



Continuous application availability
for HP Integrity NonStop servers



Flexible business continuity and availability solutions for Integrity NonStop servers on your terms.

Cornerstones of business continuity

Continuous application availability is no accident. Instead of taking your application down when upgrading your system hardware or software, or recovering from a disaster, you want to continue application processing without any loss of service or data.

Only HP Integrity NonStop NS-series and NonStop S-series servers are designed from the ground up for continuous availability—from their native fault-tolerant architecture to their suite of disaster-tolerant middleware. This is why The Standish Group has concluded that “HP has the most sophisticated offerings for high availability and disaster recovery solutions.”

Geographically dispersed NonStop clusters—HP Metrocluster for NonStop servers and Continentalclusters for NonStop servers—provide the foundation for “no downtime, no excuses” application availability.

Tightly integrated with this architecture are HP NonStop Transaction Management Facility (NonStop TMF), NonStop Remote Database Facility (NonStop RDF), NonStop AutoTMF, and NonStop AutoSYNC Software—a suite of products that provides copies of critical databases and other essential application files.

In addition, a complete spectrum of professional services—including risk management, business impact analysis, availability design and monitoring, continuity planning, implementation, and full-service outsourcing—helps enable your success.

With business continuity and availability products and services for Integrity NonStop servers, you are assured of the highest level of protection for your mission-critical data and applications.

Geographically dispersed NonStop clusters

Two geographically dispersed cluster configurations for Integrity NonStop servers provide disaster tolerance for critical business applications:

- The HP Metrocluster for NonStop servers configuration supports HP ServerNet connections up to 15 kilometers (9 miles) and remote transaction log mirroring up to 100 kilometers (62 miles).
- The HP Continentalclusters for NonStop servers configuration relies on NonStop RDF and HP Expand networking software to enable Integrity NonStop servers to be geographically separated over unlimited distances.



Loto-Québec: The winning combination

“For Loto-Québec—the government-owned corporation that runs the lottery and other gaming activities for the province of Québec—the most important thing is the continuous availability of its lottery system. With as many as 120 transactions per second on the day of a big jackpot drawing, Loto-Québec doesn’t gamble with the availability of its more than 8,000 point-of-sale lottery terminals—the company has depended on HP NonStop systems for the past 14 years to run its mission-critical applications. “We want to be there 365 days a year, nearly around the clock,” said Sylvain Carrière, director of computer systems for Loto-Québec. “That’s what our customers want—to buy tickets where and when they want. We count on our NonStop servers to make sure that happens.”

Carrière stresses that the architectures of the development and production servers are identical. “If we have to move to the backup system, we want the same performance,” he said. “Also, each time we test a major change to our application, we want to mirror our production environment precisely.” A backup disk at the development site is connected to the production system, so the transactions for every ticket sold are written to disk at both sites. If there is a disaster at the production site, Loto-Québec has a copy of all transactions at the remote mirroring facility.

For Carrière, it’s very good news that the NonStop system handles the extreme transaction volumes resulting from mega-jackpots and incorporates a remote mirroring facility for disaster protection. He concluded, “This makes the NonStop platform very valuable to Loto-Québec.”

NonStop Transaction Management Facility Software

Key features and benefits

- Robust two-phase commit protocol for transaction protection and database integrity
- Parallel, high-performance transaction management
- Recovery from accidental or intentional database modification or deletion
- Support for database reorganization, partition split/merge/move, and backup to disk or tape with zero application downtime
- Automated tape catalog for minimizing operator error
- Tape autoloader and silo support

NonStop TMF Software is the core of fault- and disaster-tolerant computing on Integrity NonStop servers, enabling instant and transparent takeover within a single system in the event of a hardware or software component failure.

Before updating the database, NonStop TMF Software writes every change to an integrated transaction log. Because the transaction log is written first, the data disks do not require frequent updates, thereby dramatically increasing application performance. With sufficient processor memory and disk cache, it is possible to create a virtual “in-memory” database without the risk of data loss in a failure situation.



Genpass: Business continuity is key to success

Genpass, Inc., is the fastest-growing ATM processor in the United States, managing a network of more than 28,000 ATMs in all 50 states and handling 3.5 million cardholder accounts and approximately 360 million transactions per year. Genpass offers products and services specifically tailored to financial institutions, retailers, and independent sales organizations.

The company quickly grew through two key ATM network acquisitions. With these purchases, Genpass immediately gained an infrastructure with a track record of reliable performance—the acquired networks have relied on HP NonStop technology since 1984. Genpass currently relies on four NonStop S74000 Servers: two production servers, a development server, and a certification/testing server.

After careful analysis of its business continuity requirements, Genpass installed a NonStop S76000 Server at a remote disaster recovery site. The remote site provides a fully redundant backup for the company's NonStop S74000 Production Servers.

As John Sandridge, vice president of operations at Genpass, observed, "Over the past year, we've had to relook at our entire disaster recovery and business continuity scenario to ensure that our employees could get to our remote backup site faster, without regional/geographical access issues, power grid concerns, and so on. The events of September 11, 2001, as well as recent major power outages prompted this focus.

"The benefit of a fully operational, redundant site—running on the NonStop S76000 Server—is that it allows us to make platform changes 'on the fly,' without downtime being an issue," continued Sandridge. "We can temporarily switch everything over to the remote site while making changes to our production servers.

"Where we make our money is keeping the system running 100 percent of the time, Sandridge explained. The track record with the NonStop system can't be beat. It's simply unmatched. We think of it as the backbone behind all we do."

NonStop TMF Software ensures that every business transaction is fully completed or fully backed out, without special programming, so that your company's databases are always consistent. The software facilitates industry-leading database integrity.

NonStop TMF Software works with the HP NonStop SQL Database to enable online database reorganization and backup to disk or tape with zero application downtime. The NonStop TMF transaction log also can be used to recover data that was damaged or deleted through user error or to restore a snapshot of last week's information while your application is still running.

NonStop Remote Database Facility Software

Key features and benefits

- High throughput for instantaneous replication
- Granular specification of primary and backup databases
- Support for all NonStop TMF configurations
- Zero lost transactions
- Robust manageability
- Cross-release replication
- Upgrade with no application downtime

NonStop RDF Software allows you to create a disaster-tolerant environment that can share processing in real time across multiple systems or physical sites.

Designed to help you create a disaster-tolerant environment, NonStop RDF Software handles even the largest application configurations.

NonStop RDF Software replicates database changes across systems using high-speed, low-level operating system interfaces. The key to continuity or recovery after a disaster is having all your data on another system before a failure, and nothing outperforms NonStop RDF Software's low-latency, high-performance database replication.

Any system in the NonStop RDF network can take over the work of another system in a matter of seconds. There is no need for system reboots, application restarts, or database reconfigurations. Nor do local workloads on the target system have to be jettisoned.

NonStop RDF Software handles even the largest application configurations and can support multiple live sites backing up each other, with every system running live transactions.

For maximum protection, a Metrocluster configuration can be implemented with a remote HP StorageWorks XP Disk Array to prevent committed transactions from being lost even in a catastrophic site failure. The storage system can be located at up to 100 kilometers from the protected Integrity NonStop server.

NonStop AutoTMF Software

Key features and benefits

- Allows applications to transparently invoke NonStop TMF protection
- Improves system and application performance
- Enables the use of NonStop RDF Software
- Installs in one simple step
- Requires no recompilation or program changes
- Performs all necessary transaction activity

NonStop AutoTMF Software enables applications not currently invoking NonStop TMF protection to do so automatically. Not only do you get better transaction protection through the use of audited database files, but also your application actually performs better because NonStop TMF Software merges multiple transactions into one disk write.

NonStop AutoTMF Software also enables the use of NonStop RDF Software for disaster tolerance and data replication, without reprogramming or reloading of data. NonStop AutoTMF operations are completely automatic and can be applied to individual applications and files as required.



NonStop AutoSYNC Software

Key features and benefits

- Supports geographically dispersed application domains
- Automates multisystem software distribution
- Facilitates system migration and upgrades
- Leverages Integrity NonStop server fundamentals
- Complements database replication software

Whereas NonStop RDF Software streams database file changes to one or more systems, NonStop AutoSYNC Software uses whole file replication to automatically synchronize any kind of file across multiple systems. In a business continuity environment, this means that all the files required to support your application environment, such as program source files, object files, configuration files, static database files, and other files necessary to start and maintain applications, can now be automatically replicated and synchronized to enable immediate and complete takeover without surprises.

NonStop AutoSYNC Software also supports automated software distribution across sites and disk-to-disk backups without tape handling.

We pioneered continuous availability

Today's Integrity NonStop servers are the culmination of more than 30 years of continuous availability expertise. No other platform provides such a comprehensive and powerful processing architecture as the Integrity NonStop server, the best choice for enterprises that cannot risk data loss or downtime.

For more information

For more information about products for application availability and continuity on HP NonStop Integrity servers, visit www.hp.com/go/nonstopcontinuity.

Continuous application availability for HP Integrity NonStop servers

Ordering information

NonStop TMF Software

As the foundation for database consistency and continuous application availability, NonStop TMF Software is included with the NonStop operating system and does not need to be ordered separately.

NonStop RDF Software

Part number	Product name
SA43V1	NonStop RDF/IMP for NonStop S-series servers
HSA44V1	NonStop RDF/IMPX extended version for Integrity NonStop NS-series servers
SA44V1	NonStop RDF/IMPX extended version for NonStop S-series servers
HSA88V1	NonStop RDF/ZLT add-on to HSA44V1 for Integrity NonStop NS-series servers
SA88V1	NonStop RDF/ZLT add-on to SA44V1 for NonStop S-series servers

NonStop AutoTMF Software

Part number	Product name
HSA45V1	NonStop AutoTMF Software for Integrity NonStop NS-series servers
SA45V1	NonStop AutoTMF Software for NonStop S-series servers

NonStop AutoSYNC Software

Part number	Product name
HSA46V1	NonStop AutoSYNC Software for Integrity NonStop NS-series servers
SA46V1	NonStop AutoSYNC Software for NonStop S-series servers



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For more information, visit www.hp.com/go/nonstopcontinuity.

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