

Installing SAS/IntrNet on Windows and Linux

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ABSTRACT

The North Carolina Trauma Registry initially developed ISSAC (Information System for State Trauma Advisory Committee) as a SAS/IntrNet application on Windows environment, and then transferred it to the Linux operating system due to its reliability and ease of use. There are similarities and differences between Installing SAS/IntrNet on Windows and Linux, and in contrast to most SAS installations, SAS/IntrNet is rather complicated. This paper presents SAS/IntrNet Installation on Windows and Linux.

INTRODUCTION

This paper covers the installation of SAS/IntrNet on Windows and LINUX operating platform. Software requirements for this paper are: Windows 2000, SAS 8.2 for Windows, Red Hat Linux 7.3, SAS 8.2 for Linux and Web Server Apache 2.0.39 for Window, Web Server Apache 2.0.49 for Linux.

INSTALL WEB SERVER

SAS/IntrNet contains a variety of components that you can use to meet your special needs of a Web-enabled information delivery solution. In this paper we discuss Application Dispatcher. It serves as a translator between your SAS session and web browser, and SAS/IntrNet must be able to receive messages from a web browser. A web server is a computer program that is running all the time and responds to information requests from a browser. In our case, we chose the Apache web server. It is free and easy to install.

INSTALL SAS/INTRNET

Installing SAS/IntrNet on Windows and Linux has similarities and differences. On a Windows platform, you can make the installation via a GUI interface; while on Linux, you need to use command lines to finish the installation, which makes it difficult, if you are not familiar with the commands.

INSTALL SAS/INTRNET CGI TOOLS ON WINDOWS

After you have a web server running, you need to install CGI tools. You can either download CGI Tools from the SAS website, or use the installation disk marked "SAS Client-Side Components". Perform the following steps to Install CGI Tools:

Click Install SAS/IntrNet software webrv.exe for Windows, and install it. During installation, you will be prompted to answer the following questions:

SAS/IntrNet samples and support files must be installed in the directory corresponding to the URL `http://your_server/sasweb/`. Enter the physical path for this directory. Setup will create this directory for you if it does not exist. The physical path needs to go under your web server's root directory.

Enter the physical path for SAS/IntrNet CGI executables. This can be a standard CGI directory or a new directory reserved for SAS/IntrNet. Setup will create this directory for you if it does not exist. You can use the one supplied by Apache or you can create your own. Enter the URL corresponding to `c:\program files\apache group\apache2\cgi-bin`. The URL would be `http://your_server/cgi-bin`. In our case, it is: `http://dirac.med.unc.edu/cgi-bin`.

INSTALL SAS/INTRNET CGI TOOLS ON LINUX

As mentioned before, you can either download CGI Tools from the SAS website, or use the installation disk marked "SAS Client-Side Components". Perform the following steps to Install CGI Tools:

Create a temporary directory to hold the contents of this package. Then download, and unpack it with the tar command: `tar -xof webrv.tar`

An example installation is shown below.

You will be prompted for information about your Web server configuration and how you wish to install SAS/IntrNet.

This installation script moves the files that were extracted from the CGI Tools package into a directory under your Web server.

The CGI Tools samples must be installed in the Web server directory corresponding to the URL `http://<your_server>/sasweb`. Enter the physical path corresponding to `http://<your_server>/sasweb`. If this directory does not exist, it will be created for you. Enter: `/httpd/sasweb`

Enter the physical path for SAS/IntrNet CGI executables. This can be a standard CGI directory or a new directory reserved for SAS/IntrNet. Setup will create this directory for you if it does not exist. Enter: `/httpd/cgi-bin`

The CGI executables and configuration files must be installed in a Web server directory with execute privilege. SAS suggests using the URL `http://<your_server>/cgi-bin` for these files, although you may use any URL. Enter the URL path corresponding to the physical path `/httpd/cgi-bin`: `http://<your_server>/cgi-bin]`

To complete the configuration of your Web server, change the following parameters in your `httpd.conf` file (`/usr/local/apache2/conf/httpd.conf`):

- map `http://<your_server>/cgi-bin` to `/httpd/cgi-bin` by changing `ScriptAliases /cgi-bin` to `ScriptAlias /cgi-bin/ "/httpd/cgi-bin/`
- change `DocumentRoot "/usr/local/apache2/htdocs"` to `DocumentRoot "/httpd"`
- change the `ServerAdmin` email address to your email address
- allow CGI execution in `http://<your_server>/cgi-bin`

Once your SAS Servers are configured and started, you can view SAS/IntrNet samples at `http://<your_server>/sasweb/IntrNet8/samples.html`. SAS/IntrNet CGI Tools are now installed on your Web server.

DEFINING A SERVICE ON WINDOWS

To start SAS/IntrNet, a service needs to be created and started. In our case, we create a default service.

Before you create a service, make sure you have already installed the SAS Service Configuration Utility. This can be done by clicking on additional setups in the SAS setup disk and installing it.

To define a service, go to `Start, Programs`, and find the `IntrNet` subfolder under `The SAS System` folder. When you click on `Create a new IntrNet Service` a program called `IntrNet Config utility 8.2` runs and it guides you through creating a service.

Read the information in the Welcome window, and then select `Next` to continue. If you have not installed the SAS Service Configuration Utility (see note above), you will receive a Warning window. You can only continue creating the service if you do not intend to run this service as a Windows service. Otherwise, you should end the configuration utility, install the SAS Service Configuration Utility, and then create the default service. Select `Create a Socket Service`, and then select `Next` to continue.

Make `default` as the name of the new service. Select `Next` to continue.

Specify the directory where you want the configuration utility to place your service directory and control files. The default location (under your `SASUSER` directory) is recommended. Select `Next` to continue.

Type the TCP/IP port number that you reserved for the default Application Dispatcher service. Typically, numbers above 5001 will be available. Here, just type `5001`. Select `Next` to continue.

A password is not necessary for the default service. You can add an administrator password later if you use this service for production applications. Select `Next` to continue.

The `Create Service` window displays all of the information that you specified for this service. Verify that the information is correct and then select `Next` to create the service. Select `Next` and then `Finish` to complete the setup of the default service.

To start the default service, go to `Start, Programs`, and find the `IntrNet` subfolder under `The SAS System` folder, then find `default service`, and start interactively.

DEFINING A SERVICE ON LINUX

Defining a service for Linux Platform

Open a terminal window, when it prompted:

```
# cd /usr/local/SAS_8.2/utilities/bin
# ./inetcfg.pl
```

Root directory for SAS/IntrNet services (`/root/intnet`):
`/httpd/sasweb/IntrNet8`

What kind of service do you wish to configure?

- 1 – Socket Service
- 2 – Pool Service
- 3 – Launch Service
- 4 – Load Manager
- 5 – Spawner

Enter service type? (1) `Press enter`

This script will set up a service definition for the SAS/IntrNet Application Dispatcher. You should know the type of service you wish to create and the TCP port number(s) or name(s) you wish to use (socket service only) before continuing.

You will be asked to provide a directory name. The script will create this directory and place server startup and log files in it.

Name of the new service? (default): `Press enter`

How many servers would you like for this service (maximum 20)? (1): `Press enter`

Please enter TCP/IP port values for this service. You may use a service name such as `appsvr` or a port number such as `5001`. if you use a name, please remember to include this name in your network services file along with a port number.

Port name or number for server 1 (5001): `Press enter`

Do you want to protect the administration of this service with a password? (N): `Press enter`

Service name: `default`

Service type: `Socket`

Root Directory: `/httpd/sasweb/Intrnet8/default`

Number of servers: `1`

Server port(s): `5001`

Admin password: `none`

Create this service? (Y): `Press enter`

CONFIGURATION

CONFIGURATION OF BROKER.CFG FILE

Before start the SAS/IntrNet, you'll need to make changes in the `broker.cfg` configuration file to the following parameters: `ServiceAdmin`, `ServiceAdminMail`, `Server`, and `port`. For example:

```
SocketService default
ServiceAdmin "yourname"
ServiceAdminMail "yourname@yourcompany"
Server your-server.yourcompany
Port 5001
FullDuplex True
```

This works for both Windows and Linux.

To start the default service execute

```
/httpd/sasweb/IntrNet8/default/start.pl
```

CONCLUSION

Installing SAS/IntrNet on windows and Linux has similarities and differences, and in contrast to most SAS installations, SAS/IntrNet is a complicated process, need knowledge of both operating systems and web server.

REFERENCES

SAS website for SAS/IntrNet software: <http://support.sas.com/rnd/web/intrnet/index.html>

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