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SAS[®] Contextual Analysis 13.2: Administrator's Guide

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SAS® Contextual Analysis 13.2: Administrator's Guide

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Contents

<i>About This Book</i>	<i>vii</i>
<i>Accessibility</i>	<i>ix</i>
<i>Recommended Reading</i>	<i>xi</i>
Chapter 1 • SAS Contextual Analysis Administrator's Guide Overview	1
Overview of SAS Contextual Analysis	1
SAS Information Online	1
Chapter 2 • Quick Start for Running SAS Contextual Analysis	3
Quick Start Overview	3
Quick Start Steps	3
Chapter 3 • SAS Contextual Analysis Architecture	11
Overview of the SAS Contextual Analysis Architecture	11
SAS Contextual Analysis Components	12
Chapter 4 • Migrating to SAS Contextual Analysis 13.2	13
Migration Overview	13
Migrating SAS Contextual Analysis Projects	13
Chapter 5 • Preparing Your Data for Use with SAS Contextual Analysis	15
Data Access Requirements	15
Registering Data (Including Start, Stop, and Synonym Lists)	15
Chapter 6 • SAS Contextual Analysis Installation and Configuration	17
Installation Overview	17
Pre-Installation Tasks	17
Install and Configure SAS Contextual Analysis	18
Chapter 7 • Post-Installation Information	23
Configure SAS Contextual Analysis in SAS Management Console	23
Define Additional SAS Contextual Analysis Users	23
Integrated Windows Authentication Setup	23
Chapter 8 • Administrator Tasks and Troubleshooting	25
Troubleshooting	25

About This Book

Audience

This book is designed for administrators of the SAS Contextual Analysis application. It guides administrators through the process of configuring the software for use at your site. It is assumed that you have some familiarity with SAS programs and installation processes.

Requirements

For a full list of software requirements for SAS Contextual Analysis, go to [System Requirements](#).

Accessibility

For information about the accessibility of this product, see [Accessibility Features of SAS Contextual Analysis 13.2](#) at support.sas.com.

Recommended Reading

Here is the recommended reading list for this title:

- The online Help for SAS Contextual Analysis 13.2
- *SAS Content Categorization Single User Servers 12.1: Administrator's Guide*
- *SAS Enterprise Content Categorization Studio 12.1: User's Guide*
- *SAS Web Applications: Tuning for Performance and Scalability*
- *SAS Intelligence Platform: Installation and Configuration Guide*
- *SAS Intelligence Platform: Desktop Application Administration Guide, Fourth Edition*
- *SAS Intelligence Platform: Data Administration Guide*
- *SAS Deployment Wizard and SAS Deployment Manager: User's Guide*

The recommended reading list from SAS Press includes the following title:

- *Text Mining and Analysis: Practical Methods, Examples, and Case Studies Using SAS*

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Chapter 1

SAS Contextual Analysis Administrator's Guide Overview

Overview of SAS Contextual Analysis	1
SAS Information Online	1

Overview of SAS Contextual Analysis

SAS Contextual Analysis is a web-based text analytics application that uses contextual analysis to provide a comprehensive solution to the challenge of identifying and categorizing key textual data. Using this application, you can build models (based on training documents) that automatically analyze and categorize a set of documents. You can then customize your models in order to realize the value of your text-based data.

The SAS Contextual Analysis architecture is designed for single-tier or three-tier deployment.

SAS Information Online

The following resources are available to you online:

- The product page for SAS documentation for SAS Contextual Analysis is available at <http://support.sas.com/software/products/ca/index.html>
- SAS Technical Support, available at support.sas.com
- Help within the SAS Contextual Analysis application

Chapter 2

Quick Start for Running SAS Contextual Analysis

Quick Start Overview	3
Quick Start Steps	3

Quick Start Overview

This chapter is designed to help you start your SAS Contextual Analysis installation quickly. It provides basic steps for completing these tasks:

- signing in to SAS Management Console and creating a SAS library
- registering a data set for use in SAS Contextual Analysis
- adding a user profile in SAS Management Console
- signing in to the SAS Contextual Analysis application

Note: Before you perform the quick start steps, complete the installation from the SAS Install Center (available at support.sas.com) and complete the configuration steps. For information about installation and configuration, see the section “[Install and Configure SAS Contextual Analysis](#)” on page 18 .

Quick Start Steps

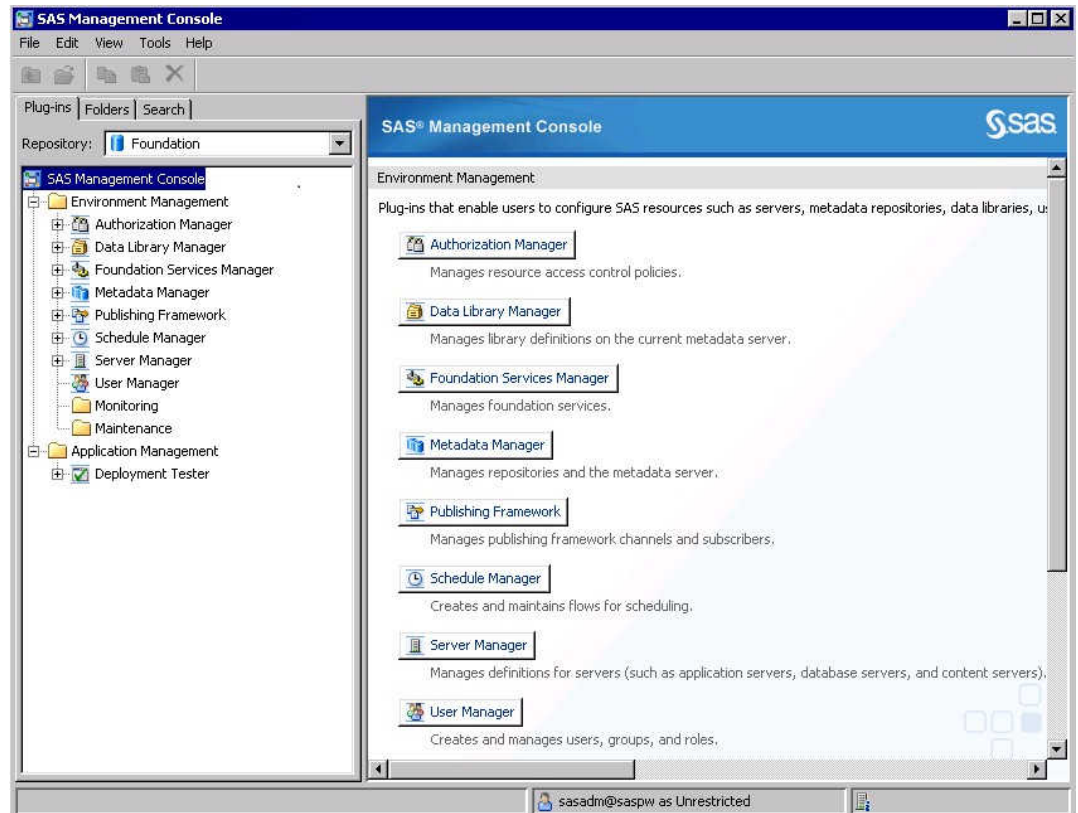
After you install and configure SAS Contextual Analysis, complete the following steps:

1. Open SAS Management Console. Connect to the metadata repository using these credentials:

Metadata server host name - the host name that you entered during installation and configuration

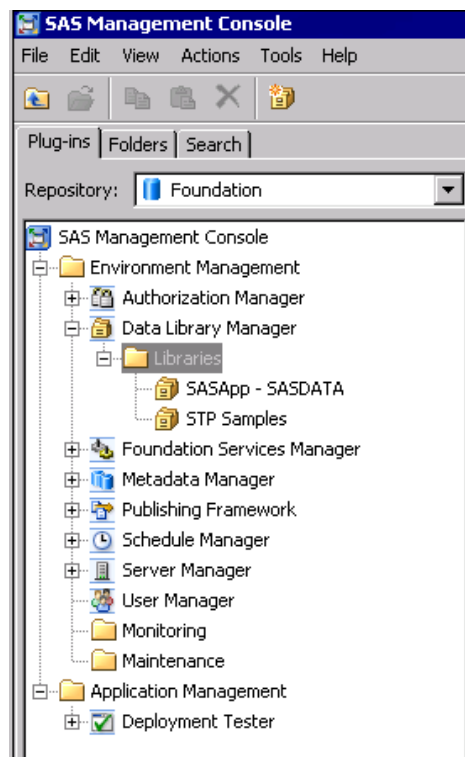
User name - the default user name (`sasadm@saspw`) or other established user name

Password - the password that you specified during installation and configuration

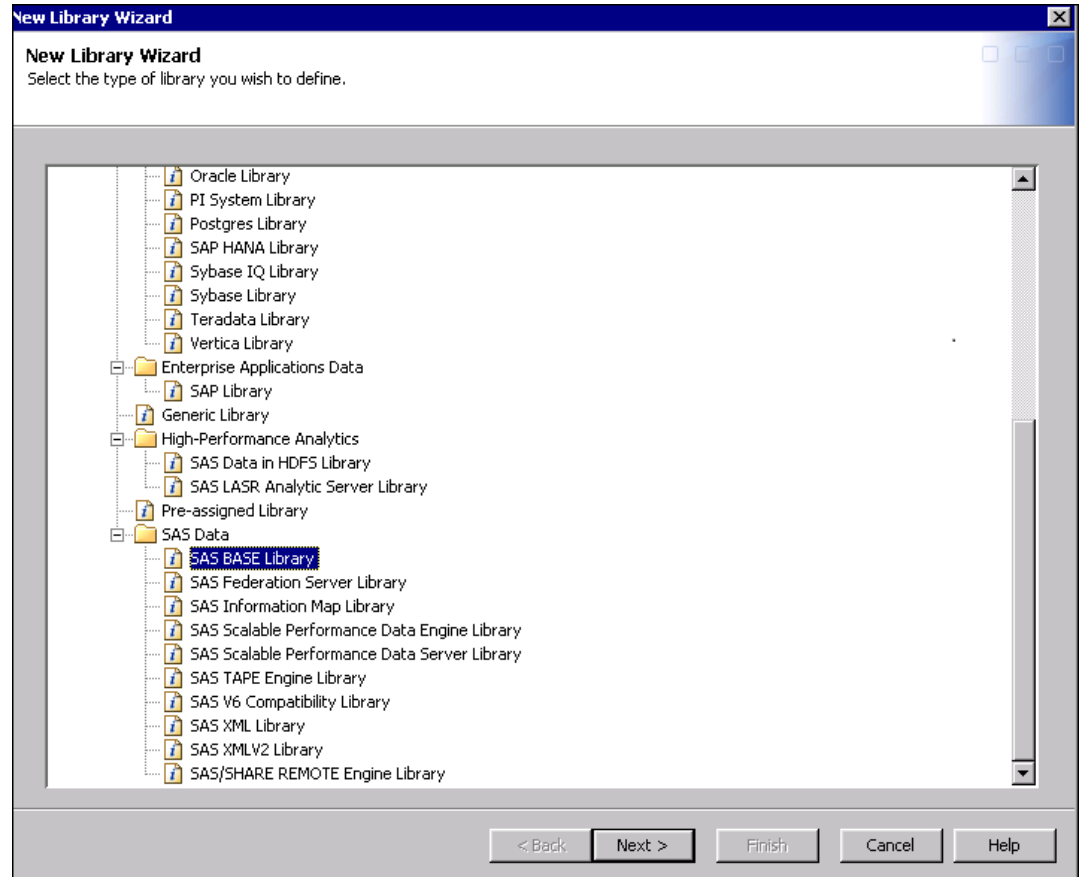


Note: If you are installing SAS Contextual Analysis on a UNIX host, you must use SAS Management Console on a Windows computer (that has SAS Management Console installed on it).

2. In the left pane under **Environment Manager**, navigate to the **Data Library Manager** plug-in and right-click **Libraries**. The New Library wizard appears.



3. Select **SAS BASE Library**, and click **Next**.



4. Enter a name for the library in the **Libref** field. Enter the location of your data folder (in this case, **C:\Program Files\SASHome\SASFoundation\9.4\tmine\sample**), and click **OK**.
5. Select **SASApp** as the application server, and click **Next**.
6. Click **New** to specify the path to the sample data sets. Sample data sets are provided in the **[SAS_HOME]\SASFoundation\9.4\tmine\sample** directory. On Windows, the default location is **C:\Program Files\SASHome\SASFoundation\9.4\tmine\sample**.

New Library Wizard
Enter the following library properties.

Libref:

Engine:

Enable WebDAV Support

Content Server:

Path Specification:

Available items:

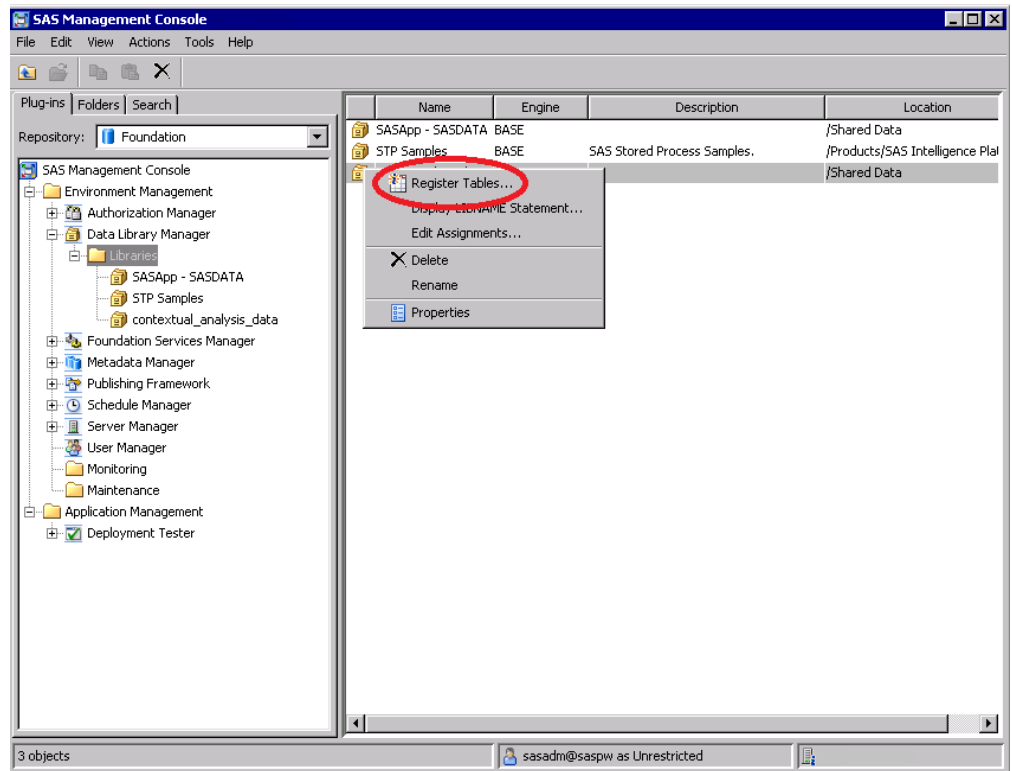
- C:\Program Files\SASHome\SASFoundation\9.4
- C:\Users\USR\Documents\My SAS Files\9.4\g
- C:\Users\USR\Documents\My SAS Files\9.4\
- C:\Users\USR\Documents\My SAS Files\9.4\
- C:\Users\USR\Documents\My SAS Files\9.4\
- C:\Users\USR\Documents\My SAS Files\9.4\

Selected items:

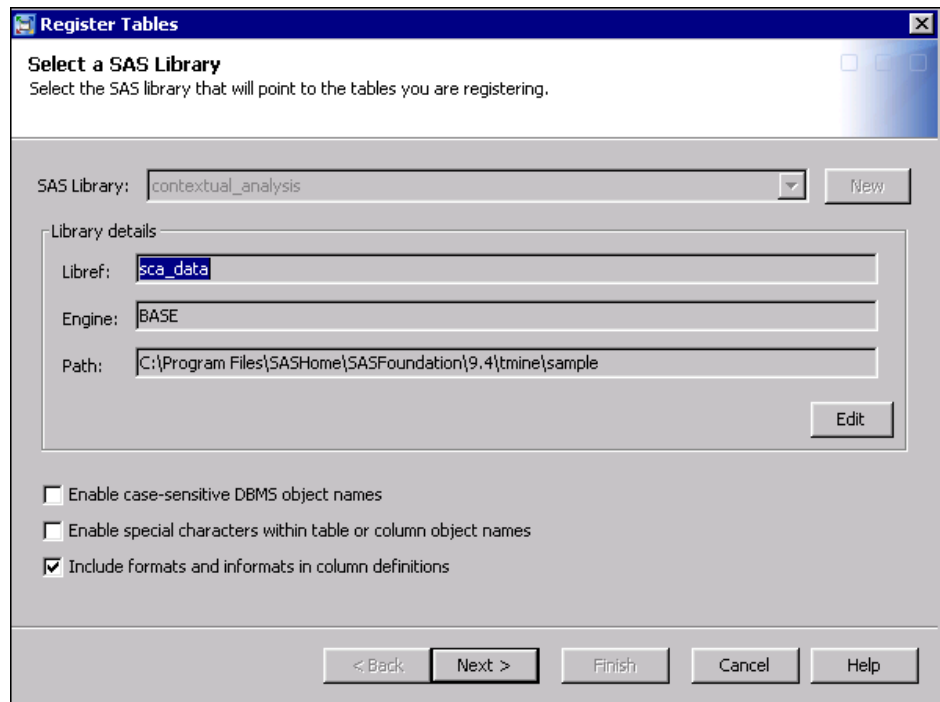
- C:\Program Files\SASHome\SASFoundation\9.4\tr

Click **Next**, and then click **Finish** to create the data library.

7. Register the tables from the data library into metadata. With the library selected, right-click to access the menu and then select **Register Tables**.

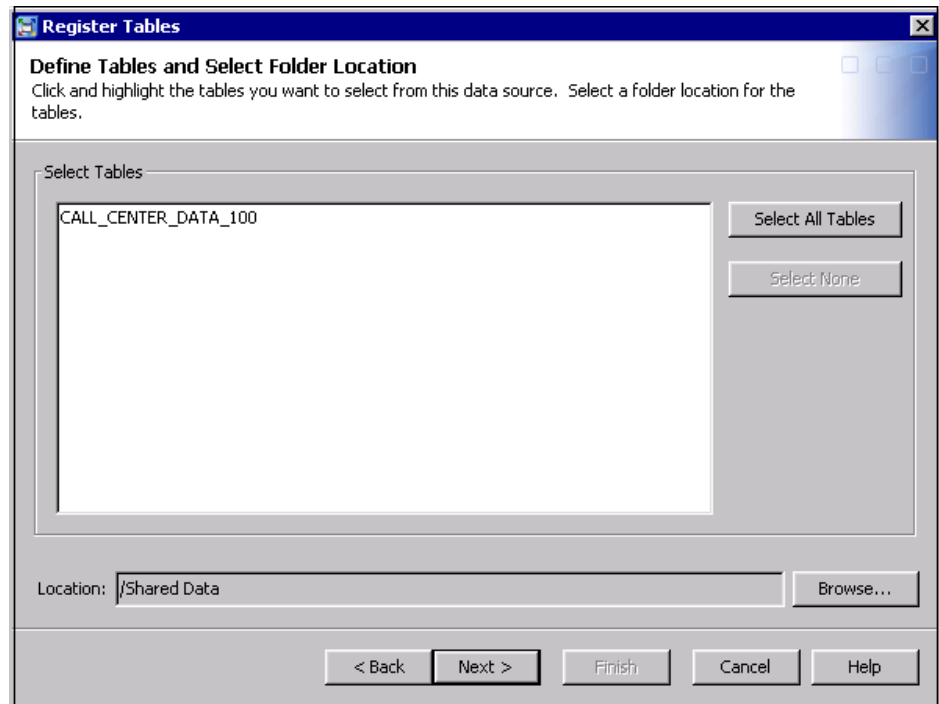


8. Enter the **Libref** name, and then click **Next**.



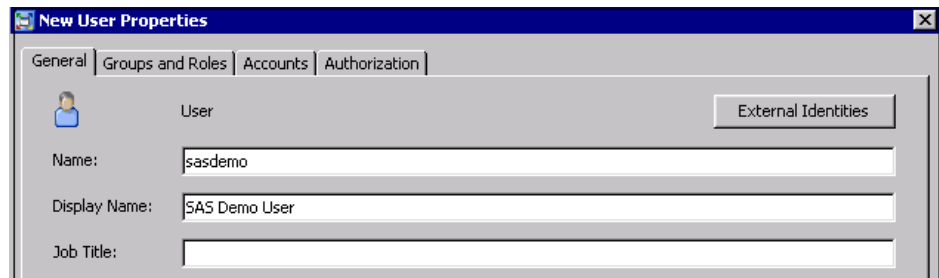
The Log On window for the application server appears.

9. In the Log On window, enter credentials for an administrator account on the application server.
10. Select the tables that you want to register. Click **Next**, and then click **Finish** to register the tables in metadata.

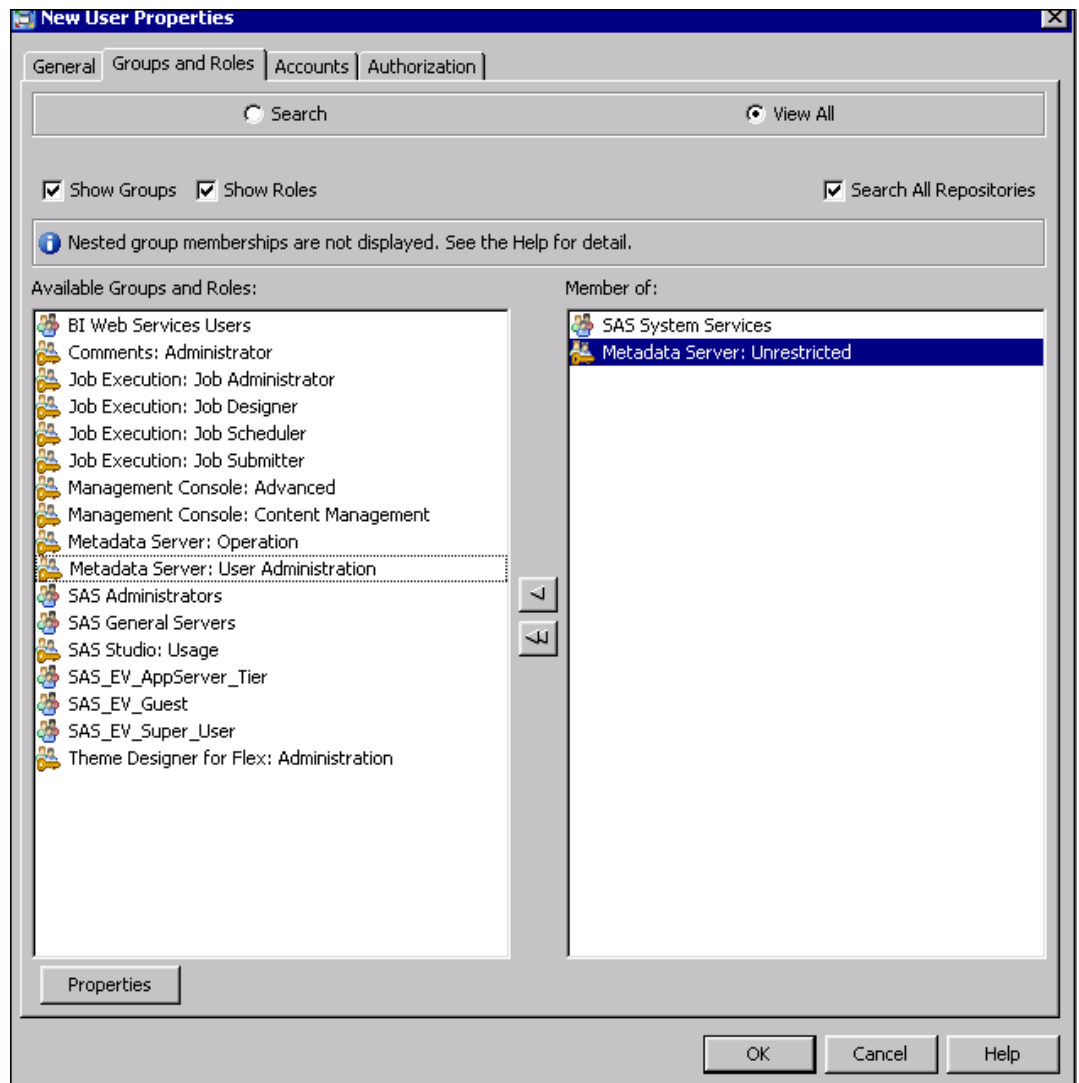


The tables are now accessible from within SAS Contextual Analysis.

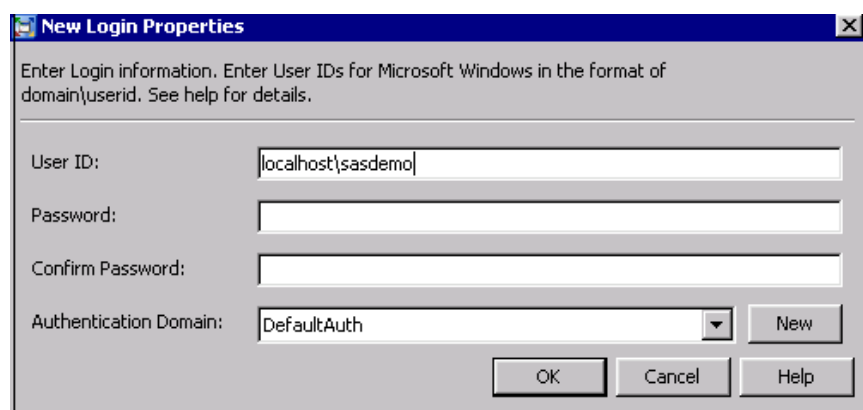
11. In SAS Management Console, use the User Manager to create a user profile.



12. Click the **Groups and Roles** tab. Grant the user membership to these groups: **SAS System Services** and **Metadata Server (Unrestricted)**.



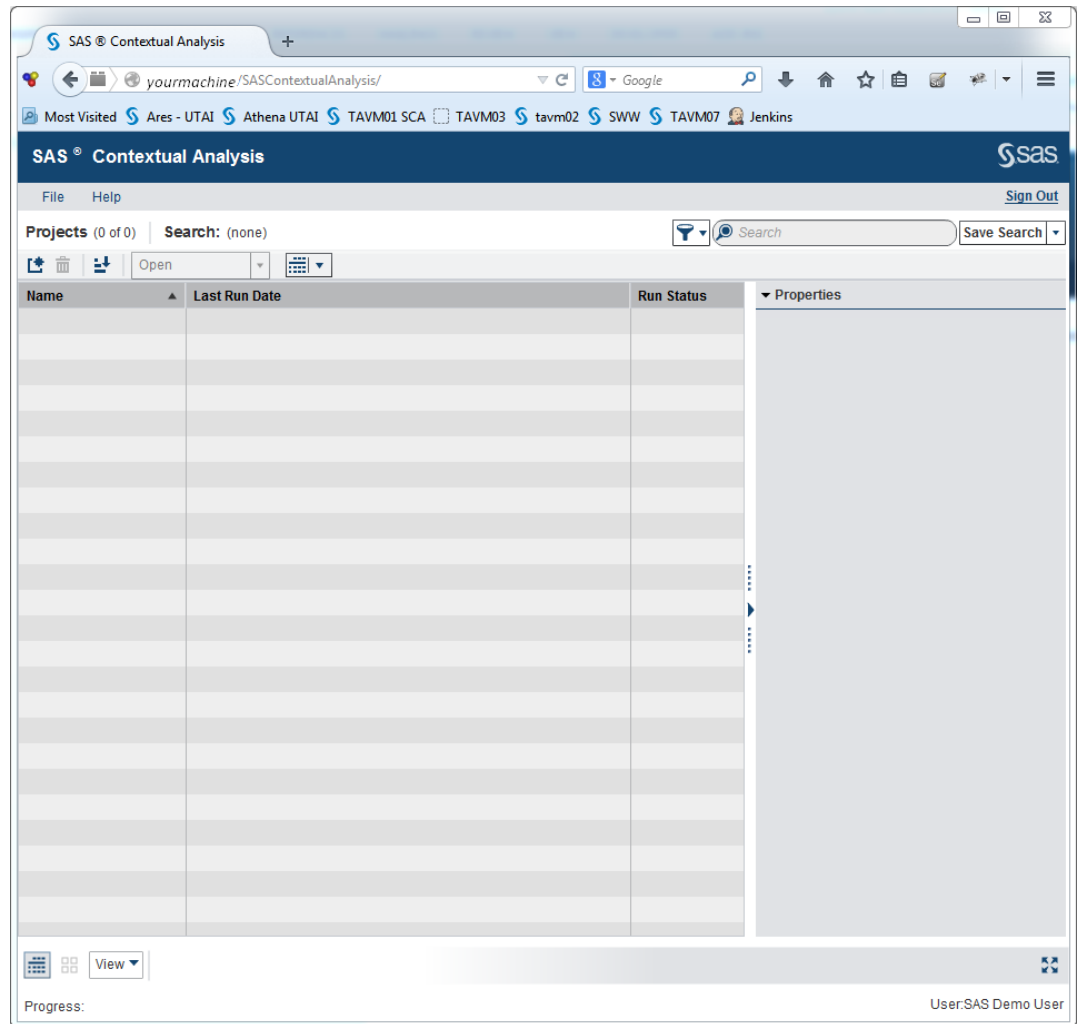
13. On the **Accounts** tab, click **New**. Enter the login for the user. If you leave the **Password** field blank, SAS uses the system's password (the domain password) for the credential.



14. Start SAS Contextual Analysis by using the following URL, where *localhost* is the name of the machine where the application is installed: **`http://localhost/SASContextualAnalysis`**. The Sign In window appears.



15. Sign in using your user credentials. The SAS Contextual Analysis application appears.



See Also

- For more information about SAS Management Console connection profiles, see the section “Change, Create, Delete, or Edit a Connection Profile” in *SAS Intelligence Platform: Desktop Application Administration Guide, Fourth Edition*
- For more information about creating a data library, see the section “Establishing Connectivity to a Library of SAS Data Sets” in *SAS Intelligence Platform: Data Administration Guide*
- For more information about registering tables in metadata, see the section “Registering and Verifying Tables” in *SAS Intelligence Platform: Data Administration Guide*
- For information about creating a project in SAS Contextual Analysis, see *SAS Contextual Analysis: User's Guide*

Chapter 3

SAS Contextual Analysis Architecture

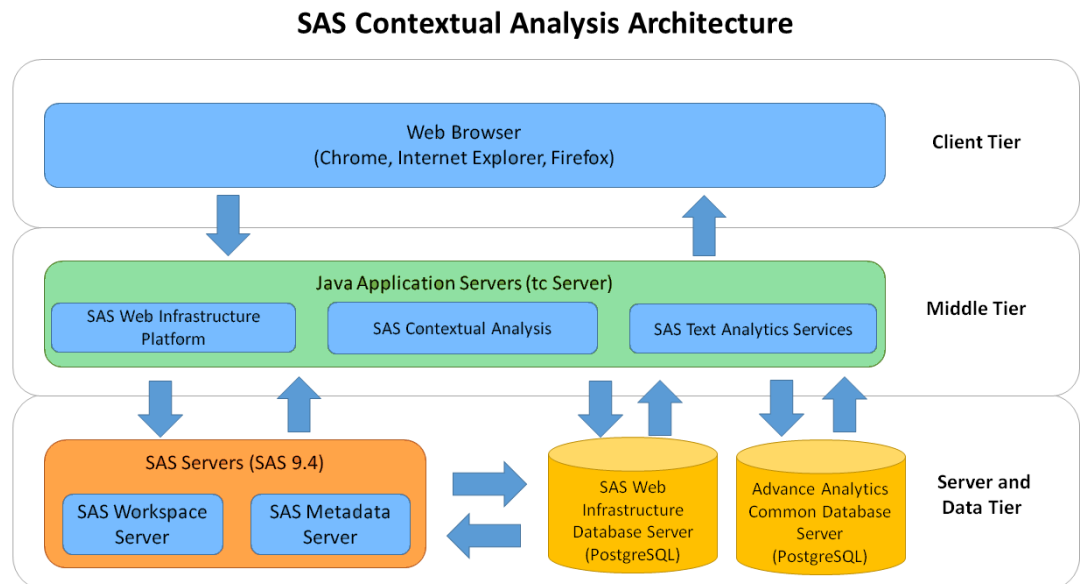
Overview of the SAS Contextual Analysis Architecture 11

SAS Contextual Analysis Components 12

Overview of the SAS Contextual Analysis Architecture

The SAS Contextual Analysis architecture is designed for single tier or three-tier deployment. Figure 3.1 depicts a three-tier deployment model, which includes a client tier, a middle tier, and a server and data tier.

Figure 3.1 SAS Contextual Analysis 13.2 Architecture



SAS Contextual Analysis Components

The SAS Web Infrastructure Platform (WIP)

provides the primary middle-tier components for the SAS platform. It supports *n*-tier architectures that are built around HTTP-based technologies. The middle-tier components in the SAS WIP not only provide for common infrastructure but also support distributed deployments and configurations that support enterprise requirements.

SAS Contextual Analysis middle tier

is the web application that is responsible for serving the user interface to a client's web browser. After a client's browser has loaded the Adobe Flex user interface for SAS Contextual Analysis, Flex uses a protocol called BlazeDS to communicate back to the SAS middle tier. The SAS Contextual Analysis middle tier also serves as the conduit through which a user's requests are routed to the SAS Text Analytics Services middle tier.

SAS Text Analytics Services middle-tier

is the home of the majority of the "brains" for SAS Contextual Analysis. The SAS Text Analytics Services middle tier often communicates with the Advanced Analytics Common Database Server to store objects that are related to a SAS Contextual Analysis project (concepts, categories, and so on). The SAS Text Analytics Services middle tier also communicates through the SAS Web Infrastructure Platform to SAS Workspace Servers to process user requests that require a SAS session.

SAS Workspace Server

enables client applications to submit SAS code to a SAS session by using an application programming interface (API). SAS Contextual Analysis generates the SAS code necessary to perform a project's analytical tasks and submits it to a SAS Workspace Server. You can run as many instances of SAS Workspace Servers as are needed to support your workload.

SAS Metadata Server

controls access to a central repository of metadata that is shared by all of the SAS applications in the deployment. The SAS Metadata Server enables centralized control so that all users access consistent and accurate data. Administrators use SAS Management Console to administer the SAS Metadata Server, including SAS server configurations. SAS Contextual Analysis also uses the SAS Metadata Server to obtain metadata about SAS libraries, tables, and SAS Workspace Servers, and to authenticate users.

SAS Web Infrastructure Database Server

is a database server that is used by the SAS WIP as the default location for middle tier data. These data include alerts, comments, and workflows.

Advanced Analytics Common Database Server

is a PostgreSQL database that is used to store SAS Contextual Analysis project-related data such as projects, concepts, categories, and so on.

Chapter 4

Migrating to SAS Contextual Analysis 13.2

Migration Overview	13
Migrating SAS Contextual Analysis Projects	13

Migration Overview

To migrate SAS Contextual Analysis from one machine to another, use the SAS Migration Utility. For more information, see *SAS Intelligence Platform: Migration Guide*. The section “Product-Specific SAS Migration Utility Properties” includes specific steps for SAS Contextual Analysis.

Migrating SAS Contextual Analysis Projects

After the migration of the software is complete, you must copy the data that you used in your projects (in the folder that you registered to the data library during post-installation) from the source machine to the target machine. You must copy all the project folders from the source machine to the same location on the target machine. For example, if you have a project folder in `C:\Users\myuserid\Documents\My SAS Files\9.4` on the source machine, then you must store the project folder in the same location on the target machine.

Chapter 5

Preparing Your Data for Use with SAS Contextual Analysis

Data Access Requirements	15
Registering Data (Including Start, Stop, and Synonym Lists)	15

Data Access Requirements

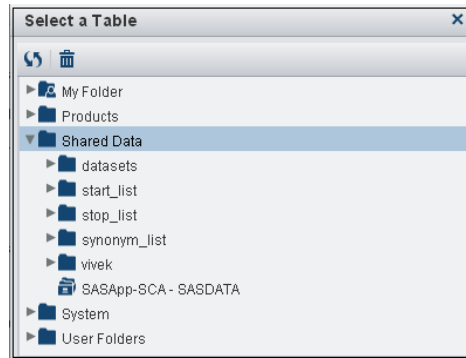
When you are accessing data in SAS Contextual Analysis, keep in mind that SAS Contextual Analysis must follow the rules of the user accounts on the SAS Workspace Server machine. For example, if you are a standard user, then you cannot access data that are stored in another user's personal folder. You also could not access data that are stored in commonly restricted folders such as `C:\Windows\system32`.

Registering Data (Including Start, Stop, and Synonym Lists)

You must register any data that you are using for text analysis, including synonym lists, stop lists, and start lists. Follow the steps for registering data in the section “[Quick Start Steps](#)” on page 3.

- For more information about creating a data library, see the section “Establishing Connectivity to a Library of SAS Data Sets” in *SAS Intelligence Platform: Data Administration Guide*.
- For more information about registering tables in metadata, see the section “Registering and Verifying Tables” in *SAS Intelligence Platform: Data Administration Guide*.

TIP You can organize your metadata so that you can easily find data. For example, you can create metadata folders within the Shared Data folder for data sets, synonym lists, start lists, and stop lists. Register the respective data sets to each library so that you can see the structure within the browse window. An example is shown in the following graphic.



Chapter 6

SAS Contextual Analysis Installation and Configuration

Installation Overview	17
Pre-Installation Tasks	17
Overview	17
System Preparations for UNIX Systems	18
Create a SAS Software Depot	18
Install and Configure SAS Contextual Analysis	18
Installation and Configuration Process	18
SAS Contextual Analysis Server Standard Deployment Plans	19

Installation Overview

Here are the major steps for installing SAS Contextual Analysis:

1. Make any system preparations that are necessary.
2. Create a SAS Software Depot.
3. Run the SAS Deployment Wizard.
4. Select from the standard deployment plans to install and configure SAS Contextual Analysis.

Pre-Installation Tasks

Overview

Before you install SAS Contextual Analysis, make any preparations to your system that you deem necessary.

You must create a SAS Software Depot on your machine. A SAS Software Depot is a file system that is used by the SAS Deployment Wizard, which is the tool used to install and initially configure SAS. The depot contains the SAS Deployment Wizard executable, one or more deployment plans, a SAS installation data file for each order, order data, and product data.

Note: You need to have access to your software order details for SAS Contextual Analysis to create a depot.

System Preparations for UNIX Systems

In order to ensure enough RAM for operating the application's database, it is recommended that you extend the size of your shared memory.

To find your memory usage, run the command `prctl $$` on the command line of your operating system and note the value in the results for `project.max-shm-memory`. Alternatively, you can do the following:

1. Run the command `id -p` on the command line to find out the project ID of a user. The example code in this section is for a Solaris (SAX) machine.

```
saxmachine> id -p
uid=29766(username) gid=100(department) projid=3(default)
```

2. Run the following command:

```
prctl -n project.max-shm-memory -i project <projectID>
```

For example:

```
saxmachine> prctl -n project.max-shm-memory -i project default
```

3. Results like the following are shown:

NAME	PRIVILEGE	VALUE	FLAG	ACTION	RECIPIENT
project.max-shm-memory					
privileged		56.4GB	-	deny	-
system		16.0EB	max	deny	-

Extend the size of shared memory by running this command:

```
prctl -n project.max-shm-memory -v <value> -r -i project <projectID>
```

Create a SAS Software Depot

To create a SAS Software Depot, follow the instructions in the section “Creating a Software Depot” in *SAS Intelligence Platform: Installation and Configuration Guide*. During the creation of the depot, you identify on the target machine where you want to download the depot.

Note: You need to have access to your software order details for SAS Contextual Analysis to create a depot.

Install and Configure SAS Contextual Analysis

Installation and Configuration Process

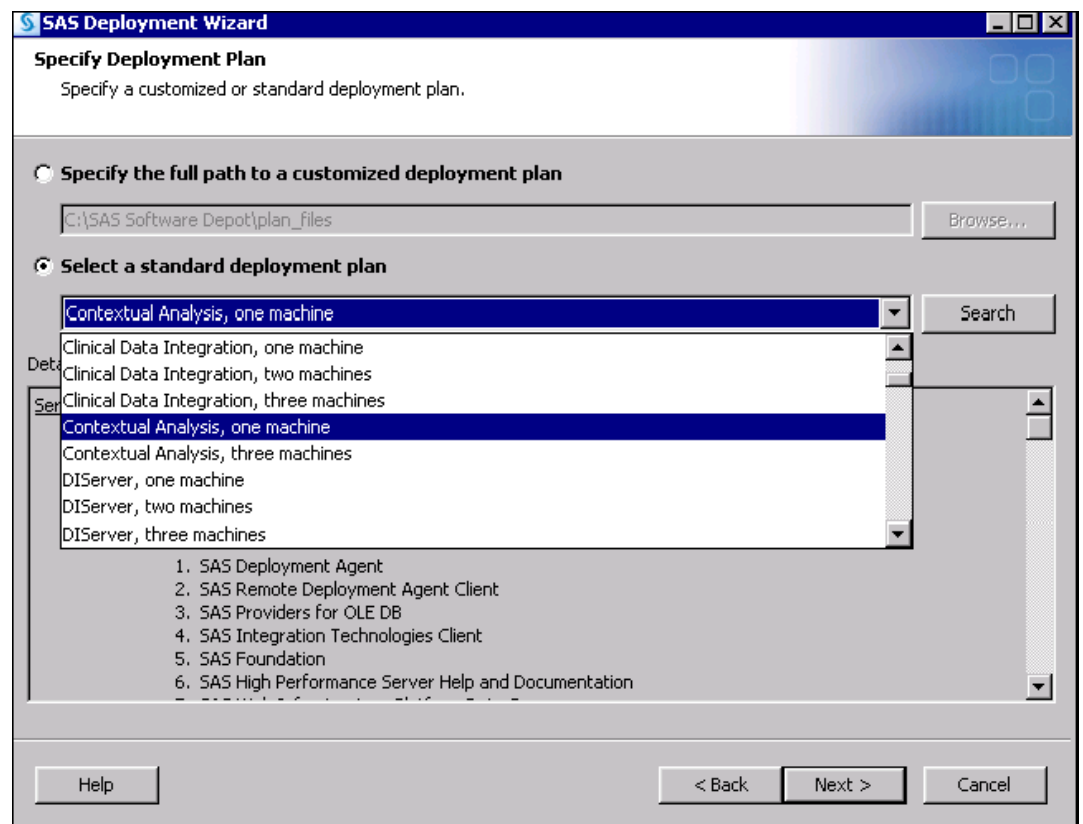
To complete the installation and configuration process, you must have completed the steps to download the SAS Software Depot. For more information, see the section “[Create a SAS Software Depot](#)” on page 18.

SAS Contextual Analysis Server Standard Deployment Plans

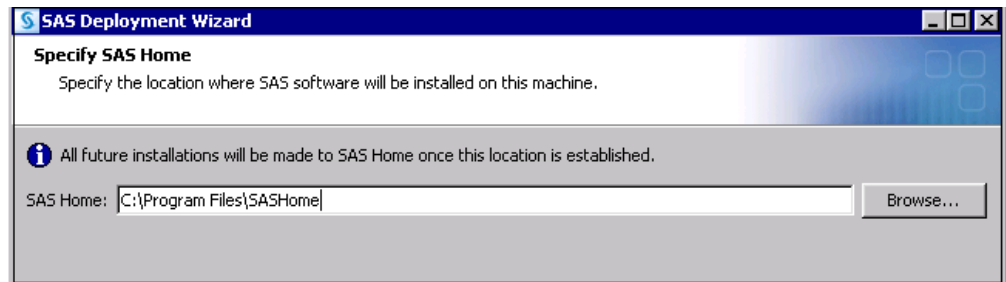
Deployment plans are blueprints for installing and configuring your software. SAS Contextual Analysis provides you with two standard plans in the SAS Software Depot: a one-machine deployment and a three-machine deployment.

To access the standard plan that is delivered with your SAS Software Depot, open the plan file. Select **Select a standard deployment plan**. Select **Contextual Analysis, one machine** or **Contextual Analysis, three machine**, depending on your desired configuration. For more information about the SAS Deployment Wizard, see *SAS Deployment Wizard and SAS Deployment Manager 9.4: User's Guide*.

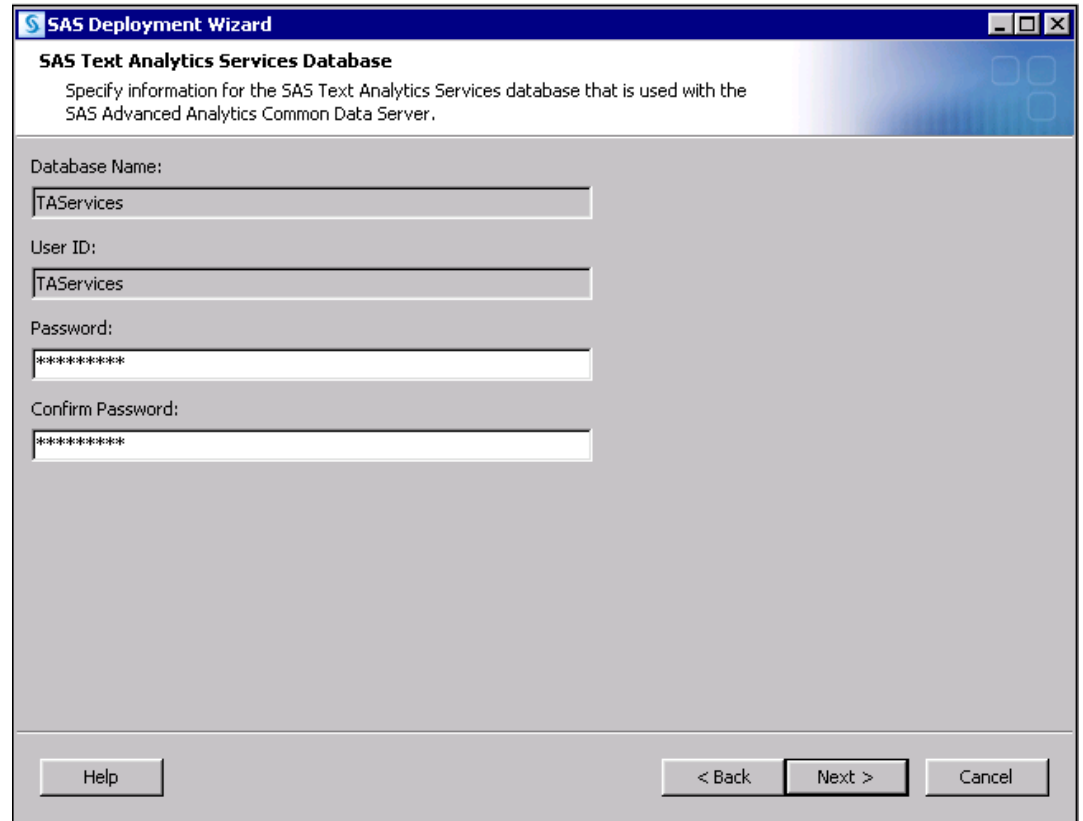
Note: If you cannot access your SAS Software Depot for some reason, you can download deployment plans from the SAS Install Center, available at <http://support.sas.com/documentation/installcenter/index.html>. In the navigation pane, select **Standard Plans**. Under **SAS 9.4**, select **9.4 Standard Deployment Plans**, and then select **SAS Contextual Analysis**. Download the appropriate plan.



In the SAS Deployment Wizard, a prompt for the location of **SAS Home** appears. A default value is provided, based on the operating system on which are deploying. For example, on a Windows 64-bit machine, the default location is **C:\Program Files\SASHome**. If you choose to enter different location, be sure to note the location for later use.



Enter a password for the database.



You must also supply your host name, port, and administrator name (and password) for the SAS Advanced Analytics Common Data Server.

The screenshot shows a window titled "SAS Deployment Wizard" with a subtitle "SAS Advanced Analytics Common Data Server". Below the subtitle is the instruction "Specify information for SAS Advanced Analytics Common Data Server." The form contains the following fields:

- Host Name:
- Port:
- Data Server Administrator:
- Data Server Administrator Password:
- Confirm Password:

At the bottom of the window, there are four buttons: "Help", "< Back", "Next >", and "Cancel".

Continue through the wizard as described in *SAS Deployment Wizard and SAS Deployment Manager 9.4: User's Guide*.

Chapter 7

Post-Installation Information

Configure SAS Contextual Analysis in SAS Management Console	23
Define Additional SAS Contextual Analysis Users	23
Integrated Windows Authentication Setup	23

Configure SAS Contextual Analysis in SAS Management Console

To start SAS Management Console, you must log on to the metadata repository using a specific set of credentials. For more information, see [Step 1 on page 3](#).

Define Additional SAS Contextual Analysis Users

You can define additional SAS Contextual Analysis users by creating user profiles in SAS Management Console. For more information, see [Step 11 on page 8](#).

Integrated Windows Authentication Setup

SAS Contextual Analysis supports Integrated Windows authentication (IWA). IWA enables the system to verify credentials through the logged-in Windows accounts, thereby eliminating the need for users to separately sign in to SAS Contextual Analysis. For information about setting up IWA, see the section “Support for Integrated Windows Authentication” in *SAS Intelligence Platform: Middle-Tier Administration Guide*.

Chapter 8

Administrator Tasks and Troubleshooting

Troubleshooting	25
Log Files	25
Log Information	25
Locating the Rules Files (.LI and .MCO)	26

Troubleshooting

Log Files

The location of the SAS log files for the SAS Contextual Analysis middle tier varies from system to system, depending on the system configuration. In general, SAS Contextual Analysis middle tier log files are located here: `[configuration-directory]\Config\Lev1\Web\Logs\SASServer1_1`

Log Information

You can adjust the amount of information that is output to the SAS Contextual Analysis middle tier log. To increase the information that is output to the log, do the following:

1. In the file system, navigate to `[configuration-directory]\Config\Lev1\Web\Common\LogConfig\`.
2. Open the `TextAnalyticsServices-log4j.xml` file in a text editor.
3. Locate this section of code:

```
<category
  additivity="false"
    name="com.sas.ta">
  <priority value="WARN"/>
  <appender-ref ref="SAS_CONSOLE"/>
  <appender-ref ref="SAS_FILE"/>
</category>
```

```
<category
  additivity="false"
    name="com.sas.ta.service">
  <priority value="WARN"/>
  <appender-ref ref="SAS_CONSOLE"/>
  <appender-ref ref="SAS_FILE"/>
```

```
</category>
```

Change the value

WARN

to

INFO

4. Restart the web application server.

TIP When enhanced logging is used, the SAS code that is output can be copied and pasted into a SAS session on the server machine.

Locating the Rules Files (.LI and .MCO)

The .LI files (used for custom concept rules) and .MCO files (used for category rules) are located within the configuration folder of the project directory. For example, the location of the folder on a Windows machine is **C:\Users\[user ID]\Documents\My SAS Files\9.4\sca_project_1\config**. The folder contains the **concepts.li** file and the **categories.mco** file for the **sca_project_1** project. These files can be used with the SAS Enterprise Content Categorization Server for scoring other documents. For more information, see *SAS Enterprise Content Categorization Studio 12.1: User's Guide*.