

Automation Engine 21

Introducing AE

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Contents

- 1. What is Automation Engine?..... 3**
 - 1.1. Client-Server Architecture..... 3
 - 1.2. Data Management and Central Resources..... 4
 - 1.3. Multi-Site Environments..... 4
 - 1.4. On-Premises or SaaS..... 4
 - 1.5. Scalability and Security..... 5
 - 1.6. The Automation Engine Viewer..... 6
 - 1.7. Integration with Other Applications..... 6
 - 1.8. Scripting..... 7
 - 1.9. More Help?..... 7
- 2. File Types and How they are Recognized..... 8**
- 3. Important Concepts and Work Modes..... 12**
 - 3.1. Containers (introduction)..... 12
 - 3.2. Jobs (introduction)..... 13
 - 3.3. Products (introduction)..... 14
 - 3.4. Page Workflow Views and Tools (introduction)..... 14

1. What is Automation Engine?

Automation Engine serves to increase productivity of prepress workflows. It does this through automated workflows, data management and quality control tools.

Automation Engine is one of many **Esko Software** applications that serve various segments of the packaging and printing industry.

1.1. Client-Server Architecture

The Automation Engine server is where all background actions are executed. This is also where the main configuration and databases are stored. This server is a powerful computer running on Windows server OS.

The most known client application is the Automation Engine **Pilot**. You can install a Pilot on Mac or Windows computers in the LAN network of the server. The Pilot is the main interface for most users. This is where they inspect files and launch and manage tasks on the server. Depending on the user's **Access Rights**, more setup and configuration tools become available.

Note: Most of the daily use of Automation Engine can also be done from a browser client.

Some customers prefer to use the client application **Shuttle**. This tool offers a more limited interface where you can simply drag and drop files to launch the same kind of workflows on the Server.

Note: Since v21, also this functionality is available via a browser client.

Users that work with interactive applications from Esko (ArtPro+, DeskPack and legacy editors like ArtPro, PackEdge and Plato) can also launch tasks from within that application, on the file that they currently work on.

Most server activity can also be started directly by external systems. Automation Engine offers many tools for a two way integration with non-Esko applications like business systems.

Tip: Learn more about its architecture in the module one [Esko Blended Learning](#).





Attention: Detailed technical requirements for server and client computers are described on <http://www.esko.com/systemrequirements>.

1.2. Data Management and Central Resources

Data Management and Central Resources

The (prepress) data that Automation Engine can work with does not have to be stored on the Automation Engine server, it can also be stored on a dedicated file server. Automation Engine can work with any data that is stored on network shares that you configured on Automation Engine. These places are called **Containers**.

Automation Engine offers databases to structure, manage and quickly access to files. Learn more in [the Jobs and Products concepts](#). The database server software is automatically installed. You have the option to use a different database server. Learn more in the chapter [Pre-Install IT Requirements](#).

The Automation Engine server also stores its **Central Resources**. These are for example files related to fonts, color management or RIP'ing (curves, screening files).

1.3. Multi-Site Environments

Automation Engine itself is restricted to work with data within the same LAN.

- **Access Points** enable up and downloading data from (S)FTP or cloud storage sites to your Automation Engine.
- Esko [WebCenter](#), a web platform for packaging project management, can also be used to share data between multiple sites.

Automation Engine's in different Locations that Collaborate by Sharing Jobs

Learn about this setup in the chapter [Collaborating via Esko Cloud](#).

1.4. On-Premises or SaaS

Automation Engine On-Premises

The Automation Engine server software is on-premises when it is installed on a computer of your organization, at a location that you chose. This Automation Engine can be used within the LAN it is installed in.

In this manual, except when mentioned otherwise, the Automation Engine server software is assumed to be installed on-premises.

Automation Engine SaaS

Software as a Service is a software delivery model in which software is centrally hosted at a hosting company that is not a location of the end-user organization, often referred to a 'data center'. Esko decides the hosting company and manages the installation and maintenance of the software.

An Automation Engine SaaS setup is a single-tenant setup. It is dedicated to one Esko customer.

Your organization, based on an annual license subscription, configures and uses the attributed server(s). All access to it from applications within your organization (Pilot or browser client software, other Esko applications, devices) happens via the web in a secure way.

The files and central resources that an Automation Engine SaaS can process also need to be present at the hosting company, in that data center.

Learn more in the chapter [AE SaaS: When your AE is in a Data Center](#).

1.5. Scalability and Security

More Functionality

Automation Engine is a very modular product. The sales modules that you purchased or subscribed to decide the licenses on your server. For example, the "**Layout**" module enables the licences for the "**Step & Repeat**" tasks.

For more info, check the available sales modules with your Esko sales contact.

More Power and Usage

The more powerful your Automation Engine server computer is, the faster it will process the background tasks and the faster it will react to requests from Pilot users.



Attention: It is important to check the minimal requirements for server and client computers on <http://www.esko.com/systemrequirements>.

- **Processing Channels:** How many tasks your server will process at the same time is also decided by licenses. A sales module so decides whether your server is allowed to process 1, 2, 4, 8 or 16 tasks at the same time ("concurrent"). 16 is the maximum. It is also possible to reserve some processing channels for specific tasks.
- **Maximum Client Users:** This same sales module also defines how many client applications can be used at the same time. For example: a maximum of 20 Pilot users logged in at the same time.

Note: Learn more in the chapter [Automation Engine Server Management](#).

Fail Safety

Automation Engine offers tools to automatically backup your software configuration and databases.

Learn more in the chapter [Automation Engine Server Management](#).

More Power combined with More Fail Safety

You can add Automation Engine **Assistants** to your Automation Engine **Master** Server.

- An Automation Engine **Assistant** is another computer that helps out by also executing tasks (maybe a specific type of tasks).
- An **Assistant** can also be stand-by to become the Master Server when your Master server is down because of a serious problem. There are many scenarios for disaster recovery. These depend on where the file server is and where the database server is.

Note: Learn more in the chapter [Pre-Install IT Requirements](#).

1.6. The Automation Engine Viewer

The Automation Engine **Viewer** is a tool that you start from the Pilot to view and inspect files. It offers powerful features to view, measure and compare files, even when they are different file formats or have different sizes. Even staff in your customer service department can for example install a Pilot for this reason only.

Each file that you open in this **Viewer** is a stream of pixels sent by the Automation Engine server to your local Pilot. These pixels can be created by the server on-the-fly, or they could have been prepared before, also by the server. This is why the use of the Viewer can have a significant impact on the load of your server.

Learn more in the chapter [Quality Control Tools](#).

1.7. Integration with Other Applications

External Applications bundled with Automation Engine

Automation Engine also offers licenses for tasks that use these built-in applications:

- The Preflight technology from **Enfocus PitStop Server**.
- Several file **Inspection** tasks from **GlobalVision**.

Learn more in [Quality Control tools](#).

Integrating with other Esko Applications

Automation Engine offers a bi-directional communication with most other Esko applications:

- Esko **Editors** can link with the Automation Engine server. This way, they use the same central resources (color data, fonts etc.) and can also launch tasks on the file that the operator has open in the Editor. Learn more in [Launching Tasks from Editors](#).
- Esko **RIP** and **Proof** software (Imaging Engine, FlexRip).
- the **Front End** application of an [Esko CDI \(DFS or Grapholas\)](#) or an [Esko Kongsberg table \(iPC\)](#).
- Integration with [Esko WebCenter](#). Learn more in the dedicated chapter [Integrating with WebCenter](#).
- Integration with [Esko Share & Approve](#). Learn more in the dedicated chapter [Integrating with Share & Approve](#).

Integrating with External Systems

Apart from classic tools like integration via Folder Access Points exchanging data via FTP, Automation Engine offers a wide range of integration capabilities with external systems. These tools can use XML, JDF or even direct database interaction.

Learn more in the dedicated chapter [Integrating with External Systems](#).

1.8. Scripting


Although Automation Engine already offers a broad set of tools to create custom workflows, it is still possible that you miss some functionality or that the available functionality does not support the native graphics format that you want to run them on.

This is why Automation Engine also offers custom scripting: you can write scripts (small programs) that typically represent actions that operators do interactively in their graphic desktop applications..

Learn more in [Using Scripts](#).

1.9. More Help?

Next to this elaborate documentation set, these tools can also help:

- **Tool Tips:** In many places in the Pilot, hover your mouse over a button or text to get a short explanation.
- In each dialog of a task ticket (and some other places), click on  to open the online documentation page for that topic.
- **Keyboard Shortcuts:** They are listed in the Pilot's **Help** menu.
- You can still see some old eLearning modules about several basic concepts on the [Esko Blended Learning platform](#).
- The [Esko Knowledge Base](#) contains information that is not part of this documentation. It contains articles about temporary topics, very technical topics, tips and tricks or specific error messages.

2. File Types and How they are Recognized

Supported File Types

Automation Engine recognizes most of the standard file formats in the printing and packaging industry (graphics, CAD and communication standards). It also supports Esko native formats like ArtPro (AP) and ArtiosCAD (ARD, MFG).

Most graphics functionality runs on PDF.

- Learn more about benefits of 'normalization' in [Normalized PDF and XMP in Automation Engine](#).
- Learn more about native PDF workflows in [PDF+ in Automation Engine](#).
- Learn more about the use of PDF/X-4 in the separate document available on the [Automation Engine documentation page](#), in the section "Related documentation".

When your production file format is ArtPro, you can also choose to execute background tasks on the native AP format by using [ArtPro Action Lists](#).

Table: File types offered by the Pilot's 'Filter' tool

File Type	File Extension	Description
A3D	A3D	3D format of Esko ArtiosCAD
Adobe Illustrator 8.0	AI	These old AI files can still be read with the task that normalizes PostScript data.
Adobe Illustrator	AI	Since v9, AI files can be the native AI format, which Automation Engine cannot read/normalize, or they can be saved as PDF compatible. The Pilot checks and shows the real format.
ARD	ARD	Native CAD format of Esko ArtiosCAD (one-up)
ArtPro	AP	Native format of Esko ArtPro
CT	CT	Contone file (Esko legacy picture format)
JS	JS	'Job Sheet' (used in TIFF/IT workflow)
LC	LC	Esko legacy contour (vector)
LP	LP	Esko legacy bitmap
Plato Plate	PLA	Esko Plato layout file, referring to legacy GRS files
BMP	BMP	Bitmap image
CDI	LEN, VIEW	RIP'ed (view) file for Esko CDI (flexo CTP)
CorelDRAW	CDR	CorelDraw native graphics
CFF2	CF2	Packaging CAD format
CSV	CSV	Comma Separated Value, typically exported from a spreadsheet or database
CTD	CTD	Preview data of CT file
Collada	DAE	Format for interactive 3D applications, XML version

File Type	File Extension	Description
DAT	DAT	Archive file of all impositions and page lists of a Job (Esko page workflow)
DCS	EPS, DCS	Desktop Color Separation, a collection of EPS files
Microsoft Word 97- 2003	DOC	Old native MS Word document
Microsoft Word	DOCX	Native MS Word document
DXF	DXF	CAD format
EPS	EPS	Encapsulated PostScript file
Flat	-	Item in Esko page workflow (set of plates)
Adobe FrameMaker	FM	Native file
GRA	GRA	Legacy Esko format (page graphics)
GRC	GRC	Legacy Esko format (label or packaging graphics)
GRI	GRI	Legacy Esko format (imposition output)
GRO	GRO	Legacy Esko format (generic output)
GRQ	GRQ	Legacy Esko format (QuickStep layout)
GRR	GRR	Legacy Esko format (layout)
GRS	GRS	Legacy Esko format (graphics)
GRT	GRT	Legacy Esko format (tiles)
GRV	GRV	Legacy Esko format (view data)
GRZ	GRZ	Legacy Esko format (ZIP'ed)
HTML	HTM, HTML	Web page
Imposition File	IMP	Imposition created by Esko FastImpose
Imposition File (GRS)	IMP	Imposition created by Esko FastImpose, referring to legacy GRS files,
Imposition	-	Item in Esko page workflow
Adobe InDesign	INDD	Native graphics format
JDF	JDF	Job Definition Format (www.cip4.org)
JMF	JMF	Job Messaging Format, HTTP version of JDF
JPEG	JPG	Picture
Layer	-	Item in Esko page workflow (layer of an Imposition)
MFG	MFG	Esko ArtiosCAD manufacturing file (CAD layout)
MJM	MJM	JMF Mime Package
PAF	PAF	Legacy version of Packed Archive Format.
PAF	PAFSC	Packed Archive Format. Esko native format to exchange graphics files.

File Type	File Extension	Description
PAG	PAG	Legacy Esko FastImpose "page" file
Page	-	Item in Pages View (Esko page workflow)
PageSlot	-	Empty item in Pages View (Esko page workflow)
PDF	PDF	Portable Document Format. Including PDF+ .
PDF Plato	PDFPLA	Esko Plato layout (PDF with references)
Normalized PDF	PDF	PDF checked by Esko for print-ability, enriched with XMP metadata, allowing external references
PDF Station	PDFSTA	Esko Plato "station" file
PICT	PICT, PCT	Old file format often used for screenshots
PLA	PLA	Legacy Esko FastImpose "plate" file
Adobe PageMaker	PMD	Native file
PNG	PNG	Portable Network Graphic (picture)
PPF	PPF	Print Production Format (CIP3 ink key settings)
PPML	PPML	Personalized Print Markup Language, XML-based standard for Variable Data Printing
PostScript	PS	PostScript file
PSD	PSD	Adobe Photoshop file
Microsoft Publisher	PUB	Native file
QuarkXpress	QXD, QXP	Native file
Rich Text Format	RTF	Text format
RTL	RTL	Old pixel format for HP proofers
RunList	Runlist	List of required page or station files (imposition and layout workflow)
Section	-	Item in Esko page workflow
Sheet	-	Item in Esko page workflow
Sheet Side	-	Item in Esko page workflow
SIG	SIG	Legacy Esko signature file (page workflow)
STA	STA	Legacy Esko Plato "station" file, GRS format
TCP	TCP	Esko legacy Trapping Color Pair
Tiff	TIF, TIFF	Tagged Image File Format
TIFF/IT	TIF, TIFF, LW, CT...	Version of TIFF, bitmap separations
TXT	TXT	Simple text format

File Type	File Extension	Description
U3D	U3D	3D graphics format, supported by Acrobat
VRML	WRL	3D graphics format
Microsoft Excel 97 - 2003	XLS	Older version of spreadsheet file
Microsoft Excel	XLSX	Spreadsheet file
XML	XML	Extensible Markup Language
ZAE	ZAE	Format for interactive 3D applications, full version
ZIP	ZIP	Archive file

Automatic File Type Determination

Several Views in the Pilot show a column **File Type**. The shown file type determines the functionality that the Pilot offers on that file.

Several steps are used to determine the correct file type:

1. The Pilot immediately shows the file type based on the file's extension.
2. In the next second, for some files, a second check is done. This can change the shown file type. For example: The file type of a file with an extension `.AI` that was saved as PDF compatible, will so change from "Adobe Illustrator file" to "PDF file".

Note: This extra check is not done for all file formats. To manually change the file type, right-click the file and choose **"Change File Type"**. This can for example be necessary to enable launching a specific task on that file.

3. When a task is started, the task does an extra check as well, to make sure it is worth launching that task on this file. This for example also happens when [Access Points](#) receive files with an extension that you cannot control.

3. Important Concepts and Work Modes

We here introduce some important terms that we use in the next chapter [Getting Started](#).

Note: Although parts of it are outdated, it might still be interesting to check the interactive **eLearning Module** that introduces the Pilot. Find it on the [Esko Blended Learning platform](#).

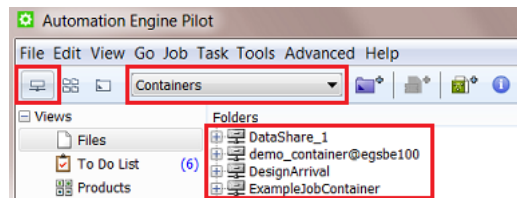
3.1. Containers (introduction)

A **Container** is a network share that contains data that Automation Engine can work with. Containers can be located on your Automation Engine server or on another computer in the same LAN (Local Area Network).

You can create a Container by using (part of) an existing network share or you can have Automation Engine create the network share while creating a Container. To manage Containers, go to **Tools > Containers**.

The installation of Automation Engine by default creates an **"ExampleJobContainer"** on the disk drive where you installed the server software.

You can add many more Containers. You can see and browse through them in the Pilots' **Containers** mode. An example:



Looking at Files or Looking at Database Items

As a Pilot user, you can choose to

- Use the **Files** view, where you see and manage data by browsing through **Containers**. This is a classic way of accessing data, but if you combine it with using SmartNames and **Workflows**, you can also get a high level of automation.
- Use one or multiple Pilot **Views** that offer faster and smarter ways to access and manage data.
 - **Jobs**: a database representation of "jobs to do". Each Job has it's specific parameters. One of those is the folder containing the data for that specific **Job**. In the Pilot, these **Job Folders** show up as a blue folder.
 - **Products**: a database representation of one-up assets, easily linked to Job where they play a part in. This is typically used at packaging and labels sites that do print re-runs. Using this **Products** tool significantly improves their data management.


Many more Pilot **Views** focus on a specific type of workflow or output. All these Views are introduced in *Pilot Views and Tools*. Some are described in detail in dedicated chapters.

3.2. Jobs (introduction)

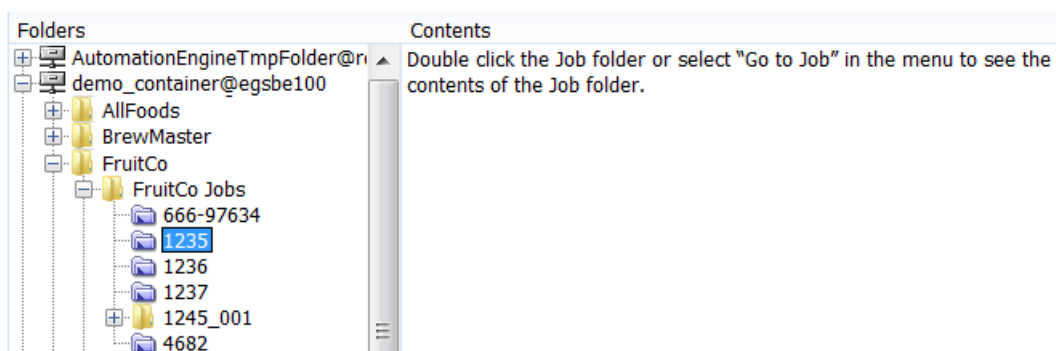
What is a Job?

In Automation Engine, a **Job** represents work that has to be done. A Job contains all the files and information related to a specific job-order. A Job has a unique name. Depending on your type of business, your Job could be to create a specific asset or to physically produce something, or a combination of both.

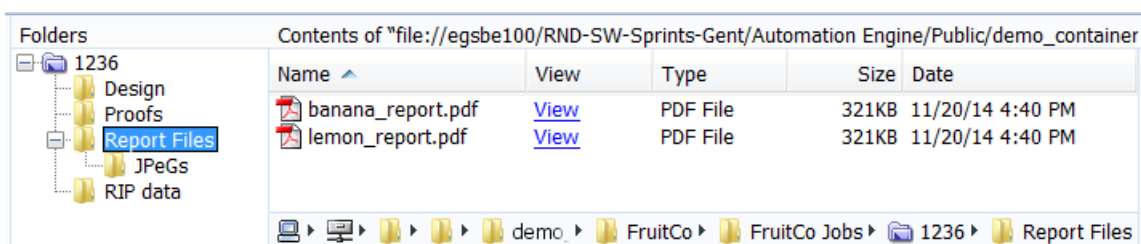
A Job represents a job-order and is therefore also "WIP": Work In Progress. This also means that, in Automation Engine, you should remove Jobs that are finished. The Jobs database can hold a few thousands Jobs, but having that many Jobs means that there is something wrong with how you use this tool.

A Job is an item in the Automation Engine Jobs database, its **Job folder** is displayed as a blue folder .

In the **Containers** mode and **Files** view, you can see the location of Jobs in their Container:



Once a Job is open ("**Last used Job** mode"), you can see its subfolders and files.



Job Metadata (Job Setup Parameters)

A Job can have an extended set of metadata: inks, barcodes or layouts to use, customer information, categorizations or any other custom parameter. This metadata is also stored in the Jobs database, and can be used when launching tasks on files that are present in the Job folder of Job.

Ideally, these **Job Setup** parameters are not set manually but come in automatically when the Job was created by your business system.

Job based Automation

Automation Engine is very Job-centric. Workflow tasks can take their settings from the **Job Setup**. They can even be launched automatically when the Job reaches a certain status (for example: all the expected files have been delivered, the **Milestone** changed to 'Approved' etc...).

Note: When you choose not to work with the Jobs tool, you can still get a similar level of automation by using alternative tools like [Workflow Parameters](#).

Job Folders

Each Job has a Job Folder. Job Folders are located somewhere in a Container and typically have a similar substructure, for example specific subfolders for artwork, production file(s), proof or other output file(s).

Learn more in the dedicated chapter [Jobs](#).

3.3. Products (introduction)

A **Product** represents a production asset. The Products database stores their location within the Container and a lot of metadata, for example their status, their graphic parts, etc.

The **Products** view is a user-friendly, searchable view on the Products database. You can use it to create new Products, search them and link them to Jobs.

Customers doing a lot of print re-runs use the Products tool to easily re-link production files that they printed earlier to the new Job (the one representing the order where the product was re-ordered).

Learn more in the dedicated chapter [Products](#).

3.4. Page Workflow Views and Tools (introduction)

Customers with page (imposition) workflows typically combine the Jobs tool with the 3 Views in the category "**Commercial Print**":

- The **Pages** view allows to build page lists, monitor incoming pages and their individual state of approval.
- The **Proofs** view shows the proof data that was made of the imposition and its status.
- The **Plates** view shows the status of the expected plates for that Job.

Impositions can be created with Esko FastImpose or with non-Esko applications.

Automation Engine is fully equipped to serve high automated JDF workflows.

Learn more in the dedicated document on "Commercial Print (Imposition) workflows in Automation Engine". Find it next to the "Complete Manual" of version AE v18.1 on <https://www.esko.com/en/Support/Product?id=Automation%20Engine&ver=18.1>.