HPC User Site Census: Middleware – Management Software

Christopher G. Willard, Ph.D.   Addison Snell
Laura Segervall

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EXECUTIVE SUMMARY

The *HPC User Site Census: Middleware – Management Software* report, part of Intersect360 Research's Site Census series, provides a detailed examination of the management middleware found at a sample of HPC user sites. We surveyed a broad range of users about their current computer system installations, storage systems, networks, middleware, and applications software supporting these computer installations.

Our goal in this report is to examine the supplier, products, and primary usage of the management middleware (Job Management, System Management, and Storage Management) reported at these sites in the last three years.

Key findings of the Site Census surveys include the following:

- Over 300 sites reported 1,124 primary middleware packages. About 40% of the mentions were management middleware.

- Over half (52%) of job management software reported was available via open source, an increase from 47% of mentions in our 2013 report.

- The top two system management software packages, based on mentions, are Ganglia and Rocks. Ganglia provides system monitoring while Rocks is used for cluster deployment and provisioning and both are open source offerings. The leading system management package from an ISV is Bright Computing's Cluster Manager.

- About 78% of the storage management software is provided by ISVs. IBM's three storage management products (GPFS, Tivoli Storage Manager, and HPSS) combined make IBM the most mentioned supplier of storage management software with a 26% share.

- Commercial sites prefer ISV packages for all three management middleware categories. At commercial sites, 57% of job management mentions, 48% of system management mentions, and 93% of storage management mentions were for ISV packages.

COMPANIES MENTIONED IN THIS REPORT

Companies mentioned in this report include:

- Adaptive Computing
- Altair Engineering
- Amanda.org
- Amazon Web Services
- Ansible
- Apache.org
- Aspera
- Atos
- Bacula.org
- Bright Computing
- Brocade
- Bull
- CentOS.org
- Cisco
- Citrix
- CJM
- Cycle Computing
- DataDirect Networks
- Dell
- EMC
- F5
- Flux Group
- Fraunhofer
- FreeBSD.org
- Fujitsu
- Globus.org
- Gluster.org
- Hitachi Data Systems
- HP
- IBM
- Illumos
- Infinity Storage
- Infortend
- Inktank
- Intel
- iPython.org
- Lawrence Berkeley Lab
- LIG laboratory
- Mellanox
- Microsoft
- Nagios.org
- NAS
- NCSA
- NetApp
- Nexenta
- Open Cluster Group
- Open Filer
- Open Grid Engine
- Open Source
- Open-E
- OpenFabrics Alliance
- OpenStack.org
- Oracle
- Ovirt.org
- Panasas
- Penguin Computing
- Promise Technology
- PSC
- Puppet Labs
- PVFS.org
- Quantum
- Red Hat
- Rockscluster.org
- ScaleMP
- SchedMD
- science + computing ag
- SGI
- Son of Grid Engine project
- Sonexion
- SourceForge
- SpectraLogic
- Splunk
- StackIQ
- Symantec
- Synology
- TACC
- Terascala
- The HDF Group
- ThinkParQ
- U of Illinois, UC
- U of Paderborn
- U of Wisconsin, Madison
- Ubuntu
- UCAR
- Univa
- X-ISS
- Your File System
- Zabbix

TECHNOLOGIES COVERED IN THIS REPORT

- Storage elements
  - File systems
    - Lustre
    - GPFS
    - HDFS
    - Other file systems
  - Storage software
- Software elements
  - Middleware
    - Cluster management
    - Job scheduling
    - Load balancing
    - Cloud management
    - Virtualization
    - Other middleware

Intersect360 Research
P.O. Box 60296 | Sunnyvale, CA 94088 | Tel. [888] 256-0124
www.Intersect360.com | info@Intersect360.com