Advanced Topics

These tasks would typically be carried out by an experiened SOA Gateway user.

- How to install a server on a remote Windows
- Running multiple instances of SOA Gateway
- IPv6 Considerations
- Reducing memory footprint using streaming

How to install a server on a remote Windows

Typically when you install SOA Gateway on Windows, the Control Centre and the SOA Gateway server are on the same machine. If you wish to install SOA Gateway on a remote Windows here are the steps involved.

1. Transfer win32Build.msi to the target machine.

   The msi can be located at
   ../eclipse/features/com.SOAGateway.feature.install.x86.windows_2.6.1.NN

   where ../eclipse is the folder from which your Control Centre is launched.

2. Transfer the SOA Gateway license to the target machine.

3. Logon to the target machine and run:

   msiexec /I c:\temp\win32Build.msi /L*v c:\temp\installLog.txt SERVERPORT=56000 LICENSESRC=c:\temp\LIC.xml

   Assuming that:

   - The msi and your license are in c:\temp\
   - You want the server to run on port 56000
   - Your license is named LIC.xml
   - The server prerequisites have already been installed. Check here for these.

Running multiple instances of SOA Gateway

This section outlines the steps required to run multiple instances of SOA Gateway, either of the same, or different versions, on a single operating system image.

- Multiple instances of SOA Gateway on Linux

- Multiple instances of SOA Gateway on z/OS

Multiple instances of SOA Gateway on z/OS

The simplest way for setting up multiple SOA Gateway servers on z/OS is to execute the Deployment Wizard once for every server, specifying distinct HLQs (High Level Qualifiers) for the datasets, TCP/IP port numbers etc., then execute the setup jobs.

This will also create multiple copies of the SOA Gateway load library, which is not required, so the start job / procedure for the various instances of the server can be modified to all use the same loadlib in its STEPLIB.

Multiple instances of SOA Gateway on Linux

This step-by-step guide assumes good knowledge of the Apache webserver on a Linux platform.

The following steps outline how to copy the existing SOA Gateway installation, and then bring up both the existing and new installations using the same Apache webserver.

- If running, stop SOA Gateway. See here on how to do this.
- Make a duplicate of the current installations files and directories. For example, if installed in /home/bre/soaGateway, then

```
mkdir /home/bre/soaGatewayNew
```

```
cp -R  /home/bre/soaGateway/*  /home/bre/portusNew
```

- In the new installation, change the Apache Listen directive, specifying a yet unused port number. This directive can be found in the *httpd.conf* file in the *apache2/conf* directory.
- Again, edit the new *httpd.conf* file and change the Include directive on the last line to pick up the new installation.
- Edit new *adabas_soa_gw.conf* file in the new installation. Modify required directives to pick up the new files and directories in the new installation.
- Add a fully qualified PidFile directive to the new *httpd.conf* (if one is not already present). This pid file should point into the new installation.

  For example

```
<IfModule !mpm_netware.c>
PidFile /home/bre/portusNew/apache2/logs/httpd.pid
</IfModule>
```

- Modify the new *xmiddleEnv.sh* file , updating its contents to use the new installation.

- Edit the new *envvars* file, updating its contents to use the new installation.
- In the current installation (*not* the one you have just created) copy the apachectl control script. For example

```
cp /home/bre/portus/apache2/bin/apachectl  /home/bre/portus/apache2/bin/apachectl_new
```

  Modify the new file to pick up the new *httpd.conf* and new *envvars* file.

  Note:
  You do not need to change the path to the httpd binary.

  Note:
  Therefore you may remove the new Apache libraries and binaries. For example, these are located under */home/bre/portus/apache2/lib* and */home/bre/portus/apache2/bin/*. *Do not remove the apache2/bin/envvars file.*

- Use the 2 apachectls scripts to start SOA Gateway
- Verify that the SOA Gateway start-up messages (found in the Apache logs) refer to the new SOA Gateway configuration file.

IPv6 Considerations

IPv6 (Internet Protocol version 6) is the latest revision of the Internet Protocol (IP), the primary communications protocol upon which the entire Internet is built. It is intended to replace the older IPv4, which is still employed for the vast majority of Internet traffic as of 2012. IPv6 was developed by the Internet Engineering Task Force (IETF) to deal with the long-anticipated problem of IPv4 running out of addresses.

IPv6 SOA Gateway is supported on all non-Windows platforms. The underlying hosting infrastructure of SOA Gateway is provided by an Apache web server, therefore IPv6 configuration changes take place in the Apache configuration.

Further information can be found here

To make SOA Gateway listen on the IPv6 interface, provide the IPv6 address of the host machine on the Listen directive in the Apache configuration file. This file is [INSTALL_DIR]/apache2/conf/httpd.conf or [INSTALL_DS].CONF(HT$CONF) depending on your system.

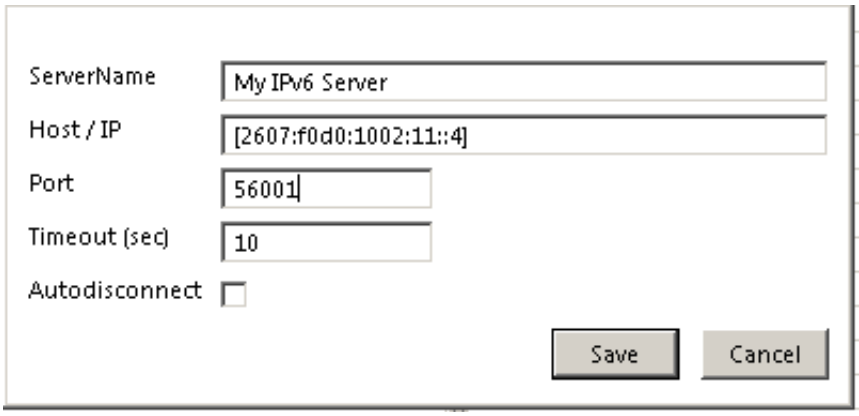
E.g.

Listen on port 56001 on this machine : Listen [2607:f0d0:1002:11::4]:56001

Listen on port 56001 for ONLY local IPv6 connections: Listen [::1]:56001

More than one Listen directive can be applied, but the ports must be unique

To connect to this server from the SOA Gateway Control Centre, add a new server connection with the IPv6 address surrounded by [and] and the port number of your server



Reducing memory footprint using streaming

When SOA Gateway handles a request it builds XML structures internally to hold the response payload. This data can become very large, and on systems where memory is limited, unexpected results can occur. To resolve this, SOA Gateway has the ability to stream back data as it is retrieved from the database. The SOA Gateway streaming uses HTTP chunked transfer encoding as a transfer mechanism. This is only available in HTTP clients that understand HTTP 1.1 or above. When data is streamed back to the client, SOA Gateway does not have to build large internal strutures to handle the payload, therefore the memory footprint is considerably less.

When streaming is enabled, it only applies when the client issues a LIST request, with all keys wildcarded. E.g. a REST request with LIST&ID=*

Important:
SOA Gateway may use extra CPU resources when streaming is enabled.

Streaming can be enabled by adding the following line in the Apache configuration

SoaGatewayStreaming on

And stopping and starting the server

This directive can also be applied to specific services using the <Location /SERVICENAME > directive

Important:
Not all clients understand HTTP 1.1 or indeed support the chunked transfer encoding.