HP NonStop Availability, Stats and Performance (ASAP) software

Data sheet

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

HP NonStop Availability Stats and Performance (ASAP) software allows you to monitor the status and performance of an entire network of HP NonStop servers. NonStop ASAP 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 NonStop servers, subsystems, and abstract application domains.

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

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

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

You can define goals (service-level objectives) at general and specific levels to control alerting to the NonStop ASAP Client, to the Event Management Subsystem (EMS), to Open Enterprise Frameworks such as HP Operations software, and to personal devices like wireless phones, pagers, and color-encoded HTML e-mail.

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 graphical user interface (GUI)
- Availability objectives monitoring
- Interfaces to Open Enterprise Management gateway
- Entity Definition Language (EDL)

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

The NonStop ASAP Client displays statistics about all of these key NonStop server 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 NonStop ASAP product also alerts you visually to degraded state and performance utilization levels throughout your network when conditions exceed user-defined thresholds. 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

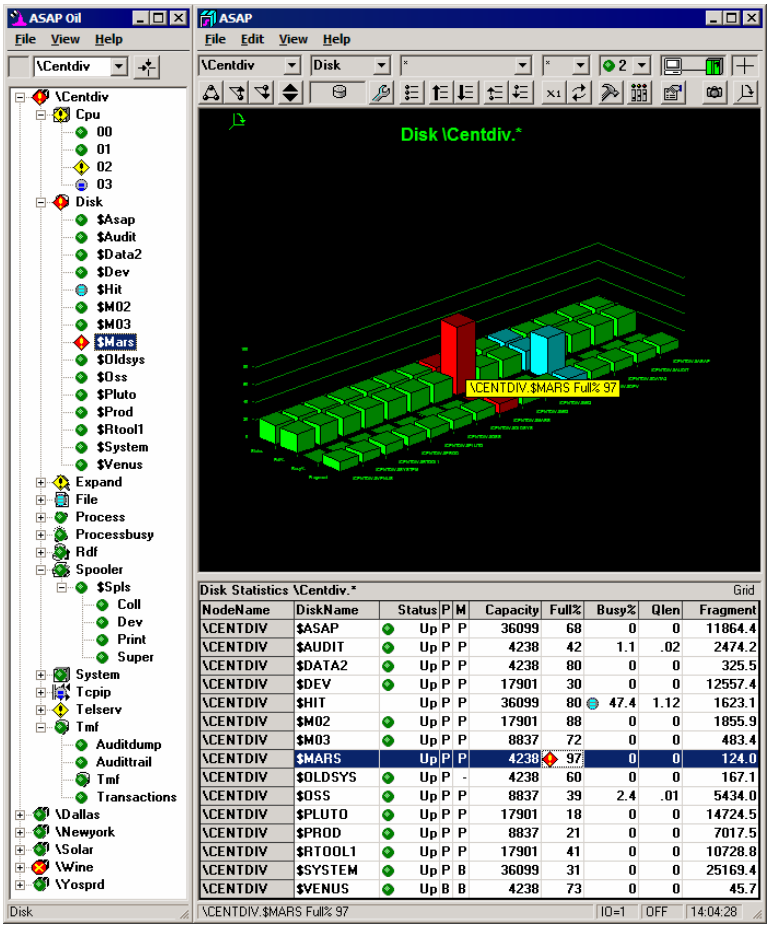
Consistent with continuous availability requirements, NonStop ASAP allows dynamic selection of monitored objects, so that you can add or remove monitored objects while the NonStop ASAP system is running. If no objects are selected for an entity class, the Statistics Gathering Process (SGP) for that entity 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. 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 NonStop ASAPX and ASAPH. The optional application plug-ins enhance the NonStop ASAP product suite by providing an interface for applications to participate in the software's object-based architecture.

- **CPU statistics** give you detailed information about CPU status, utilization, queues, disk I/O, 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, and 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.
- **Process busy statistics** help you to quickly identify which processes are consuming the most resources, including 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.
- **User-selected process statistics** include process availability information such as process status, CPU number, process identification number, priority, busy, request queue length, process state, wait state, and pages used.
- **Expand line handler and end-to-end node statistics** are provided by 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. NonStop ASAP also provides error-rate statistics such as buffer failures, transmission block character check (BCC) errors, and negative acknowledgment (NAK) rates.
- **Selected file availability information** is provided, including the status of files and subvolumes, as well as percent full, security, ownership, end of file, file code, and file format.
- **NonStop RDF statistics** include the status of the 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.
- **NonStop TMF statistics** include the status of the NonStop TMF subsystem, as well as transactions per second, catalog status, and the percentage of the audit trail used.
- **Spooler information** is provided, including the status of collectors, print processes, and supervisors, as well as jobs, open, hold, and printing.
- **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, routes, subnets, QIO, UDP, processes, as well as in-depth statistics on Telserv services and windows.
- **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).

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.

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



The NonStop ASAP OIL is a state-propagating TreeView that displays the state of applications, CPUs, disks, Expand, files, processes, NonStop RDF software, spoolers, tapes, and NonStop TMF objects. For example, in figure 1, the green icons indicate that an object is “up”; the red “X” icon indicates that \Centdiv\Cpu\00 is “down”; and the yellow “!” icon indicates that \Centdiv\Disk\$Co has a path that does not meet user-specified objectives.

Alerting of down objects and performance bottlenecks

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.

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 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 any object is also just a click away.

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

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

NonStop ASAP creates a centralized HP Enscribe database of resources monitored in your network. This database contains current and historical normalized statistics about applications, CPUs, disks, files, Expand line handlers, processes, NonStop RDF, spoolers, systems, tape drives, and NonStop TMF, which can be queried for historical trending of availability and performance data. For example, based on the data collected by 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 graphical user interface

Both real-time and historic performance views can be displayed using the NonStop ASAP GUI. The 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, NonStop ASAP alerts you visually by displaying state and performance icons. When you select an alerted entity, 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 NonStop ASAP graphs can be customized to display various types of status and performance information. NonStop ASAP 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.

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, NonStop ASAP provides customization of availability and state propagation algorithms. The 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, 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 instant availability may mean using one set of attributes, and at another instant it may mean including or excluding a different set of object attributes. These capabilities must be provided for both centrally administered policies as well as for customized user availability definitions.

NonStop ASAP analyzes each object's attributes, their state determination rules, and their metric values, and compares those values with upper- and lower-bound service-level objectives. As each attribute is analyzed, it is assigned an availability vector, or state. Examples of such vectors or states might include "OK" or "Warning." When all of the attributes for an object have been analyzed, NonStop ASAP can make an overall statement about the state of the object. Once the state of an object is determined, object states are propagated upward through the object-class hierarchy for that object. 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).

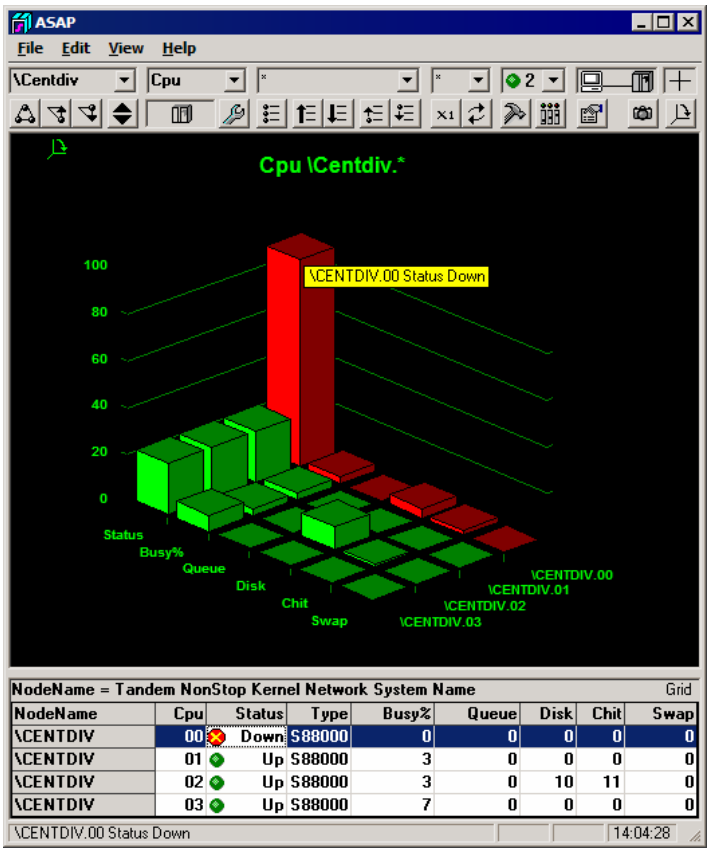
Interfaces to open enterprise management gateway

The Open Enterprise Management (OEM) gateway provides the NonStop ASAP Client with an encapsulated interface layer to enterprise management frameworks. The OEM is installed automatically as an ActiveX component when the 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.

HP ASAP Smart Plug-in for HP Operations

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

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



The ASAP Smart Plug-In for HP Operations is included with NonStop ASAP at no additional charge. The plug-in does not require the HP Operations Agent for NonStop to use or deploy NonStop ASAP so that the software can be used with or without the HP Operations Agent for NonStop. Features of the plug-in include

- NonStop ASAP object and state information that is integrated with HP Operations Manager screens.
- NonStop ASAP alerts appear in HP Operations, including availability, performance, and service-level objective state information.
- HP Operations monitoring of 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, NonStop RDF, spooler, 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 NonStop ASAPX and ASAPH are also reported to HP Operations automatically. No additional work is necessary to enable this capability. Any object known to NonStop ASAP is automatically integrated with HP Operations.
- Application objects appear in HP Operations in the same way as other NonStop ASAP objects, and can be viewed the same as any NonStop ASAP objects, including hierarchical drill-down.

- HP Operations messages are logged for all NonStop ASAP objects that change state HP Operations filtering, forwarding, and reporting tools can be used to notify operations personnel of outages, initiate recovery actions, and so on.
- NonStop ASAP-generated messages and alerts are also available via the HP Operations Manager Web interface. This allows operations personnel to obtain NonStop ASAP information from a Web browser.
- Inclusion of NonStop ASAP data in HP Operations makes heterogeneous system management possible; all HP platforms such as NonStop, UNIX®, and Windows systems can be managed from a single console.

Entity definition language

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

The notions of entity and attribute in 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. NonStop ASAP 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 an EDL file, so that an EDL file can represent the encapsulation of entity-attribute schema, statistics, and state information for running systems.

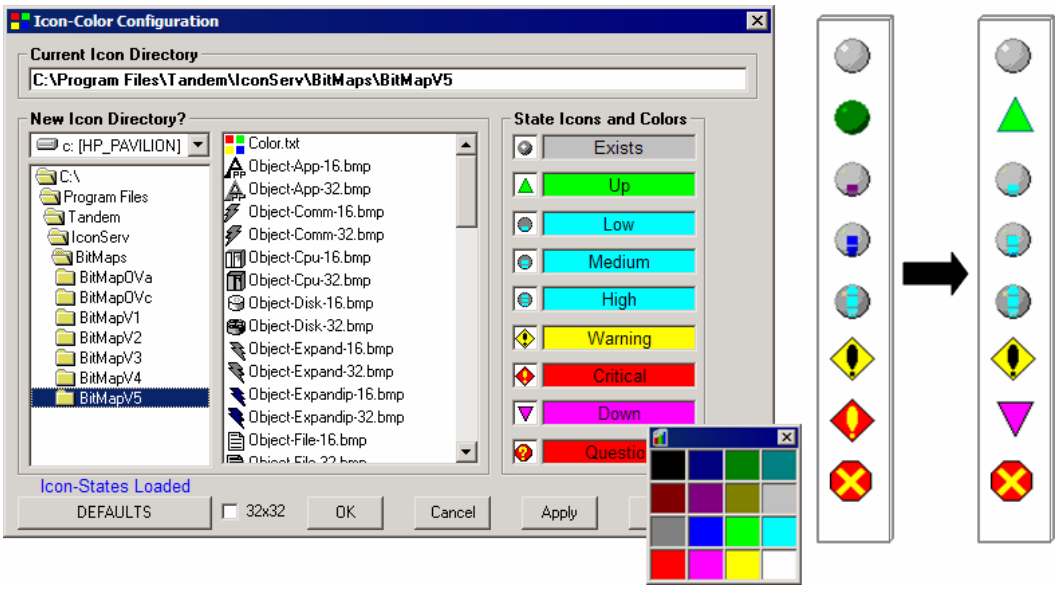
The NonStop ASAP Client includes an Interactive Development Environment (IDE) that is used by software developers to interactively develop system and application entity definitions. The IDE includes context-sensitive interactive help for the EDL. The IDE includes functions that allow EDL environments to be edited, compiled, exported, and imported. The EDL IDE 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 NonStop ASAP are defined using the EDL. The EDL 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 NonStop ASAP entity. NonStop ASAP includes a goals database to store and retrieve domain names and objective values, as well as a user command interface, an Event Management Service (EMS) message generation service, and an API to calculate NonStop ASAP states and retrieve information from the database. Each entity that is defined to NonStop ASAP using EDL is an entity whose availability, statistics, and performance can be monitored.

HP NonStop ASAP TCP/IP Plug-in

The NonStop ASAP TCP/IP Plug-in provides in-depth monitoring of more than 500 performance and availability metrics associated with the TCP/IP subsystem. Monitoring includes all aspects of the TCP/IP communications stack architecture such as statistics on TCP/IP processes, ports, routes, subnets, QIO, UDP, processes, and much more. In-depth statistics on Telserv services and windows are also provided. Goals and actions can be set on any TCP/IP property, allowing NonStop ASAP to provide access control.

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



The 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 (e.g., 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 NonStop ASAP TCP/IP smart gathering process greatly extends NonStop ASAP capabilities in the area of TCP/IP monitoring and security access control.

HP NonStop ASAP Extension (ASAPX) software

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

- Allows application domain statistics to be integrated with the NonStop ASAP client/server infrastructure
- Makes it possible for application programs to benefit from the same NonStop ASAP architecture that is used for HP 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 e-mail

HP NonStop ASAP—Hybrid Plug-in for Linux

An optional additional plug-in for NonStop ASAP, the NonStop ASAP—Hybrid Plug-in for Linux, extends the capabilities of NonStop ASAP application monitoring to remote systems

running the Linux operating system. Application metrics from remote Linux systems are seamlessly integrated into NonStop ASAP on one or more NonStop servers, thereby providing an overall view of the entire application as it spans one or more NonStop servers and one or more Linux servers. The NonStop ASAP—Hybrid Plug-in for Linux

- Provides a Linux API that is largely identical to that furnished on the NonStop server
- Employs an ultra-high-performance, shared memory, nonblocking mechanism for collecting application metrics
- Integrates fully with the 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 NonStop ASAP interfaces, including thin/thick clients, EMS, HP Operations, e-mail, and wireless phone or pager interfaces

Technical specifications

HP NonStop ASAP software (Server)	
Hardware	Any HP NonStop server
Software	HP NonStop operating system, any supported release Optional: HP Operations NonStop Server Management software (OV01v4) Required if HP Operations is used as the management server
HP NonStop ASAP software (Client)	
Hardware	IBM-compatible computer (500 MHz processor or higher); 500 MB memory; 20 MB of disk space
Software	Windows XP, Windows NT, Widows 2000, or Windows 2003
HP NonStop ASAP—Hybrid Plug-in for Linux	
Hardware	Runs on x86 and AMD64 platforms; the NonStop ASAP Hybrid API includes both 32-bit and 64-bit libraries and fully supports both 32-bit and 64-bit applications
Software	NonStop ASAP Hybrid is certified on both Red Hat Enterprise Linux and SUSE Linux but runs on virtually any Linux distribution

Ordering information

HP Integrity NonStop NS-series servers	
Part number	**Description**
HSE30v2	HP NonStop ASAP software
HSE31v2	HP NonStop ASAPX software
HSE33v1	HP NonStop ASAP—Hybrid Plug-in for Linux
HSE35v1	HP NonStop ASAP TCP/IP Plug-in
HSA29v3	HP NonStop Operations Management Bundle Includes: HP NonStop ASAP, NonStop Web ViewPoint Plug-in for ASAP, NonStop Web ViewPoint, and Pocket ViewPoint software
HSJ68V1	HP NonStop Web ViewPoint Plug-in for ASAP
HP NonStop S-series servers	
SE30v2	HP NonStop ASAP software
SE31v2	HP NonStop ASAPX software
SE33v1	HP NonStop ASAP—Hybrid Plug-in for Linux
SE35v1	HP NonStop ASAP TCP/IP Plug-in
SA29v3	HP NonStop Operations Management Bundle Includes: HP NonStop ASAP, NonStop Web ViewPoint Plug-in for ASAP, NonStop Web ViewPoint, and Pocket ViewPoint software
SJ68V1	HP NonStop Web ViewPoint Plug-in for ASAP

HP Services

HP's end-to-end service solutions, built on the Solution Lifecycle (SLC) process, offer consistent quality and service levels for the Integrity NonStop servers. The SLC process helps to achieve rapid productivity and maximum availability by examining specific needs at each of five distinct phases (Plan, Design, Integrate, Install, and Manage) and then designing solutions based upon those needs. We offer three different service solutions designed to meet customer needs:

HP Critical Service Solution

- Startup and Deployment Services—build the solution to your exact specifications, complete the installation, and make the solution application ready
  - Assessment and Design Services—define requirements and translate your business and technical needs into a solution that melds the necessary hardware and software
  - Deployment Management Services—up-front project coordination from HP
  - Education Services—training curricula relevant to needs and existing expertise based upon a needs analysis
- HP Critical Service—comprehensive, ongoing support designed to help minimize the business impact of downtime on mission-critical applications

HP Proactive Service Solution

- Startup and Deployment Services
- HP Proactive 24 Service—integrated hardware and software support, including proactive and reactive services to improve stability and availability throughout your IT environment

HP Foundation Service Solution

- Startup and Deployment Services
- HP Support Plus 24 Service—integrated hardware and software support services designed specifically for your technology

For more information: www.hp.com/services/nonstop

For more information

To learn more about HP NonStop Availability, Stats and Performance (ASAP) software and solutions provided for NonStop servers, contact your HP sales representative or visit www.hp.com/go/nonstop/asap

HP Financial Services provides innovative financing and financial asset management programs to help you cost-effectively acquire and manage your HP solutions. For more information about these services, contact your HP sales representative or visit: www.hp.com/go/hpfinancialservices

For more information, visit www.hp.com
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