



Technical Requirements for Alfabet 11.6

Alfabet Reference Manual

Documentation Version Alfabet 11.6

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Chapter 1: System Overview

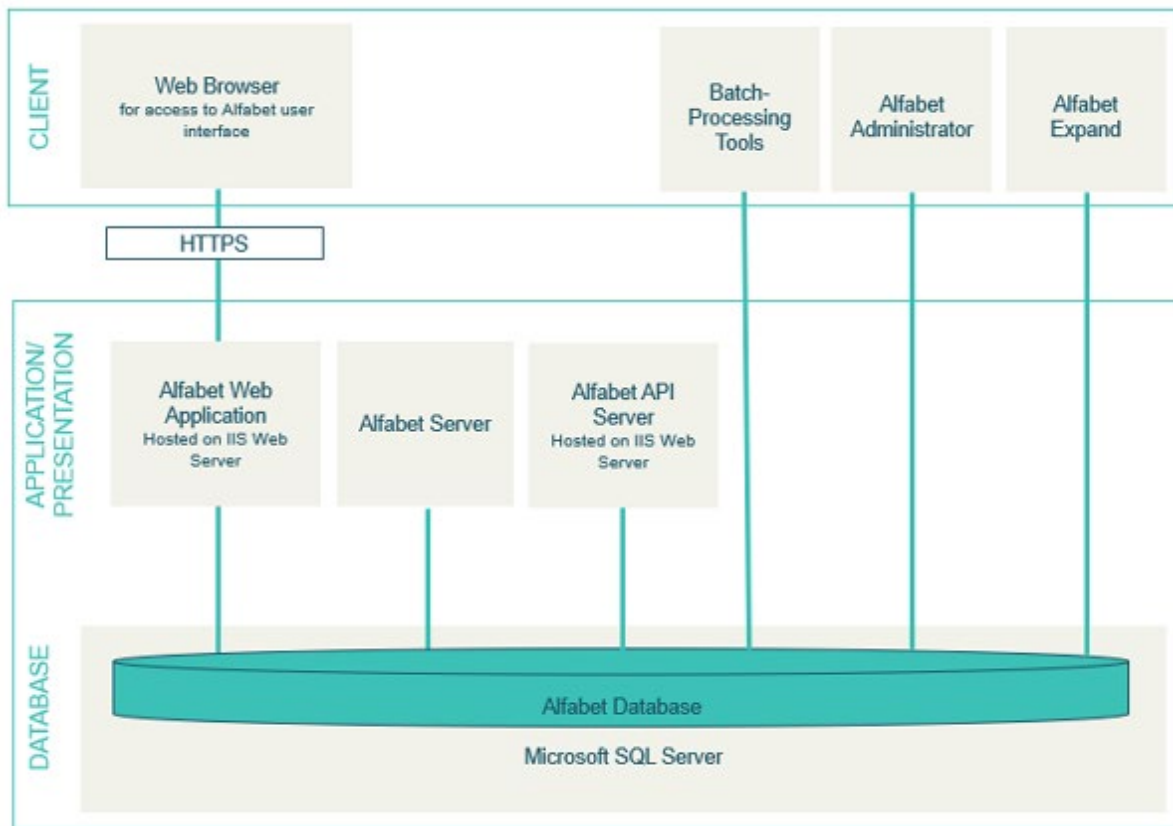


FIGURE: Alfabet components

An Alfabet installation on server side consists of two layers:

- Database layer: One or a cluster of database servers. An instance is based on a single Alfabet database.
- Solution/Presentation layer: 1 or multiple Web Servers running an Alfabet Web Application and a single running Alfabet Server.

For use of the Alfabet RESTful services one or multiple separate web applications Alfabet API Server running on the same or different Web Servers as the Alfabet Web Application.

If the server side components are installed on different host, all hosts must have the same server time.

Users can access Alfabet via a browser. In the following, the access via the browser is called Alfabet Web Client.

Software AG provides a number of tools for the administration and configuration of Alfabet that can connect to the Alfabet database in parallel to the Alfabet Web Application and the Alfabet Server:

Configura- tion Tool	Functionality
Alfabet Ad- ministrator	Edit the configuration files of the Alfabet Web Application and the other tools for configuration and administration and manage the Alfabet database. Configure access permissions to Alfabet and track Alfabet usage and audit history.
Alfabet Ex- pand	Configure the Alfabet solution. Many Alfabet functionalities as well as administrative tasks are based on a specific solution configuration defined in Alfabet Expand.

Chapter 2: Platform Requirements and Third-Party Components

The requirements are listed for use by up to 200 users.

Requirement	Alfabet database	Alfabet Web Application	Alfabet API server	Alfabet Server	Alfabet Expand	Alfabet Administrator	Alfabet Web Client
Server Platform	Dependent on database server.	Windows Server 2022 with Microsoft® IIS 10.0 and ASP.NET ("Application Server")	Windows Server 2022 with Microsoft® IIS 10.0 and ASP.NET ("Application Server")	Windows Server 2022	Windows® 10 Windows Server 2022	Windows® 10 Windows Server 2022	Any platform on which one of the supported browsers can be run. System performance must meet current standards.
Processors	4 (minimum 2) Generation Intel® Xeon® Platinum 8370C processors up to 3.5GHz	4 (minimum 2) Generation Intel® Xeon® Platinum 8370C processors up to 3.5GHz	4 (minimum 2) Generation Intel® Xeon® Platinum 8370C processors up to 3.5GHz	4 (minimum 2) Generation Intel® Xeon® Platinum 8370C processors up to 3.5GHz	Intel® or compatible Minimum 2 GHz; recommended Intel Pentium IV with 3.0 GHz	Intel® or compatible Minimum 2 GHz; recommended Intel Pentium IV with 3.0 GHz	
Memory	16 (minimum 8) GB RAM or more	16 (minimum 8) GB RAM or more If Alfabet is configured to evaluate access permissions to objects via right rules, 1 MB of additional memory is typically	16 (minimum 8) GB RAM or more If Alfabet is configured to evaluate access permissions to objects via right rules, 1 MB of additional memory is typically	16 (minimum 8) GB RAM or more	Minimum 256 MB; recommended: 1 GB RAM free memory not allocated to other processes		

Requirement	Alfabet database	Alfabet Web Application	Alfabet API server	Alfabet Server	Alfabet Expand	Alfabet Administrator	Alfabet Web Client
		required per concurrent user.	required per concurrent user.				
Disc space	Initial database size: < 1 GB Database increase: 700 MB/year (typical usage)	Approx. 1 GB	Approx. 800 MB	Approx. 70 MB 1 GB free space in the system temporary files directory (typical setup)	200 MB disc space for installation 100 MB free space in the user's temporary files directory	200 MB disc space for installation 100 MB free space in the user's temporary files directory	
Required Third-Party Components	Microsoft® SQL Server® 2019 or 2022 or Azure® SQLServer.	.NET Framework 8.0 Microsoft Internet Information Services® 10.0 and NET Core 6 runtimes	.NET Framework 8.0 Microsoft Internet Information Services® 10.0 and NET Core 8 runtimes	.NET Framework 8.0	.NET Framework 8.0	.NET Framework 8.0	HTML 5 compliant browser: Microsoft® Edge® Google Chrome® 37.0 or higher Mozilla® Firefox® 24.0 or higher Apple® Safari® 7.0 or higher
Network Controller	Minimum: 1 GB/s 10 GB/s for best performance	Minimum: 1 GB/s 10 GB/s for best performance	Minimum: 1 GB/s 10 GB/s for best performance	Minimum: 1 GB/s			

Require- ment	Alfabet database	Alfabet Web Application	Alfabet API server	Alfabet Server	Alfabet Expand	Alfabet Ad- ministrator	Alfabet Web Client
				10 GB/s for best perfor- mance			
Failover cluster ca- pability	-	No	No	No	-	-	-

Chapter 3: Database

Type	Relational
Data integrity	Verification of primary keys; physical integrity ensured by database architecture
Database storage (backup)	Manual and batch-driven
Maximum number of indices in a database table	Limited by database
Data model	Included in Alfabet database

Chapter 4: Alfabet Web Client

Screen size	Alfabet is suitable for use on tablets, laptop computers or desktop computers. It is recommended to use a screen size of 1024 x 768 at 96 dpi for best working experience.
Browser	Microsoft® Edge® Google Chrome® 37.0 or higher Mozilla® Firefox® 24.0 or higher Apple® Safari® 7.0 or higher
Browser plug-ins	Not necessary
Minimal encryption length for SSL/TLS	None
Java® applets	Not necessary
Sun® Java® plug-in	Not necessary
Session cookies	Required
Persistent (tracking) cookies	None
JavaScript®	Must be enabled for the Web browser.
Image content	Must be enabled for the Web browser.

Chapter 5: Network and Communication Between Components

Regarding security mechanisms for communication channels, see the section *Security*.

Network bandwidth	Minimum 10 MBit/s; recommended: 1 GBit/s free bandwidth for connections between server components and for each concurrent Client/Server connection
Round Trip Delay	Required < 5 ms; recommended < 1 ms
Internet Protocol Compatibility	IPv4, IPv6

Ports to Activate for Communication Between Components

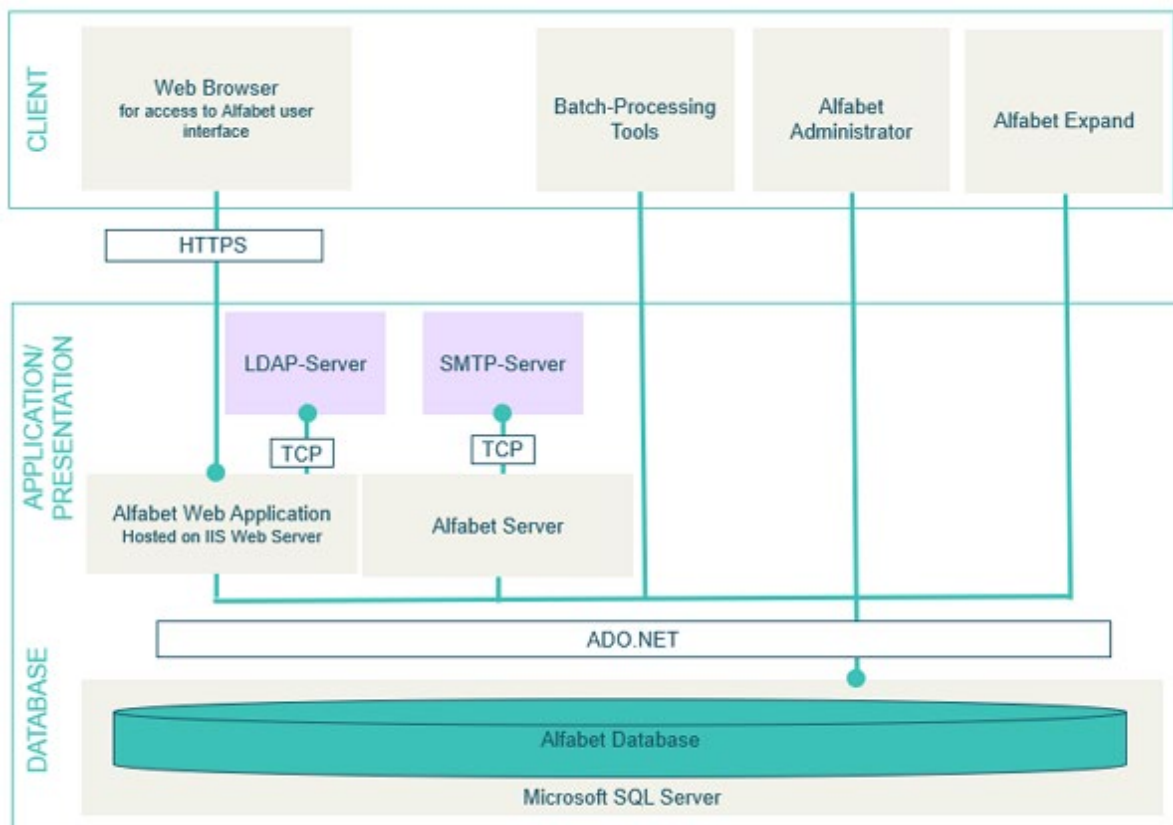


FIGURE: Communication between Alfabet components

For	From	To	Ports
Basic Communication	Web Server hosting the Alfabet Web Application, Alfabet Expand,	Database server hosting	Ports to be configured on the database server (for a Microsoft® SQL Server® default instance:

For	From	To	Ports
Between Components	, Alfabet Administrator, Alfabet Server, batch processing tools	the Alfabet database	TCP and UDP Ports 1433 and 1434)
	Browser	Web server hosting the Alfabet Web Application	HTTPS Port configurable in IIS
OPTIONAL			
E-Mail Delivery	Web Server hosting the Alfabet Web Application / Alfabet Server	SMTP server	Port configured on SMTP server side. Default: TCP Port 25
LDAP Requests	Web Server hosting the Alfabet Web Application	LDAP Server	A single TCP Port, typically 389
Enterprise Authentication	Web Server hosting the Alfabet Web Application	Domain controller	All ports for Windows® authentication
Remote Control	Administrative workstation	Web Server hosting the Alfabet Web Application	Depends on remote control software

Chapter 6: Security

Authentication of users	• User name and password • Windows authentication • LDAP • SSO
Other authentication mechanisms	On request
Data encryption	User passwords are encrypted during storage (non-symmetric SHA-1 encryption) and transmission (symmetric encryption using the Rijndael algorithm). Server variables are encrypted during storage and transmission (256-bit Advanced Encryption Standard (AES) with a unique salt value for every variable). Both encryption mechanisms are compliant with FIPS.
Password policies	Configurable

Implementing Anti-Virus Software with Alfabet

The performance and stability of the Alfabet application may be affected by anti-virus software. Therefore, it is recommended that you deactivate the **On Access Scan** option for all directories that the Alfabet components use to read or write data for virus scanners installed on Windows® servers hosting Alfabet components. If this is not done, the performance of the access to Alfabet may be decreased by a factor of 10.

Alfabet components write data to the following directories:

Component	Directories Used on Component Host
Web Server hosting the Alfabet Web Application	AlfabetWebApplication\wwwroot(AlfabetWebApplication is the physical directory of the Alfabet Web Application) and a virtual directory <code>alfabetRoot</code> in the web server under the virtual directory of the Alfabet Web Application.
Alfabet Server	<User temp directory of the service account>\alfabet\<serveralias>

Alfabet components read data from all directories specified during the installation process.

Recommendations for the settings concerning the database server are not included in the overview because they are the responsibility of the database manager and are independent of the applications accessing the database.

Chapter 7: Third-Party Components

Third-Party Code Used in Alfabet

This software includes software code owned or provided by third-party licensors. A complete list of third-party components is provided in Empower under https://documentation.softwareag.com/legal/products/AFL_11.4_terms.pdf

Sending Emails via SMTP Server

Alfabet supports the generation of e-mails for a variety of purposes. To successfully send e-mails, an SMTP server is required. An existing enterprise SMTP server can be used, or a local SMTP server can be installed on the web server host. The SMTP server must be configured to accept e-mails originating from the Alfabet Server without authentication. The address of the web server must be specified in the server alias configuration used for the Alfabet Server and the Alfabet components must be configured to send emails.

Data Exchange with Microsoft Office Formats

For interactions involving the export or publication to or import from Microsoft® Word, PowerPoint®, or Excel® files, Microsoft Office products 2003, 2007, 2010, 2013, and 2016 are supported.

If sensitivity labels are used, the sensitivity label of the documents must be `Public` to upload a document or import data from a document.

Chapter 8: Service and Support

Please open a ticket in the Empower eService for any service request as well as all non-standard support incidents such as training requests, scripting, or data integration:

<https://empower.softwareag.com>

When you submit a ticket for a service request, you should include the main release number and patch version of your Alfabet product. This information can be accessed by clicking **Help < About Alfabet**. Tickets will be recorded and transferred to the relevant team.

Empower eService also includes:

- tracking ticket statuses
- local telephone numbers for support.

In addition to the local support telephone numbers, you can use the following toll-free number:

+800 2747 4357