

Nova High Performance Computing (HPC) system

Introduction

To decrease application development cycle time, NovaMARS utilized for its calculations Nova High Performance Computing (HPC) system which is based on Microsoft Windows HPC Server platform with scalability and faulting tolerance ability. An end-user Grid Computing option is an alternative for increasing computing needs. Scalable and user configurable infrastructure with Nova's proprietary task management software addresses the growing needs of IC manufacturing metrology.

Nova HPC Value-Added Benefits

- Accelerates recipe set-up library building
- Scalable infrastructure, invest as you grow
- Low-cost entry level using grid computing with existing computation resources

Windows HPC

WinHPC allows building libraries, running real-time tasks, and also supports real-time interpretation on tool. WinHPC is able to scale the computation resources transparently inside the Local grid and to external computing power on the Cloud. System can support several grid subsystems connected together and at the same time support several customers with single system.

Basic Architecture of an HPC Cluster

A cluster consists of several servers networked together where each server in the cluster performs one or more specific tasks. Cluster components include Head Nodes, and Compute Nodes, Job Scheduler and Broker Nodes (for SOA enabled clusters.)

The single point of management and job scheduling for the cluster. It provides failover and controls and mediates access to the cluster resources.

Compute Node

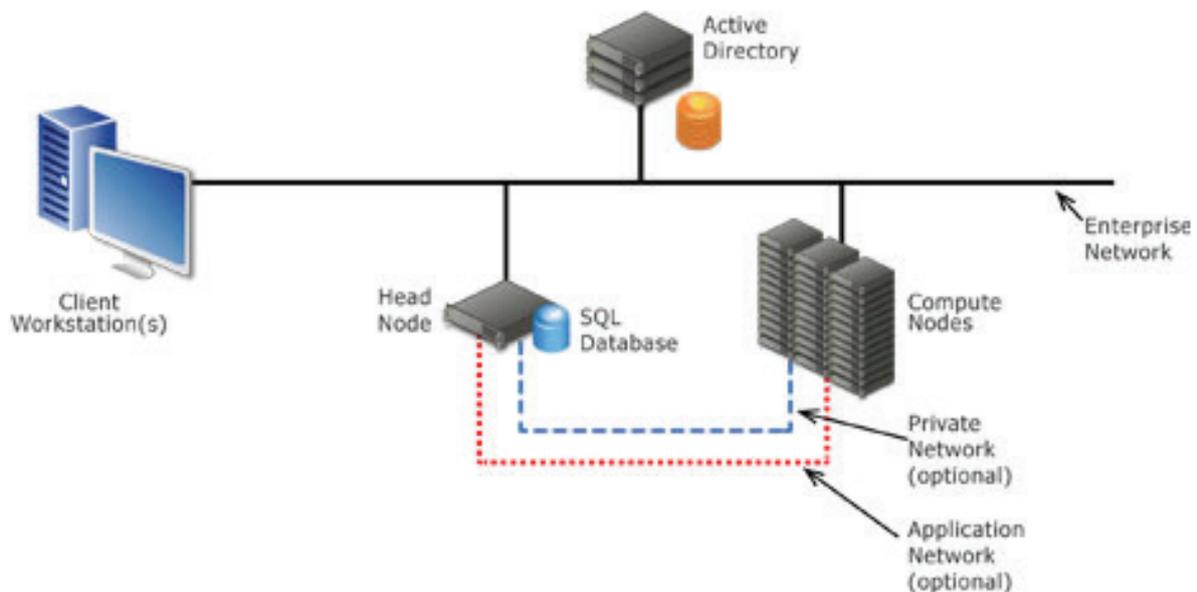
Carries out the computational tasks assigned to it by the job scheduler.

Job Scheduler

Queues jobs and their associated tasks. It allocates resources to these jobs, initiates the tasks on the computer nodes; and monitors the status of jobs, tasks, and compute nodes.

Broker Node

Act as intermediaries between the application and the services. The broker load-balances the service requests to the services, and finally return results to the application.



Basic cluster: The minimal set of components to run an HPC application on a cluster.