

## Quick Start: Object Spawner and Workspace Server with a Basic SAS 9 Foundation Install

The following steps will help you configure and test the SAS Object Spawner on a Windows or UNIX host. Note that the SAS Metadata Server is not a part of this configuration.

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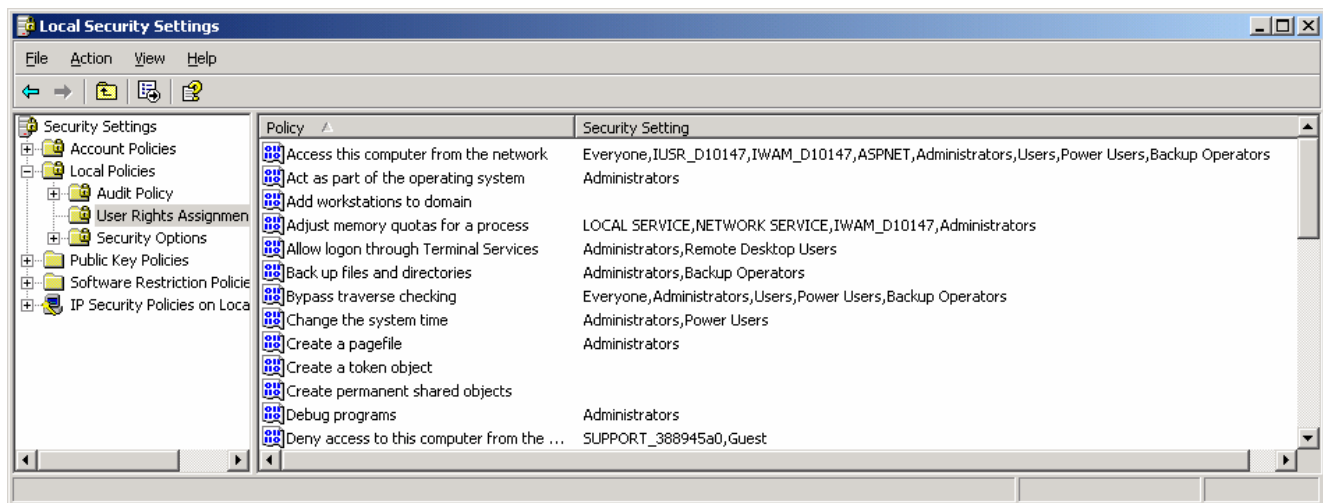
**Section 1: Windows** - These steps are performed on the SAS Server machine.

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### **STEP 1: Define Windows User Rights for Administrator.**

**Note:** This step is only necessary if you are not starting the object spawner as a Windows service.

Under the Windows Control Panel => Administrative Tools => Local Security Policy



In the Local Security Settings Window:

### **Security Settings => Local Policies => User Rights Assignment**

The user who invokes the object spawner must be a part of the Administrators group. The object spawner creates Windows processes as other users. To do this it must load the profile of the user that the process will run under. Only administrators can load user profiles. Add the "Administrators" group to the following user rights:

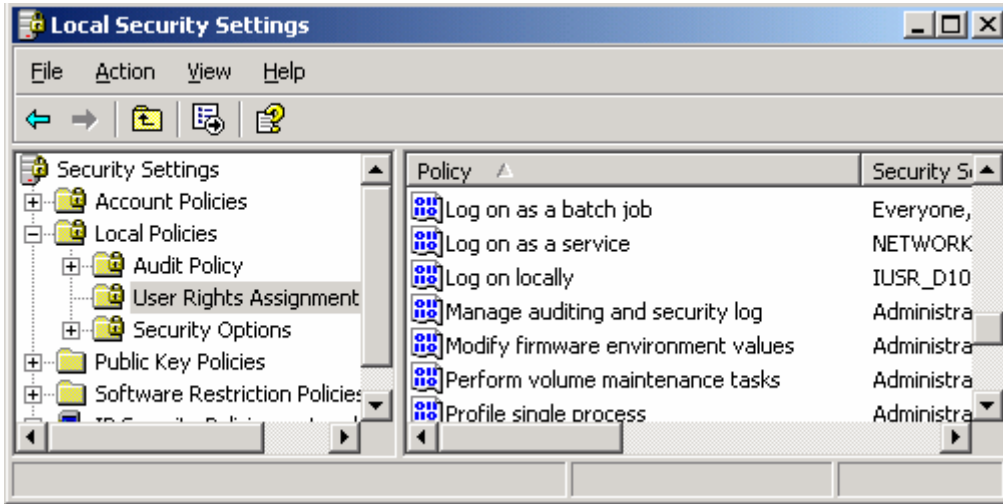
- **Act as part of the operating system**  
(Only on Windows NT or Windows 2000 systems, not for XP and later)
- **Adjust memory quotas for a process**  
(On NT/2000 systems this right will be - **Increase quotas**)
- **Replace the process level token**

[http://support.sas.com/rnd/itech/doc9/admin\\_oma/sasserver/startserv/sp\\_suwin.html](http://support.sas.com/rnd/itech/doc9/admin_oma/sasserver/startserv/sp_suwin.html)

**Step 2: Define Windows User Rights for each user.**

The end user must have the following permission to invoke a SAS Workspace on the server.

- o Log on as batch job



Grant "Everyone" the Log on as a batch job permission. You can grant individual users or a group of SAS users the Log on as a batch job permission, however a general testing rule is to grant "Everyone" permission while testing the connection and later tighten security once initial testing is complete.

**Step 3: Create an Object Spawner Configuration File - objspawn.cfg**

Using a Windows editor, copy the following statements starting in line 1, column 1 of the editor. Save it as C:\objspawn.cfg. The name and location of the configuration file is arbitrary. The port numbers specified in the configuration file are arbitrary and are based on availability.

Note that continuation lines (i.e. -config) begin in column 2 of the next line. The case of the text is mixed for readability purposes and is not case sensitive.

NOTE: There must be one (and only one) blank line (excluding #comments) between the Object Spawner and Object Server sections.

The only change that may be necessary is to change the location of the SAS executable (sas.exe) on the sasCommand statement. This change would only be necessary if SAS was installed in a location other than default.

```

#
## Define the Object Spawner Daemon to run on the
## local machine
#
dn: sasSpawnercn=sasSpawn
objectClass: sasSpawner
sasMachineDNSName: localhost
sasSpawnercn: sasSpawn
sasOperatorPort: 5307
description: Object Spawner Daemon running on local machine

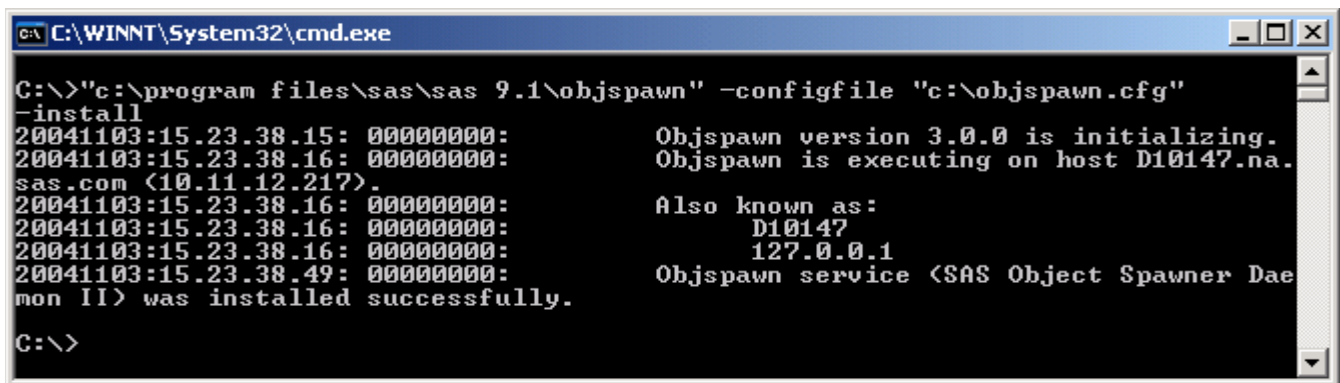
# There must be one and only one blank line above this comment
## Define the Object Server to run on the local machine
#
dn: sasServercn=ObjectServer
objectClass: sasServer
sasServercn: ObjectServer
sasCommand: "C:\Program Files\SAS\SAS 9.1\sas"
  -config "C:\Program Files\SAS\SAS 9.1\sasv9.cfg"
sasMachineDNSName: localhost
sasPort: 5308
sasProtocol: bridge
description: My object server running on my local machine

```

**Step 4: Install the Object Spawner as a Windows Service.**

From a DOS command window (cmd.exe), issue the following command to install the Object Spawner:

```
C:> "C:\Program Files\SAS\SAS 9.1\objspawn" -configFile "C:\objspawn.cfg"
-install
```

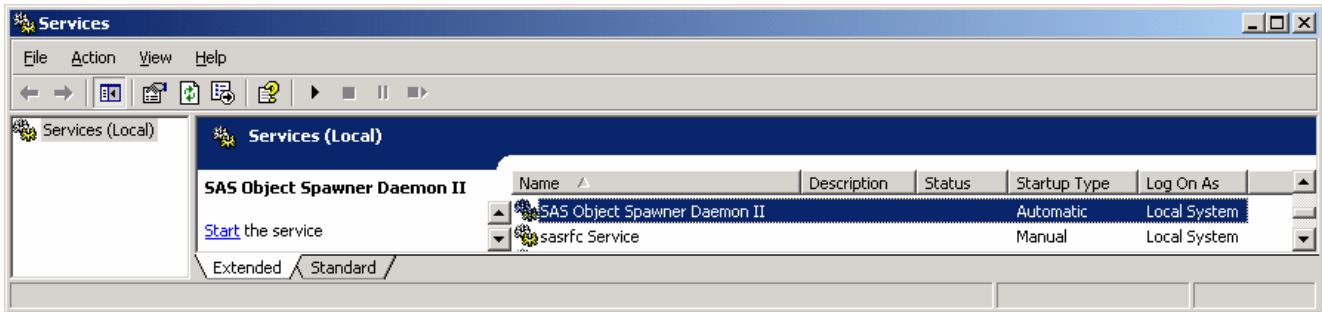


Reference the following URL for additional Object Spawner invocation options:

[http://support.sas.com/rnd/itech/doc9/admin\\_oma/sasserver/startserv/sp\\_start.html](http://support.sas.com/rnd/itech/doc9/admin_oma/sasserver/startserv/sp_start.html)

**Step 5: Start the Object Spawner as a Windows Service.**

Under the Windows Control Panel => Administrative Tools => Services



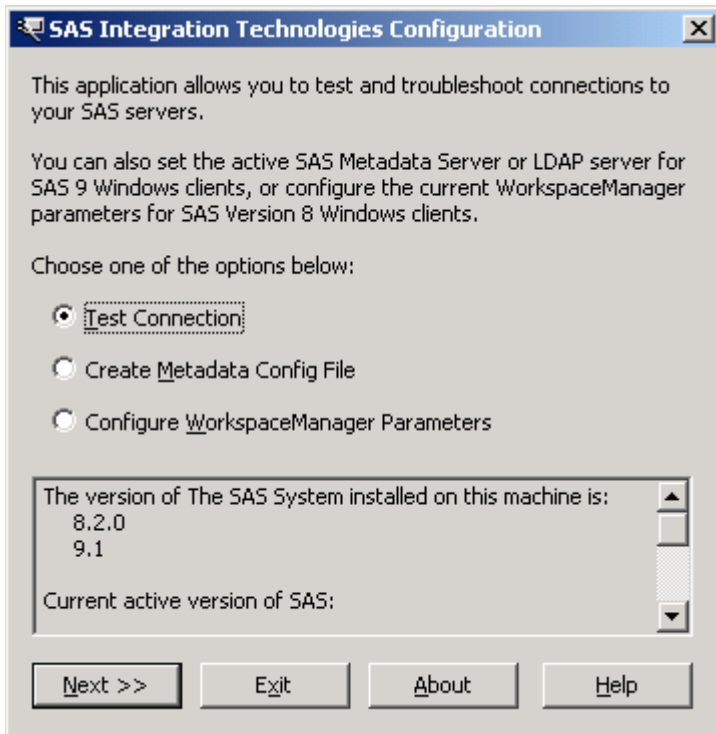
Select "Start" to start the service.

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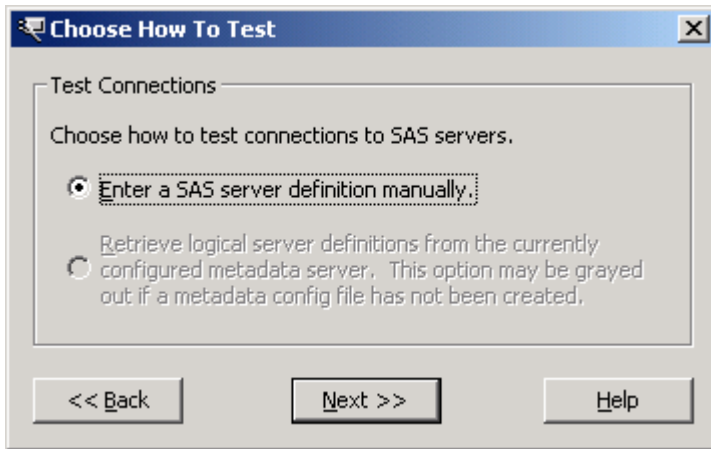
**Section 2: Test the connection - Integration Technologies Configuration (ITCONFIG)**

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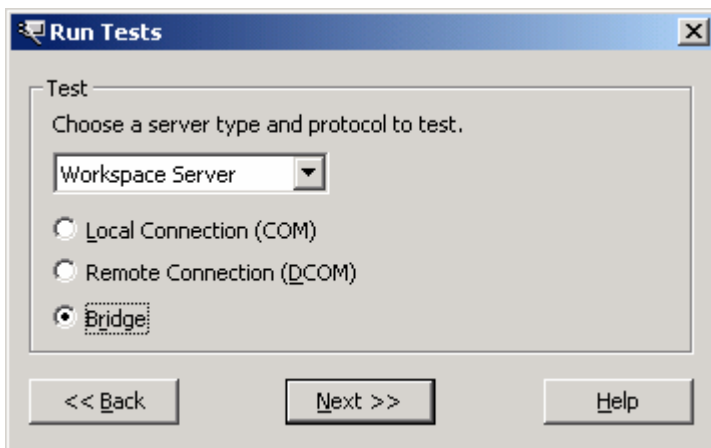
Start => Programs => SAS => SAS 9.1 Utilities => Integration Technologies Configuration



Select "Test Connection" => Next >>



Select "Enter a SAS server definition manually" => Next >>



Select a server type of "Workspace Server" and a protocol of "Bridge".  
Select Next >>

Server Information

The machine name is the DNS name of the IOM Server that you are trying to connect to.

Machine Name (machine.company.com)

Choose either to use a TCP/IP port or a service to connect to the machine, and enter the value in the box below.

Port      Port  
 Service     

Login Information

Enter a valid username and password for your server.

Username   
 Password

<< Back    Test    Cancel    Help

Enter the IOM Server name or IP Address.  
 Enter the sasPort number from Objspawn.cfg.  
 Enter the credentials for the user who has "Logon as a batch job" permissions.  
 Select "Test".

Connection Successful

Congratulations! You have successfully established a connection with the SAS server.

The test job produced the following event output:  
 DatastepStartDatastepCompleteProcStartPRINTProcCompletePRINTSubmitComplete

Proc Options says that the SASUSER directory is: C:\temp

The complete path of the SASUSER directory is C:\temp

MachineDNSName (according to SAS): D10147.na.sas.com

OK    Copy Text

A successful connection will generate a "Congratulations!" message.

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**Section 3: UNIX** - These steps are performed on the SAS Server machine.

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**STEP 1: Configuring User Authentication.**

[http://support.sas.com/documentation/installcenter/unix/91/ts1m3/unix91\\_install.pdf](http://support.sas.com/documentation/installcenter/unix/91/ts1m3/unix91_install.pdf)

The above document provides the necessary instructions on configuring user authentication.

In the !sasroot/utilities/bin directory, certain files need to be owned by root and have the "s" or setuid bit set.

```
-rwsr-xr-x 1 root      techsup      47128 May 12 2004  elssrv
-rwsr-xr-x 1 root      techsup      16363 May 12 2004  sasauth
-rwsr-xr-x 1 root      techsup      17969 May 12 2004  sasperm
```

```
-rwxr-xr-x 1 sastux   techsup      31221 May 12 2004  bdm
-rwxr-xr-x 1 sastux   techsup       9466 May 12 2004  cfgpeh
-rwxr-xr-x 1 sastux   techsup     15530 May 12 2004  cleanwork
-rwxr-xr-x 1 sastux   techsup      8728 May 12 2004  elsconf
-rwsr-xr-x 1 root      techsup      47128 May 12 2004  elssrv
-rwxr-xr-x 1 sastux   techsup     24154 Nov 15 11:47 inetcfg.pl
-rw-r--r-- 1 sastux   techsup     23994 Aug 31 10:06 inetcfg.pl.template
-rwxr-xr-x 1 sastux   techsup     17393 Nov 15 11:47 inetcfg7.pl
-rw-r--r-- 1 sastux   techsup     17193 Aug 31 10:06 inetcfg7.pl.template
-rwxr-xr-x 1 sastux   techsup     97345 May 12 2004  jproxy
-rwxr-xr-x 1 sastux   techsup      8767 May 12 2004  ke2j
-rwxr-xr-x 1 sastux   techsup      8236 May 12 2004  ke2s
-rwxr-xr-x 1 sastux   techsup      8362 May 12 2004  kj2e
-rwxr-xr-x 1 sastux   techsup      9003 May 12 2004  ks2e
-rwxr-xr-x 1 sastux   techsup     54168 Jul 28 19:50 loadmgr
-rwxr-xr-x 1 sastux   techsup     72447 May 12 2004  motifxsassm
-rwxr-xr-x 1 sastux   techsup    309021 Nov 15 11:43 objspawn
-rwxr-xr-x 1 sastux   techsup     12415 May 12 2004  patchname
-rwxr-xr-x 1 sastux   techsup     66814 May 12 2004  rbrowser
-rwxr-xr-x 1 sastux   techsup   1447213 May 12 2004  reshelper
-rwsr-xr-x 1 root      techsup      16363 May 12 2004  sasauth
-rwxr-xr-x 1 sastux   techsup      6012 Nov 28 2001  sasm.elm.mime
-rwxr-xr-x 1 sastux   techsup      2706 Nov 28 2001  sasmailer
-rwsr-xr-x 1 root      techsup     17969 May 12 2004  sasperm
-rwxr-xr-x 1 sastux   techsup   162656 Nov 15 11:43 sastcpd
-rwxr-xr-x 1 sastux   techsup     47967 May 12 2004  saswujms
$ █
```

## **Step 2: Create an Object Spawner Configuration File (objspawn.cfg)**

Using an editor, copy the following statements starting in line 1, column 1 of the editor. Save it as /objspawn.cfg. The name and location of the configuration file is arbitrary. The port numbers specified in the configuration file are arbitrary and are based on availability.

Note that continuation lines (i.e. -config) begin in column 2 of the next line. The case of the text is mixed for readability purposes and is not case sensitive.

NOTE: There must be one (and only one) blank line (excluding #comments) between the Object Spawner and Object Server sections.

The only change that is necessary to the following configuration file is on the sasCommand line. The sasCommand line should contain the complete path to the !SASROOT followed by the SAS executable. In this example, /sas9 is the !sasroot, and /sas is the SAS executable.

```
#
# Spawner Definition
#
dn: sasSpawnercn=sasSpawn
objectClass: sasSpawner
sasSpawnercn: sasSpawn
sasMachineDNSName: localhost
sasOperatorPort: 5307
description: SAS Object Spawner

# There must be one and only one blank line above this comment
# Object Server Definition
#
dn: sasServercn=ObjectServer
objectClass: sasServer
sasServercn: ObjectServer
sasPort: 5308
sasMachineDNSName: localhost
sasProtocol: bridge
sasCommand: /sas9/sas
description: SAS Object Server
```

<http://support.sas.com/rnd/itech/doc/admin/sasserver/iombridge/ldifsamp.html>

## **Step 3: Start the Object Spawner.**

From a UNIX system prompt, issue the following command to launch the Object Spawner using a configuration file:

```
/sas9/utilities/bin/objspawn -configfile /usr/myid/objspawn.cfg
```

Reference the following URL for additional Object Spawner invocation options:

[http://support.sas.com/rnd/itech/doc/admin/sasserver/iombridge/sp\\_start.html](http://support.sas.com/rnd/itech/doc/admin/sasserver/iombridge/sp_start.html)

**Step 4: Test the connection.** (This step is optional and performed on a Windows client machine)

The SAS Integration Technologies Configuration Utility (itconfig.exe) is a tool that will test the connection to the IOM Server independent of the client. The utility can be found in one of the following three locations:

1) If **SAS** is installed on the client machine:

From the Start menu => Programs => SAS => SAS 9.1 Utilities => Integration Technologies Configuration

2) If **Enterprise Guide** is installed on the client machine:

C:\Program Files\SAS Institute\Shared Files\Integration Technologies\itconfig.exe

3) **SAS Software Downloads:**

<http://www.sas.com/apps/demosdownloads/setupcat.jsp?cat=SAS+Integration+Technologies>

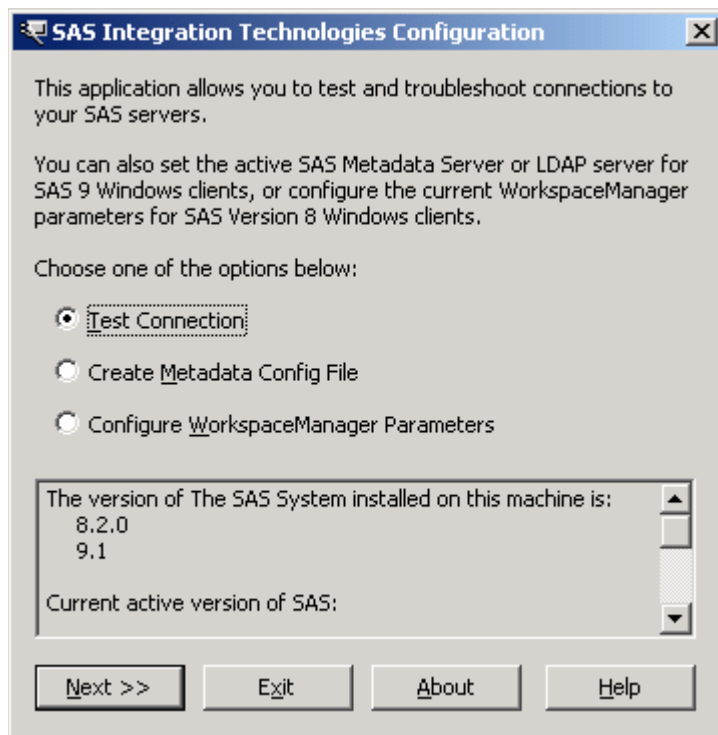
Download and install: **SAS Integration Technologies Client for Windows**

This will install itconfig.exe in the following path:

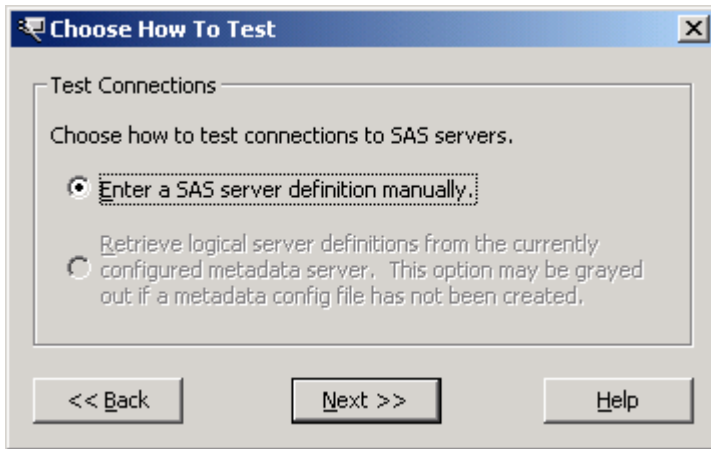
C:\Program Files\SAS Institute\Shared Files\Integration Technologies\itconfig.exe

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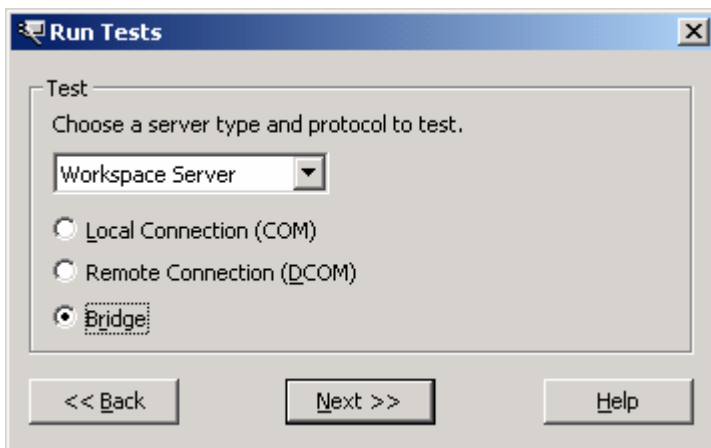
Invoke the IT Configuration Utility



Select **"Test Connection"** => **Next >>**



Select "Enter a SAS server definition manually" => Next >>



Select a server type of "Workspace Server" and a protocol of "Bridge".  
Select Next >>

Server Information

The machine name is the DNS name of the IOM Server that you are trying to connect to.

Machine Name (machine.company.com)

Choose either to use a TCP/IP port or a service to connect to the machine, and enter the value in the box below.

Port      Port  
 Service     

Login Information

Enter a valid username and password for your server.

Username   
 Password

<< Back    Test    Cancel    Help

Enter the IOM Server name or IP Address.  
 Enter the sasPort number from Objspawn.cfg.  
 Enter the credentials for the user.  
 Select "Test".

Connection Successful

Congratulations! You have successfully established a connection with the SAS server.

The test job produced the following event output:  
 DatastepStartDatastepCompleteProcStartPRINTProcCompletePRINTSubmitComplete

Proc Options says that the SASUSER directory is:  
 ~\sasuser.v91

The complete path of the SASUSER directory is  
 /r/ge.unx.sas.com/vol/vol1/u12/sasrx/diskfull/sasuser.v91

OK    Copy Text

A successful connection will generate a "Congratulations!" message.