapture 10 you may need to delete all processing results and analyze all pages once again. (You can use the project without re-recognizing but some information may be presented improperly, for example if the FlexiCapture 9.0 project contains format errors, they will not be presented in the document window the same way they are currently presented in ABBYY FlexiCapture 10).

ABBYY FlexiCapture 9.0 network projects that were loaded on server can also be used in ABBYY FlexiCapture 10.

Important! Both database and a project will be converted to new format and it will be impossible to use them in ABBYY Flex-iCapture 9.0 again.

If you need to have a Database backup or to work with both ABBYY FlexiCapture 9.0 and ABBYY FlexiCapture 10 databases at the same time please follow the instruction below. If it is not necessary go to the 1-st item of the instruction about upgrade.

To create a Database backup:

- Create a FlexiCapture 9.0 Database backup by MS SQL Server means.
- Create a copy of FileStorage (if it is a folder on a disk) and save it in an appropriate place.

To connect ABBYY FlexiCapture 9.0 to the backup Database:

- Restore the Database from the backup
- Specify path to the File Storage in the FlexiCapture 9.0 Administration and Monitoring Console.

To create a Database copy for ABBYY FlexiCapture 10:

- Copy a FlexiCapture 9.0 Database and rename it (for example, to FC10Database)
- Copy a File Storage folder and rename it (for example, to FC10FileStorage)
- After installing ABBYY FlexiCapture 10 connect to the new database (here FC10Database) and specify the path to the File Storage folder (here FC10FileStorage)
- Continue working with the original FlexiCapture 9.0 database and the File Storage.

To upgrade a network FlexiCapture 9.0 project:

- 1. Finish processing of all batches in ABBYY FlexiCapture 9.0 if it is possible.
- 2. Close all opened sessions via the Administration and Monitoring Console.
- 3. Install ABBYY FlexiCapture 10 (both servers and stations).
- 4. Make sure that FlexiCapture 9.0 database is not used by FlexiCapture 9.0. For this, do either of the following:
- Remove ABBYY FlexiCapture 9.0 from the computer or
- Delete the Connection String from the Windows registry: find the registry branch HKEY_LOCAL_MACHINE\SOFTWARE\ABBYY\FlexiCapture\9.0\WebServices and delete the "DBConnectionString" parameter
- 5. Upgrade the database to the necessary version in the Administration and Monitoring Console.
- 6. In the Administration and Monitoring Console, open the **Service** -> **Out-of-Processing** page and check if there are any batches there. If yes, click the **Return to processing** button to send batches to further processing.
- 7. In the Project Setup Station, open a project from Server. It will be converted to ABBYY FlexiCapture 10 format.
- 8. Check if the project and the Document Definition settings are correct. We recommend checking state of the "**Process** whole batches" option on the Workflow tab of the Project or Batch type properties window.
- 9. Continue working with the project.

Using ABBYY FlexiLayout Studio 9.0 projects (*.fsp) in ABBYY FlexiLayout 10

All FlexiLayout Studio 9.0 projects can be opened in FlexiLayout Studio 10. Please note the following:

- It is impossible to open an .fsp-project in ABBYY FlexiLayout Studio 9.0 once it was opened in ABBYY FlexiLayout Studio 10, so you should create a copy of the project before opening it in ABBYY FlexiLayout Studio 10 if you still need to open it in ABBYY FlexiLayout Studio 9.0.
- After opening a FlexiLayout Studio 9.0 project in ABBYY FlexiLayout Studio 10 you may need to delete all processing results and analyze all pages once again.
- Due to changes in FlexiLayout language some compilation errors may occur. In this case you will need to correct errors and re-compile FlexiLayouts.

Using FlexiLayouts (*.afl) created in ABBYY FlexiLayout 9.0

FlexiLayouts compiled in ABBYY FlexiLayout 9.0 can be loaded into ABBYY FlexiCapture 10.

Sometimes due to changes in FlexiLayout language some compilation errors may occur. In this case open the *.fsp project in ABBYY FlexiLayout Studio 10, correct the errors and re-compile FlexiLayouts.

Upgrading from ABBYY FlexiCapture 8.0 Professional

If you are installing ABBYY FlexiCapture 10 as an upgrade from version 8.0 you can use ABBYY FlexiCapture and ABBYY FlexiLayout projects as well as FlexiLayouts from the previous version.

Using ABBYY FlexiCapture 8.0 Professional projects (*.fcproj)

All ABBYY FlexiCapture 8.0 Professional projects (.fcproj) can be opened and used in ABBYY FlexiCapture 10 (both Standalone and Distributed). Please note the following:

- It is impossible to open an .fcproj-project in ABBYY FlexiCapture 8.0 once it was opened in ABBYY FlexiCapture 10, so you should create a copy of the project before opening it in ABBYY FlexiCapture 10 if you still need to open it in ABBYY FlexiCapture 8.0.
- After opening ABBYY FlexiCapture 8.0 project in ABBYY FlexiCapture 10 you may need to delete all processing results and analyze all pages once again. (You can use the project without re-recognizing but some information may be presented improperly, for example if the FlexiCapture 9.0 project contains format errors, they will not be presented in the document window the same way they are currently presented in ABBYY FlexiCapture 10).
- All settings which were not available in ABBYY FlexiCapture 8.0 and have appeared in ABBYY FlexiCapture 10 will have default values. You can change settings, add batch types, set up workflow settings. To find more details about new possibilities of ABBYY FlexiCapture 10 please read the help file.

Using ABBYY FlexiLayout Studio 8.0 projects (*.fsp) in ABBYY FlexiLayout 10

All FlexiLayout Studio 8.0 projects can be opened in FlexiLayout Studio 10. Please note the following:

- It is impossible to open an .fsp-project in ABBYY FlexiLayout Studio 8.0 once it was opened in ABBYY FlexiLayout Studio 10, so you should create a copy of the project before opening it in ABBYY FlexiLayout Studio 10 if you still need to open it in ABBYY FlexiLayout Studio 8.0.
- After opening a FlexiLayout Studio 8.0 project in ABBYY FlexiLayout Studio 10 you may need to delete all processing results and analyze all pages once again.
- Due to changes in FlexiLayout language some compilation errors may occur. In this case you will need to correct errors and re-compile FlexiLayouts. See Errors which may occur while converting FlexiLayouts.

Using FlexiLayouts (*.afl) created in ABBYY FlexiLayout 8.0

FlexiLayouts compiled in ABBYY FlexiLayout 8.0 can be loaded into ABBYY FlexiCapture 10.

Sometimes due to changes in FlexiLayout language some compilation errors may occur. In this case open the *.fsp project in ABBYY FlexiLayout Studio 10, correct the errors and re-compile FlexiLayouts. See Errors which may occur while converting FlexiLayouts.

Errors which may occur while converting FlexiLayouts

Sometimes, FlexiLayouts made in ABBYY FlexiLayout Studio 8.0 cannot be compiled in ABBYY FlexiLayout Studio 10, or errors occur when matching a FlexiLayout.

If a FlexiLayout cannot be compiled, open the *.fsp project in ABBYY FlexiLayout Studio 10 and check if any of the elements are invalid and have error description on the Errors tab.

It is also possible that the FlexiLayout is successfully compiled, but some errors occur during matching.

If you have such problems after conversion, please check if it happened due to one of the errors described below.

Please note that some elements may be found in a different way now and the logic of FlexiLayout may slightly change. Test all FlexiLayouts on your images before using them for recognition.

If you need assistance please contact our Technical Support.

Problem	Comment	Workaround
A FlexiLayout will not be compiled with the	e following errors:	
The name of an element coincides with a function's name that didn't exist in pre- vious versions. Example: in version 8.0 it was possible to create a text element with a name "RSA" and reference it using the short name: RSA.IsNull. This code cannot be com- piled in ABBYY FlexiLayout Studio 10.	If the element's name coincides with a func- tion's name, it will be considered as a func- tion's name in the code. It's possible to create an element with the name PageNumb- er, but it is prohibited to write PageNumb- er.IsNull (the only possible way is to write SearchElements.PageNumber.IsNull);	Use the full name of an element. Example: SearchElements.RSA.IsNull
If the element had a name which was allowed in version 8.0 but prohibited in ABBYY FlexiLayout Studio 10, and there was a reference to this element using a short name in the AdvancedCode, this element will be re-named during conversion, but the short name in the AdvancedCode is not changed. So, in the advanced code, there will be a reference to the element which doesn't exist.		In AdvancedCode, the element should be re-named manually.
The structure like this is now prohibited: Let e = SearchElements.StaticText1; e = SearchElements.StaticText2;	As the elements now have user-defined properties, the elements of the same type are not considered identical.	Change the mentioned structure as follows: Hypothesis e; e = SearchElements.StaticText1; e = SearchElements.StaticText2;
Incorrect usage of elements' short names. Example: There are elements: SearchEle- ments.A.A, SearchElements.A.B, Sear- chElements.A.C. In previous versions, it was possible to use the following structure in the code of element <i>C</i> : <i>A</i> . <i>B</i> In ABBYY FlexiLayout Studio 10, such a structure cannot be compiled. <i>A</i> is con- sidered SearchElements.A.A, but this element has not a <i>B</i> field.	A conflict may arise when short names are used. In version 8.0, in case of conflict, the high-level element was selected. In ABBYY FlexiLayout Studio 10, the low-level ele- ment is selected.	Use the full names of elements.
The following errors may occur during laye	out matching:	
Error in element "SearchEle- ments.StaticText", Pre-search relations section: D:\Tests\ForConversion\1.txt was not found.	In ABBYY FlexiLayout Studio 10, a refer- ence folder for relative paths to the text files used in the StaticText element was changed. In version 8.0 the relative path began from the batch's folder (where the images are stored). In ABBYY FlexiLayout Studio 10, they begin from the project's folder (the folder which contains the .fsp file).	Place the mentioned text file to the folder indicated in the message (for this example, you should put the file "1.txt" to the following folder: D:\Tests\ForConversion\). You can also change the path to the file.

Upgrading from ABBYY FormReader 6.5

In ABBYY FlexiCapture 10, the structure of projects is different, so the old projects cannot be used as they are. To be able to use your templates and flexible descriptions created in ABBYY FormReader 6.5, please read the instructions below and take all possible issues and limitations into consideration.

Using ABBYY FlexiCapture Studio 1.5 projects (*.fsp) in ABBYY FlexiLayout 10

ABBYY FlexiCapture Studio 1.5 projects can be opened in ABBYY FlexiLayout Studio 10 – no conversion is needed. Please note the following:

- Once the project is opened in ABBYY FlexiLayout Studio 10, it is permanently converted into FlexiLayout Studio 10 format
 and can no longer be opened in ABBYY FlexiCapture Studio 1.5 after this point. Please make sure you create a backup copy
 of all projects for ABBYY FlexiCapture Studio 1.5 before opening them in ABBYY FlexiLayout Studio 10. This is a safety
 measure useful in the event you still need to open the projects in ABBYY FlexiCapture Studio 1.5.
- After opening a FlexiCapture Studio 1.5 project in ABBYY FlexiLayout Studio 10, you need to delete all processing results and analyze all pages once again in order to finish converting the project.

Due to the changes in FlexiLayout language, some compilation errors may occur. In this case, you will need to correct errors and re-compile FlexiLayouts. Please contact our support team if you need assistance. See <u>Errors which may occur while converting</u> <u>FlexiLayouts</u>.

Using FlexiLayouts (*.afl) created in ABBYY FlexiCapture Studio 1.5

There are numerous changes in ABBYY FlexiLayout Studio 10 as compared with ABBYY FlexiCapture Studio 1.5. That is why we recommend opening an *.fsp project in ABBYY FlexiLayout Studio 10 first to check that there are no errors, and re-compile it, even though FlexiLayouts compiled in ABBYY FlexiCapture Studio 1.5 can be loaded into ABBYY FlexiCapture 10. See Errors which may occur while converting FlexiLayouts.

Importing templates from ABBYY FormReader 6.5 batches (*.frm)

All ABBYY FormReader 6.5 templates can be imported to ABBYY FlexiCapture 10. You must specify from which FormReader 6.5 batches (*.frm) you want to import templates.

Note: Batches created in versions earlier than 6.5 cannot be imported.

Conversion scenario

- 1. Open the ABBYY FlexiCapture 10 Project Setup Station for Distributed installation or the Administrator Station for Standalone installation.
- 2. Create a new project (File > New Project...).
- 3. Open the Document Definitions window (**Project > Document Definitions...**)
- 4. Click **Import...**, then select **FormReader 6.5 Batches (*.frm)** from the **Files of type:** list and browse the FormReader batch from which you want to import templates.



On clicking Open, the import will start.

When the import is finished, you will see a window showing the import result with a path to the log file.

ABBYY FlexiCapture 10 (Project Setup Station)

Import completed with warnings.

Import log stored in file C:\DOCUME~1\avtorova\LOCALS~1\Temp\Banking Application Forms_Import_Log.txt.

 		••••
- 01/		
UK		
0.0		
	OK	OK

The log file contains information about conversion including description of warnings or errors, if there are any.

- 5. The imported template(s) will appear in the list of Document Definitions. Open them and check field marking, data types and validation rules. Both fixed and flexible layouts with fields and their names are imported completely (except additional fields). All data types are imported as Custom data types of the Document Definition. Some of the validation rules are converted automatically; the others have to be remade manually. The information about rules' conversion can be found in the <u>Compatibility with FormReader 6.5 validation rules</u> table. Tips for converting rules that cannot be imported automatically can be found in the Help File ("Migrating from FormReader 6.5 rules and export to FlexiCapture 10 scripts").
- 6. Export settings are not converted, so you will need to readjust them.
- 7. Test the imported Document Definition on the test batches. The images from ABBYY FormReader 6.5 batches are not imported, you can add them using the File > Load Images... command.
- 8. Publish the converted Document Definitions.

Document and batch structure

If the Document Definition imported from ABBYY FormReader 6.5 contains a custom structure which is not supported in ABBYY FlexiCapture 10, a set of one-page Document Definitions will be imported.

- 1. Document templates with predefined structure (one-page document, multi-page documents, sequence of pages) are correctly converted into the document definitions for ABBYY FlexiCapture 10 with the same structure.
- 2. Custom document structure is not supported in ABBYY FlexiCapture 10. Templates with custom structure will be converted into separate one-page Document Definitions.
- **3.** If the structure of a batch (custom sequence of documents) was defined in ABBYY FormReader 6.5, it will be ignored, and the batch will be considered as an arbitrary sequence of documents.

Compatibility with FormReader 6.5 validation rules

Support of ABBYY FormReader 6.5 validation rules in ABBYY FlexiCapture 10:

FormReader 6.5	Equivalent in ABBYY FlexiCapture 10	Converted automatically
Check against a database	"Database Check" rule.	No
Check sums	"Check Sum" rule.	No
Merge blocks	"Merge Fields" rule.	Yes
Search in the list of suggestions	Field properties, "Data Type" tab. List the variants of allowed values in the "Validation" field.	Yes
Poplace values	Field properties, "Data Type" tab. "AutoCorrect options" field.	Yes
from the list	same field. If the fields are different, the rule cannot be converted, and the "Script" rule should be used.	
	Field properties, "Data Type" tab. "AutoCorrect options" field.	Yes
Replace characters from the list	Note . This rule will be converted if we find the value and write the result to the same field. If the fields are different, the rule cannot be converted, the "Script" rule should be used.	
Normalize and check dates	Field properties, "Data Type" tab. In the "Content" list, select "Date"; in the "Content Details" dialog box, select the required formats; in the "Validation" field, enter the required constraints.	No
Regular expressions	Field properties, "Data Type" tab. From the "Content" list, choose "Text" or select the "Process value as text" option for another content type. Enter the required regular expression in the "Validation" field.	Yes
Match blocks	Can be implemented via a "Script" rule (see "Field match check" sample in	No

	Help).	
If-Then rules	Can be implemented via a "Script" rule (see Help for instructions on how to migrate).	No
	Can be implemented via a "Script" rule (see Help for instructions on how to migrate).	No
Automation check	If the logic of the rule is too complex and requires an external component to be used, the component should be called from within the code of a "Script" rule (see "Automation rule" sample in Help).	
VBScript rules	Can be implemented via a "Script" rule.	No
Sum in digits - sum in writing	"Sum in digits - sum in words" rule (for Russian language).	No
Normalize prices		
Price in digits - price in writing	Price in digits - price in writing Not supported; can be implemented through an external COM component	
Validate passport series and number		

The information about ABBYY FlexiCapture 10 rules can be found in the "Program Settings -> Document Definitions -> Rule validation" article of the FlexiCapture Help File.

For more information on the "Script" rule, see the Appendix -> Using scripts in ABBYY FlexiCapture 10 -> Scripts for customizing processing -> Types of scripts -> Script rule article.

Template conversion issues and possible workarounds

The validation rules and batch or document structures used in ABBYY FormReader 6.5 have no analogs in ABBYY FlexiCapture 10 and should be re-created manually. The possible troubles with workarounds are described in the tables below.

Problem	Comment	Workaround
An error occurred during import: Import failed. Error: Unable to define fixed layout inside flexible.	This bug occurred when a field was absent in an original FlexiLayout, but the compiled layout contained it.	Open the *.fsp project in ABBYY FlexiLayout Studio 10 first to check that there are no errors, and re-compile it.
Images do not match the converted fixed Document De- finition, although the same images matched the template before conversion.	This happens due to signifi- cant changes in technologies.	Open the converted Document Definition in ABBYY FlexiCap- ture 10, delete anchors, separa- tors and static text, and re-create them automatically or manually.
Some rules which can be converted (see the <u>table</u>) are not converted.	In ABBYY FormReader 6.5, it was possible to create several rules which changed the value of the same field. This isn't possible in FlexiCapture 10.	Check if you really need such a complicated structure. Maybe, you can solve the problem using the standard ABBYY FlexiCap- ture 10 features. If not, use the "Script" rule.
In ABBYY FormReader 6.5 EE, multi-page documents were processed. After conversion, several one-page Doc- ument Definitions were created instead of a multipage Document Definition.	We cannot convert Custom structure of documents be- cause it isn't supported in ABBYY FlexiCapture 10. If Custom structure was used in FR65EE, one-page templates will be imported. See <u>Documents and batches struc- ture</u> . The documents structure is described in the FRE6BatchDefinition.sql file. If this file was damaged or deleted, only one-page tem- plates will be exported.	Some complicated structures cannot be created in ABBYY FlexiCapture 10. Check if the FRE6BatchDefinition.sql file wasn't damaged or deleted.
There were annexes in the documents. The annexes are not enabled in ABBYY FlexiCapture 10 Document Defi- nitions.	In ABBYY FormReader 6.5, it was possible to add annexes using custom structure. We cannot import custom struc- ture of documents. See <u>Documents and batches struc-</u>	Enable annex pages manually in the Document Definition Properties dialog box, Assem- bly tab.

	ture.	
The rules are converted, new rules are created but the order of rule execution differs from that in ABBYY For- mReader 6.5.	In ABBYY FlexiCapture 10 the order of rule execution doesn't depend on the user's specification, it depends on the document structure.	Try to re-create rules in such a way that they won't depend on the execution order. If the order is very important, try to create a "Script" rule which covers all your rules.
FlexiLayout couldn't be compiled.	There are numerous changes in ABBYY FlexiLayout Stu- dio 10 compared to ABBYY FlexiCapture Studio 1.5.	Open the *.fsp project in ABBYY FlexiLayout Studio 10, correct errors and re-compile it. If there are errors, you will see invalid elements with error de- scriptions on the Errors tab. Possible errors and workarounds are described in the <u>Errors in</u> <u>converted FlexiLayouts</u> section.
FlexiLayout has been compiled, but an error occurred during matching of this FlexiLayout.	There are numerous changes in ABBYY FlexiLayout Stu- dio 10 compared to ABBYY FlexiCapture Studio 1.5.	Open the *.fsp project in ABBYY FlexiLayout Studio 10, correct the code and re-compile it. Possible errors and workarounds are described in the <u>Errors in</u> <u>converted FlexiLayouts</u> section.

Errors which may occur while converting FlexiLayouts

Sometimes, the converted Flexible Description cannot be compiled, or there are errors during FlexiLayout matching.

If the Flexible Description cannot be compiled, you will see the corresponding message during templates conversion. Open the *.fsp project in FlexiLayout Studio 10. Some of the elements may be invalid and have error description on the Errors tab.

It is also possible that the FlexiLayout is successfully compiled, but some errors occur during matching.

If you have such problems after conversion, please check if it happened due to one of the errors described below.

Please note that some elements may be found in a different way now and the logic of Flexible Description may slightly change. Test all FlexiLayout on the images before using them for recognition.

If you need assistance please contact our Technical Support.					
Problem	Comment	Workaround			
A FlexiLayout will not be compiled with the following errors:					
The name of an element coincides with a function's name that didn't exist in pre- vious versions. Example: in version 1.5 (and 8.0) it was possible to create a text element with a name "RSA" and reference it using the short name: RSA.IsNull. This code can- not be compiled in ABBYY FlexiCapture 10.	If the element's name coincides with a func- tion's name, it will be considered as a func- tion's name in the code. It's possible to create an element with the name PageNumb- er, but it is prohibited to write PageNumb- er.IsNull (the only possible way is to write SearchElements.PageNumber.IsNull);	Use the full name of an element. Example: SearchElements.RSA.IsNull			
If the element had a name which was allowed in version 1.5 (or 8.0) but prohi- bited in ABBYY FlexiCapture 10, and there was a reference to this element using a short name in the AdvancedCode, this element will be re-named during conversion, but the short name in the AdvancedCode is not changed. So, in advanced code, there will be a reference to the element which doesn't exist.		In AdvancedCode, the element should be re-named manually.			
The structure like this is now prohibited: Let e = SearchElements.StaticText1; e = SearchElements.StaticText2;	As the elements now have user-defined properties, the elements of the same type are not considered identical.	Change the mentioned structure as follows: Hypothesis e; e = SearchElements.StaticText1; e = SearchElements.StaticText2;			
Incorrect usage of elements' short names. Example: There are elements: SearchEle-	A conflict may arise when short names are used. In version 1.5 (and 8.0), in case of conflict, the high-level element was selected.	Use the full names of elements.			

ments.A.A, SearchElements.A.B, Sear- chElements.A.C.	In ABBYY FlexiCapture 10, the low-level element is selected.	
In previous versions, it was possible to use the following structure in the code of element C: A.B		
In ABBYY FlexiCapture 10, such a structure cannot be compiled. A is considered SearchElements.A.A, but this element hasn't a B field.		
The following errors may occur during lay	out matching:	
Error at position -1: Text for search not defined.	In 1.5, it was allowed to search a text which consisted of a space only. In version 8.0 and 10, it isn't allowed.	Use allowed text for searching.
Error in element "SearchEle- ments.StaticText", Pre-search relations section: D:\Tests\ForConversion\1.txt was not found.	In ABBYY FlexiCapture 10, a reference folder for relative paths to the text files used in the StaticText element was changed. In version 1.5 (and 8.0), the relative path began from the batch's folder (where the images are stored). In ABBYY FlexiCapture 10, they begin from the project's folder (the folder which contains the .fsp file).	Place the mentioned text file to the folder indicated in the message (for this example, you should put the file "1.txt" to the following folder: D:\Tests\ForConversion\). You can also change the path to the file.

Managing Your Licenses

After you install the program, you need to activate your serial number. This section describes the use of ABBYY FlexiCapture 10 License Manager, the license management utility supplied with ABBYY FlexiCapture 10.

Overview

ABBYY FlexiCapture 10 License Manager is a license management utility. It is installed on the Protection Server when the server are installed.

The License Manager allows you to:

- add new licenses
- activate licenses
- view license parameters
- select and enable licenses

Hardware licenses are activated in the same way as software licenses.

ABBYY FlexiCapture 10 License Manager

The main License Manager window contains the following columns:

- Licenses displays the list of the installed licenses
- License parameters displays the parameters of the selected license

ABBYY FlexiCapture 10.0 Lice	ense Manager			X
License Service Help				
Liconsos				
Licenses				
Serial Number Protec	tion Type	Installation Type	Expiration Date	
✓DVRP-1000-0000-4658 Softw	are (File)	Network	Until 13-07-12 14:00	
			Definal Class	
Act Act	ivate License	late License	Close	
				_
License Parameters				
Description	DVDD 1000.000	0.4050.0000.0100		^
Serial Number	DVRP-1000-000	10-4658-2920-6103		=
Expiration Date	Ontil 13-07-12 14	1:00		-
Protection Type	Software (File)			-
	Tes			
	General			
Business process outsourcing service				
Workstations				
Scanning stations	2			
Verification stations	2			
Project setup stations	2			
· · · · · · · · · · · · · · · · · · ·				~

License properties

- General the serial number, expiration date, licensing method, ability to use a virtual machine
- License purpose type of license (software or hardware), ability to provide document processing services
- Work stations, Tools restrictions on the number of stations in the system and the use of development tools (FlexiLayout Studio, FormDesigner).
- **Productivity** restrictions on the use of ABBYY FlexiCapture 10.
- **Processing** additional document processing parameters: use of FlexiLayouts, use of additional recognition languages
- Custom components use of components created by users
- Import additional import capabilities
- Export additional document and image export capabilities

License statuses

• Activated (the license had been activated)

• **Expired** (the license had expired or the page limit has been reached) The current (i.e. active) license has a ✓ next to it and is highlighted in bold.

Buttons

- Hide License Parameters<< (License Parameters>>) hides (shows) the detailed information about the selected license
- Activate License... launches the ABBYY FlexiCapture Activation Wizard
- Update License... refreshes the information about the activated license
- Select makes the selected license current (i.e. active)
- Refresh refreshes the information about the licenses available on the Protection Server
- Close closes the Licenses manager

Activating a license

ABBYY takes steps to protect its intellectual property from piracy. Software piracy is harmful both to manufacturers and to end users alike. Unlike legally purchased software products, pirated software is never safe and secure.

If your end-user license agreement allows you to install and use the product only one computer, installing it on several computers will breach the agreement and violate the copyright laws of the Russian Federation. The activation technology restricts the number of software copies that can be used simultaneously and thus prevents the installation of one licensed copy on an unlimited number of computers. At the same time, one licensed copy may be installed and activated on one and the same computer any number of times without any restrictions.

You will not be able to use the software product unless you activate it.

How activation is carried out?

The activation process takes very little time and is carried out via an **activation wizard**. The activation wizard helps you to send the data required for activation to ABBYY. These activation data are sent to ABBYY in the form of a code (Product ID) which is generated based on the hardware on which the product is installed. **No personal data are used** to generate the code and the user remains completely anonymous.

The following activation methods are available:

- via Internet activation is carried out automatically and takes several seconds to complete; this method requires an active Internet connection
- **by e-mail** an e-mail message is generated that contains the data required for activation; please do not alter the body or the subject of the message to ensure a prompt reply from the mail robot
- **by e-mail from another computer** an e-mail message is generated that contains the data required for activation; you can use this method if the Protection Server is not connected to the Internet and e-mail messages cannot be sent from it
- load activation file connect an activation file you received by e-mail in response to an activation request

Once the activation is complete, **ABBYY FlexiCapture 10** can be used on the server on which it was activated. You can re-install ABBYY FlexiCapture 10 as many times as you need without additional activations (provided the Protection Server is not re-installed).

Note:

- 1. ABBYY FlexiCapture stations automatically connect to the Protection Server and use the installed license.
- 2. If you re-install the Protection Server on a different computer, you will need to re-activate your licenses (in the case of a license file) and change the address of the Protection Server in the Protection.ini file on the stations (see the "Connecting stations to the Protection Server" section for details).
- 3. If there are no free activated licenses available on the Protection Server and a user tries to run the program on their workstation, the program will not start and a warning message will be displayed.
- 4. Hardware licenses can only be activated over the Internet.

Connecting stations to the Protection Server

All the stations installed in the system access the Protection Server. The address of the Protection Server is stored in the LicensingSettings.xml file, which can be found in the installation folder. The address of the server is specified in the ServerAddress tag of the MainNetworkLicenseServer attribute.

To enable a station to access a new Protection Server, simply change the old name to the name of the computer where the Protection Server is installed.

The same applies to the standalone version of ABBYY FlexiCapture 10. If you have one license and several operator stations, specify the address of the computer where the license is stored in the LicensingSettings.xml files on the workstations. Remote stations get licenses from the Application Server. The Processing Server connected to the Application Server must be running for you to get a license.

Setting Up FlexiCapture 10 Distributed Installation

Setting up the system

Once the license is installed and activated, you should set up the system:

1. Open the Administration and Monitoring Console. Create a database.

Note: If SQL Server is installed separately, use basic authentication.

To use a file storage folder, select the corresponding option and provide the path to the folder. This should be a local folder on the Application Server.

Important! Under Windows Vista, Windows 2008 or later versions, a database must be created with <u>UAC disabled</u>. If UAC is not disabled, a database can be created, but the Processing Server will not be able to connect to it.

Note: If no file storage folder is used, all project files are stored in the database. For small projects, in terms of efficiency and security, the two approaches are equal. Storing the project files in the databases makes backing up and restoring data easier but increases the size of the database, which may decrease the system performance. Therefore, storing project files in the database should be selected only for demonstration projects.

Note: A file storage folder and a local file project must be excluded from the scope of anti-virus software and Window indexing service used for quick search.

A Ad	BBYY' F Iministratio	lexiCa n and Moni	pture ⁻ 10 itoring Console		English	~
Monitoring	Reports	Service	Permissions	Downloads		
Curren Server Datab	t setting: r instance n ase name: orage:	s ame: baika berez C:\Fil	l-2\sql2008r2 kina_10_1106(V eStorage	ersion: 61)		
Apply	Apply patch Connect to existing database Create new database					
Server	projects	list				
Refresh	Dele	te project	n Comun hu starting	the Project Cotur	Station and doing the following:	
2. Opioad • Cr (P	reate a new pro roject→Docu	ject (File→Nev ment Definition	v Project). Create ns).	or import at leas	st one document definition	

- Open one of the samples (available at %allusersprofile%\Application Data\ABBYY\FlexiCapture\10.0\Samples, for Microsoft Windows Vista and later %public%\ABBYY\FlexiCapture\10.0\Samples).
- Open a project you created in one of previous version of ABBYY FlexiCapture.
- Open a new project and import a batch you created in FormReader 6.5 DE or EE.
 For the correct operation, the project should contain at least one correct and connected document definition for which export settings have been specified.

Next, upload the project to the Application Server (File→Upload Project to Server...).

3. In the Administration and Monitoring Console, select **Permissions**→**Users**.

Note: The user that created the database had the administrator rights and may start any stations and perform any types of operations. You cannot divest the creator of the database of their administrator rights.

- 4. To add a user, click the **New user** button. You can also import user information from Active directory. Click the **Import...** button and find a user by name. Then use hyperlink in **Login** column to open page with user's information.
- On the user page specify account information and roles. Administrator, Monitoring Operator and Processing Server roles may access all projects. You must specify the projects accessible to user for the Project Settings Editor role. For the other roles you must also specify batch types.



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6. If required, create or import user groups and grant them the necessary access rights. Using groups saves time and makes user management easier.

Note: The Administrator, Monitoring Operator, and Processing Server roles can be assigned without creating a project in the database. The other roles require access rights to specific projects, therefore you need to create at least one project before you can assign those roles.

Important! The account of the computer on which the Processing Server runs must be added to the list of users with the **Processing Server** role. If this computer is part of a domain, the account will look like this: <Domain Name>\<Computer Name>\$ (e.g. Fine\quad-1\$). Subsequently, the Processing Server will automatically control the Processing Stations, their access rights, etc.

- 7. Start the Processing Server Monitor (Start→ABBYY FlexiCapture 10 Servers→Processing Server) and set up the server:
- 8. Select Actions -> Properties and specify the address of the Application Server (e.g. http://ApplicationServer).
- 9. Start the Processing Server by clicking
- 10. Add Processing Stations by selecting **Stations** in the tree and clicking **L**. Add the names of the stations or locate them in the LAN:

Processing Server Moni	Add Stations	
File Actions	Add Stations Browse for the stations you want to add. Browse for Computer Choose the computer you want to add: Choose the computer you want to add: Add Close	Start auto Yes
Ready	Add Cancel	>

Then select the stations in the list displayed in the main window of the Processing Server Monitor and click

11. If Hot Folders are to be used for image import in any of the projects, connect these folders in the node of the same name:

🥺 Processing Server Monitor - SOKOLOV					
File Actions					
🔶 🌳 隆 💽 💣	0				
ABBYY FlexiCapture	For Project				
Hot Folders	Enable				
Stations					
E TOKS	Export List Select All Ctrl+A				
<	<	>			
Ready					

If required, specify the general project processing options on the Project Setup Station ("Default" batches,
 Project→Project Properties..., Workflow tab). If several batch types are used, specify the processing parameters for each batch type: select Project→Batch Types..., select the desired type, click Edit... and then click the Workflow tab.

Setting up Microsoft Internet Information Server (IIS)

Checking the operation of IIS

To check the operation of IIS, start it by selecting **Start** \rightarrow **Control Panel** \rightarrow **Administrative Tools** \rightarrow **Internet Information Services**. If a problem occurs when starting IIS, the following message will be displayed: "Unexpected error 0x8ffe2740 occurred" for v. 5.1 (Windows XP) or "The process cannot access the file because it is being used by another process" for v. 6.0 (Windows 2003), v. 7.0 (Windows 2008) and v. 7.5 (Windows 2008 R2).

This error message means that port 80 is in use. To find out which application is using the port, do the following:

13. In the command line (**Start→Run**), type netstat -anop TCP|find ":80"

The list of connections to port 80 will be displayed and the ID of the corresponding process in the following format: TCP 0.0.0.080 0.0.0.00 LISTENING 1264

14. Type

tasklist /SVC /FI "PID eq 1264"

replacing 1264 with the ID of the process obtained at step 1. The result will be displayed in the following format: Image Name PID Services

Virus.exe 1264 KillMePlz

15. End the process that uses the port.

Important! Do not switch IIS over to another port, as you will not be able to start the Application Server in this case.

Security settings

Major scenario

Conditions:

• All participants (computers and users) are in a domain.

Features:

Requires minimum additional settings.

Actions:

- 1. After the system is installed, the administrator of the computer on which the Application Server is installed creates a database and becomes the administrator of the system. The administrator may change the settings of the Application Server, upload projects to the Application Server, and grant access rights for projects.
- 2. The administrator may grant administrator rights to another user, thereby delegating the administration of the system to that user.
- 3. The administrator grants the Processing Server rights to the computer on which the Processing Server is installed (in the format <Domain Name>\ <Computer name>\$ by default if the Processing Server operates as the Network Service; or a specially created domain account that is assigned to the Processing Server). If required, the administrator may create and set up special accounts for the Processing Stations.
- 4. The administrator uploads the projects and assigns roles to the operators.

Some of the stations are not in the domain

Conditions:

Some of the stations (Scanning Stations, Verification Stations) operate remotely.

Features:

- NTLM pass-through authentication is used. General principle: to enable user of computer M2 (account M2/User[password]) to authorize on computer M1, you must duplicate this account (with the same password) on computer M1, i.e. create M1/User[password].
- The Processing Stations must be in the same domain as the Application Server.

Actions:

- 1. Do the steps of the major scenario above.
- 2. On the Application Server, create accounts corresponding to the remote users. On the remote stations, create identical accounts (same names and passwords) and run the stations under these accounts.

Work group

Conditions:

The stations and the servers are in a work group.

Features:

• NTLM pass-through authentication is used. General principle: to enable user of computer M2 (account M2/User[password]) to authorize on computer M1, you must duplicate this account (with the same password) on computer M1, i.e. create M1/User[password].

• Basic authentication must be turned on in ISS to enable export from the Scanning Station by explicitly specifying the user's login and password.

Actions:

- 1. Perform steps 1, 2 of the major scenario above.
- 2. On the computer on which the application Server is installed, create a local account for the server. In the IIS settings, specify that the pool of FlexiCapture Web Services should run under this account.
- 3. Set up the Administration and Monitoring Console: in the IIS settings, go to the ASP.NET page and specify an account for the FlexiCapture virtual folder (either the same account as in step 2 or a separate account).
- 4. If the database is located on a computer other than the Application Server, copy the accounts from steps 2 and 3 onto the computer hosting the database. Additionally, duplicate the account of the administrator on the computer hosting the database. The Administration and Monitoring Console will be run under this account in order to set up the Application Server (to connect to the database).
- 5. Use the administrator account to run the Administration and Monitoring Console and create a new database.
- 6. On the computer on which the Processing Server is installed, create an account for it. Specify this account in the Processing Server settings. Duplicate this account on the computer on which the Application Server is installed.
- 7. In the Administration and Monitoring Console, assign the **Processing Server** role to the Processing Server account (created at step 6).
- 8. If the Processing Stations run on separate computers, create accounts for them and duplicate them on the Processing Server.
- 9. On the computer on which the Application Server is installed, duplicate the accounts of all users that should have access to the system and assign roles to the users in the Administration and Monitoring Console.

Oracle database settings

Prior to creating a database in Oracle, do the following actions:

1. On the computer on which the Application Server is installed, install the Oracle client for Windows 32bit (even though Windows x64 is installed) and Oracle DBMS for this OS. The Application Server does not work with the Oracle client for Windows x64.

If Windows x64 is installed, pools for the **Administration and Monitoring Console** and the Application Server must be set to 32-bit mode. For this, do the following:

- Execute the following command from the command line: cscript % system-

drive% \Inetpub\AdminScripts\adsutil.vbs set W3SVC/AppPools/Enable32BitAppOnWin64 true

This command switches the default pool to 32-bit mode, thus the default pool and the pools of the Administration and Monitoring Console run in the same mode which is required for registration of ASP.net.

For this command to take effect, access to the Network Service account must be granted explicitly. To grand access to the Network Service account, execute the following command: **aspnet_regiis -ga "NT Authority\Network Service"**.

- Make sure that the World Wide Web Publishing service is running in 32-bit mode:

frond fride frebi	
General Log On	Recovery Dependencies
Service name:	W3SVC
Display <u>n</u> ame:	World Wide Web Publishing
Description:	Provides Web connectivity and administration A through the Internet Information Services snap-in
Pat <u>h</u> to executab C:\WINDOW	e: system32\hetsrv\inetinfo.exe
Startup typ <u>e</u> :	Automatic
Service status:	Started
<u>S</u> tart	Stop Pause Besume
You can specify from here.	the start parameters that apply when you start the service
Start parameters:	
	OK Cancel Apply

- In Oracle DBMS create a user, e.g. FCUSER, and assign the CONNECT and DBA roles to this user. One FlexiCapture
 database corresponds to one user. If several FlexiCapture databases running under Oracle DBMS are required, create a
 user for each database.
- 3. Establish the connection between the client and the Oracle server using the Net Manager utility, which is installed to-gether with the Oracle client (in the Administration configuration) and the database server. In the client utility, create a new Service Naming element (a local naming method), which must be connected with the Oracle database server by its SID. Test the connection with the database server on behalf of the user account created in step 2. Go to the next stop only if the connection test succeeds. If you cannot set up the connection, consult the Oracle documentation.
- 4. When creating the database in the Administration and Monitoring Console, specify the name of the Service Naming element created in step 3.

After you create the database using the **Administration and Monitoring Console** you should note that by default, an Oracle database allows a maximum of 40 processes and 49 sessions. When these limits are reached, the following error message occurs: "ORA-12516: TNS:listener could not find available handler with matching protocol stack".

If required, increase the default values by using a script similar to the following: connect sys/<Login> as sysdba;

alter system set sessions=<SessionCount> scope=spfile; alter system set processes=<ProcessCount> scope=spfile; shutdown immediate; startup;

Recommendation for setting up FlexiCapture 10

General recommendation

To improve performance of ABBYY FlexiCapture, use the following recommendations:

- Install SQL Server and FlexiCapture Application Server on different computers. The Processing and Licensing servers can be installed on the computer where the Application Server is installed.

- Do not install processing stations on the computes where FlexiCapture servers or SQL Server are installed.

- Do not store all data in SQL database. For these purposes, a File Storage should be used. This option must be selected when creating a database in the Administration and Monitoring Console. If a file storage was not created when creating a database, it

cannot be connected later while working. During work, it is also impossible to disconnect the file storage which was connected when creating the database.

These recommendations are described in more detail below.

Configuring SQL Server

RAM

The amount of RAM available to SQL Server should be not less than the amount recommended by Microsoft for the given edition of MS SQL Server (see the table of recommendations for different editions).

The more RAM is available, the larger part of database can fit in RAM which allows faster access to database.

However, if FlexiCapture servers are installed on the same computer, the amount of RAM available to SQL Server must be restricted in SQL Server settings so that the amount of RAM was also sufficient for FlexiCapture servers including IIS (recommended amount of RAM is at least 4 GB). Thus, in order to improve performance, it is recommended that SQL Server and FlexiCapture Servers should be installed on different computers.

Hard disk

It is desirable to place the database file on a fast hard drive (e.g., 15000 rpm/second). If SQL Server is installed on the same computer with FlexiCapture Servers, it is desirable to use one hard disk for the %temp% folder of IIS and the File Storage and another disk – for SQL database.

Database File

The process of increasing the database file may lead to a temporary decrease in SQL Server performance, so it is recommended to specify in database properties in Autogrowth settings that a one-time increment of the database file must be at least 100 MB.

Recovery model

To improve performance of SQL Server, it is desirable to use a Simple Recovery Mode for the database.

Rebuilding indexes

After long work of FlexiCapture, a significant increase in the size of database can be noticed. At the same time, more than 50% of the space can be occupied not with data, but with the indexes in tables. In order to decrease the size of database and improve performance, it is recommended that indexes of the Batch, Document, Page, EventLog and other tables should be rebuilt periodically (e.g., once for every million pages processed).

Estimating the size of File Storage

Most of the space in file storage is occupied by images being processed in the system. For each loaded file, its source image is stored as the original; besides black-and-white image copies and image thumbnails are created. For color images, color copies with quality loss are also created.

The level of quality loss is specified in batch type properties, in the Displayed image quality field.

EXP	port	1	Norkflow	.Net Refe	erences
General	Image Prepr	ocessing	Recognition	Event Handlers	Verification
<u>N</u> ame:	Batch Type 1				
Description:					
Default batd Digplayed im Registration	h priority: N ages quality: 6 Parameters	lormal 0%	▼ ▼		
Name				Required	<u>A</u> dd
					<u>E</u> dit
					Delete

To get a relatively accurate estimate of the file storage size, you can upload 10 typical images to FlexiCapture and view the size of a file storage folder, in which the batch (<FileStorage><GUID>project <id>0000-0999<Batch Id>) is stored.

Estimates for the file storage obtained during testing are as follows: for 1 image, 3-6 times more space in the file storage than the image size is needed.

File Storage

For the file storage, it is recommended to use a disk that is local relative to the Application Server (or a system of comparable performance). To achieve maximum performance, the %temp% for IIS must be located on the physical disk. If IIS runs under the **Network Service** account, a path to folder %temp% can be specified in the registry (registry branch [HKEY_USERS\S-1-5-20\Environment], variables «TEMP» and «TMP»).

In order to increase performance, it is recommended that a file storage folder should be excluded from the scope of anti-virus software, Window indexing service and other processes that require long-term access to the disk. Preferably use a faster hard drive (e.g., 15 000 rpm/secondy).

Application Server

Caching

In order to decrease the amount of memory occupied by IIS, it is necessary to disable Output in the IIS settings. Using the cache does not lead to increasing performance, as the identical information is not frequently requested by FlexiCapture.

Configuring settings of the Application Server Recycling Pool

For FlexiCapture 10 Web Services, the Application Server pool, it is necessary to specify Recycling settings, that is to enable cleanup of the pool when it reaches a certain threshold of consumed memory. The threshold is determined based on the amount of available memory in the system: when IIS consumes maximum memory, there must remain enough memory for normal functioning of the operating system and other applications that can be installed on the same computer.

It is recommended to set up a forced cleanup of the Application Server pool when the amount of occupied memory reaches 1200000 KB.

Edit Applic	ation Pool Recycling Settings		? ×
٢	Recycling Conditions		
Fixed Ir	itervals	Fixed number of requests:	
Exa	cific time(s): mple: 8:00 PM,12:00 AM		
Memory	Based Maximums		
	ual memory usage (in KB):	Private memory usage (in KB):	
		Previous Next Enish Car	ncel

Number of threads

For the Application Server pool, the number of working processes can be specified. The optimal number of threads is two threads per processor core if hyper-threading technology is not used on the computer and one thread per virtual core if hyper-threading is used.



Configuring FlexiCapture input and output

Frequently, the bottleneck that limits performance of the system is the input (import) or the output (export).

Below are the two ways to increase performance in bottlenecks of FlexiCapture:

1. If it is assumed that a large number of Processing Stations will simultaneously import files from a hot folder or export files to file system, then the hot folder and/or the export target must be located on the computer with the server edition

of the operating system. Normally, client operating systems support a limited number of connections which may lead to error in import/export tasks.

2. If a hot folder is assumed to be processed at several Processing Stations, then bandwidth to the hot folder will be divided between the Processing Stations which may lead to bandwidth shortage. In this case, it is recommended to use multiple independent hot folders. If export to files is performed, it is recommended that export target should not be on the same computer with the hot folders

Using performance counters

To monitor FlexiCapture state and search for bottlenecks, the Performance Monitor utility can be used.

FlexiCapture counters

FlexiCapture own counters are located in the category FlexiCapture.

🔕 Performance Monitor			
🔊 Eile Action View Windo	w <u>H</u> elp		_ 8 ×
🗢 🔿 🙋 📅 📴 🛤 🛽	? 🖬		
N Performance	🕅 🗊 📾 🗸 🛃 🗶 🥒 🛤 🗎 🔳 🚺		
🖃 🔂 Monitoring Tools 🛛 🗛 🗛 🖓	Counters	×	
Performance Mc			××××××××××××
F Reports		Added counters	
	elect counters from computer:	Counter Parent Inst Computer	
	<local computer=""></local>		
	Distributed Transaction Coordinator 🗄 🔺		
	Event Tracing for Windows 🕀 🔄		
	Event Tracing for Windows Session		
	FlexiCapture 🖂		
	ASCT count		
	ASCT latency		
	Cores Count		
	_		
Ī	stances of selected object:		
	<all instances=""></all>		
	rocessing Server		
	Search		
		Permana 44	
		Remove <<	
	5how description		PM 7:48:35 PM
		Help OK Cancel	
			ption 1:40
	Show Color Scale Counter	Instance Parent Object	Computer
	1.0 % Processor Time	Total Processor Information	

Values of the counters are recorded by the Processing Server, so the counters are available in the computer where this server is installed.

As the Processing Server is a 32-bit application, the Performance Monitor utility must be run in 32-bit mode when used in 64-bit computers. For this, enter the following command in the command line (cmd.exe):

mmc /32 perfmon.msc

By default, recording counters by the Processing Server is disabled. To enable counters recording, perform the following actions:

- Start the Processing Server console. For this, on the computer where the service of the Processing Server is started, execute the following command in the command line (cmd.exe): FlexiBRSvc.exe please obey
- 2. Set the value of the server parameter **PerformanceCounting** to **true**. For this, execute the command: set PerformanceCounting=true
- 3. Check the state of the PerformanceCounting parameter with the "view" command.
- 4. Quit the Processing Server Manager console using the "quit" command.

Note: To view help on the Processing Server Manager console, use the "help" command.



Description of counters:

- ASCT Count Application Server Communication Threads count. The number of running threads used for interaction with the Application Server. By default, takes values from 1 to 3. Each thread opens its session. Additional threads are started if, for the existing threads, latency (ASCT Latency) has reached two seconds.
- 2. **ASCT Latency** Application Server Communication Thread latency (ms). The latency of processing requests in the flows of interaction with the Processing. The downtime of queuing requests measured in milliseconds.

The smaller this value, the better. The ideal value is zero. Values within 1000 (1 second) are the norm.

When the counter value reaches 2 seconds and the maximum number of threads is not running one more thread is started. When the value reaches 30000 (30 seconds), the Processing Server switches to a critical mode: it stops taking new tasks and retrieving information about projects on the server until the queue is unloaded. Therefore, a long stay is the state > 30 seconds is generally undesirable.

3. **Primary Thread Latency** – a delay in the response of the Processing Server measured in milliseconds. This index shows the responsiveness of the server. The increase of this index leads to "freezing" of the Processing Server Monitor.

It is desirable that the value of this counter be minimal. This counter is the most critical. The server does not have autoadjusting by the value of this counter. A response delay of more the 10 seconds is highly undesirable. As a rule, an excessive growth of this counter means that a network interaction with some station is extremely slow.

Note: With the "view" command of the Processing Server console, you can output the "Server lag time" value that corresponds to the maximum of the **Primary Thread Latency** and **ASCT Latency** values.

- 4. Task Queue Size the size of the buffer allocated for the task. Includes all tasks displayed in the Processing Server Monitor as well as some of the tasks deleted over the past 5 minutes. This counter does not matter much in terms of administration however it can be used to monitor the correlation between the number of tasks in the Processing Server and the occupied memory.
- 5. Cores Count the number of cores in all started (which are in s state Started) Processing Stations of FlexiCapture.
- 6. **Free Cores** the number of free cores in all started (which are in s state **Started**) Processing Stations of FlexiCapture. Allows you to estimate, whether there are enough cores in FlexiCapture.
- Pending Tasks the number of tasks taken into processing by the Processing Server, but not yet assigned to a
 Processing Station. Such tasks are displayed in the Processing Server Monitor in a Pending state. Note that this number
 is not the number of tasks queued in the Processing Server.

This number may be proportional to the total number of cores in the system, but it should not be increased indefinitely. Admissible value: up to 2 tasks per 1 core.

- 8. Running Tasks the total number of tasks being executed in the Processing Server at the moment.
- 9. **Export Count, Import Count, Recognition Count, Other Tasks Count** the number of corresponding tasks (export, import, recognition and others) over the past 5 minutes.
- 10. **Export Time, Import Time, Recognition Time, Other Tasks Time** an average execution time for the corresponding tasks (export, import, recognition and others) over the past 5 minutes.
- 11. **Modification Server Locks Count** the number of documents that are blocked for executors. The counter applies for the Processing Station only.

System counters

Sometimes, insufficient performance can be caused by the used hardware. In order to determine whether the hardware complies with the load and whether it has bottlenecks, system performance counters must be used. Counter used for different system components are described below.

RAM

- 1. **Memory: Available Mbytes** the amount of physical memory (RAM), in bytes, available to processes running on the computer. RAM consists of the physical memory and a swap file. If the RAM in the system is not enough, the paging mechanism is used which can lead to slowdown.
- 2. **Paging File: Usage** the use of paging. Data and code in the memory are divided into pages. On Intel, one page is equal to 4096 byte. Paging is the process of moving pages between the physical to virtual memory. Excessive movement of pages from disk into memory and vice versa can lead to severe CPU load. Such a situation may look like a problem with the processor or disk.
- 3. Memory: Committed Bytes the committed memory. The memory reserved in the file pagefile.sys in case you need to dump the contents of physical memory to disk. The amount of allocated memory of the process characterized the amount of memory actually consumed by it. The amount of allocated memory is limited to the size of the paging file. The limit of the amount of allocated memory in the system (Memory: Commit Limit) is determined by how much memory can be allocated to processes without increasing the size of the paging file. The counter shows the total amount of allocated memory for all processes that is the actual amount of memory used by the system.
- 4. Memory: Page Faults/sec shows how often the data are outside the working set. The working set is the physical memory (RAM) visible to a process or a program. Page faults occur when the program requests a code or data page which is not in the working set and must be found elsewhere. Includes soft page faults and hard page faults. A soft page fault is a situation when the program requests a page which is memory but out of working set. In this case, restoring data from disk is not required. A hard page fault is a situation when the program requests a page which is a situation when the program requests a page which is not in the physical memory (RAM) and must be restored from disk. Faults of this type are the best to show the presence of bottlenecks in the memory configuration. More than 5 faults per second show that RAM should be increased.
- 5. **Memory: Page Input/sec** total number of pages read from disk to resolve hard page faults. Comparing with Page Faults/sec shows the number of soft page faults.
- 6. Memory: Pages/sec total number of pages read from disk and written to disk. This is the sum of Page Outputs/sec (the number of pages that had to be written to the disk to make room in RAM for other pages as a result of page fault) and Page Inputs/sec. The admissible average value is 0 20. The Pages/sec value of more than 5 per second indicates a bottleneck in memory configuration. Comparing with Page Faults/sec gives an idea about the number of soft page faults and hard page faults.

It is also recommended to monitor the memory occupied by the following processes:

- FlexiBrSvc.exe the process of the Processing Server and the Processing Station. If both services are installed on the computer (not recommended), they can be distinguished by PID specified for the corresponding services.
- w3wp.exe IIS working processes.
- sqlserv.exe SQL Server process

Processor

It is recommended to exclude memory and other bottlenecks that load the processor before diagnosing a bottleneck caused by a process.

Identify processes that occupy more than 80% of CPU time. If the length of the queue is more than 2 threads, the bottleneck in operation of the system is probably caused by this process.

1. System: % Processor Time: _Total – time (in percentage of the whole working time) during which all processors were busy. For one processor, it is equal to the counter Processor: % Processor Time. For multiple processors, an average counter value is used. The counter measures how much time (in %) the system spends processing Idle processes and

subtracts this percentage from 100 %. The resulting value corresponds to the percentage of time, the processor actually spent working on productive threads.

- 2. Processor: % Total Processor Time: the same as System: % Processor Time, though measured for each processor.
- 3. **System: Processor Queue Length** shows how many threads are ready in the processor queue, but not currently able to use the processor. Does not include a thread that is processed at the moment. Shows the current (not an average) value. The counter value of more than 2 indicates a bottleneck.

Disk

- 1. LogicalDisk or PhysicalDisk: % Disk Time indicates how busy the disk is (% of working time).
- 2. LogicalDisk or PhysicalDisk: Current Disk Queue Length measures the number of the I/O transactions that are waiting to be handled. Contains the current value (not an average). The counter value of more than 2 for a long period of time indicates a bottleneck.
- 3. **Disk Bytes / sec:** the number of bytes transferred to the disk per second. The primary measure of the disk performance.
- 4. **Avg Disk Bytes / Transfer: -** the average number of bytes transferred per read of the disk system. This is an indicator of the disk efficiency. The higher the value, the better.

Network interface

- 1. Network Interface: Current Bandwidth bandwidth of the network interface.
- 2. Network Interface: Bytes Total/sec load of the network interface. If the load of the network interface is 75% or more of the bandwidth, than the network interface is a bottleneck. It is also worth comparing the load with the base mode in which the work was stable.
- 3. Network Interface: Output Queue Length network interface. If an average value of the counter is more than two, it means that the network interface (or the capacity of the network infrastructure) cannot cope with transferring data provided by the server. That is, server provides data at a faster rate than the network interface is able to pass.

IIS

- 1. W3SVC_W3WP: Active Threads Count: FlexiCapture 10 Web Services the number of active threads in IIS.
- 2. WebService: Current ISAPI Extension requests: Default Web site (if the FlexiCapture Application Server has not been transmitted to a different site by the user) the queue of requests to be processed in IIS. If the queue is significantly (2-3 times) larger than the number of active threads in IIS, then IIS is likely to be a bottleneck. You should take into account that the bottleneck may also be the SQL Server that executes requests for a long time causing the queue of requests to increase.

SQL Server

SQL Server has a large number of performance counters which can help you not only estimate the server load, but also, for example, investigate the behavior in case of custom settings (non-optimal settings can increase the load on the server which can be visible with the help of the counters).

We recommend using the main counter responsible for the server performance:

SQLServer: SQL Statistics: Batch Requests/Sec counter – this counter measures the number of batch requests received by SQL Server per second and allows you to monitor the load of processors in the server. In general, more than 1000 batch requests per second tells of a very high load on the SQL Server and may mean that if you have not experienced a shortage of CPU resources, you may run into it in the near future. Of course, this number is relative, and the more powerful hardware you have, the more batch requests per second can be handled by SQL Server. In terms of network bottlenecks, a typical network card with a capacity of 100 Mb/s can only handle about 3000 batch requests per second. Under similar loads, you may need to switch to a network card with capacity of 1 Gb/s. You can also use the counter SQLServer: Databases: Transaction/Sec: _Total to measure the total activity of SQL Server. However, it measures only the activity within the transaction, not the whole activity, which can lead to erroneous results.

You can also use the following counters to analyze the amount of memory consumed by the server and estimate whether the server has enough memory:

- SQLServer: Memory Manager Target Server Memory (KB) shows how much memory is required for SQL Server. If the value of this parameter matches the value of SQLServer: Memory Manager — Total Server Memory (KB), it means that SQL Server has enough memory.
- 3. SQLServer: Memory Manager Total Server Memory (KB) shows how much memory SQL Server actually uses. If the value of this parameter matches the value of SQLServer: Memory Manager — Target Server Memory (KB), it means that SQL Server has enough memory. However, if the value of this counter is smaller, it means that more available memory is needed to optimize performance of SQL Server.

Logging

Administration and Monitoring Console logs

The event and error logs available in the Administration and Monitoring Console are the main logs that register errors that occur in the system in general. These logs record all errors that occur during document processing and affecting the processing and all events that occur during document processing. To view the logs, select **Monitoring**-**Event Log** and **Monitoring**-**Error Log** in the Administration and Monitoring Console. In the settings of the Administration and Monitoring Console, you can specify what type of events should be logged. Logging all events is not recommended, as it can lead to a significant increase in the size of the database during an intensive processing.

Task processing logs on the Processing Servers

The Processing Server logs the processing of the tasks. The list of the active tasks and their logs can be accessed via the Processing Server Monitor. To view a task log, select Actions \rightarrow View Log... when selecting the task.

OS event logs on the servers

The server components (Application Server, Processing Server, and Processing Stations) log errors and warnings in the local event log of the operating system under which they are running (section: Application, sources: FlexiCapture Web Services and FlexiCapture Processing Server). These logs can be accessed by the administrators both locally and remotely via the standard Event Viewer tool of the MMC console.

The local OS event log records not only processing errors, but also all errors in the operation of the server components not directly related to the processing of documents. This log will list processing errors even if the Application Server is inaccessible at the time of error and the error cannot be logged in the ABBYY FlexiCapture log.

Working with Clusters

ABBYY FlexiCapture 10 supports clusters.

There are two important benefits to using clusters:

- Fault tolerance: in case of failure of one of the servers, the request will be executed by another server.
- Distributed workloads: query processing is distributed among cluster nodes. This improves performance and increases fault tolerance.

The following ABBYY FlexiCapture 10 components can be installed on clusters:

- Processing Server
- Licensing Server
- Application Server

ABBYY FlexiCapture can work with Microsoft SQL Server installed on failover cluster.

The Processing Server and the Licensing Server are installed on failover clusters.

The Application Server, the Administration and Monitoring Console, and the Web Data Verification Station, which use IIS (Internet Information Services), are installed on NLB (Network Load Balancing) clusters.

Note. Failover and Network Load Balancing clusters cannot work on the same computer.

The following figure displays the clusterization of ABBYY FlexiCapture Servers and Microsoft SQL Server:



SQL Server (FailOver cluster)

The deployment of the Processing Server and the License Server on clusters is described below in this guide.

Setting Up the Processing Server

Failover clusters are used for clustering the Processing Server. A detailed guide to failover clustering can be found on the <u>Microsoft website</u>.

Deploying the Processing Server on a Failover Cluster

In this section, you will find step-by-step instructions for setting up the server on a failover cluster.

Note. The addresses, computer names, domain names, etc. used below are not mandatory and may be changed by the administrator.

Note. The following server configuration is intended only for local use in a local area network.

Important! The names of servers, services, and shared folders must not contain spaces.

Basic Configuration of the Failover Cluster

In this example, the processing server is deployed on a FOC cluster (FOC.cluster2008r2.ru). The cluster uses a network with the address 192.168.0.0/24 and the domain cluster2008r2.ru.

The cluster consists of two nodes: Node1 and Node2.

Addressing in the Cluster

The Node1 and Node2 nodes have two network interfaces: one interface belongs to the 192.168.0.0/24 network, the other may belong to your local area network (for example 10.0.0.0/16). The data storage only interfaces with the 192.168.0.0/24 network and is available only to the cluster nodes (i.e. Node1 and Node2).

Both networks are available to the cluster FOC.cluster2008r2.ru. Cluster traffic should only be allowed in the designated network 192.168.0.0/24 for security and workload balancing reasons. External users can access the data storage through requests to Node1 and Node2. In order to allow cluster traffic in the 192.168.0.0/24 network, open the **Failover Cluster Manager**, select **Cluster Network** in the **Networks** group, and choose **Enabled** in the **Cluster Use** column (see the screenshot below).

權 Failover Cluster Manager					
Eile Action View Help					
Failover Cluster Manager	Networks			Actions	
FOC.duster2008r2.ru	Networks			Networks	
□ 🎒 Nodes	Name	Status	Cluster Use	View	
Node2	Cluster Network	💽 Up	Enabled	Q Refresh	
Carage	External Network	🕐 Up	Disabled	Help	
Cluster Network				Cluster Network	
External Network				Show the critical events f	
				Properties	
				? Help	
	1				
	Cluster Netwo	ork.			
	Status:	Subnets:			
	Up	192.168.0.0/24 (IPv4)			
	•		•		

Interfaces and networks:

Interface	Network	Description
Storage	192.168.0.1/24	Centralized storage
Node1	192.168.0.11/24	Cluster node
Node2	192.168.0.12/24	Cluster node
FOC	192.168.0.10/24	Cluster address
FC10ProcServer	192.168.0.2/24	Address of the service running in the cluster

Domain users

To set up domain user accounts:

- 1. Create two domain users, for example cluster2008r2\node1admin and cluster2008r2\node2admin.
- 2. Give administrator rights to cluster2008r2\node1admin on Node1 and to cluster2008r2\node2admin on Node2.

Important! These user accounts will only be used for working with ABBYY FlexiCapture in a failover cluster to ensure correct usage of shared network resources.

Important! Clustering requires the use of domain accounts. It is not possible to work under a local user account.

Adding the ABBYY FlexiCapture 10.0 Service to the Cluster

Install ABBYY FlexiCapture on Node1 and Node2, then create a network folder for the FlexiCapture service.

Creating the Service

Complete the following steps to create the service:

1. Right-click the Services and Applications group and choose Configure a Service or Application...



2. Select Generic Service from the list of services and click Next.


3. Choose ABBYY FlexiCapture 10.0 Processing Server from the list of available services and click Next.

🧱 High Availability V	/izard	×
Select Se	ervice	
Before You Begin	Select the service you want to use from the list:	
Application	Name	Description
Select Service	ABBYY FlexiCapture 10.0 Licensing Service	ABBYY FlexiCapture Licensing Service
Client Access Point	ABBYY FlexiCapture 10.0 Processing Server	ABBYY FlexiCapture Processing Server service
Calact Ctampas	Application Experience	Processes application compatibility cache reque
Select Storage	Application Host Helper Service	Provides administrative services for IIS, for exam
Replicate Registry Settings	Application Identity	Determines and verifies the identity of an applica
Confirmation	Application Information	Provides support for 3rd party protocol plugios f
Commanon	Application Management	Processes installation removal and enumeratio
Configure High Availability	ASP.NET State Service	Provides support for out-of-process session state
Summany	Background Intelligent Transfer Service	Transfers files in the background using idle netw
Summary		
		< Previous Next > Cancel

4. Enter the name of the service (FC10ProcServer in this example) to be used by clients and choose an address (192.168.0.2 in this example). Click **Next**.

Ma High -1_1_-1--

🤯 High Availability W	/izard							×
Client Acc	cess Poir	nt						
Before You Begin	Type the i	name t	hat clients will use when acce	ssing this se	rvice or applic	ation:		
Select Service or Application	N <u>a</u> me:		FC10ProcServer					
Select Service	One or mo	re IPv4 krie ee	4 addresses could not be conf	igured autor	natically. For	each netw	ork to be used	l, make sure
Client Access Point	and notivol	10.00	locica, and more type an ada	033.				
Select Storage								
Replicate Registry Settings			Networks	Address	100	0	-	
Confirmation		M	192.168.0.0/24	192 .	108 .	υ.	4	
Configure High Availability								
Summary	l	_	_	_	_	_	_	_
	More abo	ut how	clients access a clustered s	service or ap	oplication			
					< <u>P</u> revious	<u>N</u> e	ext >	Cancel

5. Choose the shared drive you created for centralized storage and click Next.

🤯 High Availability V	/izard	×
Select St	orage	
Before You Begin Select Service or Application	Select only the storage volumes that you want to assign to this service or application. You can assign additional storage to this service or application after you complete this wizard.	
Select Service	Name Status	
Client Access Point	🗹 🗉 🖙 FlexiCaptureStorage 💿 Online	
Select Storage		
Replicate Registry Settings		
Confirmation		
Configure High Availability		
Summary		
	< <u>P</u> revious <u>N</u> ext > Cancel	

- 6. Specify the registry key:
- $HKEY_LOCAL_MACHINE \ SOFTWARE \ ABBYY \ FlexiCapture \ 10.0-for\ x32\ systems$ •

• HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ABBYY\FlexiCapture\10.0 - for x64 systems (see the screenshot below)

🧱 High Availability V	/izard	×
Replicate	Registry Settings	
Before You Begin Select Service or Application	Programs or services may store data in the registry. Therefore, it is important to have this data available on the node on which they are running. Specify the registry keys under HKEY_LOCAL_MACHINE that should be replicated to all nodes in the cluster.	
Select Service	SOFTWARE\Wow6432Node\ABBYY\FlexiCapture\10.0	
Client Access Point		
Select Storage		
Replicate Registry Settings		
Confirmation		
Configure High Availability	Add Modify Remove	
Summary		
	< <u>P</u> revious <u>N</u> ext > Cancel	

7. Click **Next** to confirm the settings.

🦣 High Availability V	/izard		×
Confirmat	lion		
Before You Begin Select Service or Application	You are ready to configure h	nigh availability for a Generic Service.	-
Select Service	Service:	ABBYY FlexiCapture 10.0 Processing Server	1
Client Access Point	Storage:	FlexiCaptureStorage	
Select Storage	Network Name:	FC10ProcServer	
Replicate Registry	IP Address: 192.168.0.2		
Settings	Registry Key:	SOFTWARE\Wow6432Node\ABBYY\FlexiCapture\10.0	
Configure High Availability	Parameters:	Files (x86)\ABBYY FlexiCapture 10.0 Servers\FlexiBRSvc.exe \service -stationType:server - inifile:\\fc10procserver\ClusterTemp\ServerSettings.xml	
Summary	J To continue, click Next.	<u>•</u>]
		< Previous Next > Cancel]

8. To complete the creation of the service in the cluster, click **Finish**.

🧱 High Availability W	/izard		×
Summary			
Before You Begin	High availability wa	s successfully configured for the service or application.	
Select Service or Application			
Select Service			_
Client Access Point	Service:	ABBYY FlexiCapture 10.0 Processing Server (ABBYY.ProcServer.FlexiCapture.10.0)	
Select Storage	Storage:	FlexiCaptureStorage	
Replicate Registry	Network Name:	FC10ProcServer	
Settings	IP Address:	192.168.0.2	
Confirmation	Registry Key:	SOFTWARE\Wow6432Node\ABBYY\FlexiCapture\10.0	
Configure High Availability	Parameters:	Files (x86)\ABBYY FlexiCapture 10.0 Servers\FlexiBRSvc.exe \service -stationType:server - inifile:\\fc10procserver\ClusterTemp\ServerSettings.xml	•
Summary	To view the report created I To close this wizard, click F	by the wizard, click View Report. <u>Vi</u> ew Report	
		<u> </u>	

Creating a Shared Folder for the Processing Server Service

The cluster nodes Node 1 and Node 2 need a shared folder where to store their temporary files. To create a shared folder for the nodes, right-click the service you created (in this case FC10ProcServer) and choose Add a Shared Folder. In this example, the shared drive H:\ was used (this drive was earlier created at the Storage computer). In the Location field, enter the name of the folder you want to share, for example H:\Cluster Temp.

💏 Provision a Shared Folder	Wizard (FC10ProcServ	ver)			
Shared Folder	Location				
Steps:	Specify the folder that yo	u want to share. On	a volume with appropri	ate characteristics	
Shared Folder Location	and space, select an exi-	sting folder or create	a new one. If an appropri	priate volume does	
NTFS Permissions	not exist, click Provision	Storage and create	one.		
Share Protocols	Location:				
Review Settings and Create	H:\ClusterTemp			Browse	
Confirmation					
	<u>Available volumes:</u>		1		
	Volume	Capacity	Free Space	Type	
	New Volume (H.)	1,021 MB	300 MD	Simple	
	•				
	- Details				
	Volume: New Volur	ne (H:)			
	Shadow copies: Ur	hknown			
	Indexing: Unknown	1			
	Highly available serve	er: FC10PROCSEF	RVER		
			Pi	rovision <u>S</u> torage	
			< <u>P</u> re	vious <u>N</u> ext >	Cancel

2. To edit access permissions, select the Yes, change NTFS permissions option and click the Edit Permissions... button.

👼 Provision a Shared Folder	Wizard (FC10ProcServer)	
NTFS Permiss	sions	
Steps:	Count NTEC construction to control how in thick of your and county account in failure	
Shared Folder Location	locally. For network access to a shared folder, the more restrictive of the NTFS permissions and the share permissions configured for the share pertocol determine the	
NTFS Permissions	level of access granted to users and groups.	
Share Protocols		
Review Settings and Create Share	P <u>a</u> th:	
Confirmation	H:\ClusterTemp	
	Do you want to change the NTFS permissions for this folder?	
	O No. do not change NTFS permissions	
	• Yes, change NTFS permissions	
	To change NTFS permissions, click Edit Permissions.	
	Edit Permissions	
	For more information about sharing and permissions, see <u>Managing Permissions</u> for <u>Shared Folders</u> .	
	< <u>P</u> revious <u>N</u> ext >	Cancel

3. To add new users, click Add... The Select Users, Computers, Service Accounts, or Groups dialog box will open. Add the two previously created users from the cluster2008r2 domain and click OK.

Select Users, Computers, Service Accounts, or Groups	? ×
Select this object type:	
Users, Groups, or Built-in security principals	Object Types
From this location:	
cluster2008r2.ru	Locations
Enter the object names to select (<u>examples</u>):	
node1admin (node1admin@cluster2008r2.ru); node2admin (node2admin@cluster2008r2.ru)	Check Names
Advanced OK	Cancel

4. Give full access permissions for the folder \\FC10ProcServer\ClusterTemp to the users node1admin and node2admin.

Permissions for ClusterTemp		×
Security		
Group or user names:		
SYSTEM		<u> </u>
Administrators (NODE2\Admin	nistrators)	
👗 node1admin (node1admin@c	luster2008r2.ru)	
📕 👗 node2admin (node2admin@c	luster2008r2.ru)	
Users (NODE2\Users)		
	A <u>d</u> d	<u>R</u> emove
Permissions for node 1admin	Allow	Deny
Full Control		
Modify	\checkmark	
Read & Execute		
List Folder Contents		
Read		
For special permissions or advance	ed settings	
click Advanced.		Advanced
Learn about access control and pe	emissions	
	_	
OK	Cancel	Apply

5. Choose SMB as the protocol over which users will access the folder.

novision a Shared Folder	Wizard (FC10ProcServer)
Share Protoco	ls
Steps:	Select each protocol over which users can access this shared folder
Shared Folder Location	
NTFS Permissions	✓ SMB
Share Protocols	Share name:
SMB Settings	ClusterTemp
SMB Permissions	Share path:
DFS Namespace Publishing	\\FC10PROCSERVER\ClusterTemp
Review Settings and Create Share	□ N <u>E</u> S
Confirmation	Share name:
	Sha <u>r</u> e path:
	O Services for NFS is not installed on this server.
	For more information about creating highly available share, see <u>Cluster</u> <u>Administrator Help</u> .
	< <u>P</u> revious <u>N</u> ext > Cancel

6. In the Description field, provide a description for the folder which will help you with support and maintenance in the future. Click the **Advanced...** button to edit access permissions for SMB-based access.

📸 Provision a Shared Folder	Wizard (FC10ProcServer)	
SMB Settings		
Steps:	Constitution while allowed folders to be used by strate according to use the CMD	
Shared Folder Location	protocol. You can use the description to add comments about how the shared folder	
NTFS Permissions	is used. You can also control advanced SMB settings including the maximum connections allowed, access-based enumeration, and offline availability.	
Share Protocols		
SMB Settings	Share path:	
SMB Permissions	\\FC10PROCSERVER\ClusterTemp	
DFS Namespace Publishing	Description:	
Review Settings and Create Share	This is temporary folder for FlexiCapture 10 Processing Servers operating in Failover Cluster FC10ProcServer	
Confirmation		
	Advanced settings	
	User limit: Maximum allowed	
	Access-based enumeration: Disabled	
	Onine settings. Jocected nes and programs available on inte	
	To change these settings, click Advanced. Advanced	
	< Previous Next >	Cancel

 Click Add... The Permissions for ClusterTemp window will open. Add the two previously created users from the cluster2008r2 domain and click OK. Give the users node1admin and node2admin full access permissions for \\FC10ProcServer\ClusterTemp.

🕌 Permissions for Cl	usterTemp			X
Security				
<u>Group or user names:</u>				
Street Everyone				
📕 🏅 node1admin (no	de1admin@clu	uster2008r2.ru)		
A node2admin (node2admin@cluster2008r2.ru)				
	[A <u>d</u> d	<u>R</u> emove]
Permissions for node 1	admin	Allow	Deny	
Full Control		\checkmark		
Change				
Read				
Learn about access control and permissions				
	ОК	Cancel	Apply	

8. If you want to publish the SMB share to a DFS namespace, select the corresponding option and click Next.

💀 Provision a Shared Folder Wizard (FC10ProcServer)				
DFS Namespa	ace Publishing			
Steps:	You can publish an SMB share to a DFS namespace by specifying an existing			
Shared Folder Location	namespace and the folders you want to create in the namespace. The last folder in the			
NTFS Permissions	nancapace pair will have the new anale as a folder target.			
Share Protocols	Dublish the SMR share to a DES parenage			
SMB Settings				
SMB Permissions	Parent <u>f</u> older in namespace:			
DFS Namespace Publishing	Example: \\Domain\Name\Folder			
Review Settings and Create Share				
Confirmation	New folder name:			
	J Example: Name or NewFolder\Name			
	Preview of namespace path:			
	For more information about DFS Namespaces, see <u>Namespaces</u> .			
	< <u>P</u> revious <u>N</u> ext >	Cancel		

9. Check your settings and click **Create** to create the shared folder.

novision a Shared Folder Wizard (FC10ProcServer)

Review Setting	gs and Create Share
Steps:	To provision a shared folder with the following settings, click Create. To change any of
Shared Folder Location	these setting, click Previous or select the appropriate page in the orientation pane.
NTFS Permissions	
Share Protocols	Share folder settings:
SMB Settings	Share on FC10ProcServer
SMB Permissions	NTFS permissions:
DFS Namespace Publishing	CLUSTER2008R2\node1admin = Allow:: Full Control (explicit)
Review Settings and Create Share	CLUSTER2008R2\node2admin = Allow:: Full Control (explicit) BUILTIN\Administrators = Allow:: Full Control (inherited) NT AUTHORITY\SYSTEM = Allow:: Full Control (inherited)
Confirmation	CREATOR OWNER = Allow:: (inherited) BUILTIN\Users = Allow:: Read & Execute List Folder Contents BUILTIN\Users = Allow:: Create Folders / Append Data (inherited BUILTIN\Users = Allow:: Create Files / Write Data (inherited) Share over SMB: ClusterTemp Description: This is temporary folder for FlexiCapture 10 Processin User limit: Maximum allowed Offline setting: Selected files and programs available offline SMB permissions: Everyone = Allow:: Read CLUSTER2008R2\node1admin = Allow:: Full Control CLUSTER2008R2\node2admin = Allow:: Full Control
	< <u>P</u> revious Cr <u>e</u> ate Cancel

10. Click **Close** to complete the creation of the shared folder.

🙀 Provision a Shared Folder	Wizard (FC10ProcServer)		
Confirmation			
Steps:			
Shared Folder Location	You have successfully completed the Provisi	on a Shared Folder Wizard	
NTFS Permissions			
Share Protocols	Taske From 1		
SMB Settings			1
SMB Permissions	lask O Share over SMB	Success	·
DFS Namespace Publishing		000003	
Review Settings and Create Share			
Confirmation			
			Class
			Lose

Setting Up the Cluster Nodes

Next you must set up the cluster nodes Node1 and Node2. The instructions below apply to Node1. The other nodes are set up identically.

Setting Up the ABBYY FlexiCapture 10.0 Processing Server Local Service

To set up the service, complete the following steps:

nodes in the cluster.

- Enter the following command in the command line (cmd.exe): sc config ABBYY.ProcServer.FlexiCapture.10.0 binpath= "%systemdrive%\Program Files (x86)\ABBYY FlexiCapture 10.0 Servers\FlexiBRSvc.exe \service -stationType:server -inifile:\\fc10procserver\ClusterTemp\ServerSettings.xml" This command changes the default settings for the process ABBYY.ProcServer.FlexiCapture.10.0, which is launched from the file "%systemdrive% \ Program Files (x86) \ ABBYY FlexiCapture 10.0 Servers \ FlexiBRSvc.exe", and sets the path to the following file that contains the settings for the Processing Server: \ \ fc10procserver \ ClusterTemp \ ServerSettings.xml. Now the file ServerSettings.xml will be stored in the shared folder and will be available to all
- Find the service ABBYY FlexiCapture 10.0 Processing Server in the list of services (Start > Administrative Tools > Services). Right-click the service and choose Properties.

Q Services					
Fle Action View	Help				
	🧟 🛃 🔢 🖬 🕨 🔳 🕕				
🤹 Services (Local)	🔅 Services (Local)				
			1		
	ABBYY FlexiCapture 10.0 Processing	Name A	Description	Status	Startup Tyj
	Server	ABBYY FlexiCapture 10.0 Licensing Service	ABBYY Flex	Started	Automatic
	Stop the service	ABBYY FlexiCapture 10.0 Processing Server	ABBYY Flex	Start	al
	Restart the service	Abbit Flexicapture 10.0 Processing Station	Abbit Flex	Stop	natic
		Application Experience	Processes	Pause	
	Description:	Application Host Helper Service	Provides a	Resume	nauc
	A3BYY FlexiCapture Processing Server	Application Information	Determines	Restart	al
	service	Application Laver Cateway Service	Provides cu		
		Application Management	Processes in 1	All LONS	
		ASP NET State Service	Provides su	Refresh	a
		Background Intelligent Transfer Service	Transfers fi	Properti	a a
		Base Filtering Engine	The Base Fill	rroperu	matic
		Certificate Propagation	Copies use	Help	al
		Cluster Service	Enables ser	Started	Automatic
		CNG Key Isolation	The CNG k		Manual
		COM+ Event System	Supports S	Started	Automatic
		COM+ System Application	Manages t		Manual
		Computer Browser	Maintains a		Disabled
		🔍 Credential Manager	Provides se		Manual
		Cryptographic Services	Provides fo	Started	Automatic
		🔍 DCOM Server Process Launcher	The DCOM	Started	Automatic
		🔍 Desklop Window Manager Session Manager	Provides D	Started	Automatic
		🔍 DFS Namespace	Enables yo	Started	Automatic
		CFS Replication	Enables yo…	Started	Automatic 🚽
		<u> </u>			Þ
	Extended Standard				
Opens the properties dia	alog box for the current selection.				

3. Make sure that the parameters you typed in the command line are displayed in the Path to executable field.

ABBYY FlexiCapture	e 10 Processing Server Properties (Local Comput 🔜			
General Log On	Recovery Dependencies			
Service name:	ABBYY.ProcServer.FlexiCapture.10.0			
Display name:	ABBYY FlexiCapture 10 Processing Server			
Description:	n: ABBYY FlexiCapture Processing Server service			
Path to executable stationType:serve	e: rf-inifile:\\fc10procserver\ClusterTemp\ServerSettings.xml			
Startup typ <u>e</u> :	Automatic			
Help me configure service startup options.				
Service status: Stopped				
<u>Start</u> Stop <u>P</u> ause <u>R</u> esume				
You can specify the start parameters that apply when you start the service from here.				
Start parameters:				
	OK Cancel Apply			

4. Go to the **Log On** tab. For Node1, change the user NetworkService to node1admin. For Node2, change the user NetworkService to to node2admin. Click **OK**.

ABBYY FlexiCapture 10.0	Processing Serve	r Properties (l	.ocal Com 🗴		
General Log On Recove	ery Dependencies	1			
Log on as:					
C Local System account Allow service to int	eract with desktop				
Inis account:	node1admin@cluste	r2008r2.ru	Browse		
Password:	•••••	•			
Confirm password:	•••••	•			
Help me configure user account log on options.					
	ОК	Cancel	Apply		

Changing the variable %appdata%

The service ABBYY.ProcServer.FlexiCapture.10.0 creates and stores session data in the location referenced by the variable %appdata%. The users node1admin and node2admin must have the same folder specified for %appdata% in order for the service to switch between cluster nodes.

Important! For the user cluster2008r2\node1admin, the variable %appdata% must be changed on Node1. For the user cluster2008r2\node2admin, the variable %appdata% must be changed on Node2.

You can change the variable %appdata% through the command line or directly in the registry.

To change %appdata% through the command line:

- Enter the following command in the command line (cmd.exe): REG ADD "HKCU\Software\Microsoft\Windows\CurrentVersion\Explorer\User Shell Folders" /v AppData /t REG_EXPAND_SZ /d \\FC10ProcServer\ClusterTemp, where \\FC10ProcServer\ClusterTemp should be replaced wit the path to your folder.
- 2. Confirm that you want to change the AppData folder if it already exists.
- 3. Repeat steps 1 and 2 for Node2.

To change %appdata% directly:

- 1. Find the key HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\User Shell Folders in the registry.
- 2. If it doesn't already exist, create a REG_EXPAND_SZ type variable with the name AppData in this key. Set its value to \\FC10ProcServer\ClusterTemp.
- 3. Repeat steps 1 and 2 for Node2.

Connecting the Processing Server Monitor

To connect the Processing Server Monitor, choose a node to which the FC10ProcServer service will belong, then open the Processing Server Monitor on any computer in your LAN and add the clustered Processing Server.

Add processing server		<u>_ 0 ×</u>
Enter processing server locati	on:	
Network host:		
fc10procserver		
O <u>L</u> ocal host		
	ОК	Cancel
		/

Setting Up the Licensing Server

The Licensing Server service can be added to the cluster identically to the Processing Server service.

You can use separate serial numbers for each node or use a license with the same serial number for all nodes.

The stations must be restarted after the service switches between the cluster nodes. The Processing Server stops and automatically starts in 5 minutes. The remote stations continue working with their tickets if the same serial number is used for all of the cluster nodes.

A separate log file with page use statistics is created on each cluster node in the folder %alluserspro-

file%\ABBYY\FlexiCapture\10.0\Licenses. To obtain summary statistics, the values from all of the nodes must be added.

Setting Up the Application Server (and clustering the Administration and Monitoring Console and Web Data Verification Station)

The ABBYY FlexiCapture 10 Application Server can be deployed on an NLB cluster to balance workloads and speed up query processing.

Detailed information about Network Load Balancing technology can be found on the Microsoft website.

Setting Up an NLB Cluster for the Application Server

In this section, you will find step-by-step instructions for setting up an NLB cluster for the Application Server.

The Administration and Monitoring Console and Web Data Verification Station are clustered together with the Application Server.

A detailed overview of NLB cluster settings can be found on the Microsoft website.

Note. The addresses, computer names, domain names, etc. used below are not mandatory and may be changed by the administrator.

Setting Up the Cluster

To set up the cluster, complete the following steps:

- 1. Install the Application Server on each cluster node. The database, File Storage Folder, Processing Server, Licensing Server, and Application Server clients must be located on a different computer, which must be accessible to all nodes in the cluster.
- 2. In Windows Features, add Network Load Balancing to each node in the cluster. This can be done by clicking the Add Features link in the main window of the Server Manager (Start > Administrative Tools > Server Manager).
- 3. Assign an IP address to the cluster via which the cluster can access the nodes as a unit. (This is a virtual cluster address.)

If a single network interface is used for client/cluster traffic and other network traffic on the nodes (as is usual in Multicast mode), each host in the cluster must have a dedicated IP address (in addition to the virtual address, which is common to all cluster nodes). A host will use its dedicated IP address instead of the virtual cluster address for incoming connections to the cluster nodes over Telnet, SSH and other protocols, and for outbound connections from the cluster nodes.

All cluster nodes must receive all incoming cluster traffic. The balancing algorithm determines which cluster node should respond to a given query. The choice between Unicast and Multicast depends on your network configuration.

4. You can use the Performance Monitor for IIS (accessible through the toolbar of the Microsoft Management Console (MMC)) to monitor node activity. In the Web Service object, for each node, add the ISAPI Extension Requests/sec counter for Default Web Site (this is the location of the Application Server in the IIS).

Selecting the Unicast or Multicast Method of Distributing Incoming Requests

The choice between the Unicast and Multicast methods depends on your network configuration. A detailed description of the two methods can be found on the Microsoft website.

Balancing Workloads in the Cluster, Setting Up Hosts

You can set up cluster traffic to be balanced and filtered by ports.

ABBYY FlexiCapture 10 requires the TCP protocol for its operation. There are two filtering modes: Single Host and Multiple Host.

Single host

This mode provides fault tolerance, but does not allow load balancing. Only one cluster node is active at a time.

Multiple host

Traffic from a predefined range of ports is handled by the node with the highest priority in the cluster. All cluster nodes function simultaneously.

This mode provides both workload balancing and fault tolerance.

Traffic from a predefined range of ports is balanced among nodes. You can also set the Affinity parameter to:

- None (not recommended) If this option is selected, multiple connections (TCP sessions) from a single client can be handled by different nodes.
- Single (recommended) If this option is selected, all connections from a single client are handled by one node.
- Network (Class C) (recommended) If this option is selected, all queries from the TCP/IP Class C address space are handled by one node. This may be necessary if there is a proxy server between the client and the cluster.

Setting Up the Application Server

Complete the following steps to set up the Application Server:

- 1. Create a shared folder that can be accessed by all of the nodes in the cluster.
- 2. Install Microsoft SQL Server. Microsoft SQL Server must be available to all cluster nodes.
- 3. Install the Application Sever on all cluster nodes.
- 4. On the first cluster node, run the Administration and Monitoring Console and create a database and specify a shared storage.
- 5. On each of the remaining cluster nodes, run the Administration and Monitoring Console and connect to the database you created.

Important! For this operation, SQL authentication must be used.

- 6. On the SQL Server, give full access permissions for the database to all users on all cluster nodes under whose accounts IIS is running (the World Wide Web Publishing Service must be running in the service list). Permissions for the first node are given automatically when the database is created, other permissions must be given manually. By default, IIS runs under the user Network Service. In this case, assuming IIS is running on computer NodeN, you must give full access permissions to the user DomainName\NodeN\$ on the SQL Server.
- 7. If the Application Server is not unavailable in the cluster, but PING requests still reach the cluster, check if IIS is available in the cluster. To do this check, place a static *.html file in the folder %systemdrive%\inetpub\wwwroot (usually this folder already contains an iisstart.htm file) and open this file in a browser: \\ClusterAddress\iisstart.htm. Pay attention to the proxy server settings in your browser when opening the file.

Running Server Application Clients

We recommend that you place all cluster nodes in one domain and run Application Server clients under domain user accounts.

Running Application Server clients under local user accounts is not recommended for the following reason.

In the usual (i.e. non-clustered) configuration of the Application Server, the following authentication method may be used: on the computer where the Application Server is installed, a local user is created, with its own user name and password; now any client may connect to the Application Server under this user's account.

In a clustered configuration, the Application Server that processes client requests may be placed on different computers, and the actual user name will change accordingly: on the computer node1, the user name will be node1\User, while on the computer node2, the user name will be node2\User. This may disrupt the operation of the system.

Running Application Server clients under domain users avoids this problem.

To connect clients on remote computers which are not in the domain, you can use basic authentication and a user account in the domain to which the cluster belongs. Suppose the clustered Application Server is in the cluster domain and the computer of the verification operator is not in this domain. All you need to do is create in the cluster domain an account for the user cluster/VerificationOperator and communicate the account name and password to the verification operator. Now the verification operator will be able to connect to the Application Server using this account and basic authentication on the Verification.

Note. To use basic authentication for clients, be sure to enable basic authentication for the folder FlexiCapture10\Server in IIS. Otherwise, users will get HTTP 401 error when attempting to connect.

Technical Support

Should you have any questions regarding the installation and use of ABBYY FlexiCapture 10, please contact the ABBYY technical support service or the technical support service of the ABBYY partner from which you obtained the software. For contact details, see the **Technical Support** section of the ABBYY website at **www.abbyy.com**.