



Alfabet Technical Requirements

Alfabet 10.11

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Chapter 1: System Overview

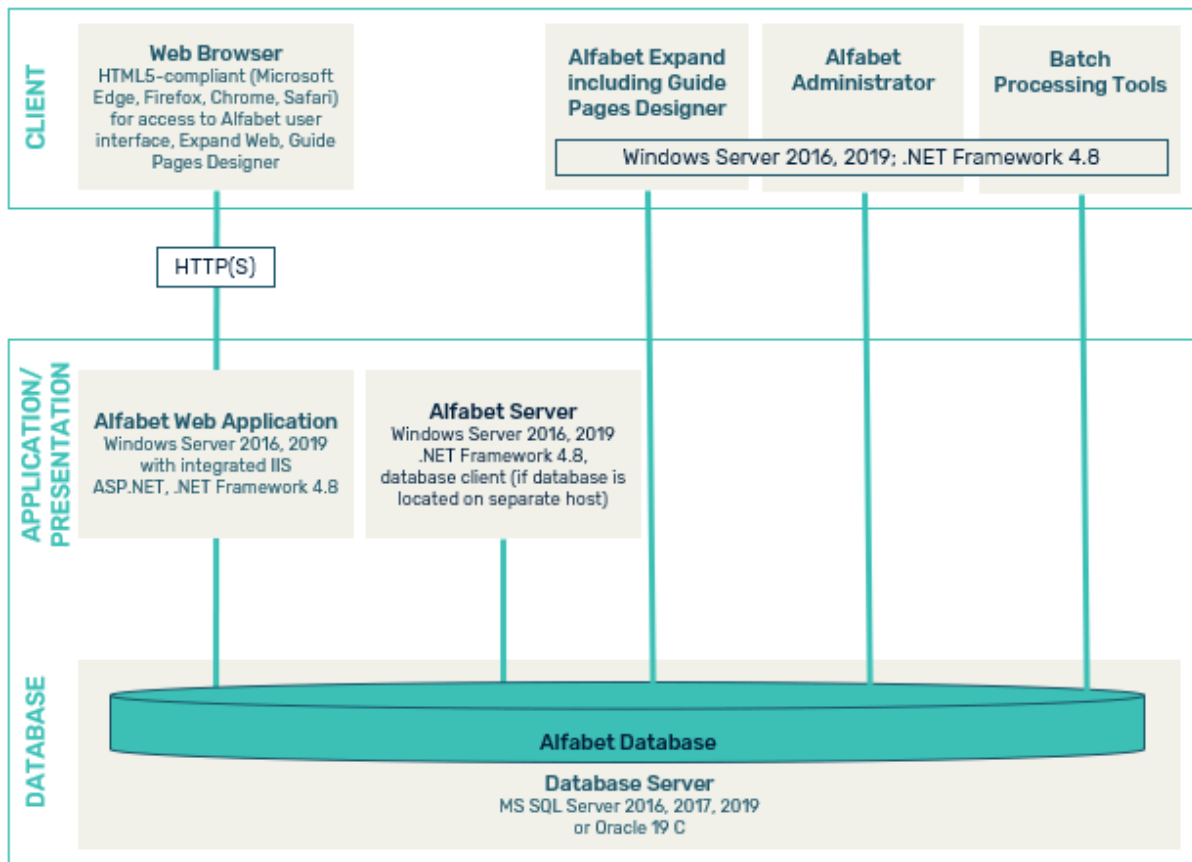


FIGURE: Alfabet components including required third-party components

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 running Alfabet Server.

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.

Chapter 2: Database Server

Technical Requirements and Specification

The requirements are for exclusive use of the database server for one Alfabet database. If other databases are run in parallel on the same database server, the requirements must be adapted accordingly.

Supported database servers	Microsoft® SQL Server® 2016, 2017, 2019 Oracle® 19c
Processors	Minimum: Pentium® IV Recommended: 2 Intel® Xeon® Dualcore 2,4 GHz processors (processor performance should meet the current standard) If your enterprise implements permission rules, it is recommended that your enterprise plan for one processor or processor core to be used on the database server host for the management of permission rules.
Server platform	Dependent on database
Memory	Minimum: 4 GB RAM Recommended: 8 GB RAM or more If the Alfabet Presentation Model Usage Tracking is activated, 16 GB RAM are recommended. Note: These values refer to free memory not allocated to other processes.
Disc space for database	Initial database size: < 1 GB Database increase: 700 MB/year (typical usage)
Network Controller	1 GBit/s

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

Preinstallation Requirements

Prior to the installation of the Alfabet components, create an empty database and login / user with full database access. The database must be created according to Alfabet specifications described in the *System Administration* reference manual for Alfabet.

If the database is installed on an Oracle® database server and the indirect connection mode is implemented, the Oracle® Net8 Client must be installed on the Alfabet Web Application host and the Alfabet database must be defined for the parameter Database Net Service Name in the file `tnsnames.ora` of the Oracle® Net Client.



The Alfabet Server supports indirect as well as direct connections to Oracle® database servers.

The direct connection is recommended for connections to the Alfabet database. Indirect connections require additional installation of a client application. Some Oracle® features are only supported for indirect connections, but none of these features is required for working with Alfabet. It is possible to change to an indirect connection if any of the restrictions for direct connections become critical in the future.

The main restrictions of direct connections to Oracle® databases are:

- Only the TCP/IP protocol is supported for the connection.
- Advanced authentication (for example, OS authentication and proxy authentication) are not supported.
- Advanced configurable Oracle® functionalities (for example, Real Application Cluster, Oracle Loader, Transparent Application Failover, and Oracle Transaction Guard) are not supported.

Using Free Database Server Versions

In exceptional cases, the SQL Server Express Edition or the Oracle® Database Express Edition corresponding to the supported full database server versions may be used as a database server instead of a fully functional database server in a test environment. Because of performance and sizing limits of these database server versions they are not suitable for use in a production environment.

Chapter 3: Web Application Server

Technical Requirements and Specification

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

Server platform	Windows Server 2016 with Microsoft® IIS 10.0 and ASP.NET ("Application Server") Windows Server 2019 with Microsoft® IIS 10.0 and ASP.NET ("Application Server")
Processors	2 vCPU (Minimum: Pentium® IV) Recommended: 2 Intel® Xeon® Dualcore 2.4 GHz processors processor performance should meet the current standard
Memory	Note: These values refer to free memory not allocated to other processes. Minimum: 4 GB RAM Recommended: 8 GB RAM or more The configuration tool Alfabet Expand allows access permissions to objects in the Alfabet database to be configured via query-based RightRules. If this feature is used, 1 MB of additional main memory will typically be required for permission management per currently logged in active user. Hence the minimum requirement will increase accordingly for the Alfabet Web Application.
Disc space for installation	Approx. 500 MB 1 GB free space in the runtime subdirectory of the Web Application directory
Programming language of server components	C#
Failover cluster capability	No
Software required	Microsoft®.NET Framework 4.8
Communication protocols with Alfabet Web Client	HTTP and/or HTTPS and/or HTTP/2 with HTTPS

Network Con- 1 GBit/s
troller

Preinstallation Requirements

- On Windows Server 2016 and higher Microsoft®.NET Framework 4.5 or 4.7.2 is part of the windows features. Make sure that the Microsoft.NET Framework feature is activated and that an upgrade to Microsoft.NET Framework 4.8 is installed. After installation of the update, the version number of .NET Framework is still displayed with a lower version although Microsoft.NET Framework 4.8 is used.
- If you have installed the Microsoft® Internet Information Services and Microsoft.NET Framework 4.8 was already installed on the machine, you may need to run registry tools or reinstall Microsoft.NET Framework 4.8.
- The Alfabet Web Application is based on ASP.NET technology. Ensure that your Internet Information Services is properly configured to run ASP.NET applications.

To check whether this is the case, create a test virtual directory that contains a `test.aspx` file. Insert the following text in the file `test.aspx` and attempt to access this page from a planned client Web browser:

```
<html>
  <head>
    <title>ASPX test page</title>
  </head>
  <body topmargin="0" bottommargin="0" leftmargin="0" rightmargin="0"
  scroll="no">
    <form id="AspxTestForm" method="post" runat="server">
      <div>Hello World!</div>
    </form>
  </body>
</html>
```

- The execution of the full text search capability based on `dtSearch` requires Microsoft® Visual C++ 2015 Redistributable Package which may be already installed by other software components. If full text search fails, download the package from <https://www.microsoft.com/en-US/download/details.aspx?id=48145> and install it on the Alfabet Web Application host.

Chapter 4: Alfabet Web Client

Technical Requirements

Hardware

Client platform Any platform on which one of the supported browsers can be run. System performance must meet current standards.

The following operating systems have been tested with Alfabet:

Windows® 8.1

Windows 10

iOS 7.1.2

Web Browser



Please note that the default high-contrast mode used in Microsoft Windows may display the background as pure black and white without support for inverse colors, thus causing any specified background colors to be not visible. Therefore, it is highly recommended that users render the Alfabet interface with Google Chrome® 37.0 or higher or Mozilla® Firefox® 24.0 or higher with their add-on extensions for high-contrast mode.

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

Browser Settings for the Alfabet Web Client

The following settings are required:

- JavaScript® must be enabled.
- Image content must be enabled.

Screen Size Recommendations

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.

The Alfabet user interface automatically adapts to the screen size of the device used to open it. The user interface is designed to use the full screen size. If the browser window showing the Alfabet user interface is reduced or the monitor is set to display content in 125% size, content may be hidden from the main tool bar.

Chapter 5: Alfabet Server

Technical Requirements and Specification

The following requirements apply:

Server platform	Windows Server® 2016 Windows Server® 2019
Processors	2 vCPU Minimum: Pentium® IV Recommended: 2 Intel® Xeon® Dualcore 2,4 GHz processors processor performance should meet the current standard
Memory	Minimum: 4 GB RAM Recommended Minimum: 8 GB RAM Note: These values refer to free memory not allocated to other processes. Note: If you are using integration mechanisms like ADIF that are processing large amounts of data (e.g. 10 GByte) per batch run it might be necessary to extend the allocated memory accordingly (e.g. by 10 GByte in the above mentioned case).
Disc space for installation	Approx. 70 MB 1 GB free space in the system temporary files directory (typical setup)
Programming language of server components	C#
Failover cluster capability	No
Server processes	Require Administrative rights
Software required	Microsoft.NET Framework 4.8
Network Controller	1 GBit/s

Preinstallation Requirements

- On Windows Server 2016 and higher Microsoft®.NET Framework 4.5 or 4.7.2 is part of the windows features. Make sure that the Microsoft.NET Framework feature is activated and that an upgrade to Microsoft.NET Framework 4.8 is installed. After installation of the update, the version number of .NET Framework is still displayed with a lower version although Microsoft.NET Framework 4.8 is used.
- The Alfabet Server is configured to listen for incoming client requests on the specific TCP port defined in the Alfabet configuration file `AlfabetMS.xml` (default: 1880). You must ensure that the planned port is not blocked by a firewall or other security software (on both the server and client side as well as by network devices).
- All Alfabet components are Windows® 64bit applications. Windows® 32-bit operating systems are no longer supported.

Installation on a Virtual Machine

It is possible to run the Alfabet Server on a virtual machine. No performance degradation has been encountered when implementing the Alfabet Server components on VMware vSphere (ESXi Version 5.0.0) or Hyper-V Server 2012. Stability and performance in virtual environments depend on the virtualization platforms used and the individual settings. It is therefore not possible to generalize the observation made with the above mentioned virtualization environments. Thus, stability and performance on other virtualization platforms can not be guaranteed.

Chapter 6: Administration and Configuration Tools: Alfabet Administrator and the Alfabet Expand Application

Software AG provides a number of tools to simplify the tasks of configuration and administration. The tools can be run on the Alfabet Server host or accessed via the Alfabet Server or the Alfabet database from a remote host.

The following table lists the Alfabet tools with a short description of the functionality provided with the tool:

Configuration Tool	Functionality
Alfabet Administrator	<p>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.</p> <p>For information on the Alfabet Administrator, see the reference manual <i>System Administration</i>. This is available as a PDF document on your Alfabet installation CD.</p>
Alfabet Expand	<p>Configure the Alfabet solution. Many Alfabet functionalities as well as administrative tasks are based on a specific solution configuration defined in Alfabet Expand.</p> <p>Alfabet Expand is available as an application or as a Web based tool integrated in the Alfabet Web Application. Both versions of Alfabet Expand also include the Guide Pages Designer for creating customized navigation page for navigation of the Alfabet interface. For Alfabet Expand web the technical requirements of the Alfabet Web Application apply.</p> <p>For information on the configuration tool Alfabet Expand, see the reference manual <i>Configuring Alfabet with Alfabet Expand</i>. This is available as a PDF document on your Alfabet installation CD.</p> <p>For information on the Guide Pages Designer, see the reference manual <i>Designing Guide Pages for Alfabet</i>. This is available as a PDF document on your Alfabet installation CD.</p>

Technical Requirements

Client platform	Windows® 8.1 Windows® 10 Windows Server® 2016 Windows Server® 2019
Processors	Intel® or compatible

	Minimum 1 GHz; recommended Intel Pentium IV with 3.0 GHz
Memory	Minimum 256 MB; recommended: 1 GB Note: These values refer to free memory not allocated to other processes.
Disc space for installation	200 MB disc space for installation 100 MB free space in the user's temporary files directory
Programming language of client components	C#
Multi-language	Supports multi-language and two-byte Unicode
16-bit-codes	None
Software required	Microsoft.NET Framework 4.8 Web Browser (Microsoft® Edge®, Chrome 37.0, Firefox 31.0, Safari)
Network Controller	1 GBit/s

Preinstallation Requirements

On Windows Server 2016 and higher Microsoft®.NET Framework 4.5 or 4.7.2 is part of the windows features. Make sure that the Microsoft.NET Framework feature is activated and that an upgrade to Microsoft.NET Framework 4.8 is installed. After installation of the update, the version number of .NET Framework is still displayed with a lower version although Microsoft.NET Framework 4.8 is used.

All Alfabet components are Windows® 64bit applications. Windows® 32-bit operating systems are no longer supported.

Chapter 7: Network and Communication Between Components

Regarding security mechanisms for communication channels, see the section [Security](#).

Technical Requirements

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

If clients need to be connected via low bandwidth, high delay or low quality of service networks, it is recommended to run the Alfabet Web Clients on a Citrix or Terminalserver located in the high quality network that is then accessed by the client hosts of the end users.

Ports to Activate for Communication Between Components

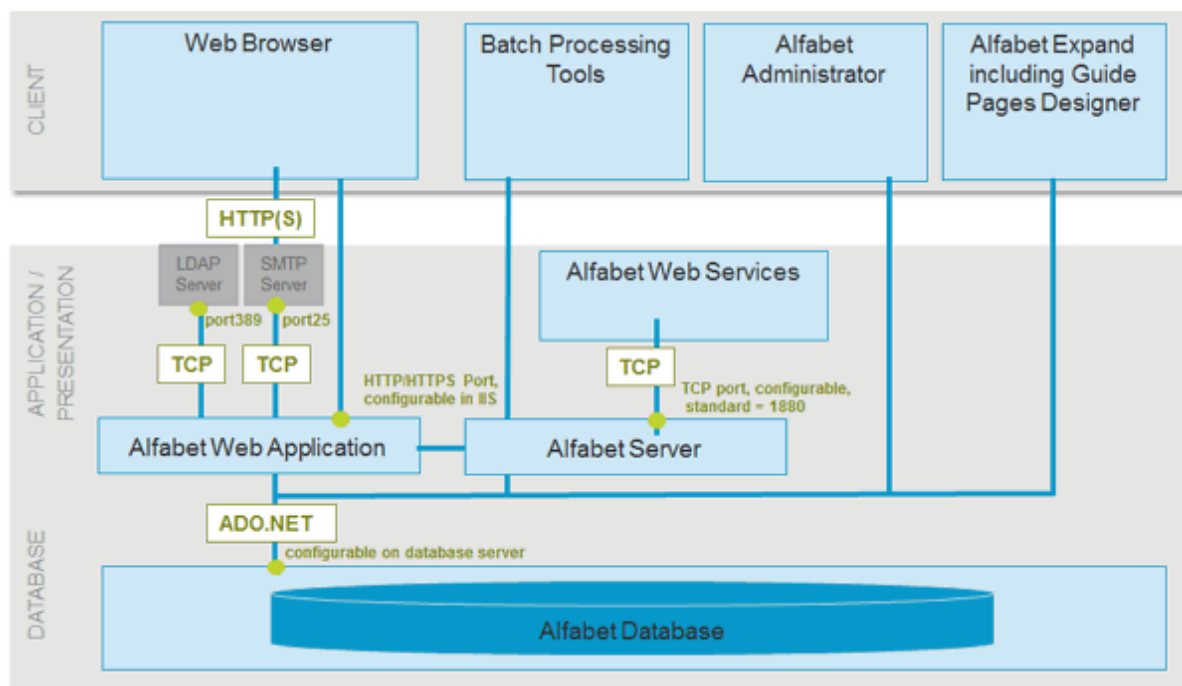


FIGURE: Communication ports used by the platform of Alfabet

For	From	To	Ports
Basic Communication Between Components	Web Server hosting the Alfabet Web Application, Alfabet Expand, Guide Pages Designer, Alfabet Administrator, Alfabet Server, batch processing tools	Database server hosting the Alfabet database	Ports to be configured on the database server (for a Microsoft® SQL Server® default instance: TCP and UDP Ports 1433 and 1434)
	Alfabet Web Services, Batch Processing Tools	Alfabet Server	A single configurable TCP port (default value: 1880)
	Browser	Web server hosting the Alfabet Web Application	HTTP and/or HTTPS Port configurable in IIS
OPTIONAL			
E-Mail Delivery	Web Server hosting the Alfabet Web Application / Alfabet Server	SMTP server	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 8: Security

Technical Requirements

Authentication of users	Access is controlled by internal mechanisms (see section <i>Configuring User Authentication</i> in the reference manual <i>System Administration</i>).
Data encryption	User passwords are encrypted during storage (non-symmetric SHA-1 encryption) and transmission (symmetric encryption using the Rijndael algorithm). Both encryption mechanisms are compliant with FIPS.
Other authentication mechanisms	On request
Password policies	Configurable

Preinstallation Requirements

Various mechanisms in the communication between the Alfabet components require that the database server, the Web Application Server and all of the Alfabet Web Clients are members of the same Microsoft® Active Directory® forest.

If you want to work with components that are members of different Microsoft® Active Directory® forests, please contact Software AG Support for a detailed description of the required configuration.

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\runtime(alfabetwebapplication directory location is specified during the installation process.)

Component	Directories Used on Component Host
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.

Usage Tracking

When your license for using Alfabet is based on a metered contract, it is required that the usage of functionalities is tracked and data about the usage is provided to Software AG.

This tracking process requires a special configuration during or after the installation of the Alfabet Server. This section describes the tracking process and the configuration and visualization.

About Usage Tracking

When usage tracking is activated, the Alfabet Server stores information about the usage of Alfabet functionalities. This information is written to a `.dat` file named `TrackUsage_<YYYY_MM>.dat` between 23:00 and midnight each day and at startup and shutdown of the Alfabet Server. A new file is only created the first day of each month. On the following days of the month, the Alfabet Server adds entries to the existing file. To fulfill a metered contract, you must send the closed file to Software AG each time a new file has been started.

The `.dat` files are stored encrypted in a configurable directory. By default, this is the working directory of the Alfabet Server. The Alfabet Server (Service) must have write access permissions to the target directory to store tracking data.

The Alfabet Server writes a tracking record whenever a user logs in with a specific user profile or changes the user profile. To ensure the privacy of the user, the `REFSTR` of the user is written to the file instead of the name or user name. The tracking records are evaluated within the contractual tracking period in the following way:

- If a user is logged in with `ReadOnly` user profiles only during the tracking period, he/she is counted as one **Analysis User**. This is independent of the overall number of user profiles that the user logged in with during the tracking period and independent of the overall number of logins for the user during the tracking period.
- If the user is logged in with both `ReadOnly` and `ReadWrite` user profiles or with `ReadWrite` user profiles only, he/she is counted as one **Business User**. This is independent of the overall number of user profiles that the user logged in with during the tracking period and independent of the overall number of logins for the user during the tracking period.

- If a user logged in 25 days or less during the tracking period, he/she is additionally marked as an occasional user either for the **Business User** or **Analysis User** count, depending on the access permissions of the user profiles he/she logged in with during the tracking period.



The license model for usage tracking was different for contracts purchased with Alfabet 9.6 or with previous planningIT versions:

The Alfabet Server wrote a tracking records for the first time each day that a specific user accessed a specific functionality or configured report. There were three types of usage types in Alfabet: **Viewer** for access with ReadOnly access permissions, **Data Entry User** for ReadWrite access to simple data maintenance functionalities, **Functional User** for ReadWrite access to sophisticated Alfabet functionalities. If the same user accessed another functionality or configured report of the same usage type on the same day, no records were written. Usage tracking was independent of the user profile that the user was logged in with. If the user accessed a functionality of the same usage type on the same day with a different user profile, no new record was written to the file. Tracked information is limited to the contractual information regarding how many users used at least one functionality with a given usage type per day.

The information in the .dat files is stored encrypted. Alfabet provides an interface to allow customers to view the tracking information written to the file. Access to the information stored in the files is only possible via this interface.



Files can be read by the Alfabet Administrator and the result of usage tracking is then displayed on the interface of the Alfabet Administrator. The access permissions and the number of users assigned to the user profile are also displayed.


Activating Usage Tracking

To perform usage tracking, a running Alfabet Server must be connected to the same Alfabet database than the Alfabet Web Application. The Alfabet Server can be run as a service.

Usage tracking must be activated in both the server alias of the Alfabet Web Application and the server alias of the Alfabet Server.

Do the following to activate usage tracking in the server alias configuration of the Alfabet Web Application and the Alfabet Server:

- 1) Define a target directory for the storage of tracking data and define write access permissions for the Alfabet Server (Service) for the directory.
- 2) Open the Alfabet Administrator and click the **Alfabet Aliases** node.
- 3) In the table, select the server alias of the Alfabet Web Application that you want to track usage for and click the **Edit**  button in the toolbar. You will see the editor in which you can edit the server alias.
- 4) Go to the **Server Settings > Tracking** tab.
- 5) Select the **Track Usage** checkbox.
- 6) Click **OK** to save your changes.
- 7) In the table, select the server alias of the Alfabet Server that you want to use for usage tracking and click the **Edit**  button.
- 8) Go to the **Server Settings > Tracking** tab.

- 9) Select the **Track Usage** checkbox.
- 10) In the **Track Usage Directory** field, either select the target directory using the **Browse**  button, or specify a path to the storage location absolute or relative to the working directory of the Alfabet Server.



Server variables can be used to define part of the information as a variable with the value set in the **Variables** tab of the server alias configuration. For more information, see *Defining Connections Based On Server Variables*.

- 11) Click **OK** to save your changes.

Viewing the Tracking Information

You can view information about the contract-relevant usage of Alfabet based on the information written to the `.dat` file in the interface of the Alfabet Administrator. In the report, the number of users that accessed Alfabet functionalities with a distinct contract-relevant usage type is displayed as well as the number of users that logged in to the Mobile Portfolio Manager.

The Alfabet Administrator reads the `.dat` files in the usage tracking directory. Therefore the following usage tracking information is excluded from display:

- information for the current day that is not yet written to a `.dat` file, and
- usage tracking records of `.dat` files deleted or archived in another directory than the usage tracking directory.
- The **Occasional Usage Count (last 12 month max)** column displays the subset of users counted in the **Usage Count** column that are occasional users (users only logged on 25 days or less for the respective combination of **Usage Type**, user name and day for the tracking period defined with the **From Date** and **To Date** filter fields). If the tracking period exceeds 12 months, occasional users will only be evaluated for the last twelve months of the tracking period.

To view the tracking information:

- 1) Click the **Usage Tracking** node in the **Administrator** explorer. A blank page with a filter on top is displayed on the right.
- 2) Define the following filters:
 - **Select Alias:** Select the server alias of the Alfabet Server that is used for usage tracking.
 - **Select License Model:** Select the license model that applies to your contract. Contracts that were purchased with Alfabet 9.6 or previous versions of planningIT count usage based on business function and configured report usage, while contracts for Alfabet 9.7 and higher count usage based on the access permissions for user profiles that a user logged in with.
 - **From Date:** Select the start date of the period that you want to view the usage tracking information for.
 - **To Date:** Select the end date of the period that you want to view the usage tracking information for.
- 3) Click **Update** to view the report.

The report shows the following data for the new license model purchased with Alfabet 9.7 or higher:

- **Usage Type** : License access permission definition for the user profiles that the users are logged in with. There is a line for each of the usage types `Analysis User` (logged in with `ReadOnly` user profiles only), and `Business User` (logged in with at least one user profile with `ReadWrite` access permissions).
- **Usage Count**: The usage count is displayed as the maximum number of distinct users logged in with either `ReadOnly` or `ReadWrite` user profiles in the period defined by the filter setting for the report. For example, if you select a period of three days, and on the first day users A and B and on the other two days of the period users B and C were logged in with a `ReadOnly` user profile only, the **Usage Count** column for `Analysis User` displays 3 to inform you that three different users were logged in with `ReadOnly` user profiles only in the defined period.

Please note that the report counts each user only once for the highest usage type in the hierarchy of usage types (`Analysis User` < `Business User`) accessed by the user. That means that a user logged in with both a `ReadOnly` and a `ReadWrite` user profile in the same period is only counted in the column for the usage type `Business User`. The access to the functionality of the usage type `Analysis User` is ignored in the tracking report.

- **Occasional Usage Count (last 12 months max)**: The subset of users listed in the **Usage Count** column that have not logged in on 25 days or less during the defined period. If a tracking period of more than 12 months is selected for the report, the occasional usage count is only calculated for the last twelve months within the selected period.

The report shows the following data for the old license model purchased with Alfabet 9.6 or previous versions of planningIT:

- **Usage Type** : Displays the license access permission definition for the accessed functionality. There is a line for each of the usage types `Viewer`, `Data Entry User` and `Functional User`.
- **Usage Count** : Displays the usage count is displayed as maximum number of distinct users working on the level of a given usage type in the period defined by the filter setting for the report. For example, if you select a period of three days and on the first day users A and B and the on the other two days of the period users B and C accessed a functionality of the usage type `Data Entry User`, the **Usage Count** column would display 3 to inform you that three different users were using a `Data Entry User` functionality in the defined period.

Please note that the report counts each user only once for the highest usage type in the hierarchy of usage types (`Viewer` < `Data Entry User` < `Functional User`) accessed by the user. That means that a user that accessed both a functionality of the usage type `Data Entry` and `Functional User` in the same period is only counted in the column for the usage type `Functional User`. The access to the functionality of the usage type `Data Entry User` is ignored in the tracking report.

- **Occasional Usage Count (last 12 months max)**: Displays the subset of users listed in the **Usage Count** column that have not logged in on 25 days or less during the defined period. If a tracking period of more than 12 months is selected for the report, the occasional usage count is only calculated for the most recent twelfth month within the selected period.

If your specified time period for the report includes a month for which no usage tracking file is available, the information will be highlighted red in the report:

Usage Type	Usage Count	Occasional Usage Count (last 12 months max)
Business User	4	4
Analysis Users	0	0

File C:\Alfabet\drop\Programs\TrackingInfo\TrackUsage_2...

FIGURE: Usage tracking report for the new license model with a warning that a file is not found

Chapter 9: Third-Party Components

Integration of Optional Third-Party Components of the System

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 Web Application without authentication. The address of the web server must be specified in the server alias configuration used for the Alfabet Web Application.



E-mail delivery requires configuration of the Alfabet solution and the Alfabet Web Application.

Exporting Data to Microsoft® Office Formats

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

Prerequisites for Using DevExpress®

The embedded third-party component DevExpress® allows the dataset of a tabular configured report to be analyzed in a pivot table or chart.

This functionality requires the following code to be available in the web.config file of the Alfabet Web Application. Make sure that the following settings are available in your web.config file:

- 1) Add the following as child XML element of the `configSections` XML element:

```
<sectionGroup name="devExpress">
  <section name="themes"
    type="DevExpress.Web.ThemesConfigurationSection,
    DevExpress.Web.v19.2, Version=19.2.5.0, Culture=neutral,
    PublicKeyToken=b88d1754d700e49a" requirePermission="false" />
  <section name="compression"
    type="DevExpress.Web.CompressionConfigurationSection,
    DevExpress.Web.v19.2, Version=19.2.5.0, Culture=neutral,
    PublicKeyToken=b88d1754d700e49a" requirePermission="false" />
  <section name="settings"
    type="DevExpress.Web.SettingsConfigurationSection,
    DevExpress.Web.v19.2, Version=19.2.5.0, Culture=neutral,
    PublicKeyToken=b88d1754d700e49a" requirePermission="false" />
</sectionGroup>
```

```

<section name="errors"
type="DevExpress.Web.ErrorsConfigurationSection, DevExpress.Web.v19.2,
Version=19.2.5.0, Culture=neutral, PublicKeyToken=b88d1754d700e49a"
requirePermission="false" />

<section name="resources"
type="DevExpress.Web.ResourcesConfigurationSection,
DevExpress.Web.v19.2, Version=19.2.5.0, Culture=neutral,
PublicKeyToken=b88d1754d700e49a" requirePermission="false" />

</sectionGroup>

```

- 2) In the `compilation` XML element, add the following code as child XML element of the `assemblies` XML element in addition to already existing child XML elements:

```

<add assembly="DevExpress.Web.ASPxThemes.v19.2, Version=19.2.5.0,
Culture=neutral, PublicKeyToken=b88d1754d700e49a" />

```

- 3) If your `web.config` file includes an `authorization` XML element as child of the `system.web` XML element, add the following code as child XML elements of the `authorization` XML element in addition to already existing child XML elements:

```

<httpModules>

  <add type="DevExpress.Web.ASPxHttpHandlerModule, DevExpress.Web.v19.2,
Version=19.2.5.0, Culture=neutral, PublicKeyToken=b88d1754d700e49a"
name="ASPxHttpHandlerModule" />

</httpModules>

<httpHandlers>

  <add type="DevExpress.Web.ASPxHttpHandlerModule, DevExpress.Web.v19.2,
Version=19.2.5.0, Culture=neutral, PublicKeyToken=b88d1754d700e49a"
verb="GET,POST" path="DX.ashx" validate="false" />

</httpHandlers>

```

- 4) Add the following as child XML element of the `handlers` XML element (in the `system.web` XML element):

```

<add type="DevExpress.Web.ASPxHttpHandlerModule, DevExpress.Web.v19.2,
Version=19.2.5.0, Culture=neutral, PublicKeyToken=b88d1754d700e49a"
verb="GET,POST" path="DX.ashx" name="ASPxHttpHandlerModule"
preCondition="integratedMode" />

```

- 5) Add the following as child XML element of the `security` XML element (in the `system.web` XML element) in addition to already existing child XML elements:

```

<modules>

  <add type="DevExpress.Web.ASPxHttpHandlerModule, DevExpress.Web.v19.1,
Version=19.1.5.0, Culture=neutral, PublicKeyToken=b88d1754d700e49a"
name="ASPxHttpHandlerModule" />

</modules>

```

- 6) Add the following as child XML element of the `system.webServer` XML element in addition to already existing child XML elements:

```

<validation validateIntegratedModeConfiguration="false" />

```

- 7) Add the following child XML element to the `appSettings` XML element in addition to already existing child XML elements or, if the `appSettings` XML element does not already exist in the file, create it as child element of the configuration root element with the following child XML element :

```

<add key="aspnet:RequestQueueLimitPerSession" value="2147483647"/>

```

8) Add the following XML element as last child element of the configuration root element:

```
<devExpress>
  <themes enableThemesAssembly="true" styleSheetTheme="" theme=""
  customThemeAssemblies="" baseColor="" font="" />
  <compression enableHtmlCompression="false"
  enableCallbackCompression="true" enableResourceCompression="true"
  enableResourceMerging="true" />
  <settings accessibilityCompliant="false" doctypeMode="Html5"
  rightToLeft="false" checkReferencesToExternalScripts="true"
  embedRequiredClientLibraries="true" protectControlState="true"
  ieCompatibilityVersion="edge" />
  <errors callbackErrorRedirectUrl="" />
</devExpress>
```

Prerequisites for Using Essential Objects®

The embedded third-party component Essential Objects® is the standard component for rendering of images in Alfabet.

The use of the component is activated by default. Activation is done the `alfabet.config` file of the Alfabet Web Application by the following XML element in the `alfaSection` XML element:

```
<add key="eo_publishing" value="on" />
```

Integration of Other External Applications

Some of the specified mechanisms for integration of external applications are only available when included in the customer's license agreement

Mechanisms	SOAP, SQL, XML, COM
Data Import/Export	The (optional) ADIF interface allows export, import and manipulation of the data in the Alfabet database. Data can be imported from or exported to other databases, XML files, CVS files or Microsoft® Excel files.
Access from/to third-party applications	Supported by the (optional) Alfabet Web Service. Interfaces to external databases and service registries are available on order. Details specified on an individual basis. Mechanisms for interfacing with external reporting tools included.

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The following executables provided by third-party components do not have a digital signature:

- godusoft.gsqlparser.dll
- SharpPlot.dll
- Syncfusion.Compression.Base.dll
- Syncfusion.Core.dll

- Syncfusion.DLS.Base.dll
- Syncfusion.DocIO.Base.dll
- Syncfusion.DocToPDFConverter.Base.dll
- Syncfusion.Pdf.Base.dll
- WPFVisifire.Charts.dll

Chapter 10: 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

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