

# 공개 S/W 기술지원 KISA

한국소프트웨어진흥원  
공개SW기술지원센터

## &lt;Revision 정보&gt;

| 일자          | VERSION | 변경내역  | 작성자 |
|-------------|---------|-------|-----|
| 2007. 2. 23 | 0.1     | 초기 작성 | 손명선 |
|             |         |       |     |

|  | 공개SW 기술지원 |                |
|-----------------------------------------------------------------------------------|-----------|----------------|
|                                                                                   | 구분 : 기술지원 | 단계:            |
|                                                                                   | 작성자: 손명선  | 작성일: 2007.2.23 |
|                                                                                   | 검토자:      | 검토일:           |
|                                                                                   | 승인자:      | 승인일:           |

#### 1. 대상기업/기관 정보

| 구분          | 항목          | 내용                      | 비고 |
|-------------|-------------|-------------------------|----|
| 기업/기관<br>정보 | 지역          | 서울시 송파구 가락동 78번지 IT벤처타워 |    |
|             | 기업/기관 명칭    | 한국정보보호진흥원               |    |
|             | 부서          | 유지보수업체(일래스틱네트웍스)        |    |
|             | 직책          | 대리                      |    |
|             | 담당자 이름      | 조건형                     |    |
|             | 전화번호 / 팩스번호 | 011-494-9876            |    |
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#### 2. 대상기업/기관 지원사항

| 구분            | 항목   | 내용                                                                                                                                                                                                                                                                                                                                                | 비고 |
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| 기업/기관<br>지원사항 | 접수내용 | 리눅스 정보 수집서버의 장애 복구 기술지원                                                                                                                                                                                                                                                                                                                           |    |
|               | 지원내역 | <p>1. 1차 장애 발생 분석</p> <p>- 2006년 12월 23일 Center2의 시스템 장애에 의해서 Center1번으로 File Service Failover 작동 (Center2과 Center1은 File Service HA 구성으로 Center2번이 Master로 동작함)</p> <p>; Center2의 재부팅으로 인해 Center2의 KISASVR를 위해 NFS Mount Point가 끊어짐.</p> <p>; HA구성으로 서비스에 대한 장애 복구가 자동으로 이루어졌음.</p> <p>; Center2의 Uptime 기간으로 봐서 시스템 Shutdown이 발생한 것으로 추정됨.</p> |    |

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|  |  | <p>&lt;&lt; 정상 로그 &gt;&gt;</p> <pre> ### executing in Center1  [Center1] Filesystem Size Used Avail Use% Mounted on [Center1] /dev/sda2 9.7G 472M 8.7G 6% / [Center1] /dev/sda1 190M 17M 164M 10% /boot [Center1] none 506M 0 506M 0% /dev/shm [Center1] /dev/sda7 981M 352M 579M 38% /tmp [Center1] /dev/sda3 9.7G 2.3G 6.9G 25% /usr [Center1] /dev/sda5 2.9G 337M 2.5G 13% /var [Center1] /dev/sda8 43G 1.6G 39G 4% /KISA/BACKUP [Center1] 192.168.2.105:/data/KISA/LOG [Center1] 551G 103G 421G 20% /KISA/LOG &lt;&lt;==== Service를 위해 NFS Mount [Center1] 192.168.2.105:/data/KISA/data [Center1] 551G 103G 421G 20% /KISA/data &lt;&lt;==== Service를 위해 NFS Mount  ### executing in Center2  [Center2] Filesystem Size Used Avail Use% Mounted on [Center2] /dev/sda2 9.7G 401M 8.8G 5% / [Center2] /dev/sda1 190M 14M 167M 8% /boot </pre> |  |
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|  |  | <pre> [Center2] none 506M 0 506M 0% /dev/shm  [Center2] /dev/sda7 981M 22M 909M 3% /tmp  [Center2] /dev/sda3 9.7G 1.3G 8.0G 14% /usr  [Center2] /dev/sda5 2.9G 172M 2.6G 7% /var  [Center2] /dev/sda8 43G 23G 18G 56% /KISA/BACKUP  [Center2] /dev/drbd0 551G 103G 421G 20% /data &lt;&lt;==== HA Master가 갖는 파티션  [Center2] 192.168.2.105:/data/KISA/LOG  [Center2] 551G 103G 421G 20% /KISA/LOG &lt;&lt;==== Service를 위해 NFS Mount  [Center2] 192.168.2.105:/data/KISA/data  [Center2] 551G 103G 421G 20% /KISA/data &lt;&lt;==== Service를 위해 NFS Mount  ### executing in Center3  [Center3] Filesystem Size Used Avail Use% Mounted on  [Center3] /dev/sda2 9.7G 170M 9.0G 2% /  [Center3] /dev/sda7 45G 85M 42G 1% /KISA/BACKUP  [Center3] /dev/sda1 198M 12M 177M 6% /boot  [Center3] none 506M 0 506M 0% /dev/shm  [Center3] /dev/sda3 989M 23M 916M 3% /tmp </pre> |  |
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|  |  | <pre> [Center3] /dev/sda5 9.7G 6.4G 2.8G 70% /usr  [Center3] /dev/sda6 2.9G 73M 2.7G 3% /var  [Center3] 192.168.2.105:/data/KISA/LOG  [Center3] 551G 103G 421G 20% /KISA/LOG &lt;&lt;==== Service를 위해 NFS Mount  [Center3] 192.168.2.105:/data/KISA/data  [Center3] 551G 103G 421G 20% /KISA/data &lt;&lt;==== Service를 위해 NFS Mount  ### executing in Center1  [Center1] 2006. 12. 22. (금) 06:01:02 KST  ### executing in Center2  [Center2] 2006. 12. 22. (금) 06:01:02 KST  ### executing in Center3  [Center3] 2006. 12. 22. (금) 06:01:02 KST  &lt;&lt; 1차 장애 발생이후 로그 &gt;&gt;  ### executing in Center1  [Center1] Filesystem Size Used Avail Use% Mounted on  [Center1] /dev/sda2 9.7G 472M 8.7G 6% /  [Center1] /dev/sda1 190M 17M 164M 10% /boot </pre> |  |
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|  |  | <pre> [Center1] none 506M 0 506M 0% /dev/shm  [Center1] /dev/sda7 981M 391M 541M 42% /tmp  [Center1] /dev/sda3 9.7G 2.3G 6.9G 25% /usr  [Center1] /dev/sda5 2.9G 337M 2.5G 13% /var  [Center1] /dev/sda8 43G 1.6G 39G 4% /KISA/BACKUP  [Center1] 192.168.2.105:/data/KISA/LOG  [Center1] 551G 103G 420G 20% /KISA/LOG &lt;&lt;==== Service를 위해 NFS Mount  [Center1] 192.168.2.105:/data/KISA/data  [Center1] 551G 103G 420G 20% /KISA/data &lt;&lt;==== Service를 위해 NFS Mount  [Center1] /dev/drbd0 551G 103G 420G 20% /data &lt;&lt;==== Center2의 장애 발생이후 Center1으로 Failover된 파티션  ### executing in Center2  [Center2] Filesystem Size Used Avail Use% Mounted on  [Center2] /dev/sda2 9.7G 452M 8.7G 5% /  [Center2] /dev/sda1 190M 14M 167M 8% /boot  [Center2] none 506M 0 506M 0% /dev/shm  [Center2] /dev/sda7 981M 22M 910M 3% /tmp  [Center2] /dev/sda3 9.7G 1.3G 8.0G 14% /usr </pre> |  |
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|  |  | <pre> [Center2] /dev/sda5 2.9G 165M 2.6G 6% /var  [Center2] /dev/sda8 43G 23G 18G 56% /KISA/BACKUP &lt;&lt;==== Center2에는 Mount Point가 끊어져있음.  ### executing in Center3  [Center3] Filesystem Size Used Avail Use% Mounted on  [Center3] /dev/sda2 9.7G 170M 9.0G 2% /  [Center3] /dev/sda7 45G 85M 42G 1% /KISA/BACKUP  [Center3] /dev/sda1 198M 12M 177M 6% /boot  [Center3] none 506M 0 506M 0% /dev/shm  [Center3] /dev/sda3 989M 23M 916M 3% /tmp  [Center3] /dev/sda5 9.7G 6.5G 2.7G 71% /usr  [Center3] /dev/sda6 2.9G 73M 2.7G 3% /var  [Center3] 192.168.2.105:/data/KISA/LOG  [Center3] 551G 103G 420G 20% /KISA/LOG &lt;&lt;==== Service를 위해 NFS Mount  [Center3] 192.168.2.105:/data/KISA/data  [Center3] 551G 103G 420G 20% /KISA/data &lt;&lt;==== Service를 위해 NFS Mount  ### executing in Center1  [Center1] 2006. 12. 24. (일) 06:01:02 KST  ### executing in Center2 </pre> |  |
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|  |  | <div style="background-color: #333; color: white; padding: 10px;"> <p>[Center2] 2006. 12. 24. (일) 06:01:02 KST</p> <p>### executing in Center3</p> <p>[Center3] 2006. 12. 24. (일) 06:01:02 KST</p> </div> <p>2. 2차 장애 발생 분석</p> <ul style="list-style-type: none"> <li>- Center2의 NFS mount Point가 끊어져 있는 상태에서 KISASVR Service가 시작되어 Remote File server에 data가 쌓이지 않고, Local에 data가 쌓여서 / 파티션이 Full이 됨. (장애 발생시 KISASVR이 자동으로 시작되게 되어있지 않기 때문에 어떻게 시작되었는지는 확인이 어려움. 수동으로 시작시켰을 가능성이 있음.)</li> </ul> <p>; 2007년 2월 19일 Center2의 시스템 오작동 초래</p> <p>3. 2월 21일 출장 조치 내역</p> <ul style="list-style-type: none"> <li>- 시스템 장애 로그 확인으로 원인 분석</li> <li>- Center2의 Local에 쌓인 Data를 /KISA/BACKUP으로 Backup하여 / 파티션의 확보</li> <li>- Center2의 HA 재시작 및 Standby에서 Master로 서비스 재 이관.</li> <li>- NFS Mount 방식을 Hard 마운트에서 Auto 마운트로 변경으로 Mount상황을 수시 Check 및 자동 Mount가 되도록 기능 변경</li> <li>- Mount Point를 / 파티션에서 /dev/sda8의 별도 파티션으로 옮겨서 최소한 장애 발생 대비 / 파티션이 Full이 되는 것을 막음.</li> </ul> |  |
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|  |  | <p>&lt;&lt; 2차 장애 로그 &gt;&gt;</p> <pre> ### executing in Center2  [Center2] Filesystem Size Used Avail Use% Mounted on [Center2] /dev/sda2 9.7G 9.7G 0 100% / &lt;&lt;==== / 파티션이 Full이 됨.  [Center2] /dev/sda1 190M 14M 167M 8% /boot  [Center2] none 506M 0 506M 0% /dev/shm  [Center2] /dev/sda7 981M 68M 864M 8% /tmp  [Center2] /dev/sda3 9.7G 1.3G 8.0G 14% /usr  [Center2] /dev/sda5 2.9G 143M 2.6G 6% /var  [Center2] /dev/sda8 43G 29G 12G 73% /KISA/BACKUP </pre> <p>&lt;&lt; 조치 이후 정상 로그 &gt;&gt;</p> <pre> ### executing in Center1  [Center1] Filesystem Size Used Avail Use% Mounted on [Center1] /dev/sda2 9.7G 475M 8.7G 6% /  [Center1] /dev/sda1 190M 17M 164M 10% /boot  [Center1] none 506M 0 506M 0% /dev/shm </pre> |  |
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|  |  | <pre> [Center1] /dev/sda7 981M 214M 718M 23% /tmp  [Center1] /dev/sda3 9.7G 2.3G 6.9G 25% /usr  [Center1] /dev/sda5 2.9G 341M 2.5G 13% /var  [Center1] /dev/sda8 43G 1.6G 39G 4% /KISA &lt;&lt;==== Mount Point를 별도의 파티션으로 변경  [Center1] 192.168.2.105:/data/KISA/LOG  [Center1] 551G 61G 462G 12% /KISA/KISA/LOG  [Center1] 192.168.2.105:/data/KISA/data  [Center1] 551G 61G 462G 12% /KISA/KISA/data  ### executing in Center2  [Center2] Filesystem Size Used Avail Use% Mounted on  [Center2] /dev/sda2 9.7G 257M 8.9G 3% /  [Center2] /dev/sda1 190M 14M 167M 8% /boot  [Center2] none 506M 0 506M 0% /dev/shm  [Center2] /dev/sda7 981M 68M 864M 8% /tmp  [Center2] /dev/sda3 9.7G 1.3G 8.0G 14% /usr  [Center2] /dev/sda5 2.9G 143M 2.6G 6% /var  [Center2] /dev/sda8 43G 32G 8.4G 80% /KISA &lt;&lt;==== Mount Point를 별도의 파티션으로 변경  [Center2] 192.168.2.105:/data/KISA/LOG </pre> |  |
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|  |  | <pre> [Center2] 551G 61G 462G 12% /KISA/KISA/LOG  [Center2] 192.168.2.105:/data/KISA/data  [Center2] 551G 61G 462G 12% /KISA/KISA/data  [Center2] /dev/drbd0 551G 61G 462G 12% /data &lt;&lt;=== HA Master로 서비스 재 이관  ### executing in Center3  [Center3] Filesystem Size Used Avail Use% Mounted on  [Center3] /dev/sda2 9.7G 165M 9.0G 2% /  [Center3] /dev/sda1 198M 12M 177M 6% /boot  [Center3] none 506M 0 506M 0% /dev/shm  [Center3] /dev/sda3 989M 20M 919M 3% /tmp  [Center3] /dev/sda5 9.7G 7.9G 1.3G 87% /usr  [Center3] /dev/sda6 2.9G 73M 2.7G 3% /var  [Center3] /dev/sda7 45G 789M 41G 2% /KISA &lt;&lt;=== Mount Point를 별도의 파티션으로 변경  [Center3] 192.168.2.105:/data/KISA/data  [Center3] 551G 61G 462G 12% /KISA/KISA/data  [Center3] 192.168.2.105:/data/KISA/LOG  [Center3] 551G 61G 462G 12% /KISA/KISA/LOG </pre> |  |
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|  |  | <pre>## auto Mount 설정 파일 내역  /etc/auto.master  -----  #  # \$Id: auto.master,v 1.3 2003/09/29 08:22:35 raven Exp #  #  # Sample auto.master file  # This is an automounter map and it has the following format  # key [ -mount-options-separated-by-comma ] location  # For details of the format look at autofs(5).  #/misc /etc/auto.misc --timeout=60  #/misc /etc/auto.misc  #/net /etc/auto.net  /KISA/KISA /etc/auto.KISA --timeout=60  -----  /etc/auto.KISA</pre> |  |
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|  |  | <pre>LOG -fstype=nfs,rw,soft,bg 192.168.2.105:/data/KISA/LOG data -fstype=nfs,rw,soft,bg 192.168.2.105:/data/KISA/data</pre> |  |
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