
FG Resource Report

Release 0.4

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July 29, 2014

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Date Created: Tue, 29 Jul 2014

SUMMARY REPORT (ALL)

- Period: January 01 – June 30, 2014
- Cloud(india.futuregrid.org): eucalyptus, openstack
- Cloud(sierra.futuregrid.org): eucalyptus, nimbus
- Cloud(hotel.futuregrid.org): nimbus
- Cloud(alamo.futuregrid.org): nimbus
- Cloud(foxtrot.futuregrid.org): nimbus
- Metrics: VMs count, Users count, Wall hours, Distribution by Wall Hours, Project, Project Leader, and Institution, and Systems

1.1 Wall Hours by Clusters (Total, monthly)

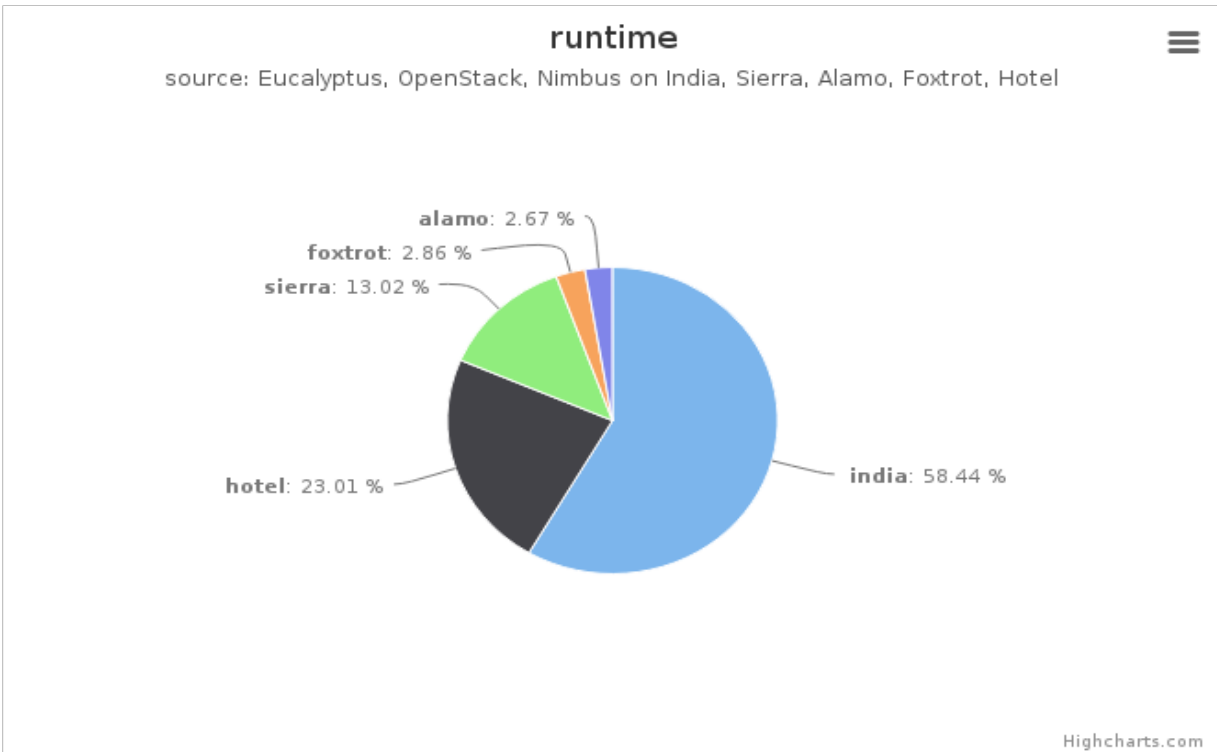


Figure 1. Wall time (hours) by Clusters
This chart represents overall usage of wall time (hours).

- Period: January 01 – June 30, 2014
- **Cloud:**
 - india: Eucalyptus, Openstack
 - sierra: Eucalyptus, Nimbus
 - hotel: Nimbus
 - alamo: Nimbus
 - foxtrot: Nimbus

Table 1.1: Wall time (hours) by Clusters

Total	Value
india	278889.0
hotel	109823.0
sierra	62117.0
foxtrot	13628.0
alamo	12740.0

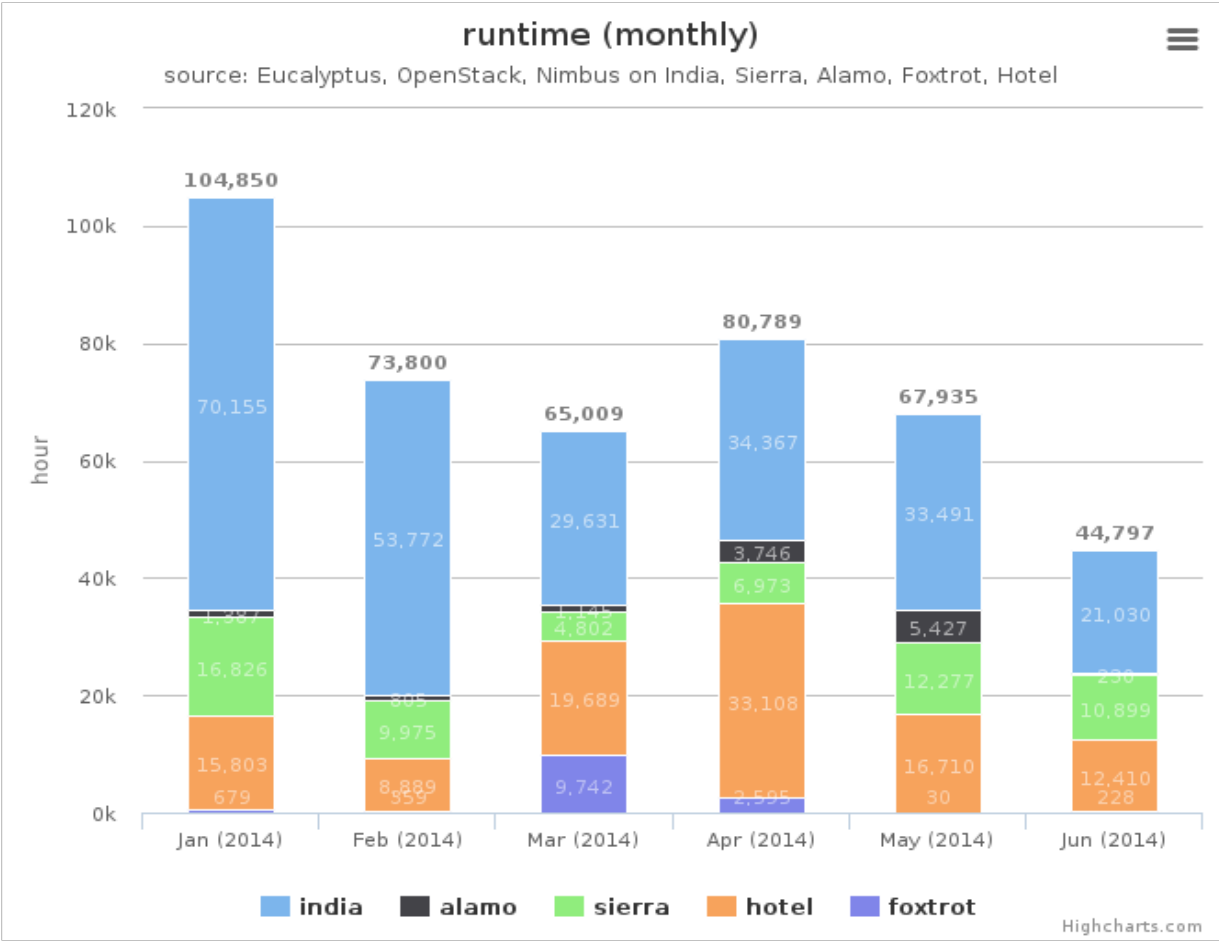


Figure 2. Wall time (hours) by Clusters (monthly)
This stacked column chart represents average monthly usage of wall time (hours).

- Period: January 01 – June 30, 2014
- **Cloud:**
 - india: Eucalyptus, Openstack
 - sierra: Eucalyptus, Nimbus
 - hotel: Nimbus
 - alamo: Nimbus
 - foxtrot: Nimbus

1.2 VM Count by Clusters (Total, monthly)

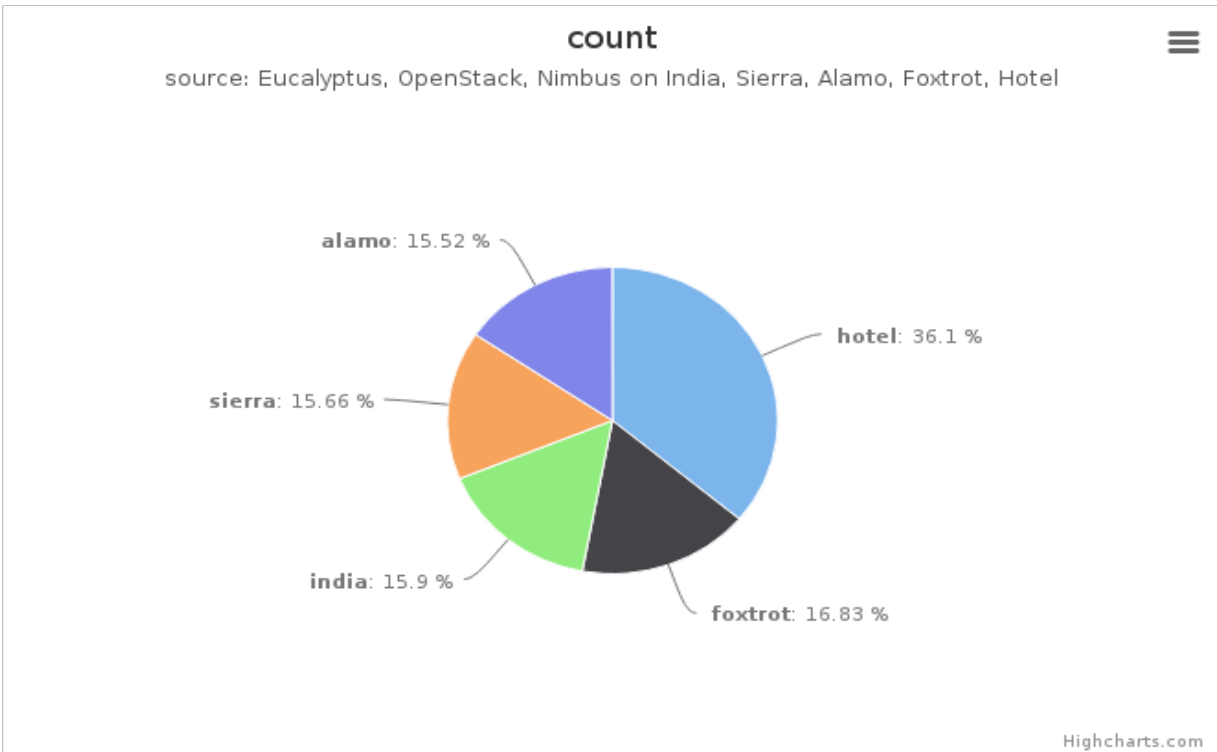


Figure 3. VMs count by Clusters

This chart represents overall VM instances count during the period.

- Period: January 01 – June 30, 2014
- **Cloud:**
 - india: Eucalyptus, Openstack
 - sierra: Eucalyptus, Nimbus
 - hotel: Nimbus
 - alamo: Nimbus
 - foxtrot: Nimbus

Table 1.2: VM instance count by Clusters

Total	Value
hotel	7728
foxtrot	3603
india	3403
sierra	3353
alamo	3322

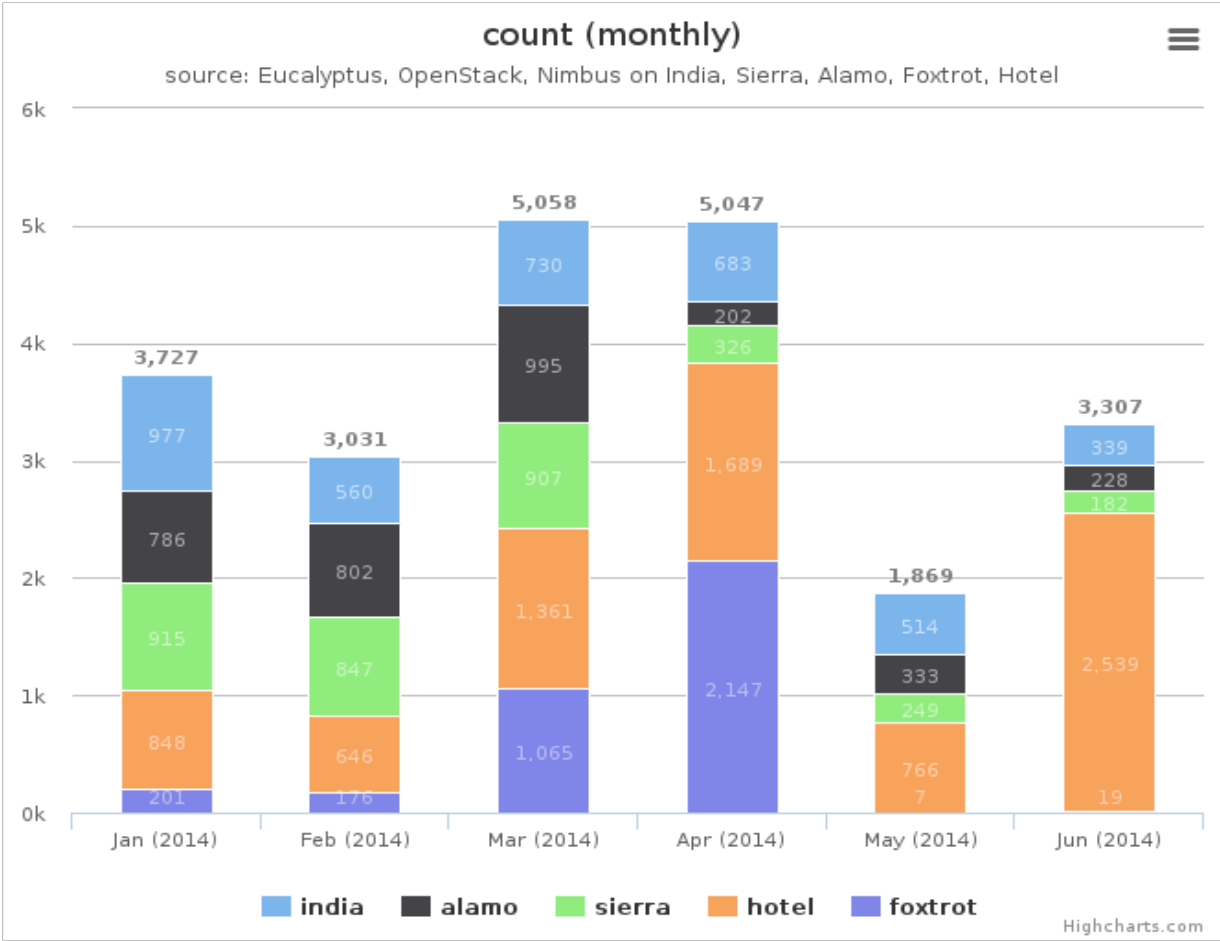


Figure 4. VMs count by Clusters (monthly)
This stacked column chart represents average VM instances count per month.

- Period: January 01 – June 30, 2014
- **Cloud:**
 - india: Eucalyptus, Openstack
 - sierra: Eucalyptus, Nimbus
 - hotel: Nimbus
 - alamo: Nimbus
 - foxtrot: Nimbus

1.3 Users Count by Clusters (Total, monthly)

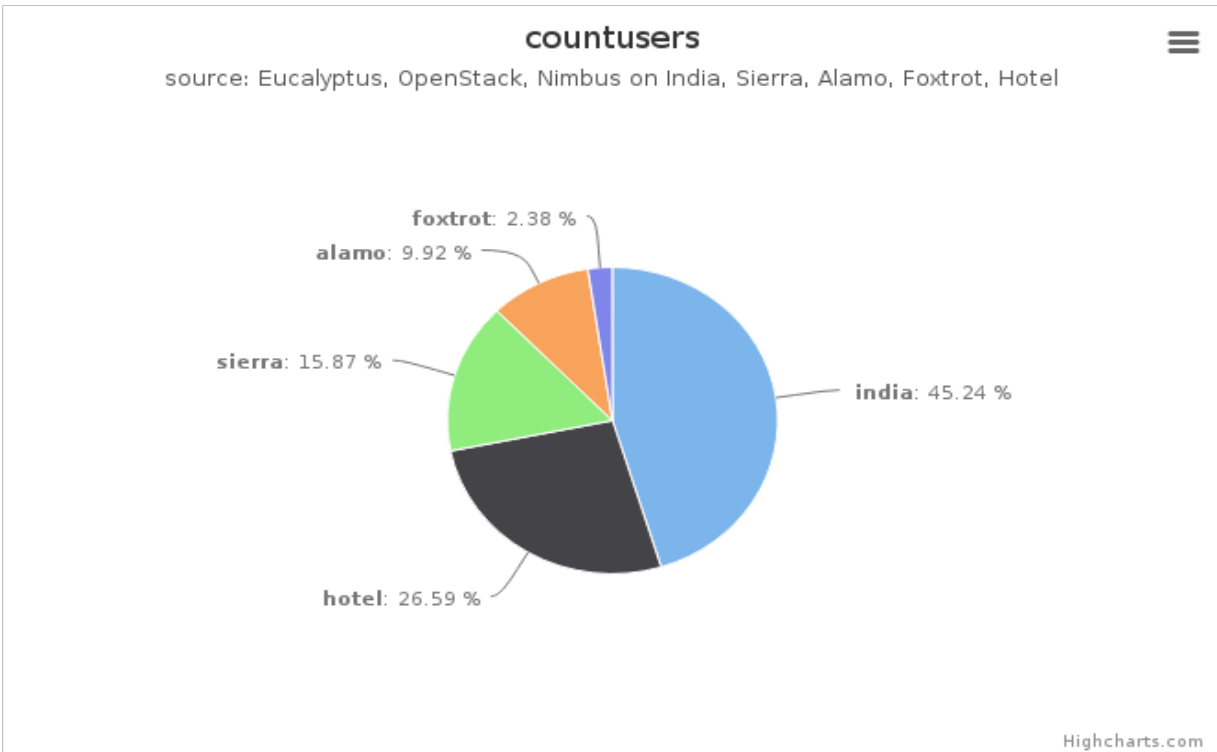


Figure 5. Unique User count by Clusters
 This chart represents total number of unique active users.

- Period: January 01 – June 30, 2014
- **Cloud:**
 - india: Eucalyptus, Openstack
 - sierra: Eucalyptus, Nimbus
 - hotel: Nimbus
 - alamo: Nimbus
 - foxtrot: Nimbus

Table 1.3: Unique User count by Clusters

Total	Value
india	114
hotel	67
sierra	40
alamo	25
foxtrot	6

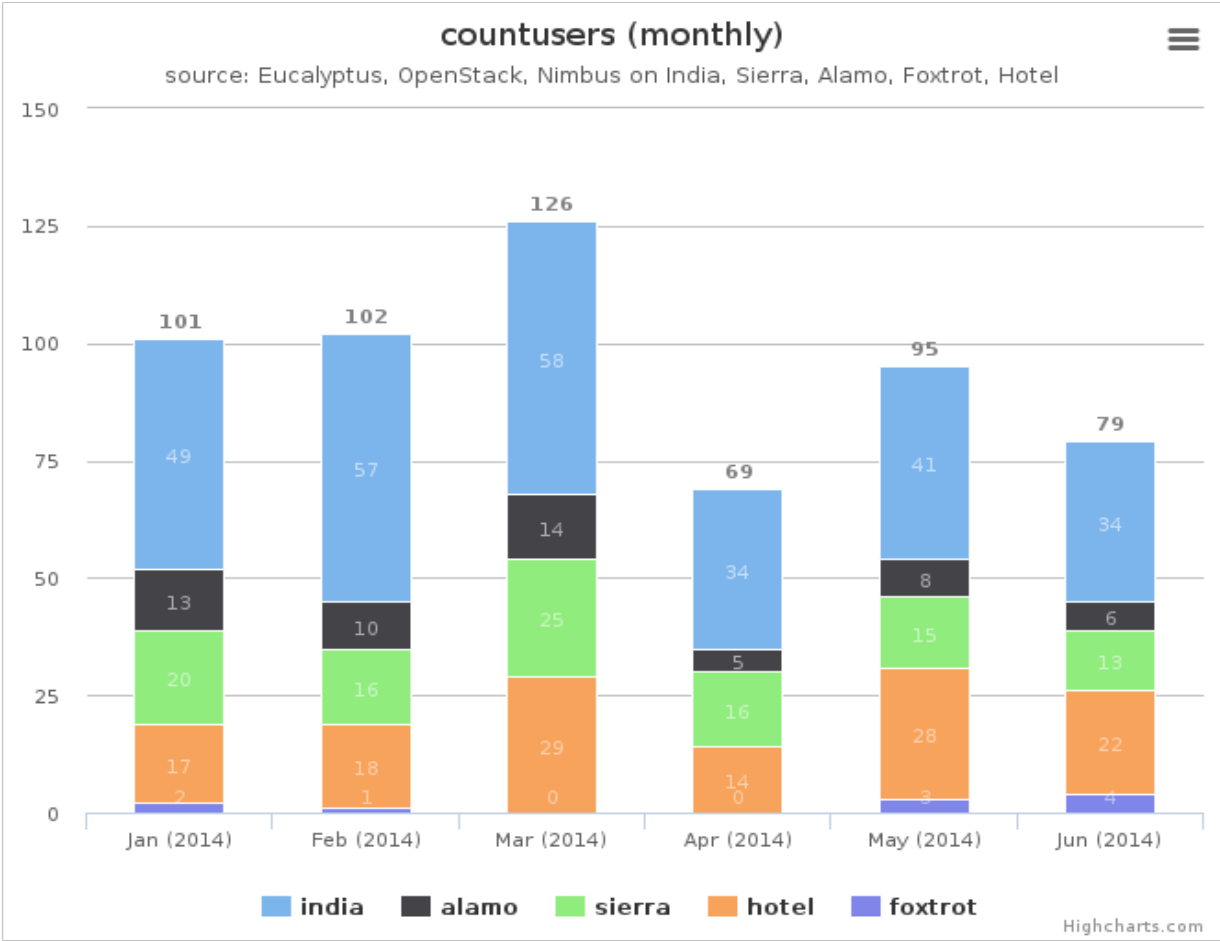


Figure 6. Users count by Clusters (Monthly)
This stacked column chart represents average count of active users per month.

- Period: January 01 – June 30, 2014
- **Cloud:**
 - india: Eucalyptus, Openstack
 - sierra: Eucalyptus, Nimbus
 - hotel: Nimbus
 - alamo: Nimbus
 - foxtrot: Nimbus

USAGE REPORT SIERRA

- Period: January 01 – June 30, 2014
- Hostname: sierra.futuregrid.org
- Services: nimbus, openstack, eucalyptus
- Metrics: VMs count, Users count, Wall time (hours), Distribution by wall time, project, project leader, and institution, and systems

2.1 Histogram

2.1.1 Summary (Monthly)

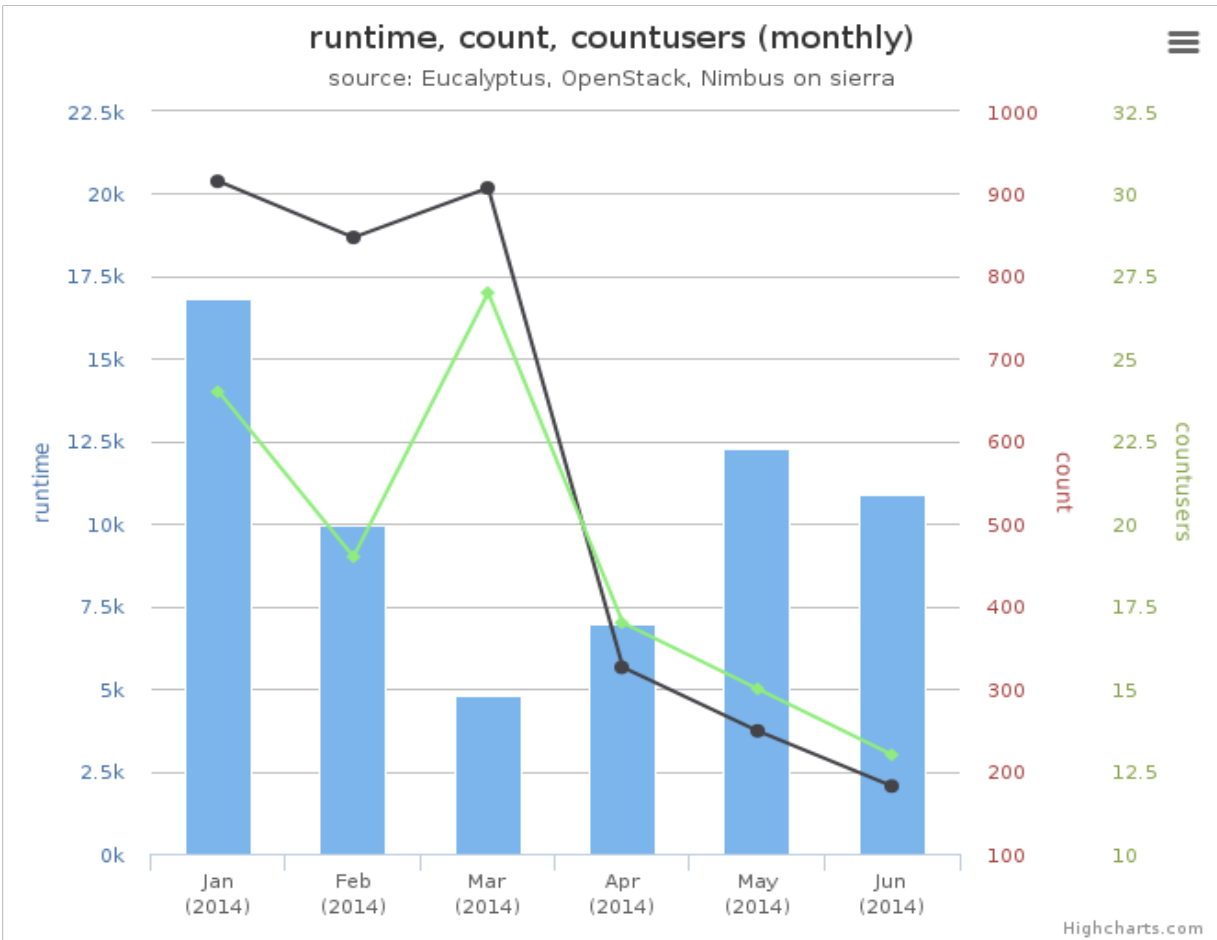


Figure 1: Average monthly usage data (wall time (hour), launched VMs, users)

This mixed chart represents average monthly usage as to wall time (hour), the number of VM instances and active users.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack, eucalyptus
- Hostname: sierra
- **Metric:**
 - Runtime (Wall time hours): Sum of time elapsed from launch to termination of VM instances
 - Count (VM count): The number of launched VM instances
 - User count (Active): The number of users who launched VMs

2.1.2 Summary (Daily)

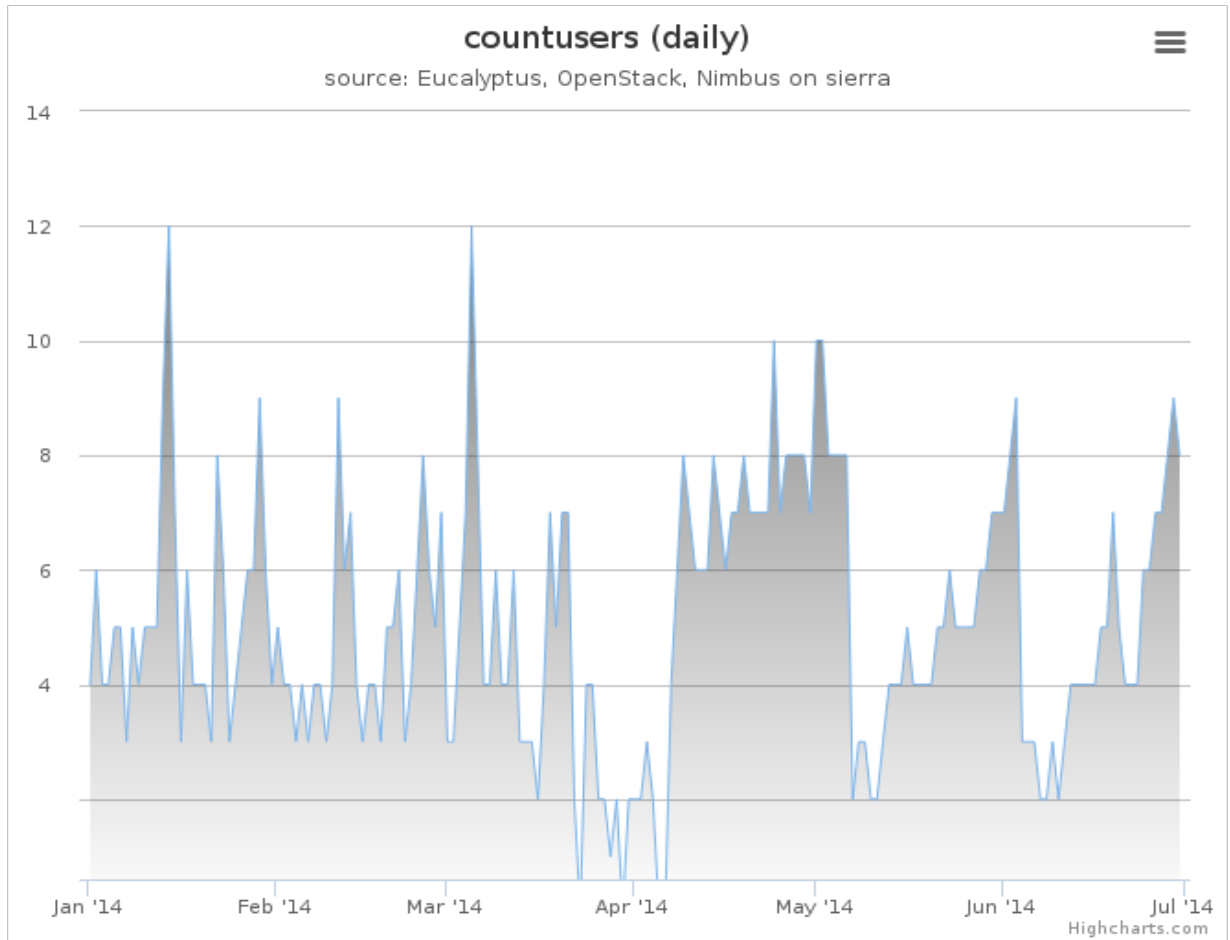


Figure 2: Users count

This time series chart represents daily active user count for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack, eucalyptus
- Hostname: sierra

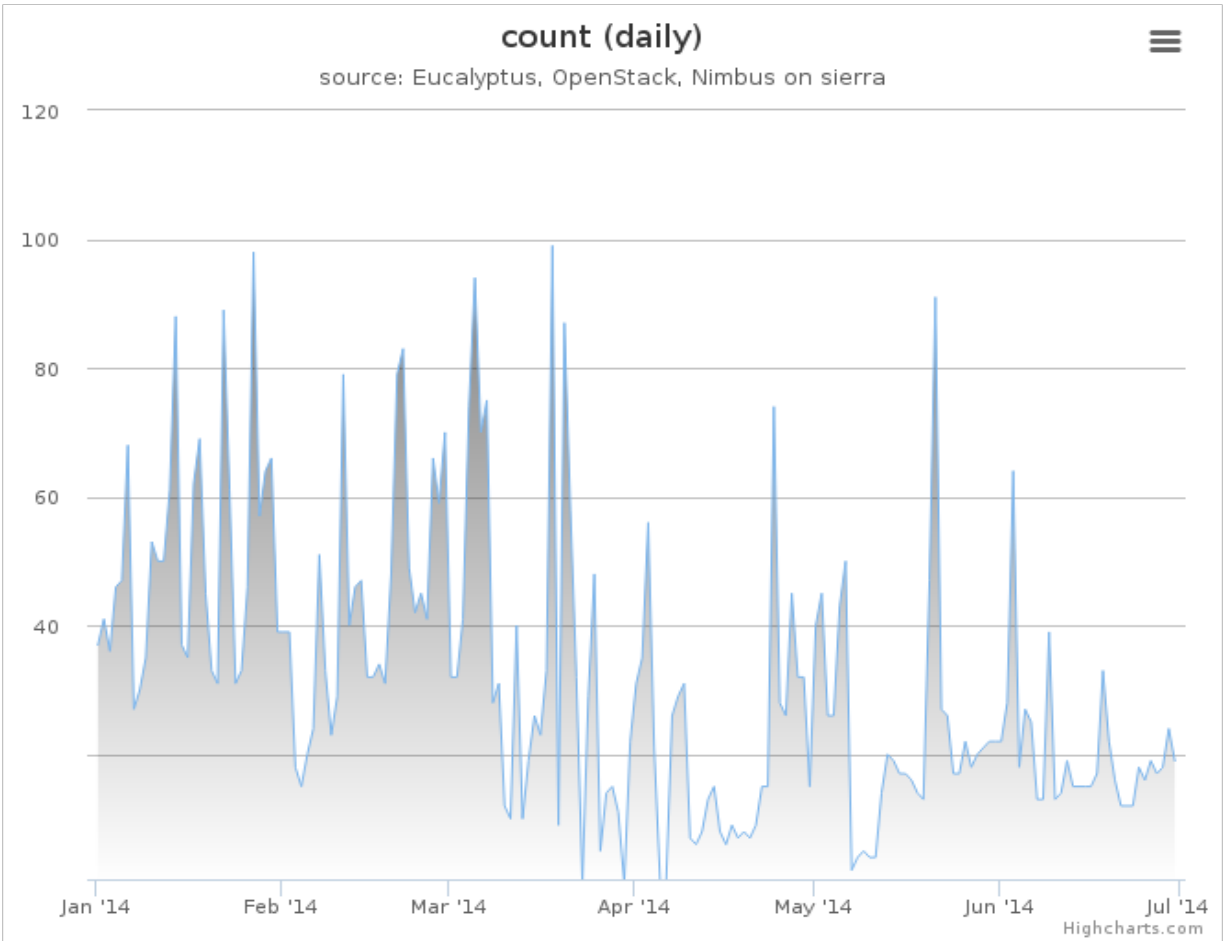


Figure 3: VMs count

This time series chart represents the number of daily launched VM instances for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack, eucalyptus
- Hostname: sierra

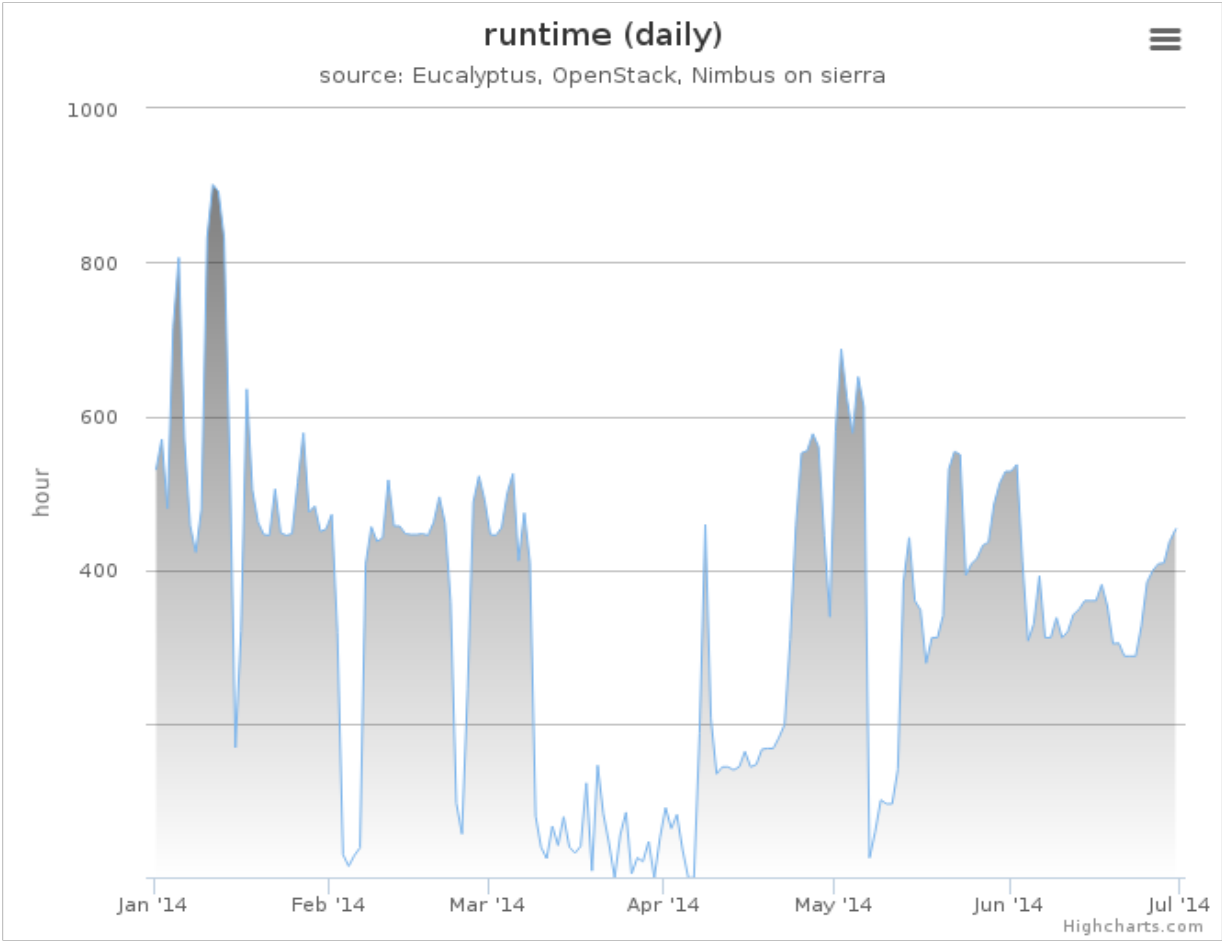


Figure 4: Wall time (hours)
This time series chart represents daily wall time (hours) for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack, eucalyptus
- Hostname: sierra

2.2 Distribution

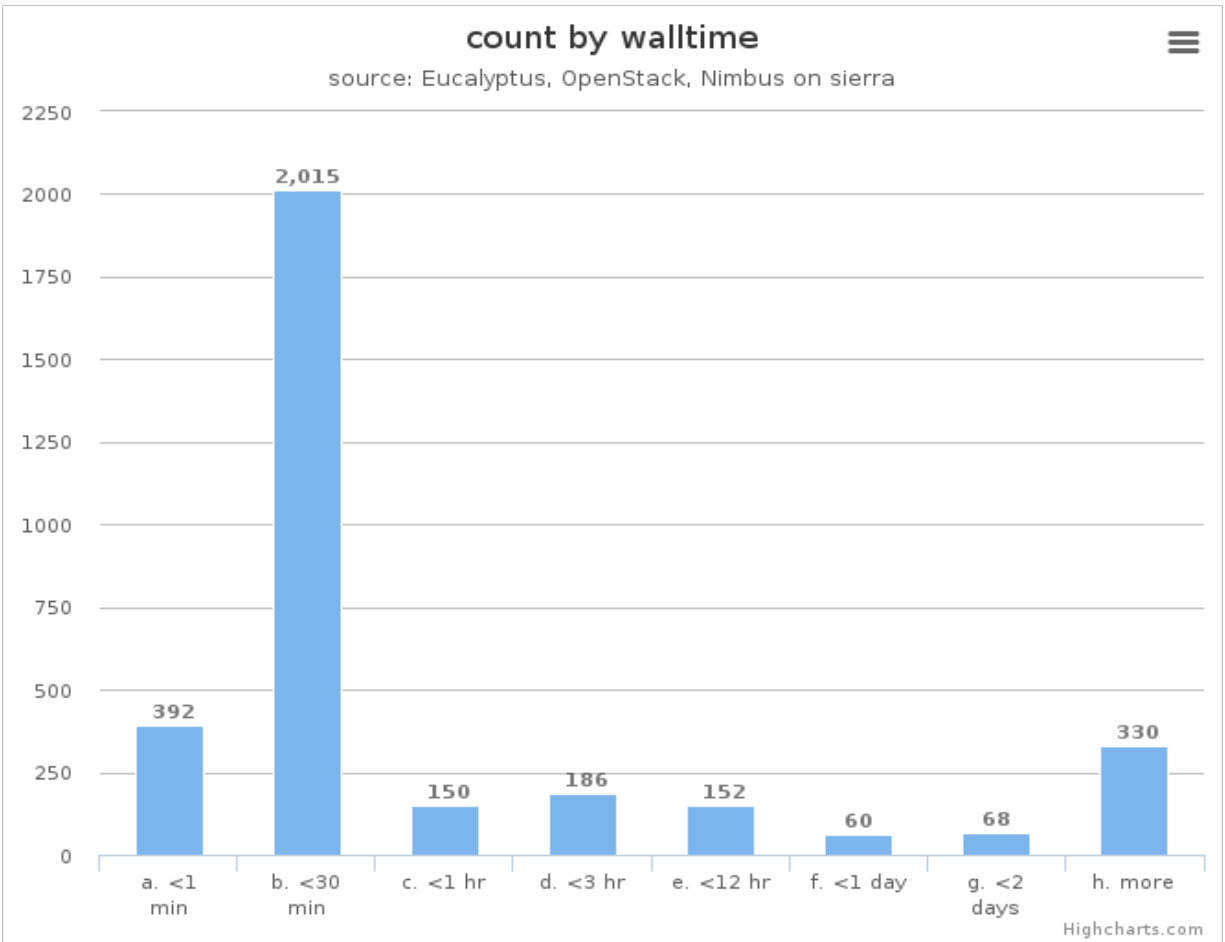


Figure 5: VM count by wall time

This chart illustrates usage patterns of VM instances in terms of running wall time.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack, eucalyptus
- Hostname: sierra

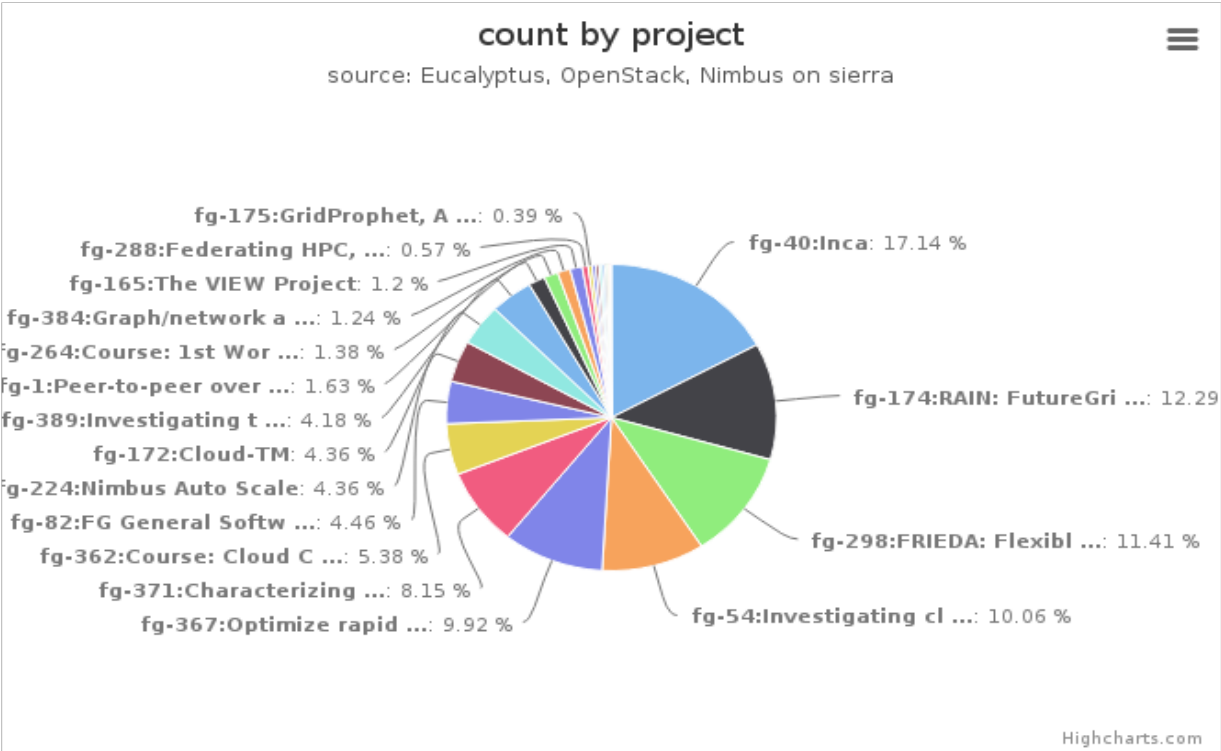


Figure 6: VMs count by project
This chart illustrates the proportion of launched VM instances by project groups. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack, eucalyptus
- Hostname: sierra

Table 2.1: VMs count by project

Project	Value
fg-40:Inca	484
fg-174:RAIN: FutureGrid Dynamic provisioning Framework	347
fg-298:FRIEDA: Flexible Robust Intelligent Elastic Data Management	322
fg-54:Investigating cloud computing as a solution for analyzing particle physics data	284
fg-367:Optimize rapid deployment and updating of VM images at the remote compute cluster	280
fg-371:Characterizing Infrastructure Cloud Performance for Scientific Computing	230
fg-362:Course: Cloud Computing and Storage (UF)	152
fg-82:FG General Software Development	126
fg-224:Nimbus Auto Scale	123
fg-172:Cloud-TM	123
fg-389:Investigating the Apache Big Data Stack	118
fg-1:Peer-to-peer overlay networks and applications in virtual networks and virtual clusters	46
fg-264:Course: 1st Workshop on bioKepler Tools and Its Applications	39
fg-384:Graph/network analysis Resource manager	35
fg-165:The VIEW Project	34
fg-288:Federating HPC, Cyberinfrastructure and Clouds using CometCloud	16
fg-175:GridProphet, A workflow execution time prediction system for the Grid	11
fg-244:Course: Data Center Scale Computing	10
fg-382:Reliability Analysis using Hadoop and MapReduce	9
fg-10:TeraGrid XD TIS(Technology Insertion Service) Technology Evaluation Laboratory	8
fg-372:Mobile Device Computation Offloading over SocialVPNs	8
fg-404:Enhancing Usage of cloud Infrastructure	6
fg-136:JGC-DataCloud-2012 paper experiments	5
fg-316:Course: Cloud Computing Class - third edition	5
fg-432:2014 Topics in Parallel Computation	2

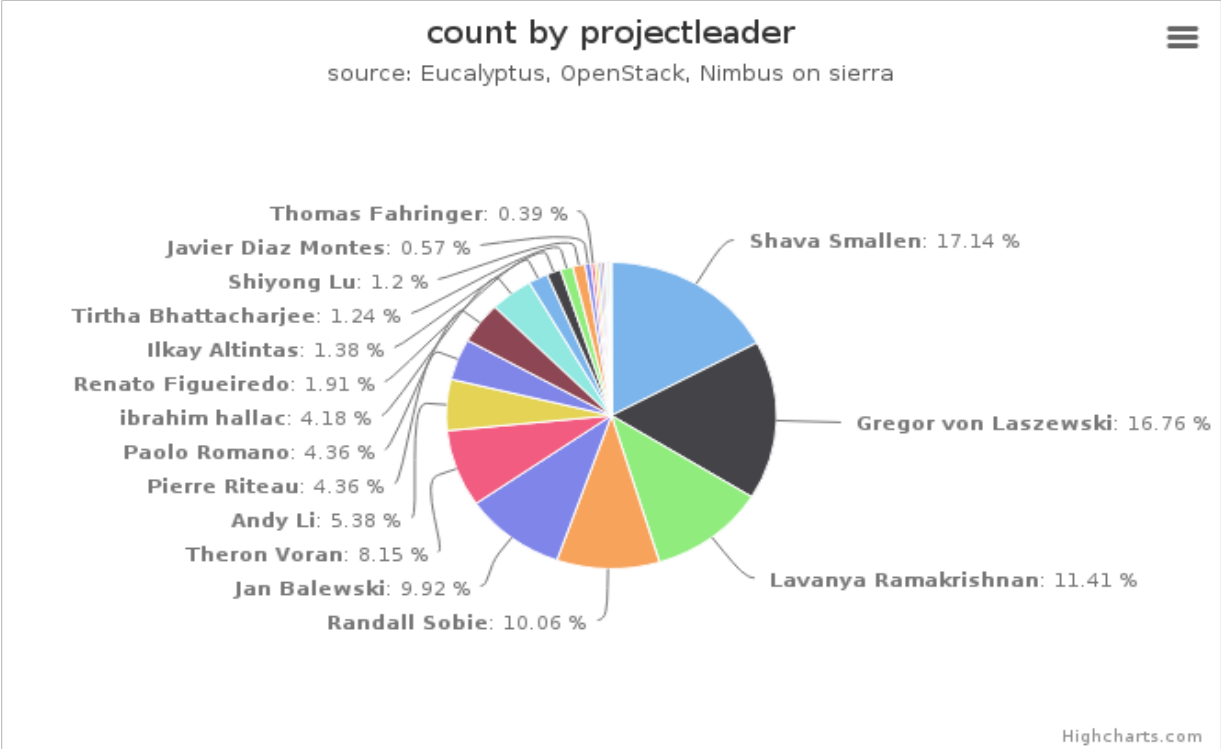


Figure 7: VMs count by project leader
This chart also illustrates the proportion of launched VM instances by project Leader. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack, eucalyptus
- Hostname: sierra

Table 2.2: VMs count by project leader

Projectleader	Value
Shava Smallen	484
Gregor von Laszewski	473
Lavanya Ramakrishnan	322
Randall Sobie	284
Jan Balewski	280
Theron Voran	230
Andy Li	152
Pierre Riteau	123
Paolo Romano	123
ibrahim hallac	118
Renato Figueiredo	54
Ilkay Altintas	39
Tirtha Bhattacharjee	35
Shiyong Lu	34
Javier Diaz Montes	16
Thomas Fahringer	11
Dirk Grunwald	10
Carl Walasek	9
John Lockman	8
Rahul Limbole	6
Massimo Canonico	5
Mats Rynge	5
Heru Suhartanto	2

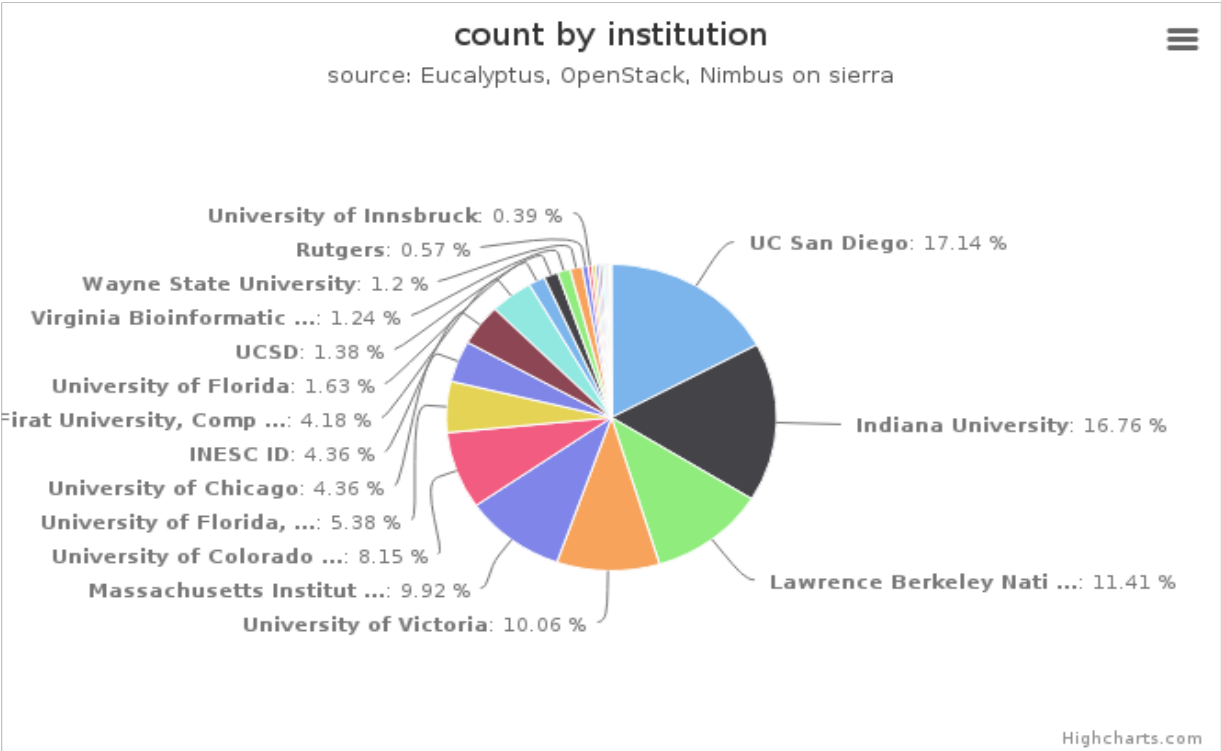


Figure 8: VMs count by institution
This chart illustrates the proportion of launched VM instances by Institution. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack, eucalyptus
- Hostname: sierra

Table 2.3: VMs count by institution

Institution	Value
UC San Diego	484
Indiana University	473
Lawrence Berkeley National Lab	322
University of Victoria	284
Massachusetts Institute of Technology, Laboratory for Nuclear Sc	280
University of Colorado at Boulder, Computer Science Department	230
University of Florida, Department of Electrical and Computer Eng	152
University of Chicago	123
INESC ID	123
Firat University, Computer Science Department	118
University of Florida	46
UCSD	39
Virginia Bioinformatics Institute, Virginia Polytechnic Institut	35
Wayne State University	34
Rutgers	16
University of Innsbruck	11
Univ. of Colorado	10
University of the Sciences , Mathematics, Physics, and Statistic	9
University of Florida, Electrical and Computer Engineering	8
University of Texas at Austin	8
Veer mata Jijabai Technological Institute Mumbai, Computer Scienc	6
USC	5
University of Piemonte Orientale, Computer Science Department	5
Universitas Indonesia, Faculty of Computer Science	2

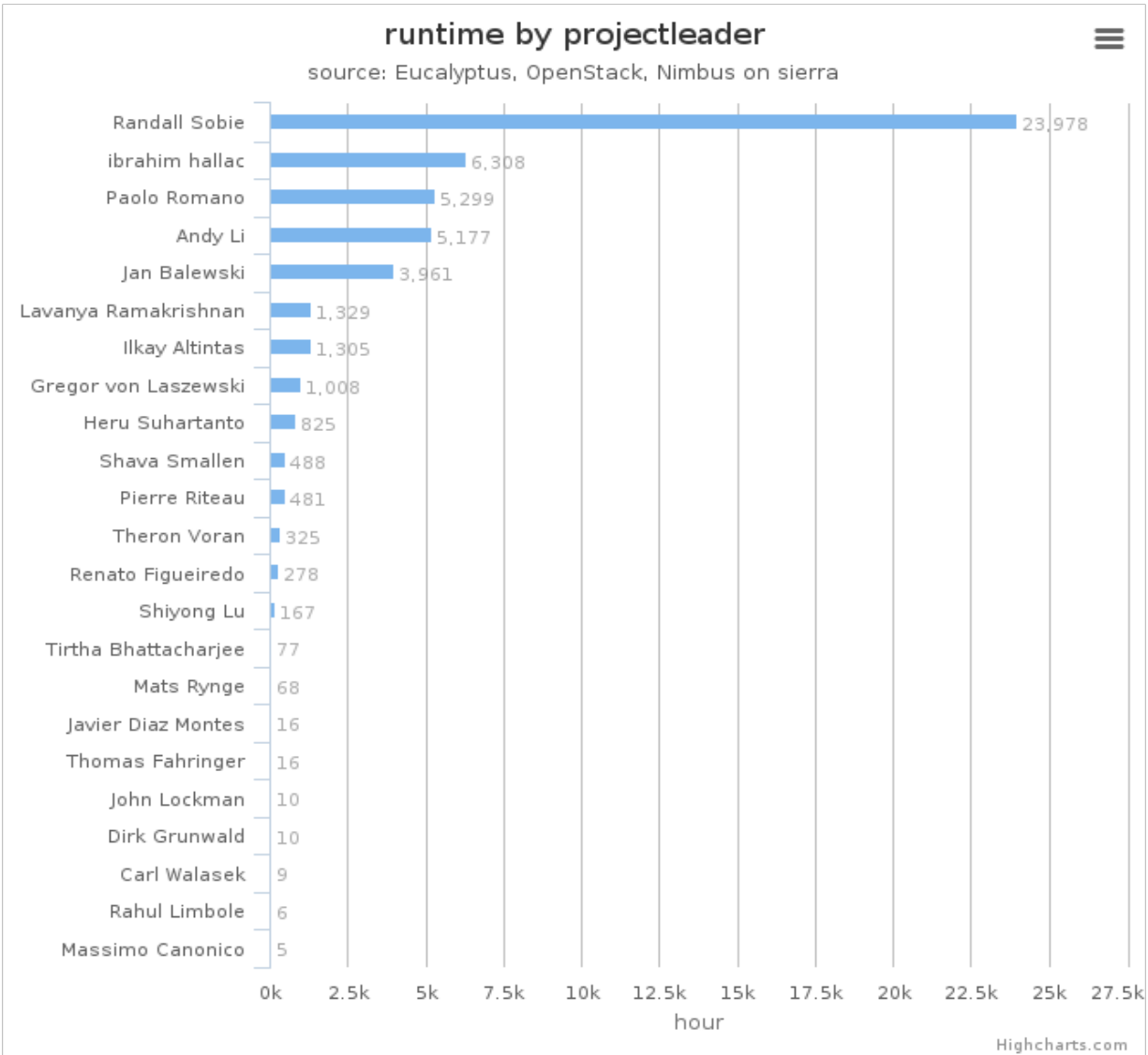


Figure 9: Wall time (hours) by project leader
 This chart illustrates proportionate total run times by project leader.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack, eucalyptus
- Hostname: sierra

2.3 System information

System information shows utilization distribution as to VMs count and wall time. Each cluster represents a compute node.

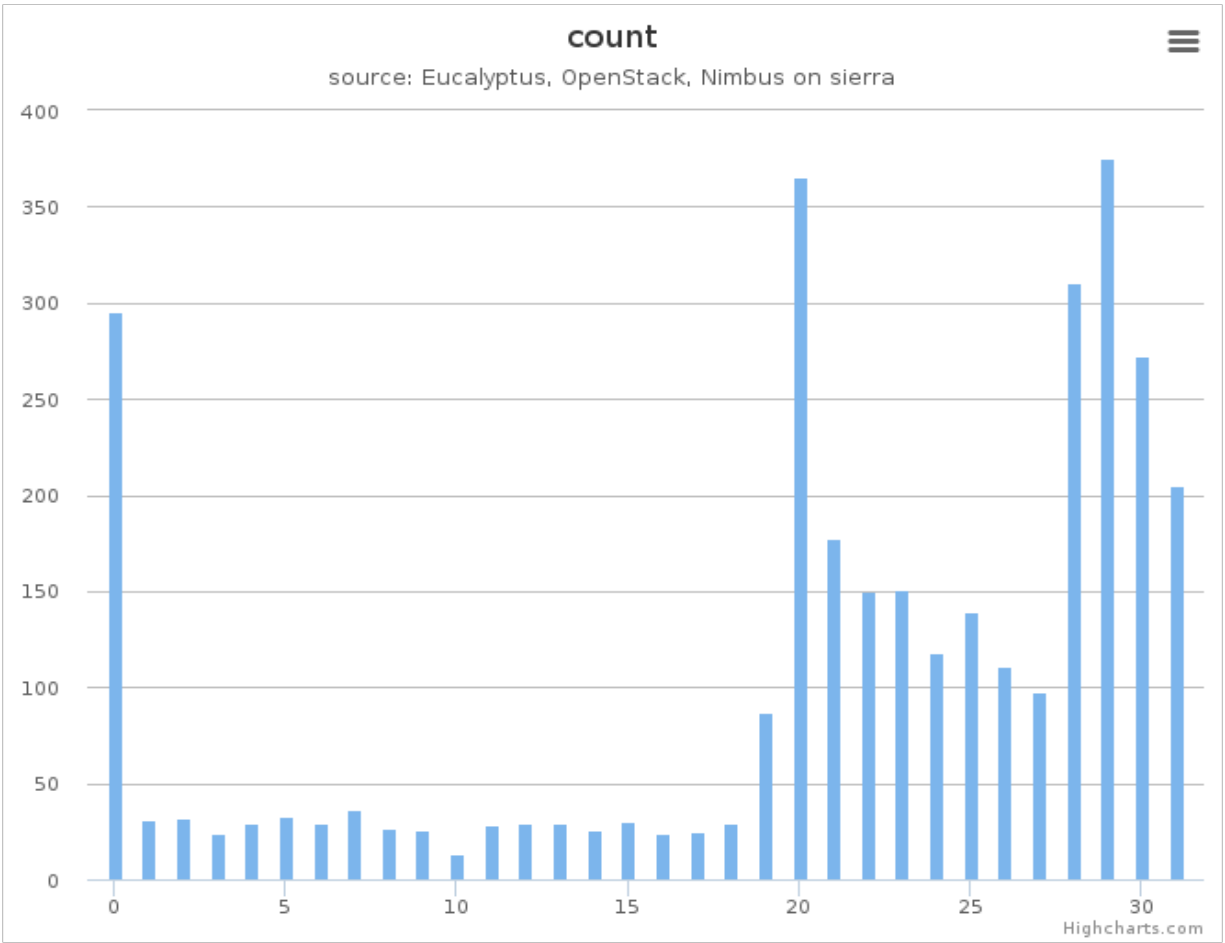


Figure 10: VMs count by systems (compute nodes) in Cluster (sierra)
 This column chart represents VMs count among systems.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack, eucalyptus
- Hostname: sierra

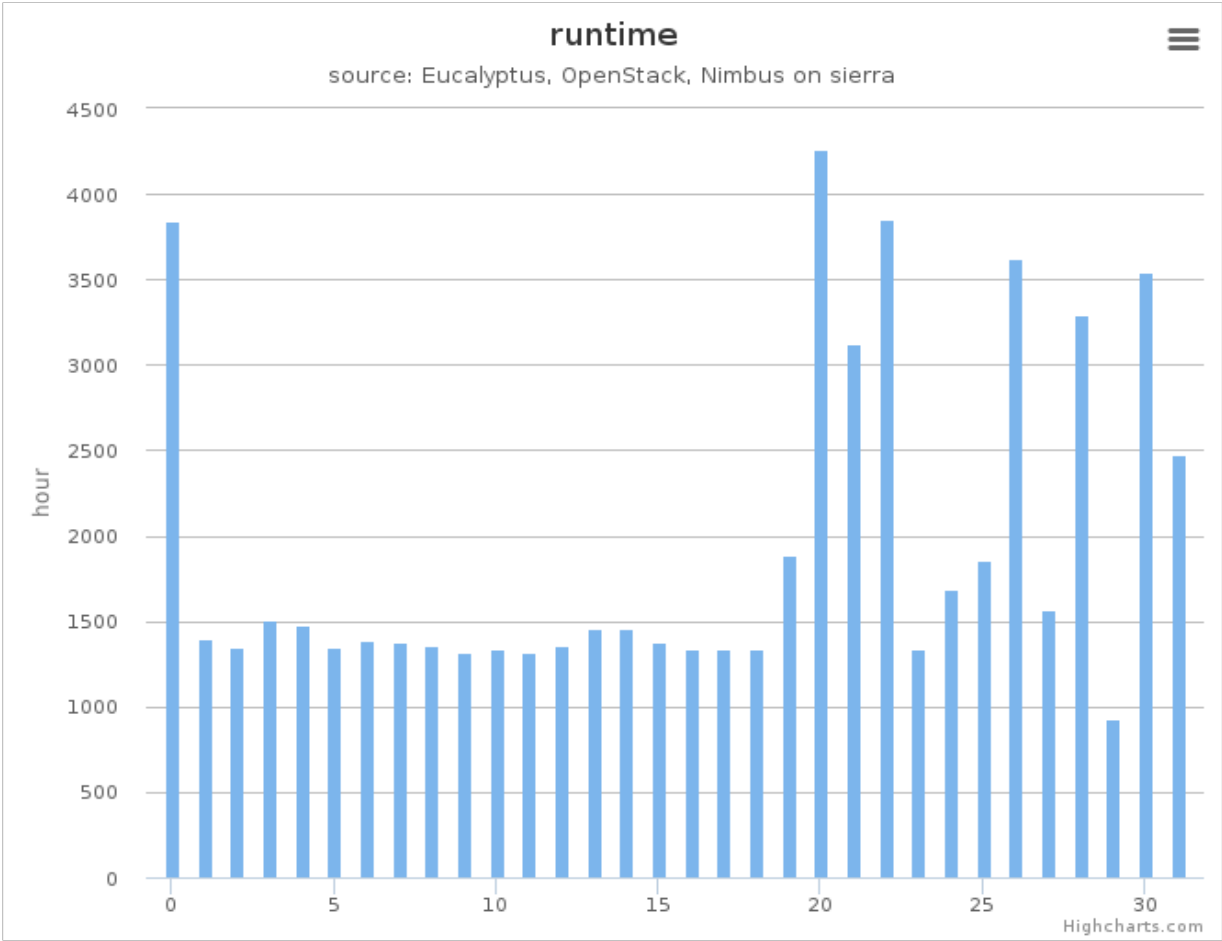


Figure 11: Wall time (hours) by systems (compute nodes) in Cluster (sierra)
This column chart represents wall time among systems.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack, eucalyptus
- Hostname: sierra

USAGE REPORT INDIA

- Period: January 01 – June 30, 2014
- Hostname: india.futuregrid.org
- Services: openstack, eucalyptus
- Metrics: VMs count, Users count, Wall time (hours), Distribution by wall time, project, project leader, and institution, and systems

3.1 Histogram

3.1.1 Summary (Monthly)

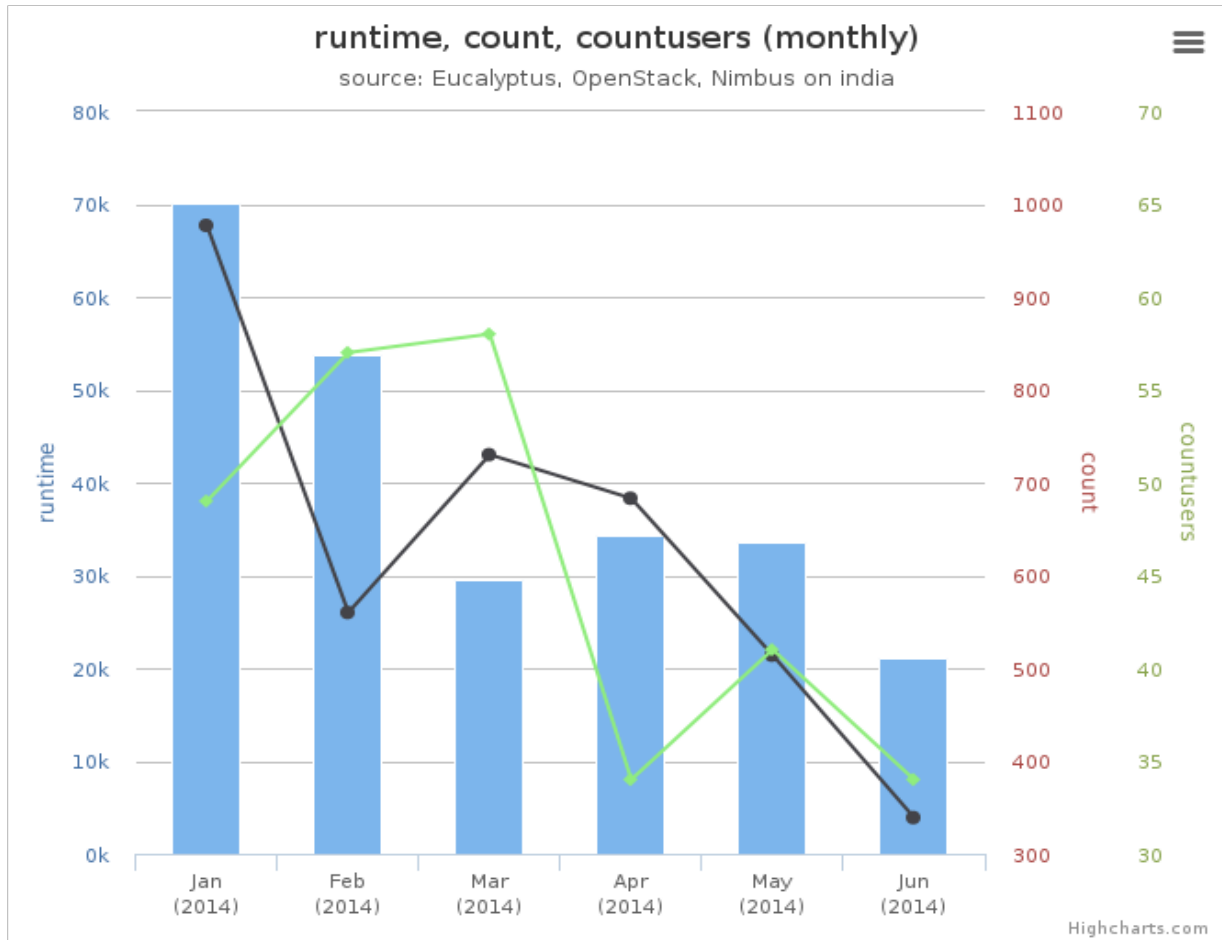


Figure 1: Average monthly usage data (wall time (hour), launched VMs, users)

This mixed chart represents average monthly usage as to wall time (hour), the number of VM instances and active users.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): openstack, eucalyptus
- Hostname: india
- **Metric:**
 - Runtime (Wall time hours): Sum of time elapsed from launch to termination of VM instances
 - Count (VM count): The number of launched VM instances
 - User count (Active): The number of users who launched VMs

3.1.2 Summary (Daily)

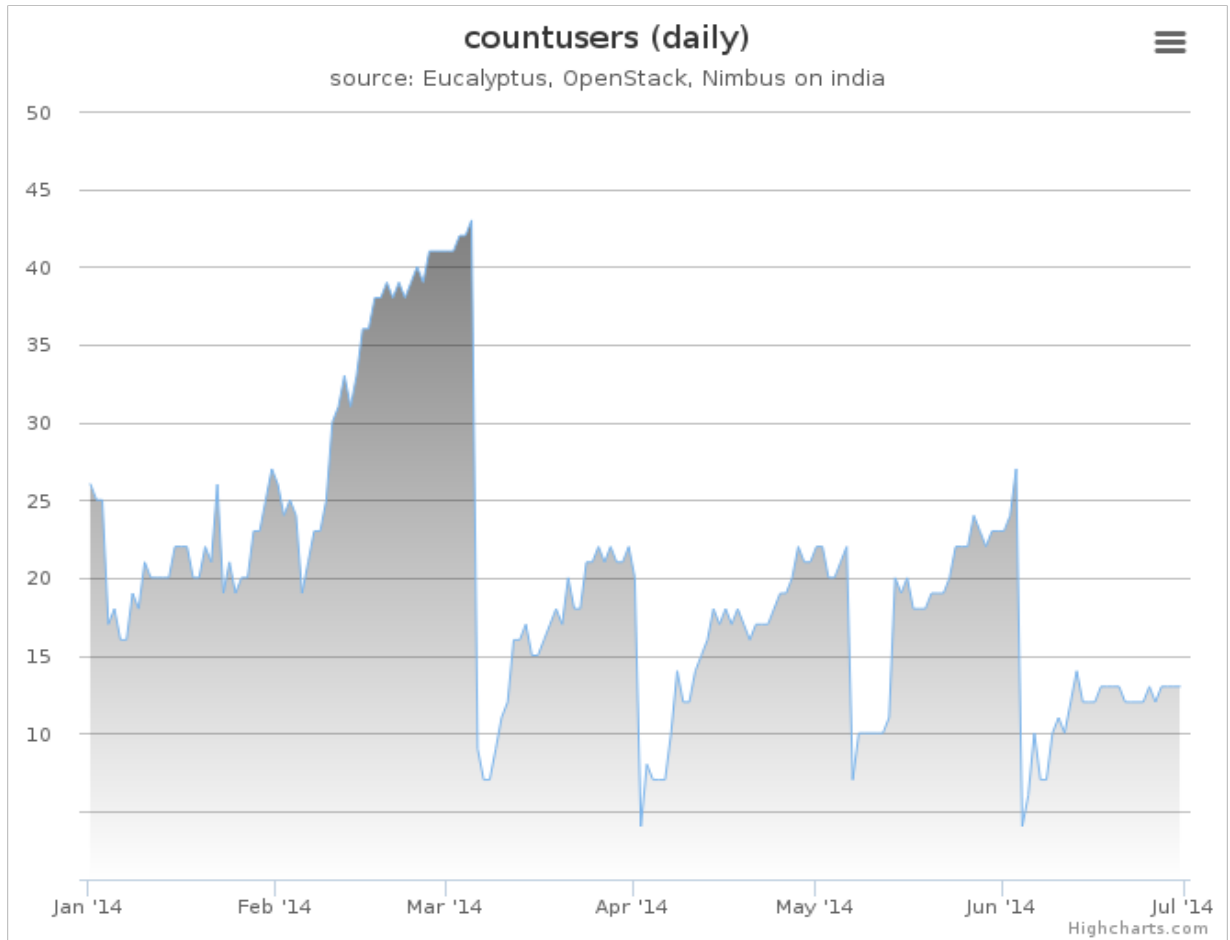


Figure 2: Users count

This time series chart represents daily active user count for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): openstack, eucalyptus
- Hostname: india

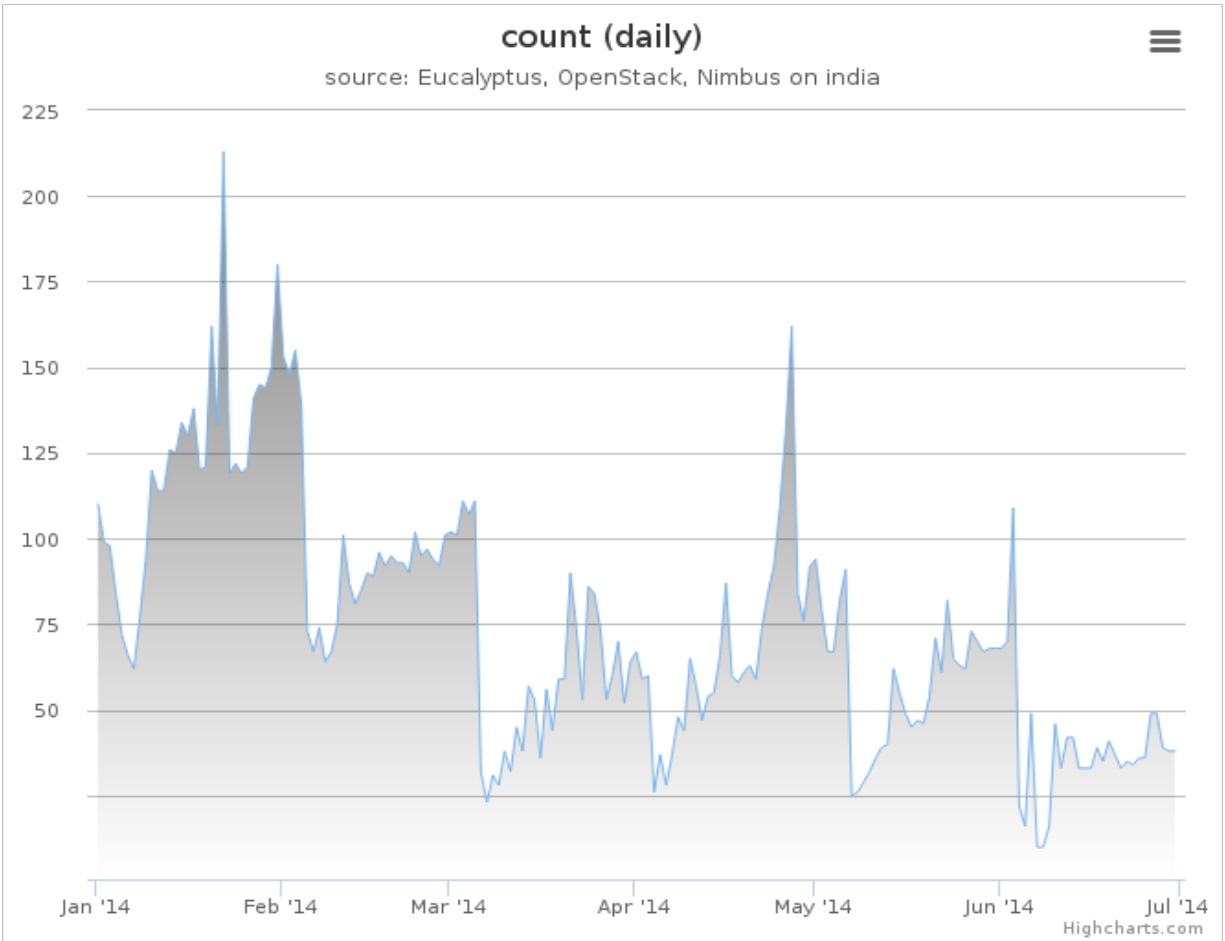


Figure 3: VMs count

This time series chart represents the number of daily launched VM instances for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): openstack, eucalyptus
- Hostname: india

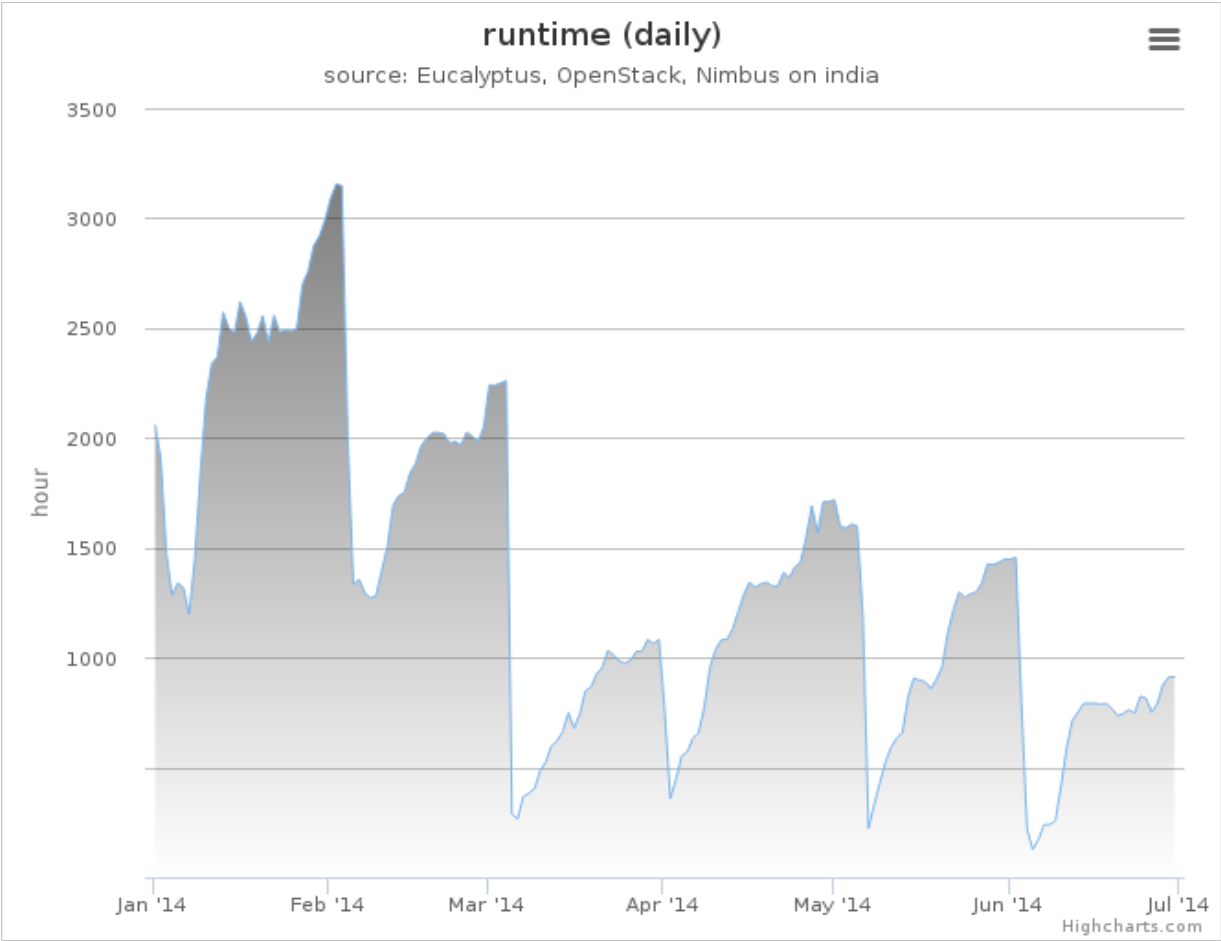


Figure 4: Wall time (hours)
This time series chart represents daily wall time (hours) for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): openstack, eucalyptus
- Hostname: india

3.2 Distribution

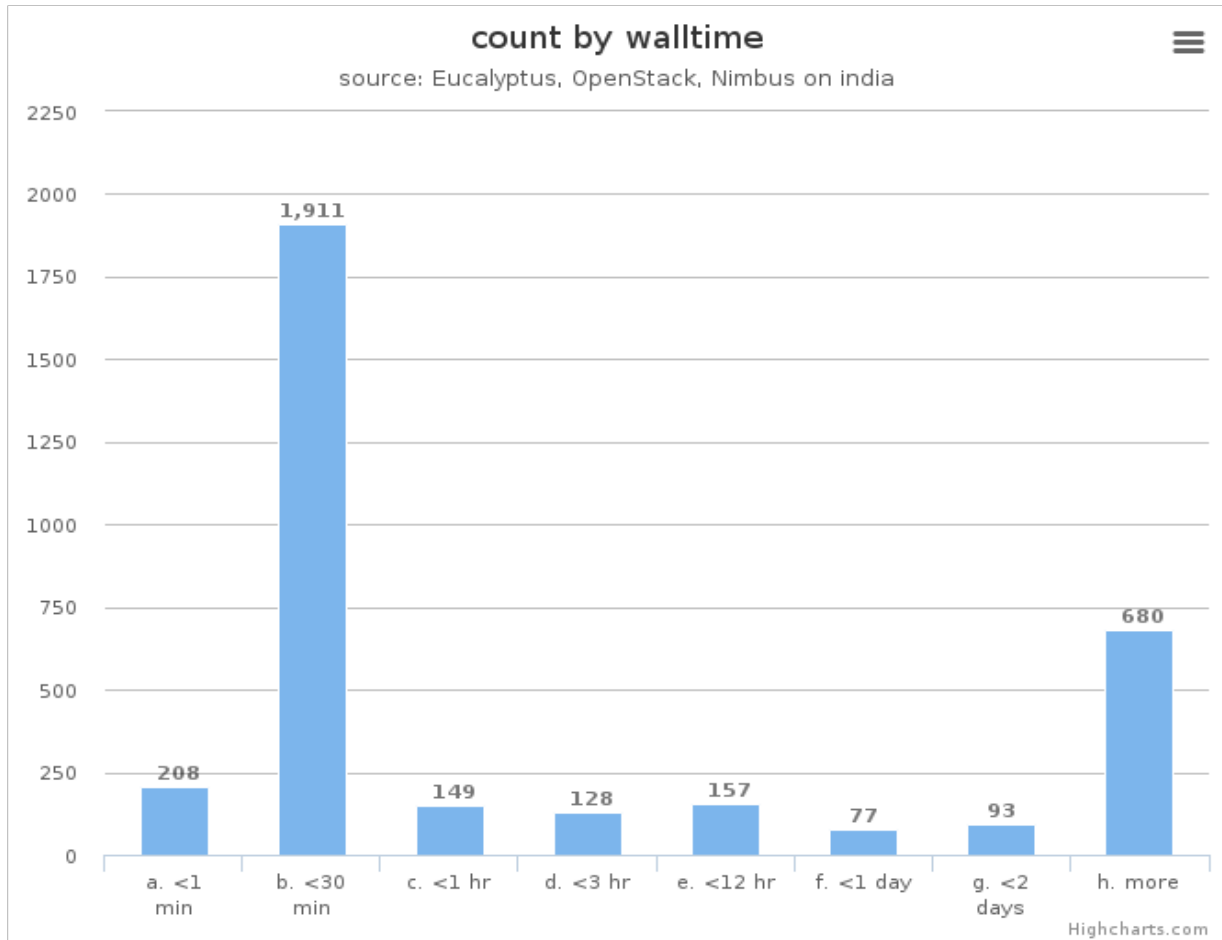


Figure 5: VM count by wall time

This chart illustrates usage patterns of VM instances in terms of running wall time.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): openstack, eucalyptus
- Hostname: india

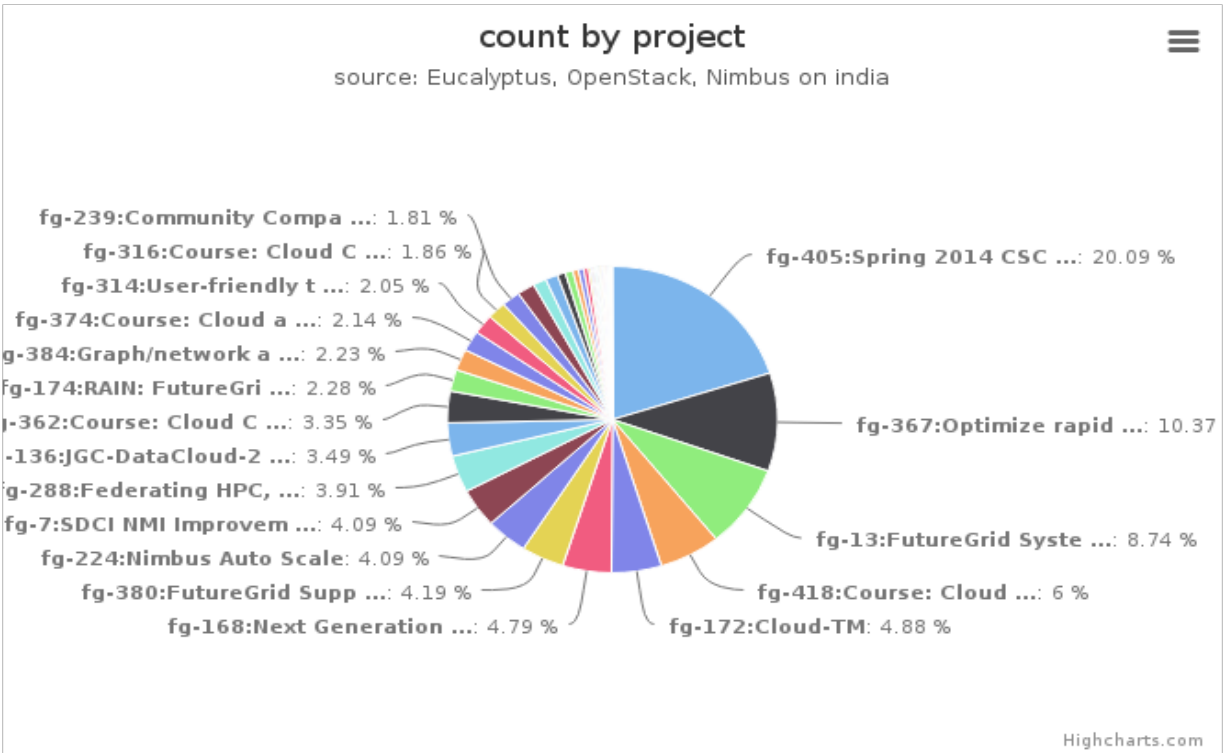


Figure 6: VMs count by project

This chart illustrates the proportion of launched VM instances by project groups. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): openstack, eucalyptus
- Hostname: india

Table 3.1: VMs count by project

Project
fg-405:Spring 2014 CSCI-B649 Cloud Computing MOOC for residential and online students
fg-367:Optimize rapid deployment and updating of VM images at the remote compute cluster
fg-13:FutureGrid Systems Development and Prototyping
fg-418:Course: Cloud Computing Class - fourth edition
fg-172:Cloud-TM
fg-168:Next Generation Sequencing in the Cloud
fg-380:FutureGrid Support for BigData MOOC
fg-224:Nimbus Auto Scale
fg-7:SDCI NMI Improvement: Pegasus: From Concept to Execution- - -Mapping Scientific Workflows onto the National Cyberinfrastructure
fg-288:Federating HPC, Cyberinfrastructure and Clouds using CometCloud
fg-136:JGC-DataCloud-2012 paper experiments

Contin

Table 3.1 – continued from previous page

Project
fg-362:Course: Cloud Computing and Storage (UF)
fg-174:RAIN: FutureGrid Dynamic provisioning Framework
fg-384:Graph/network analysis Resource manager
fg-374:Course: Cloud and Distributed Computing
fg-314:User-friendly tools to play with cloud platforms
fg-316:Course: Cloud Computing Class - third edition
fg-239:Community Comparison of Cloud frameworks
fg-175:GridProphet, A workflow execution time prediction system for the Grid
fg-368:Course: Fall 2013 P434 Distributed Systems Undergraduate Course
fg-1:Peer-to-peer overlay networks and applications in virtual networks and virtual clusters
fg-214:Mining Interactions between Network Community Structure and Information Diffusion
fg-10:TeraGrid XD TIS(Technology Insertion Service) Technology Evaluation Laboratory
fg-333:Intrusion Detection and Prevention for Infrastructure as a Service Cloud Computing System
fg-382:Reliability Analysis using Hadoop and MapReduce
fg-372:Mobile Device Computation Offloading over SocialVPNs
fg-165:The VIEW Project
fg-42:SAGA
fg-149:Metagenome analysis of benthic marine invertebrates
fg-249:Large Scale Computing Infrastructure 2012 Master class
fg-248:Geophysical fluid dynamics education and research
fg-298:FRIEDA: Flexible Robust Intelligent Elastic Data Management
fg-411:ILS-Z604 Big Data Analytics for Web and Text - SP14 Group #2
fg-340:Research: Parallel Computing for Machine Learning
fg-363:Course: Applied Cyberinfrastructure concepts
fg-110:FutureGrid Systems Development
fg-20:Development of an information service for FutureGrid
fg-3:Survey of Open-Source Cloud Infrastructure using FutureGrid Testbed
fg-401:Evaluation of HPC Applications on Cloud Resources
fg-179:GPCLoud: Cloud-based Automatic Repair of Real-World Software Bugs
fg-432:2014 Topics in Parallel Computation
fg-82:FG General Software Development
fg-369:Testing of Network Facing Services for the Open Science Grid
fg-253:Characterizing Performance of Infrastructure Clouds
fg-398:Ensuring Data Security and Accountability for Data Sharing in the Cloud
fg-45:Experiments in Distributed Computing
fg-54:Investigating cloud computing as a solution for analyzing particle physics data

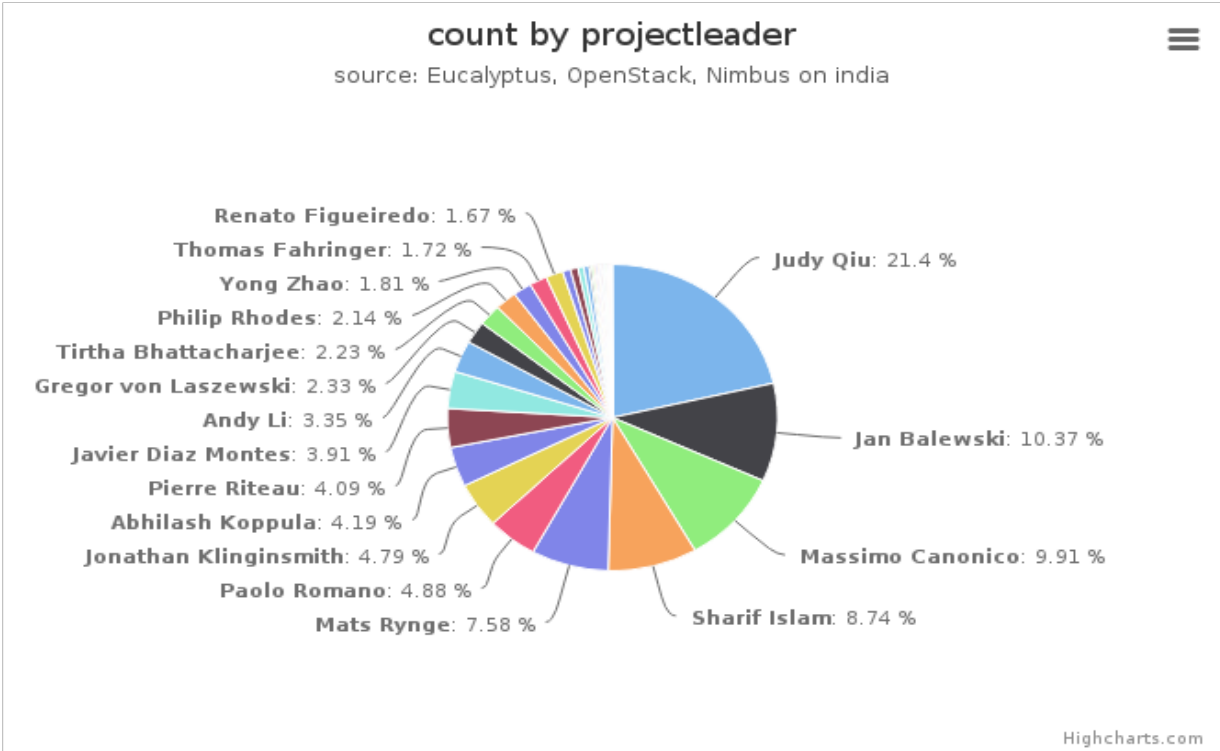


Figure 7: VMs count by project leader
This chart also illustrates the proportion of launched VM instances by project Leader. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): openstack, eucalyptus
- Hostname: india

Table 3.2: VMs count by project leader

Projectleader	Value
Judy Qiu	460
Jan Balewski	223
Massimo Canonico	213
Sharif Islam	188
Mats Rynge	163
Paolo Romano	105
Jonathan Klinginsmith	103
Abhilash Koppula	90
Pierre Riteau	88
Javier Diaz Montes	84
Andy Li	72
Continued on next page	

Table 3.2 – continued from previous page

Projectleader	Value
Gregor von Laszewski	50
Tirtha Bhattacharjee	48
Philip Rhodes	46
Yong Zhao	39
Thomas Fahringer	37
Renato Figueiredo	36
Yong-Yeol Ahn	17
John Lockman	16
Jessie Walker	12
Carl Walasek	11
Shantenu Jha	5
Shiyong Lu	5
Sergio Maffioletti	4
Jason Kwan	4
Glenn Flierl	3
Lavanya Ramakrishnan	3
Trevor Edelblute	3
Nirav Merchant	3
Wilson Rivera	3
Claire Le Goues	2
Brock Palen	2
Heru Suhartanto	2
Gary Miksik	2
Hyungro Lee	2
Tak-Lon Wu	2
Paul Marshall	1
Randall Sobie	1
Igor Sfiligoi	1
Sandip Bhagat	1

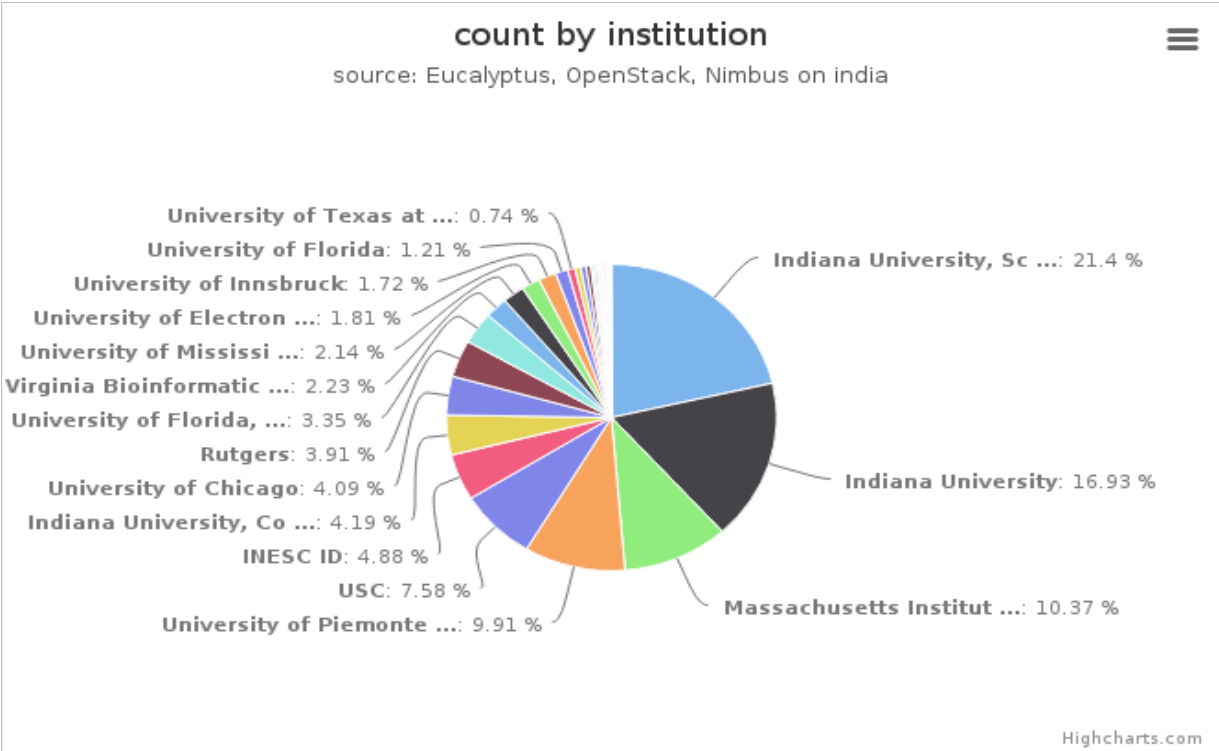


Figure 8: VMs count by institution
 This chart illustrates the proportion of launched VM instances by Institution. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): openstack, eucalyptus
- Hostname: india

Table 3.3: VMs count by institution

Institution	Value
Indiana University, School of Informatics and Computing	460
Indiana University	364
Massachusetts Institute of Technology, Laboratory for Nuclear Sc	223
University of Piemonte Orientale, Computer Science Department	213
USC	163
INESC ID	105
Indiana University, Community Grids Lab	90
University of Chicago	88
Rutgers	84
University of Florida, Department of Electrical and Computer Eng	72
Virginia Bioinformatics Institute, Virginia Polytechnic Institut	48
University of Mississippi, Department of Computer Science	46

Continued on next page

Table 3.3 – continued from previous page

Institution	Value
University of Electronic Science and Technology	39
University of Innsbruck	37
University of Florida	26
University of Texas at Austin	16
University of Arkansas at Pine Bluff , Computer Science	12
University of the Sciences , Mathematics, Physics, and Statistic	11
University of Florida, Electrical and Computer Engineering	10
Wayne State University	5
Louisiana State University	5
University of Zurich	4
University of Utah	4
Massachusetts Institute of Technology	3
Indiana University, Department of Information & Library Science,	3
Lawrence Berkeley National Lab	3
University of Puerto Rico, Electrical and Computer Emgineering D	3
University of Arizona, Arizona Research Laboratories, School of	3
University of Virginia	2
Universitas Indonesia, Faculty of Computer Science	2
U of Michigan / Xsede, CAEN HPC	2
University of Colorado at Boulder	1
Veermata Jijabai Technological University, Mumbai India. , Veerm	1
University of Victoria	1
University of California San Diego, Physics Department	1

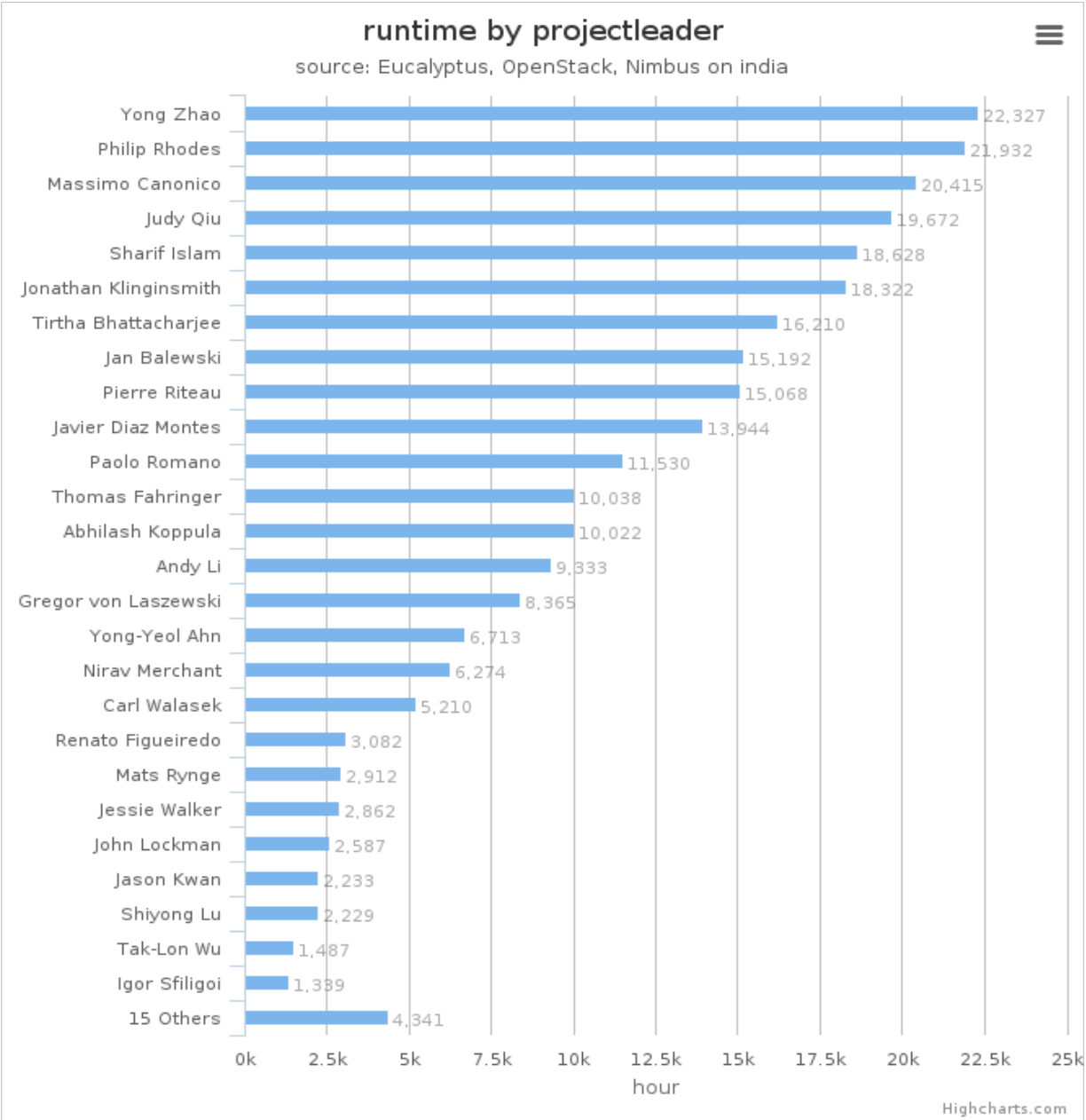


Figure 9: Wall time (hours) by project leader
This chart illustrates proportionate total run times by project leader.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): openstack, eucalyptus
- Hostname: india

3.3 System information

System information shows utilization distribution as to VMs count and wall time. Each cluster represents a compute node.

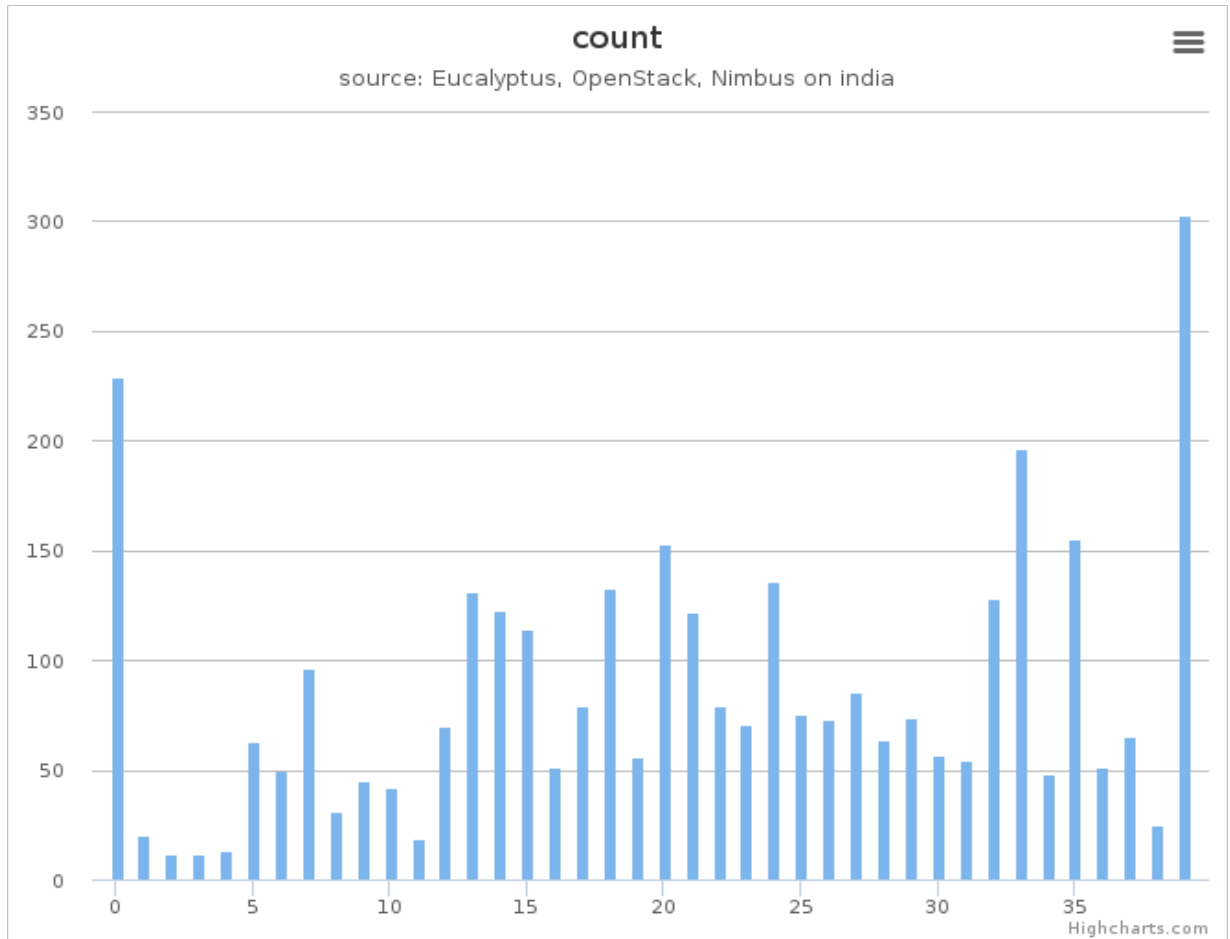


Figure 10: VMs count by systems (compute nodes) in Cluster (india)

This column chart represents VMs count among systems.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): openstack, eucalyptus
- Hostname: india

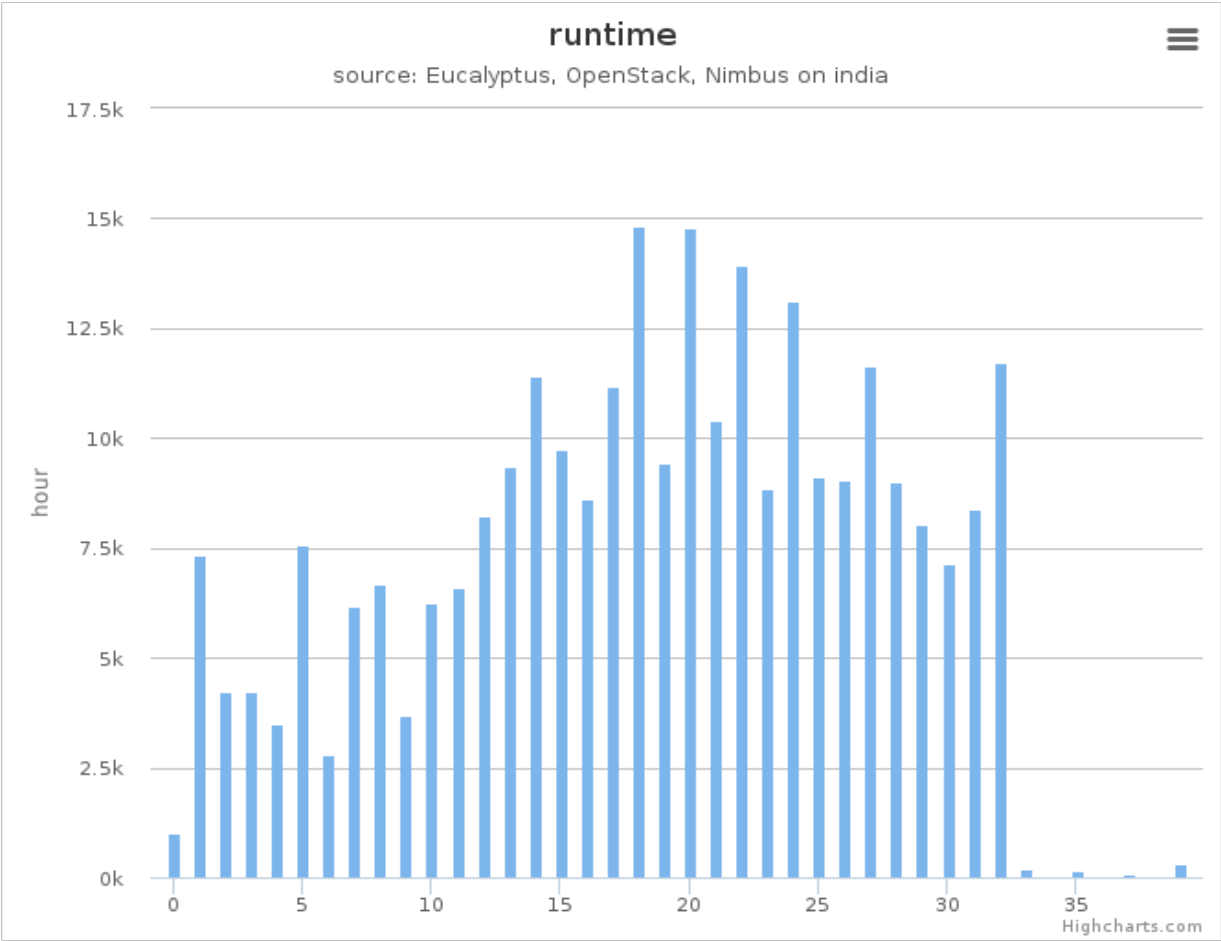


Figure 11: Wall time (hours) by systems (compute nodes) in Cluster (india)
This column chart represents wall time among systems.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): openstack, eucalyptus
- Hostname: india

USAGE REPORT HOTEL

- Period: January 01 – June 30, 2014
- Hostname: hotel.futuregrid.org
- Services: nimbus
- Metrics: VMs count, Users count, Wall time (hours), Distribution by wall time, project, project leader, and institution, and systems

4.1 Histogram

4.1.1 Summary (Monthly)

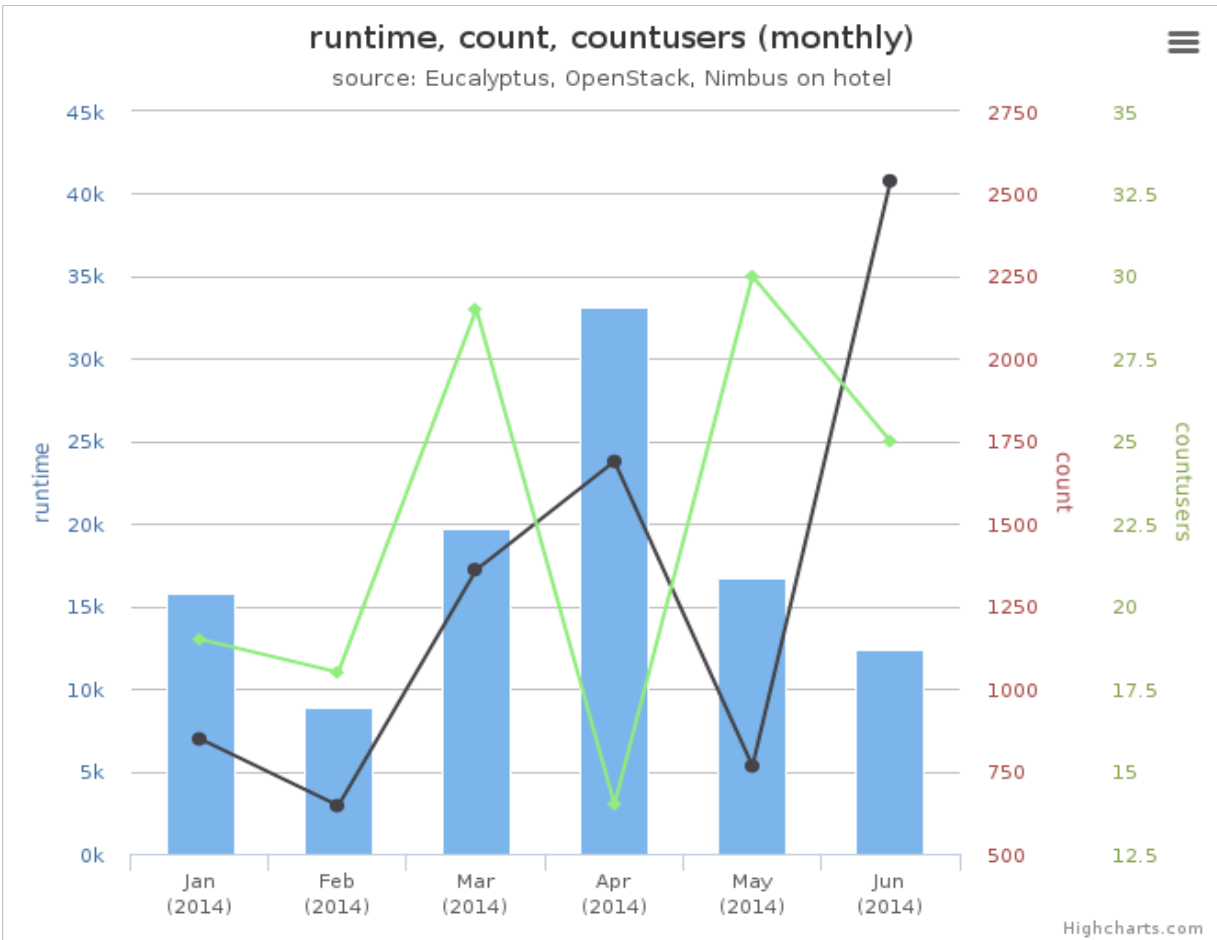


Figure 1: Average monthly usage data (wall time (hour), launched VMs, users)

This mixed chart represents average monthly usage as to wall time (hour), the number of VM instances and active users.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: hotel
- **Metric:**
 - Runtime (Wall time hours): Sum of time elapsed from launch to termination of VM instances
 - Count (VM count): The number of launched VM instances
 - User count (Active): The number of users who launched VMs

4.1.2 Summary (Daily)

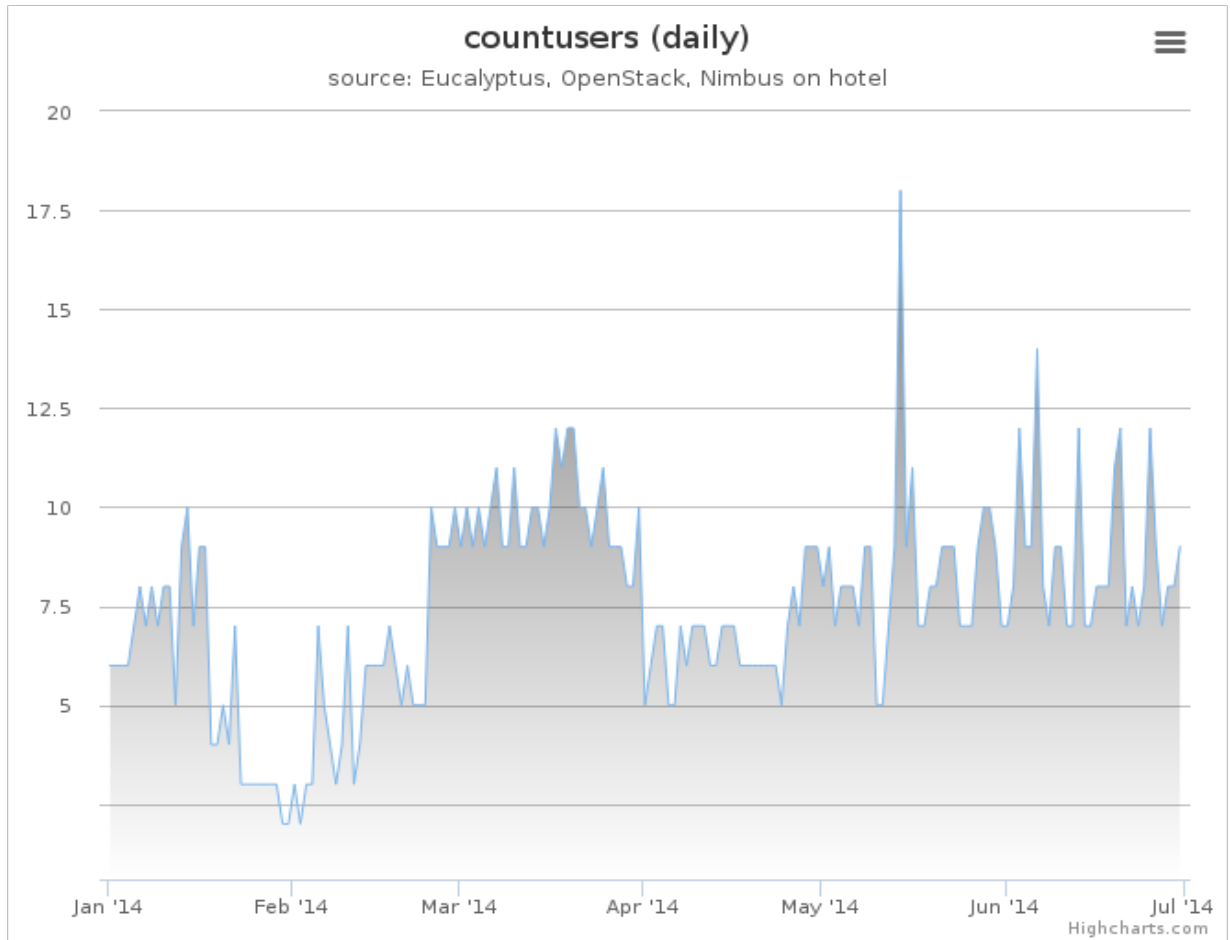


Figure 2: Users count

This time series chart represents daily active user count for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: hotel

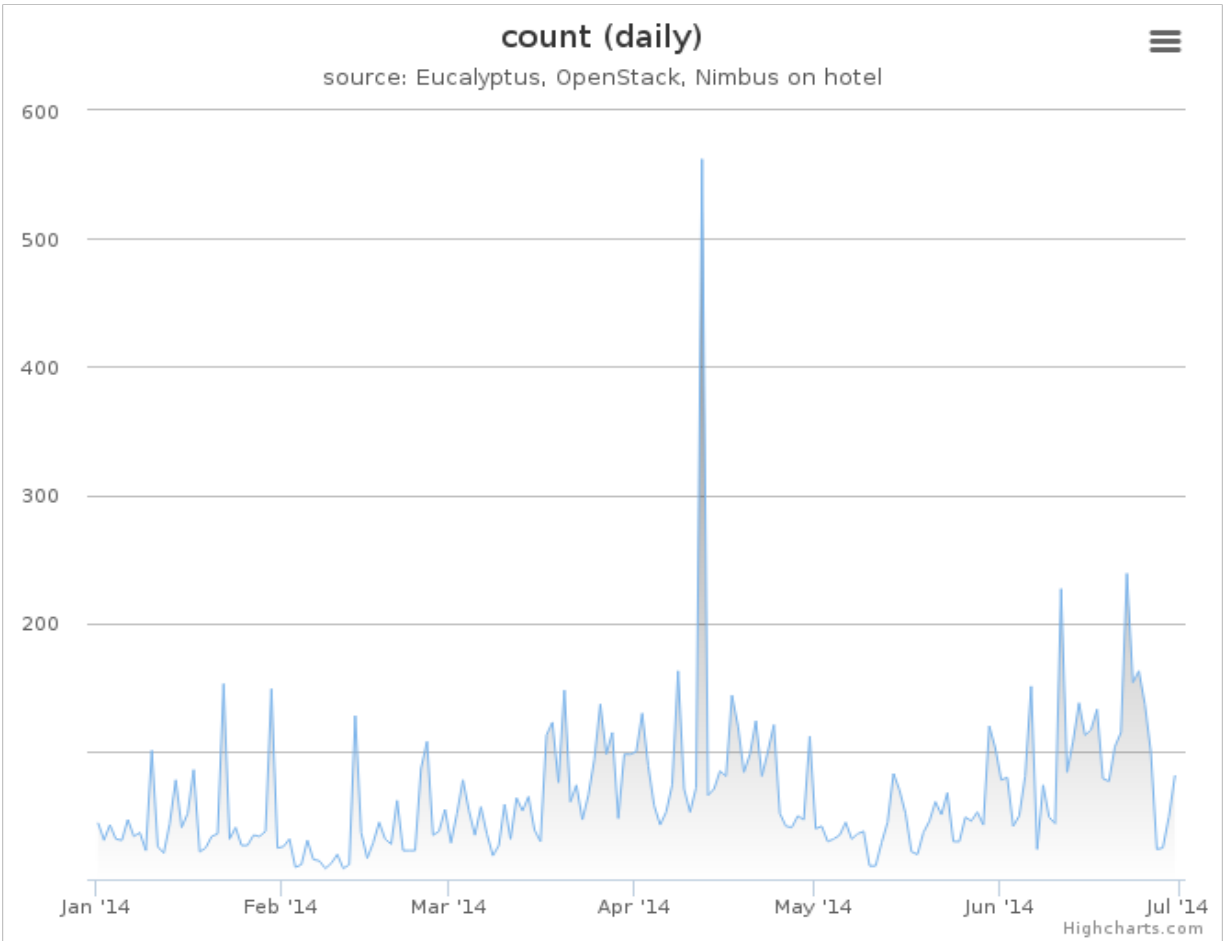


Figure 3: VMs count

This time series chart represents the number of daily launched VM instances for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: hotel

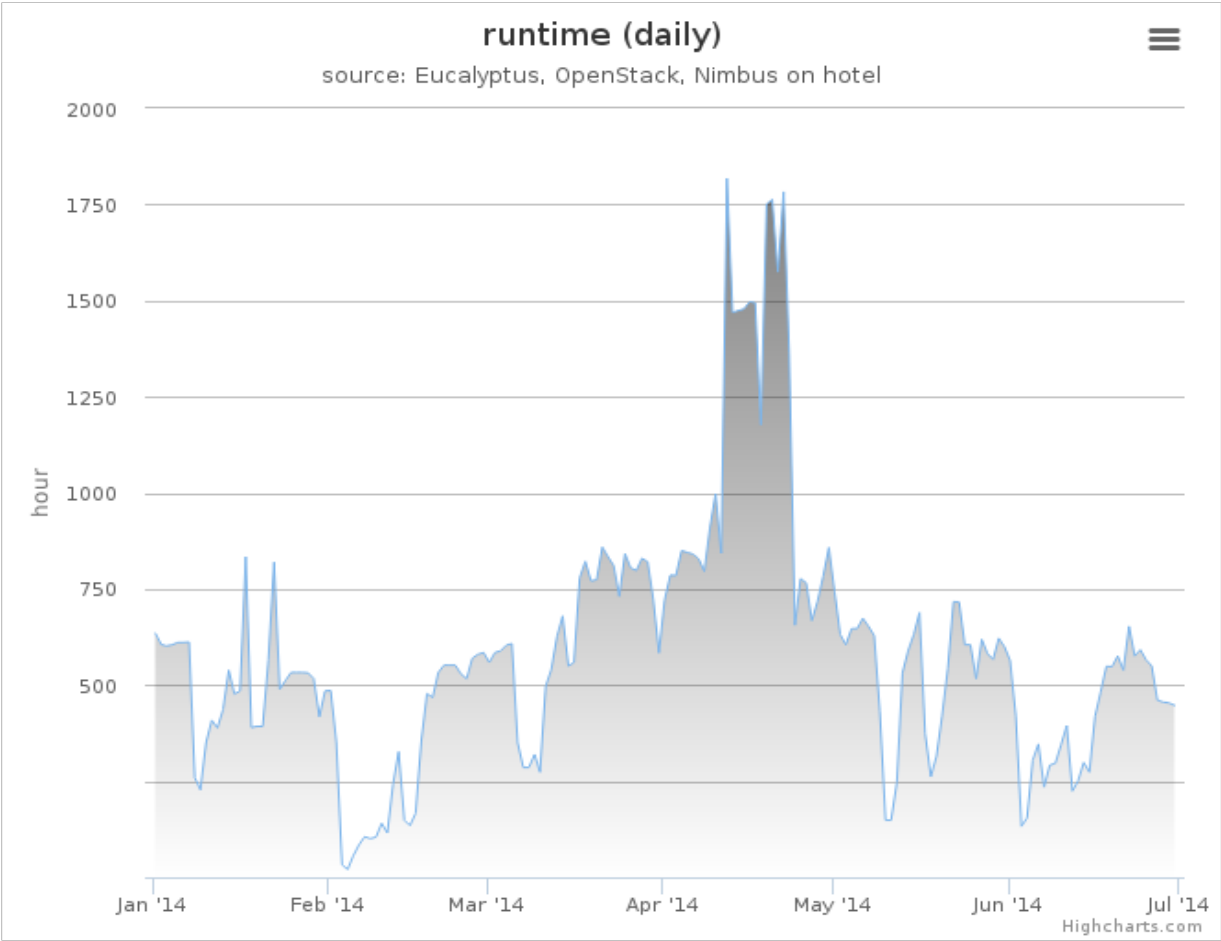


Figure 4: Wall time (hours)
This time series chart represents daily wall time (hours) for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: hotel

4.2 Distribution

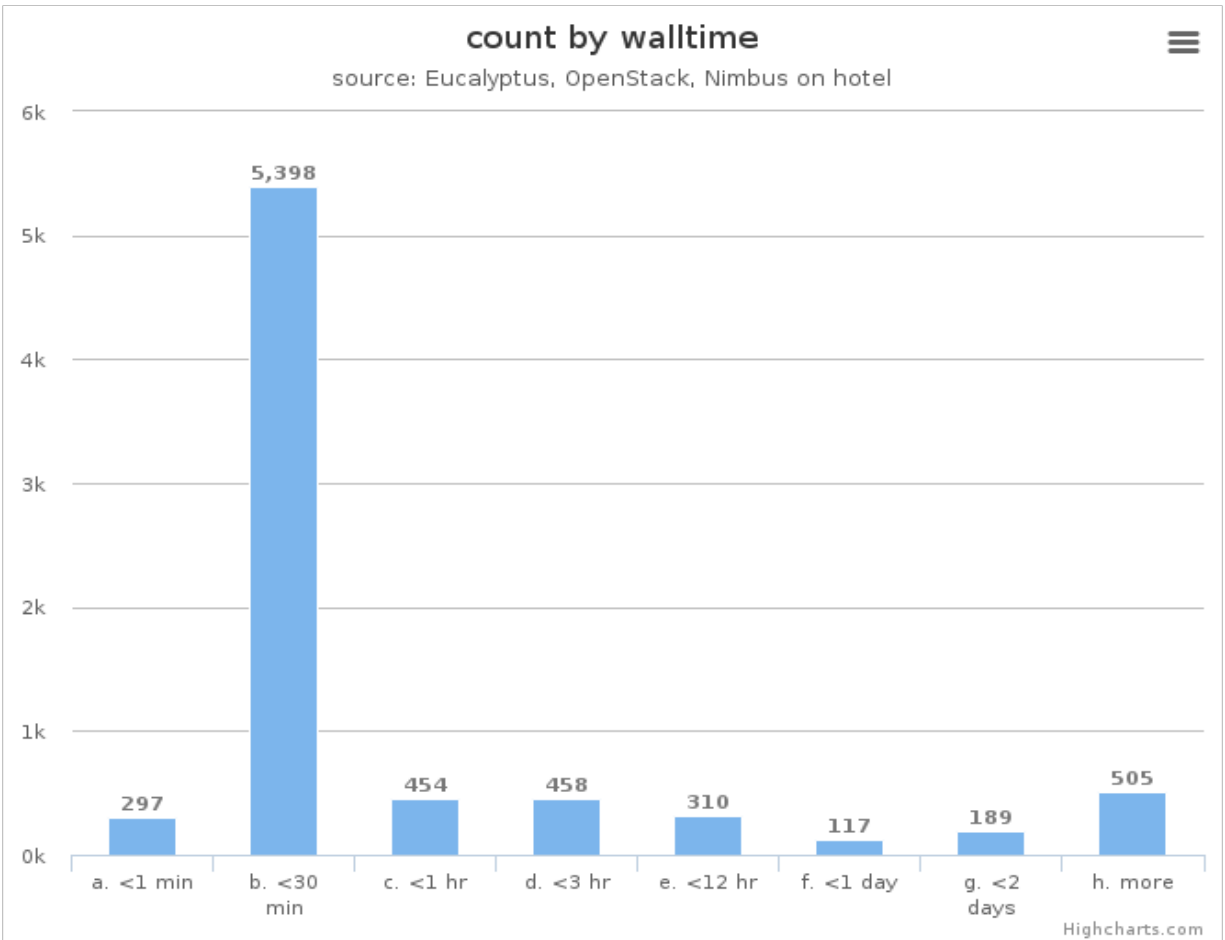


Figure 5: VM count by wall time

This chart illustrates usage patterns of VM instances in terms of running wall time.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: hotel

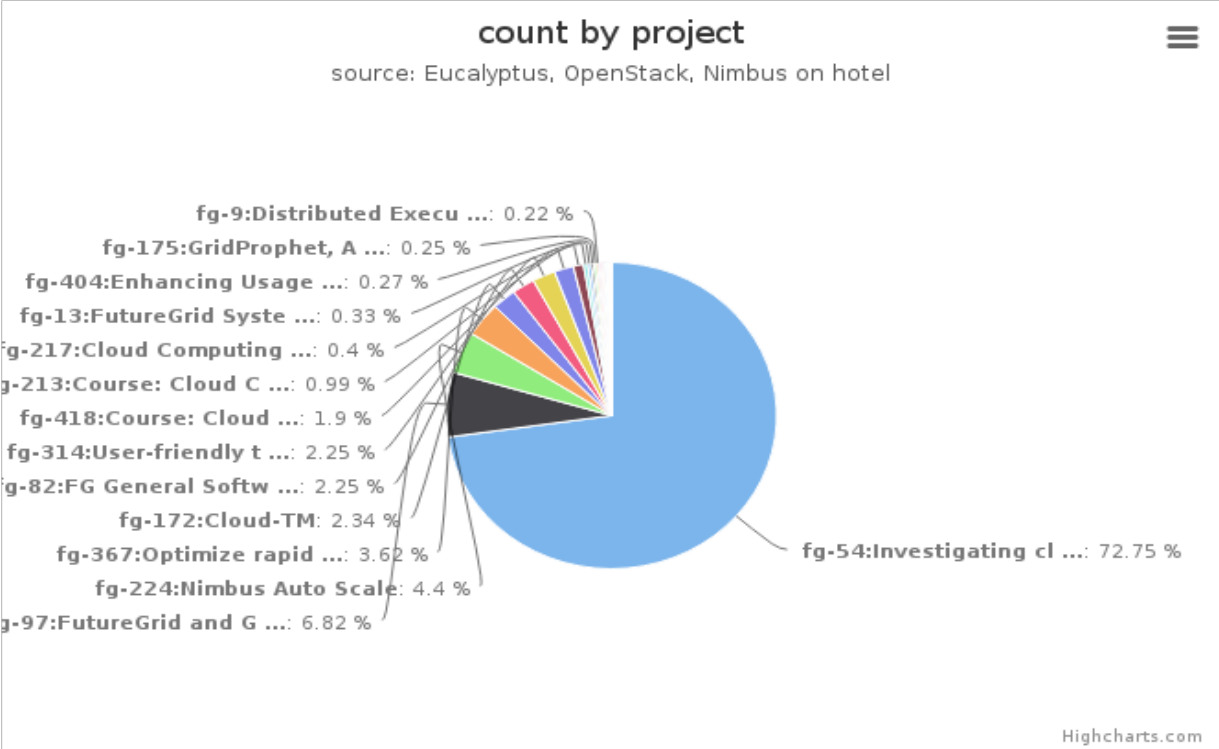


Figure 6: VMs count by project
This chart illustrates the proportion of launched VM instances by project groups. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: hotel

Table 4.1: VMs count by project

Project	Value
fg-54: Investigating cloud computing as a solution for analyzing particle physics data	4567
fg-97: FutureGrid and Grid'5000 Collaboration	428
fg-224: Nimbus Auto Scale	276
fg-367: Optimize rapid deployment and updating of VM images at the remote compute cluster	227
fg-172: Cloud-TM	147
fg-82: FG General Software Development	141
fg-314: User-friendly tools to play with cloud platforms	141
fg-418: Course: Cloud Computing Class - fourth edition	119
fg-213: Course: Cloud Computing class - second edition	62
fg-217: Cloud Computing In Education	25
fg-13: FutureGrid Systems Development and Prototyping	21

Continued on next page

Table 4.1 – continued from previous page

Project	Value
fg-404:Enhancing Usage of cloud Infrastructure	17
fg-175:GridProphet, A workflow execution time prediction system for the Grid	16
fg-9:Distributed Execution of Kepler Scientific Workflow on Future Grid	14
fg-397:Laboratory for Cosmological Data Mining	11
fg-257:Particle Physics Data analysis cluster for ATLAS LHC experiment	11
fg-42:SAGA	8
fg-362:Course: Cloud Computing and Storage (UF)	8
fg-239:Community Comparison of Cloud frameworks	7
fg-150:SC11: Using and Building Infrastructure Clouds for Science	6
fg-230:Automatic Extraction of Heterogeneous Parallelism from Array-based High-level Languages	5
fg-341:Course: Parallel Computing	3
fg-371:Characterizing Infrastructure Cloud Performance for Scientific Computing	3
fg-374:Course: Cloud and Distributed Computing	3
fg-394:Hydroinformatics on the Cloud	3
fg-165:The VIEW Project	2
fg-298:FRIEDA: Flexible Robust Intelligent Elastic Data Management	2
fg-10:TeraGrid XD TIS(Technology Insertion Service) Technology Evaluation Laboratory	2
fg-401:Evaluation of HPC Applications on Cloud Resources	1
fg-344:Exploring map/reduce frameworks for users of traditional HPC	1
fg-443:Virtual Machine Live Migration for Disaster Recovery in WANs	1

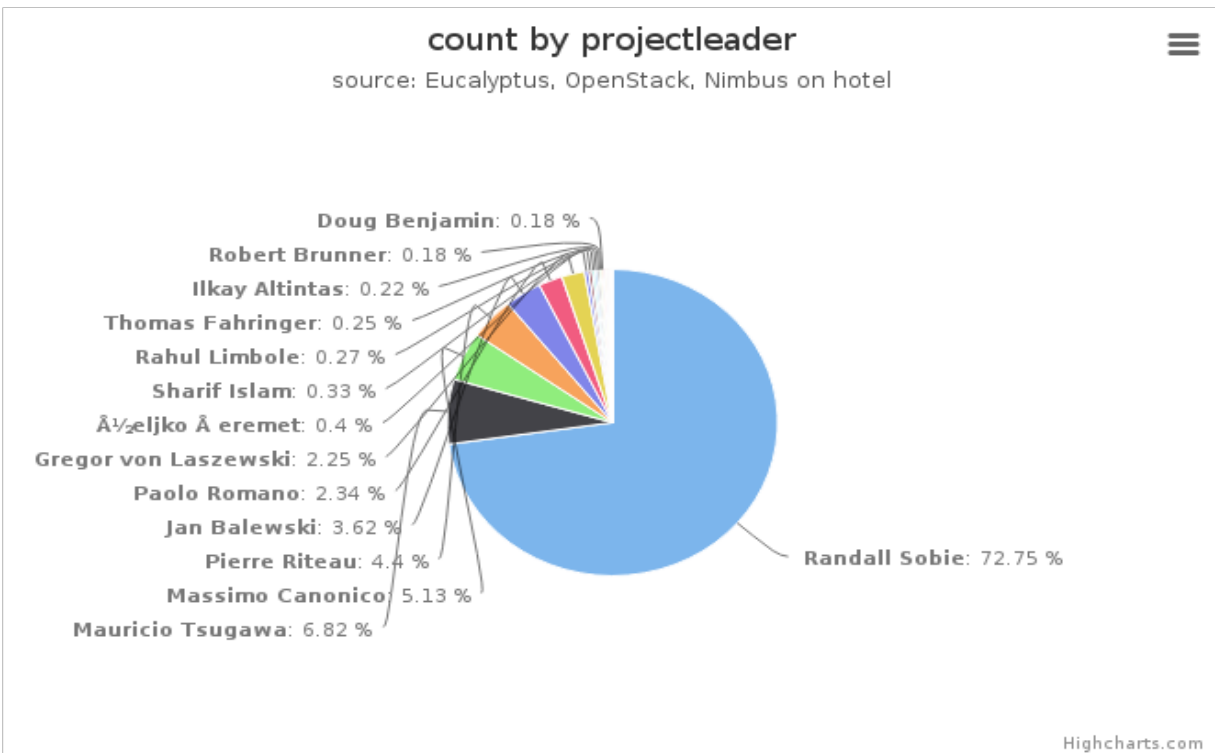


Figure 7: VMs count by project leader

This chart also illustrates the proportion of launched VM instances by project Leader. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: hotel

Table 4.2: VMs count by project leader

Projectleader	Value
Randall Sobie	4567
Mauricio Tsugawa	428
Massimo Canonico	322
Pierre Riteau	276
Jan Balewski	227
Paolo Romano	147
Gregor von Laszewski	141
Željko Šeremet	25
Sharif Islam	21
Rahul Limbole	17
Thomas Fahringer	16
Ilkay Altintas	14
Robert Brunner	11
Doug Benjamin	11
Shantenu Jha	8
Andy Li	8
Yong Zhao	7
John Bresnahan	6
Arun Chauhan	5
Philip Rhodes	3
Theron Voran	3
Wilson Rivera	3
Kate Keahey	3
Lavanya Ramakrishnan	2
Shiyong Lu	2
John Lockman	2
Brock Palen	1
Glenn K. Lockwood	1
Tae Seung Kang	1

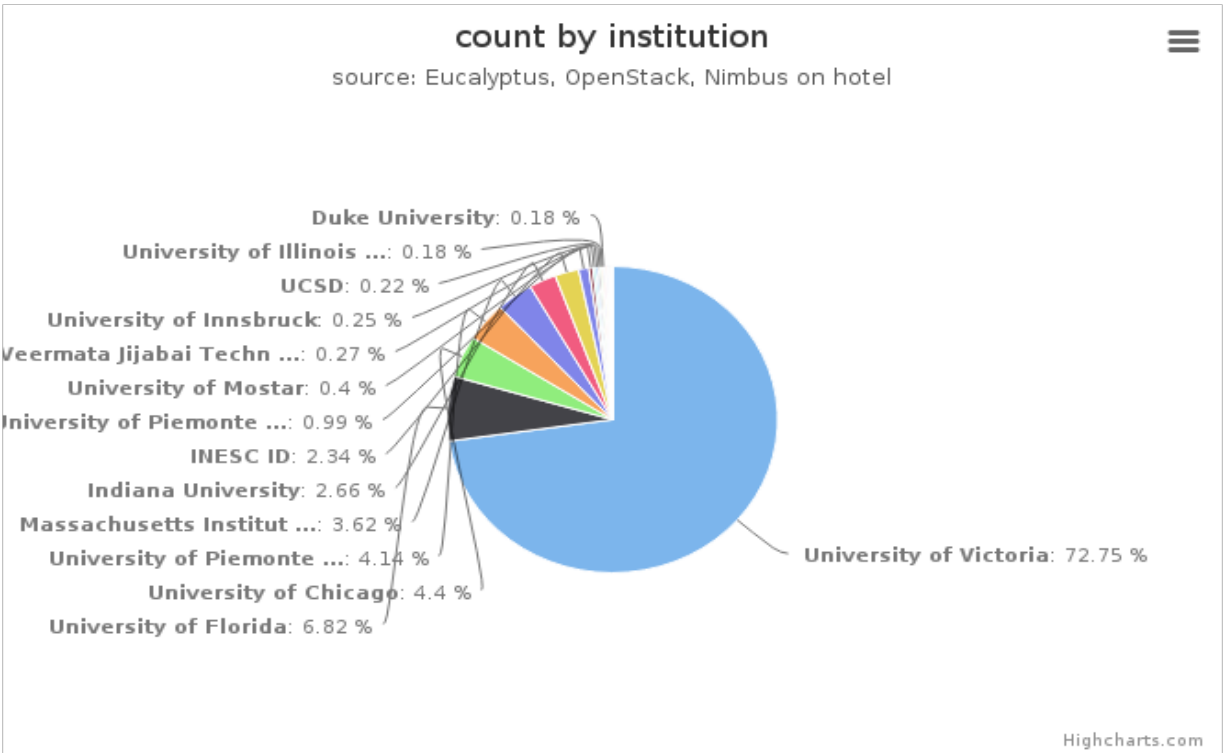


Figure 8: VMs count by institution

This chart illustrates the proportion of launched VM instances by Institution. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: hotel

Table 4.3: VMs count by institution

Institution	Value
University of Victoria	4567
University of Florida	428
University of Chicago	276
University of Piemonte Orientale, Computer Science Department	260
Massachusetts Institute of Technology, Laboratory for Nuclear Sc	227
Indiana University	167
INESC ID	147
University of Piemonte Orientale	62
University of Mostar	25
Veermata Jijabai Technological Institute Mumbai, Computer Scienc	17
University of Innsbruck	16
UCSD	14
University of Illinois, Astronomy & NCSA	11
Duke University	11
University of Florida, Department of Electrical and Computer Eng	8
Louisiana State University	8
University of Electronic Science and Technology	7
Nimbus	6
University of Chicago, Computation Institute	3
University of Mississippi, Department of Computer Science	3
University of Colorado at Boulder, Computer Science Department	3
University of Puerto Rico, Electrical and Computer Emgineering D	3
University of Texas at Austin	2
Wayne State University	2
Lawrence Berkeley National Lab	2
University of California San Diego, San Diego Supercomputer Cent	1
University of Florida, Advanced Computing and Information System	1
U of Michigan / Xsede, CAEN HPC	1

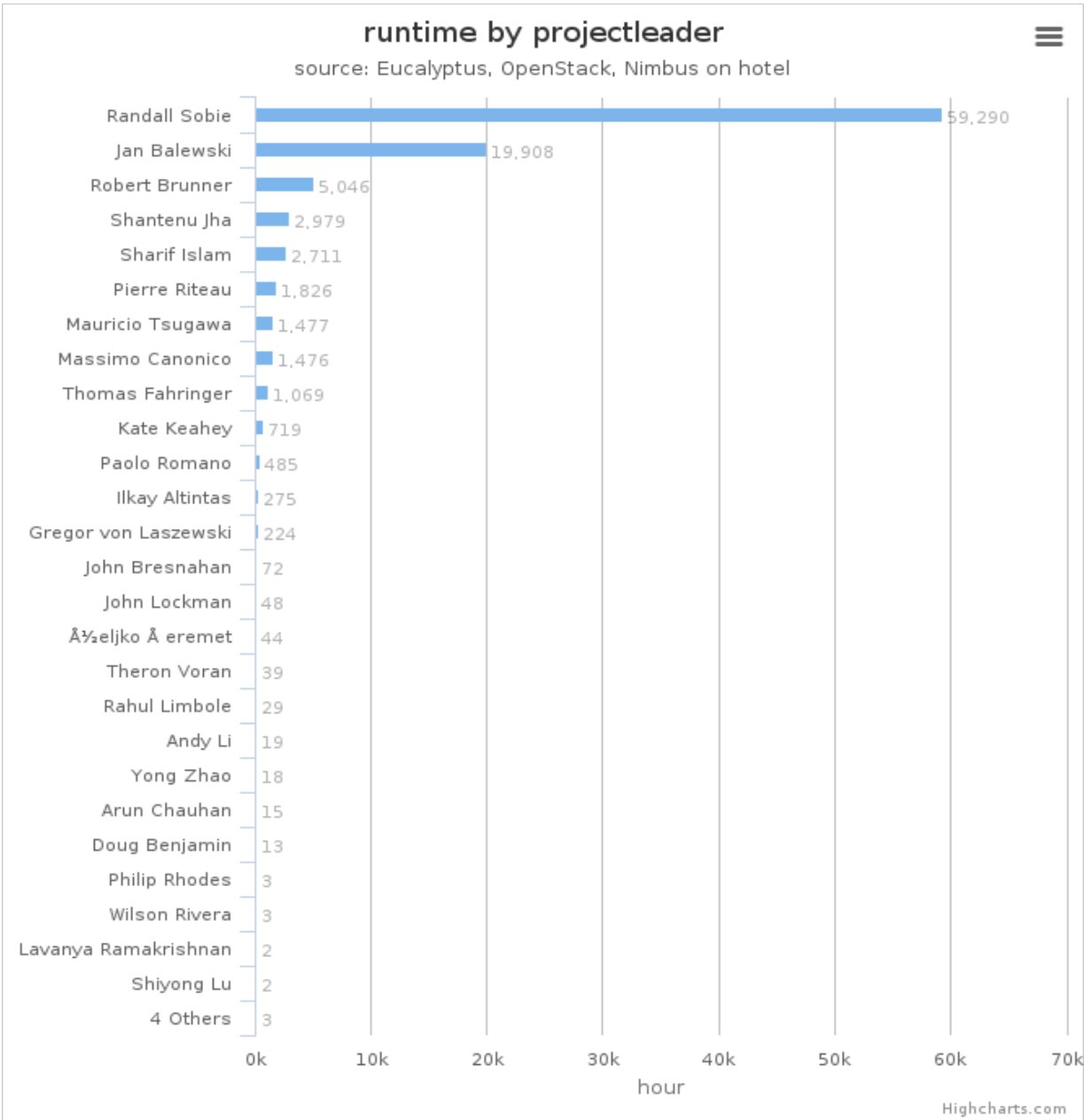


Figure 9: Wall time (hours) by project leader
This chart illustrates proportionate total run times by project leader.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: hotel

4.3 System information

System information shows utilization distribution as to VMs count and wall time. Each cluster represents a compute node.

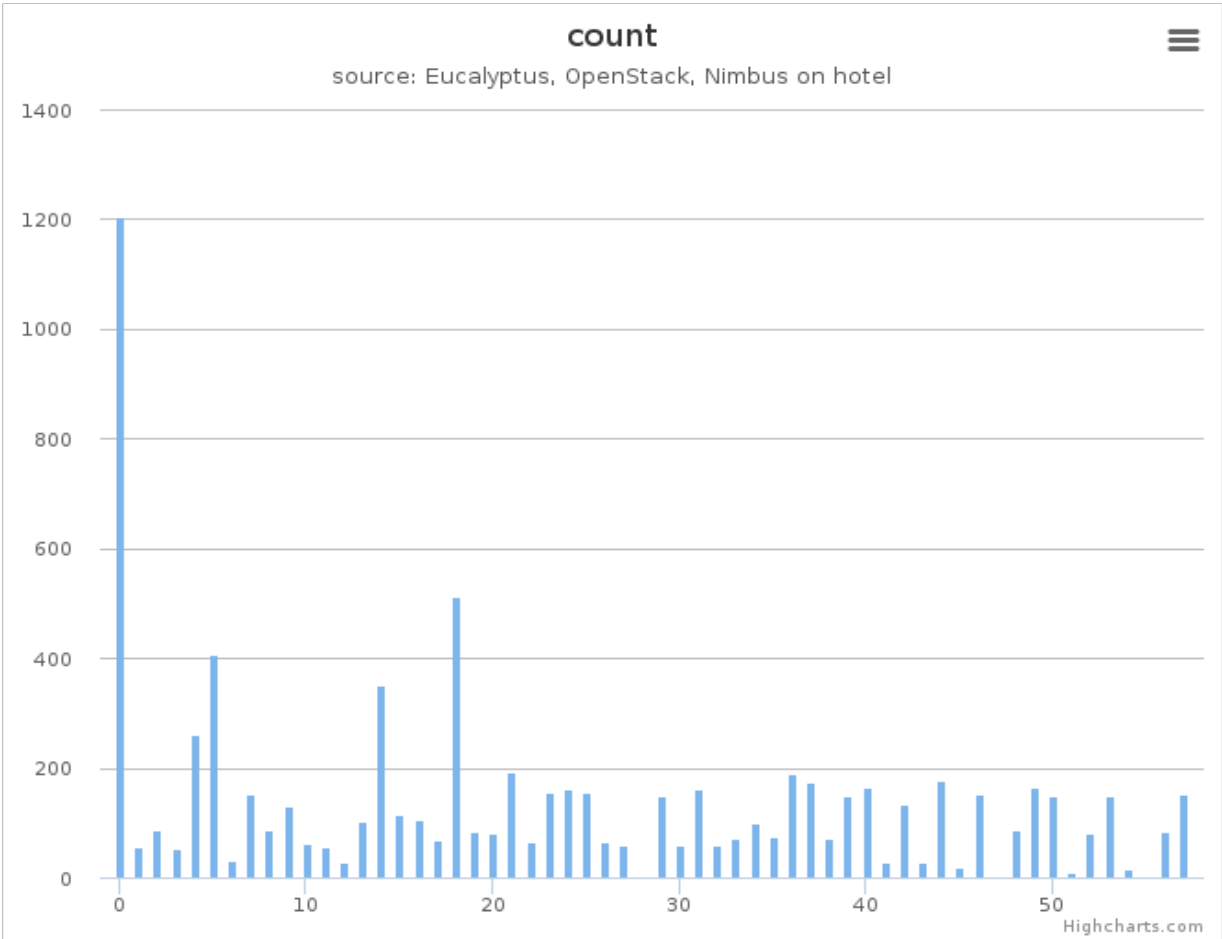


Figure 10: VMs count by systems (compute nodes) in Cluster (hotel)
This column chart represents VMs count among systems.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: hotel

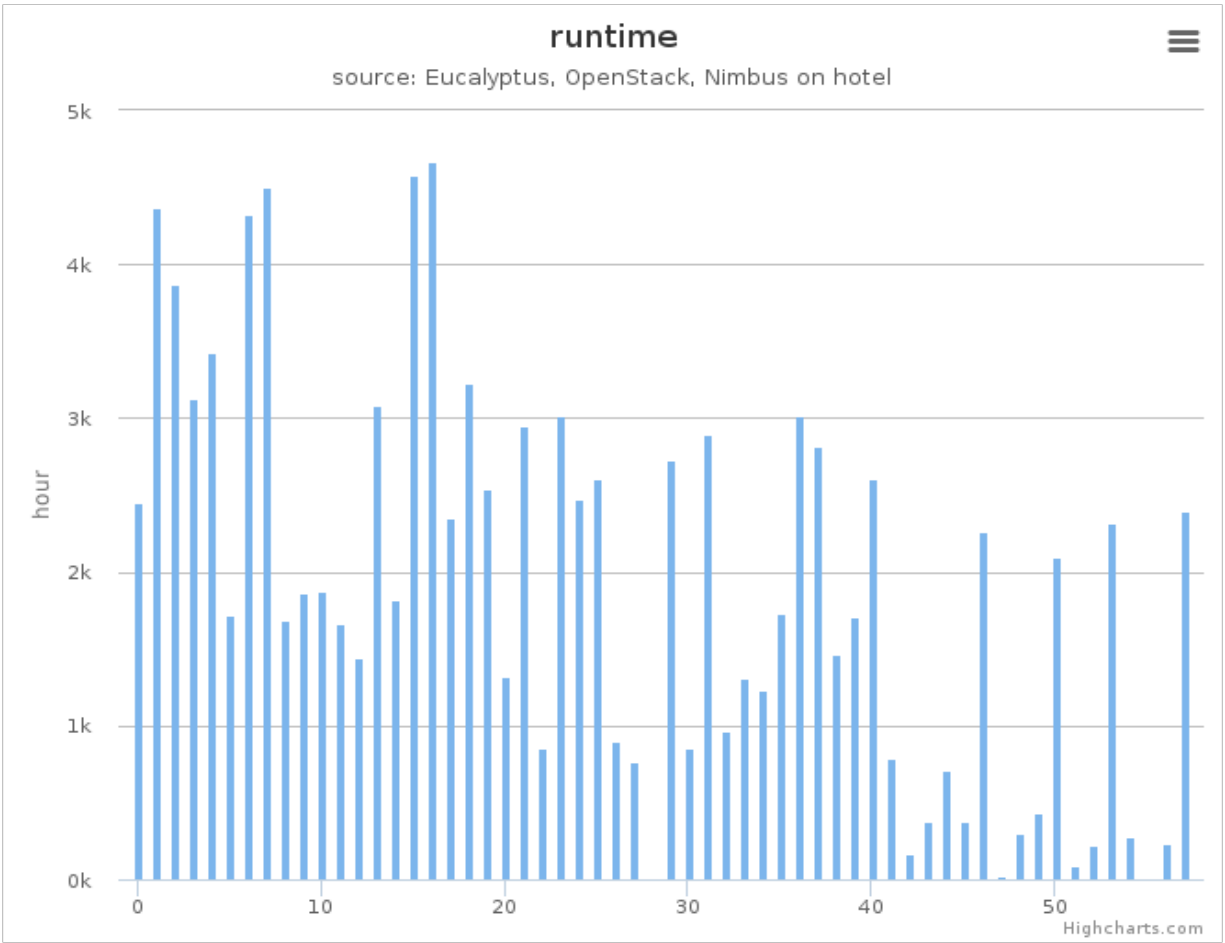


Figure 11: Wall time (hours) by systems (compute nodes) in Cluster (hotel)
This column chart represents wall time among systems.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: hotel

USAGE REPORT ALAMO

- Period: January 01 – June 30, 2014
- Hostname: alamo.futuregrid.org
- Services: nimbus, openstack
- Metrics: VMs count, Users count, Wall time (hours), Distribution by wall time, project, project leader, and institution, and systems

5.1 Histogram

5.1.1 Summary (Monthly)

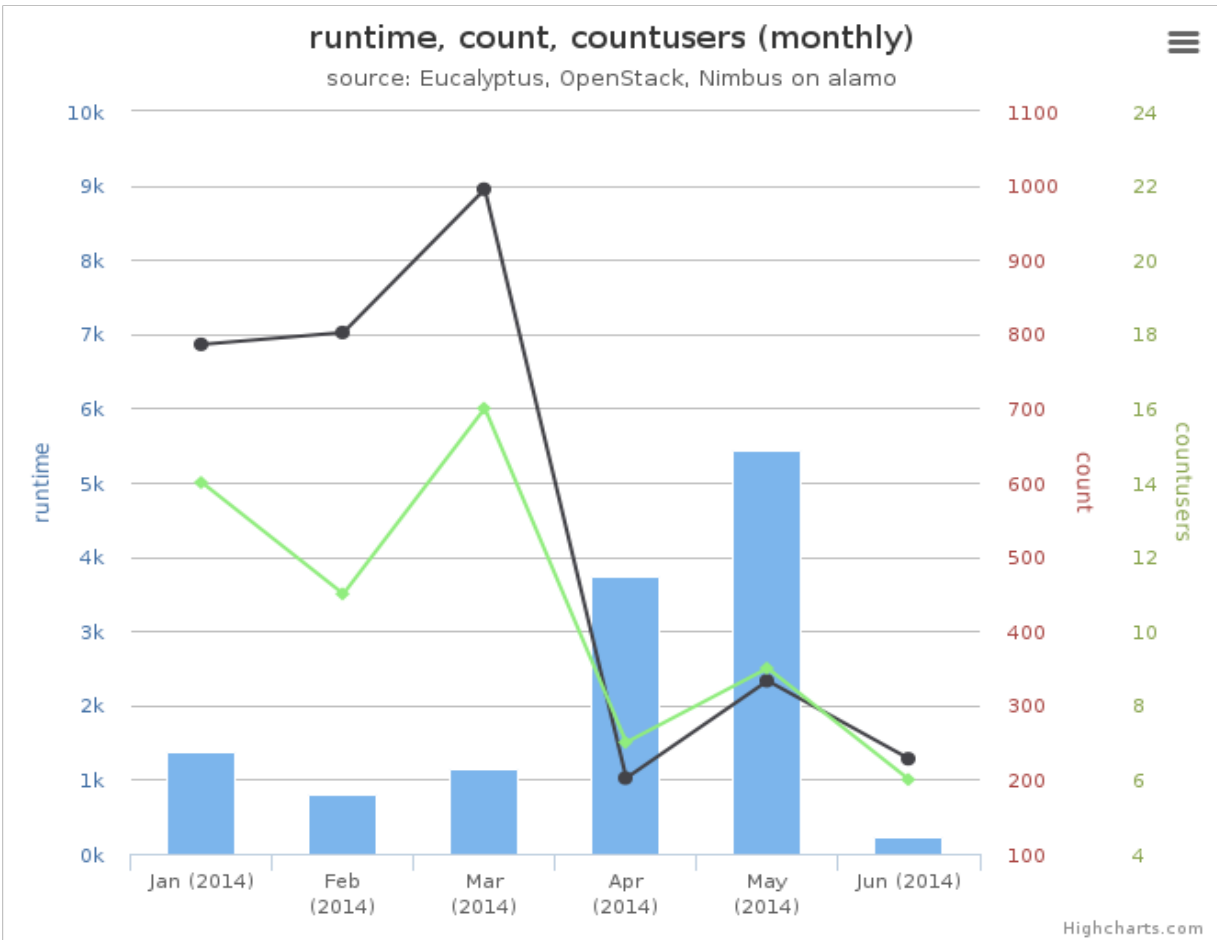


Figure 1: Average monthly usage data (wall time (hour), launched VMs, users)

This mixed chart represents average monthly usage as to wall time (hour), the number of VM instances and active users.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack
- Hostname: alamo
- **Metric:**
 - Runtime (Wall time hours): Sum of time elapsed from launch to termination of VM instances
 - Count (VM count): The number of launched VM instances
 - User count (Active): The number of users who launched VMs

5.1.2 Summary (Daily)

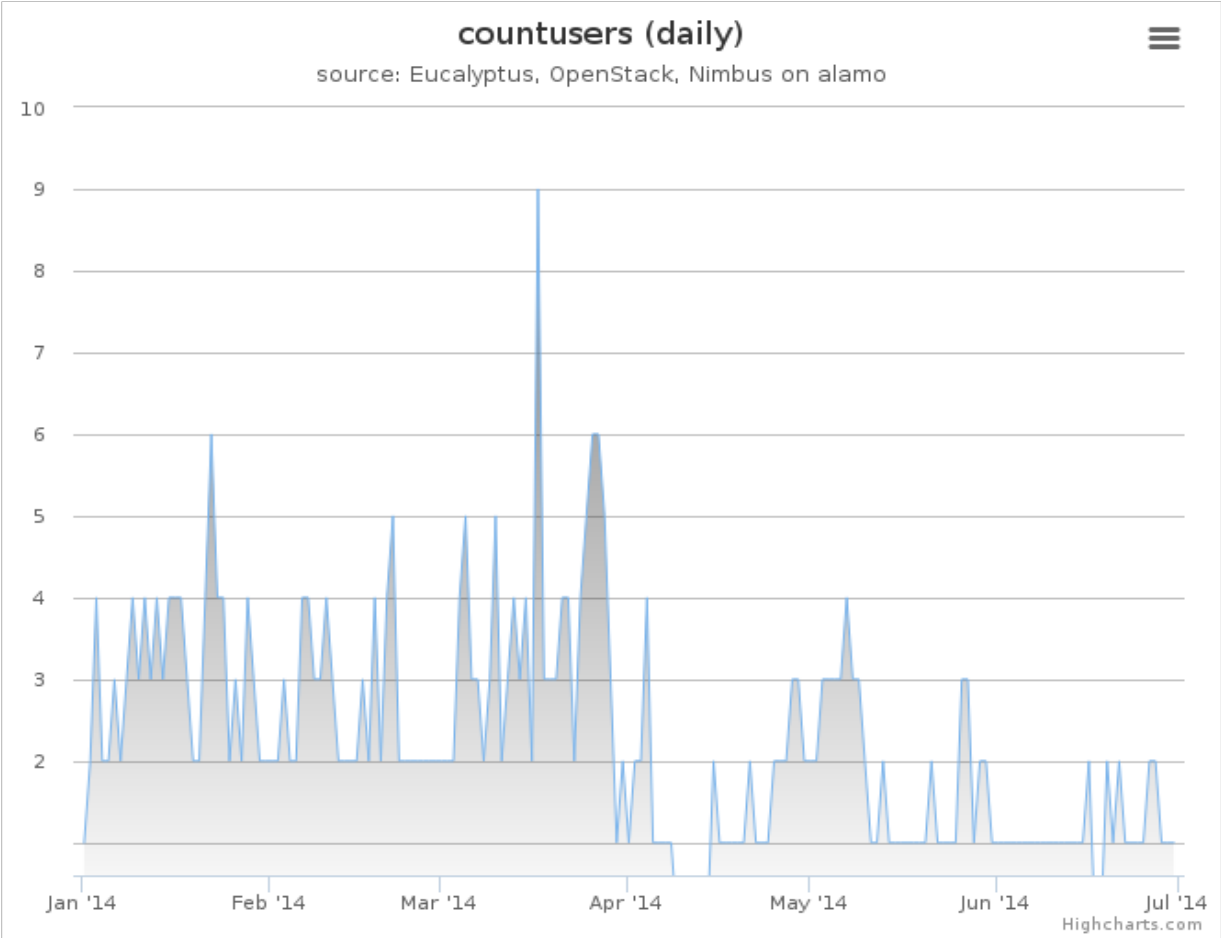


Figure 2: Users count
This time series chart represents daily active user count for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack
- Hostname: alamo

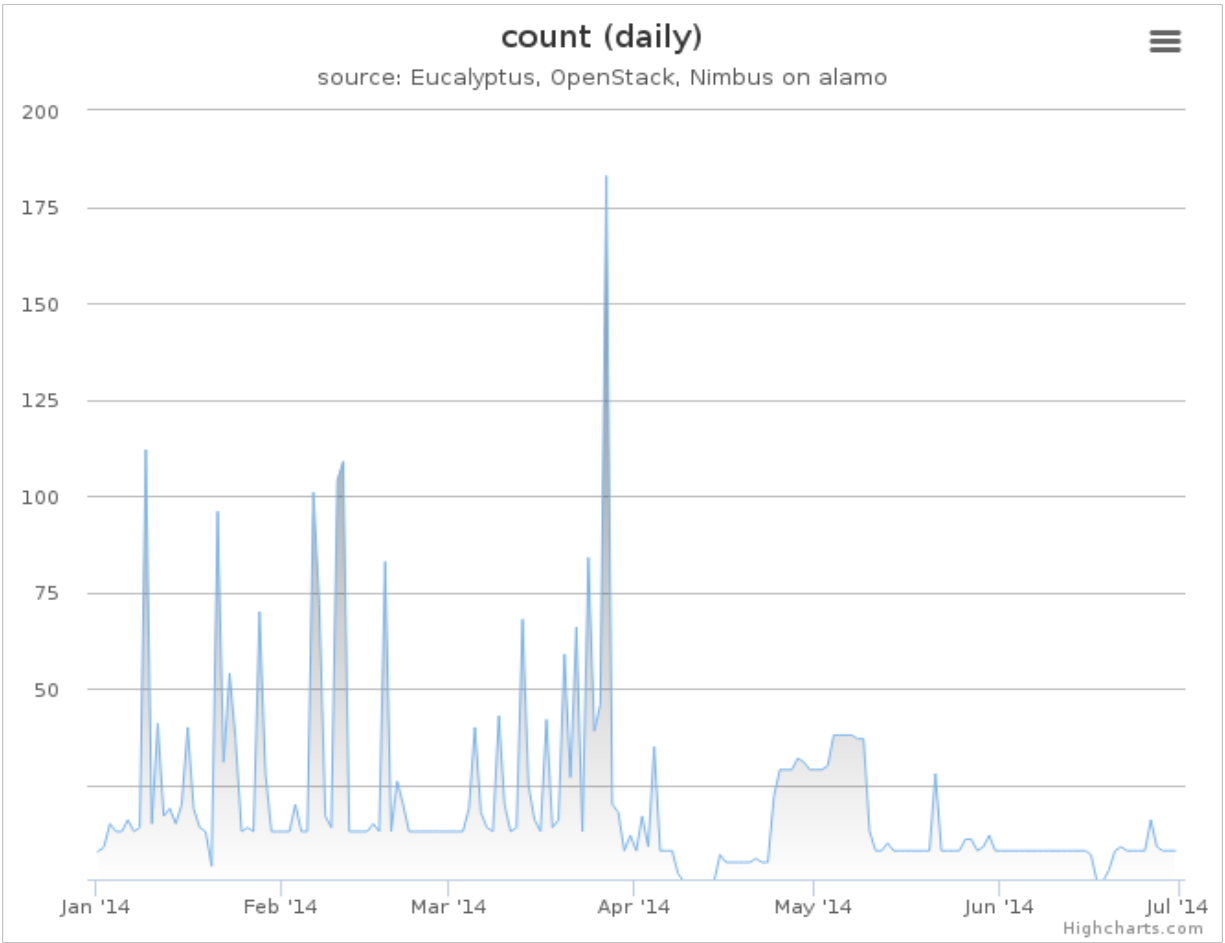


Figure 3: VMs count

This time series chart represents the number of daily launched VM instances for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack
- Hostname: alamo

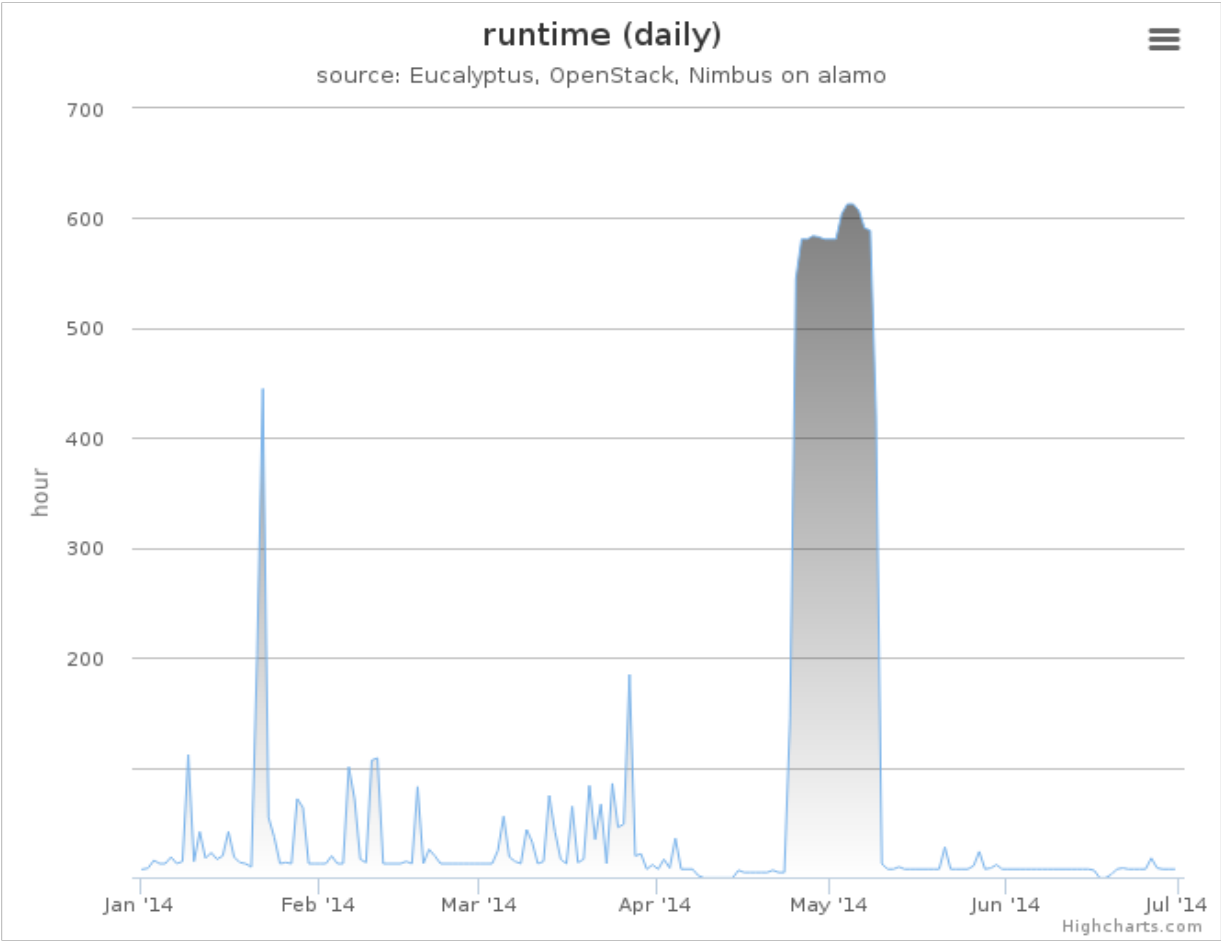


Figure 4: Wall time (hours)
This time series chart represents daily wall time (hours) for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack
- Hostname: alamo

5.2 Distribution

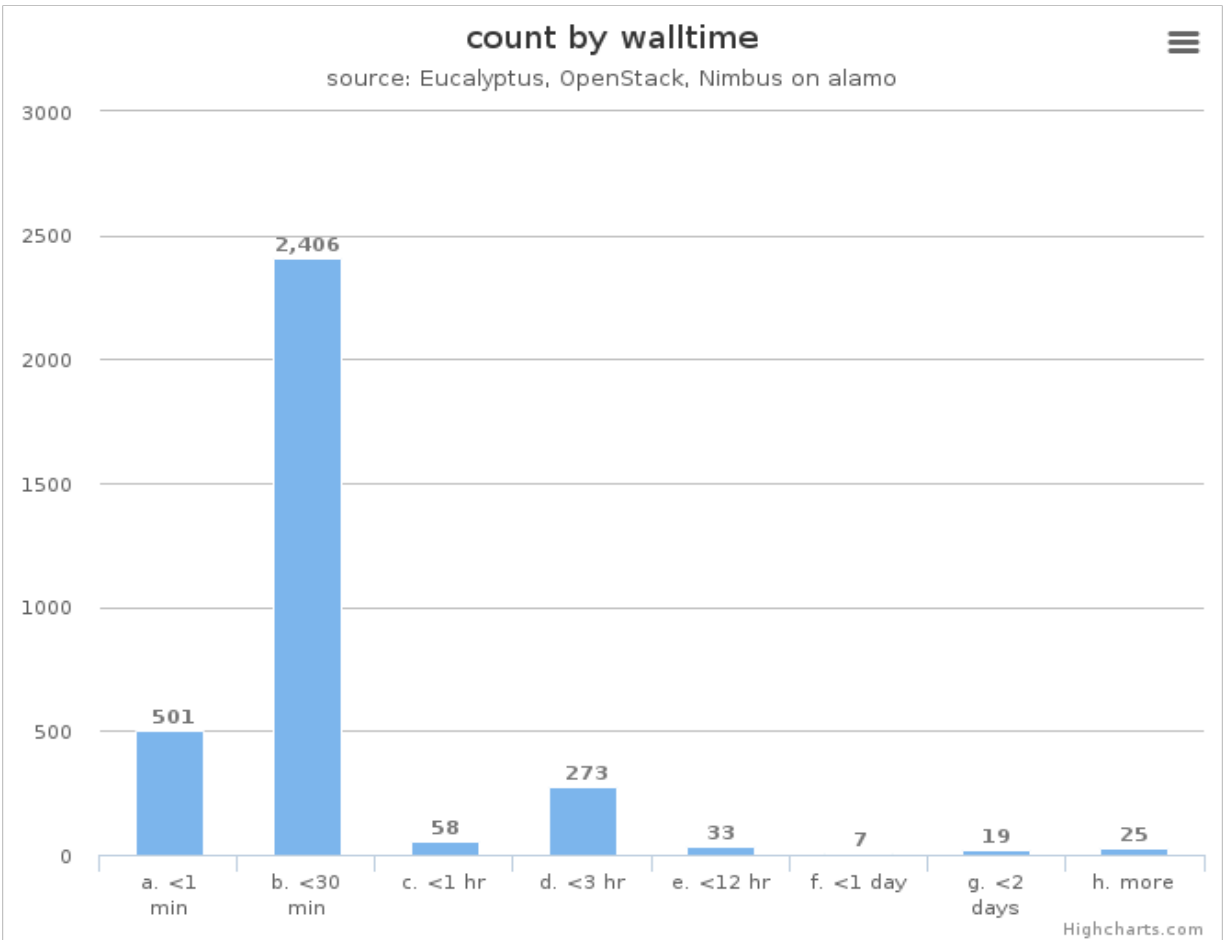


Figure 5: VM count by wall time

This chart illustrates usage patterns of VM instances in terms of running wall time.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack
- Hostname: alamo

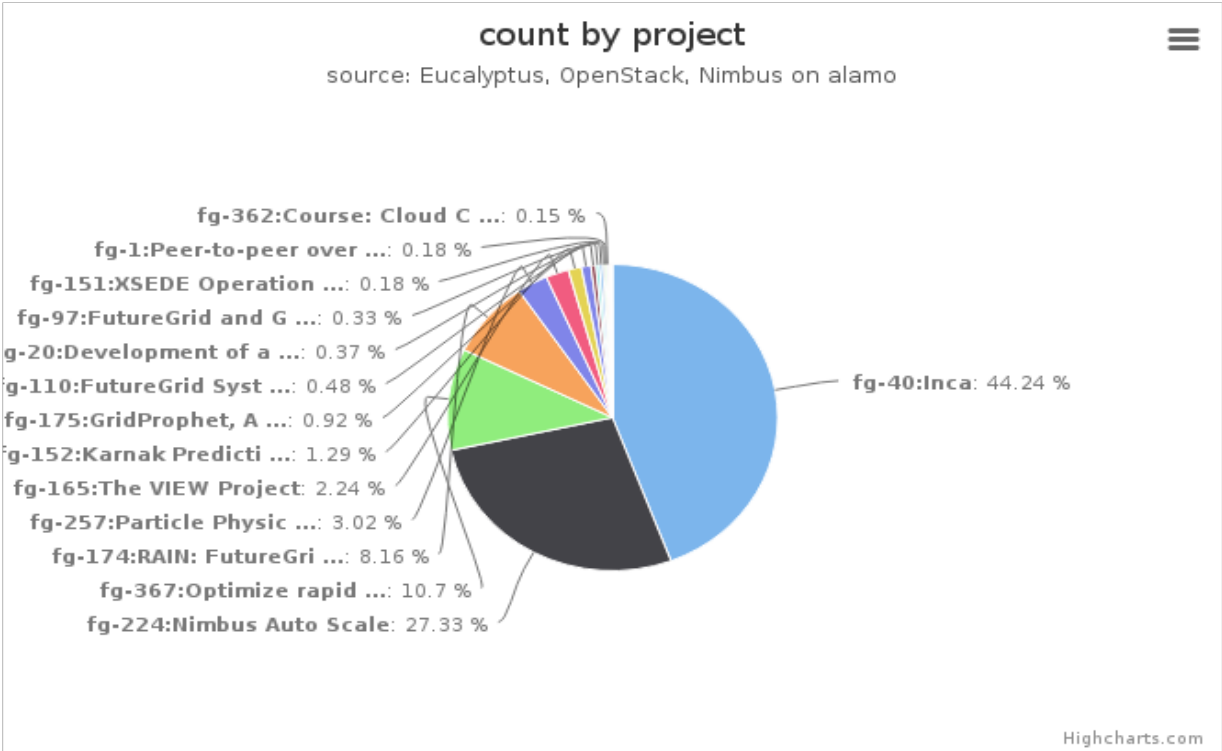


Figure 6: VMs count by project
This chart illustrates the proportion of launched VM instances by project groups. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack
- Hostname: alamo

Table 5.1: VMs count by project

Project	Value
fg-40:Inca	1203
fg-224:Nimbus Auto Scale	743
fg-367:Optimize rapid deployment and updating of VM images at the remote compute cluster	291
fg-174:RAIN: FutureGrid Dynamic provisioning Framework	222
fg-257:Particle Physics Data analysis cluster for ATLAS LHC experiment	82
fg-165:The VIEW Project	61
fg-152:Karnak Prediction Service	35
fg-175:GridProphet, A workflow execution time prediction system for the Grid	25
fg-110:FutureGrid Systems Development	13
fg-20:Development of an information service for FutureGrid	10
fg-97:FutureGrid and Grid'5000 Collaboration	9
fg-151:XSEDE Operations Group	5
fg-1:Peer-to-peer overlay networks and applications in virtual networks and virtual clusters	5
fg-362:Course: Cloud Computing and Storage (UF)	4
fg-372:Mobile Device Computation Offloading over SocialVPNs	3
fg-314:User-friendly tools to play with cloud platforms	2
fg-392:Using Clouds to Scale GIS Applications	2
fg-382:Reliability Analysis using Hadoop and MapReduce	2
fg-42:SAGA	1
fg-443:Virtual Machine Live Migration for Disaster Recovery in WANs	1

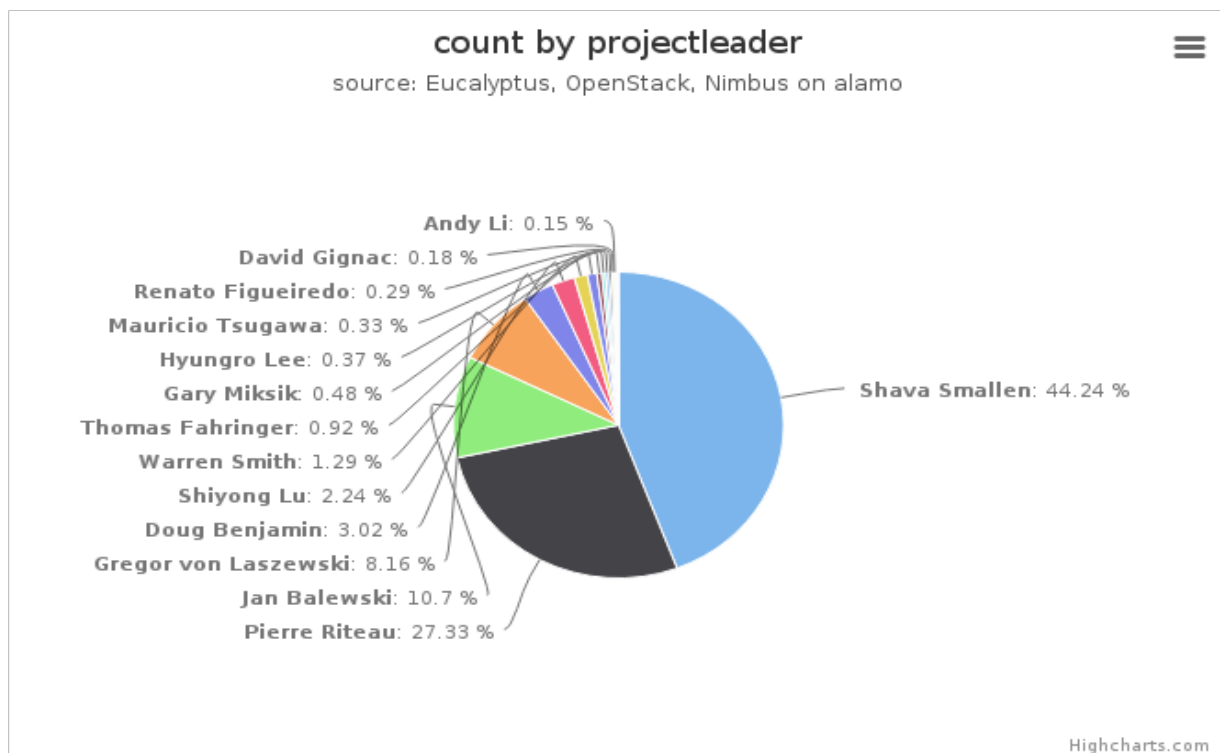


Figure 7: VMs count by project leader

This chart also illustrates the proportion of launched VM instances by project Leader. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack
- Hostname: alamo

Table 5.2: VMs count by project leader

Projectleader	Value
Shava Smallen	1203
Pierre Riteau	743
Jan Balewski	291
Gregor von Laszewski	222
Doug Benjamin	82
Shiyong Lu	61
Warren Smith	35
Thomas Fahringer	25
Gary Miksik	13
Hyungro Lee	10
Mauricio Tsugawa	9
Renato Figueiredo	8
David Gignac	5
Andy Li	4
Carl Walasek	2
Massimo Canonico	2
Kate Keahey	2
Shantenu Jha	1
Tae Seung Kang	1

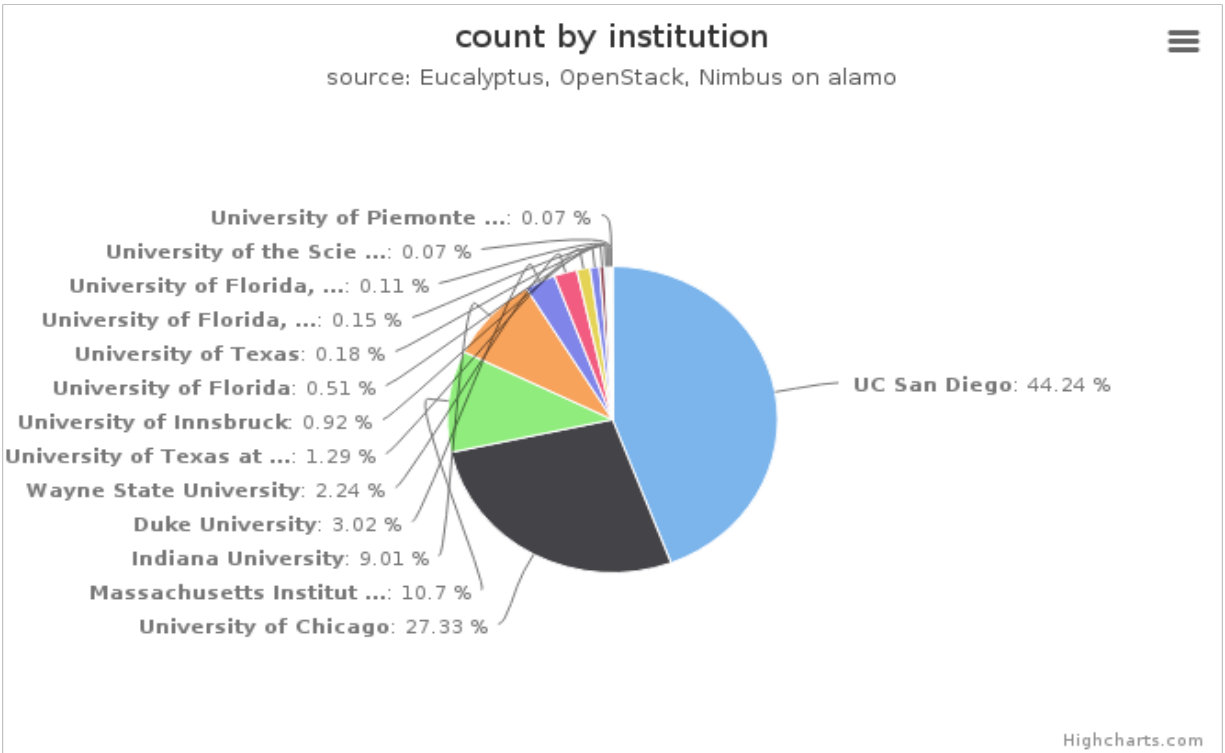


Figure 8: VMs count by institution

This chart illustrates the proportion of launched VM instances by Institution. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack
- Hostname: alamo

Table 5.3: VMs count by institution

Institution	Value
UC San Diego	1203
University of Chicago	743
Massachusetts Institute of Technology, Laboratory for Nuclear Sc	291
Indiana University	245
Duke University	82
Wayne State University	61
University of Texas at Austin	35
University of Innsbruck	25
University of Florida	14
University of Texas	5
University of Florida, Department of Electrical and Computer Eng	4
University of Florida, Electrical and Computer Engineering	3
University of Chicago, Computation Institute	2
University of the Sciences , Mathematics, Physics, and Statistic	2
University of Piemonte Orientale, Computer Science Department	2
Louisiana State University	1
University of Florida, Advanced Computing and Information System	1

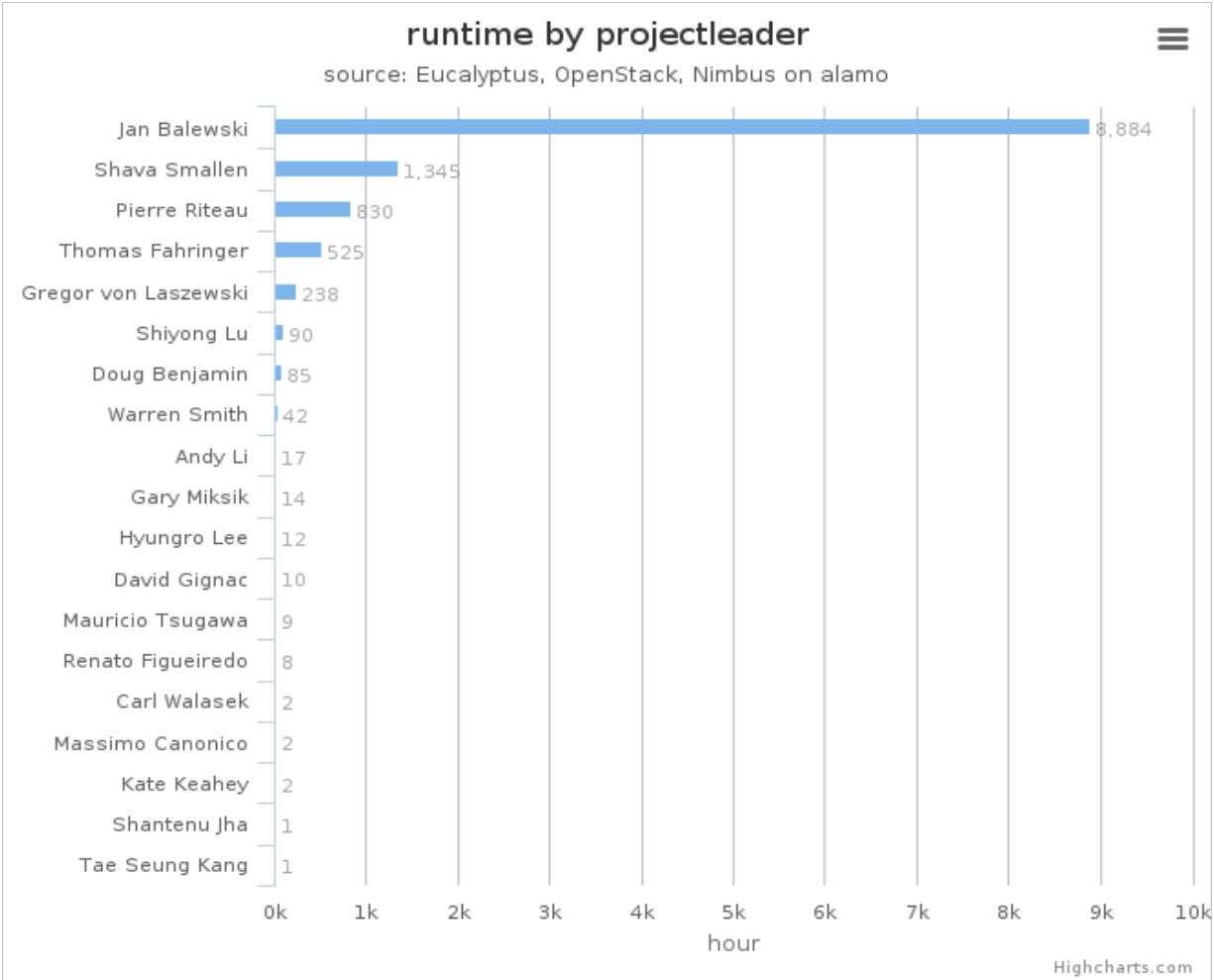


Figure 9: Wall time (hours) by project leader

This chart illustrates proportionate total run times by project leader.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack
- Hostname: alamo

5.3 System information

System information shows utilization distribution as to VMs count and wall time. Each cluster represents a compute node.

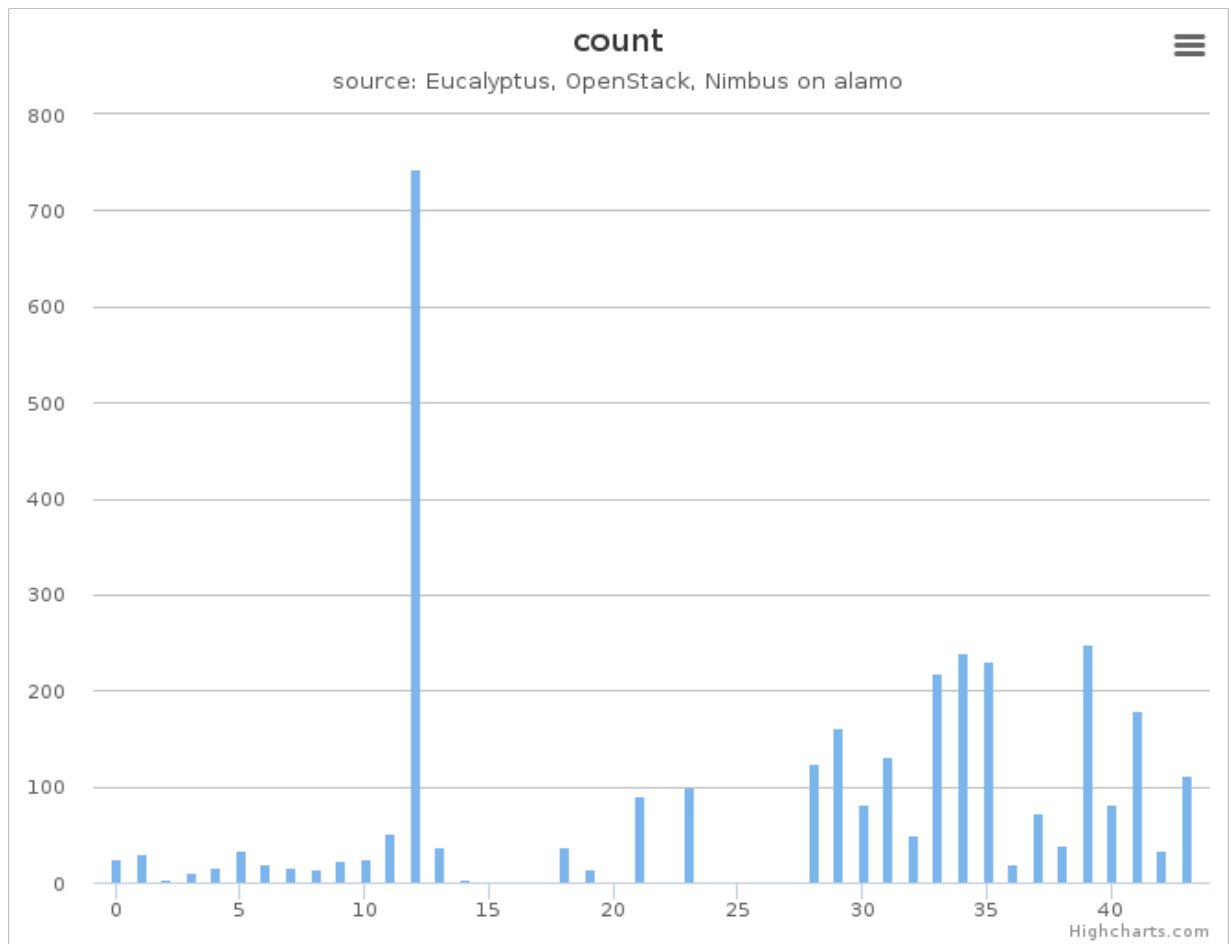


Figure 10: VMs count by systems (compute nodes) in Cluster (alamo)

This column chart represents VMs count among systems.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack
- Hostname: alamo

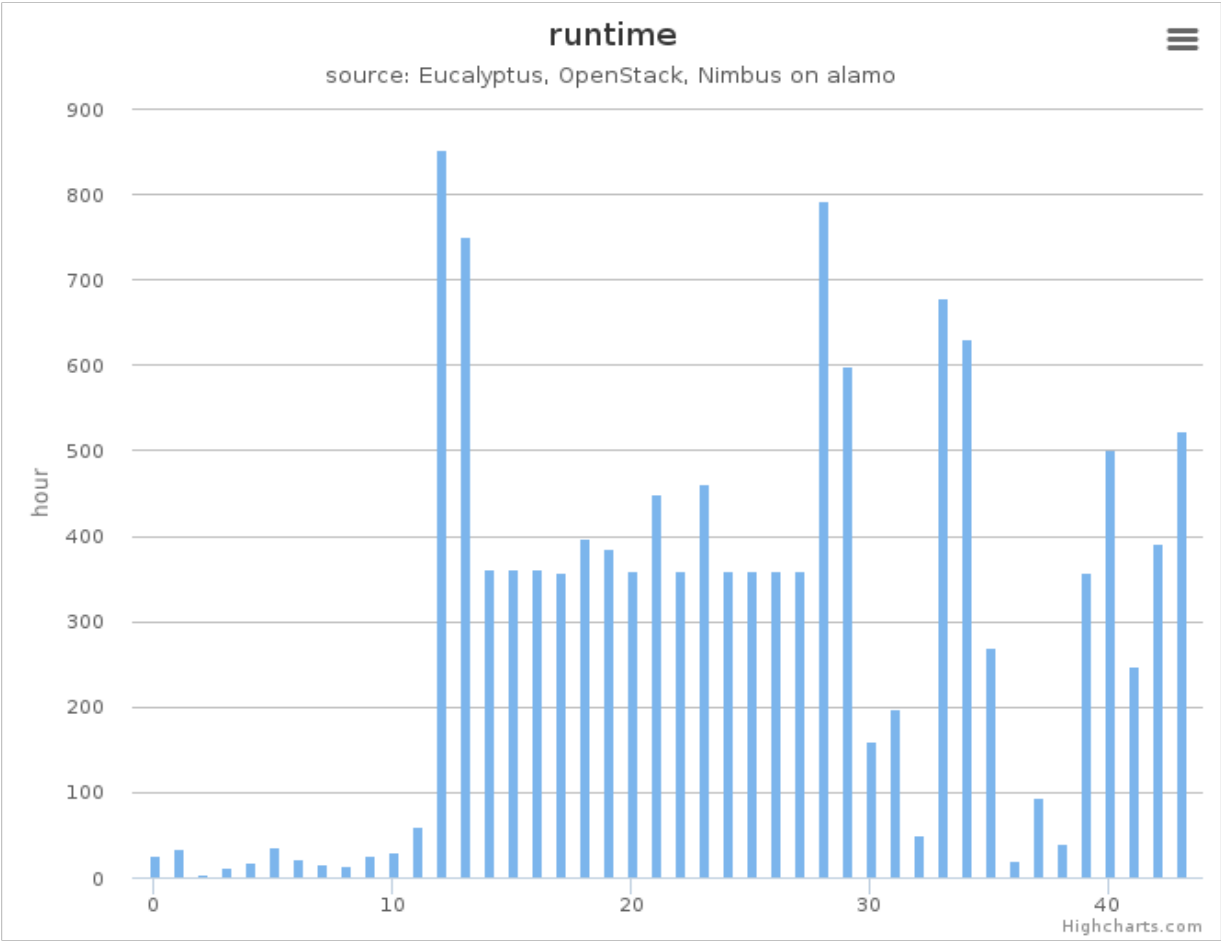


Figure 11: Wall time (hours) by systems (compute nodes) in Cluster (alamo)
This column chart represents wall time among systems.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus, openstack
- Hostname: alamo

USAGE REPORT FOXTROT

- Period: January 01 – June 30, 2014
- Hostname: foxtrot.futuregrid.org
- Services: nimbus
- Metrics: VMs count, Users count, Wall time (hours), Distribution by wall time, project, project leader, and institution, and systems

6.1 Histogram

6.1.1 Summary (Monthly)

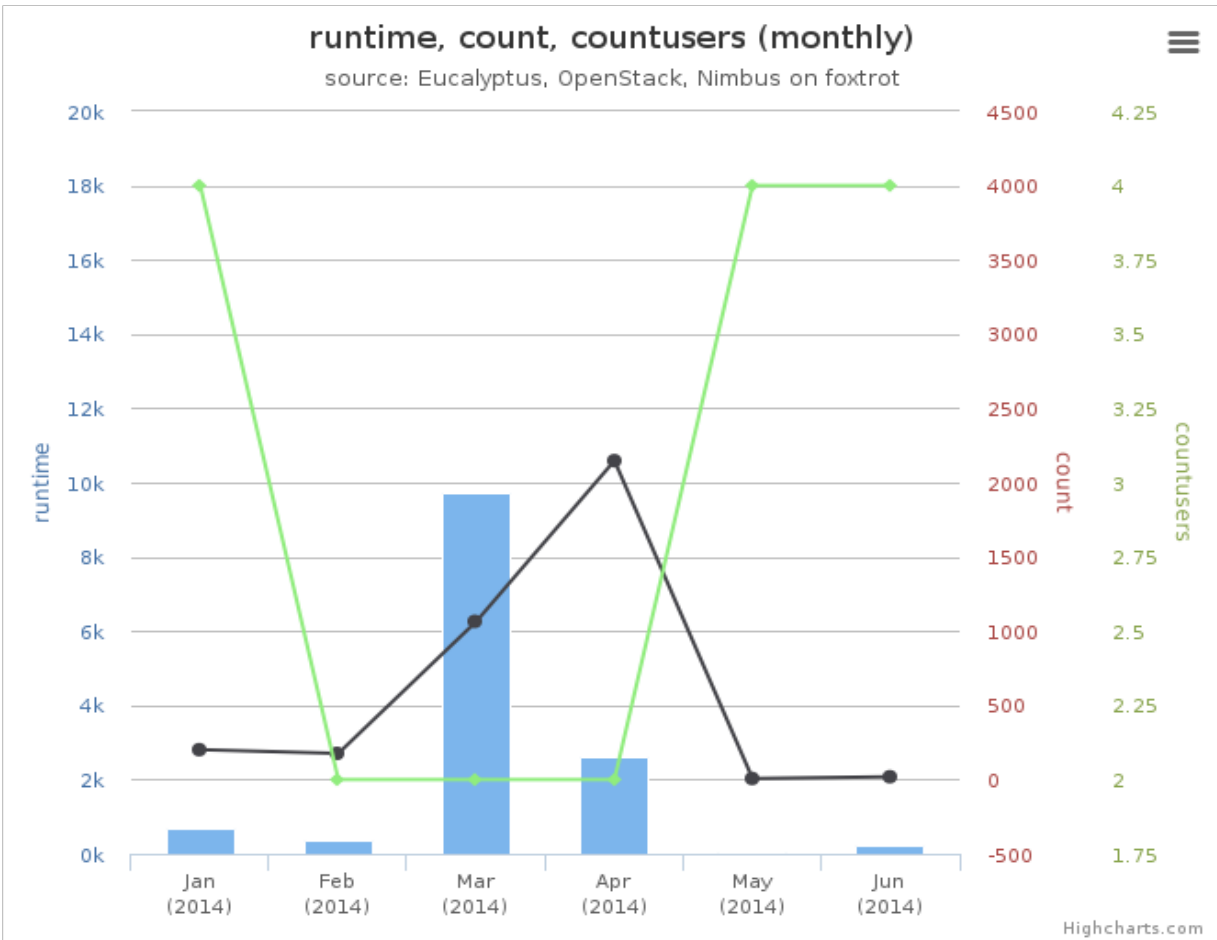


Figure 1: Average monthly usage data (wall time (hour), launched VMs, users)

This mixed chart represents average monthly usage as to wall time (hour), the number of VM instances and active users.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: foxtrot
- **Metric:**
 - Runtime (Wall time hours): Sum of time elapsed from launch to termination of VM instances
 - Count (VM count): The number of launched VM instances
 - User count (Active): The number of users who launched VMs

6.1.2 Summary (Daily)

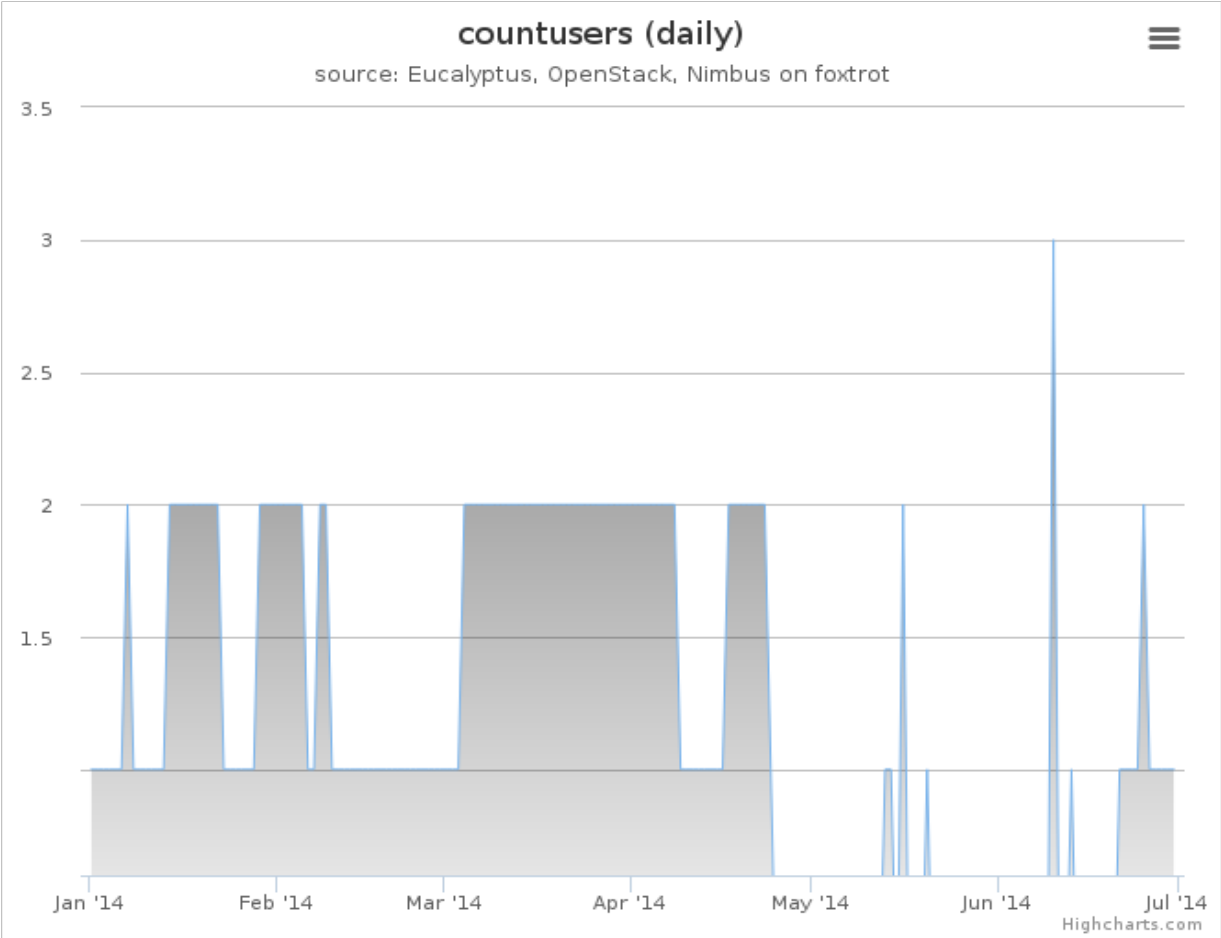


Figure 2: Users count

This time series chart represents daily active user count for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: foxtrot

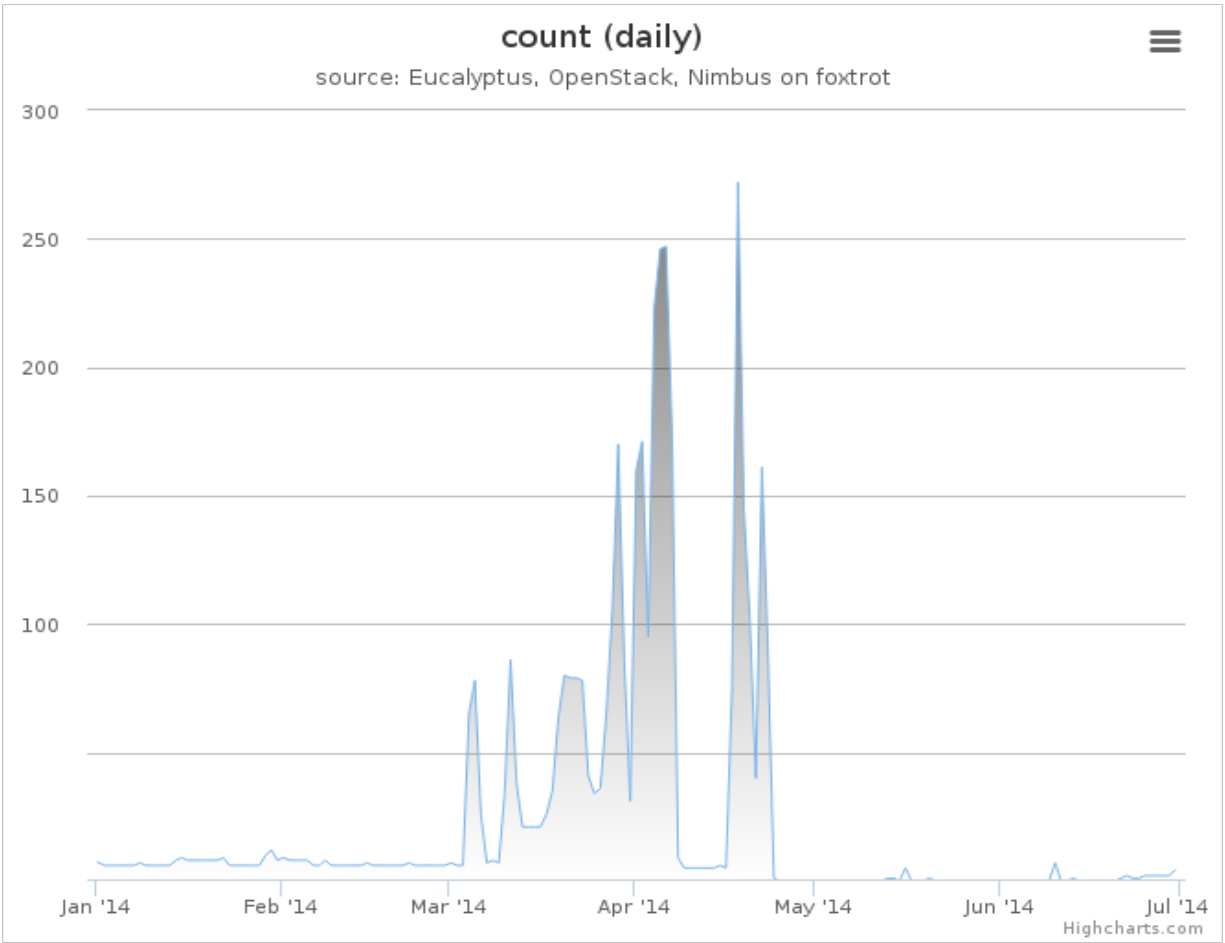


Figure 3: VMs count

This time series chart represents the number of daily launched VM instances for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: foxtrot

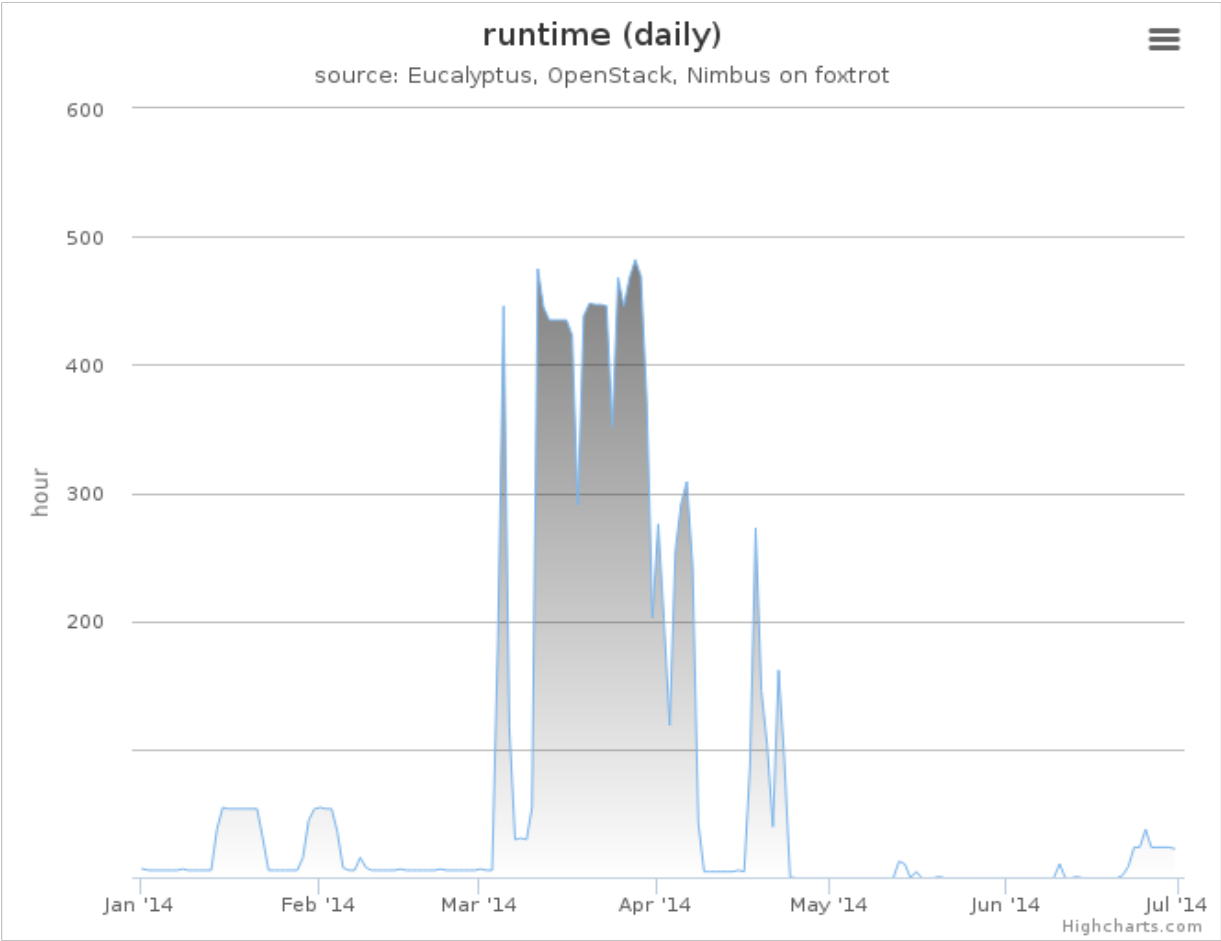


Figure 4: Wall time (hours)
This time series chart represents daily wall time (hours) for cloud services and shows historical changes during the period.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: foxtrot

6.2 Distribution

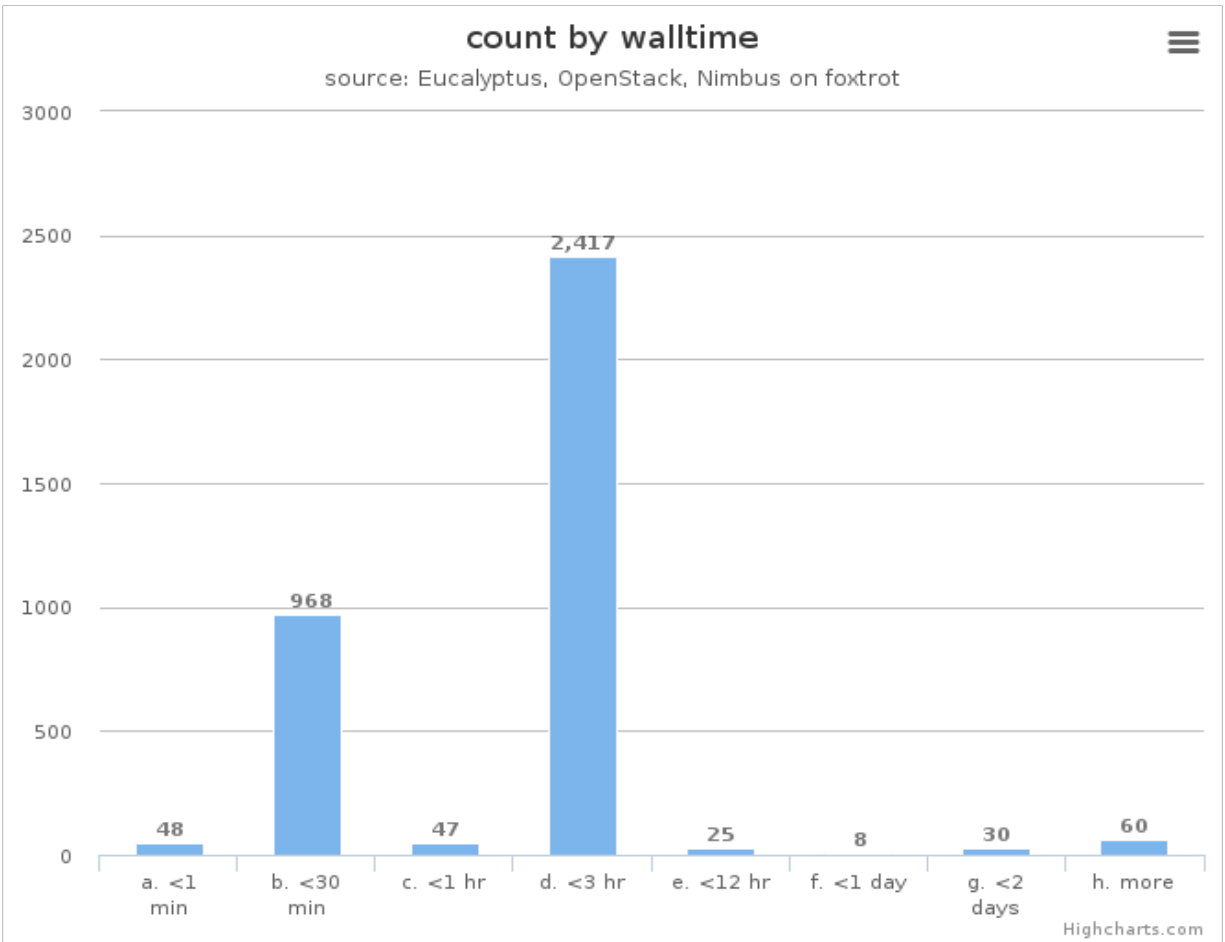


Figure 5: VM count by wall time

This chart illustrates usage patterns of VM instances in terms of running wall time.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: foxtrot

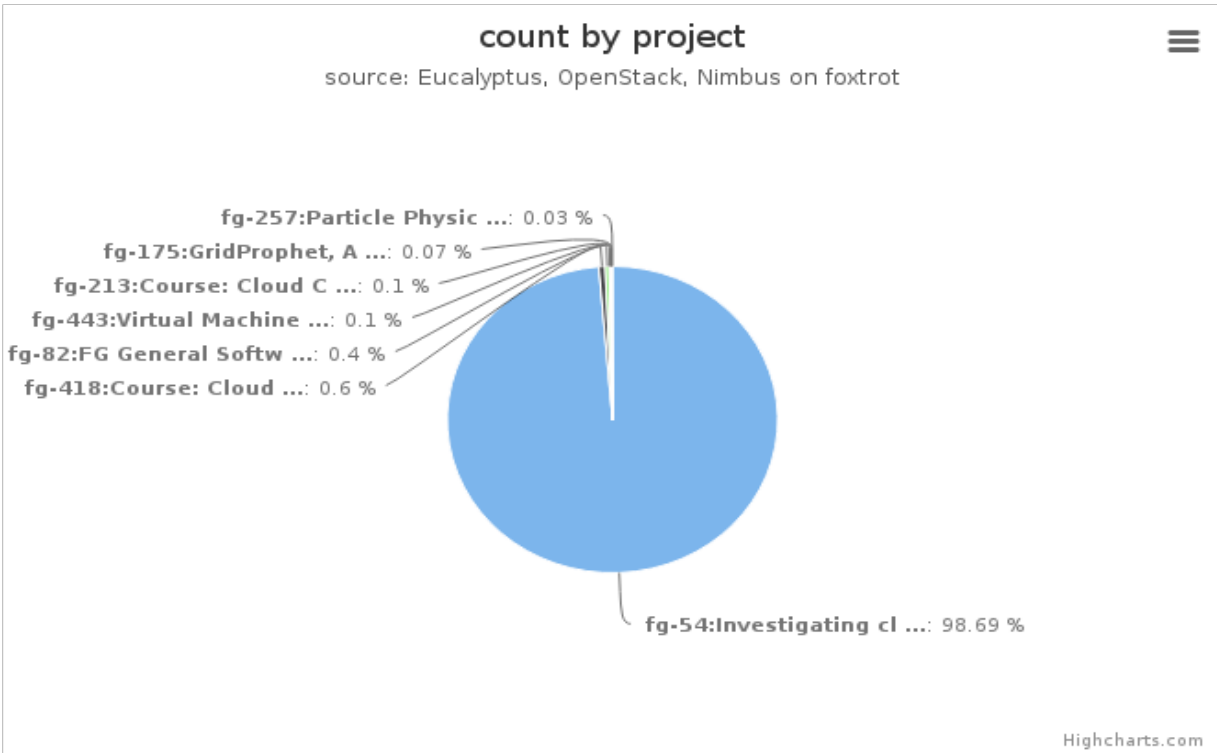


Figure 6: VMs count by project

This chart illustrates the proportion of launched VM instances by project groups. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: foxtrot

Table 6.1: VMs count by project

Project	Value
fg-54:Investigating cloud computing as a solution for analyzing particle physics data	2948
fg-418:Course: Cloud Computing Class - fourth edition	18
fg-82:FG General Software Development	12
fg-443:Virtual Machine Live Migration for Disaster Recovery in WANs	3
fg-213:Course: Cloud Computing class - second edition	3
fg-175:GridProphet, A workflow execution time prediction system for the Grid	2
fg-257:Particle Physics Data analysis cluster for ATLAS LHC experiment	1

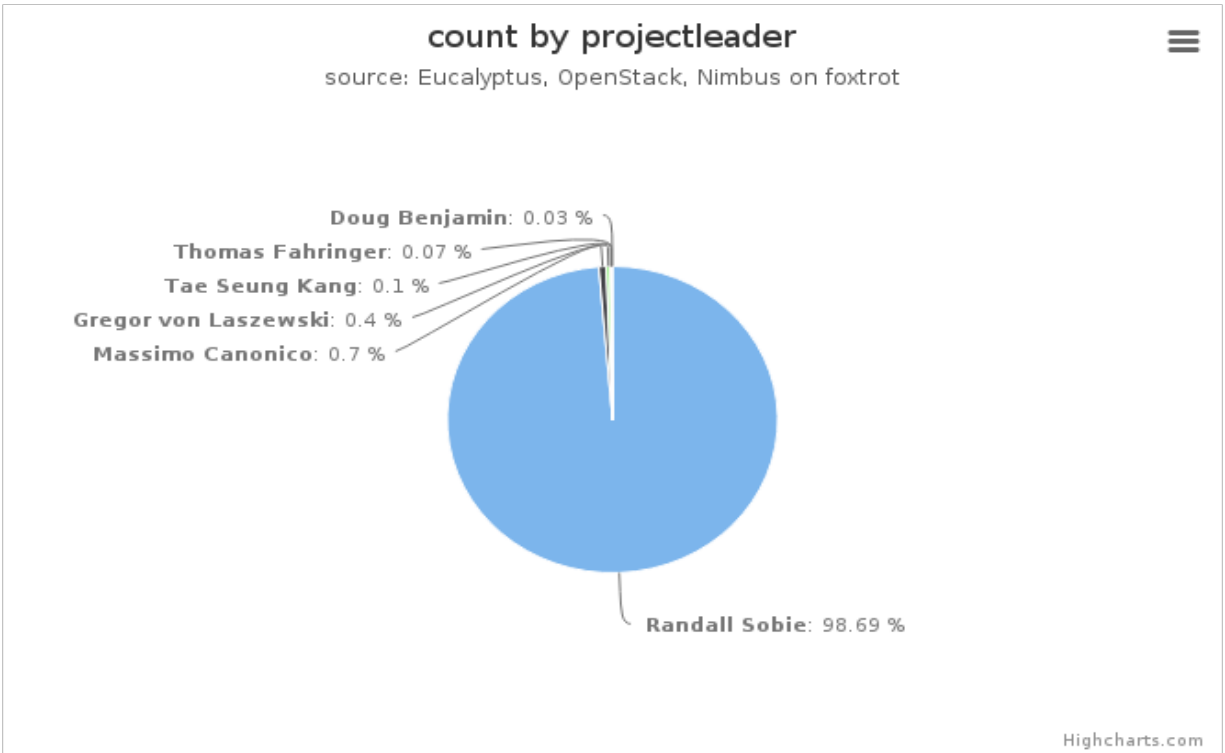


Figure 7: VMs count by project leader

This chart also illustrates the proportion of launched VM instances by project Leader. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: foxtrot

Table 6.2: VMs count by project leader

Projectleader	Value
Randall Sobie	2948
Massimo Canonico	21
Gregor von Laszewski	12
Tae Seung Kang	3
Thomas Fahringer	2
Doug Benjamin	1

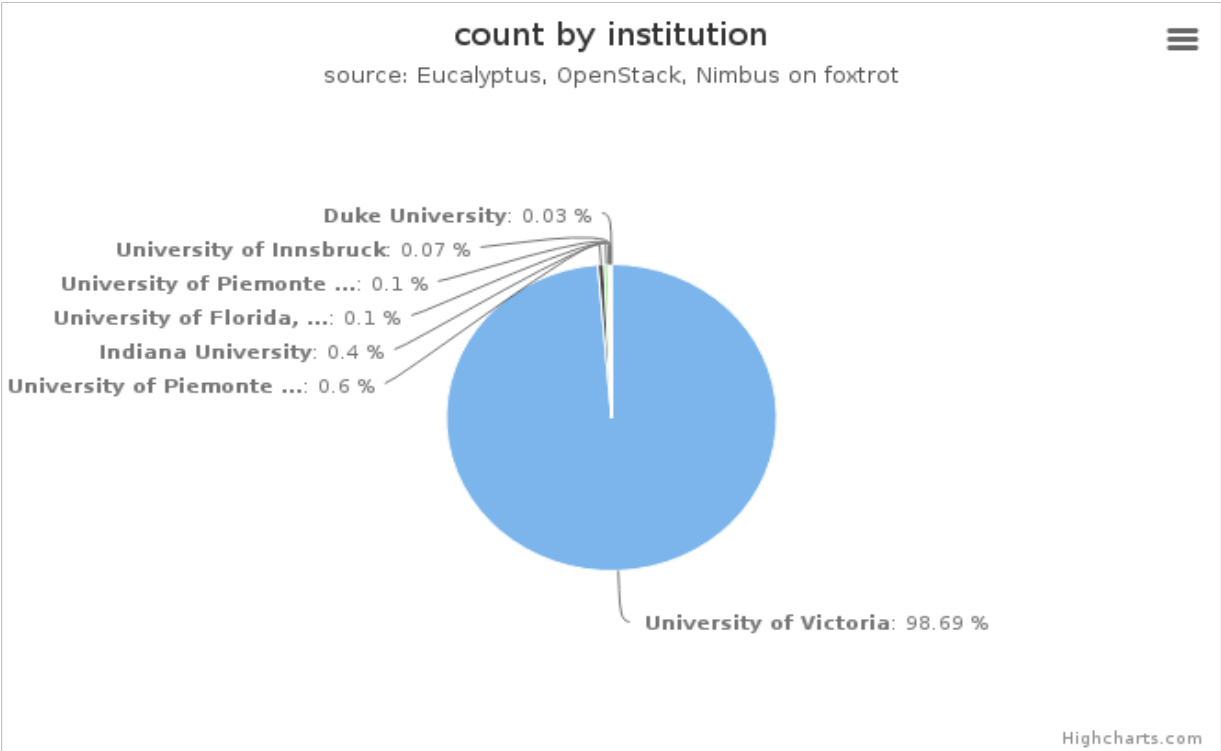


Figure 8: VMs count by institution
This chart illustrates the proportion of launched VM instances by Institution. The same data in tabular form follows.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: foxtrot

Table 6.3: VMs count by institution

Institution	Value
University of Victoria	2948
University of Piemonte Orientale, Computer Science Department	18
Indiana University	12
University of Florida, Advanced Computing and Information System	3
University of Piemonte Orientale	3
University of Innsbruck	2
Duke University	1

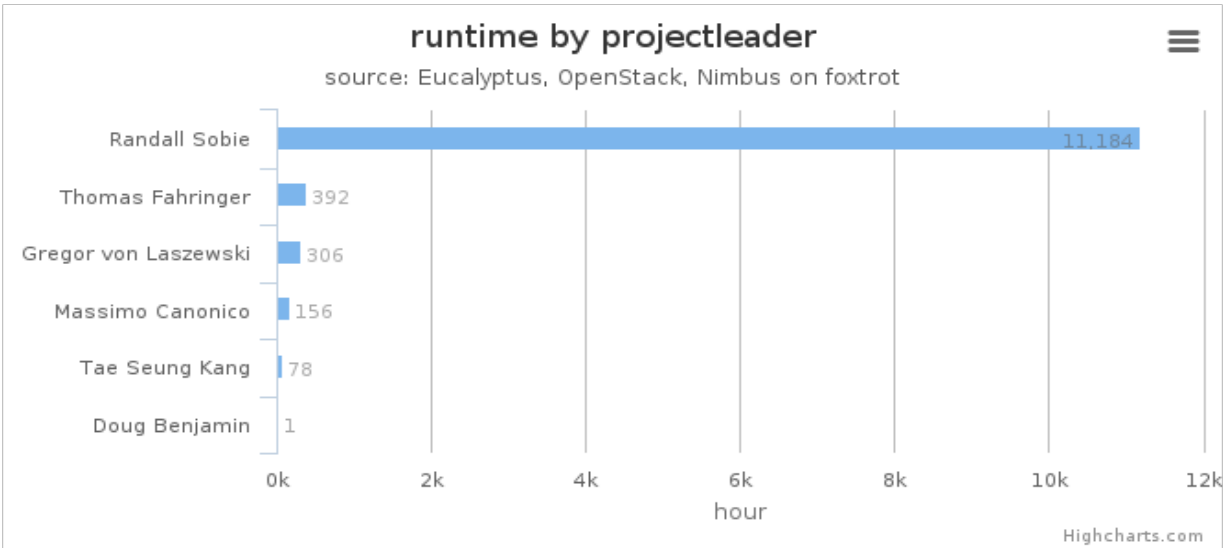


Figure 9: Wall time (hours) by project leader
This chart illustrates proportionate total run times by project leader.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: foxtrot

6.3 System information

System information shows utilization distribution as to VMs count and wall time. Each cluster represents a compute node.

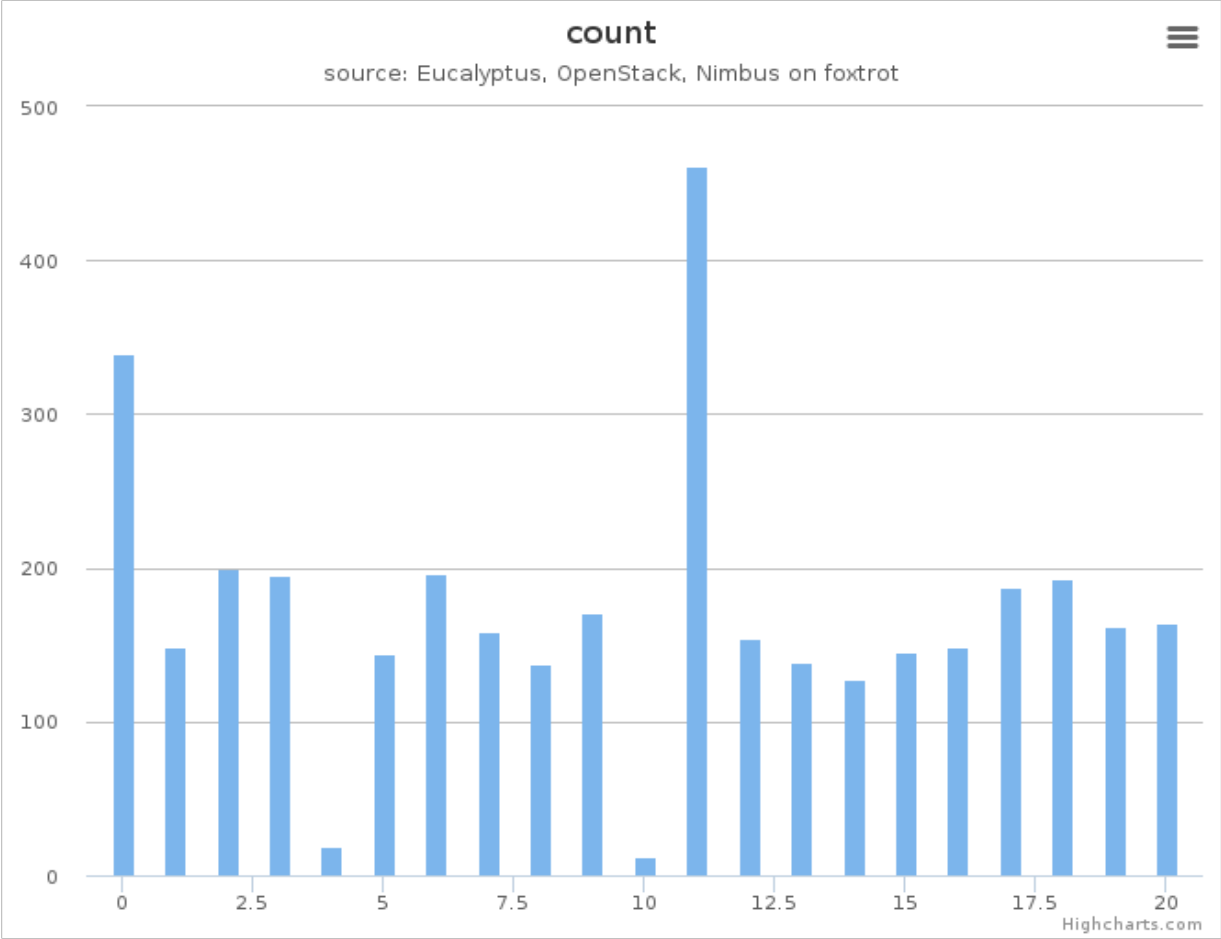


Figure 10: VMs count by systems (compute nodes) in Cluster (foxtrot)
This column chart represents VMs count among systems.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: foxtrot

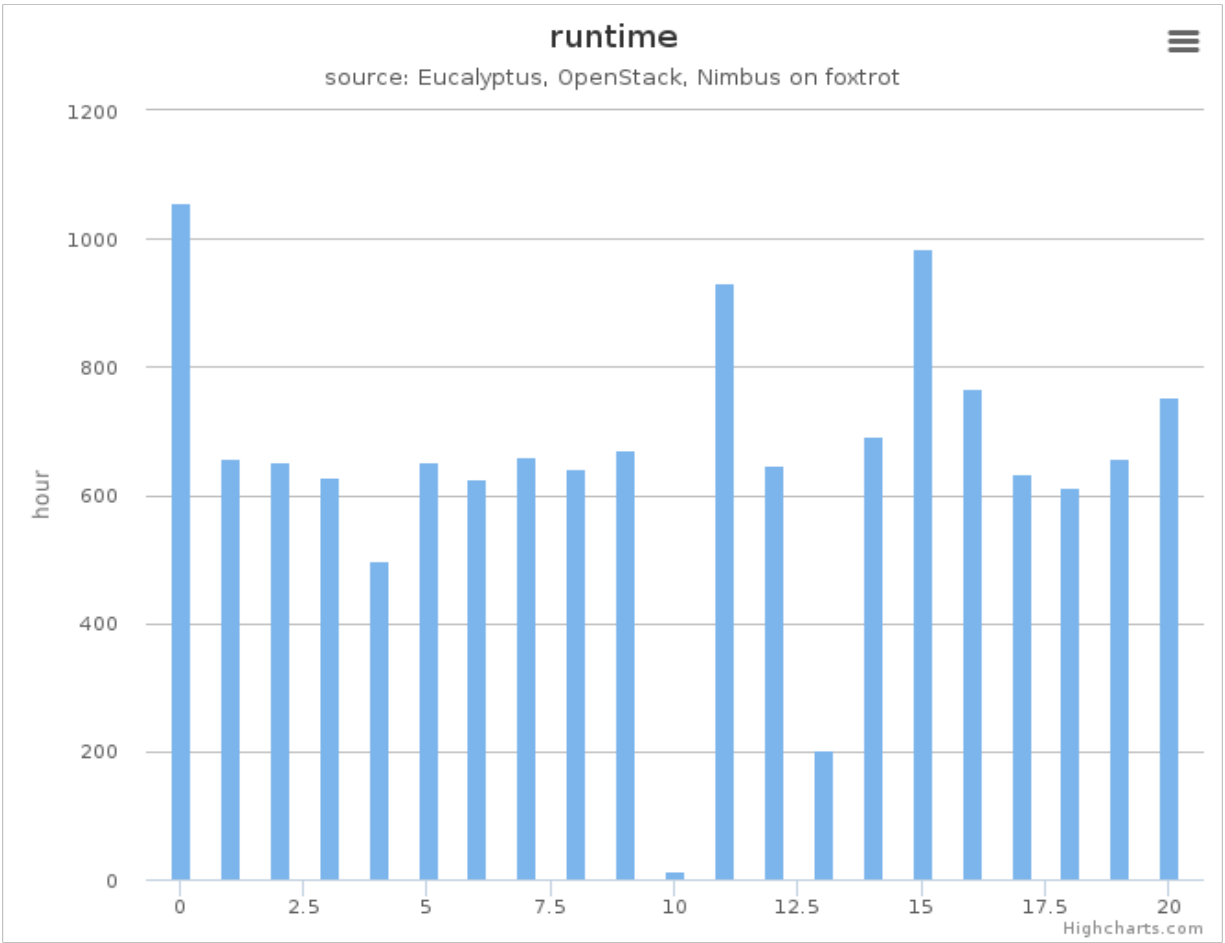


Figure 11: Wall time (hours) by systems (compute nodes) in Cluster (foxtrot)
This column chart represents wall time among systems.

- Period: January 01 – June 30, 2014
- Cloud(IaaS): nimbus
- Hostname: foxtrot

USER TABLE (CLOUD)

This table provides wall time usage of cloud users with the project id (first appearance). - Cloud:

- india.futuregrid.org: openstack, eucalyptus
- sierra.futuregrid.org: nimbus, (openstack expected soon)
- hotel.futuregrid.org: nimbus
- alamo.futuregrid.org: nimbus, (openstack expected soon)
- foxtrot.futuregrid.org: nimbus

USER TABLE (HPC)

This table provides detailed information on users, including average job size, average wait time, and average run time.
- HPC: alamo, bravo, hotel, india xray, sierra - Data obtained from ubmod.futuregrid.org **** Missing user name is represented as a hidden userid under asterisks.