



# **Reflex ONE24**

## **A New Approach to BASE24 Management**



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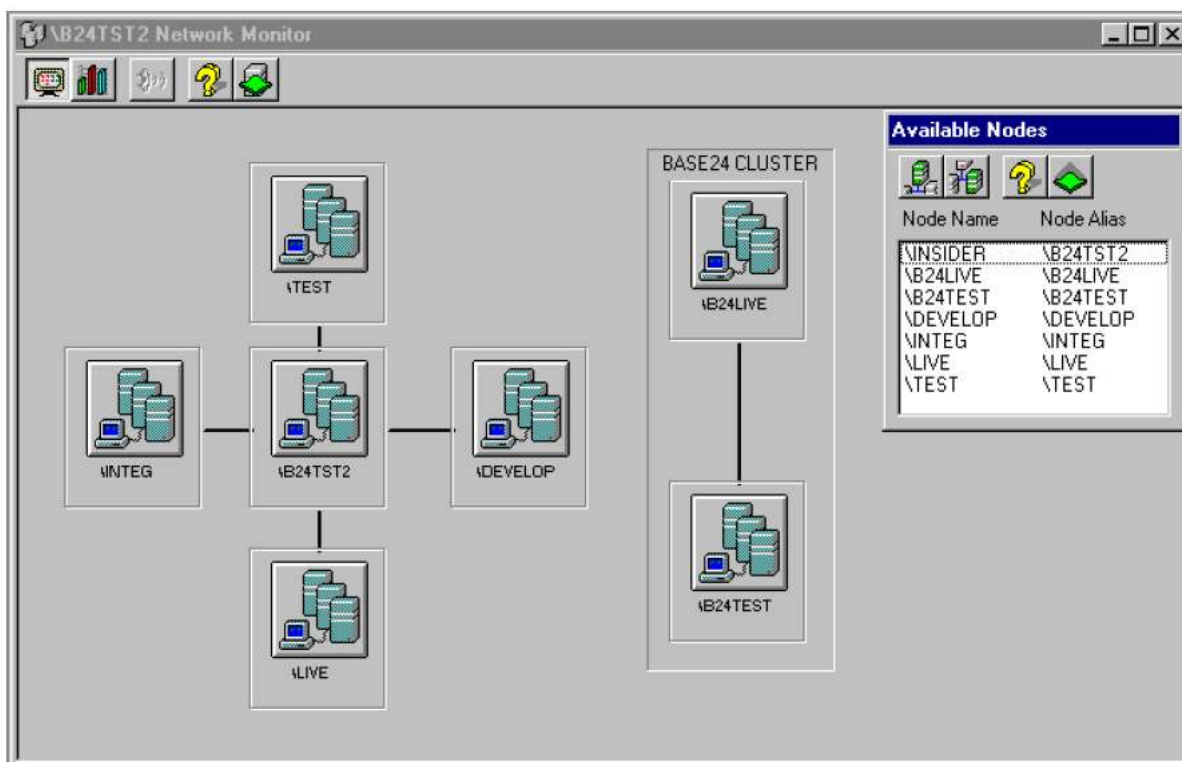
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## Introduction to Reflex ONE24™

Do you need an integrated approach to graphically monitoring a BASE24™ application over one or more hp NonStop systems without the need to jeopardise any of your current system performance or response times?

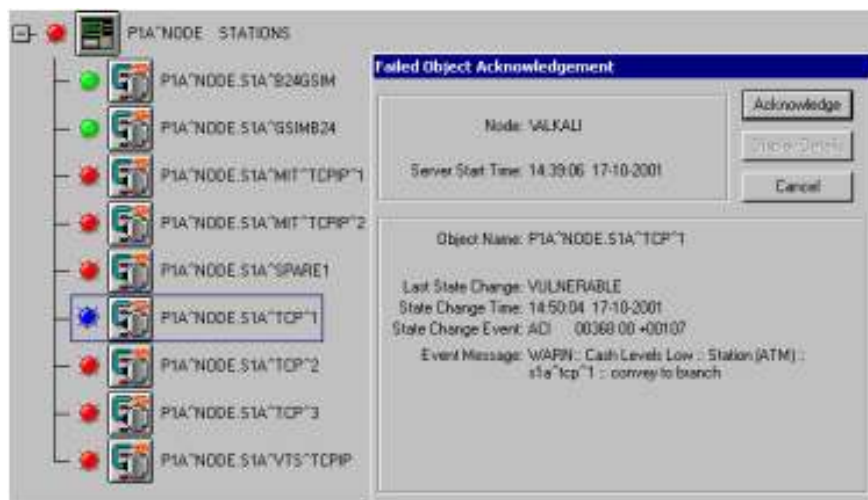
If so Reflex ONE24™ is the next generation approach to the management of BASE24™ and the NonStop system components that support it.

Reflex ONE24™ incorporates an all-in-one suite of system and application monitoring, automation and service management modules for your BASE24™ environments and the supporting hardware and system software. Reflex ONE24™ uses an easy to configure, NonStop WIN32 graphical interface that offers a comprehensive view of the entire hp NonStop network (being a combination of one or all of K-series, S-series, Integrity, or Blade platforms) from any number of configured PCs.



Developed after intensive dialogue with BASE24™ users and technicians from both large and smaller sites, Reflex ONE24™ represents an advised and unique approach to BASE24™ management. The Reflex ONE24™ architecture is centred on an automated technique of CPU friendly status checking on a low-overhead, "Just-In-Time" basis, which utilises the combination of:

- Efficient automatic detection of all objects
- Monitoring functions within the established and proven upper service layers of the core Reflex 80:20 suite.



Reflex ONE24™ combines event and service object monitoring, problem analysis and profiling; incident and performance mapping to business objects; object failure history; escalation via email, Mobile SMS text message alerting, pager alerting and enterprise manager interfaces; automation via point and click tasks and more complex script files; and lastly, automated SLA monitoring with integrated Microsoft Reporting Services functions to produce your service documentation on a daily, weekly or other recurrent basis.

Some of the Benefits Include:

- Day-to-day monitoring does not impede, impact or inhibit your live BASE24™ environments by constantly probing, polling or interrogating your critical XPNET network layer or BASE24™ processes
- Management of single and multiple instances of the BASE24™ application across an entire hp NonStop network, offering tight integration within an all-encompassing graphical interface
- Low maintenance costs as the necessary features for monitoring the BASE24™ application and the breadth of subsystems on the hp NonStop platform are contained in a single integrated product
- Critical BASE24™ application and hardware problems will always persist graphically until dealt with by IT or business support staff and are recorded for historical look-up, trending and active management information reports
- User friendly automatic detection and graphical configuration of the network infrastructure components Stations (ATMs and POS devices), Supporting Lines, Processes, Devices and Links that make up the BASE24™ XPNET layer
- Critical exception alert ranges and typical, time saving automation can be pre-delivered to be imported directly into your Reflex ONE24™ database minimising configuration time
- Reflex ONE24™ is based on the proven Reflex 80:20 package used by many of the world's largest and most demanding hp NonStop financial and telecommunications sites. Reflex ONE24™ is abreast of the latest hp NonStop technologies such as node clustering approaches to hardware configuration, Storage Management Foundation (SMF) for virtual disks; and Open System Services (OSS) Unix monitoring to provide a complete graphical view of your entire hp NonStop application environment.

## Reflex One24™ and Event/Console Management

At the centre of the Reflex ONE24™ product lies the event Reaction engine. This is the nerve centre of the ONE24 product and allows for the total and complete rationalisation of operational monitoring based on old style event-viewing consoles.

The DSM EMS subsystem has often been described as being too noisy or too active with both informational and cryptic EMS exception alerts clogging up and polluting the message displays.

Critical and important exception alerts disappear off the edge of monitor screens to be lost during support staff shift changes or busy support periods.

Large applications generate their fair share of non-critical messages that appear emphasised in green screen or graphical console displays. Conversely, the event viewer may not highlight those alerts considered critical to the organisation due to coding oversights during development, or misunderstandings as to the significance of certain alert messages.

Reflex ONE24™ allows the bank to assign a severity level to a BASE24™ or Guardian alert or range of alerts using the in-built reaction engine. When the alert is raised by the hp NonStop system, the message is picked up by the NonStop Event Monitor of ONE24 and relayed to the graphical alerting screen of Reflex. The benefit of this screen is that it presents the user with a graphical breakdown of all components by subsystem, application, geographical location or any other tailored view across a virtual, scrollable canvas.



Subsystems or BASE24™ areas that are experiencing problems, immediately shift to the top left of the display and flash red for critical (device down or compromised) or blue for vulnerable (device pressure mounting, approaching critical levels), so that support staff are immediately notified of problems. PCs fitted with soundcards can generate audible alerts where support staff are not in the immediate vicinity of the Reflex graphical readout and usually work across a number of support areas.

Compare this to the frustrating one-dimensional readouts of event viewers. With Reflex ONE24™, problems will persist graphically until dealt with by IT support staff. This will also be the case at staff changeovers with any operator actions being recorded in a history log detailing which user did what action on which PC in the organisation.

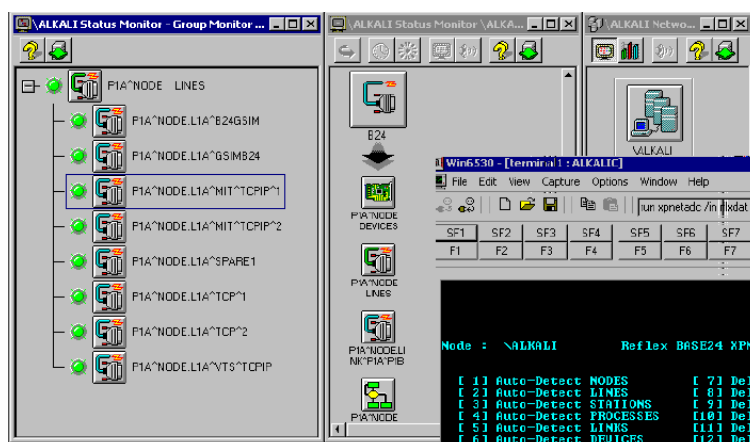
Each user view can be tailored so that only relevant graphical aspects of the hp NonStop network under his or her control or jurisdiction can be viewed. This approach further facilitates problem solving and troubleshooting as each user is presented with only pertinent information, be it BASE24™ specific, hardware and system specific or both.

Reflex ONE24™ is based on the proven Reflex 80:20™ package used by many of the world's largest and most demanding hp NonStop financial and telecommunications sites.

Standard event console facilities are also provided as part of the product. These are generally configured as “prove it” backups or catch-all fallback mechanisms. In practice, once the object graphics become established, such textual consoles are dropped from live use, as they are highly inefficient compared to object and business status displays.

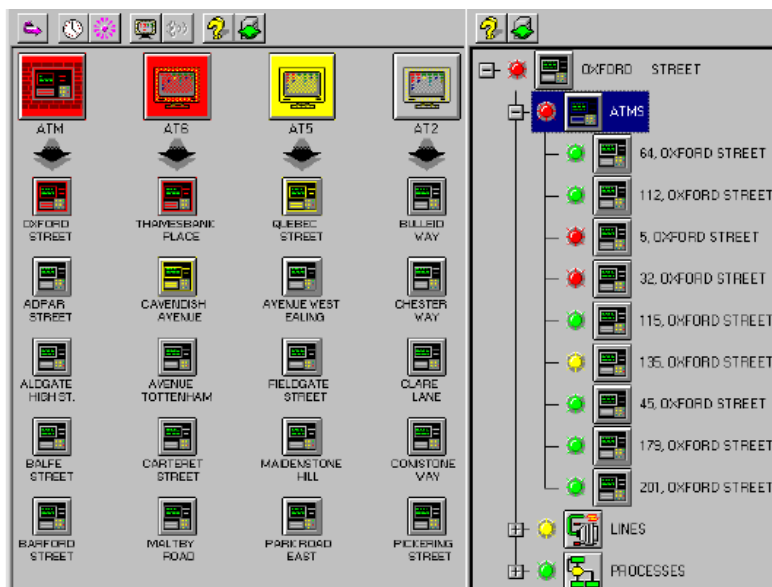
## BASE24™ and XPNET Management using Reflex ONE24™

An XPNET automatic detection utility is available with Reflex ONE24™, to extract a copy of the various XPNET nodes, stations (ATMs and POS devices), supporting lines, links, processes and device entities using the NCP (network control point) servers of BASE24™. This detection will populate the Reflex ONE24™ database with the required records to enable graphical component trees to be built up using the Reflex GUI interface.



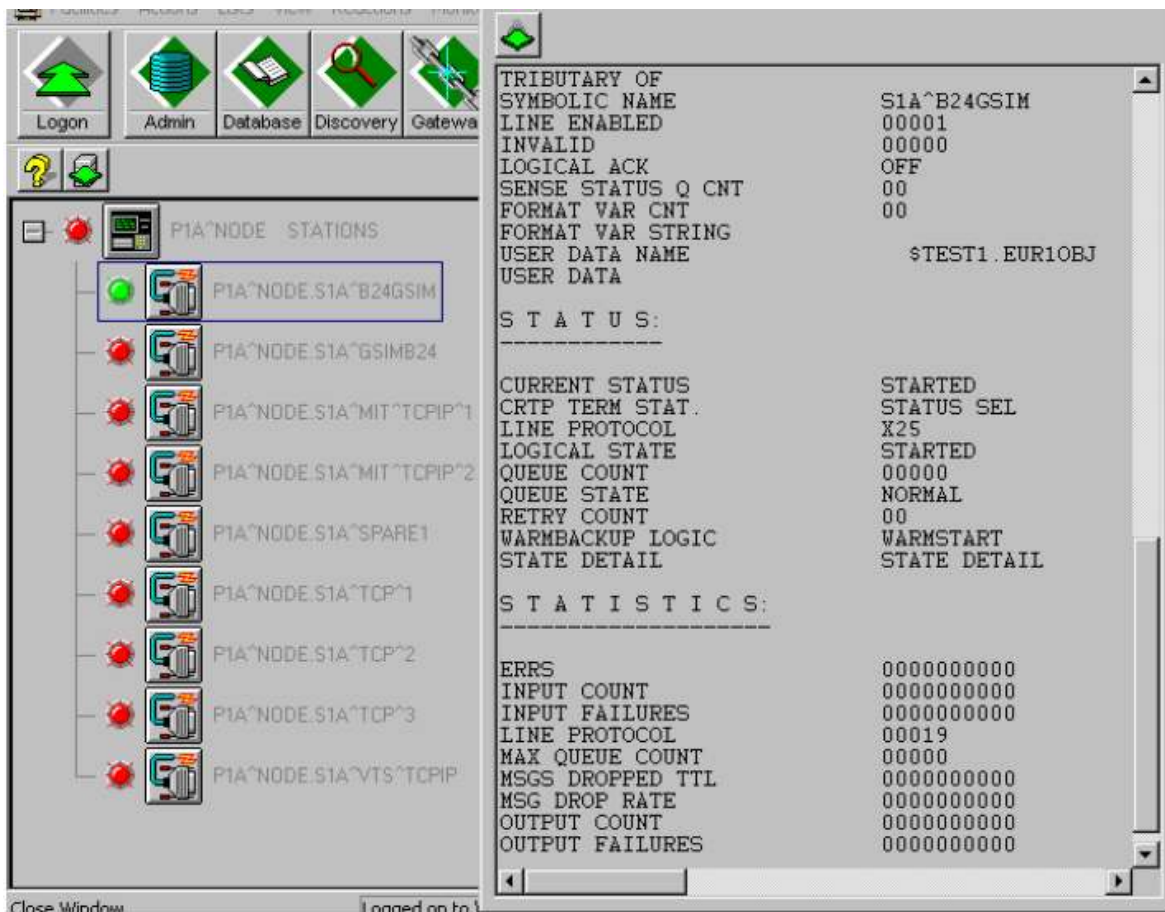
These object trees can be tailored to suit user requirements for visibility of the various XPNET relationships. For instance:

- An object tree can be built to group an ATM or POS device with related lines and processes.
- The components can be organised geographically or by street names using in-built alias to physical name dialog functions.



- The detection utility can also produce default trees where all like XPNET components are grouped under a single display icon for each XPNET object node, e.g. P1A^NODE STATIONS, P1B^NODE LINES.

Once an XPNET graphical tree has been built, a simple click on an individual component will provide access to information, detailed status and statistics relating to that XPNET object. This is provided using a status agent module available within the Reflex ONE24™ product, interacting with the NCP-SERVERS of the BASE24™ application. This feature enables users to make use of the integrated network display of Reflex to access XPNET component data rather than using TACL prompts and the NCPCOM conversational interface.



Reflex provides quiet, CPU friendly monitoring of all hp NonStop Guardian sub-systems and applications. This is achieved by taking advantage of the DSM EMS sub-system. Reflex can be configured with BASE24™ and XPNET EMS exception alerts that will automatically be mapped against the detected XPNET graphical trees of Status Monitor.

From here, users can acknowledge events and invoke XPNET tasks to remedy problems. A default list of tasks is available in Reflex ONE24™, by way of a transit file that can be imported into the Reflex database using a standard deliverable utility.

A list of received EMS events can be displayed for each XPNET entity providing a comprehensive history of issues and states over hours, days and weeks.

The Reflex ONE24™ product also includes:

- Comprehensive file monitoring and for the checking of file arrivals
- Key, busy and looping process monitoring
- TCP/IP, X25 monitoring and ASAP data analysis
- WebSphere MQ Series monitoring
- TMF monitoring
- Spooler monitoring
- CPU and disk monitoring
- Text to EMS conversion
- RDF monitoring
- Enterprise manager delivery of exception alerts
- Mobile SMS paging and emailing of exception alerts
- Task Automation
- MultiBatch monitoring
- Component rules analysis for SLA service monitoring
- Comprehensive EMS console event viewing and filtering
- Active Management Information Reports
- NetBatch monitoring
- Mobile PDA interaction is under development

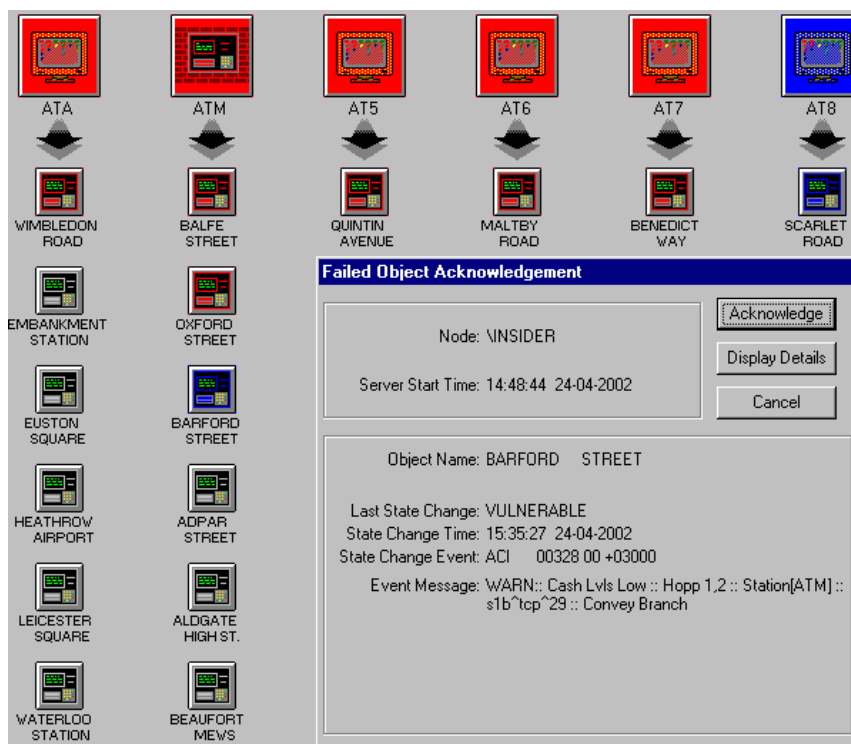
## Using Reflex ONE24™ to Manage your ATM and POS Devices

The Reflex ONE24™ product comes complete with a suite of utilities for ATM and POS device monitoring; from comprehensive X25 problem detection through to XPNET agents. These deliver detailed status, statistics and information relating to the XPNET graphical displays of Reflex.

### ATM/POS Graphical Tailoring

The Reflex ONE24™ product GUI incorporates versatile and intuitive drag-and-drop functions for building ATM and POS monitoring screens to your own preferred, on-site requirements. Reflex ONE24™ does not restrict or dictate your view of your own BASE24™ systems but allows different views to be constructed for the different departments of your financial or retail organisation from the ATM or POS network monitoring divisions through to the NonStop systems management area.

The different views can co-exist and are concurrently accessible. The ATM support staff can view ATMs or POS devices by geographical location and/or by street location using logical and hierarchical object trees. The systems support staff can view the same devices by physical component names within the BASE24™ XPNET layer with the adjoining XPNET lines and processes under the same object tree to make troubleshooting easier.



### ATM/POS Exception Alert Mapping

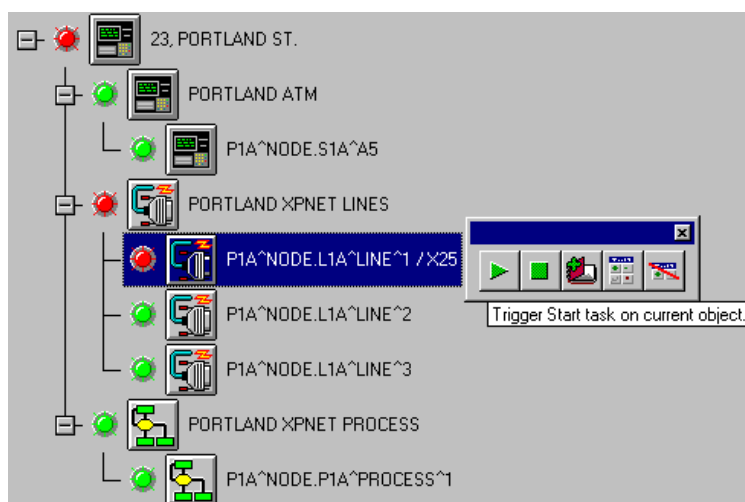
The Reflex ONE24™ architecture is unique and allows for the mapping of ATM and POS device exception alerts, BASE24™ and XPNET alerts, directly to the individual Reflex ONE24™ graphical object tree icons where they can be seen more clearly.

Event viewing consoles are too “noisy” and distract from the important and critical issues that are occurring within your own BASE24™ environments. Messages from cash low, cash out, paper out, device down through to much lower level hardware and software issues can be separated out and mapped directly to the graphical views of the different departments of your organisation. Critical problems can be seen, in context, before they affect the business.

Critical BASE24™ application and hardware problems will always persist graphically until dealt with by IT support staff and are recorded for historical look-up, trending and management information reports. Alerts will no longer be overlooked and both internal staff and the banks can be notified of problems inside of their control more quickly. All actions to acknowledge alerts are audited and recorded for Compliance and MIS purposes.

### Concurrent User ATM/POS Monitoring

Reflex ONE24™ is a concurrently accessible product that can be installed and have multiple sessions co-existing on over a hundred PCs. A support user can actively acknowledge a problem and start a “healing” task for an ATM/POS XPNET issue or lower level device problem. All other Reflex ONE24™ users will then be notified by colour changes to the appropriate graphical BASE24™ icons.



These actions are audited and security controlled, allowing only selected staff to carry out particular actions depending on their area of control and seniority. For example, the ATM monitoring division of the bank can have a graphical view which allows only acknowledgement of ATM/POS issues whereas the IT systems support area can have a tailored view of the entire BASE24™ environment and related subsystems.

### Email or SMS page in Response to ATM Issues

Bank branches can be notified of problems with cash, paper or device issues by automatically paging or emailing the appropriate branch staff or a mobile SMS text message can be generated. Similarly, internal staff can be notified both graphically but also by email should service levels be affected. An example would be, if it is peak time and 20 percent of the ATMs in key areas of the city are experiencing low cash or device out issues then alert service support staff.

### Active Management Information Reports

All actions, acknowledgements and critical exception alerts monitored by Reflex ONE24™ are relayed directly to a nominated NT server for active management reporting. This is done away from the NonStop platform to allow the CPUs to concentrate on live application processing and not monitoring, querying or reporting software. This is in keeping with the low CPU utilisation approach that is at the heart of the Reflex ONE24™ product.

Service levels (SLAs) can be monitored with integrated Microsoft Reporting Services functions to produce your service documentation on a daily, weekly or other recurrent basis. Reports produced can detail, for example, average ATM down time, cash low times or how long it has taken for bank support staff to take note and acknowledge ATM issues.

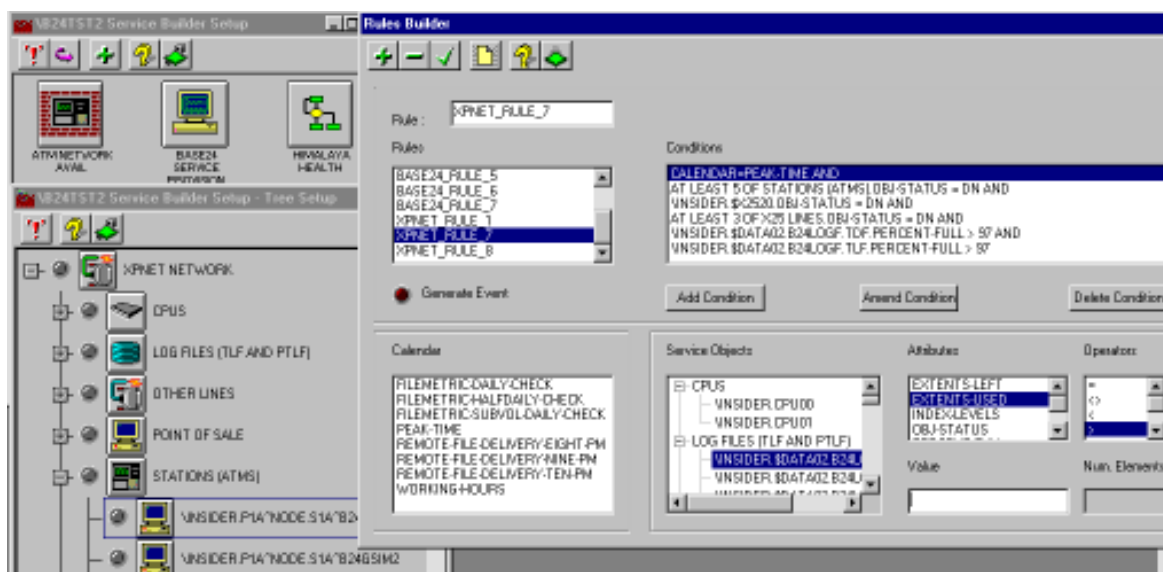
## Service Management using Reflex ONE24™

Reflex ONE24™ contains a sophisticated rules engine that brings together all diagnostic and status information from the breadth of the Reflex ONE24™ product. This suite of functions provides a cross-sectional view of an entire service offering spanning more than one hp NonStop system. This pooling of system and application level information and data allows for the grouping of components, both BASE24™ related and hardware, to detail SLA failings and shortfalls.

This is achieved by bringing together and comparing all critical aspects of a live production application and the subsystems that support it, regardless of the node on which they reside. A comprehensive NonStop calendar function is provided in order to isolate key windows of time, such as peak time, working hours, holiday and overnight and weekend periods. This calendar function allows your organisation to view your current service offerings in terms of sensitive parts of the day, week or month. This can all be accessed from a single graphical summary view of your service offering. This view can be further queried using point-and-click technology to provide colour-coded indicators of offending areas of your network currently affecting and compromising your service levels.

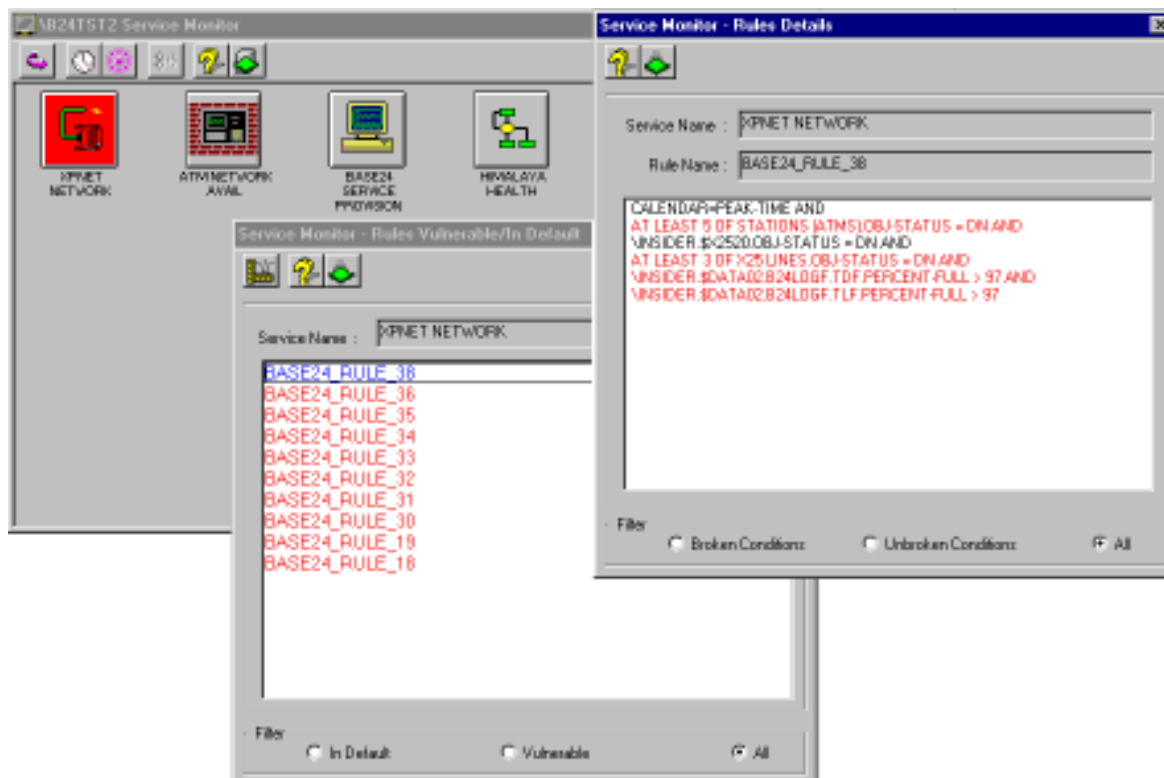
For the full range of ATM or POS devices, BASE24™ and XPNET layers, it is possible to build service rules such as;

- 'If 15 of 40 key ATMs in the busiest parts of the city are experiencing cash low or device level problems AND it is 'PEAK TIME' AND a number of TCP/IP lines are currently down'.



If a configured rule indicates a service level is broken or partially broken, you can automatically react to issue alerts both graphically on the Reflex ONE24™ service display (via your ATM network graphic) and also utilise either SMS messages, pager alerts or email appropriate support staff.

The Reflex ONE24™ rules engine is engineered to alert on a potential service problem as well as a current live problem. With this approach, service provision can be proactively maintained rather than being compromised when a number of key components have failed.



Thus, as well as presenting the IT support staff view of the system, comprising raw components like CPUs and disks, you can also configure the Service view for business managers who require the overall picture of the service levels being provided to users. The display will quickly isolate any deficiencies in your ability to meet agreed SLAs by underlining key failing critical path components, subsystems and application processes. Online data can be also be stored against pre-configured MIS reports.

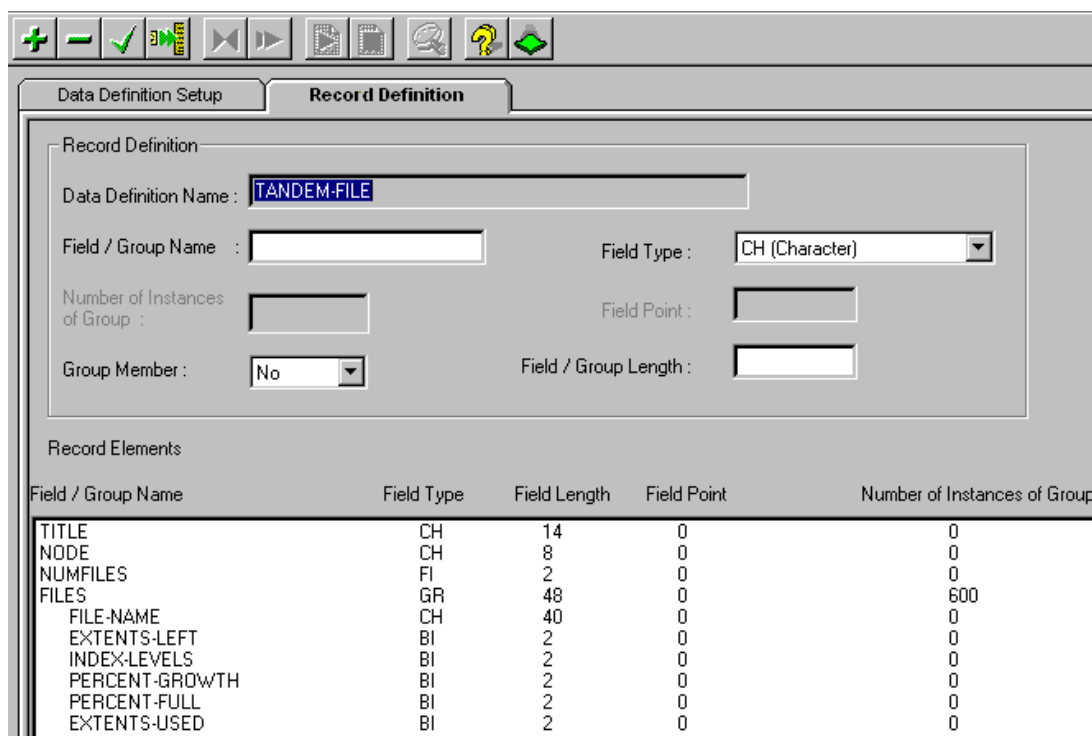
## The Reflex ONE24™ Rule Engines

Reflex ONE24™ allows for the easy integration of critical applications into the service rules engine that takes feeds from the rest of the ONE24 product. The service provided by your organisation comprises not only the overall availability of your critical path hardware, software processes and subsystems, but also the ongoing state and progressive health of your live BASE24™ environments.

With this in mind, Reflex ONE24™ comes complete with message definition GUI dialogs to describe outputs from your applications so that they can be fed directly into the ONE24 product.

The technology alleviates the need to hard-code API message structure definitions and subsequently allows for your processes to be plugged into the service rules engine of Reflex ONE24™. These GUI dialogs allow messages to be described dynamically at:

- Field level for different formats like binary and ASCII,
- Differing field lengths and;
- Numeric representation like floating and fixed point.



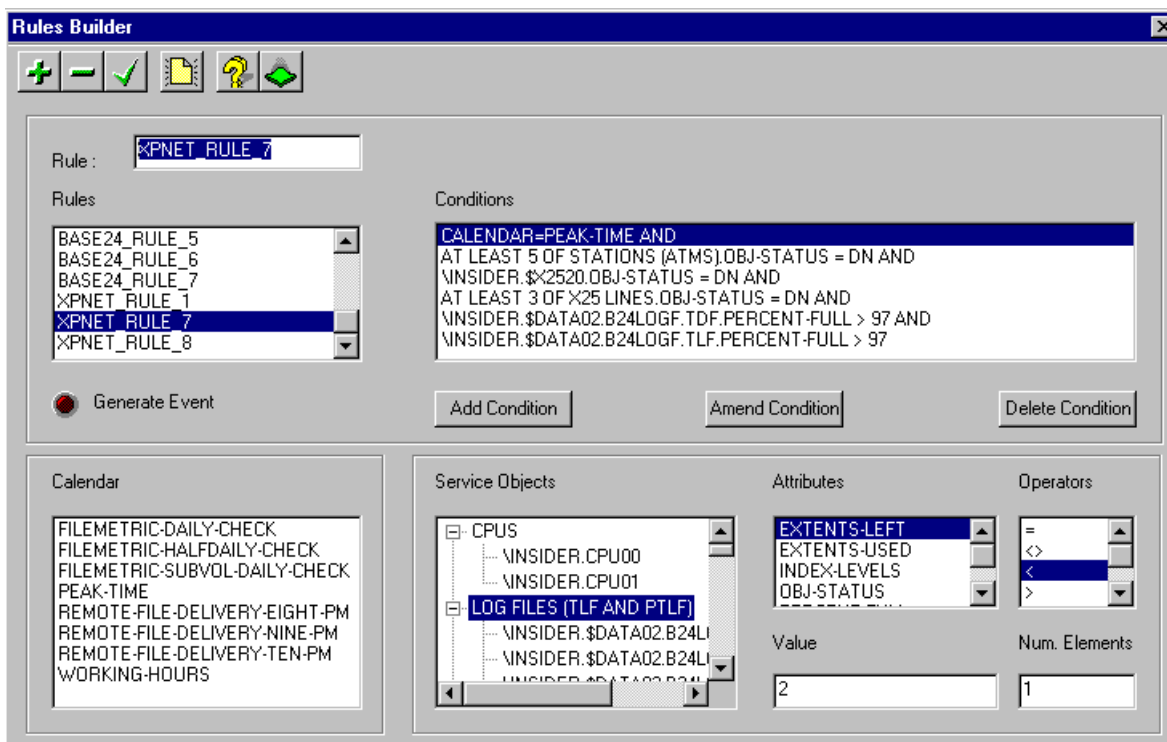
Field / Group Name	Field Type	Field Length	Field Point	Number of Instances of Group
TITLE	CH	14	0	0
NODE	CH	8	0	0
NUMFILES	FI	2	0	0
FILES	GR	48	0	600
FILE-NAME	CH	40	0	0
EXTENTS-LEFT	BI	2	0	0
INDEX-LEVELS	BI	2	0	0
PERCENT-GROWTH	BI	2	0	0
PERCENT-FULL	BI	2	0	0
EXTENTS-USED	BI	2	0	0

Typically, version changes to your application inter-process API structures would necessitate the re-compilation of any affected third party executables that use the same messages for status information. Reflex ONE24™ maintains seamless service integration by requiring only an on-screen change using the ONE24 graphical interface. With this approach, both diagnostic and service monitoring is optimised by limiting updates (and therefore no-cover periods in the live monitoring) to an absolute minimum.

Reflex ONE24™ does away with the need to upgrade third party monitoring software to later releases to account for your ongoing development tuning and/or your live application upgrades.

Each graphical object component within the Reflex ONE24™ rules engine, has an associated type that allows context-specific attributes to be accessed for complex rule comparisons to be made.

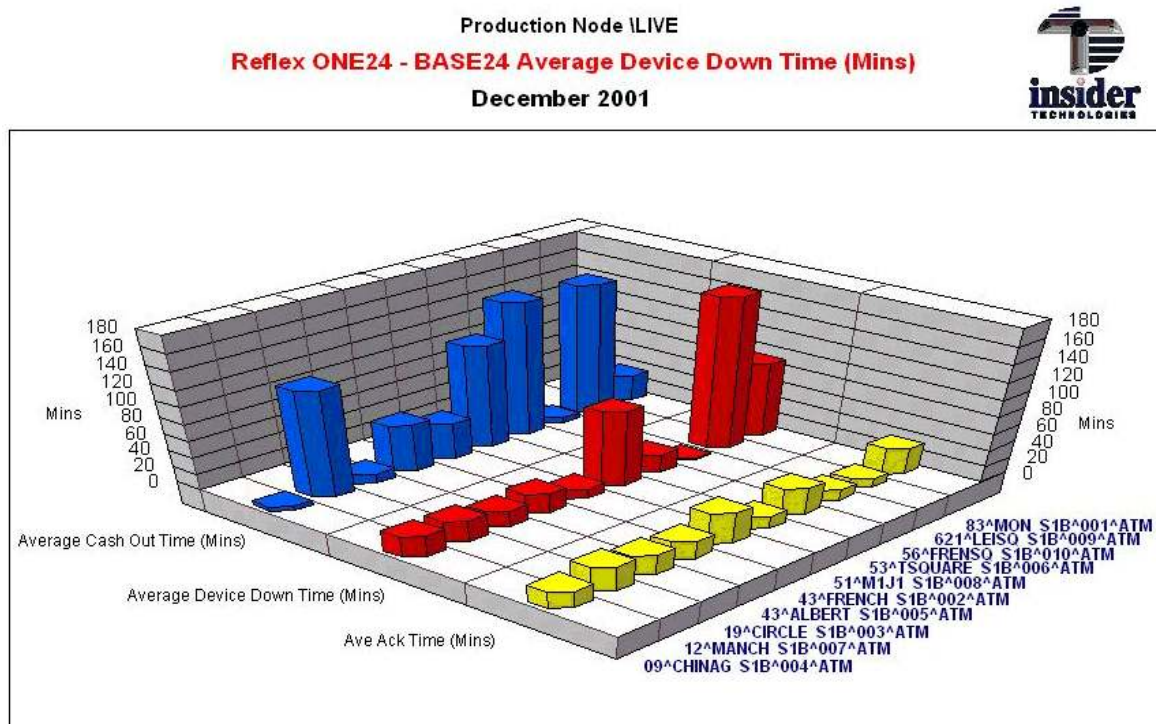
Taking feeds from other applications, for example the hp NonStop Availability Stats and Performance software (ASAP), Reflex ONE24™ is able to combine the data values and current metrics for a number of object types. Those component values extracted by ASAP along with the Reflex Dashboard, Heartbeat and complete Status Monitoring set of object diagnostics can be brought together in a single rules screen. Inside the same screen and within the same rules, BASE24™ stations and lines status can be compared along with TCP/IP line status. Calendar periods can be introduced to the rules to embrace peak time, overnight, holiday periods and so on.



The group comparing of identifiable and auto-detected components that together, comprise your critical path NonStop objects, provides you with a service level focus and graphical viewing area for the sensitive parts of your entire network. Reflex ONE24™ offers an instant readout of potential service problems before they affect your business.

## Reflex ONE24 and Active MIS

The ability to extract, analyse and present relevant MIS data from your BASE24™ systems is vitally important. This is often required by both IT staff and also by business teams and end-users. System Managers and Administrators have a clear need to be able to monitor system performance in order to assess whether SLAs are being met and that the service is running at optimum levels.



ILIVE P1B^NODE

Report Date: 1st January 2002

The prime consideration for the Reflex ONE24™ product is to offer CPU friendly, comprehensive monitoring of your BASE24™ application and supporting components. MIS monitoring is also achieved in delivering active management information reports to allow such processes as totalling and trending your Reflex ONE24™ entities over weekly, monthly and other recurring intervals.

Reflex ONE24™ uses a Fastpipe™ gateway module on the platform. This data extraction and object interaction “pipe” process is delivered as standard with all Reflex ONE24™ installations. It provides a proven and multi-featured TCP/IP sockets data transfer layer used for fast transport of system metrics and diagnostics, state driven object data and user actions such as acknowledgement, start task and reset away from the NonStop platform.

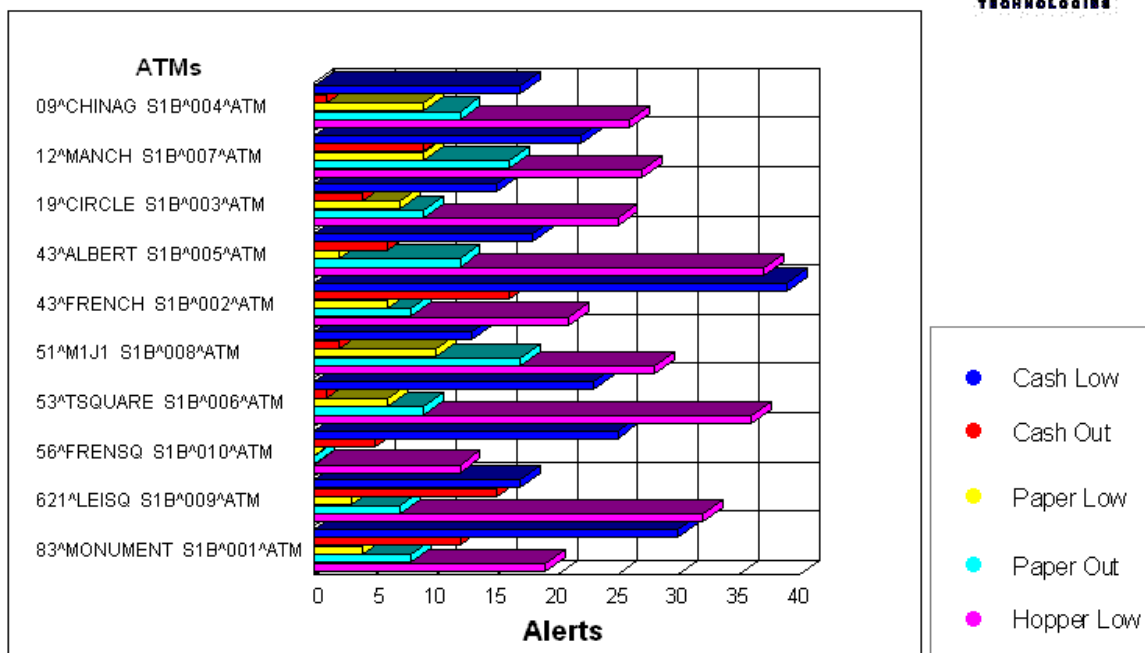
The result is a comprehensive relational SQL Server database of all user-initiated actions, performance data, metrics and exception alerts to provide all of your trending and totalling reports for any given period. Any complex queries or reports are produced away from the platform so as maintain optimum performance and response times for your resident live BASE24™ installations.

The Fastpipe™ gateway is fully configurable for large installations to cater for relaying high volumes of performance and state information. All record insertions and deletions occur on the NT server, thereby minimising any disk I/O overhead on your critical systems.

Management reports can be produced with integrated or stand-alone Microsoft Reporting Services functions to produce your service documentation on request or at predetermined intervals. These reports can be produced in a variety of formats for distribution – e.g. PDF, text, HTML or Web-reporting technology. Reports produced can detail average ATM down time, cash low times or how long it has taken for bank support staff to take note and acknowledge ATM issues.

Production Node ILIVE

**Reflex ONE24 - BASE24 Top 'n' Cash & Paper Low/Out**  
**December 2001**



ILIVE P1B^NODE

Report Date : 1st January 2002

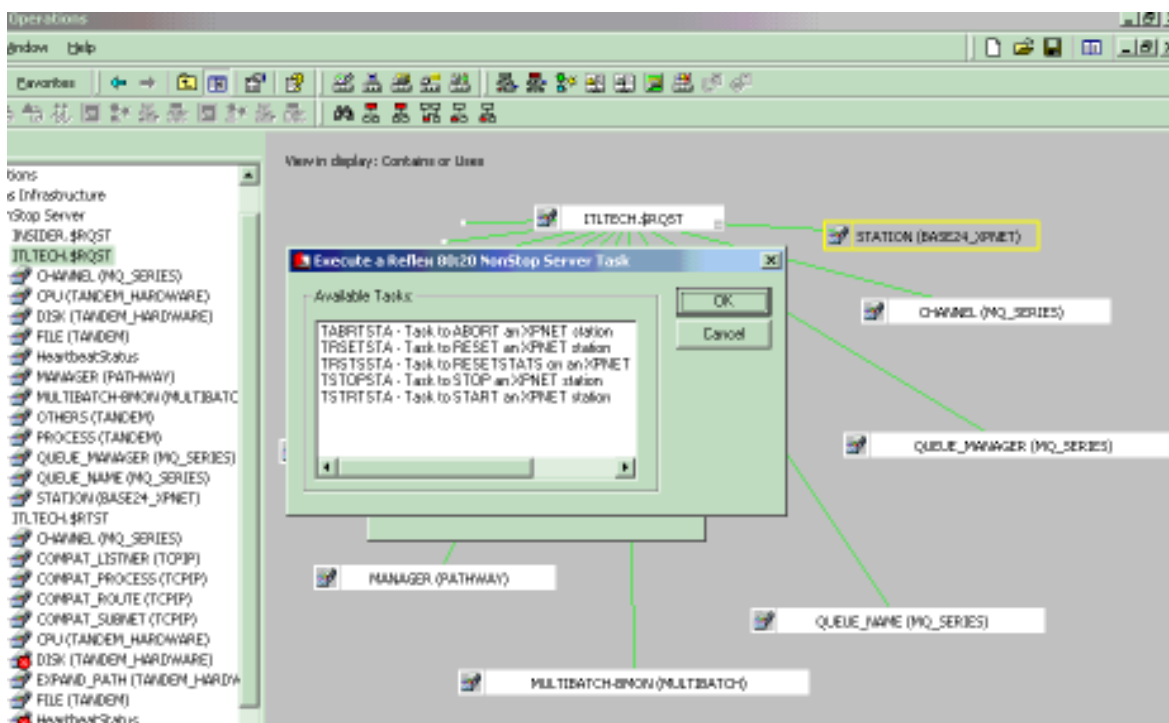
Reports also detail such information as process busy mapped against CPU busy, SQL and ENSCRIBE file issues, disk growth, fragmentation and disk I/O.

## HP OpenView Operations BASE24™ and XPNET™ Support

The Reflex Smart Plug-In (SPI) for hp OpenView is hp certified and provides a powerful inclusion within hp OpenView Operations (OVO) for managing hp NonStop servers. The Reflex SPI is an out-of-the-box solution that links seamlessly with the hp OVO Management Console using hp approved techniques for integration. The hp OVO Smart Plug-In technology demands a greater level of sophistication for central enterprise control and goes beyond basic event alerting. The SPI for Reflex offers a comprehensive view of your entire hp NonStop network (being a combination of one or all of K-series, S-series, Integrity, or Blade platforms) from the hp OVO Management Console.

Reflex makes use of an advised approach for BASE24™ and XPNET™ monitoring, developed after discussions with both the users and technicians close to the application. The Smart Plug-In provides extensive health checking, discovery and mapping for BASE24™ application and XPNET™ component types within the hp OVO Management Console. Users of hp OVO are also able to request detailed configuration information, real-time status and current statistics for any of the offending XPNET™ nodes, stations, lines, processes, links and devices.

Pre-deliverable event transit files ensure that each layer of the BASE24™ application is monitored in hp OVO. This includes the logical XPNET™ event ranges for component state changes as well as the device handler and manufacturer device type events. Alerts for the various ATM issues relating to cash amounts, hopper levels and general device status can be relayed with plug-and-play configuration, to the hp OVO Service Trees.



Building still further on the recommended strategy for BASE24™ performance monitoring, the Reflex SPI can now receive threshold alerts for the switch interchange transactional interface layer of the application for each of the approved and declined transaction counts maintained. In combination with these interchange thresholds, a true picture of the efficiency and performance of the BASE24™ application can be viewed by also relaying the state, rate and queue metrics of XPNET™ to the hp OVO Management Console.



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