

## JavaService – Run a java program as Windows service

This document contains details and setup information for the JavaService Tool.

**Note:** The JavaService Tool is provided **as-is**, no support, no warranty.

### Overview

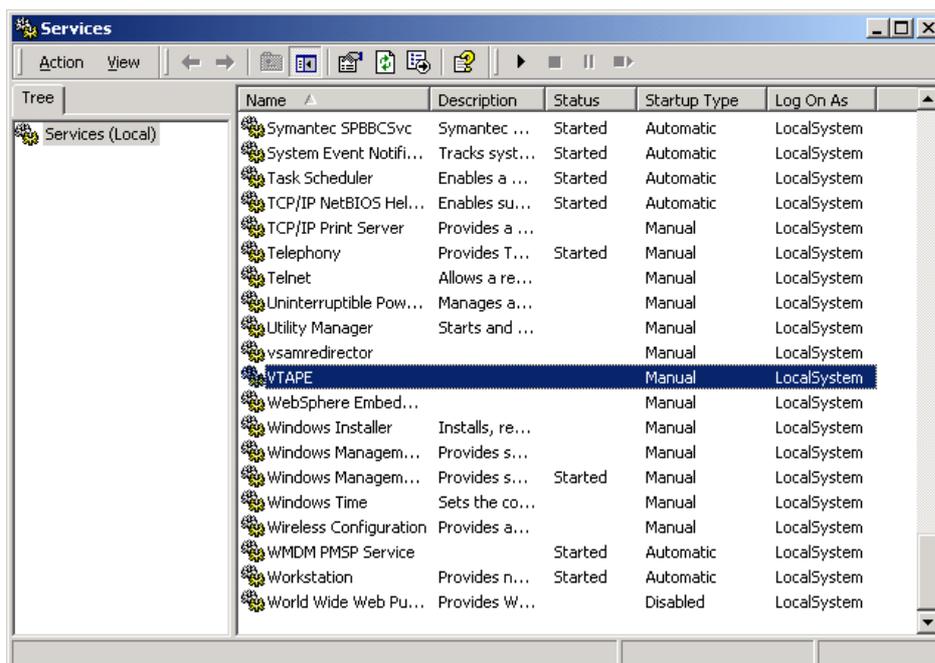
IBM provides several server applications for use with z/VSE that are implemented in Java:

- VSAM Redirector Server
- VSE VTape Server
- VSE Script Server
- Virtual VSE FTP Server

Users may wish to run such a server on an unattended Windows system. They may want to keep these server applications running even if no user is signed-on on Windows.

The JavaService Tool allows running a Java application as a Windows service in the background. It acts as a wrapper in-between the Windows Service Control Manager and the Java Program.

Windows services can be managed through the Windows Control Center applet “Services”. This applet can be found under “Control Panel” → “Administrative Tools” → “Services”. The Service applet allows you to start and stop a service. It also allows you to set the startup type to Manual or Automatic. Automatic means the service is automatically started at boot time.



## Installation

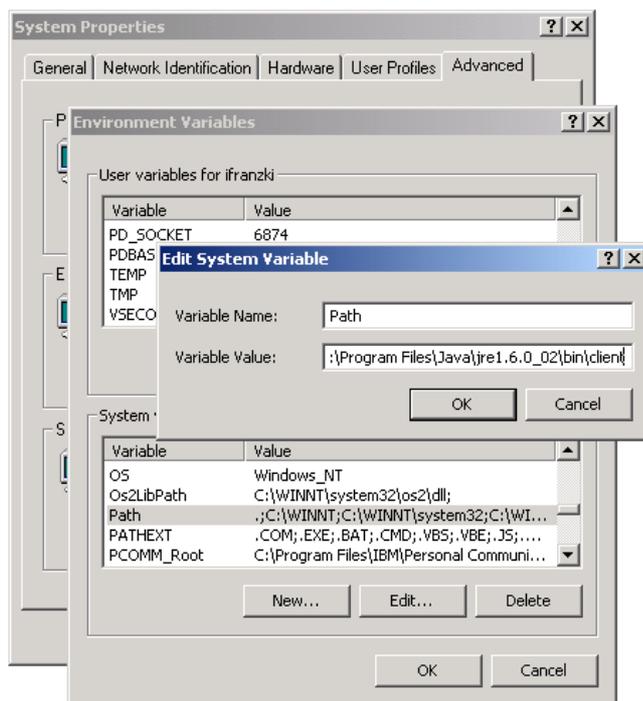
To install the JavaService Tool, you need to perform the following steps:

- 1.) Install the Java application that you want to run as Windows service (if not already done). For installation procedures for installing that software, please refer to the documentation provided with the Java application.
- 2.) Copy **JavaService.exe** into the **Windows\System32\** directory (on Windows NT or Windows 2000 the folder might be named WINNT\System32).
- 3.) The JavaService tool needs to be able to load the **jvm.dll** in order to create a Java virtual machine. This DLL is part of the Java runtime installation.

If you have multiple Java runtime environments installed on your system, you might find several jvm.dll files. To find the right one, please enter “java - version” in a command prompt. Look for the version; it will match to the directory where the jvm.dll resides. The jvm.dll resides in the **\bin\client\** directory of your Java runtime installation. A typical location would look like: "C:\Program Files\Java\jre1.6.0\_02\bin\client".

**Note:** Do not copy the jvm.dll to any other place, the Java runtime installation requires it to reside in the \bin\client\. Moving it to other places will cause errors when running the service (will fail to create a Java runtime environment).

Got to the “System” applet in the Windows Control panel and update the PATH system environment variable. Add the location of the jvm.dll to the PATH.



- 4.) To create a Windows service for a particular Java program open a windows command prompt and enter the following command (no line break):

```
JavaService.exe create <ServiceName> <rootdir> <classpath>
                    <mainclass> [<userid> <password>]
```

The parameters (<...> ) have the following meaning:

<b>&lt;ServiceName&gt;</b>	The name of the service. This name will be displayed in the Services Control panel applet. E.g. "VSAMRedirector"
<b>&lt;rootdir&gt;</b>	The directory where the Java application is installed. If the path contains blanks, you must enclose it in double quotes (""). E.g. "C:\VSAMRedir"
<b>&lt;classpath&gt;</b>	The CLASSPATH that the Java application requires to run. Please consult the Java applications start script (e.g. run.bat) for any CLASSPATH settings. The CLASSPATH environment variable is appended (if available) at the end of the CLASSPATH specification. If the CLASSPATH contains blanks, you must enclose it in double quotes (""). E.g. ".;VsamRedir.jar;ibmhandlers.jar"
<b>&lt;mainclass&gt;</b>	The name of the Java class that contains the main method to start. Please consult the Java applications start script (e.g. run.bat) for the main class to use. E.g. "com.ibm.vse.redirector.VSAMRedirectorServer"
<b>&lt;userid&gt;</b>	Optional. Specifies the Windows user under which the Service will run.
<b>&lt;password&gt;</b>	Optional. Specifies the Windows password of the user under which the Service will run.

## Running the Service

To start the Service, go to the Services Control Panel applet. You should see the newly created service. Press "Start" to start the service. The service is created with start type Automatic. This setting will automatically start the service at the next boot.

In case there are problems during start of the service, JavaService.exe will create entries in the Windows Event Log. Consult the Windows Event Viewer (Control Panel → Administrative Tools → Event Viewer). Look in the Application Log for events where the source matches the service name. In addition you may look in the System Log for events from the Service Control Manager.

Any messages that the Java applications would write to Standard-Output stream and –Error stream (stdout and stderr) are redirected to the files out.txt and err.txt which will be created in the root directory of the service (see <rootdir> when installing the service).

## ***Stopping the Service***

To stop a running service, go to the Services Control Panel applet. Press “Stop” to stop the service. While performing the stop, you may receive a message that the service has terminated unexpectedly. This is normal and can be ignored.



Since stopping a Java program from outside the Java application is not that easy, the JavaService Tool uses the following procedure:

To give the Java application a chance to stop gracefully, JavaService.exe sends the following commands through the programs Standard-Input stream (stdin):

```
quit<0x0d><0x0a>
quit force<0x0d><0x0a>
```

In case the Java program reads from its stdin, it can stop itself. If the Java program does not react on this command, it will be forced to stop.

IBM provided Java server applications (like VSAM Redirector, VSE VTAPE Server or VSE Script Server) will react on the stop command and quit gracefully.

## ***Uninstalling a Service***

To uninstall a particular Java Service, open a windows command prompt and enter the following command:

```
JavaService.exe delete <ServiceName>
```

<ServiceName> specifies the service to be deleted.

## ***Contact and problem reporting***

As stated above, the JavaService Tool is provided **as-is**, no support, no warranty.

However, you may send an email to [zvse@de.ibm.com](mailto:zvse@de.ibm.com) to report problems.

