Configuration Guidelines and Details for "HOSTNAME"

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Warnings and Notices

The following issues occurred during the automated portion of your configuration and must be addressed before proceeding.

- Some of the clients in your environment may need access to the SAS/GRAPH Java applets to view graphical output generated by SAS processes. If so, add the APPLETLOC option to the sasv9_usermods.cfg file located in each SAS Application Server context directory specifying the location to be used in generating graphical output. APPLETLOC should point to a network accessible copy of the SAS/GRAPH Java applets.

  Since your deployment includes the SAS Web Infrastructure Platform, the applets can be made available (you must use the correct host and port) via:

  ```
  -APPLETLOC "http://mid-tier-server:mid-tier-port/saswebraph"
  ```

- Permissions on the logs directory (/opt/SAS/Config/Lev1/Web/Logs) are currently set at 777. We strongly recommend that you narrow access to this directory. To facilitate creation of logs, make sure that the SAS Installer (sas) and the invoker of the Web application server can write to this directory. To facilitate appropriate use of the logs, make sure that administrators can see the directory.

- Because you selected to not automatically deploy your SAS Web Applications, you will need to perform some manual steps to complete the configuration of your SAS Web Applications. Once you have deployed the SAS Web Infrastructure Platform, you will need to manually load content to the SAS Content Server. Follow the instructions below to accomplish this.

SAS Management Console

SAS Management Console is required to complete many of the following steps.

Startup command	/opt/SAS_92/SASManagementConsole/9.2/sasmc For easier access, the installation directory /opt/SAS_92/SASManagementConsole/9.2 can be placed in the executable path environment. Likewise, aliases or symbolic links can be created to reference the command.
User ID	SAS Administrator user ID
Password	Enter the password you created in the SAS Deployment Wizard.

SAS Application Servers

SASMeta - Metadata Server

Host machine	HOSTNAME.example.com
Port	8562
Log directory	/opt/SAS/Config/Lev1/SASMeta/MetadataServer/Logs For more details about the initial logging configuration and how to modify it, see "Administering Logging for SAS Servers" in the *SAS Intelligence Platform: System Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Execution type	Shell script /opt/SAS/Config/Lev1/SASMeta/MetadataServer/MetadataServer.sh

Notes:

- The metadata server is configured to use journaling. The metadata journal file is located at **/opt/SAS/Config/Lev1/SASMeta/MetadataServer/Journal/MetadataJournal.dat**. The metadata journal file is updated more quickly than repositories and updated metadata becomes available to clients sooner. Journaling also improves the ability to recover the server and can be recovered from the state of the journal file when the metadata server is restarted.
- In the event of severe problems, the metadata server has been instructed to send alert e-mail to **admin@example.com** with the sender of the e-mail being identified as **SASMeta - Metadata Server (Config - Lev1) <admin@HOSTNAME.example.com>**.

SASApp - Connect Server

Validation steps	1. In the SAS Management Console, on the Plug-ins tab, select "+" to expand the Server Manager node. 2. Expand SASApp. 3. Expand SASApp - Logical Connect Server. 4. Highlight the SASApp - Connect Server. 5. Right mouse click this server and select Validate (you can enter sasdemo or the SAS Spawned Servers account for the user ID). You should see a *Validation Successful* message.

SASApp - OLAP Server

Host machine	HOSTNAME.example.com
Port	5452
Log directory	/opt/SAS/Config/Lev1/SASApp/OLAPServer/Logs For more details about the initial logging configuration and how to modify it, see "Administering Logging for SAS Servers" in the *SAS Intelligence Platform: System Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Validation steps	1. In the SAS Management Console, on the Plug-ins tab, select "+" to expand the Server Manager node. 2. Expand SASApp. 3. Highlight the SASApp - Logical OLAP Server. 4. Right mouse click this server and select Validate. You should see a *Validation Successful* message.
Execution type	Shell script /opt/SAS/Config/Lev1/SASApp/OLAPServer/OLAPServer.sh

SASApp - Stored Process Server

Host machine	HOSTNAME.example.com
Port	8602
Log directory	/opt/SAS/Config/Lev1/SASApp/StoredProcessServer/Logs For more details about the initial logging configuration and how to modify it, see "Administering Logging for SAS Servers" in the *SAS Intelligence Platform: System Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Validation steps	1. In the SAS Management Console, on the Plug-ins tab, select "+" to expand the Server Manager node. 2. Expand SASApp. 3. Highlight the SASApp - Logical Stored Process Server. 4. Right mouse click this server and select Validate. You should see a *Validation Successful* message.

SASMeta - Workspace Server

Host machine	HOSTNAME.example.com
Validation steps	The SASMeta - Workspace Server should be used for only a few designated administrative tasks. It is appropriate to defer validation of this server until you have set up the SAS users who will perform these tasks. This server requires an external account and is available to only the SAS Administrators group.

Notes:

- The /opt/SAS/Config/Lev1/SASMeta/WorkspaceServer/Logs directory is intended to serve as a placeholder for workspace server logs. Workspace server logs may be directed to this directory in the event that your SAS or IT administrator enables logging. The following default attributes are associated with the Logs directory:
  - Universal read, write or execute access is disabled for the directory in order to comply with default installation security requirements
  - Execution of a workspace server does not populate the Logs directory
  - The Logs directory serves as a placeholder should you enable logging for workspace servers

  Enabling workspace server logging should be carefully considered, due to the proliferation of workspace server logs, as well as the requirement to grant universal write access to the Logs directory. To enable workspace server logging, perform the following steps:
  - Enable read, write and execute access to the Logs directory
  - Modify the workspace server logconfig.xml to enable the desired levels of logging
  - Alternately, enable the logconfig.trace.xml logging file to capture workspace server diagnostic logging

SASApp - Workspace Server

Host machine	HOSTNAME.example.com
Port	8592
Log directory	/opt/SAS/Config/Lev1/SASApp/WorkspaceServer/Logs For more details about the initial logging configuration and how to modify it, see "Administering Logging for SAS Servers" in the *SAS Intelligence Platform: System Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Validation steps	1. In the SAS Management Console, on the Plug-ins tab, select "+" to expand the Server Manager node. 2. Expand SASApp. 3. Highlight the SASApp - Logical Workspace Server. 4. Right mouse click this server and select Validate (you can enter sasdemo or the SAS Spawned Servers account for the user ID). You should see a *Validation Successful* message.

Notes:

- The /opt/SAS/Config/Lev1/SASApp/WorkspaceServer/Logs directory is intended to serve as a placeholder for workspace server logs. Workspace server logs may be directed to this directory in the event that your SAS or IT administrator enables

logging. The following default attributes are associated with the Logs directory:

- Universal read, write or execute access is disabled for the directory in order to comply with default installation security requirements
- Execution of a workspace server does not populate the Logs directory
- The Logs directory serves as a placeholder should you enable logging for workspace servers

Enabling workspace server logging should be carefully considered, due to the proliferation of workspace server logs, as well as the requirement to grant universal write access to the Logs directory. To enable workspace server logging, perform the following steps:

- Enable read, write and execute access to the Logs directory
- Modify the workspace server logconfig.xml to enable the desired levels of logging
- Alternately, enable the logconfig.trace.xml logging file to capture workspace server diagnostic logging

SAS BI Report Services Workspace Configuration

Query Cache Library	Name ="SASApp - wrstemp" 1. In SAS Management Console, on the Plug-ins tab, select the "+" to expand the Data Library Manager node. 2. Select "+" to expand Libraries. 3. Select the library listed above. 4. Right mouse click this library and select Properties. 5. Click the Options tab and locate the path to the library in the Selected items text box. Review the documentation provided to determine if permissions need to be modified for the library or directory to which the library points. 1. For details, view the http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92 and refer to the document called ***SAS 9.2 Intelligence Platform: Web Application Administration Guide***. 2. See the section called ***Improving the Performance of SAS Web Report Studio***. 3. This section will contain a list of *Suggestions for Improving the Performance of SAS Web Report Studio.* Go to the information titled ***"Using the Query Cache"***. 4. Refer to the subsection called ***Manage Host Access to the Query Cache Library*** for information regarding permissions.
Distribution Library	Name ="SASApp - wrsdist" 1. In SAS Management Console, on the Plug-ins tab, select the "+" to expand the Data Library Manager node. 2. Select "+" to expand Libraries. 3. Select the library listed above. 4. Right mouse click this library and select Properties. 5. Click the Options tab and locate the path to the library in the Selected items text box. Review the documentation provided to determine if permissions need to be modified for the library or directory to which the library points. 1. For details, view the http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92 and refer to the document called ***SAS 9.2 Intelligence Platform: Web Application Administration Guide***. 2. See the section called ***Pre-generated Reports From SAS Web Report Studio***. 3. Refer to the subsection called ***Verifying Permissions for the Distribution Library*** for information regarding permissions.
Validation steps	1. In SAS Management Console, on the Plug-ins tab, select "+" to expand the Data Library Manager node. 2. Verify the libraries named above are listed under the Data Library Manager. 3. In SAS Management Console, on the Plug-ins tab, select "+" to expand the Application Management node. 4. Select "+" to expand the Configuration Manager 5. Highlight BI Rep Svc Wkspace Config 4.2 6. Right mouse click and select Properties. 7. Click the Settings tab. 8. Validate the query cache library and the distribution library. They should match the libraries listed under Data Libraries.

SAS BI Report Services 4.2

Log directory	/opt/SAS/Config/Lev1/Applications/SASBIReportServices4.2/Logs For more details about how to modify your log format and to see what logging entails, see the *SAS Intelligence Platform: Web Application Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Java Batch Server	Name ="SASApp - BRM Java Batch Server"
Configuration	Configuration Directory = "/opt/SAS/Config/Lev1/Applications/SASBIReportServices4.2"
Validation steps	**Java Batch Server** 1. In SAS Management Console, on the Plug-ins tab, select "+" to expand the Server Manager node. 2. Select "+" to expand SASApp. 3. Select "+" to expand the SASApp - Logical SAS Java Batch Server. 4. Verify the existence of the java batch server(s) referenced above. 5. Right mouse click this server and select Properties. 6. Click the Options tab. 7. Validate the command line by examining the parameter values and verifying file locations and the repository name. **Local Services** 1. In SAS Management Console, on the Plug-ins tab, select "+" to expand the Foundation Services Manager node. 2. Select "+" to expand the SASBIReportServices4.2 Local Services Definition. 3. Select "+" to expand Core. 4. Select the Logging Service. 5. Right mouse button and choose Properties. 6. Click the Service Configuration tab. 7. Click the Configuration button. 8. Verify the logging contexts. 9. Refer to the logging documentation at the link specified above for details. **outputgen.ini file** 1. The file outputgen.ini may need to be modified. This file is located in the install folder /opt/SAS_92/SASBIReportServices/4.2. 2. The following default settings for Java command line options appear in this file: java.net.preferIPv4Stack=true and java.net.preferIPv6Addresses=false. 3. If the system is configured to use IPv6, these values must be changed to: java.net.preferIPv4Stack=false and java.net.preferIPv6Addresses=true.

SASApp - Pooled Workspace Server

Host machine	HOSTNAME.example.com
Port	8702
Validation steps	1. In the SAS Management Console, on the Plug-ins tab, select "+" to expand the Server Manager node. 2. Expand SASApp. 3. Highlight the SASApp - Logical Pooled Workspace Server. 4. Right mouse click this server and select Validate. You should see a *Validation Successful* message.

SASMeta - SAS DATA Step Batch Server

Host machine	HOSTNAME.example.com
Log	/opt/SAS/Config/Lev1/SASMeta/BatchServer/Logs

directory	For more details about the initial logging configuration and how to modify it, see "Administering Logging for SAS Servers" in the *SAS Intelligence Platform: System Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Validation steps	1. Execute the following command: /opt/SAS/Config/Lev1/SASMeta/BatchServer/sasbatch.sh 2. If SAS starts successfully, the DATA step batch server has been validated.

SASApp - SAS DATA Step Batch Server

Host machine	HOSTNAME.example.com
Log directory	/opt/SAS/Config/Lev1/SASApp/BatchServer/Logs For more details about the initial logging configuration and how to modify it, see "Administering Logging for SAS Servers" in the *SAS Intelligence Platform: System Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Validation steps	1. Execute the following command: /opt/SAS/Config/Lev1/SASApp/BatchServer/sasbatch.sh 2. If SAS starts successfully, the DATA step batch server has been validated.

SAS Spawners

Object Spawner

Host machine	HOSTNAME.example.com
Port	8582
Log directory	/opt/SAS/Config/Lev1/ObjectSpawner/Logs For more details about the initial logging configuration and how to modify it, see "Administering Logging for SAS Servers" in the *SAS Intelligence Platform: System Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Execution type	Shell script /opt/SAS/Config/Lev1/ObjectSpawner/ObjectSpawner.sh

Connect Spawner

Host machine	HOSTNAME.example.com
Ports	7552
Log directory	/opt/SAS/Config/Lev1/SASApp/ConnectServer/Logs For more details about the initial logging configuration and how to modify it, see "Administering Logging for SAS Servers" in the *SAS Intelligence Platform: System Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Execution type	Shell script /opt/SAS/Config/Lev1/ConnectSpawner/ConnectSpawner.sh

SAS Table Server

Host machine	HOSTNAME.example.com

Port	2172
Log directory	/opt/SAS/Config/Lev1/SASTS/TableServer/Logs For more details about the initial logging configuration and how to modify it, see "Administering Logging for SAS Servers" in the *SAS Intelligence Platform: System Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Execution type	Shell script /opt/SAS/Config/Lev1/SASTS/TableServer/TableServer.sh

SAS/SHARE Server

Host machine	HOSTNAME.example.com
Port	8552
Log directory	/opt/SAS/Config/Lev1/ShareServer/Logs For more details about the initial logging configuration and how to modify it, see "Administering Logging for SAS Servers" in the *SAS Intelligence Platform: System Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Execution type	Shell script /opt/SAS/Config/Lev1/ShareServer/ShareServer.sh

SAS Deployment Tester Server

Host machine	HOSTNAME.example.com
Port	10022
Execution type	Shell script /opt/SAS/Config/Lev1/DeploymentTesterServer/DeploymentTesterServer.sh
Validation steps	1. In SAS Management Console, on the Plug-ins tab, select "+" to expand the Application Management node. 2. Select "+" to expand Deployment Tester 3. Highlight the host machine: HOSTNAME.example.com 4. Right mouse click and select Run All Test Suites. 5. Select "+" to expand the Results. 6. Validate the results for each test suite. All tests should pass.

Notes:

- Deployment Tester Server is used to run tests on SAS products and servers to validate functionality and proper operation. The Deployment Tester Server in conjunction with the Deployment Tester SMC plug-in allows for tests to be executed on remote systems from a single SMC instance. Select Help on Deployment Tester in the SMC Help menu for more information.

Remote Services

Host machine	HOSTNAME.example.com
Port	5092
Execution type	Shell script /opt/SAS/Config/Lev1/Web/Applications/RemoteServices/RemoteServices.sh

- SAS Remote Services needs to be restarted after each reboot of your system. The above command can be used to perform this action. Note, it is imperative that SAS Remote Services is started **before** starting the web application server.

Web Application Server

Vendor	jboss
Application Server Name	JBoss
Version	4.2.0
JBoss Home Dir	/export/home/sas/jboss-4.2.0.GA
Java JDK	java version "1.5.0_12" Java(TM) 2 Runtime Environment, Standard Edition (build 1.5.0_12-b04) Java HotSpot(TM) Server VM (build 1.5.0_12-b04, mixed mode)
Host machine	HOSTNAME.example.com
.	
Configuration	SASServer1
Port	8080
Server Log Dir	/export/home/sas/jboss-4.2.0.GA/server/SASServer1/log

Configuring Your JBoss Web Application Server

When you run the SAS Deployment Wizard to install and configure the SAS 9.2 software, you have the option of allowing the SAS Deployment Wizard to configure a JBoss application server configuration for you and to deploy your web applications to that server. You have chosen manual configure of JBoss. The following instructions provide a basic JBoss configuration that uses SAS authentication and unsecure connections. This configuration should support a small number of users. If you need to setup a more sophisticated topology that includes reverse proxy servers, web server authentication, single sign-on, or secure socket connections, please see the *SAS 9.2 Intelligence Platform: Web Application Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92 for additional details.

Before configuring JBoss for SAS applications, be sure to review the JBoss Post-Installation Steps if you have not already done so.

The following list contains a summary of **configuration actions you need to perform:**

- **JBoss Server Configurations- SASServer1**:

  The SAS Web Applications require at least one JBoss configuration. The minimal requirements are met by copying the standard configuration named "default" found in /export/home/sas/jboss-4.2.0.GA/server to /export/home/sas/jboss-4.2.0.GA/server/SASServer1. Each server configuration requires a number of tunings:

  1. Configure ServiceBindingManager using the port bindings file found at /opt/SAS/Config/Lev1/Web/Common/jboss/jboss.port.bindings.xml. The Service Bindings file contains the port settings for the JBoss server. The ServiceBindingManager is configured by adding the following XML code to /export/home/sas/jboss-4.2.0.GA/server/SASServer1/conf/jboss-service.xml, where "ServerName" should reflect the name of the server configuration and "StoreURL" is the complete path to the jboss.port.bindings.xml file:

     ```
     <mbean code="org.jboss.services.binding.ServiceBindingManager"
     name="jboss.system:service=ServiceBindingManager">
     <attribute name="ServerName">SASServer1</attribute>
     <attribute name="StoreURL">/opt/SAS/Config/Lev1/Web/Common/jboss/jboss.port.bindings.xml</attribute>
     <attribute name="StoreFactoryClassName">
     org.jboss.services.binding.XMLServicesStoreFactory
     </attribute>
     </mbean>
     ```

  2. Turn off RMI server class downloads. Modify the "jboss:service=WebService" mbean found in the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/conf/jboss-service.xml file. Locate the attribute with 'name="DownloadServerClasses"' and set its value to false.
  3. Set ear classloader policy to isolated. Modify the "jboss.j2ee:service=EARDeployer" mbean found in the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy/ear-deployer.xml file.
  4. Modify the web container (tomcat in jboss-web) configuration to suppport body encoding on URI's. Add the attribute - useBodyEncodingForURI="true" - to the connector on port 8080 found in /export/home/sas/jboss-

4.2.0.GA/server/SASServer1/deploy/jboss-web.deployer/server.xml.

5. Create an additional deployment directory called "deploy_sas" in /export/home/sas/jboss-4.2.0.GA/server/SASServer1. In addition, add the new directory name to the "jboss.deployment:type=DeploymentScanner" mbean's "URLs" attribute (it should be a comma separated list) found in /export/home/sas/jboss-4.2.0.GA/server/SASServer1/conf/jboss-service.xml.
6. JVM options -
   - Before running your JBoss configuration, set JAVA_OPTS environment variable as done in /opt/SAS/Config/Lev1/Web/Common/jboss/SASServer1.sh:
   - -d64 -Xms1024m -Xmx2048m -XX:PermSize=512m -XX:MaxPermSize=720m -Xss256k -XX:NewSize=128m -XX:MaxNewSize=256m -XX:+UseConcMarkSweepGC -XX:+UseTLAB -XX:+DisableExplicitGC -XX:+CMSIncrementalMode -XX:+CMSClassUnloadingEnabled -XX:+CMSPermGenSweepingEnabled -Dcom.sun.management.jmxremote -Djava.awt.headless=true -Djboss.platform.mbeanserver -Djavax.management.builder.initial=org.jboss.system.server.jmx.MBeanServerBuilderImpl -Dsun.rmi.dgc.client.gcInterval=3600000 -Dsun.rmi.dgc.server.gcInterval=3600000 -Dsas.container.identifier=jboss -Dsas.auto.publish.port=8080 -Dcom.sas.services.logging.disableRemoteList=true -Dcom.sas.services.logging.disableRemoteLogging=true -Djava.net.preferIPv4Stack=true -Djava.net.preferIPv6Addresses=false -Dmulticast_udp_ip_ttl=1 -Dmulticast.address=239.11.0.19 -Dmulticast.port=8562 -Djava.security.policy="/export/home/sas/jboss-4.2.0.GA/server/SASServer1/conf/sas.all.permissions.policy" -Djboss.home.dir="/export/home/sas/jboss-4.2.0.GA" -Djboss.server.home.dir="/export/home/sas/jboss-4.2.0.GA/server/SASServer1" -Dsas.deploy.dir="/export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas" -Dcom.sas.log.config.url=file:///opt/SAS/Config/Lev1/Web/Common/LogConfig/
7. JAAS Configuration:
   - SAS Web Applications need a custom JAAS login module configured in the JBoss server's conf/login-config.xml. Add the elements found in /opt/SAS/Config/Lev1/Web/Common/jboss/login-config.xml.
8. Mail Session:
   - Create a file named sas-mail-service.xml in /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy with the same content as /opt/SAS/Config/Lev1/Web/Common/jboss/sas-mail-service.xml.
9. JMS Connection Factory:
   - Configure the JMS connection factory named SASTopicConnectionFactory. Add a Connection Factory mbean definition to /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy/jms/sas-jms-service.xml. Add the following elements before the end of the definition in sas-jms-service.xml:

     ```
     <mbean code="org.jboss.naming.LinkRefPairService"
     name="jboss.jms:alias=SASTopicConnectionFactory">
     <attribute name="JndiName">sas/jms/TopicConnectionFactory</attribute>
     <attribute name="RemoteJndiName">ConnectionFactory</attribute>
     <attribute name="LocalJndiName">java:/JmsXA</attribute>
     <depends>jboss:service=Naming</depends>
     </mbean>
     ```

     An example has been configured in /opt/SAS/Config/Lev1/Web/Common/jboss/SASServer1/sas-jms-service.xml.
10. JMS Connection Factory:
    - Configure the JMS connection factory named SASQueueConnectionFactory. Add a Connection Factory mbean definition to /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy/jms/sas-jms-service.xml. Add the following elements before the end of the definition in sas-jms-service.xml:

      ```
      <mbean code="org.jboss.naming.LinkRefPairService"
      name="jboss.jms:alias=SASQueueConnectionFactory">
      <attribute name="JndiName">sas/jms/QueueConnectionFactory</attribute>
      <attribute name="RemoteJndiName">ConnectionFactory</attribute>
      <attribute name="LocalJndiName">java:/JmsXA</attribute>
      <depends>jboss:service=Naming</depends>
      </mbean>
      ```

      An example has been configured in /opt/SAS/Config/Lev1/Web/Common/jboss/SASServer1/sas-jms-service.xml.
11. JMS Queue:
    - Configure the JMS queue named AlertQueue. Add a Queue mbean definition to /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy/jms/sas-jms-service.xml. Add the following elements before the end of the definition in sas-jms-service.xml:

      ```
      <mbean code="org.jboss.mq.server.jmx.Queue"
      name="jboss.mq.destination:service=Queue,name=AlertQueue">
      <depends optional-attribute-name="DestinationManager">jboss.mq:service=DestinationManager</depends>
      <attribute name="JNDIName">sas/jms/AlertQueue</attribute>
      </mbean>
      ```

      An example mbean has been configured in /opt/SAS/Config/Lev1/Web/Common/jboss/SASServer1/sas-jms-service.xml.

12. JMS Queue:
    - Configure the JMS queue named WorkflowQueue. Add a Queue mbean definition to /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy/jms/sas-jms-service.xml. Add the following elements before the end of the definition in sas-jms-service.xml:

      ```
      <mbean code="org.jboss.mq.server.jmx.Queue"
      name="jboss.mq.destination:service=Queue,name=WorkflowQueue">
      <depends optional-attribute-name="DestinationManager">jboss.mq:service=DestinationManager</depends>
      <attribute name="JNDIName">sas/jms/WorkflowQueue</attribute>
      </mbean>
      ```

      An example mbean has been configured in /opt/SAS/Config/Lev1/Web/Common/jboss/SASServer1/sas-jms-service.xml.
13. JMS Queue:
    - Configure the JMS queue named WorkflowCommandQueue. Add a Queue mbean definition to /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy/jms/sas-jms-service.xml. Add the following elements before the end of the definition in sas-jms-service.xml:

      ```
      <mbean code="org.jboss.mq.server.jmx.Queue"
      name="jboss.mq.destination:service=Queue,name=WorkflowCommandQueue">
      <depends optional-attribute-name="DestinationManager">jboss.mq:service=DestinationManager</depends>
      <attribute name="JNDIName">sas/jms/WorkflowCommandQueue</attribute>
      </mbean>
      ```

      An example mbean has been configured in /opt/SAS/Config/Lev1/Web/Common/jboss/SASServer1/sas-jms-service.xml.
14. JMS Queue:
    - Configure the JMS queue named WorkflowEventsQueue. Add a Queue mbean definition to /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy/jms/sas-jms-service.xml. Add the following elements before the end of the definition in sas-jms-service.xml:

      ```
      <mbean code="org.jboss.mq.server.jmx.Queue"
      name="jboss.mq.destination:service=Queue,name=WorkflowEventsQueue">
      <depends optional-attribute-name="DestinationManager">jboss.mq:service=DestinationManager</depends>
      <attribute name="JNDIName">sas/jms/app/WorkflowEventsQueue</attribute>
      </mbean>
      ```

      An example mbean has been configured in /opt/SAS/Config/Lev1/Web/Common/jboss/SASServer1/sas-jms-service.xml.
15. JDBC Datasource:
    - Configure the JDBC datasource named "SharedServices". Copy "/opt/SAS/Config/Lev1/Web/Common/jboss/SharedServices-ds.xml" to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy directory. The following jars containing the driver must be copied to /export/home/sas/jboss-4.2.0.GA/server/SASServer1/lib:
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/icu4j.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.core.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.core.nls.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.icons.contents.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.icons.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.icons.nls.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.intrnet.javatools.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.intrnet.javatools.nls.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.nls.collator.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.oda.tkts.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.oda.tkts.nls.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.rutil.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.rutil.nls.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.security.sspi.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.svc.connection.jar
      - /opt/SAS/Config/Lev1/Web/Applications/SASSharedServices9.2/JDBCDrivers/sas.svc.connection.nls.jar

Starting the Web Application Server

The SAS Deployment Wizard has not attempted to start the JBoss Web Application Server for you. However, the SAS Deployment Wizard has created a sample startup script for your use at /opt/SAS/Config/Lev1/Web/Common/jboss/SASServer1.sh. If the Server is not running then it can be started by running the SASServer1.sh command.

Usage: SASServer1.sh [start, stop]

Deploy Web Applications

- "SASWebInfrastructurePlatformServices9.2" - copy /opt/SAS/Config/Lev1/Web/Staging/sas.wip.services9.2.ear to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas deployment directory.
- "SASWebInfrastructurePlatformApplications9.2" - copy /opt/SAS/Config/Lev1/Web/Staging/sas.wip.apps9.2.ear to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas deployment directory.
- "SASStoredProcessApplication9.2" - copy /opt/SAS/Config/Lev1/Web/Staging/sas.storedprocess9.2.ear to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas deployment directory.
- "SASContentServer9.2" - copy /opt/SAS/Config/Lev1/Web/Staging/sas.wip.scs9.2.ear to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas deployment directory.
- "SASThemes9.2" - copy /opt/SAS/Config/Lev1/Web/Staging/sas.themes.ear to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas deployment directory.
- "SASPortal4.2" - copy /opt/SAS/Config/Lev1/Web/Staging/sas.portal4.2.ear to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas deployment directory.
- "SASPackageViewer4.2" - copy /opt/SAS/Config/Lev1/Web/Staging/sas.packageviewer4.2.ear to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas deployment directory.
- "SASWebReportStudio4.2" - copy /opt/SAS/Config/Lev1/Web/Staging/sas.webreportstudio4.2.ear to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas deployment directory.
- "SASSharedServices9.2" - copy /opt/SAS/Config/Lev1/Web/Staging/sas.shared9.2.ear to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas deployment directory.
- "SASBIDashboard4.2" - copy /opt/SAS/Config/Lev1/Web/Staging/sas.bidashboard4.2.ear to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas deployment directory.
- "SASWebDoc9.2" - copy /opt/SAS/Config/Lev1/Web/Staging/sas.webdocmd9.2.ear to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas deployment directory.
- "SASWebOLAPViewer4.2" - copy /opt/SAS/Config/Lev1/Web/Staging/sas.webolapviewer4.2.ear to the /export/home/sas/jboss-4.2.0.GA/server/SASServer1/deploy_sas deployment directory.

SAS Web Applications

SAS Themes

Validation steps	SAS Themes are used by SAS theme-enabled web applications. If you go to the logon screen for the Portal or Web Report Studio and see images then SAS Themes are working properly.

SAS Web Infrastructure Platform

Log directory	/opt/SAS/Config/Lev1/Web/Logs
Validation steps	The SAS Web Infrastructure Platform is used by other SAS web applications, so if the validation steps for SAS web applications are successful, then the SAS Web Infrastructure Platform is working properly.

SAS Content Server

Log file	/opt/SAS/Config/Lev1/Web/Logs/SASContentServer.log
Validation steps	1. In the SAS Management Console, on the Plug-ins tab, select "+" to expand the Server Manager node. 2. Highlight the SAS Content Server. 3. Right mouse click this server and select Validate. 4. Log in using valid credentials for an unrestricted user defined in the SAS Metadata Server. 5. You should see a Validation Successful message.

SAS Stored Process Web Application

URL	http://HOSTNAME.example.com:8080/SASStoredProcess/do
Log file	/opt/SAS/Config/Lev1/Web/Logs/SASStoredProcess9.2.log
Validation steps	1. Access the URL provided above. 2. Log in using the sasdemo credentials provided during configuration. 3. On the Welcome page, click the "Sample: Shoe Sales by Region" link to access the custom input form for this sample stored process. 4. Select an ODS style or accept the default value, and click the "Display SAS Output" button. 5. The output from the stored process is a static table and a clickable chart. Click a bar segment on the chart to drill down to the data for that country.

SAS Web Report Studio

URL	http://HOSTNAME.example.com:8080/SASWebReportStudio
Log directory	/opt/SAS/Config/Lev1/Web/Logs/SASWebReportStudio4.2.log For more details about how to modify your log format and to see what logging entails, see "Logging for SAS Web Applications" in the *SAS Intelligence Platform: Web Application Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Validation steps	1. Access the URL provided above. 2. Login using valid credentials defined in the SAS Metadata Server.

SAS Web OLAP Viewer for Java

;

URL	http://HOSTNAME.example.com:8080/SASWebOLAPViewer
Log file	/opt/SAS/Config/Lev1/Web/Logs/SASWebOLAPViewer4.2.log For more details about how to modify your log format and to see what logging entails, see "Logging for SAS Web Applications" in the *SAS Intelligence Platform: Web Application Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Validation steps	1. Access the URL provided above. 2. Login using valid credentials defined in the SAS Metadata Server.

SAS Information Delivery Portal

URL	http://HOSTNAME.example.com:8080/SASPortal
Log file	/opt/SAS/Config/Lev1/Web/Logs/SASPortal4.2.log For more details about how to modify your log format and to see what logging entails, see "Logging for SAS Web Applications" in the *SAS Intelligence Platform: Web Application Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Validation steps	1. Access the URL provided above. 2. Login using the sasdemo credentials provided during configuration. 3. Since the Portal samples were installed, verify that a Home page was created and contains two portlets, My Collections and Bookmarks. 4. Perform a search to verify that you have access to SAS content.

Notes:

- The SAS Portlets are located at: /opt/SAS/Config/Lev1/Web/Applications/SASPortlets4.2/Deployed
- If your network has a proxy server, you must specify the following parameters on the Application Server start-up command so that **syndication channels** and the **URL Display Portlet** can access content outside of your network.
  - -Dhttp.proxyHost=*host*
  - -Dhttp.proxyPort=*port*

SAS Shared Services

Log directory	/opt/SAS/Config/Lev1/Web/Logs
Validation steps	1. Access the Comment Service. 2. Log in using the sasdemo credentials provided during configuration. 3. Verify that you can add a comment.

Notes:

SAS BI Dashboard 4.2

URL	http://HOSTNAME.example.com:8080/SASBIDashboard
Log directory	/opt/SAS/Config/Lev1/Web/Logs/SASBIDashboard4.2.log For more details about how to modify your log format and to see what logging entails, see "Logging for SAS Web Applications" in the *SAS Intelligence Platform: Web Application Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.
Validation steps	1. Grant the user SAS Demo User access to SAS BI Dashboard 4.2. In SAS Management Console, on the Plug-ins tab, click on the User Manager node. 2. Right click on "BI Dashboard Administrators" and select "Properties." 3. Click on the "members" tab 4. Double click on SAS Demo User to add it to the group. 5. Click OK. 6. Access the URL provided above. 7. Login using the sasdemo credentials provided during configuration. 8. Create a new indicator using the New Indicator option. 9. Add this indicator to a new or existing dashboard and verify that you have access to this dashboard by adding the BI Dashboard Portlet to a Portal page.

Notes:

- The SAS BI Dashboard 4.2 sample files are located at: /opt/SAS_92/SASBIDashboard/4.2/SampleData. Please refer the sample files install guide for more information.

SAS Help Viewer Metadata Configuration

URL	http://HOSTNAME.example.com:8080/SASWebDoc
Validation steps	Use the URL above and examine the Installed Products Page, if there were any errors configuring help content, they will be reported on that page.

Web Application Custom Content

If you wish to add custom content into SAS web applications, you may do so by placing your custom content into the appropriate custom content directory structure for the given application, and then running the SAS Deployment Manager to rebuild web applications. The custom content root directory for a given web application is

```
/opt/SAS/Config/Lev1/Web/Common/Server Name/Application Name/CustomContent
```

For example,

```
/opt/SAS/Config/Lev1/Web/Common/SASServer1/SASWebReportStudio4.2/CustomContent
```

Within that directory, there are subdirectories (for example, `ears` or `wars`) corresponding to specific archive types (ear and war files, respectively). Under the archive type directories, there are subdirectories for each specific archive—these are the root

directories for each archive within the application. Custom content should be placed in the archive's directory tree corresponding to where the content should appear within the archive.

For example, to add the `ear_addon.xml` file into the `addons` directory in the `sas.webreportstudio` ear file, create the

```
.../CustomContent/ears/sas.webreportstudio/addons
```

directory, and place `ear_addon.xml` in it. Our process knows which war files are contained within ear files, so if you want to add `war_addon.jar` into the `WEB-INF/lib` directory in the `sas.webreportstudio` war file within the `sas.webreportstudio` ear file, then create

```
.../CustomContent/wars/sas.webreportstudio/WEB-INF/lib
```

directory, and place `war_addon.jar` in it.

Once all your custom content is ready to be consumed, run the SAS Deployment Manager and choose to rebuild web applications. Doing so will rebuild the web applications, inserting the custom content into the archives under the appropriate paths. Note that if custom content has the same path and name of content normally included in the archive, then the custom content takes precedence.

Completing Your Deployment

In order to complete your deployment on this machine, certain manual steps have to be performed. The SAS Content Server must be running before you attempt these steps.

Loading Content to the SAS Content Server

- Since you selected to not automatically deploy your SAS Web Applications, manual steps are required to ensure the proper content is loaded to the SAS Content Server. The file, /opt/SAS/Config/Lev1/Web/Utilities/manualLoadContent.sh, has been created to facilitate this process.
- Execute /opt/SAS/Config/Lev1/Web/Utilities/manualLoadContent.sh to automatically load content for the SAS Web Applications that require it.

The steps detailed above resulted in the creation of log files, which can be found in /opt/SAS/Config/Lev1/Logs/Configure. Review the contents of the scripts you executed for the name of the log files that were created. Review these logs and make sure there were no errors. Each execution of these scripts results in the logs from previous executions being overwritten. Therefore, prior to rerunning these scripts, you may wish to make appropriate backups of the logs.

These manual steps required the use of the SAS Administrator account. The scripts contain the SAS Administrator's credentials with the password encrypted at the sas002 level. The scripts are not intended for further use once your deployment is complete. Since these scripts contain the SAS Administrator's credentials, it is highly recommended that you delete them once your deployment is complete.

Obtaining Additional Information

Additional SAS Intelligence Platform documentation is available from the SAS 9.2 administration documentation web site.

There may be additional configuration steps required for your SAS Foundation software. Consult the SAS Foundation Configuration instructions available for your operating system for product-specific post-installation steps. The configuration instructions are available from the SAS Install Center web site.

Backing up your SAS Metadata Server

After completing your SAS Intelligence Platform configuration, we strongly recommend that you create a backup of your newly configured SAS Metadata Server. If you have adequate disk space to accommodate a copy of all of your metadata repositories on the metadata server host, use the MetadataServer.sh script provided in the /opt/SAS/Config/Lev1/SASMeta/MetadataServer directory. To execute the script, type:

./MetadataServer.sh backup

The script copies all critical metadata server files to a SASBackup subdirectory of the MetadataServer directory.

If disk space is an issue, then use the SAS Backup wizard provided in the SAS Management Console Metadata Manager or the %OMABAKUP macro to perform the backup. Both of these tools copy all critical metadata server files and permit you to specify a different backup destination. For more information, see "About the Backup Wizard" and "About %OMABAKUP" in the *SAS Intelligence Platform: System Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.

Regular metadata server backups using SAS backup tools are crucial to ensuring the health of your SAS 9.2 Intelligence Platform configuration, but they are just one part of backing up a SAS Intelligence Platform configuration. To devise a backup strategy for your entire SAS Intelligence Platform configuration, see "Best Practices for Backing Up and Restoring Your System" in the *SAS Intelligence Platform: System Administration Guide* at http://support.sas.com/documentation/onlinedoc/intellplatform/index.html#intell92.

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