

The ball and chain of ...

Proactive
Application
Management

OpenView
2000

IT SOLUTIONS
enterprise management
deployment
IT SOLUTIONS
implementation
IT Performance



...a guide to Openview SMART Plug-Ins

Presenter

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SMART Plug-Ins(SPI) Topics to Cover

OPENVIEW
FORUM
INTERNATIONAL



HP OPENVIEW

We Will cover:

General SPI Architecture

**SPI Components &
requirements**

SPI Interfaces

SPI GUI tools

SPI Deployment &

Management

SPI Support & Futures

Questions...

Additional Info

Available Online:

**Specific SPI
Versions/Support**

Product Datasheets

SPI Documentation

<http://openview.hp.com/>

OpenView
2000



The Ball and Chain....

The Ball...

**Point Solutions for Application and DB Mgmt.
(called “Best in Class”)**

- **Little or no integration or centralization**
- **Departmental Silos of tools and responsibilities (DBA’s have tools, PC/UNIX Admins have tools etc...)**



The Ball and Chain

The Chain...

**People and processes “married “ to limited tools
with *reactive* problem management**

- **No knowledge transfer or central reporting capabilities to spot trends in problems**
- **Limited “root cause” analysis or proactive monitoring**
- **Unable to manage access and operator functions within tools**

OpenView
2000



Introduction to SPI's

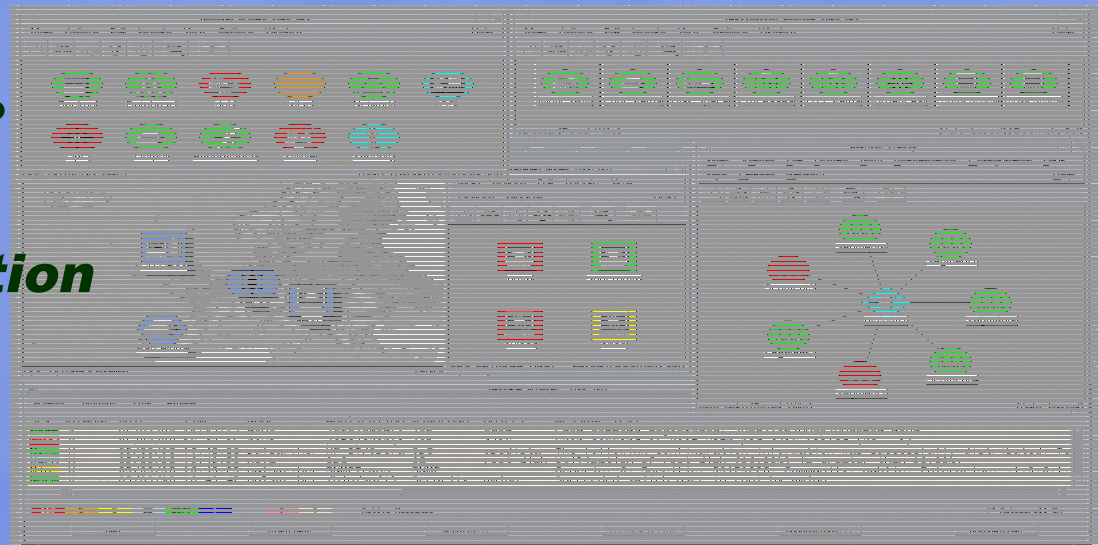
Overview

What are SPI's?

SPI's as a *Solution*

Benefits

Requirements





What is a Smart Plug-In?

A complete SOLUTION for monitoring and managing application resources and health...

SPI's consist of:

Additional ITO Application Banks & Vantagepoint Tools for each SPI to start, stop and manage data collections.

Templates and Policies to collect metrics and define application thresholds.

Built-in Alarms and events with Operator actions & notifications



OpenView SPI's

ITO Plug-Ins

-Applications

SAP/R3	Tuxedo
MS/Exchange	Baan
Lotus Notes	Remedy
Peoplesoft	Internet

-DBSPI

Oracle	Informix
Sybase	SQL/Server

Vantagepoint Plug-Ins

-Applications

Windows NT/2000
Windows+
Self Management
BroadVision
MS/Exchange

-DBSPI*

Oracle	Informix
Sybase	SQL/Server



*Avail. Q4-2000

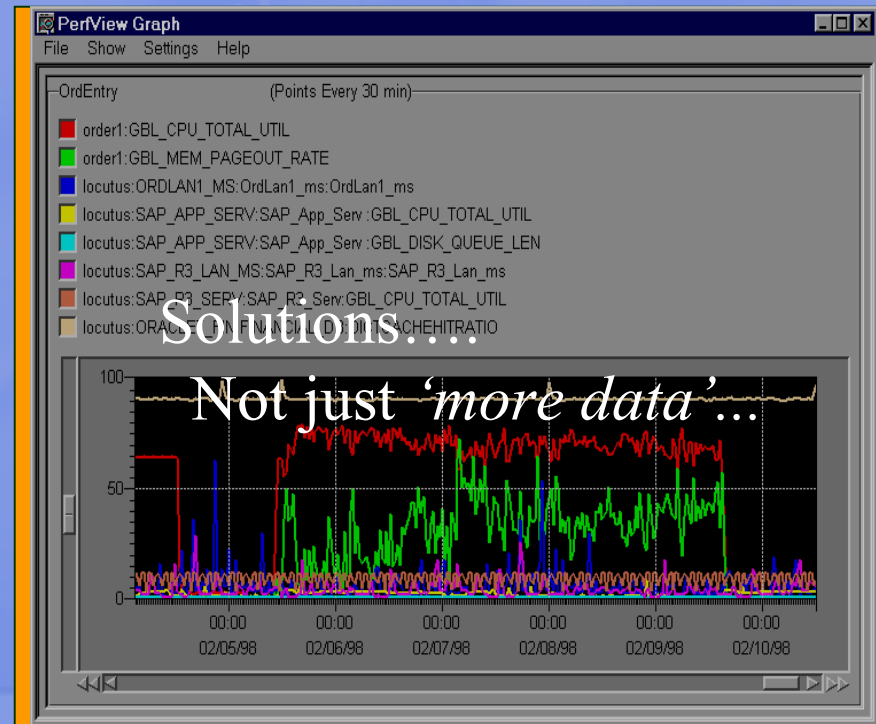


SPI's are a 'Solution' not a stand-alone package...

SPI's build upon existing ITO and OpenView infrastructure & training..

SPI's extend the monitoring and management capabilities of 'standard' SNMP tools..

SPI's are constantly being developed by HP and our partners...



SPI's Require...



A Management Console:

HP IT/Operations:

ITO (HP-UX/SUN)

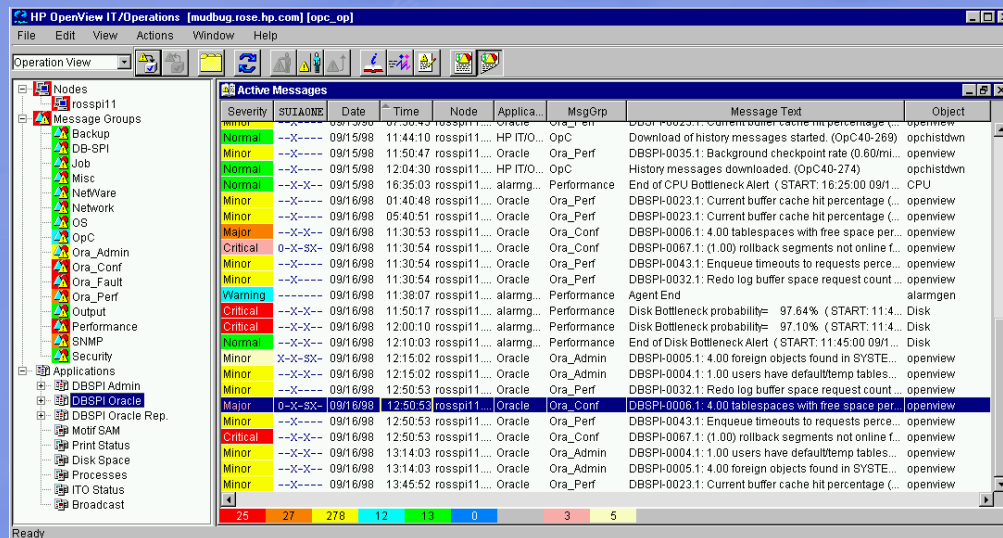
HP Vantagepoint:

Deployed OpenView

Agents:

ITO and/or VPW agents

MeasureWare(UNIX/NT)



A Reporting Tool:(...not 'required')

PerfView

ServiceReporter & others...

SMART Plug-Ins

Features & Benefits



SPI Features	Benefit	Stakeholder
Selective Monitoring and object-specific thresholding	Reduce false alarms	Operations Manager, DBA
Simple and powerful user-definable metrics	Leverage any home-grown scripts & tools	Operators, Sys Mgr, DBA
Out-of-the-box thresholds, text, auto and operator actions	Quick deployment	Operators NOC staff
ITO / VPW tight integration with SPI's to DB & Apps	Fast root cause analysis and problem resolution	Operations Manager
Logging of and graphing of performance and workload data	Fast visualization of workload and trends	Sys, Mgr., DBA IT staff
Service Reports, Availability & uptime monitoring	Quantify service achievements to business	Operations Manager, DBA Manager
VPW Intelligent Policy Deployment	Reduce false alarms, threshold customization	Operations Manager, DBA
Maintenance & Support	Revision management of DB, OS, OV and excellent technical support	Operations Manager, DBA Manager

SMART Plug-Ins

Features & Benefits

SPI Features	Benefit	Stakeholder
Early warnings before service outages	Reduced downtime & SLA violations	CFO, CIO & IT Director
Detect database & OS performance problems	Improved productivity	Operations Manager
Immediate notification of critical situations	Reduced time to recovery	Operations Manager
Funnel all DB & Application problems to central consoles	Manage more racks with same staff	IT Managers
Set up Operators as front line for DB & App. problems	Reduce DBA stress and HelpDesk Calls	IT Staff
Uses existing OpenView tools	Reduced cost, training, revision management	CFO, Operations Manager
All platforms supported through remote monitoring	No need for band-aids for uncommon platforms	Operations Manager

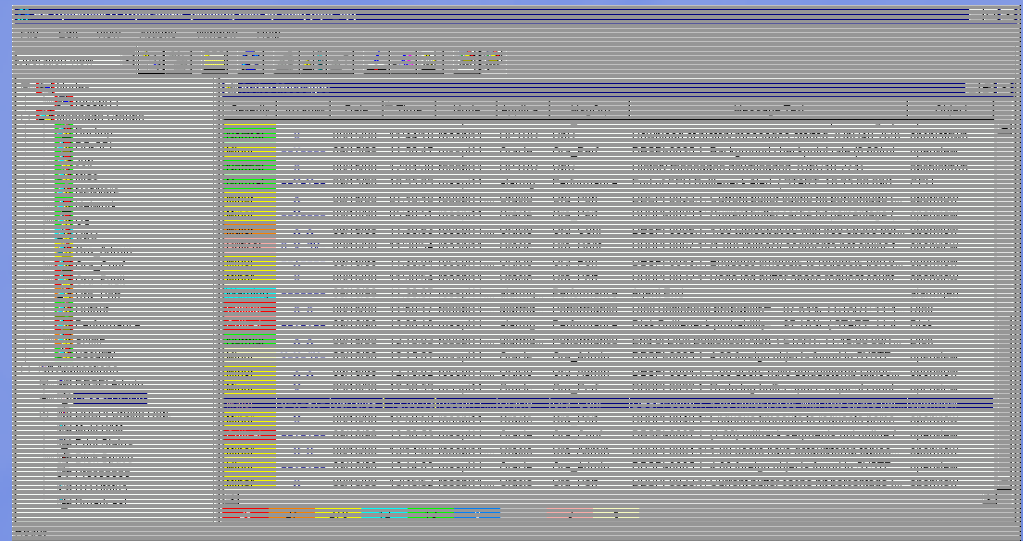


SPI Architecture

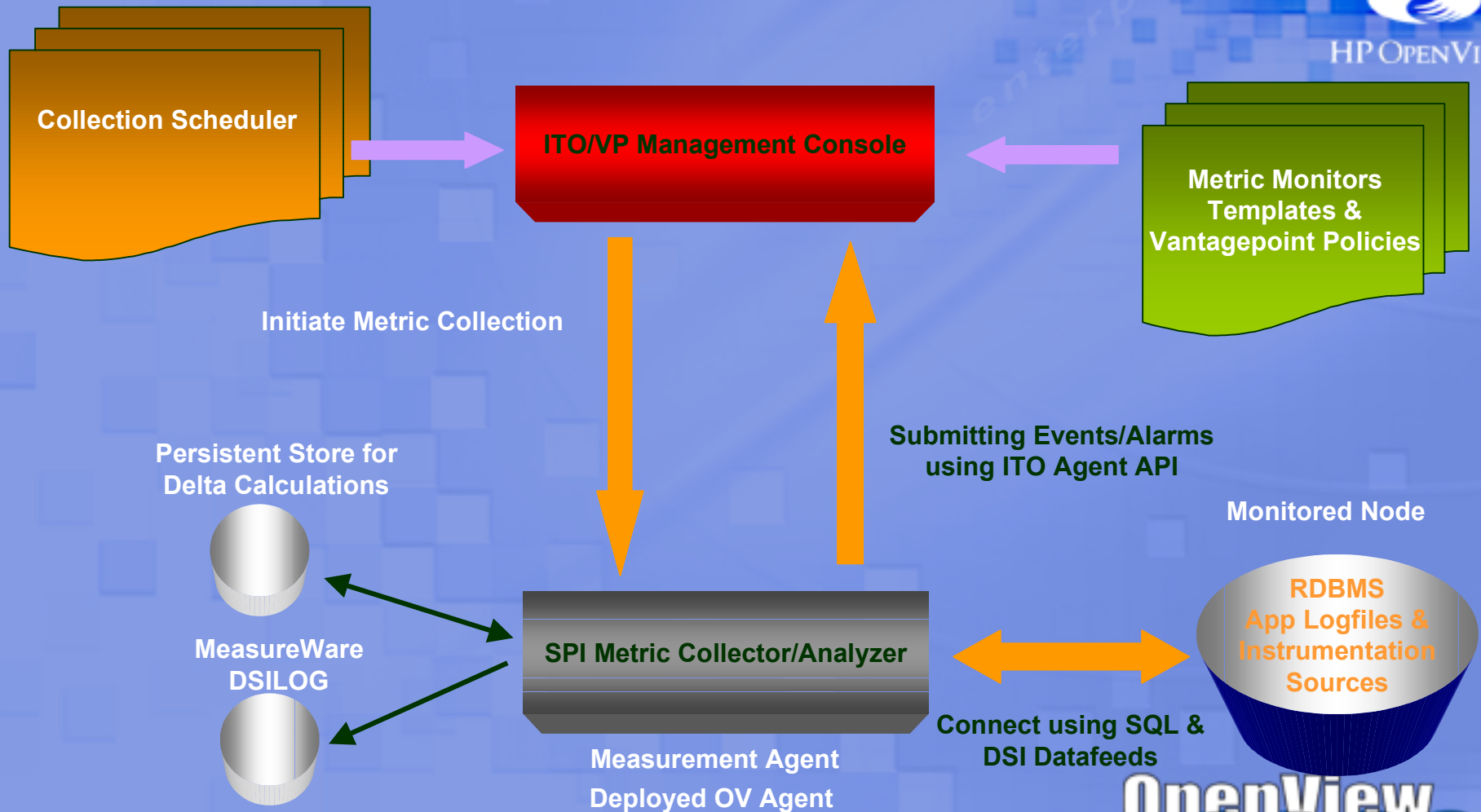
SPI Components

Interfaces

GUI



SPI Basic Components



SPI Interfaces



ITO/Vantagepoint

- o Actions/Tools
- o Event Templates/Policies
 - Monitor Log/Status Files
 - Monitor Processes

PerfView

- o Integration out-of-box with Installation of VP on NT/W2K
- o Historical Performance Analysis & Diagnostics

PerfView Launch

- o ITO/VP Action Launch

GlancePlus Launch

- o ITO Action Launch
- o Message Operator Action Launch

GlancePlus

- o Real-time Performance Monitor & Diagnostics(UNIX only)

ServiceReporter

Web Based Reporting

Remote/Central Auto data collection & reporting

MeasureWare Actions

- o Configure
- o Control
- o Report Status
- o Run Utilities

MeasureWare Alarming

Calls to opcmmsg for ITO/VP Messages

MeasureWare/DSI

- o Logging of Performance Data
- o Alarming on Performance Data

UNIX/Windows OS

- o Monitor Processes and System Health
- o Monitor Events (Log/Status Files)
- o Configure (Sam)
- o Report Status (Process, Disk, Print)

Applications/RDB Monitoring

- o Monitor Processes and Databases
- o Monitor Threshold & Logfile Events
- o Log performance data
- o Configure (DB Vendor Utilities)

RDBMS, APPS & Web

UNIX, NT4 Win2000

SPI Interfaces & Message GUI



The screenshot shows the HP OpenView IT/Operations console. The top window displays a list of active messages with columns for Severity, SUIAON, Date, Time, Node, Application, Message Group, and Message Text. Below this, a network diagram titled 'View in display: Contains or Uses' shows various nodes like 'Clearcase Server System Services', 'Web Server Infrastructure', 'Database Server', 'Customer', 'Sales', 'Research_Development', 'Marketing', 'Finance', 'Internal Applications', and 'Trading Data Base'. At the bottom, another console window shows a detailed message log with columns for Severity, S, U, I, A, O, N, Date, Time, Service, Node, Application, Object, and Message.

This screenshot shows the HP OpenView IT/Operations Special Edition console. It features a 'Messages on yo' window with a table of messages and a 'Message Properties' dialog box.

Severity	UIAON	Date	Time	Node	Applicat
Major	-X-X-	06/25/99	09:28:52	yo.rose.hp...	Oracle
Major	-X-X-	06/25/99	09:28:52	yo.rose.hp...	Oracle
Major	-X-X-	06/25/99	09:28:52	yo.rose.hp...	Oracle
Major	-X-X-	06/25/99	09:28:52	yo.rose.hp...	Oracle

The 'Message Properties' dialog box shows the following details:

- Severity: Major
- General tab: Node (yo.rose.np.com), Application (Oracle), Message Group (Ora_Conf), Object (openview:OPC_INDEX1), Message Type, Source (ITO-SE@DBSPI@DBSPI-0206), Annotations (0), Attributes, Time Created (06/25/99 09:28:52)
- Buttons: Close, Delete



SPI Interfaces & GUI's

Same AS Management console!

Collected by SAME agents!

Alarms & Messages managed by same interfaces

Tools & Application Groups included to run custom management apps (or add your own)

Details follow in Oracle DBSPI example



SPI Examples

Come see Oracle DB SPI Demo!

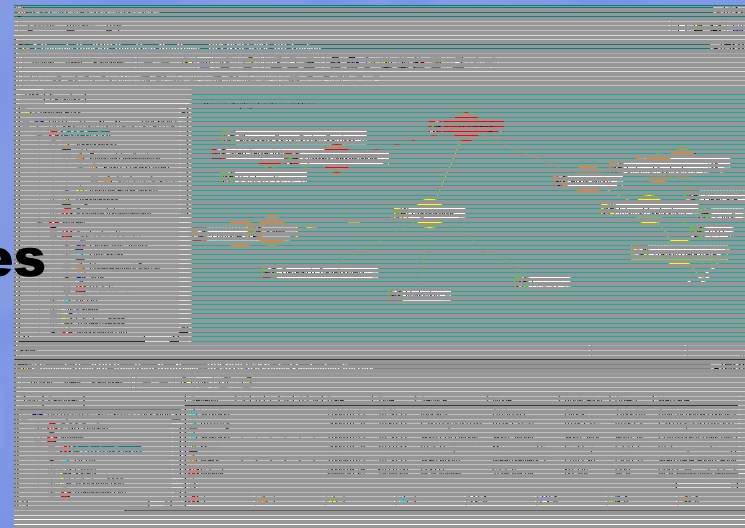
SPI Application/Tools

SPI Message Templates

SPI Messages

SPI Actions

SPI Data & SPI Reporting





SPI Examples - DB SPI Oracle

SPI's available for wide range
of DB & Applications...

Multiple Platforms, OS versions
and DB/APP versions supported.

Not all covered here...

See web for details...



Oracle as example?

- ITO DB *is* Oracle
- Mature SPI
- Extensive metrics,
thresholding & alarms
- Auto/Oper actions
- Message & text help

SPI Tools



DBSPI Collector/Analyzer

- Collects and analyzes the DB metrics using Embedded SQL
- Hooks into ITO / NP Console using the ITO Agent API
- Command line options for each metric and report

MeasureWare/PerfView DSILOG Datafeed

- Feeds DBSPI metrics into OpenView MeasureWare via DSILOG
- Interval can be customized via ITO monitor
- Enable/Disable tool in the Management Console

Glance Integration/ ServiceReporter

- Out-of-the-box OpenView Glance application reporting group for Oracle and DBSPI processes
- Canned Crystal Report templates for each DB

SPI Application Group



ITO Application Group: DBSPI Oracle

Map Actions Edit Locate View Options Window Help

SQL*Plus SQL*DBA Svr Mgr (Text) Svr Mgr (X11) Start Instance

Start all Inst. Shutdown Inst. Shutdown all Inst. Shut. Inst. Immediate Shut. Inst. Abort

SQL Net Status SQL Net Start SQL Net Stop Import Export

LSNRCTL

opc_admin [Read-Write] [Auto-Layout]

Message Templates



ITO Message Template Properties [lovebug.rose.hp.com]

Monitor DBSPI-Ora-05min-Favorites

General Source Options Condition Defaults Instructions

Monitor Program

Program Name
ites -m 1-2,6:10,7,9:90,21-24,26-30,31:95,32-

Polling Interval 5m

MIB Object

MIB ID

Polling Interval

On Node

External

Threshold Type

Maximum

Minimum

Message Generation

with Reset

without Reset

Continuous

OK Cancel

SPI Messages



Message Browser [opc_adm]

Sev.	SUIAONE	Date	Time
Maj	--X-X--	09/16/98	11:30:53
Min	--X----	09/16/98	11:30:54
Min	--X----	09/16/98	11:30:54
Crit	X-X-SX-	09/16/98	11:30:54
Warn	-----	09/16/98	11:38:07
Crit	--X-X--	09/16/98	11:50:17
Crit	--X-X--	09/16/98	12:00:10
Norm	--X-X--	09/16/98	12:10:03
Min	--X-X--	09/16/98	12:15:02
Min	0-X-SX-	09/16/98	12:15:02
Maj	X-X-SX-	09/16/98	12:50:53
Min	--X----	09/16/98	12:50:53
Min	--X----	09/16/98	12:50:53
Crit	--X-X--	09/16/98	12:50:53
Min	--X-X--	09/16/98	13:14:03
Min	--X-X--	09/16/98	13:14:03
Min	--X----	09/16/98	13:45:52

25
27
278
12
13

Message Details

Node	rosspi11.rose.hp.com	Severity	Minor
Application	Oracle	Message No.	03c-4d99-71d2-0baa-0f089e1f000d
Message Group	Ora_Admin	Message Type	
Object	openview	Time Created on Managed Node	09/16/98 12:15:02
Source	Monitor:DBSPI-0005	Time Received on Mgmt. Server	09/16/98 12:15:02
Annotations	2	Time Owned	09/16/98 12:46:42
Attributes		Owned by	opc_adm
Forwarding Manager			

Message Text

DBSPI-0005.1: 4.00 foreign objects found in SYSTEM tablespace for openview.

Actions	Status	Node	Command	Anno.	Ackn.
Automatic				No	No
Operator Initiated	successful	sp111.rose.hp.com	dbspicao -m 5 -r 1 -f openview	Yes	No
Notification					
Trouble Ticket	No				No

Escalations

Escalated to: _____ by: _____ at: _____

Help

free space percentage too request count (270.00) too requests percentage (1.00%) nts not online for openview

64% (START: 11:45:00 09/1 10% (START: 11:45:00 09/1 RT: 11:45:00 09/16/98 ; END lt/temp tablespace of 'SYST found in SYSTEM tablespace free space percentage too request count (290.00) too requests percentage (1.00%) nts not online for openview lt/temp tablespace of 'SYST found in SYSTEM tablespace hit percentage (24.32%) too

Autoscroll On

SPI Operator Actions



Annotations

Annotation No. 1 Author: OpC
Date/Time: 09/16/98 12:46:42

operator-init action started.
Node : rosspi11.rose.hp.com
Action : dbspicao -m 5 -r 1 -i openview

Annotation No. 2 Author: OpC
Date/Time: 09/16/98 12:46:57

operator-init action finished.
Result : 0

Output :

Report For Database openview

Wed Sep 16 12:46:44 1998

Metric ObjectsForeignCnt(0005)

OWNER	SEGMENT_TYPE	SEGMENT_NAME
PETER	TABLE	F00
PETER	TABLE	F002
PETER	TABLE	F003
PETER	TABLE	F004

Buttons: Add..., Modify..., Delete, Close, Help

Help

space percentage too
est count (270.00) too
ts percentage (1.00%)
ot online for openview

(START: 11:45:00 09/1
(START: 11:45:00 09/1
1:45:00 09/16/98 ; END
mp tablespace of 'SYST
in SYSTEM tablespace

space percentage too
est count (290.00) too
ts percentage (1.00%)
ot online for openview
mp tablespace of 'SYST
in SYSTEM tablespace
percentage (24.32%) too

Autoscroll On

Acknowledge

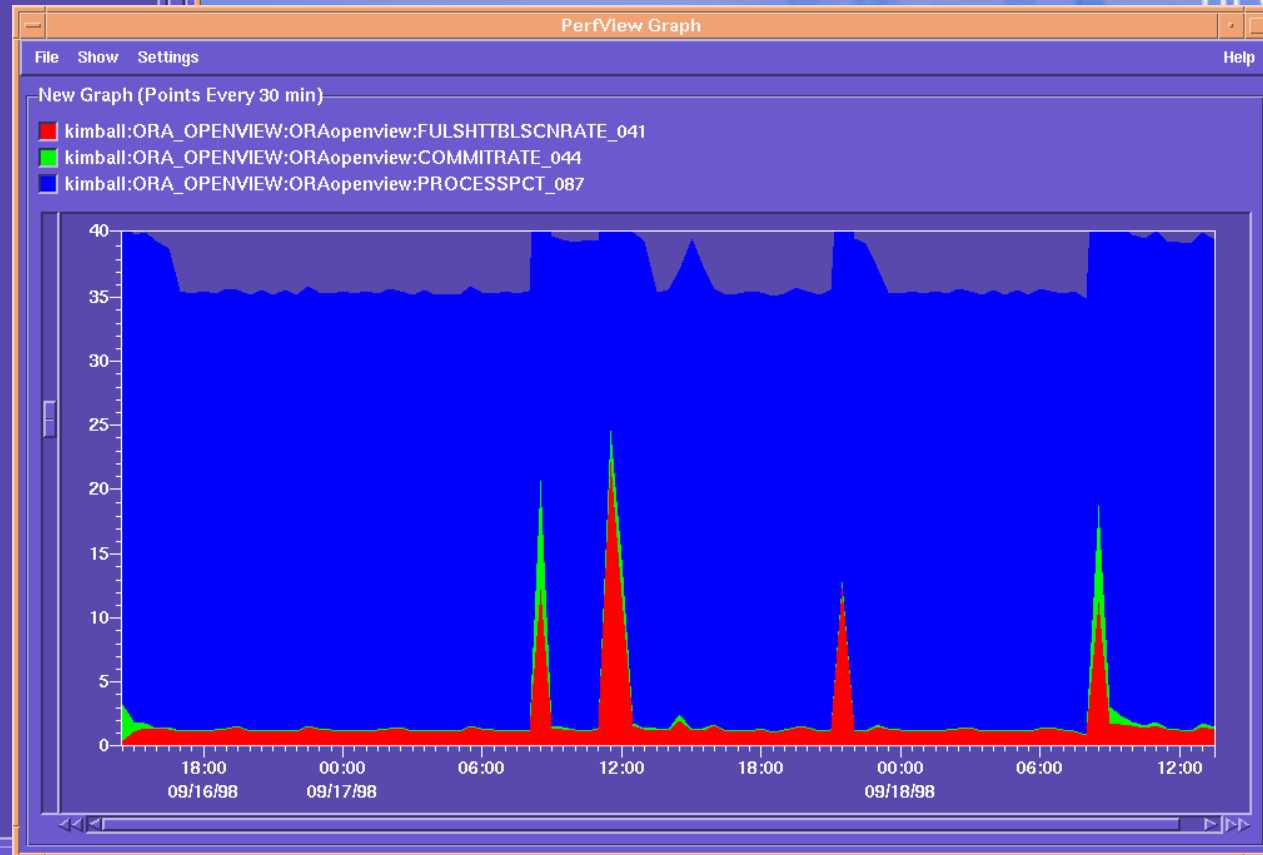


Monitoring SPI Data

Metric List

- TBLSPCFREEPCTCNT_006
- TBLSPCSTATUSCNT_007
- TSBKREADRATIOCNT_008
- TSTEMPEXNTPCTCNT_009
- TBLSPCFRAGMENTCNT_011
- SEGMENTEXTENDCNT_016
- SEGMENTMAXEXTCNT_017
- SEGMENTEXTRAPDCNT_018
- SORTDISKRATE_019
- SORTMEMORYPCT_020
- BUFFERBUSYPCT_021
- TOTBUFCACHHITPCT_022
- CURBUFCACHHITPCT_023
- EQWAITSREQPCT_024
- DICTIONARYHITPCT_026
- LIBCACHRELOADPCT_027
- LOCKSUSEDPCT_028
- SESSIONWAITLCKCNT_029
- FULLNGTBLSCNRATE_030
- OPENCURSORPCT_031
- REDOLOGSPCREQCNT_032
- REDOALOCCLATCHPCT_033
- REDOCOPYLATCHPCT_034
- BCKGNDCKPTRATE_035
- USERLOGONCNT_037
- LIBCACHGETHITPCT_039
- LIBCACHPINHITPCT_040
- FULSHTTBLSCNRATE_041
- UNALYZTBLINDXPCT_042
- EQTIMEOUTSREQPCT_043
- COMMITRATE_044
- SHARDPOOLFREEPCT_045
- ROWFETCDBYIDXPCT_046
- TABLESCACHEDCNT_047
- CHAINDROWFTCHPCT_048
- USERCALLRATE_049
- RCRSVUSRCLRATIO_050
- SORTROWSAVGCNT_051
- SORTTOTALRATE_052
- ROLLBACKRATE_054
- ARCHVFREESPACCNT_056
- ARCHVFREERATE_057
- ARCHVFREESPACPCT_058

OK



Centralized Reporting



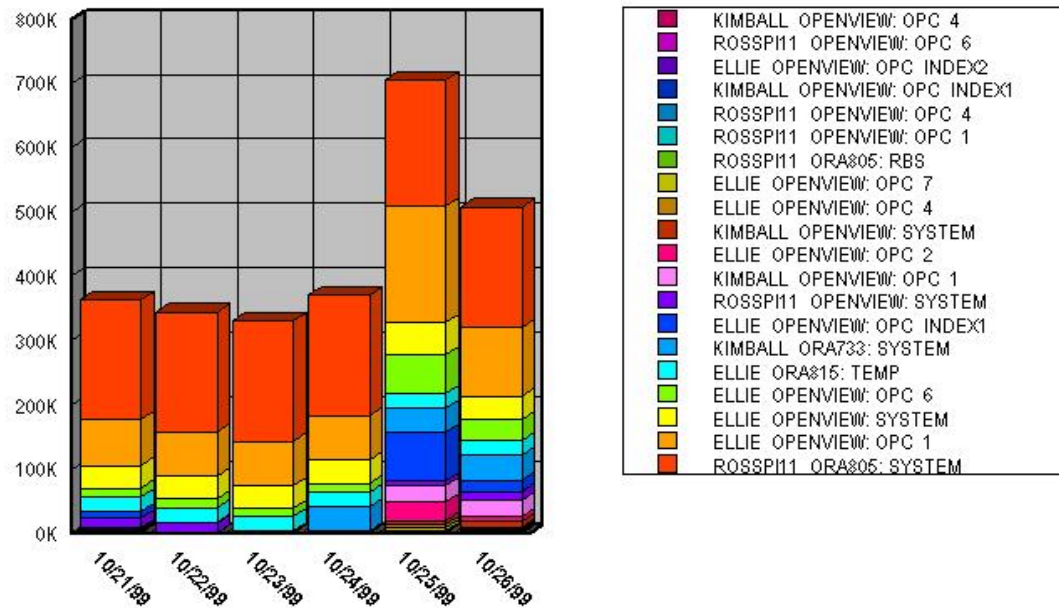
Service Reporter

Oracle Tablespace I/O

This report was prepared on 10/27/99, 2:04:17AM

This report shows Oracle physical reads and writes over the reporting interval.

Top Tablespaces By Physical I/O





Centralized Management Reports

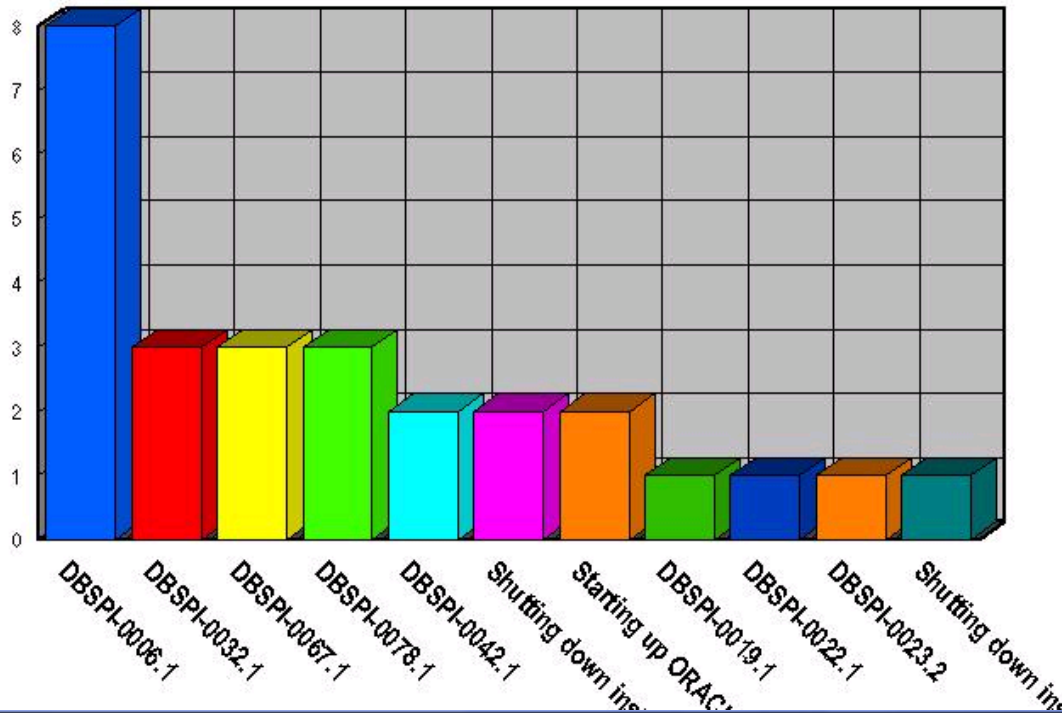
Service Reporter

Oracle DB-SPI History ITO Messages

This report was prepared on 10/27/99, 2:54:53PM

This report shows the top **history** message types which were forwarded to IT/Operations.

Top Messages





SPI Deployment & Management

SPI Deployment

SPI Remote Monitoring

DB Pak 2000

OpenView
2000

SPI Deployment & Management

**Retain investment in ITO
Knowledge & skills:**

Deployed via ITO or VP agent

**Managed via ITO or VP
console**

**VP auto-policy
deployment/auto-discovery
deployment**

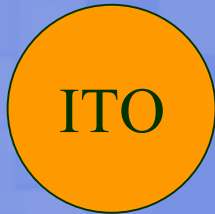
The screenshot displays the HP OpenView management console with several windows open:

- Message Groups (opc_up):** A grid of icons for Backup, Database, Job, Misc, Network, OS, OpC, Output, Performance, SNMP, and Security.
- Application Desktop (opc_up):** A grid of icons for Mail S/M, Print Status, Disk Space, Processes, ITO Status, Broadcast, Hardware Testing, and Virtual Terminal.
- Managed Nodes (opc_up):** A window showing a map of Europe with nodes like GB Office, HSI, and Barcelona, and a list of nodes including nova, supernova, pulsar, and orion.
- Message Browser (opc_up):** A table displaying system messages with columns for Severity, SUIAONE, Date, Time, Node, Application, MsgGroup, Object, and Message Text.

Sev.	SUIAONE	Date	Time	Node	Application	MsgGroup	Object	Message Text
Info	-X-----	05/03/98	16:42:12	nova	/etc/cron(1)	Job	cron	Cron command registered: /usr/lib/luccp/luccmon-hour
Err	-X-----	05/03/98	16:42:15	nova	/etc/cron(1)	Job	4716	Cron command of root with pid 4716 failed (rc = 1)
Warn	-X-----	05/03/98	16:42:22	pulsar.her	HP IT/Opera	OpC	opcdista	The following configuration information was successfully distributed: Te
Warn	-X-----	05/03/98	16:42:50	nova	OpC	OS	root_disk	Utilization of root disk (96.00%) is greater than 90.00%.
Warn	-X-----	05/03/98	16:43:25	pulsar.her	SNMPTraps	SNMP		Generic: 6, Specific: 59179228, Community: public, Enterprise: .1.3.6.1.
Warn	-X-----	05/03/98	16:43:47	pulsar.her	/bin/su(1)	Security	amigo	Successful switch user to root by amigo

Remote Monitoring

ITO Management
Server



ITO Managed node
HP-UX or Solaris

DBSPI installed

DB software

Remote system
(other)

DBSPI
not installed

DB software

Remote database

Some restrictions

- *ITO agent required on remote system for logfile monitoring*
- *some metrics and apps not supported*
- *scalability (max 10 nodes recommended)*

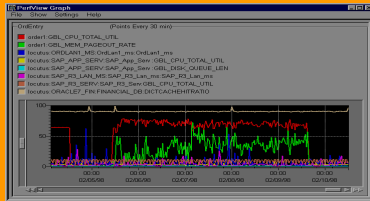
The Single Node Database



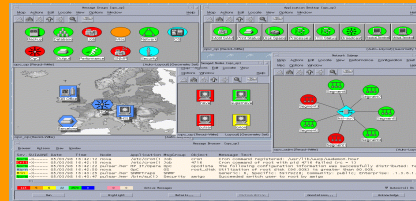
Database Pak 2000 - the "Start-up" Pak

Focus:

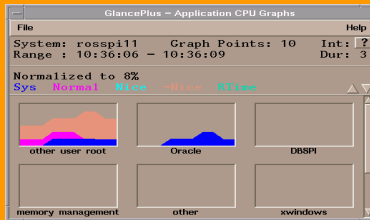
For implementations rolling out database applications on HP 9000 servers the DB Pak 2000 provides the System Administrator with all he needs in one tool to monitor the database and the OS!



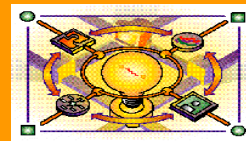
MeasureWare



IT/Operations
Special Edition



GlancePlus



SMART Plug-Ins

ORACLE

Informix

SYBASE

OpenView
2000



SPI Support & Futures

Updated prior to session

OpenView
2000

OPENVIEW
FORUM
INTERNATIONAL



HP OPENVIEW

Backup slides

OpenView
2000

Accelerating IT Performance and Business Success

Notes

Integrate & Make your own Monitoring!

You may have the “Pieces parts”

Know your sources of data

Use HP Openview & Support Web pages

Monitor Version & Patch info

HP Documentation

HP Training

HP Consulting



Vantagepoint SPI's

Vantagepoint for Windows
Operations/Performance
(see Session/Demo Details)

VPW SPI's for:
Windows NT 4.0
Windows 2000
Win+
Self Management (SeM)
BroadVision
RDBMS (Q4 2000)

