

\* 1, 1, 1

1, (E-mail: picchi@kasi.re.kr)

Abstract

(KASI) GNSS (IGS) (GDC) KASI
GDC IGS GDC 4
KASI GDC IGS GNSS
GDC
IGS GPS IGS
가 GDC
KASI GDC
RAID LVM KASI GDC
Active

Keywords: KASI Global Data Center (GDC), GPS data, (redundant technique.)

1.

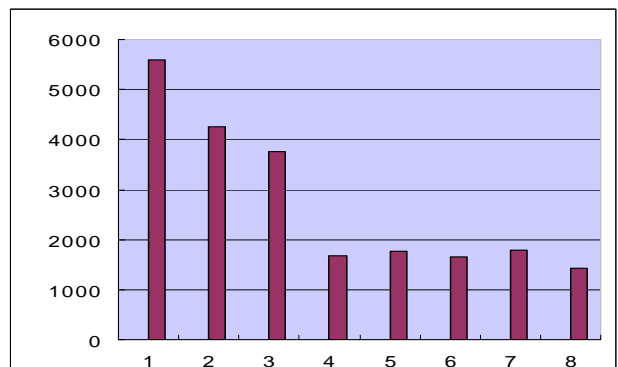
GPS
가
1994 GNSS (IGS)
GNSS
IGS 3 GPS
가
[1].
(KASI) 2003
(GDC) IGS , 2004
, 2005 IGS 4
IGS GDC 2006
1 1 KASI 가 IGS GDC
IGS 380 GPS
GPS IGS GDC 90
GDC
IGS
GDC
(Terabytes)
[2].

2. KASI GDC

2.1

2005
KASI GDC
2006
가 1, 4

GDC
Independent) LVM(Logical Volume Manager)
(Storage)
RAID(Redundant Array of
DAS(Direct Attached Storage)
[3].
KASI GDC



1. Fig. 1. WEB connection counts

KASI GDC 가

2.2

KASI GDC (http://gdc.kasi.re.kr)  
 FTP (ftp://nfs.kasi.re.kr)  
 KASI GDC daily

Table 1. Data download capacity by type

	d	m	n	o	s	(KB)
1	332,799	652	10,462	15,568,040	0	15,911,953
2	514,967	108	6,632	47,768,367	0	48,290,074
3	1,413,681	186	3,062	6,534,641	7	7,951,577
4	6,660,304	22	1,721	343,507,301	0	350,169,348
5	12,658,702	1,495	5,205	48,980	0	12,714,382
6	9,255,498	595	6,009	67,871	8	9,329,981
7	6,932,095	553	23,780	77,077	320	7,033,825
8	1,082,123	101	2,077	63,395	0	1,147,696

daily, 453,108,594KB

3.

3.1 HA

IGS GDC, (Node)  
 (High Availability : HA)  
 KASI GDC (Redhat)  
 (Cluster Suite)  
 [4].

Table 2. Cluster specification

Hardware	
Server	Dell PowerEdge™ 2850 × 3
CPU	Intel® Xeon™ 3.4 GHz 2Way
Memory	2GB, DDR-2 SDRAM
HDD	146GB × 2 (RAID 1)
Software	
OS	Red Hat Enterprise Linux 4 ES UP3
Application	Apache 2.0 / PHP 4.3 / MySQL 4.1 Cluster Suite × 3

3. HA 가 HA

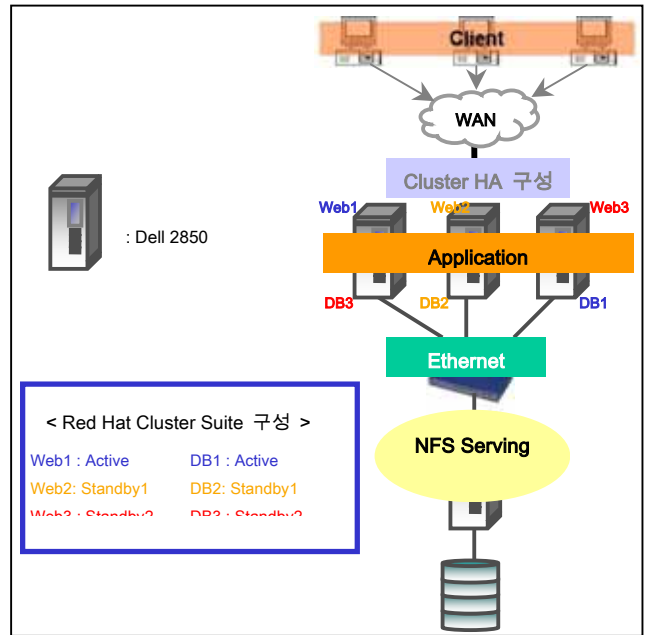
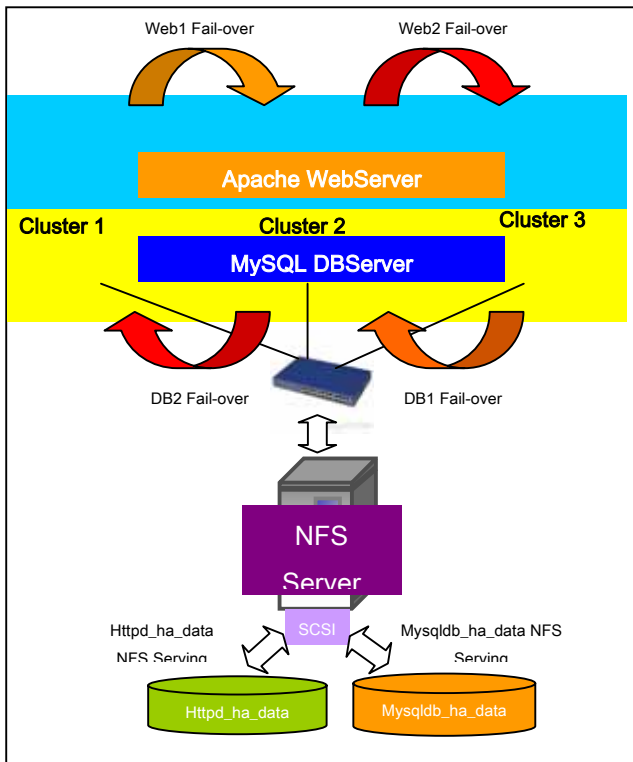


Fig. 2. Cluster HA

Active 가 가 Active  
 Standby 가 Active 가

3.2 HA

HA, DB  
 DB, Apache 가  
 MySQL DB 가  
 MySQL DB  
 Apache 가  
 MySQL DB 가  
 MySQL DB



3. HA  
Fig. 3 The principle of cluster HA

## Acknowledgement

1. <http://igsbc.jpl.nasa.gov>.
2. S.K. Cho, D.K. Lee, J.U. Park, P.H. Park, "IGS Global Data Center Operation in Korea Astronomy and Space Science Institute," Proceedings of the 12th GNSS Workshop, Dec. 2005, pp. 95.
3. D.K. Lee, S.K. Cho, J.U. Park, P.H. Park, "Implementation of Hardware RAID and LVM-based Large Volume Storage on Global Data Center System of International GNSS Service," International Conference on Control, Automation and System, Jun. 2005, pp. 1553-1557.
4. <http://www.redhat.com/docs/manuals/csgfs>.

1 가 Standby1 가 2가

1 가 DB 3 가 Fail-over가

4.

GPS

가 GPS 가

GPS

GPS

GPS

IGS 2006 1

2005

GDC

GDC

GPS

HA

GDC

GNSS

GNSS