# Cluster Checker

除Intel Cluster Checker，目前只找到两套商业集群管理系统，一套开源软件，其中提供cluster-checker插件。

## Phoenix Cluster Management Suite

Atipa's HPC 专家推荐配置如下：

* Intel® Xeon E5-2600 (Sandy Bridge EP) or AMD Opteron 6200 (Interlagos) multi-core processors
* Up to 128GB of RAM per node
* 500GB HDDs for swap space and local storage
* Infiniband network interface controllers from Mellanox or QLogic
* CentOS, RHEL, SLES, or OpenSUSE Linux operating environment
* One head (master) node with the following configuration:
* Phoenix Cluster Management Suite for cluster management
* TORQUE + Maui for job scheduling and resource management
* Ganglia for cluster monitoring
* OpenMPI, MPICH and MPICH2 message passing libraries for parallel computation
* Supermicro IPMI View, OFED drivers, optimized math libraries, and other miscellaneous software packages
* Mellanox or Intel Infiniband switches
* GigE + IPMI network switches
* APC Switched Rack PDUs for advanced load monitoring and remote on/off switching control of individual outlets
* High-quality interconnects

Phoenix Cluster Management Suite是一款集群管理工具，基本命令行程序，系统监控应用。安装在主节点上，包括以下功能：

* **Essential Command Line Tools.** Quickly check cluster health, copy files to multiple nodes, manage cluster-wide user accounts, and more.
* **Parallel Command Execution.** Simultaneously execute any bash command over the entire cluster.
* **Quality Check Scripts.** Easily check the health of the entire cluster. Remotely ensure every node is running at optimal performance.
* **Ganglia Integration.** Phoenix includes a customer installation of Gangila, a monitoring system for HPC clusters.
* **Advanced IPMI Controls. I**ntegration with Supermicro IPMIView allows for remote power cycling, KVM-over-LAN, sensor readings, and more.
* **Atipa Autoinstaller.** Automatically kick start any node to effortlessly re-install the operating system and all software packages.
* **Fully Automated Node Deployment.** 100% menu-driven network boot system allows for new nodes to be added without dynamically.

## Bright Cluster Health Management

健康检查：

* check if the hard drive still has enough space left on it and return PASS if it has;
* check if an NFS mount is accessible and return FAIL if it is not;
* check if CPUUser is below 50% and return PASS if it is;
* check if the cmsh binary is found and return UNKNOWN if it is not.

调度测试：

* instruct the workload manager to reschedule the job to a different node;
* give the node a status of "Drained", which means no more jobs will be scheduled to it;
* inform the system administrator.

性能测试：

* Measure hard disk write speed with CPUs idle.
* Measure hard disk write speed while stressing CPUs.
* Check for bad blocks while running memory test.
* Test power supply with hard power resets.
* Check for bad blocks while running Linpack on all CPUs.
* Compile Linux kernel.
* Run mprime torture test.
* Run memtest86.

## Nagios

开源，其中有cluster-check插件，可用于集群检测。

主要功能包括：

* 网络服务监控（SMTP、POP3、HTTP、NNTP、ICMP、SNMP、FTP、SSH）
* 主机资源监控（CPU load、disk usage、system logs），也包括Windows主机（使用NSClient++ plugin）
* 可以指定自己编写的Plugin通过网络收集数据来监控任何情况（温度、警告……）
* 可以通过配置Nagios远程执行插件远程执行脚本
* 远程监控支持SSH或SSL加通道方式进行监控
* 简单的plugin设计允许用户很容易的开发自己需要的检查服务,支持很多开发语言（shell scripts、C++、Perl、ruby、Python、PHP、C#等）
* 包含很多图形化数据Plugins（Nagiosgraph、Nagiosgrapher、PNP4Nagios等）
* 可并行服务检查
* 能够定义网络主机的层次, 允许逐级检查, 就是从父主机开始向下检查
* 当服务或主机出现问题时发出通告，可通过email, pager, sms 或任意用户自定义的plugin进行通知
* 能够自定义事件处理机制重新激活出问题的服务或主机
* 自动日志循环
* 支持冗余监控
* 包括Web界面可以查看当前网络状态，通知，问题历史，日志文件等

# 体系结构

SSH System Administration Tool

ssh Java interface for Unix, Linux and MS Windows administration

Allows you to remotely access and control your servers through google talk.

Features

?Remote Desktop Win (RDP)

?PuTTY(included)

?WinSCP (included)

?Wireshark (separate download)

?Remotely access and control your servers 类似VNC的功能？

?Automates firewall rule checks; exporting the results into Excel 防火墙规则检查

?Run multiple Unix commands on multiple servers simultaneously

?Remotely monitor your servers in a real time dashboard displaying CPU and RAM 远程显示服务器CPU和RAM利用率

?google talk

?NC Test

Java NRPE Server