



D·I·S RESEARCH, LTD.
IT Enterprise Solutions

Managing Applications in an MC/ServiceGuard Environment

Presented by

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of

D·I·S RESEARCH, LTD.

Training Topics

The Mechanics of MC/ServiceGuard

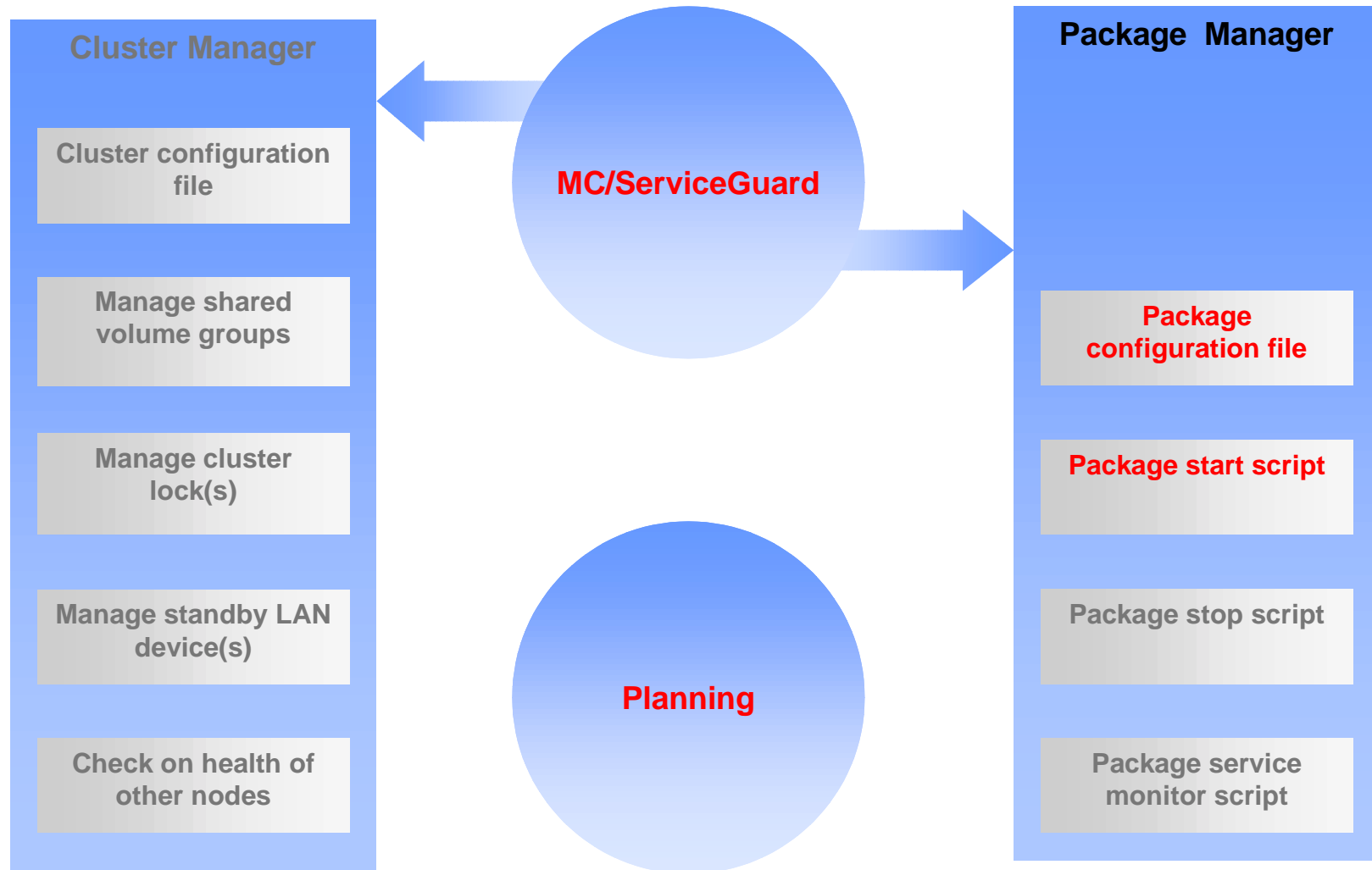
Keys to successful planning and administration

Package configuration issues

Package design considerations

Database issues

Our Topics of Discussion

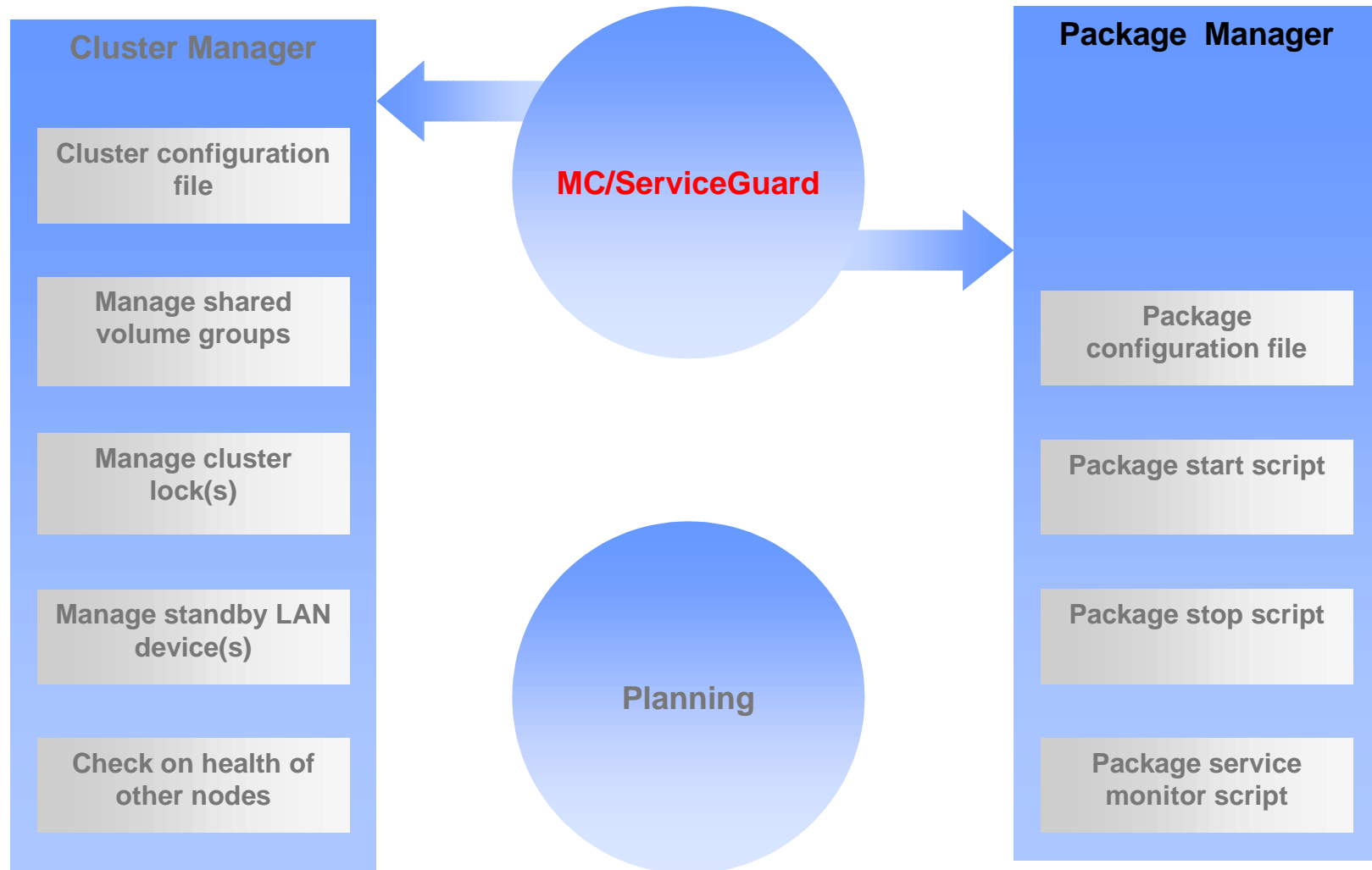


Topics

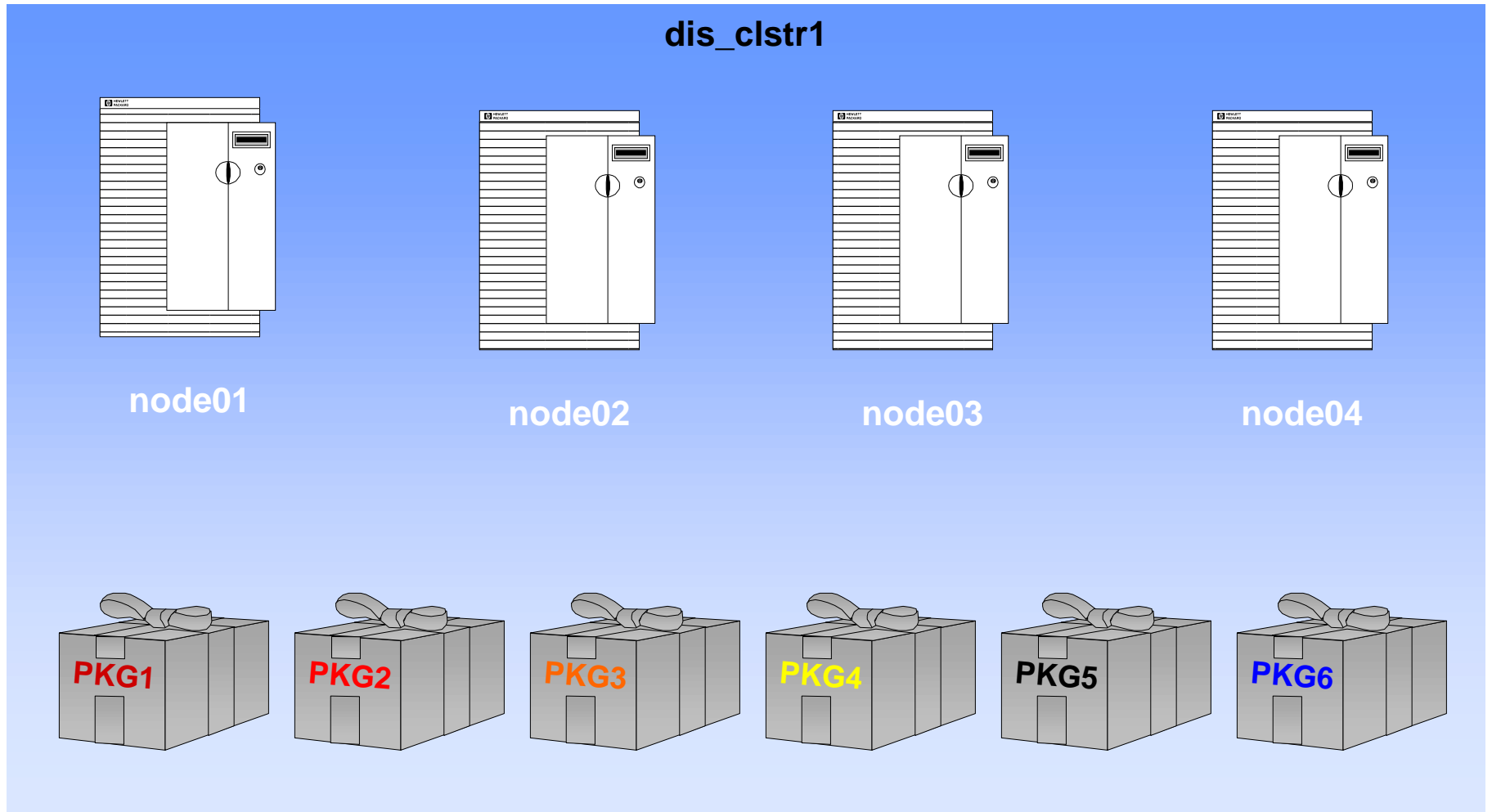


Mechanics of MC/ServiceGuard

The Mechanics of MC/ServiceGuard



Components of a Cluster

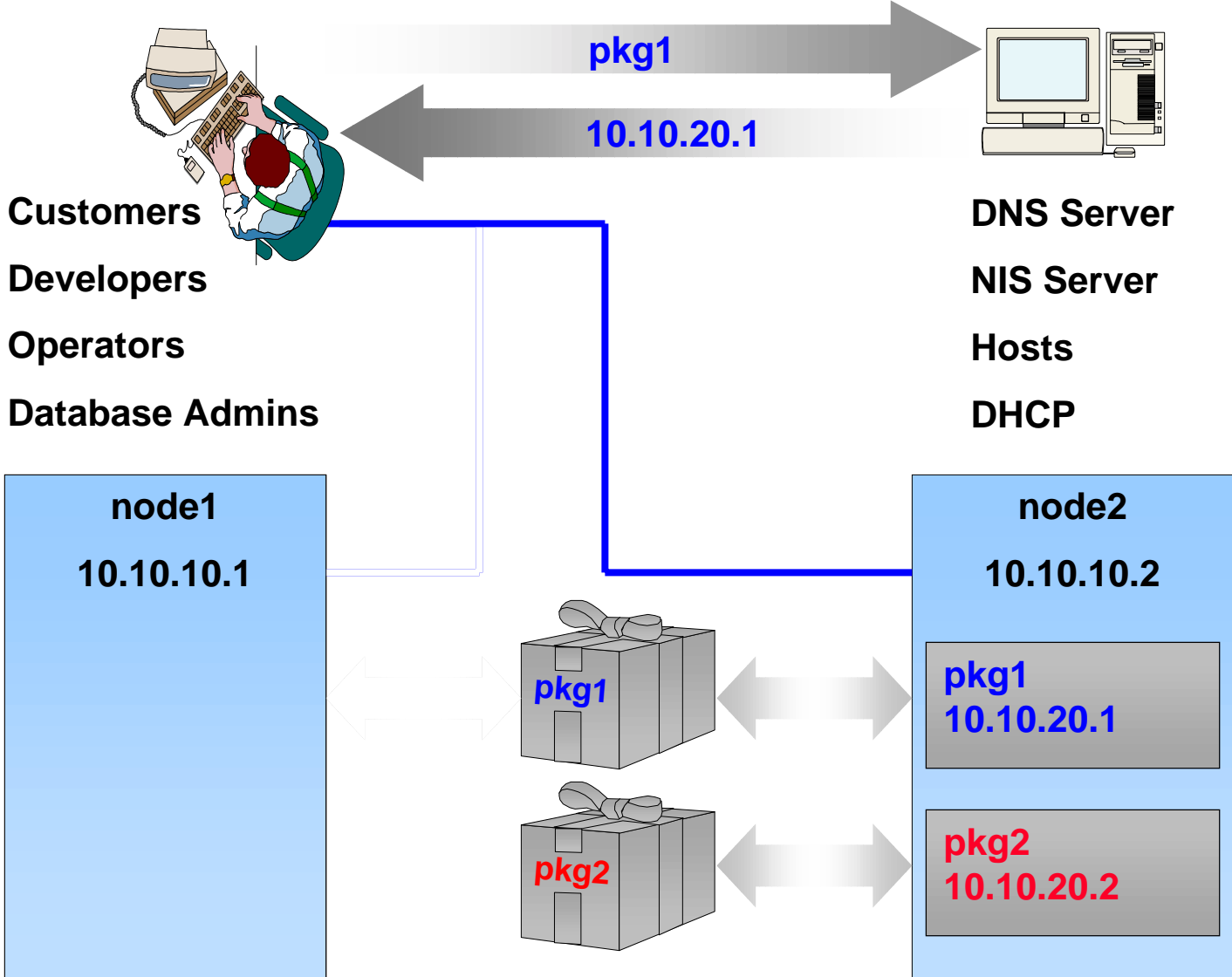


Mechanics of MC/ServiceGuard

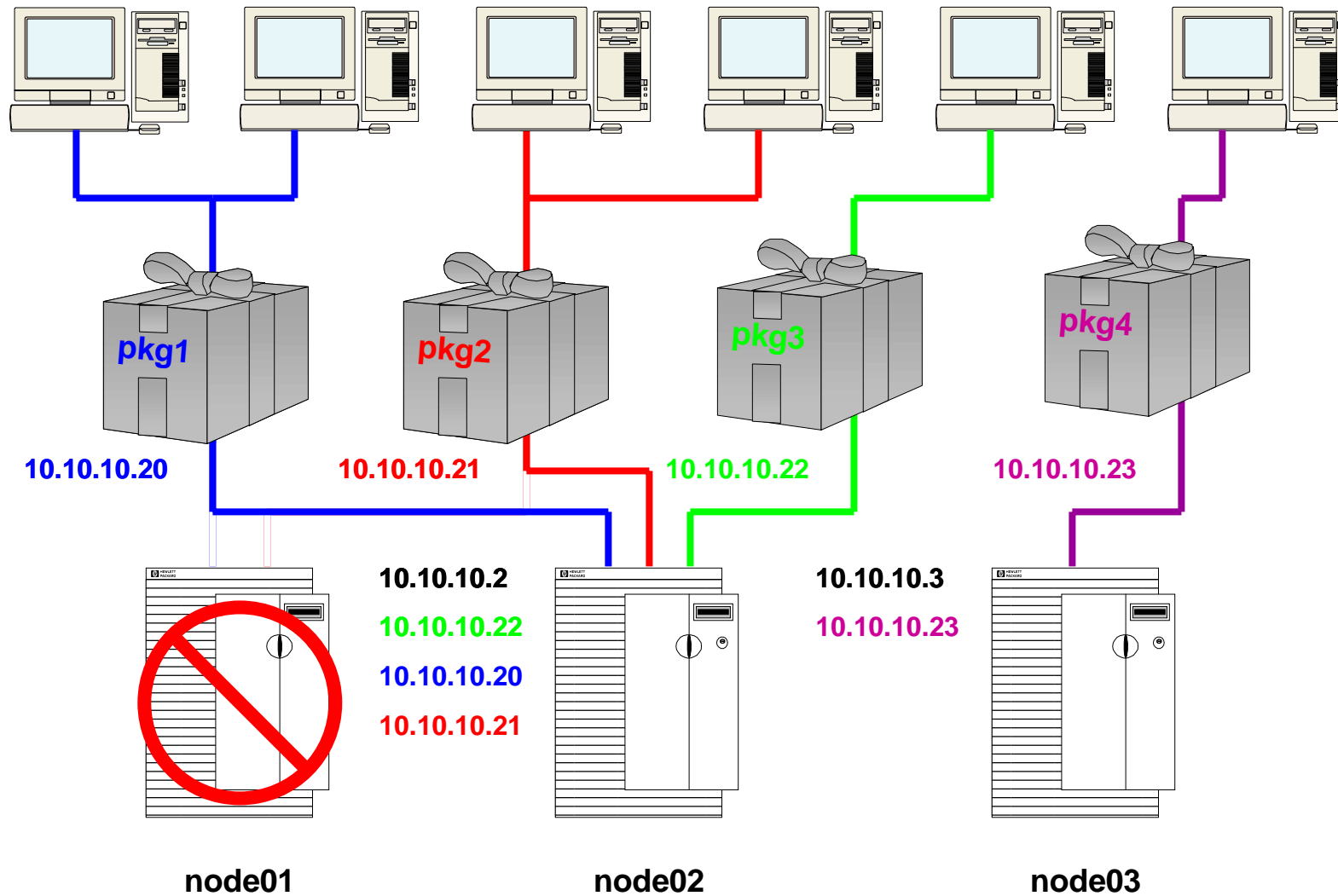
What is a Package?

Components of a package	Example
Package Name	pkg1
Managed resources IP address(es) Volume groups Logical volumes	10.10.10.4 10.10.11.4 VG01 /dev/VG01/lvol1 /dir1 VG02 /dev/VG02/lvol1 /dir2
Managed apps start the application stop the application monitor the application	Oracle binaries (resides on VG00) Oracle data for SID1 (resides on VG02) Oracle data for SID2 (resides on VG02) Oracle TNS listener (for SID1) Oracle TNS listener (for SID2) Sybase server 1 app1 (resides on VG00) app2 (resides on VG00)

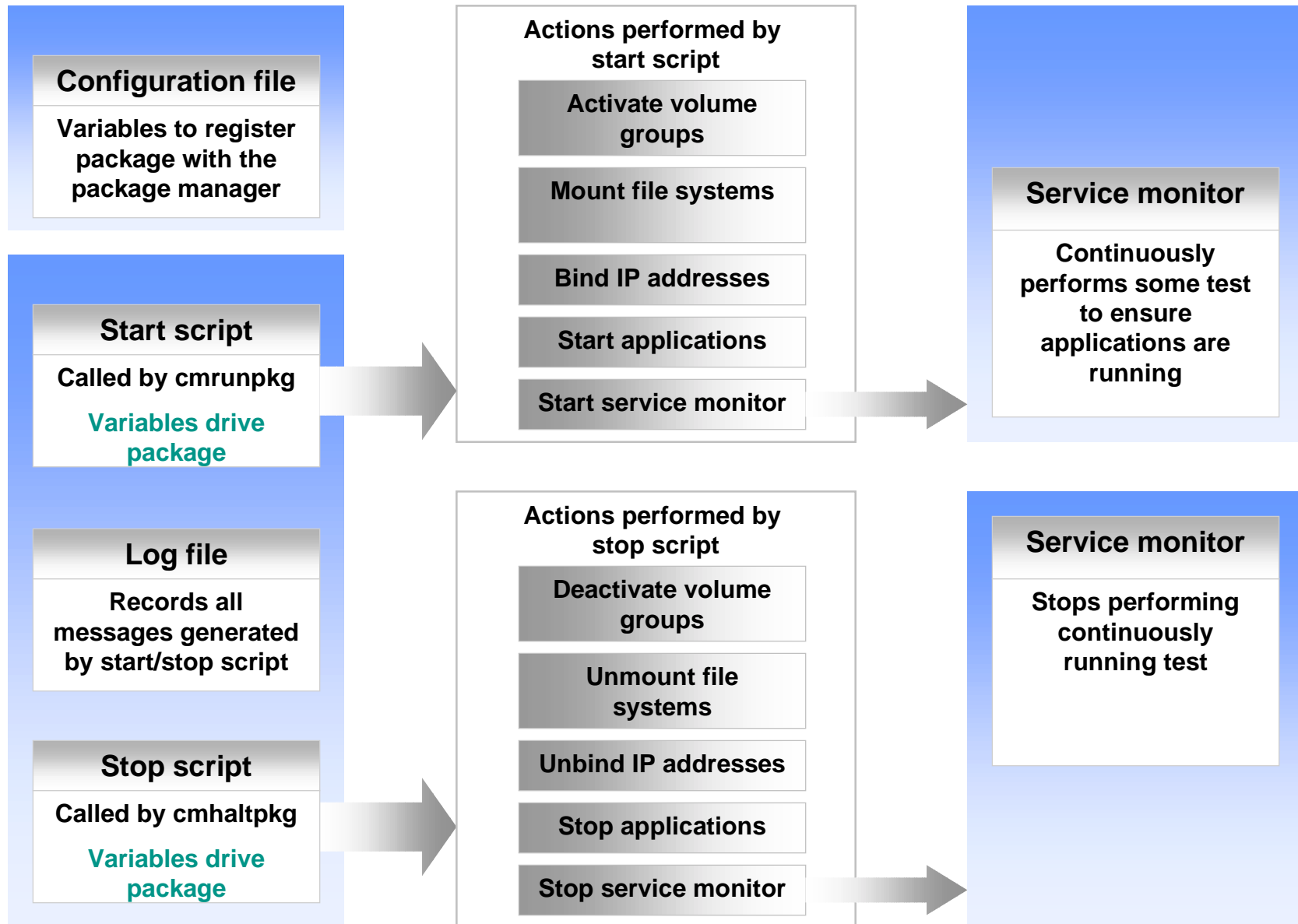
How Customers Connect to Applications



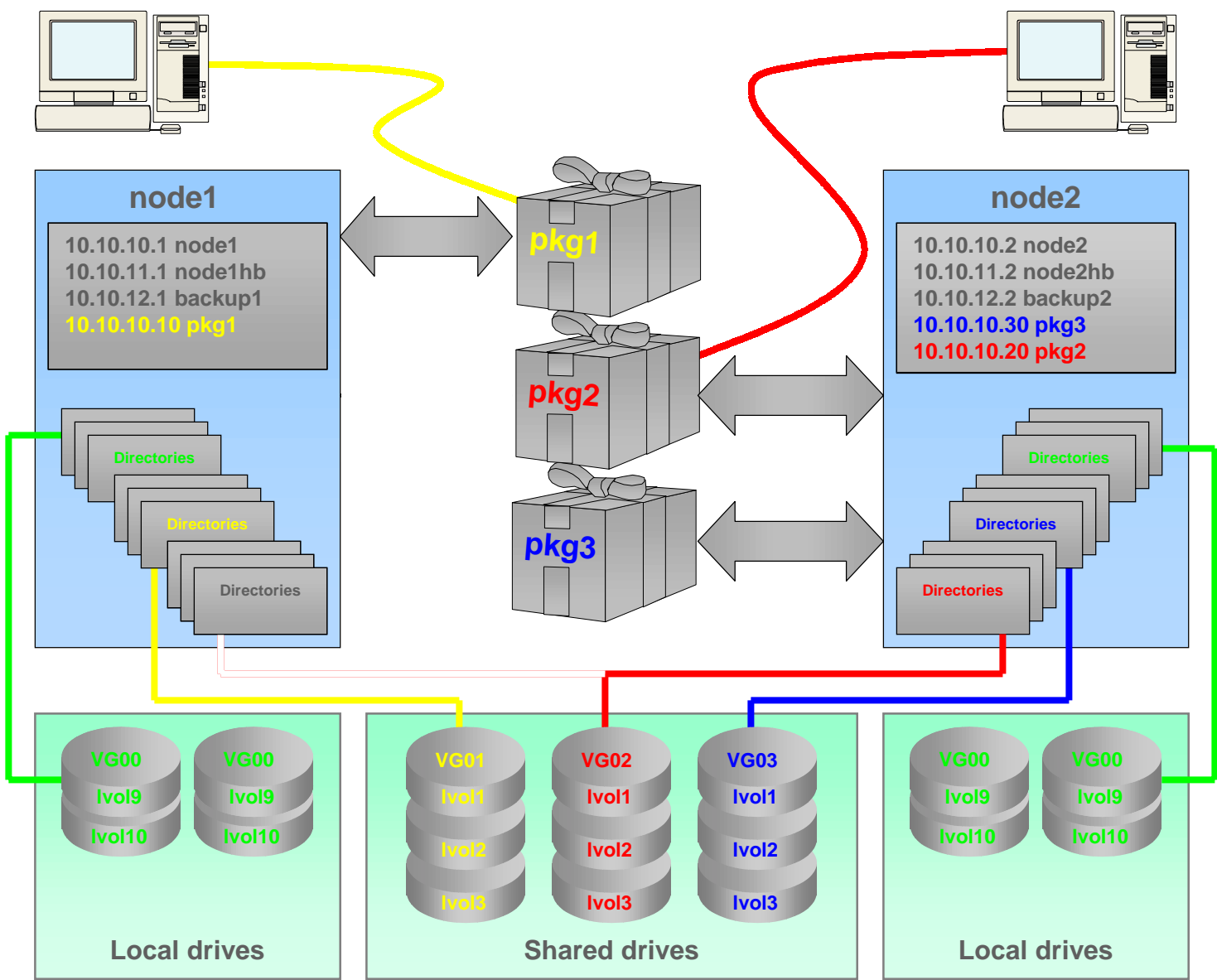
How Packages Keep People Working



How Various Package Files Work Together



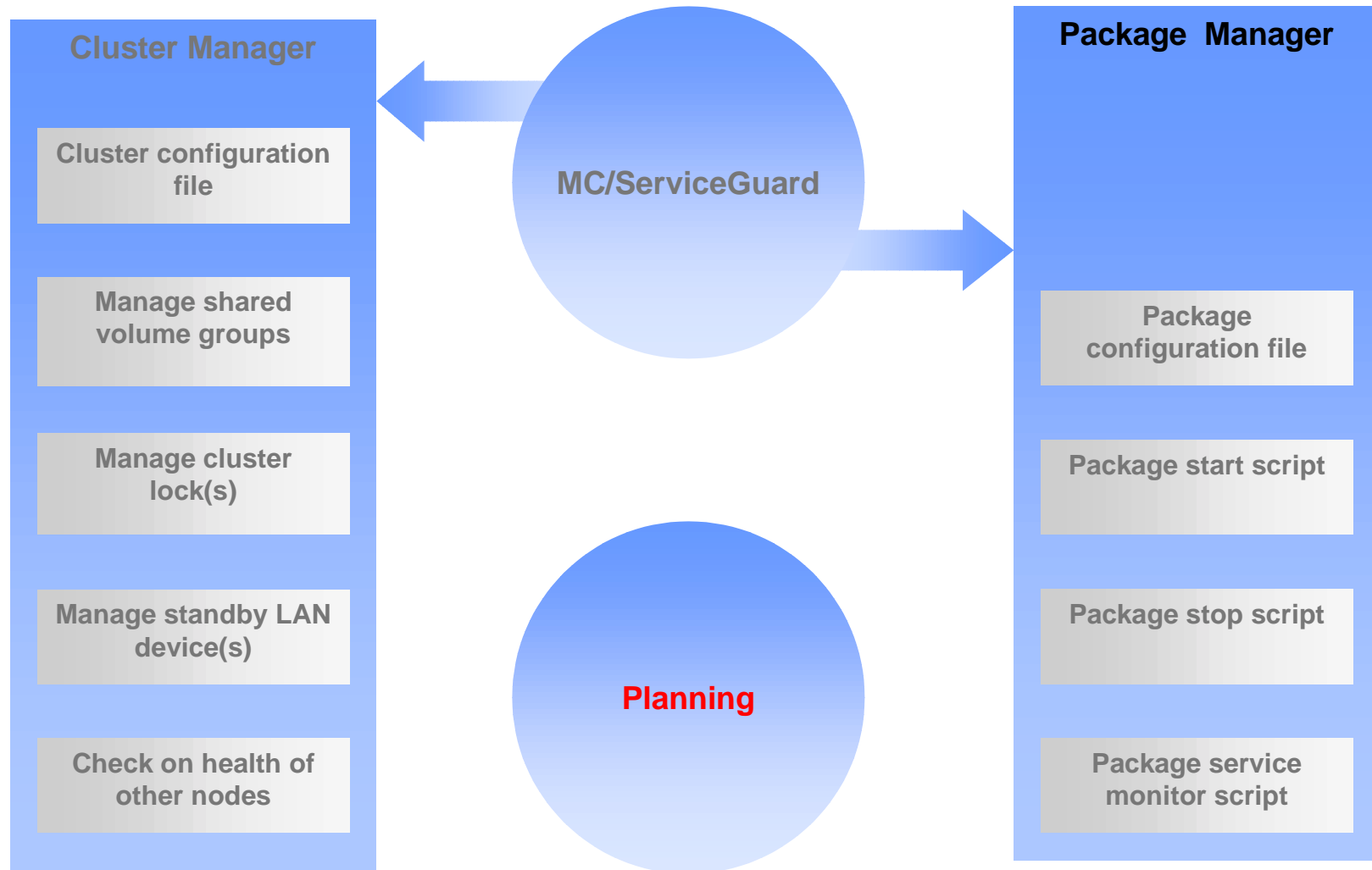
Moving a Package





Keys to successful planning

Successful Planning & Administration

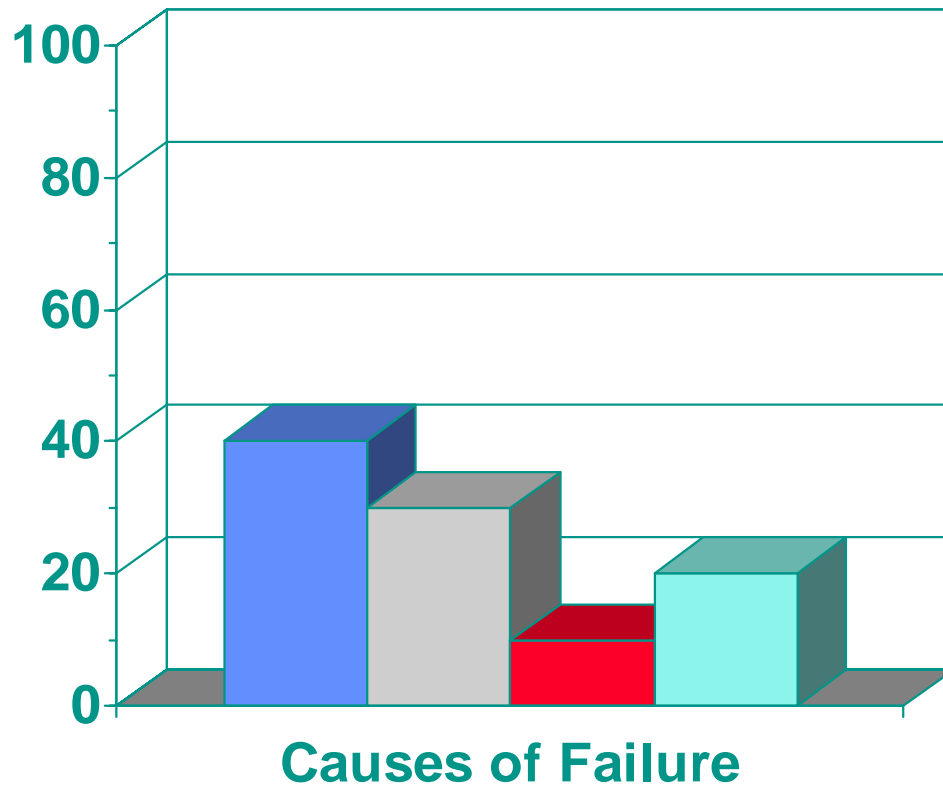


Keys to Successful Package Implementation

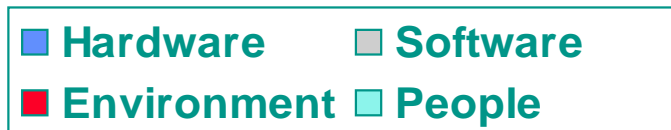
- ◆ Fully understand how each variable affects the package
 - Attend Hewlett-Packard MC/ServiceGuard training
 - Read the “Managing MC/ServiceGuard” manual
 - Visit <http://docs.hp.com:80/dynaweb/hpux11> OR [../hpux10](http://docs.hp.com:80/dynaweb/hpux10)
 - Visit <http://www.docs.hp.com/hpux/ha>
- ◆ Create simple solutions
- ◆ Create & maintain system configuration documentation
- ◆ Perform exhaustive testing
- ◆ Create Operations procedures & train operators
- ◆ Perform more testing

Causes of Application Downtime

(Source: Gartner Group)

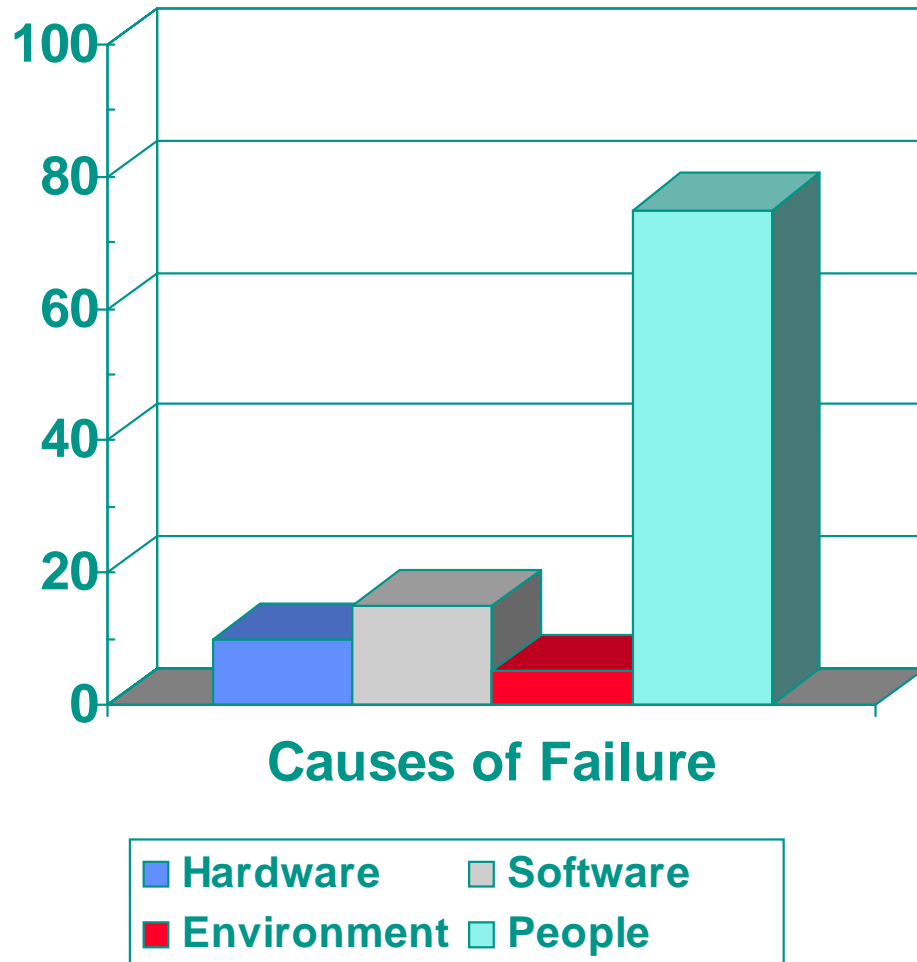


- ◆ Hardware failure
- ◆ Software errors
- ◆ Environment least
- ◆ People sometimes cause failures



Causes of Application Downtime

(Source: Gregory King's observations)



- ◆ Poor system documentation
- ◆ Lack of documented production standards
- ◆ No documented operations procedures
- ◆ Complex solutions & system architecture
- ◆ Lack of OS consistency between machines
- ◆ Lack of change control
- ◆ Mixing production & development environments
- ◆ Little investment in training
- ◆ Poor troubleshooting methods

Before You Start an Implementation

- ◆ Gather application information
 - Know how to start the application
 - Know how to stop the application (all processes)
 - Know what test(s) can be performed to verify application is running correctly
- ◆ Ensure viability of application start/stop scripts
 - No prompting for user input
 - Ensure app does not use “uname” to ascertain on which node it is running
 - Scripts must actually work correctly before using them with a package
- ◆ Ensure client access works correctly
 - Package names are in DNS, NIS, hosts, etc.
 - Ensure there is network connectivity
 - Clients use package names, not node names

Before You Start the Implementation

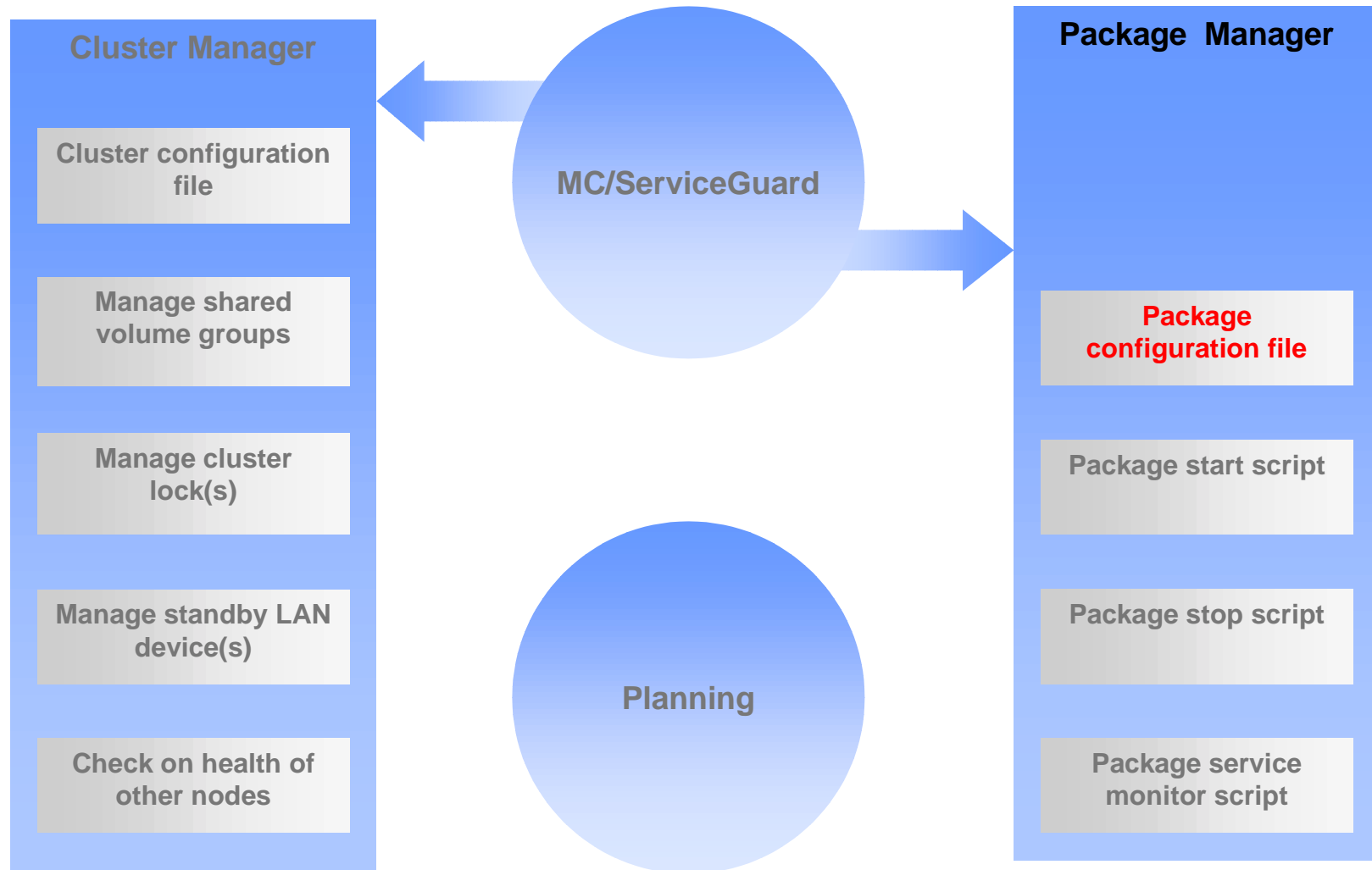
- ◆ Ensure OS is properly configured and consistent on all nodes
 - All network connections work
 - All volume groups & logical volumes are available on all nodes
 - The kernel is consistently configured on all nodes
 - All patches are consistently installed on all nodes
- ◆ Ensure applications work correctly before putting them under the control of a package
- ◆ Document system, cluster & package configurations

Package Configuration Issues



Package configuration issues

Package Configuration Issues



Package Configuration Issues

Basic Variables

- ◆ PACKAGE_NAME
- ◆ NODE_NAME
 - Multiple entries
 - Primary node first
 - Adoptive nodes follow
- ◆ SERVICE_NAME
- ◆ SUBNET
- ◆ RUN_SCRIPT
- ◆ HALT_SCRIPT

Failover and Failback Policies

- ◆ **FAILOVER_POLICY**
 - CONFIGURED_NODE (Default)
 - MIN_PACKAGE_NODE
- ◆ **FAILBACK_POLICY**
 - AUTOMATIC
 - MANUAL (Default)

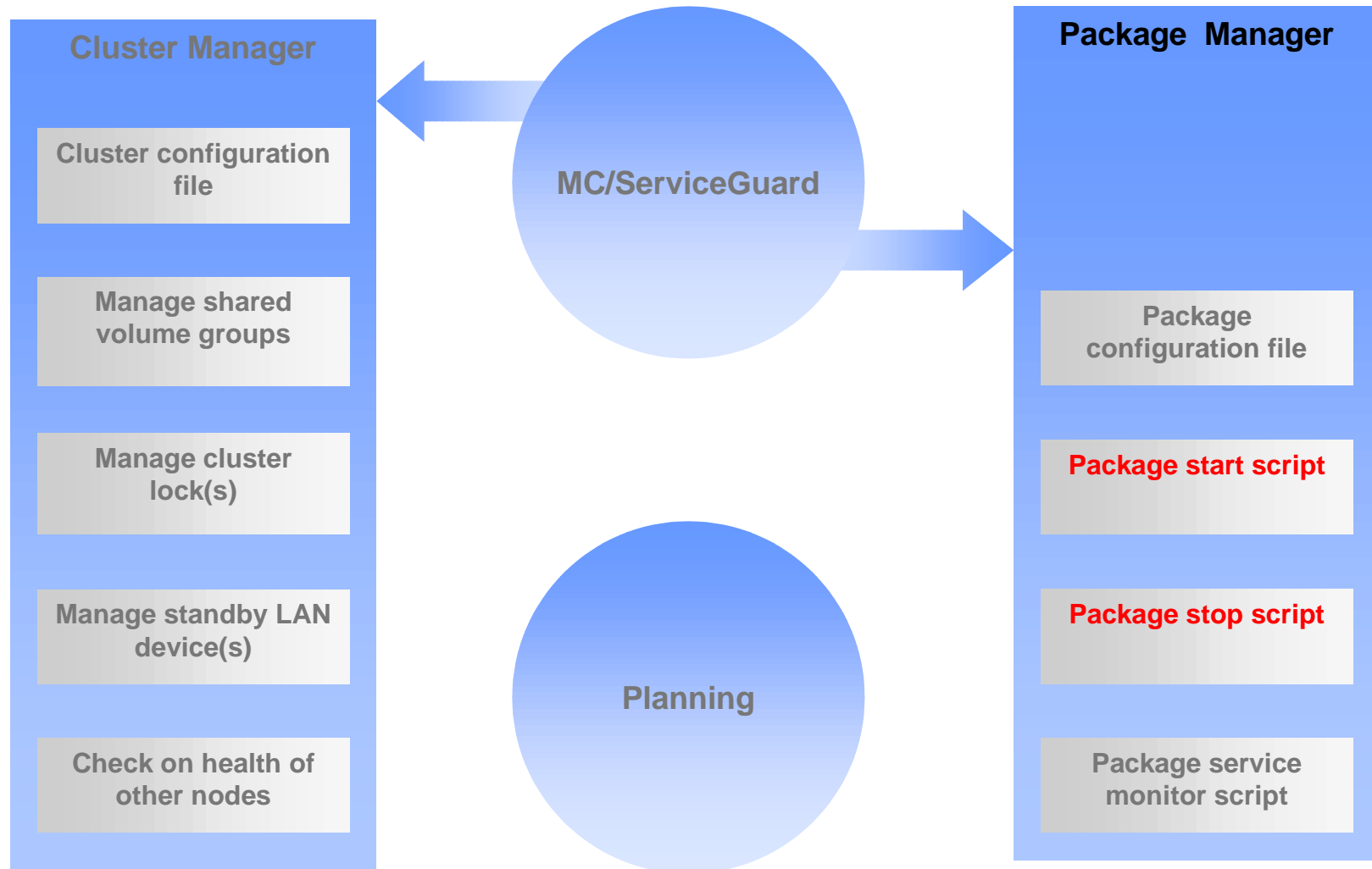
Other Helpful Variables To Set

- ◆ **PKG_SWITCHING_ENABLE**
 - YES (Default)
 - NO
- ◆ **RESOURCE_NAME (EMS)**
- ◆ **RESOURCE_POLLING_INTERVAL (EMS)**
- ◆ **RESOURCE_UP_VALUE (EMS)**

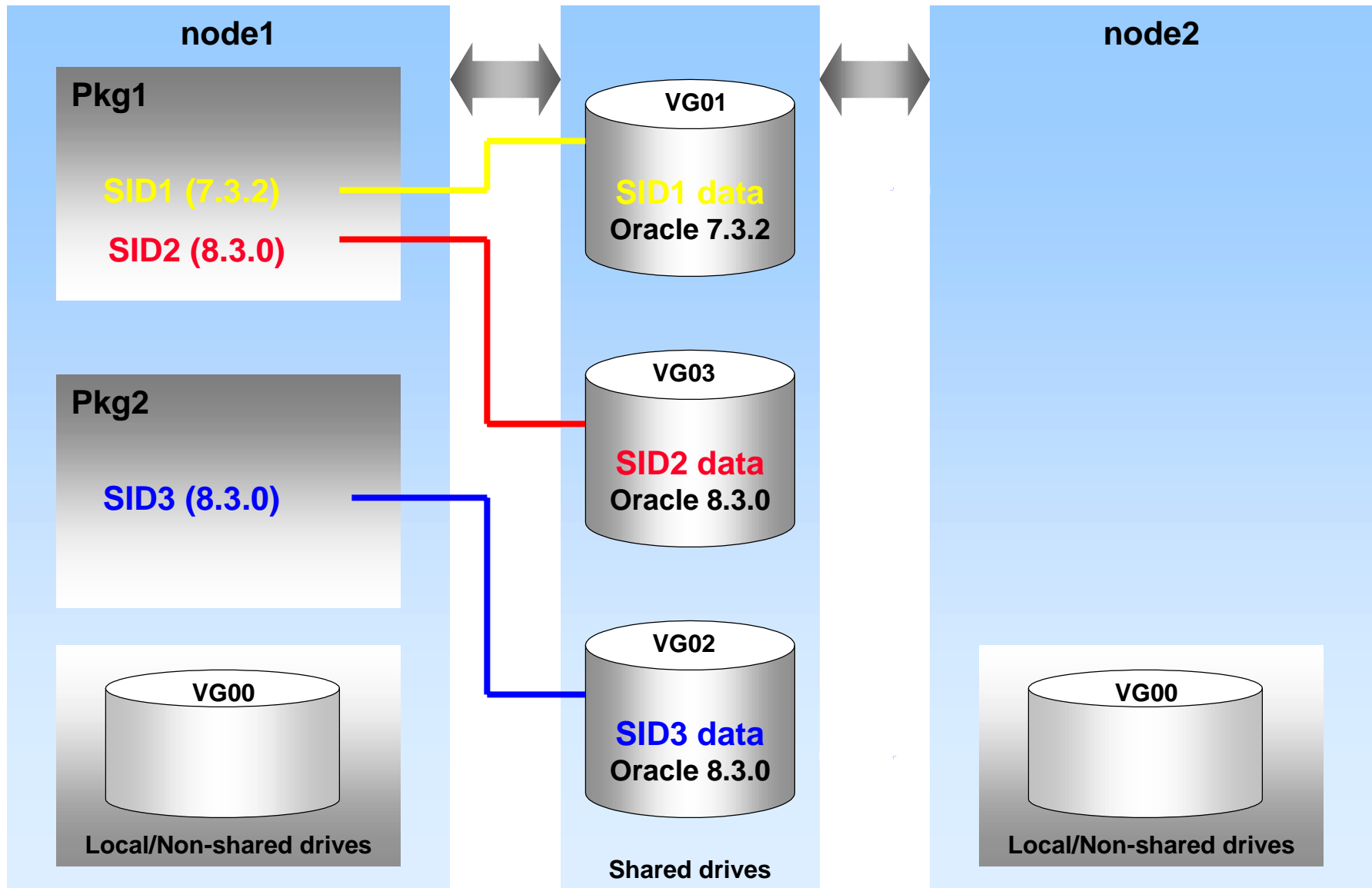


Package design issues

Package Design Considerations

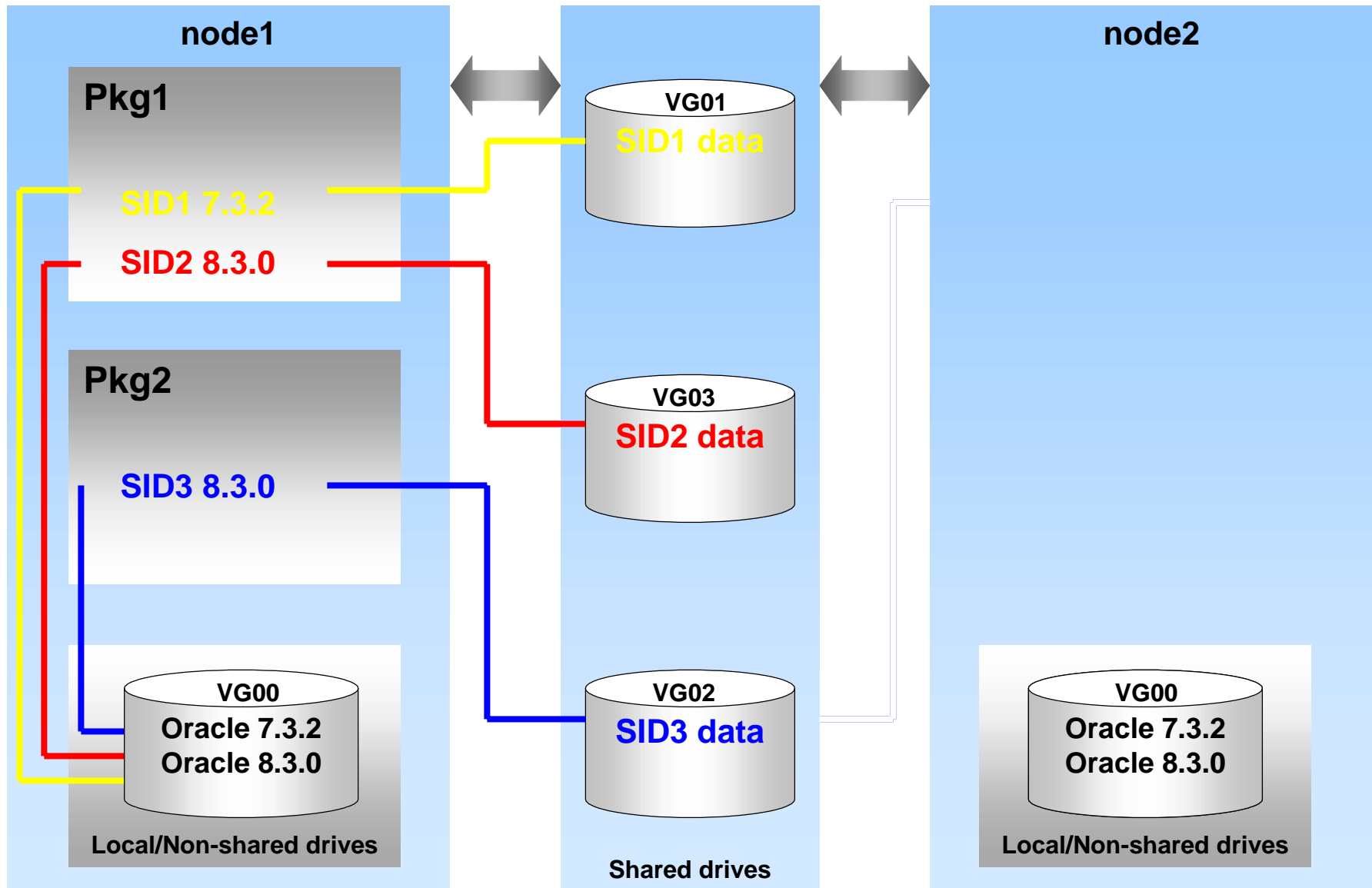


LVM: Binaries on shared drives

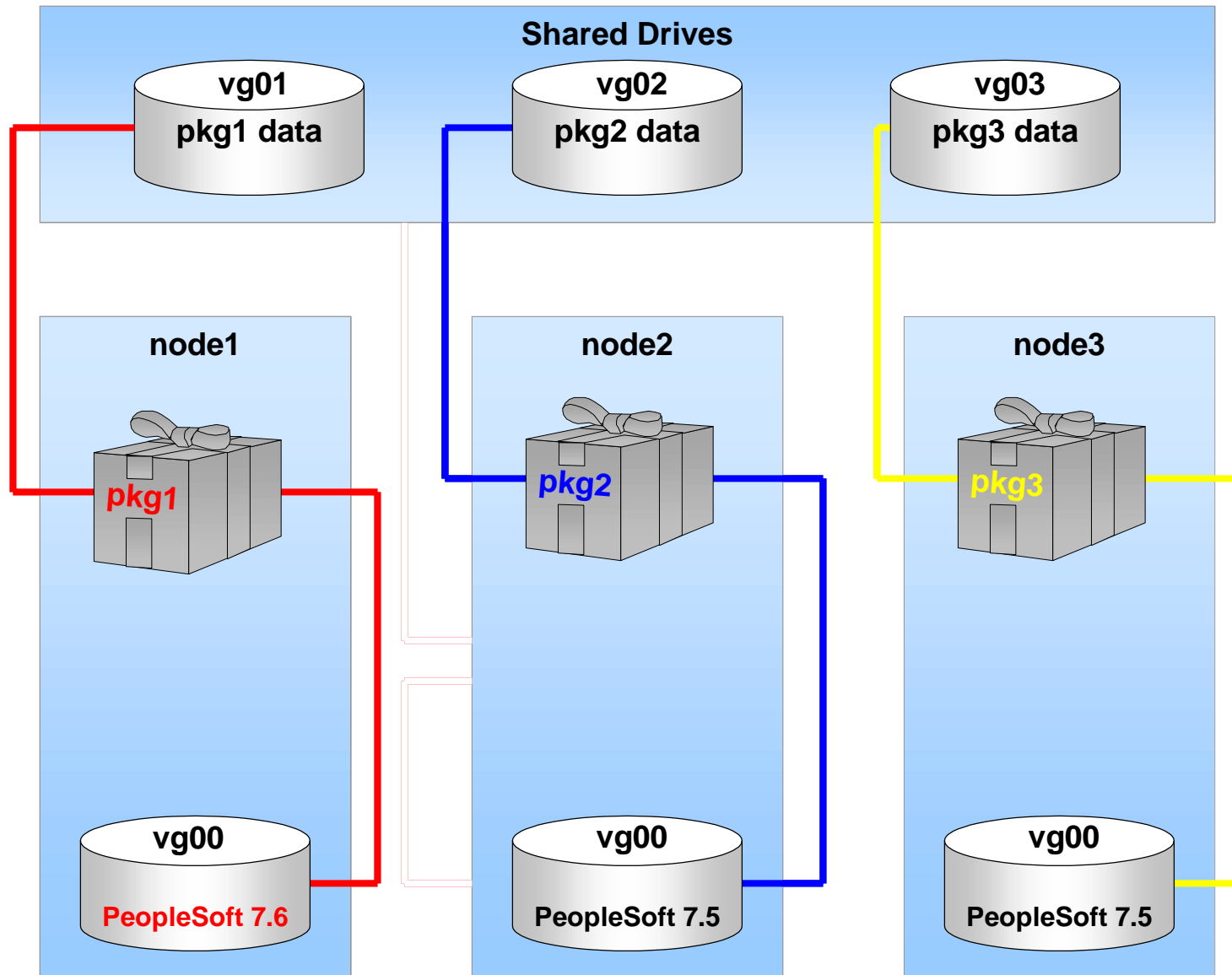


Package Design Considerations

LVM: Binaries on local drives

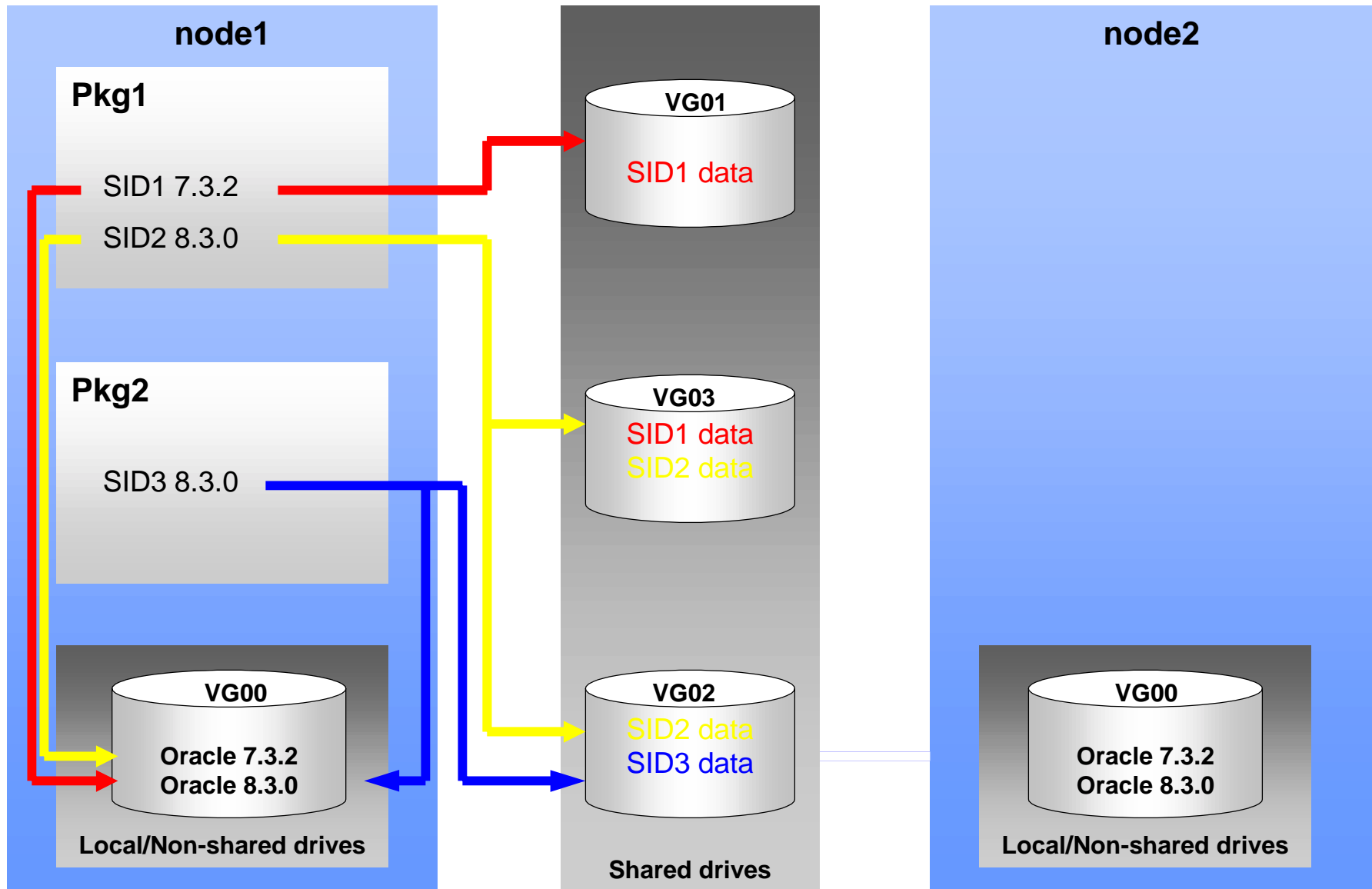


LVM: Rolling upgrade using binaries on local drives



Package Design Considerations

LVM: Don't Share Data Between Packages



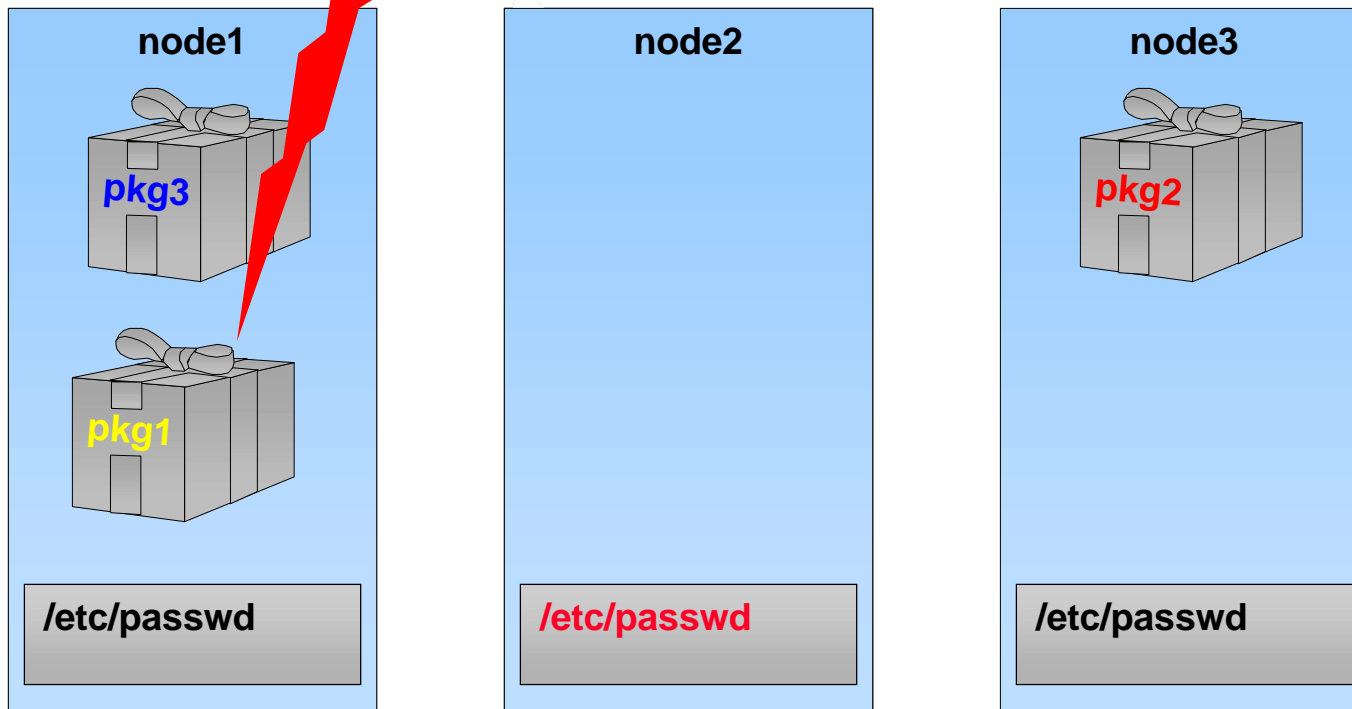
Package Design Considerations

NIS: When to Use NIS



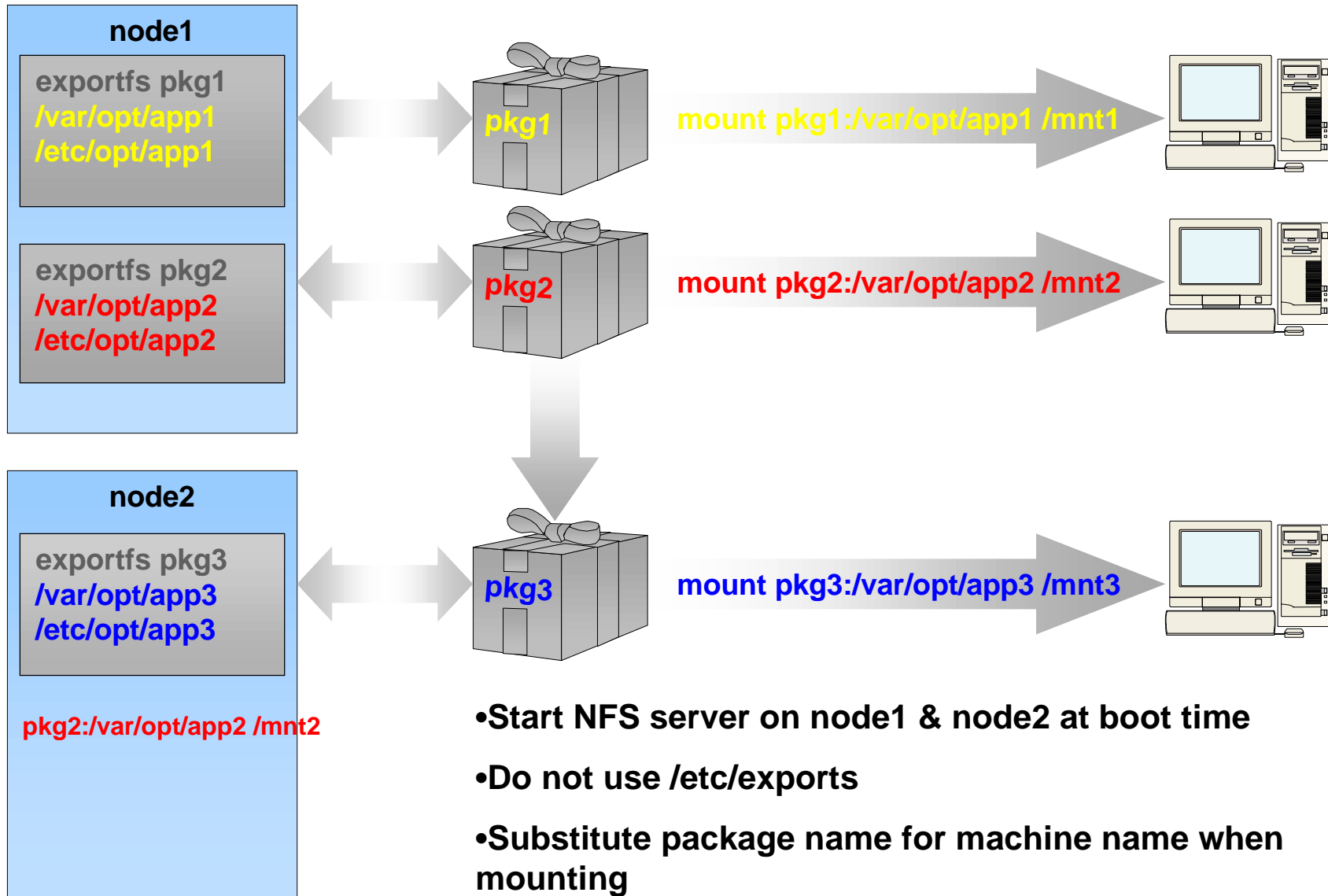
Customer

- Use NIS if many users log onto one or more packages
- Usually manage only passwd & group



Package Design Considerations

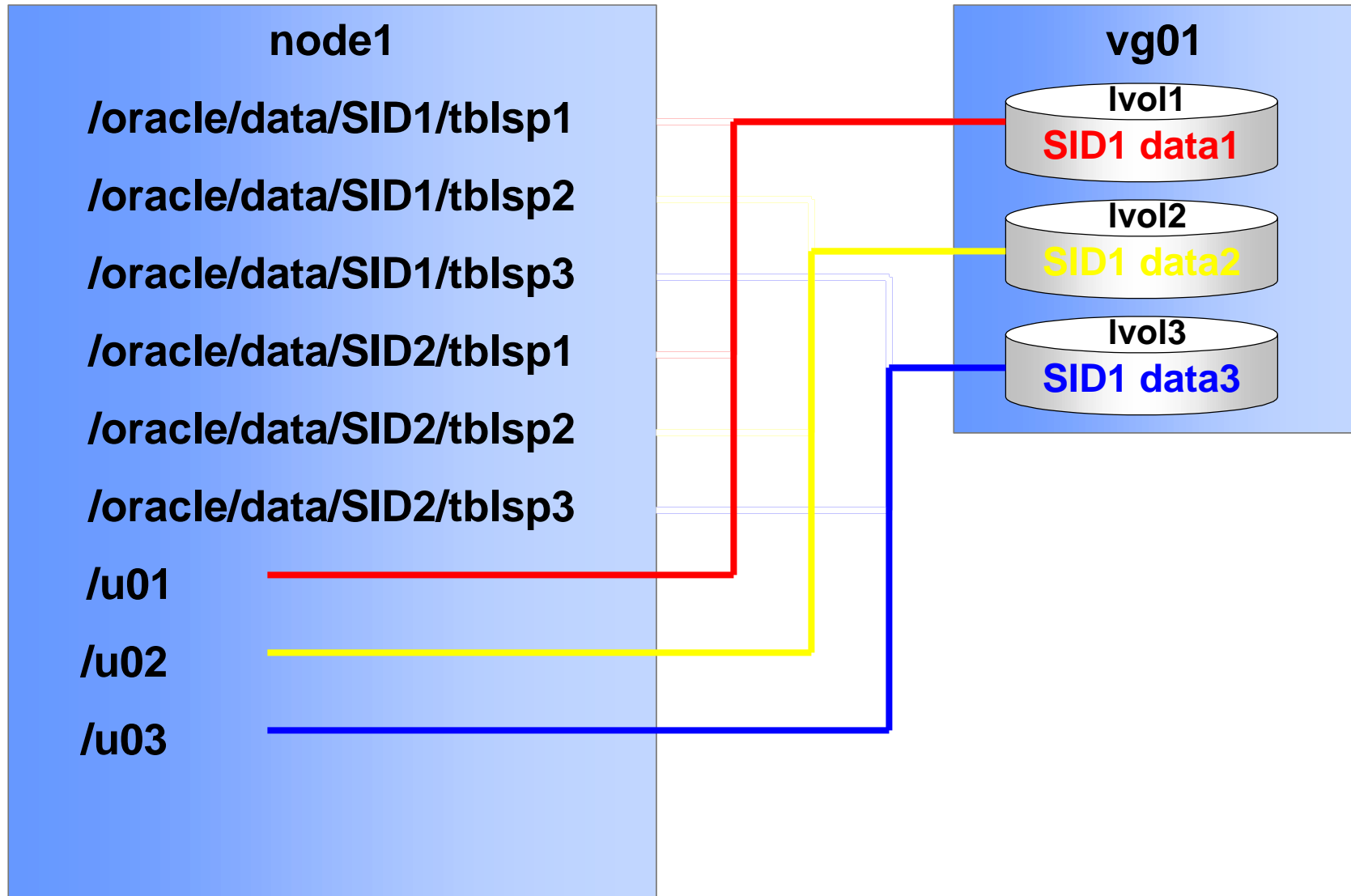
NFS: Using NFS with Packages



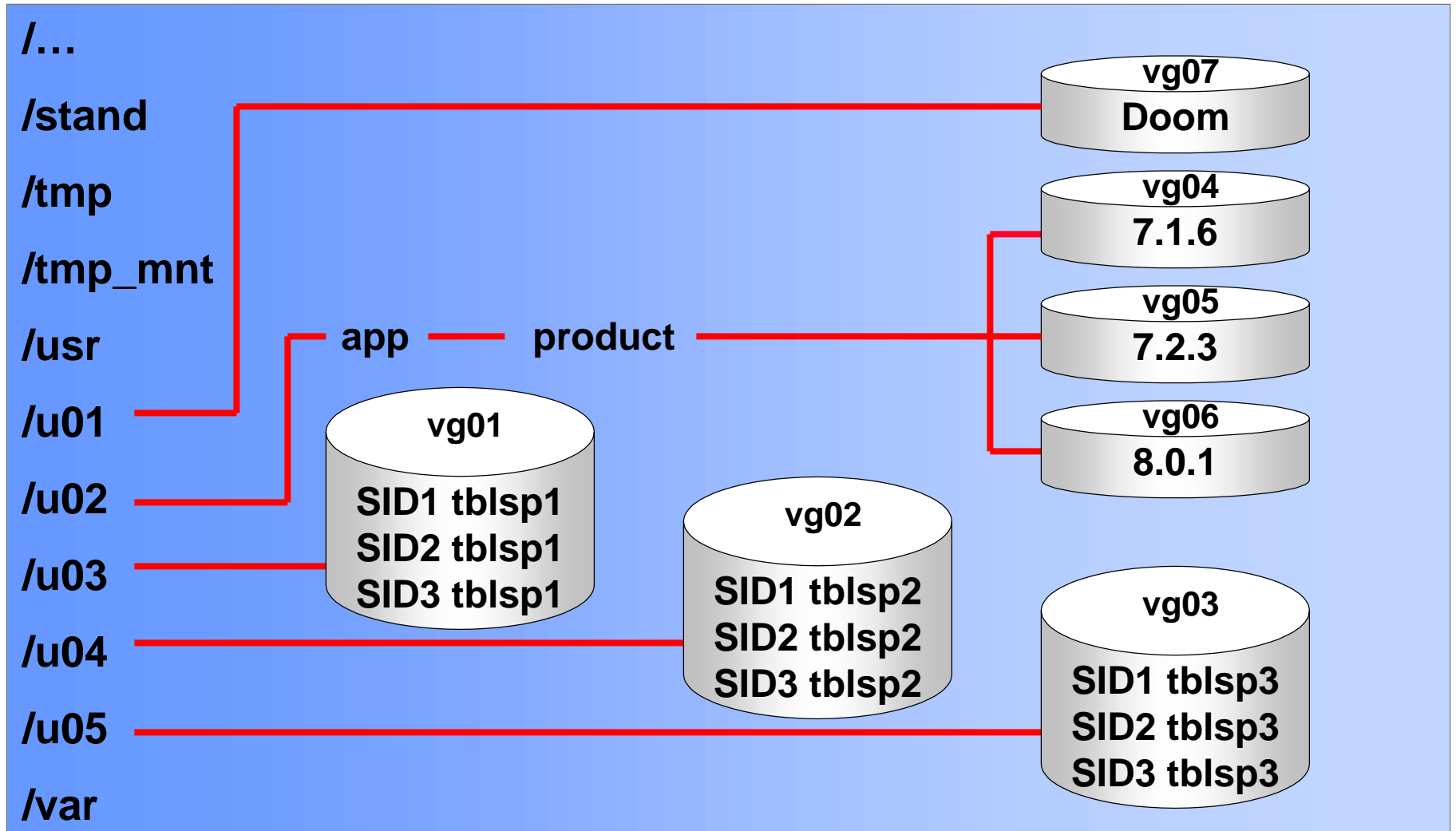


Database issues

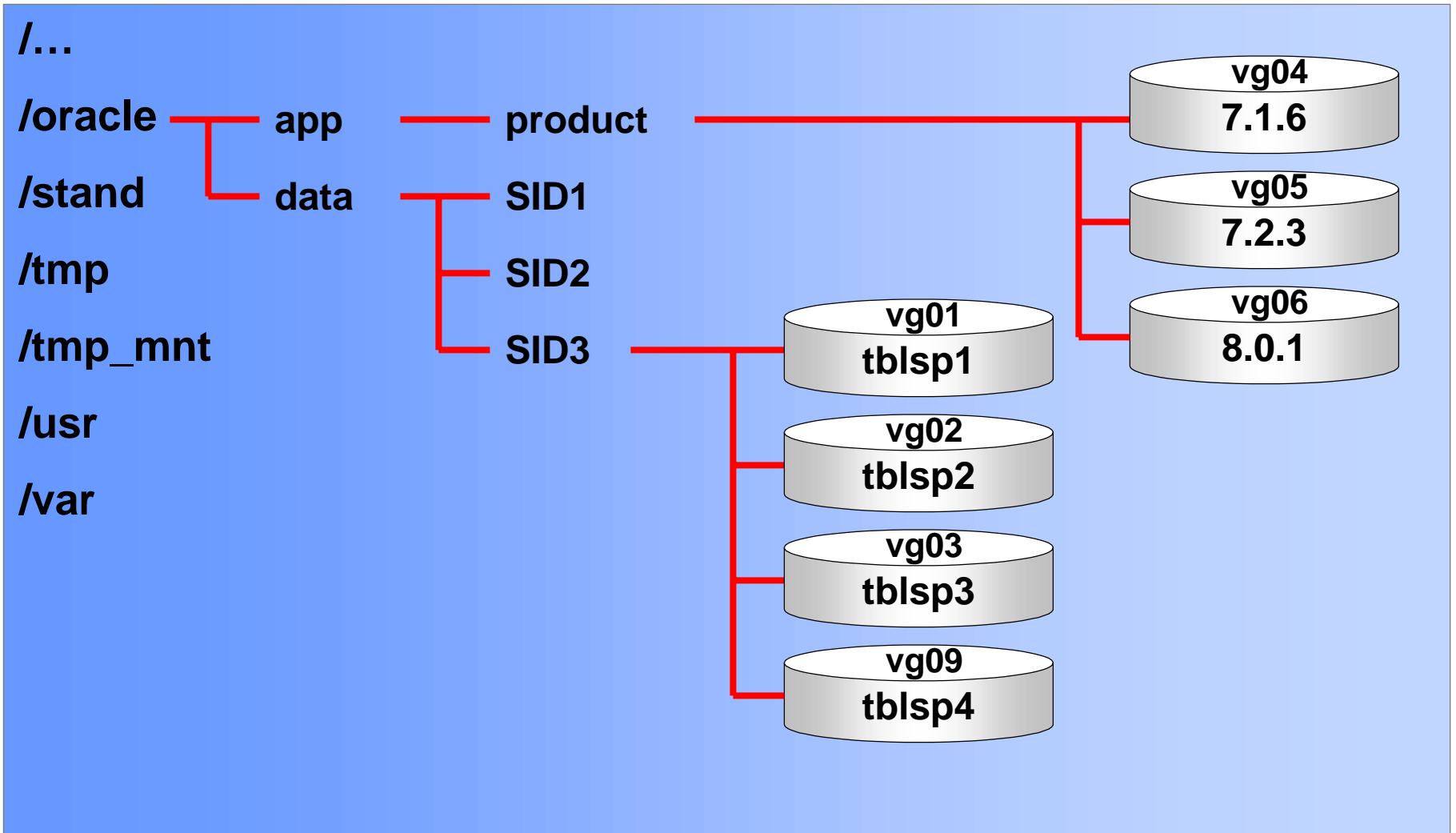
LVM: File System Basics



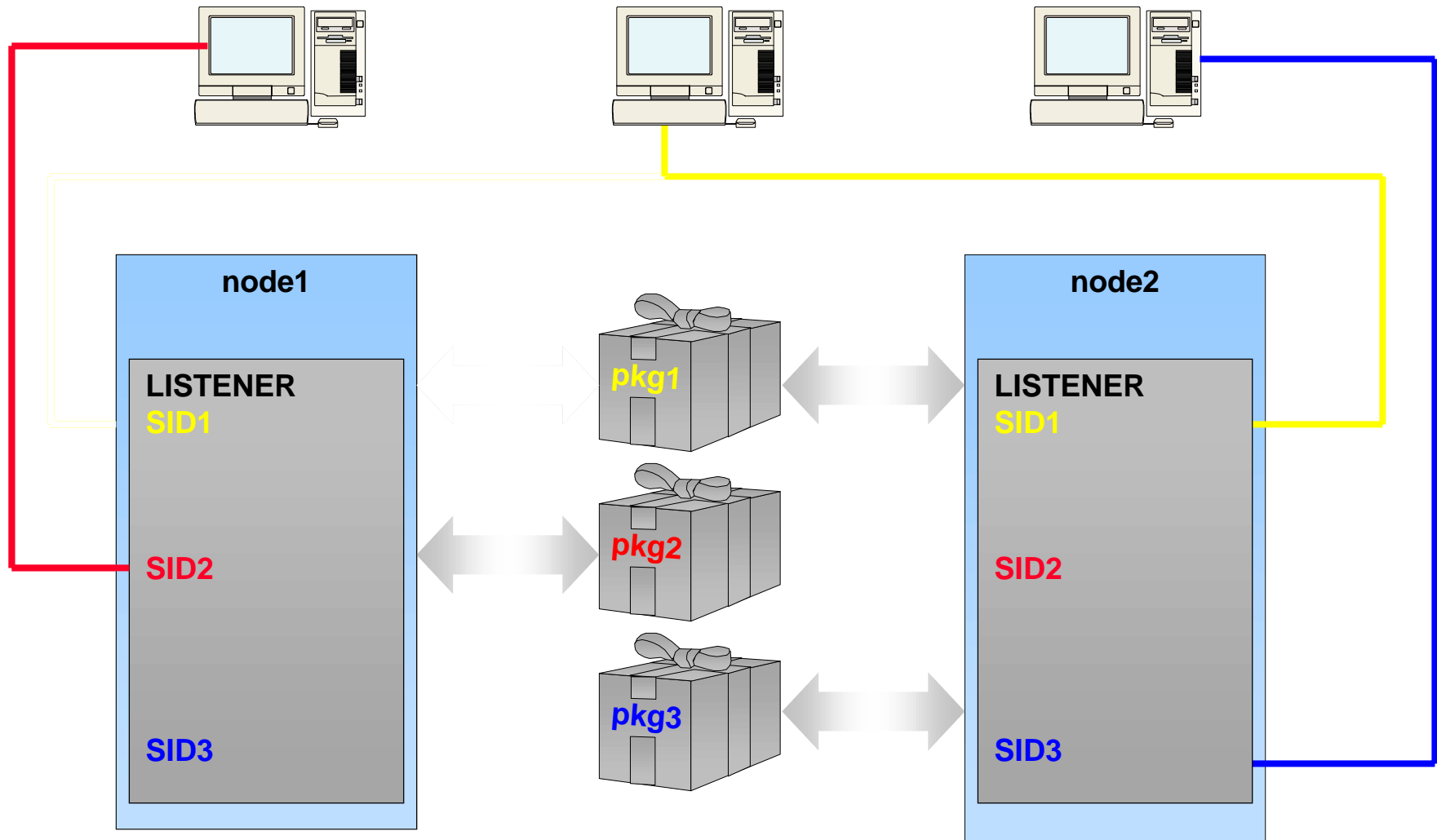
LVM: Typical Interpretation of OFA



LVM: Suggested OFA for Lower Maintenance

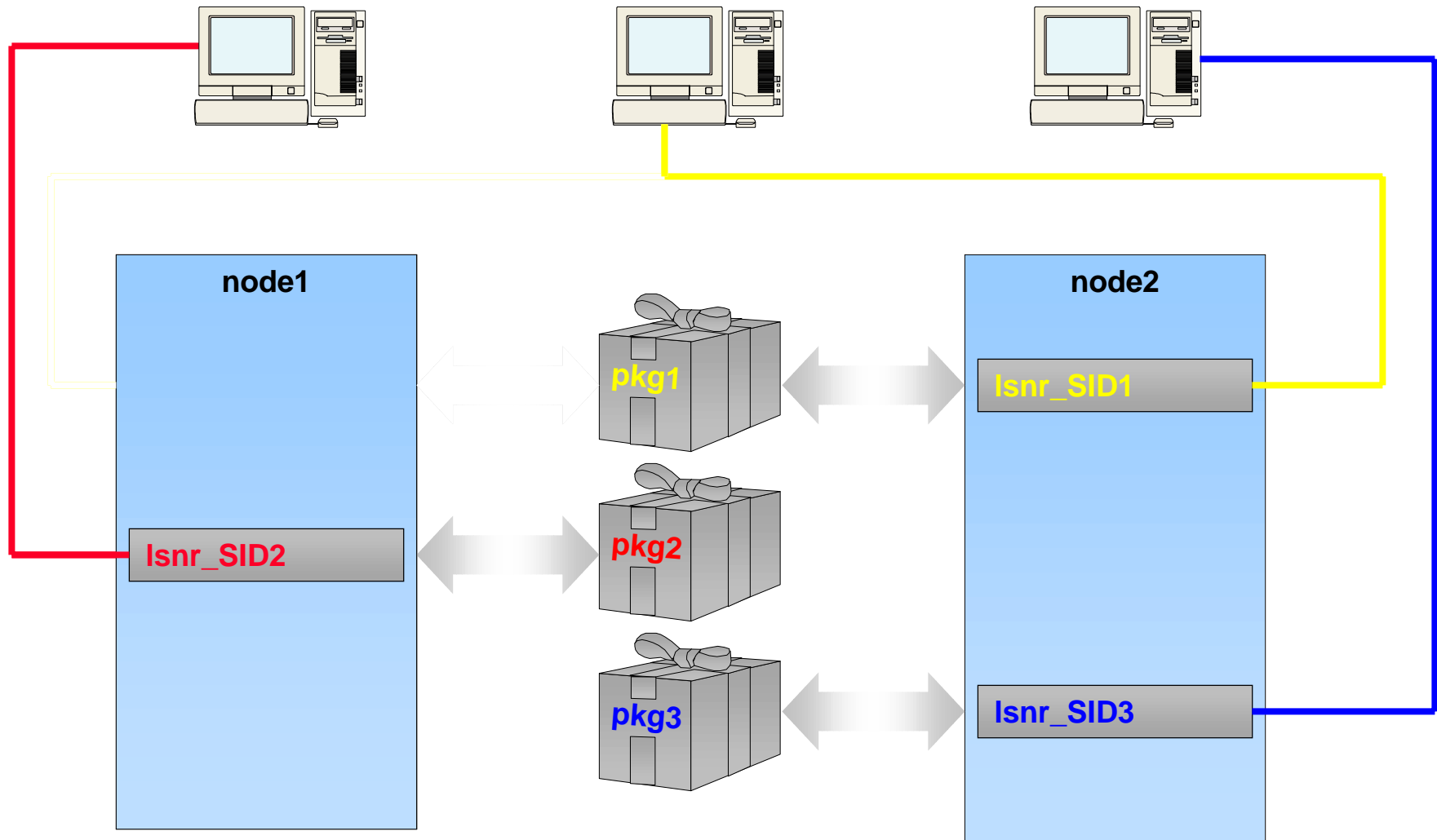


SQL*Net: Using a Single Connect Descriptor



Database Design Considerations

SQL*Net: Using Independent Connect Descriptors



Database Design Considerations