

Storage reallocation and restructuring at Computer Science Department

Phase 1

▪ Pallene, Kallimachos and Galatea

Hermes is almost obsolete machine (Purchase date:11/2007) and single point of failure. We can add new machines, Pallene and Kallimachos, for better nfs performance and load balancing. Email storage(/mail) and /home/students storage are demanding services with too many read/write operations. The aim is to split these two services , on two iScsi storage machines and also on two iscsi/nfs servers.

A. Pallene (cs9056)

1. Connect Pallene as iscsi initiator with Iasonas and as NFS server
2. Redirect /dev/sdb2 (located on Iasonas) from hermes (/dev/sdc) to Pallene, to export NFS for /home/projects,/home/courses,/home/students
3. Increase quotas for students groups, for /home/students (See Section1)

A. Galatea(cs9040)*** and Kallimachos(cs9055)

1. Prepare Galatea as iSCSI target
2. Connect Kallimachos to Galatea as iscsi initiator and as NFS server.
3. Transfer email, and /sys-data/mail from Orfeas and increase quotas for students and research group
4. Kallimachos will act as NFS server for /mail and /sys-data/mail
5. Transfer /extraspaces/research and /extraspaces/faculty from Iasonas Galatea . Hermes will continue to export /extraspaces/research and /extraspaces/faculty
6. Orfeas can be retired

Note: * Can we use machine cs8302 (machine is in store and was purchased as virtualization server). What if we purchase 2.5" SAS 10k/15k Hard disks for email**

B. Argos (cs5293)

1. 2 x 1 TB new Hdds can be installed on the server (are in the 003-store)
2. Can be used to replace Kalliopi, Leto, Astarti, and part of netgear1

A. Artemis /Demetra space

1. Move /opnet from Leto to Artemis
2. We can store VM Host images of critical machines (email,dns, etc) on Artemis/Demetra, for immediate restore
- 3.

Phase 2

B. Artemis /Demetra space

1. Since we have more than 4.1 TB available on Artemis and 9.5 TB free on Demetra we can provide /extraspaces/students and W:\ drive to all students
2. Goofy can also be redirected to NetApp/Demetra , so as to free space on Iasonas

HOSTNAME	RAW SPACE	Total Available Raw Space	Space Allocated and Used	Unallocated Space															
IASONAS (12/2010) cs7360	<ul style="list-style-type: none"> 2 x 148 (for OS, Raid 1) 4 x 2TB 4 x 3TB <hr/> 8+12 = 20 TB <table border="1" data-bbox="359 561 814 805"> <thead> <tr> <th>Max HDD Slots</th> <th>#of HDD Installed</th> <th>Availabe Raw Space</th> </tr> </thead> <tbody> <tr> <td rowspan="2">12 (Applied Raid 5)</td> <td>4 x 2TB</td> <td>3 x 2 TB</td> </tr> <tr> <td>4 x 3TB</td> <td>3 x 3 TB</td> </tr> <tr> <td></td> <td>3 x 3 TB*</td> <td>9 TB</td> </tr> <tr> <td>Free HDD Slots</td> <td>1</td> <td></td> </tr> </tbody> </table> <p>*just installed on system with no configuration in raid ** 2 TB allocated to Iraklis but not used</p>	Max HDD Slots	#of HDD Installed	Availabe Raw Space	12 (Applied Raid 5)	4 x 2TB	3 x 2 TB	4 x 3TB	3 x 3 TB		3 x 3 TB*	9 TB	Free HDD Slots	1		15 TB+9 TB	12 TB	3.5 TB+9* TB+2TB**	<ol style="list-style-type: none"> 1. Move and install 3 x 3 TB (unused on Iasonas ,cs8549/50/51) to Galatea 2. /dev/sdb3 (/extraspaces/research) and /dev/sdc1 (/extraspaces/faculty) to be moved from Iasonas to Galatea 3. Space allocated to Iraklis (2 TB) and has not been used until now, we can get it back.
Max HDD Slots	#of HDD Installed	Availabe Raw Space																	
12 (Applied Raid 5)	4 x 2TB	3 x 2 TB																	
	4 x 3TB	3 x 3 TB																	
	3 x 3 TB*	9 TB																	
Free HDD Slots	1																		
Net App (1/2010) cs6478 cs8196	12 x 1 TB (Artemis) 12 x 2 TB (Demetra) <hr/> 12+24 TB=36 TB Raw Space * 3.7 TB on Artemis of which : utilities+contiki+voIP allocated but not used (1GB+1TB+160GB =1.16 TB+2.64 free space) **9.5 TB on Demetra(pittsilides+linuxVMFS) allocated but we can get it back (5TB+600GB+4TB free space)	6.6TB (Artemis) 12.9 TB (Demetra)	2.64 TB * 4 TB**		<ol style="list-style-type: none"> 1. 5 TB space allocated on Demetra (pittsilides volume) and 600 GB for linux VMS, can be taken back, so totally 9.5 TB free space (including 4TB free space) 2. Extraspaces for students can be provided as W:\ drive.(See section 1 below) 3. Space of ~1TB for TSM pools for KVM images of critical machines, to be available at any time 														

<p>ARGOS cs5293 (12/2010)</p>	<table border="1" data-bbox="277 228 701 469"> <tr> <th>Max HDD Slots</th> <th>#of HDD Installed</th> <th>Availabe Raw Space (Raid1)</th> </tr> <tr> <td rowspan="2">6</td> <td>2 x 146GB</td> <td>Operating System</td> </tr> <tr> <td>2 x 1TB</td> <td>1 TB</td> </tr> <tr> <td></td> <td>2 x 1TB*</td> <td>1 TB*</td> </tr> <tr> <td>Free HDD Slots</td> <td>2</td> <td></td> </tr> </table> <p>* The disks are in Room 003-Store</p>	Max HDD Slots	#of HDD Installed	Availabe Raw Space (Raid1)	6	2 x 146GB	Operating System	2 x 1TB	1 TB		2 x 1TB*	1 TB*	Free HDD Slots	2		<p>1 TB</p>	<p>800 GB</p>	<p>200 GB</p>	<p>Argos will be act as NFS/SAMBA server for OTY purposes:</p> <ol style="list-style-type: none"> 1. /opnet from leto to Argos (Space needed,30GB) 2. We can install all 4x1 TB, with no raid support 3. /kvmimages from astarti (used space:490GB) 4. /graphics lab from leto (used space:94GB) 5. /DataVG from leto (used space:380GB) 6. /sys-data from kalliopi (used space:144 GB) 7. /otyspace/software from netgear1 (used space:186 GB) 8. /Scratch (used space:147 GB) from leto to Argos
Max HDD Slots	#of HDD Installed	Availabe Raw Space (Raid1)																	
6	2 x 146GB	Operating System																	
	2 x 1TB	1 TB																	
	2 x 1TB*	1 TB*																	
Free HDD Slots	2																		
<p>Orfeas cs6415 (8/2009)</p>	<table border="1" data-bbox="277 1029 716 1138"> <tr> <th>Max HDD Slots</th> <th>#of HDD Installed</th> </tr> <tr> <td>2</td> <td>2x 250GB</td> </tr> </table>	Max HDD Slots	#of HDD Installed	2	2x 250GB	<p>250 GB</p>	<p>10 GB</p>	<p>240 GB</p>	<p>To retire</p> <ol style="list-style-type: none"> 1. Move from Orfeas the /sys-data/mail to Galatea) 										
Max HDD Slots	#of HDD Installed																		
2	2x 250GB																		
<p>Astarti (12/2002) cs1089</p>	<table border="1" data-bbox="277 1219 716 1328"> <tr> <th>Max HDD Slots</th> <th>#of HDD Installed</th> </tr> <tr> <td>6</td> <td>6 x 300GB</td> </tr> </table>	Max HDD Slots	#of HDD Installed	6	6 x 300GB	<p>1.8 TB</p>	<p>465 GB</p>	<p>1.2 TB</p>	<p>To retire</p> <ol style="list-style-type: none"> 1. /kvmimages from astarti (used space:490GB) to Argos 2. 										
Max HDD Slots	#of HDD Installed																		
6	6 x 300GB																		

<p>Leto (12/2002) cs1088</p>	<table border="1"> <thead> <tr> <th>Max HDD Slots</th> <th>#of HDD Installed</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>6 x 300GB</td> </tr> </tbody> </table>	Max HDD Slots	#of HDD Installed	6	6 x 300GB	<p>1.8 TB</p>	<p>1.4 TB</p>	<p>400 GB</p>	<p>To retire</p> <ol style="list-style-type: none"> 1. /graphics lab from leto to Argos (used space:94GB) 2. /DataVG from leto to Argos (used space:380GB) 3. /opnet from leto to Artemis (Space needed,30GB) 4. /Scratch (used space:147 GB) from leto to Argos 		
Max HDD Slots	#of HDD Installed										
6	6 x 300GB										
<p>Kalliopi (12/2002) cs917</p>	<table border="1"> <thead> <tr> <th>Max HDD Slots</th> <th>#of HDD Installed</th> </tr> </thead> <tbody> <tr> <td></td> <td>1 x 80GB</td> </tr> <tr> <td></td> <td>1x200GB</td> </tr> </tbody> </table>	Max HDD Slots	#of HDD Installed		1 x 80GB		1x200GB	<p>250 GB</p>	<p>144 GB</p>	<p>0 GB</p>	<p>To retire</p> <p>/sys-data from kalliopi (used space:144 GB) to argos</p>
Max HDD Slots	#of HDD Installed										
	1 x 80GB										
	1x200GB										
<p>Netgear1 (1/2009) cs6468</p>	<table border="1"> <thead> <tr> <th>Max HDD Slots</th> <th>#of HDD Installed</th> </tr> </thead> <tbody> <tr> <td></td> <td>3x500</td> </tr> <tr> <td></td> <td>3x 1 TB</td> </tr> </tbody> </table>	Max HDD Slots	#of HDD Installed		3x500		3x 1 TB	<p>3.2 TB</p>	<p>2.2 TB</p>	<p>0</p>	<p>/otyspace/software from netgear1 (used space:186 GB to argos)</p>
Max HDD Slots	#of HDD Installed										
	3x500										
	3x 1 TB										

Galatea* (Dell R520,with RAID-5) (12/2014)	<table border="1"> <thead> <tr> <th>Max HDD Slots</th> <th>#of HDD Installed</th> <th>Availabe Raw Space</th> </tr> </thead> <tbody> <tr> <td>8</td> <td>3 x 3 TB</td> <td>9 TB ()</td> </tr> <tr> <td>Free HDD Slots</td> <td>5</td> <td></td> </tr> </tbody> </table>	Max HDD Slots	#of HDD Installed	Availabe Raw Space	8	3 x 3 TB	9 TB ()	Free HDD Slots	5		9 TB	0 GB	6TB (with RAID-5)	Space available on Galatea 6 TB TB(Raid-5, 3 x 3 TB) <ol style="list-style-type: none"> 1. Move email storage from hermes (/mail) to Galatea. 2. Move from Orfeas the /sys-data/mail to Galatea. 3. Remove 3 x 3 TB δίσκων (Raid-5, space for use 6 TB), from Iasonas to Galatea, to be used for /extraspaces/faculty and /extraspaces/research.
	Max HDD Slots	#of HDD Installed	Availabe Raw Space											
8	3 x 3 TB	9 TB ()												
Free HDD Slots	5													
* The server supports RAID 5														
Kallimachos* (Dell R220) FILER (12/2014)	1 x 1TB Hard Disk 8 GB RAM			NFS Server	<ol style="list-style-type: none"> 1. Kallimachos will be the filer for /mail and /sys-data/mail from Galatea 2. Students and research quotas for email can be increased (Please see section 1 below) 									
Pallene (Dell R220) FILER (In store) (12/2014)	1 x 1TB Hard Disk 8 GB RAM			NFS Server	<ol style="list-style-type: none"> 1. Pallene will be the filer for /home/projects /home/courses, /home/students 2. Students quotas can be increased (Please see section 1 below) 									
Hermes (11/2007)	1 x 1TB Hard Disk 8 GB RAM			NFS Server	<ol style="list-style-type: none"> 1. Will be filer for /extraspaces/faculty and /extraspaces/research, from Galatea. 									

Section 1

Year	Email Quota	Home Directory Quota	Proposed Email Quota	Proposed Directory Quota	Home Extraspace for Students on NetApp
First	200 MB	480 MB	350 MB	700 MB	300 MB
Second	200 MB	480 MB	350 MB	700 MB	400 MB
Third	300 MB	800 MB	450 MB	1.5 GB	2 GB
Fourth +	500 MB	1 GB	600 MB	1.8 GB	2.5 GB
Master - PhD	2 GB	1.2 GB	2.5 GB	2 GB	3 GB
Research	2 GB	10 GB	4 GB	10 GB	No quotas
Alumni	1.2 GB	500 MB	1.2 GB	500 MB	N/A
Faculty	N/A	N/A			
Projects	N/A	N/A	500 MB	300 MB	N/A
Courses	N/A	N/A	200 MB	300 MB	N/A
Students of other departments	N/A	100 MB	N/A	300 MB	N/A