



NAREGI UNICORE-C V1.0

Installation Manual

Version 1.0

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1. Introduction

UNICORE-C is a UNICORE-Condor bridge program which supports the submission and control of Condor jobs from a UNICORE client. This document explains the installation of UNICORE-C.

2. Installation

UNICORE-C consists of IDB-Condor and TSI-Condor modules. These modules are installed on UNICORE environment. Installation should be done with root privilege and Bourne Shell environment.

2.1. Prerequisites

1. UNICORE NJS version 4.0.3 and TSI version 4.0.4 are installed on the same machine.
2. Condor is also installed in the same machine with NJS and TSI, and installed in /usr/local/condor.
3. A UNICORE certificate has been obtained.

2.2. UNICORE-C Package

UNICORE-C is distributed as one archive file “unicore-c.tar.gz.” The content of the archive file is shown in Table 2.2-1. IDB-Condor should be installed first and then TSI-Condor.

Table 2.2-1 UNICORE-C package

Module	file (absolute path)
IDB-Condor	unicore-c/condor.idb
TSI-Condor	unicore-c/linux_condor/tsi unicore-c/linux_condor/GetStatusListing.pm unicore-c/linux_condor/Submit.pm
Documents	unicore-c/doc/installation.pdf unicore-c/doc/users_manual.pdf

2.3. Installation of IDB-Condor

IDB-Condor should be installed through the following steps.

1. Login as root.
2. Copy UNICORE-C archive file “unicore-c.tar.gz” to any directory.
3. Extract “unicore-c.tar.gz”.
4. Set the environment variable NJS_ROOT to where the UNICORE NJS is installed. For example, if UNICORE NJS is installed in /usr/local/unicore/njs, the environment variable NJS_ROOT is set to the NJS directory, as shown in the example below.
5. Create a NJS configuration file for UNICORE-C in the \$NJS_ROOT directory and copy all files in the NJS configuration directory (i.e., \$NJS_ROOT/conf) into the new directory created.
6. Copy the extracted “condor.idb” into the UNICORE-C configuration directory created at step 5.

```
# tar zxvf unicare-c.tar.gz
unicore-c/
unicore-c/linux_condor/
unicore-c/linux_condor/GetStatusListing.pm
unicore-c/linux_condor/Submit.pm
unicore-c/linux_condor/tsi
unicore-c/condor.idb
unicore-c/doc/installation.pdf
unicore-c/doc/users_manual.pdf
# export NJS_ROOT=/usr/local/unicore/njs
# cp -r $NJS_ROOT/conf $NJS_ROOT/conf_condor
# cp unicare-c/condor.idb $NJS_ROOT/conf_condor/
```

2.4. Installation of TSI-Condor

TSI-Condor should be installed through the following steps.

1. Set the environment variable TSI_ROOT to the UNICORE TSI directory. The example below assumes that the UNICORE TSI is installed in the /usr/local/unicore/TSI_4.0.4.
2. Copy TSI-Condor package into UNICORE TSI directory. For instance, as shown in the example below, use “cp -r linux_condor \$TSI_ROOT/tsi”, which should create a new directory linux_condor in the \$TSI_ROOT/tsi directory and copy all files into it.
3. Run TSI installation program.

During the TSI installation process, all the system-specific installable TSIs will be listed, then select “linux_condor”. Other variables should be set as default values.

```
# export TSI_ROOT=/usr/local/unicore/TSI_4.0.4
# cp -r linux_condor $TSI_ROOT/tsi/
# cd $TSI_ROOT/tsi/
# ./Install.sh
Available TSI implementations are:

1: tsi/NOBATCH
2: tsi/aix_ll
3: tsi/ccs
4: tsi/hitachi
5: tsi/hpux_pbs
6: tsi/irix_nqs
7: tsi/linux_condor
8: tsi/linux_pbs
9: tsi/sgi_lsf
10: tsi/superux
11: tsi/unicos
12: tsi/vpp
13: tsi_contrib/aix_ll_dce_RUKA
14: tsi_contrib/aix_lsf
15: tsi_contrib/hitachi_LRZ

To be continued.
```

Continued

16: tsi_contrib/solaris_ZIB

17: tsi_contrib/superux_CSCS

18: tsi_contrib/unicos_ZIB

19: tsi_contrib/vpp_LRZ

The installation will copy required files into a new directory.

Files common to all TSI implementations are copied from tsi/SHARED.

The TSI without a batch sub-system requires also files from tsi/NOBATCH.

Each TSI with a batch sub-system needs the files from tsi/<specific_system>.

Select a TSI to install (enter number) # **Type "7" and press [Enter]**

7

Enter installation directory for tsi/linux_condor (relative or absolute path) [tsi_linux_condor] #

Press [Enter]

Please confirm installation of tsi/linux_condor into directory tsi_linux_condor by typing y/n [y] #

Press [Enter]

Copy shared files (common to all installations) first:

Copy tsi/SHARED/BecomeUser.pm to tsi_linux_condor/BecomeUser.pm

Copy tsi/SHARED/Dump2File.pm to tsi_linux_condor/Dump2File.pm

Copy tsi/SHARED/EndProcessing.pm to tsi_linux_condor/EndProcessing.pm

Copy tsi/SHARED/ExecuteScript.pm to tsi_linux_condor/ExecuteScript.pm

Copy tsi/SHARED/GetDirectory.pm to tsi_linux_condor/GetDirectory.pm

Copy tsi/SHARED/Initialisation.pm to tsi_linux_condor/Initialisation.pm

Copy tsi/SHARED/JobControl.pm to tsi_linux_condor/JobControl.pm

Copy tsi/SHARED/MainLoop.pm to tsi_linux_condor/MainLoop.pm

Copy tsi/SHARED/PutFiles.pm to tsi_linux_condor/PutFiles.pm

Copy tsi/SHARED/Reporting.pm to tsi_linux_condor/Reporting.pm

Copy tsi/SHARED/tsi_ls to tsi_linux_condor/tsi_ls

To be continued.

Continued.

Copy (overwrite) specific files:

Copy tsi/linux_condor/GetStatusListing.pm to tsi_linux_condor/GetStatusListing.pm

Copy tsi/linux_condor/Submit.pm to tsi_linux_condor/Submit.pm

Copy tsi/linux_condor/tsi to tsi_linux_condor/tsi

#####

Finish installation by editing tsi_linux_condor/tsi.

Execute "Install_permissions.sh tsi_linux_condor" after update.

Finally start the TSI as described in the README file

#####

NB: When porting to new platform all specific files have to be adapted!

3. Configuration

3.1. IDB-Condor configuration

3.1.1. IDB file

The following configuration should be done about the Condor IDB file "condor.idb", which is installed in UNICORE-C installation process.

(1) NJS_FILE_SPACE

Set appropriate path name for NJS_FILE_SPACE. /var/unicore is an example.

```
-DEFINE NJS_FILE_SPACE /var/unicore
```

(2) SOURCE

Specify the name of machine on which the TSI-condor will run and the port number that it will use to connect to the NJS-condor. The first argument is TSI hostname, the second one is the port on which the NJS is listening for TSI connection, and the last one is the port on which the TSI will listen for NJS requests..

```
SOURCE tsi-hostname 5555 5560
```

(3) QSTAT_XLOGIN

Specify the uid of a user who is allowed to see all jobs running on the Condor Note that the user must be a local user who is registered in the UUDB, and has the right to execute condor_q command, for example, to see the status of jobs submitted.

```
QSTAT_XLOGIN naregi
```

(4) Other resource information

Specify appropriate information for NODE, PROCESSOR, MEMORY, STRAGE, CPU TIME, APPLICATION, SOFTWARE_RESOURCE.

3.1.2. njs.properties

Specify the location of the IDB-condor (i.e., incarnation database) for the njs.incarnationdb entry in the njs_properties file. This is either the full path to the file or the name of a file relative to the NJS configuration directory.

```
njs.incarnationdb=condor.idb
```

3.2. TSI-Condor configuration

3.2.1. NJS Status directory creation

Create a directory to store NJS status. The directory name should be other than the name of NJS default state directory. “stat_condor” is an example

```
#mkdir $NJS_ROOT/stat_condor
```

3.2.2. TSI-Condor configuration directory creation

TSI-Condor configuration directory is created and all files are copied from the existing TSI configuration directory into it. The \$TSI_ROOT is the directory in which the TSI is installed. “conf_condor” is an example.

```
#cp -r $TSI_ROOT/conf $TSI_ROOT/conf_condor
```

3.2.3. tsi.properties

Specify information in the \$TSI_ROOT/conf_condor/tsi.properties file as follows. Note that the values of tsi.njs_machine, tsi.njs_port, tsi.my_port must be the same with the values of SOURCE in the Condor IDB file.

```
tsi.path=./tsi_linux_condor/  
tsi.njs_machine=njs-hostname  
tsi.njs_port=5555  
tsi.my_port=5560
```

3.2.4. njs.properties

Specify information in the \$NJS_ROOT/conf_condor/njs.properties file as follows. Any name is acceptable for njs.vsite_name. The port number other than existing port number must be used for njs.admin_port, njs.gateway_port.

```
njs.vsite_name=UNICONDORE
njs.save_dir=$NJS_ROOT/stat_condor
njs.admin_port=7272
njs.gateway_port=8181
```

3.2.5. connections

If the system makes connection between Gateway and NJS dynamically, skip this section.

Specify information in the \$GATEWAY_ROOT/conf/connections file as follows. Note that the values of Vsite name, NJS port must be the same with the values of njs.vsite_name, njs.gateway_port in njs.properties respectively.

```
# <Vsite name>          <NJS machine>   <NJS port>
UNICONDORE             njs-hostname    8181
```

4. Start and Stop UNICORE-C

UNICORE-C will be run by starting UNICORE NJS and TSI daemons which are properly configured as described in the installation process above. UNICORE-C will be stopped by the UNICORE NJS and TSI stop utility.

4.1. NJS Start

```
#cd $NJS_ROOT/bin/  
#./start_njs ../conf_condor
```

4.2. NJS Stop

```
#$NJS_ROOT/bin/njs_admin -m <njs hostname> stop now
```

p

4.3. TSI Start

```
#cd $TSI_ROOT/bin  
#./start_tsi ../conf_condor
```

4.4. TSI Stop

There are two ways to stop running the TSI. User may use prefer one.

1)

```
#cd $NJS_ROOT/njs/bin  
#./njs_admin -m <njs hostname> tsi stop
```

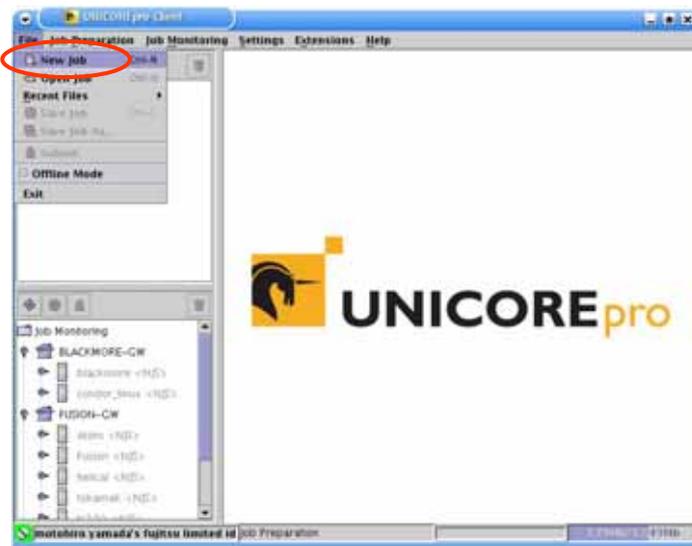
2)

```
#cd $TSI_ROOT/bin  
#./kill_tsi ../conf_condor
```

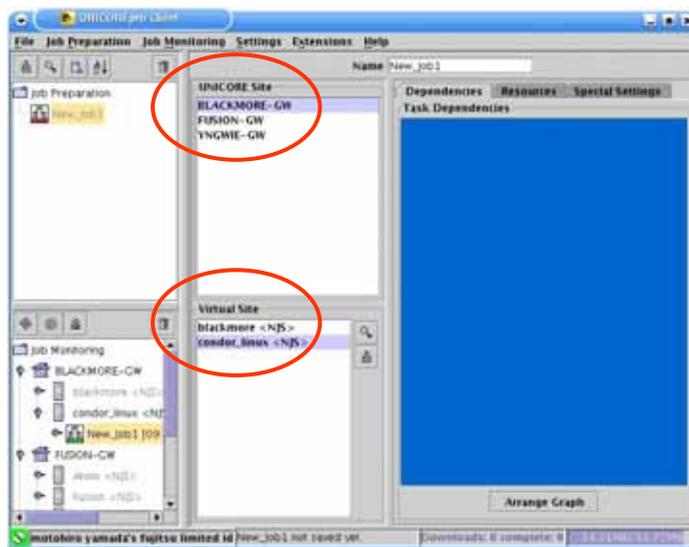
5. Installation and configuration check

This section explains how to see if the UNICORE-C is properly installed and configured. Note that the figures, which are used in this section, are the snap shots of UNICOREpro client.

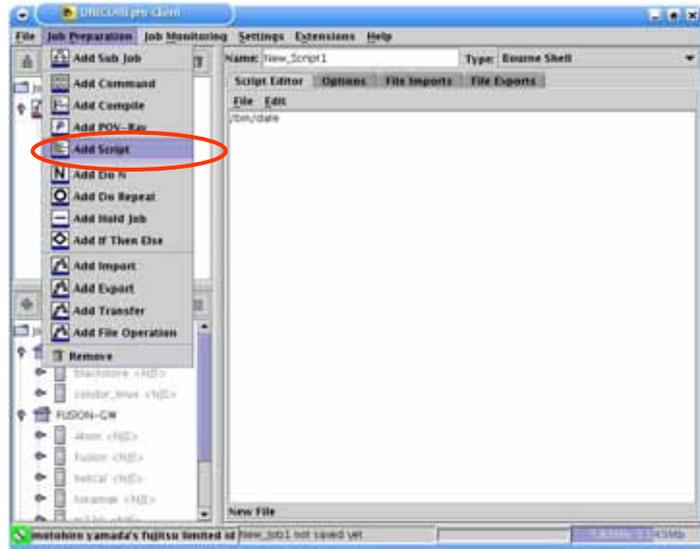
1. Run UNICORE Client.
2. Select [New Job] from [File] menu.



3. Select UNICORE Site and Virtual Site.



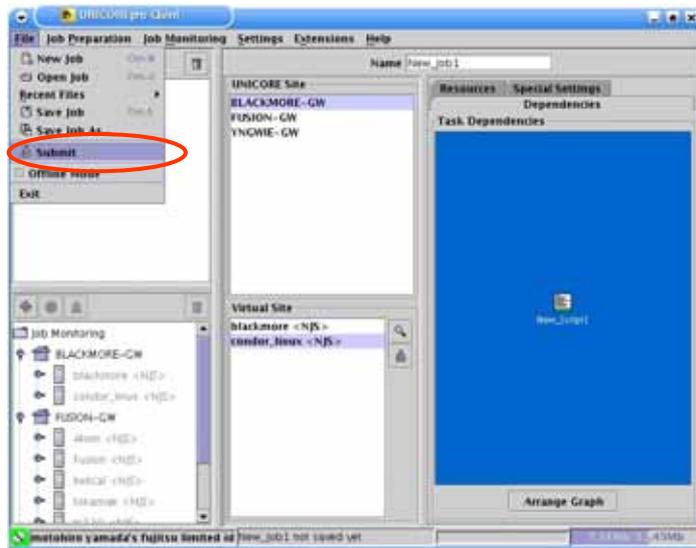
4. Select [Add Script] from [Job Preparation] menu



5. Select [Script Editor] tab and then input the following script.

```
date
sleep 600
date
```

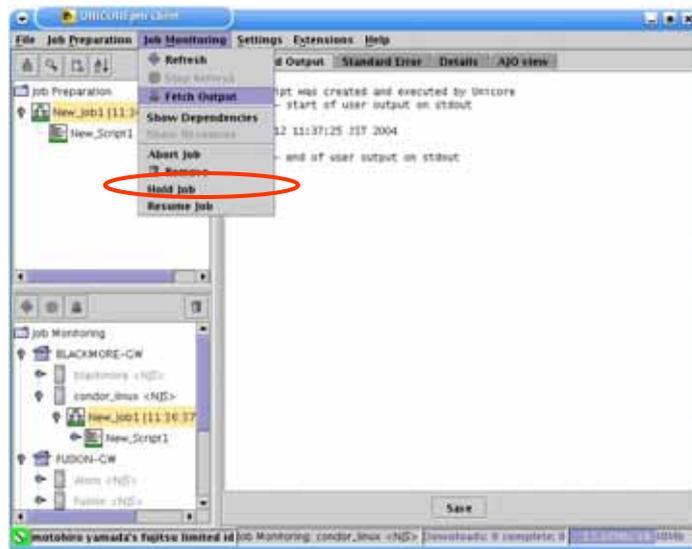
6. Select [Submit] from [File] menu



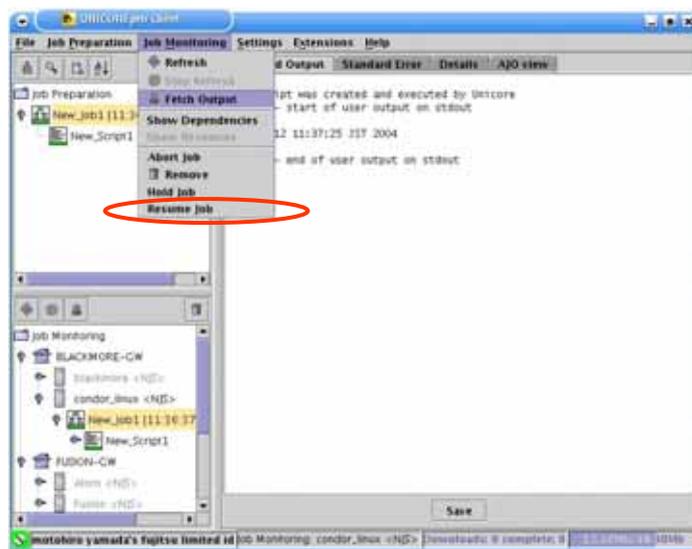
7. Login the Condor's submission host, and use the condor_q command to see if the

script task is successfully submitted to the Condor. The condor_q lists all jobs submitted onto the Condor submission host.

8. Select the submitted job from UNICORE Client Job monitoring window and then select [Hold Job] from [Job monitoring] menu.



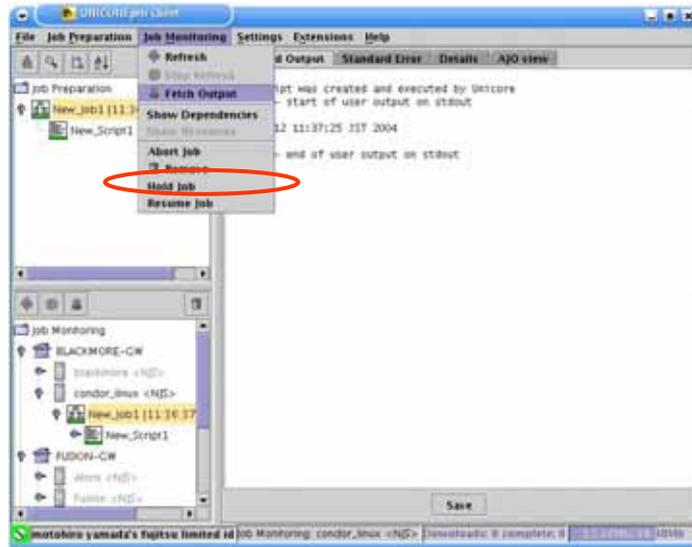
9. Run condor_q command on the submitted Condor host, and make sure the status of the job is in "H", which means it's stopped.
10. Select the submitted job from UNICORE Client Job monitoring window, and then select [Resume Job] from [Job monitoring] menu.



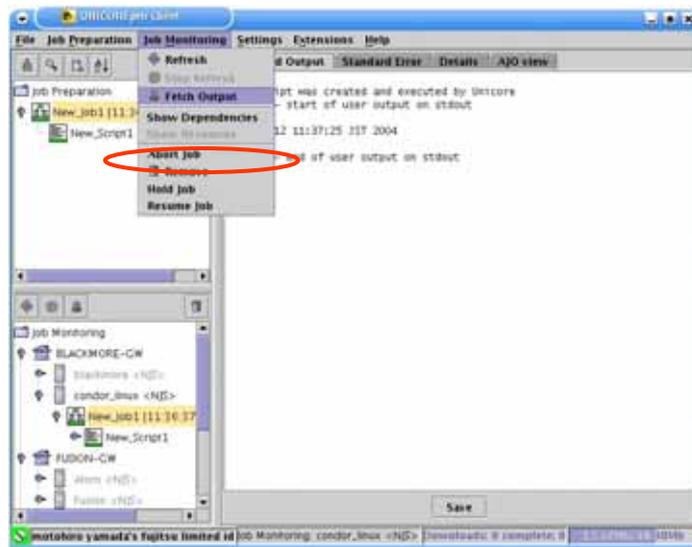
11. Run condor_q command on the submitted Condor host, and see if the status of the job

is changed to either "I" or "R", which means it's idle or running, respectively.

12. Select the submitted job from UNICORE Client Job monitoring window and then select [Hold Job] from [Job monitoring] menu.

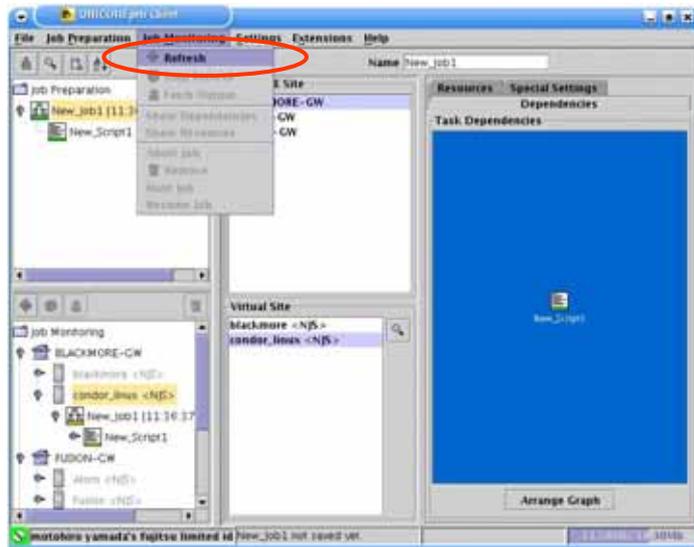


13. Select the submitted job from UNICOREpro Client Job monitoring window and then select [Abort Job] from [Job monitoring] menu.

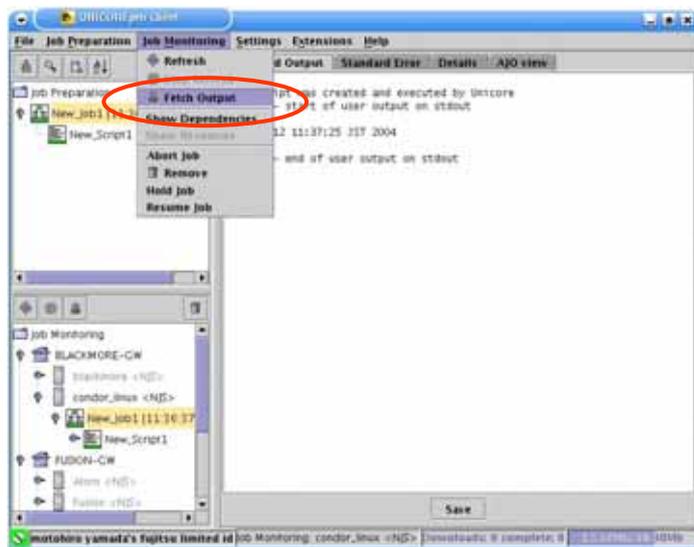


14. Run condor_q command on the submitted Condor host to see if the job is removed from the queue list.
15. On the UNICORE Client, select [Submit] from [File] menu again.

- Wait 10 minutes, then select Virtual Site from UNICORE Client Job monitoring window and then select [Refresh] from [Job monitoring] menu.



- Select the submitted job from UNICORE Client Job monitoring window and then select [Fetch Output] from [Job monitoring] menu.



- Select the [Standard Output] tab on UNICORE Client, and then check the result of the execution. Confirm the result that the date is the testing date and displayed twice.