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TECHNICAL PAPER

**USING VERSION 9.2 OF THE SAS BUSINESS INTELLIGENCE
PLATFORM TO ASSIGN UNIQUE SAS APPLICATION SERVERS TO
SAS OFFER OPTIMIZATION FOR COMMUNICATIONS**

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Introduction

With the advent of version 9.2 of the SAS System for Business Intelligence (BI), many SAS products will take advantage of the concept of a SAS Application Server. A SAS Application Server is a logical entity that represents the SAS server tier. This logical entity contains specific servers (for example, a SAS Workspace Server or a SAS Stored Process Server) that execute SAS code. Depending upon what software is licensed and purchased, a SAS Application Server will be created during deployment and configuration. By default, a typical SAS BI deployment will see two SAS Application Servers created.

SAS solutions will also leverage the use of a SAS Application Server and at times, may require “exclusive” access to one. “Exclusive” means that the fundamental nature of the SAS Application Server, or the entities it contains, will be changed in such a way that it no longer resembles the one created by default for the SAS BI platform. These changes make it usable only by a specific SAS solution or suite of solutions.

SAS Offer Optimization for Communications is a solution going out after the release of SAS 9.2, and it needs “exclusive” access to SAS Application Servers as defined above. Furthermore, a SAS Workspace Server, SAS Stored Process Server, a SAS OLAP Cube Server, and a SAS Pooled Workspace Server are required. There are two usage cases for SAS Offer Optimization for Communications.

1. SAS Offer Optimization for Communications deployed and configured on a “clean” system. In this case, “clean” implies that while there may be previous versions of SAS software present, no SAS 9.2 software is on the system. The customer has purchased SAS Offer Optimization for Communications as well as other SAS offerings and intends to deploy and configure them.
2. SAS Offer Optimization for Communications deployed and configured on an already configured system with SAS 9.2. In this case, SAS Offer Optimization for Communications is an upsell and is being added to an existing SAS 9.2 deployment, which more than likely already contains one or more SAS Application Servers.

Each of these cases is discussed below.

Deployment and Configuration on a “Clean” System

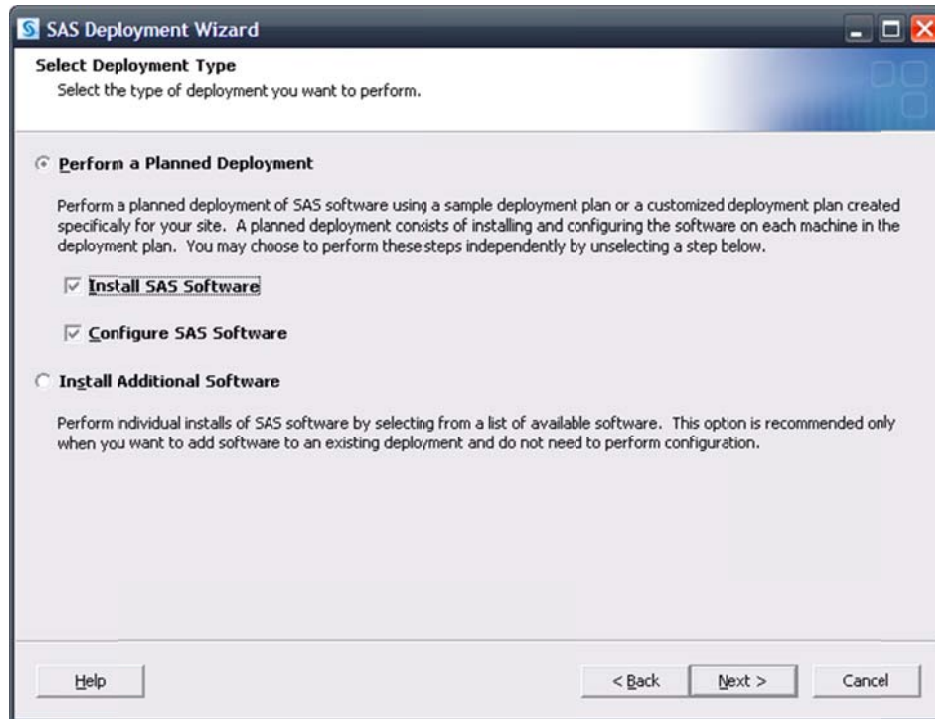
A “clean” system implies that no SAS 9.2 software is on the customer’s system. A customer would have ordered SAS Offer Optimization for Communications along with any other required/dependent products. A deployment plan file would be created and an image made available. The customer (or consultant) would make sure the third-party requirements and the pre-install checklist items had all been met and then could begin installation and configuration using the SAS Deployment Wizard. Software updates, if applicable, will be installed along with whatever products are in the plan.

In this example, the default SAS Application Server created during this deployment will be associated with SAS Offer Optimization for Communications. As noted above, SAS Offer Optimization for Communications requires “exclusive” use of a SAS Application Server. Thus, if a generic SAS Application

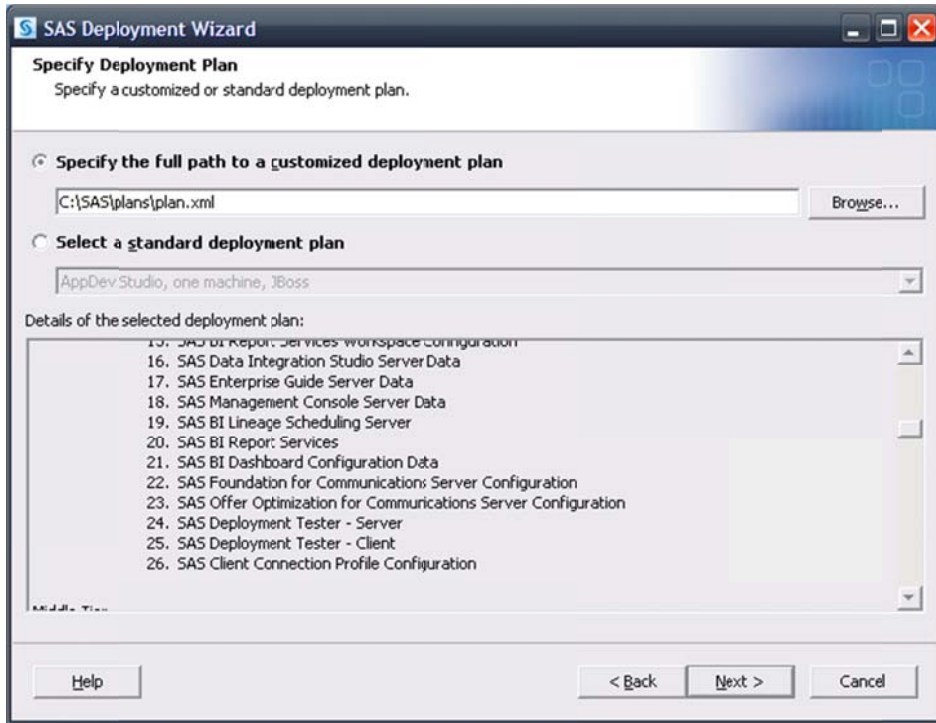
Server is needed, the SAS Deployment Wizard will have to be executed more than once. See the appendix for more details for creating such a SAS Application Server.

Begin by starting the SAS Deployment Wizard.

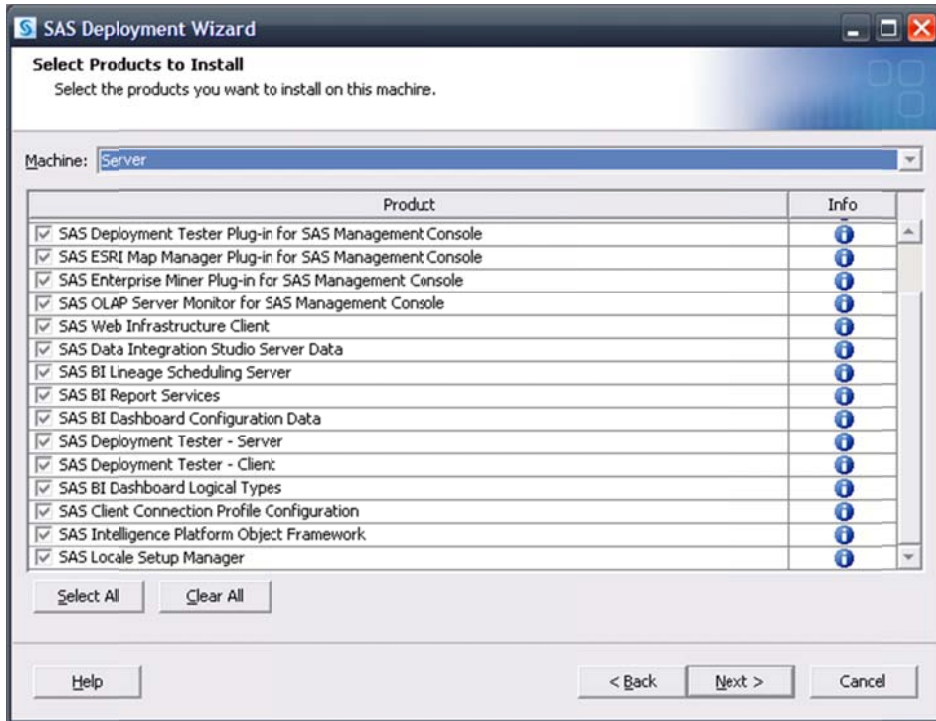
After specifying the order, select a deployment type, usually a “Planned Deployment” with **Install SAS Software** and **Configure SAS Software** selected.



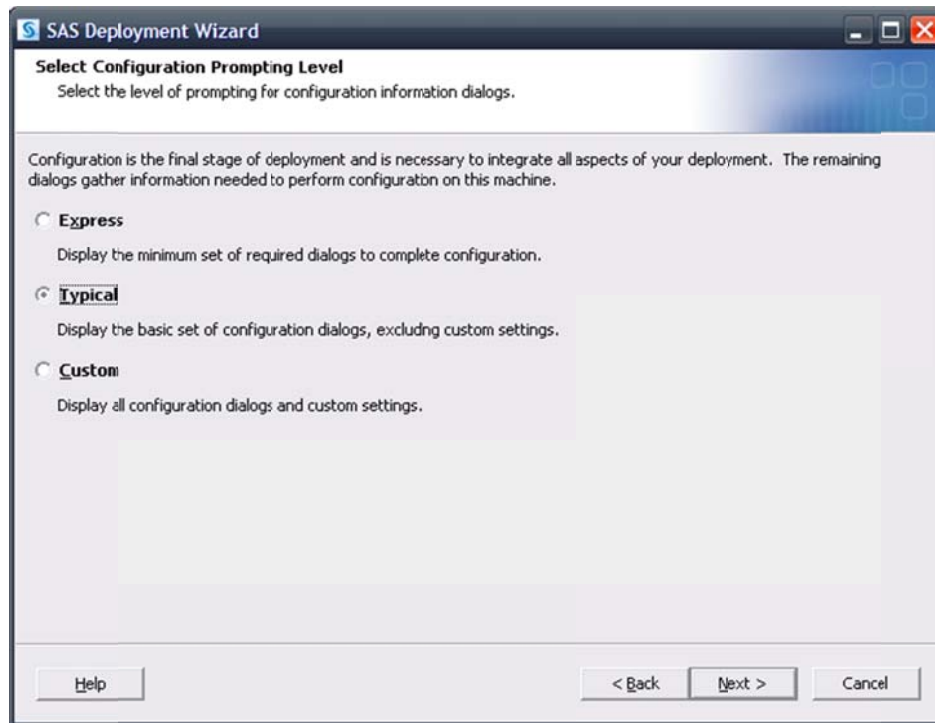
Next, select the deployment plan provided with the image.



Specify the machine. In this example, the **Server** machine is used.



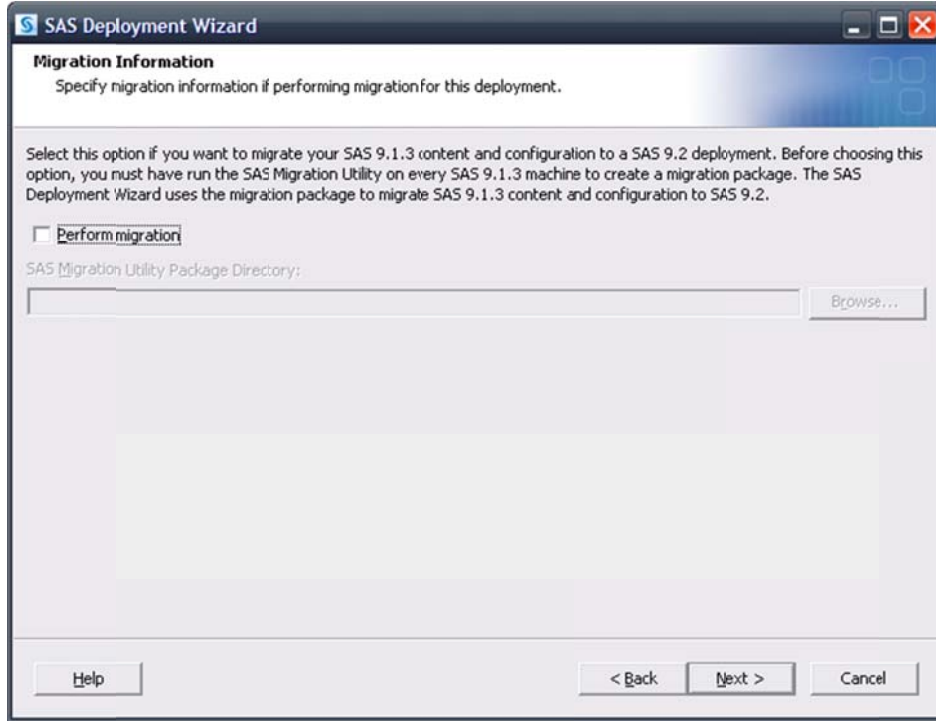
Continue through the pages until the **Select Configuration Prompting Level** page opens.



The **Typical** prompting level can be used, but if more customizations are desired, select **Custom** and refer to the *SAS Intelligence Platform: Installation and Configuration Guide* at <http://support.sas.com/documentation/cdl/en/big/60946/HTML/default/titlepage.htm> for additional information.

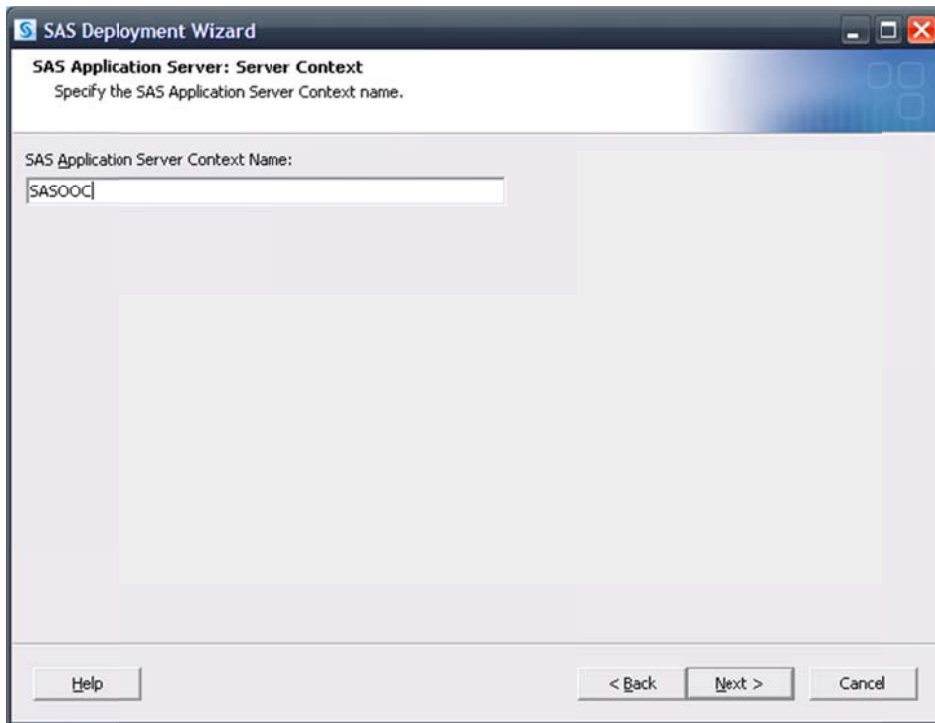
Continue on, specifying appropriate values for your system.

In the event previous versions of SAS software are present, such as SAS 9.1.3, migration may be required or selected. Please see the *SAS Intelligence Platform: 9.1.3 to 9.2 Migration Guide* at <http://support.sas.com/documentation/cdl/en/bimig/61696/HTML/default/titlepage.htm> for more details and information.



Continue on, specifying appropriate values for your system, including required user credentials information.

Of special interest is the **SAS Application Server: Server Context** page.



Since SAS Offer Optimization for Communications requires “exclusive” access to a SAS Application Server, using a name that identifies the SAS Application Server with SAS Offer Optimization for Communications is suggested. In this example, the name **SASOOC** has been chosen. Again, if a non-SAS Offer Optimization for Communications SAS Application Server context is desired, see the appendix for details on creating one. If an additional SAS Application server is going to be created, it is important to make note of what ports are associated with the various SAS servers to avoid potential conflicts.

Continue through the pages, addressing assorted Database Schema credentials. Upon reaching the **Deployment Summary**, click **Start** to begin the installation and configuration process. When the SAS Deployment Wizard finishes, SAS Offer Optimization for Communications and its dependent components have been deployed and configured on the selected **Server** machine and are ready to use.

Deployment and Configuration in an Upsell Scenario

In this case, we use an “upsell scenario” involving a customer purchasing SAS 9.2 and other products, then purchasing SAS Offer Optimization for Communications later and adding it to their existing 9.2 environment. It is important to note that, with the release of the 9.2M3 SAS System for Business Intelligence, maintenance releases are available. For more detailed information, see *Maintenance Planning for SAS 9.2* at

<http://support.sas.com/documentation/cdl/en/biig/60946/HTML/default/titlepage.htm>.

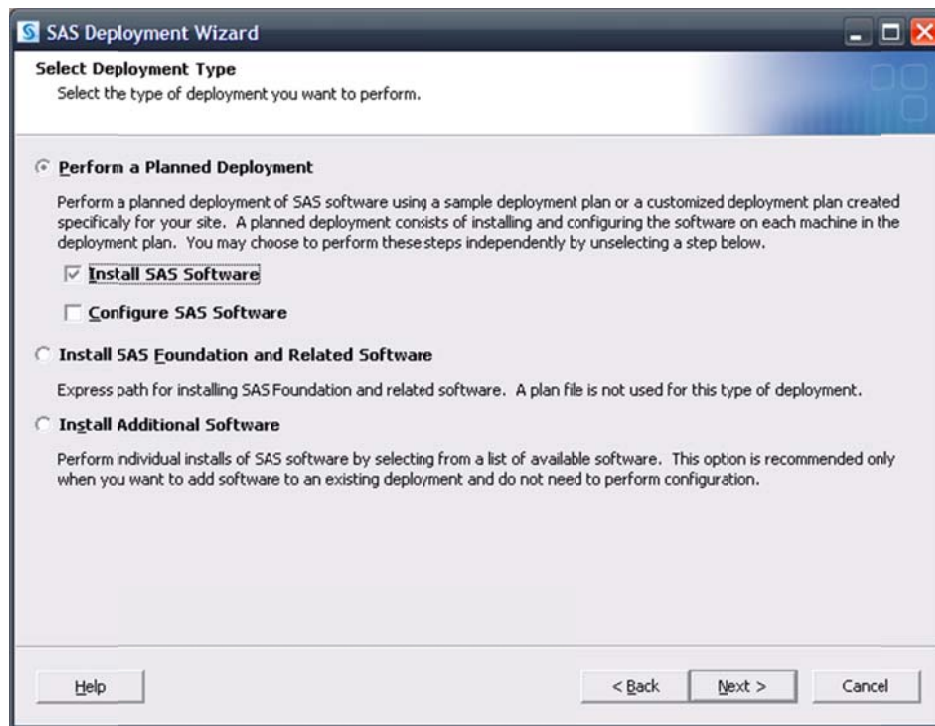
Before invoking the SAS Deployment Wizard, SAS strongly recommends that any active SAS sessions on the machine SAS Offer Optimization for Communications is going to be installed on, including but not

limited to SAS Object Spawners and SAS servers, are stopped. Upon invoking the SAS Deployment Wizard, if any product updates are required, the SAS Deployment Wizard goes into update mode and installs those product updates on that machine. Updates that are installed in a maintenance release apply only to software that is already installed at your site. No new software is installed during a maintenance installation. When all updates are installed, customers will have the opportunity to update any existing configurations. It is strongly recommended that all configurations be updated, but in particular, the configuration intended to be used with SAS Offer Optimization for Communications should be updated. See *How to Install and Configure the Third Maintenance Release for SAS 9.2* at <http://support.sas.com/documentation/cdl/en/whatsdiff/63542/HTML/default/installsteps.htm> for more information.

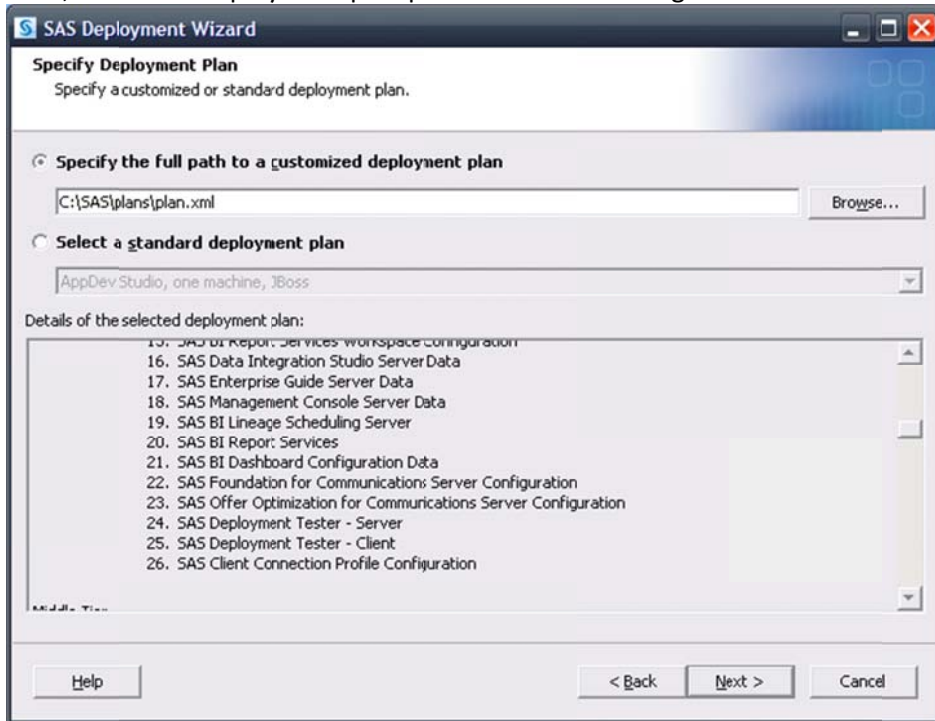
Since this is an “upsell scenario”, existing SAS Application Servers will more than likely be present. As a result, selecting a SAS Application Server to use with SAS Offer Optimization for Communications is important. The customer can use an existing SAS Application Server, such as **SASApp**, or choose to create a new SAS Application Server. The latter approach is more flexible since any existing SAS Application Server configurations and definitions would not be modified. Both approaches are discussed below.

Using an Existing SAS Application Server

When all intended configuration updates are complete, make sure that all SAS servers are stopped. Since SAS Offer Optimization for Communications software has yet to be installed, SAS recommends that no SAS software is running during installation. After stopping all running SAS servers and applications, invoke the SAS Deployment Wizard, choose a “Planned Deployment,” and specify only **Install SAS Software**.

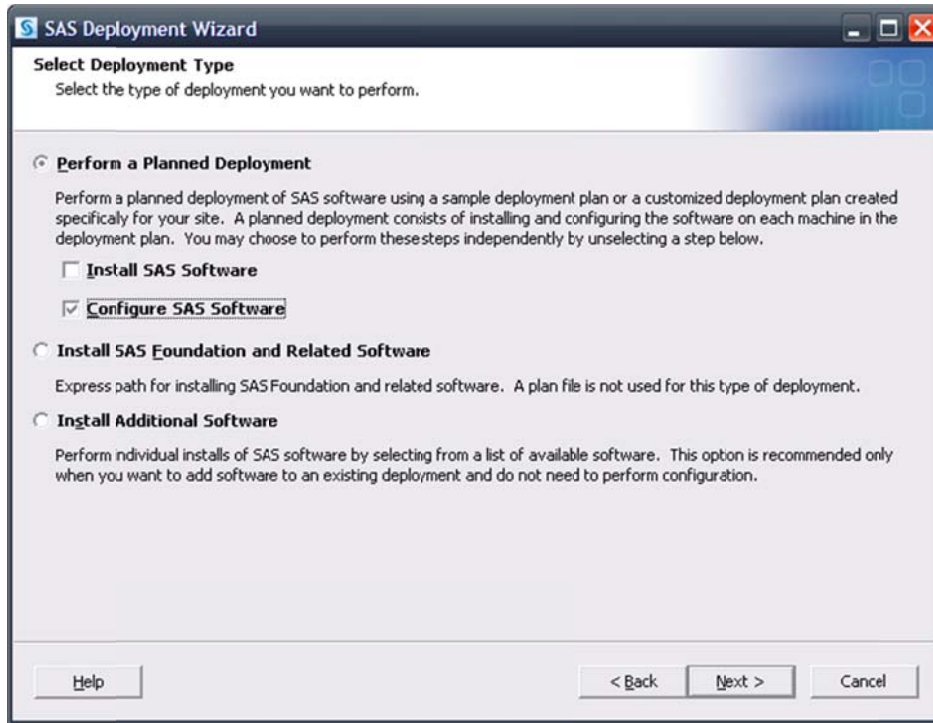


Next, select the deployment plan provided with the image.

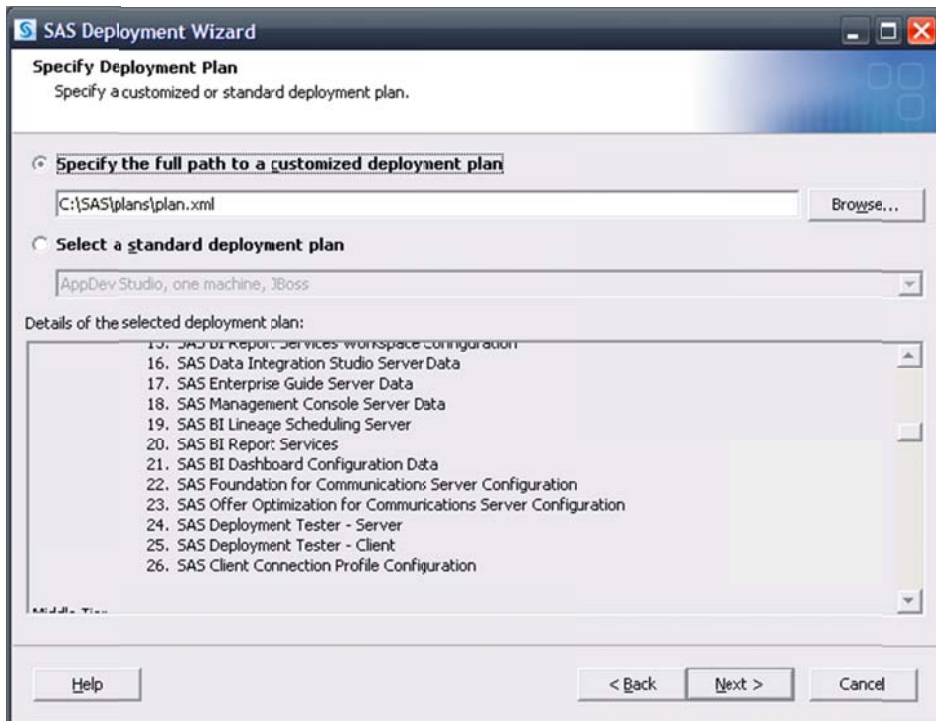


Select the machine. For this example, the **Server** machine is used. Continue on through the pages, and when you reach the **Deployment Summary**, click **Start** to begin the installation process. When the SAS Deployment Wizard finishes, SAS Offer Optimization for Communications and its dependent components have been installed on the selected **Server** machine and are ready to be configured. Restart all SAS servers and spawners and then invoke the SAS Deployment Wizard.

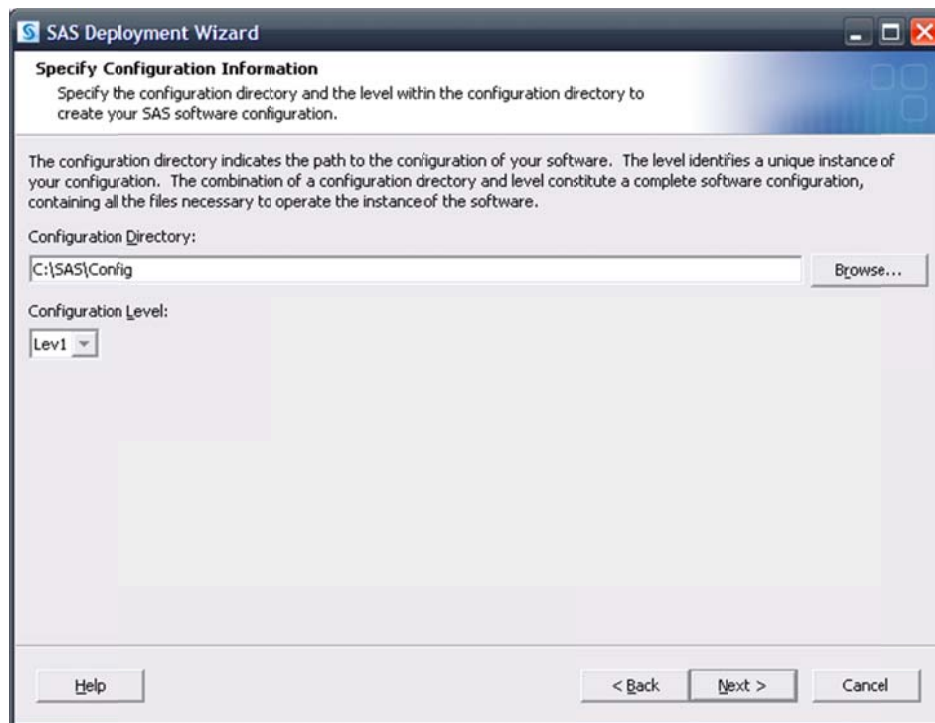
Select a “Planned Deployment” and specify **Configure SAS Software**.



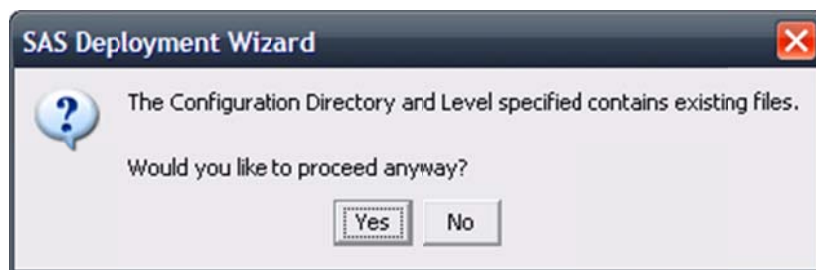
Next, specify the deployment plan provided with the image.



Select the machine. For this example, the **Server** machine is used. When prompted, specify the same configuration directory and level that is currently in use.

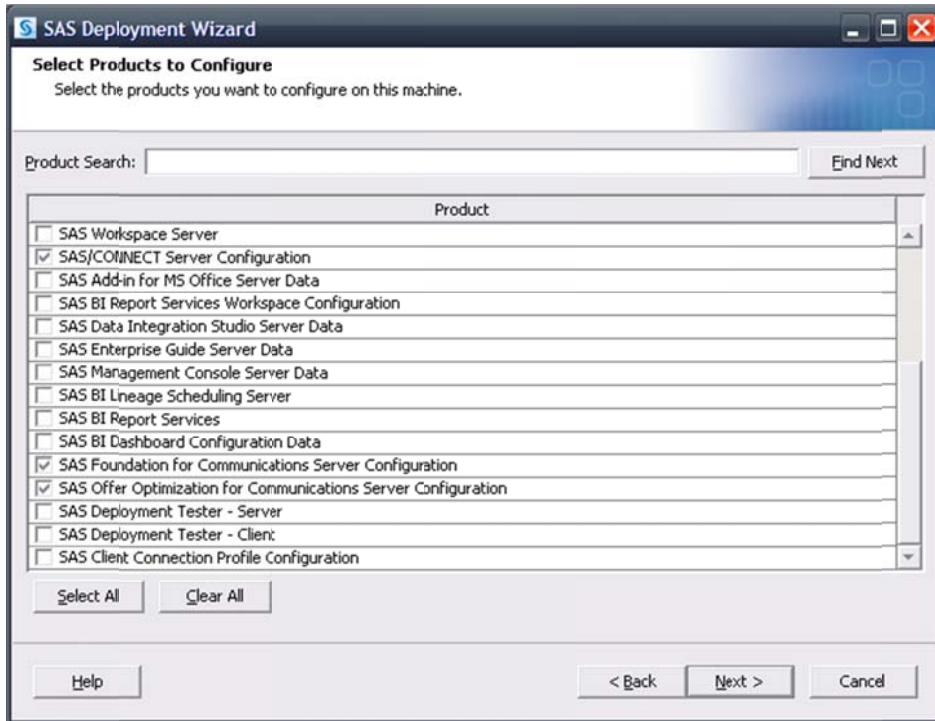


The SAS Deployment Wizard will recognize that this configuration directory and level directory already contain files.



Click **Yes** to proceed.

A page listing the products to configure opens.



By default, the SAS Deployment Wizard will present only products that have not been configured. Any products required by SAS Offer Optimization for Communications but not yet configured will be selected. Since an existing SAS Application Server is going to be used in this configuration, no SAS servers such as a SAS Workspace Server need to be selected. Select **Next** to proceed.

The same values that were used during the initial deployment must again be used. Specify the host information for the SAS Metadata Server as well as valid credentials for the SAS Administrator, the SAS Trusted User, and SAS Spawnd Servers account.

In the event a SAS/CONNECT Server configuration is needed, specify the SAS Application Server you intend to use for SAS Offer Optimization for Communications as a dependency.

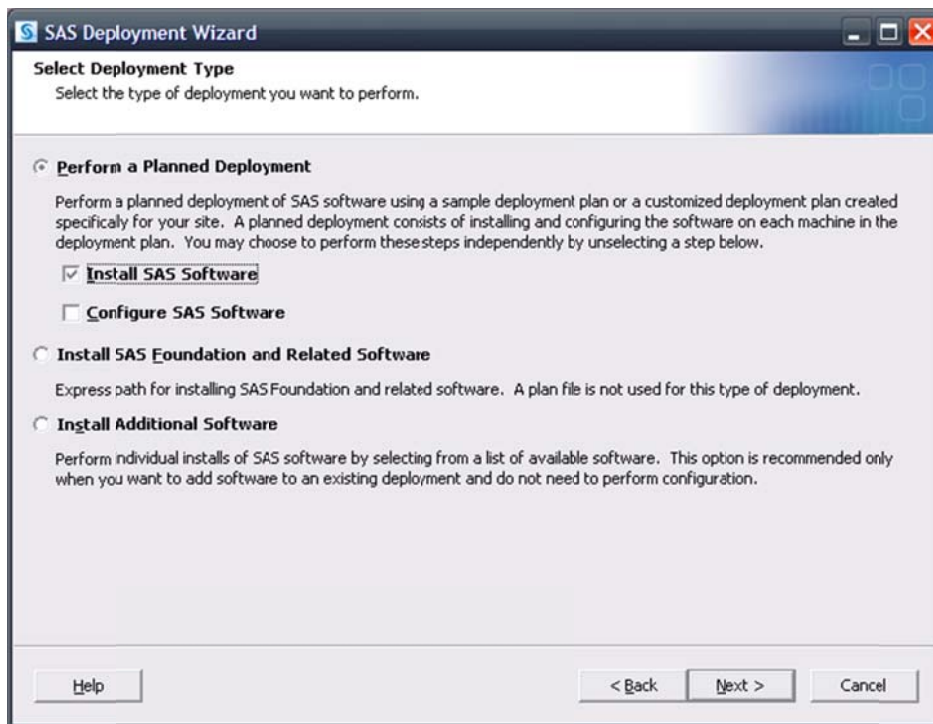
Continue on, specifying the appropriate information. Depending on the number of SAS Application Servers in the configuration specified, pages will open, asking you to select the SAS Application Server dependencies for SAS Foundation for Communications Server and SAS Offer Optimization for Communications. If these pages appear, select the SAS Application Server intended for use.

Continue through the pages, addressing assorted Database Schema credentials. Upon reaching the **Deployment Summary**, click **Start** to begin the configuration process. When the SAS Deployment Wizard finishes, SAS Offer Optimization for Communications and its dependent components will be deployed on the selected **Server** machine and are ready to use.

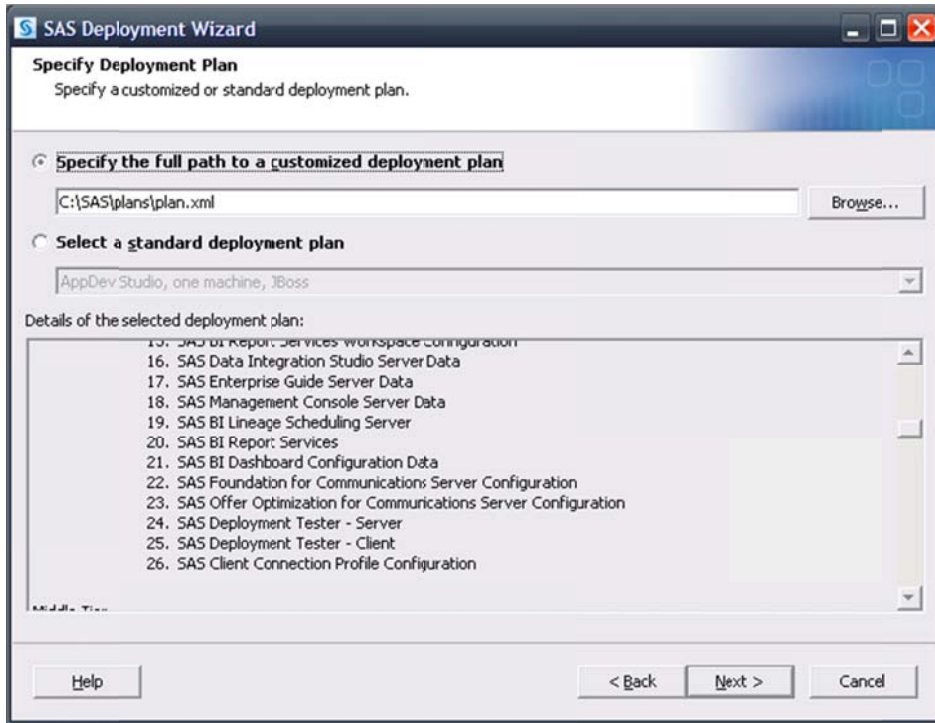
Creating a New SAS Application Server

When all intended configuration updates are complete, make sure that all SAS servers are stopped. Since SAS Offer Optimization for Communications software has yet to be installed, SAS recommends that no SAS software is running during installation.

After stopping all running SAS servers and applications, invoke the SAS Deployment Wizard, choose a “Planned Deployment,” and specify only **Install SAS Software**.

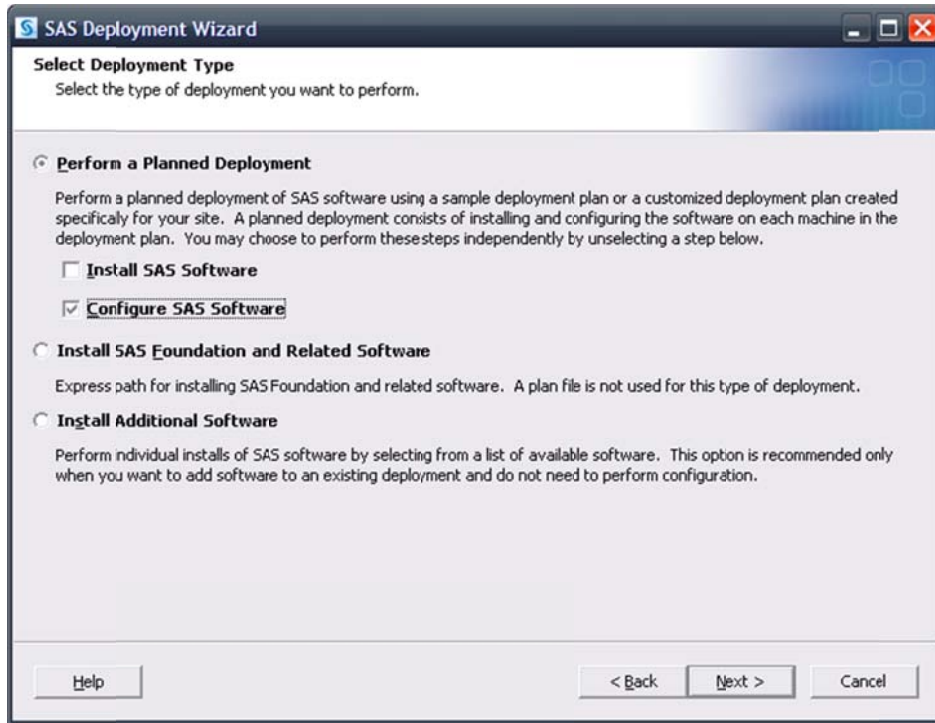


Next, select the deployment plan provided with the image.

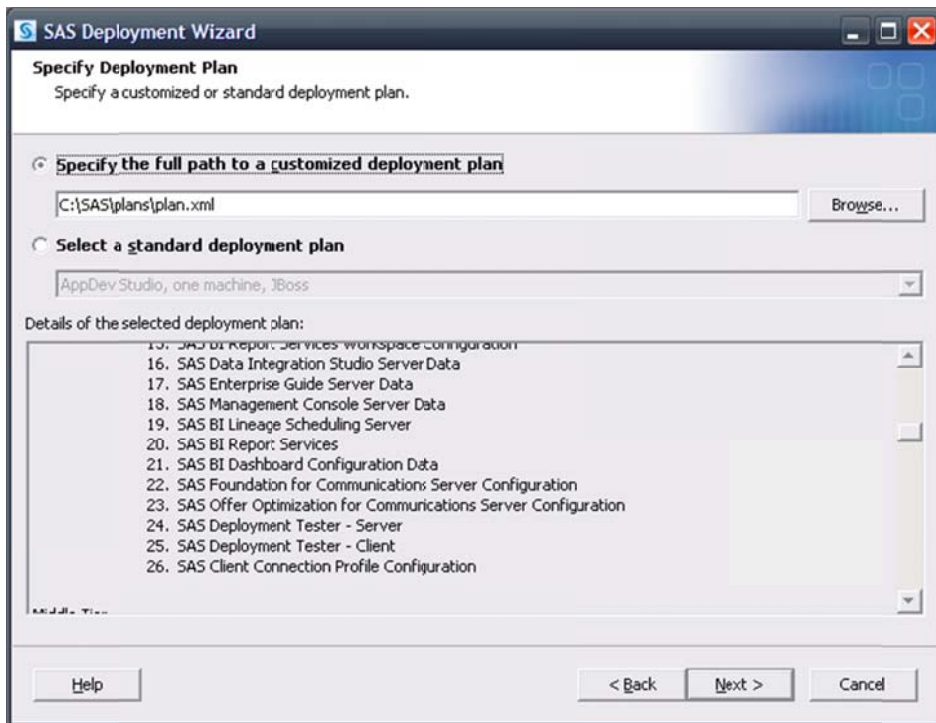


Select the machine. For this example, the **Server** machine is used. Continue on through the pages and upon reaching the **Deployment Summary**, click **Start** to begin the installation process. When the SAS Deployment Wizard finishes, SAS Offer Optimization for Communications and its dependent components will be installed on the selected **Server** machine and are ready to be configured. Restart all SAS servers and spawners and then invoke the SAS Deployment Wizard.

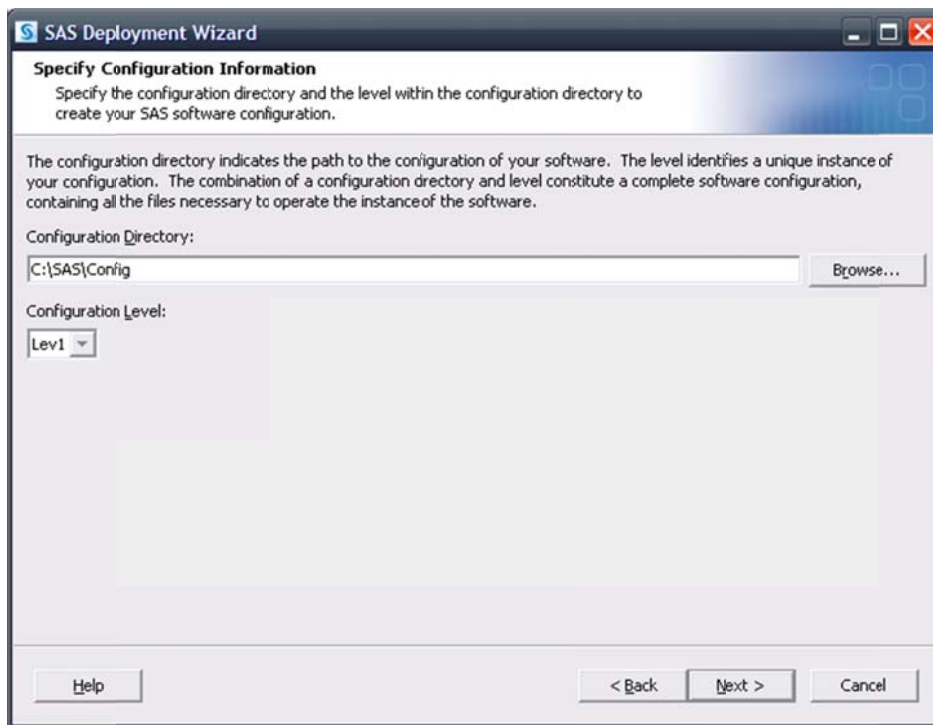
Select a "Planned Deployment," and specify only **Configure SAS Software**.



Next, specify the deployment plan provided with the image.



Select the machine. For this example, the **Server** machine is used. When prompted, specify the same configuration directory and level that is currently in use.

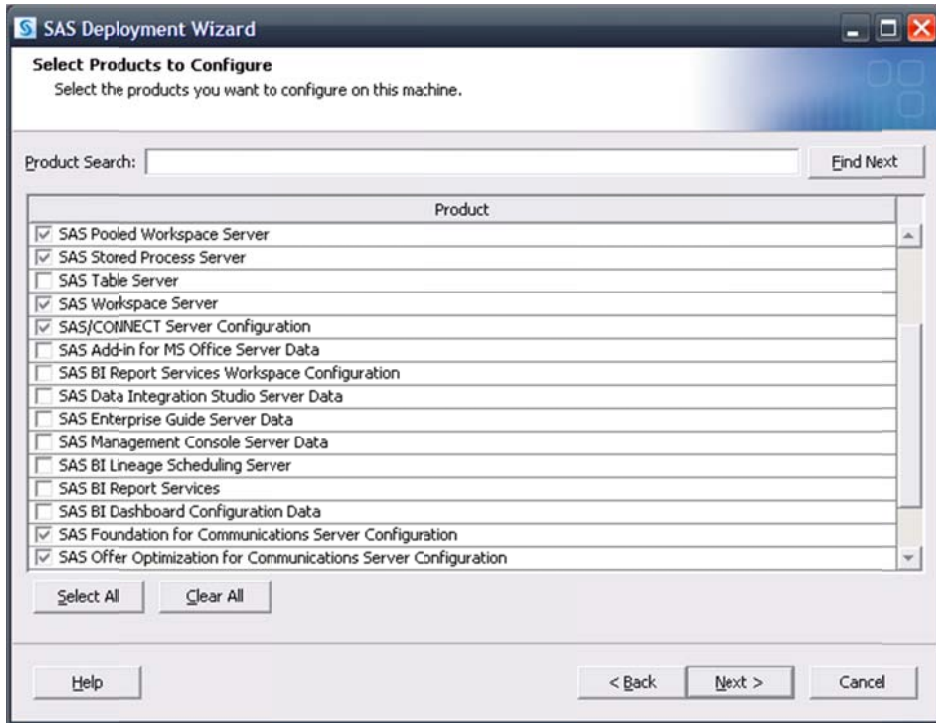


The SAS Deployment Wizard will recognize that this configuration directory and level directory already contain files.



Click **Yes** to proceed.

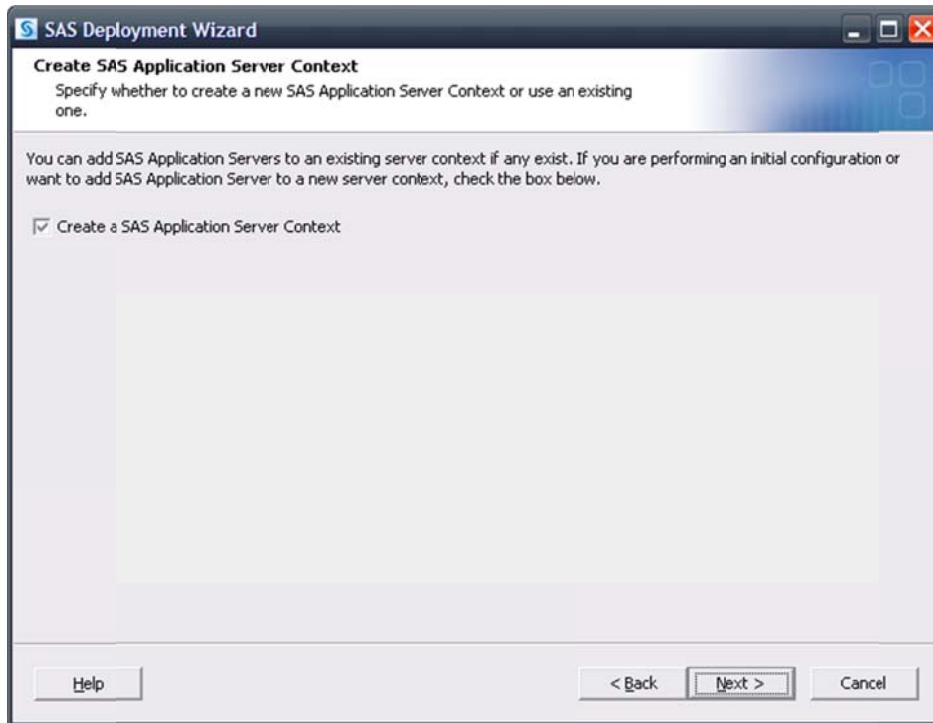
A page listing the products to configure opens. By default, the SAS Deployment Wizard will present only products that have not been configured. Any products required by SAS Offer Optimization for Communications but not yet configured will be selected. However, since a new SAS Application Server is going to be created, the SAS servers required and used by SAS Offer Optimization for Communications will have to be configured.



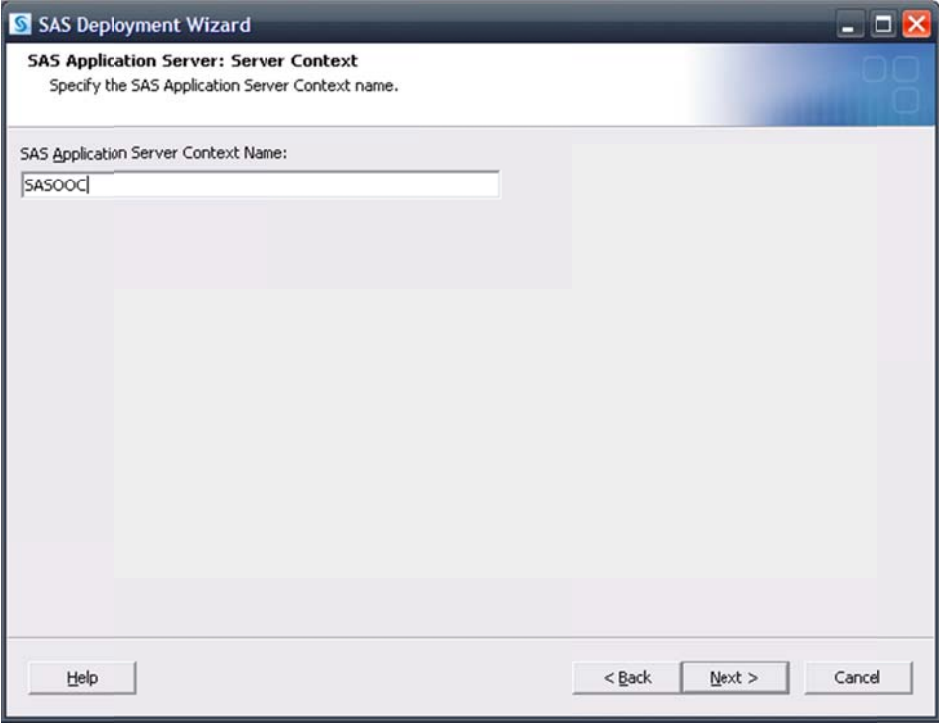
Therefore, a SAS Pooled Workspace Server, a SAS Workspace Server, a SAS OLAP Cube Server, and a SAS Stored Process Server have been specified in addition to SAS Offer Optimization for Communications to provide the required “exclusive” access. Select **Next** to proceed.

The same values that were used during the initial deployment must be used here. Specify the host information for the SAS Metadata Server as well as valid credentials for the SAS Administrator, the SAS Trusted User, and SAS Spawned Servers account.

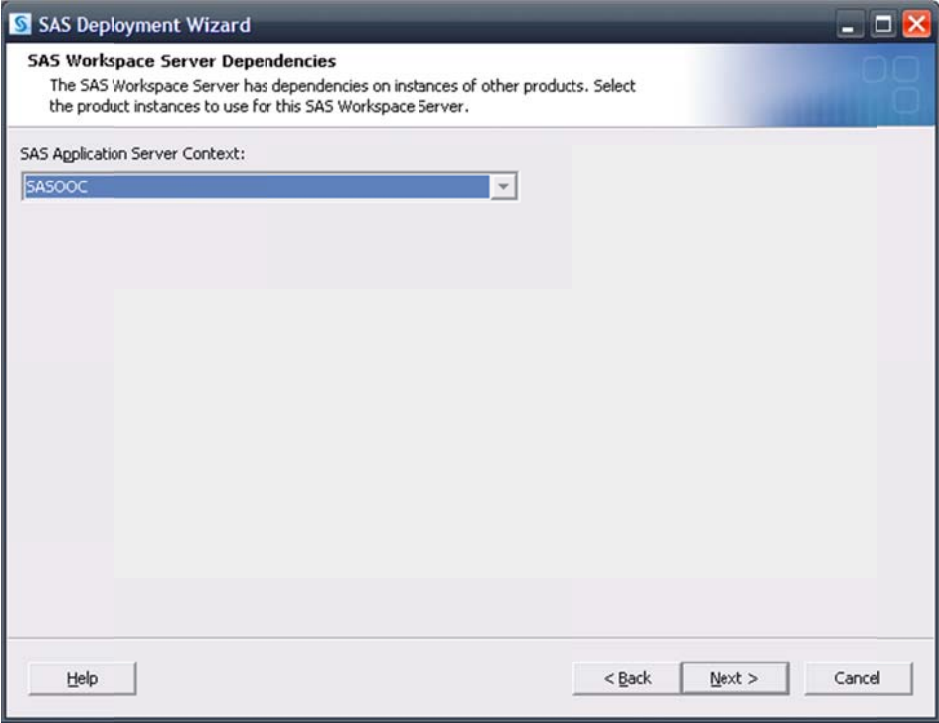
Continue on, specifying the same connection information until the **Create SAS Application Server Context** page opens. Select **Create a SAS Application Server Context**.



A page prompting for the name of the SAS Application Server opens. A unique name is required, and SAS suggests that a mnemonic name, easily associated with SAS Offer Optimization for Communications, is used. In this example, **SASOOC** is specified.



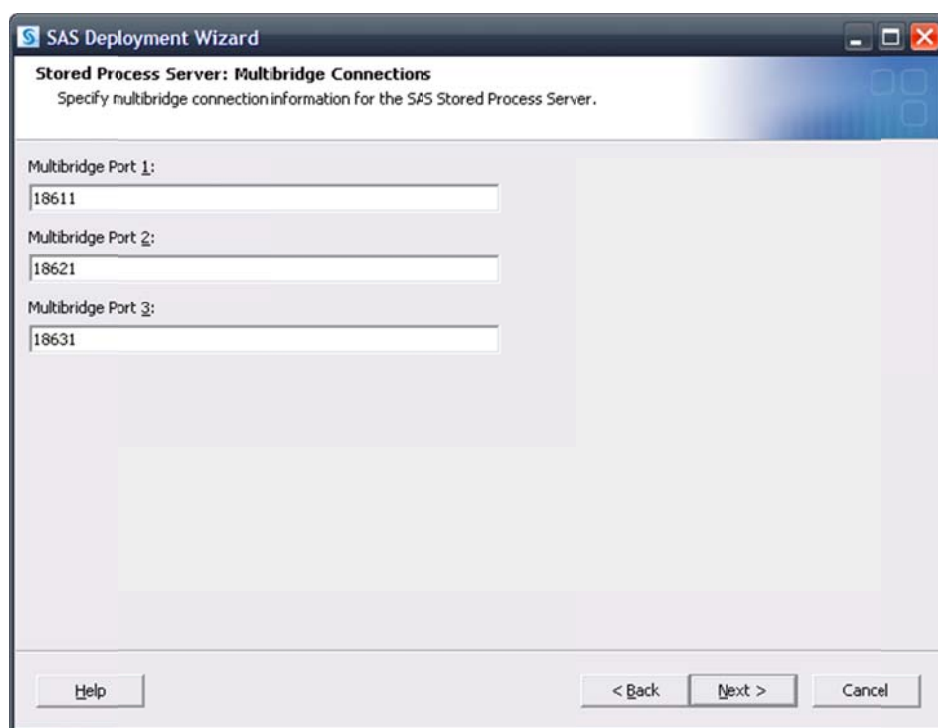
Each server being added to the SAS Application Server will prompt for which context to use.



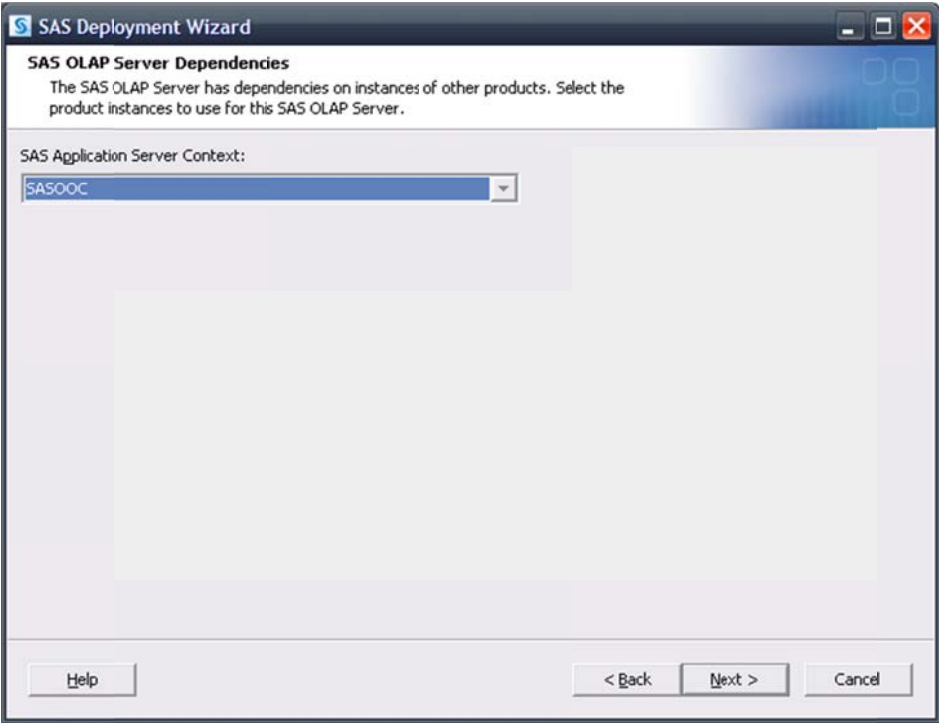
SASOOC should be the selection for each server.

Each server being added will also prompt for their main port. The SAS Workspace Server and SAS Pooled Workspace Server being added to **SASOOC** can use whatever port is desired, including the same port the previous configuration might have used for them (provided that no other conflicts exist). The SAS 9.2 Object Spawner is fully capable of handling this issue such that no conflicts will occur in the spawning of these servers.

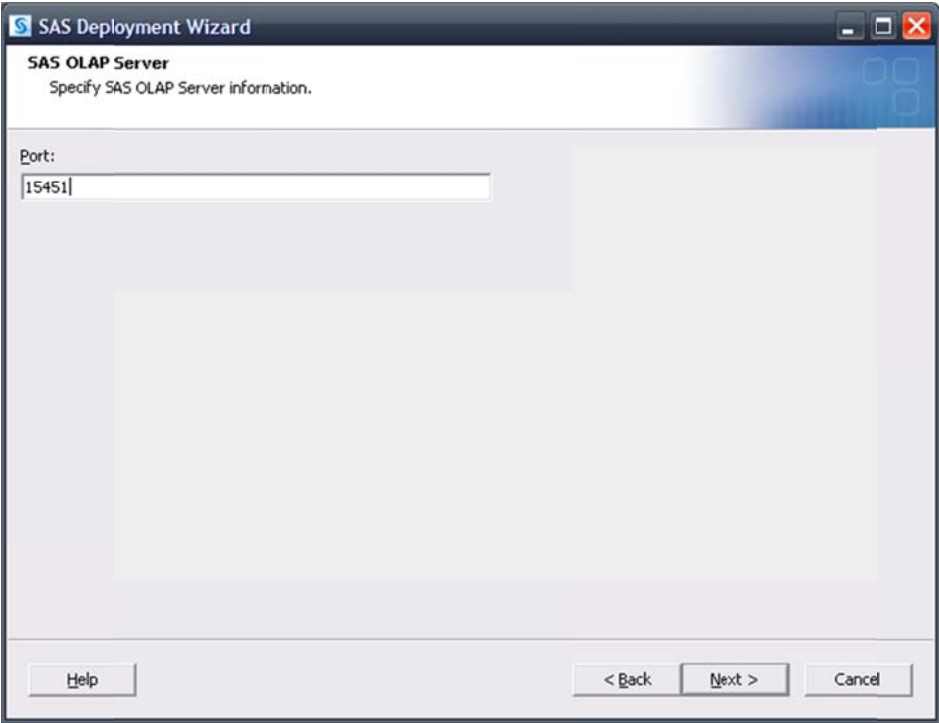
However, the SAS Stored Process Server needs unique port values for its multibrige connections. This example uses a variation on the default values of 8611, 8621, and 8631. Any ports that are appropriate and available can be used—they merely have to be unique and not in use.



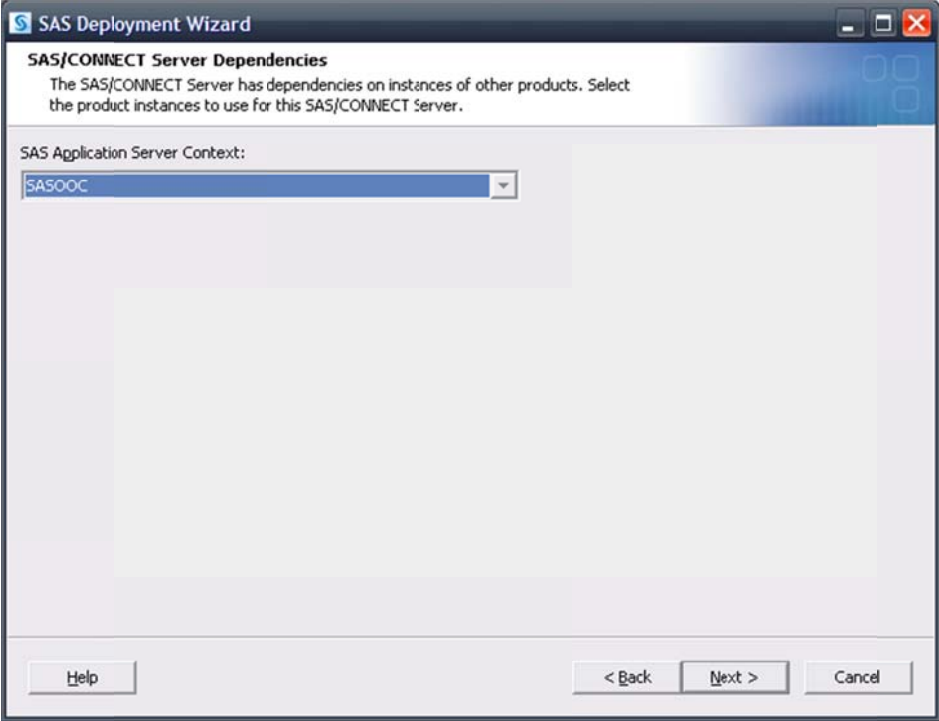
The SAS OLAP Cube Server being added should also be associated with **SASOOC**.



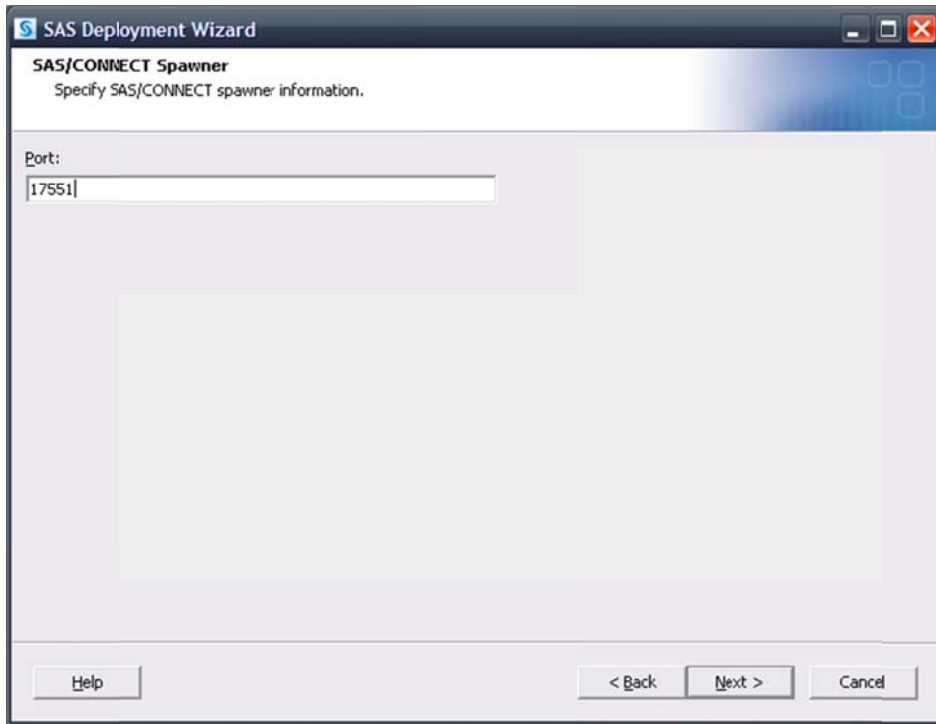
The SAS OLAP Cube Server must have a unique value for its main port. This example uses a variation on the default value of 5451. Any port that is appropriate and available can be used—it merely has to be unique and not in use.



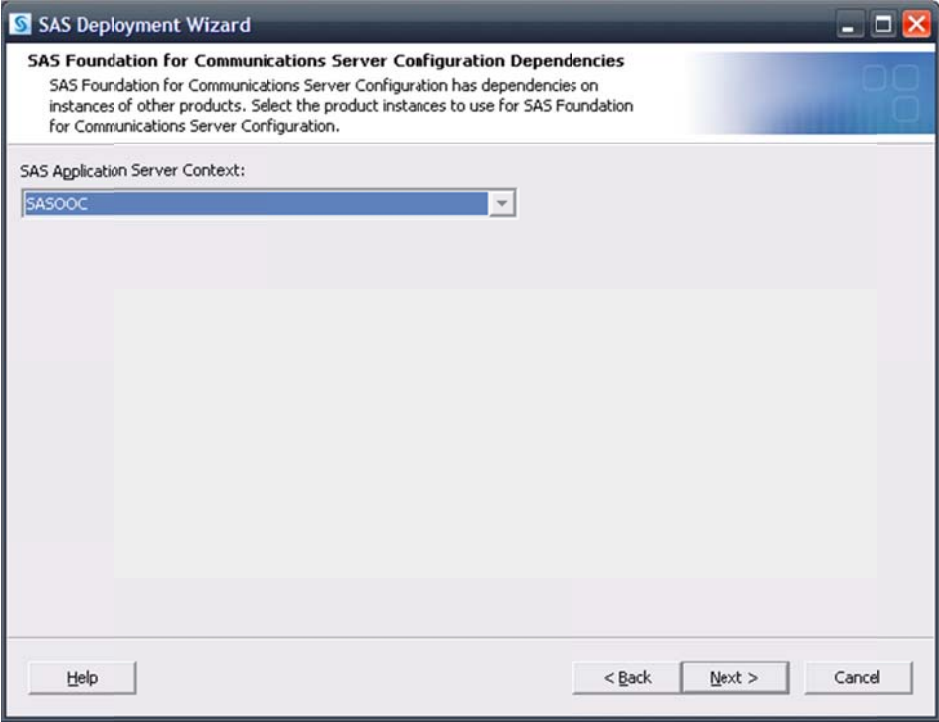
In the event an existing SAS/CONNECT Server is present in the deployment, an additional one should be selected and associated with **SASOOC**.



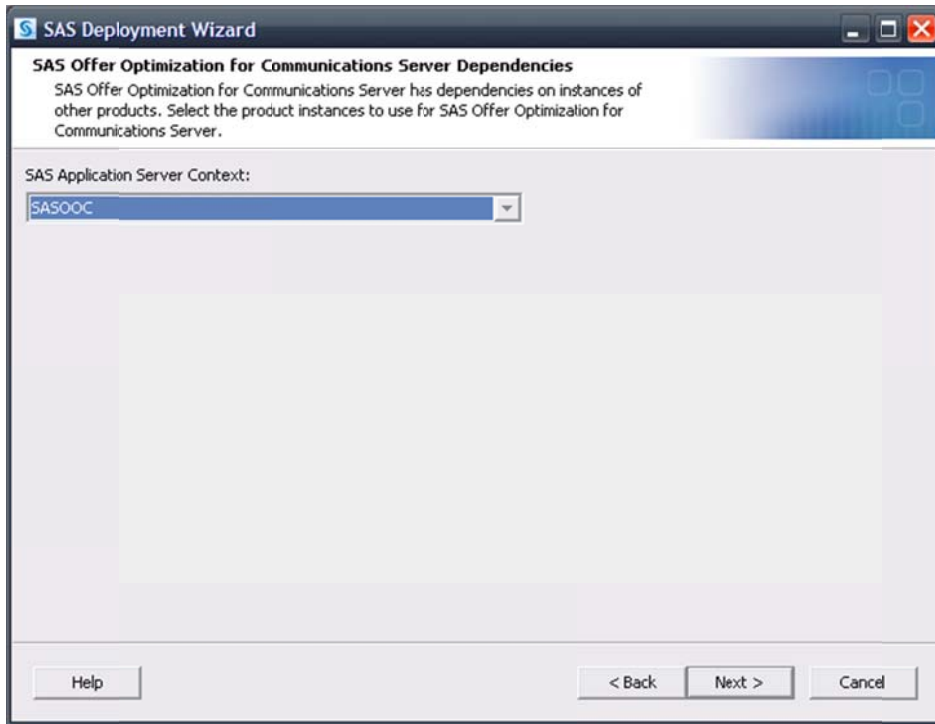
The SAS/CONNECT Spawner must have a unique value for its main port. This example uses a variation on the default value of 7551. Any port that is appropriate and available can be used—it merely has to be unique and not in use.



Continue through the pages, addressing assorted Database Schema credentials. When prompted, specify the dependency for SAS Foundation for Communications Server using the newly created SAS Application Server, **SASOOC**.



Do the same for SAS Offer Optimization for Communications.



Continue through the pages, addressing assorted Database Schema credentials. Upon reaching the **Deployment Summary**, click **Start** to begin the configuration process. When the SAS Deployment Wizard finishes, SAS Offer Optimization for Communications and its dependent components have been deployed and configured on the selected **Server** machine and are ready to use.

The *Configuration Guidelines and Details* will be presented upon completion of the SAS Deployment Wizard. As new servers are added that are managed by a SAS Object Spawner, the SAS Object Spawner associated with this configuration will need to be restarted to detect them.

Conclusions

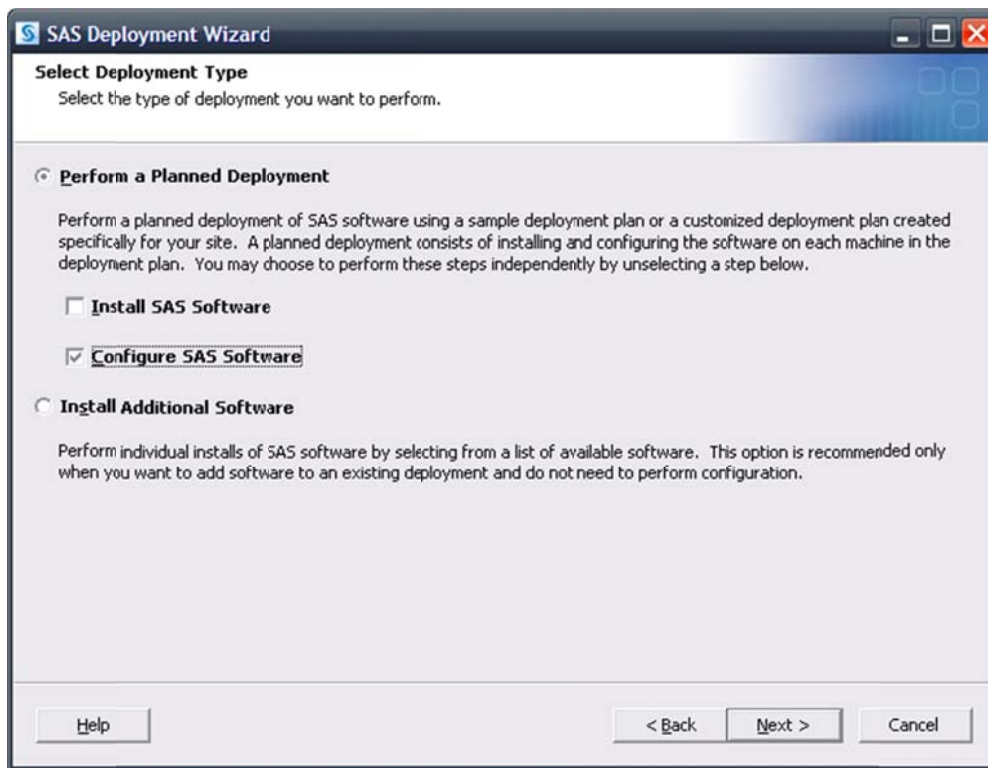
SAS Offer Optimization for Communications is a SAS solution that requires “exclusive” access to a SAS Application Server. The main issues to consider are what products are required in support of this solution and whether or not it will be installed and configured on top of an existing configuration. Either of the approaches discussed above should be able to handle most requirements. Be sure that unique ports are used when applicable and name things in such a way that they are easy to associate with the solution in question.

Appendix

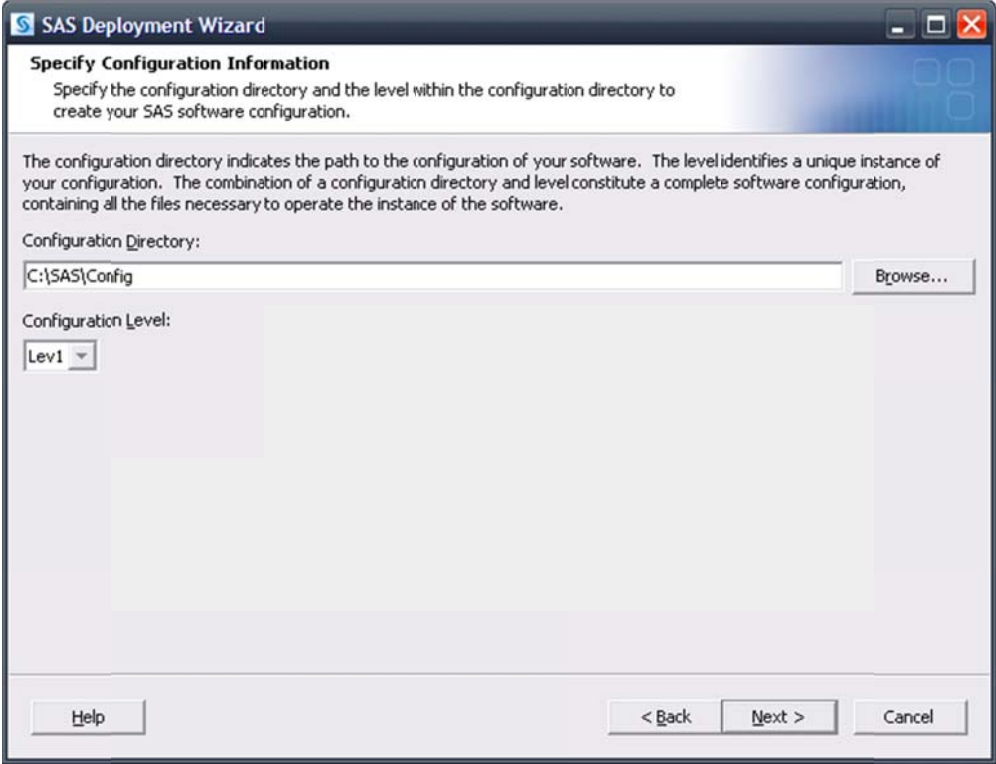
Creating a SAS Application Server Specific to the SAS Business Intelligence Platform

Deploying SAS Offer Optimization for Communications on a “clean” system resulted in the creation of the SAS Offer Optimization for Communications specific SAS Application Server, **SASOOC**. As mentioned above, in the event that an additional “vanilla” SAS Application Server is needed, the SAS Deployment Wizard can be used to create one.

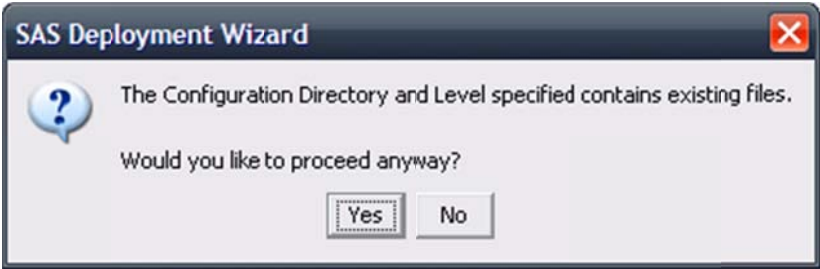
Invoke the SAS Deployment Wizard. Choose **Perform a Planned Deployment** and specify **Configure SAS Software**.



Choose the same plan and machine as before, for example, **Server**. Also, for this example, the same configuration location and level used in the initial deployment are specified.

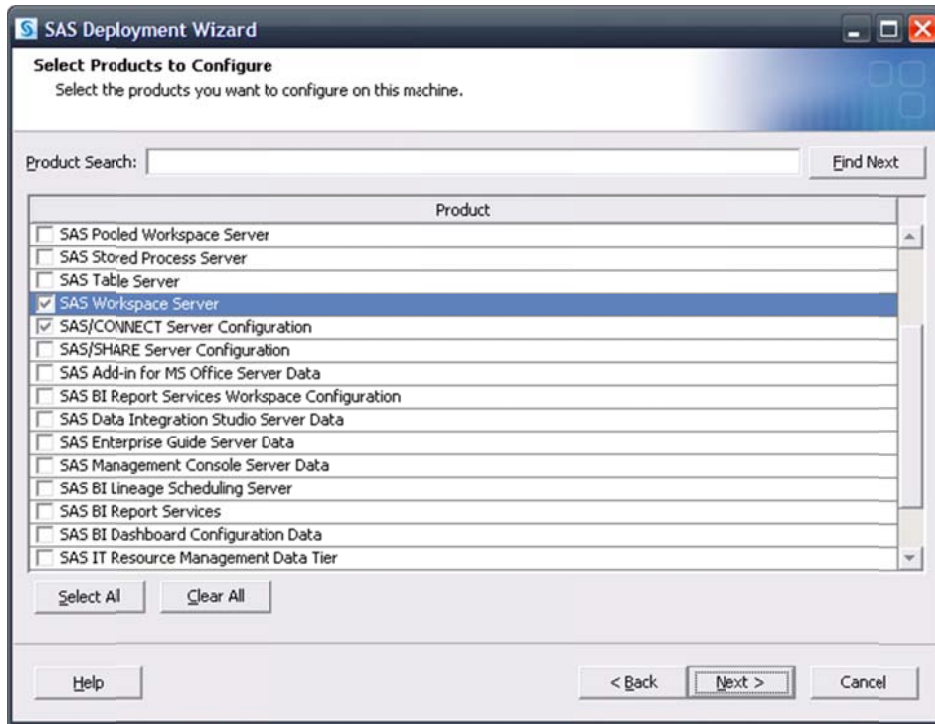


The SAS Deployment Wizard will recognize that this configuration directory and level directory already contain files.

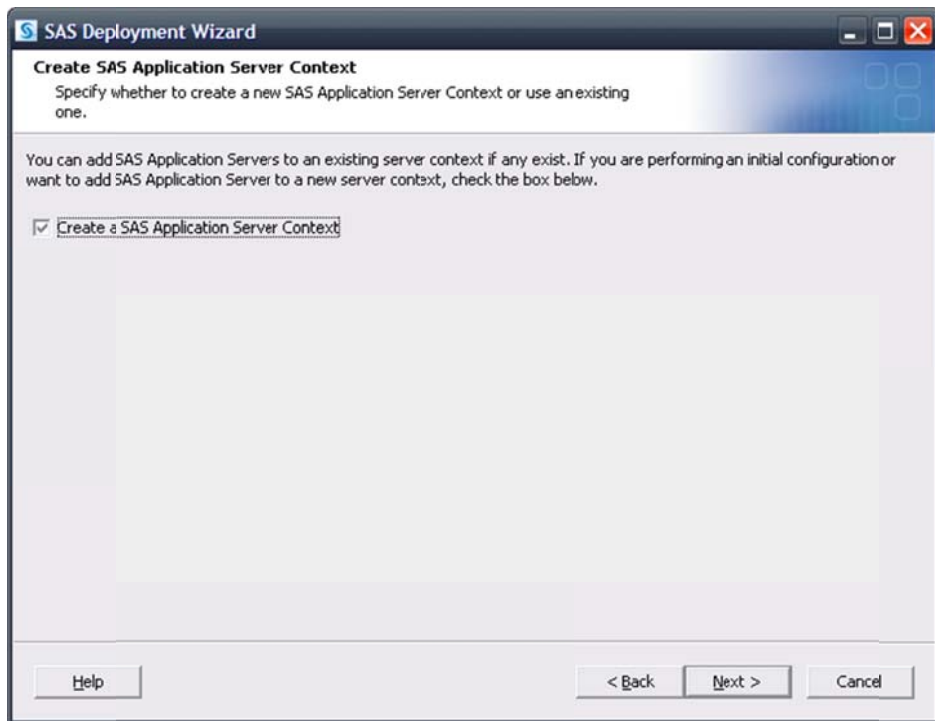


Click **Yes** to proceed.

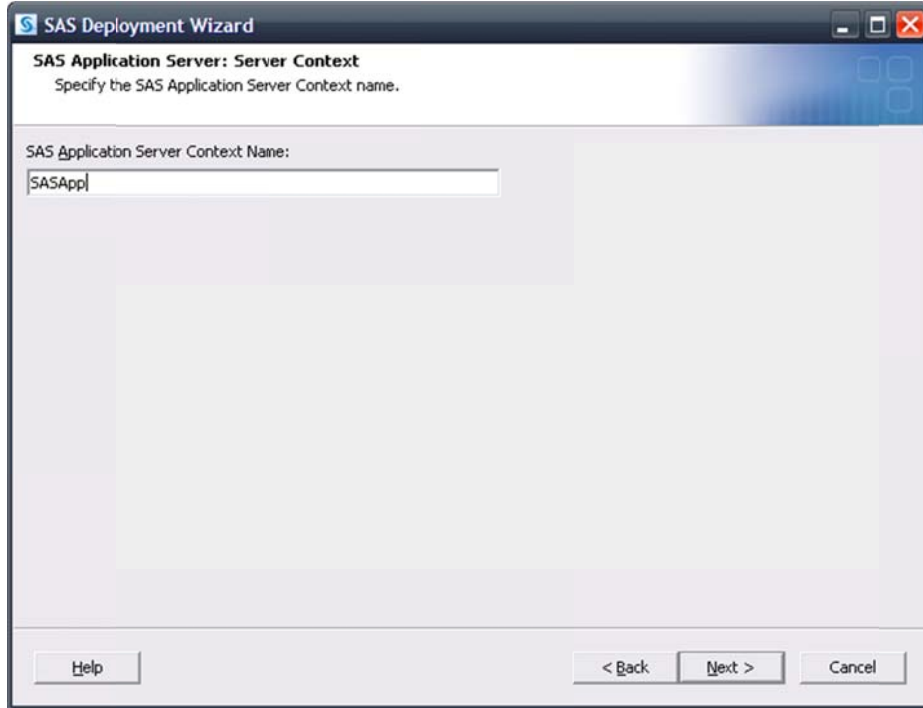
A page listing the products to configure opens. Choose any of the SAS Application Servers that are desired to be added to the SAS Application Server that will be created. The examples below show a SAS/CONNECT Server and a SAS Workspace Server.



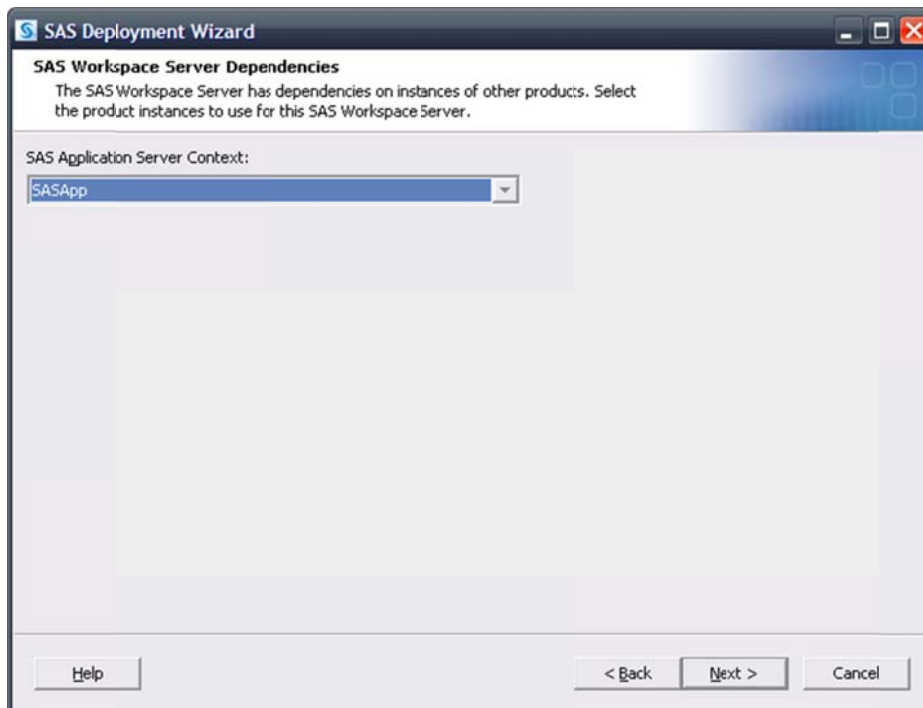
The SAS Application Server information opens next.



It is important here to create a SAS Application Server Context. This is done in order to provide an additional SAS Application Server. Assuming a SAS Application Server (**SASOOC**) specific to the SAS Offer Optimization for Communications solution has already been created, the usual default of **SASApp** can be used.

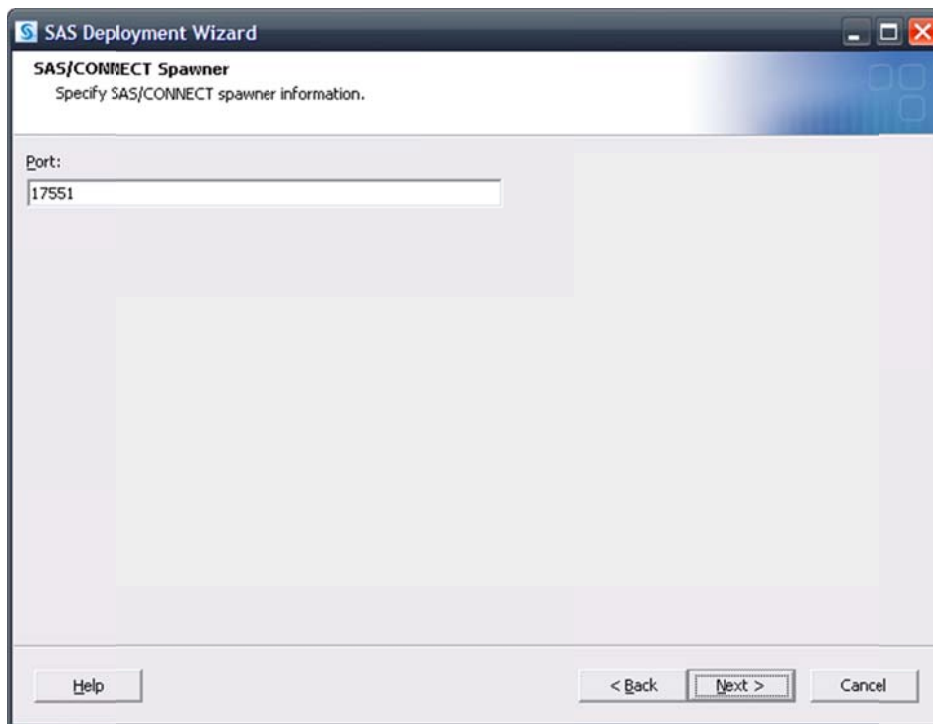


Dependencies for the application servers being added will then need to be specified.



Since these servers are intended to be associated to the new SAS Application Server, **SASApp** should be selected.

Each server being added will also prompt for their main port. For this example, the SAS Workspace Server can use whatever port is desired, including the same port the previous configuration might have used for them (provided that no other conflicts exist). The SAS 9.2 Object Spawner is fully capable of handling this issue such that no conflicts will occur in the spawning of this server. However, the SAS/CONNECT Spawner requires a unique port. 7551 is the default port for a SAS/CONNECT Spawner so for this example, a much different value is used, 17551. Any port that is appropriate and available can be used—it merely has to be unique and not in use.



Continue on through the pages and upon reaching the **Deployment Summary**, click **Start** to begin the configuration process. When the SAS Deployment Wizard finishes, SAS Offer Optimization for Communications and its dependent components have been deployed and configured on the selected **Server** machine and are ready to use.

The *Configuration Guidelines and Details* will be presented to upon completion of the SAS Deployment Wizard. As new servers are added that are managed by a SAS Object Spawner, the SAS Object Spawner associated with this configuration will need to be restarted to detect them.