



ABBYY®

Recognition Server 2.0

Server-based OCR and PDF Conversion Solution



ABBYY Recognition Server is a robust and powerful server-based solution for automating optical character recognition and PDF conversion of medium and large volumes of documents in workgroups and enterprises.

ABBYY Recognition Server can be used both as a turnkey out-of-the-box solution and as an integral part of document capture and document sorting systems and back-end applications.

ABBYY Recognition Server provides:

■ High quality OCR in 191 languages

Award-winning ABBYY OCR technology delivers unprecedented recognition accuracy for any kind of printed documents.

■ Unattended server-based operation

The whole document conversion process is performed in unattended mode on the server, and administered centrally.

■ Fault tolerance

Designed as a highly robust solution, Recognition Server ensures ongoing system stability and data safety.

■ Unprecedented scalability

With its ability to use resources of additional computers and CPUs during processing, Recognition Server can convert virtually any volume of documents within the required timeframe. There is no need for complex system configuration – it takes just a few minutes to extend the processing power by plugging additional stations into the system.

■ Flexible integration tools

Integration with scanners, MFPs, imaging applications, and backend systems has never been easier. Recognition Server can communicate with other systems in a number of ways: via “watched” folders, e-mail, COM-compatible API or Web Service API. It has all the features to be used as an OCR Web Service in the Service-Oriented Architecture (SOA) environment.

ABBYY Recognition Server is especially beneficial in such tasks as:

■ Conversion of a large number of documents into full-text searchable formats (e.g. conversion of archives or records creation)

ABBYY Recognition Server 2.0 streamlines a centralized document capture process by automating OCR and conversion of images to a variety of formats suitable for archiving, and preservation, such as PDF, PDF/A, TIFF or RTF. Due to its scalable architecture, it can cope with any volumes of documents, processing them during scheduled hours or round-the-clock. Recognition Server delivers very accurate results, thanks to the built-in ABBYY award-winning OCR technology, automatic quality control features, and tools for verifying low-quality pages.

■ Deployment of a robust and cost-efficient solution for everyday document recognition and conversion in workgroups and enterprises

ABBYY Recognition Server 2.0 is ideal for use as a centralized OCR service for everyday OCR needs of company employees. Once installed on a server in the organization’s headquarters, Recognition Server will deliver OCR functions 24/7 to all the employees, including even those in the remote company branches and working at home over the Internet. Apart from that, it can be used directly from the network scanners and MFPs. Recognition Server is extremely easy to use: all the conversion settings are pre-defined by the administrator, so it doesn’t require users to have an OCR background.

■ Low-cost and resource-efficient integration of an OCR module with back-end server-based systems

ABBYY Recognition Server 2.0 can act as a scalable OCR component for document/record/knowledge management and archiving systems. Compared to conventional OCR SDKs, it significantly saves integration effort and cost by providing developers with high-level access to ready-made functionality for document recognition and PDF conversion through its API. Recognition Server will empower the external system with a full-fledged document conversion functionality, while taking care of all interim operations such as document queue management, paralleling recognition tasks, and load balancing among CPUs and stations.

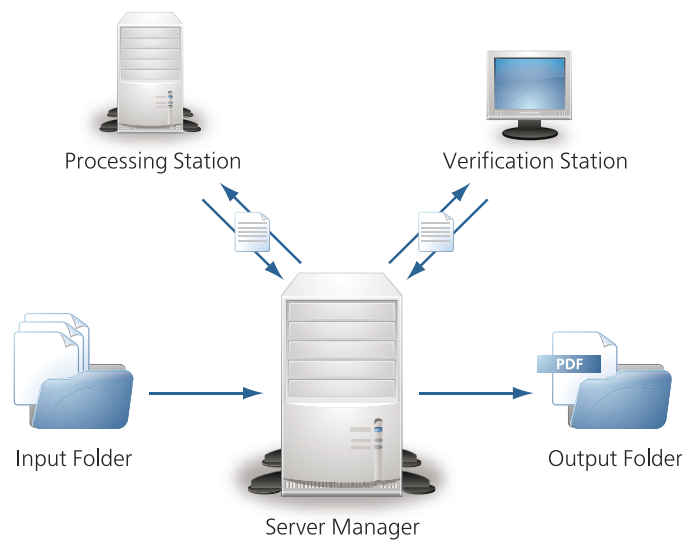
Overview

ABBYY Recognition Server consists of the following main components: the Server Manager, the Processing Station, the Verification Station, and the Remote Administration Console.

- **Server Manager** – The main component. It works as a Windows® service, manages licenses and all processing options, queues the files to be processed, distributes the files among the Processing Stations and the Verification Stations, and delivers the output documents after processing. It also coordinates the work of other components (Processing Stations and Verification Stations) and interacts with the Remote Administration Console. The Server Manager does not perform recognition – this task is performed by the Processing Stations.
- **Processing Station** – A Windows service that directly performs recognition. It processes files received from the Server Manager. Recognition Server allows you to connect several Processing Stations to one Server Manager in order to increase processing speed and maximize throughput. The Server Manager will distribute the workload among the CPUs of the Processing Stations evenly.
- **Verification Station** – A client station which allows you to proofread the recognition results. The Verification Station automatically receives the recognized pages that require verification from the Server Manager. It is possible to connect several Verification Stations to one Server Manager, in order to speed up the verification process.
- **Remote Administration Console** – A Microsoft® Management Console snap-in that provides a common administration interface for configuration and monitoring of Recognition Server.

Recognition Server components can be installed on the same or on different computers in the local area network.

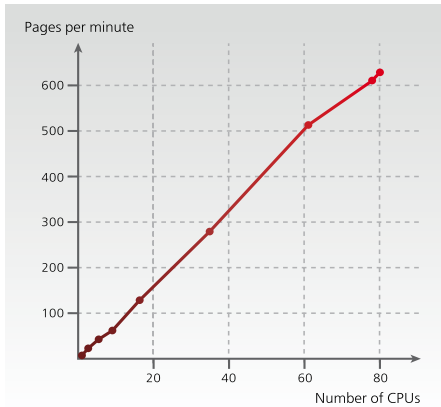
Recognition Server processes each image file according to a **workflow** – a set of processing parameters predefined by the administrator. Recognition Server can handle several workflows with different parameters. Each workflow corresponds to a unique input source (a folder or a mailbox). All the images that appear in the source folder/mailbox are processed using the parameters of the corresponding workflow. If several workflows are set up, ABBYY Recognition Server will process files from all the workflows simultaneously, within the single queue. The files will be ordered in the queue according to their creation time and priorities.



Document processing in Recognition Server consists of four stages:

- 1. Import of images.** At this stage, the Server Manager component imports images from the Input source (shared folder, FTP folder, or mailbox folder) and arranges them in a queue for processing.
- 2. Recognition.** The first image file from the queue is routed to a Processing Station for recognition. If there are several Processing Stations in the system, the Server Manager will distribute the files from the queue among these Processing Stations evenly. When the Processing Station has finished processing a file, it returns the recognized file to the Server Manager and gets the next file from the queue.
- 3. Verification (optional).** If verification is turned on in the workflow settings, pages that require verification will be queued for verification once they are recognized. The Server Manager will route the queued pages to available Verification Stations. After the verification is done, the pages will be returned to the Server Manager.
- 4. Publication.** After all the pages of the document are recognized and (if required) verified, the Server Manager will deliver the output document to its destination (which can be a network folder, a SharePoint® library, or an e-mail address).

Scalability



One Server Manager can manage tens of Processing Stations connected to it and effectively distribute the workload among these Processing Stations. This makes the whole system highly scalable to meet large-volume processing demands. By connecting dozens of Processing Stations, you can increase the processing speed up to several hundreds of pages per minute.*

* The picture shows the speed increase according to ABBYY's internal testing results. The system performance may vary depending on the complexity and quality of the images, as well as on the hardware of the server and the stations and the network configuration.

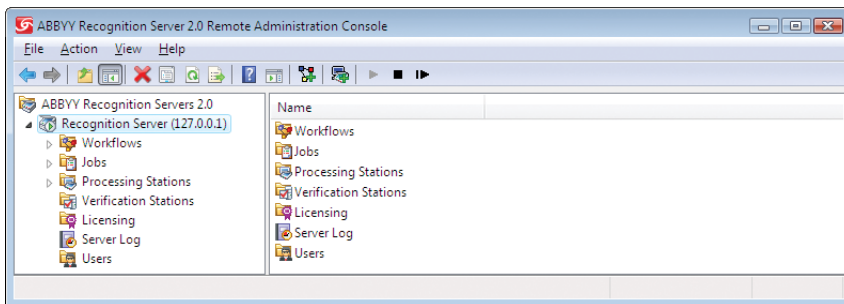
Fault tolerance

As ABBYY Recognition Server 2.0 is designed to run unattended, it has special fault tolerance features that ensure robustness of the system:

- The main components, the Server Manager and the Processing Stations work as Windows services and start automatically at Windows startup. The Server Manager periodically checks connection with the stations. If connection is lost, it will be automatically re-established.
- Documents are processed so that no data is lost in the case of a system failure. If a station processing the document experiences a failure, the document will be automatically re-routed to another available station or remain in the queue until there is an available station.
- All the events are logged by the system, so that the administrator can backtrace errors.

Administration

The administration of Recognition Server is performed via a convenient administration interface based on the Microsoft Management Console. It allows the administrator to configure the system and monitor its activity: create and manage workflows, manage licenses, stations, and user permissions, manage the processing queue and view the log files.



The **priority management** and advanced **scheduling** features allow the administrator to control the order in which the documents are processed and use the stations' hardware resources efficiently by scheduling OCR for night hours or weekends.

Integration

ABBYY Recognition Server 2.0 provides various means of integration with other front-end and back-end systems, as well as with network scanners and MFPs:

COM-based API – an open COM-compatible programming interface that enables Recognition Server to exchange image files and recognition results with other applications.

Web Service API – a Web-based programming interface that allows for cross-platform integrations and integration with remote applications over HTTP protocol, as well as using Recognition Server in a Service-Oriented (SOA) environment.

XML tickets – a way to customize processing parameters for individual files using a special XML file (so-called "XML ticket") which can be generated programmatically by the client application.

Functionality*

Input

- **Conversion of all popular image formats** such as JPEG, TIFF, BMP, PDF, DjVu, etc;
- **Network folder watching** – import of images from a “watched” network folder, including nested subfolders;
- **FTP folder watching** – import of images from a “watched” FTP folder;
- **Exchange mailbox watching** – receives images by e-mail from users or directly from network scanners and MFPs;

Processing

- **Accurate OCR** – recognizes documents in 191 languages (including Chinese, Japanese, Korean, Hebrew, and Thai), supports multilingual documents;
- **Barcode recognition** – supports most popular 1D and 2D barcodes, recognizes barcodes at any angle on the page;
- **Document separation** – provides several document separation methods for documents scanned in a batch. Supports separation by fixed number of pages, blank separator pages, barcode pages;
- **Image enhancement** – provides a set of automatic image enhancement functions, such as splitting facing pages (for book scans), converting colored images to black and white, correcting skew, and detecting image orientation.
- **Adjustable recognition speed** – the recognition process can be adjusted in favor of speed or quality.
- **Scheduled processing** – a schedule can be defined for each input source, so that different kinds of documents can be processed at different times.

Quality control

- **Automatic quality control** – allows the administrator to set a threshold for recognition accuracy, so that documents with poor-quality text will not be exported, but rather stored in a separate folder for special treatment;
- **Verification Station** – a client station for proofreading recognition results. Verification can be enabled for all pages or it can be based on the accuracy threshold. Verification permissions management is supported.

Output

- **Multiple output formats** – outputs documents in various formats including Searchable PDF, PDF/A, RTF, Microsoft Office 2007 XML formats (DOCX, XLSX), as well as in image formats: TIFF, JPEG, JPEG 2000, and Image PDF. Documents can be converted to several different formats at a single pass;
- **Advanced PDF creation features** – supports creation of PDF files of various types:
 - **PDF compression** – the enhanced compression algorithm reduces PDF file size significantly, while preserving the image quality;
 - **Secure PDF files** – it is possible to restrict editing, copying, and printing of the content of output PDF documents, as well as to set a password for opening created PDF files;
 - **Tagged PDF files** – supports creation of Tagged PDF files that can be displayed properly on handheld devices and which are accessible for screen reading programs;
 - **PDF files optimized for Web** – created PDF documents are optimized for downloading from the Internet and viewing in a Web browser;
 - **PDF/A output** – saves files in PDF/A-1b and PDF/A-1a formats for long-term preservation.
- **Customizable output file naming** – output file names can be generated according to a predefined rule, for example, using barcode values, date and time, etc.;
- **Publishing output documents to folder** – saves output documents to a network folder, preserving the original subfolder structure;
- **Uploading output documents to Microsoft Office SharePoint Server** – processed documents can be automatically stored in the SharePoint Server document library;
- **Sending output documents by e-mail** – processed documents can be sent by e-mail to the same user who submitted the image for OCR, or to any other specified addresses.

*Some of the functionality may be available as add-on modules. Please contact the ABBYY office or ABBYY authorized partner in your region for information about the licensing policy.

Specifications

System requirements

- PC with a 500 MHz or higher processor
- Operating system: Microsoft Windows Server 2008, Windows Vista®, Windows Server 2003, Windows XP, Windows 2000
- 128 MB of RAM and an additional 100 MB for each recognition process
- 700 MB of hard-disk space
- Microsoft .NET Framework 1.1 or later
- Microsoft Outlook 2000 or later (for processing and sending e-mails)

Recognition languages

- **37 main languages with dictionary support:** Armenian (Eastern), Armenian (Grabar), Armenian (Western), Bashkir, Bulgarian, Catalan, Croatian, Czech, Danish, Dutch, Dutch (Belgian), English, Estonian, Finnish, French, German, German (new spelling), Greek, Hungarian, Indonesian, Italian, Latvian, Lithuanian, Norwegian (Bokmal), Norwegian (Nynorsk), Polish, Portuguese, Portuguese (Brazilian), Romanian, Russian, Slovak, Slovenian, Spanish, Swedish, Tatar, Turkish, and Ukrainian
- **133 additional languages:** Abkhaz, Adyge, Afrikaans, Agul, Albanian, Altai, Avar, Aymara, Azerbaijani (Cyrillic), Azerbaijani (Latin), Basque, Belarusian, Bemba, Blackfoot, Breton, Bugotu, Buryat, Cebuano, Chamorro, Chechen, Chukchee, Chuvash, Corsican, Crimean Tatar, Crow, Dargwa, Dungan, Eskimo (Cyrillic), Eskimo (Latin), Even, Evenki, Faroese, Fijian, Frisian, Friulian, Gagauz, Galician, Ganda, German (Luxembourg), Guarani, Hani, Hausa, Hawaiian, Icelandic, Indonesian, Ingush, Irish, Jingpo, Kabardian, Kalmyk, Karachay-balkar, Karakalpak, Kasub, Kawa, Kazakh, Khakass, Khanty, Kikuyu, Kirghiz, Kongo, Koryak, Kpelle, Kumyk, Kurdish, Lak, Latin, Lezgi, Luba, Macedonian, Malagasy, Malay (Malaysian), Malinke, Maltese, Mansi, Maori, Mari, Maya, Miao, Minangkabau, Mohawk, Moldavian, Mongol, Mordvin, Nahuatl, Nenets, Nivkh, Nogay, Nyanja, Ojibway, Ossetian, Papiamentu, Provençal, Quechua, Rhaeto-Romanic, Romany, Rundi, Russian (Old Spelling), Rwanda, Sami (Lappish), Samoan, Scottish Gaelic, Selkup, Serbian (Cyrillic), Serbian (Latin), Shona, Sioux (Dakota), Somali, Sorbian, Sotho, Sunda, Swahili, Swazi, Tabasaran, Tagalog, Tahitian, Tajik, Tok Pisin, Tongan, Tswana, Tun, Turkmen, Tuviniian, Udmurt, Uigur (Cyrillic), Uigur (Latin), Uzbek (Cyrillic), Uzbek (Latin), Welsh, Wolof, Xhosa, Yakut, Zapotec, and Zulu
- **4 East Asian languages with dictionary support:** Chinese (Traditional, Simplified), Japanese, and Korean
- **Hebrew (with dictionary support)**
- **Thai**
- **5 languages for recognition of old European documents and books printed in 18–20th centuries** (from FineReader XIX): English, French, German, Italian, and Spanish
- **4 artificial languages:** Esperanto, Interlingua, Ido, and Occidental

- **6 programming languages:** Basic, C/C++, COBOL, Fortran, Java, and Pascal
- **Simple chemical formulas**
- **Digits**

Print types

Normal, typewriter, dot-matrix printer, Gothic, OCR-A, OCR-B, MICR (E13B)

Barcode types

1D: Check Code 39, Check Interleaved 25, Code 128, Code 39, EAN 13, EAN 8, Interleaved 25, CODABAR (without checksum), UCC Code 128, Code 2 of 5 (Industrial, IATA, Matrix), Code 93, UPC-A, UPC-E and Postnet

2D: PDF 417

Input formats

- TIFF: black and white, gray, color, multi-image. Compression methods: Unpacked, CCITT Group 3, CCITT Group 3 FAX(2D), CCITT Group4, PackBits, JPEG, ZIP, LZW
- JPEG, JPEG 2000 part1: gray, color
- PDF
- DjVu
- BMP: black and white, gray, color
- PNG: black and white, gray, color
- PCX, DCX: black and white, gray, color

Output formats

- PDF, PDF/A-1a, PDF/A-1b
- RTF
- DOC, DOCX, Word XML
- XLS, XLSX
- TXT, CSV
- HTML
- TIFF
- JPEG, JPEG 2000
- XML
- FineReader internal format (FineReader Engine-compatible)

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