Deployment of LCG and SRB at KEK

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Agenda

• KEK SRB Environment
• KEK LCG Environment
KEK SRB Environment
KEK SRB Test System Overview

• Used SRB versions history
  – SRB 2.0.x (first build) with PostgreSQL as MCAT
  – SRB 3.0.1 (GSI tested) with IBM DB2 Universal Database as MCAT
  – SRB 3.1.0 (current system)

• Operating Systems
  – AIX5L 5.1.0 on IBM eServer pSeries
    • Both MCAT-enabled and MCAT-disabled SRB servers are built.
    • IBM DB2 Universal Database v8.1 is used as MCAT.
  – Red Hat Linux 7.3 on PC servers (Intel based)
    • Some machines have both MCAT-enabled/disabled SRB Servers.
    • IBM DB2 Universal Database V8.1 is used as MCAT.

• Especially Mentioned Feature
  – HPSS-enabled SRB Server running
    • KEK SRB test system can use HPSS as its storage resource.
KEK SRB Test System Image

Can be switched by changing configurations

ZONE : gtsrb13

MCAT

gt13.kek.jp

MCAT

ZONE : gtsrb13

MCAT

gt13.kek.jp

MCAT

ZONE : gasrb01

MCAT

ga01.cc.kek.jp

MCAT

gl03.cc.kek.jp

MCAT

gl04.cc.kek.jp

HPSS

ZONE : gtsrb13

MCAT

ga01.cc.kek.jp

MCAT

gl03.cc.kek.jp

MCAT

gl04.cc.kek.jp

HPSS

ZONE : gtsrb04

MCAT

gl04.cc.kek.jp
KEK SRB Test System

Australia site

Internet

ZONE : glsrbo1
- gl01

ZONE : gtsrb13
- gt13
- gl01
- gl03
- bcs20
- HPSS
- NFS server

ZONE : kekgt15
- MCAT
- gt15
- gtdmz01

MCAT
- firewall
SRB Deployment Key-Point

• For enabling HPSS connection:
  – A part of source code had to be modified.
    • KEK HPSS use the Kerberos (Heimdal) as authentication & authorization of Linux clients.
    • This mechanism is so unique.
    • DCE is popular as A&A method for HPSS.
    • Kerberos co-operates DCE at KEK.
    • SRB original codes assume that non-DCE mode is used on only Solaris Platform.
  – The others can be built satisfactory
    • Beforehand, HPSS client module and GlobusToolkit have to be installed.
SRB and HPSS Relations Example

Globus Toolkit CA

MCAT-enabled SRB Server

MCAT (DB2)

Physical Resource: ga01-hpss-srb

SRB Domain “kek”

HPSS-enabled SRB Server

HPSS Core Server

HPSS Disk Mover

HPSS Disk Mover

/hpss/ce/srb/srb01/SRBVault/
KEK LCG Environment
KEK LCG Test System Overview

• Both LCG1 & LCG2 were tried
  – configured Tier 1
  – Now, LCG2 (LCG2_0_0)

• Test environment consists of PC servers which have various specifications.
  – manufacturers, memories, storages...etc.

• LCFG server is used to configure LCG2 environment..
  – There were some errors when I configured LCFG server.
  – I heard that this way of installation & configuration were obsolete
  – However, in this case, LCFG server can be used after re-execution of several configuration scripts on LCFG.
KEK LCG

LCFGng

RB

CE

WN

UI

Proxy

SE

RLS

BDII

MDS

lcg004

lcg007

lcg008

lcg009

lcg001

lcg002

lcg003

lcg010

lcg005

lcg006
KEK LCG-2

(Configuration)

LCFGng

(User Interface)

UI

request proxy certificates

(Proxy Server)

Proxy

job submission

(RB)

Resource Broker

(CE)

Computing Element

(MDS)

(Berkely Database Information Index)

asynchronous query

asynchronous report

asynchronous query

(Job Manager)

Classic SE

(Storage Element)

(MDS) Grid Info Index Service

(WN)

Worker Nodes

(Job Submission)

GRAM

(resource)

information

asynchronous

report

(resource)

information

(resource)

information

(Worker Nodes)

PBS Domain

(/home is shared)
For Next Steps

• Now under investigation:
  – How to configure mini Tier 0 environment
  – How to use HPSS as LCG-2 SE
  – How to use SRB with LCG-2
Summary

• KEK SRB system can use HPSS as storage resource.
• KEK LCG system have been tested about basic function.
• Now under investigation about
  how to integrate these data grid middle-wares.
Thank you