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Post-Installation Tasks

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SAS® Credit Risk Management for Banking 4.2: Post-Installation Tasks

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Post-installation Tasks

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Post-installation Tasks

Overview of Post-installation Tasks

Definition of Credit Risk Settings

Below are conventions for the setting “placeholders” that are used in the SAS Configuration Wizard instructions for SAS Credit Risk Management for Banking. Whenever you encounter a setting placeholder, you should replace it with the corresponding value for your installation. The following examples use the Windows operating system conventions:

- Your SAS home is *<SAS_HOME>* (e.g., c:\Program Files\SAS).
- Your trusted administrative user IDs for SAS Credit Risk Management for Banking is *<criskm.privileged.userid>* (e.g., A12345\saswbadm).
- Your SAS configuration directory is *<config.dir>* (e.g., c:\SAS\CriskM) .
- Your SAS Credit Risk Management for Banking installation directory on this machine is *<install.dir>* (e.g., c:\Program Files\SAS\SASCreditRiskManagement\4.2).
- The application server is SASApp.

Note: In a multi-machine environment, you can have different installation directories for the different machines. For example, the middle tier can be installed at c:\Program Files\SAS\SASCreditRiskManagement\4.2, while the SAS server tier can be installed at ../data/SAS/SASCreditRiskManagement/4.2. When you substitute for *<install.dir>* in a particular step in these instructions, be sure that you use the value appropriate to the machine on which you are performing the step.

SAS Servers

The following servers are used during the run-time of the SAS Credit Risk Management for Banking solution:

- SAS server tier:
 - SAS Workspace Server
 - SAS Stored Process Server
 - SAS Metadata Server
- SAS middle tier
 - Java application server (such as WebSphere or Tomcat)
 - WebDAV Server (such as Xythos or Apache)

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Typically, SAS Credit Risk Management for Banking components are installed on both a server tier machine and a middle tier machine. However, it is possible to install all tiers on a single machine. Be sure that you have a clear understanding of the topology of your deployment before proceeding.

Be sure to perform all of the following steps in the proper order and to perform the steps that are appropriate to the operating system where you are installing. For example, if a step specifies the server-tier machine, then do not perform the task when configuring the middle tier machine.

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SAS Configuration Wizard Tasks

There are tasks that you must do after your SAS Intelligence Platform and SAS Credit Risk Management for Banking software installs successfully. The SAS Configuration Wizard enables you to perform these tasks during the configuration stage of your installation. You can find the SAS Credit Risk Management for Banking post-installation configuration tasks in the `instructions.html` file located in the following directory:

`<config.dir>\CriskM`

You might find it helpful to use the following checklist in order to keep track of your progress. [Table 1](#) is a tool that you can use to keep track of each task's completion. You can print this checklist and add checkmarks, e.g., [x], in the Done column after you complete each task.

Table 1. Post-installation Checklist

Task	Done
Get the current post-installation tasks	[]
Install current hot fixes	[]
Set up security for SAS Credit Risk Management for Banking	[]
Set up SAS servers.	[]
Set up Java application servers.	[]
Verify the SAS Credit Risk Management for Banking Installation	[]
Initialize SAS Credit Risk Management for Banking Data	[]
Complete the Installation	[]
Optional Configuration	[]

Most Current Instructions

For the most current installation and configuration information, see the following Web site and select SAS Credit Risk Management for Banking as your product:

<http://support.sas.com/documentation/onlinedoc/index.html>

Install Current Hot Fixes

You must install the current hot fixes for SAS 9.1.3 on the machine that the SAS Workspace Server runs. The required hot fixes can be downloaded from the following Web address:

http://ftp.sas.com/techsup/download/hotfix/op_home.html

Set Up Security For SAS Credit Risk Management for Banking

SAS Credit Risk Management for Banking users and groups must be defined both in SAS metadata and in the operating system of the SAS server tier machine. Permissions must be set appropriately in both the metadata and the operating system. For information about setting up user IDs and groups, see the SAS Intelligence Platform documentation set at the following Web address:

<http://support.sas.com/onlinedoc/913/docMainpage.jsp>

There are many possible security scenarios that depend on operating systems, configurations, and the desired level of security. These instructions are not meant to cover every possible scenario, so it might be necessary to adjust the details to match your needs.

1. Create SAS Credit Risk Management for Banking users in the operating system.

If you have not created users in the operating system as a pre-installation task, then you must create perform this task now. For a more secure deployment, you can consult with your system administrator to create a SAS Credit Risk Management for Banking user group, and ensure that the group contains all of the SAS Credit Risk Management for Banking users.

You must include any user who runs SAS code in batch mode or from the Web as part of the group. In addition, the group must contain the `<criskm.privileged.userid>` user and the user ID under which the SAS Stored Process Server runs, which usually is the `sassrv` user ID.

If there is an existing operating system group that serves your purpose, then you can use that existing group, or you can create a new group such as SASCreditRiskUsers. The exact details of how to create this group varies according to which operating system is in use.

Note: In UNIX, the group that you define must be the primary default group for the SAS Credit Risk Management for Banking users and the SAS server users (*<criskm.privileged.userid>*) and the Stored Process Server user (e.g., sassrv). The primary default group is the group whose ID is associated with the user ID in the */etc/passwd* file.

2. Grant Write permission on the SAS Credit Risk Management for Banking directory.

Verify that SAS Credit Risk Management users can Read and Write to the installation directory (*<install.dir>*).

The exact details of how to grant these permissions varies according to which operating system groups are defined and how restrictive you want your security to be. The following examples are given for purposes of illustration only. The examples might not be applicable to your situation.

- Example: Suppose you installed SAS Credit Risk Management for Banking on Windows and a SAS Credit Risk Management user with the user ID *sasdemo* is a member of the SASCreditRiskUsers security group. In Windows Explorer, right-click on the *<install.dir>* folder and select **Properties**. Under the **Security** tab, if necessary add the "SASCreditRiskUsers" group and assign it **Full Control**.

Tip: When you set security on the SAS Credit Risk Management for Banking directory

(e.g., *c:\program files\sas\sascreditriskmanagement\4.2*), you should select the Advanced window and check **Replace permission entries on all child objects with entries shown here that apply to child objects**. Otherwise, access does not propagate permissions down to individual files.

- Example: Suppose you installed SAS Credit Risk Management for Banking on UNIX. In order to grant users Write permissions to the SAS Credit Risk Management for Banking installation directory, you use the `chgrp` command that assigns group ownership of the SAS Credit Risk Management installation directory to an operating system group that contains the SAS Credit Risk Management for Banking users. At the level above the top-level SAS Credit Risk Management for Banking directory *<install.dir>*, use a `chmod` command to grant Read and Write permissions to the directory. For example:


```
chmod -R g+rw <install.dir>
```
- For more information about these commands, see a UNIX text or use the `man` command.

3. **UNIX Only:** Set the `umask` option for newly created files. The `umask` option sets the permissions on new files. New files are created when

you execute SAS code that is part of the SAS Credit Risk Management for Banking solution either by using the Web or in batch mode. The default `umask` option setting for your system might not be appropriate to ensure that SAS Credit Risk Management for Banking users can Read and Write to new files. In order to grant Read and Write permissions, edit the file that is used to run SAS. Usually, the file is named `sas.sh` and is located under the Base SAS directory (e.g., `<SAS_HOME>/SAS_9.1`). Add an appropriate `umask` command at the start of this file after the heading. For example, add the following:

```
umask g+rw
```

For more information and options, see the man page for the `umask` command.

Note: If you only want to execute the `umask` option for the SAS Credit Risk Management users, then you can add conditional logic similar to the following code. In the following example, `GID=201` is the group ID for the SAS Credit Risk Management for Banking user group:

- **AIX:**

```
CMD=/usr/bin/id
CURR_GID=eval $CMD -g
GID=201
if [$CURR_GID -eq $GID]; then umask g+rw fi
```

- **H64 (HP-Risc):**

```
CMD=/usr/bin/id
CURR_GID=eval $CMD -g
GID=201
if [ $CURR_GID -eq $GID ] ; then umask 007 fi
```

- **H64I (HP-Itanium):**

```
CMD=/usr/bin/id
CURR_GID=eval $CMD -g
GID=201
if [ $CURR_GID -eq $GID ] ; then umask 007 fi
```

4. If necessary, start the SAS Metadata Server.

On Windows, you can start the metadata server by using the Control Panel | Administrative Tools | Services.

On UNIX, you can start the metadata server by running the following script:

```
<config.dir>/Lev1/SASApp/MetadataServer/MetadataServer.sh
stop
<config.dir>/Lev1/SASApp/MetadataServer/MetadataServer.sh
start
```

By default, the log file for the metadata server is located at `<config.dir>/Lev1/SASApp/MetadataServer/logs`.

5. Define the SAS Credit Risk Management for Banking users and groups in the SAS Metadata Server by performing the following steps:

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- (a) Open SAS Management Console and connect to your metadata server.
Log on as the SAS administrative user, and go to **User Manager**.

(b) Create the following SAS Credit Risk Management for Banking groups:

- CreditRiskAdmin
- CreditRiskAnalyst
- CreditRiskUser

Note: The names must match exactly with no spaces and case sensitive characters.

(c) Double-click on each group and add users to it. For example, you can add the `sasdemo` user to all groups. If you want to create new users, then you need to follow the same procedures that you used in the SAS Intelligence Platform Pre-installation checklist for users such as `sasadm` and `sasdemo`. You must add new users to the operating system as well.

6. Add the privileged user `<criskm.privileged.userid>` to the SAS Metadata CreditRiskAdmin group. Also, verify that the SAS Metadata Authentication Domain for the CreditRiskAdmin group user is set appropriately for this user. Under the **Logins** tab in the user's **Properties** window, the **Authentication Domain** should be set to the one that you assigned (e.g., DefaultAuth).

Note: You add the privileged user after you install and configure the middle tier machine. If you have not completed the installation and configuration of your middle tier machine at this time, then you must complete this step later when the middle tier machine is ready.

Set Up SAS Servers for SAS Credit Risk Management for Banking

In order to set up the SAS Servers for the SAS Credit Risk Management for Banking solution, perform the following steps:

1. Modify the `sasv9.cfgfile`.

On the server tier machine, edit the `sasv9.cfg` file. according to your site's specifications:

- By default, the `sasv9.cfgfile` is located at "`<SAS_HOME>/SAS9.1`" or at "`<SAS_HOME>/SAS9.1/nls/<locale>`"
- If you edit the `sasv9.cfg` file under your SAS Foundation directory, then any change you make are used automatically by any launched SAS process, whether running in batch mode, on the Stored Process server, or on the Workspace server. The advantage of this approach is simplicity; the disadvantage is that if SAS Foundation is updated, then the new changes to the configuration file can overwrite your changes.
- If you edit the SAS Configuration file under your SAS BI Configuration directory, then any change you make is used by the workspace server and the stored process server. However, SAS processes running in batch mode do not use your changes unless you explicitly invoke this `sasv9.cfg` by using the `-config` option when invoke SAS with the following

command:

```
-config "<config.dir>/Lev1/SASApp/sasv9.cfg"
```

One disadvantage of this approach is that if you update your SAS BI platform, then the updates might overwrite your changes.

UNIX Tip: You might need to examine the script that you are using to launch SAS in order to determine the correct `sasv9.cfg` file to edit. It might be that this `sasv9.cfg` file uses a `-config` option to point at a file that in turn has a `-config` option that points at another `sasv9.cfg` file.

2. After you determined which `sasv9.cfg` file to edit, make the other modifications listed below. You must match the case of each letter. Use the forward slash ("/) or back slash ("\) in the path that is appropriate for your operating system.

Note: Depending on your installation, it might be necessary to make adjustments to the modifications listed here such as pathnames. The following examples are given for purposes of illustration only. The examples might not be completely applicable to your situation. The “...” indicates that there can be other items present.

- (a) Add variables that are used by the SAS Credit Risk Management for Banking code:

```
-SET CMHOME "<install.dir>"
-SET CMINDATA "<install.dir>"
-SET CMUSER "<install.dir>"
```

- (b) Add the SAS Credit Risk Management for Banking macro folder to the SASAUTOS search path.

- Windows:

```
-SET SASAUTOS ("!sasroot\core\sasmacro"
... "<install.dir>\sascode\macros"
...
)
-sasautos ('!SASROOT\core\sasmacro' ... '
<install.dir>\sascode\macros' ...)
```

- UNIX:

```
-SET SASAUTOS ("!sasroot/sasautos"
...
"<install.dir>/sascode/macros"
...
)
-sasautos ('!SASROOT/sasautos' ... '
<install.dir>/sascode/macros' ...)
```

- (c) (Optional) If your server does not have a default printer installed, then you might need to specify the `-uprint` option in the `sasv9.cfg` file. On the Windows operating system, you can specify the `-uprintmenuswitch` option as well.

3. Configure SAS servers.

You must configure the SAS servers by performing the following steps:

- (a) Open SAS Management Console by running the script or executable file that is located in the following pathname:
`<SAS_HOME>/SASManagementConsole`.
 Log on as the SAS administrative user.

- (b) Navigate to the workspace server by selecting **Server Manager** → *<application-server>* → **Logical Workspace Server**. By default, the application server is SASApp. Right-click on the workspace server and select **Properties**. Under **Options**, if the **MEMSIZE** option is specified, then add the following arguments to the launch command for SAS and adjust the pathnames, if necessary:

```
-memsize MAX
```

Note: The `memsize` parameter is simply a maximum. By setting the `memsize` parameter to this value does not pre-allocate this much memory. The maximum setting only specifies an upper bound on what can be allocated in the worst case.

Note: There can be multiple configuration files. Check each configuration file.

- (c) Add the following option to Object Server Parameters:
`metaautoinit`

- (d) Repeat this procedure for the stored process server and OLAP server, which are located under **Server Manager**. Add the object server and SAS start command options above.

Tip: Examine your `sasv9.cfg` file to verify that there is not a `-memsize` option listed in the file. If the `-memsize` option is listed, then it will override the entry above.

4. Set up connection pooling for the workspace server. In SAS Management Console, expand **Server Manager** and right-click on **SASApp - Logical Workspace Server**. Select **Convert To** → **Pooling . . .**. In the Pooling Options dialog box, create a new Puddle named `CreditRiskPuddle`. For additional security, you can specify a logon `<criskm.privileged.userid>` and general access group `CreditRiskAdmin`. Click **OK**.

5. Restart (or start) the SAS servers.

- (a) Restart the object spawner.

- Windows: Navigate to the Services window by selecting **Control Panel** → **Administrative Tools** → **Services**.

- **UNIX:** Run the following script:

```
<config.dir>/Levl/SASApp/
ObjectSpawner/ObjectSpawner.sh stop
<config.dir>/Levl/SASApp/
ObjectSpawner/ObjectSpawner.sh start
```

By default, the log file for the object spawner is located at
 <config.dir>/Levl/SASApp/ObjectSpawner/logs.

- (b) Restart the SAS OLAP Server.

- **Windows:** Navigate to the Services window by selecting **Control Panel** → **Administrative Tools** → **Services**.

- **UNIX:** Run the following script:

```
<config.dir>/Levl/SASApp/
OLAPServer/OLAPServer.sh stop
<config.dir>/Levl/SASApp/
OLAPServer/OLAPServer.sh start
```

By default, the log file for the OLAP Server is located at
 <config.dir>/Levl/SASApp/OLAPServer/logs.

- (c) Launch the SAS Services Application. This RMI server runs SAS Remote Foundation Services.

- **Windows:** You can launch the application from the Start Menu by selecting **Start** → **Programs** → **SAS** → **CRiskM** → **Start SAS Services Application**. A command prompt window opens.

- **UNIX:** You can use the `ps -aef | grep java` command in order to check for currently running instances. To launch the application, you can issue the following commands:

```
cd <config.dir>/Levl/web/Deployments/RemoteServices/
WEB-INF ./StartRemoteServices.sh
```

By default, the log file for the SAS Remote Services Application is located at

```
<config.dir>/Levl/web/Deployments/
RemotesServices/logs/RemoteServices.log.
```

Set Up Java Application Servers

On the middle tier machine, you set up the Java application servers for SAS Credit Risk Management for Banking by assigning policy rights and deploying the SAS Credit Risk Management for Banking application to your application server.

Tip: SAS Web applications, such as SAS Credit Risk Management for Banking, and the SAS Intelligence Platform architecture cause heavy memory demands on application servers. Verify that your JVM memory startup options are large enough for your site. The following sample parameters are for illustration purposes only.

```
-server -Xms1024m -Xmx1024m -XX:NewSize=256m  
-XX:MaxNewSize=256m  
-XX:PermSize=256m -XX:MaxPermSize=256m
```

These parameters can be set either in the application server startup script or in the application server administrative console. For information and additional tuning parameters, see the documentation for your application server and the following Web site about third party software downloads:

<http://support.sas.com/documentation/configuration/thirdpartysupport/index.html>.

- Tomcat:

1. Edit the file `$TOMCAT_HOME$/conf/catalina.policy` and add the following lines:

```
grant codeBase "file:${catalina.home}/webapps/  
criskm/-" {  
permission java.security.AllPermission;  
};
```
2. To deploy, either use the Manager tool (e.g., `http://localhost:8080/manager`) or copy the war file `<install.dir>/criskm.war` to your Tomcat Web application directory that is located in `$TOMCAT_HOME$/webapps`, by default. Verify that there are no other XML files or folders in this directory that try to assign the context path `/criskm`.
Note: Do not attempt to use an XML file to point to the SAS Credit Risk Management for Banking directory if it is in a path that contains spaces, such as `C:\Program Files\SAS\....`

- **WebLogic:**

You can set up the Weblogic application server by doing either one of the following methods:

- The most secure option is to edit the start up script for the WebLogic domain that contains the SAS Credit Risk Management application, such as

```
c:\bea\user_projects\domains
\mydomain\startWebLogic.cmd.
```

Modify the `-Djava.security.policy` argument to specify a file containing the following text:

```
grant { permission java.security.AllPermission;
};
```

- You can edit the `weblogic.policy` file that, by default, is located at `c:\bea\weblogic81\server\lib\` so that the file contains only the following code:

```
grant { permission java.security.AllPermission;
};
```

Note: If you choose to edit the `weblogic.policy` file, then be sure that you backup the `weblogic.policy` file first. Use the administrative console (e.g., <http://localhost:7501/console>) to deploy the application by browsing to the `<install.dir>/webapps/criskm` directory. Restart WebLogic.

- **Websphere:**

You can set up the Websphere application server by performing the following steps:

1. Open the Websphere Administration Console (e.g., <http://localhost:9090/admin>) and select **Applications** → **Install New Application**.
2. Browse to the location of the `criskm.war` file (`<install.dir>`) and assign the context root **criskm**.
3. In the next series of screens, select the checkboxes to map the virtual host and precompile JSP's. For the other options, you can accept the defaults.
4. Save data to the master configuration file when prompted.
5. Edit the file `WAS_ROOT/AppServer/properties/wsjaas.conf` and add the contents of the file `<install.dir>/webapps/conf/login.config`.
6. Go to the metadata location for the **criskm** application in Websphere. For example, go to `WAS_ROOT/AppServer/config/cells/CELL_NAME/applications/criskm_war.ear`, substituting your system's cell name. Edit the file `deployments/criskm_war/META-INF/was.policy` as follows:


```
grant codeBase "file:${application}" {
```



```
permission java.security.AllPermission;
};
```

Note: For troubleshooting purposes, metadata about the `criskm` application is stored at the above location. The actual program code is extracted from the war file to `WAS_ROOT/AppServer/installedApps`.

7. Restart Websphere. If necessary, start the SAS Credit Risk Management for Banking application in the Websphere Administration Console.

Verify the SAS Credit Risk Management for Banking Installation

You can verify the installation of SAS Credit Risk Management software by performing the following steps:

1. Define a content area on your WebDAV Server for the SAS Credit Risk Management solution to use. Verify that your WebDAV server (Xyθος or Apache) is setup correctly:
 - (a) Verify that you created the base directory for the WebDAV server (e.g., `/sasdav`).
 - (b) Create a subdirectory for SAS Credit Risk Management for Banking content named `crisk`. You should have a directory in WebDav that matches `/sasdav/crisk`.
 - (c) Set permissions on the directory that grants the server tier Read and Write permissions. Ensure that `<criskm.privileged.userid>` has the ability to create folders under the `crisk` folder.

Note: For information about on how to create folders and assign security, see your specific WebDav vendor's documentation. For Xyθος, in the administrative console, select **Search for Users and Groups**. Enter **administrator** in the Contains field. Select **OK**. Choose the SAS Web Administrator and select **OK**. Assign all permissions to this user by changing No to Yes for each permission. Select the **Save Changes** button. Then set all the permissions from No to Yes for the 'Public' user and for 'Users with accounts'.

- (d) Open SAS Management Console and log on as the SAS administrative user. Verify that the local **Information Service** has the WebDAV repository configured for auto-connect. Select **Foundation Services Manager** → **ID Local Portal Services** → **BIP Local Services OMR**. Right-click on **BIP Information Service** and select **Properties**. Select **Service Configuration** → **Edit Configuration**. Under **Repositories**, verify that the Web DAV repository has Auto-Connect set. If Auto-Connect is not set, then click **Edit**.

Tip: There are 3 places in SAS Management Console where WebDAV settings are stored:

- **Repositories** in the Properties window of the BIP Information Service node in SAS Management Console
- **Server Manager** in SAS Management Console
- Properties window for the BIP Tree under Business Report Manager node.

Tip: If you are using Xythos for WebDAV, then ensure that the logon for `<criskm.privileged.userid>` has the same Authentication Domain as the HTTP DAV Server. In SAS Management Console, select **Server Manager HTTP DAV** → **Server**. Right click on the **Connection** object and select **Properties**. On the **Options** tab note the Authentication Domain. Select the properties for `<criskm.privileged.userid>` under the **User Manager**. On the **Logins** tab, verify that the Authentication Domain is the same as the one for the HTTP DAV Server.

- (Optional) Change the title displayed in the banner of the SAS Portal.
The installation of the SAS Credit Risk Management for Banking application includes a configured deployment of the SAS Portal Web application. The SAS Portal is configured with pages, portlets, and links to the SAS Credit Risk Management for Banking application. If you want to change the title that is displayed in the banner of the SAS Portal from *SAS Portal* to *Risk Studio*, then perform the following steps:
 - Edit the file `PortalConfigure/install_defaults.properties` in the SAS Portal installation directory that is located at `<SAS_HOME>/Web`, by default. Set the property **NAME_IN_BANNER** to `Risk Studio`.
 - Regenerate the SAS Portal WAR file by running the `configure_wik.bat` script in the SAS Portal installation directory. This script refreshes the `Portal.war` file in the same directory.
 - Redeploy the `Portal.war` file to your application server.
- Verify that the SAS Information Delivery Portal is initialized.
The SAS Portal application must be initialized before running the SAS jobs below that register the Risk Studio portal metadata information. The jobs create the required metadata structure required by the Risk Studio portal application. You can initialize the SAS Portal application in the following ways:
 - Ensure the Portal war file is deployed and log on to the Portal as the SAS Web Administrator by opening a browser and log into `http://host:port/Portal`.
 - Run the script `initPortalData` to create the metadata structure. By default, the script is located in `<SAS_HOME>/Web/Portal2.0.1/Tools`.
- Check SAS Themes installation.
Verify that the `SASTheme_default` Web application has deployed successfully. If the deployment is not successful, then the `.war` file is located in the Portal

installation directory (e.g., `<SAS_HOME>/Web/Portal2.0.1`). By default, the SASTheme_default Web application deploys on the same application server as other SAS Web applications.

Tip: It is recommended that you select an application server (WebSphere, WebLogic, or Tomcat) before installing any of the SAS Intelligence Platform components and do not change the application server while installing and configuring all SAS components, such as Portal, Web Report Studio, and SAS Credit Risk Management for Banking. If you want to change application servers after the initial installation (for example, start with Tomcat and then switch to WebSphere), then you need to modify the portal metadata for where to find the SASTheme_default application. You can change application servers by running the job located in the Portal installation directory (e.g., `<SAS_HOME>/Web/Portal2.0.1/OMR/UpdateThemeConnection.sas`). For more information, see http://support.sas.com/rnd/itech/doc9/portal_admin/deploy/ag_diststhapp.html.

5. DBCS Installation. If you are installing the SAS Credit Risk Management for Banking server tier on Windows and you are using one of the Double Byte Character Set (DBCS) languages such as Korean or Japanese, then you must modify the path separator used by the application.
 - (a) Edit the file under your Web application deployment location:


```
.../WEB-INF/classes/com/sas/ets/creditrisk/
config.properties
```
 - (b) Change the `lib.pathsep` property value from `"/` to `"\"`
 - (c) Change the path separators in `lib.groups.location` property value from `"/` to `"\"`
 - (d) Change the path separators in `lib.usrprefs.location` property value from `"/` to `"\"`
 - (e) Change the path separators in `lib.template.usr.location` property value from `"/` to `"\"`
 - (f) Change the path separators in `lib.template.usrprefs.location` property value from `"/` to `"\"`
 - (g) Change the path separators in `lib.template.grp.location` property value from `"/` to `"\"`
 - (h) Change the path separators in `lib.datamart.location` property value from `"/` to `"\"`
6. Install Java Plug-in on client browsers.

For all client browsers that access the application, ensure that the Java Plug-in is installed and configured for that browser. If the Java Plug-in is not installed, then you can download the Java Plug-in and JRE at <http://www.java.com/en/download>. Be sure that you download the same version of Java as your Java Application Server (e.g., version 1.4.2).

Note: On the Windows operating system, if you download the Java Plug-in, then the Java Plug-in is put in the Windows Control Panel. You can use this

Java Plug-in to check whether your browser and the plug-in are configured correctly.

Initialize SAS Credit Risk Management for Banking Data

In order to initialize SAS Credit Risk Management for Banking data, run the SAS jobs that load metadata and initialize the SAS Credit Risk Management for Banking system on the server tier machine.

1. You must be logged on as a user who which must be a member of the primary default group on UNIX (e.g., `<criskm.privileged.userid>`).
2. Run SAS `/data/SAS/SAS91/sas` on the following programs in the order listed. It is recommended that you run these in batch mode (e.g., `<SAS_HOME>/SAS91/sas <sas-file-name>`). After each step, examine the log file that is created and verify that no errors occurred.

Note: These programs might take a long time to complete.

- (a) `<install.dir>/omr/load_credit_risk_metadata.sas` loads the SAS Credit Risk Studio metadata.
- (b) `<install.dir>/omr/Portal/Load_risk_studio_metadata.sas` loads Risk Studio (Portal) metadata.
- (c) `<install.dir>/sascode/batch/installation_batch_job.sas` runs SAS Credit Risk Management for Banking batch jobs to initialize necessary data.

Note: If the `installation_batch_job.sas` program is not run at this point, then you can run it from the Credit Risk Web application. Under **Analysis** → **Analysis Wizard** → **Credit Risk analysis calculations**, run **Valuation Project**. If you are logged on the application as a member of the `CreditRiskAdmin` group, then it is recommended that you run the program now in order to verify your SAS setup.

Complete the Installation

1. Restart your application server.
Open a browser window and go to the following Web address:
`http://<midtier_hostname:port>/criskm/pre_compile.jsp`.
For example, go to `http://localhost:8080/criskm/pre_compile.jsp`.
You must substitute the correct hostname and port number that is appropriate for your configuration. Log on as one of the `CreditRiskAdmin` users that you created.
Note: The page can take some time to load.
2. Enter the Credit Risk Studio Web application.
Go to the appropriate root URL for the Credit Risk Studio Web application:
`http://<hostname:port>/criskm`.
For example, go to `http://localhost:8080/criskm`.

You must substitute the correct hostname and port number that is appropriate for your configuration. After the Web page loads, if there are any additional instructions that are required to finish your installation and configuration, then complete them. Otherwise, your installation and configuration is complete.

3. Open the Risk Studio Portal.

Open a browser window and go to the appropriate root URL for the Risk Studio Portal:

`http://<hostname:port>/Portal.`

For example, go to `http://localhost:8080/Portal.`

You must substitute the correct hostname and port number that is appropriate for your configuration.

Optional Configuration

Workspace Connection Pooling

The SAS Stored Process Server and the SAS Workspace Server are used to provide JDBC access. The workspace configuration data is retrieved from the metadata as

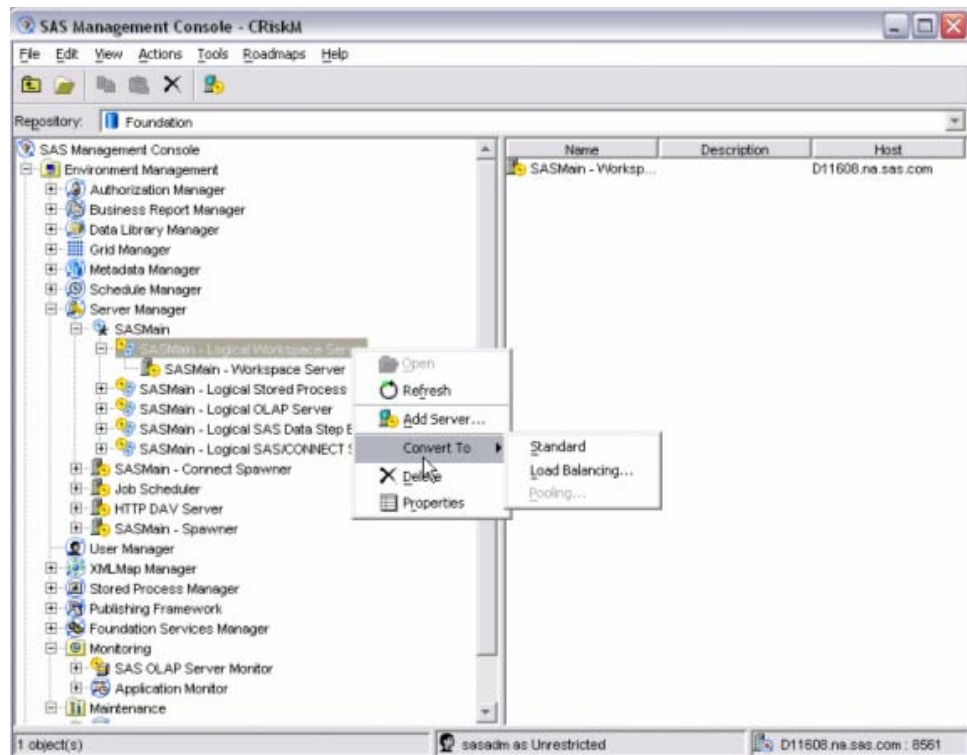


Figure 1. **Figure 1.** Workspace Configuration Data

If the SAS Workspace Server is configured for connection pooling, then only a limited pool of SAS processes are used and shared by all users. SAS Credit Risk Studio works automatically with whatever configuration is set.

If you want to secure the connection pool, the following settings are recommended:

- Login: saswbadm (or the privileged user ID that you use)
- Grant Access To Group: CreditRiskAdmin

Figure 2 shows the recommended settings.

The screenshot shows a configuration dialog box with the following fields and values:

Name:	CreditRiskPuddle
Minimum Available Servers:	0
Minimum Number of Servers:	2
Login:	D11608\saswbadm (DefaultAu
Grant Access To Group:	CreditRiskAdmin

At the bottom of the dialog are three buttons: OK, Cancel, and Help.

Figure 2. Recommended Settings

Note: Optionally, you can use a Standard configuration. By default, SAS Credit Risk Studio uses a servlet filter to open and to close a connection for access to each Web page. If pooling is configured, then by closing a connection releases the connection back to the pool. If the Standard configuration is used, then a SAS process starts for each Web page that is accessed and then exits. In SAS Credit Risk Management for Banking 4.1, each user login session has a dedicated SAS process that starts when the user logs on and exits when the user logs out. To revert back to that behavior, you use the Standard configuration and edit the SAS Credit Risk Studio deployment descriptor (.../WEB-INF/web.xml) to comment out the following: <filter>

```
<filter-name>CreditRiskCleanupFilter</filter-name>
<filter-class>com.sas.ets.creditrisk.httpfilters.
CleanupFilter</filter-class>
</filter>
<filter-mapping>
```

```
<filter-name>CreditRiskCleanupFilter</filter-name>  
<url-pattern>/*</url-pattern>  
</filter-mapping>
```

