Check the web site for course descriptions and prerequisites at:

http://education.hp.com/curr-nonstop.htm (Instructor-Led Training)

http://education.nonstop.compaq.com/us/cat/httoc.htm (Self-Study Training)

You can also call (800) 621-9198 in North America, to speak with one of our education consultants or register for courses.

Or, you can email us at: nonstop.training@hp.com

Exam Status

The NonStop Kernel Platform Support - Level 2 exam has been completed beta testing and is now live. This exam is administered by Prometric Regional Service Centers in North America (other locations may have different delivery methods). Refer to the Prometric website: http://www.2test.com

Exam Details

Number of test items: 62

Time allotted to take test: 75 minutes

Passing Score: 63% - 39 items correct

You are not allowed to refer to any books or reference material during the NonStop Kernel Platform Support - Level 2 exam.
Audience

This exam is targeted for the following personnel, with a minimum of one-year experience on the HP NonStop S-Series platforms running the G-Series NonStop Kernel Operating System:

- **Authorized Service and Support personnel** (field support technicians), who perform installations, upgrades, troubleshooting and maintenance tasks.

- **Global Customer Support Center (GCSC) personnel**, who may have specialized technical expertise in the operating system (e.g., security features, hardware, subsystems) and serve as support for both field support technicians and customers.

- **Analyst SEs or Pre-SalesTechnical Support (PSTS) personnel**, who perform pre-sales consulting and technical account support, including tasks such as assessment of customer needs, system sizing and configuration, installation consulting, and so forth.

- **NSK Software Developers, System Integrators and Consultant Partners, Application Designers, Authorized Service Channel Partners and Distributors, Customers authorized to service their own equipment.**
What You’ll Be Tested On

Exam questions were written to evaluate your knowledge of the following objectives. The percentage of items dedicated to each major category is included in parenthesis.

1) Gathering Information (21%)

1.1 Determine system information
- Demonstrate how to find OS level and SYSnn
- Determine the time a Sysgen/cold-load was last performed on the system
- Identify possible environmental problems

1.2 Determine relative subsystem status
- Identify symptoms of the problem
- Discover any previous alarms
- Identify subsystem affected through EMS log messages
- Find the subsystem release level
- Describe onsite actions and tools to perform these operations
- Explain methods to link a remote system

1.3 Determine recent system changes
- Find latest additions (prior to the problem)
- Find latest deletions
- Find latest modifications

1.4 Verify problem being reported
- Determine if this is a correctable problem
- Verify if the problem reported matches findings
- Determine if the product associated with the problem is behaving as designed

1.5 Identify corrective actions taken after problem occurred
- Identify related product modifications since problem occurred
- Identify other product modifications since problem occurred
- Identify environmental changes that may have occurred

1.6 Gather information for affected subsystem
- Gather application and subsystem logs
- Gather processor and/or subsystem dumps
- Gather communication traces (if any)

1.7 Identify if a professional service is needed
- Identify if a system audit is needed
- Identify if an application audit is needed (design review)
- Identify if an operational procedure audit is needed
2) Analyzing Information (8%)

2.1 Describe ways to isolate problem down to product or module
   • Demonstrate how to follow events backwards to the root cause
   • Demonstrate how to identify when the problem occurred
   • Explain how to distinguish between symptom reporting and failing subsystem
   • Describe ways to interpret error messages
   • Describe how to group relevant symptoms

2.2 Describe steps to reproduce the problem
   • Describe characteristics of a good test case
   • Explain minimum steps to reproduce problem
   • Describe system configuration requirements to reproduce problem
   • Determine whether there are hardware dependencies to the problem

2.3 Demonstrate how to rediscover known problem
   • Identify relevant search criteria for rediscovery
   • Describes sources of available information
   • Describe ways to identify and evaluate the best possible match to known problems
   • Eliminate possible matches that do not relate to the problem

3) Risk Analysis (7%)

3.1 Describe online considerations
   • Explain possible implications of halting a CPU
   • Explain possible implications of downing a disk
   • Explain the effect of a backup process takeover
   • Explain how to make a backup process become primary
   • Describe the possible effects of changes in the communication environment
   • Describe the implications of performing online system resizing

3.2 Determine availability of TMF, RDF or BACKUP data
   • Explain how to verify usage of TMF to protect a database
   • Explain how to use RDF to protect a database
   • Explain considerations on the open option of BACKUP
   • Explain how to use pax to protect an OSS database

4) Resolution Implementation (9%)

4.1 Describe the levels of problem resolution
   • Describe the primary differences between providing workaround and resolution for a platform support issue
4.2 Determine workaround methods
   • Identify if a workaround is software
   • Identify if a workaround is hardware change (or replacement)
   • Identify if a workaround is performing an operational procedure
   • Determine alternative workaround methods and risk(s)

4.3 Perform and verify resolution actions
   • Describe how to install files or implementing workarounds
   • Discuss how to perform cold-load
   • Discuss how to stop/start subsystems
   • Describe how to verify the problem has been corrected

5) Product Interdependencies (7%)

5.1 Determine interdependent product(s) for use of a product
   • Determine where to find pre-requisite product information
   • Identify required products for SQL/MP
   • Identify required products for OSS
   • Identify required products and considerations for security programs
   • Identify required products for DSM/SCM
   • Describe issues surrounding SRLs supporting NonStop™ Kernel products (public/private)
   • Discuss how to resolve issues with EMS template files

5.2 Explain sizing and impact to other subsystems
   • Define the impact of changing the QIO segment size on system resources
   • Define the impact increasing disk cache has on system performance
   • Describe TM/MP behavior on an undersized configuration
   • Describe the system behavior with an undersized KMSF subsystem

6) Change Management (11%)

6.1 Describe change management
   • Identify changes that can be done online
   • Identify ways to reduce time required for planned outages
   • Identify ways to minimize the frequency of planned outages

6.2 Recognize steps of OS upgrades
   • Recognize where changes/highlights are documented
   • Define the sequence of DSM/SCM steps in an OS upgrade
   • Describe system modification prior to activating new SYSnn
   • Describe the NonStop Kernel Operating System Release Model

6.3 Differentiate non-intrusive online changes/upgrade vs. offline changes/upgrade
   • Describe how to perform online file reorganization
   • Differentiate repartitioning, Enscribe vs. SQL
• Define the steps in completing an online disk upgrade
• Define TM/MP process parameter changes requiring restart
• Define TM/MP process parameter changes not requiring restart
• Differentiate steps between SYSGENable vs. non-SYSGENable upgrade
• Identify steps required to change the system name or number

7) Tools and Utilities (18%)

7.1 Demonstrate use of debugging tools
• Identify relevant information from Garth
• Identify relevant information from Inspect

7.2 Demonstrate use of low level tools
• Identify relevant information from
  • TANDUMP
  • DIRCHECK
  • SNOOP
  • DIVER

7.3 Demonstrate use of display tools
• Identify relevant information from
  • Vproc
  • Noft
  • tools utilized for EMS
  • FILCHECK / FCHECK
  • FSCK (OSS)
  • PEEK
  • LTILT
• Explain the use of LISPPROC
• Identify relevant information from PTRACE

7.4 Demonstrate use of Dump collection tools
• Demonstrate how to use TSM to halt/dump a processor (disk/tape)
• Demonstrate how to use TSM to force a system freeze
• Explain the use of RCVDUMP (online vs. halted CPUs)
• Demonstrate how to use TFDSCOM to capture CPU dumps/saveabends
• Demonstrate how to use TFDSCOM to automatically reload failed CPUs

7.5 Demonstrate use of Information sources
• Demonstrate how to search previous problems from TIM
• Demonstrate the use of IPMSCOUT
• Identify procedures for identifying Hotstuffs, Support Notes, and OPNs
• Demonstrate the use of TWS
• Explain use of ExpressNotice
8) Best Operational Practices (19%)

8.1 Identify system startup/shutdown order
   • Differentiate between the kernel subsystem startup modes
   • Define the sequence order for the startup modes
   • Describe the recommended order of system shutdown
   • Describe the recommended order of system startup

8.2 Identify ways of monitoring subsystem/system health
   • Define periodic system checklist
   • Identify and differentiate system monitoring tools

8.3 Identify weaknesses in a non-fault tolerant configuration
   • Identify when a disk is in an inconsistent state
   • Identify tools that minimize non-fault tolerant scenarios
   • Identify optimum placement of system processes

8.4 Describe data archival best practices
   • Describe best practices in
     • BACKUP of SQL/MP objects
     • archival of TM/MP objects
     • BACKUP of non-audited and non-SQL files
     • archival of OSS file sets

8.5 Differentiate levels of data and disaster recovery
   • Describe SYSTEM configuration documentation, SIT, and offsite archival procedures
   • Identify the levels of TM/MP protection
   • Describe the benefits and drawbacks of using RDF for disaster recovery

8.6 Identify subsystem startup/shutdown order
   • Describe the sequence of startup/shutdown for
     • communication subsystems (LAN, WAN)
     • DSM/SCM
     • SMF
     • OSS
Related Training and Study References

The Compaq Accredited Professional Program (Level 2) includes references to a variety of materials that provide information included on this certification exam. Completion of courses and review of materials is recommended, but not required, for success on this exam.

Recommended Minimum Courses

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<th>Course Title</th>
<th>Part Number</th>
<th>Type</th>
<th>Length</th>
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<tr>
<td>DSM/SCM Operations and Management</td>
<td>U4150S</td>
<td>ILT</td>
<td>4 days</td>
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<tr>
<td>NonStop SQL/MP Database Management</td>
<td>U4180S</td>
<td>ILT</td>
<td>3 days</td>
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<td>NonStop Transaction Management Facility (TMF) Operations and Management</td>
<td>U4186S</td>
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<tr>
<td>Open Systems Services (OSS) Operations and Management</td>
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<td>ILT</td>
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<tr>
<td>Pathway Performance Workshop</td>
<td>U4193S</td>
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<tr>
<td>Pathway System Management</td>
<td>U4194S</td>
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<tr>
<td>Securing Guardian Systems</td>
<td>U4196S</td>
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Additional Highly Recommended Courses
Check web site course descriptions for prerequisites

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<tr>
<td>ASAP/ASAPX</td>
<td>424373-001</td>
<td>SSP</td>
<td>7 hours</td>
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<tr>
<td>NonStop S-Series Field Support Training</td>
<td>U4170S</td>
<td>ILT</td>
<td>10 days</td>
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<tr>
<td>Pathway Configuration and Operations</td>
<td>81781</td>
<td>SSP</td>
<td>6 hours</td>
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<tr>
<td>ViewPoint Basic Operations</td>
<td>117310</td>
<td>SSP</td>
<td>6 hours</td>
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CBT = Computer-Based Training
ILT = Instructor-Led Training
SSP = Self Study Program

Check web site course descriptions for prerequisites at:
http://education.hp.com/curr-nonstop.htm (Instructor-Led Training)
http://education.nonstop.compaq.com/us/cat/httoc.htm (Self-Study Training)

Additional Recommended Reference Materials for This Exam

References to the majority of questions found in this exam can be found in manuals contained in the Online TIM collections (This guide typically references the latest release available in the TIM Document Collection). TIM (Total Information Manager) is a single interface to all NonStop Systems documentation and support information.

External users must subscribe to the TIM CD collection. See your HP Representative for more information.

NOTE: TIM must be installed on your system before using the following default access settings.

Internal: http://techlibrary.cac.cpqcorp.net/ntl/
External: www.hp.com/go/ntl

Documentation

- ASAP Client Manual (424820-001)
- Availability Guide for Application Design (124511)
- Availability Guide for Change Management (125506)
- Availability Guide for Problem Management (125509)
- AWAN ACCESS Server Configuration and Management Manual (424242-001)
- CA-Unicenter for Tandem, Model 125, Administrators Guide (137080)
- DSM/SCM Users Guide (422736-001)
- EMS Manual (425037-001)
- EMS Reference Summary (124742)
- File Utility Program (FUP) Reference Manual (425742-001)
- G06.08 Software Installation and Upgrade Guide (427100-001)
- G06.09 Software Installation and Upgrade Guide (426064-001)
- Guardian Disk and Tape Utilities Reference Manual (426910-001)
- Guardian Operations Reference Summary (425267-001)
- Guardian Procedures Errors and Messages Manual (420035-001)
- Inspect Reference Manual (118810-001)
- IPM Scout User's Guide (426724-001)
- Introduction to NonStop™ Operations Management (125507)
- Introduction to NonStop™ SQL/MP (113425)
- Introduction to NonStop™ Transaction Processing (125335)
- Introduction to Tandem Himalaya S-Series Servers Manual (130961)
- Kernel-Managed Swap Facility (425824-001)
- Managing Software Releases and IPMs (426723-001)
- Measure User’s Guide (425663-001)
- nld and noft Manual (136744)
- NonStop RDF System Management Manual (133547)
- NonStop SQL/MP Installation and Management Guide (424912-001)
- NonStop SQL/MP Reference Manual (425858-001)
- NonStop S-Series Hardware Support Guide (427142-001)
- NonStop S-Series Operations Guide (426837-001)
- NonStop S-Series Server Description Manual (425160-001)
- NonStop S-Series System Expansion and Reduction Guide (426721-001)
- NonStop Storage Management Foundation User’s Guide (424399-001)
- NonStop TM/MP Application Programming Guide (136586)
- NonStop TM/MP Configuration and Planning Guide (136588)
- NonStop TM/MP Operations and Recovery Guide (136589)
- NonStop TM/MP Reference Manual (137445)
- NonStop TS/MP System Management Manual (135027)
- Open System Services Installation Guide (420114-001)
- Open System Services Management and Operations Guide (425683-001)
- Open System Services Shell and Utilities Reference Manual (424388-001)
- Open System Services User’s Guide (420292-001)
- Operator Messages Manual (426800-001)
• Processor Halt Codes Manual (426917-001)
• PTrace Reference Manual (139164)
• QIO Configuration and Management Manual (424717-001)
• Safeguard Administrator's Manual (422084-001)
• Safeguard Audit Services Manual (127296)
• SCF Reference Manual for G-Series Releases (135084)
• SCF Reference Manual for the Kernel Subsystem (425664-001)
• SCF Reference Manual for Storage Subsystem (424878-001)
• System Generation Manual for G-Series Releases (422998-001)
• TACL Reference Manual (109642)
• Tandem Failure Data System (TFDS) Manual (424045-001)
• Tandem Reload Analyzer Manual (129830)
• TCP/IP (Parallel Library) Configuration and Management (425665-001)
• TNS/R Native Application Migration Guide (136525)
• Tools for Online Change - Availability Guide for Change Management (125506)
• TSM Configuration Guide (425150-001)
• TSM Online User Guide (424778-001)
• ViewPoint Manual (424874-001)
• Viewsys User's Guide (103491)
• WAN Subsystem Configuration and Management Manual (425644-001)

Other References

• CSSI Website Procedures – (TSM Program Menu - Support - CSSI Website - Customer Procedures)
• Customer Services Guide for Tandem Systems – (see TIM Support NSK Collection)
• Online Help for Garth, SNOOP, TANDUMP, TSM Application (see online help facilities for the specific product or tool)
• SUPNOTE S00046 (see Support Notes under the TIM Support NSK Collection)