**HPC DME Production Deployment Instructions**

# **Scope**

# This document describes the production deployment process for the various components of the HPC Data Management Environment, specifically the HPCDME API running on Apache ServiceMix, and the Web Application that provides the GUI interface to the system. This a living document that will be modified as when configuration changes occur. The document is not specific to any release, and describes the common production deployment process. However, release-specific steps if any will be captured in an Appendix at the end of the document.

# The deployment will be performed in two parts – pre-deployment or the deployment readiness process, and the actual deployment. Pre-deployment is the set of steps executed in preparation for the deployment, without disrupting system operation, or altering the executing code or configuration of the running system. Pre-deployment minimizes system downtime during deployment by performing some of the deployment steps upfront, thus reducing the time, effort and risk associated with the actual deployment.

# **Assumptions**

# This document assumes that the following activities associated with the release have already been performed:

1. Code checked into the release branch: releases/<version number>
2. Database schema change and migration scripts ready (if any)
3. New Globus group and application accounts setup completed (if any).

# **System Information**

The table below lists the servers hosting the various components of the system. These can be accessed from the combined development server (fr-s-hpcdm-gp-d.ncifcrf.gov) or the combined UAT server (fr-s-hpcdm-uat-p.ncifcrf.gov).

|  |  |  |
| --- | --- | --- |
| **Server** | **Name** | **Description** |
| API Server | fr-s-dmeapi-t-p.ncifcrf.gov  service account: ncifhpcdmsvcp | Hosts HPCDME API running on Apache ServiceMix. |
| Web Application Server | fr-s-hpcdm-web-p.ncifcrf.gov | Host Web Application |
| iRODS Server | fr-s-hpcdm-irods-p.ncifcrf.gov | Host iRODS |
| Database Server | fr-s-dmedb-t-p.ncifcrf.gov | Hosts Postgres database |

# **Pre-deployment Steps**

The pre-deployment steps are indicated below. Prior to executing these, SSH to the development or UAT server, and logon to the below servers from there, since these servers cannot be accessed directly from the local machines.

1. Prepare the build on API Server
2. Logon to the production server and sudo to root

**ssh fr-s-dmeapi-t-p.ncifcrf.gov**

**sudo su**

1. Switch user to service account and change to GIT local directory

**su ncifhpcdmsvcp**

**cd /opt/HPC\_DME\_APIs/src/HPC\_DME\_APIs**

1. Reset the GIT local repository to the new version

**git pull**

**git reset --hard origin/releases/<new version>**

**git checkout releases/<new release>**

1. Execute the API build

**cd src**

**mvn clean install –Pprod**

1. **Excecute the Web Application build**

**cd hpc-web**

**cp /opt/ apache-servicemix-7.0.0.M3/prod-env.conf src/main/resources/appconfigs/prod-env.conf**

**mvn clean install –Pprod**

**(Note: If any new env. Variable has been added in this releases to prod-env.conf, then instead of a blind copy, a merge should be performed)**

1. Transfer the Web Application war to the Web Application server

Copy the file target/hpc-web-<new\_version>.war from the above build to Web Server e.g.

scp -r target/hpc-web-1.6.0.war [<UserId>@fr-s-hpcdm-web-p.ncifcrf.gov:/home/<UserId>/](mailto:konkapv@fr-s-hpcdm-web-p.ncifcrf.gov:/home/konkapv/)

1. Transfer database migration script to the database server

Copy database script if any from /opt/<HPC\_DME\_ROOT>/src/hpc-server/hpc-dao-impl/src/main/script/migration/<migration\_script\_name> e.g.

**scp -r /opt/HPC\_DME\_APIs/src/HPC\_DME\_APIs/src/hpc-server/hpc-dao-impl/src/main/script/migration/release-1.6.0** [**<UserId>@fr-s-dmedb-t-p.ncifcrf.gov:/home/<UserId>/**](mailto:konkapv@fr-s-hpcdm-web-p.ncifcrf.gov:/home/konkapv/)

1. Update API startup script
   1. Change to Servicemix installation directory

**cd /opt/apache-servicemix-7.0.0.M3**

* 1. Copy the startup script *start-deploy-servicemix-service-<current\_version>.sh* to *start-deploy-servicemix-service-<new\_version>.sh*

In the line

**./bin/client -h 127.0.0.1**

**"feature:repo-add mvn:gov.nih.nci.hpc/hpc-features/<current\_version>/xml/features"**

replace <current\_version> with the new version e.g.

**./bin/client -h 127.0.0.1**

**"feature:repo-add mvn:gov.nih.nci.hpc/hpc-features/1.7.0/xml/features"**

1. Update config file on Web Application Server
   1. Logon to the Web Application server and sudo to root

**ssh fr-s-hpcdm-web-p.ncifcrf.gov**

**sudo su**

* 1. Change to the Tomcat config directory

**cd/opt/apache-tomcat-8.0.42/conf**

* 1. Update server.xml

In the line

**<Context path="" docBase="hpc-web-<prev\_version>" privileged="true"/>**

replace <prev\_version> with the value of <new\_version> e.g.

**<Context path="" docBase="hpc-web-1.7.0" privileged="true"/>**

# **Deployment Steps**

The deployment steps are indicated below. Prior to executing these, SSH to the development or UAT server, and logon to the below servers from there, since these servers cannot be accessed directly from the local machines.

1. Execute database scripts (if applicable)
   1. Login to database server and sudo to root

**ssh fr-s-dmedb-t-p.ncifcrf.gov**

**sudo su**

* 1. Switch user to postgres

**su postgres**

* 1. Backup current database

**pg\_dump ICAT > ICAT-<DateTime>.sql**

* 1. Run following migration script e.g.

**psql -d ICAT -f /home/<UserId>/hpc\_release\_1.6.0\_main-<ENV>.sql**

1. Restart API server and Install features
   1. Logon to the production server and sudo to root

**ssh fr-s-dmeapi-t-p.ncifcrf.gov**

**sudo su**

* 1. Switch user to service account and change to Servicemix installation directory

**su ncifhpcdmsvcp**

**cd /opt/apache-servicemix-7.0.0.M3**

* 1. Restart API server and install feature set

Execute the startup script

**./start-deploy-servicemix-service.sh**

1. Stage the Web Application war file
   1. Logon to the Web Application server and sudo to root

**ssh fr-s-hpcdm-web-p.ncifcrf.gov**

**sudo su**

* 1. Change to Tomcat installation directory

**cd /opt/apache-tomcat-8.0.42**

* 1. Stop Apache Tomcat by executing the command

**./bin/catalina.sh stop**

* 1. Backup the existing war file e.g.

**mv webapps/hpc-web-1.6.0.war webapps/hpc-web-1.6.0.war.backup\_<date\_time>**

* 1. Delete existing war directory e.g.

**rm –rf webapps/hpc-web-1.6.0**

* 1. Copy the new war file generated during pre-deployment to webapps directory

cp **~/hpc-web-<new\_version>.war webapps/.**

1. Start Apache Tomcat

**./bin/catalina.sh start**

If the web application URL displays Tomcat home page, stop and start Apache Tomcat

**./bin/catalina.sh stop**

**./bin/catalina.sh start**