# 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 in use. 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 other components in the system.

# 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 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

This web service is bundled with the VM management web service. You can follow the same steps mentioned above to build the web service jar. You can deploy it to the same Tomcat container or a different Tomcat container, or even on a different machine. The only configuration you need to change is in the default.xml file. You need to change the value of “sloan.ws.resources.names” as “edu.indiana.d2i.sloan.UploadResult” (no quotes).