

Deployment Guide

Installing Altair Data Analytics Products

Altair Knowledge Studio® 2025.0

Altair Knowledge Seeker® 2025.0

Altair Knowledge Studio® for Apache Spark[™] 2025.0



Table of Contents

1. Introduction	4
2. Product Components (Overview)	4
2.1 Knowledge Studio and Knowledge Seeker	4
2.2 Knowledge Studio for Apache Spark	5
3. Supported Hardware and Software Platforms	6
3.1. Overview: Supported Operating Systems	6
3.2. System Requirements	6
4. Release 2025.0 and Previous Versions	11
5. Prerequisites	12
5.1. Overview	. 12
5.2. R Software for Statistical Computing	. 13
5.2.1 R for Standalone and Client/Server Configuration on Windows	. 13
5.2.2. R for Client/Server Configuration on Linux	. 15
5.2.3. Rserve Package for R	. 15
5.3. Python	. 16
5.4. unixODBC and openssI for Linux	. 16
6. Supported Installation Modes on Windows	17
7. Deploying the Standalone Configuration	18
7.1. Deploying KS Workstation (Standalone)	. 18
7.2. Advanced Configuration Using KDSConnection.ini	. 26
7.3. Installing KS Library for R Integration	. 27
7.4. Installing Altair SLC and Altair Analytics Workbench	. 30
8. Deploying Client/Server Configuration	35
8.1. Deploying KS Server and Dependent Components on Windows Server	. 36
8.1.1. Install KS Server on Windows	. 36
8.1.2. Install KS Library for <i>R</i> Integration on Windows Server	. 44
8.1.3. Installing Altair SLC	. 47
8.1.4. Configure KS Service (KSWinLogin Service)	. 50
8.1.5. Configure User Rights on the Server	. 55
8.1.6. Configure Altair SLC and SSH Server	. 56
8.2. KS Server Installation and Configuration on Linux	. 61
8.2.1. Configure Pluggable Authentication Modules (PAM) for KS Service	. 61
8.2.2. Install KS Server on Linux	. 62



8.2.3. KS Libraries for R and Python	62
8.2.4. Install and Configure Altair SLC	63
8.2.5. Configure KS Service and Security	64
8.2.6. Environment for Database Connectivity	66
8.2.7. Starting and Stopping KS Service	68
8.2.8. Automating KS Server Startup with Linux Service Management Tools	69
8.2.9. Troubleshooting	70
8.3. Deploying Client Components for Client/Server Configuration	
8.3.1. Installing KS Workstation	
8.3.2. Installing Altair Analytics Workbench	
9. Alternative Installation Modes on Windows	79
9.1. Silent Install	79
9.2. Customizations to Assist in Repackaging for Deployment	82
10. Citrix and Remote Desktop Services Environments	85
10.1. Citrix	85
10.2. Remote Desktop Services	85
12. Advanced Configuration: Optional Runtime Parameters	87
13. Uninstalling Altair Data Analytics Products	
13.1. Modifying, Repairing, and Removing KS Workstation	88
13.2. Modifying, Repairing, or Removing KS Server for Windows	89
13.3. Uninstalling KS Server on Linux	90
14. Licensing Methods and Configuration	92
14.1. Licensing Methods	92
14.2. License Configuration	92
14.2.1. Environment Variables in the Standalone Configuration	92
14.2.2. Environment Variables for KS Server on Windows	
14.2.3. Environment Variables for KS Server on Linux	99
14.2.4. Machine Authorization for Managed Altair Licensing	100
15. Contacting Customer Support	104

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1. Introduction

This document provides instructions on deploying Altair Knowledge Studio and Knowledge Seeker products of version 2025.0 for all platforms and configurations.

If you are upgrading from an older version, see <u>Section 4: Release 2025.0 and Previous</u> <u>Versions</u>.

The Architecture White Paper is available upon request.

2. Product Components (Overview)

This guide covers deployment procedures for the desktop and server-based configurations of the following products:

- Knowledge Studio
- Knowledge Seeker
- Knowledge Studio for Apache Spark

Knowledge Studio and Knowledge Seeker include R and Python language integration features and SAS Language integration. If the intended users are going to use these features, R and Python software must be installed first.

The product name and feature set activated for each product are defined by the license applied after the installation.

2.1 Knowledge Studio and Knowledge Seeker

The **<u>Standalone configuration</u>** of Knowledge Studio and Knowledge Seeker for Windows Desktop or Windows Server includes the following installation packages:

- KS Workstation
- KS Library for R
- Altair SLC
- Altair Analytics Workbench

R and Python software are prerequisites. Installation instructions for the Standalone configuration are given in <u>Section 7</u>.

The <u>Client/Server configuration for Windows Server</u> includes the following installation packages:

Client side:

- KS Workstation
- Altair Analytics Workbench



Server side:

- KS Server
- KS Library for R
- Altair SLC

The <u>Client/Server configuration for Linux</u> includes KS Workstation, KS Server, and Altair SLC. KS Libraries for R and Python are built in the KS Server package.

<u>Prerequisite software</u>: R and Python software must be installed on the server side if the end users require R or Python code integration features.

The installation procedure for the client/server configuration is described in <u>Section 8</u>.

2.2 Knowledge Studio for Apache Spark

Knowledge Studio for Apache Spark[™] is a data science platform integrated with Apache Spark technology to provide predictive analytics on large-scale distributed data structures - Hadoop HDFS, Amazon S3, and other storage types supported by Spark.

For the prerequisites concerning the Apache Spark server and the storage cluster, see *"Requirements for Knowledge Studio for Apache Spark"* in <u>Section 3.2</u>.

The <u>Standalone configuration</u> of Knowledge Studio for Apache Spark includes KS Workstation. For installation instructions, see <u>Section 7</u>.

The <u>Client/Server configuration for Windows or Linux</u> includes the following installation packages:

Client side:

KS Workstation

Server side:

KS Server

The installation procedure for the client/server configuration is described in Section 8.



3. Supported Hardware and Software Platforms

3.1. Overview: Supported Operating Systems

Altair Data Analytics products version 2025.0 are available in the standalone and client/server configurations for the following operating systems:

KS Workstation (Standalone or Client)	KS Server
	Windows Server on x86-64 platform:
	Windows Server 2016
Windows on x86-64 platform	Windows Server 2019
• Windows 10	Windows Server 2022
Windows 11	
Windows Server 2016	Linux on x86-64 platform:
Windows Server 2019	• Red Hat Enterprise Linux 7, 8, and 9
Windows Server 2022	• CentOS 7, CentOS Stream 8 and 9

- > All products are supported only on 64-bit systems.
- Knowledge Studio for Apache Spark requires Apache Spark server. System requirements for this product are described at the end of Section 3.2 below.

3.2. System Requirements

- Microsoft .NET Framework 4.6.2 (or higher) and 3.5 Service Pack 1 are required for KS Workstation. The KS Workstation installation package includes the web installer for Microsoft .NET Framework 4.6.2 and installs it unless the same or a higher version is already present. It also enables Microsoft .NET Framework 3.5 if it is not already enabled in Windows features.
- **Microsoft Visual C++ 2015-2022 Redistributable** package is required for KS Workstation and KS Server. Both KS Workstation and KS Server installers include the web installer for Microsoft Visual C++ 2015-2022 Redistributable and installs it unless the same or a higher version is already present.
- KS Workstation includes KS PDF Printer component, which enables the *Copy to PDF* functionality for exporting decision trees, charts, and reports to PDF. The printer uses Amyuni PDF Converter by <u>Amyuni Technologies, Inc.</u>



The following are the minimum and recommended requirements for all configurations:

1. Standalone Configuration

KS Workstation 2025.0 – Standalone

Minimum	Recommended	
Windows 10 or 11 (64-bit) x86-64 CPU, 2 GHz	Windows 10 or 11 (64-bit) Quad-core x86-64 CPU, 2 GHz, or better 8 GB RAM or more *	
Disk space:	Disk space:	
 4 GB for program files ** 15+ GB for user's projects Monitor resolution: 1152x864 	 4 GB for program files ^^ 20+ GB for user's projects Monitor resolution: 1680x1050 or better 	

* The amount of RAM required for the Standalone configuration depends on the typical size of analytic datasets and the types of models to be built. If the users will be dealing with very large datasets and need help assessing the required amount of RAM, please email <u>dasupport@altair.com</u>.

** If R and Python integration features are required, R and Python program files and packages may take additional 3 GB or more.

2. <u>Client/Server Configuration</u>

KS Workstation 2025.0 – Client

Minimum	Recommended	
Windows 10 or 11 (64-bit)	Windows 10 or 11 (64-bit)	
x86-64 based CPU, 2 GHz x86-64 based CPU, 2 GHz or higher		
4 GB RAM	8 GB RAM or more	
Disk space: 4 GB for program files	Disk space: 4 GB for program files	
Monitor resolution: 1152x864	Monitor resolution: 1680x1050 or better	



KS Server 2025.0

Minimum*	Recommended	
Windows Server 2016, 2019, or 2022; Red Hat Enterprise Linux 7, 8, or 9; CentOS 7; CentOS	Windows Server 2016, 2019, or 2022; Red Hat Enterprise Linux 7, 8, or 9; CentOS 7; CentOS Stream 8 or 9	
x86-64 based CPU, 2 GHz	A multi-core x86-64 based CPU(s) with at least 8 cores in total, 2.5 GHz, or better **	
8 GB RAM	16 GB RAM or more**	
Disk space:	Disk space:	
 3 GB for program files 10+ GB per user for users' projects** 	 3 GB for program files 15+ GB per user for users' projects** 	

** **Note:** System requirements for the server depend on the maximum number of users expected to be using KS Server concurrently. The KS Server performance also depends on the typical size of analytic datasets, on whether any other applications run on the same server, and other factors. To ensure that your product is compatible with your environment and delivers expected performance, please fill in the Installation Questionnaire. Contact your account representative or email <u>dasupport@altair.com</u> to request the questionnaire if necessary.

If R and Python integration features are required, the prerequisite R and Python program files and packages may take at least 3 GB of disk space on the KS Server host, depending on the R and Python distributions of your choice.

3. Requirements for Knowledge Studio for Apache Spark

Knowledge Studio for Apache Spark is an application for data mining and predictive analytics on large-scale distributed data structures (HDFS, Amazon S3, etc.) via <u>Apache Spark</u>.

The types of distributed storage supported by Knowledge Studio for Apache Spark are the same as those supported by Apache Spark. The product is supported for any Hadoop distribution satisfying the *Apache Spark server requirements* listed below.

Examples of supported Hadoop distributions:

• Cloudera Data Platform. All CDP versions compatible with Apache Spark 2.4, 3.1, 3.3, or 3.5.1: See the requirements for CDS Powered by Apache Spark at https://docs.cloudera.com/



• **Databricks Platform** on Azure and AWS clouds with Apache Spark 2.4, 3.1, 3.3, or 3.5.1. See <u>Apache Spark on Databricks</u>. See also the Databricks documentation for Azure and AWS at <u>https://databricks.com/documentation</u>.

Note: Spark cluster configurations with dynamic allocation are not supported.

System requirements for the Knowledge Studio software components are described at the beginning of Section 3.2 (see above). The following are the requirements for Apache Spark Server.

Apache Spark server requirements			
~	Apache Spark version 2.4, 3.1, 3.3, or 3.5.1		
	 Cluster management system options: Standalone (native Spark cluster) or <u>Hadoop YARN</u> or <u>Apache Mesos</u> 		
	Python version 3.7 or 3.10, 64-bit		
\triangleright	The following Python packages:		
	 <u>Pandas</u>: the <u>Python Data Analysis Library</u> version 2.1.3 provides data structures and analysis tools for Python 		
	• <u>NumPy</u> : the package for scientific computing with Python (version 1.26.0)		
	 <u>Scirry</u>. the fundamental library for scientific computing (version 1.11.3) <u>Scikit-learn</u>: tools for data mining and data analysis (version 1.3.2) 		
	 <u>PyArrow</u>: Python API of Apache Arrow 		
\succ	Jupyter Notebook version 6.5.5		
\triangleright	JupyterHub version 4.0.8		
For Jupyter Notebook prerequisites and installation instructions, see https://jupyter.readthedocs.io/en/latest/install.html For JupyterHub prerequisites and installation instructions, see			

Note: The use of JupyterHub as a multi-user Jupyter notebook server is strongly recommended. If you prefer not to use JupyterHub, you can use basic authentication implemented by other mechanisms and configure them according to your security, authentication, and file system access requirements.

Examples of supported types of distributed storage clusters:

- Amazon EMR
- Microsoft Azure HDInsight
- Custom clusters satisfying the above requirements for Apache Spark, cluster management systems, Python, and Jupyter.



For your convenience, our Customer Support can provide a script for installing the necessary prerequisites, including the required Python packages. The script is provided upon request. You can modify it as you see fit to install the components that you need. Please contact Data Analytics Customer Support at <u>dasupport@altair.com</u> to request the script.

For the client/server configuration of Knowledge Studio for Apache Spark, the range of TCP ports 6060 – 6090 on the server must be open for inbound connections from the client machines. In the standalone (desktop) configuration, Knowledge Studio for Apache Spark also uses ports in this range, but this is confined to localhost.

For more information on the security configuration settings:

- for KS Server on Windows, see <u>Section 8.1.4</u>: "Configuring KS Service".
- for KS Server on Linux, see subsection "Configuring Server Security (Network and Firewall Settings)" in <u>Section 8.2.5</u>: "Configuring KS Server on Linux"



4. Release 2025.0 and Previous Versions

- Version 2025.0 can be installed and run side by side with any previous version.
- Uninstalling Altair Data Analytics products does not remove the users' data, project files, working directories or licenses.
- If you run version 2025.0 side by side with an older version for a period of evaluation or testing during the upgrade, use a separate working directory for each version, since older projects modified in 2025.0 may no longer be compatible with their original version. See <u>Section 5</u> for details about the Working Directory.
- Project compatibility:
 - Altair projects created in versions 9.3 2024.2 can be opened and modified in version 2025.0 without any conversion.

It is recommended to make a backup copy of your old projects before opening them in version 2025.0.

- Forward compatibility is not supported: models and other objects in projects created or modified in version 2025.0 may not be loaded correctly when opened in older versions.
- KS PDF Printer compatibility:

When using KS Workstation 2025.0 side by side with an older version, the error "*Printer not activated, error code - 41*" may occur when using the **Copy to PDF** command under the File menu. The solution is to reinstall both versions of KS PDF Printer by executing the following commands in Command Prompt started as administrator. For example, for versions 2025.0 and 2023.1, run the following commands:

```
cd "C:\Program Files\Altair Data Analytics\KS Workstation 2025.0.0\bin"
Install -s -u "KS PDF Printer"
Install -s "KS PDF Printer"
cd "C:\Program Files\Altair Data Analytics\KS Workstation 2023.1.0\bin"
Install -s -u "KS PDF Printer"
Install -s "KS PDF Printer"
```

 Note: In case KS PDF Printer is removed from the system, it can be restored by running AngossPDFInstall.cmd from C:\Program Files\Altair Data Analytics\KS Workstation 2025.0.0\bin.



5. Prerequisites

This section describes installation prerequisites for all configurations and platforms.

5.1. Overview

- Ensure that your systems meet the <u>hardware and software requirements</u>. Note that the required hardware resources (CPU, memory) depend on the typical size of analytic datasets, the type of data mining tasks to be performed by the users, the expected number of concurrent users in the case of a server-based configuration.
- Knowledge Studio and Knowledge Seeker features include integration with Tableau® and Qlik® business intelligence software for interactive data visualization. Tableau integration features in Knowledge Studio and Knowledge Seeker require Tableau Desktop or any Tableau workbook viewer on the user's workstation and, optionally, web access to a Tableau Server from the user's workstation. Tableau components can be installed independently of Altair Data Analytics products. Supported Tableau versions are 2019.1 and higher. Altair does not distribute Tableau software or licenses for it. If you do not use Tableau but would like to know more about it, please visit http://www.tableau.com/.
- R and Python language integration features require R Software for statistical computing and Python software. Install them if the end users need these features. The instructions are given below in <u>Sections 5.2</u> and <u>5.3</u>.
- For configurations with multi-user access (client/server or shared standalone software on a server):
 - For the client/server configuration, TCP port 5470 must be open on the KS Server host for inbound connections from the client machines. Knowledge Studio for Apache Spark also uses TCP port range 6060-6090. See <u>Section 8.1.4</u> for details.

You may also need to add KS Server and KS Workstation to the list of authorized applications if such a list is maintained for your antivirus or other security systems.

- Each user must have a user account recognized by the host machine where KS Server is installed.
- For each user, a working directory with sufficient space must be allocated for their projects. For example, server administrators can create a directory KS_Projects with subdirectories KS_Projects/<user_name> for each user. A single shared directory may be used for all users, but it is a less organized way.

The Working Directory does not have to be on the application server that hosts KS Server. It may be on a network drive, as long as it is on a file system accessible from the application server and the read & write access to this storage is fast enough. In the case of a Windows Server, users can specify a UNC path for the Working Directory. Note that KS Server cannot access mapped drives in the client/server mode on Windows.



The necessary space to allocate can be calculated based on the average size of analytic datasets (number of rows and columns), the number of datasets in each project, and the number of projects. Assign the appropriate Read & Write permissions for the created directories as required by your security policies. *Note: Any user can change their working directory at any time after the installation using the Connect or Set Working Directory commands in the File menu of KS Workstation.*

- If users will be importing data from databases, ODBC drivers for the source databases must be installed on the server, and the users must have sufficient permissions on the server to load the drivers.
- If you are using self-hosted Altair License Server, you will receive a license file and an installation guide for Altair License Manager. See <u>Section 14.2</u> for details.

5.2. R Software for Statistical Computing

Knowledge Studio and Knowledge Seeker support integration with <u>the *R* language</u>. *R* software must be installed as a prerequisite if the end users require the *R* integration feature.

R versions 4.0 and higher are supported.

Note: For the Client/Server configuration of Knowledge Studio and Knowledge Seeker, R is only required on the server side.

5.2.1 R for Standalone and Client/Server Configuration on Windows

R software is available at the R Project website http://www.r-project.org/.



The R Project for Statistical Computing

Getting Started

R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and MacOS. To **download R**, please choose your preferred CRAN mirror.

On the R Project page, click "download R" and select the preferred mirror site of the <u>R</u> <u>Archive Network</u>. On the next page click "Download R for Windows"



The Comprehensive R Archive Network

Download and Install R Precompiled binary distributions of the base system and contributed packages, Windows and Mac users most likely want one of these versions of R: • Download R for Linux (Debian, Fedora/Redhat, Ubuntu) • Download R for macOS • Download R for Windows R is part of many Linux distributions, you should check with your Linux package management system in addition to the link above.

On the next page, click "Install R for the first time":

	R for Windows
Subdirectories:	
base	Binaries for base distribution. This is what you want to install R for the first time.
<u>contrib</u>	Binaries of contributed CRAN packages (for $R \ge 4.0.x$).
old contrib	Binaries of contributed CRAN packages for outdated versions of R (for $R \le 4.0.x$).

On the next page, download the latest version of R software. If you need an older version of R, click the *Previous releases* link on the same page. Note that R versions older than 4.0 are not supported.

Run the downloaded R installer. In the third page of the installation wizard, select at least the **Main Files** and **64-bit Files** components.

r → Setup - R for Windows 4.3.2	_		×
Select Components Which components should be installed?			R
Select the components you want to install; clear the components you install. Click Next when you are ready to continue.	u do not	want to	
User installation		~	
Main Files		89.6 MB	
64-bit Files		71.0 MB	
Message translations		8.9 MB	
Current selection requires at least 172.5 MB of disk space.			
<u>B</u> adk <u>N</u> e	xt	Can	cel



Choose the remaining options as desired and finish the installation.

5.2.2. R for Client/Server Configuration on Linux

To install R on Linux, use the following examples of R installation steps.

On RHEL 7 and CentOS 7:

```
sudo yum update
sudo yum install epel-release
sudo yum install R
```

On RHEL 8 and 9 or CentOS Stream 8 and 9:

sudo dnf install epel-release

sudo dnf config-manager --set-enabled powertools

sudo yum install R

The default R installation directory is /usr/lib64/R. To verify the installation, use the command

R --version

For more information on installing R on Linux, see the R project website <u>https://www.r-project.org/</u> and <u>https://fedoraproject.org/wiki/EPEL</u>

5.2.3. Rserve Package for R

The **Rserve** package (<u>Binary R server</u>) is required. It must be installed in the *R* library folder used by the **R Code** node in Knowledge Studio and Knowledge Seeker. By default, it is the common library location for *R*. On Windows, it is usually C:\Program Files\R\R-N.N.N\library, where N.N.N is the R version. On Linux, it is usually /usr/lib64/R/library.

Make sure the common library location for R has **Read** and **Write** permissions for the intended user(s) or group. For example, for R version 4.3.2, it is C:/Program Files/R/R-4.3.2/library. For the client/server configuration, you may want to create a user group for KS Server users and assign the permissions to the group.

Windows:

Run the R console and install the Rserve package into the common R library location. The following example assumes that the R version is 4.3.2:

install.packages("Rserve", "C:/Program Files/R/R-4.3.2/library")

Linux:

• If you are using Amazon Linux AMI, install or update openssl-devel using the command yum install openssl-devel



• Run *R* and install the Rserve package version 1.8-0 or higher. For example, to install Rserve from the repository <u>https://rforge.net</u>, use the following command from the *R* command line:

```
install.packages("Rserve",,"https://rforge.net")
```

The library location can be specified explicitly as follows:

install.packages("Rserve","/usr/lib64/R/library","https://rforge.net")

Refer to the R documentation for the install.packages and .libPaths commands, if necessary.

5.3. Python

The **Python Language Integration** enables embedding <u>Python programs</u> into the visual workflows of Knowledge Studio and Knowledge Seeker projects. For more information on Python, see the Python project website <u>https://www.python.org/</u>.

Prerequisites

 The Python Code node feature requires Python version 3.7 or higher, Python Data Analysis Library (pandas), SciPy and NumPy libraries, and the reports package. Python versions 3.7 – 3.12 are supported.

For the Client/Server configuration, Python is only required on the server side. On Linux, Python libraries should be installed for all users rather than in a local user directory.

To enable Jupyter Notebook integration in the Client/Server configuration on Windows:

- Set the following system environment variables on the server. Their values must be set to folders that have Read & Write permissions for all users of the application.
 - O JUPYTER CONFIG DIR
 - O JUPYTER DATA DIR
 - O JUPYTER RUNTIME DIR
- In the Windows Firewall on the server, open a range of TCP ports for Jupyter Notebook users (for example, 8800-8900) and inform each user of the port assigned to them for Jupyter Notebook use.

5.4. unixODBC and openssl for Linux

The following prerequisites are required for KS Server on Linux:

<u>unixODBC</u> driver manager

To install unixODBC, use the command

sudo yum install unixODBC



To check the version of the installed unixODBC:

rpm -qa unixODBC

• openssl and openssl-libs version 1.0.2 or higher

To install the latest version, use the command

sudo yum install openssl openssl-libs

6. Supported Installation Modes on Windows

- To install an Altair Data Analytics product on a small number of workstations, run the downloaded MSI package on each workstation. This process is described below in the sections on deploying the standalone and client/server configurations.
- To install the software in the silent mode from the command line without user interaction via the wizard, see <u>Section 9.1, "Silent Install"</u>.
- The Altair Data Analytics software installer supports mass deployment on many workstations using automated installation tools. For example, macros can be specified in the installation wizard to customize the Working Directory location for individual users. See <u>Section 9.2, "Customizations to Assist in Repackaging KS Workstation for</u> <u>Deployment"</u>.
- To deploy the product in a Citrix environment or use it with Remote Desktop Services, see <u>Section 10</u>.



7. Deploying the Standalone Configuration

- The Standalone configuration can be used by a single user on Windows Desktop or by multiple users on Windows Server via Remote Desktop connection or Citrix.
- KS Workstation is the main component of the Standalone configuration of Knowledge Studio and Knowledge Seeker for Windows Desktop or Windows Server.
 KS Library for R is required to enable R language integration features (see <u>Section</u> <u>5.2.1</u>), while Altair SLC and Altair Analytics Workbench are required for the SAS Language integration features in Knowledge Studio.
- **KS Workstation** is the only component required for the Standalone configuration of Knowledge Studio for Apache Spark. For the Apache Spark server and Hadoop cluster requirements, see <u>Section 3</u>, Subsection: "*Requirements for Knowledge Studio for Apache Spark*".

7.1. Deploying KS Workstation (Standalone)

- 1. Log in to the computer as a user with sufficient rights to install software.
- 2. Double-click the downloaded MSI package *KS-Workstation-2025.0-64bit.msi* to start the installation.
- **3.** The installer prepares the InstallShield Wizard, and the Welcome window opens. Click **Next** >.



 The License Agreement window opens. If you accept the terms, select "I accept" and click Next >.



Altair Data Analytics 2025.0.0 - InstallShield Wizard	×		
License Agreement Please read the following license agreement carefully.	R		
Altair Engineering Inc Data Analytics Software License Agreement			
THIS SOFTWARE LICENSE AGREEMENT ("AGREEMENT") SETS FORTH THE STANDARD TERMS AND CONDITIONS FOR THE USE OF SOFTWARE AVAILABLE FROM ALTAIR AND WHICH IS ACCESSIBLE VIA PHYSICAL MEDIA, A LICENSE FILE, OR FROM AN ALTAIR OR THIRD-PARTY WEBSITE OR HOSTED COMPUTE RESOURCES. THIS AGREEMENT SUPERSEDES ANY AND ALL PRIOR STANDARD TERMS AND CONDITONS FOR ACCESS TO AND USE OF SUCH SOFTWARE. BY			
I <u>accept the terms in the license agreement</u> I <u>d</u> o not accept the terms in the license agreement	t		
InstallShield < <u>B</u> ack <u>N</u> ext > Canc	el		

- **5.** The Configuration Type window opens.
 - Select the "Standalone configuration" option if the software will be run in the standalone mode on this machine.







6. Specify whether you are the intended user. (This will define the default Working Directory at one of the next steps.) Click Next >.

🛃 Altair Data Analytics 2025.0.0 - InstallShield Wizard	×
Intended User of Application Specify whether the installation is performed by the intended user.	
 I am the intended user installing the software for I am an administrator installing the software for s 	myself omeone else
InstallShield	Next > Cancel

 If necessary, change the destination folder for the application program files by clicking the Change button and specifying the desired location. The default is C:\Program Files\Altair Data Analytics. Click Next >.





8. The Working Directory window opens. Specify the path for the Working Directory for Altair project files. Make sure it has Read & Write permissions for the intended user(s). If necessary, click **Change** and create a new folder.

Note 1: If you prefer to use cloud storage, such as OneDrive or Google Drive, select a folder with offline access enabled. For example, if you choose a folder on OneDrive, right-click the folder in Windows Explorer and select option "Always keep on this device".

Note 2: The Working Directory can be changed after the installation at any time using the Set Working Directory command or the Connect command in the File menu.

💿 Altair Da	ata Analytics 2025.0.0 - InstallShield Wizard		×
Working Specify	Directory the working directory for users' projects.	🛆 AI	TAIR
Þ	Working Directory: C:\Users\jsmith\Documents\Altair		<u>C</u> hange
	Select a folder with Read & Write permissions for th	e intended user(s).	
InstallShield -	< <u>B</u> ack	<u>N</u> ext >	Cancel

Click Next >

- 9. The License Configuration window opens.
 - If the host machine has already been configured for Altair licensing, the current values of the environment variables ALM_HHWU and/or ALTAIR_LICENSE_PATH are displayed. Click Next > to accept the existing configuration.

Example 1: The machine is already configured for managed Altair Licensing (ALM HHWU=True):



Altair Data Analytics 2025.0.0 - InstallShield Wizard	2
Altair License Configuration	
Configuration of the Altair License type	LIAIR
License Information Altair license configuration is shown below. Click Next to accept it an the installation	d complete
Atm_nnwo. not	
Edit	
O Managed Altair Licensing	
On-premises Altair License Server:	
Port@Host	
Example: 6200@Server1	
at-llChield	
< <u>B</u> ack <u>N</u> ext >	Cancel

<u>Example 2</u>: The machine is already configured for an **on-premises Altair License Server** (ALTAIR_LICENSE_PATH=6200@<server_name>; ALM_HHWU=false):

🛃 Altair Data Analytics 2024.2.0 - InstallShield Wizard 🛛 🗙
Altair License Configuration Configuration of the Altair License type
License Information Altair license configuration is shown below. Click Next to accept it and complete the installation.
ALM_HHWU: false ALTAIR_LICENSE_PATH: 6200@example_license_server1
Edit
 Managed Altair Licensing On-premises Altair License Server:
Port@Host 6200@example_license_server1
Example: 6200@Server1
InstallShield < <u>B</u> ack <u>Next</u> > Cancel



• If the host machine has **not** previously been configured for Altair licensing, select *Edit* and choose the licensing method: *Managed Altair Licensing* or *On-premises Altair License Server*.

Contact your team members responsible for Altair product licenses if you are not sure which licensing method you need to use.

🔄 Altair Data Analytics 2025.0.0 - InstallShield Wiza	rd X
Altair License Configuration	
Configuration of the Altair License type	
License Information	
Please enter the Altair license configuration info	ormation.
_	
✓ Edit	
Managed Altair Licensing	🛟 Configure
On-premises Altair License Server:	
Port@Host	
Evample: 6200@Senier1	
Example: 6200@Server1	
InstallShield	
< Back	Next > Cancel

 If you select *Managed Altair Licensing*, click **Configure** to open Altair License Utility and authorize the machine using the options in the Managed Licensing tab.



S Altair License Utility	- 🗆 X
File Edit Tools Help	
HostID License Usage Managed Licensing Activation Borrow Authorization	wing Local Admin Remote Admin Proxy Configuration
Authorize with Altair One E-mail Address Password Sign In Use Auth Code	Proxy Host Proxy Port Proxy Username Proxy Password
This tab is used for Altair's Managed Licensing.	Save Revert This is not for configuring On-Premises licensing

Once you close Altair License Utility and click **Next** >, the system environment variable ALM_HHWU will be created, and its value will be set to *True*.

 If you select On-premises Altair License Server, enter the license server address and port in the format <port>@<host>, for example, 6200@server1.

Altair Data Analytics 2025.0.0 - InstallShield Wizard × Altair License Configuration Configuration of the Altair License type
Altair License Configuration
Configuration of the Altair License type
Configuration of the Altair License type
License Information
Please enter the Altair license configuration information.
C E 4/4
O Managed Altair Licensing
On-premises Altair License Server:
Port@Host
Example: 6200@Server1
and the second
InstallShield



Once you click Next >, the system environment variables ALTAIR_LICENSE_PATH and ALM_HHWU will be created. The former will be assigned the value you specified, and the latter will be set to *False*.

See <u>Section 14</u> for detailed information about the licensing methods.

- **10.** At the final step:
 - Choose whether to install the desktop shortcut.
 - The option to install KS PDF Printer is selected by default. It enables the function of saving decision trees, tables, charts, and reports as PDF. Leave it selected unless you are already using a PDF printer driver or converter of the same brand.

Click Install to start the installation.

💿 Altair Data Analytics 2025.0.0 - Instal	IShield Wizard		×
Ready to Install the Program The wizard is ready to begin installati	ion.	🛆 AI	TAIR
Click Install to begin the installation. If you want to review or change any o Cancel to exit the wizard.	of your installatio	on settings, click Bacl	k. Click
 Install Desktop Shorter Install KS PDF Printer (KS PDF Printer uses A Technologies, Inc. 	ut (required to save myuni PDF Conv	: views as PDF) erter by Amyuni	
InstallShield	< <u>B</u> ack	<u>Install</u>	Cancel

11. The Setup Status window shows the installation progress. When the installation is complete, choose whether to launch the software now and click **Finish**.





The installed software is now available in the Windows Start menu. Launch the application by double-clicking the desktop shortcut **KS Workstation 2025.0.0** or selecting **Start | All Programs | Altair Data Analytics | KS Workstation 2025.0**.

See <u>Section 14</u> for detailed information about the licensing methods.

NOTE: The KS Workstation installer enables Microsoft .NET Framework 3.5 if it is not already enabled in Windows features. If the installer fails to enable it, download the offline installer from the Microsoft website https://learn.microsoft.com/en-us/dotnet/framework/install/dotnet-35-windows.

7.2. Advanced Configuration Using KDSConnection.ini

After installing KS Workstation, you can change the initial settings for the mode (Standalone or Client/Server) and the Working Directory using the file KDSConnection.ini in C:\Program Files\Altair Data Analytics\KS Server 2025.0.0\bin.

Example content of KDSConnection.ini:

```
<Config>
<Mode>0</Mode>
<Location>C:\Analytic Workspace\</Location>
<Service></Service>
<User></User>
<Host></Host>
<Port>5470</Port>
<Secure>True</Secure>
</Config>
```



For example, to change the mode from Standalone to Client/Server, specify **1** for Mode, specify the user ID, the KS Server host name or IP address, and the port number in the appropriate lines as shown in the example below:

```
<Config>
<Mode>1</Mode>
<Location>C:\Analytic Workspace\</Location>
<Service></Service>
<User>jsmith</User>
<Host>ks_server</Host>
<Port>5470</Port>
<Secure>True</Secure>
</Config>
```

7.3. Installing KS Library for R Integration

Knowledge Studio and Knowledge Seeker support integration with <u>R software for statistical</u> <u>computing</u>. If the end users require this feature, install KS Library for R as described below.

In the Prerequisites section above, see <u>Section 5.2: "R Software for Statistical Computing"</u>. The <u>Rserve</u> package is required (see <u>Section 5.2.3: "Rserve Package for R"</u>).

- 1. Make sure KS Workstation 2025.0 and R v4.0.0 or higher are installed.
- 2. Download *KS Library 2025.0 for R 4.0 or higher* from the <u>Altair Knowledge Studio</u> <u>Downloads page</u>.
- 3. Uninstall any previous version of *KS Library for R* from the Programs and Features list in the Windows Control Panel.
- 4. Double-click the downloaded installer file. Click Next > in the Welcome screen.





5. In the License Agreement window, select "I accept" if you accept the terms. Click Next >.



6. The Destination Folder window opens. KS library for R will be installed into <R root folder>\R-X.X\library\, where R-X.X is the most recent version of R on the host machine. The standard R root folder is C:\Program Files\R. The default folder to extract the temporary setup files is C:\Program Files\Altair Data Analytics. To change any of these folders, click the Change button.





Click Next >.

7. Click Install.

×
IR
l to
cel

8. The Setup Status window shows the installation progress. When the installation is complete, click Finish.





As a result, three subfolders representing the required R integration libraries are created under <R root folder>\R-X.X\library\:

- angoss
- KnowledgeSurvival
- xtable

If you are going to use a different R library path, copy the folders angoss, xtable, and KnowledgeSurvival from <R program folder>\R-X.X\library\ to the desired R library location.

Note: The **<u>Rserve</u>** package, whose installation was described in <u>Section 5.2.3</u>, must be present in the same R library location.

7.4. Installing Altair SLC and Altair Analytics Workbench

Knowledge Studio supports SAS Language. This functionality is powered by Altair SLC and Altair Analytics Workbench (formerly known as WPS Analytics).

- Download the latest versions of <u>Altair SLC</u> and <u>Altair Analytics Workbench</u> from <u>AltairOne</u> <u>Marketplace</u>. If you don't have an AltairOne account, please reach out to the person managing Altair software licenses at your organization or contact Altair Data Analytics Customer Support at <u>dasupport@support.com</u>.
- 2. Run the downloaded Altair SLC installation package. Click Next > in the Welcome screen.





3. In the End-User License Agreement window, select "I accept the terms in the License Agreement" if you accept the terms. Click Next >.



4. In the Custom Setup page, select all Altair SLC program features, as shown below. To change the destination folder for the application program files, click the Change button and specify the desired location. The default is C:\Program Files\Altair\SLC\<version>. Click Next >.

🧟 Altair SLC 2024 Setup	– 🗆 X
Custom Setup	
Select the way you want features to be installed.	
Click the icons in the tree below to change the way	features will be installed.
Altair SLC 2024 Altair SLC 2024	All features for Altair SLC 2024.1 (5.24.2.0.1334)
	This feature requires 69KB on your hard drive. It has 3 of 3 subfeatures selected. The subfeatures require 713MB on your hard drive.
Location: C:\Program Files\Altair\SLC\2024	B <u>r</u> owse
Re <u>s</u> et Disk <u>U</u> sage	Back Next Cancel



5. Click **Install** to start the installation.



6. The Setup Status window shows the installation progress. When the installation is complete, click Finish.

Altair SLC 2024 Setup		_		\times
	Completed the Altair SL Wizard	_C 2024	Setup	
	Click the Finish button to exit the S	etup Wizard		
	<u>B</u> ack	nish	Cance	

7. Altair SLC provides the engine component (SAS language compiler) with no graphical user interface. Install <u>Altair Analytics Workbench</u> to access a GUI-based integrated



development environment for the SLC engine. Run the Altair Analytics Workbench installation package. Click **Next** > in the Welcome screen.

🧟 Altair Analytics Workbench	2024 Setup	_		×
	Welcome to the Altair A Workbench 2024 Setup	nalytics Wizard		
	The Setup Wizard will install Altair A on your computer. Click Next to con the Setup Wizard.	nalytics Wo tinue or Ca	orkbench 2 ancel to ex	2024 cit
	<u>B</u> ack <u>N</u> e	xt	Canc	el

8. In the End-User License Agreement window, select "I accept the terms in the License Agreement" if you accept the terms. Click Next >.





 In the Custom Setup page, select all program features, as shown below. To change the destination folder for the application program files, click the Change button and specify the desired location. The default is C:\Program Files\Altair\Analytics Workbench\<version>. Click Next >.

🛃 Altair Analytics Workbench 2024 Setup	-	<
Custom Setup Select the way you want features to be installed.		
Click the icons in the tree below to change the way	y features will be installed.	
Altair Analytics Workbench 2024 Documentation Java Runtime Environme Altair Analytics Workben	All features for Altair Analytics Workbench 2024.1 (5.24.2.0.1334)	
	This feature requires 403KB on your hard drive. It has 3 of 3 subfeatures selected. The subfeatures require 620MB on your hard drive.	
Location: C:\Program Files\Altair\Analytics	s Workbench\2024\ B <u>r</u> owse	
Reset Disk Usage	Back Next Cancel	

10. Click **Install** to start the installation.





Altair Analytics Workbenc	h 2024 Setup	-		×
	Completed the Altair Workbench 2024 Set	Analytics up Wizard		
	Click the Finish button to exit th	ne Setup Wizard		
	Back	Finish	Capo	a

11. The Setup Status window shows the installation progress. When the installation is complete, click Finish.

12. Altair Analytics Workbench is now available in the Windows **Start** menu. Launch the application by double-clicking the desktop shortcut "Altair Analytics Workbench" or selecting **Start | Altair | Altair Analytics Workbench**.

Altair SLC and Analytics Workbench use the same license as Knowledge Studio and Knowledge Seeker. Activating these products with an <u>Altair Units License</u> automatically activates SLC and Analytics Workbench on the same machine.

8. Deploying Client/Server Configuration

For the client/server configuration, **KS Workstation** software must be installed on each client machine, and **KS Server** software must be installed on the server.

<u>R Statistical Software</u>, <u>Python software</u>, and KS Library 2025.0 for R must be installed on the server if users need R and Python integration features.

For SAS Language integration features, <u>Altair SLC</u> must be installed on the server, while <u>Altair</u> <u>Analytics Workbench</u> must be installed on the client machines.

Note: TCP port 5470 must be open for inbound connections on the KS Server host. The application can be configured to use a different port if necessary. Additional ports need to be open for Knowledge Studio for Apache Spark. The details are provided in the sections below.

Security protocols: In the client/server mode, **TLS1.2** is used by default. The older versions TLS1.1, TLS1.0, and SSL are never used.



Make sure all the installation prerequisites listed in <u>Section 5</u> are met. Allocate the necessary disk space on the server and create Working Directories for the users following the guidelines in <u>Section 5</u>.

Prior to installing KS Server on a machine that has a previous version of KS Server running, notify the users to exit the application, as the installer will shut down all KS user processes.

For deploying KS Server on Windows, follow the instructions in <u>Section 8.1</u>. For deploying KS Server on Linux, follow the instructions in <u>Section 8.2</u>.

After installing KS Server, proceed to <u>Section 8.3</u>, which describes the process of deploying KS Workstation as part of the client/server configuration.

Note: In the client/server configuration, both KS Workstation and KS Server must be of the same major version. For example, KS Workstation 2025.0 works only with KS Server 2025.0 and does not work with KS Server 2024.1. When upgrading, you must upgrade the clients and the server to the new version.

8.1. Deploying KS Server and Dependent Components on Windows Server

This section describes the process of installing and configuring KS Server and dependent components on Windows Server platforms.

8.1.1. Install KS Server on Windows

- 1. Log in as an administrator to the machine that will host KS Server.
- It is assumed you have downloaded the KS Server package following the instructions in the email from the License Administrator. Double-click the downloaded MSI package KS-Server-2025.0-64bit.msi.
- The setup prepares the InstallShield Wizard, and the Welcome window opens. Click Next >.




4. The License Agreement window opens. If you accept the terms, select "I accept".



Click Next >.

- **5.** The Setup Type window opens:
 - To install KS Server program files to the default location with default settings, select the **Express** option.



The application program files will be installed in C:\Program Files\Altair Data Analytics. A Windows Service called *KSWinLoginService2025.0_64* will be installed and started automatically.

💿 Altair Data An	alytics 2025.0.0 - InstallShield Wizard X	
Setup Type Choose the se	etup type that best suits your needs.	
Please select a	a setup type.	
Express	The program will be installed with default features.	
Custom	Choose which program features you want installed and where they will be installed. Recommended for advanced users.	
InstallShield	< <u>B</u> ack <u>N</u> ext > Cancel	

Click Next > and proceed to Step 7.

 To change the destination for KS Server program files or KS service properties such as the TCP port for the service to listen on, select the Custom option.





Click Next >.

6. If you select the Custom option, the Custom Setup window opens. To change the destination folder for the program, click the Change button and specify the desired location. The default is C:\Program Files\Altair Data Analytics.

🔁 Altair Data Analytics 2025.0.0 - InstallShield Wizard	×
Custom Setup Select the program features you want installed.	
Click on an icon in the list below to change how a featur	e is installed. Feature Description KS Server for connecting from Knowledge Studio, Knowledge Seeker, and Knowledge Studio for Apache Spark. This feature requires 2343MB on your hard drive. It has 1 of 1 subfeatures selected. The subfeatures require 3484KB on your hard drive.
Install to: C:\Program Files\Altair Data Analytics\	<u>C</u> hange
InstallShieldSpace < <u>B</u> ack	<u>N</u> ext > Cancel

Click Next >.

- 7. The Altair License Configuration window opens.
 - If the server has previously been configured for Altair licensing, the values of the environment variables ALM_HHWU and/or ALTAIR_LICENSE_PATH are displayed. Click Next > to accept the existing configuration.

Example 1: The machine is already configured for managed Altair Licensing (ALM HHWU=True):



configuration	of the Altair	License ty	pe	Δ	ALIAI
License In Altair license installation.	ormation configuration	on is show	n below. Click I	Vext to accept it	and complete the
ALM_HHWU		True			
🗌 Edit					
O Ma	naged Altair I	Licensing			
On	premises Alta	air License	Server:		
Po					

<u>Example 2</u>: The machine is already configured for an **on-premises Altair License Server** <u>licensing</u> (ALTAIR_LICENSE_PATH=6200@<server_name>; ALM_HHWU=false):

🛃 Altair Data Analytics 2025.0.0 - InstallShield Wizard	×
Altair License Configuration	LTAIR
License Information Altair license configuration is shown below. Click Next to accept it and installation.	complete the
ALM_HHWU: False	
ALTAIR_LICENSE_PATH: 6200@example_license_server1	
🗌 Edit	
O Managed Altair Licensing	
O On-premises Altair License Server:	
Port@Host	
6200@example_license_server1	
Example: 6200@Server1	
InstallShield	
< <u>B</u> ack <u>N</u> ext >	Cancel

• If the host machine has not previously been configured for Altair licensing, enter the license configuration information. Choose the licensing method: *Managed Altair Licensing* or *On-premises Altair License Server*.

Contact your team members responsible for Altair product licenses if you are not sure which licensing method is going to be used.



Altali Data A	-	
Altair License	Configuration	
Configurati	on of the Altair License type	
License	nformation	
Please ent	er the Altair license configuration informati	on.
🗹 Edit		
🖌 Edit		
edit	lanaged Altair Licensing	
Edit	fanaged Altair Licensing)n-premises Altair License Server:	
Edit	lanaged Altair Licensing On-premises Altair License Server: Port@Host	
Edit	Nanaged Altair Licensing On-premises Altair License Server: Port@Host Example: 6200@Server1	
Edit	Nanaged Altair Licensing On-premises Altair License Server: Port@Host Example: 6200@Server1	
Edit	Nanaged Altair Licensing On-premises Altair License Server: Port@Host Example: 6200@Server1	

- If you select Managed Altair Licensing, once you click Next >, the system environment variable ALM_HHWU will be created, and its value will be set to *True*.
- If you select On-premises Altair License Server, specify the license server address and port in the format <port>@<host>, for example, 6200@server1.

Altair Data Analytics 2025.0.0 - InstallShield Wizard	×
Altair License Configuration	
Configuration of the Altair License type	
License Information	
Please enter the Altair license configuration information.	
C Edit	
O Managed Altair Licensing	
On-premises Altair License Server:	
Port@Host	
Example: 6200@Server1	
InstallShield	
< <u>B</u> ack	Next > Cancel



Once you click Next >, the system environment variables ALTAIR_LICENSE_PATH and ALM_HHWU will be created. The former will be assigned the value you specified, and the latter will be set to *False*.

See <u>Section 14</u> for detailed information about the licensing methods.

8. The Windows Service Setup window opens.

The option *Install KSWinLoginService as a Windows Service* is selected by default. Leave it selected unless you are installing KS Server for Real-Time Scoring Web API only. If you deselect it, you will have to start KS Server manually from the command line, and it will not be restarted automatically after the server is rebooted.

Specify the TCP port for the service. The default is **5470**. The port must be open for inbound connections on the server, as described in <u>Section 8.1.4, "Configuring KS</u> <u>Service"</u>.

💿 Altair Data Analytics 2025.0.0 - Insta	IShield Wizard		×
KS Server Setup Specify KS Server options.			R
Select whether to install KSWinLogin! Server client/server connectivity.	Service, the Windo	ows Service required for KS	
🕑 Install KSWinLoginService as a	Windows Service		
Port: 5470			
InstallShield			
	< <u>B</u> ack	<u>N</u> ext > Canc	el

Click Next >

9. Click Install to start the installation.



🔬 Altair Data Analytics 2025.0.0 - InstallSh	ield Wizard		×
Ready to Install the Program The wizard is ready to begin installation	ı.		AIR
Click Install to begin the installation.			
If you want to review or change any of y Cancel to exit the wizard.	our installation set	tings, click Back. Cl	ick
installShield			
	< <u>B</u> ack	Install	Cancel

10. The Setup Status window shows the installation progress. When the installation is complete, click **Finish**.



After the installation, open Windows Services and verify that the service **KSWinLoginService2025.0_64** is running, and its Startup Type is 'Automatic'.



🤹 Services					-		×
<u>File</u> <u>A</u> ction <u>V</u> iew <u>H</u> elp							
🖛 🔿 🔚 🖼 🗟 🔒 🛛 🖬 🕨 💷 🕕 🕨							
Services (Local) Services (Local)							
KSWinLoginService2025.0_64	Name	Description	Status S	Startup Type	Log On As		
Stop the service Restart the service	🤹 IP Helper 🤹 IP Translation Configuration Service 🍓 IPsec Policy Agent	Provides tunnel connectivity Configures and enables tran Internet Protocol security (IP	Running A N Running N	Automatic Manual (Trigger Manual (Trigger	Local Syster Local Syster Network Ser	n n vice	
Description: KS Data Mining Engine	KSWinLoginService2025.0_64 KtmRm for Distributed Transaction Coord Language Experience Service Link-Layer Topology Discovery Mapper	KS Data Mining Engine Coordinates transactions bet Provides infrastructure supp Creates a Network Map, con	Running A	Automatic Manual (Trigger Manual Manual	Local Syster Network Ser Local Syster Local Servic	n vice n e	
Extended Standard							

- **11.** If you select the Managed Altair Licensing option at Step 7, authorize the server for the Managed license as follows:
 - Run Command Prompt as administrator.
 - Change to the folder C:\Program Files\Altair Data Analytics\KS Server 2025.0.0\security
 - Run the following command, where <username> is your <u>Altair One</u> login ID:

almutil -alauth -system -username <username> -passwd

You will be prompted for your password to log in to Altair One. The successful login will automatically authorize the machine.

If you are not registered at Altair One, ask a registered user to generate and send you an authorization code at Altair One, then use the following command:

almutil -alauth -system -code <auth code>

For detailed information on the almutil usage and advanced options including proxy configuration, run almutil with no arguments. See also <u>Section 14</u>.

8.1.2. Install KS Library for R Integration on Windows Server

Knowledge Studio and Knowledge Seeker support integration with <u>R software</u> <u>environment for statistical computing</u>. If the intended users are going to use this feature, install KS Library for R on the server as described below.

<u>Prerequisites</u>: R software and KS Server. R is only required on the server side. In the Prerequisites section above, see <u>Subsection 5.2</u>: "*R Software for Statistical Computing*".

- 1. Make sure KS Server 2025.0 and R v4.0.0 or higher are installed.
- 2. Download KS Library 2025.0 for R 4.0 or higher from the Altair software download site.
- 3. Uninstall any previous version of KS Library for R from the Programs and Features list in the Windows Control Panel.



4. Double-click the downloaded package for KS Library for R. Click Next > in the Welcome screen.



 In the License Agreement window, select "I accept" if you accept the terms and click Next >.





6. The Destination Folder window opens. KS library for R will be installed into <R root folder>\R-X.X\library\, where R-X.X is the most recent version of R on the host machine. The standard R root folder is C:\Program Files\R. The default folder to extract the temporary setup files is C:\Program Files\Altair Data Analytics. To change any of these folders, click the Change button.

💿 Altair Da	ta Analytics 2025.0.0 - InstallShield Wizard		×
Destinati Destinati	on Folder on for KS Library and temporary setup files	🛆 AI	TAIR
Þ	Temporary setup files will be extracted to: C:\Program Files\Altair Data Analytics\		<u>C</u> hange
Ø	KS Library for R will be installed to: C:\Program Files\R\R-4.4.1		<u>C</u> hange
InstallShield –	< Back	Next >	Cancel

Click Next >.

7. Click Install.





8. The Setup Status window shows the installation progress. When the installation is complete, click Finish.



As a result, three subfolders containing the required R integration libraries are created under <R root folder>\R-X.X\library\ :

- angoss
- KnowledgeSurvival
- xtable

If users are required to use a different *R* library path, copy the folders angoss, xtable, and KnowledgeSurvival to the desired *R* library location.

Note: The <u>Rserve</u> package, whose installation was described in <u>Section 5.2.3</u>, must be present in the same R library location.

8.1.3. Installing Altair SLC

- Download the latest versions of <u>Altair SLC</u> from <u>AltairOne Marketplace</u>. If you don't have an AltairOne account, please reach out to the person managing Altair software licenses at your organization or contact Altair Data Analytics Customer Support at <u>dasupport@support.com</u>.
- Run the downloaded Altair SLC installation package. Click Next > in the Welcome screen.





 In the End-User License Agreement window, select "I accept the terms in the License Agreement" if you accept the terms. Click Next >.



4. In the Custom Setup page, select all Altair SLC program features, as shown below. To change the destination folder for the application program files, click the Change button and specify the desired location. The default is C:\Program Files\Altair\SLC\<version>. Click Next >.



🛃 Altair SLC 2024 Setup	- 🗆 X	
Custom Setup		
Select the way you want features to be installed.		
Click the icons in the tree below to change the way	features will be installed.	
Altair SLC 2024 Altair SLC 2024 Commentation Altair SLC Local Server Java Runtime Environme	All features for Altair SLC 2024.1 (5.24.2.0.1334)	
	This feature requires 69KB on your hard drive. It has 3 of 3 subfeatures selected. The subfeatures require 713MB on your hard drive.	
Location: C:\Program Files\Altair\SLC\2024	B <u>r</u> owse)
Re <u>s</u> et Disk <u>U</u> sage	Back Next Cancel	

5. Click **Install** to start the installation.



6. The Setup Status window shows the installation progress. When the installation is complete, click Finish.





 Altair SLC only contains the compiler engine without graphical user interface components. The graphical user interface is provided by the Altair Analytics Workbench on the client side.

Altair SLC uses the same license as Knowledge Studio Server. Activating KS Server with an <u>Altair Units License</u> automatically activates Altair SLC on the same machine.

8.1.4. Configure KS Service (KSWinLogin Service)

The Windows service **KSWinLoginService2025.0_64** is installed and started automatically if you chose the default Windows Service Setup option in the KS Server installation wizard.

The service is listening on the port that was specified in the wizard. The default is **5470**. If you want to change the default port for KSWinLogin Service, specify the desired port number in the KS Server configuration file **KSWinLogin.conf**, whose default location is C:\Program Files\Altair Data Analytics\KS Server 2025.0.0\bin.

For example, to change the default port to 5480, open the file KSWinLogin.conf in a text editor and add the following line:

port 5480

Then open *Services* from the Windows Control Panel | Administrative Tools and restart KSWinLoginService2025.0_64.

Upon each client connection from KS Workstation, KS Server creates a process called **KSWinLogin.exe**. Server administrators can monitor these processes in the Task Manager. Connection attempts are logged in the Windows Server Event Viewer in the *Application* and *Security* logs in the *Windows Logs* folder.



Cryptographic Protocols:

TLS1.2 is used by default. The older versions TLS1.1, TLS1.0, and SSL are never used.

Windows Firewall configuration

Create a new inbound rule for the KS Server TCP port.

In your Windows Server Control Panel, open System and Security \rightarrow Administrative Tools \rightarrow Windows Firewall with Advanced Security

a	Windows	Firewall with Advanced Se	ecurity					- 9	3	x
<u>File Action View H</u> elp										
🗢 🄿 🙍 🖬 🔒 🛛 🖬										
I Windows Firewall with Advance	Inbound Rules						Actions			
式 Inbound Rules	Name	Group	Profile	Enabled	Action		Inhound Rules			
Cutbound Rules	Bitvise SSH Server (TCP/IPv4 22)	Bitvise SSH Server	All	Yes	Allow		Mooding Hards			
Connection Security Rules	Bitvise SSH Server (TCP/IPv6 22)	Bitvise SSH Server	All	Yes	Allow	=	New Rule			
Monitoring	BranchCache Content Retrieval (HTTP-In)	BranchCache - Content Retr	All	No	Allow		Filter by Profile			•
	BranchCache Hosted Cache Server (HTT	BranchCache - Hosted Cach	All	No	Allow		🍸 Filter by State			►
	BranchCache Peer Discovery (WSD-In)	BranchCache - Peer Discove	All	No	Allow		Filter by Group			•
	COM+ Network Access (DCOM-In)	COM+ Network Access	All	No	Allow		10000			
	OCM+ Remote Administration (DCOM-In)	COM+ Remote Administrati	All	No	Allow		view			-
	Ore Networking - Destination Unreacha	Core Networking	All	Yes	Allow		Refresh			
	Ocre Networking - Destination Unreacha	Core Networking	All	Yes	Allow		🔜 Export List			
	Ocore Networking - Dynamic Host Config	Core Networking	All	Yes	Allow		Help			
	Ocore Networking - Dynamic Host Config	Core Networking	All	Yes	Allow		incip			
	🐼 Core Networking - Internet Group Mana	Core Networking	All	Yes	Allow					
	🕑 Core Networking - IPHTTPS (TCP-In)	Core Networking	All	Yes	Allow					
	🕜 Core Networking - IPv6 (IPv6-In)	Core Networking	All	Yes	Allow					
	🐼 Core Networking - Multicast Listener Do	Core Networking	All	Yes	Allow					
	🐼 Core Networking - Multicast Listener Qu	Core Networking	All	Yes	Allow					
	🔇 Core Networking - Multicast Listener Rep	Core Networking	All	Yes	Allow					
	🔇 Core Networking - Multicast Listener Rep	Core Networking	All	Yes	Allow					
	🔇 Core Networking - Neighbor Discovery A	Core Networking	All	Yes	Allow					
	Ore Networking - Neighbor Discovery S	Core Networking	All	Yes	Allow	\sim				
< 111 >	<				>					

Expand the top item in the left panel and open *Inbound Rules*. In the Actions panel on the right, click New Rule...

In the New Inbound Rule Wizard, select the Port option.



@	New Inbound Rule Wizard
Rule Type Select the type of firewall rule to c	reate.
Steps: Protocol and Ports Action Profile Name	What type of rule would you like to create? Program Rule that controls connections for a program. Pgt Rule that controls connections for a TCP or UDP port. Prgdefined: BranchCache - Content Retrieval (Uses HTTP) Rule that controls connections for a Windows experience. Qustom Custom rule.

At the next step, select the **TCP** option and choose "*Specific local ports*". Then specify the port(s) to open for inbound connection from the client machines. *Note: If you configured KS Server to run on a non-default port, replace "5470" below with the port number you specified in KSWinLogin.conf.*

- For Knowledge Seeker or Knowledge Studio:
 - o enter port number 5470
 - if users require the Jupyter Notebook integration feature, in addition to 5470, specify the range of TCP ports to be used by Jupyter Notebook users (for example, 8800-8900)
- For Knowledge Studio for Apache Spark, open port **5470** and the port range **6060–6090**.

See the example screenshot below.



New Inbound	Rule Wizard X
which this rule applies.	
	202
Does this rule apply to TCP or UL	JP ?
 <u>т</u>ср 	
○ <u>U</u> DP	
Does this rule apply to all local po	nts or specific local ports?
O <u>All local ports</u>	
Specific local ports:	5470, 6060-6090
	Example: 80, 443, 5000-5010
	< Back Next > Cancel
	New Inbound which this rule applies. Does this rule apply to TCP or UI I CP Does this rule apply to all local por All local ports Specific local ports:

At the next step, select the option "Allow the connection" or "Allow the connection if it is secure", depending on your security requirements.

<i>\[</i>	New Inbound Rule Wizard
Action Specify the action to be taker	n when a connection matches the conditions specified in the rule.
Steps: Protocol and Ports Action Profile Name	What action should be taken when a connection matches the specified conditions? • Alow the connection This includes connections that are protected with IPsec as well as those are not. • Allow the connection if it is secure hile becured using the settings in IPsec properties and rules in the Connection Security Rule node. Customize Block the connection

At the next step, select the desired profiles depending on your security requirements. At least the **Domain** profile is usually required.



@	New Inbound Rule Wizard						
Profile Specify the profiles for which this r	ule applies.						
Steps: Action Profile Name	When does this rule apply? ✓ Domain Applies when a computer is connected to its corporate domain. ✓ Private Applies when a computer is connected to a private network location, such as a home or work place. ✓ Pyblic Applies when a computer is connected to a public network location. Pglies when a computer is connected to a public network location.						

At the next step, enter the name for the new rule (for example, "*Altair KS Server*") and optional description.

@	New Inbound Rule Wizard	x
Name Specify the name and description	of this rule.	
Steps: Protocol and Ports Action Profile Name	Name: Attair KS Server Description (optional): TCP Port rules < Back Enish Cance	el

Click **Finish**. The new rule will be created in the Windows Firewall with Advanced Security configuration.



@	Windows Firewall with Advanced Se	ecurity		- 🗆 X
File Action View Help				
 Windows Firewall with Advanced Security on Local Computer Inbound Rules Outbound Rules Connection Security Rules Monitoring 	Inbound Rules Name Q Altair KS Server Q Qlik Ø Bitvise SSH Server (TCP/IPv4 22) Ø Bitvise SSH Server (TCP/IPv6 22) Ø BranchCache Content Retrieval (HTTP-In) Ø BranchCache Hosted Cache Server (HTT Ø BranchCache Peer Discovery (WSD-In) © COM+ Network Access (DCOM-In) © Core Networking - Destination Unreacha © Core Networking - Destination Unreacha © Core Networking - Dynamic Host Config © Core Networking - Internet Group Mana © Core Networking - Internet Group Mana © Core Networking - IPHTPS (TCP-In) © Core Networking - Multicast Listener Do © Core Networking - Multicast Listener Do © Core Networking - Multicast Listener Rep © Core Networking - Multicast Listener Rep	Group A Bitvise SSH Server Bitvise SSH Server BranchCache - Content Retr BranchCache - Hosted Cach BranchCache - Peer Discove COM+ Network Access COM+ Networking Core Networking	Actions Inbound Rules Image: Second Seco	• • •

8.1.5. Configure User Rights on the Server

Create a user group that includes all intended users of KS Server in the client/server mode. For example, call it **KS_Users**. Note: Creating the group is optional. You may choose to add permissions to an existing user group that includes all potential KS Server users, or to individual users instead.

- Open the Local Security Policy or Local Security Settings item of the Server Administrative Tools. Open Local Policies and select User Rights Assignment.
- Edit the following policies to add the KS user group or individual users:
 - > Access this computer from the network
 - Either Allow Log on locally OR Log on as a batch job, depending on the security requirements in your network.



Local Security Policy		- D >	<
File Action View Help			
🗢 🔿 🖄 📰 🗙 🗟 🚺 🖬			
🚡 Security Settings	Policy	Security Setting	^
> 📴 Account Policies	Access this computer from the network	Everyone, Administrators, Users, B	
V 🙀 Local Policies	Act as part of the operating system		
Audit Policy	📓 Add workstations to domain		
G Security Options	📓 Adjust memory quotas for a process	LOCAL SERVICE, NETWORK SERV	
Security Options Windows Defender Eirswall with Adva	📓 Allow log on locally	Guest, Administrators, Users, Back	
Network List Manager Policies	📓 Allow log on through Remote Desktop Services	Administrators, Remote Desktop	
Public Key Policies	Back up files and directories	Administrators, Backup Operators	
Software Restriction Policies	Bypass traverse checking	Everyone,LOCAL SERVICE,NETW	
Application Control Policies	🔯 Change the system time	LOCAL SERVICE, Administrators,	
> 👵 IP Security Policies on Local Compute	🔯 Change the time zone	LOCAL SERVICE, Administrators,	
> 📋 Advanced Audit Policy Configuration	🔯 Create a pagefile	Administrators	
	🔯 Create a token object		
	📓 Create global objects	LOCAL SERVICE, NETWORK SERV	
	🔯 Create permanent shared objects		
	📖 Create symbolic links	LOCAL SERVICE, Administrators,	
	🔯 Debug programs	Administrators	
	🔯 Deny access to this computer from the network	Guest	
	🔯 Deny log on as a batch job		
	🔯 Deny log on as a service		
	📓 Deny log on locally	Guest	
	🔯 Deny log on through Remote Desktop Services		
	Enable computer and user accounts to be trusted for d		
	Force shutdown from a remote system	Administrators	
	📖 Generate security audits	LOCAL SERVICE, NETWORK SERV	
	Impersonate a client after authentication	LOCAL SERVICE, NETWORK SERV	
	🔯 Increase a process working set	Users	
	📓 Increase scheduling priority	Administrators, Window Manage	
	🔯 Load and unload device drivers	Administrators	
	🔯 Lock pages in memory		
< >	🔯 Log on as a batch job	Administrators, Backup Operator	4
	116 M •		

If you choose the option Log on as a batch job, update the KS Server configuration file KSWinLogin.conf. Its default location is C:\Program Files\Altair Data Analytics\KS Server 2025.0.0\bin. Open the file KSWinLogin.conf in a text editor and add the line

logon type batch

Restart the service KSWinLoginService2025.0_64

8.1.6. Configure Altair SLC and SSH Server

Configure Altair SLC

 Create a new parent folder on the server for the Altair SLC standard libraries SASUSER and WORK. The WORK library is for temporary files. It is recommended to use the same drive where the Knowledge Studio users' working



directories are set up. For example, create a new folder **D:\ALTAIRSLC_HOME**. This folder must have Read & Write permissions for all KS Server users.

 Edit the configuration file altairsIc.cfg located in the Altair SLC root folder C:\Program Files\Altair\SLC\<version_number>. Change the values of the SASUSER and WORK parameters in altairsIc.cfg. For example, if the folder you created is D:\ALTAIRSLC_HOME, then specify:

```
-SASUSER 'D:\ALTAIRSLC_HOME\!USERNAME\My SLC Files'
-WORK 'D:\ALTAIRSLC HOME\!USERNAME\TEMP'
```

Save the changes in altairslc.cfg.

<u>Note</u>: In case of any issues with user-specific subfolders, you may omit the !USERNAME variable referring to user-specific locations and define common SASUSER and WORK locations as follows (*not recommended, as this is a less organized way*):

-SASUSER 'D:\ALTAIRSLC_HOME' -WORK 'D:\ALTAIRSLC HOME\TEMP'

- 3. Set the environment variables for the Altair SLC integration: From the Windows Server Control Panel, open System → Advanced System Settings, go to the Advanced tab and click Environment Variables.
 - a) In the System Variables section, click New and add an environment variable ANGOSS_DLL with the value AngossData64-2025.0.dll
 - b) In the System Variables section, select the PATH variable, click Edit, and add the path to the KS Server bin folder at the end. For example, if KS Server is installed in the default location, this is C:\Program Files\Altair Data Analytics\KS Workstation 2025.0.0\bin

Install and Configure Bitvise SSH Server

<u>Bitvise SSH server</u> is required for Altair SLC integration for Knowledge Studio in the client/server mode. It can be downloaded from <u>https://www.bitvise.com/ssh-server-download</u>. Install and configure the standard, fully functional Bitvise SSH server edition. The detailed configuration instructions are available here:

<u>https://www.bitvise.com/configuring-ssh-server-for-sftp</u>. Below is a brief description of the installation and configuration steps suitable for most cases:

- Download the file BvSshServer-Inst.exe and run the downloaded executable. In the installation wizard, make sure you select the standard, fully functional Bitvise SSH server edition that supports domain accounts.
- 2. When the installation is complete, the Bitvise SSH Server Easy Settings window appears. In the Server Settings tab, select the desired option for "Open Windows Firewall". If you choose any option other than "Open port(s) to any computer", make sure the listening port is accessible to the computers of all KS Server users.



8	6		Bitvise SSH Server Easy Settings
	1. Server settings	2. Windows accounts	3. Virtual accounts
	Basic server se	ttings wall and router to outside conne	ctions, test your settings by connecting to 'localhost' with an SSH dient installed on the same
	machine. Once you are satisfied y	with your configuration, configure	the SSH Server to open the Windows firewall and to configure your router so that outside
	connections can be rece	ived.	
	Expand / Collapse all he	<u>lp</u>	
	IP versions for list	ening port	IPv4 and IPv6 v
	Listening port Automatically cont	figure router (requires UPnP)	22
	 Open Windows Fir 	rewall	Open port(s) to any computer
	🕐 Enable trace loggi	ng	Do not change Windows Firewall settings Open port(s) to local network (subnet scope) Open port(s) to any computer
	Back	Next	Save changes Gose without change

Check *the* settings in the Windows accounts tab and modify them if necessary (see the next screenshot). Make sure that logging in to Windows domain accounts of KS Server users is allowed.

ŝ		Bitvise SSH Server Easy	Settings		_ 🗆 X		
1. Server settings	2. Windows accounts	3. Virtual accounts					
Simplified Wind	ows accounts						
These settings control SS also control login rights a	SH login rights and permission nd permissions for domain a	ns for local accounts that already ex ccounts.	ist in Windows. If	your server is part of a do	main, these settings		
To create or manage loca	al Windows accounts, use Co	omputer Management in Windows Ac	lministrative Tools,	or User Accounts in the V	Vindows Control Panel.		
If using domain accounts	, don't forget to configure th	ne Windows domain order in Advanc	ed settings. See al	so: https://www.bitvise.c	om/wug-domain		
	Affendarum annual 🗔 🗖						
	windows account	- MP 1	1 1 1 1	D 117 1 1 1 1 1 1	All 61 1 6		
Windows account type Windows account domain Windows account name Login allowed Public keys imported Allow file transfer							
C III >							
Add Copy	Add Copy Edit Remove						
	Back Next Save changes Gose without change						

If required, configure access for the Virtual accounts in the third tab.

3. If you choose not to start the server upon closing the Easy Settings dialog, start it from the Bitvise SSH Server Control Panel, as shown below. Easy Settings and Advanced Settings are also available in the same Control Panel dialog. For



detailed description of advanced settings, see https://www.bitvise.com/configuring-ssh-server-for-sftp

ធា		Bitvise SSI	H Server Cor	ntrol Panel	_		x
Server	Sessions (0)	Activity	Statistics		Send	us fee	dback
Server m Use this tab to	anagement start and stop Bitv	vise SSH Server	and manage its ł	nost keypairs, the passv	vord cache, a	nd sett	tings.
Click the quest	ion mark icons to le	arn more about	each configurat	on aspect.			
Bitvise SSH Copyright (C)	Server 7.39 2000-2018 by Bitv	ise Limited.		In	stance type:	Standa	lone
EVALUATION Apply activa	I - 30 days remaining tion code to remaining to remain to remai	ng ove evaluation t	ime limit.				
Please purch See <u>www.bitv</u>	hase within 30 d ise.com/ssh-server	ays of initial in for purchasing	nstallation. instructions.				
Bitvise SSH Se Open log folde	erver service is run <u>er viewer</u>	ning <u>Stop</u>	<mark>Server</mark> Star	tup type: <u>Automatic</u>			
🕖 Host key	/s						_
RSA host	t key 3072 bits	5-040-00-78	7.dc:66.71.ee.c	2.7h.e5.89 Copy			
Bubble-I SHA-256	Babble: xigah-cep fingerprint: dcb	ig-comeb-robok- elSDKA/qIQl8HF	letas-zitub-pohir VRPMIganXEuSk	n-cobec-hipab-sibig-vax LZni2Lqhu+Pm0 <u>Copy</u>	yx <u>Copy</u>		
ECDSA/I MD5 fing Bubble-I SHA-256	nistp384 host key gerprint: 0b:39:90 Babble: xezim-kup 5 fingerprint: gun	384 bits d: 35:a 1: 19:ae:4 yv-dypoz-zomer FS7puXAnhgyv:	lf:09:74:88:24:1 n-kuluz-viguc-ca x02htNE0asi5xL)	2:5e:5e:7d <u>Copy</u> buv-mucer-nitih-zehyb- /p89AFOa3DWKaA <u>Co</u>	fyxox <u>Copy</u> <u>py</u>		
Manage	<u>host keys</u>						
Ø Settings	;						-
<u>Open ea</u>	sy settings						
Edit advar	nced settings <u>Vie</u>	<u>ew Import E</u>	Export Restore	1			
Query set	tings with <u>PowerSt</u>	<u>view insta</u>	lied resources				
Passwor	d cache						-
Password	sm cache: U M	anaye passw	UTU CACHE				
						Close	

4. <u>Windows Firewall configuration for Bitvise SSH Server</u>: Depending on your Windows Firewall configuration and security rules, you may need to edit the default Inbound rules for Bitvise SSH Server. In your Windows Server Control Panel, open System and Security → Administrative Tools → Windows Firewall with Advanced Security



<i>@</i>	Windows	Firewall with Advanced S	ecurity			_ 🗆 🗙	×
<u>File Action View H</u> elp							
🗢 🄿 🙍 🖬 🗟 🖬							
💣 Windows Firewall with Advance	Inbound Rules				Actions		
🔣 Inbound Rules	Name	Group	Profile		Inbound Rules		^
Outbound Rules	Bitvise SSH Server (TCP/IPv4 22)	Bitvise SSH Server	All		New Rule		
Connection Security Rules	Bitvise SSH Server (TCP/IPv6 22)	Bitvise SSH Server	All	≡			
Nionitoring	BranchCache Content Retrieval (HTTP-In)	BranchCache - Content Retr	All		Y Filter by Profile	•	
	BranchCache Hosted Cache Server (HTT	BranchCache - Hosted Cach	All		Filter by State	•	
	BranchCache Peer Discovery (WSD-In)	BranchCache - Peer Discove	All		🝸 Filter by Group	•	
	COM+ Network Access (DCOM-In)	COM+ Network Access	All		View		
	COM+ Remote Administration (DCOM-In)	COM+ Remote Administrati	All				
	Ore Networking - Destination Unreacha	Core Networking	All		Q Refresh		
	Core Networking - Destination Unreacha	Core Networking	All		Export List		
	Core Networking - Dynamic Host Config	Core Networking	All		👔 Help		=
	Core Networking - Dynamic Host Config	Core Networking	All				
	Core Networking - Internet Group Mana	Core Networking	All		Bitvise SSH Server (TCP/IPv6 22)	^	
	Core Networking - IPHTTPS (TCP-In)	Core Networking	All		Disable Rule		
	Core Networking - IPv6 (IPv6-In)	Core Networking	All		🔏 Cut		
	Core Networking - Multicast Listener Do	Core Networking	All		E Conv		
	Core Networking - Multicast Listener Qu	Core Networking	All				
	Core Networking - Multicast Listener Rep	Core Networking	All		X Delete		
	Core Networking - Multicast Listener Rep	Core Networking	All		Properties		
	Core inetworking - Neighbor Discovery A	Core ivetworking	All	~	? Help		
			/				1

5. Expand the top item in the left panel and open *Inbound Rules*. Double-click the rule "*Bitvise SSH Server (TCP/IPv6 22)*" to open its properties. Go to the Scope tab of the Properties dialog and specify the desired Remote IP address range for computers allowed to access the SSH server. Make sure the users' computers are within this range.

General Programs and Services Remote Computers Protocols and Ports Scope Advanced Local Principals Remote Users Local IP address 	Bitvise SSH Server (TCP/IPv6 22) Properties					
Protocols and Ports Scope Advanced Local Principals Remote Users Local IP address These IP addresss: These IP address 	General	Program	s and Services	Remot	e Computers	
Local IP address Ary IP addresss	Protocols and Po	orts Scope	Advanced	Local Principals	Remote Users	
Any IP address These IP addresss: Add Edt Remove Any IP address Add Edt Remove Any IP address Add Edt Remove	Local IP addr	ess				
		Any IP address				
Image:		These IP addres	ses:			
Edt Remove IP address These IP addresses: Add Edt Remove		::- fiff .fiff.fiff.fiff.fiff.fi	HH. HHH. HHH.	A <u>d</u> d		
Remote IP address Any IP address				<u>E</u> dit		
Remote IP address Any IP address These IP addresses: Add Edit Remove				Remove		
Any IP address These IP addresses: Add Edit Remove	Remote IP ad	ldress				
These IP addresses: Add Edit Remove		An <u>y</u> IP address				
Add Edit Remove	• • •	These IP addres	ses:			
Edţ Remove				Add <u>.</u>		
Remove				Edit		
				Remove		
OK Cancel Apply			ОК	Cancel	Apply	



6. Go to the Advanced tab of the Properties dialog and specify the desired profiles to which the rule applies. Make sure the computers of the KS Server users fit at least one of these profiles.

Bitvise SSH Server (TCP/IPv6 22) Properties							
General		Programs and Services		Remote	Remote Computers		
Protocols a	nd Ports	Scope	Advanced	Local	Principals	Remote Users	
Profiles							
	Specify profiles to which this rule applies.						
Domain							
	Private						
✓ Public							
Interface	e types						
	Specify the interface types to which this rule applies.						
Edge tra	Edge traversal						
and the second se	Edge traversal allows the computer to accept unsolicited inbound packets that have passed through an edge device such as a Network Address Translation (NAT) router or firewall.						
	Block edge traversal 🗸						
	Prevent a the Intern	Prevent applications from receiving unsolicited traffic from the Internet through a NAT edge device.					
			ОК		Cancel	Apply	

7. Set the same properties for the rule "Bitvise SSH Server (TCP/IPv4 22)".

8.2. KS Server Installation and Configuration on Linux

This section describes the process of installing and configuring KS Server and dependent components on Linux. For system requirements and prerequisites, see <u>Section 3</u> and <u>Section 5</u>. Follow the steps below.

8.2.1. Configure Pluggable Authentication Modules (PAM) for KS Service

Define the authentication rules for KS Server by creating the KS Service configuration file **kslogin** in /etc/pam.d/. Since these rules should normally be the same as those for the standard **login** service, create *kslogin* by copying the *login* configuration file:

```
cp /etc/pam.d/login /etc/pam.d/kslogin
```

For more information about PAM modules and options, see the system-level administration guide in your Linux OS documentation and <u>http://www.linux-pam.org/</u>.



8.2.2. Install KS Server on Linux

- 1. Download the KS Server installation package for your Linux system from the Altair software download site. For example, for Red Hat enterprise Linux 8, the file name is *KS-Server-2025.0-rhel8_x64.rpm*. Copy the downloaded file to a directory on the server.
- 2. Log in to the server as *root*.
- 3. If you are upgrading from a previous version of KS Server, note that the installer will shut down all current KS Server processes. Notify the users if necessary. To check if any KS user processes are running, use the command

ps -ef | grep kslogin

4. Run the installer. For example, on Red Hat Enterprise Linux 8, run the command

```
rpm -ivh KS-Server-2025.0-rhel8 x64.rpm
```

This installs KS Server to /opt/Altair-Data-Analytics and starts the KS service *kslogin*.

To install to a different directory, specify the desired path after the --prefix switch. For example, this command installs KS Server to /apps/Altair-Data-Analytics on Red Hat Enterprise Linux 8:

rpm -ivh --prefix=/apps KS-Server-2025.0-rhel8 x64.rpm

5. Verify that the KS service has started successfully. The following messages indicate the successful start:

```
/opt/Altair-Data-Analytics/KS-Server-
2025.0/lib/kslogin(service_pid=2951,server_pid=2952) 2024-
08-09 23:33:06 server start: port 5470
```

```
/opt/Altair-Data-Analytics/KS-Server-2025.0/lib/kslogin:
logging to kslogin.log
```

8.2.3. KS Libraries for R and Python

This section describes the steps to install and configure R and Python integration libraries.

Install and configure KS Library for R

If the R integration features are required, make sure that R version 4.0.0 or higher is installed as described in <u>Section 5.2</u>.

In the examples below, it is assumed that R is installed under /usr/lib64/R.

 Edit the KS Server startup script ks_start, whose default location is /opt/Altair-Data-Analytics/KS-Server-2025.0. In the R environment section, specify the value for the R_HOME environment variable if the R home directory on your server is different from the default specified here:



R HOME=/usr/lib64/R

export R HOME

- 2. Uninstall any previous version of KS Library for R as follows:
 - R CMD REMOVE angoss
 - R CMD REMOVE KnowledgeSurvival
- 3. Install KS Library for R:

```
cd /opt/Altair-Data-Analytics/KS-Server-2025.0/R
```

Rscript angossSetupR.R

This will create three directories under the R library location /usr/lib64/R/library/:

- angoss
- KnowledgeSurvival
- xtable

If any users need to use a different R library path, copy the directories angoss, KnowledgeSurvival, and xtable to the desired R library location. Note that the <u>Rserve</u> library must exist in the same R library location (see <u>Section 5.2.3</u>).

Configure KS Library for Python

If Python integration features are required, make sure that Python or one of its distribution packages has been installed as described in <u>Section 5.3</u>.

Edit the KS Server startup script ks_start in /opt/Altair-Data-Analytics/KS-Server-2025.0. In the Python environment section, specify the value for the PYTHON_HOME environment variable. It must point to the parent directory of the Python bin and lib directories. For example, if your Python is a part of Miniforge installed in /opt/miniforge3, then set PYTHON_HOME to /opt/miniforge3:

```
PYTHON_HOME=/opt/miniforge3
export PYTHON_HOME
```

8.2.4. Install and Configure Altair SLC

- Download the installation package for Altair SLC for Linux (x64) from the <u>Altair</u> <u>Marketplace</u> and copy it to the server where KS Server is installed. If you don't have an AltairOne account, please reach out to the person managing Altair software licenses at your organization.
- 2. Install Altair SLC for Linux by running the command

rpm --install <slc-installation-file>.rpm

The default installation location is /opt/altair/slc/2024



3. Create a symbolic link /opt/altairslc pointing to the Altair SLC root directory. For example, if Altair SLC is installed in /opt/altair/slc/2024, then link it as follows:

```
ln -s /opt/altair/slc/2024 /opt/altairslc
```

If creating a symbolic link in /opt is not desirable, define the environment variable WPS_HOME in ks_start: export WPS HOME=/opt/altair/slc/2024

4. Edit the configuration file altairslc.cfg in /opt/altair/slc/2024 and modify the SASUSER and WORK attributes as follows:

-SASUSER '!HOME/altairslc'

-WORK '!HOME/altairslc/tmp'

(note: you can choose any name instead of 'altairslc').

- 5. Make sure that the OpenSSH server process (sshd) is running. Refer to the Linux documentation for the information on the *openssh-server* and *openssh* packages and starting the sshd daemon. For example, for RHEL 7, see <u>OpenSSH for RHEL 7</u>.
- 6. Create the **altairslcenv**. **sh** shell script for SLC environment in the ALTAIR SLC root directory /opt/altair/slc/2024 and define the following environment variables in this script (in this example, KS Server is assumed to be installed in /opt):

```
export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/opt/Altair-Data-
Analytics/KS-Server-2025.0/lib
```

export ANGOSS DLL="libAngossData.so"

For a <u>self-hosted Altair License Server</u>, define the ALTAIR_LICENSE_PATH variable (for altair_license_server, substitute the name or IP address of the Altair License Server host machine):

export ALTAIR LICENSE PATH=6200@altair license server

For a <u>Managed license</u> hosted in the Altair cloud, the define ALM_HHWU variable:

export ALM HHWU=true

8.2.5. Configure KS Service and Security

This section describes the steps to configure KS service, the firewall for KS Server security, set KS service runtime parameters, and configure database connections. KS Server must be restarted as described in the next section for any configuration change to take effect.

Configure KS Service

The KS Server configuration file **kslogin.conf** defines the runtime parameters of the service such as the port number for the KS service to listen on, the log file name and location, etc. The default location of the service configuration file is

/opt/Altair-Data-Analytics/KS-Server-2025.0/lib

Example configuration file kslogin.conf:



port 5470 backlog 10 log kslogin.log ssl_cert ssl_cert.pem ssl_key ssl_key.pem

- The default port number for KS service is **5470**. The port number is defined by the **port** parameter. Specify a different port if necessary.
- The **backlog** parameter is related to the socket configuration. It defines the maximum length that the queue of pending connections may grow to. The default value (10) is suitable in most cases.
- The log parameter defines the name of the KS service authentication log file. When its name is specified without the full path, it is located in <install_dir>/Altair-Data-Analytics/KS-Server-2025.0. To keep the log in a different location, specify the full path, for example: /opt/Altair-Data-Analytics/logs/kslogin.auth.log
- The **ssl_options** parameter determines the cryptographic protocol to be used by KS Server. TLS1.2 is used by default.

Deprecated protocol versions TLS1.1, TLS1.0, and SSL are never used.

• The ssl_cert and ssl_key parameters name the files containing the SSL certificate and key, respectively. Their default values are ssl_cert.pem and ssl_key.pem, and the designated location for these files is the KS Server lib directory, which also contains kslogin.conf. These files must exist, and the OpenSSL library must approve of them, otherwise any connection attempt will fail. If necessary, generate your own certificate/key pair and copy it to the KS Server lib directory. An example command to generate the SSL certificate and key:

```
openssl req -x509 -nodes -days 10000 -subj '/' -newkey rsa:4096 -keyout ssl key.pem -out ssl cert.pem
```

• The **authenticator** parameter defines the authentication mechanism. The default authenticator is **PAM**. If you are using other authentication methods where users do not necessarily have entries in /etc/passwd, specify an alternative authentication mechanism, for example:

authenticator pw

For setting optional advanced runtime parameters, see Chapter 12.



Configure Firewall for TCP Port Connections

Create inbound rules in the Linux firewall for the TCP ports used by KS Server. Inbound connections to the KS Server host must be allowed on these ports from the KS Workstation client machines.

- For Knowledge Studio or Knowledge Seeker, open the port specified in kslogin.conf (the default is **5470**)
- For Knowledge Studio for Apache Spark, open the port specified in kslogin.conf (the default is **5470**) and the port range **6060–6090**. Ensure the network connectivity between the KS Server host and the Apache Spark Server.

8.2.6. Environment for Database Connectivity

This step is necessary only if the users need to import data from databases. See <u>Section 5.5</u> for prerequisites.

- 1. Install the ODBC drivers for the required databases. Native ODBC drivers are recommended. For example, for Apache Hadoop, use the Hortonworks or Cloudera ODBC drivers available for free from the respective vendors.
- Edit the file ks_odbc in the KS Server home directory to set the ODBC environment if necessary. The example below assumes that your unixODBC libraries are in /usr/lib64 and odbc.ini is in /etc. If you do not define ODBCINI and ODBCSYSINI in ks_odbc, the unixODBC defaults will be used.

```
export ODBCINI=/etc/odbc.ini
export ODBCSYSINI=/etc
export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/usr/lib64
```

- 3. You may need to add other environment variables depending on the requirements for the ODBC driver and the source databases. Please refer to the ODBC driver documentation. For example, for the Cloudera native ODBC driver for Apache Hive, define the CLOUDERAHIVEINI variable.
- 4. Edit the odbc.ini file of unixODBC to configure the Data Source Names (DSN) for the desired databases. You may need the help of the database administrator to get the host name for the database server, the database name, port number, or other connection parameters. An example odbc.ini is provided below. For the detailed guide to configuring odbc.ini for data access, refer to http://www.unixodbc.org/ and your ODBC driver documentation.

DSN Configuration Example:

The following **odbc.ini** example file defines Data Source Names (DSN) for Teradata, Oracle, MySQL, SQL Server, and Apache Hive databases.

```
[ODBC Data Sources]
TeradataDB=Teradata ODBC Driver
OracleDB=Oracle Native ODBC driver
SQL Server=Microsoft ODBC Driver 13 for SQL Server
```



```
MySQL=MyODBC 5.3.10 Driver DSN
HortonWorksHive64=Hortonworks Hive ODBC Driver 64-bit
[ODBC]
# Specify any global ODBC config here such as ODBC tracing.
[TeradataDB]
Driver = /opt/teradata/client/ODBC 64/lib/tdataodbc sb64.so
DBCName = tddb.us.cloudapp.azure.com
[OracleDB]
Driver = /usr/lib/oracle/12.2/client64/lib/libsqora.so.12.1
ServerName = db server name
Database = SAMPLE
SID
          = orcldb.company.com
[SQL Server 1]
Description=Microsoft ODBC Driver 13 for SQL Server
Driver=/opt/microsoft/msodbcsql/lib64/libmsodbcsql-
13.1.so.9.2
Database=sample db
Server=db server name,1433
UID=
PWD=
[MySQL]
Driver = /usr/lib64/libmyodbc5a.so
Description = Connector/ODBC 5.3.10 Driver DSN
SERVER = mysqldb_server_name
           = 3306
PORT
            = dbuser1
USER
Password =
Database = db_name
OPTION = 3
             =
SOCKET
[HortonworksHive64]
Description=Hortonworks Hive ODBC Driver (64-bit) DSN
Driver=/usr/lib/hive/lib/native/Linux-amd64-
64/libhortonworkshiveodbc64.so
HOST=hdp server name
PORT=10000
Schema=default
ServiceDiscoveryMode=0
ZKNamespace=
HiveServerType=2
AuthMech=2
ThriftTransport=1
UseNativeQuery=0
UID=
KrbHostFQDN= HOST
```



```
KrbServiceName=hive
KrbRealm=
SSL=0
TwoWaySSL=0
ClientCert=
ClientPrivateKey=
ClientPrivateKeyPassword=
```

8.2.7. Starting and Stopping KS Service

The KS service *kslogin* starts automatically upon the KS Server installation and listens to KS client connections. This section describes the use of KS Server scripts for starting and stopping the KS service.

Starting KS service using ks_start:

- 1. Log in as root.
- 2. Change to the KS Server home directory. For example:

```
cd /opt/Altair-Data-Analytics/KS-Server-2025.0
```

3. Run ks_start:

./ks_start

The following messages confirm that the KS service started successfully:

```
/opt/Altair-Data-Analytics/KS-Server-
2025.0/lib/kslogin(service_pid=2951,server_pid=2952) 2024-
01-02 23:33:06 server start: port 5470
```

```
/opt/Altair-Data-Analytics/KS-Server-2025.0/lib/kslogin:
logging to kslogin.log
```

The service is now ready to accept connections from KS Workstation clients. You will be able to test the client/server connection and install the license after deploying KS Workstation on Windows (see <u>Section 8.3</u>).

If any errors are reported, see Section 8.2.8, "Troubleshooting".

Stopping the service using ks_shutdown:

To stop the KS service and all KS users' kslogin processes on the server, use the **ks_shutdown** command in the KS Server home directory:

```
cd /opt/Altair-Data-Analytics/KS-Server-2025.0
```

./ks shutdown

To restart the KS service, use ks_shutdown first and then run ks_start.

To stop only a particular user's process rather than the entire KS service, list all kslogin processes first, then kill the process running under this specific user ID:

ps -ef | grep kslogin



get the process ID of the user

kill -9 <process ID>

8.2.8. Automating KS Server Startup with Linux Service Management Tools

This section describes how to make the KS Server service start automatically at boot time and use service management commands to start and stop KS Server.

KS service can be managed using **systemd** and **systemcti**. The examples below assume that KS Server is installed in the default location under /opt.

- 1. Make sure that KS service can be started successfully using ks_start as described in the preceding section.
- 2. Copy the file ks.service from the KS Server home directory to /etc/systemd/system
 - cd /opt/Altair-Data-Analytics/KS-Server-2025.0
 - cp ks.service /etc/systemd/system
- 3. Create a symbolic link "KS-Server" to the KS-Server-2025.0.0 directory in the Altair-Data-Analytics directory:

cd /opt/Altair-Data-Analytics

- ln -s KS-Server-2025.0.0 KS-Server
- 4. Enable the *ks* service by running the command:

systemctl enable ks

This will make KS Server start at boot time.

• To start KS Service, run the command

systemctl start ks

To stop KS Service at any time, run the command

systemctl stop ks

• To check if KS Server is running, run the command

ps -ef | grep kslogin

For more information on systemd and systemctl, see your Linux System Administrator documentation. For example, <u>Managing systemd for RHEL 8</u>.



8.2.9. Troubleshooting

Errors at service startup

If starting the KS Server service results in error messages, this may indicate that the environment is not set properly, or the system is not at sufficient maintenance level, and certain patches need to be installed.

Connectivity issues

Connection loss: If an end user working in client/server mode with server on Linux gets an exception resulting in the loss of connection with the server, in most cases, the problem is resolved on the client side by simply reconnecting to the server using the command File | Connect from the application menu. The KS Server service on the Linux server does not need to be restarted.

If you have to restart KS Service, notify the users that it is about to be shut down. Then shut down and start KS Service using any of the ways described in <u>Sections</u> 8.2.5 and 8.2.6.

- Authentication issues: If users get the error message "Authentication failure" or similar errors when trying to connect, the most likely cause is incorrect settings in the configuration file kslogin.conf. Verify that the parameters in kslogin.conf are set properly according to <u>Section 8.2.5</u>, depending on your operating system.
- Failure to connect: If a user gets the error, "No connection could be made because the target machine actively refused it", there are two possible causes:
 - a) KS service is not running.
 - b) The user specified the wrong port number or host name when connecting to KS Server.

To fix this problem, make sure the kslogin service is running on the server using the command ps -ef | grep kslogin. The process "kslogin kslogin.conf" owned by root must be running.

Make sure the user specifies the correct port number and host name in the connection dialog. The port number must be the one indicated in the kslogin.conf configuration file.

 Abnormal termination of the client/server connection: If the network connection between the client machine and the server is lost, the corresponding KS server process on the server (KSWinLogin.exe) is automatically terminated several minutes after the connection loss.

Testing the ODBC Connection

After installing KS Workstation (<u>Section 8.3</u>) and activating the license, test the database connectivity as follows.

1. Run KS Workstation 2025.0 on a Windows client machine and connect to KS Server. If necessary, use the **Connect** command from the **File** menu and specify the KS connection information.



Establish Connect	ion		×				
Mode:	Client/Server Login						
Working Directory:	/home/jsmith/Projects	5					
Client/Server Login							
Host name:	ks_server_name	Port:	5470				
User:	jsmith						
Password:	*****						
	OK	Cancel	<u>H</u> elp				

- 2. When connected, install the license if it is not already installed. See <u>Chapter 14</u> of this document for the license installation instructions.
- 3. Create a new project by selecting **Create Project** from the **File** menu.
- Right-click anywhere on the Workflow Canvas and select Connect → ODBC Import from the context menu. The ODBC Import Wizard will open.
- In the ODBC Connection page (see the screenshot below), select the DSN option, select the DSN you configured, specify the database user ID and password and click Next >.

NOTE: If you are connecting to DB2, the very first connection must be performed with the user ID that has sufficient privileges to create packages.

Import - ODBC Connect	tion		_ D X
Connect string			····
OSN	Northwind		
	Login: Password:	dbuser1	
Data Import Type Select Table		💿 Type Table	Type SQL
	Cancel	< Back Next > Save	Run Help



If your DSN is not in the list, this means it is not in the [ODBC Data Sources] section of odbc.ini, or the ODBC environment was not configured correctly.

6. Click Next. The list of your database tables will be displayed in the next page of the wizard. Select a table and import data from it.

If you fail to connect to the database or import any table, check your DSN parameters in odbc.ini or consult with your database administrator.

Troubleshooting Database Connectivity Issues:

 If no tables are displayed after connecting to a database, check the UseCurrentSchema parameter (if available) in the DSN description for your database in odbc.ini. If UseCurrentSchema=1, the database driver looks for tables only in the default schema (the schema with the same name as the database user name specified in the wizard). Change it to UseCurrentSchema=0 so that the driver could look for tables in all accessible schemas and try connecting again.

License Errors

 For KS Server on Linux, if you get an error message that textrel_shlib_t failed to run, this is caused by lack of an exec permission on the /tmp partition. Change the location of the temporary files for Altair licensing by defining the TMPDIR variable inside the ks_start script. For example, create a new directory alm_tmp under the KS Server home directory and add the following line to ks_start:

export TMPDIR=\$KSTUDIOHOME/alm tmp

System Configuration for Large File Support

Some operations in KS Server, such as importing a large file, may take a lot of memory. It may be necessary to adjust the resource limits of your operating system.

Edit the file /etc/security/limits.conf to view or set the desired ulimit values to increase file size limits and process memory size limit if necessary. See the manual pages for ulimit and your Linux System Administrator documentation for details.

8.3. Deploying Client Components for Client/Server Configuration

This section describes the interactive installation of KS Workstation (desktop client) and dependent components on the client machines as part of the deployment procedure for the client/server configuration. It is assumed that KS Server is already installed on the server. For non-interactive installation modes such as silent install, see <u>Section 9</u>.

8.3.1. Installing KS Workstation

- 1. Log in to the client machine as a user with sufficient rights to install software.
- 2. Double-click the downloaded MSI package KS-Workstation-2025.0-64bit.msi.


3. The setup prepares the InstallShield Wizard, and the Welcome window opens. Click Next >.



 The License Agreement window opens. If you accept the terms, select "I accept" and click Next >

🔄 Altair Data Analytics 2025.0.0 - InstallShield Wizard	×
License Agreement Please read the following license agreement carefully.	LTAIR
Altair Engineering Inc Data Analytics Softwa License Agreement	are
THIS SOFTWARE LICENSE AGREEMENT ("AGREEMENT") SETS THE STANDARD TERMS AND CONDITIONS FOR THE USE OF S AVAILABLE FROM ALTAIR AND WHICH IS ACCESSIBLE VIA PH MEDIA, A LICENSE FILE, OR FROM AN ALTAIR OR THIRD-PART WEBSITE OR HOSTED COMPUTE RESOURCES. THIS AGREEM SUPERSEDES ANY AND ALL PRIOR STANDARD TERMS AND CONDITONS FOR ACCESS TO AND USE OF SUCH SOFTWARE	S FORTH OFTWARE YSICAL Y IENT . BY
<u>accept the terms in the license agreement</u> <u>I do not accept the terms in the license agreement</u>	<u>P</u> rint
< <u>B</u> ack <u>N</u> ext >	Cancel

 The Configuration Type window opens. Select the *Client/Server configuration* option and click Next >.



ontiguration Type		
Choose the configuration computer.	on for KS Workstation on this	
Configuration		
Standalone configur	ation	
_ /		
Client/Server configure	Iration	
Client/Server configu KS Workstation on connect to KS Serve	u <mark>ration</mark> this machine will be used as a cli r.	ent to
 Client/Server configure KS Workstation on connect to KS Serve 	u <mark>ration</mark> this machine will be used as a cli r.	ent to
 Client/Server configure KS Workstation on connect to KS Serve 	Iration this machine will be used as a cli r.	ent to
 Client/Server configure KS Workstation on connect to KS Serve 	<u>aration</u> this machine will be used as a cli rr.	ent to
 Client/Server configure KS Workstation on connect to KS Serve 	ıration this machine will be used as a cli r.	ent to

6. If necessary, change the destination folder for the application program files on the client machine by clicking the **Change** button and specifying the desired location. The default is C:\Program Files\Altair Data Analytics. Click Next >.

支 Altair Data Analytics 2025.0.0 - InstallShield Wizard	×
Destination for KS Workstation Program Files Specify the destination folder for the listed components	
Click on an icon in the list below to change how a feature	e is installed. Feature Description Program files and examples for Knowledge Studio, Knowledge Seeker, and Knowledge Studio for Apache Spark. This feature requires 2522MB on your hard drive.
Install to: C:\Program Files\Altair Data Analytics\ InstallShield	<u>C</u> hange
<u>H</u> elp <u>Space</u> < <u>B</u> ack	<u>N</u> ext > Cancel

- 7. The KS Server Connection Properties window opens.
 - In the Host field, enter the name or the IP address of the server where KS Server is installed.



- In the **Port** field, enter the port number to be used by the client to connect to KS Server. The default port number is **5470**. If you change it, make sure it is the same as the one specified in the KS Server configuration (<u>see Section</u> 8.1.4. "Configuring the KS Service").
- In the Working Directory field, enter the working directory for the users' project files.

Note 1: This directory path must be a local path with respect to the server (for example, D:\Altair KS Projects\ for Windows Server, or /apps/ks_projects/ for Linux). You can use a network path such as \\server1\ks_projects if the Working directory is on a network drive. The Working Directory must have Read & Write permissions for the intended users.

Note 2: The end users can change their Working Directories at any time after the installation using the **Set Working Directory** command in the **File** menu. For example, if you created subdirectories user1, user2, ... userN under D:\Altair KSProjects, instruct the users to set their Working Directories to the respective folders D:\Altair KS Projects\userN.

🔁 Altair Data Analytics 2025.0.0 - InstallShield Wizard	×
KS Server Connection Properties	
Specify the KS Server host machine, port number, and working directory for users' projects.	
Connection Properties and Working Directory:	
Host: Port: 5470	
Working Directory:	
InstallShield	
< <u>B</u> ack	Next > Cancel

Click Next >.

8. At the final step, choose whether to install a desktop shortcut for KS Workstation. Click **Install** to start the installation.



🔁 Altair Data Analytics 2025.0.0 - Instal	IShield Wizard		×
Ready to Install the Program			_
The wizard is ready to begin installat	ion.		R
Click Install to begin the installation.			
If you want to review or change any Cancel to exit the wizard.	of your installation se	ttings, click Back. Click	
🕑 Install Desktop Short	cut		
🕑 Install KS PDF Printer	(required to save viev	vs as PDF)	
KS PDF Printer uses A Technologies, Inc.	myuni PDF Converter	by Amyuni	
InstallShield			
	< <u>B</u> ack	Install Cance	el

9. The Setup Status window opens. It shows the installation progress. When the installation is complete, click **Finish**.



10. The installed software is now available as KS Workstation in the program group Start | Programs | Altair Data Analytics.

To activate the product, follow the instructions in <u>Chapter 14: "License</u> <u>Administration"</u>.



8.3.2. Installing Altair Analytics Workbench

 On the client side, the graphical user interface for Altair SLC on the server is provided by Altair Analytics Workbench. Run the downloaded Altair Analytics Workbench installation package. Click Next > in the Welcome screen.



2. In the End-User License Agreement window, select "I accept the terms in the License Agreement" if you accept the terms. Click Next >.

Altair Analytics Workbench 2024 Setup		×
End-User License Agreement		
Please read the following license agreement carefully		
THIS IS A LEGALLY BINDING AGREEMENT BETWEEN YOU A WORLD PROGRAMMING LIMITED. PLEASE READ CAREFULI BEFORE DOWNLOADING, INSTALLING OR USING THE SOFTWARE.	ND _Y	
These terms, together with any Invoice (defined below), (together, the Agreement) constitute a legal agreement between you (Customer) a World Programming Limited of Osprey House, Budds Lane, Romsey Hampshire SO51 0HA, United Kingdom (Supplier), (together, the Par for the Software (defined below).	nd , ties)	
accept the terms in the License Agreement		
Print Back Next	Can	cel



 In the Custom Setup page, select all program features, as shown below. To change the destination folder for the application program files, click the Change button and specify the desired location. The default is C:\Program Files\Altair\Analytics Workbench\<version>. Click Next >.

Altair Analytics Workbench 2024 Setup	-		×
Custom Setup Select the way you want features to be installed.			
Click the icons in the tree below to change the way feature	s will be installed.		
All fea	tures for Altair Ar ench 2024.1 (5.2	nalytics 24.2.0.133	4)
This fe hard d subfea subfea hard d	ature requires 40 rive. It has 3 of 3 itures selected. T itures require 620 rive.	03KB on yo 3 The 0MB on you	ur
Location: C:\Program Files\Altair\Analytics Workber	nch\2024\	Browse	
Reget Disk <u>U</u> sage <u>B</u> ack	<u>N</u> ext	Cano	el

4. Click Install to start the installation.





5. The Setup Status window shows the installation progress. When the installation is complete, click Finish.

Altair Analytics Workben	ch 2024 Setup			-		\times
	Complete Workben Click the Finis	ed the Alta ch 2024 S	air Analy Setup Wiz	tics zard ^{Wizard.}		
		<u>B</u> ack	Finish		Cance	

 Altair Analytics Workbench is now available in the Windows Start menu. It can be launched by double-clicking the desktop shortcut "Altair Analytics Workbench" or selecting Start | Altair | Altair Analytics Workbench.

9. Alternative Installation Modes on Windows

9.1. Silent Install

To install KS Workstation in the silent mode from the command line without user interaction, follow these steps:

- 1. Copy the downloaded installation package KS-Workstation-2025.0-64bit.msi to a folder on the intended host machine.
- Run Command Prompt as administrator. For example, on Windows 10, select Start | Windows System, right-click on Command Prompt, and select More → Run as administrator.
- Type msiexec.exe in the command prompt and press Enter. The Windows Installer window displays its version and usage options. The syntax of the commands depends on the version of Windows Installer on your system. For more information, see the <u>Windows Installer Portal</u> and the information on the <u>Command Line Options</u>.
- 4. The following examples show how to install KS Workstation in several typical cases.
 - <u>NEW INSTALLATION</u>: To install KS Workstation 2025.0 with default settings to the default destination folder C:\Program Files\Altair Data Analytics



and save the installation log in the file ks_install.log, execute the following command as a single line:

msiexec.exe /package "C:\temp\KS-Workstation-2025.0-64bit.msi" /quiet /log ks install.log

 <u>UPGRADE</u>: To install KS Workstation 2025.0 and apply the preferences of the previous version, specify the preferences file of the previous version as an argument in the silent install command line. For example:

```
msiexec /i "KS-Workstation-2025.0-64bit.msi" /l*v
"install.log" CWDGROUP="C:\Work\Altair KS Projects"
PREFERENCES="C:\Users\jsmith\AppData\Roaming\Altair\KSMainNe
t64-2022.0.xml" /quiet
```

As a result, all applicable parameters in the specified XML file that correspond to the preference values will be set as the default preference settings in **Tools | Preferences** of the installed application. Note that the Working Directory is specified separately using the options CWDGROUP or SCWD (see the table below).

<u>UNINSTALL</u>: To uninstall KS Workstation 2025.0, use the following command as a single line:

msiexec.exe /uninstall "C:\temp\KS-Workstation-2025.0-64bit.msi" /quiet /log ks install.log

The options that can be specified to customize the installation are given below. The values must be specified in double quotes, except ALMSERVER. Examples are given below.

ALMSERVER	Self-hosted Altair License Server host name or IP address. Example: ALMSERVER=6200@server1
MANAGEDLICENSE	<i>True</i> or <i>False.</i> Determines whether Managed Altair Licensing is used. The installer creates the system environment variable ALM_HHWU with the specified value. Example: MANAGEDLICENSE=True
PREFERENCES	The preferences file that contains the application preferences to be applied. Example syntax: PREFERENCES="C:\TEMP\KSMainNet64-2024.2.xml"
CWDGROUP	Working Directory location <u>in the Standalone mode</u> . The default is the "Altair" folder under the current user's <i>My Documents</i> folder. Not applicable to the client/server mode. When deploying the client for the client/server configuration (KSSERVERTYPE=2) use the SCWD keyword to set the Working Directory on the server.



SCWD	The Working Directory location on the server (in the case of the client/server configuration). This is used in combination with KSSERVERTYPE=2 (see below).
INSTALLDIR	Installation directory. The default is "C:\Program Files\Altair Data Analytics"
DSKTOPSTCUT	Desktop shortcut option ("1" if required to create; "0" otherwise)
PDFPRINTER	Install Amyuni PDF Printer. ("1" if required to install; "0" otherwise). The printer driver is required for users to be able to save trees, tables, charts, and reports as PDF. The default is "1".
KSSERVERTYPE	Determines whether the mode is Standalone or Client/Server. "1" - the standalone mode. This is the default option. "2" - the client/server mode (KS Workstation serves as a client to connect to KS Server)
KSHOSTNAME	The name of the KS Server host to connect to. (Applicable to the client/server configuration, when KSSERVERTYPE="2")
KSPORT	The TCP port number for the KS Workstation (client) to connect to KS Server. The default is "5470". Applicable only to the client/server configuration, when KSSERVERTYPE="2" and KSHOSTNAME is specified.

Here is an example command (must be specified as a single line in the command prompt or script):

msiexec.exe /package "C:\Temp\KS-Workstation-2025.0-64bit.msi"
/quiet /log ks_install.log INSTALLDIR="D:\Program Files\Altair
Data Analytics" ALMSERVER="6200@server1" MANAGEDLICENSE=False
CWDGROUP="C:\Users\jsmith\Documents\Altair" DSKTOPSTCUT="1"
PDFPRINTER="1"

If you are performing silent install on multiple PCs at the same time, after the installation you can set the default configuration (client/server or standalone mode, server name to connect, port number, and default Working Directory) on the client side by replacing the INI file in the KS Workstation program folder on every client PC. The configuration file is C:\Program Files\Altair Data Analytics\KS Workstation 2025.0.0\bin\KDSConnection.ini

For example, if you want KS Workstation to connect by default to a specific server and set the working directory to D:\KS_Projects, the contents of **KDSConnection.ini** should be:

<Config> <Mode>1</Mode>



```
<Location>D:\KS_Projects</Location>
<Service></Service>
<User></User>
<Host>KS_server_name_or_ip_address</Host>
<Port>5470</Port>
<Secure>True</Secure>
</Config>
```

9.2. Customizations to Assist in Repackaging for Deployment

The KS Workstation installer and software support the capability of deploying on a large number of workstations using automated installation tools. This section provides guidelines on how to prepare the software for this type of deployment.

- Run the installer KS-Workstation-2025.0-64bit.msi.
- The installer prepares the InstallShield Wizard, and the Welcome window opens. Click Next >.
- The License Agreement window opens. If you accept the terms, select "I accept" and click Next >.
- The Configuration Type window opens.
- For the Standalone configuration, select the "Standalone configuration" option, click Next >, and proceed as follows:
 - Select the option "I am an administrator installing the software for someone else". Click Next >.
 - If necessary, change the destination folder for the application program files by clicking the Change button and specifying the desired location. The default is C:\Program Files\Altair Data Analytics. Click Next >.
 - The Working Directory window opens. Specify the path for the Working Directory.

The Working Directory can be parameterized to point to each end user's folder M_Y Documents\Altair or another user-specific folder. For example, you can specify the following path in the Working Directory field:

%USERPROFILE%\Documents\Altair

Note 1: Each user will be able to change the Working Directory at any time using the **Set Working Directory** command in the **File** menu of the installed application.

Make sure the folder has Read & Write permissions for the intended user(s).

Note 2: If you prefer to use cloud storage, such as OneDrive or Google Drive, select a folder with offline access enabled. For example, if you choose a folder on OneDrive, right-click the folder in Windows Explorer and select option "**Always keep on this device**".



The License Configuration window opens. Follow the instructions of **Step 9** in <u>Section 7.1. Deploying KS Workstation (Standalone)</u> to configure the licensing method.

Click Next > and then click Install in the next page to start the installation.

- For the Client/Server configuration, select the Client/Server configuration option and proceed as follows.
 - If necessary, change the destination folder for the application program files by clicking the Change button and specifying the desired location. The default is C:\Program Files\Altair Data Analytics. Click Next >.
 - The KS Server Connection Properties window opens.
 - In the Host field, enter the name or the IP address of the server where KS Server is installed.
 - In the **Port** field, enter the port number to be used by the client to connect to KS Server. The default port number is **5470**. If you change it, make sure the port number entered here is the same as the one specified in the KS Server configuration.
 - o In the **Working Directory** field, enter the directory for users' projects.

Note 1: This directory path must be a local path with respect to the server machine (for example, C:\UserProjects\ for Windows Server or /home/userprojects/ for Linux). You can use a network path such as \\server1\projects if the Working directory will be on a server different from the one that hosts KS Server. The Working Directory should have Write permissions for the intended user(s);

Note 2: The end users can change their Working Directories at any time after the installation by using the **Set Working Directory** command in the **File** menu.

If each user is supposed to have a separate working directory on the server, the Working Directory entry can be parameterized to point to end users' individual folders (e.g., C:\UserProjects\<user_name>). For example, specify the following path ensuring to maintain the spaces and the case of the letters:

C:\UserProjects\%USERNAME%

 If necessary, specify a location for the license files in the License Location field. This must be a local path with respect to the server. The default is C:\Program Files\Altair Data Analytics\License.

Click Next > and then click Install to start the installation.

• The Setup Status window opens. It shows the installation progress. When the installation is complete, click **Finish**.

If the custom settings you programmed during the installation don't take effect, the workaround is to set the custom configuration after deploying the product with default



settings. You can set the mode (client/server or standalone), server name to connect, port number, and the Working Directory by replacing an INI file in the KS Workstation program folder on every client PC. The configuration file is C:\Program Files\Altair Data Analytics\KS Workstation 2025.0.0\bin\KDSConnection.ini

For example, if you want KS Workstation to connect by default to a specific server and set the working directory to D:\KS_Projects, the contents of KDSConnection.ini should be as follows:

```
<Config>
<Mode>1</Mode>
<Location>D:\KS_Projects</Location>
<Service></Service>
<User></User>
<Host>KS_server_name_or_ip_address</Host>
<Port>5470</Port>
<Secure>True</Secure>
</Config>
```

In this case, however, the Working Directory will be the same for all users, and they will need to change it using the File | Set Working Directory command if they need separate working directories.



10. Citrix and Remote Desktop Services Environments

10.1. Citrix

In a Citrix environment, you will need to deploy the Client/Server configuration of the product. KS Workstation can be replicated across as many computers of the Citrix farm as desired, while KS Server must be installed on a **single server**, which may be outside of the farm.

Here are the steps required to deploy the product in a Citrix environment:

- Make sure all the installation prerequisites listed in <u>Section 5</u> are met. Allocate the necessary disk space on the server and create Working Directories for the users following the guidelines in <u>Section 5</u>.
- Follow the instructions in <u>Section 8: Deploying Client/Server Configuration</u>. See also <u>Section 9</u> if you plan to package the Workstation for mass deployment on your Citrix farm computers.

Note: The installation wizard for KS Workstation lets you specify a location for the Working Directory. The users will still be able to change their Working Directories at any time using the **File | Set Working Directory** menu command (or the **File | Connect** command). If you want the users to use separate working directories (recommended) rather than a shared one, you will need to either parameterize the Working Directory in the installation wizard as described at the end of <u>Section 9.2</u>, or notify the users after you finish the installation that they should set Working Directory to the appropriate locations.

For configuring the licensing method, see <u>Chapter 14, "License Administration"</u>.

10.2. Remote Desktop Services

If you intend to use the product in a multi-user environment where users access the software via Windows Remote Desktop Services, you will need to deploy the **<u>standalone</u>** configuration of the product.

The installation procedures are the same as those described in <u>Section 7, "Deploying</u> <u>Standalone Configuration</u>". Follow these steps:

- Make sure all the installation prerequisites listed in <u>Section 5</u> are met.
- Determine whether a separate Working Directory is required for each user or one shared Working Directory is required for all users.

If the users require separate Working Directories, create one for each user and assign appropriate read/write permissions for the created directories. After you finish the installation, notify the users that they should set Working Directory to the appropriate locations. Any user can change his/her working directory at any time after the installation by selecting menu commands **File | Connect** or **File | Set Working Directory...** in the client application.

- Proceed to <u>Section 7, "Deploying Standalone Configuration"</u>. Follow the instructions therein, taking into account the following details:
 - If each user requires a separate Working Directory for their projects (recommended in most cases), then



- If necessary, create a new folder for each user of the application. For example, create a folder called Altair under the My Documents folder of each user profile. Make sure it has read and write permissions for the respective users. The Working Directory does not have to be on the server that hosts KS Server. It can be a network folder, and users can refer to it using a UNC path. Note that KS Server cannot access mapped drives in the client/server mode on Windows.
- When specifying the Working Directory in the installation wizard, specify any folder that has at least *Read* permissions for all users.
- After the installation and license activation is done, instruct the users to run KS Workstation and set their Working Directories to their respective working folders for projects using the File | Set Working Directory menu command (or File | Connect command)
- o If all users require a single shared Working Directory for their projects, then
 - Create a folder with Read and Write permissions for all users. The Working Directory does not have to be on the server that hosts KS Server. It can be a network folder, and users can refer to it using a UNC path. Note that KS Server cannot access mapped drives in the client/server mode on Windows.
 - Specify this folder as the Working Directory in the installation wizard (see the Custom setup option in Step 7 of <u>Section 7</u>).
 - To configure the licensing method, see <u>Chapter 14, "License</u> <u>Administration"</u>.



12. Advanced Configuration: Optional Runtime Parameters

Optional runtime parameters for the application can be specified in a special configuration file. To set any of the parameters described below, use any text editor to create a new file called **KDSProvider.conf** in the directory that contains the application binaries. The default location for the configuration file is:

• For the standalone configuration of KS Workstation on Windows:

C:\Program Files\Altair Data Analytics\KS Workstation 2025.0.0\bin

• For the client/server configuration on Windows Server:

C:\Program Files\Altair Data Analytics\KS Server 2025.0.0\bin

• For KS Server on Linux:

/opt/Altair-Data-Analytics/KS-Server-2025.0/lib

Since file names on Linux are case-sensitive, make sure that you name the file exactly as specified: KDSProvider.conf.

In the client/server configuration, after modifying KDSProvider.conf, KS Server must be restarted for the changes to take effect.

The following runtime parameters can be specified in KDSProvider.conf:

- jupyter path full path to the jupyter executable (enclosed in double quotes).
- http.logfile set to 1 to generate an http log for Knowledge Studio for Apache Spark. The log file is created in the %TEMP% directory (the default temporary files folder under the current user profile). The default is 0 (the log is not generated).
- proc maximum number of threads created by the engine processes (the default is "unlimited").
- cores maximum number of CPU cores used (the default is "unlimited")
- index_max maximum size of the temporary index file during data import.
 Determined dynamically by the engine unless the value is set. 0 means "unlimited".
- pivot_max maximum size of the temporary pivot file during data import. 0 means "unlimited".
- window_max maximum size of memory window during data import. If the value is not set, this does not exceed 3 GB. **0** means "unlimited".
- y2k_future together with y2k_window, defines the default century for Date variables. This is ignored if y2k_window has been assigned a value.
- y2k_window together with y2k_future, defines the default century for Date variables. If no value is assigned, then it is computed from y2k_future as follows:
 y2k_window = current_year + y2k_future 100
- wamp.enabled enables the WAMP service (required for Knowledge Studio for Apache Spark). The default value is 1 (enabled).



Example configuration in KDSProvider.conf:

```
jupyter_path "C:\ProgramData\miniforge3\Scripts\jupyter.exe"
http.logfile 1
proc 4
cores 2
index_max 0
pivot_max 0
window_max 0
y2k future 10
```

In this example, since index_max, pivot_max, and window_max are set to 0, data import operations will use as much memory as available on the host system. Be careful with these settings if you must limit the resource usage in multi-user environments.

After setting or changing any parameters in KDSProvider.conf, restart KS Server in the case of the client/server configuration or KS Workstation in the standalone configuration.

13. Uninstalling Altair Data Analytics Products

This section describes the procedure of uninstalling, modifying, or repairing the products featured in this guide.

13.1. Modifying, Repairing, and Removing KS Workstation

To uninstall KS Workstation, repair the installation, or to add or remove components of the software, follow the steps below.

Note: Uninstalling, modifying, or repairing the software will not delete the users' projects or license files.

In the Programs and Features list in the Windows Control Panel, select **KS Workstation 2025.0.0**.

- To uninstall the software, click Remove or Uninstall.
- To change or modify the installation, click the Change button.
- 1. The Welcome window opens. Click Next >.
- The Program Maintenance window opens. The description beside each explains in detail what it does. Select the appropriate radio button and click Next > to continue.
 - If you select Modify, the Custom Setup window opens. A list shows you the components that are available, and the components that are already installed. See the appropriate installation instructions above for the description of the options in this window. Select or deselect the components to install or uninstall. Click Next >.



- The Data Mining Engine Setup Window opens. Change the entries as required. See the appropriate installation instructions above for the description of the options in this window. Click Next > to continue, then click Install.
- The Setup Status window opens. It shows the installation progress. When the maintenance is complete, click Finish.

OR

- If you selected Repair, the Ready To Repair the Program window opens. Click Install.
- The Setup Status window opens. The Repair option automatically fixes any damaged files or replaces lost files. It begins installing the software to the same specifications you selected last time you installed. When this process is complete, click **Finish**.

OR

 If you selected **Remove**, the Remove the Program window opens. Clicking the Remove button will uninstall the program. When this process is complete, click **Finish**.

13.2. Modifying, Repairing, or Removing KS Server for Windows

To uninstall KS Server, repair or change the installation, follow the steps below.

Note: Uninstalling, modifying, or repairing the software will not delete the users' projects or license files.

Open the list of Programs and Features on Windows Server and select **KS Server 2025.0.0**.

- To uninstall the software, click Remove or Uninstall.
- If you want to change or modify the software, click the Change button.
 - 1. The Welcome window opens. Click Next>.
 - 2. The Program Maintenance window opens. The description beside each explains in detail what it does. Select the appropriate radio button and click Next>.
 - If you selected Modify, the Custom Setup window opens. A list shows you the components that are available, and the components that are already installed. See the appropriate installation instructions above for the description of the options in this window. Select or deselect the components to install or uninstall. Click Next>.
 - The Windows Service Setup Window opens. Choose the desired options. See the appropriate installation instructions above for the description of the options in this window. Click Next> to continue, then click Install.
 - The Setup Status window opens. It shows the installation progress. When the maintenance is complete, click Finish.



OR

- If you selected Repair, the Ready To Repair the Program window opens. Click Install.
- The Setup Status window opens. The Repair option automatically fixes any damaged files or replaces lost files. It begins installing the software to the same specifications you selected last time you installed. When this process is complete, click Finish.
- OR
 - If you selected Remove, the Remove the Program window opens. Clicking the Remove button will uninstall the program. When this process is complete, click Finish.

13.3. Uninstalling KS Server on Linux

To uninstall KS Server on Linux, follow these steps:

- 1. To prevent the interruption of any user's work by shutting down the service, identify the user processes using the command ps -ef | grep kslogin and make sure there are no active client sessions.
- 2. Shut down the kslogin service and terminate all users' kslogin processes on the server by running the script ks_shutdown from the Altair Data Analytics home directory.
- If you used R language integration features on Linux and would like to uninstall the KS Library for R and Survival Analysis package, use the commands:
 - R CMD REMOVE angoss
 - R CMD REMOVE KnowledgeSurvival
- 4. If you are planning to reinstall the product or upgrade to a new version, make a backup copy of the KS Server licenses. For example, if the product is installed under /opt/Altair-Data-Analytics, copy the directory /opt/Altair-Data-Analytics/license/ to a backup location. Also, back up the environment and startup scripts and odbc.ini in /opt/Altair-Data-Analytics/KS-Server-NN.N, where NN.N is your current version.
- 5. Check the KS Server 2025.0 package name using any of the commands

```
rpm -qa KS-Server
```

```
rpm -qaiv KS-Server
```

The latter provides a detailed description of the package.

To uninstall KS Server 2025.0, use the command

rpm -e <package_name>

where <package_name> is the exact name reported by the command rpm -qa KS-Server, for example, KS-Server-2025.0-18151_centos8.x86_64.

If there are any errors during the uninstall, you may use the command

rpm -e package_name --noscripts



After that you can delete the KS Server home directory. For example,

rm -rf /opt/Altair-Data-Analytics/KS-Server-2025.0.0

where X.X is the KS-Server version. You can also delete the parent directory /opt/Altair-Data-Analytics after backing up the license folder and any configuration files, if necessary.

6. If you enabled the automatic startup of KS Server as described in <u>Section 8.2.9</u>, <u>"Enabling automatic startup"</u>, delete the startup script and the related link (if any) from the corresponding system directories. The location of the startup scripts depends on your operating system (refer to <u>Section 8.2.9</u> for details).



14. Licensing Methods and Configuration

14.1. Licensing Methods

<u>Altair Units</u> is a value-based license management system enabling metered usage of an entire suite of products. All Altair Data Analytics products have the capability to use a single pool of recyclable Altair Units.

Managed Altair Licensing

If your organization is using *Managed Altair Licensing*, the License Server is hosted by Altair, and the application checks out the required license units by contacting the license servers in the Altair One cloud via HTTPS.

See <u>https://help.altair.com/altairone/index.htm</u> for more information on Altair One™.

• On-premises Altair License Server

If your organization is using a self-hosted Altair License Server, the application checks out the required license units by connecting via TCP to a license server in your corporate network or in a cloud managed by your organization. The license server is managed by your IT team.

The Altair License Manager software installation and administration guide is available on the <u>Altair Documentation Portal</u>.

14.2. License Configuration

This section describes the process of configuring the application host for the licensing method you are using.

If you are using a self-hosted Altair License Server, the instructions below assume that it is already installed on a server in your network, and that you have the name or IP address of the license server at hand.

There are three configurations of Knowledge Studio and Knowledge Seeker:

- 1. Standalone
- 2. Client/Server for Windows Server
- 3. Client/Server for Linux

14.2.1. Environment Variables in the Standalone Configuration

From the Windows Control Panel, select **System** and click **Advanced System Properties**. If you have no access to Advanced System Properties, click on the Windows Start button and start typing "environment", then select "*Edit environment variables for your account*".



System Properties	×
Computer Name Hardware Advanced System Protection Remote	
You must be logged on as an Administrator to make most of these chang Performance Visual effects, processor scheduling, memory usage, and virtual memor	jes. y
Settings User Profiles Desktop settings related to your sign-in Settings	
Startup and Recovery	
System startup, system failure, and debugging information	
Environment Variable	s
OK Cancel Ar	oply

In the Advanced tab of the System Properties dialog, click the **Environment Variables** button.



Variable	Value
Path	C:\Users\Dm\AppData\Local\Microsoft\WindowsApp
SALIENCEFIVE_INCLUDE	C:\Program Files\Lexalytics\Salience\SDK\include
SALIENCEFIVE_LIB	C:\Program Files\Lexalytics\Salience\SDK\lib
TEMP	C:\Users\Dm\AppData\Local\Temp
тмр	C:\Users\Dm\AppData\Local\Temp
	<u>N</u> ew <u>E</u> dit <u>D</u> elete
stem variables	
Variable	Value
Variable ComSpec	Value C:\Windows\system32\cmd.exe
Variable ComSpec DriverData	Value C:\Windows\system32\cmd.exe C:\Windows\System32\Drivers\DriverData
Variable ComSpec DriverData NUMBER_OF_PROCESSORS	Value C:\Windows\system32\cmd.exe C:\Windows\System32\Drivers\DriverData 8
Variable ComSpec DriverData NUMBER_OF_PROCESSORS OS	Value C:\Windows\system32\cmd.exe C:\Windows\System32\Drivers\DriverData 8 Windows_NT
Variable ComSpec DriverData NUMBER_OF_PROCESSORS OS Path PATHEYT	Value C:\Windows\system32\cmd.exe C:\Windows\System32\Drivers\DriverData 8 Windows_NT C:\Program Files (x86)\Intel\Intel(R) Management Engine Compone COM: EXE: RAT: CMD: VRS: VRS: USE: WSE: WSE: WSE: MSC

Click the **New** button in the *System variables* section or in the *User variables* section, depending on whether you are activating the product for all users on this machine or only the user ID currently logged in.

New System Variable	:	<
		1
Variable <u>n</u> ame:	ALTAIR_LICENSE_PATH	
Variable <u>v</u> alue:]
Browse <u>D</u> irectory	Browse <u>File</u> OK Cancel]

- Set Variable name to ALTAIR_LICENSE_PATH
- For the Variable value field:
 - If you are using Altair License Server, enter its address and port number. The format is: NNNN@<server_name_or_IP_address>,



where *NNNN* is the port number (6200 by default), and the second part is the Altair License Server host name or IP address. For example: 6200@server1

o If you are using Managed Altair Licensing, set the value to false

Click **OK** to create the variable.

Click the **New** button in the same section as ALTAIR_LICENSE_PATH.

New System Variable	×	(
Variable <u>n</u> ame:	ALM_HHWU	
Variable <u>v</u> alue:		
Browse <u>D</u> irectory	Browse <u>File</u> OK Cancel	

- Set Variable name to ALM_HHWU
- To use Managed Altair Licensing, set the value of ALM_HHWU to **True.** Otherwise, set it to **False**.

Click **OK** in all dialogs to save the changes and exit the Advanced System Properties dialog.

Start the KS Workstation application.

The Select Product window will prompt you to select the desired product (feature set to be enabled).

Select Product	×
Available products:	Knowledge Studio - Altair Units
Details	Knowledge Seeker - Altair Units
Туре	Knowledge Studio for Apache Spark - Altair Units Knowledge Studio Student Edition - Altair Units
Base License	Knowledge Studio Altair Units 0
<	>
	Launch Cancel

Select the desired product and click Launch.



14.2.2. Environment Variables for KS Server on Windows

From the Windows Server Control Panel, select **System** and click **Advanced System Properties**.

System Propertie	5				×			
Computer Name	Hardware	Advanced	System Protection	Remote				
You must be lo Performance Visual effects	gged on as a	an Administrat cheduling, ma	or to make most of the	hese changes. tual memory <u>S</u> ettings				
User Profiles Desktop settings related to your sign-in S <u>e</u> ttings								
Startup and Recovery System startup, system failure, and debugging information Settings								
		ОК	Environme	nt Variables				

In the Advanced tab of the System Properties dialog, click the **Environment** Variables button.



Users\Dm\AppData\Local\Microsoft\WindowsApp Program Files\Lexalytics\Salience\SDK\include Program Files\Lexalytics\Salience\SDK\lib Users\Dm\AppData\Local\Temp Users\Dm\AppData\Local\Temp
Program Files\Lexalytics\Salience\SDK\include Program Files\Lexalytics\Salience\SDK\lib Users\Dm\AppData\Local\Temp Users\Dm\AppData\Local\Temp
Program Files\Lexalytics\Salience\SDK\lib Users\Dm\AppData\Local\Temp Users\Dm\AppData\Local\Temp
Users\Dm\AppData\Local\Temp Users\Dm\AppData\Local\Temp
Users\Dm\AppData\Local\Temp
<u>N</u> ew <u>E</u> dit <u>D</u> elete
Je
Windows\system32\cmd.exe
Windows\System32\Drivers\DriverData
ndows_NT
Program Files (x86)\Intel\Intel(R) Management Engine Compone
M: EXE: BAT: CMD: VBS: VBE: JS: JSE: WSE: WSH: MSC

Click the New button in the System variables section.

New System Variable	>	<
Variable <u>n</u> ame:	ALTAIR_LICENSE_PATH]
Variable <u>v</u> alue:]
Browse Directory	Browse <u>F</u> ile OK Cancel	

- Set Variable name to ALTAIR_LICENSE_PATH
- For the Variable value field:
 - If you are using Altair License Server, enter its address and port number. The format is NNNN@<server_name_or_IP_address>,



where *NNNN* is the port number (**6200** by default), and the second part is the Altair License Server host name or IP address. For example, 6200@server1.

o If you are using Managed Altair Licensing, set the value to False

Click OK to create the variable.

Click the New button in the System variables section.

New System Variable		×
Variable <u>n</u> ame:	ALM_HHWU	
– Variable <u>v</u> alue:		
Browse <u>D</u> irectory	Browse <u>F</u> ile	OK Cancel

- Set Variable name to ALM_HHWU
- To use Managed Altair Licensing, set the value of ALM_HHWU to **True.** Otherwise, set it to **False**.

Click **OK** in all dialogs to save the changes and exit the Advanced System Properties dialog.

Start the KS Workstation application on any client machine.

Connect to KS Server. The Product Selection window will prompt you to select the desired product.

Select Product	\times
Available products: Knowledge Studio - Altair Units Details Knowledge Studio - Altair Units Type Knowledge Studio for Apache Spark - Altair Units Base License Knowledge Studio Altair Units	
<	>
Launch Cancel	

Select the desired product and click Launch.



14.2.3. Environment Variables for KS Server on Linux

Define the environment variables ALTAIR_LICENSE_PATH and ALM_HHWU in the KS Server startup script **ks_start** as described below. For information about ks_start, see <u>Section 8.2.5</u>, "Configuring KS Server on Linux".

- 1. If you are using self-hosted Altair License Server:
 - Set the value of ALTAIR_LICENSE_PATH to the address of the Altair License Server. The format is: **NNNN@<server_name_or_IP_address>**, where NNNN is the port number (6200 by default), and the second part is the Altair License Server host name of IP address. For example:

export ALTAIR_LICENSE_PATH=6200@server1

Set the value of ALM_HHWU to false:

export ALM HHWU=false

- 2. To use Managed Altair Licensing:
 - Set the value of ALM_HHWU to true

export ALM HHWU=true

Save the changes in ks_start and restart KS Server using any of the methods described in <u>Sections 8.2.5 and 8.2.6</u>.

Start KS Workstation on any client machine and connect to KS Server. The Product Selection window will prompt you to select the desired product (feature set).

Select Product		×
Available products: Details Type Base License K	Knowledge Studio - Altair Units Knowledge Studio - Altair Units Knowledge Seeker - Altair Units Knowledge Studio for Apache Spark - Altair Units Knowledge Studio Student Edition - Altair Units nowledge Studio Altair Units 0	~
<	Launch Cance	>



Select the desired product and click Launch.

14.2.4. Machine Authorization for Managed Altair Licensing

This section describes how to authorize the application host machine(s) for **Managed Altair Licensing**, where the license server is hosted in the Altair cloud. This step is not required if you are using a self-hosted Altair License Server.

Standalone configuration for a single user:

- If you have not registered on the AltairOne portal yet, ask a user with Altair license admin role at your company to add you as a user at <u>https://AltairOne.com</u>. You will receive an email from Altair with a link to activate your AltairOne account. Click the activation link in your email and register on the AltairOne portal.
- 2. Open the file browser and navigate to the folder C:\Program Files\Altair Data Analytics\KS Workstation 2025.0.0\security

security ×	+					-		:
← → ↑ C 🖵	> This PC > System (C:) >	Program Files > A	Altair Data Analytics	> KS Work	station 2025.0.0 > security		۹	
🕀 New - 🔏 🗘 🗋	🗐 🖄 🗊 🛝 Sort	~ 🔳 View ~ 😽				C	Preview	
	Name	Date modified	Туре	Size				
👻 💻 This PC	almutil.exe	11/15/2024 5:22 PM	Application	12,969 KB				
> 🛄 System (C:)	🔍 almutil_gui.exe	11/15/2024 5:22 PM	Application	15,059 KB				
> 🔄 Network	🚯 liblmx-altair.dll	11/15/2024 5:22 PM	Application exten	11,477 KB				
	1							
3 items 1 item selected 14.7 MB								

3. Double-click on the almutil_gui. The Altair License Utility window opens:

_					
8	Altair License Utility			- 0	\times
Fi	e Edit Tools Help				
	HostID License Usage Managed Licensing	g Activation	Borrowing Local Admin Remote Admin		
	HostID	Туре	Description	Сору	
	00FFD03EB0	ETHERNET	TAP-Windows Adapter V9 for OpenVPN Connect	Refresh	
	00090FFE0(ETHERNET	Forti Virtual Ethernet Adapter (NDIS 6.30)	Export To File	
	F0B61E5EE5	ETHERNET	Intel(R) Wi-Fi 6 AX201 160MHz	Dongle Support	
	F0B61E5EE!	ETHERNET	Bluetooth Device (Personal Area Network)		
	0000_0000_0000_0000_8CE3_8E10_002C	HARDDISK	KXG70PNV2T04 NVMe KIOXIA 2048GB		
	C6PY5J3	BIOS	Dell Inc DELL - 2		
	4671526310728273203331747325508041	WIN_INSTALL_ID	Windows Installation ID		



🕄 Altair License Utility								_		×
File Edit Tools Help										
HostID License Usage	Managed Licensing	Activation Borrowing	Local Admin	Remote A	Admin					
Authorization					Proxy Configuration Proxy Required Use legacy proxy	credentials ①				
E-mail Address	Authorize wit	th Altair One			Proxy Host					
Password			Sign In	۲	Proxy Port Proxy Username Proxy Password					
<u>Use Auth Code</u> ▼							Save	Rever	t	
	This tal	b is used for Altair's	Managed Lic	censing.	This is not for config	guring On-Premise	s licensing			

4. Go to the Managed Licensing tab of Altair License Utility window:

5. Specify your AltairOne credentials: your email address and password that you used to register at the <u>AltairOne</u> portal. Click **Sign In**.

Alternatively, if you are not registered at the <u>AltairOne</u> portal and received an authorization code an Altair license admin user at your company, click Use Auth Code, specify the authorization code received from this user and click **Authorize**.

You will get the message: "Successfully authorized this machine". Click OK.

Client/Server configuration or Standalone configuration for multiuser access:

- If you have not registered yet on the AltairOne portal, ask a user with Altair license admin role at your company to add you as a user at <u>https://AltairOne.com</u>. You will receive an email from Altair with a link to activate your Altair One account. Click the activation link in your email and register on the Altair One portal.
- Log on to <u>https://altairone.com/Dashboard</u>. In the Manage Account section of the Altair One Dashboard page, click Managed Licenses, as shown below.





3. In the left pane, click User Profile:



4. Click Authorized Machines in the User Profile page:

III Altair One	
😰 Dashboard	Settings Authorized Machines
오 User Profile	User Profile
	Change Password Delete My Account

5. In the Authorized Machines page, click **Generate Auth Code** at the top right corner:



	Altair One					Feedback 🖉
🖬 Dashboard		← Authorized Machines (1)			Q Generate Auth Code	
蚁	Users	Username	Hostname	Auth Token	Added At	MAC Addresses

 This will generate an authorization code to authorize a machine for the Altair license. Copy the code to the clipboard. Note: The code is valid for 15 minutes, so you must perform the next 7 steps within 15 minutes of generating the code.

\					
Auth Codes can be used with Almutil by administrators to quickly authorize license access by multiple users on a single machine and/or multiple machines.					
	Your Auth Code is: G07RCLJR 🏥	2× 3			
	Expires in 14 minutes, 37 seconds				
Authorized Machines (0)	٩			

- 7. After copying the code:
- For the Standalone configuration on Windows: run Command Prompt as administrator and change to the folder C:\Program Files\Altair Data Analytics\KS Workstation 2025.0.0\security
- For the Client/Server configuration on Windows: run Command Prompt as administrator and change to the folder C:\Program Files\Altair Data Analytics\KS Server 2025.0.0\security
- For the client/server configuration on Linux: Change to the directory /usr/local/altair/licensing15.5/bin/, which contains almutil. If you cannot find almutil on your Linux system, please contact <u>Altair Customer Support</u>.
- 8. Run the following command as administrator, where *NNNN* is the authorization code generated at the previous step:

almutil -alauth -system -code NNNNN

The almutil tool can also be used to test the connectivity with the license servers in the Altair One cloud and configure proxy settings. Run almutil to view the detailed information on the usage and all available options.

 Once you get the message that the machine was successfully authorized, restart the application (KS Server service for the client/server configuration; KS Workstation for the Standalone configuration).



15. Contacting Customer Support

Altair Customer Support website: https://community.altair.com/community

To report issues with the software or ask questions regarding the product features, please contact Customer Support via email or telephone:

- Telephone: 1-888-715-7391 (toll-free within North America) or 1-416-593-2417
- Data Analytics Customer Support e-mail: <u>dasupport@altair.com</u>

We welcome your suggestions on how to make our application easier to use and understand. Please send your comments and suggestions to <u>dasupport@altair.com</u>.

Join our online community of experts and users to share insights, collaborate with colleagues and find more ways to take full advantage of your product: <u>https://altair.com/knowledge-studio-user-group</u>



About Altair | Altair Data Analytics

Altair is a global leader in delivering advanced analytics to businesses looking to improve performance across risk, marketing and sales.

Altair removes the complexity inherent with predictive analytics and machine learning with a platform that is intuitive to use and rich in features. It is designed so that Data Scientists and Data Citizens alike can build models used to help solve business problems.

https://www.altair.com/

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