IBM HPC Open Software Stack

Q&A

Release Level
Version 3.3

July 30, 2008

Release Statement:

IBM® is announcing an open software stack for high performance computing (HPC) on Linux® for IBM x86 and POWER Architecture® platforms which provides a solid end-to-end open software solution to our customers.

This IBM HPC Open Software Stack is an alternative to the existing IBM HPC software stacks that are available on those systems and does not replace them.

Questions and Answers:

Q: Why is IBM providing this additional offering?
A: IBM is leveraging widely-used open source components that are integrated and tested with fee-based products to provide to our customers a solid end-to-end cross platform software solution for HPC Linux clusters.

Q: Does this replace any of IBM's proprietary HPC software stacks?
A: No. This offering is an additional offering and does not replace IBM's proprietary HPC software stacks. The HPC Open Source Software Stack has been tested with some of the proprietary components in the IBM proprietary stacks and will be tested with additional proprietary components in the future.

Q: Which IBM platforms are supported with the IBM HPC Open Software Stack for Linux?
A: IBM supports this software stack on IBM POWER™ BladeCenter® systems running RHEL 5.2. In the future, IBM intends to support IBM POWER 575, System x™ iDataPlex, System x™ Intel Xeon Systems and x86 BladeCenter® products.

Q: What distributions of Linux are supported?
A: Red Hat™ Enterprise Linux 5.2 is supported. Future support is planned for SUSE™ Linux Enterprise Server 10 Service Pack 2 Customers must procure this software from these distributors.

Q: What switches and adapters are supported?
A: IBM supports this software stack on the Voltaire Grid Switch ISR 9024 with Mellanox ConnectX dual port DDR IB 4X HCA PCIe 2.0 x8 adapters. In the future IBM intents to support Qlogic switches.

Q: What software components are in the IBM HPC Open Software Stack?
A: IBM is rolling support of the HPC Open Software Stack in a staged delivery.

IBM's HPC Open Software Stack Version 1 includes:
- Advance Toolchain for POWER™ Systems 1.1
- IBM HPC Open Source Software Stack install scripts
- Simple Linux Utility for Resource Management (SLURM) version 1.3.1
- Extreme Cluster Administration Toolkit (xCAT) version 2.0

Note: Open MPI 1.2.5 is included in Red Hat Enterprise Linux 5.2.

The fee-based components which have been certified with the HPC Open Software Stack are:
- IBM XL C/C++ Advanced Edition for Linux, V9.0
- IBM XL Fortran Advanced Edition for Linux, V11.1
- IBM Engineering and Scientific Subroutine Library (ESSL) version 4.3.1

IBM intends to enhance Version 1 in the future with the following open source components:
- Torque Resource Manager and Maui Cluster Scheduler
- Ganglia Monitoring System

IBM intends also to certify in the future the following fee-based components:
- IBM General Parallel File System (GPFS)
- IBM LoadLeveler®
- Intel C and Fortran compilers
- Intel Math Library

Q: How are the source and binary versions distributed?
A: The University of Illinois maintains the repository (both source and binary versions) of each of the open stack components along with build and installation scripts. The open source code can be downloaded at no cost and compiled for Linux from the following site: ftp://linuxpatch.ncsa.uiuc.edu/openhpc.

Q: Is everything in the HPC Open Source Software Stack open source?
A: Yes. All of the components in the HPC Open Source Software Stack are open source components. To round out the stack, these components have been tested with additional licensed products from IBM and future products are planned from Intel.

Q: What size cluster has the HPC Open Source Software Stack been tested on?

A: Currently, the HPC Open Source Software Stack has been tested on clusters of 12 BladeCenter® JS22 servers. Customers wishing to deploy the HPC Open Source Software Stack on larger clusters may submit a special bid. IBM intends to test the stack on additional platforms with more servers in the future.

Q: Will Blue Gene systems be supported with the HPC Open Source Software Stack?
A: Currently, the HPC Open Source Software Stack has not been tested by IBM for use on Blue Gene® systems.

Q: Will systems based on the Cell Broadband Engine be supported with the HPC Open Source Software Stack?
A: Currently, the HPC Open Source Software Stack has not been tested by IBM for use on systems based on the Cell Broadband Engine.

Q: What is the price of the HPC Open Source Software Stack offering?
A: The HPC Open Source Software Stack is offered at no cost.

Q: What kind of support is provided for the HPC Open Source Software Stack?
A: The support offered for the components in the IBM HPC Open Source Software Stack is available at no cost and provided on an "as-is" basis via an IBM developerWorks® web Forum. A fee-based offering will be provided later this year for xCAT. This fee based support offering may grow over time.

Q: Does the inclusion of Open MPI with the HPC Open Source Software Stack mean IBM will discontinue offering the fee-based Parallel Environment product for Linux clusters in the future?
A: No, IBM will continue to offer and enhance the Parallel Environment fee-based product as part of its proprietary software stack offerings.

Q: Will the HPC Open Source Software Stack be offered on AIX?
A: There currently are no plans to offer the HPC Open Source Software Stack on AIX®.

Q: Will IBM be adding additional open source components into the HPC Open Source Software Stack in the future?
A: Additional open source components may be added over time.

Q: Will IBM be donating any more of its proprietary components to the open source community in the future?
A: A version (without an open source license) of LoadLeveler® is currently available at no cost for download on www.loadl.com. This buildable source contains many of the features from the TWS LoadLeveler product. It has been compiled and tested with RHEL 5.2 and SLES 10. IBM is constantly assessing what technologies to share in the Linux community. Additional proprietary components may be considered for donation to the open source community in the future.

Q: How will I learn about updates?
A: Details are intended to be provided at announcement time.

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