



HPE NonStop Availability, Stats, and Performance software



HPE NonStop Availability, Stats, and Performance (ASAP) software provides a uniquely integrated, extensible infrastructure that allows you to monitor the availability and performance of system and application objects.

HPE NonStop ASAP software allows you to monitor the status and performance of an entire network of HPE NonStop systems. It provides a uniquely integrated, extensible infrastructure for monitoring the availability and performance of system and application objects. It integrates both availability and performance information to form normalized availability vectors for monitored domains and associated properties. Information integration includes operational status, performance, and availability objectives for HPE Integrity NonStop X, HPE Integrity NonStop i, and HPE Virtualized NonStop systems, subsystems, and abstract application domains.

HPE NonStop ASAP includes a database that encapsulates both statistical and service-level objective information. Statistical information includes availability, statistics, and performance data. Objective information includes user specifications about which objects should be monitored and the service-level objectives for monitored objects.



With the offering, you can monitor both the object status and the performance of all key system resources on a network-wide basis. The HPE NonStop ASAP Client is designed to operate on workstations running Microsoft® Windows® operating systems. The HPE NonStop ASAP Server runs on the HPE NonStop X, HPE NonStop i, or HPE Virtualized NonStop systems. The companion products, HPE NonStop ASAP Extension (ASAPX) and HPE NonStop ASAP Hybrid (ASAPH) provide an API that allows you to monitor the availability and performance of your application domains on both HPE NonStop systems and Linux® system-based servers. The API allows application domain statistics to become fully integrated with the client/server functions.

HPE NonStop ASAP provides object state reporting as well as detailed performance information for critical resources. These are applications, CPUs, communication lines, disks, HPE Expand line handlers, files, subvolumes, processes, HPE NonStop Remote Database Facility (RDF) software, spoolers, systems, tape drives, and HPE NonStop Transaction Management Facility (TMF) software.

Consistent with continuous availability requirements, HPE NonStop ASAP allows dynamic selection of monitored objects, so that you can add or remove monitored objects while the system is running.

Key features and benefits

- Online monitoring of object status and performance
- Alerting of down objects and performance bottlenecks
- Easy definition of goals and automated actions if goals are not met
- Historical reporting of system object status and performance
- Detailed drill-down on busiest CPUs, disks, files, and openers
- Simplified monitoring using a GUI
- Availability objectives monitoring
- Interfaces to open enterprise management (OEM) gateway
- Entity definition language (EDL)

You can define goals (service-level objectives) in general and specific levels to control alerting to the HPE NonStop ASAP client, to the event management subsystem (EMS), and to open enterprise frameworks such as Micro Focus Operations Manager (OM) software. It can also extend to personal devices such as wireless phones, pagers, and color-encoded HTML email.

You can define automated recovery actions for any goal to allow HPE NonStop ASAP to attempt recovery of failed objects or to bring service levels back in line with stated objectives. Actions are simply stated as HPE NonStop system commands and macros without requiring rules-based development in a new rules language.

The HPE NonStop ASAP Client displays statistics about all of these key HPE NonStop system resources in the network, enabling IT to identify and monitor critical conditions before they affect user levels. In addition to online displays, information is written automatically to a database for historic archival, analysis, and report generation. The offering also alerts you visually to degraded state and performance utilization levels throughout your network when conditions exceed user-defined thresholds.

HPE NonStop ASAP is easy to use with a graphical interface, pull-down menus, and context-sensitive help text. It increases operator productivity by presenting a consolidated picture of both application and system object status and performance data in easy-to-read graphics.





Online monitoring of object status and performance

Consistent with continuous availability requirements, HPE NonStop ASAP allows dynamic selection of monitored objects, so that you can add or remove monitored objects while the system is running. If no objects are selected for an entity class, the statistics gathering process (SGP) for that entity will configure a set of objects automatically. For example, if you do not specify a CPU to be monitored, then all CPUs will be monitored. HPE NonStop ASAP displays up-to-the-minute object state and performance information for the following kinds of statistics and data:

- **Application statistics** are provided by HPE NonStop ASAPX and HPE NonStop ASAPH. The optional application plug-ins enhance the HPE NonStop ASAP product suite by providing an interface for applications to participate in the software's object-based architecture.
- **Cluster I/O Protocol (CIP) SGPs** collect availability information on cluster I/O module (CLIM) devices of HPE NonStop servers. The CIP SGP collects status and statistics information for CLIM devices, CIP monitor processes, and CIP provider processes.
- **CPU statistics** gives you detailed information about CPU status, utilization, queues, disk I/O, and cache hit rates, memory usage, page fault rates, process control blocks, and other important performance characteristics.
- **Communications statistics** provide detailed information about communication line handlers, including legacy protocols such as asynchronous ATP6100, X.25, and SNAX.
- **Disk statistics** provide detailed information about all of your disk volumes, including the status of mirrored volumes and controllers. It also provides metrics such as disk space and capacity utilization, disk queues, cache hits and misses, disk request rates, total busy, seek busy, read busy, write busy, and input/output kilobytes per second.
- **HPE Expand line handler and end-to-end node statistics** are provided by HPE NonStop ASAP and include the status of line handlers and paths, as well as the number of packets sent, received, and passed through the network. HPE NonStop ASAP also provides error-rate statistics such as buffer failures, transmission block character check (BCC) errors, and negative acknowledgment (NAK) rates.
- **File statistics** provide detailed information about user-selected files or subvolumes on the node. The file SGP provides metrics on percent full, file owner, file attributes, end of file (EOF), open, file code, file type, number of partitions, TMF protected, last open, last modified, progid, and license.
- **Node statistics** provide path information and traffic statistics between two HPE Expand nodes. Statistics provided are L4 links sent/received, L4 packets sent/received, next system number, and number of physical hops between the nodes.
- **Process statistics** include user-selected process availability information such as process status, CPU number, process identification number, priority, busy, request queue length, process state, wait state, and pages used.



- **Process busy statistics** help you to quickly identify processes that consume the most resources. These are overall rank, CPU utilization, messages sent and received, request queue length, group, user ID, priority, process name, average memory pages used, and the program object file name of each process.
- **HPE NonStop RDF statistics** include the status of the HPE NonStop RDF subsystem components such as extractors and updaters, as well as relative delay times, relative byte address of the record being processed, and sequence number of the audit or image file.
- **Spooler information** is provided, including the status of collectors, print processes, and supervisors, as well as jobs, open, hold, and printing.
- **Swap file statistics provide information** about the Kernel-managed swap files on the node. The ASAP reports on what's available for each CPU, including the percent for swap space, number of memory pages, total swap space allocated, memory pages allocated, and more.
- **Tape availability information** is provided and includes tape status, mounts, opening process, and tape label.
- **TCP/IP information** includes in-depth monitoring of 600 metrics associated with the TCP/IP subsystem. Monitoring includes all aspects of the TCP/IP communications stack architecture and encompasses statistics on ports, routers, subnets, QIO, user datagram protocol (UDP), and processes. In-depth statistics on Telserv services and windows are also provided. Goals and actions can be set on any TCP/IP property, allowing HPE NonStop ASAP to provide access control.

The HPE NonStop ASAP TCP/IP Plug-in also provides unique security access control capabilities. It is possible to monitor and set goals on TCP/IP components and to take automated actions on access such as a user's foreign TCP/IP address (for example, limit or restrict access to various subnet addresses) or a service utilized, or to set limits on a given user's window, service, and so on. The HPE NonStop ASAP TCP/IP smart gathering process greatly extends the HPE NonStop ASAP capabilities in the area of TCP/IP monitoring and security access control.
- **HPE NonStop TMF statistics** includes the status of the subsystem, as well as transactions per second, catalog status, and the percentage of the audit trail used.
- **System-level availability information** is automatically rolled up into a standard Microsoft Internet Explorer TreeView of your overall network. The software's object integration layer (Oil) TreeView keeps you informed of which nodes, entities, and objects are unavailable or consuming the most resources (see Figure 1).



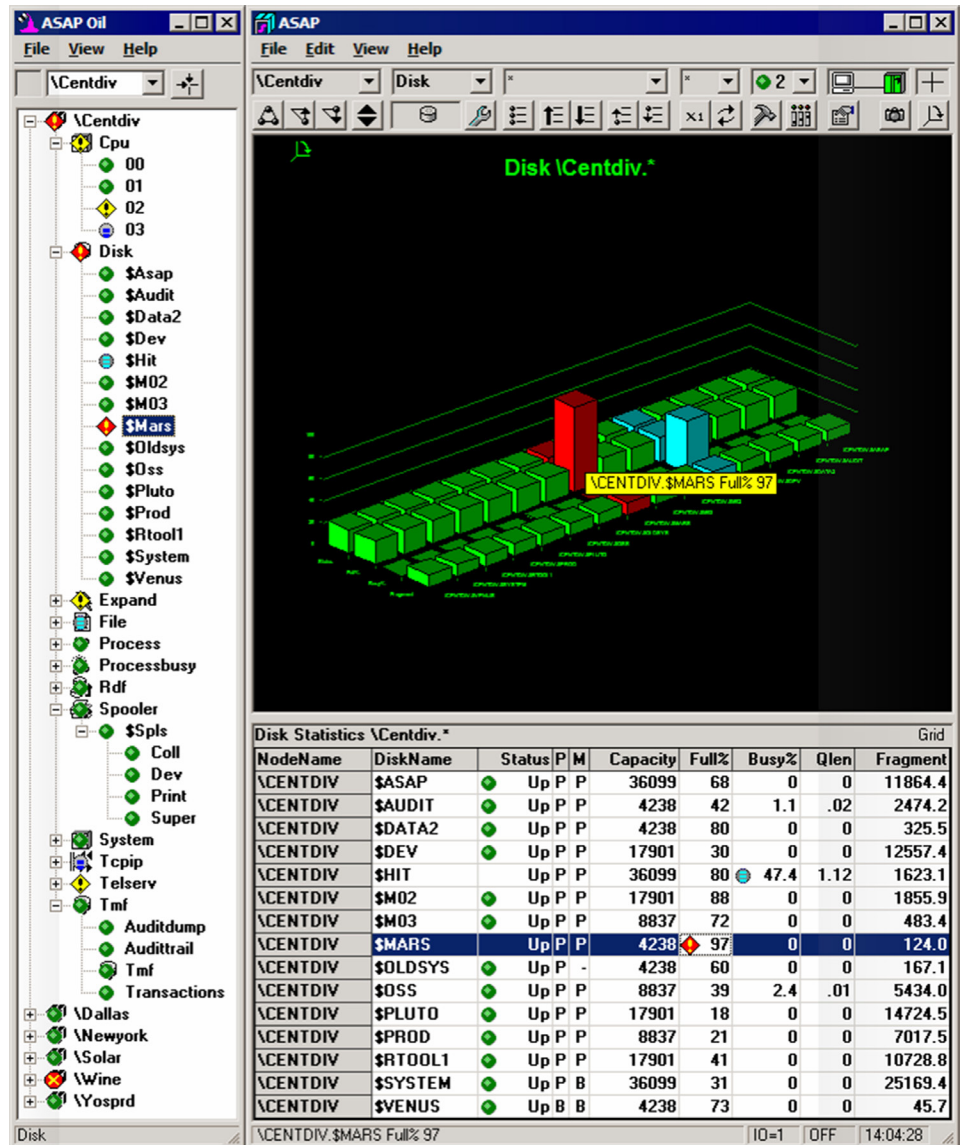


Figure 1. HPE NonStop ASAP Oil (left) and associated ASAP graph-grid window (right)

HPE NonStop ASAP state and performance icons guide you through detailed data about your system and application entities so that you can quickly identify critical service-level performance conditions.

The HPE NonStop ASAP Oil is a state-propagating TreeView that displays the state of applications, CIP, communication devices, CPUs, disks, HPE Expand, files, node, processes, busiest processes, HPE NonStop RDF software, spoolers, Kernel-managed swap facility (KMSF), tapes, TCP, and HPE NonStop TMF objects.

For example, in Figure 1, the green icons indicate that an object is “up”; the red “!” icon indicates that \Centdiv\Disk\Mars is “97% Full”; and the yellow “!” icon indicates that \Centdiv\Cpu\O2 has a warning that does not meet user-specified objectives; the red “X” icon indicates \Wine has a down object; clicking the + will display the down entity and object.



Alerting of down objects and performance bottlenecks

HPE NonStop ASAP state and performance icons guide you through detailed data about your system and application entities so that you can quickly identify critical service level and performance conditions.

HPE NonStop ASAP increases operator productivity by presenting a consolidated picture of object states and performance in easy-to-read graphics. It can highlight information that has exceeded thresholds so that operators can quickly identify and correct possible problems. Because the statistics displayed by the HPE NonStop ASAP product are updated continuously and automatically, you always have the most current view of object states and network performance. Detailed drill-down and in-depth measurement of an object is also just a click away.

Easy definition of goals and actions to take when goals aren't met

HPE NonStop ASAP allows you to define generic and specific goals that represent service levels that must be met. There can be both general and specific goals: for example, all processors must be less than 90 percent busy, and processor 1 must be less than 80 percent busy. Goals can be set on many attributes of all monitored subsystems.

For each goal defined, you can specify an automated action to take if the goal isn't met. Actions can be simple executions of utility commands such as securing a file that isn't configured correctly or suspending a process that is consuming too many resources. Actions also can be sophisticated macros or open system services (OSS) scripts that perform tasks such as adjusting application and network parameters when the RDF relative time delay between the primary and backup systems exceeds the desired service level.

Historical reporting of system object status and performance

HPE NonStop ASAP creates a centralized HPE NonStop Enscribe database of resources monitored in your network. This database contains current and historical normalized statistics about applications. These are CIP, CPUs, disks, files, HPE Expand line handlers, nodes, processes, busiest processes, HPE NonStop RDF, spoolers, KMSF files, systems, tape drives, TCP/IP, and HPE NonStop TMF, which can be queried for historical trending of availability and performance data. For example, based on the data collected by HPE NonStop ASAP, you can determine the five busiest processes in any processor during any predefined interval.

Historical data can be maintained for any length of time and can vary based on the type of data. For example, you might maintain a month's worth of CPU data but only a week's worth of disk data. The database is completely self-managing and does not require any operator intervention.



Simplified monitoring using a GUI

Both real-time and historic performance views can be displayed using the HPE NonStop ASAP GUI. The HPE NonStop ASAP Client allows you to create multiple graphical views on various nodes, entities, and objects in your network so that you can customize your monitoring environment. When conditions exceed user-defined thresholds, it alerts you visually by displaying state and performance icons. When you select an alerted entity, HPE NonStop ASAP provides a real-time view of the entity. This view updates in real time and three-dimensional hot-spot graphics allow you to drill down to obtain detailed reports on the selected entity (see Figure 2).

For example, clicking on the red graph element shown in Figure 2 indicates that \Chicago\Cpu\00 status is "down." Note that HPE NonStop ASAP graphs can be customized to display various types of status and performance information. It requires no special training or complex commands. A context-sensitive help function makes it easy to use. All you need to do is point to an object and press the help function key or pull down the Help menu.

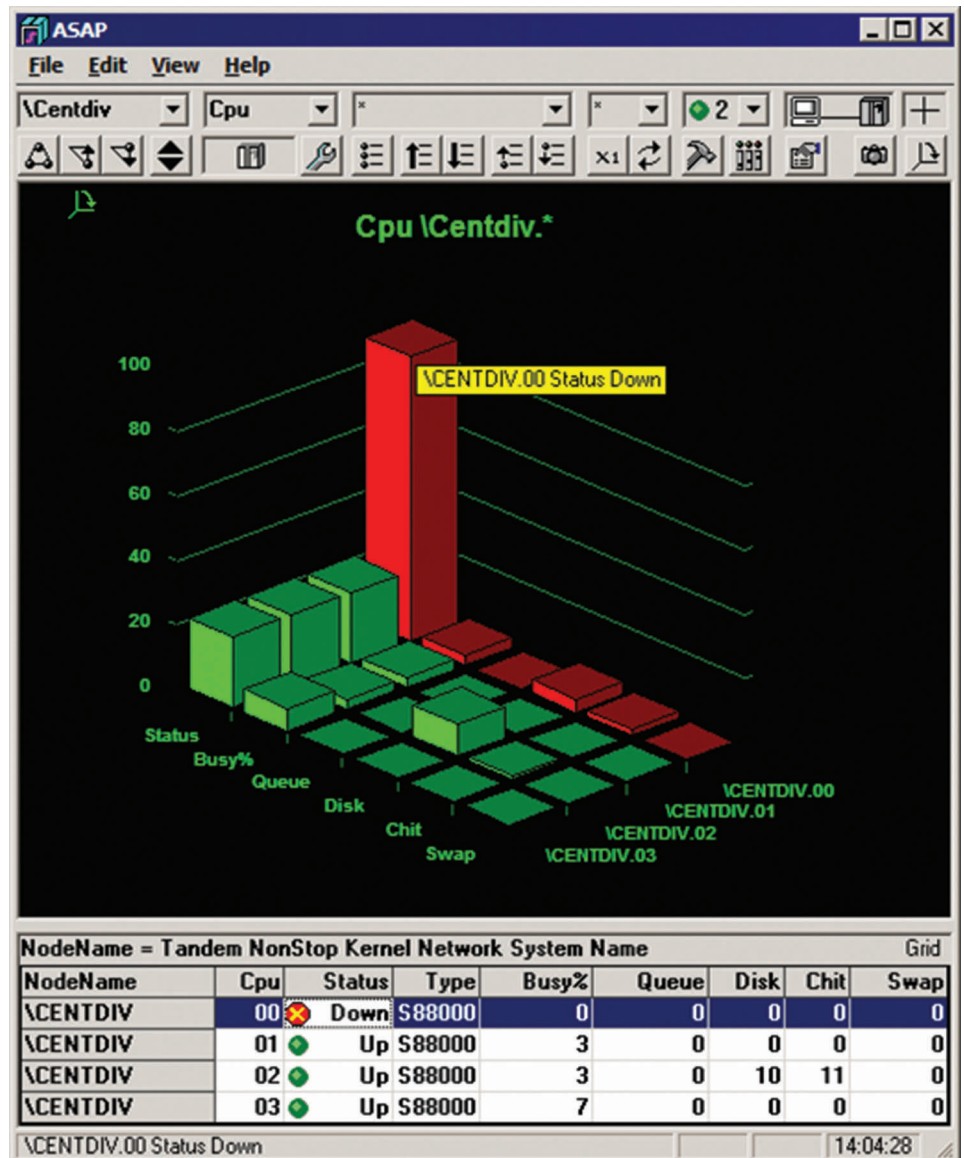


Figure 2. HPE NonStop ASAP window displaying detailed information about objects in the form of 3-D graphs with hot-spot drill-down



HPE NonStop ASAP changes its state determination rules instantly, based on a user's relative notion of availability at any given moment.

Availability objectives monitoring

The definition of service-level availability is dependent on a user's point of view. Different users have different definitions of service-level availability. Also, a user's definition of availability can change many times during a given day. As a result, HPE NonStop ASAP provides customization of availability and state propagation algorithms. HPE NonStop ASAP Client, Server, Extension, and Hybrid architectures are designed to operate with these requirements in mind. Because the definition of availability is not fixed, it follows that object state determination rules must be variable. Thus, HPE NonStop ASAP changes its state determination rules instantly, based on a user's relative notion of availability at any given moment.

For example, in one instance availability may mean using one set of attributes and at another instance, it may mean including or excluding a different set of object attributes. These capabilities must be provided for both centrally administered policies and for customized user availability definitions.

HPE NonStop ASAP analyzes each object's attributes, their state determination rules, and their metric values. It also compares these values with upper- and lower-bound service-level objectives. As each attribute is analyzed, it is assigned an availability vector or state.

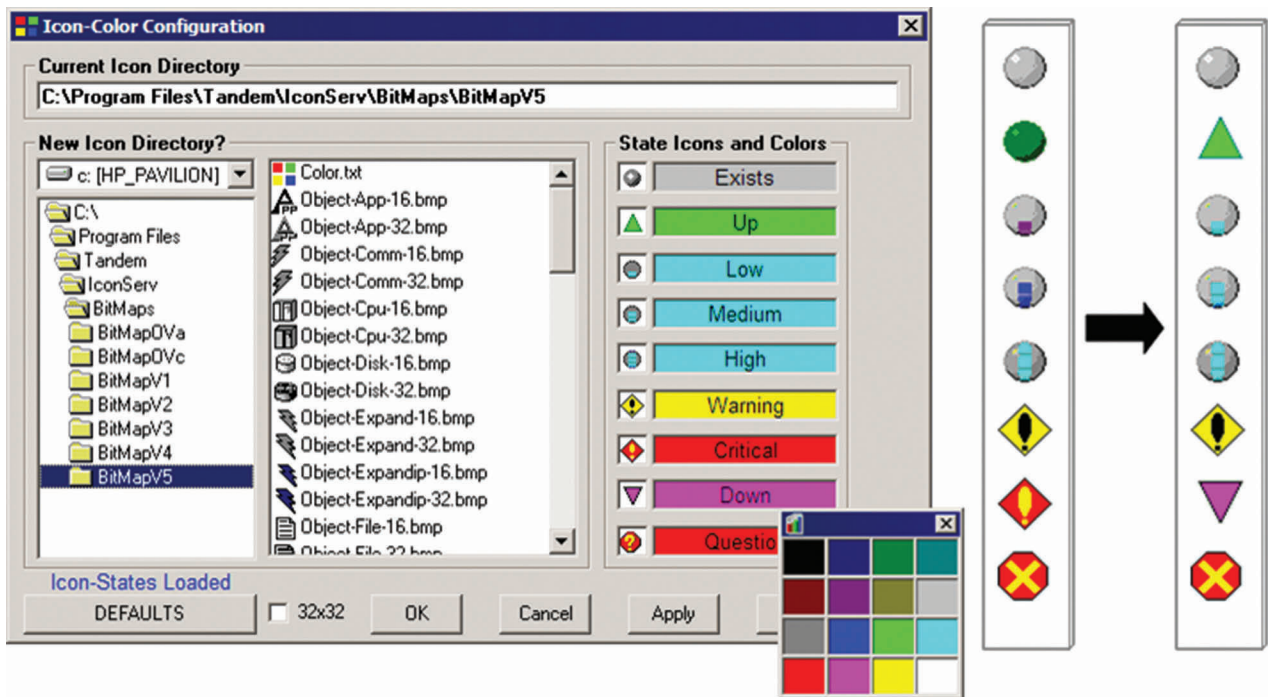


Figure 3. Window illustrating the customizable user-defined states that the HPE NonStop ASAP analysis engine can assign objects



Examples of such vectors or states might include “OK” or “Warning.” When all of the attributes for an object have been analyzed, HPE NonStop ASAP can make an overall statement about the state of the object. Once it is determined, object states are propagated upward through the object-class hierarchy for that object. HPE NonStop ASAP also allows customization of how an object’s availability state is presented. The user-defined icons and colors also address internationalization (see Figure 3).

Interfaces to OEM gateway

The OEM gateway provides the HPE NonStop ASAP Client with an encapsulated interface layer to enterprise management frameworks. The OEM is installed automatically as an ActiveX component when the HPE NonStop ASAP Client is installed. OEM consists of an ActiveX server component and one or more optional OEM gateway components. Client applications communicate with the OEM ActiveX server component. The OEM server communicates with the OEM gateway on behalf of the clients, while the gateways handle communication to and from the enterprise management frameworks. The OEM layer handles all of the details of the interface. As a result, clients effectively communicate object-state information in a uniform and consistent manner with no impact to either client or host server code.

HPE NonStop ASAP Smart Plug-in for Micro Focus OM

As discussed earlier, the OEM allows HPE NonStop ASAP integration with frameworks such as Micro Focus OM using a supplied framework adapter. The plug-in for HPE NonStop ASAP is an adapter and is intended specifically to share all object and state data with OM.

The HPE NonStop ASAP Smart Plug-In for OM is included at no additional charge. The plug-in does not require the HPE Operations Agent for NonStop to use or deploy HPE NonStop ASAP. Features of the plug-in include:

- HPE NonStop ASAP object and state information that is integrated with OM screens.
- HPE NonStop ASAP alerts appear in OM, including availability, performance, and service-level objective state information.
- Operations monitoring of HPE NonStop ASAP allows:
 - System objects such as CPU, disk, expand, communication, node, system, tape, and so on
 - Subsystems such as file, busy, process, remote database, HPE NonStop RDF, spooler, HPE NonStop TMF, and so on
 - Application domains such as ATMs, funds, accounts, customers, orders, and so on
 - Third-party entities such as ServerNet, SQL, and so on
- Application domains and objects monitored via HPE NonStop ASAPX and HPE NonStop ASAPH are also reported to OM automatically. No additional work is necessary to enable this capability. Any object known to HPE NonStop ASAP is automatically integrated with OM.
- Application objects appear in OM in the same way as other HPE NonStop ASAP objects. It can be viewed the same as any HPE NonStop ASAP objects, including hierarchical drill-down.
- Operations messages are logged for all HPE NonStop ASAP objects that change state operations filtering, forwarding, and reporting tools can be used to notify operations personnel of outages, initiate recovery actions, and so on.
- HPE NonStop ASAP-generated messages and alerts are also available via the OM web interface. This allows operations personnel to obtain HPE NonStop ASAP information from a web browser.
- The inclusion of HPE NonStop ASAP data in OM makes heterogeneous system management possible; all platforms such as HPE NonStop, UNIX®, and Windows systems can be managed from a single console.



Entity definition language

HPE NonStop ASAP Client, Server, Extension, and Hybrid components incorporate an EDL that provides an extensible definition of abstract entities and attributes as they relate to the HPE NonStop ASAP features and functions. EDL allows system entities, customer application domains, and third-party entities to be defined externally to the HPE NonStop ASAP environment.

The notions of entity and attribute in HPE NonStop ASAP are somewhat synonymous with the notions of table and column in the SQL data model. An entity can be thought of as a table, and an attribute can be thought of as a column in a given table. The offering differs from the SQL model in that entities and attributes have intrinsic properties that relate specifically to the software's features and functions. EDL also allows data to be included in a file so that it can represent the encapsulation of entity-attribute schema, statistics, and state information for running systems.

HPE NonStop ASAP Client includes an interactive development environment (IDE) that is used by software developers to interactively develop system and application entity definitions. The IDE includes context-sensitive interactive help for the EDL. The IDE includes functions that allow EDL environments to be edited, compiled, exported, and imported. The EDL environment also allows data from live host sessions, along with entity definitions, to be interactively saved and mailed to other users.

All entities and attributes monitored by HPE NonStop ASAP are defined using the EDL. It allows users to define business objects and attributes that will be monitored and to set goals for specific object attributes. The goals provide discrete objectives against specific attributes for any HPE NonStop ASAP entity.

HPE NonStop ASAP includes a goals database to store and retrieve domain names and objective values. It also includes a user command interface, an EMS message generation service, and an API to calculate HPE NonStop ASAP states and retrieve information from the database. Each entity that is defined to HPE NonStop ASAP using EDL is an entity whose availability, statistics, and performance can be monitored.

HPE NonStop ASAP Extension software

HPE NonStop ASAPX executes on the HPE NonStop operating system as an optional feature for extending HPE NonStop ASAP to local customer applications. The software provides an API for infrastructure so that the availability and performance of abstract application domains can be monitored. The HPE NonStop ASAPX software:

- Allows application domain statistics to be integrated with the HPE NonStop ASAP Client/Server infrastructure
- Makes it possible for application programs to benefit from the same architecture that is used for HPE objects
- Collects statistics via an ultra-high-performance, nonblocking, shared-memory architecture
- Provides measurement, viewing, and analysis of application service-level objectives
- Evaluates predefined goals automatically to establish alert priorities
- Tracks the productivity, performance, and availability of applications
- Notifies operators and administrators when application processes do not meet service-level objectives
- Provides notifications that occur via fat/thin clients, EMS, wireless phones, pagers, and HTML email



HPE NonStop ASAP—Hybrid Plug-in for Linux

HPE NonStop ASAP—Hybrid Plug-in for Linux is an optional additional plug-in that extends the capabilities of the HPE NonStop ASAP application monitoring to remote systems running the Linux operating system. Application metrics from remote Linux systems are seamlessly integrated into HPE NonStop ASAP on one or more systems, thereby, providing an overall view of the entire application as it spans these systems and the Linux servers. The HPE NonStop ASAP—Hybrid Plug-in for Linux:

- Provides a Linux API that is largely identical to that furnished on the HPE NonStop system
- Employs an ultra-high-performance, shared memory, nonblocking mechanism for collecting application metrics
- Integrates fully with the HPE NonStop ASAP framework, allowing users to set goals, generate alerts, and take actions based on Linux application data
- Detects if a Linux system hosting an instrumented application fails and generates corresponding alerts
- Supports all external HPE NonStop ASAP interfaces, including thin/thick clients, EMS, Micro Focus OM, email, and wireless phone or pager interfaces

Technical specifications

HPE NonStop ASAP software (Server)

Platforms	HPE Integrity NonStop X, HPE Integrity NonStop i, and HPE Virtualized NonStop systems
Software	HPE NonStop L-series or J-series operating systems

HPE NonStop ASAP software (Client)

Hardware	IBM-compatible Windows computer (500 MHz processor or higher); 500 MB memory; 20 MB of disk space
Software	Windows 7, Windows Vista, Windows XP, Windows NT, Windows 2003, or Windows 2008

Ordering information

HPE Integrity NonStop X and HPE Virtualized NonStop systems

Part number	Description
BE259AC ¹ , BE259ACE ²	HPE NonStop ASAP software
BE262AC ³ , BE262ACE ⁴	HPE NonStop ASAPX software
BE157AC	HPE NonStop Operations Management Bundle Includes: HPE NonStop ASAP, NonStop Web ViewPoint, NonStop Web ViewPoint Plug-in for ASAP, and Pocket ViewPoint software

HPE Integrity NonStop i systems

Part number	Description
QSE30v2	HPE NonStop ASAP software
QSE31v3	HPE NonStop ASAPX software
QSE33v1	HPE NonStop ASAP—Hybrid Plug-in for Linux
QSA29v4	HPE NonStop Operations Management Bundle Includes: HPE NonStop ASAP, NonStop Web ViewPoint, NonStop Web ViewPoint Plug-in for ASAP, and Pocket ViewPoint software
QSE35V1	HPE NonStop ASAP TCP-IP Plug-in

^{1,3} Supported on both HPE Integrity NonStop X and HPE Virtualized NonStop systems

^{2,4} Offered only on HPE Virtualized NonStop systems



Optimize your IT investment strategy with new ways to acquire, pay for, and use technology, in lock-step with your business and transformation goals.

hpe.com/solutions/hpefinancialservices

HPE Pointnext services

HPE Pointnext leverages our strength in infrastructure, partner ecosystems, and the end-to-end lifecycle experience, to accelerate powerful, scalable IT solutions to provide you the assistance for faster time to value. HPE Pointnext provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation.

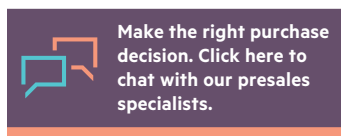
Operational Services

- **HPE Datacenter Care:** HPE's most comprehensive support solution tailored to meet your specific data center support requirements. It offers a wide choice of proactive and reactive service levels to cover requirements ranging from the most basic to the most business-critical environments. HPE Datacenter Care Service is designed to scale to any size and type of data center environment while providing a single point of contact for all your support needs for HPE as well as selected multivendor products.
- **HPE Critical Service:** High-performance reactive and proactive support designed to minimize downtime. It offers an assigned support team, which includes an account support manager (ASM). This service offers access to the HPE Global NonStop Solution Center, 24x7 hardware and software support, six-hour call-to-repair commitment, enhanced parts inventory, and accelerated escalation management.
- **HPE Proactive 24:** Provides proactive and reactive support delivered under the direction of an ASM. It offers 24x7 hardware support with four-hour on-site response, 24x7 software support with a two-hour response, and flexible call submittal.
- **HPE Foundation Care:** Support for HPE servers, storage, networking hardware, and software to meet your availability requirements with a variety of coverage levels and response times.

Advisory & Transformation Services—HPE Pointnext designs the transformation and builds a road map tuned to your unique challenges including Hybrid IT, Workload and Application Migration, Big Data, and the Intelligent Edge. Hewlett Packard Enterprise leverages proven architectures and blueprints, as well as integrates with partner products and solutions. We also engage the Professional and Operational Services teams as needed.

Professional Services—HPE Pointnext creates and integrates configurations that get the most out of software and hardware, and works with your preferred technologies to deliver the optimal solution. Services provided by the HPE Pointnext team, certified channel partners, or specialist delivery partners include installation and deployment services, mission-critical and technical services, and education services.

Learn more at
hpe.com/info/nonstop
nonstopasap.com



Sign up for updates

© Copyright 2018 Hewlett Packard Enterprise Development LP. The information contained herein is subject to change without notice. The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. UNIX is a registered trademark of The Open Group. Linux is the registered trademark of Linus Torvalds in the U.S. and other countries. All other third-party trademark(s) is/are property of their respective owner(s).

a00040300ENW, February 2018

