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SAS® Quality Knowledge Base for Contact Information 23

Installation and Configuration Guide

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SAS® Quality Knowledge Base for Contact Information 23: Installation and Configuration Guide

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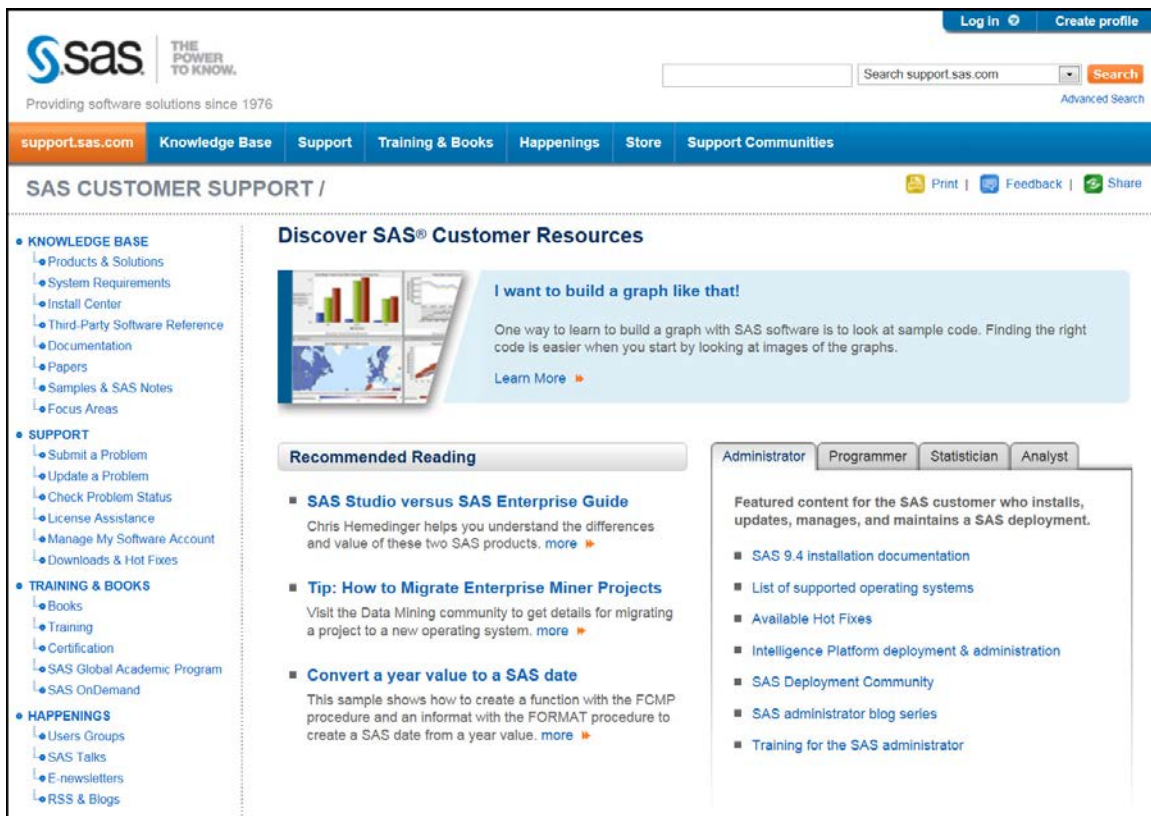
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Downloading a Quality Knowledge Base (QKB)

- [Downloading a QKB for Windows](#)
- [Downloading a QKB for UNIX](#)

Downloading a QKB for Windows

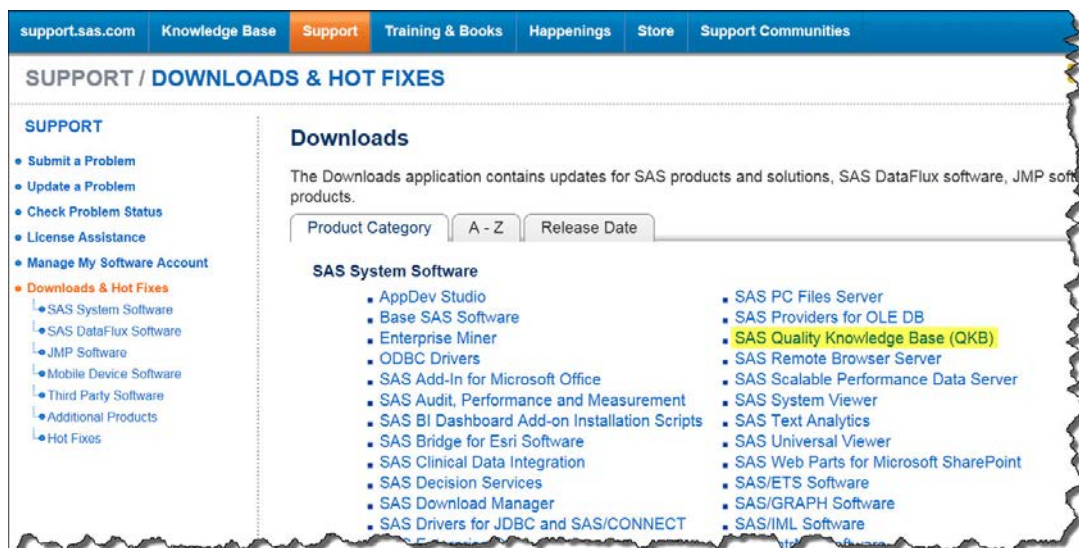
To download the SAS Quality Knowledge Base for Contact Information 23, go to the SAS Customer Support page located at <http://support.sas.com>.



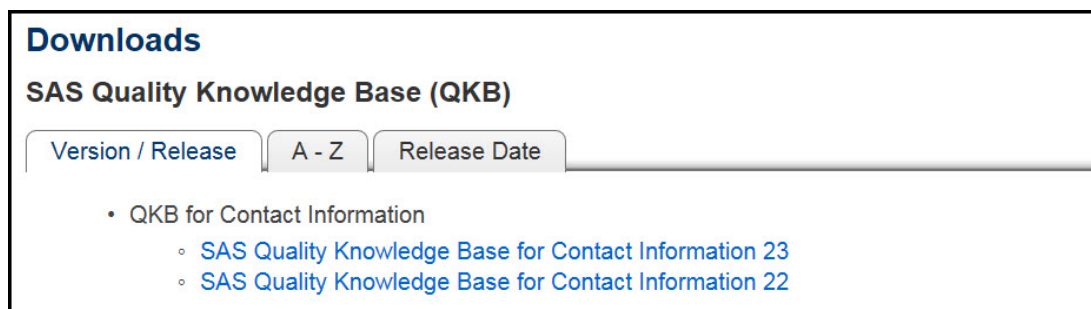
The screenshot shows the SAS Customer Support Web Site. The header includes the SAS logo, the tagline "THE POWER TO KNOW.", and a search bar. The navigation bar contains links to support.sas.com, Knowledge Base, Support, Training & Books, Happenings, Store, and Support Communities. The main content area is titled "SAS CUSTOMER SUPPORT /" and features a sidebar with a knowledge base tree, a central "Discover SAS® Customer Resources" section with a featured article about building graphs, and a "Recommended Reading" section with links to various guides and tips. The right sidebar shows "Featured content for the SAS customer who installs, updates, manages, and maintains a SAS deployment." with links to installation documentation, supported operating systems, hot fixes, deployment administration, and community resources.

SAS Customer Support Web Site

1. In the menu bar, click **Support**.
2. In the left pane, click **Downloads & Hot Fixes**.



3. From the **SAS System Software** section, select **SAS Quality Knowledge Base (QKB)**.
4. Select Quality Knowledge Base for Contact Information 23.



5. A list of platform options is available on the SAS Quality Knowledge Base for Contact Information 23 Downloads page. Select **Windows 32-bit** or **Windows 64-bit**.

Downloads

SAS Quality Knowledge Base for Contact Information 23

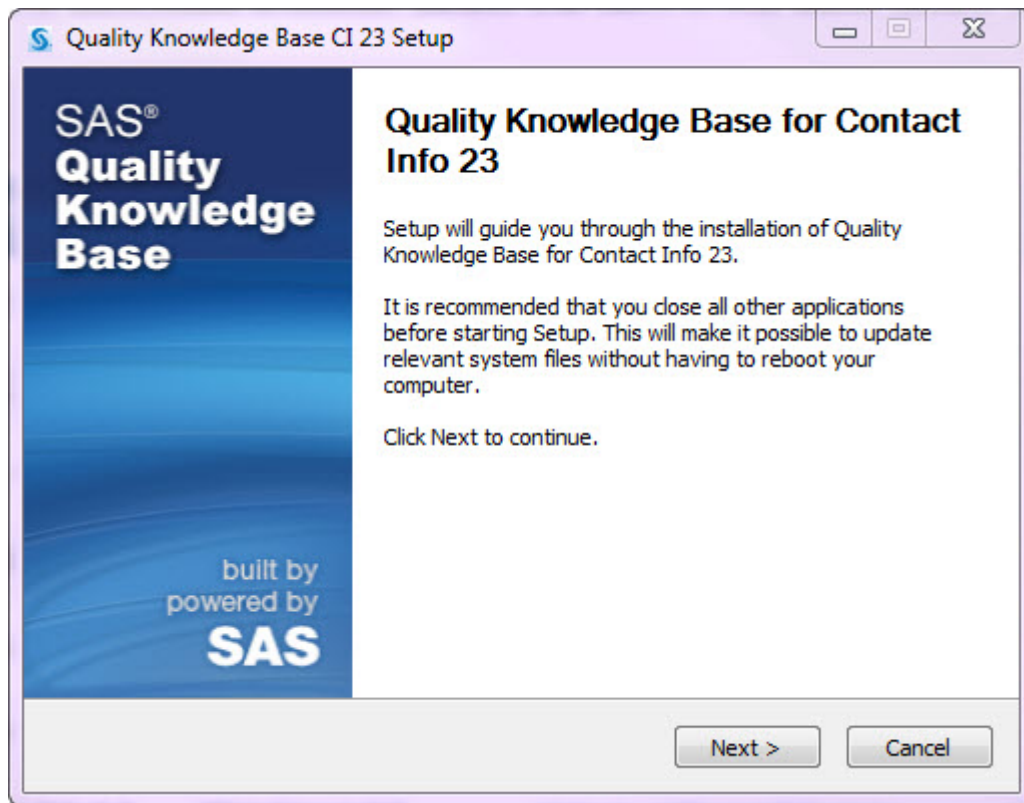
The Quality Knowledge Base for Contact Information (QKB CI) is a collection of files that define rules, criteria, and data by which data cleansing can be performed for contact information (names, addresses, phone numbers, etc.). Note that this is the standard Quality Knowledge Base that was previously referred to simply as "the QKB" without qualification with a context name. For information about what features are included in a QKB release, please visit the [What's New](#) page.

To begin the download process, select the item in the table below which best meets your needs.

SAS Quality Knowledge Base for Contact Information 23					
Platform	Description	Request Download	Size	Release Date	ReadME
AIX	AIX	qkb-ci-v23-aix64.tar.gz	879.8 MB	2014-05	txt
HP UX-i64	HP UX-i64	qkb-ci-v23-hpux-i64.tar.gz	880.7 MB	2014-05	txt
Linux 64-bit	Linux 64	qkb-ci-v23-lin64.tar.gz	878.9 MB	2014-05	txt
Sol64	Sol64	qkb-ci-v23-sol64.tar.gz	879.3 MB	2014-05	txt
Solaris x64	Solaris x64	qkb-ci-v23-solaris-x64.tar.gz	878.8 MB	2014-05	txt
Windows 32-bit	Windows 32	qkb-ci-v23-win32.exe	899.5 MB	2014-05	txt
Windows 64-bit	Windows 64	qkb-ci-v23-win64.exe	901.1 MB	2014-05	txt

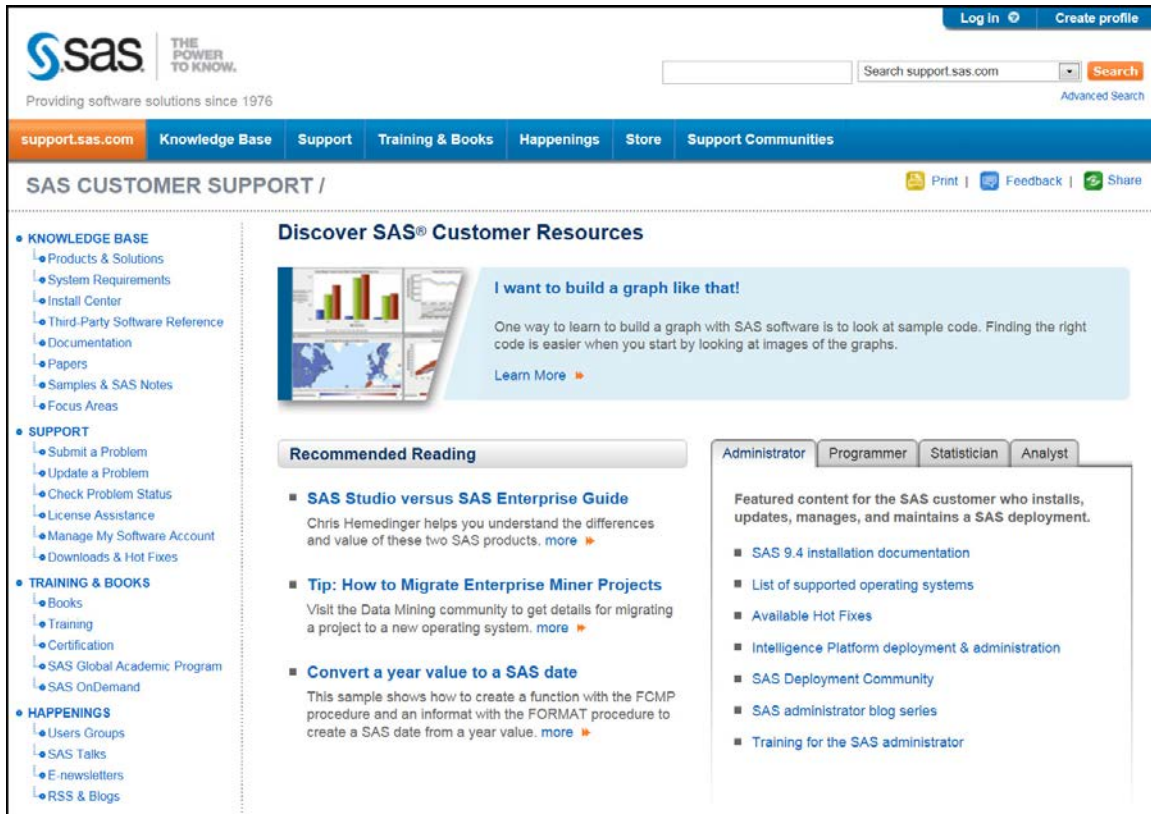
For questions you may have about this download, please [contact our Product Support Group](#)

6. A login prompt opens. Enter your e-mail address and password to log in.
7. Read the SAS License Agreement. Click **Accept** or **Do Not Accept**.
8. A message appears, asking **Do you want to run or save qkb-ci-v23-win64.exe (or -win32.exe) from support.sas.com?** Click **Run** or **Save**.
9. Follow the steps in the SAS Quality Knowledge Base for Contact Information 23 wizard.



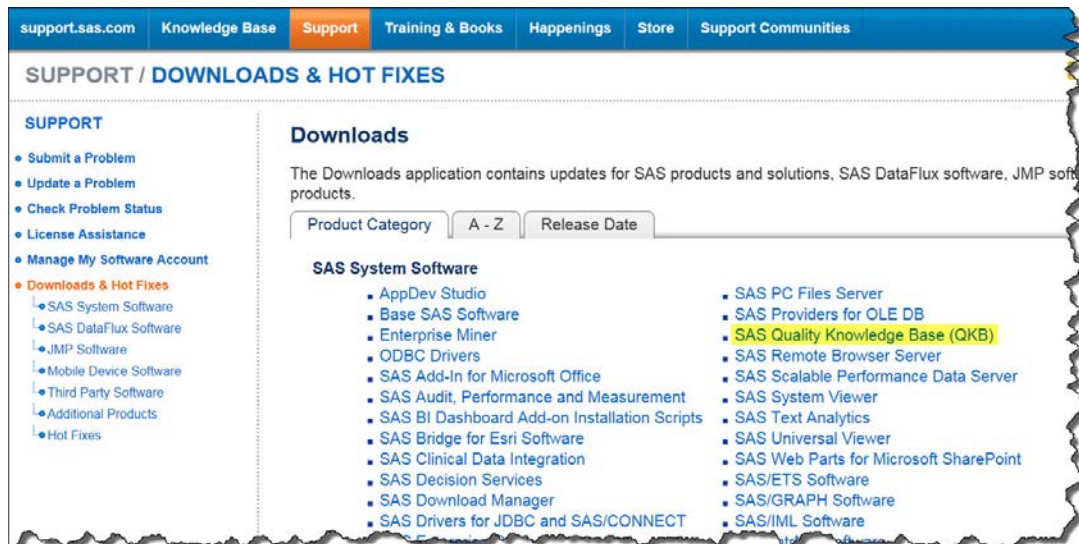
Downloading a QKB for UNIX

To download the SAS Quality Knowledge Base for Contact Information 23, go to the SAS Customer Support page located at <http://support.sas.com>.



SAS Customer Support Web Site

1. In the menu bar, click **Support**.
2. In the left pane, click **Downloads & Hot Fixes**.



3. From the **SAS System Software** section, select **SAS Quality Knowledge Base (QKB)**.
4. Select Quality Knowledge Base for Contact Information 23.

Downloads

SAS Quality Knowledge Base (QKB)

[Version / Release](#)
[A - Z](#)
[Release Date](#)

- QKB for Contact Information
 - [SAS Quality Knowledge Base for Contact Information 23](#)
 - [SAS Quality Knowledge Base for Contact Information 22](#)

- A list of platform options is available on the SAS Quality Knowledge Base for Contact Information 23 Downloads page. Select the appropriate download file for your UNIX platform.

Downloads

SAS Quality Knowledge Base for Contact Information 23

The Quality Knowledge Base for Contact Information (QKB CI) is a collection of files that define rules, criteria, and data by which data cleansing can be performed for contact information (names, addresses, phone numbers, etc.). Note that this is the standard Quality Knowledge Base that was previously referred to simply as "the QKB" without qualification with a context name. For information about what features are included in a QKB release, please visit the [What's New](#) page.

To begin the download process, select the item in the table below which best meets your needs.

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Platform	Description	Request Download	Size	Release Date	ReadME
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HP UX-i64	HP UX-i64	qkb-ci-v23-hpux-i64.tar.gz	880.7 MB	2014-05	txt
Linux 64-bit	Linux 64	qkb-ci-v23-lin64.tar.gz	878.9 MB	2014-05	txt
Sol64	Sol64	qkb-ci-v23-sol64.tar.gz	879.3 MB	2014-05	txt
Solaris x64	Solaris x64	qkb-ci-v23-solaris-x64.tar.gz	878.8 MB	2014-05	txt
Windows 32-bit	Windows 32	qkb-ci-v23-win32.exe	899.5 MB	2014-05	txt
Windows 64-bit	Windows 64	qkb-ci-v23-win64.exe	901.1 MB	2014-05	txt

For questions you may have about this download, please [contact our Product Support Group](#)

- A login prompt opens. Enter your e-mail address and password to log in.
- Read the SAS License Agreement. Click **Accept** or **Do Not Accept**.
- Select the TAR file using the following command:

```
gzip -c -d PATH_TO/qkb-ci-v23-<PLATFORM>.tar.gz | tar xvf -
```

Replace `PATH_TO` with the directory where the tar file will be located and `<PLATFORM>` with the platform name (linux, sol64, and so on).

- For additional information, refer to [Installing on UNIX](#).

Installing the Quality Knowledge Base

- [Installing on Windows](#)
- [Installing on UNIX](#)

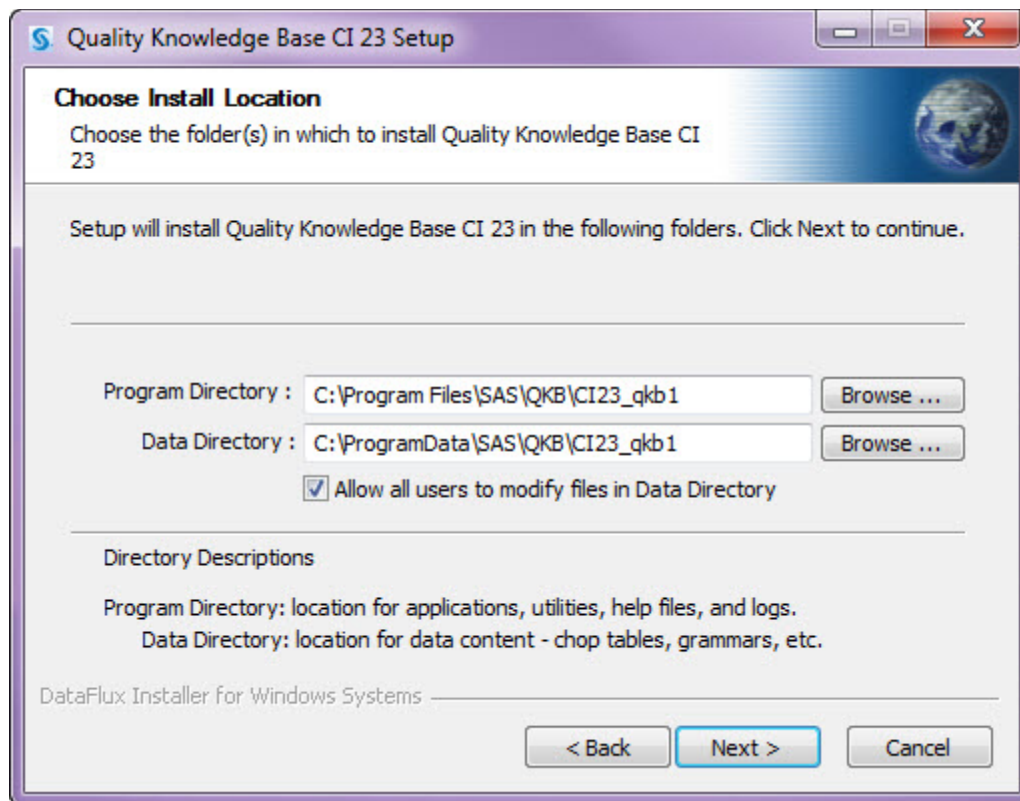
Installing on Windows

This section takes you through the typical installation process for SAS QKB for Microsoft Windows operating systems.

- [Installation Instructions](#)
- [Locales](#)
- [Registration](#)
- [Command Line Installation Options](#)
- [Windows Directory Layout](#)

Installation Instructions

To launch the QKB setup program on Windows, double-click on the setup application file. During the installation, you are prompted for information. Follow the instructions in the installation dialog box, or see [below](#) for more information:



Choose Install Location

Program Directory

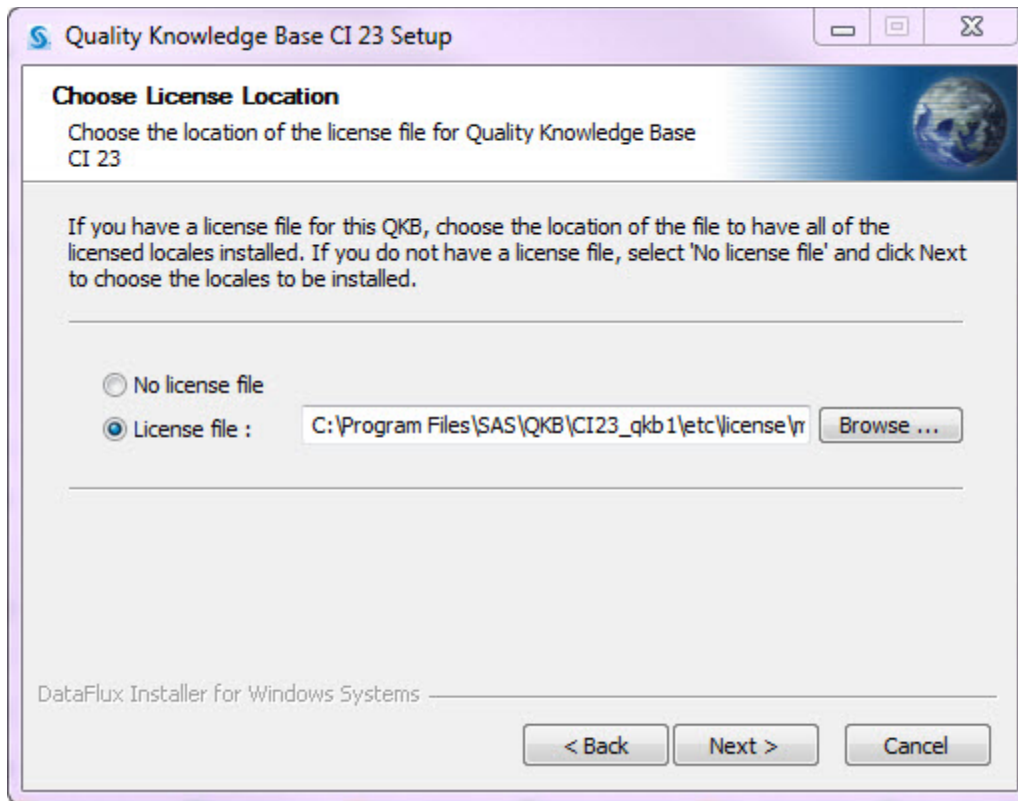
This directory is typically located under your SASHome directory, which is normally in the Program Files directory. The Program Directory contains program files, applications, utilities, help files, and logs. With the exception of the logs, content installed in this directory typically remains unchanged after installation.

Data Directory

This directory is typically located under the ProgramData directory. Contents in this directory can be modified by customizing your QKB. If you are reinstalling the QKB, you must select a directory that is different from the directory containing your original QKB data.

Allow all users to modify files in Data Directory

Some Windows environments restrict who can access directories. If you select this option, it enables all authenticated users full access rights to the data directory. If you do not select this option, there are no changes to the security settings of the data directory. An administrator will need to provide users or groups explicit access by using Windows security.



Choose License Location

The options in the Choose License Location dialog box include **No license file** and **License file** path:

No license file

Select the **No license file** option to choose from a complete list of available QKB locales that you can install.



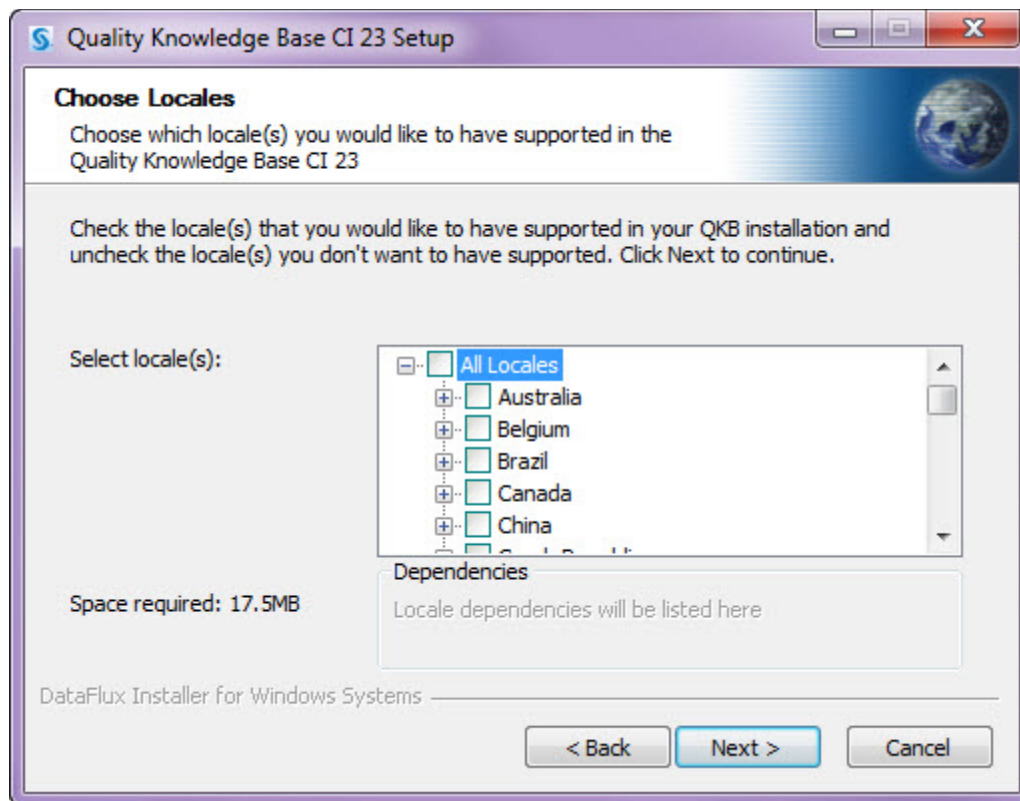
Note: You must have a license to use any of the available QKB locales.

License file

Select the **License file** option when you have your license file and want to install all licensed locales. Click **Browse** to locate the path and file name of your license file. This file is used to determine which QKB locales are installed.

Choose Locales

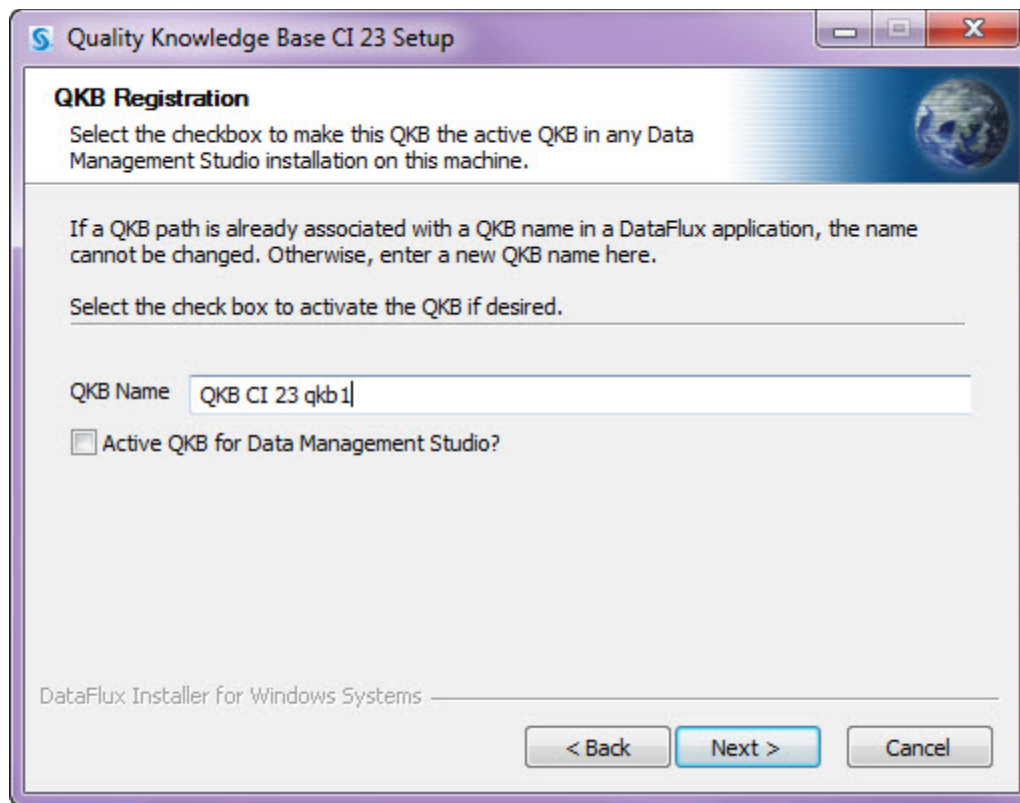
If you selected the **No license file** option on the previous screen, the following dialog box appears with a complete list of available QKB locales. Select one or more locales from the **Select locale(s)** list.



Choose Locales

QKB Registration

The QKB Registration dialog box appears after you have selected your QKB locales or specified the license file.



QKB Registration

The QKB name is used to identify the QKB in data management applications. The QKB name must be unique for the system. This means that you cannot use the same name that was used in an earlier QKB installation.

Active QKB for Data Management Studio?

If you want to set the QKB as the active QKB for DataFlux Data Management Studio, select the check box.



Note: When you select this option, your previous QKB becomes inactive. Consider this option carefully and leave the check box unchecked if you want to continue to use a previously active QKB. You can activate the new QKB later within DataFlux Data Management Studio.

Command Line Installation Option

To install the QKB on Windows without user intervention, invoke the setup application from the Windows command line using the following parameters:

Parameter	Description	
/ACTIVE	If present and set to TRUE, the installed QKB is set to active for DataFlux Data Management Studio.	
/DATADIR	The path for the data directory that contains QKB data and logic files.	
/INSTDIR	The path for the program directory that contains installation files and documentation.	
/LOCALES	Comma-separated list of ISO code names for the locales to be installed. Locale ISO code names are listed below:	
	Locale Name	ISO Code Name
	Afrikaans, South Africa	AFZAF
	Arabic, Egypt	AREGY
	Chinese, China	ZHCHN
	Czech, Czech Republic	CSCZE
	Danish, Denmark	DADNK
	Dutch, Belgium	NLBEL
	Dutch, Netherlands	NLNLD
	English, Australia	EN AUS
	English, Canada	EN CAN
	English, Hong Kong	EN HKG
	English, India	EN IND
	English, New Zealand	EN NZL
	English, South Africa	EN ZAF
	English, United Kingdom	EN GBR
	English, United States	EN USA
	Finnish, Finland	FIFIN
	French, Belgium	FRBEL
	French, Canada	FR CAN
	French, France	FR FRA
	German, Germany	DE DEU
	Greek, Greece	ELGRC
	Hebrew, Israel	HEISR
	Hungarian, Hungary	HUHUN
	Italian, Italy	ITITA
	Japanese, Japan	JA JPN
	Korean, South Korea	KOKOR
	Malay, Malaysia	MSMYS
	Norwegian, Norway	NONOR
	Polish, Poland	PLPOL
	Portuguese, Brazil	PTBRA

Parameter	Description
	Portuguese, Portugal
	Russian, Russia
	Slovak, Slovakia
	Spanish, Mexico
	Spanish, Spain
	Swedish, Sweden
	Thai, Thailand
	Turkish, Turkey
/QKB_NAME	The name assigned to the QKB.
/S	Case-sensitive capital "S" tells the installer to perform a silent install.

Below is an example of the command line with parameters for installing the English (United States) and French (France) locales:

```
qkb-ci-v23-win64.exe /S /QKB_NAME="SAS QKB CI 23"
/INSTDIR="C:\Program Files\SAS\QKB\CI\23"
/DATADIR="C:\ProgramData\SAS\QKB\CI\23"
/ACTIVE=true /LOCALES="ENUSA,FRFRA"
```



Note: For 32-bit Windows installations, the name of the setup application is qkb-ci-v23-win32.exe. For 64-bit Windows installations, the name of the setup application is qkb-ci-v23-win64.exe.

Windows Directory Layout

- [Program Directory](#)
- [Data Directory](#)

Program Directory

After your installation is complete, you will have the following subdirectories in your program directory:

Directory	Description
bin	Executable files for this platform
data	Data specific to this installation
doc	Detailed QKB documentation in HTML format
lib	Library files for this platform
share	Shared (not platform-specific) data

Data Directory

You will have the following subdirectories in your data directory:

Directory	Description
chopinfo	Chop table files used in QKB definitions
grammar	Grammar files used in QKB definitions
locale	Metadata about QKB data types and definitions
phonetx	Phonetics libraries used in QKB definitions
regexlib	Regular Expression libraries used in QKB definitions
scheme	Scheme files used in QKB definitions or applied directly to data in a data job
vocab	Vocabulary files used in QKB definitions

Installing on UNIX

This section takes you through the typical installation process for SAS QKB for UNIX operating systems.

- [Installation Instructions](#)
- [License Instructions](#)
- [Reinstall or Upgrade Your QKB](#)
- [UNIX Directory Layout](#)

Installation Instructions

Enter the following command at your UNIX command prompt:

```
cd /opt/sas
```

If you want to install your SAS software in a directory other than /opt/sas, enter that location in place of /opt/sas. Note that all files are installed in a subdirectory called qkb. Enter the following command:

```
gzip -c -d <PATH_TO>/qkb-ci-v23-<PLATFORM>.tar.gz | tar xvf -
```

Replace <PATH_TO> with the directory in which you have copied the TAR file. Replace <PLATFORM> with the platform name (linux, sol64, etc.). Enter the following command:

```
perl qkb/install.pl
```

The install script takes control of the installation process. You are prompted for information about where to install the QKB data files and which locales will be installed.

License Instructions

During the installation, you are prompted about the QKB license file. You should have a SAS license file for the QKB.

If you have a license file for this QKB, only the locales that you have licensed are installed. If you do not have a license file, you must choose the locales to be installed individually.

Do you have a license file? (y/n) [n]:

If you answer yes, you are prompted for the location (path and file name) of the license file. This license file is used to determine which QKB locales will be installed.

If you answer no, you are shown a list of QKB locales from which to choose to be installed.



Note: You must have a license to use any of the available QKB locales.

Reinstall or Upgrade Your QKB

During a reinstall or upgrade, you might encounter the following prompts. Answer each prompt as appropriate for your site.

You have chosen a location that already contains an instance of Quality Knowledge Base - CI - 23.

Reinstall the software in this location? (y/n) [n]:

This prompt explains that this QKB has already been installed in the installation directory that you selected. If you answer yes, a confirmation prompt follows.

If you answer no, the installation stops. You will need to rerun the install script and select a different installation location.

You have chosen a location that already has another SAS product installed. Product: Quality Knowledge Base - CI - 22.

Please choose another location for this installation.

This prompt explains that an earlier version of the QKB has already been installed in the installation directory that you selected. The installation stops. You will need to rerun the install script and select a different installation location.

Do you want to replace the data in the existing data directory? The existing data will be copied to a backup directory. If you choose not to replace the existing data, you can choose a new location for the data.

Replace existing data? (y/n) [y]:

This prompt asks you to confirm that you want to back up and replace the existing data in either a re-installation or upgrade. If you answer yes, the data

directory will be backed up. If you answer no, the installation stops. You will need to rerun the install script and select a different installation location.

UNIX Directory Layout

After your installation is complete, you will have the following subdirectories in your installation directory:

Directory	Description
qkb/bin	Executable files for this platform. The QKB Merge Tool and script are installed here.
qkb/data	Data specific to this installation.
qkb/doc	Detailed QKB documentation in HTML format.
qkb/lib	Library files for this platform.
qkb/share	Shared (not platform-specific) data.
qkb/install.pl	The installer (see the installation instructions).
qkb/ReleaseNotes	Release notes for this platform.
qkb/README	A text file containing brief information about getting started.

Merging with an Existing QKB

If you made customizations in a previously installed QKB, you might want to merge your newly installed QKB with the previously installed QKB so that you can save your customizations. See the SAS Quality Knowledge Base for Contact Information 23 online Help for information about how to merge your existing QKB with the latest QKB.

Configuring Data Jobs

The following definitions are released with non-default values for the Parse Resource Limit or Solution Tree Depth optimization parameters. SAS recommends that you do not override these parameters when using these definitions in your Data Jobs.

Afrikaans, South Africa

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	HIGH	5

Arabic, Egypt

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Chinese, China

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Czech, Czech Republic

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address	Match	HIGH	
Address	Parse	HIGH	
Address	Standardization	HIGH	
Address (Global)	Parse	HIGH	
Address (Global) (v23)	Parse	HIGH	
Address (PO Box Only)	Match	HIGH	
Address (Street Only)	Match	HIGH	

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Phone	Match	HIGH	5
Phone	Parse	HIGH	5
Phone	Standardization	HIGH	5
Phone (Electronic)	Standardization	HIGH	5
Phone (with Country Code)	Standardization	HIGH	5

Danish, Denmark

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Dutch, Belgium

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	INTENSIVE	

Dutch, Netherlands

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address	Match	HIGH	
Address	Parse	HIGH	
Address	Standardization	HIGH	
Address (Full)	Parse	HIGH	
Address (Global)	Parse	HIGH	
Address (Global) (v23)	Parse	HIGH	
Address (PO Box Only)	Match	HIGH	
Address (Short Street Name)	Standardization	HIGH	

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address (Street Only)	Match	HIGH	
City	Match	VERY HIGH	
City	Standardization	VERY HIGH	
City - State/Province - Postal Code	Match	VERY HIGH	
City - State/Province - Postal Code	Parse	VERY HIGH	
City - State/Province - Postal Code	Standardization	VERY HIGH	
City - State/Province - Postal Code (Global)	Parse	VERY HIGH	
City - State/Province - Postal Code (International)	Standardization	VERY HIGH	
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	INTENSIVE	

English, Australia

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	HIGH	5
Phone	Match	HIGH	5
Phone	Parse	HIGH	5
Phone	Standardization	HIGH	5
Phone (Electronic)	Standardization	HIGH	5
Phone (with Country Code)	Standardization	HIGH	5

English, Canada

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Definition	Type	Parse Resource Limit	Solution Tree Depth
Name (Multiple Name)	Parse	HIGH	5

English, Hong Kong

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	HIGH	5

English, India

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address	Match	INTENSIVE	
Address	Parse	INTENSIVE	
Address	Standardization	INTENSIVE	
Address (Full)	Parse	INTENSIVE	5
Address (Global)	Parse	INTENSIVE	
Address (Global) (v23)	Parse	INTENSIVE	
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	HIGH	5

English, New Zealand

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	HIGH	5

English, South Africa

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address (Full)	Parse	HIGH	5
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	HIGH	5

English, United Kingdom

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address	Match	MEDIUM	
Address	Parse	MEDIUM	
Address	Standardization	MEDIUM	
Address (Full)	Match	VERY HIGH	
Address (Full)	Parse	HIGH	
Address (Full) (2011A)	Match	VERY HIGH	
Address (Full) (with Combinations)	Match	VERY HIGH	
Address (Global)	Parse	MEDIUM	
Address (Global) (v23)	Parse	MEDIUM	
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	HIGH	5
Phone	Match	HIGH	
Phone	Parse	HIGH	
Phone	Standardization	HIGH	
Phone (Electronic)	Standardization	HIGH	
Phone (with Country Code)	Standardization	HIGH	

English, United States

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	HIGH	5
Phone	Match	HIGH	
Phone	Parse	HIGH	
Phone	Standardization	HIGH	
Phone (Electronic)	Standardization	HIGH	
Phone (with Country Code)	Standardization	HIGH	

Finnish, Finland

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	HIGH	5

French, Belgium

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	INTENSIVE	

French, Canada

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	HIGH	5

French, France

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address	Match	VERY HIGH	
Address	Parse	VERY HIGH	
Address	Standardization	VERY HIGH	
Address (Detailed)	Parse	VERY HIGH	
Address (Full)	Parse	VERY HIGH	
Address (Full) (AFNOR)	Parse	VERY HIGH	
Address (Global) (v23)	Parse	VERY HIGH	
Address (PO Box Only)	Match	VERY HIGH	
Address (Street Only)	Match	VERY HIGH	
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	MEDIUM	
Name/Organization	Parse	MEDIUM	
Organization	Match	VERY HIGH	
Organization	Parse	VERY HIGH	
Organization	Standardization	VERY HIGH	
Organization (Global)	Parse	VERY HIGH	
Organization (Upper)	Standardization	VERY HIGH	

German, Germany

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Phone	Match	MEDIUM	
Phone	Parse	MEDIUM	
Phone	Standardization	MEDIUM	
Phone (Electronic)	Standardization	MEDIUM	
Phone (Global)	Parse	MEDIUM	
Phone (with Country Code)	Standardization	MEDIUM	

Greek, Greece

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Hebrew, Israel

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Hungarian, Hungary

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Italian, Italy

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address	Match	HIGH	
Address	Parse	HIGH	
Address	Standardization	HIGH	
Address (Full)	Parse	VERY HIGH	
Address (Global)	Parse	HIGH	
Address (Global) (v23)	Parse	HIGH	
Address (PO Box Only)	Match	HIGH	
Address (Postal Standard)	Standardization	HIGH	
Address (Street Only)	Match	HIGH	
City	Match	HIGH	
City	Standardization	HIGH	
City - State/Province - Postal Code	Match	HIGH	
City - State/Province - Postal Code	Parse	HIGH	
City - State/Province - Postal	Standardization	HIGH	

Definition	Type	Parse Resource Limit	Solution Tree Depth
Code			
City - State/Province - Postal Code (Global)	Parse	HIGH	
City - State/Province - Postal Code (International)	Standardization	HIGH	
City (Postal Standard)	Standardization	HIGH	
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	MEDIUM	
Organization	Match	HIGH	
Organization	Parse	HIGH	
Organization	Standardization	HIGH	
Organization (Global)	Parse	HIGH	

Japanese, Japan

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address	Match	VERY HIGH	5
Address	Parse	VERY HIGH	5
Address	Standardization	VERY HIGH	5
Address (Full)	Match	VERY HIGH	
Address (Full)	Parse	VERY HIGH	
Address (Full)	Standardization	VERY HIGH	
Address (PO Box Only)	Match	VERY HIGH	5
Address (Street Only)	Match	VERY HIGH	5
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name	Gender	HIGH	
Name	Match	HIGH	
Name	Parse	HIGH	
Name	Standardization	HIGH	
Name (Global)	Parse	HIGH	
Phone	Match	HIGH	5
Phone	Parse	HIGH	5
Phone	Standardization	HIGH	5
Phone (Electronic)	Standardization	HIGH	5

Definition	Type	Parse Resource Limit	Solution Tree Depth
Phone (with Country Code)	Standardization	HIGH	5

Korean, South Korea

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Malay, Malaysia

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Norwegian, Norway

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Polish, Poland

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Portuguese, Brazil

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address	Standardization	MEDIUM	
Address (Abbreviated Street Type and Title)	Standardization	MEDIUM	
Address (Detailed)	Parse	MEDIUM	

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address (Full)	Parse	HIGH	
Address (Full) (Detailed)	Parse	HIGH	
Address (Global) (v23)	Parse	MEDIUM	
Address (PO Box Only)	Match	MEDIUM	
Address (Street Only)	Match	MEDIUM	
Address (v23)	Match	MEDIUM	
Address (v23)	Parse	MEDIUM	
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Portuguese, Portugal

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Russian, Russia

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Slovak, Slovakia

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address	Match	MEDIUM	
Address	Parse	MEDIUM	
Address	Standardization	MEDIUM	
Address (Full)	Parse	MEDIUM	
Address (Global)	Parse	MEDIUM	
Address (Global) (v23)	Parse	MEDIUM	
Address (PO Box Only)	Match	MEDIUM	
Address (Street Only)	Match	MEDIUM	
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Phone	Match	HIGH	5
Phone	Parse	HIGH	5
Phone	Standardization	HIGH	5
Phone (Electronic)	Standardization	HIGH	5
Phone (with Country Code)	Standardization	HIGH	5

Spanish, Mexico

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Spanish, Spain

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address	Match	MEDIUM	
Address	Parse	MEDIUM	
Address	Standardization	MEDIUM	
Address (Full)	Parse	VERY HIGH	
Address (Global)	Parse	MEDIUM	
Address (Global) (v23)	Parse	HIGH	
Address (PO Box Only)	Match	MEDIUM	
Address (Street Only)	Match	MEDIUM	
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Name (Multiple Name)	Parse	VERY HIGH	5
Organization	Match	MEDIUM	
Organization	Parse	MEDIUM	
Organization	Standardization	MEDIUM	
Organization (Global)	Parse	MEDIUM	
Phone	Match	HIGH	5
Phone	Parse	HIGH	5
Phone	Standardization	HIGH	5

Definition	Type	Parse Resource Limit	Solution Tree Depth
Phone (Electronic)	Standardization	HIGH	5
Phone (with Country Code)	Standardization	HIGH	5

Swedish, Sweden

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Thai, Thailand

Definition	Type	Parse Resource Limit	Solution Tree Depth
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	

Turkish, Turkey

Definition	Type	Parse Resource Limit	Solution Tree Depth
Address (Full) (v23)	Parse	VERY HIGH	8
Address (Global) (v23)	Parse	VERY HIGH	8
Address (v23)	Parse	VERY HIGH	8
E-mail	Match	MEDIUM	
E-mail	Parse	MEDIUM	
E-mail	Standardization	MEDIUM	
E-mail (v23)	Match	MEDIUM	
Organization	Parse	VERY HIGH	
Organization	Standardization	VERY HIGH	
Organization (Global)	Parse	VERY HIGH	
Organization (v23)	Match	VERY HIGH	