SAGA-Torque Adaptor
Setup Guide

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1 Introduction

This document is the STA (SAGA-Torque Adaptor for Job Management) environment setup guide.

2 STA environment

STA uses Torque as job manager. Torque cluster consists of Torque server and Torque compute nodes. The Torque server manages a scheduler to control job queues and the PBS compute nodes execute each job. STA adaptor host that STA is installed on should need to access all of the Torque nodes. /home directory is shared among Torque server and Torque compute nodes in the typical Torque cluster system. STA adaptor host does not be required to have such shared directories with the cluster.

3 Setup procedure of STA environment

This chapter describes how to setup STA environment.

3.1 Setup Torque cluster system

Please refer to the install/setup instruction guide of Torque.

3.2 Setup STA Application Host

This section describes how to setup STA application host. The following software is required. Each setup procedure shows in the next.

- ➢ Torque client
- ➢ Boost C++ libraly
- ➢ SAGA C++ API
- ➢ STA

3.2.1 Software requirements

The following is required to setup STA application host.

OS	Linux distribution
Compiler	GCC C/C++ 3.4.6 or later

3.2.2 Torque client

STA requires Torque client on the STA application host.

Torque	Torque 2.3.6 or later

The following is the steps to install Torque client.

(1) Extract Torque package. The installation directory is /usr/local/src in this example.

```
$ tar zxvf torque_2.3.6.tar.gz
$ su
# mv torque_2.3.6 /usr/local/src/
```

(2) Install Torque commands for Torque client with the script in the Torque-2.3.6 source directory in the Torque server.

```
# cd torque_2.3.6
# scp –p torque_server:/somewhere/torque-package-clients-linux-i386.sh .
# ./torque-package-clients-linux-i386.sh --install
```

(3) Set setuid bit of pbs_iff

```
# chmod u+s /usr/local/torque/sbin/pbs_iff
```

(4) Create profile.d script for environment variables of Torque

```
. /etc/profile.d/torque.sh
```

```
#!/bin/bash
export TORQUE_HOME=/usr/local/torque
export PATH=$PATH:$ TORQUE_HOME /bin
```

The $ TORQUE_HOME should be same as the install directory you specified at the step (2).

(5) Modify Torque server configuration to accept jobs from STA application host.

(a) Add STA application host in /etc/hosts.equiv on Torque server
(b) Configure ACL of Torque server. For example,
```
# qmgr -c 'set server acl_host_enable = True'
# qmgr -c 'set server acl_hosts += sg01.cc.kek.jp'
```

(6) Configure the time to maintain information of completed jobs. In this example, the retention time is specified as 3600 seconds (1 hour).

```
# qmgr –c 'set server keep_completed = 3600'
```

3.2.3 Boost C++ libraly

Boost C++ library is required to compile SAGA. The following is the requirement of Boost C++ library.

Boost C++ library	Boost C++ library 1.34.1 or later

The following is the steps to install the Boost C++ library.

(1) Extract Boost C++ library package. The source directory is /usr/local/src in this example.

```
$ tar jxvf boost_1_34_1.tar.bz2
$ su
# mv boost_1_34_1 /usr/local/src/
```

(2) Compile and install Boost C++ library. The install directory is /usr/local/ in this example.

```
$ cd boost_1_34_1
$ ./configure --prefix=/usr/local
$ make
$ su
# make install
```

If you have some error messages that Boost Python cannot be detected at the next step (3), please try the following configure options. The Python install directory is /usr/local/python in this example.

```
$ ./configure --prefix=/usr/local --with-python=/usr/local/python/bin/python
```

3.2.4 SAGA C++ API

SAGA C++ API is required to use STA. The following is a requirement of SAGA C++ API.

SAGA C++	SAGA C++ 1.1.1 or later

The following is the steps to install the SAGA C++ API.

(1) Extract SAGA C++ package. The source directory is /usr/local/src in this example.

```
$ tar jxvf saga-cpp-1.1.1.src.tar.bz2
$ su
# mv saga-cpp-1.1.1.src /usr/local/src/
```

(2) Compile and install SAGA C++ API. The install directory is /usr/local/saga in this example.

```
$ cd saga-cpp-1.1.1-src
$ ./configure --prefix=/usr/local/saga
```

```
$ make
$ su
# make install
```

If you have some error messages that Boost Python cannot be detected, please try the following configure options. The Python install directory is /usr/local/python and the Boost C++ library is located at /usr/local in this example.

```
$./configure --prefix=/usr/local/saga --with-python=/usr/local/python --with-boost=
/usr/local
```

3.2.5 STA

The document, "STA Installation Guide", describes how to install STA.