OVERVIEW

The web service package is built to manage virtual machine equipped with data capsule. The web services are responsible for VM status monitoring, response to request from the web front end, request scheduling, and failover on back-end operations. This guide presents information about how to build the web service, how to deploy it and how to configure it according to your environment.

There are two web services the system uses. One is used to manage virtual machine equipped with data capsule. The other one is used internally by the back-end script to handle result release and is not supposed to used by users.

INSTALLATION - VM MANAGEMENT WEB SERVICE

1. Software dependencies
JDK 1.6+
MySQL database server 5.1
Apache Maven 3.0+
Apache Tomcat 6.0.x+

2. Set up the database
1) Make sure you have MySQL up and running.
2) Run the script as follows.
> mysql -h username -p
> source ${sloan-project}/webservice/src/main/resources/createtables.sql
3) Load the VM image path to the database. Notice you need to change the value in the loaddata.sql script according to the actual VM image path, login username and password.
> mysql -h username -p
> source ${sloan-project}/webservice/src/main/resources/loaddata.sql

3. Build from the source
1) Check out the source from git. Assume the project location is ${sloan-project}
2) cd ${sloan-project}/webservice
3) mvn package
The binary distribution is a war file in ${sloan-project}/webservice/target.

4. Deployment
We use Tomcat 6.X as the web container. To deploy the web service, simply copy and paste the war file to ${tomcat-home}/webapps. Tomcat will automatically extract the war file and run the web service.

5. Configuration
To use the web service, you have to configure some parameters in files default.xml and sites.xml locating in ${tomcat-home}/webapps/sloan-ws-1.x-SNAPSHOT/WEB-INF/classes/

The default.xml contains parameters that you don't need to change to make the web service work. You MUST change the parameters values in sites.xml to make the web service work. Below are the parameters you have to change according to your environment.

Database configuration

Parameters	Description
sloan.ws.db.jdbcurl	It is the JDBC url for the DB.
sloan.ws.db.user	It is the user name for the DB.
sloan.ws.db.pwd	It is the password for the DB.

Host configuration.

Parameters	Description
sloan.ws.hosts	It includes all the hosts that are used to run VMs. Host names are separated by ;
sloan.ws.port.range.min	The web service uses a range of port numbers to serve VNC session and SSH session for VM. It is the minimum port number that is used in the range.
sloan.ws.port.range.max	It is the maximum port number that is used in the range.
host.ssh.username	It is the username that the web service uses to log in to the remote hosts.
host.ssh.private.key.path	It is the private key path that the web service uses to log in to the remote hosts.

Hypervisor scripts

Parameters	Description
cmd.create.vm	It is the path where the create vm script locates.
cmd.launch.vm	It is the path where the launch vm script locates.
cmd.query.vm	It is the path where the query vm script locates.
cmd.switch.vm	It is the path where the switch vm script locates.
cmd.stop.vm	It is the path where the stop vm script locates.

cmd.delete.vm	It is the path where the delete vm script locates.

Firewall setting for VM

Parameters	Description
hypervisor.fw.maintenance	It is the firewall setting for VM in maintenance mode.
hypervisor.fw.secure	It is the firewall setting for VM in secure mode.

Result release setting

Parameters	Description
email.sendername	It is the account name on the email server.
email.password	It is the password of the account on the email server.
email.smtp.host	It is the smtp host for the email server.
email.smtp.port	It is the smtp port for the email server.
result.download.prefix	It is the url prefix for the link to download the result.
result.expire.sec	It indicates how long the result will expire. The unit is second.

6. Run and monitor

Once the configuration is done, you need to restart Tomcat to reflect the changes.

The log file generated by the web service locates in ${tomcat-home}/sloan-ws.log by default. You can change this location by setting the log4j.properties.path in ${tomcat-home}/webapps/sloan-ws-1.x-SNAPSHOT/WEB-INF/classes/default.xml

INSTALLATION - RESULT RELEASE WEB SERVICE