

SIMPLIFYING HPC

Dell offers Intel® Cluster Ready systems to help simplify the purchasing, deployment, and management of high-performance computing clusters

Dell helps organizations in a range of fields address some of the most challenging computational tasks through high-performance computing (HPC). Whether an oil and gas firm needs to increase the accuracy of reservoir models, an auto manufacturer wants to improve the analysis of crash test simulations, or a financial institution wants to perform complex modeling more quickly, Dell can help design, build, deploy, and support the right HPC system for the customer's needs.

Increasingly, smaller businesses and departmental groups in larger enterprises are considering HPC as a way to boost productivity and solve new problems. Those organizations require outstanding processing power without the complexity of larger infrastructures. "At Dell, we are working with the major HPC ecosystem players to make purchasing, deploying, and managing a cluster easier than ever before," says Judy Chavis, director of business development and product management at Dell. "Through the Intel Cluster Ready program, Dell is helping to simplify HPC for customers of all types and sizes."

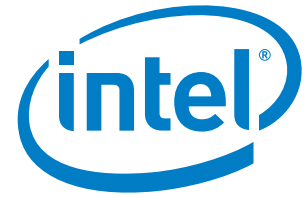
DELL AND INTEL CLUSTER READY HELP SIMPLIFY PURCHASING AND DEPLOYMENT

At the heart of the Intel Cluster Ready program is the Intel Cluster Ready Specification—a common technical specification for building HPC clusters. Dell and other participating vendors earn certification for their clusters when they build systems that comply with the specification and then test them to ensure component interoperability. Software vendors register their applications by validating them on certified clusters.

"Dell was one of the founding members of the Intel Cluster Ready program," says Chavis. "From the desktop to the data center, Dell is committed to simplifying IT and helping customers gain productivity. The Dell HPC Cluster Solutions Advisor tool offers an easy way for customers to configure a system that fits their needs. And now Dell customers can select Intel Cluster Ready systems to gain another level of confidence that the system components and registered applications will work well together."

Customers selecting certified Intel Cluster Ready systems from Dell have great flexibility to customize their systems based on their particular needs. "Customers can select the right number of nodes to fit their goals and their budget. They can also choose from different Dell servers featuring Intel® Xeon® processors and then configure memory, hard drives, and secondary interconnect fabrics," says Peter Lillian, senior product manager for HPC at Dell.

Because certified systems from Dell and registered applications have already undergone rigorous interoperability testing, customers can dramatically accelerate system deployment. "With a certified Intel Cluster Ready system from Dell and registered



CHALLENGE

- Enable customers to experience the advantages of high-performance computing (HPC) for increasing productivity and solving new problems by making it simple to select, deploy, and manage HPC clusters.

SOLUTION

- Dell offers Intel® Cluster Ready systems with Dell™ PowerEdge™ servers in configurations that have been designed, built, and tested to ensure system interoperability and to run registered Intel Cluster Ready applications seamlessly.

CUSTOMER BENEFITS

Get IT Faster

- Helps simplify purchasing by eliminating the time and risks of selecting a collection of independent components.

Run IT Better

- Designed to maintain productivity at deployment and over the life of the cluster with the Intel® Cluster Checker tool. The Intel Cluster Checker tool helps identify and resolve problems quickly, improving cluster reliability, simplifying management, and reducing the need for specialized support.

Grow IT Smarter

- Run multiple registered applications on the same certified Dell cluster without requiring cluster reconfiguration.
- Customize the cluster or enhance capabilities without sacrificing interoperability by using Intel Cluster Ready components offered by Dell.

DELL AND INTEL CLUSTER READY

Dell has been a leader in simplifying and standardizing high-performance computing (HPC) for more than a decade. The Dell HPC engineering and product management teams work closely with customers and industry partners to bring the performance and productivity advantages of HPC to organizations of all types and sizes while helping to reduce the complexity of deploying, managing, and maintaining an HPC infrastructure. Dell was one of the founding partners of the Intel Cluster Ready program, along with Intel and Platform Computing.



SAMPLE DELL-CERTIFIED INTEL CLUSTER READY CONFIGURATIONS

PLATFORM COMPUTING

- Dell™ PowerEdge™ M600/e1000 Blade System with InfiniBand and Platform Open Cluster Stack¹ 4.5.1
- Dell PowerEdge M600/e1000 Blade System with Gigabit Ethernet and Platform Open Cluster Stack 4.5.1
- Dell PowerEdge 1950 with InfiniBand and Platform Open Cluster Stack 4.5.1
- Dell PowerEdge 1950 with Gigabit Ethernet and Platform OpenCluster Stack 4.5.1

CLUSTERCORP ROCKS+

- Dell PowerEdge 1950 with InfiniBand and Panasas storage

TESTED REGISTERED APPLICATIONS

- Platform Open Cluster Stack 4.5.1
- Intel® Cluster Runtime
- Intel® Cluster Checker
- ANSYS-D
- ANSYS Fluent
- ESI Group PAM-CRASH
- CD-adapco STAR-CD
- Livermore Software Technology Corporation LS-Dyna
- MSC Software MD Nastran
- Abaqus standard and explicit

“NOW DELL CUSTOMERS CAN SELECT INTEL® CLUSTER READY SYSTEMS TO GAIN ANOTHER LEVEL OF CONFIDENCE THAT THE SYSTEM COMPONENTS AND REGISTERED APPLICATIONS WILL WORK WELL TOGETHER.”

—**Judy Chavis**, director of business development and product management, Dell Inc.

Intel Cluster Ready applications, our customers know that their cluster will be ready for work, right away,” says Lillian. “As a result, they can experience the benefits of HPC sooner and start solving new problems faster.”

DELL AND INTEL PROVE THE VALUE OF INTEL CLUSTER READY

Dell and Intel engineering teams conducted a proof-of-concept test to demonstrate the interoperability of Intel Cluster Ready hardware from Dell with a range of registered software applications. “We created a certified Intel Cluster Ready system with a Dell™ PowerEdge™ 2950 server head node and 16 PowerEdge M600 blade server nodes, all equipped with the quad-core Intel Xeon processor E5450 series. The system ran the Platform Open Cluster Stack software stack,” says Lillian. “In a single day, we loaded and ran eight separate registered applications from six different software vendors, all without having to rebuild the software stack or reconfigure any of the hardware. Everything just worked.”

For customers, the flexibility to run multiple applications on the same system can help to significantly improve the cost benefits of owning an HPC cluster. “A research group might need to run one application on Monday and another on Tuesday. By using registered Intel Cluster Ready applications, they don’t have to make any changes to the system,” says Chavis. “Ultimately, that means our customers can maximize the utility and value of their clusters, leading to greater productivity and faster time to results.”

INTEL CLUSTER CHECKER CAN DECREASE TROUBLESHOOTING TO MINUTES

Included with all certified Intel Cluster Ready systems, the Intel Cluster Checker software tool helps to further simplify ongoing management. “We use Intel Cluster Checker as part of the

process of certifying a cluster—we input a configuration file, and Intel Cluster Checker tells us whether each component passes certification,” says Lillian. “Once the system is up and running at the customer site, Intel Cluster Checker offers an easy way to ensure the system remains within certification. Customers should also use the tool regularly to find problems that might cause performance degradation or system failure.”

In many cases, Intel Cluster checker will help reduce the time spent troubleshooting problems. “Our goal is to provide the fastest problem resolution possible. If a customer calls us, we can use Intel Cluster Checker together to rapidly determine where the problem is,” says Lillian. “We can identify software incompatibilities or hardware issues very quickly with Intel Cluster Checker. That’s great news for our customers.”

DELL AND INTEL HELP BRING HPC TO NEW CUSTOMERS

By making it simple to buy, deploy, and manage an HPC cluster, Dell and Intel are enabling more organizations to deploy HPC systems to address their compute-intensive tasks. “We believe that HPC can and should be within reach of more organizations,” says Chavis. “By offering certified Intel Cluster Ready systems, Dell is making it even easier for small businesses, research groups, and departmental workgroups to capitalize on the power and productivity of HPC.”

For more information on Dell HPC solutions, go to DELL.COM/HPCC.



SIMPLIFY YOUR TOTAL SOLUTION AT DELL.COM/Simplify



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