FG Resource Report

Release 0.4

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June 19, 2013

CONTENTS

Date Created: Wed, 19 Jun 2013

SUMMARY REPORT (ALL)

- Period: July 01 – September 30, 2012

- 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

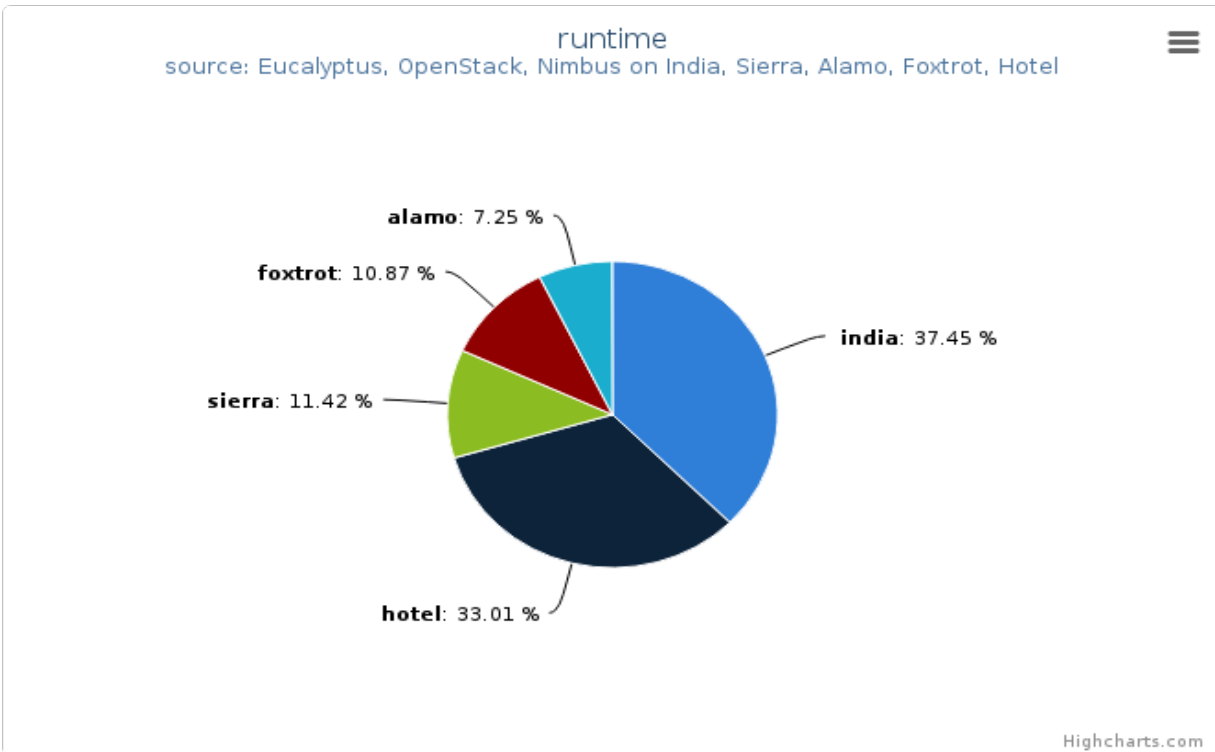## 1.1 Wall Hours by Clusters (Total, monthly)

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

- Period: July 01 – September 30, 2012

- **Cloud:**

    - india: Eucalyptus, Openstack

    - sierra: Eucalyptus, Nimbus

    - hotel: Nimbus

    - alamo: Nimbus

    - foxtrot: Nimbus

Table 1.1: Wall time (hours) by Clusters

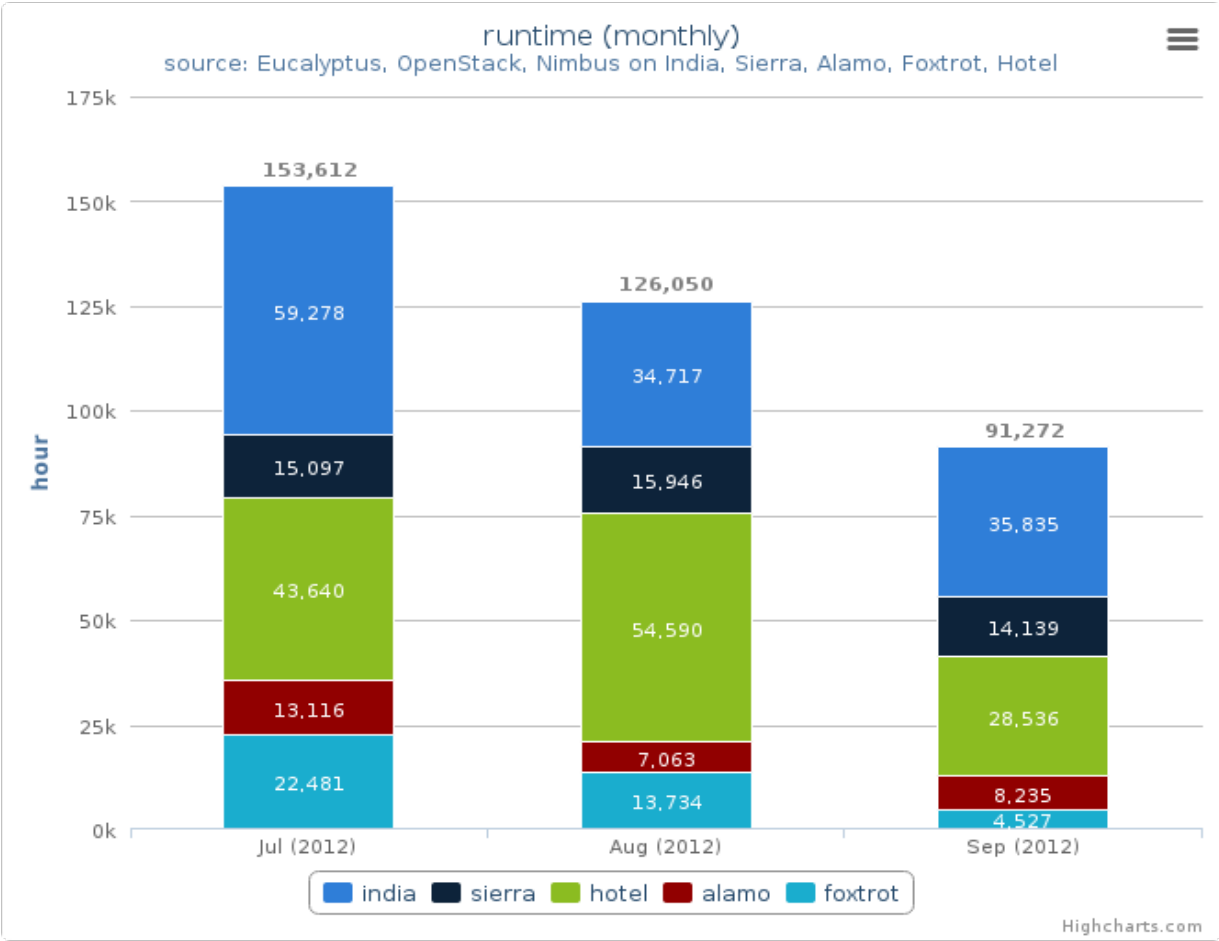| Total	Value
india	157031.0
hotel	138419.0
sierra	47889.0
foxtrot	45563.0
alamo	30411.0

Figure 2. Wall time (hours) by Clusters (monthly)

This stacked column chart represents average monthly usage of wall time (hours).

- Period: July 01 – September 30, 2012
- **Cloud:**

    – india: Eucalyptus, Openstack

    – sierra: Eucalyptus, Nimbus

    – hotel: Nimbus

    – alamo: Nimbus

    – foxtrot: Nimbus
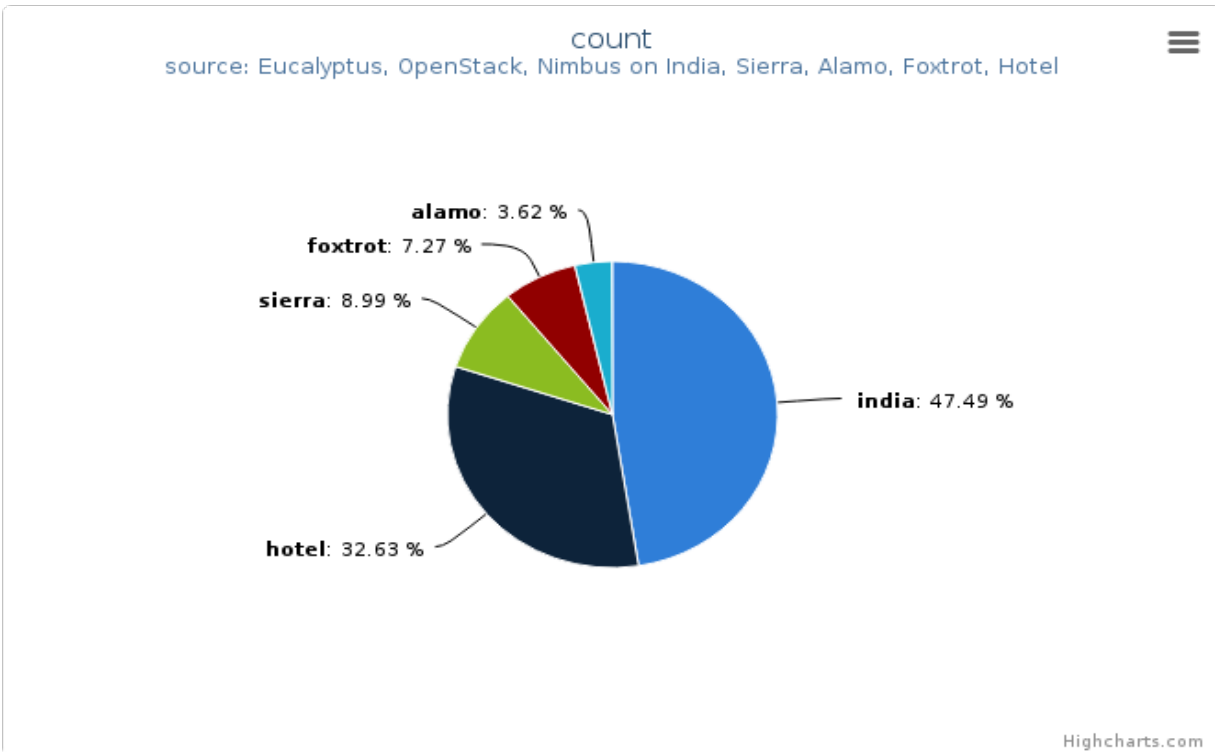
1.2 VM Count by Clusters (Total, monthly)

Figure 3. VMs count by Clusters

This chart represents overall VM instances count during the period.

- Period: July 01 – September 30, 2012
- **Cloud:**
    - india: Eucalyptus, Openstack
    - sierra: Eucalyptus, Nimbus
    - hotel: Nimbus
    - alamo: Nimbus
    - foxtrot: Nimbus

Table 1.2: VM instance count by Clusters

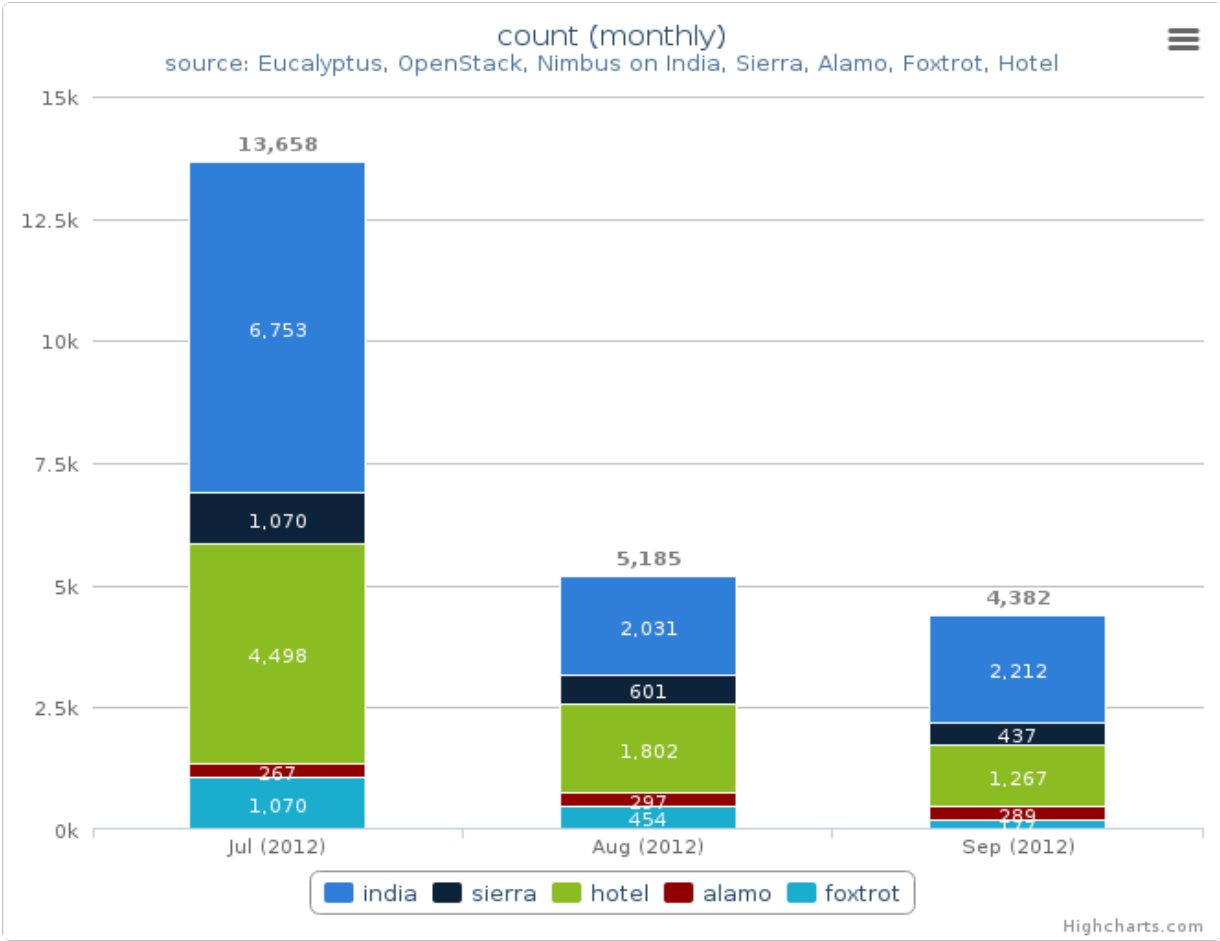| Total	Value
india	10861
hotel	7463
sierra	2056
foxtrot	1662
alamo	829

Figure 4. VMs count by Clusters (monthly)

This stacked column chart represents average VM instances count per month.

- Period: July 01 – September 30, 2012
- **Cloud:**
    - india: Eucalyptus, Openstack
    - sierra: Eucalyptus, Nimbus
    - hotel: Nimbus
    - alamo: Nimbus
    - foxtrot: Nimbus

1.3 Users Count by Clusters (Total, monthly)

Figure 5. Users count by Clusters
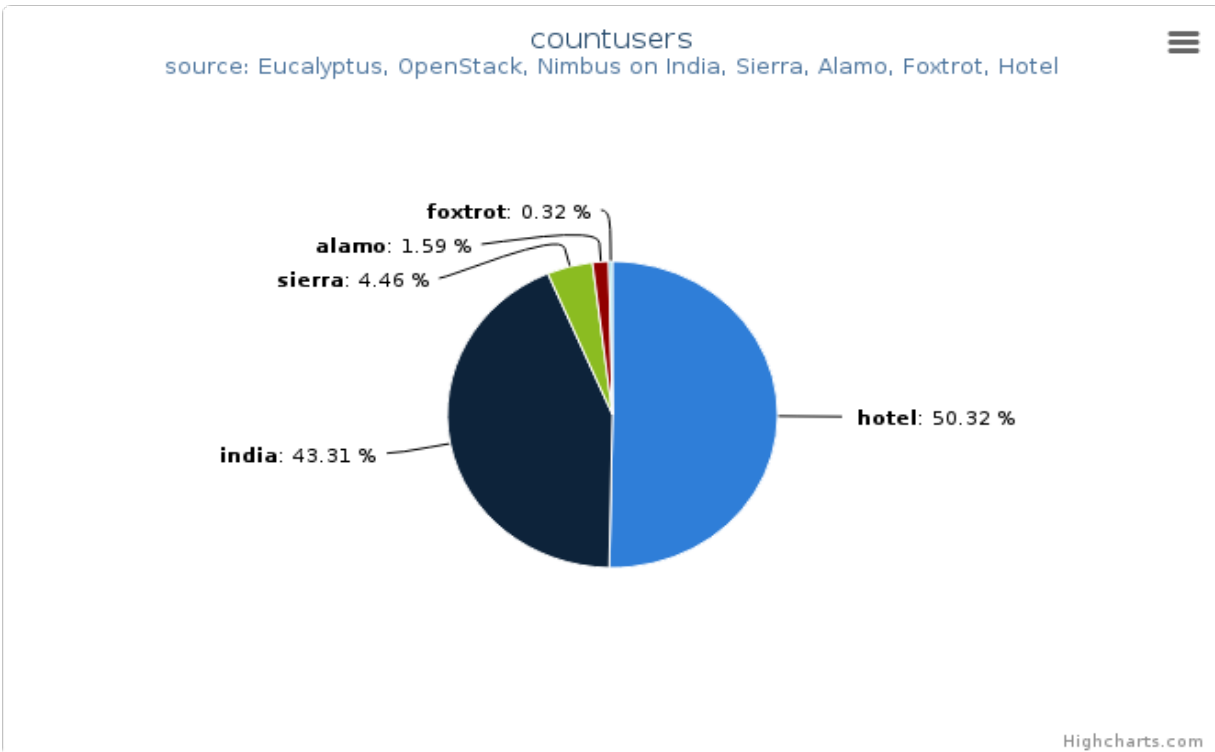This chart represents total number of active users.

- Period: July 01 – September 30, 2012
- **Cloud:**

    - india: Eucalyptus, Openstack

    - sierra: Eucalyptus, Nimbus

    - hotel: Nimbus

    - alamo: Nimbus

    - foxtrot: Nimbus

Table 1.3: User count by Clusters

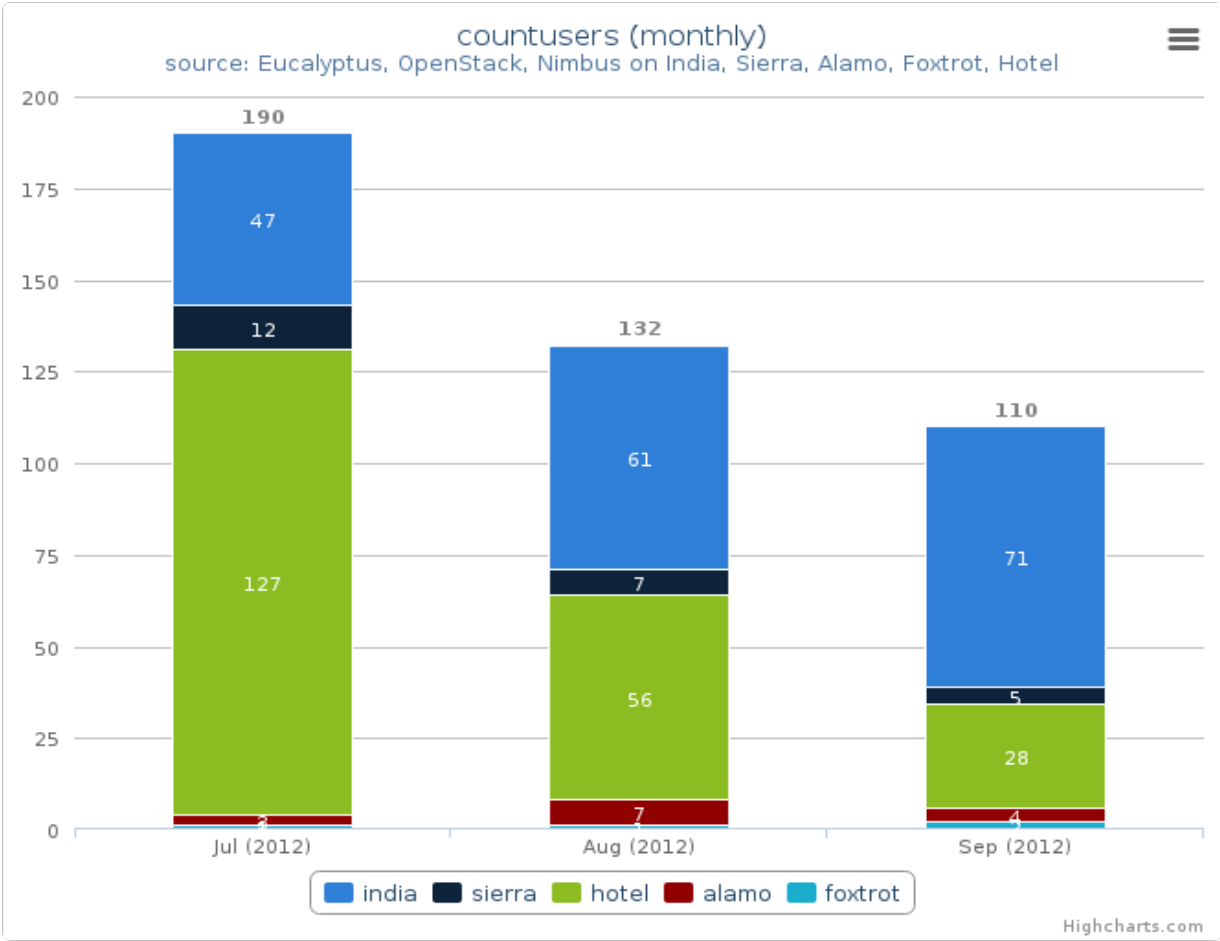| Total	Value
hotel	158
india	136
sierra	14
alamo	5
foxtrot	1

Figure 6. Users count by Clusters (Monthly)

This stacked column chart represents average count of active users per month.

- Period: July 01 – September 30, 2012
- **Cloud:**
    - india: Eucalyptus, Openstack
    - sierra: Eucalyptus, Nimbus
    - hotel: Nimbus
    - alamo: Nimbus
    - foxtrot: Nimbus

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- Period: July 01 – September 30, 2012

- Hostname: sierra.futuregrid.org

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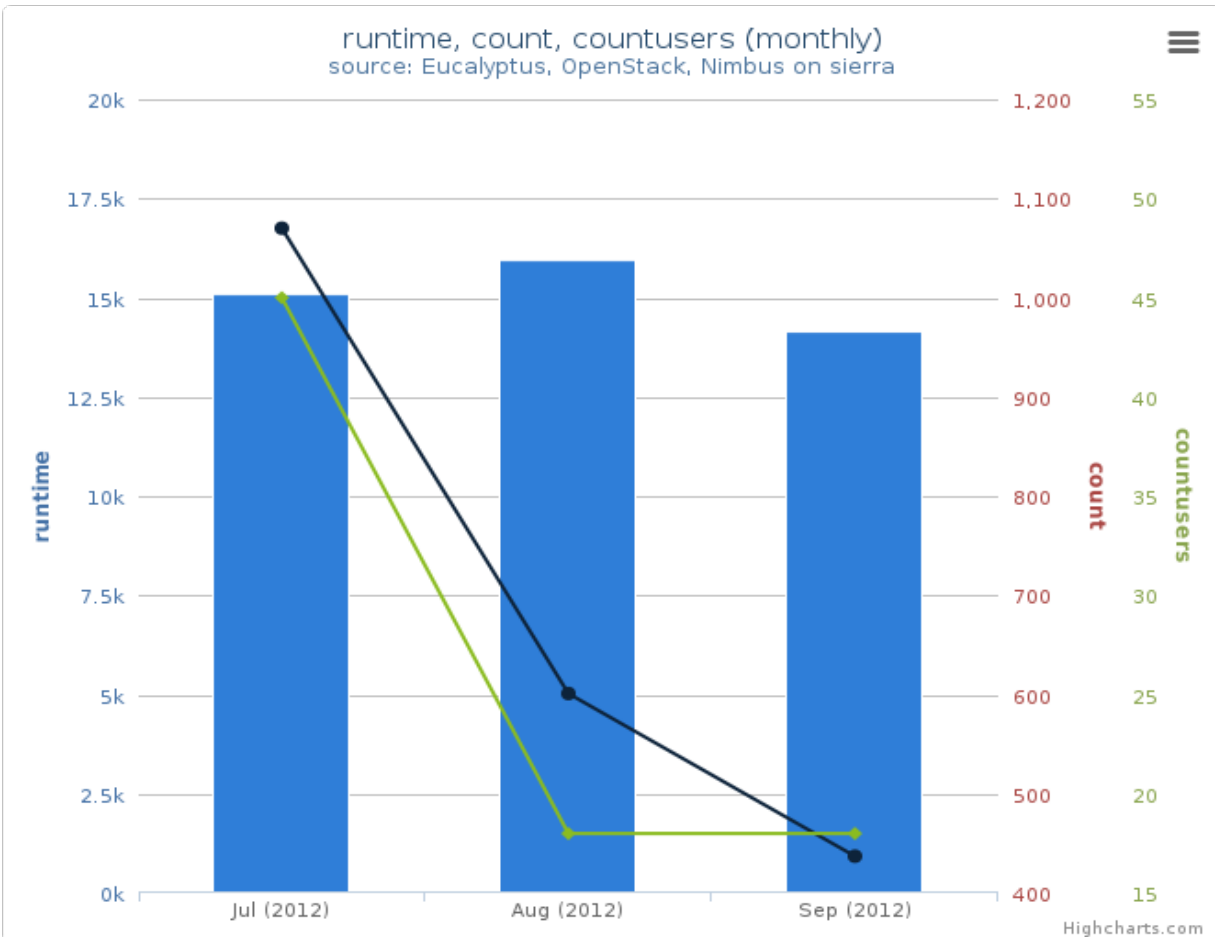
Figure 1: Average monthly usage data (wall time (hour), launched VMs, users)

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

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus, 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: July 01 – September 30, 2012
- Cloud(IaaS): nimbus, 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: July 01 – September 30, 2012

- Cloud(IaaS): nimbus, eucalyptus
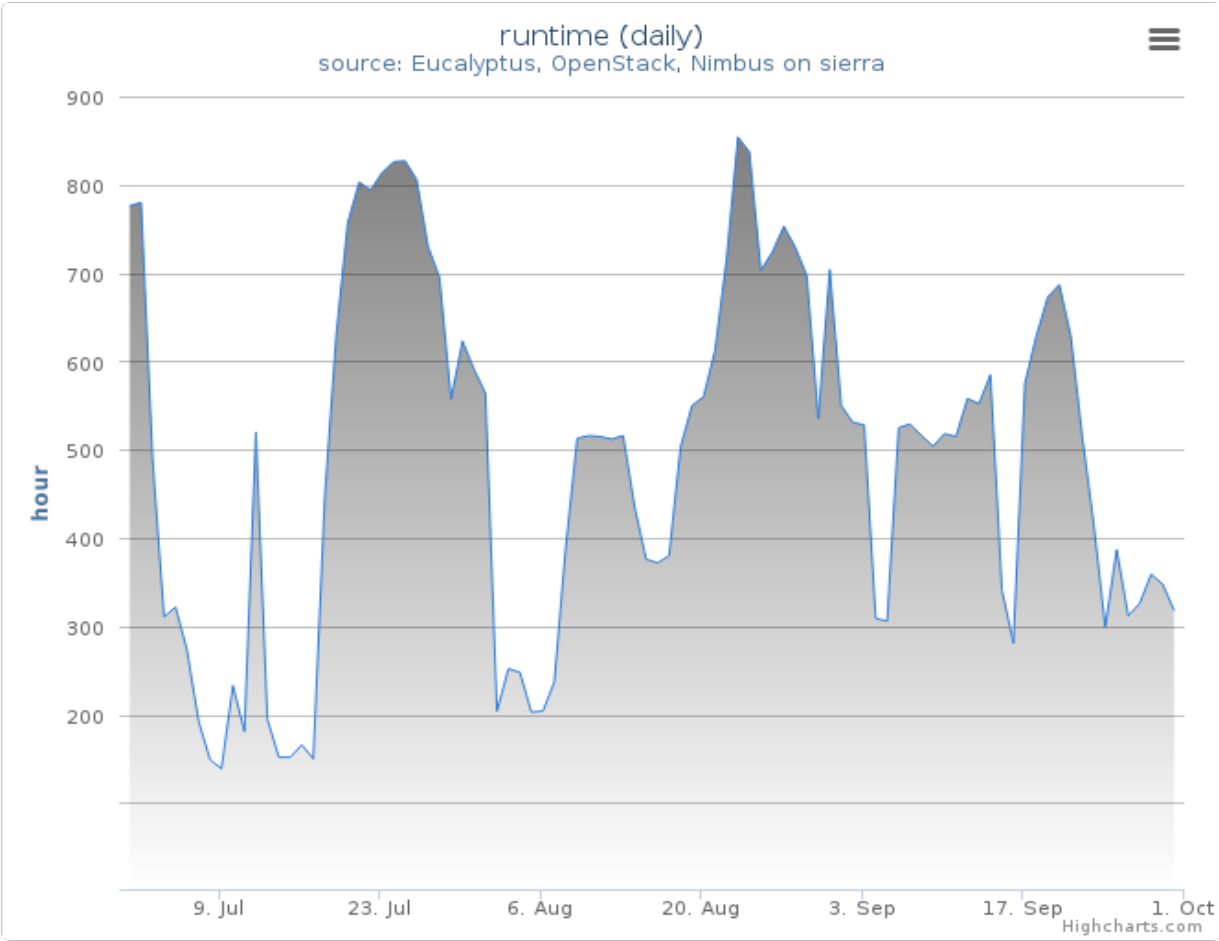
- Hostname: sierra

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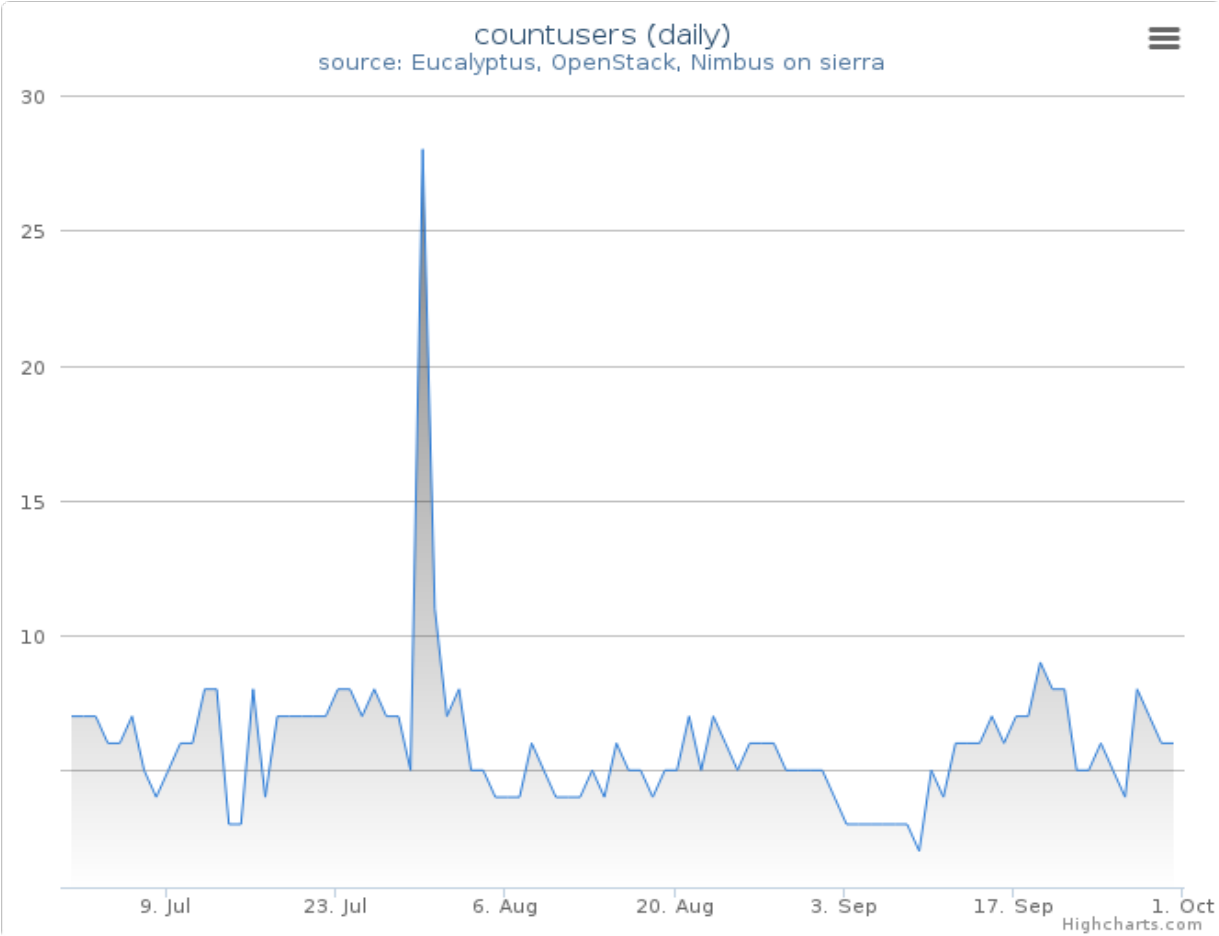
This time series chart represents daily wall time (hours) for cloud services and shows historical changes during the period.

- Period: July 01 – September 30, 2012

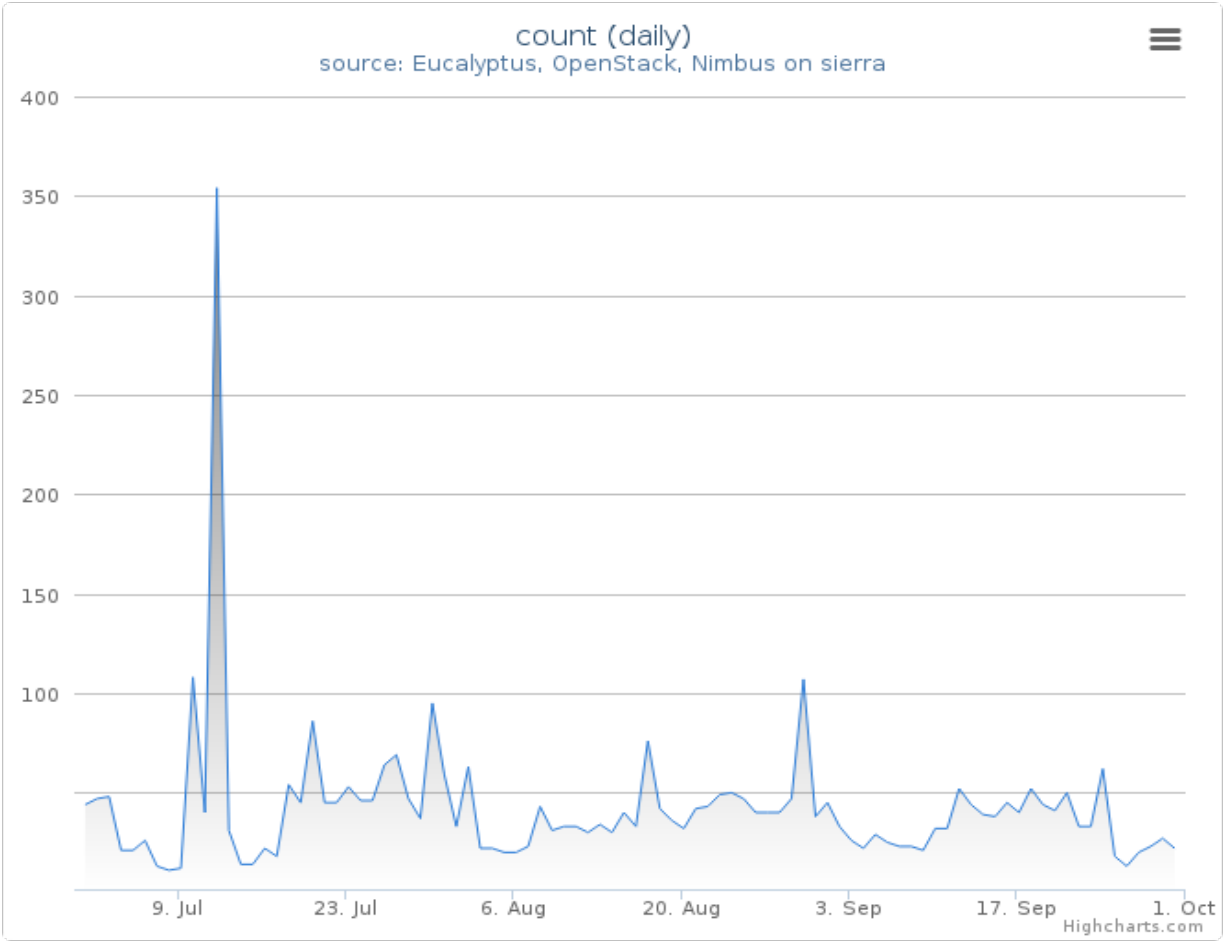- Cloud(IaaS): nimbus, eucalyptus

- Hostname: sierra

2.2 Distribution
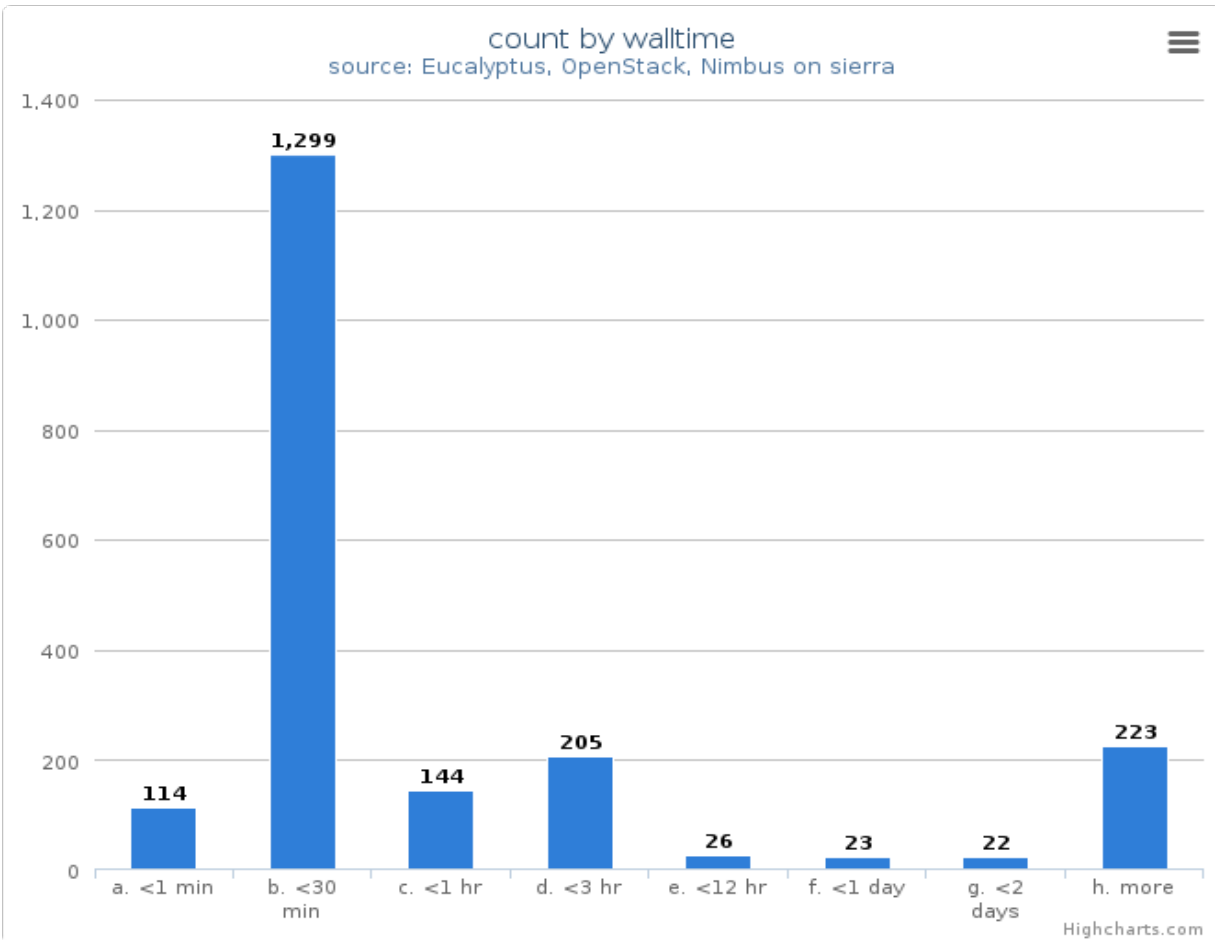
Figure 5: VM count by wall time
This chart illustrates usage patterns of VM instances in terms of running wall time.

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus, 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: July 01 – September 30, 2012

- Cloud(IaaS): nimbus, eucalyptus

- Hostname: sierra

Table 2.1: VMs count by project

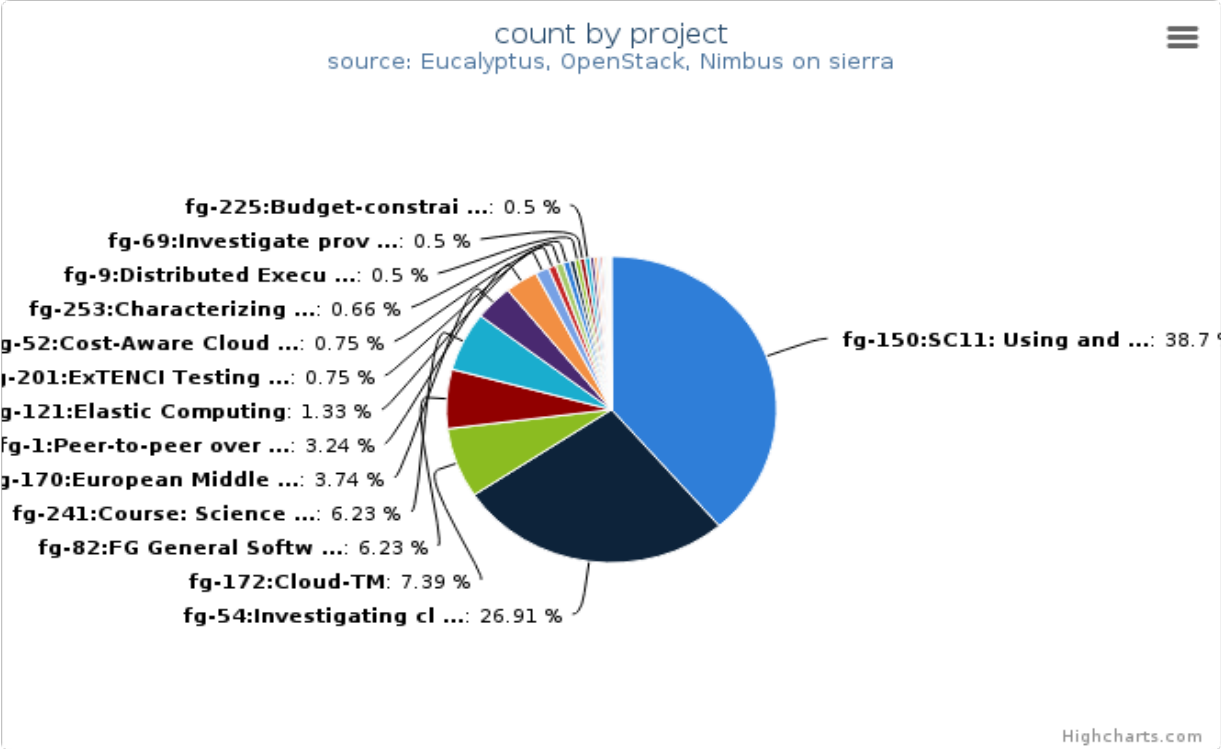| Project	Value
fg-150:SC11: Using and Building Infrastructure Clouds for Science	466
fg-54:Investigating cloud computing as a solution for analyzing particle physics data	324
fg-172:Cloud-TM	89
fg-82:FG General Software Development	75
fg-241:Course: Science Cloud Summer School 2012	75
fg-170:European Middleware Initiative (EMI)	45
fg-1:Peer-to-peer overlay networks and applications in virtual networks and virtual clusters	39
fg-121:Elastic Computing	16
fg-201:ExTENCI Testing, Validation, and Performance	9
fg-52:Cost-Aware Cloud Computing	9
fg-253:Characterizing Performance of Infrastructure Clouds	8
fg-42:SAGA	6
fg-9:Distributed Execution of Kepler Scientific Workflow on Future Grid	6
fg-69:Investigate provenance collection for MapReduce	6
fg-225:Budget-constrained workflow scheduler	6
fg-130:Optimizing Scientific Workflows on Clouds	5
fg-229:Course: XSEDE 2012 Tutorial	4
fg-112:University of California (UC) Grid and Cloud Project	3
fg-200:MapReduce Based Ray Tracing Class Project	3
fg-186:Course: Spring 2012 B534 Distributed systems Graduate Course	2
fg-78:Exploring VMs for Open Science Grid Services	2
fg-20:Development of an information service for FutureGrid	1
fg-40:Inca	1
fg-176:Cloud Interoperability Testbed	1
fg-47:Parallel scripting using cloud resources	1
fg-244:Course: Data Center Scale Computing	1
fg-238:HPC meets Clouds	1
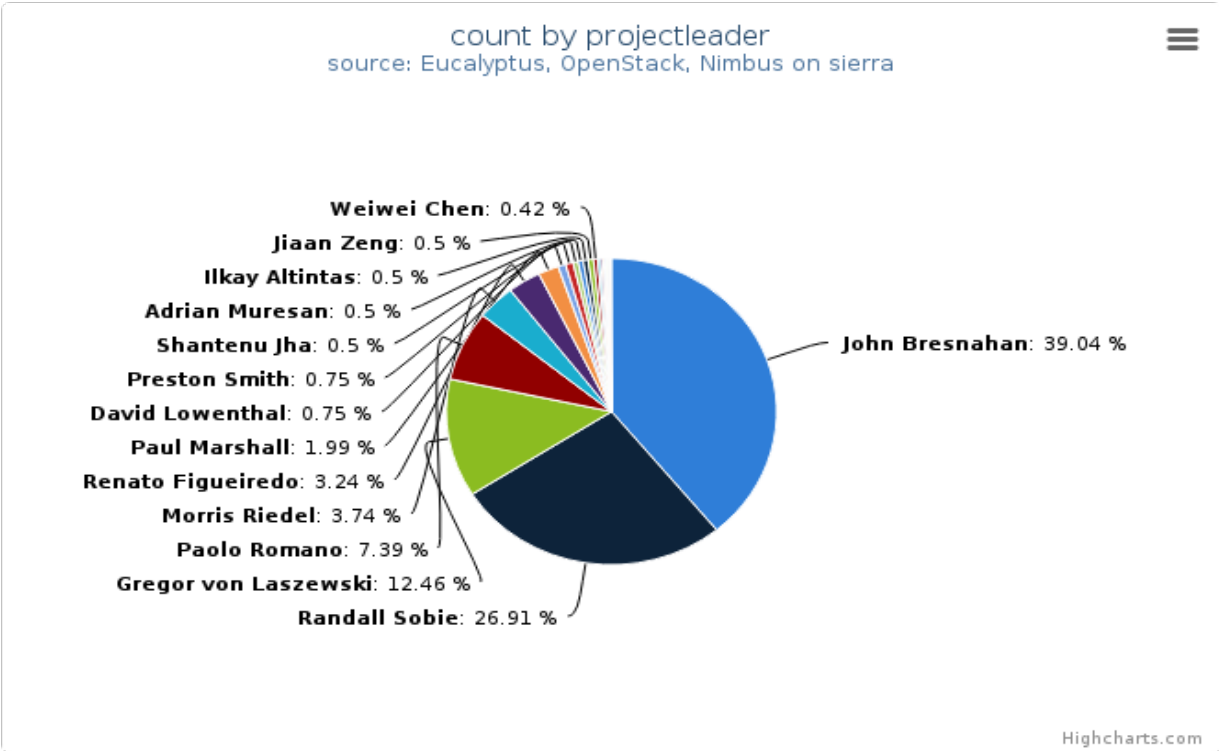
Figure 7: VMs count by project leader

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

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus, eucalyptus

- Hostname: sierra

Table 2.2: VMs count by project leader

| Projectleader	Value
John Bresnahan	470
Randall Sobie	324
Gregor von Laszewski	150
Paolo Romano	89
Morris Riedel	45
Renato Figueiredo	39
Paul Marshall	24
David Lowenthal	9
Preston Smith	9
Shantenu Jha	6
Adrian Muresan	6
Ilkay Altintas	6
Jiaan Zeng	6
Weiwei Chen	5
Prakashan Korambath	3
Jingya Wang	3
	2
Judy Qiu	2
Hyungro Lee	1
Dirk Grunwald	1
Alan Sill	1
Li Chunyan	1
Michael Wilde	1
Shava Smallen	1
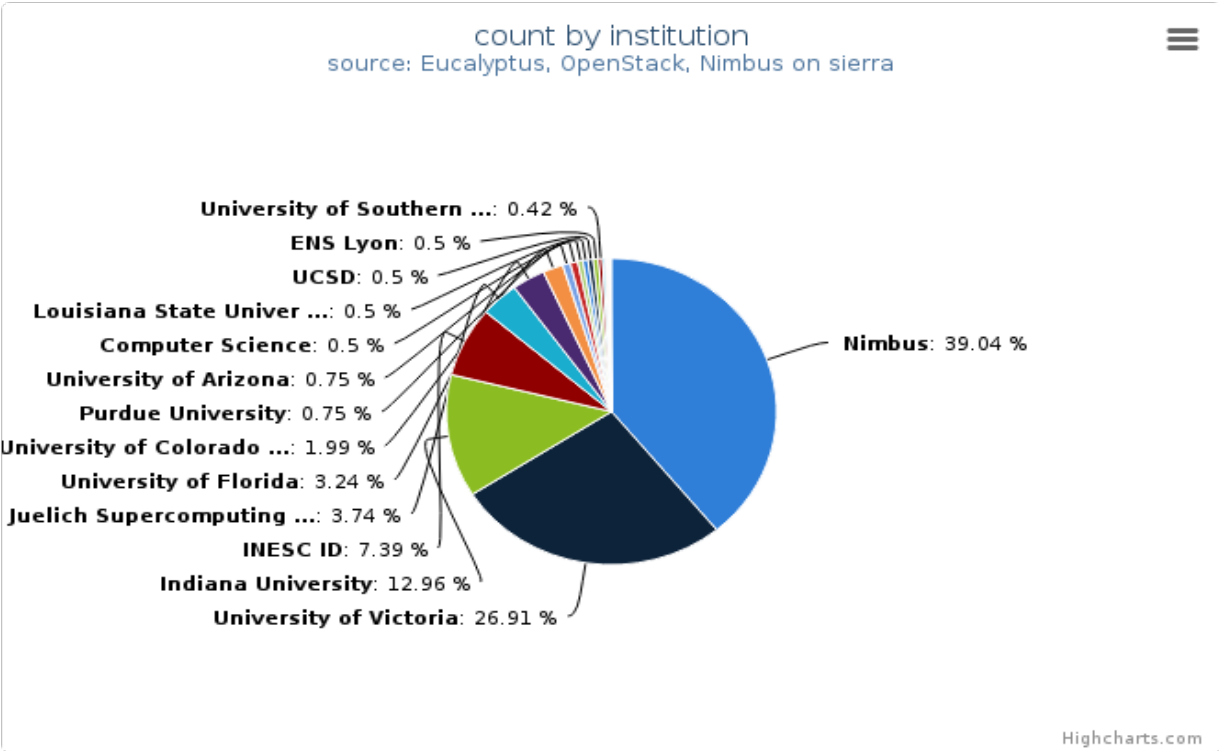
Figure 8: VMs count by institution

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

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus, eucalyptus

- Hostname: sierra

Table 2.3: VMs count by institution

| Institution	Value
Nimbus	470
University of Victoria	324
Indiana University	156
INESC ID	89
Juelich Supercomputing Centre	45
University of Florida	39
University of Colorado at Boulder	24
Purdue University	9
University of Arizona	9
Computer Science	6
Louisiana State University	6
UCSD	6
ENS Lyon	6
University of Southern California	5
UCLA	3
	2
Argonne National Laboratory	1
Univ. of Colorado	1
Texas Tech University	1
YunNan University	1
UC San Diego	1
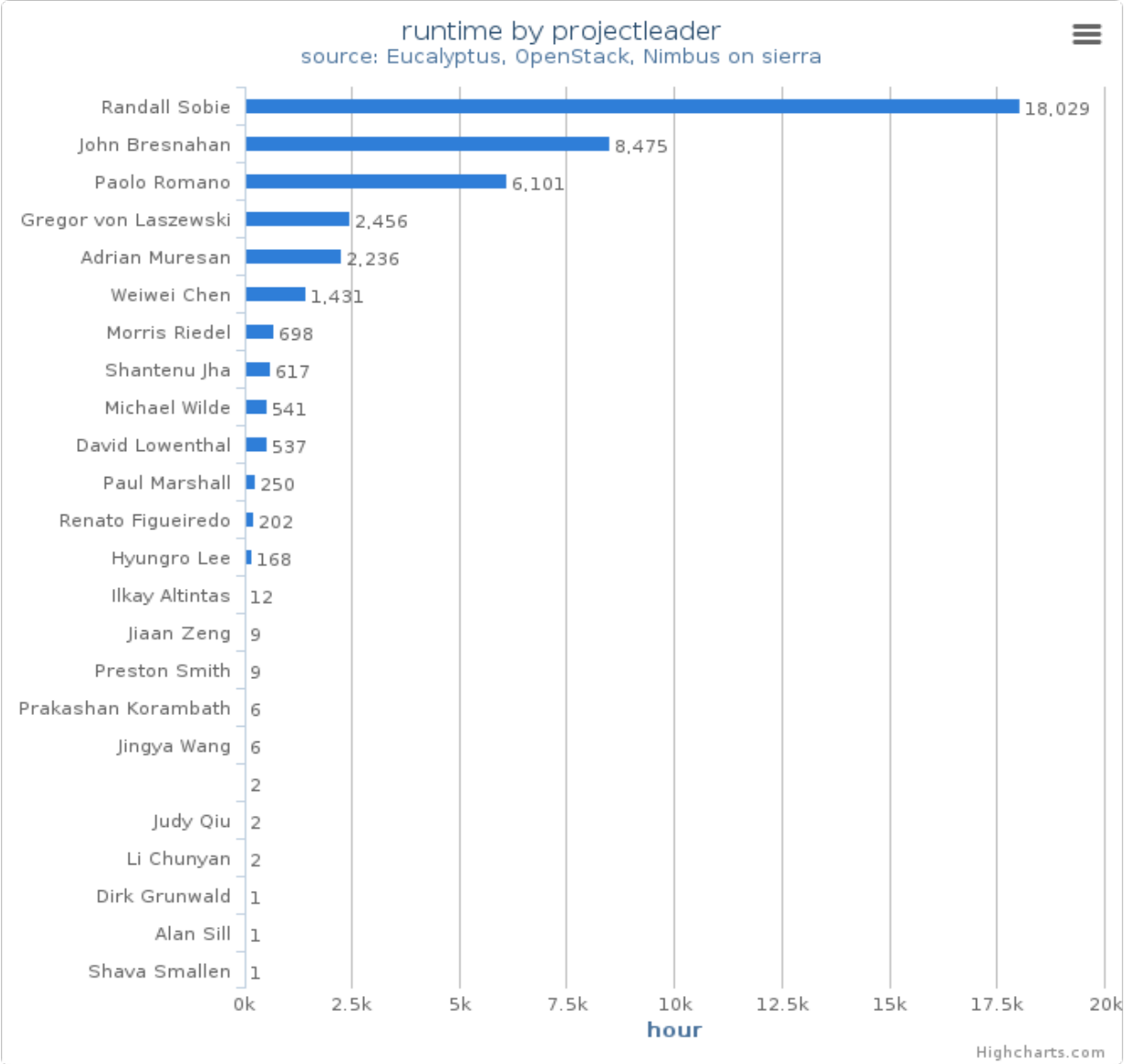
Figure 9: Wall time (hours) by project leader

This chart illustrates proportionate total run times by project leader.

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus, 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: July 01 – September 30, 2012

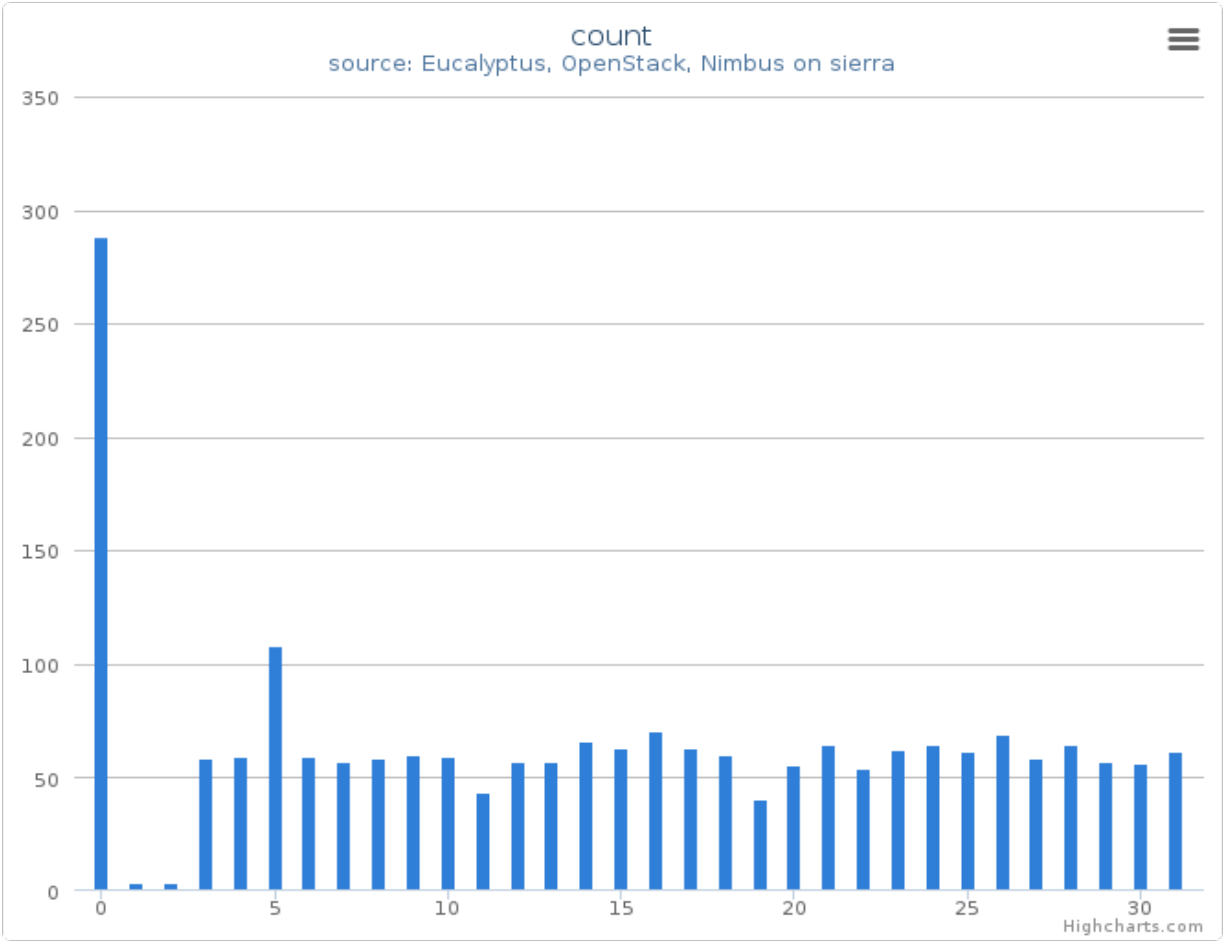- Cloud(IaaS): nimbus, eucalyptus

- Hostname: sierra

Figure 11: Wall time (hours) by systems (compute nodes) in Cluster (sierra)

This column chart represents wall time among systems.

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus, eucalyptus

- Hostname: sierra

USAGE REPORT INDIA
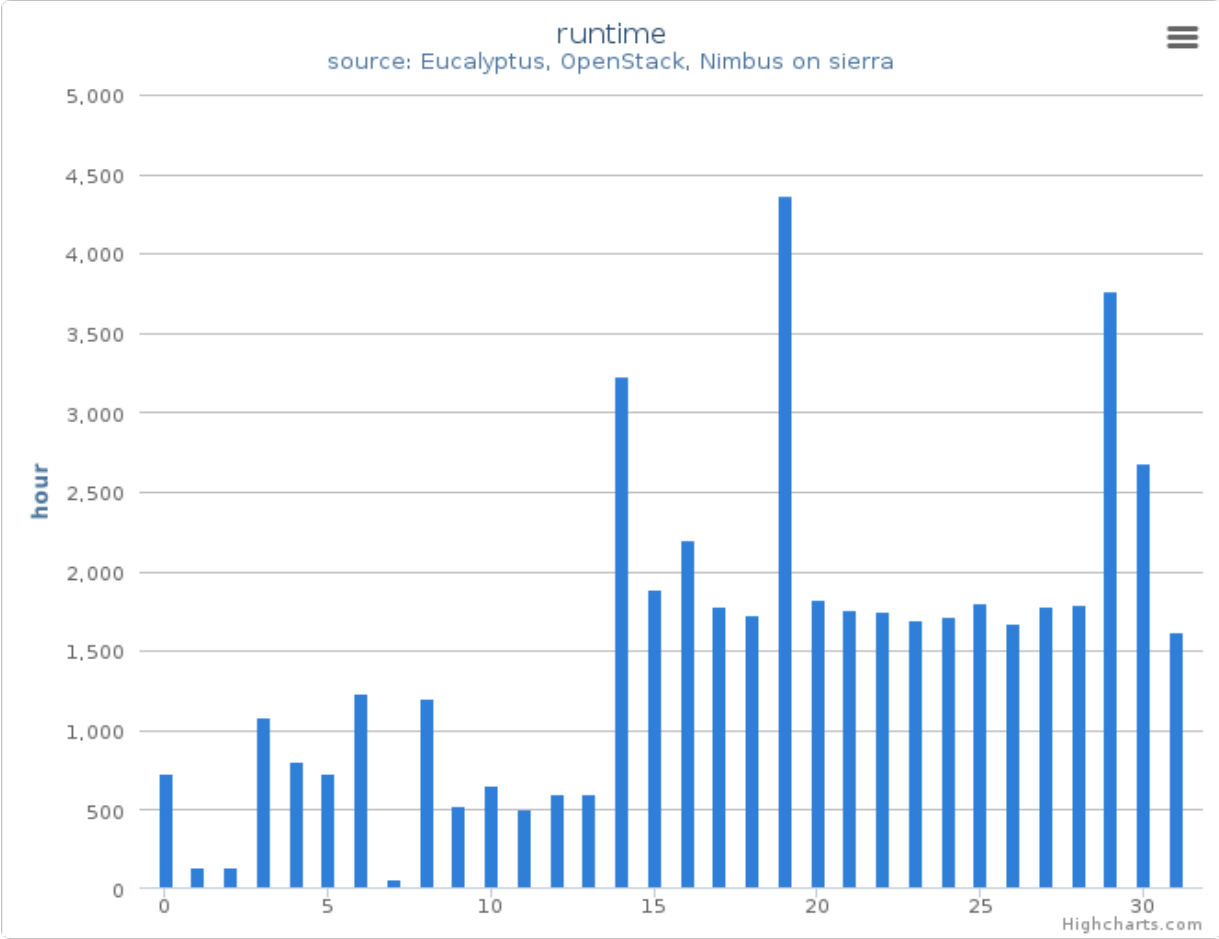
- Period: July 01 – September 30, 2012

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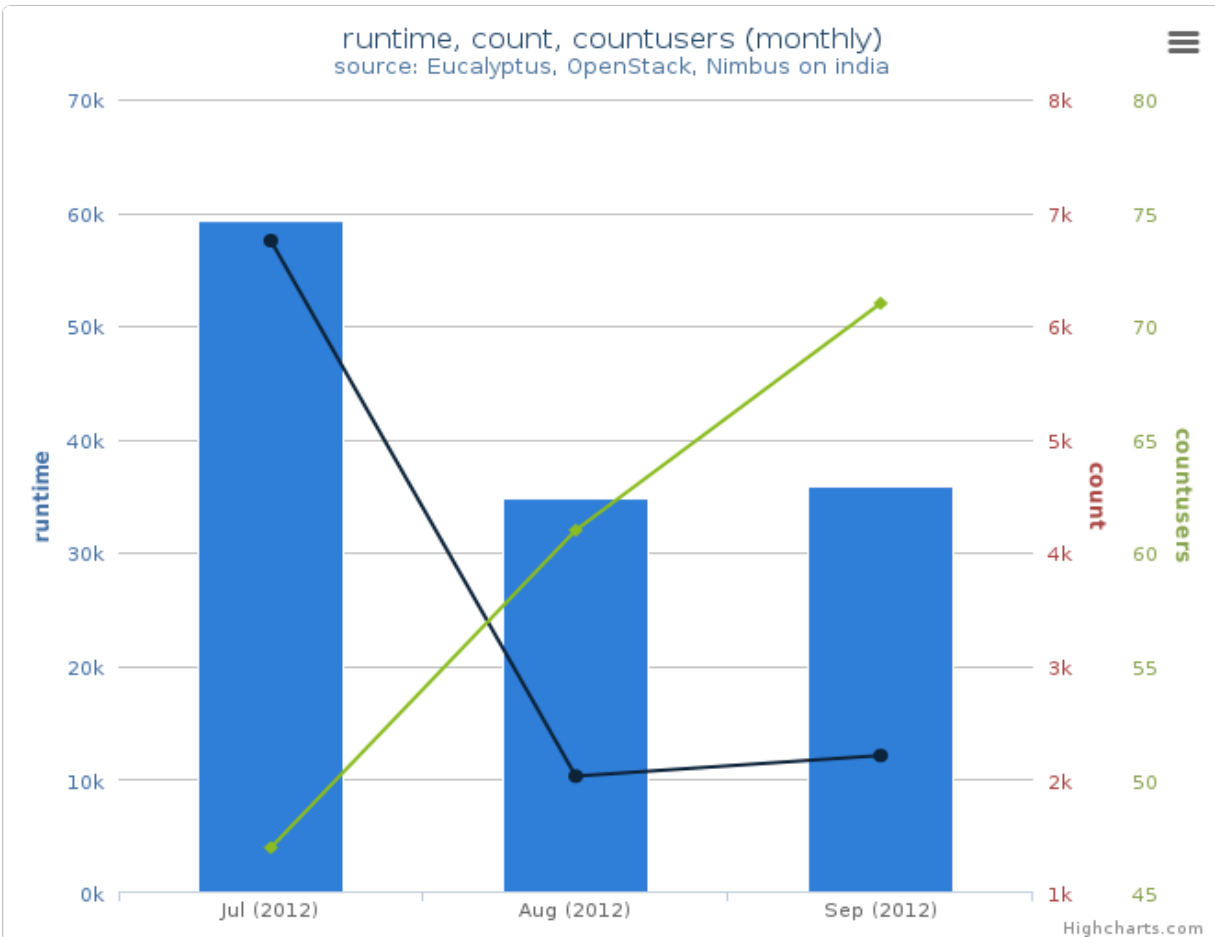
Figure 1: Average monthly usage data (wall time (hour), launched VMs, users)

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

- Period: July 01 – September 30, 2012

- 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: July 01 – September 30, 2012
- 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: July 01 – September 30, 2012

- Cloud(IaaS): openstack, eucalyptus

- Hostname: india

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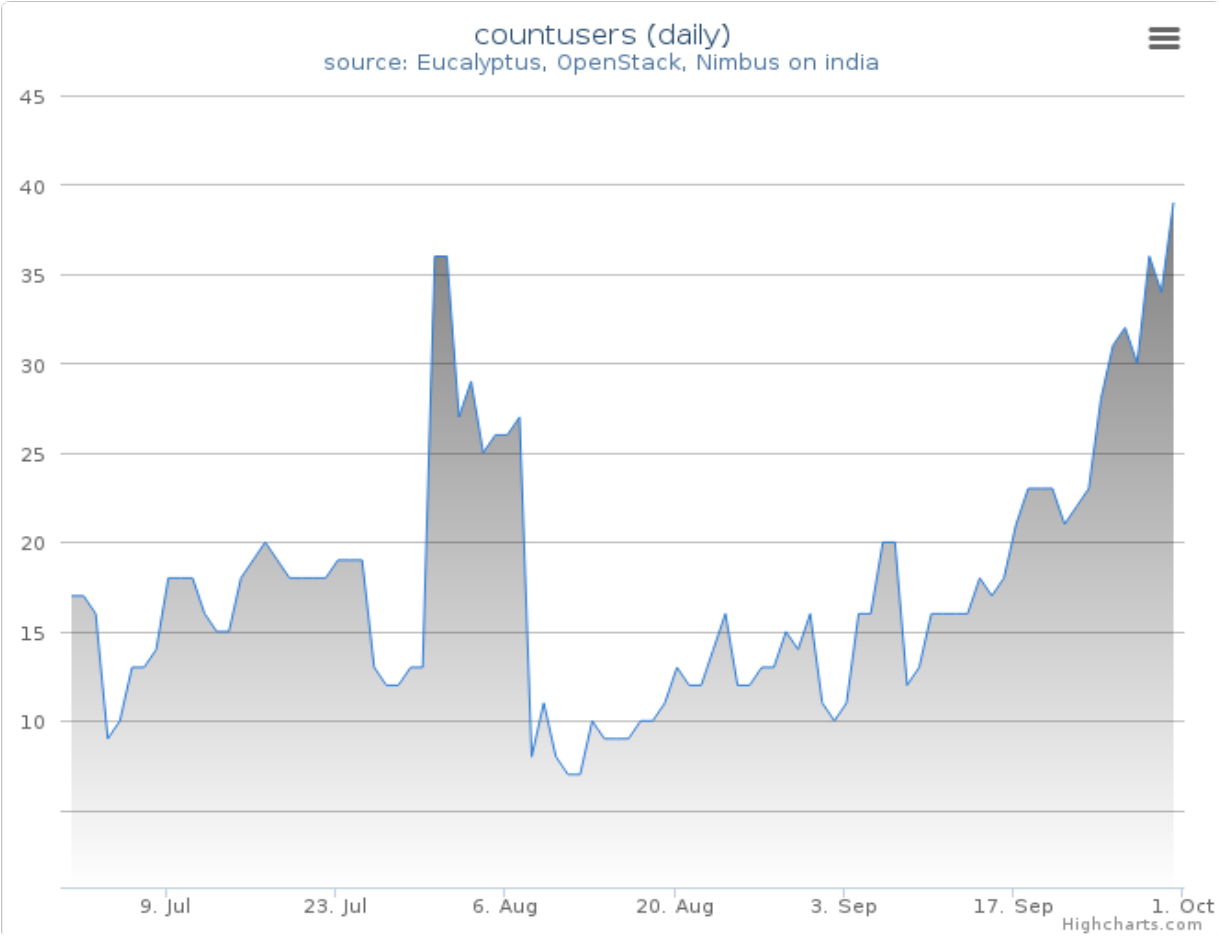
This time series chart represents daily wall time (hours) for cloud services and shows historical changes during the period.

- Period: July 01 – September 30, 2012

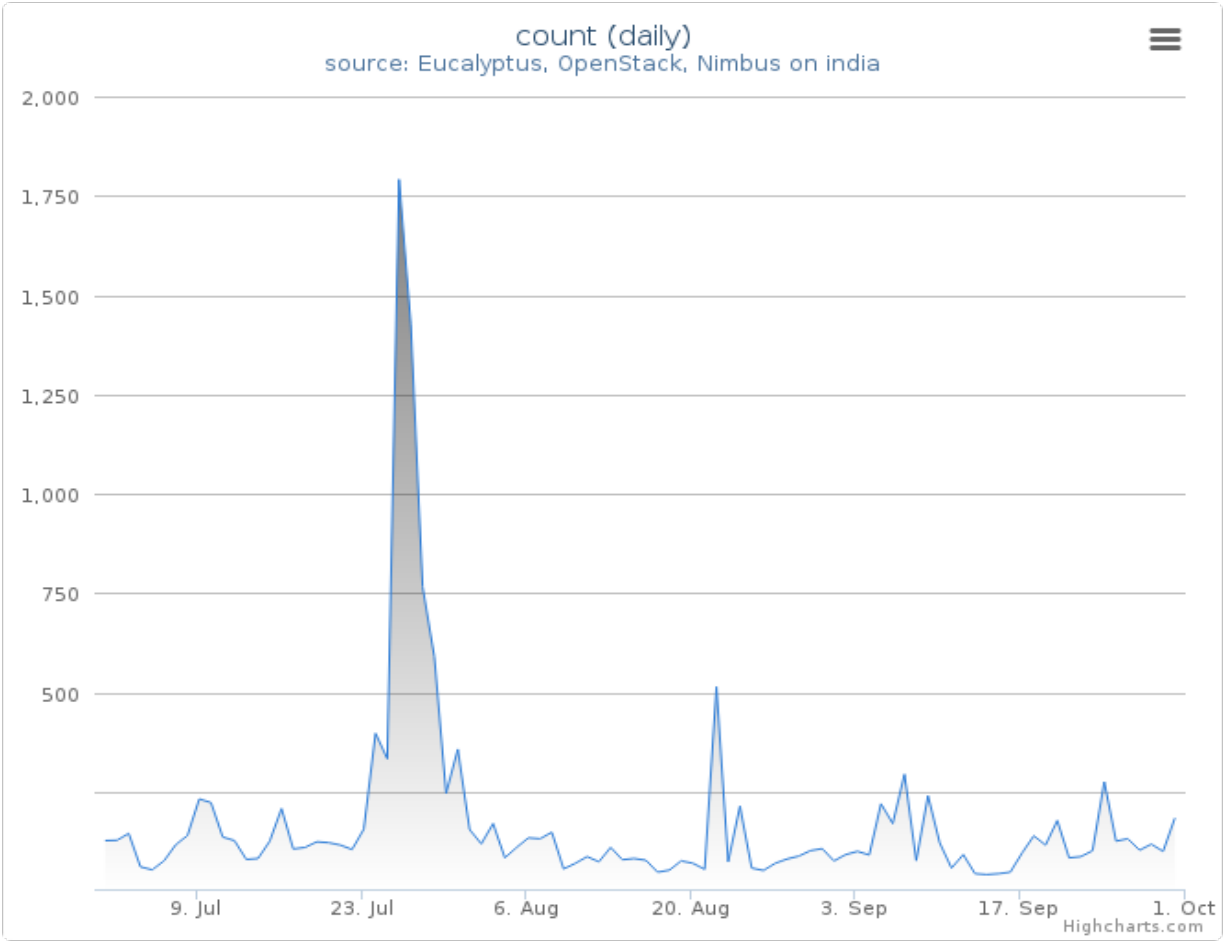- Cloud(IaaS): openstack, eucalyptus

- Hostname: india
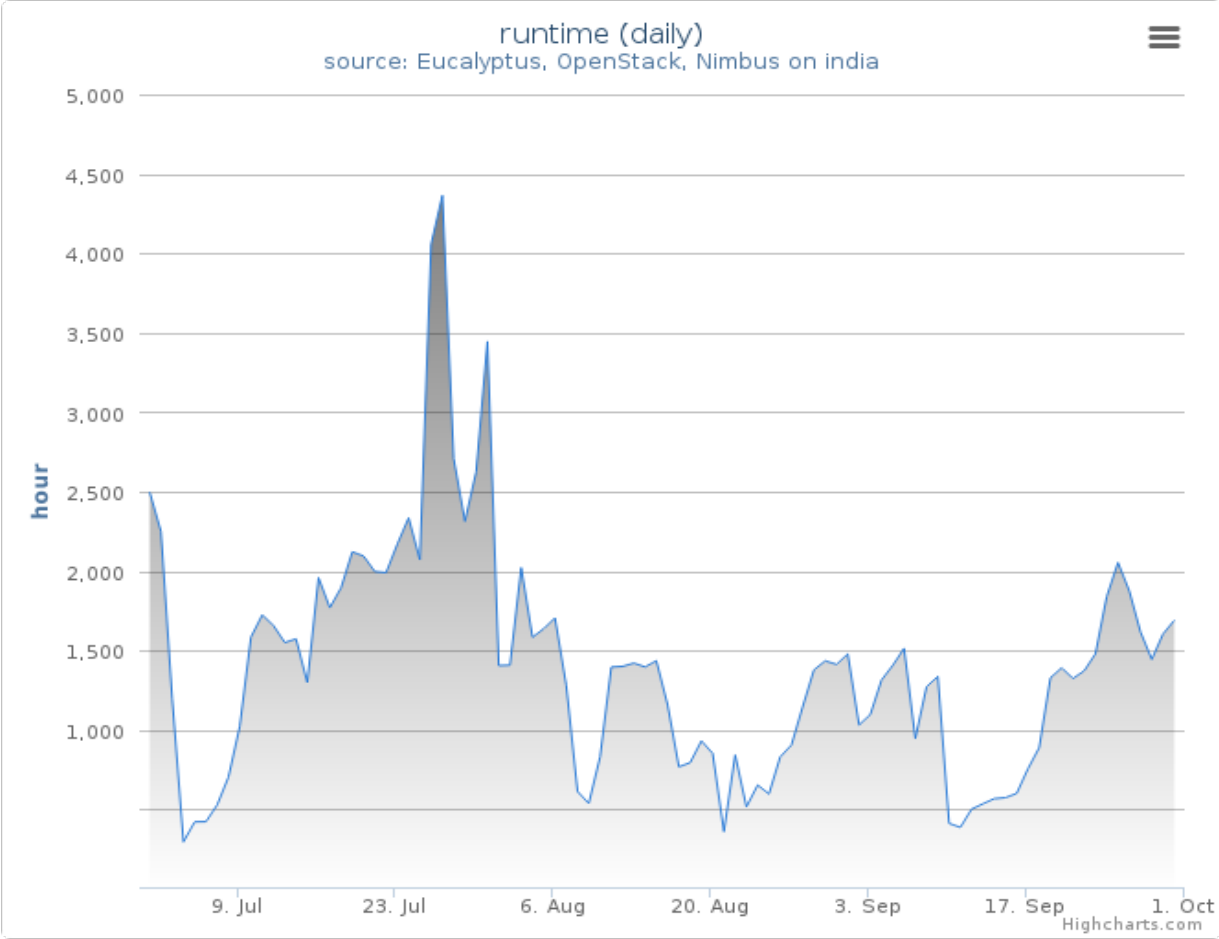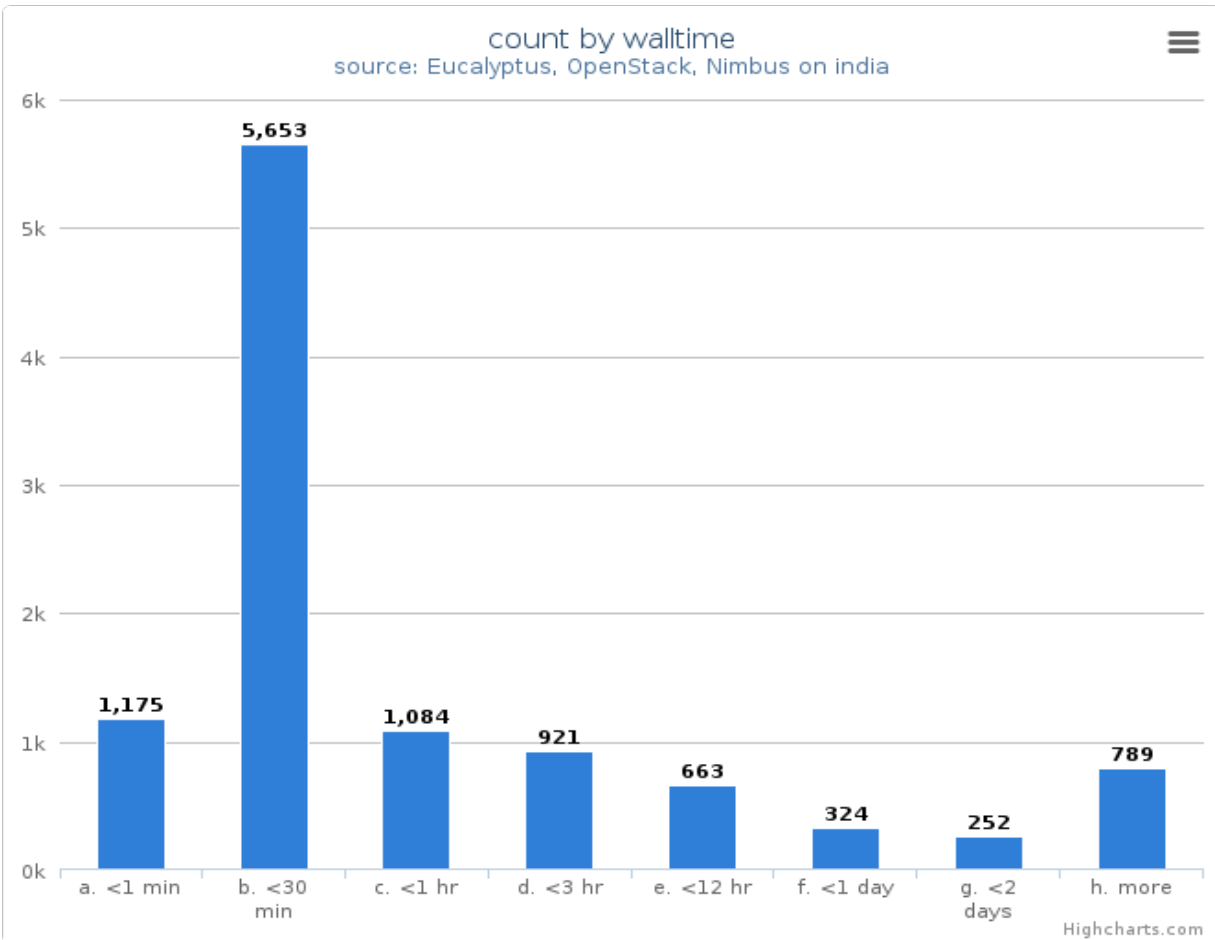
3.2 Distribution

Figure 5: VM count by wall time

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

- Period: July 01 – September 30, 2012

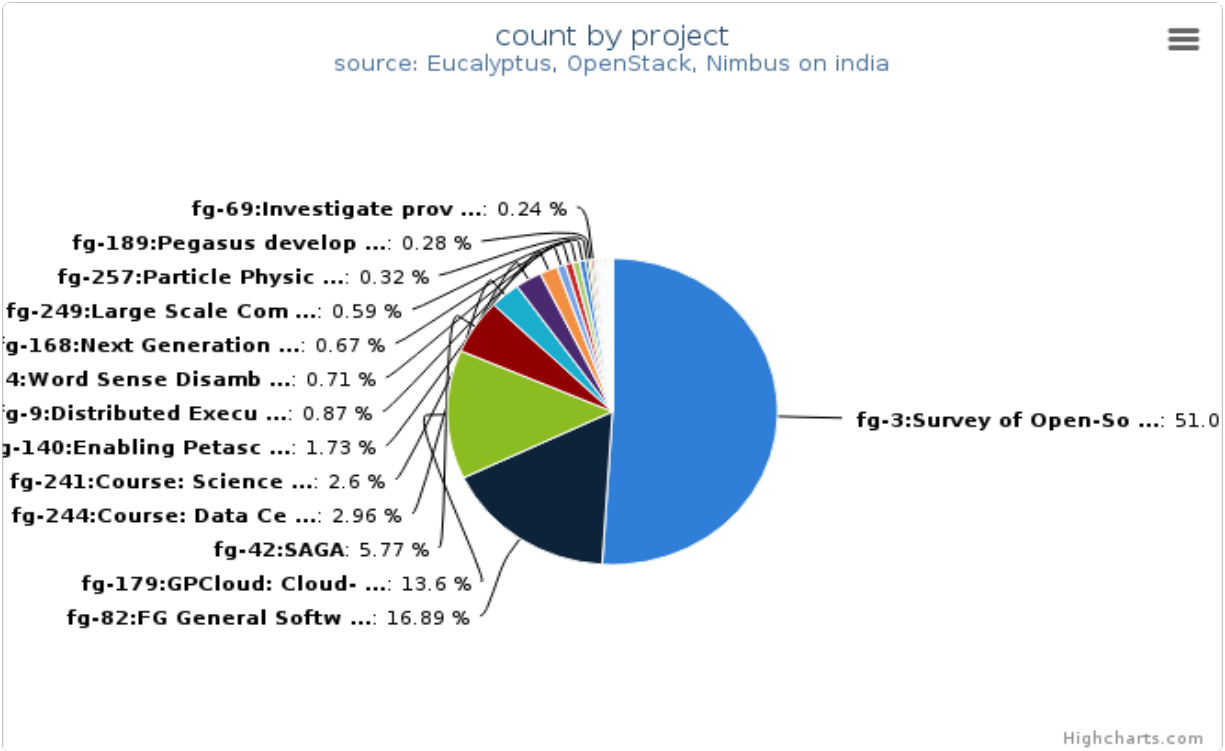- Cloud(IaaS): openstack, eucalyptus

- 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: July 01 – September 30, 2012

- Cloud(IaaS): openstack, eucalyptus

- Hostname: india

Table 3.1: VMs count by project

Project	Valu
fg-3:Survey of Open-Source Cloud Infrastructure using FutureGrid Testbed	4183
fg-82:FG General Software Development	1385
fg-179:GPCloud: Cloud-based Automatic Repair of Real-World Software Bugs	1115
fg-42:SAGA	473
fg-244:Course: Data Center Scale Computing	243
fg-241:Course: Science Cloud Summer School 2012	213
fg-140:Enabling Petascale Ensemble-based Data Assimilation for Numerical Analysis and Prediction of High-Impact Weather	142
fg-9:Distributed Execution of Kepler Scientific Workflow on Future Grid	71
fg-4:Word Sense Disambiguation for Web 2.0 Data	58
fg-168:Next Generation Sequencing in the Cloud	55
fg-249:Large Scale Computing Infrastructure 2012 Master class	48

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Table 3.1 – continued from previous page

| Project	Val
fg-257:Particle Physics Data analysis cluster for ATLAS LHC experiment	26
fg-189:Pegasus development and improvement platform	23
fg-69:Investigate provenance collection for MapReduce	20
fg-233:CINET - A Cyber-Infrastructure for Network Science	16
fg-213:Course: Cloud Computing class - second edition	15
fg-200:MapReduce Based Ray Tracing Class Project	13
fg-99:Cloud-Based Support for Distributed Multiscale Applications	11
fg-60:Wide area distributed file system for MapReduce applications on FutureGrid platform	10
fg-148:Developing Virtual Clusters for Science Gateways and HPC Education	10
fg-176:Cloud Interoperability Testbed	9
fg-138:Data mining samples based on Twister	8
fg-238:HPC meets Clouds	8
fg-20:Development of an information service for FutureGrid	7
fg-186:Course: Spring 2012 B534 Distributed systems Graduate Course	7
fg-8:Running workflows in the cloud with Pegasus	6
fg-170:European Middleware Initiative (EMI)	6
fg-110:FutureGrid Systems Development	5
fg-52:Cost-Aware Cloud Computing	4
fg-174:RAIN: FutureGrid Dynamic provisioning Framework	3
fg-23:Hardware Performance Monitoring in the Clouds	3
fg-112:University of California (UC) Grid and Cloud Project	1
fg-121:Elastic Computing	1
fg-78:Exploring VMs for Open Science Grid Services	1
fg-94:SpeQulos: A Framework for QoS in Unreliable Distributed Computing Infrastructures using Cloud Resources.	1
fg-136:JGC-DataCloud-2012 paper experiments	1
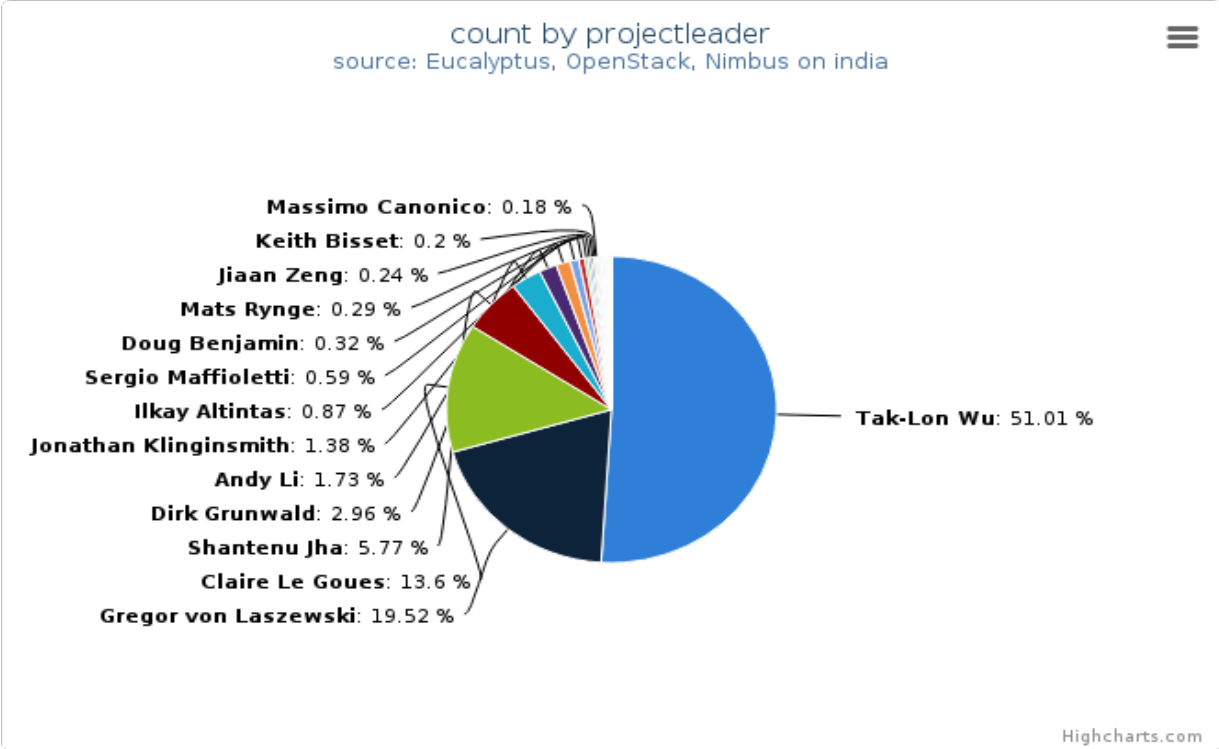
Figure 7: VMs count by project leader

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

- Period: July 01 – September 30, 2012

- Cloud(IaaS): openstack, eucalyptus

- Hostname: india

Table 3.2: VMs count by project leader

Projectleader	Value
Tak-Lon Wu	4183
Gregor von Laszewski	1601
Claire Le Goues	1115
Shantenu Jha	473
Dirk Grunwald	243
Andy Li	142
Jonathan Klinginsmith	113
Ilkay Altintas	71
Sergio Maffioletti	48
Doug Benjamin	26
Mats Rynge	24
Continued on next page	

Table 3.2 – continued from previous page

Projectleader	Value
Jiaan Zeng	20
Keith Bisset	16
Massimo Canonico	15
Jingya Wang	13
Katarzyna Rycerz	11
Lizhe Wang	10
Thomas Hacker	10
Alan Sill	9
Zhanquan Sun	8
Li Chunyan	8
Hyungro Lee	7
Judy Qiu	7
Gideon Juve	6
Morris Riedel	6
Gary Miksik	5
David Lowenthal	4
Shirley Moore	3
	1
Prakashan Korambath	1
Paul Marshall	1
Simon Delamare	1

count by institution
source: Eucalyptus, OpenStack, Nimbus on india

Purdue University: 0.12 %
AGH: 0.13 %
University of Piemonte ...: 0.18 %
Virginia Tech: 0.2 %
Computer Science: 0.24 %
USC: 0.29 %
Duke University: 0.32 %
University of Zurich: 0.59 %
UCSD: 0.87 %
University of Florida: 1.73 %
Univ. of Colorado: 2.96 %
Louisiana State Univer ...: 5.77 %
University of Virginia: 13.6 %
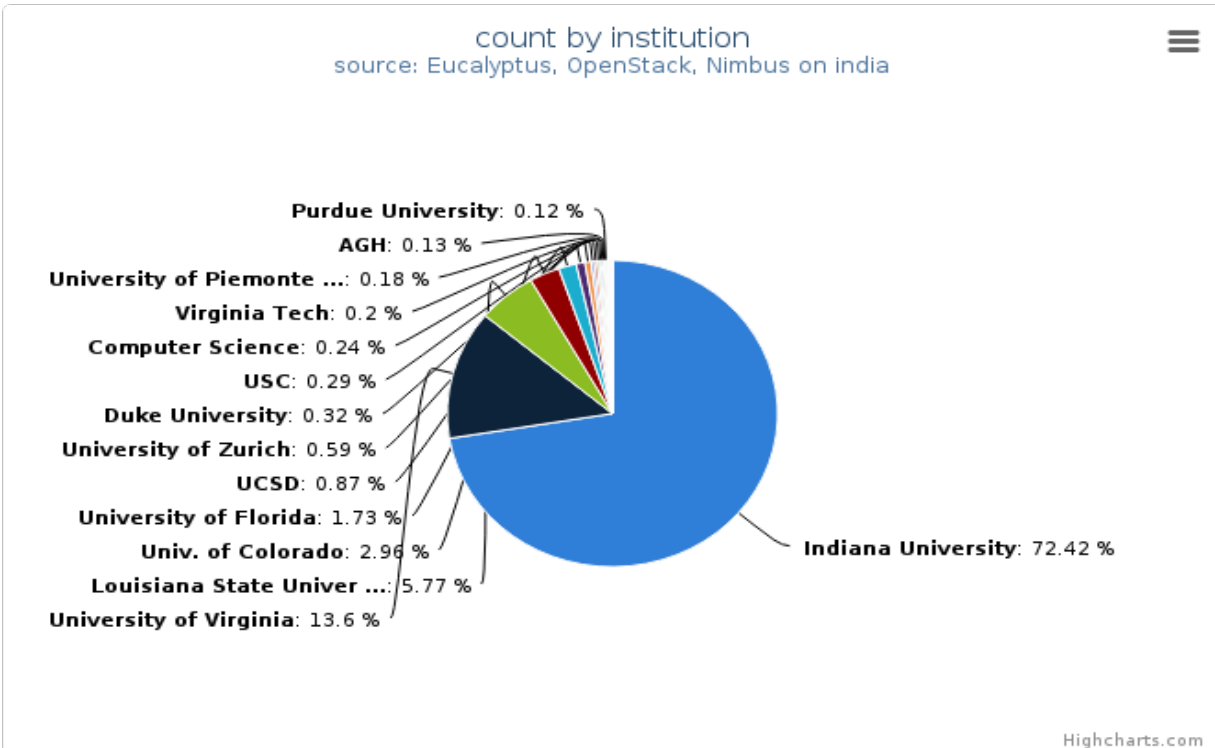Indiana University: 72.42 %

Highcharts.com

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: July 01 – September 30, 2012

- Cloud(IaaS): openstack, eucalyptus

- Hostname: india

Table 3.3: VMs count by institution

| Institution	Value
Indiana University	5939
University of Virginia	1115
Louisiana State University	473
Univ. of Colorado	243
University of Florida	142
UCSD	71
University of Zurich	48
Duke University	26
USC	24
Computer Science	20
Virginia Tech	16
University of Piemonte Orientale	15
AGH	11
Purdue University	10
Texas Tech University	9
Indiana University Bloomington	8
YunNan University	8
University of Southern California	6
Juelich Supercomputing Centre	6
University of Arizona	4
University of Tennessee	3
	1
University of Colorado at Boulder	1
INRIA - France	1
UCLA	1
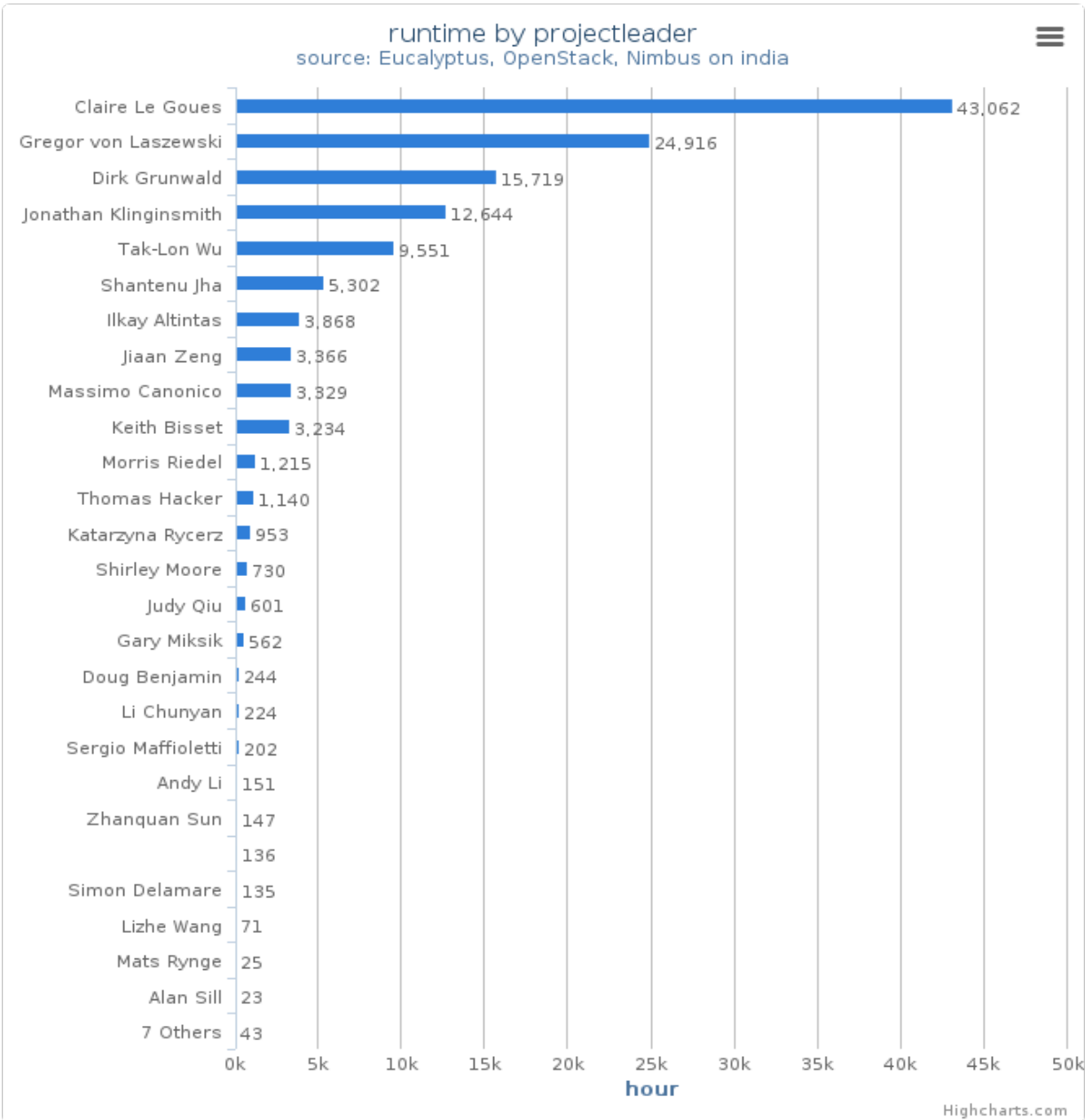
Figure 9: Wall time (hours) by project leader

This chart illustrates proportionate total run times by project leader.

- Period: July 01 – September 30, 2012

- 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.
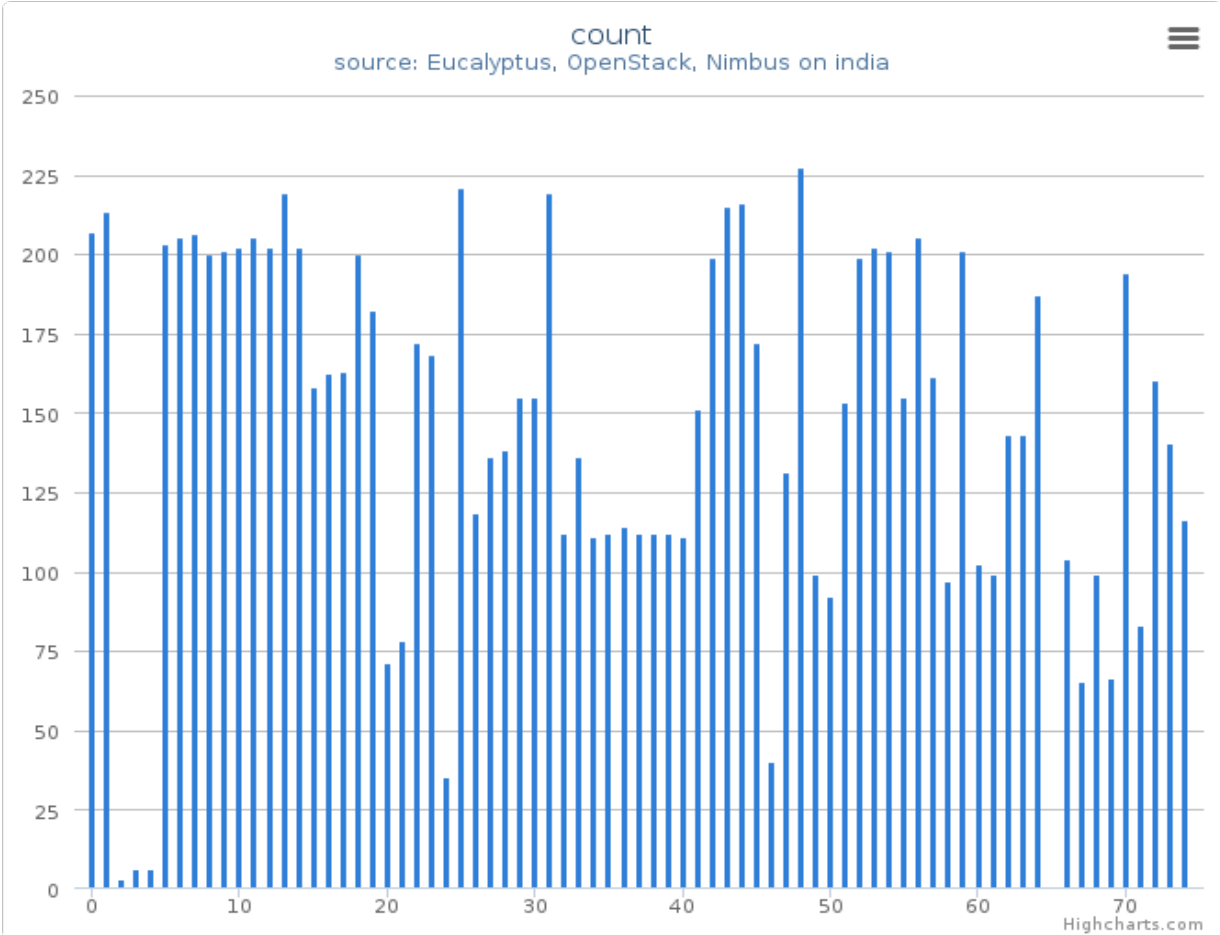

Figure 10: VMs count by systems (compute nodes) in Cluster (india)

This column chart represents VMs count among systems.

- Period: July 01 – September 30, 2012

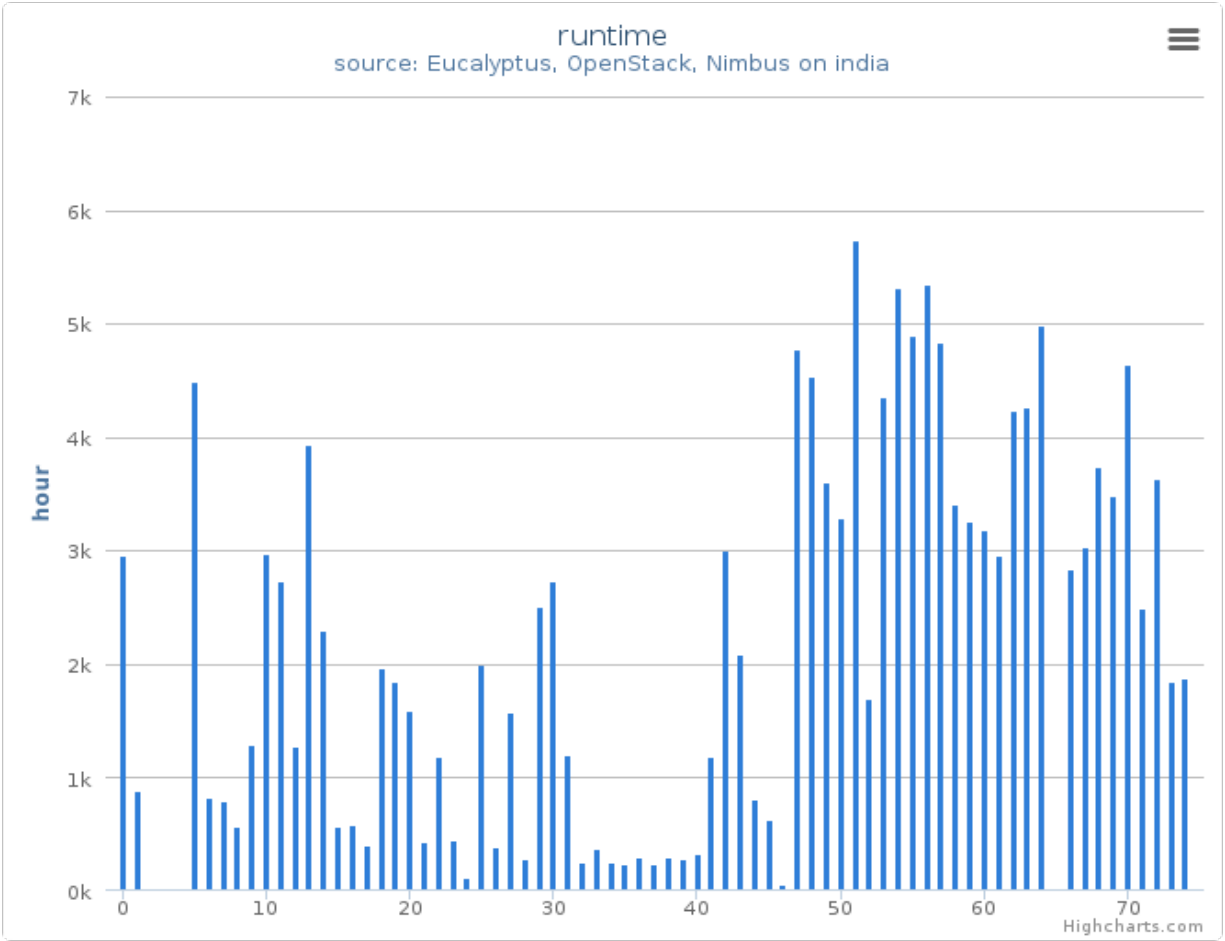- Cloud(IaaS): openstack, eucalyptus

- Hostname: india

Figure 11: Wall time (hours) by systems (compute nodes) in Cluster (india)

This column chart represents wall time among systems.

- Period: July 01 – September 30, 2012
- Cloud(IaaS): openstack, eucalyptus
- Hostname: india

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USAGE REPORT HOTEL

- Period: July 01 – September 30, 2012

- 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

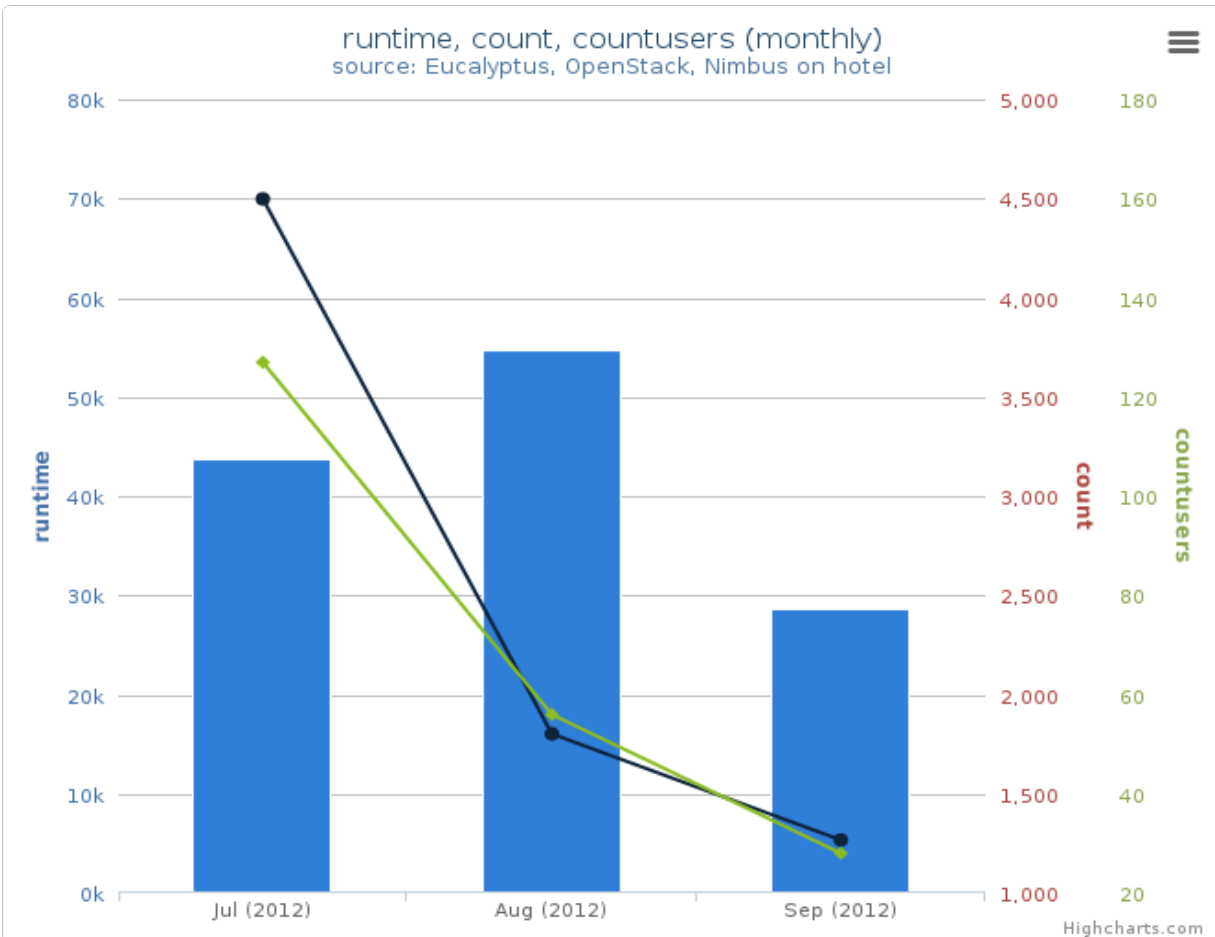# 4.1 Histogram

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: July 01 – September 30, 2012

- 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
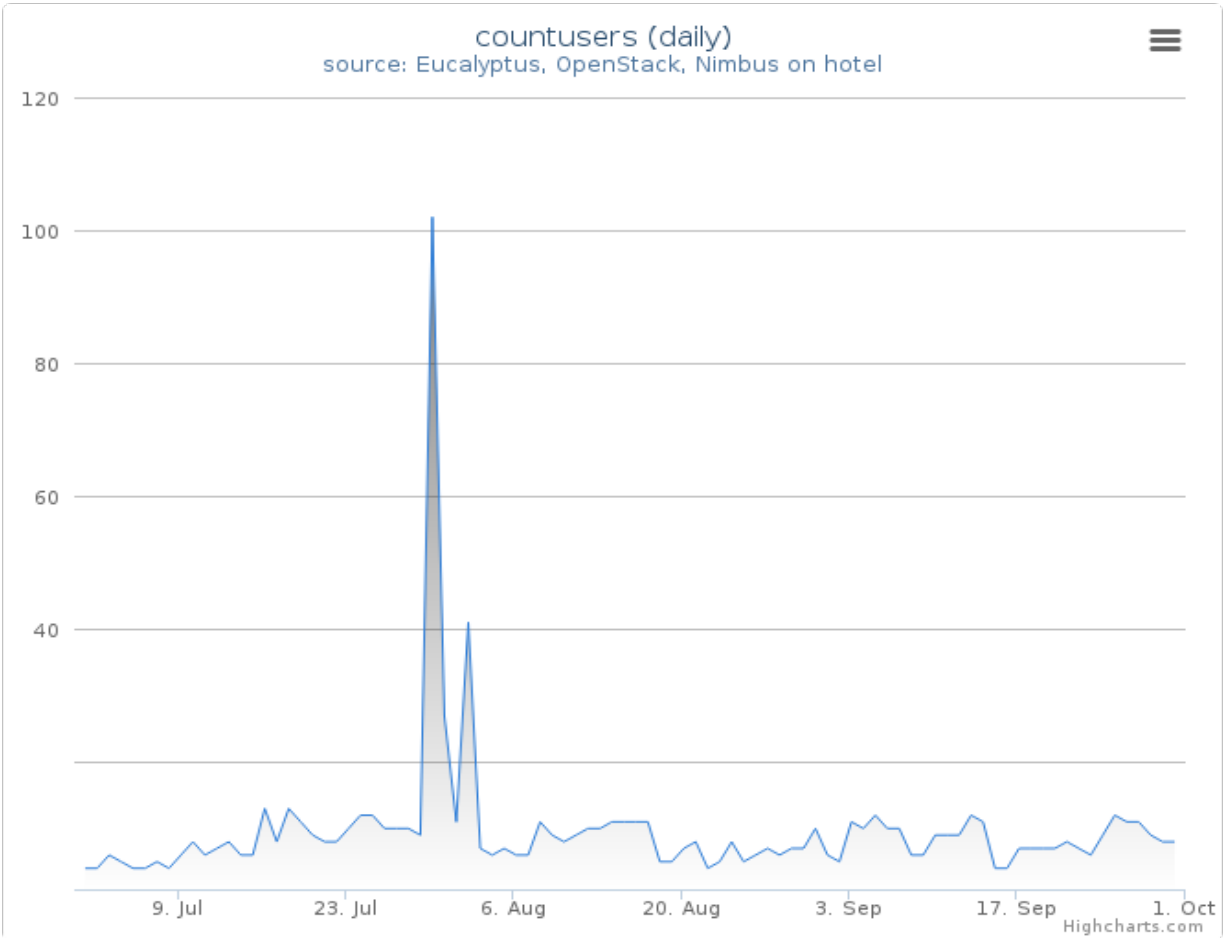
4.1.2 Summary (Daily)

Figure 2: Users count

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

- Period: July 01 – September 30, 2012
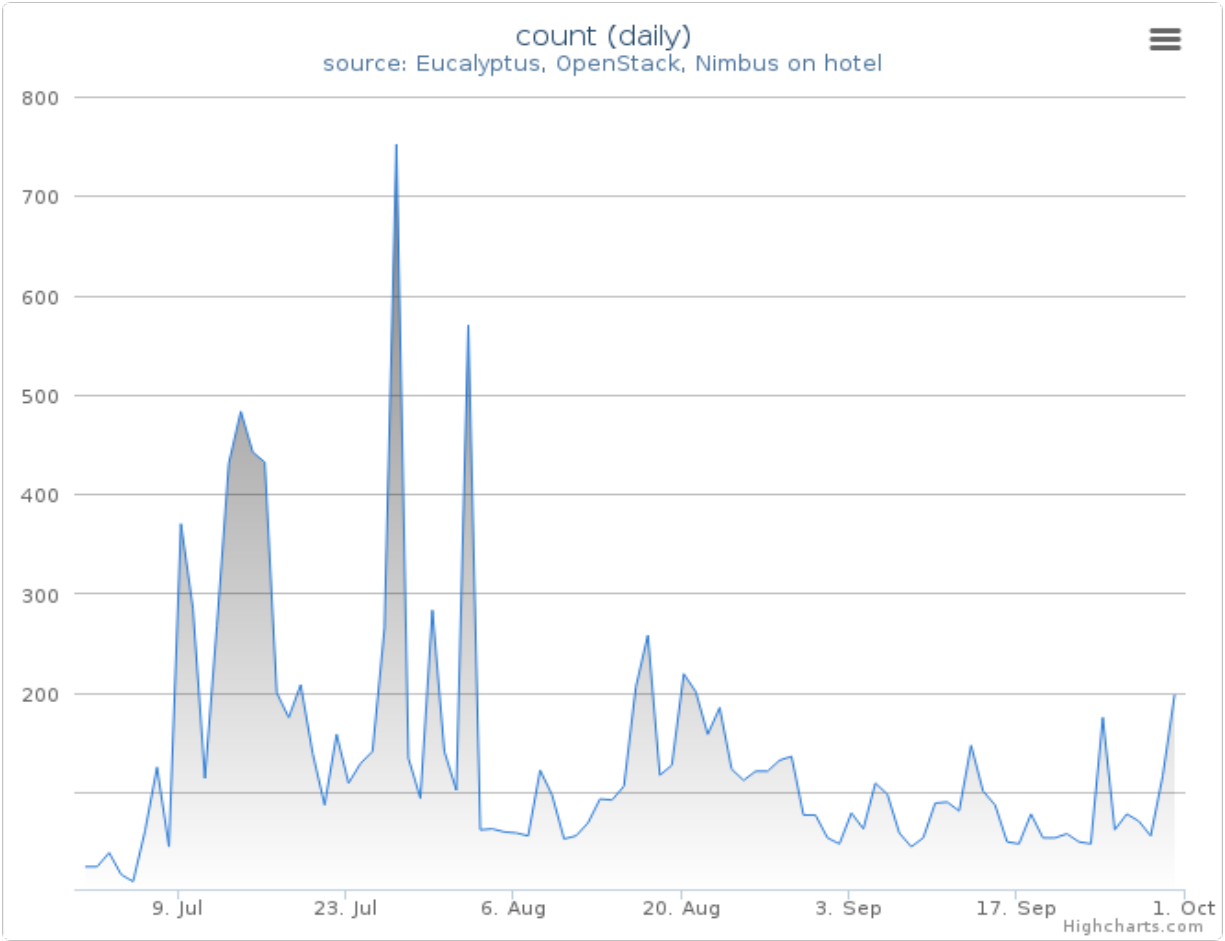- Cloud(IaaS): nimbus
- Hostname: hotel

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: July 01 – September 30, 2012
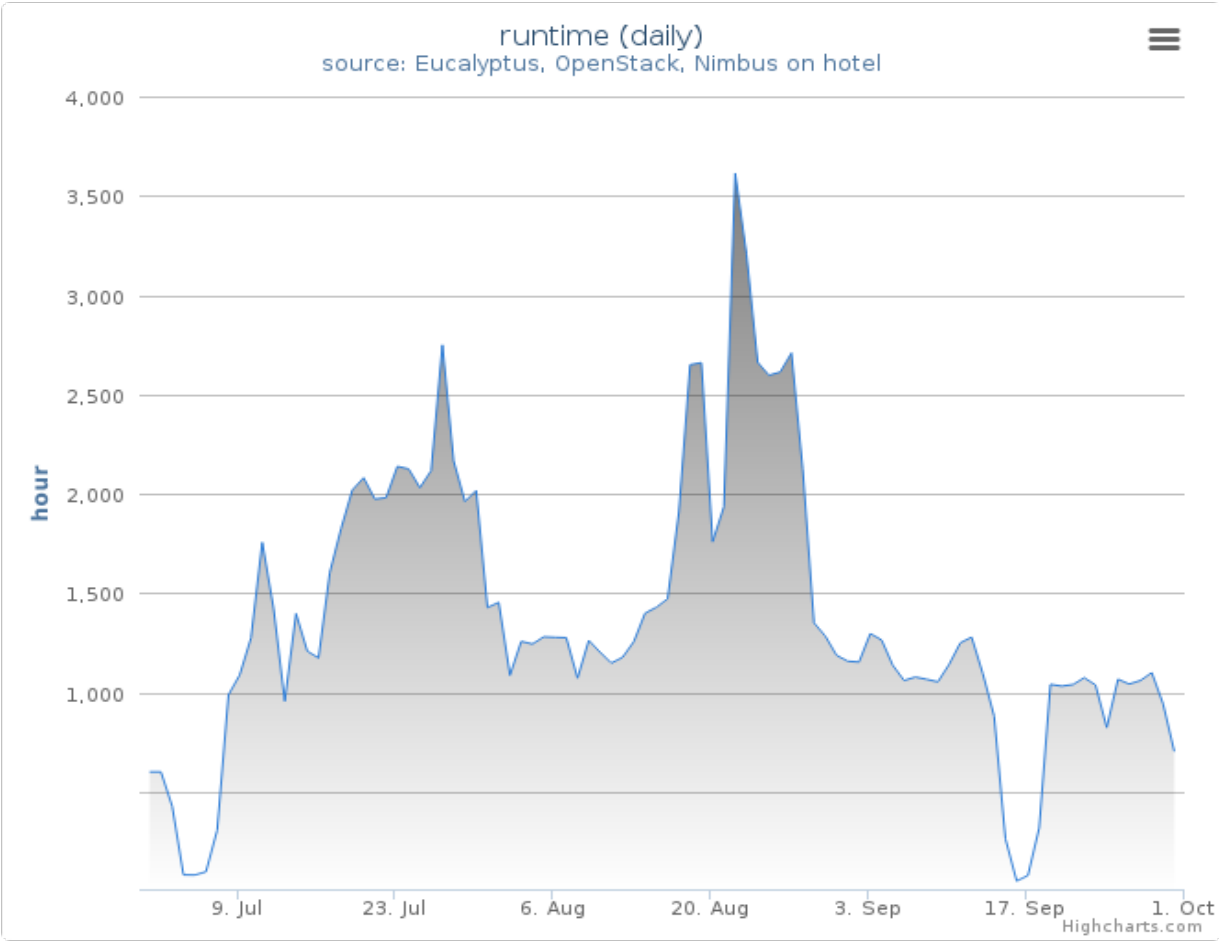- Cloud(IaaS): nimbus
- Hostname: hotel

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: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

- Hostname: hotel
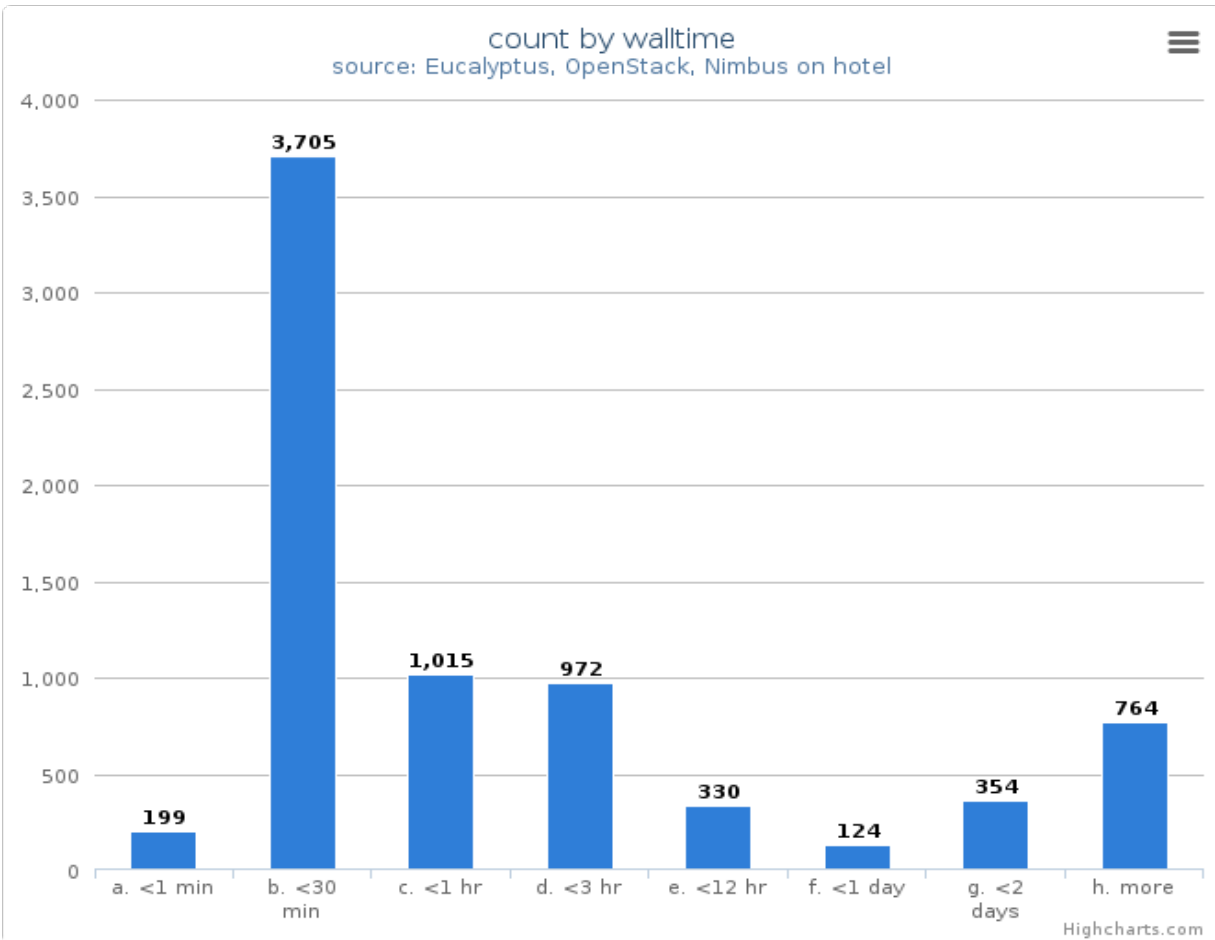
4.2 Distribution

Figure 5: VM count by wall time
This chart illustrates usage patterns of VM instances in terms of running wall time.

- Period: July 01 – September 30, 2012
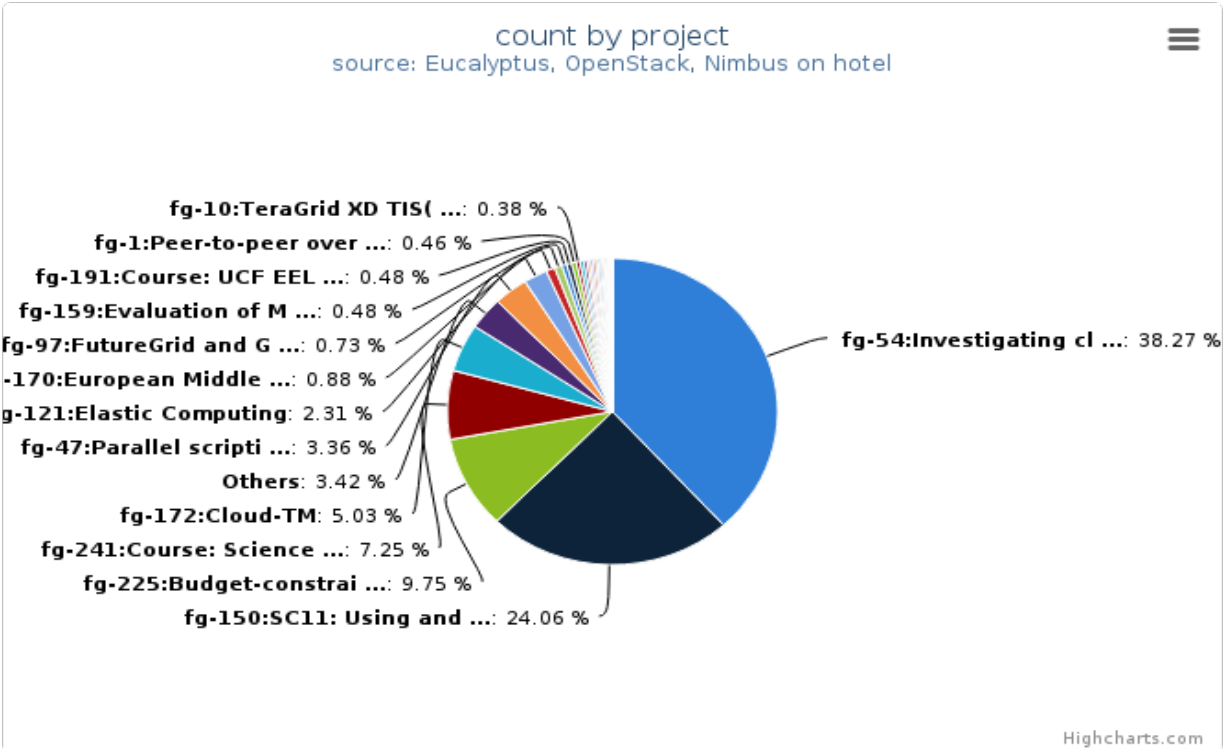- Cloud(IaaS): nimbus
- Hostname: hotel

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: July 01 – September 30, 2012

- 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	2733
fg-150:SC11: Using and Building Infrastructure Clouds for Science	1718
fg-225:Budget-constrained workflow scheduler	696
fg-241:Course: Science Cloud Summer School 2012	518
fg-172:Cloud-TM	359
Others	244
fg-47:Parallel scripting using cloud resources	240
fg-121:Elastic Computing	165
fg-170:European Middleware Initiative (EMI)	63
fg-97:FutureGrid and Grid'5000 Collaboration	52
fg-159:Evaluation of MPI Collectives for HPC Applications on Distributed Virtualized Environments	34
	Continued on next page

Table 4.1 – continued from previous page

| Project	Value
fg-191:Course: UCF EEL6938 Data-intensive computing and Cloud Class	34
fg-1:Peer-to-peer overlay networks and applications in virtual networks and virtual clusters	33
fg-10:TeraGrid XD TIS(Technology Insertion Service) Technology Evaluation Laboratory	27
fg-186:Course: Spring 2012 B534 Distributed systems Graduate Course	26
fg-201:ExTENCI Testing, Validation, and Performance	22
fg-259:Performance analysis of a parallel CFD solver in cloud computing clusters	21
fg-82:FG General Software Development	20
fg-253:Characterizing Performance of Infrastructure Clouds	20
fg-130:Optimizing Scientific Workflows on Clouds	17
fg-257:Particle Physics Data analysis cluster for ATLAS LHC experiment	17
fg-112:University of California (UC) Grid and Cloud Project	13
fg-60:Wide area distributed file system for MapReduce applications on FutureGrid platform	10
fg-78:Exploring VMs for Open Science Grid Services	10
fg-52:Cost-Aware Cloud Computing	9
fg-238:HPC meets Clouds	9
fg-229:Course: XSEDE 2012 Tutorial	7
fg-214:Mining Interactions between Network Community Structure and Information Diffusion	6
fg-146:SLASH2 Testing in a Wide Area Environment	6
fg-213:Course: Cloud Computing class - second edition	3
fg-143:Course: Cloud Computing for Data Intensive Science Class	3
fg-234:CCTools Scalability Testing	2
fg-20:Development of an information service for FutureGrid	1
fg-69:Investigate provenance collection for MapReduce	1
fg-247:Course: Cloud Computing and Storage Class	1
fg-200:MapReduce Based Ray Tracing Class Project	1
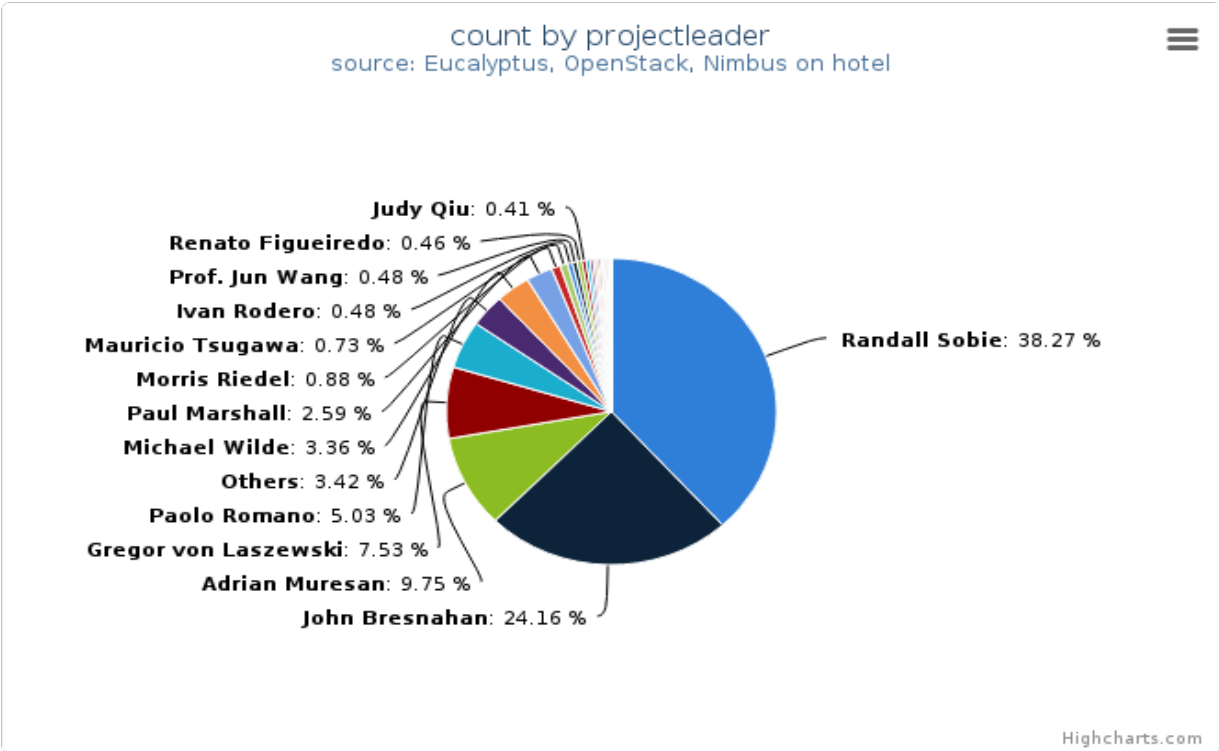
Figure 7: VMs count by project leader

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

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

- Hostname: hotel

Table 4.2: VMs count by project leader

Projectleader	Value
Randall Sobie	2733
John Bresnahan	1725
Adrian Muresan	696
Gregor von Laszewski	538
Paolo Romano	359
Others	244
Michael Wilde	240
Paul Marshall	185
Morris Riedel	63
Mauricio Tsugawa	52
Ivan Rodero	34
Continued on next page	

Table 4.2 – continued from previous page

Projectleader	Value
Prof. Jun Wang	34
Renato Figueiredo	33
Judy Qiu	29
John Lockman	27
Preston Smith	22
Pratanu Roy	21
Weiwei Chen	17
Doug Benjamin	17
Prakashan Korambath	13
	10
Lizhe Wang	10
David Lowenthal	9
Li Chunyan	9
Yong-Yeol Ahn	6
J Ray Scott	6
Massimo Canonico	3
Douglas Thain	2
Andy Li	1
Hyungro Lee	1
Jiaan Zeng	1
Jingya Wang	1

count by institution
source: Eucalyptus, OpenStack, Nimbus on hotel

University of Victoria: 38.27 %
Nimbus: 24.16 %
ENS Lyon: 9.75 %
Indiana University: 8.19 %
INESC ID: 5.03 %
Others: 3.42 %
Argonne National Labor ...: 3.36 %
University of Colorado ...: 2.59 %
University of Florida: 1.2 %
Juelich Supercomputing ...: 0.88 %
Rutgers University: 0.48 %
University of Central ...: 0.48 %
University of Texas at ...: 0.38 %
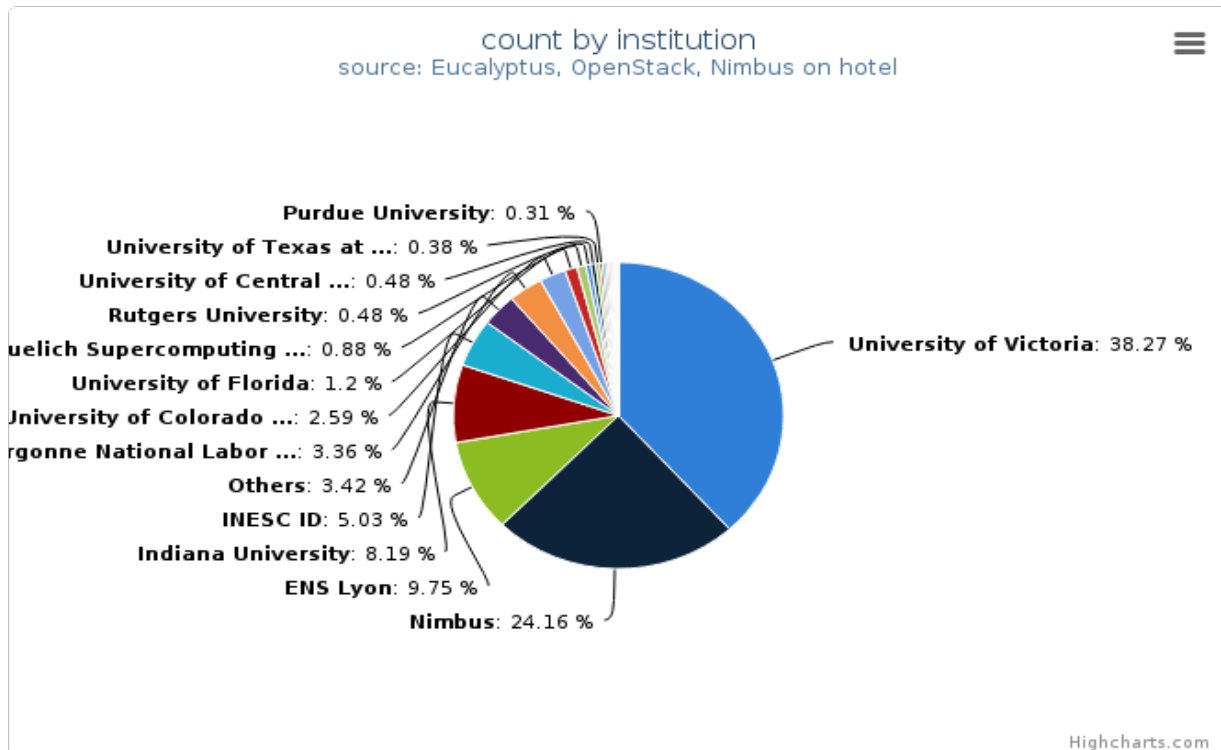Purdue University: 0.31 %

Highcharts.com

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: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

- Hostname: hotel

Table 4.3: VMs count by institution

Institution	Value
University of Victoria	2733
Nimbus	1725
ENS Lyon	696
Indiana University	585
INESC ID	359
Others	244
Argonne National Laboratory	240
University of Colorado at Boulder	185
University of Florida	86
Juelich Supercomputing Centre	63
Rutgers University	34
University of Central Florida	34
University of Texas at Austin	27
Purdue University	22
Texas A&M University	21
University of Southern California	17
Duke University	17
UCLA	13
	10
YunNan University	9
University of Arizona	9
Carnegie Mellon University	6
University of Piemonte Orientale	3
University of Notre Dame	2
Computer Science	1
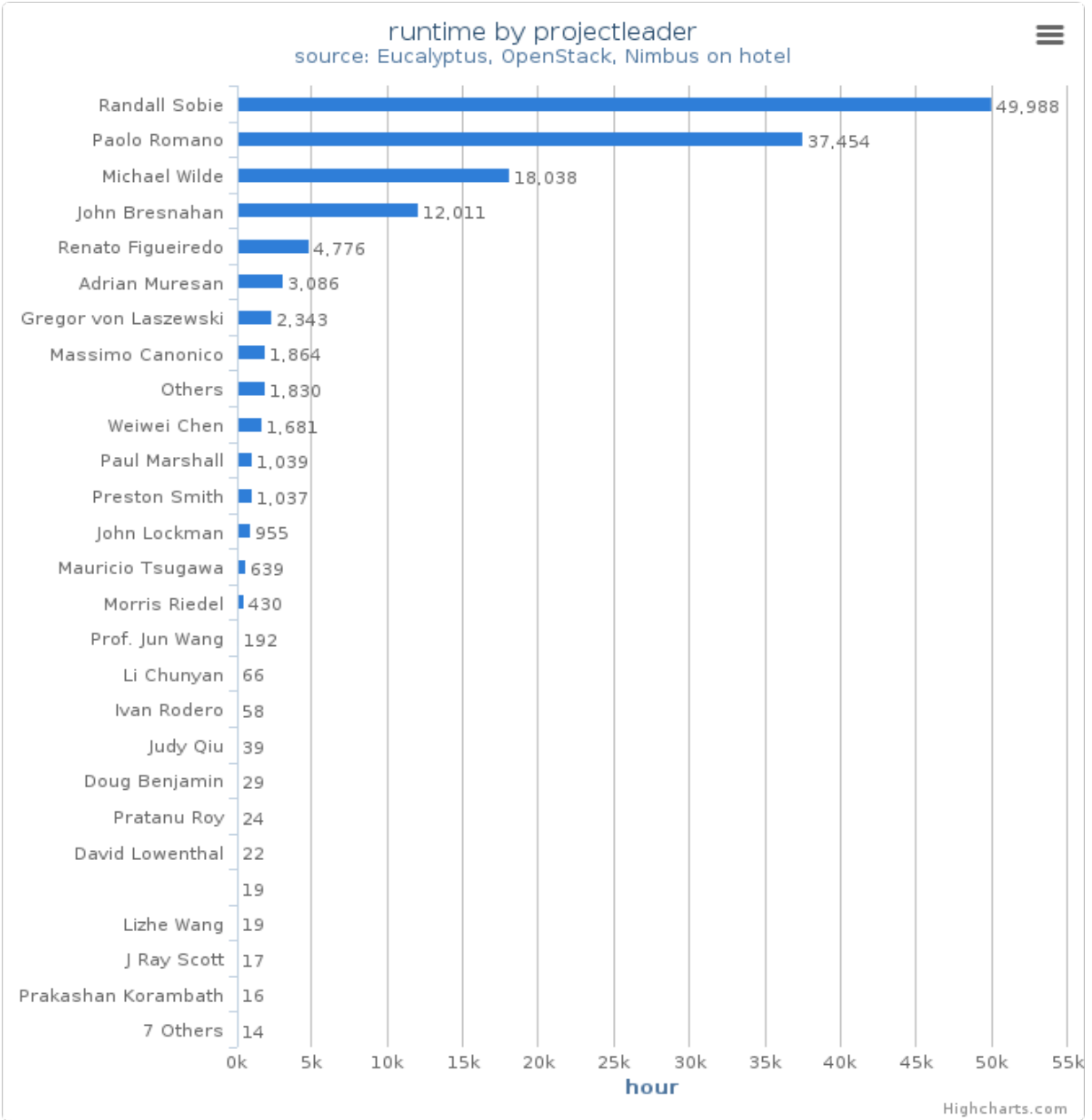
Figure 9: Wall time (hours) by project leader

This chart illustrates proportionate total run times by project leader.

- Period: July 01 – September 30, 2012

- 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.
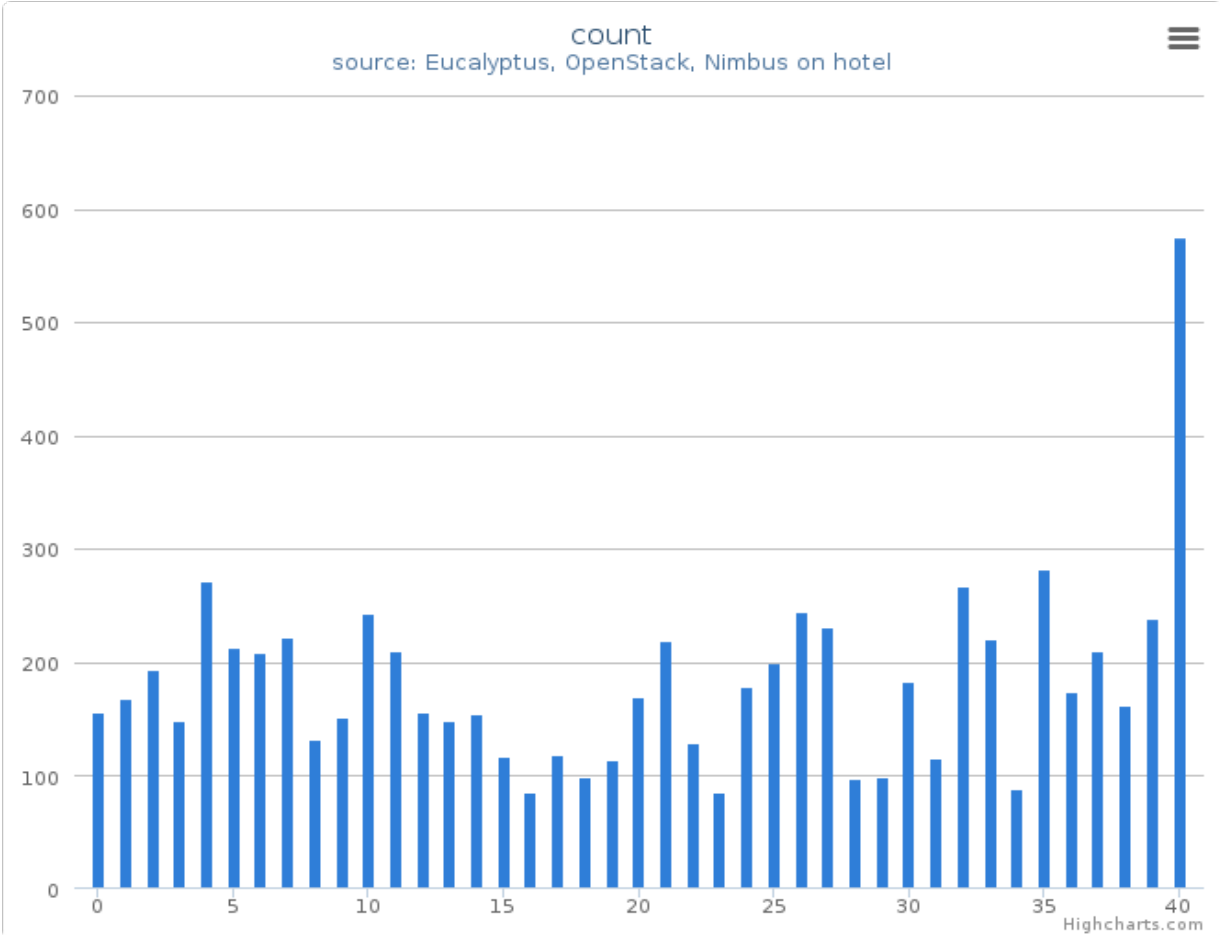

Figure 10: VMs count by systems (compute nodes) in Cluster (hotel)
This column chart represents VMs count among systems.

- Period: July 01 – September 30, 2012
- Cloud(IaaS): nimbus
- Hostname: hotel
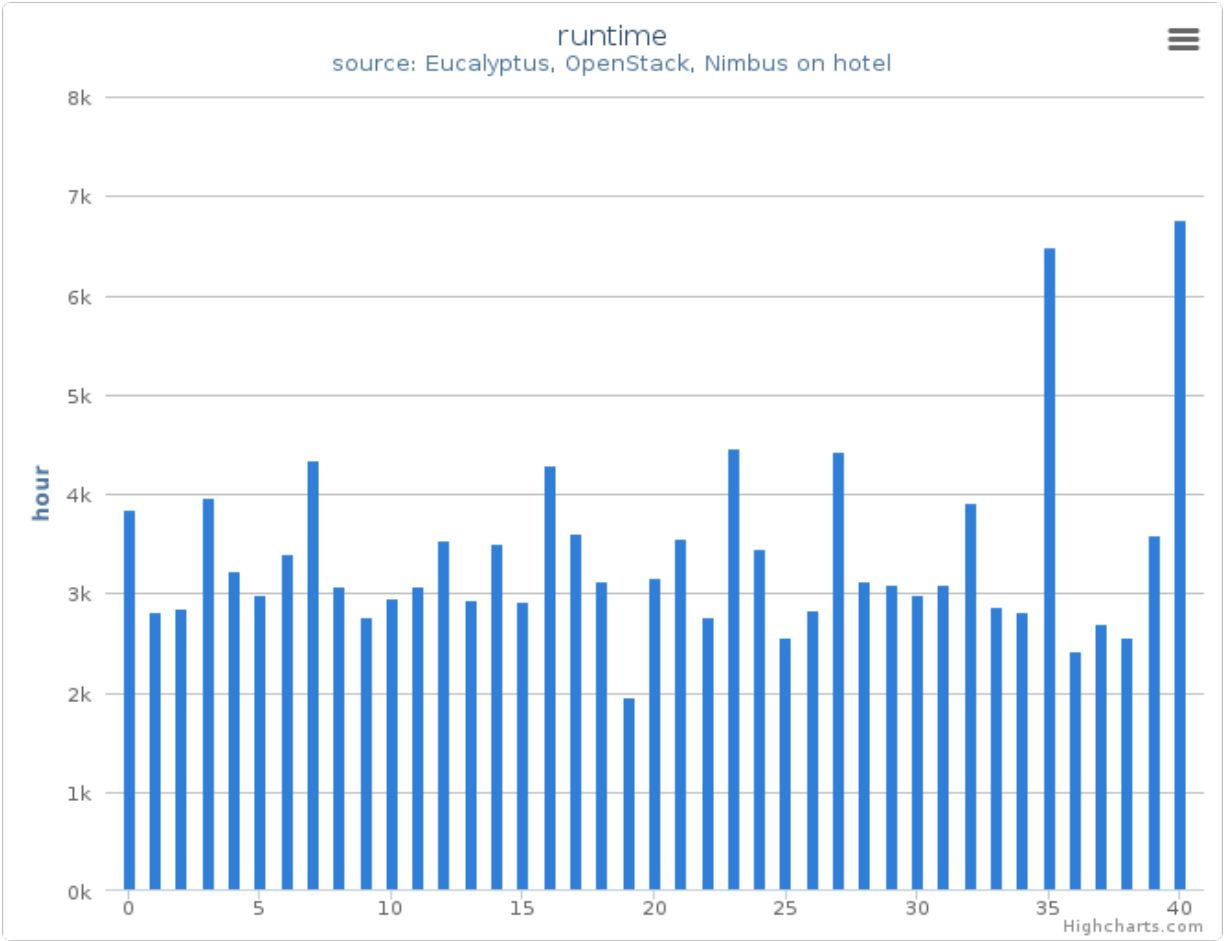
Figure 11: Wall time (hours) by systems (compute nodes) in Cluster (hotel)
This column chart represents wall time among systems.

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

- Hostname: hotel

USAGE REPORT ALAMO

- Period: July 01 – September 30, 2012

- Hostname: alamo.futuregrid.org

- Services: nimbus

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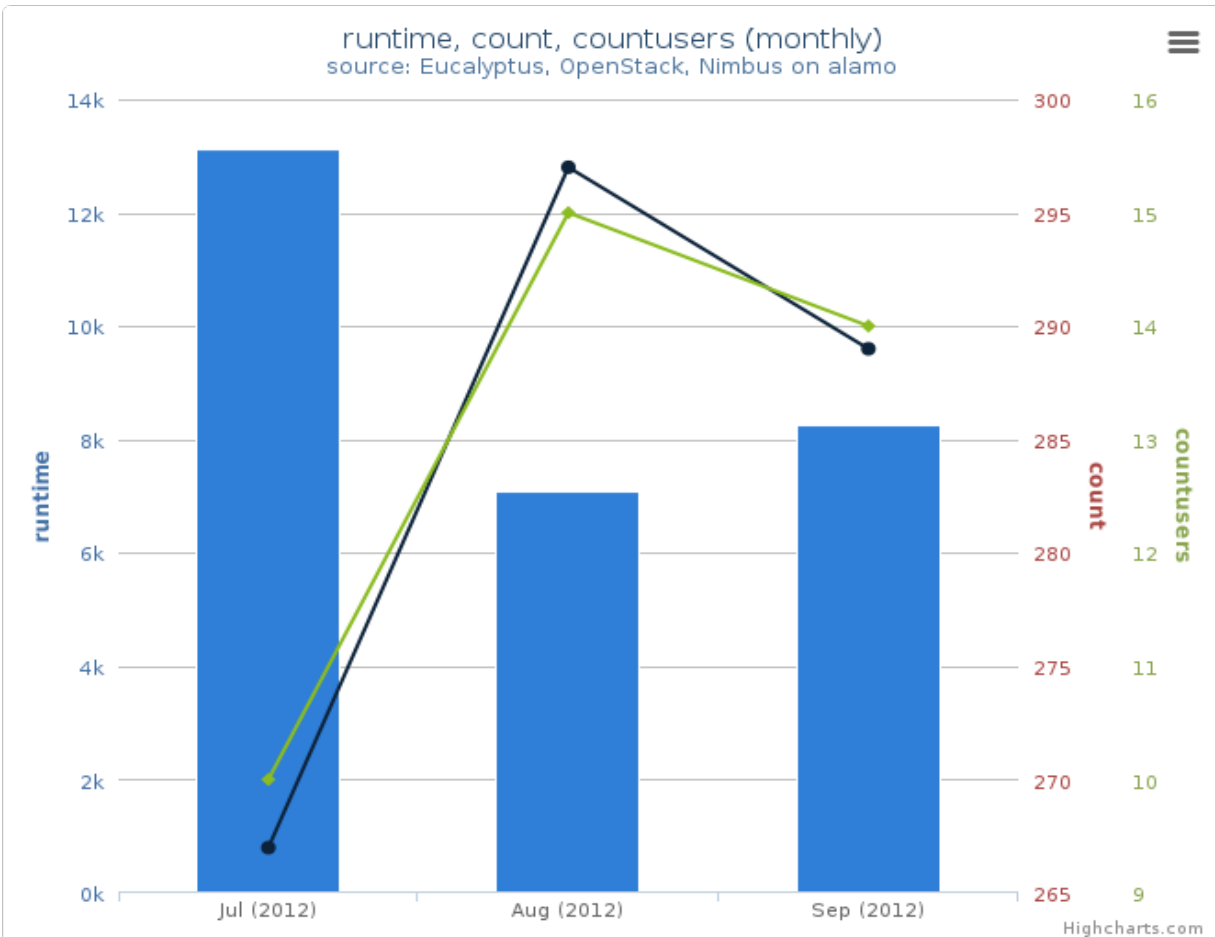
Figure 1: Average monthly usage data (wall time (hour), launched VMs, users)

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

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

- 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)
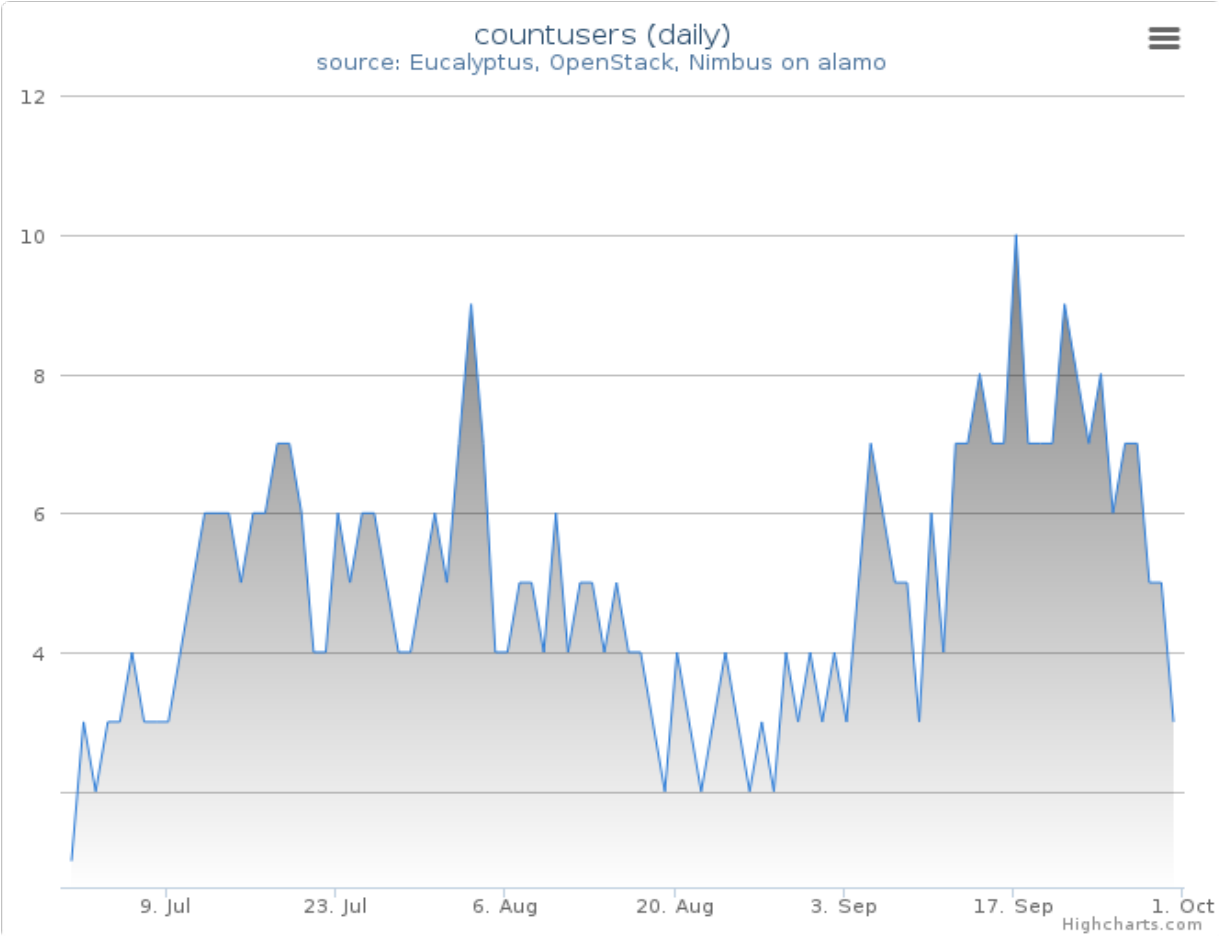
Figure 2: Users count

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

- Period: July 01 – September 30, 2012
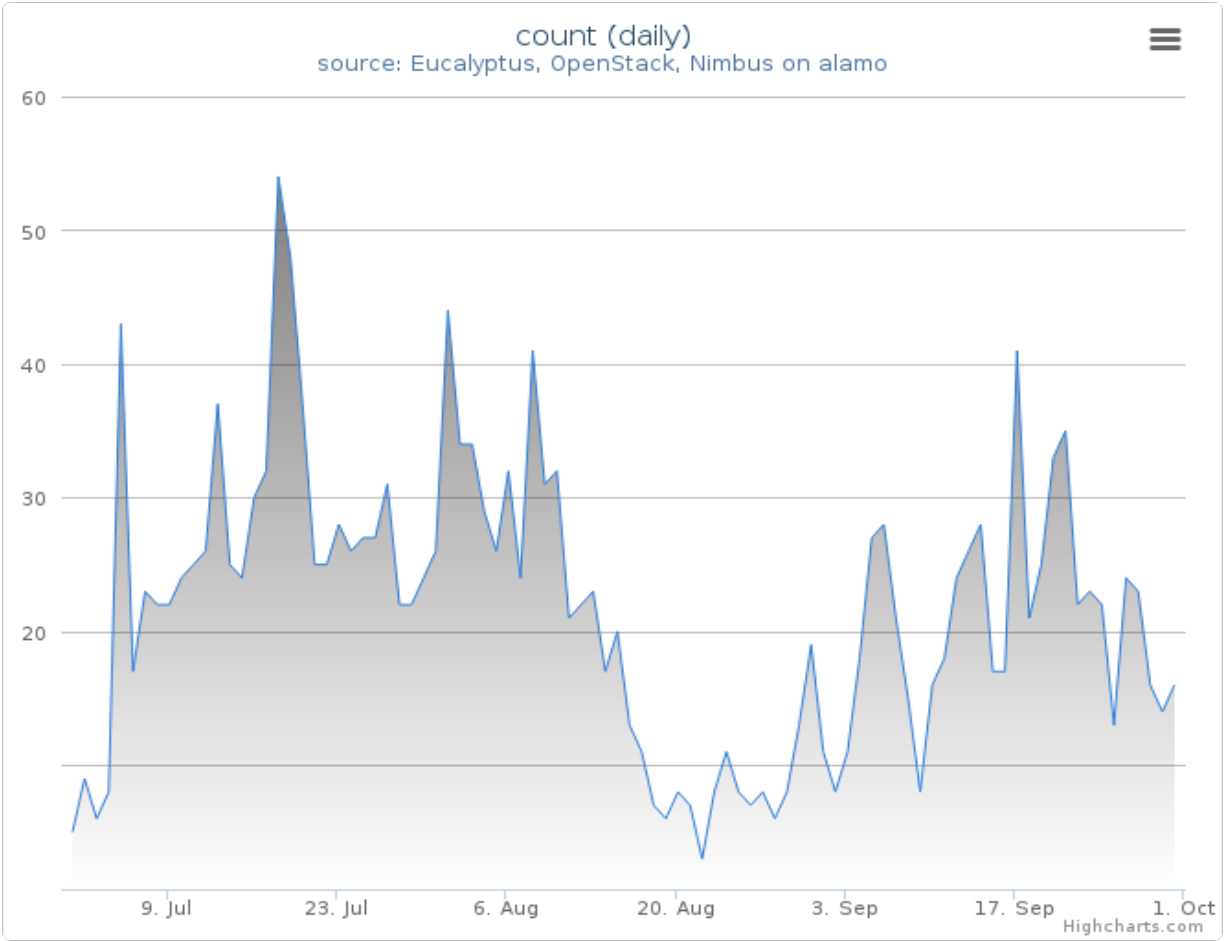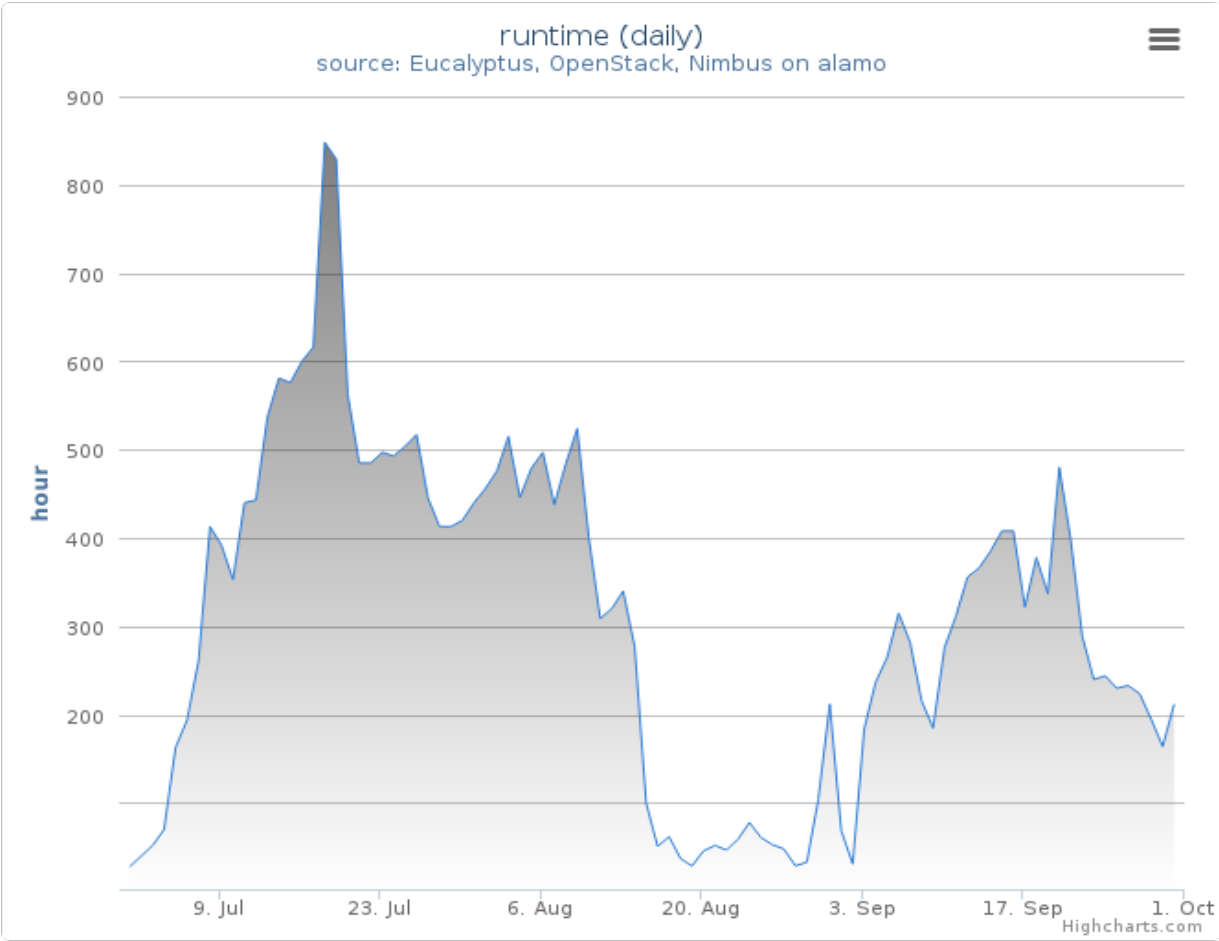
- Cloud(IaaS): nimbus

- 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: July 01 – September 30, 2012
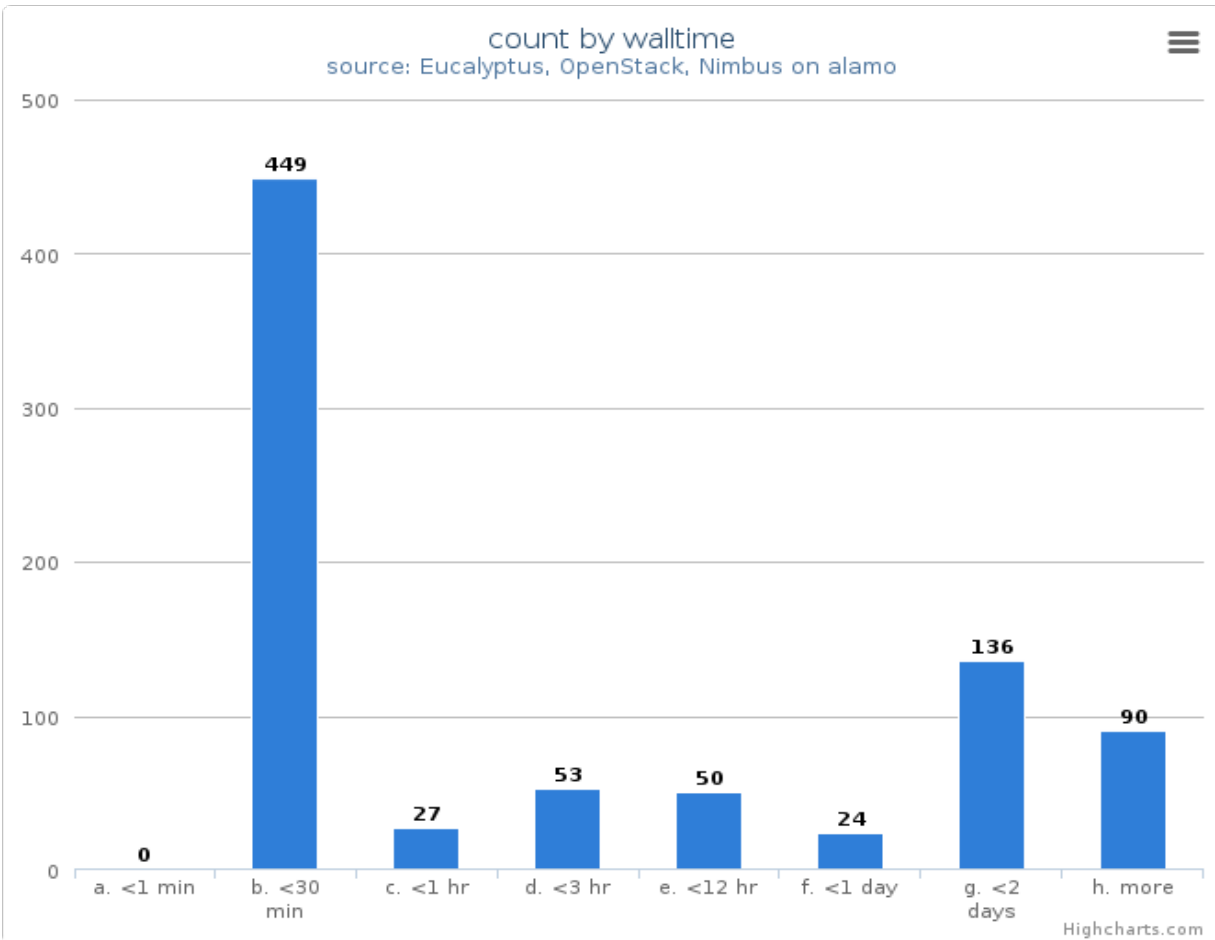
- Cloud(IaaS): nimbus

- 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: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

- 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: July 01 – September 30, 2012
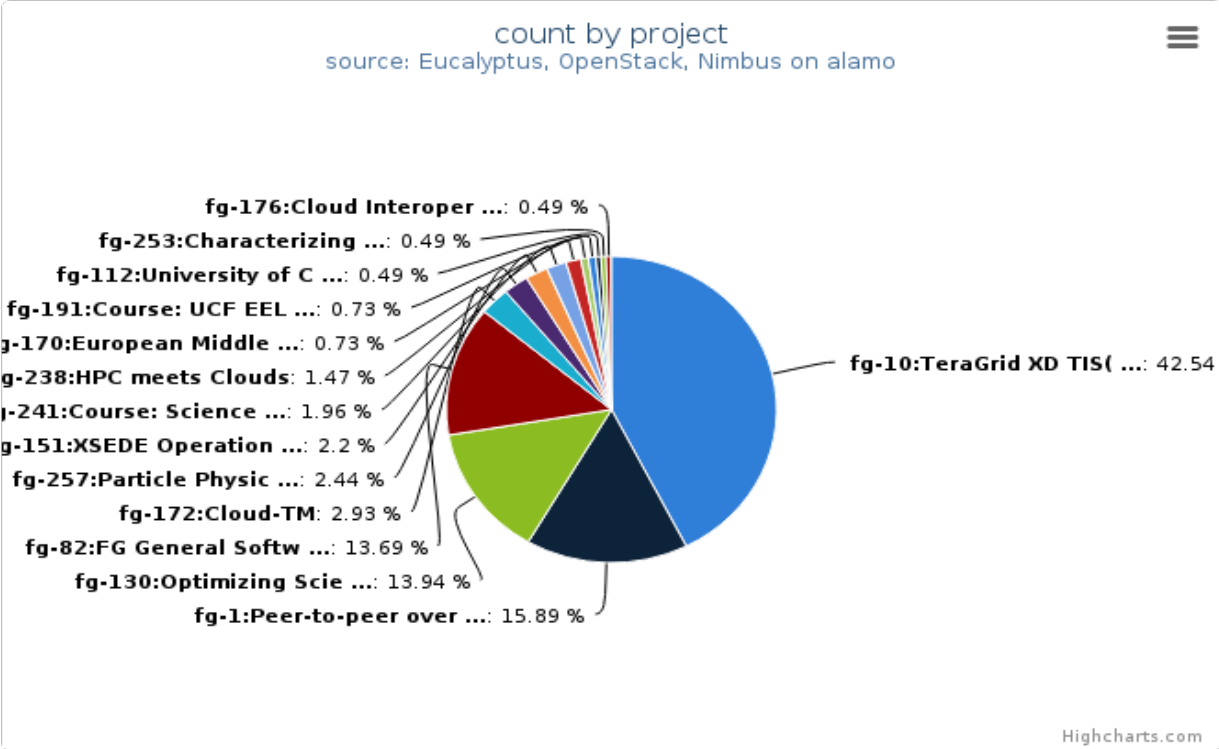
- Cloud(IaaS): nimbus

- 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: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

- Hostname: alamo

Table 5.1: VMs count by project

| Project	Value
fg-10:TeraGrid XD TIS(Technology Insertion Service) Technology Evaluation Laboratory	174
fg-1:Peer-to-peer overlay networks and applications in virtual networks and virtual clusters	65
fg-130:Optimizing Scientific Workflows on Clouds	57
fg-82:FG General Software Development	56
fg-172:Cloud-TM	12
fg-257:Particle Physics Data analysis cluster for ATLAS LHC experiment	10
fg-151:XSEDE Operations Group	9
fg-241:Course: Science Cloud Summer School 2012	8
fg-238:HPC meets Clouds	6
fg-170:European Middleware Initiative (EMI)	3
fg-191:Course: UCF EEL6938 Data-intensive computing and Cloud Class	3
fg-112:University of California (UC) Grid and Cloud Project	2
fg-253:Characterizing Performance of Infrastructure Clouds	2
fg-176:Cloud Interoperability Testbed	2
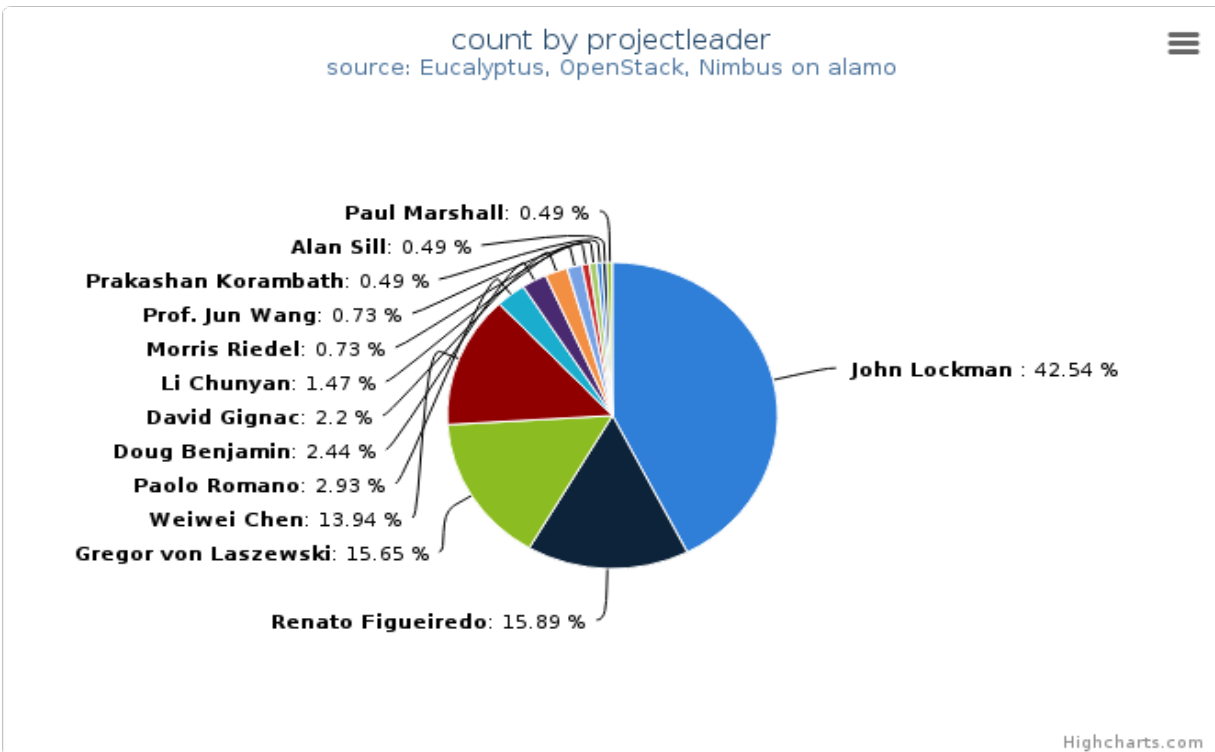
Figure 7: VMs count by project leader

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

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

- Hostname: alamo

Table 5.2: VMs count by project
leader

Projectleader	Value
John Lockman	174
Renato Figueiredo	65
Gregor von Laszewski	64
Weiwei Chen	57
Paolo Romano	12
Doug Benjamin	10
David Gignac	9
Li Chunyan	6
Morris Riedel	3
Prof. Jun Wang	3
Prakashan Korambath	2
Alan Sill	2
Paul Marshall	2
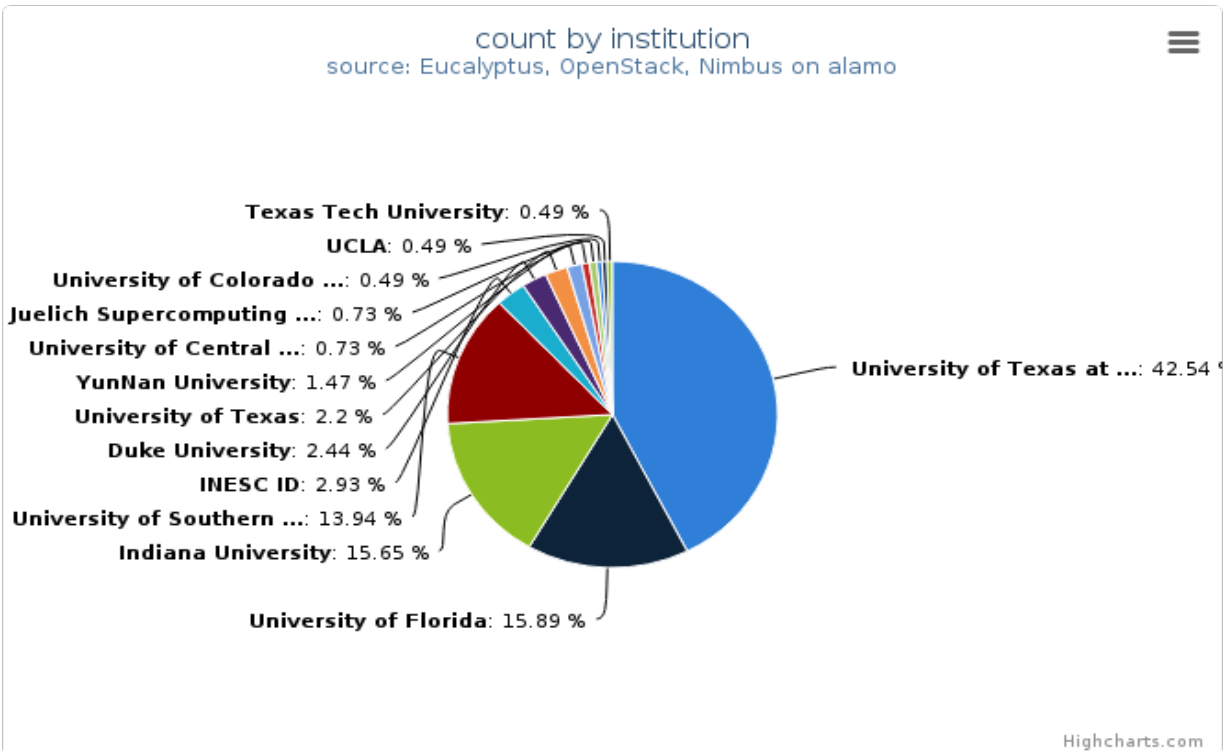
Figure 8: VMs count by institution

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

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

• Hostname: alamo

Table 5.3: VMs count by institution

Institution	Value
University of Texas at Austin	174
University of Florida	65
Indiana University	64
University of Southern California	57
INESC ID	12
Duke University	10
University of Texas	9
YunNan University	6
University of Central Florida	3
Juelich Supercomputing Centre	3
University of Colorado at Boulder	2
UCLA	2
Texas Tech University	2
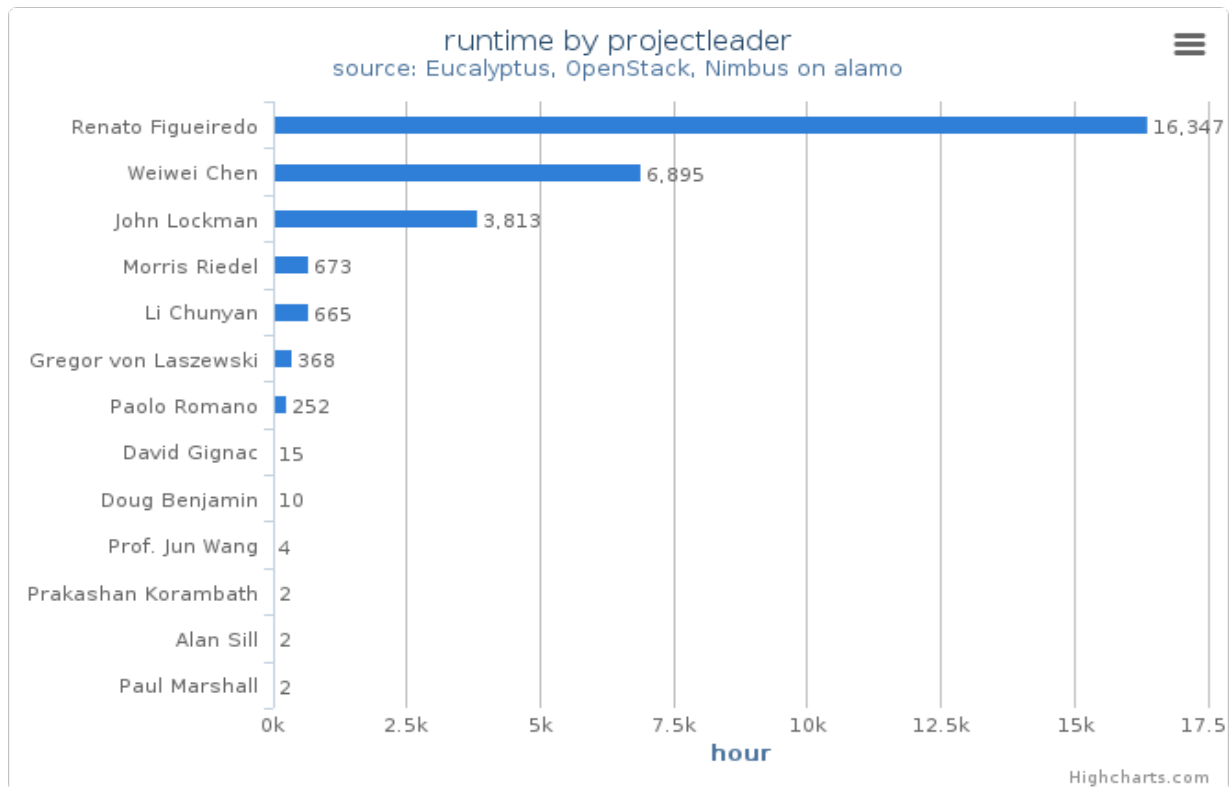
Figure 9: Wall time (hours) by project leader
This chart illustrates proportionate total run times by project leader.

• Period: July 01 – September 30, 2012

• Cloud(IaaS): nimbus

- Hostname: alamo

5.3 System information

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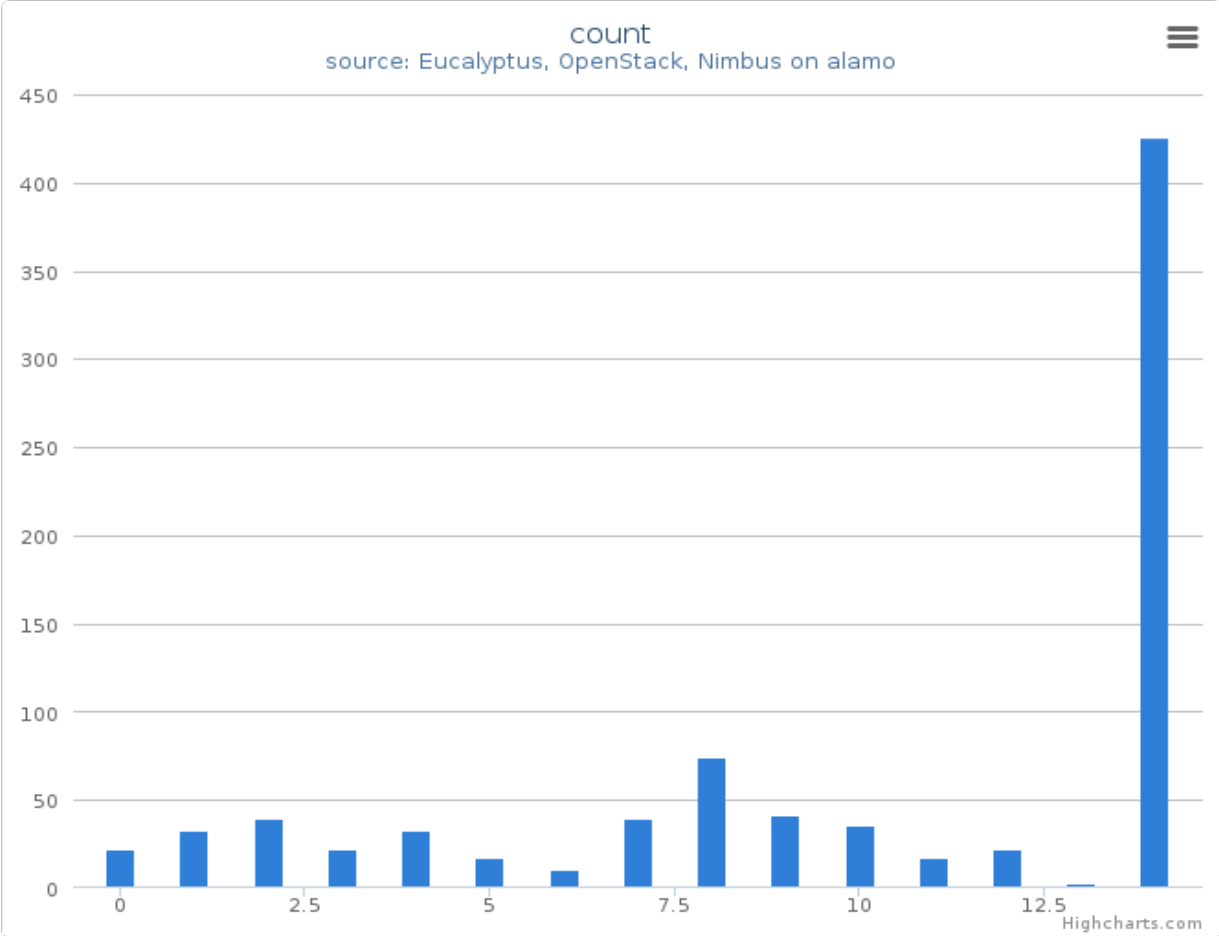

Figure 10: VMs count by systems (compute nodes) in Cluster (alamo)

This column chart represents VMs count among systems.

- Period: July 01 – September 30, 2012

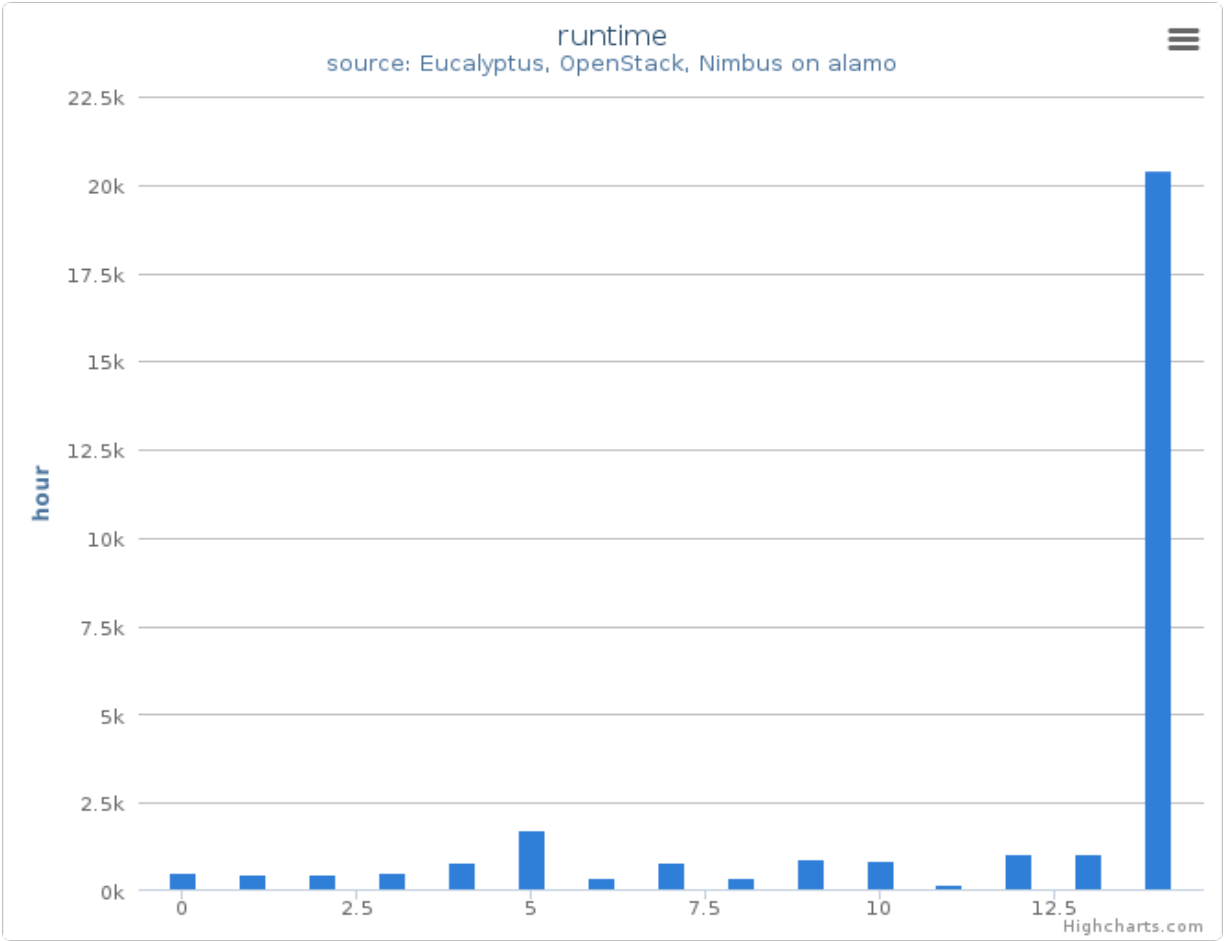- Cloud(IaaS): nimbus

- Hostname: alamo

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

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

- Hostname: alamo

USAGE REPORT FOXTROT

- Period: July 01 – September 30, 2012

- 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
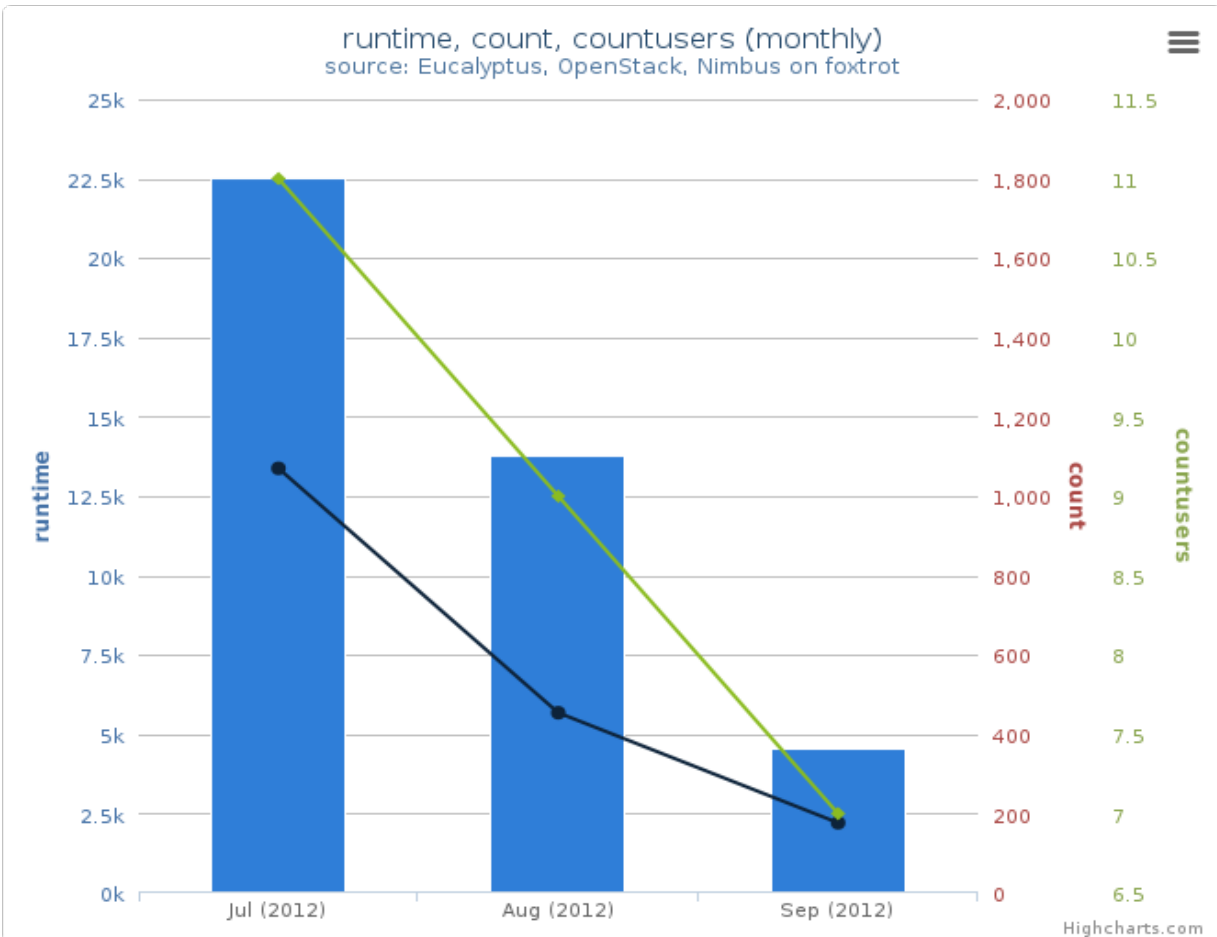
6.1 Histogram

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: July 01 – September 30, 2012

- 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
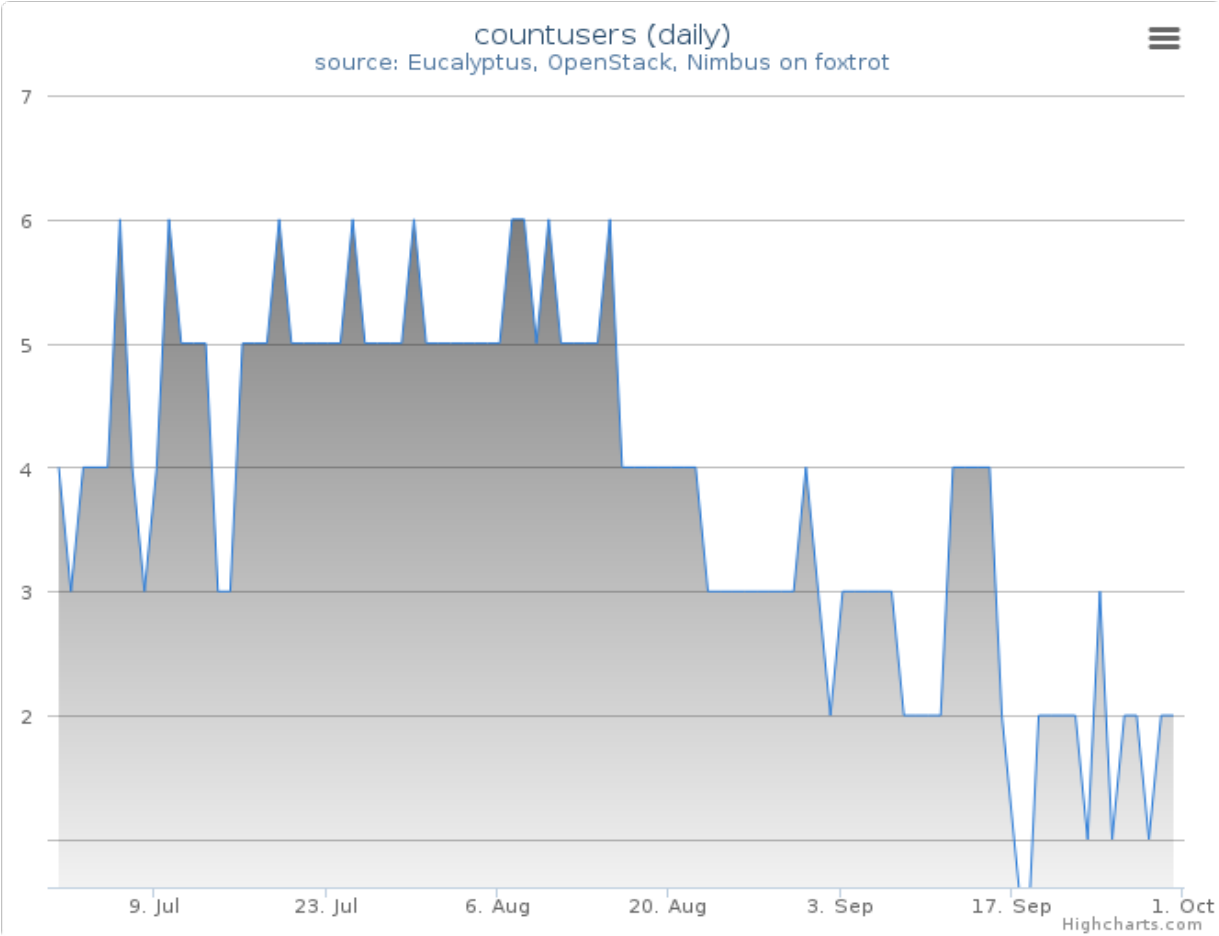
6.1.2 Summary (Daily)

Figure 2: Users count

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

- Period: July 01 – September 30, 2012
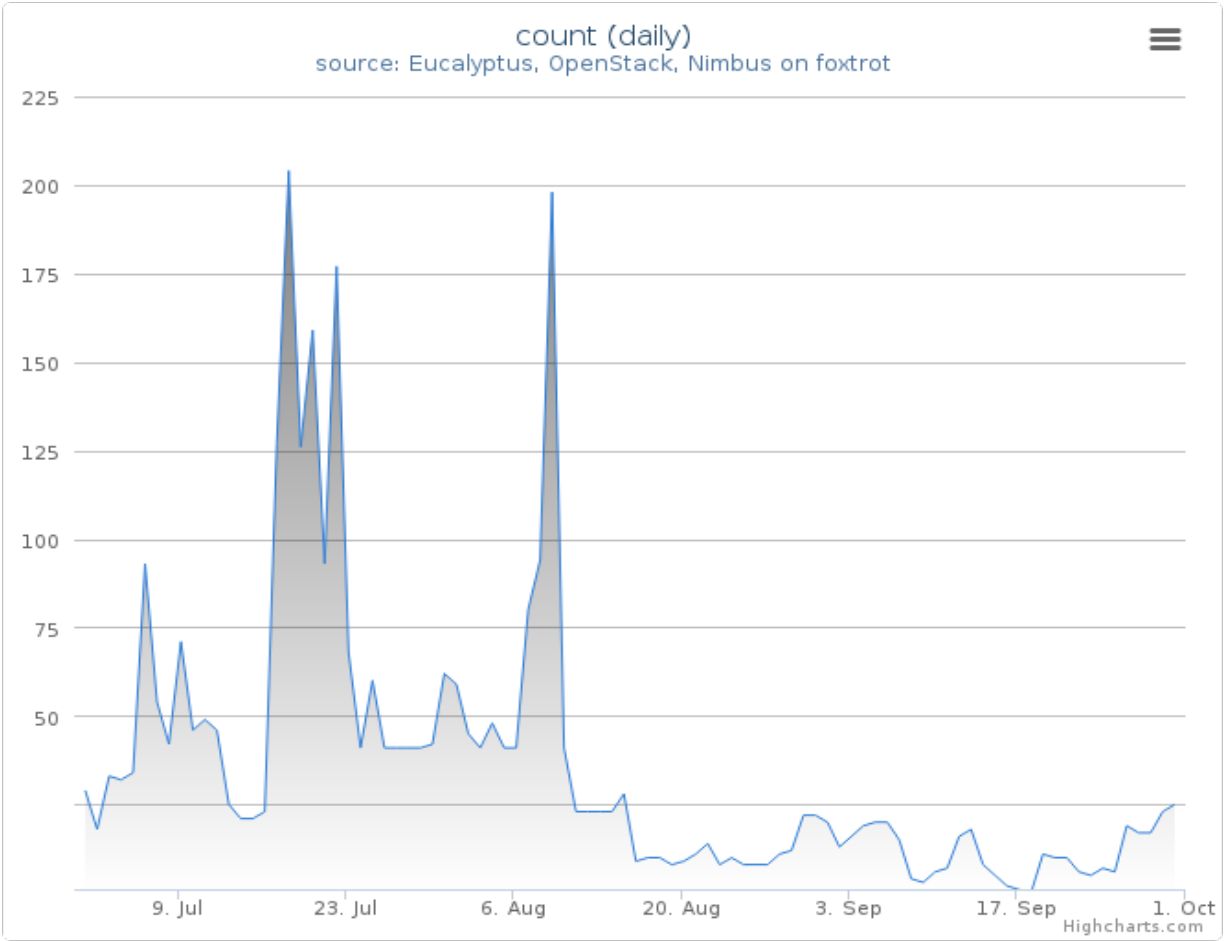- Cloud(IaaS): nimbus
- Hostname: foxtrot

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: July 01 – September 30, 2012
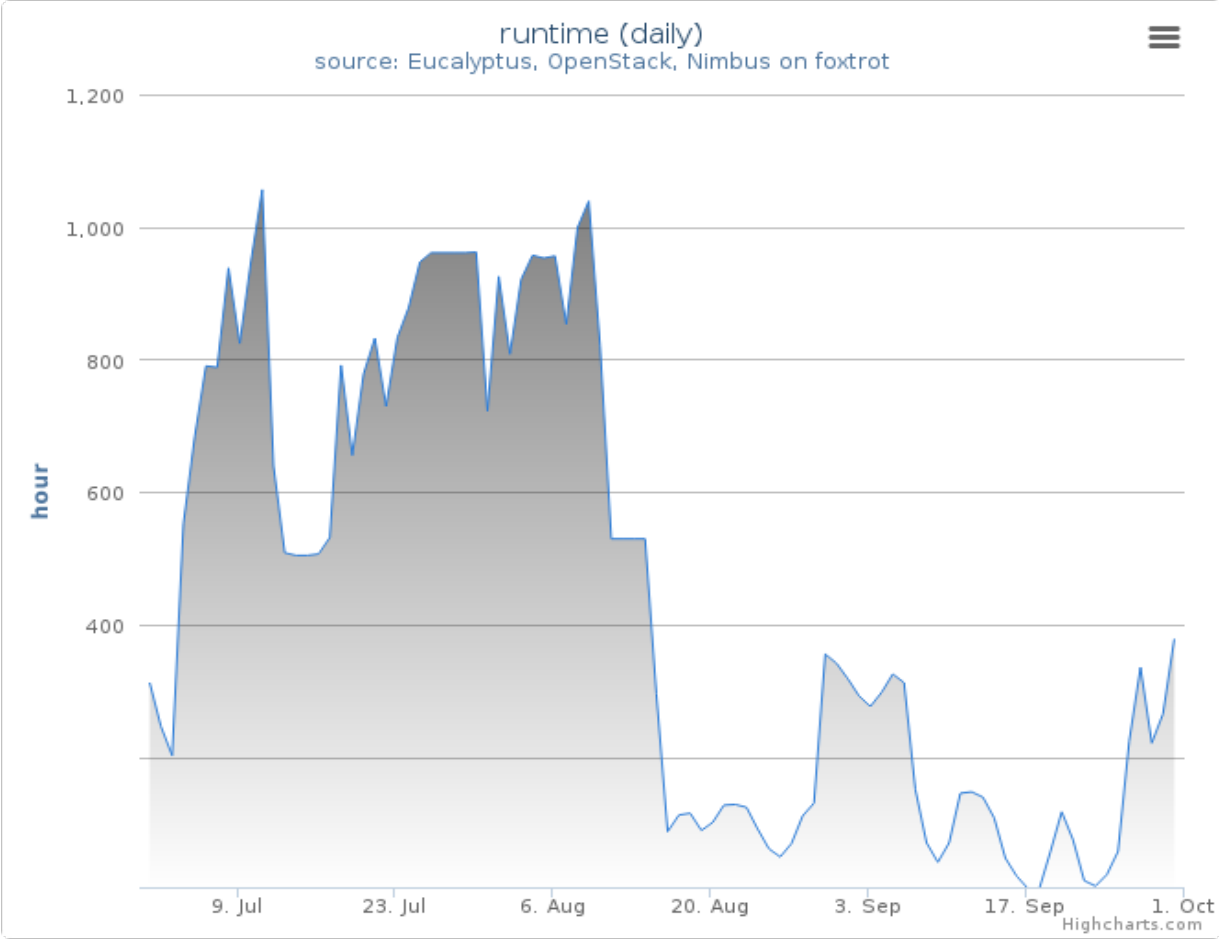- Cloud(IaaS): nimbus
- Hostname: foxtrot

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: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

- Hostname: foxtrot
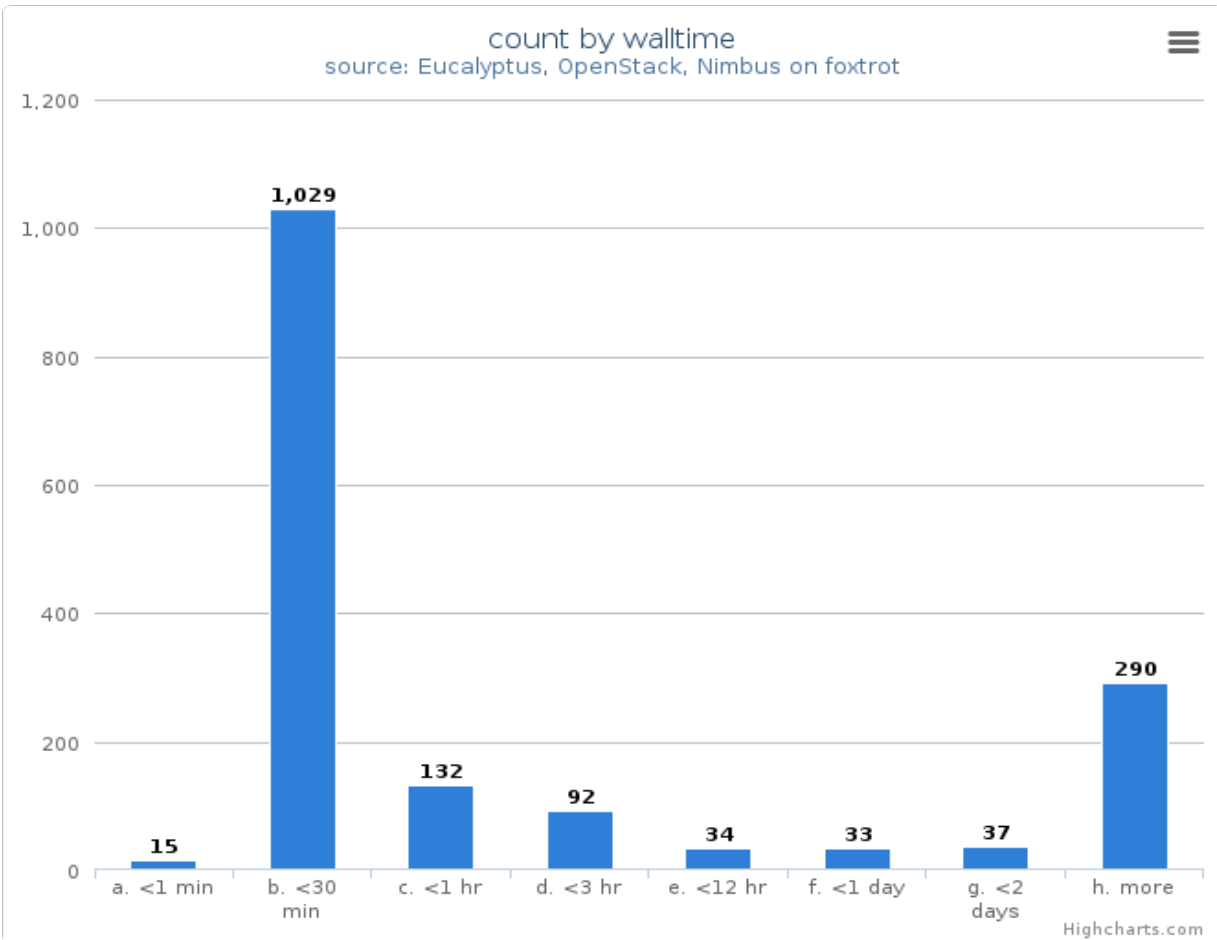
6.2 Distribution

Figure 5: VM count by wall time

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

- Period: July 01 – September 30, 2012
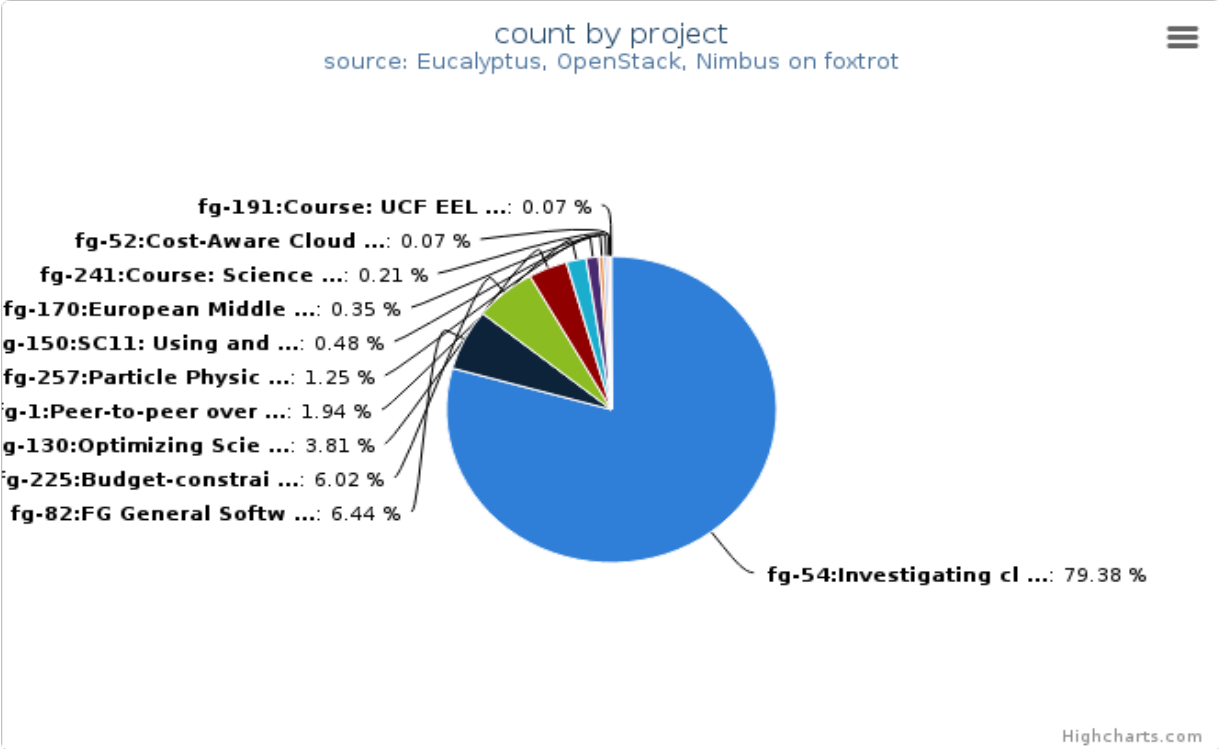
- Cloud(IaaS): nimbus

- 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: July 01 – September 30, 2012

- 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	1147
fg-82:FG General Software Development	93
fg-225:Budget-constrained workflow scheduler	87
fg-130:Optimizing Scientific Workflows on Clouds	55
fg-1:Peer-to-peer overlay networks and applications in virtual networks and virtual clusters	28
fg-257:Particle Physics Data analysis cluster for ATLAS LHC experiment	18
fg-150:SC11: Using and Building Infrastructure Clouds for Science	7
fg-170:European Middleware Initiative (EMI)	5
fg-241:Course: Science Cloud Summer School 2012	3
fg-52:Cost-Aware Cloud Computing	1
fg-191:Course: UCF EEL6938 Data-intensive computing and Cloud Class	1
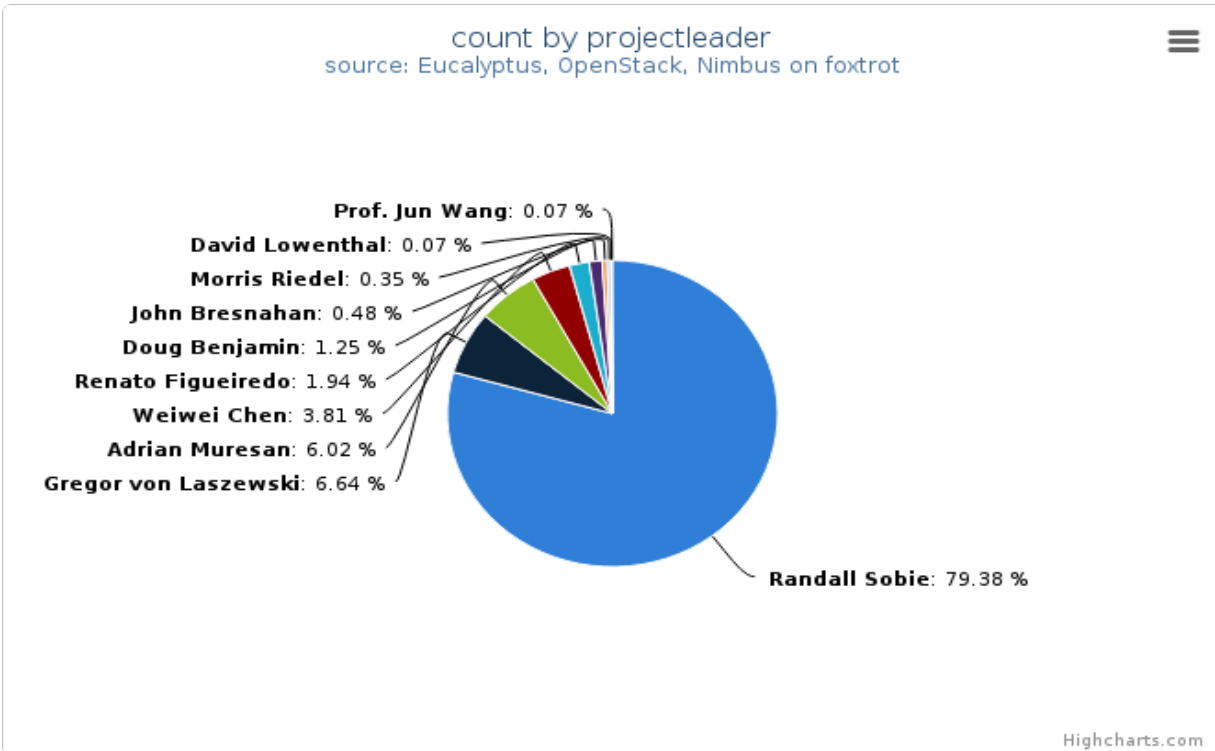
Figure 7: VMs count by project leader

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

- Period: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

- Hostname: foxtrot

Table 6.2: VMs count by project leader

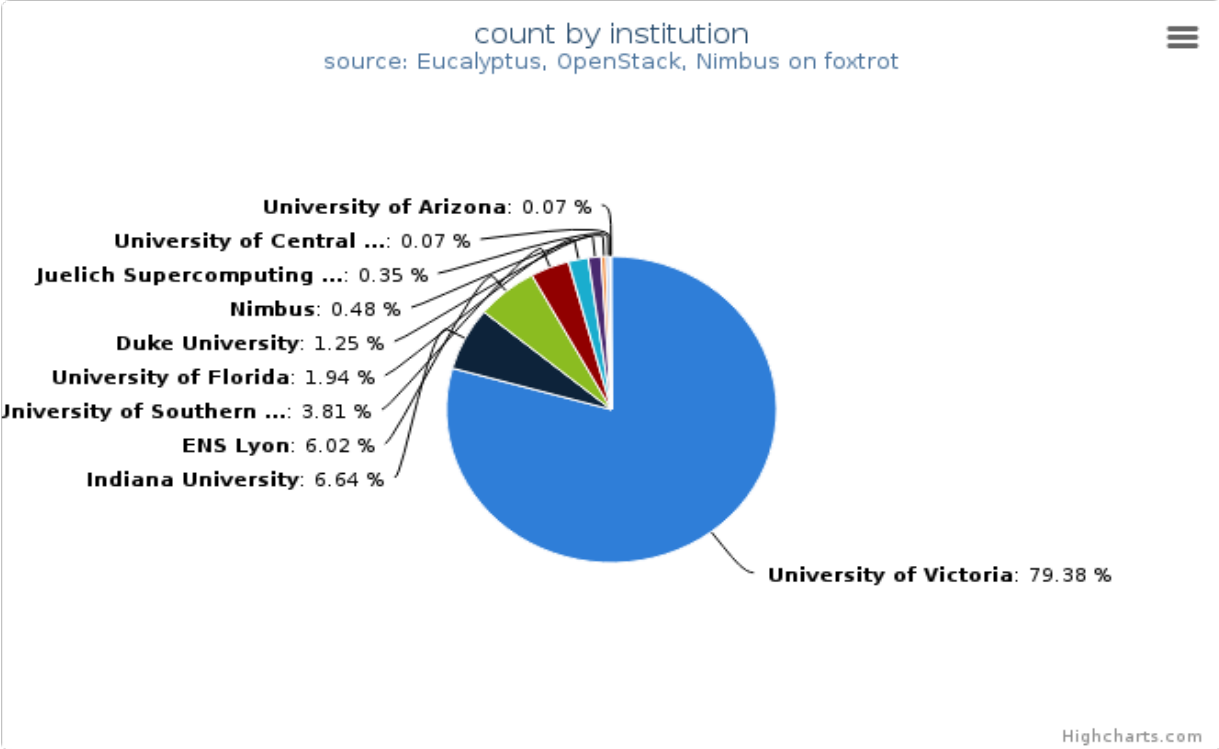| Projectleader	Value
Randall Sobie	1147
Gregor von Laszewski	96
Adrian Muresan	87
Weiwei Chen	55
Renato Figueiredo	28
Doug Benjamin	18
John Bresnahan	7
Morris Riedel	5
David Lowenthal	1
Prof. Jun Wang	1

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: July 01 – September 30, 2012

- Cloud(IaaS): nimbus

- Hostname: foxtrot

Table 6.3: VMs count by institution

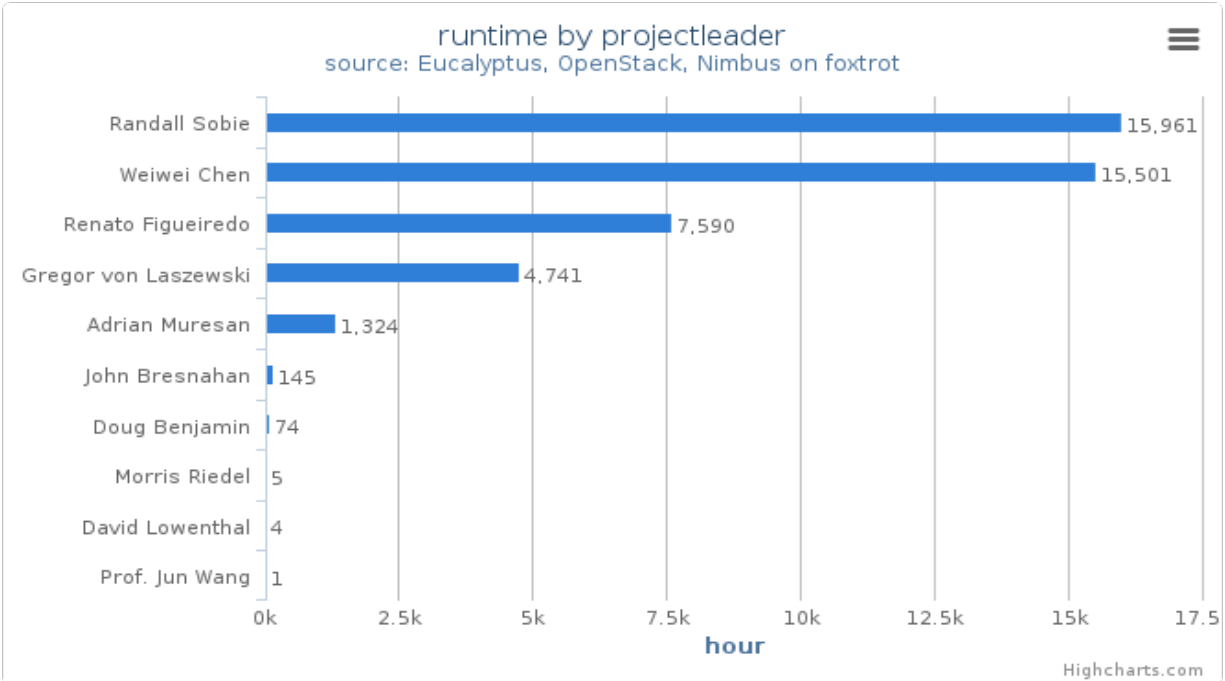| Institution	Value
University of Victoria	1147
Indiana University	96
ENS Lyon	87
University of Southern California	55
University of Florida	28
Duke University	18
Nimbus	7
Juelich Supercomputing Centre	5
University of Central Florida	1
University of Arizona	1

Figure 9: Wall time (hours) by project leader

This chart illustrates proportionate total run times by project leader.

- Period: July 01 – September 30, 2012

- 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.
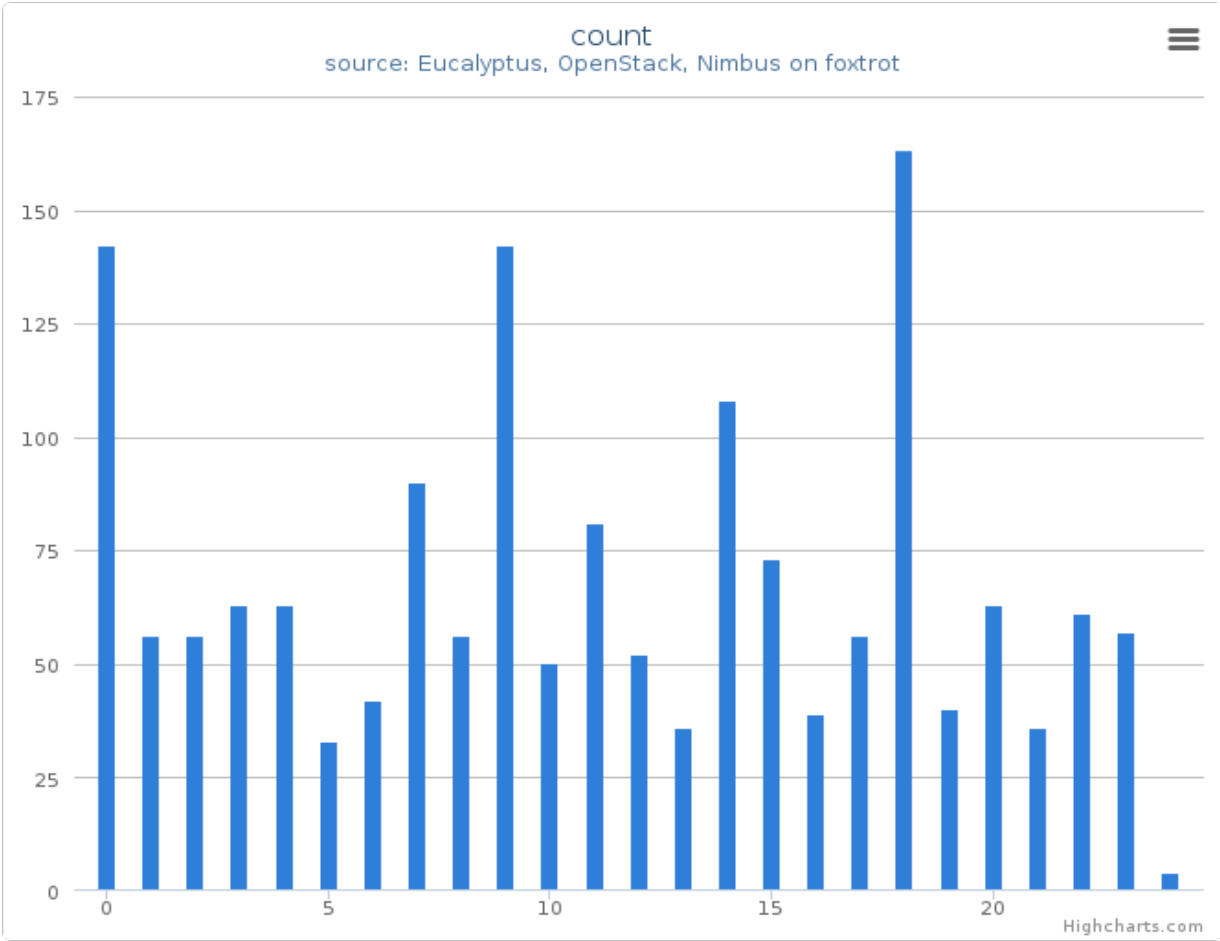
Figure 10: VMs count by systems (compute nodes) in Cluster (foxtrot)

This column chart represents VMs count among systems.

- Period: July 01 – September 30, 2012

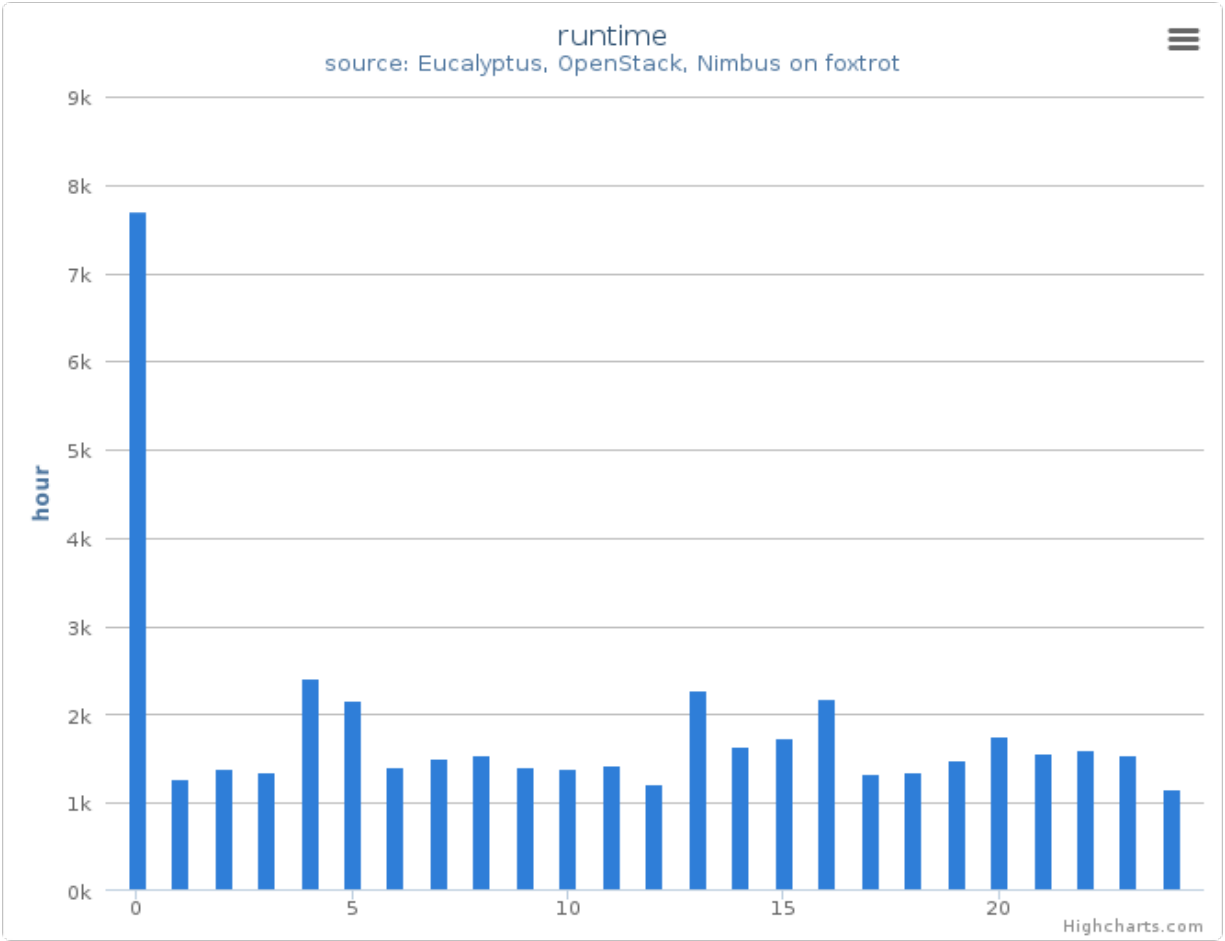- Cloud(IaaS): nimbus

- Hostname: foxtrot

Figure 11: Wall time (hours) by systems (compute nodes) in Cluster (foxtrot)

This column chart represents wall time among systems.

- Period: July 01 – September 30, 2012

- 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.