






















ALICE GRID SERVICES IPv6 READINESS

costin.grigoras@cern.ch

CENTRAL ALIEN SERVICES

- Authen, IS, JobManager, JobBroker ...
 - All run as httpd apps 
- MySQL, PgSQL, LDAP 
- APIService
 - Xrootd-based 
- MonALISA repository
 - Java / Tomcat 
- Various Web apps
 - ALICE public web pages 
 - Software build servers 

SITE SERVICES

- CVMFS 
- VoBox Services
 - CE, CMReport, PackMan 
 - Perl http server 
 - ClusterMonitor 
 - Apache httpd app 
 - MonALISA 
 - Java 
- SE
 - Xrootd/EOS 
 - DCache 
 - DPM 
 - CASTOR 
- JobAgent
 - Internal Apache httpd server 
- ApMon (C, C++, Perl) 

CENTRAL SERVICES STATUS

- All servers were assigned IPv6 addresses 1y ago
- ~4 months ago the DNS was switched to the production name and the firewall was opened for all (>50) servers
- DNS load balancing publishes aliases with both the IPv4 and the IPv6 of the respective servers

```
$ host alice-ldap.cern.ch
alice-ldap.cern.ch has address 137.138.99.165
alice-ldap.cern.ch has address 137.138.99.166
alice-ldap.cern.ch has IPv6 address 2001:1458:201:b49f::100:f
alice-ldap.cern.ch has IPv6 address 2001:1458:201:b49f::100:10
```
- No problems detected, but most services are not contacted via IPv6
- Requests from 86 IPv6 networks to *alimonitor.cern.ch* since then (3% of requests)

SITE SERVICES SORE POINTS

- Xrootd
 - Will need to update all components to 4.0.0+
 - All SE elements
 - AliEn command line client
 - ROOT library
 - ApiServices
- Perl code
 - 5.14+ supports IPv6 natively
 - IO::Socket::INET -> IO::Socket::IP
 - 5.10 could also be used with a backported Socket lib
 - But better take the opportunity to upgrade
- ApMon: C, C++ and Perl implementations

SITE DEPLOYMENT

- Still only 4 sites have deployed IPv6 on the VoBoxes
 - **BITP, CSC, DCSC_KU, NECTEC**
 - BITP has fully enabled it site-wide
 - More sites seem to have it deployed for users
- Not interfering with the production
 - Minor issues ironed out, usually related to firewall configuration
- Sites are encouraged to deploy it as soon as possible

MONITORING STATUS

- Test for IPv6 support on the VoBox
- Preliminary mapping of IPv6 classes to sites for SE discovery
 - AS-level topology from the IPv4 suite
- To do: the full test suite like for IPv4
 - tracepath6 / traceroute6
 - Bandwidth measurement on IPv6
 - Comparing the results on both protocols
 - Routes, latency, performance

IPv6-ONLY WN AT CERN DEPENDS ON

- Upgrade Perl in AliEn
- Switch to Xrootd 4.0.0+ for client and central services
- Either switch EOS as well to Xrootd 4.0.0+ or access data via IPv4 local addresses
- Hopefully more sites will offer SE access on IPv6 by then