

Intel® Cluster Ready— Making HPC simpler

Boost productivity. Solve new problems. The Intel® Cluster Ready program makes it simpler to experience the power of high-performance computing.

Program Brief

Intel Cluster Ready

High-Performance
Computing



Developed in conjunction with hardware and software vendors, the Intel Cluster Ready program simplifies buying, deploying, and managing a high-performance computing (HPC) cluster. Intel Cluster Ready helps to ensure application and component interoperability from the moment you power up the cluster through the lifetime of the system.

Why Intel Cluster Ready?

Find the right configuration, right away.

Take the complexity out of purchasing an HPC cluster. Choose a certified Intel Cluster Ready system to reduce the time and risk of selecting a collection of independent hardware components for your applications. Certified Intel Cluster Ready systems have been thoroughly tested to ensure component interoperability.



“The Intel® Cluster Ready Program supports the Cray CX1* supercomputer goal of ‘Ease-of-Everything’ by simplifying the setup and configuration complexity of deploying an HPC cluster. Cray also applauds Intel’s initiative in giving customers confidence that their chosen system will operate successfully through the ICR certification process.”

–lan Miller, Senior VP of Sales and Marketing, Cray

Know that it works.

Select a certified Intel Cluster Ready system for your registered Intel Cluster Ready applications so you can be confident that hardware and software components will work together, right out of the box. Software tools such as Intel® Cluster Checker help ensure that those components continue to work together, delivering a high level of quality and a low total cost of ownership over the course of the cluster’s lifetime.

Solve new problems.

Capitalize on the power of an Intel processor-based HPC cluster to enhance productivity and solve new problems. Intel Cluster Ready helps you realize HPC benefits faster by ensuring application and system interoperability.

How does it work?

Laying the foundation—Intel Cluster Ready Specification

Working with HPC ecosystem partners, Intel has defined the Intel Cluster Ready Specification—a common basis for building clusters and registering applications for HPC. The specification—which includes requirements for hardware, software, manageability, and functionality—helps to make sure that each cluster component conforms to industry standards or, if no standard exists, best-of-class practices. Intel provides the specification to hardware vendors, software vendors, and systems integrators so they can build certified Intel Cluster Ready clusters and develop registered Intel Cluster Ready applications.

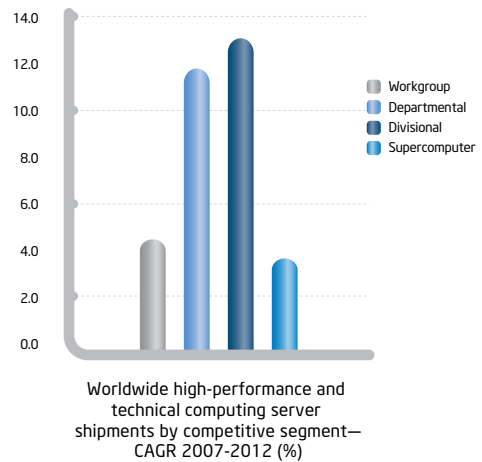
Ease-of-Everything

The Cray CX1 supercomputer puts powerful cluster technology in the service of small, decentralized, and nimble business units. Designed to work in an ordinary office, the Cray CX1 system plugs into a standard 120/240-volt power outlet, and thus does not have to be sited in the confines of a climate-controlled and energy-constrained data center. And with active noise cancellation technology, it’s just as at home underneath a desk as at a traditional workstation.

By creating a common basis for clusters, the Intel Cluster Ready Specification also gives you the flexibility to customize your system based on your specific needs. Choose from a variety of hardware and software components that conform to the specification when you are first deploying the cluster or make modifications as your requirements change.

Ensuring interoperability—Certified Intel Cluster Ready clusters

Intel facilitates component interoperability by working with hardware vendors and systems integrators to assemble the right combination of components for HPC clusters. A “certified” cluster is a system built according to the Intel Cluster Ready Specification that has been rigorously tested for component interoperability.



Source. IDC, Worldwide High-Performance and Technical Computing Server 2008–2012 Forecast, 2008

Intel® Cluster Ready

Intel® Cluster Ready Is:

- A program to make it easier for end users to buy, deploy, and maintain clusters

End User HPC Cluster Needs:

- To Get Their Job Done
- Cluster Server with Enterprise Characteristics

Platform Solutions Provider

ISV Application

Cray CX1 Deskside Supercomputer

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Intel Cluster Ready:

- Platform Specifications
- Reference Designs
- HW Certification
- Application Registration
- Tools, Labeling, and Marketing

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Making it simpler to buy an HPC cluster

Validating applications—Registered Intel Cluster Ready applications

A “registered” Intel Cluster Ready application is one that has been validated on a certified Intel Cluster Ready cluster. To register an application, either Intel or an Intel partner demonstrates that the software can run real-world workloads successfully on a certified cluster. When the software successfully passes the test, Intel issues the Intel Cluster Ready registration to the software vendor and posts the application version and requirements on a public Web page.

“LSTC is confident that...[the] Intel® Cluster Ready program will be welcomed by LS-DYNA worldwide users. Our MPP customers and their IT support staffs will no longer be required to expend resources bringing their clusters online. Setup and configuration time will be significantly decreased or eliminated entirely as a result of Intel’s certification solution.”

– John Hallquist, CEO, LSTC

Because registered Intel Cluster Ready applications are all developed to run on clusters with the same base specification, you can run multiple registered applications on the same certified Intel Cluster Ready cluster without having to rebuild the software stack or reconfigure the hardware. Run different applications on different days. You can optimize your HPC resources and enhance productivity without adding costs or complexity.



“Achieving Intel® Cluster Ready status for PBS Professional and for RADIOSS is another example of Altair’s commitment to simplify the deployment of technology solutions for our customers. PBS Professional enables customers to maximize the utility of their hardware and software resources. RADIOSS, Altair’s finite-element solver, lets engineers solve real-world multi-physics problems. The participation of both solutions in the Intel Cluster Ready program allows our users to extract maximum performance from Intel multi-core architectures.”

– Michael Humphrey, Vice President of Partner Programs, Altair

Expanding your infrastructure—Intel Cluster Ready recipes

Systems integrators build “recipes” with certified Intel Cluster Ready clusters and registered software. Using a recipe, you can create an exact copy of the cluster to expand your HPC infrastructure or deploy a cluster for another business group. Because the new cluster is Intel Cluster Ready, you can be confident that hardware and software will work together as they should.

Simplifying management—Intel Cluster Checker

Intel Cluster Checker is an essential software management tool that helps make sure system components continue to work together over the lifetime of the cluster. Provided free with all certified Intel Cluster Ready clusters, Intel Cluster Checker analyzes the cluster’s configuration to be certain it remains within certification. If a software update causes software conflicts or a cable comes loose, Intel Cluster Checker can identify the problem quickly and provide detailed diagnostic information.

Use Intel Cluster Checker to dramatically reduce the time spent troubleshooting and minimize the need for specialized support skills. Run Intel Cluster Checker regularly to enhance system reliability and ensure optimal performance.

For more information, visit www.intel.com/go/cluster to discover which applications are Intel Cluster Ready and where to buy a certified Intel Cluster Ready cluster.

For more information on the Cray CX1 supercomputer, visit www.cray.com/products/cx1.

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