

HPC User Site Census: Middleware

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EXECUTIVE SUMMARY

The *HPC User Site Census: Middleware* report, part of Intersect360 Research's Site Census series, provides a detailed examination of the 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. Other reports in this series include: *HPC User Site Census: Systems*; *HPC User Site Census: Storage*; *HPC User Site Census: Processors*; *HPC User Site Census: Applications*; and *HPC User Site Census: Interconnects/ Networks*.

Our goal in this report is to examine the supplier, products, and primary usage of the middleware reported at these sites in the last three years.

Key findings of the Site Census surveys include the following:

- More than 300 unique supplier-packages reported as primary middleware are installed at user sites with over half (62%) only being mentioned once.
- Programming Environment and Compilers were the two main usage categories for middleware packages at the surveyed sites.
- MathWorks' Matlab and Adaptive Computing's Moab were the leading commercial middleware packages. The combined group of OpenMPI directives received the third most mentions. However, the combined share of all three was only 13.5% of the total middleware market, once again illustrating the diversity of offerings for middleware.
- Commercial was the primary source of middleware with 5% share, followed by Open Source at 42%. Academic and government sites are more likely to use open source middleware than commercial sites.

COMPANIES MENTIONED IN THIS REPORT

Companies mentioned in this report include:

- Absoft
- Accelereyes
- Accelrys
- Adaptive Computing
- Alinea
- Altair Engineering
- AMD
- Aspera
- Bright Computing
- Bull
- CA Technologies
- CAPS
- Cisco
- Citrix
- Cray
- Cycle Computing
- DataDirect Networks
- DataSynapse
- DDN
- Dell
- EMC
- Eucalyptus Systems
- GigaSpaces
- GLOBEtrotter
- Hitachi Data Systems
- HP
- IBM
- Illumos
- Impulse Accelerated Technologies
- Informatica
- Infortrend
- Intel
- JetBrains
- LSI Logic
- Maplesoft
- Mathworks
- Microsoft
- Modius
- NAG
- NetApp
- Nexenta
- NexSAN
- Nokia
- Nvidia
- Open Filer
- Open-E
- Oracle
- Panasas
- Pathscale
- Portland Group
- PSSC Labs
- Quantum
- Quest
- Red Hat
- Rogue Wave Software
- SAS
- ScaleMP
- SGI
- SpectraLogic
- Splunk
- StackIQ
- StataCorp
- Symantec
- Terascale
- Univa
- VMWare
- Wingware
- Wolfram Research

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
 - Developer tools
 - Programming models (e.g. MPI, OpenMP)
 - Compilers and languages
 - Libraries
 - Accelerator-specific optimization tools (e.g. CUDA, OpenCL)
 - Debuggers
 - Parallel programming tools
 - Other development and optimization libraries and tools
- Cloud computing, grid computing, utility computing
 - Grid computing
- Other technology trends
 - Big Data trends