

Migration from gLite to EMI in RO-16-UAIC site



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Agenda



- INTRODUCTION
- RO-16-UAIC INFRASTRUCTURE
- INSTALLATION AND CONFIGURATION PROCEDURE
 - *Operating systems*
 - *Installation and configuration of EMI*
- TESTING AND MONITORING PROCEDURE

INTRODUCTION



Fig. 1. RO-16-UAIC part of WLCG

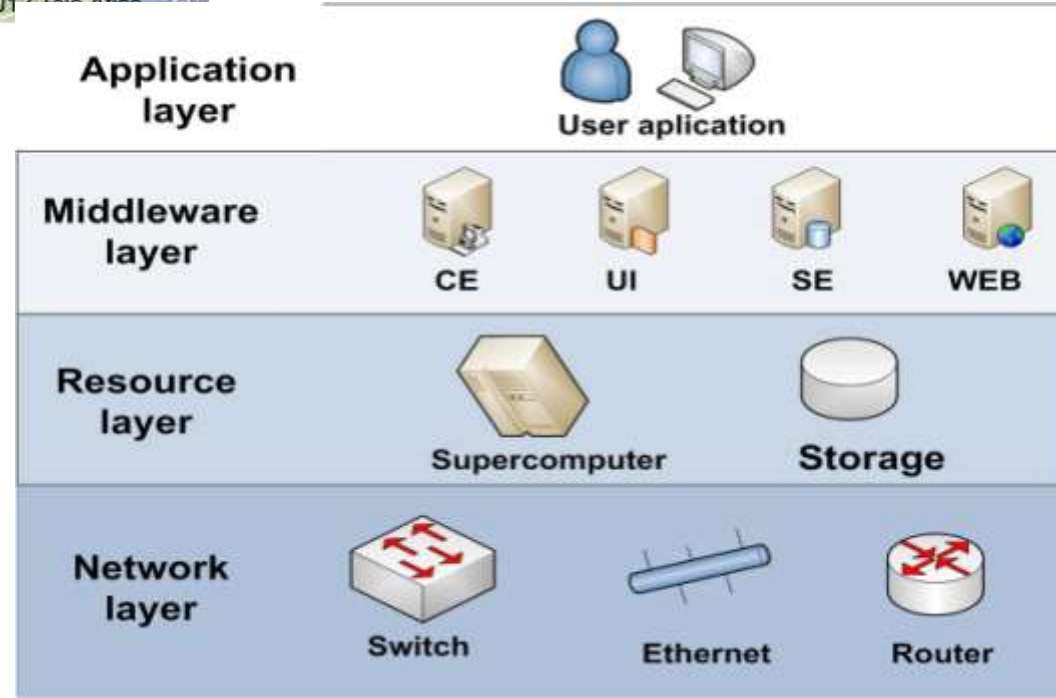


Fig. 2. Grid infrastructure model

RO-16-UAIC INFRASTRUCTURE

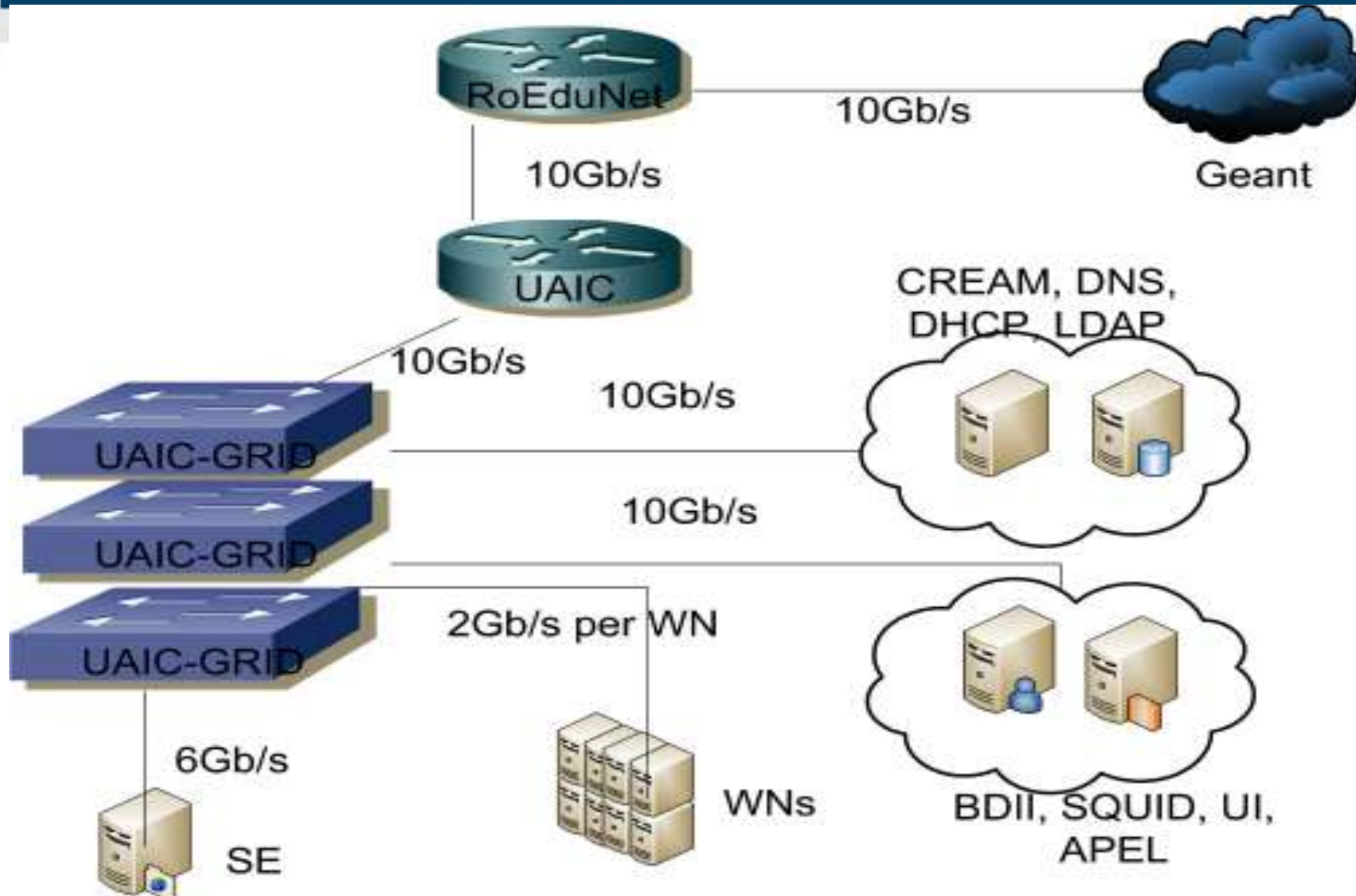
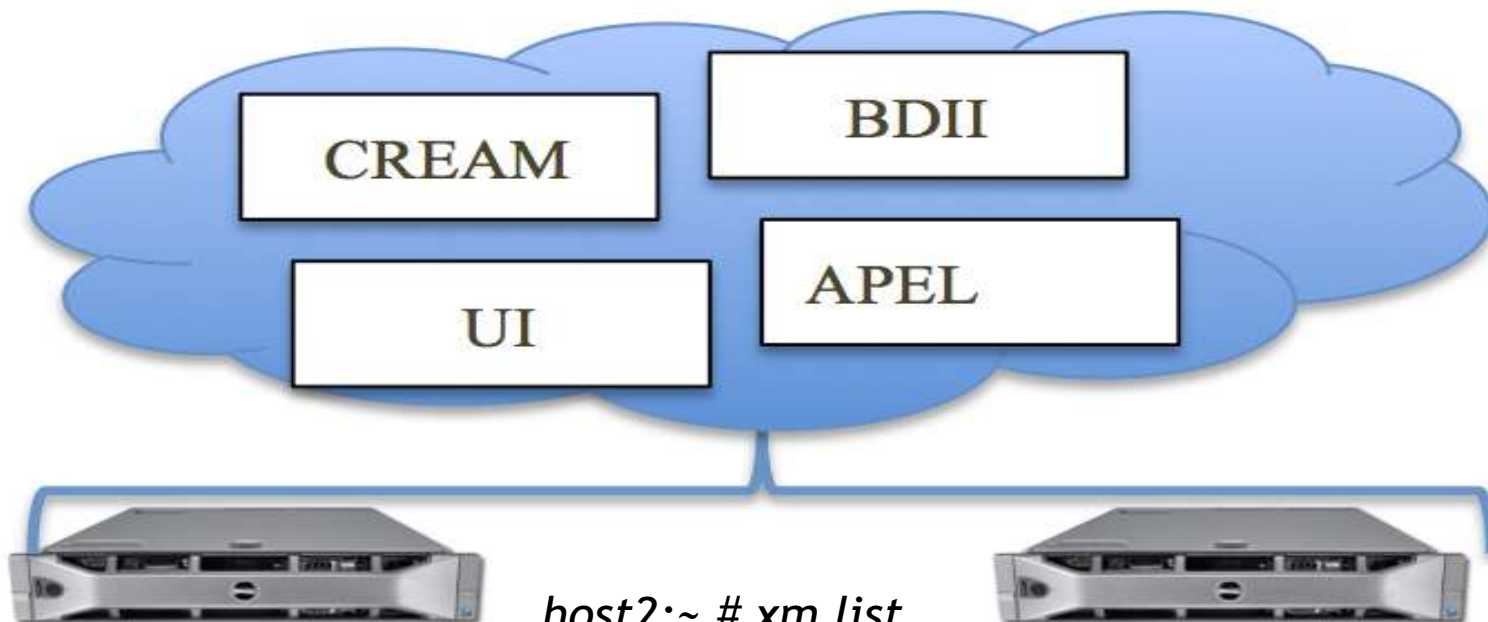


Fig. 3. Hardware infrastructure

RO-16-UAIC INFRASTRUCTURE



host2:~ # xm list

Name	ID	Mem	VCPUs	State	Time(s)
Domain-0	0	17060	12	r-----	41842.8
cre	5	10000	4	-b----	9989.7
squid	6	4096	2	-b----	4195.9
ui-grid	7	1024	1	-b----	4356.4

host1:~ # xm list

Name	ID	Mem	VCPUs	State	Time(s)
Domain-0	0	19884	12	r-----	44179.1
cream-emi	6	10240	6	-b----	126427.8
ri-grid	2	2048	2	-b----	17254.6



A. *Operating systems*

Workstation nodes:

```
install
cdrom
url --url
http://192.168.0.99/mirrors/sl/
5.0/
lang en_US.UTF-8
langsupport --default en_US.UTF-
8
keyboard us
network --device eth0 --onboot
yes --bootproto dhcp
network --device eth1 --onboot
yes --bootproto dhcp
.....
append="rhgb quiet"
logging --host 192.168.0.99
```

```
clearpart --all
part swap --fstype swap --size=8192 --asprimary
part / --fstype ext3 --size=8192 --asprimary
part /tmp --fstype ext3 --size=1024
part /home --fstype ext3 --size=16386
reboot
skipx
text
%packages
@text-internet
yum-allowdowngrade
.....
cd /root
wget http://192.168.0.99/ui/5/postboot.sh
/bin/bash /root/postboot.sh 1>
/root/post_install.log 2>&1
```



B. EMI

Workstation nodes:

```
root@gs-49 tmp]# cat install-grid.sh
#!/bin/bash

LOG="/root/post_install.log"
wget -O /etc/pki/rpm-gpg/RPM-GPG-KEY-emi
http://192.168.0.99/utils/grid/RPM-GPG-KEY-emi 1>>${LOG}
2>&1
wget -O /etc/pki/rpm-gpg/RPM-GPG-KEY-EPEL
http://192.168.0.99/utils/grid/RPM-GPG-KEY-EPEL 1>>${LOG}
2>&1
yum -y install ntp >>${LOG} 2>&1
chkconfig ntpd on >>${LOG} 2>&1
yum -y install lcg-CA >>${LOG} 2>&1
yum -y install ca-policy-egi-core 1>>${LOG} 2>&1
yum -y install emi-wn 1>>${LOG} 2>&1
yum -y install emi-glexec_wn 1>>${LOG} 2>&1
yum -y install emi-torque-client 1>>${LOG} 2>&1
create-munge-key 1>>${LOG} 2>&1
/etc/init.d/munge start 1>>${LOG} 2>&1
chkconfig munge on 1>>${LOG} 2>&1
yum -y install yum-protectbase yum-priorities 1>>${LOG} 2>&1
yum -y install compat-openldap compat-libf2c-34 compat-
libgcc-296 ghostscript-8.15.2 blas blas-devel sharutils glibc-
utils subversion freetype glibc-devel python-tools libxml2
openssl097a 1>>${LOG} 2>&1
```

```
yum -y install openldap-clients 1>>${LOG} 2>&1
yum -y install compat-libf2c-34.i386 compat-libf2c-34.x86_64
compat-glibc-headers.x86_64 1>>${LOG} 2>&1
yum -y install compat-libstdc++-33.x86_64 1>>${LOG} 2>&1
wget -O /opt/glite/yaim/examples/site-info.def
http://192.168.0.99/utils/grid/site-info.def 1>>${LOG} 2>&1
wget -O /opt/glite/yaim/examples/users.conf
http://192.168.0.99/utils/grid/users.conf 1>>${LOG} 2>&1
wget -O /opt/glite/yaim/examples/wn-list.conf
http://192.168.0.99/utils/grid/wn-list.conf 1>>${LOG} 2>&1
wget -O /opt/glite/yaim/examples/groups.conf
http://192.168.0.99/utils/grid/groups.conf 1>>${LOG} 2>&1
wget -O /etc/hosts http://192.168.0.99/utils/grid/hosts
1>>${LOG} 2>&1
```

INSTALLATION AND CONFIGURATION PROCEDURE



OS

```
xm new /etc/xen/vm/cream-emi
cat /etc/xen/vm/cream-emi
name="cream-emi"
description="None"
uuid="1a230624-e1aa-91e8-416c-f99d2f93b67d"
memory=10240
maxmem=10240
vcpus=6
disk=[ 'file:/var/lib/xen/images/cream-emi/disk0.raw,hda,w',
'file:/var/lib/xen/images/SL.57.090911.DVD.x86_64.disc1.iso,hdc:cdrom,r', ]
vif=[ 'mac=00:16:3e:2e:94:a7,bridge=br0,model=e1000',
'mac=00:16:3e:46:ea:86,bridge=br1,model=e1000', ]
```

EMI Install

```
yum install xml-commons-apis      yum -y install emi-bdii-site
yum -y install emi-cream-ce      yum install emi-torque-server
yum -y install emi-argus         yum install emi-torque-utils
```


INSTALLATION AND CONFIGURATION PROCEDURE



CONFIGURATION

```
[root@ce-grid examples]# cat /usr/local/bin/job
#!/bin/bash
rm /root/post_install.log
LOG="/root/post_install.log"

/opt/glite/yaim/bin/yaim -c -s /opt/glite/yaim/examples/site-info.def -n TORQUE_utils -n
TORQUE_server -n creamCE -n ARGUS_server -n BDII_site -f config_mkgridmap 1>>${LOG} 2>&1

/opt/glite/yaim/bin/yaim -c -s /opt/glite/yaim/examples/site-info.def -n creamCE -n
TORQUE_server -n TORQUE_utils -n ARGUS_server -n BDII_site -f config_cream_blparser 1>>${LOG}
2>&1

/etc/init.d/tomcat5 restart 1>>${LOG} 2>&1

/usr/bin/blparser_master start 1>>${LOG} 2>&1

cp /var/spool/maui/maui.cfg.b /var/spool/maui/maui.cfg
service maui restart
```

INSTALLATION AND CONFIGURATION PROCEDURE



Before Install

```
mysqldump -u username -p accounting > accounting.sql
```

...

```
yum -y install mysql mysql-server
```

```
yum -y install emi-apel
```

```
yum -y install emi-ui
```

....

AFTER Install

```
mysql -u username -p accounting < accounting.sql
```

Configuration

```
[root@ui-grid ~]# cat /usr/local/bin/compile
```

```
#!/bin/bash
```

```
rm /root/post_install.log
```

```
LOG="/root/post_install.log"
```

```
/opt/glite/yaim/bin/yaim -c -s /opt/glite/yaim/examples/site-info.def -n glite-UI -n APEL -f  
config_mkgridmap
```

```
cp /usr/bin/apel-publisher.bck /usr/bin/apel-publisher
```

```
APEL_HOME=/ /usr/bin/apel-publisher -f /etc/glite-apel-publisher/publisher-config-yaim.xml
```

!!!!

```
cat /usr/bin/apel-publisher
```

```
#MYSQL_DRIVER_CP="/opt/mm-mysql/*:/usr/share/java/mysql-connector-java-3.1.8-bin.jar"
```

```
MYSQL_DRIVER_CP="/usr/share/java/mysql-connector-java.jar"
```



Before Install

```
mysqldump -u username -p cns_db > cns_db.sql
```

```
mysqldump -u username -p dpm_db > dpm_db.sql
```

...

```
yum -y install mysql mysql-server
```

```
yum -y install emi-dpm_mysql
```

....

AFTER Install

```
mysql -u username -p cns_db > cns_db.sql
```

```
mysql -u username -p dpm_db > dpm_db.sql
```

Configuration

```
/opt/glite/yaim/bin/yaim -c -s /opt/glite/yaim/examples/site-info.def -n emi_dpm_mysql
```

!!!!

missing packets

gridsite-1.7.22-2.e16.x86_64

TESTING AND MONITORING PROCEDURE



[Site RO-16-UAIC \(site-RO-16-UAIC\)](#)

Host	Services	Actions
ce-grid.oid.uaic.ro	tr.spa.CADet-Check-logsNGI/Romania tr.spa.CREAMCE-ConfUptime tr.spa.APEL-PUB tr.spa.apelAPEL-Sync tr.sam.CREAMCE-DirectJobState-logsNGI/Romania tr.sam.CREAMCE-DirectJobSubmit-logsNGI/Romania tr.sam.CREAMCE-JobState-logsNGI/Romania tr.sam.CREAMCE-JobSubmit-logsNGI/Romania tr.sam.VW-B-logsNGI/Romania tr.sam.VW-Ces-logsNGI/Romania tr.sam.VW-Rep-logsNGI/Romania tr.sam.VW-Rep-logsNGI/Romania tr.sam.VW-Rep-logsNGI/Romania tr.sam.VW-Rep-logsNGI/Romania tr.sam.VW-Rep-logsNGI/Romania tr.sam.VW-Rep-logsNGI/Romania	
ce-grid.uaic.ro	tr.spa.Entries tr.spa.Freshness tr.spa.Sanity-Check tr.spa.BCH-Check	
se-grid.uaic.ro	tr.spa.SRM2-ConfUptime tr.sam.SRM-logsNGI/Romania tr.sam.SRM-Conf-logsNGI/Romania tr.sam.SRM-Conf-logsNGI/Romania tr.sam.SRM-Conf-logsNGI/Romania tr.sam.SRM-ConfURLs-logsNGI/Romania tr.sam.SRM-ConfURLs-logsNGI/Romania tr.sam.SRM-Logs-logsNGI/Romania tr.sam.SRM-Logs-logsNGI/Romania	
ul-grid.uaic.ro		

Normalised CPU time (units 1K.SI2K.Hours) by SITE and VO

SITE	atlas	Total	%
RO-02-NIPNE	1,697,845	1,697,845	14.71%
RO-07-NIPNE	4,858,386	4,858,386	42.09%
RO-14-ITIM	1,740,783	1,740,783	15.08%
RO-16-UAIC	3,247,187	3,247,187	28.13%
Total	11,544,201	11,544,201	
Percentage	100.00%		

[Click here for a CSV dump of this table](#)

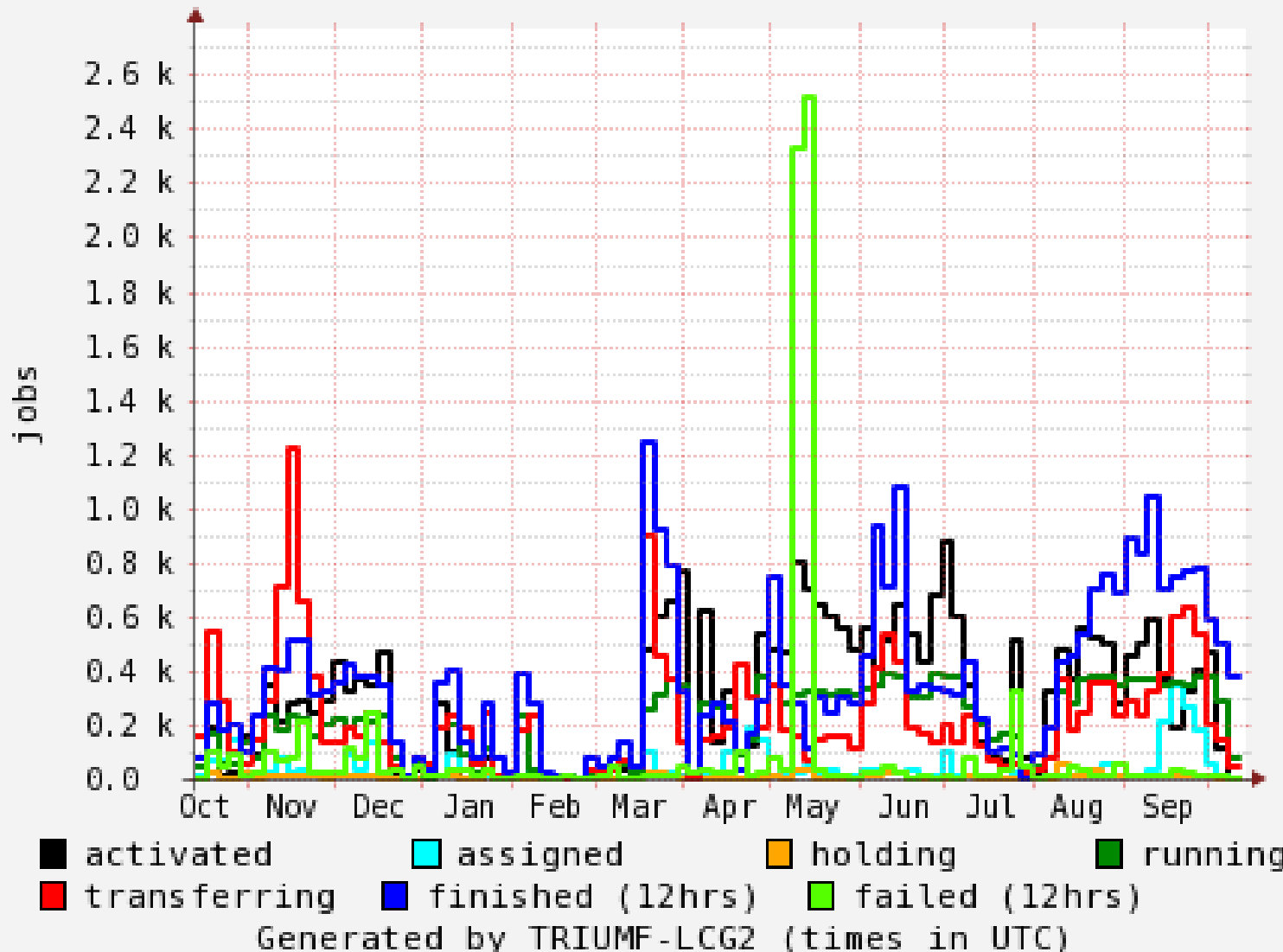
[Click here for XML encoded data](#)

TESTING AND MONITORING PROCEDURE

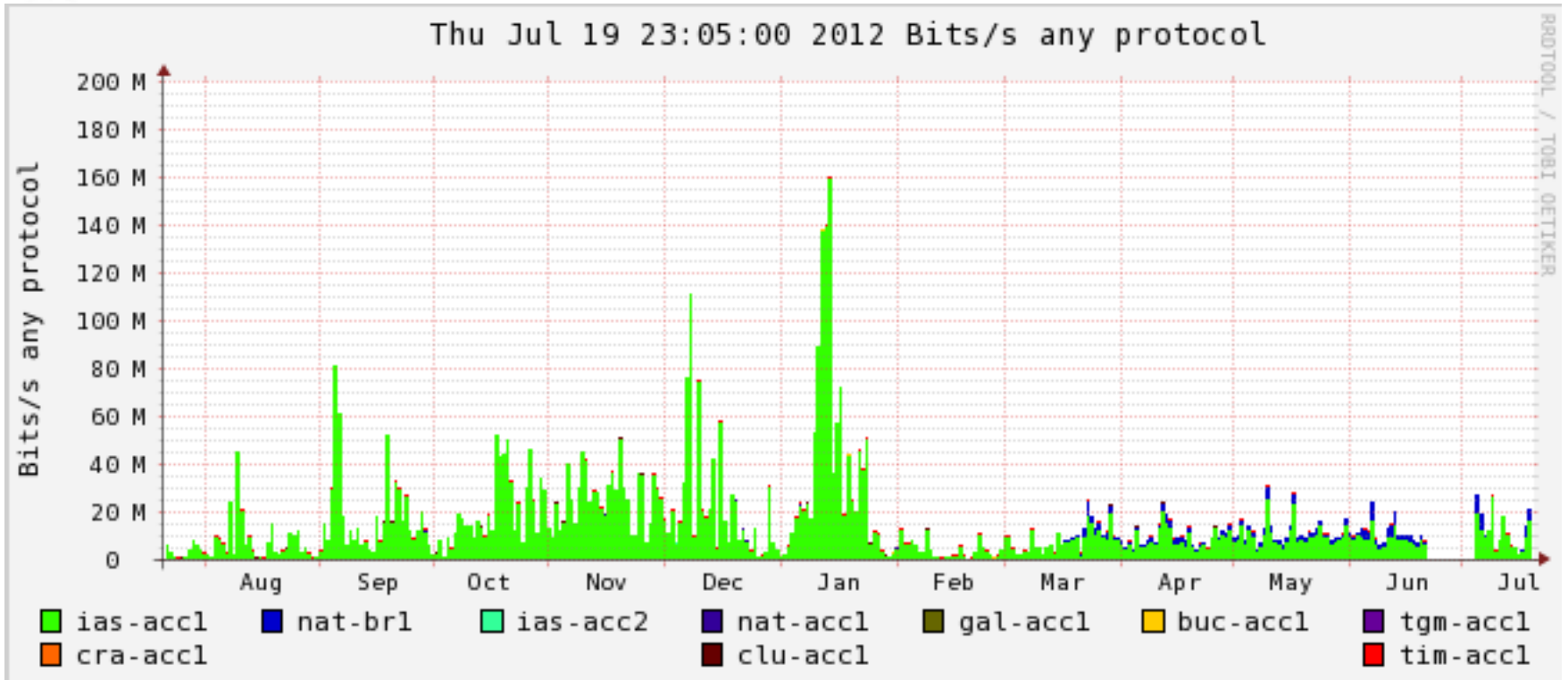


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TESTING AND MONITORING PROCEDURE

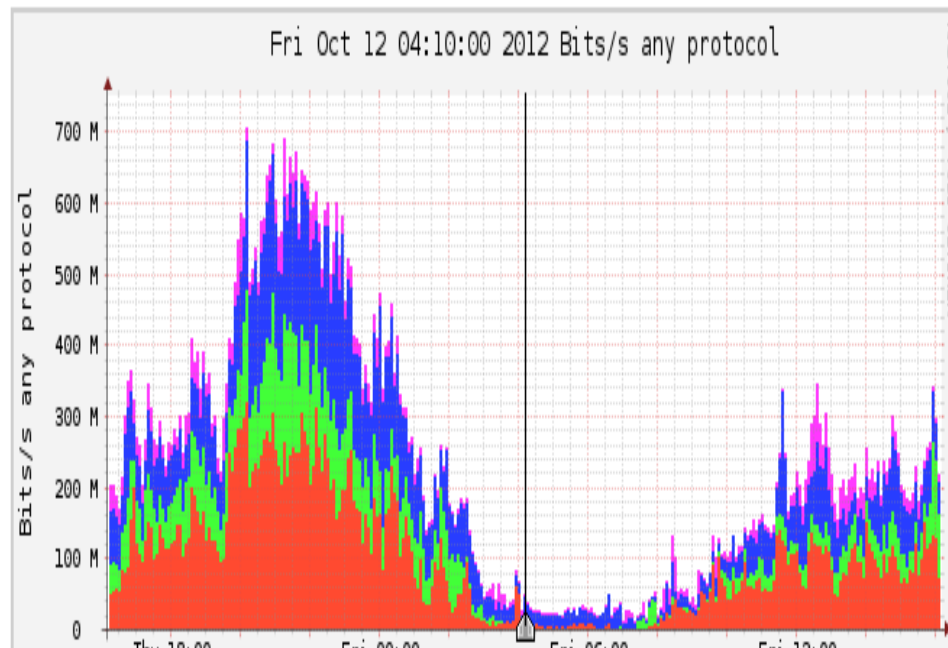


NMIS, NetFlow Analyzer

TESTING AND MONITORING PROCEDURE



Dst IP Addr	Flows (%)	Packet	Bytes
193.48.99.141	144248	703.7M	636.4 GB
193.48.99.139	76462	404.3 M	605.5 GB
193.48.99.151	167265	719.8 M	595.9 GB
193.48.99.140	144307	707.4 M	590.6 GB
193.48.99.130	174832	709.8 M	590.5 GB
193.48.99.157	106197	404.5 M	589.0 GB
193.48.99.129	139261	652.6 M	586.8 GB
193.48.99.13	153134	710.6 M	584.7 GB
193.48.99.137	79268	386.9 M	579.5 GB



*Nfsen: SRC/DEST IP, SRC/DEST PORT, SRC/DEST INTERFACE, SRC/DEST AS, BGP, VLAN,
.....,MASK, MPLS*

Thank you!

