

Monitoring and Administration of Clusters With ServiceGuard Manager

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agenda

- HA overview
- serviceguard manager features
- cluster monitoring
- cluster administration
- integration with openview and service control manager
- live demo
- roadmap
- q&a

high availability is...

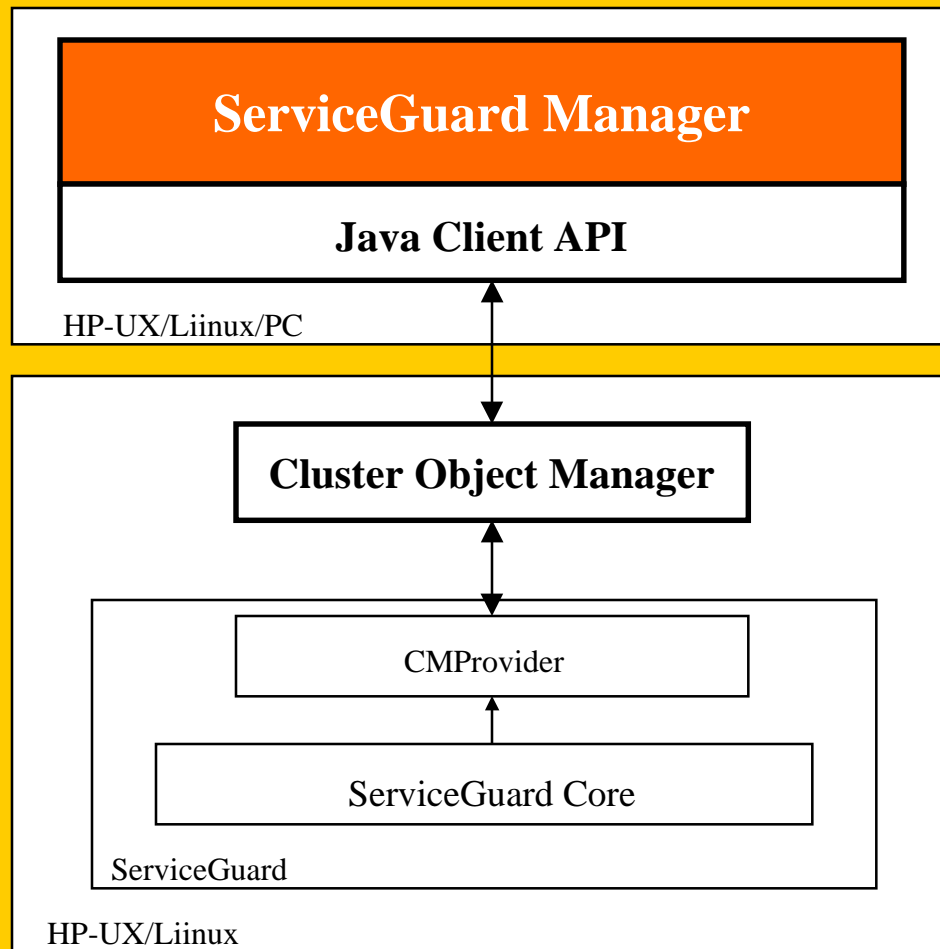
- hardware, systems, software, applications and IT processes designed to minimize both planned and unplanned downtime
- a computer system's application services being able to continue in spite of a hardware or software failure
- critical in today's 24x7 business environment



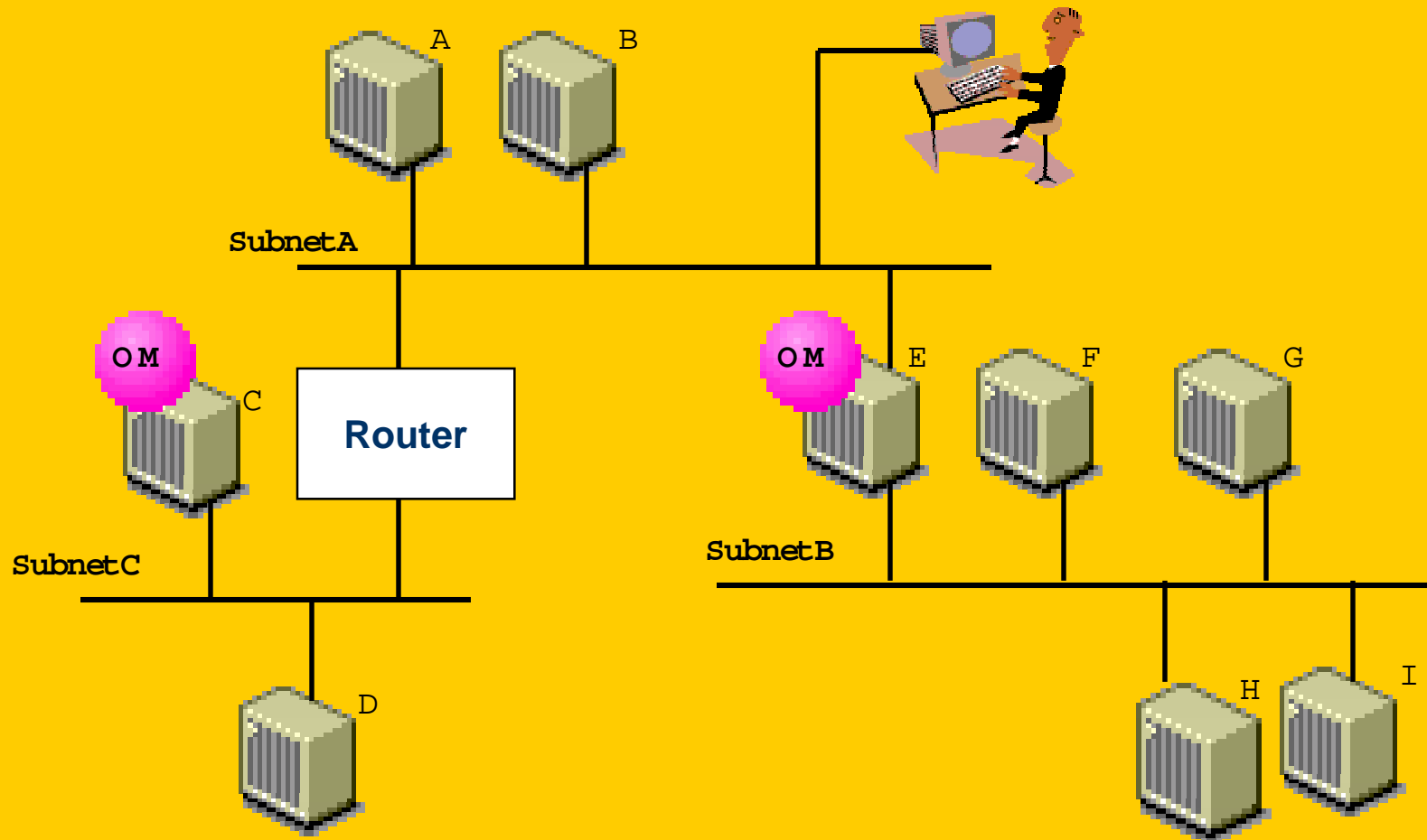
ServiceGuard Manager Features

- ✓ A pure-Java application runs on HP-UX, Windows and Linux
- ✓ Graphical representation of ServiceGuard clusters, nodes, and packages
- ✓ Status display
- ✓ Cluster, node, and package property sheets
- ✓ Cluster administration
- ✓ Save cluster environment to a file for future reference
- ✓ Map History
- ✓ Standalone or integrated with HP OpenView products (NNM and VPO) and launchable from Service Control Manager (SCM)
- ✓ Internationalization; localization in Japanese in process

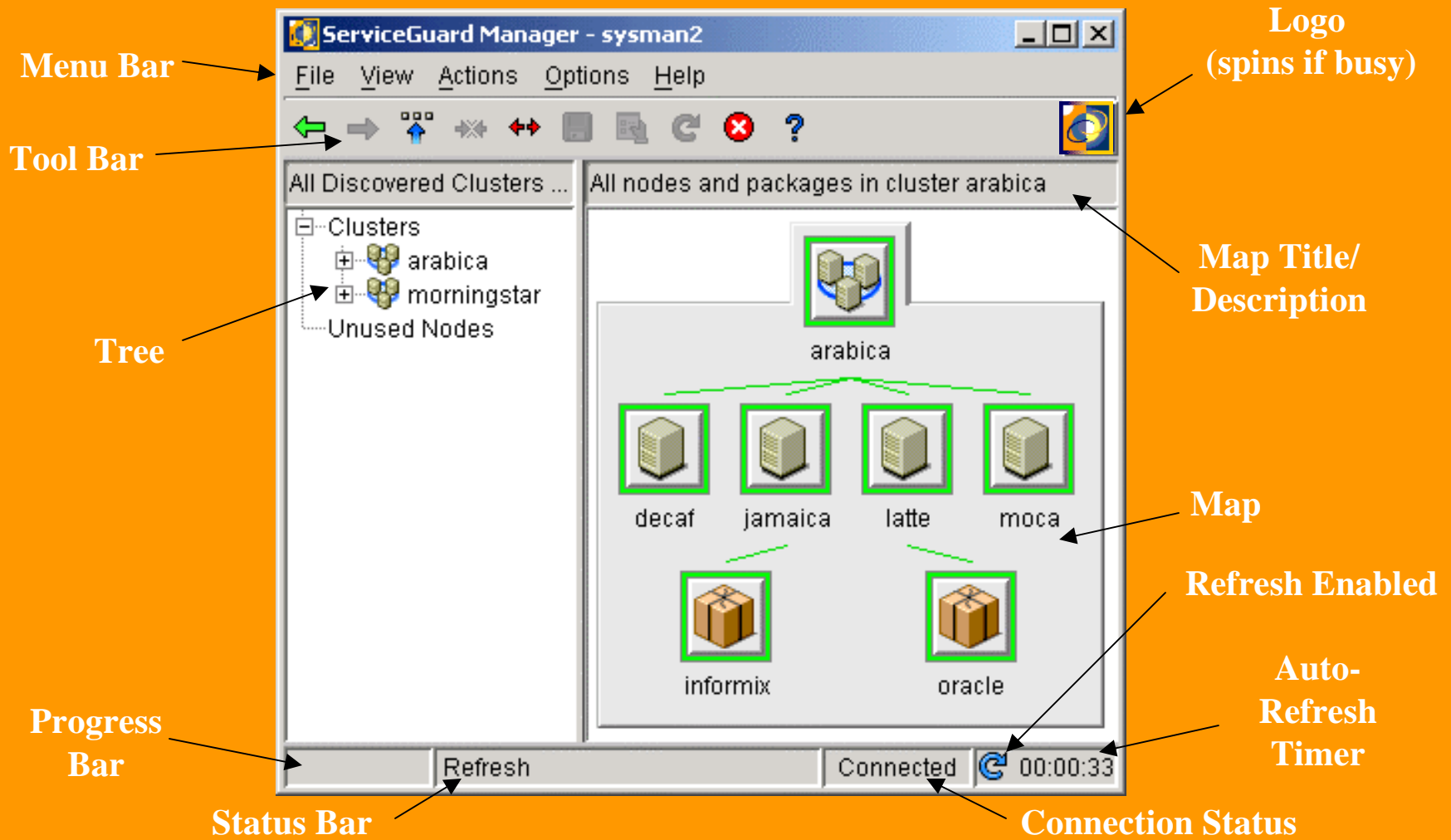
ServiceGuard Components



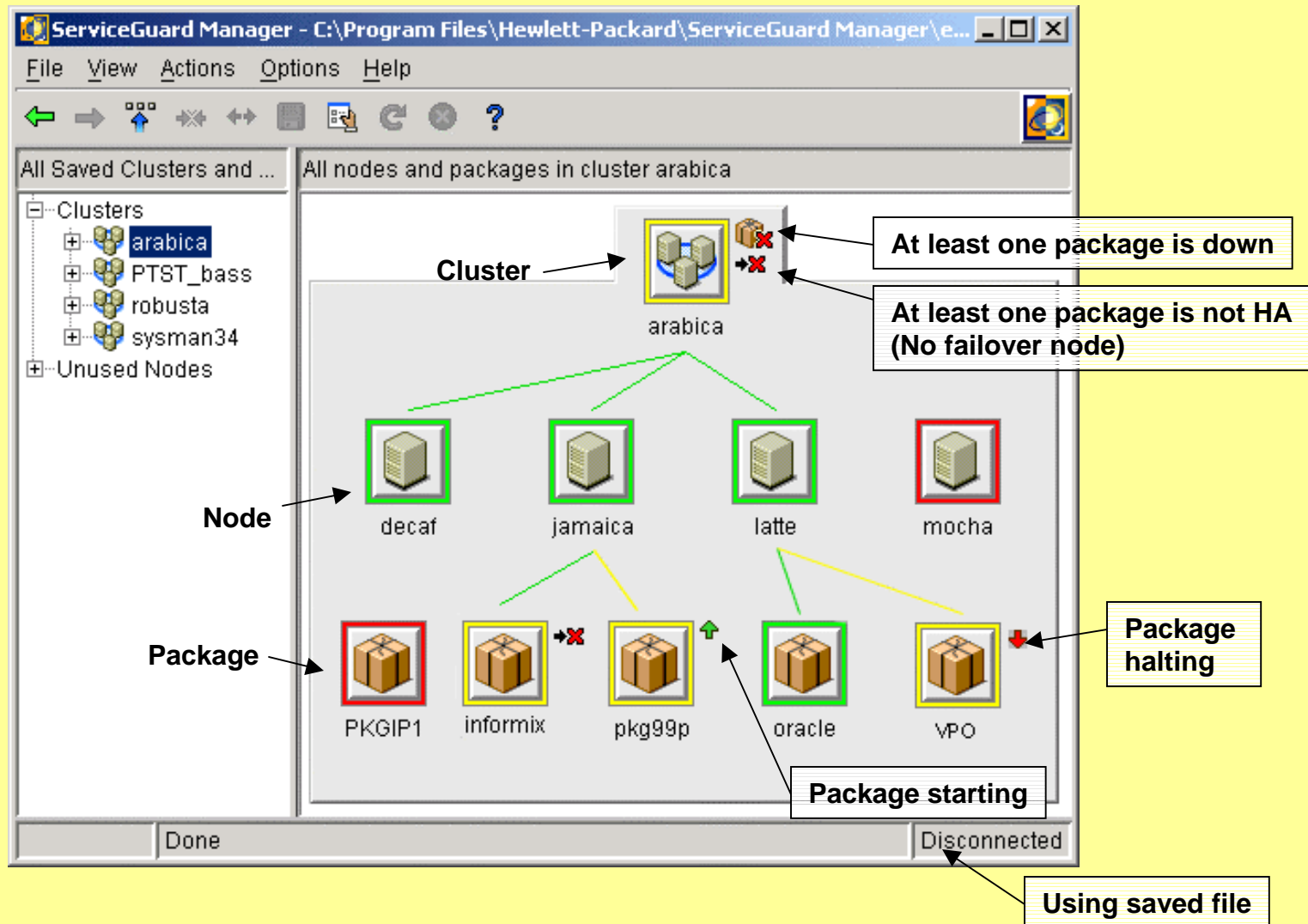
Cluster Discovery



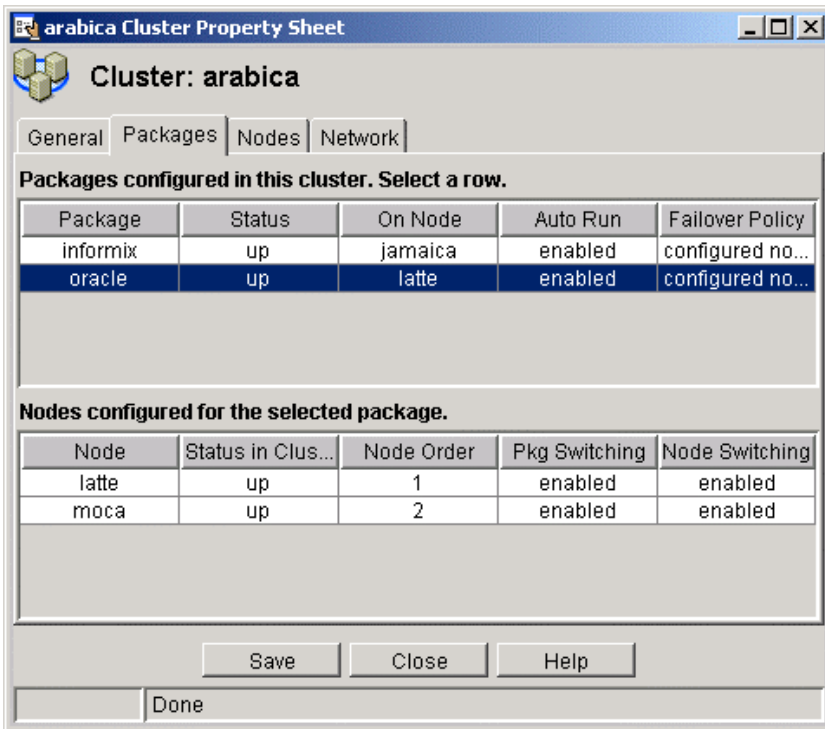
SG Manager User Interface



Map Objects, Badges, and Border Colors

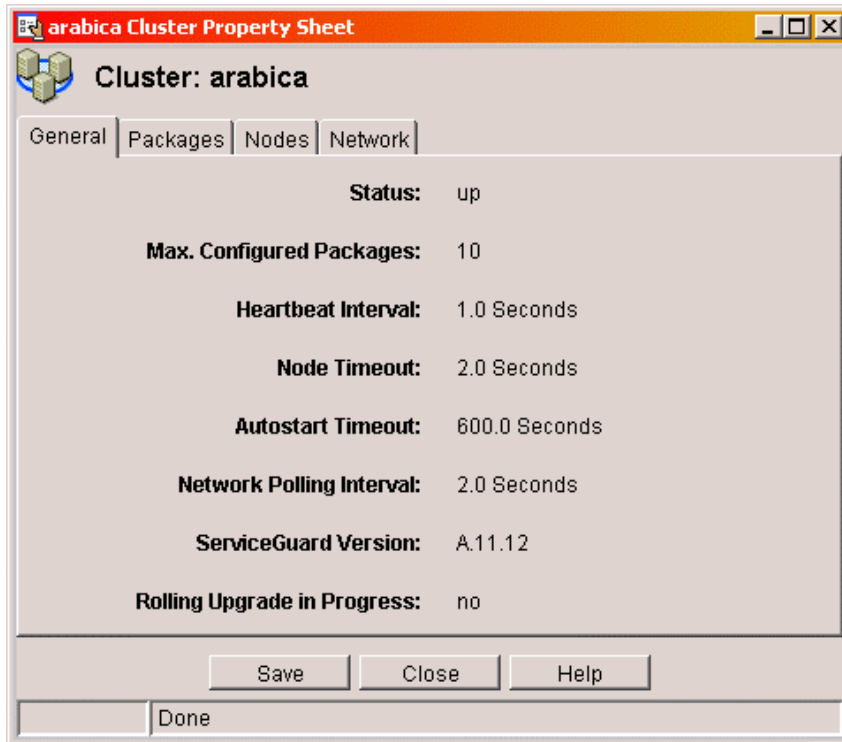


Property Sheet



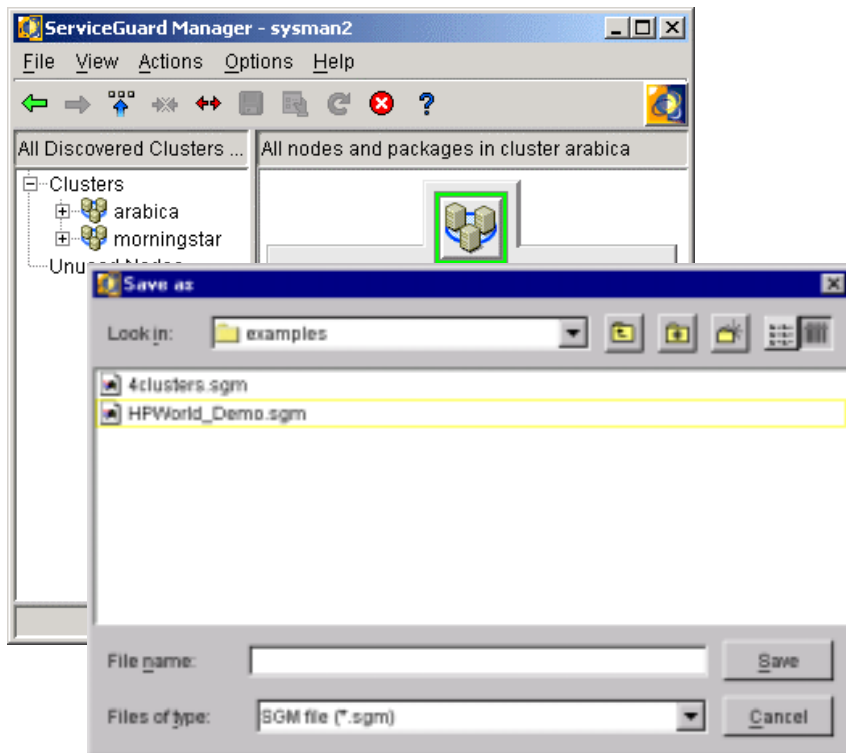
- Every map object has its own property sheet
- A property sheet is a collection of property tabs
- Two types of tabbed pane:
 - List tab
 - Table tab
- There is a status bar at the bottom.
 - Progress bar
 - Text panel to display status messages
- Save shows the ASCII summary information of the property sheet

Property Sheet



List tab displays general information about the map object

Save Environment



- Save map view in a static sgm file
- For future references: see what changed
- For demonstration purposes

Monitoring Clusters

- ✓ Scope – Select clusters to be monitored
- ✓ Security for cluster discovery
- ✓ Using map and tree for navigation
- ✓ Tooltips – Map objects and badges
- ✓ Auto-refresh – Enable/Disable, polling interval

Connect and Select Cluster to be Monitored

Connect to ServiceGuard (Object Manager)

Login

Server: sysman2

User Name: operator1

Password: *****

Save password?

Clusters to View

Select or Enter Set of Clusters (Separate cluster names with spaces):
arabica robusta morningstar

Include unused SG nodes?

View All Clusters and Unused SG Nodes (This may take a few minutes)

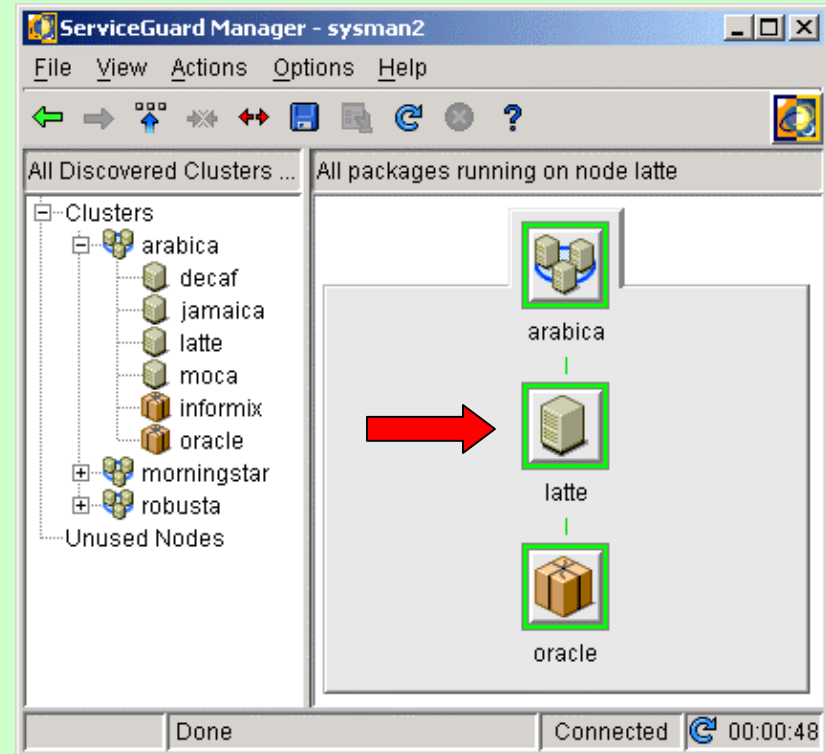
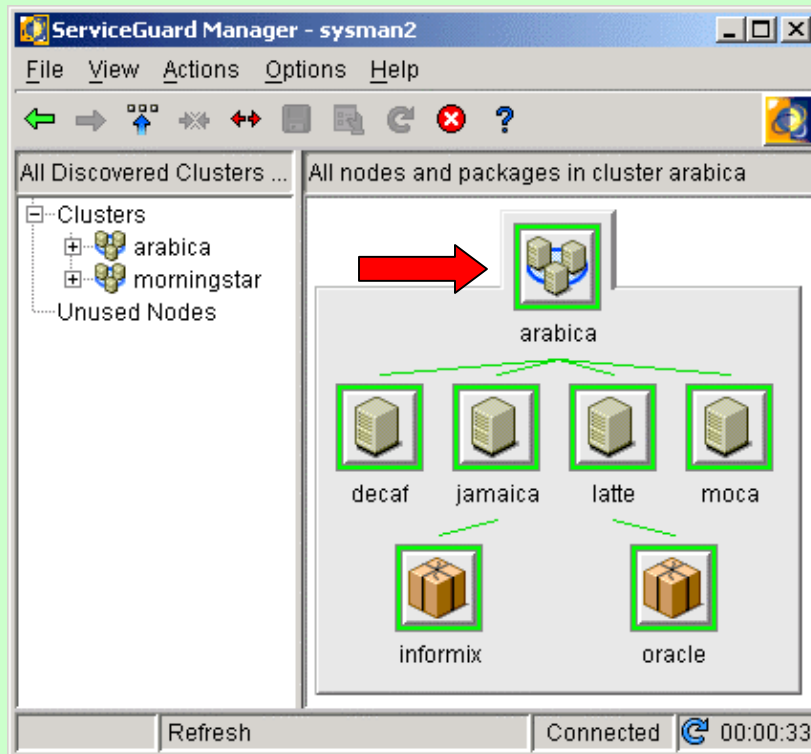
Connect Cancel Help

- Connect to the OM on a ServiceGuard node with valid user name and password (root or non-root)
- User can specify which clusters to monitor, choosing from all the clusters that can be discovered by the OM.

ServiceGuard Manager Security

- SG Manager allows you to limit the clusters to be managed based on customer security requirements.
- The OM cannot return information about a node without the node's permission. The discovered node can list the OM node in its `.rhosts` or in `/etc/cmcluster/cmclnodelist`.
- Passwords are encrypted before they are sent over the network, and if they are saved for the next session.

Cluster Focus vs. Node Focus



Node Focus vs. Package Focus

The screenshot shows the ServiceGuard Manager interface with the title bar "ServiceGuard Manager - sysman2". The menu bar includes "File", "View", "Actions", "Options", and "Help". The toolbar contains various navigation and action icons. The left pane, titled "All Discovered Clusters ...", shows a tree view of clusters: arabica (with sub-nodes decaf, jamaica, latte, moca), informix, oracle, morningstar, and robusta. The right pane, titled "All packages running on node latte", shows a vertical stack of three packages: arabica (top), latte (middle), and oracle (bottom). A red arrow points from the latte node in the left pane to the latte package in the right pane. The status bar at the bottom shows "Done", "Connected", and a timer at "00:00:48".

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Cluster Administration

- ✓ What the administrator can do
- ✓ What's going on in the backend
- ✓ Comparison with command-line interface

As An Administrator, You Can...



- Run/halt cluster
- Run/halt node
- Run/halt package
- Move a package by drag&drop or through menu bar
- Enable/disable package and node switching

ServiceGuard Admin Commands

- ✓ Run cluster – `cmruncl`
- ✓ Halt cluster – `cmhaltcl -f`
- ✓ Run node – `cmrunnode`
- ✓ Halt node – `cmhaltnode -f`
- ✓ Run package – `cmrunpkg`
- ✓ Halt package – `cmhaltpkg -f`
- ✓ Enable/disable package switching – `cmmodpkg -v -e pkg`
or `cmmodpkg -v -d pkg`
- ✓ Moving a package – `cmhaltpkg -n node1 pkg` and
`cmrunpkg -n node2 pkg`

You cannot interrupt or undo an admin operation.

HP OpenView Integration

- ✓ ServiceGuard Manager Launcher
- ✓ ServiceGuard Event Templates
- ✓ Application Tools for Cluster Administration and Configuration in VPO toolbank
- ✓ Mib Browser

HP Service Control Manager Integration

- ✓ ServiceGuard Manager launchable from within SCM

NNM Integration (NT & HP-UX)

The screenshot displays a network management application window titled "Root" with a menu bar (Map, Edit, View, Performance, Configuration, Fault, Tools, Options, Window, Help) and a toolbar. An "Internet" icon is visible on the left. The main window is titled "All Alarms Browser" and contains a table of alerts. The table has columns for Ack, Cor, Severity, Date/Time, Source, and Message. The status bar at the bottom indicates "20 Alarms - Critical:2 Major:2 Minor:0 Warning:2 Normal:14".

Ack	Cor	Severity	Date/Time	Source	Message
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:19	sysman3.cup.hp.com	HA Cluster Package Switching Flags Changed for package "pkg99p"
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:19	sysman3.cup.hp.com	HA Cluster Package Switching Flags Changed for package "PKGIPI1"
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:19	sysman3.cup.hp.com	HA Cluster Package Switching Flags Changed for package "pkg99p" (f
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:19	sysman3.cup.hp.com	HA Cluster Package Switching Flags Changed for package "PKGIPI1" (f
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:19	sysman3.cup.hp.com	HA Cluster Package Switching Flags Changed for package "pkg99p" (f
<input type="checkbox"/>		Major	Thu Mar 23 15:28:19	sysman3.cup.hp.com	HA Cluster Package "pkg99p" halting. Halt script invoked on node
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:19	sysman3.cup.hp.com	HA Cluster Package Switching Flags Changed for package "pkg99p" (f
<input type="checkbox"/>		CRITICAL	Thu Mar 23 15:28:28	sysman3.cup.hp.com	HA Cluster Package "pkg99p" down on node "sysman3.cup.hp.com"
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:28	sysman3.cup.hp.com	HA Cluster Package Switching Flags Changed for package "PKGIPI1"
<input type="checkbox"/>		Major	Thu Mar 23 15:28:28	sysman3.cup.hp.com	HA Cluster Package "PKGIPI1" halting. Halt script invoked on node
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:28	sysman3.cup.hp.com	HA Cluster Package Switching Flags Changed for package "PKGIPI1" (f
<input type="checkbox"/>		CRITICAL	Thu Mar 23 15:28:38	sysman3.cup.hp.com	HA Cluster Package "PKGIPI1" down on node "sysman3.cup.hp.com"
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:38	sysman3.cup.hp.com	HA Cluster Package Switching Flags Changed for package "pkg99p"
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:38	sysman3.cup.hp.com	HA Cluster Package Switching Flags Changed for package "PKGIPI1"
<input type="checkbox"/>		Warning	Thu Mar 23 15:28:40	sysman3.cup.hp.com	HA Cluster "sysman34" Reforming
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:43	sysman3.cup.hp.com	HA Cluster Node Joined Cluster
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:43	sysman3.cup.hp.com	HA Cluster "sysman34" Up
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:43	sysman3.cup.hp.com	HA Cluster Package Switching Flags Changed for package "pkg99p"
<input type="checkbox"/>		Normal	Thu Mar 23 15:28:43	sysman3.cup.hp.com	HA Cluster Package Switching Flags Changed for package "PKGIPI1"
<input type="checkbox"/>		Warning	Thu Mar 23 15:28:44	sysman3.cup.hp.com	HA Cluster Node Halted

20 Alarms - Critical:2 Major:2 Minor:0 Warning:2 Normal:14

default [Read-Write] [Auto-Layout]

VPO Integration (HP-UX)

The screenshot displays the HP-UX VPO (Virtual Performance Optimizer) integration interface. It features a main window titled "ITO Node Bank" and a "Message Browser" window.

The "ITO Node Bank" window shows a map of nodes with icons for "Internet", "ITO Node Bank", "sgguiux", "sysman3", "sysman4", and "HoldingArea".

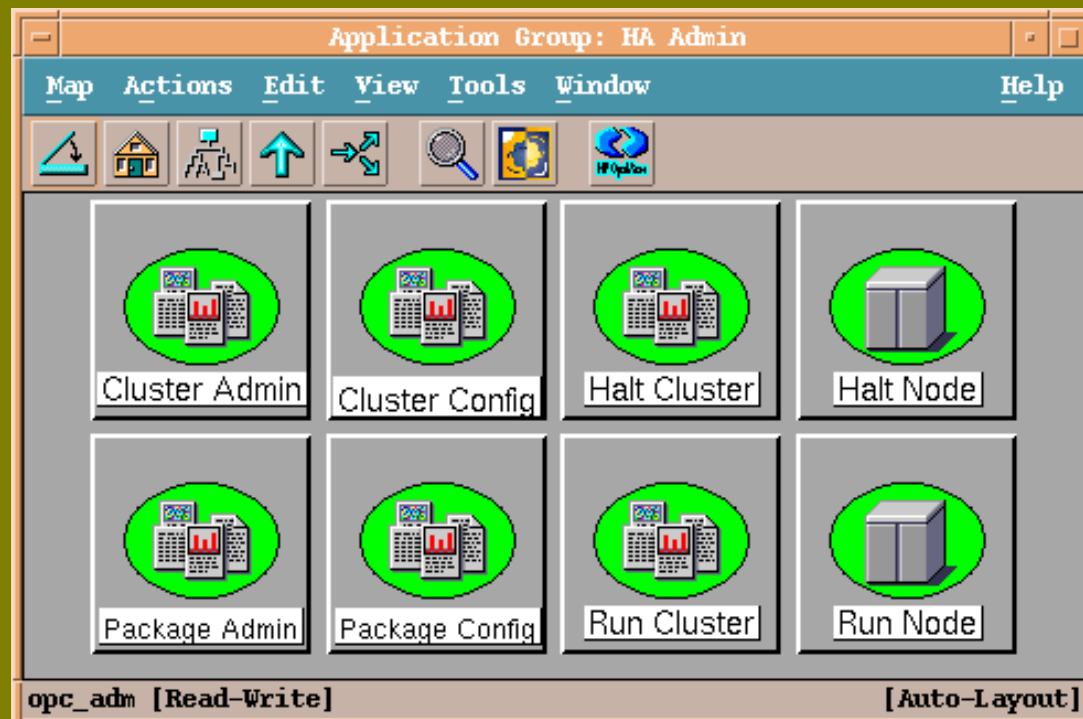
The "Message Browser" window displays a list of messages with the following columns: Sev., SUIAONE, Date, Time, Node, Application, MsgGroup, Object, and Message Text.

Sev.	SUIAONE	Date	Time	Node	Application	MsgGroup	Object	Message Text
Norm	-X-----	03/23/00	15:22:04	sysman3.cu	HA Cluster	HA		IPAddrDown 192.1.168.30
Crit	--X----	03/23/00	15:22:10	sysman3.cu	HA Cluster	HA	PKGIP1	Package "PKGIP1" down on node "sysma
Norm	-X-----	03/23/00	15:22:11	sysman3.cu	HA Cluster	HA		PkgDown PKGIP1 37634 sysman3.cup.hp.
Norm	-X-----	03/23/00	15:22:11	sysman3.cu	HA Cluster	HA		PkgFlags pkg99p 37633 28 sysman34
Norm	-X-----	03/23/00	15:22:11	sysman3.cu	HA Cluster	HA		PkgFlags PKGIP1 37634 28 sysman34
Warn	--X-X--	03/23/00	15:22:12	sysman4.cu	HA Cluster	HA	sysman4.c	Node "sysman4.cup.hp.com" halted
Warn	--X----	03/23/00	15:22:12	sysman3.cu	HA Cluster	HA	sysman34	Cluster "sysman34" reforming
Norm	-X-----	03/23/00	15:22:12	sysman4.cu	HA Cluster	HA		NodeHalted sysman34
Norm	-X-----	03/23/00	15:22:12	sysman3.cu	HA Cluster	HA		Reconfig sysman34
Norm	--X----	03/23/00	15:22:15	sysman3.cu	HA Cluster	HA	sysman3.c	Node "sysman3.cup.hp.com" joined clu
Norm	-X-----	03/23/00	15:22:15	sysman3.cu	HA Cluster	HA		NodeUp sysman34
Norm	-X-----	03/23/00	15:22:15	sysman3.cu	HA Cluster	HA		ClusterUp sysman34
Norm	-X-----	03/23/00	15:22:15	sysman3.cu	HA Cluster	HA		PkgFlags pkg99p 37633 28 sysman34
Norm	-X-----	03/23/00	15:22:16	sysman3.cu	HA Cluster	HA		PkgFlags PKGIP1 37634 28 sysman34
Warn	--X-X--	03/23/00	15:22:17	sysman3.cu	HA Cluster	HA	sysman3.c	Node "sysman3.cup.hp.com" halted
Norm	-X-----	03/23/00	15:22:17	sysman3.cu	HA Cluster	HA		NodeHalted sysman34
Warn	--X----	03/23/00	22:10:08	sysman3.cu	SNMPTraps	SNMP	sysman3.c	Node down
Crit	--X----	03/27/00	08:56:32	sgguiux.cu	HP IT/Opera	OpC	opcdispm	Display receiver of user opc_adm is

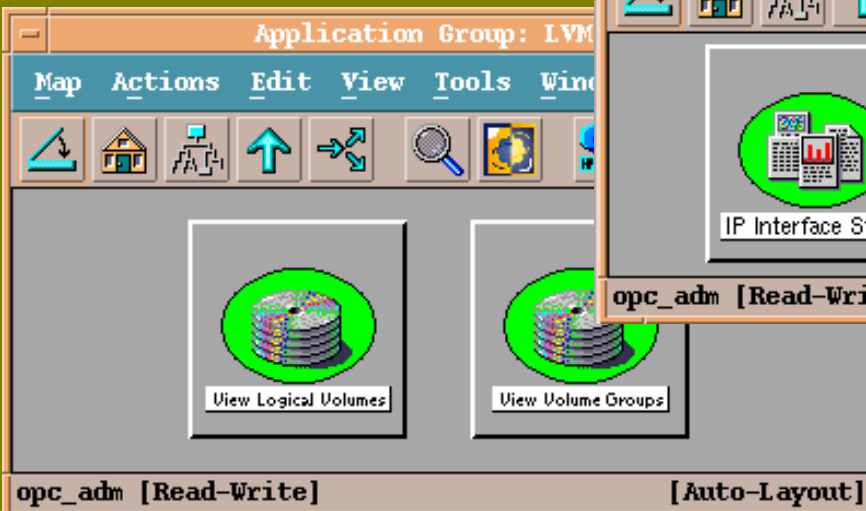
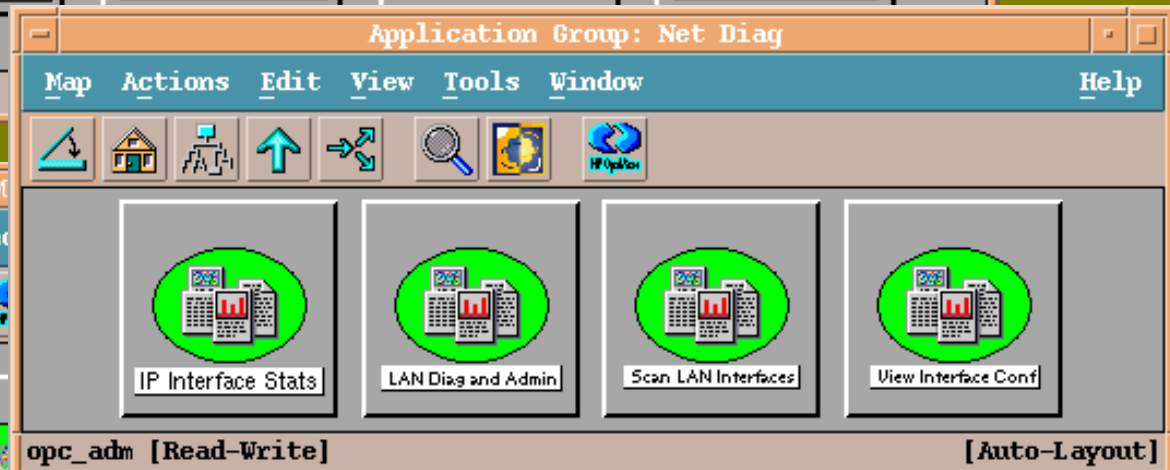
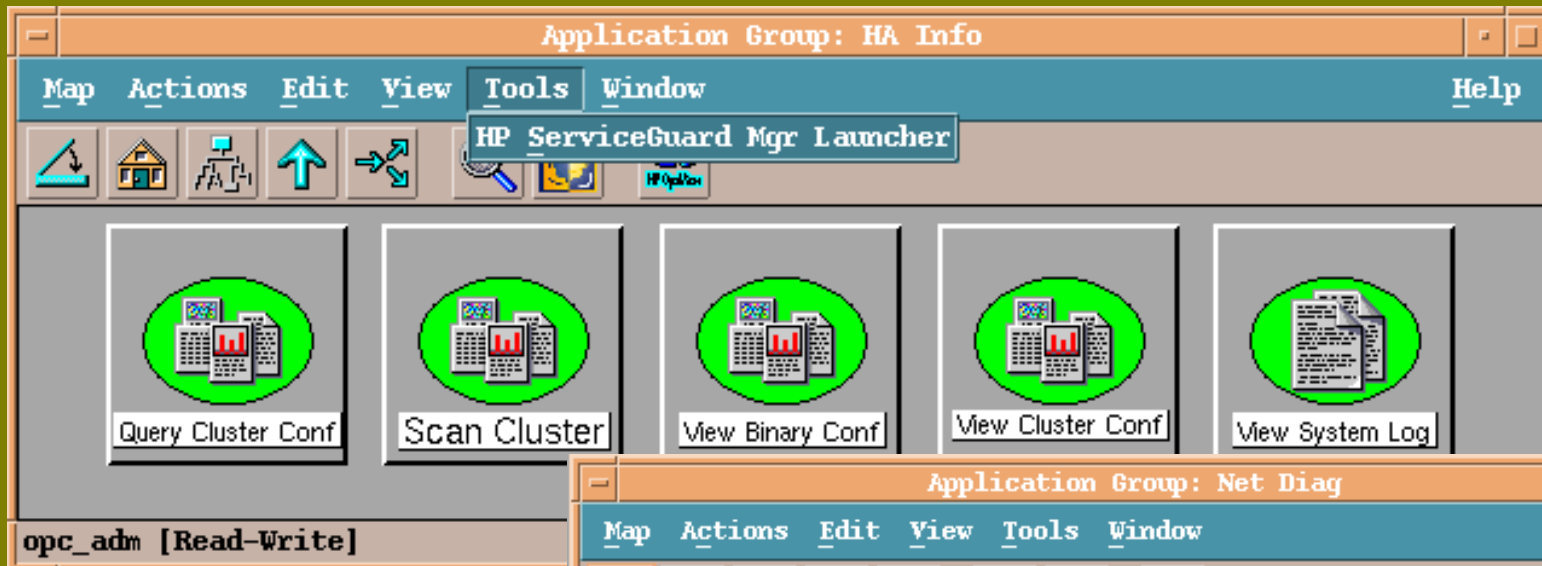
At the bottom of the Message Browser window, there is a status bar with a color-coded progress indicator (5, 4, 0, 7, 88, 0) and buttons for "Own", "Highlight", "Details...", "Perform Action", and "Annotations...".

HA Tools for VPO

Application tools that comes with ServiceGuard Manager OV integration can be accessed from VPO's Application Bank.



More HA Tools



Live Demo

- ✓ Load saved file vs. connect live
- ✓ Using property sheet
- ✓ Identify SPOF... and fix it
- ✓ Manual and auto-eefresh... and get the latest data
- ✓ Package failover scenario
- ✓ Preview: Cluster Administration

ServiceGuard Manager Roadmap

- ✓ Future releases
- ✓ ClusterView replacement
- ✓ Where to get it

Q&A

Thanks for coming...

- ✓ **Remember to pick up some goodies before you leave (ServiceGuard Manager CD)**
- ✓ **Feel free to leave your business card and receive latest news about ServiceGuard Manager**