NonStop System Software Update

Timothy Keefauver
Product Management
May 4, 2007

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Agenda

• NonStop System Roadmap
• Service Oriented Architecture
• Recent Enhancements
  – TMF, RDF, Pathway
  – Application Development Environment
  – OSS and Portability
  – NonStop SQL and JDBC
  – Java and Java-related
  – Security and Manageability
• Open Source
NonStop Software Roadmap
**Integrity NonStop Series (NS-Series) Roadmap May 2, 2007**

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**Legend**
- □ General availability
- ◇ Controlled availability
- ▲ EAP

Future product plans, dates, and functionality are subject to change without notice.
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<tr>
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<th>H06.08 11/06</th>
<th>H06.10 ~5/07</th>
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<td>Backup/Restore 2 Backcopy</td>
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<td>Native Inspect enhance.</td>
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<td>TCM &amp; MeasTCM enhance.</td>
<td>SQL/MX 2.3 MX Tables General Availability</td>
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<td>Native Inspect COBOL support</td>
<td>XML Parsers with Tandem Float</td>
<td>TMF 3.5 including Commit Time improvements</td>
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<td>Daylight Savings Time USA66</td>
<td>TS/MP 2.2 (CA)</td>
<td>Better debugging for optimized code</td>
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<td>Code Coverage Tool</td>
<td>Visual Inspect enhance.</td>
<td>Measure Limits Removal</td>
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<td>SPI enhancements</td>
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NonStop S-Series Servers
2006 Retrospective

Future product plans, dates, and functionality are subject to change without notice.

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Legend
- General availability
- Controlled availability
- EAP

Future product plans, dates, and functionality are subject to change without notice.
# NonStop S-Series Roadmap

**May 3, 2007**

## Legend

- **General availability**
- **Controlled availability**
- **EAP**

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| **Future product plans, dates, and functionality are subject to change without notice.**
G-series RVU Feature Summary

**G06.26 4/05**
- TMF 3.3
- 144 GB and 36 GB 15K rpm disk
- StorageWorks XP 12000 support
- GDSX Format 2 Files support
- TMF 3.3
- NSK Gthreads
- OSM enhancements
- TS/MP 2.1 (CA)

**G06.27 9/05**
- SQL/MX R2.1.1
- Fibre Channel Disk Module (FCDM)
- StorageTek SL500 Tape library
- DP2 enhancements
- OSM enhancements
- NonStop SQL/MP and SQL/MX enhancements
- Domain Name Services (DNS) 9.X, R2

**G06.28 2/06**
- Pathway TS/MP limits increase
- SCF support for Fiber Channel Config.
- ServerNet Cluster R4 long distance
- OSS standard Security API enhance.
- Re-entrant Threads enhancement
- Seeview stong security authentication
- Pathmon openers increased to 800
- DSM/SCM cloning SW configs on multiple targets
- Daylight Savings Time USA enhance.
- Pass PARAMs/DEFINEs to generic procs

**G06.29 7/06**
- Pathway TS/MP limits increase
- OSS Files > 2 GB
- OSS ACLs
- Daylight Savings Time
- OSS Std Security APIs
- Safeguard HMAC256 passwords
- OSS POSIX Threads enhancements
- SQL enhancements
- JBOD Performance enhancements
- SPI enhancements

**G06.30 1/07**
- Visual Inspect enhancements
- OSS Name Server limits relief
- NetBatch limits increase for master jobs and assigned job numbers
- OpenView Quality Improvements
- OSS Name Server increased defaults for INODECACHE & LINKCACHE

**G06.31 7/07**
- Long passwords
- Password quality enforcement
- Longer user_authenticate() display buffer
- Safecom INFO GROUP command enhancement
- OSH -phd enhancement
- Defect repair
- More

Future product plans, dates, and functionality are subject to change without notice.
Support for Service Oriented Architecture (SOA)
What is SOA?

• SOA is an architecture, not a product
• SOA is a new approach to building IT systems using services
  – Services are business processes that are available on a network
    • They are accessed easily in a standardized fashion without knowledge of the underlying implementation
• SOA encourages service reuse
  – Easily apply existing services to new business processes
    • Reduces the time to implement a new business process = business agility
  – Unlike previous models, SOA provides a comprehensive foundation to deliver on the promise of service reuse
SOA and the HP NonStop server—overview

• In an agile enterprise, services must be available, scalable, performant, and manageable
  – Requirements tailor-made for the HP NonStop server platform
• Most NonStop applications are already 90% SOA enabled because the service model is the natural way to create applications on NonStop servers
  – Think of “Create Order” or “Fulfill Order” SOA services as Pathway serverclasses, NonStop Tuxedo services, NonStop Servlets for JSP, or NonStop CORBA objects
• The NonStop server supports the necessary tools and infrastructure to support the WS-I Basic Profile
  – SOA services deployed on NonStop servers are fully standards compliant and may interoperate with SOA services on other compliant platforms
• The NonStop server is an excellent platform for providing SOA services
  – Preserve investments in existing applications by leveraging them as part of a heterogeneous SOA application
  – Develop new applications for the NonStop server that conform to the SOA standard model
SOA and the HP NonStop server—technologies for service access

• HP iTP WebServer software
  - Provides the basic HTTP protocol service and acts a scalable and available container for other components (using NonStop TS/MP internally)

• HP NonStop SOAP software
  - NonStop SOAP (plus iTP WebServer) supports the standard runtime SOAP over HTTP SOA service access protocol
  - Runs as scalable serverclasses under iTP WebServer
  - GUI wizard to easily expose Pathway servers as SOA services
    • Contains a built-in service adapter for Pathway servers
  - Customizable user exits to enable use with SOA services implemented in other application environments
    • Create your own service adapter
  - Includes an XML document parser and the open-source gSOAP toolkit for access to remote SOA services using SOAP
SOA and the HP NonStop server—
technologies for service access in Java

- **HP NonStop Servlets for JavaServer Pages (NonStop Servlets for JSP) software**
  - Container for hosting SOA services written in Java
  - Fortified version of the Apache Tomcat Servlet and JSP container
  - Runs as scalable serverclasses under iTP WebServer

- **Apache Axis2 software**
  - Open-source product
  - Runs under NonStop Servlets for JSP container (inherits scalability, ...)
  - Includes a SOAP protocol engine and tools for WSDL generation
  - Alternative to NonStop SOAP if you want to use Java SOA services

- **BEA WebLogic Server software**
  - Complete J2EE and SOA application server infrastructure
    - HTTP and SOAP server for service access
    - Servlet/JSP/EJB container for service adapters and business logic
    - Supports additional WS-* SOA standard services
SOA and the NonStop server—product technologies summary

NonStop server

NonStop TS/MP
Scalable and available execution container

Service invocation

Service implementation

Pathway
NonStop CORBA
NonStop Tuxedo
Java

Pathsend
JToolkit
IIOP
ATMI

Service adapters

BEA WebLogic Server

Apache
Axis2

Service adapters

HP iTP WebServer

NonStop SOAP

HP NonStop Servlets for JSP

Service access

SOAP
HTTP
Planned NonStop SOA technology enhancements

• NonStop SOAP
  – More complete W3C SOAP 1.2 & WSDL 1.1 standards compliance
  – Target: 2H 2007 (both S-series and Integrity NonStop)

• SOAP Client
  – Bring (open source) gSOAP to current level (version 2.7.9)
  – FCS: March 2007 as an SPR, SUT-based in May 2007
  – Both S-series and Integrity NonStop

• iTP WebServer
  – Add support for Transport Layer Security (TLS)
  – FCS: 2H 2007 (both S-series and Integrity NonStop)

Future product plans, dates, and functionality are subject to change without notice
TMF, RDF, Pathway Enhancements
TMF Enhancements

NonStop TMF Software 3.3 Update, G06.26 April 2005 and H06.05 March 2006

• Ability to add auxiliary audit trails dynamically, while TMF is started
• STATUS TRANSACTION command includes backout process name and has sorting options
• Commands relocated from SNOOP to TMFCOM
  – TMFCOM ALTER TMF, TMPWAITTIMER
  – TMFCOM ALTER TMF, PIOBUFFER
  – TMFCOM ALTER TMF, GOREMOTE
  – TMFCOM ALTER TMF, TRANSACTIONPROTOCOL
  – Commands moved to TMFCOM have been tested more extensively and are now documented in the TMF manuals
• “HP NonStop TMF Performance Tuning” support note (S05039)
• Performance feature formerly called TurboTMF (controlled availability) is now generally available
  – TurboTMF feature split along functional lines into two options
    • TRANSACTIONPROTOCOL
    • GOREMOTE
• Default TMPWAITTIMER changed from AUTO (set by the TMP) to OFF
TMF 3.4 on Integrity NonStop

- **TMF 3.4 delivery May 2006 on H06.06**
  - More Snoop commands moved into TMFCOM
    • Continuing effort

- **New Default values and limits**
  - Default audit trail format: format 2
  - Default audit trail file size: 1 GB
  - Default tape block size: 52

- **Moveable TMPs (Transaction Monitoring Process)**
  - Allows you to specify the order to automatically move TMP backup process pairs upon a TMP CPU failure
    • No more running TMF non-fault tolerant after a CPU failure

Future product plans, dates, and functionality are subject to change without notice
• Goal: Increase performance
• Improved Commit Time (latency reduction)
  − Smarter “convenience writes” for all disk types
  − For XP disk users, parallel writes for partial blocks
• Finer granularity for control of TMP Wait Timer
  − Allow users to fine-tune commit processing performance
  − Applications with highest transaction rates will see most potential benefit
  − Targeting overall commit time performance
  − Including improvements for StorageWorks XP disk arrays

Future product plans, dates, and functionality are subject to change without notice
Remote Database Facility Release 1.7

October 2005 on S-series (December 2005 on Integrity NonStop)

- Management of RDF by any Supergroup Userid, regardless of what Userid started it
- Management of RDF by any user (non SUPER group)
- Run with one-way remote passwords (primary to backup)
- Faster file comparison tool
- Faster takeover and switchover by a target system
  - Single RDFCOM command to drain and apply all audit up to the time the command was issued
  - New REVERSE option for the STOP RDF command
  - Configure triggers that are automatically executed after critical operations (e.g. Takeover and Stop RDF, reverse commands)
  - New event issued when all updaters have stopped and replication is shut down
  - Force takeover even if the Expand network line is up with the “!” option
  - “NOW” option with INITTIME in INITIALIZE RDF command
Remote Database Facility Release 1.8
September 2007 for Integrity NonStop and S-series

- Performance
  - “Nativize” select objects (only for Integrity NonStop)

- Ease of Use
  - SQL/MX MX tables ANSI names in event messages

- Manageability
  - More flexibility in naming volumes on target system
    - Subvolume naming can be different on target system than source

- Interoperability
  - RDF replication between Integrity NonStop and S-series systems

Future product plans, dates, and functionality are subject to change without notice
Pathway Enhancements

- **TS/MP PATHMON G06.25, Sept. 2005**
  - Support for six-character server process names

- **TS/MP 2.1 G06.26 CA & H06.05 CA (H06.11 GA, August 2007)**
  - Provides Pathsend users higher link capacity
    - Replaces the link management functions of the LINKMON (ROUT) process with functions provided by the Application Cluster Services (ACS) subsystem
  - NonStop TS/MP 2.1 helps Pathsend users, no effects on SCOBOL users
  - Better load balancing
  - No more link starvation in very high load environments
**TS/MP 2.1 Pathsend Limits Relief**

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Additionally, G06.28 & H06.05 (Feb. 2006) increase Pathmon openers from 300 to 800.

* TS/MP 2.3 doubles these limits as compared to TS/MP 2.1
Pathway Enhancements

• TS/MP 2.3 Controlled Availability [December 2007 for Integrity NonStop]

• This new release of TS/MP adds further limits relief building upon the ACS infrastructure first shipped with TS/MP 2.1
  – at least doubles certain limits from those of release 2.1 including
    • Number of concurrent links to server processes per processor
    • Number of concurrent Pathsend requesters per processor
    • Number of concurrent, outstanding “serverclass_send_” requests per processor
TS/MP 2.3 – Pathway domains

- Pathway *domains* for **planned outage elimination**
  - multiple Pathway environments behave as one application domain within one node
    - replicated Serverclasses across environments
    - transparent load-balancing across environments
  - take down one environment for update, others in domain continue processing work
  - enables *application* software upgrades with no loss of service
    - change existing applications, deploy new applications
  - enables online rebalancing of Pathway environments
Pathway/iTS Enhancements (HSR76)

- **Pathway/iTS 1.1 General Availability [H06.10]**
  - A new release providing increased limits and enhanced functionality for SCOBOL requesters
  - New api’s enable SCOBOL requesters to use context-sensitive (“dialog”) communication style
    - Exchange multiple messages with same Pathway server in same transaction context
    - Enables exchange of messages > 32K length
      - Removes single 32K message size limitation
  - Enables more outstanding concurrent sends
    - New PathTCP4 process will share links across both PathTCP and TERM objects by using Pathsend instead of WRITEREAD based send operations
  - If new functionality required, strongly recommend use with TS/MP 2.1 (HSR52)

Future product plans, dates, and functionality are subject to change without notice
Application Development Updates
Enterprise Toolkit—NonStop Edition—key features

A Microsoft Visual Studio .NET based application development environment

• Fully integrated into Visual Studio .NET. Same look and feel as Visual Studio .NET.

Supports multiple NonStop server specific project types

Supports native languages

• C, C++, COBOL, and pTAL
• Supports DLLs

Supports database and middleware application development

• NonStop SQL/MP, NonStop SQL/MX Database
• CORBA (ETK 2.0)

Complementary tools

• Visual Inspect (separate license), fix include, ar, File Transfer, etc.

Integrated Help system
ETK 3.1 Release, March 2006

- Compatibility with Visual Studio .NET 2005
  - Installer detects & supports both 2003 & 2005 versions

- Support for Build Events
  - Pre-build, post-build events supported

- Most Recently Used (MRU) deployment information
  - Host name, user name, OSS/Guardian target location

- Modify & Repair options during installation
NonStop Plugins for Eclipse\textsuperscript{TM}
June 2007 (for both S-series & Integrity NonStop)

- NonStop application developers can use industry accepted Open Source platform
- A single development environment for
  - Java, C/C++, COBOL and pTAL
  - NonStop Integrity & S-Series Servers
  - Other platforms beyond NonStop
- Improved ROI
  - No license fee as in the case of Visual Studio .NET
  - Lower cost to train and maintain workforce
  - Familiarity of environment amongst developers working on different platforms (Linux, HP-UX, Solaris, etc.)
- Greater Flexibility
  - Compose a customized environment rather than buying an expensive suite
  - Extend development environment by standard & widely accepted plug-ins

Future product plans, dates, and functionality are subject to change without notice
Code Coverage Tool [H06.07, August 2006]

• Tool provides a view of how much code was executed during an application/test run

• **Purpose:** To show how well your testing process, etc., covers the application’s source code.

• Generates HTML based reports of the test results
  – Displays the code that was executed by the run.

• Supported for C/C++, ePTAL & ECOBOL applications
  – Includes mixed-language applications and DLLs.
  – **No source code change needed**

• Compilations can be done on all supported platforms:
  – Native compilers and Windows based cross-compilers

Future product plans, dates, and functionality are subject to change without notice
Debuggers Improvements

- Native Inspect Enhancements
  - Support for debugging COBOL programs [H06.06, May 2006]
  - Aggregate assignment for COBOL tables [H06.07, August 2006]
- Visual Inspect Enhancements [H06.06, G06.30 April 2007]
  - Support for multibyte characters in breakpoint condition text
  - Use Visual Inspect in the presence of a firewall
  - Create, modify and monitor register as watch items
  - Create conditional data breakpoints
  - Display, modify and watch items from an address
  - Enhanced scope browser displays procedure locations when a selected procedure is expanded
  - Current release (version 3.3) is compatible with S-Series VI Servers
    - Requires Visual Inspect Server version 2.4 running on NonStop S-Series
Languages Enhancements

• Selected 1999 ISO C Standards (C99) [H06.08, Nov. 2006]
  – Currently adheres to ANSI/ISO 1989 standards
  – Excludes features with no demands; e.g. complex types

• Selected ANSI COBOL 2002 Standards [H06.08, Nov. 2006]
  – Currently adheres to ANSI COBOL 85 standards
  – Support dynamic heap memory (allocate/free)
  – Allow COBOL 2002 reserved keywords in COBOL85 applications

• 2003 version C++ Runtime Library [H06.10, May 2007]
  – Ports latest Dinkumware Standard C++ library on NonStop

Future product plans, dates, and functionality are subject to change without notice.
Profile Guided Optimization (PGO)

• PGO functionality [H06.09, February 2007]
  – Allows the compiler to use data collected during program execution to aid in the optimization
  – Compiler can be more selective about the optimizations it performs and can also make improved decisions about how to perform them
  – Three step process
    • Create an instrumented executable
    • Run the instrumented application with typical workload to generate dynamic information
    • Re-compile the code to optimize code paths using the dynamic information

Future product plans, dates, and functionality are subject to change without notice
Easier Porting of UNIX and Linux Applications, New APIs

• `setreuid()` and `setregid()` security APIs [G06.29/H06.05]
  – Changes to the effective user ID or the effective group ID
  – Generates Safeguard auditing records

• `fchmod()/fchown()` security APIs [G06.28/H06.05]
  – Change file security settings/ownership programmatically

• pThreads enhancements [G06.28/H06.05]
  – 31 re-entrant functions: `ctime_r()`, `getgrid_r()`, `strtok()`, etc…

• Non-blocking OSS Regular File I/O for threaded applications [Q2 2007]
  – Operations like `read()` and `write()` will only block the calling thread

• Support for `mmap()` and `ptty` [H1 2008]
  – Useful for porting many open source packages

Future product plans, dates, and functionality are subject to change without notice
Limits Extensions

• NameServer Limits Extension [G06.30/H06.08]
  – Increase in default values of INODECACHE and LINKCACHE attributes from 4,096 to 64,000
  – Decreases message traffic between NameServer & DP2

• OSS System Limits (Release 1) [H1 2008]
  – To avoid faster microprocessors hitting system limits
    • OSS PID (process ID) limit raised from 29,000 OSS processes per system to at least 160,000
    • Guardian and OSS process limit shall be raised from 4,000 processes per processor to at least 10,000
    • OSS file open limit shall be raised from approximately 12,000 opens to at least 64,000 opens per processor

Future product plans, dates, and functionality are subject to change without notice.
NonStop SQL Enhancements
Winter Corporation Largest Databases Survey

• HP NonStop SQL’s first year in the survey
  – 2 NonStop customers entered the survey competition
  – 2 NonStop customers won top competition honors

• Largest Number of Database Rows in the world
  – 1st Place: Sprint = 2.847 trillion rows
  – 2x larger than the 2nd place winner

• Largest Peak Mixed Workload in the world
  – 1st Place: HP Integration Hub Supply Chain
  – 3.56 million SQL operations per hour
Advantages of NonStop SQL/MX compared to NonStop SQL/MP

• SQL/MX implements ANSI 1999 and ANSI 2003 standards
  – SQL/MP implements ANSI 1989 standards
  – Richer coding of SQL DML improves programmer productivity
• Publish/Subscribe and Queuing Services
• Rowsets improve OLTP performance for multi-send OLTP
• Better ESP management improves parallelism for queries
• JDBC Type 2 and Type 4 driver for no additional charge
• Functionally rich ODBC for no additional charge
• Visual Query Planner
• New string, date, arithmetic, and statistical functions
• Built-in Data Mining features
• Transpose function
• Sampling
• Sequence Functions (similar to ANSI OLAP functions)
Advantages of NonStop SQL/MX compared to NonStop SQL/MP

• The following features accrue to users of the new SQL/MX Tables
  – ANSI catalog and schema
  – ANSI identifiers (128 bytes vs. 8 bytes for tables and 30 bytes for columns)
  – ANSI data types
  – ANSI views (no limit to view length, updateable views, aggregations and unions in views, aggregate over a view or join it to another table/view, etc.)
  – Hash Partitioned tables for ease of management
  – Decoupled clustering and partitioning keys
  – Multiple partitions per disk without using Storage Mgmt. Foundation
  – Triggers (before and after)
  – Referential Integrity
  – Stored Procedures in Java
  – Grant/Revoke security
  – IEEE Floating point data type
  – Unicode UCS2 data types
  – Management GUI – NSM/web
• Most new features will be delivered in SQL/MX versus SQL/MP
NonStop SQL/MX Roadmap

S-Series

2002
SQL/MX 1.8

2003
SQL/MX 1.8.5

2004
SQL/MX 2.0 (MP Tables)

2005
SQL/MX 2.0 (MX Tables-Controlled Avail.)

2006
SQL/MX 2.1.1 – September 2005

2007
SQL/MX 2.2 – H06.05 March 2006

2008
SQL/MX 2.3 GA – H06.10 May 2007

2009
SQL/MX 2.3.1 – H06.11 Aug. ’07

Performance - 15%-30% better for dynamic SQL

2010
SQL/MX 2.4 – 2008

Future product plans, dates, and functionality are subject to change without notice.
NonStop SQL/MX R2.1.1
in G06.27 – Sept 2005; in H06.04 – November 2005

• Improvements to the accuracy of Update Statistics
• Measure support for Publish/Subscribe
• Stored Procedures in Java RFE: SET CATALOG/SCHEMA is propagated to stored procedures
• Enhancement to Visual Query Planner to display the plans for statements in compiled module files
NonStop SQL/MX R2.2 (March 2006 H-series)

- Support ANSI Names with FUP, FCHECK, & EMS Events
- Performance improvements for Transaction Proc. queries
  - Reducing plan size in SQLBUFFER
- Continued performance improvements for Update Stats
  - Use of partitioned sample table
- Dynamic SQL cursor performance enhancements in JDBC Type 2 driver
In H06.06 Update to R2.2
- Constant folding of range predicates with AND on leading clustering key columns to reduce or eliminate scans
  - Expressions like “a > 10 and a < 5” to be reduced to FALSE
  - Expressions like “a > 10 and a > 15” to be reduced to a > 15
- Support for OSS large files (> 2 GB)
- Scheduled Subscriptions in Publish/Subscribe (SPR to R2.2)
  - Allows a row to be returned to a subscriber at a time determined by the value of the row’s date or timestamp column without the use of polling

Future product plans, dates, and functionality are subject to change without notice.
NonStop SQL/MX R2.3
May 2007 H06.10 Integrity NonStop

- General Availability for SQL/MX Tables
  - Online Populate Index
  - Completion of Online Partition Management
    - Prior to 2.3, supports online range partition management
      - 2.3 Support for hash and decoupled key partitioned objects
    - Local Guardian directory support for modules similar to local OSS directory support for modules
  - Control Query Default option to skip unavailable partitions
  - Returning of error code from MXCI when a query that is run in an MXCI script returns errors
  - Reduce scanning for join queries involving the FIRST $n$ option
  - SQL/MX MX Table ANSI names supported in MEASURE

Future product plans, dates, and functionality are subject to change without notice.
NonStop SQL/MX R2.3.1
H06.11, August 2007 on Integrity NonStop

• Drivers for Release 2.3.1
  – Faster compiles and less memory consumption by the compiler
    • 15% to 40% improved compile time
    • Also handles queries with large number of joins
  – Plan Versioning, Metadata Versioning, and Schema Versioning
    • Allows multiple SQL/MX versions on different nodes in support of one schema (for distributed computing)

• Improvements in error handling in IMPORT
  – Carry on the import task even when data errors are encountered

• Concurrent PARTONLY Backup/Restore of INDEX partitions

Future product plans, dates, and functionality are subject to change without notice.
NonStop SQL/MX R2.3.1
H06.11, August 2007 on Integrity NonStop

• Expected as a part of R2.3.1 or as an SPR at a later date
  – Improvements to DISPLAY USE OF
    • Display source file name and object file name in DISPLAY USE OF
    • Display potentially invalid modules in DISPLAY USE OF when the table’s modified time stamp is greater than the module creation time

Future product plans, dates, and functionality are subject to change without notice.
NonStop SQL/MX Release 2.4 and later

• Drivers for 2008 on Integrity NonStop
  – Large Keys and Large Rows with large blocks
• Under evaluation for release
  – Multiple result set support in Java Stored Procedures
  – Improvement in Update Statistics performance
  – Various performance enhancements to ODBC and JDBC
  – Additional enhancements to error handling in IMPORT
    • Enhanced error handling and improved diagnostics (e.g. trace information)
  – Backup/restore enhancements (e.g. grant/revoke histogram statistics, default tables, triggers, RI constraints)
  – Cursor with hold for SQL/MX and JDBC/MX
  – Return Syskey with inserted row
  – Time zone support
  – Additional improvements in error handling in IMPORT
  – ANSI names support in MEASURE
  – NOWAIT SQL support from C/C++

*Future product plans, dates, and functionality are subject to change without notice.*
NonStop ODBC/MX 2.1

- Several performance enhancements to MXCS
  - Including singleton operations (primarily externalized in JDBC Type 4 driver)
- Password expiration support and change

- Additionally, a 2008 feature/function enhancement has begun the planning phase
JDBC/MX Type 4 (May 2007 CA H-series)

• XA support
• XACI command line tool
• Support for BLOBs as parameters in Stored Procedures for Java
• Controlled availability
  – General availability expected in August 2007

• Additionally, for 2008, a performance release has begun the planning phase

Future product plans, dates, and functionality are subject to change without notice.
Java & Java-related Enhancements
NonStop Server for Java (NSJ)

• Introduced NSJ 5.0 in February 2006 on Integrity NonStop
  – Certified implementation of JDK 5.0
  – Available on Integrity NonStop servers only
  – Incorporates same HotSpot JVM used in HP-UX JDK
  – Over 3x performance improvement relative to S88K
  – JToolkit now bundled with NSJ
  – EMS logging available using standard Java logging APIs

• Key themes for JDK 5.0
  – Language changes for ease of development
  – Monitoring and Management

• NSJ 5.1 expected in October 2007 on Integrity NonStop

*Future product plans, dates, and functionality are subject to change without notice.*
NonStop Servlets for JSP (NSJSP)

• Introduced NSJSP 5.0 in April 2006
  – Deep port of Apache Tomcat 5.0
  – Available on both Integrity NonStop and S-series servers
  – Significant performance improvement
  – Complete server monitoring using JMX technology

• Working on NSJSP 6.0 based on Apache Tomcat 6.0 – October 2007

*Future product plans, dates, and functionality are subject to change without notice.*
BEA WebLogic Server (WLS)

• Complete, certified version of WLS 8.1 SP2 and SP3
  – J2EE Version 1.3 compliant
  – Tested and certified on NonStop Server
    • WLS 8.1 SP2 on S-series and WLS 8.1 SP3 on Integrity NonStop
  – All standard features of WebLogic Server

• Plan to certify WLS 9.2 on Integrity NonStop servers
  August 2007

• This product is purchased directly from BEA

Future product plans, dates, and functionality are subject to change without notice.
Security & Manageability Enhancements
Security Enhancements

- **ITUG 6 Safeguard RFES**
  1. Persistent ACLs – G06.21
  2. Individual Warning Mode (Guardian override of ACL) – G06.22
  3. Node Names in ACLs – G06.24, Sept. 2004
  4. Patterns in Guardian File Name ACLs – G06.25, Feb. 2005
  5. Multiple owners of Userid – G06.27, Sept. 2005
  6. Comment field on Userid – G06.27, Sept. 2005

- **OSS ACLs Security** – G06.29/H06.08

- **Enhanced Passwords**
  1. HMAC256 Password Encryption – H06.06, G06.29
  2. 64 byte passwords with HMAC256 – H06.08, G06.31
  3. Quality password enforcement – H06.09 Feb. 2007, G06.31

- **Safeguard carries no added charge on Integrity NS**

Future product plans, dates, and functionality are subject to change without notice.
Security Enhancements

• Safeguard H06.10, May 2007 for Integrity NonStop
  – Ease of use enhancements to Total Number of Failures and Last Unsuccessful Attempts for Users and Aliases
    • Enhancement to SAFECOM INFO/ALTER to reset Safeguard attributes “Total Number of Failures” and “Last Unsuccessful Attempts” for USER or ALIAS without having to delete and re-add USER/ALIAS
    • Includes wildcarding capability
    • Includes new display field for SAFECOM INFO USER/ALIAS to aid analysis of density of logon failure count after last reset
    • Includes auditing capability

Future product plans, dates, and functionality are subject to change without notice.
Security Enhancements

• Future directions 2007 and 2008
  – Fibre-channel disk volume-level encryption (not part of Safeguard) probably via a hardware third party vendor
  – Safeguard performance improvements for Integrity NonStop
    • e.g. INFO * type commands
  – Safeguard Audit enhancements for Integrity NonStop
    • Including filtering of audit events
  – Additional Safeguard enhancements for Integrity NonStop

Future product plans, dates, and functionality are subject to change without notice.
Future product plans, dates, and functionality are subject to change without notice.
Simplifying NonStop Management

• Web ViewPoint – New release AAM
  – New Webdash screen provides performance at a glance
  – Ability to drill down into specific objects as needed
  – Ability to graph subsystem data across multiple systems
• ASAP - New Release 2.8 – Feb. 2007
  – New features for Blade Management
  – “Show Related Measurement” Feature
  – Support for TCP/IP Plug-in
• ASAP TCP/IP Plug-in – Feb. 2007
  – Monitors processes, subnets, routes, ports, Telnet, etc.
  – Conventional and IPv6 compatibility mode supported
• OpenView for NonStop – Tivoli Adapter
  – Optional Adapter for Tivoli provides open system event monitoring of
    OVMN NonStop Server through the Tivoli TEC Management console
• Hybrid Management Essentials – Sept 2007
  – Provides HP SIM interface for managing hybrid configurations that include
    NonStop from a single management view.
NonStop Time Synchronization
Beta (May 2007) General Availability (July 2007)

Automatically synchronizes system clocks within a system, cluster or network

Multiple synchronization sources & choices – including internet

Provides ability to synchronize system clocks between NonStop, Linux and Windows. Ensures that time updates occur safely on all platforms. Never allows time to move backwards

Future product plans, dates, and functionality are subject to change without notice.
New Self Service Terminal Products
POS Transaction Analyzer
Integrates with OpenView

Coming in May 2007

POS – Point of Sale Transaction Analyzer
monitors and analyzes status of POS transactions across the enterprise
plugs-in to an Operational Bridge for trouble ticket routing
integrates with BMC environments
works with Base 24 applications
plugs-in to OVNM (optional)

Future product plans, dates, and functionality are subject to change without notice.
ATM Transaction Analyzer
Integrates with OpenView

Coming in May 2007

ATM – Automatic Teller Transaction Analyzer monitors status of ATM transactions across the enterprise plugs-in to an Operational Bridge for trouble ticket routing analyzes ATM Service needs across the enterprise future functions will monitor ATM Cash levels works with Base 24 applications plugs-in to OVNM (optional)

Future product plans, dates, and functionality are subject to change without notice.
SST Operations Bridge
Integrates with OpenView

Beta Program May 2007
SST (Self Service Terminal) Operations Bridge
Monitoring ATM or POS devices across the enterprise
plugs-in to trouble ticket systems for routing
works with Base 24 applications
plugs-in to OVNM (optional)

Future product plans, dates, and functionality are subject to change without notice.
Open Source Updates
Open source software for Integrity NonStop and NonStop S-series servers

• About 200 packages on each platform
• Examples include bash, emacs, openssh, openssl, perl, python, samba, zope
• Source, executable, and documentation
• Developed and released as open source FLOSS (library and tools) to make porting easier
• Goal is to encourage community support and enhancement of open source

opensource.hp.com
New Open Source Whitepaper
Opensource.hp.com

HP NonStop open source software for software developers

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