



Installing and Configuring HP Serviceguard for Linux on ProLiant Servers



Lance Taylor
Training Program Manager
Hewlett-Packard

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Overview

- Serviceguard for Linux
 - Protects applications from hardware and software failures
 - Enables you to create high-availability clusters of HP ProLiant or Integrity servers
 - Automatically transfers package control to another node if there is a failure
 - Monitors component health
 - All resources required by an application can be organized in to application packages

Serviceguard for Linux target markets



- Target markets for Serviceguard for Linux
 - Existing Serviceguard HP-UX customers considering a Linux platform
 - Early adopters of Linux looking for a high-availability clustering solution (such as the telecommunications market)
- Target markets for high-availability are driven by
 - Increasing levels of availability with decreasing budgets
 - Increased customer demand for fast, easy, and continuous access to information and services
 - Growing dependency on IT infrastructure for business processes
 - Society and business movement toward a more dynamic and continuously online world
 - Increased competitive pressures



Features and benefits

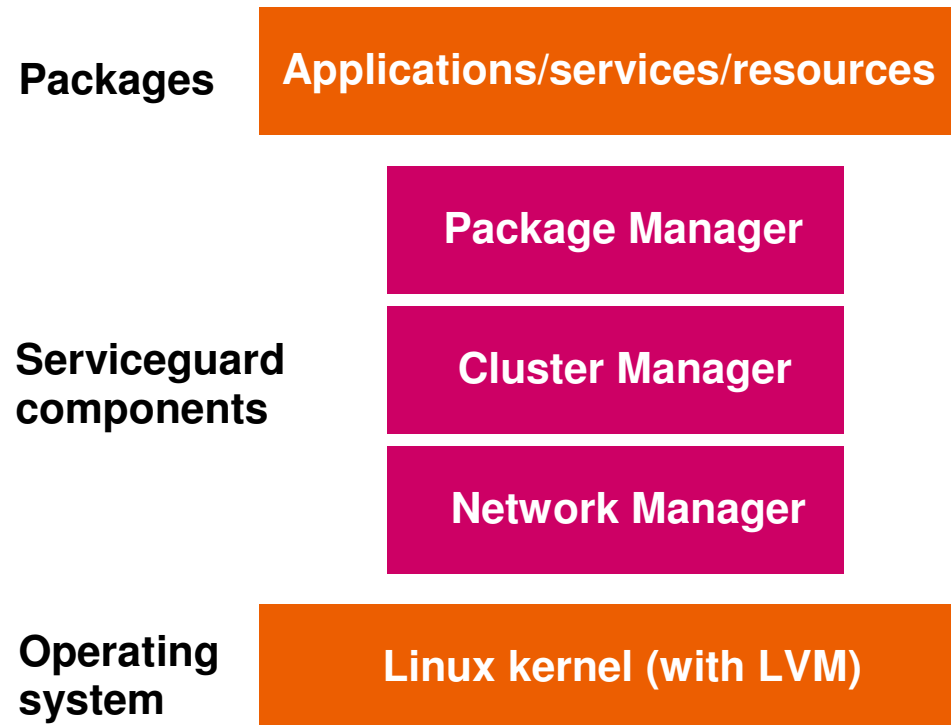
- Provides disaster protection through stretch clustering
- Increases overall cluster availability
- Provides greater protection than typical cluster configurations
- Ensures data integrity by eliminating split-brain syndrome
- Enables you to perform online reconfigurations
- Eliminates downtime for upgrades
- Maintains performance levels
- Accelerates Linux capabilities
- Uses an intuitive, graphical interface
- Eliminates retraining
- Protects existing storage investment
- Speeds deployment
- Delivers unsurpassed control of infrastructure and business services



Competitive landscape

- Key HP differentiators
 - Only vendor to integrate a total high-availability solution
 - Hardware, software, and support services
 - Experience in high-availability — More than 80,000 licenses of Serviceguard for HP-UX sold
 - Strong support services — An extensive portfolio

Components



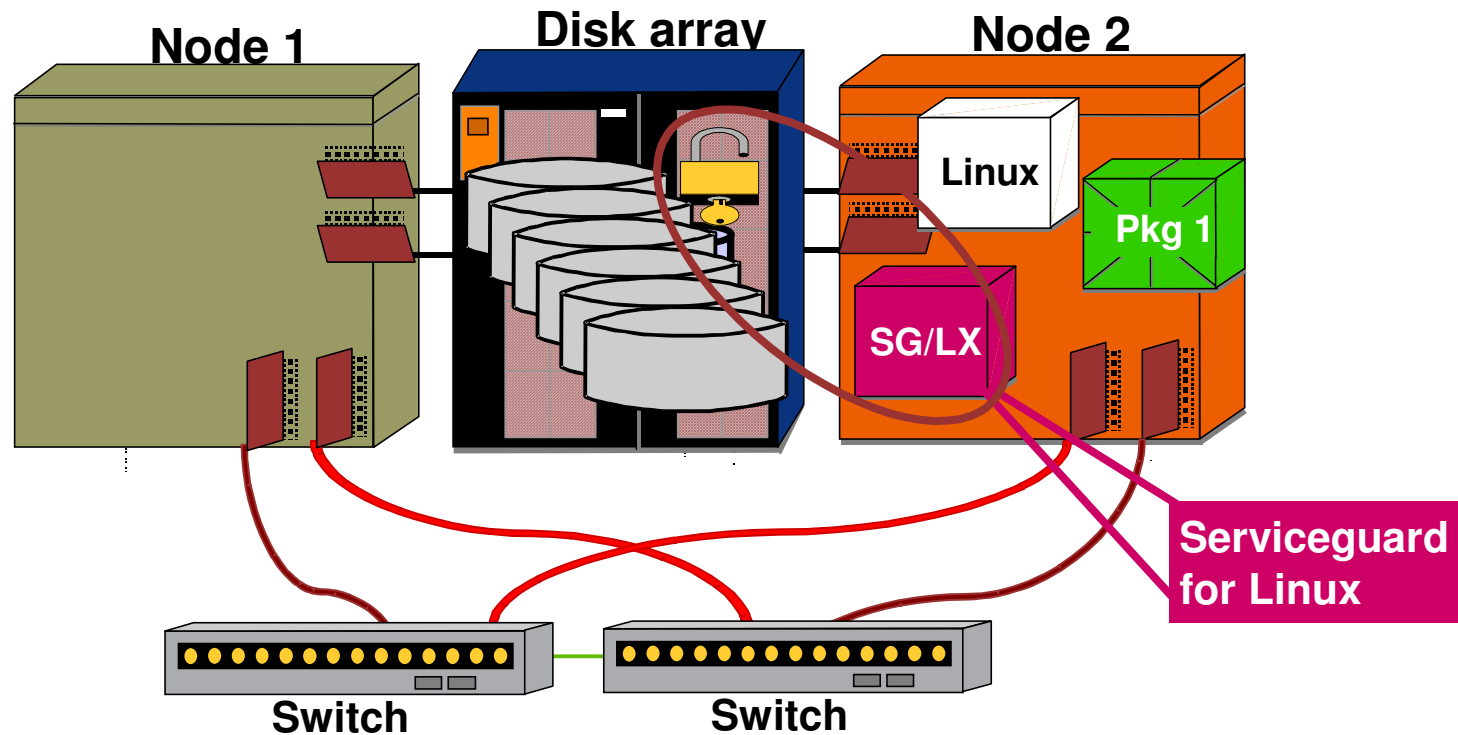
Configuring LVM

- Use vgscan to create /etc/lvmtab
- Define the physical volumes that will be used (pvcreate)
- Create the volume groups (vgcreate)
- Create the logical volumes (lvcreate)
- Create the filesystems on each logical volume (mke2fs)
- Mount the filesystems
- Activate the volume groups (vgchange)

Cluster Lock

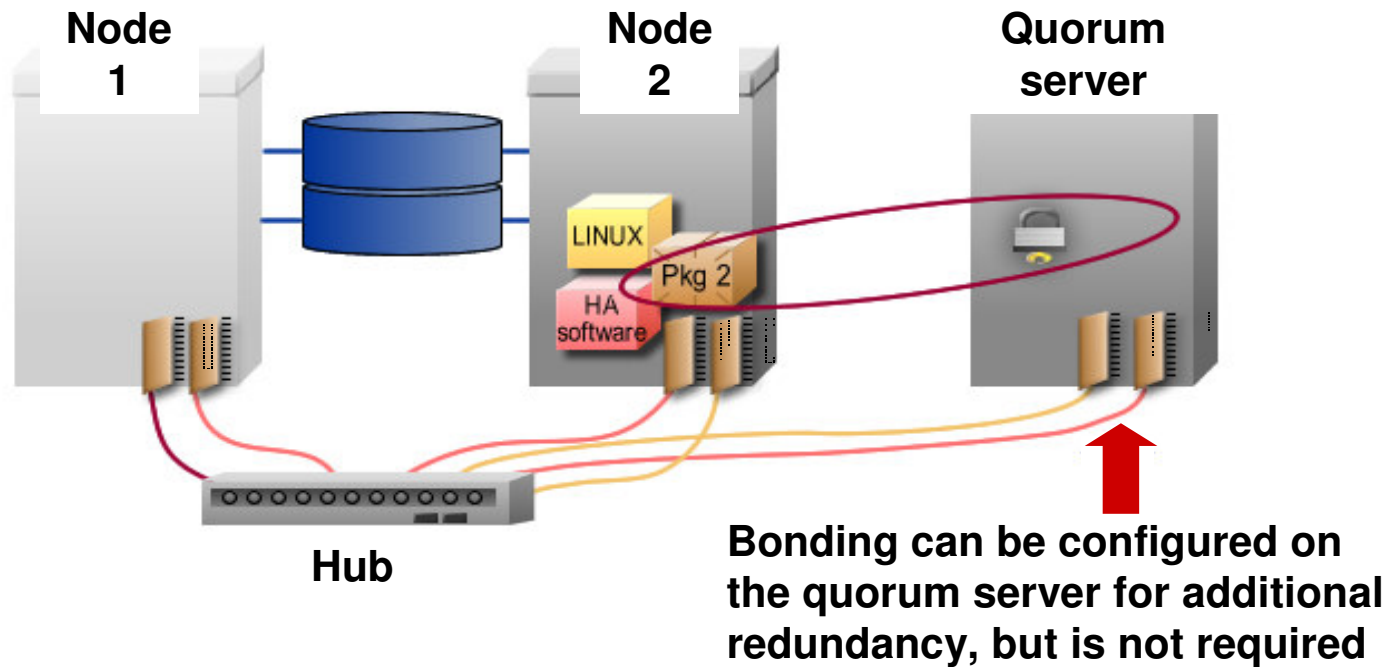
- Tie-breaker that prevents split-brain syndrome
- Implemented through lock LUN or quorum server
- Required for two-node clusters, and recommended for three- and four-node clusters

Cluster lock LUN



- Can be used for cluster up to four nodes in size
- When node obtains lock, that area is marked at “taken”
- Cluster configuration file identifies complete path name of the lock LUN

Quorum server



- Can be used in clusters of any size
- Chooses the node to continue running if communication fails
- Must run on a server that is separate from the cluster for which it is providing quorum services

Using sginstall to install Serviceguard and customize the kernel



- Change to the tools directory and run the sginstall script
- Sginstall will
 1. Load a set of Linux kernel source files
 2. Load required kernel patch files
 3. Load LVM and patches
 4. Rebuild the Linux kernel
 5. Install Serviceguard .rpm files in the correct directories
- **Syntax of sginstall**
`sginstall [-v] [-r <Linux Root>] [-o nokernel I buildkernel]`

Cluster configuration steps

- Create ASCII cluster configuration file (cmquerycl)
- Modify ASCII cluster configuration file
- Check ASCII cluster configuration file for errors (cmcheckconf -C)
- Create and distribute binary configuration file to nodes (cmapplyconf -C)
- Start the cluster daemons (cmruncl)
- View the cluster information (cmviewcl)

Daemon processes

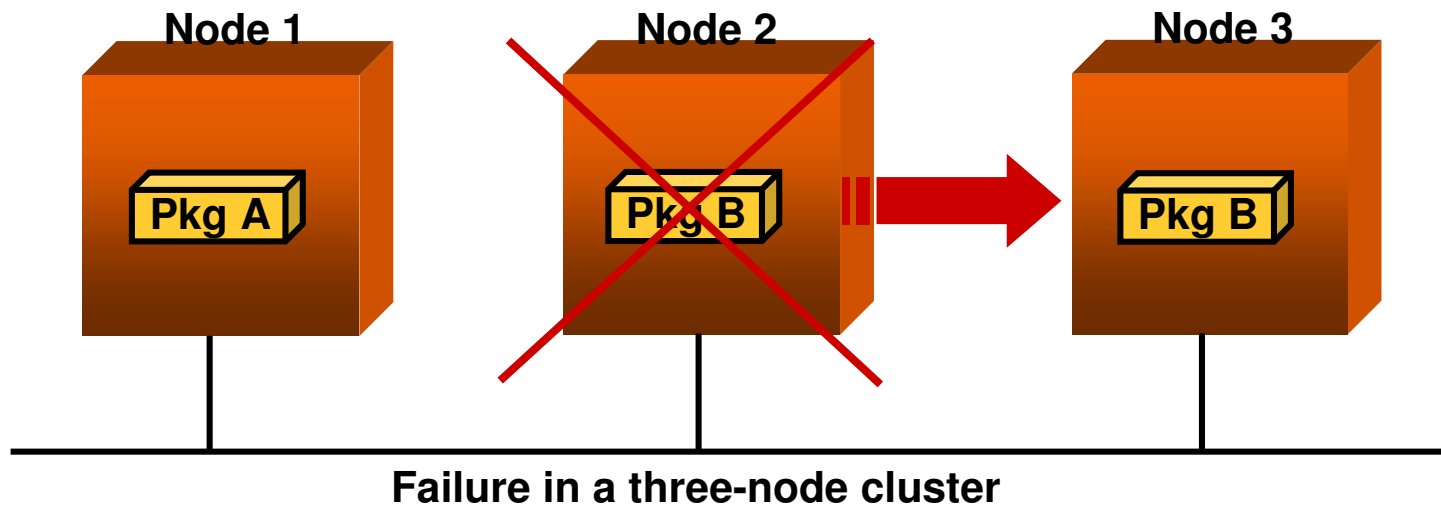
– Eight daemon processes

- /usr/local/cmcluster/bin/cmclconfd (configuration daemon)
- /usr/local/cmcluster/bin/cmclcd (cluster daemon)
- /usr/local/cmcluster/bin/cmlogd (cluster system log daemon)
- /usr/local/cmcluster/bin/cmlocklund (cluster lock LUN daemon)
- /usr/local/cmom/bin/cmomd (cluster object manager daemon)
- /usr/local/cmcluster/bin/cmsrvassisd (service assistant daemon)
- /usr/local/cmcluster/bin/cmresmond (resource monitor daemon)
- /usr/local/qs/bin/qs (quorum server daemon)

– All daemon processes log to the syslog file except

- Quorum server — Logs to the /usr/local/qs/log/qs.log
- Cluster object manager — Logs to /usr/local/cmom/log/cmomd.log

Package concepts (1 of 2)



- Packages contain
 - Applications
 - Resources
 - Relocatable IP address for the application
 - Application data
 - Next destination

Package concepts (2 of 2)

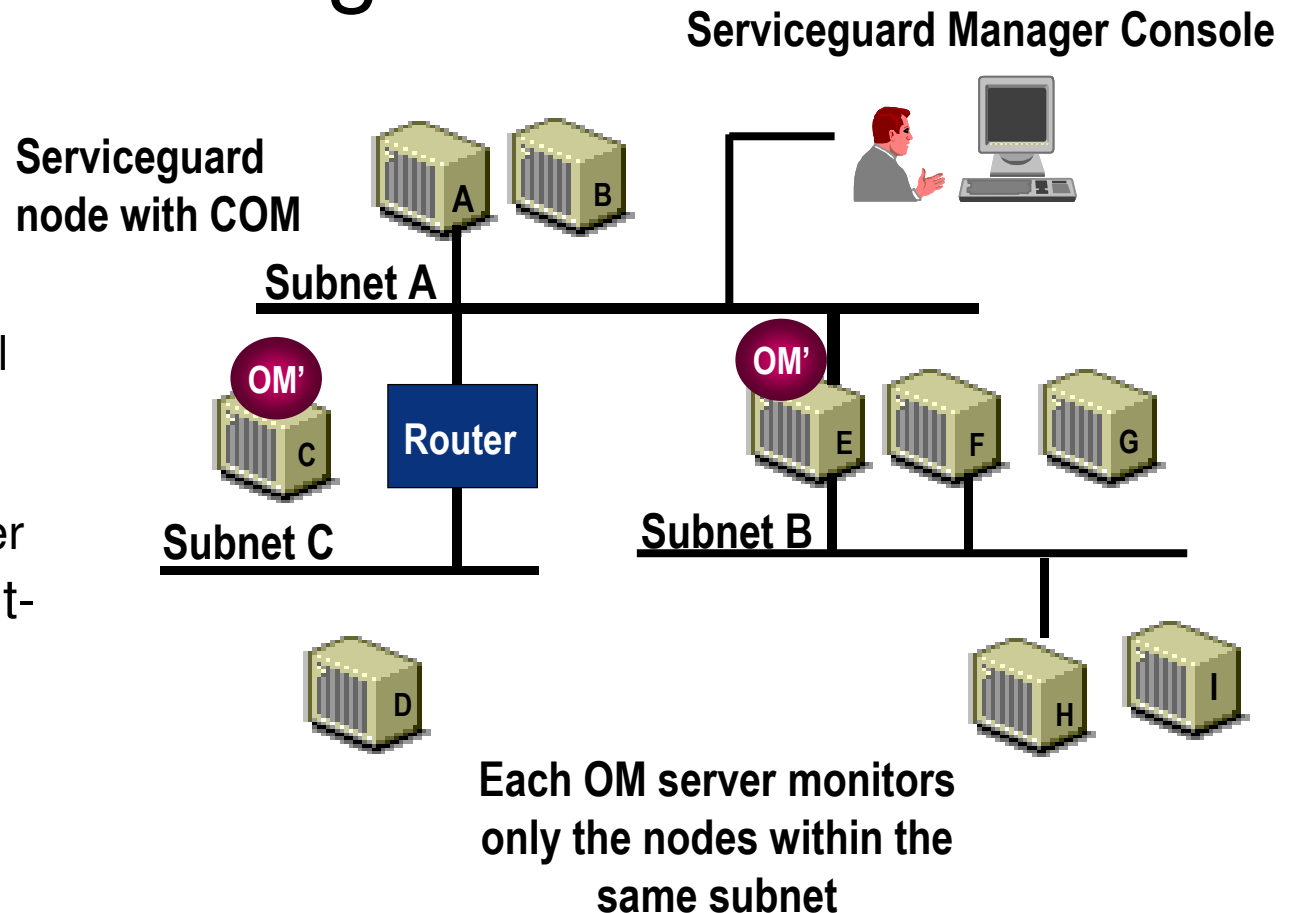
- Applications are wrapped in to packages with all resources required to run that application
- Typical resources used by applications
 - IP addresses
 - Volume groups
 - Logical volumes
 - File systems
 - Monitored services
- A package does not contain only resources
- Several packages might not contain data if no disk volume groups are defined

Package configuration steps

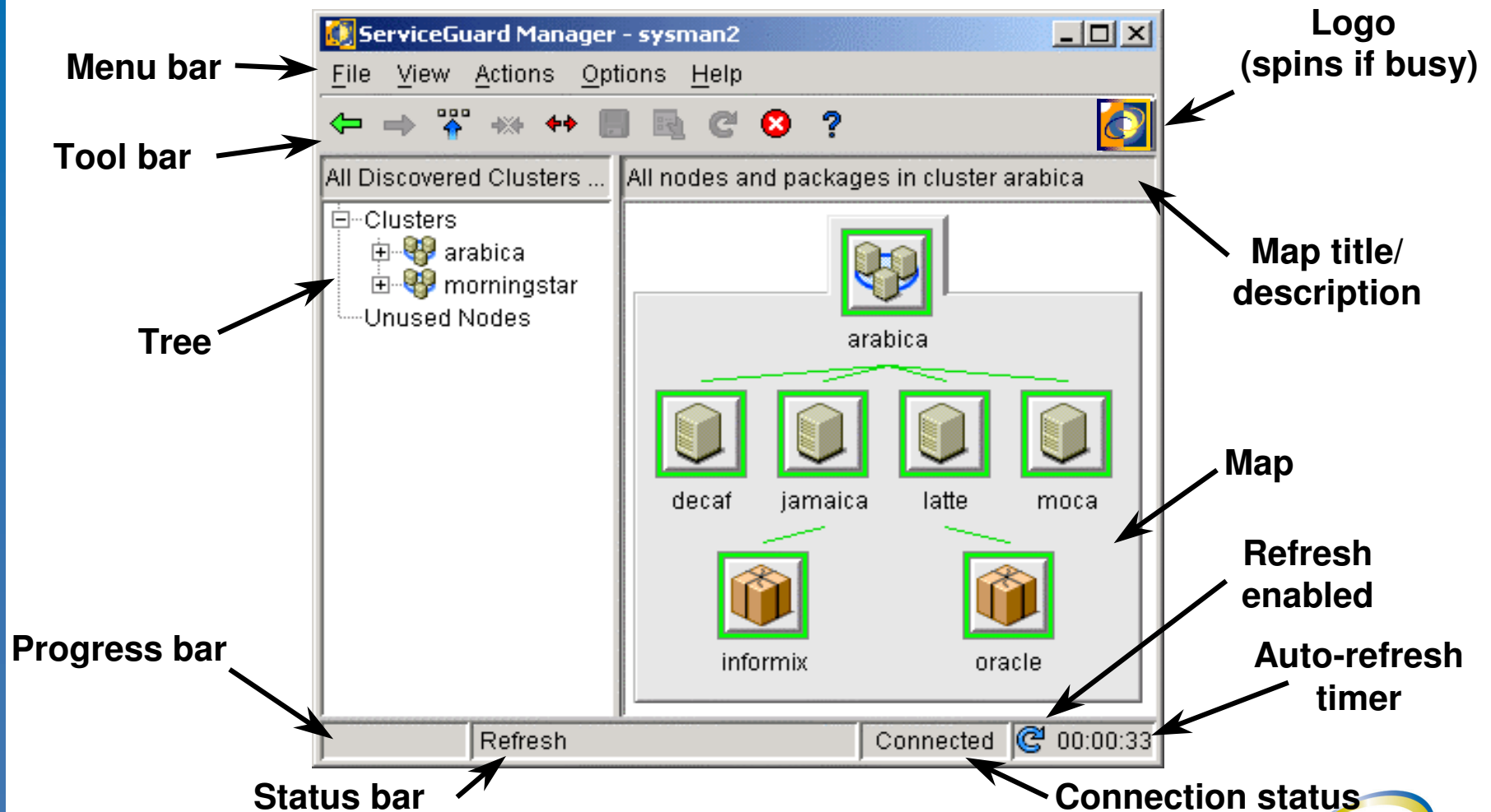
- Create package configuration file template
(cmmakepkg -p)
- Modify the package configuration file
- Create package control script template
(cmmakepkg -s)
- Modify the package control script
- Manually copy the package control script to all nodes
- Check package configuration file for errors
(cmcheckconf -P)
- Create and distribute binary configuration to nodes
(cmapplyconf -P)
- Start the package
(cmrunpkg)

Serviceguard Manager basics

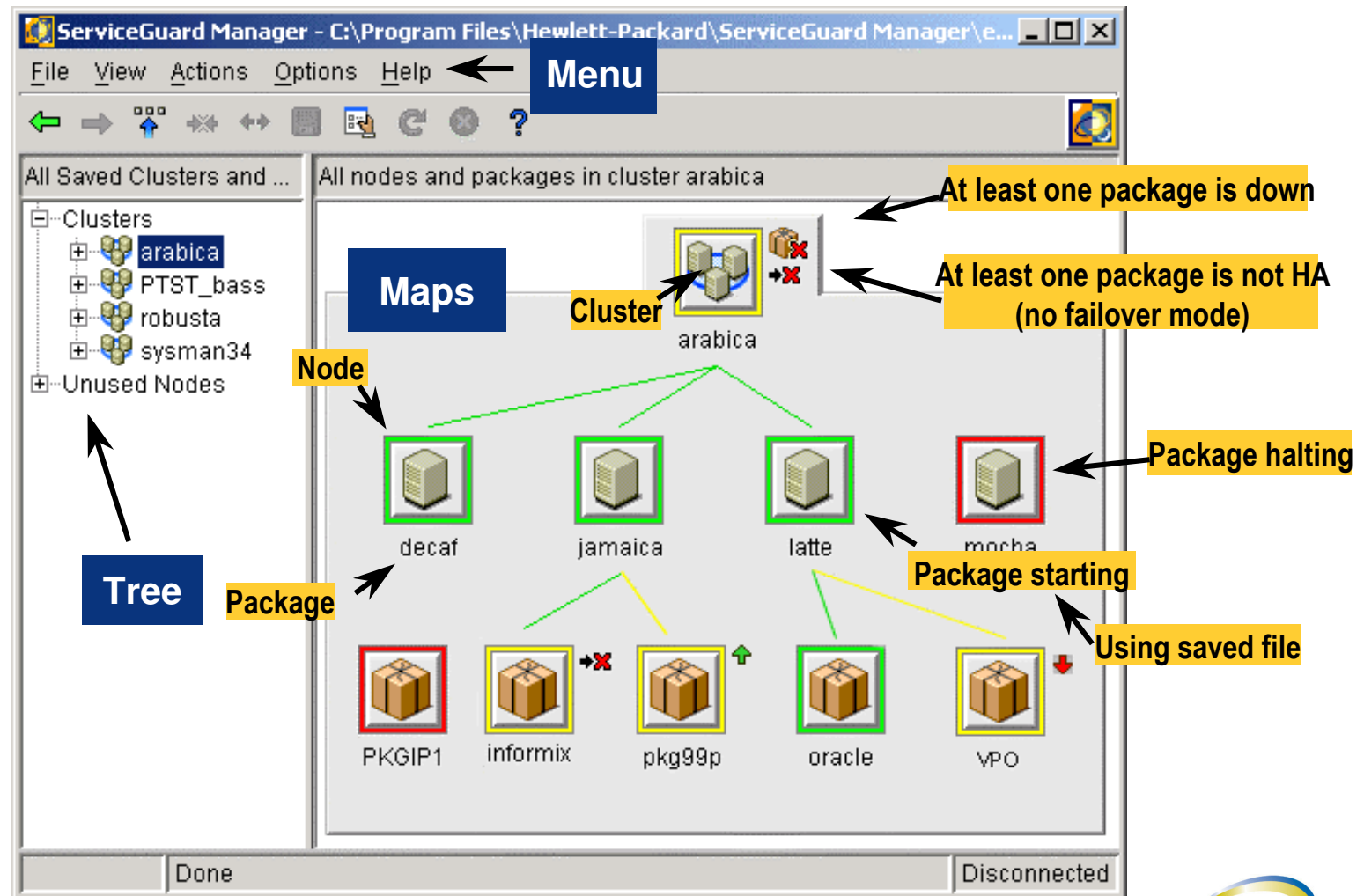
- Operates as a stand-alone product
- Integrates with
 - Service Control Manager 3.0
 - HP OpenView
 - Insight Manager
- Follows the client-server model



Serviceguard Manager user interface



Map objects and badges



Serviceguard Toolkits

- Toolkits available from software.hp.com
(click the high availability link)
- Free Linux toolkits
 - Apache
 - MySQL
 - NFS
 - Postgres
 - Samba
 - Sendmail
- Toolkits for sale
 - Oracle & Oracle RAC
 - SAP



Serviceguard for Linux installation and configuration Labs



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