Server and applications migration from glastlnx to fermilnx boxes

Overview

We have decided to set up virtual machines on the Fermilnx boxes. This will enable us to map existing glastlnx boxes onto virtual machines, to first approximation keeping the existing break down of applications/ (virtual) servers.

Proposed mapping

See also: Applications on glastlnx machines and fermilnx migration, Servers and Aliases, Web Server Applications, Tom's migration spreadsheet, Migration Check List.

Existing	New	Aliases	Status (date)	Comment
glastlnx03	fermiln x-v07 (HA)	glast-xrootd01 glast-tomcat01	Oct 14: Tomcat Migration Complete Oct 14: updated crontabs for tomcat scripts. Turned off tomcat server on glastlnx03.	
glastlnx04	fermiln x-v08 (HA)	glast-rdr glast-tomcat02 glast-jobcontrol 01	Oct 14: Tomcat Migration Complete. There are no web applications on this server. Oct 14: updated contrabs for tomcat scripts. Turned off tomcat server on glastlnx04 Oct:14 The server is NOT running. It has not been completely installed.	This node runs job control daemons for several accounts, at least glast, glastraw,glastmc
glastlnx05	fermiln x-v12	glast-rdr glast-tomcat03	Oct 14: Migration Complete This is the dev server. Oct 14: crontab migrated.	
glastlnx07	fermiln x-v14	centaurusa glast-java svn glast-heprep01		This machine requires user login. This machine is used as a Fermi CVS server, and a subversion server for a variety of user groups. svn functionality should move elsewhere.
glastlnx08	fermiln x-v19	glast-tomcat04	Oct 9: This is where the Elog runs. We have to be careful when moving it. The elog entries are currently on /nfs/farm/g/glast/u25 /tomcat/glast/writable/glastlnx08/webapps. Should they be moved?	This is used as a test SRS web server -- this should move somewhere else. Decorator -- could move elsewhere? Xroot proxy?
glastlnx09				This is now used by EXO as a database server. A replacement machine is (about to be) ordered. This machine is used as a CVS server for lcsim and a few other project. Should be shutdown and projects moved elsewhere.
glastlnx10	fermiln x-v05	glast-tomcat08		
glastlnx12	fermiln x-v13 (Dedic ated NIC)	glast-tomcat05	Merged Prod Pipeline (08/29/13)	
glastlnx13	fermiln x-v16	glast-tomcat06	Migrated Dev Pipeline (07/19/13) Migrated Dev Crawler (07/19/13) Migrated Astroserver (07/19/13)	
glastlnx16	fermiln x-v17	glast-tomcat09		
glastlnx17	fermiln x-v18	glast-tomcat10	Oct 14: Web Migration complete. Crontabs updated. Turned off tomcat server on glastlnx17.	
glastlnx18	fermiln x-v10	glast-tomcat11	Oct 14: Migration Complete. Oct 14: Updated tomcat crontab. Turned off tomcat server on glastlnx18	There is also a SRS tomcat server in this machine -- it should migrate somewhere else
glastlnx19	fermiln x-v11	glast-tomcat12	Oct 14: Migration Complete. Oct 14: Updated tomcat crontab. Turned off tomcat server on glastlnx19	There is also an EXO tomcat server on this machine -- it should migrate somewhere else
glastlnx20	fermiln x-v03	glast-test-rdr	Migrated (05/14/13)	Xrootd test redirector
glastlnx21	fermiln x-v04		Migrated Datacatalog Crawler (07/19/13)	Production datacatalog crawler

glastlnx22	fermilnx-v06	glast-xrd-xfer glast-test-rdr	Migrated (05/14/13)	Xroot proxy server
glastlnx23	fermilnx-v15			

Next Steps

We should identify a set relatively standalone services to move to fermilnx-v* machines. Some suggestions:

- Test tomcat server
- Data catalog crawler
- Astro server loaders

As we move services we should also check which version of Java they are using, and where possible switch to Java 7.

We will need to move aliases to point to new machines, in a phased way. It would probably also be good to introduce new aliases for some services which do not currently have them.

Goals

We need to identify critical applications and estimate resource usage for these applications and spread them across the servers accordingly. Since we are using fewer servers, we are increasing the number of services per machine so we want to limit effects incurred from possibly misbehaving applications. I'm going to try to rate the applications on a scale of 1-5 in these 3 metrics. The first metric is the priority of the application during a normal power scenario, assuming SLAC is not in a power outage scenario. The second metric is the estimated CPU usage and memory usage of the application. The third metric is the possibility an application will misbehave and abuse resources for an extended amount of time.

Application	Priority/Criticality	CPU/Memory Requirements (average/peak)	Resource abuse potential
Pipeline (Production)	5	2/4	3
Pipeline Mail client	5	1/2	1
Pipeline Jobcontrol clients	5	1/2	2
Datacatalog server (crawler)	3	2/2	2
Astroserver (loader)	2	2/5	3

Resource management

Ideally we could put all applications on a few machines without worrying about interference from other applications. In practice this isn't practical. It's been suggested to use virtual machines and split up services among the machines.