Example for the JobScheduler SSH Job

Introduction

This document describes the functionality of the JobSchedulerSSHJob and the parameters to configure the Job properly. Additionally this document provides a minimal example of an SSH Job configuration.

Mode Of Operation

Unix based operating systems provide an SSH client, while MS Windows operating systems do not.

The JobSchedulerSSHJob allows the execution of shell commands and scripts on a remote host running an SSH server without requiring a local SSH client to be installed.

For a minimal SSH job only a limited number of parameters has to be configured as shown in the example below.

Example

A minimal SSH Job configuration

Simple SSH Job

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<job title="Launch remote commands or executable files by SSH" stop_on_error="no">
    <description >
        <include  file="jobs/JobSchedulerSSHJob.xml"/>
    </description>
    <params >
        <param  name="host" value="HOSTNAME"/>
        <param  name="user" value="USERNAME"/>
        <param  name="password" value="PASSWORD"/>
        <param  name="auth_method" value="password"/>
        <param  name="command" value="printenv"/>
    </params>
    <script  language="java" java_class="sos.scheduler.job.SOSSSHJob2JSAdapter"/>
    <run_time />
</job>
```

Parameters

- Required Parameters
    - Parameters which have to be set in the job configuration to properly run the job
        - Example: The `host` parameter is always required to run a job that connects to a remote host.
- Optional Parameters
    - Parameters which are not required or parameters which are technically required but are instantiated through a default value and therefore do not have to be set in the job configuration
        - Example 1: technically required, but instantiated with default value
            - To connect to a remote host, the `port` parameter is required. The parameter is instantiated with the default value `22` therefore the `port` parameter does not have to be set in the job configuration.
        - Example 2: not required
            - The `proxy_host` parameter is only used if the jobs connection has to be instantiated over a proxy, otherwise it is not needed at all

Required Parameters

host

- default value:
    - empty
- description:
    - This parameter specifies the hostname or IP address of the SSH server to which a connection is to be made.

user

- default value:
    - empty
- description:
    - This parameter specifies the user account to be used when connecting to the SSH server.

Optional Parameters

port

- default value:
    - 22
- description:
    - This parameter specifies the port number of the SSH server.

auth_method

- default value:
    - publickey
- description:
    - This parameter specifies the authorization method for the SSH server - the *publickey* and *password* methods are supported. The path name of the private key file must be set in the `auth_file` parameter when the *publickey* authorization method is used. If the private key

file is secured by a password then this must be specified with the `password` parameter. The password for each user account using *password* authorization must be specified using the `password` parameter. The authorization methods which are enabled depend on the SSH server configuration. Not all SSH server configurations support the *password* authorization method.

password

- default value:
  - empty
- description:
  - This parameter specifies the user account password for authorization by the SSH server and must be specified if the *password* authorization method is specified in the `auth_method` parameter.
    Alternatively, this parameter is used specify the secret key passphrase if *publickey* authorization has been set in the `auth_method` parameter.

auth_file

- default value:
  - empty
- description:
  - This parameter specifies the path and name of a user's private key file used for registration on an SSH server. This parameter must be specified if the *publickey* authorization method has been specified in the `auth_method` parameter.
    If the private key file is secured with a passphrase, the `passphrase` parameter hat to be set with the passphrase.

command_delimiter

- default value:
  - %%
- description:
  - Command delimiter characters are specified using this parameter. These delimiters are used in command parameters to separate multiple commands. These commands can then executed in separate SSH sessions.

command

- default value:
  - empty
- description:
  - This parameter specifies a command that is to be executed on the SSH server. Multiple commands can be separated by the command delimiter that is specified using the `command_delimiter` parameter.

command_script

- default value:
  - empty
- description:
  - This parameter can be used as an alternative to `command`, `command_delimiter` and `command_script_file`. It contains script code which will be saved to a temporary (script-)file on the remote host and executed there. The script can access task and order parameters by environment variables. Environment variable names are written in upper case and have "SCHEDULER_PARAM_" as a prefix. Order parameters with the same name overwrite task parameters.

command_script_file

- default value:
  - empty
- description:
  - This parameter can be used as an alternative to `command`, `command_delimiter` and `command_script`. It contains the name of a local (script-)file, which will be transferred to the remote host and executed there. The script can access task and order parameters by environment variables. Environment variable names are written in upper case and have "SCHEDULER_PARAM_" as a prefix. Order parameters with the same name overwrite task parameters.

    The SSH Job is only able to transfer a command script file to the remote machine if SFTP is allowed on the remote SSH Server.

proxy_host

- default value:
  - empty
- description
  - The value of this parameter is the host name or the IP address of a proxy used to create the connection to the SSH server. The use of a proxy is optional.

proxy_port

- default value:
  - empty
- description
  - This parameter specifies the port number of the proxy if a proxy is used to create the connection to the SSH server.

proxy_user

- default value:
  - empty
- description
  - The value of this parameter specifies the user account for authorization by the proxy server if a proxy is used to connect to the SSH server.

proxy_password

- default value:
  - empty
- description
  - This parameter specifies the password for the proxy server user account if a proxy is used to connect to the SSH server.

command_script_param

- default value:
  - empty
- description
  - This parameter contains a parameter string which will be appended when a `command_script` or `command_script_file` is called.

ignore_error

- default value:
  - false
- description
  - If the value of this parameter is set to *true* then execution errors caused by commands on the SSH server will be ignored. Otherwise such execution errors for jobs and orders are reported by the Job Scheduler.

ignore_exit_code

- default value:
  - empty
- description
  - This parameter is used to specify one or more exit codes which will not be treated as errors. Multiple exit codes can be defined using comma separated values or using ranges.
- examples:
  - 255
  - 2,3,4,100
  - 4,50-60,210-220

ignore_signal

- default value:
  - false
- description
  - If the value of this parameter is set to *true* then all signals on Unix systems that terminate the execution of a command on the SSH server will be ignored - if for example a command is terminated using kill.
    Note that by default the Job Scheduler reports errors for commands that are terminated by signals.

ignore_stderr

- default value:
  - false
- description
  - This job checks if any output to `stderr` has been created by a command that is being executed on the SSH server and reports this as an error.
    If the value is set to *true* then output to `stderr` will not be reported as an error by the Job Scheduler.

simulate_shell

- default value:

    - false
- description
    - If this value is set to *true* then a login to a shell is simulated to execute commands. Some scripts may cause problems if a shell is not present.

simulate_shell_prompt_trigger

- default value:
    - empty
- description
    - The expected command line prompt. Using this prompt the job tries to find out if commands may be entered or have been carried out. If no prompt can be configured, timeout parameters have to be used.

simulate_shell_login_timeout

- default value:
    - empty
- description
    - If no new characters are written to `stdout` or `stderr` within a given number of milliseconds, the job assumes that that the login has been carried out and the shell is waiting for commands.

simulate_shell_inactivity_timeout

- default value:
    - empty
- description
    - If this parameter is set the job will assume that the command has been carried out and the shell is waiting for commands if no new characters are written to `stdout` or `stderr` after the given number of milliseconds.