



## HP NonStop Remote Server Call/MP software

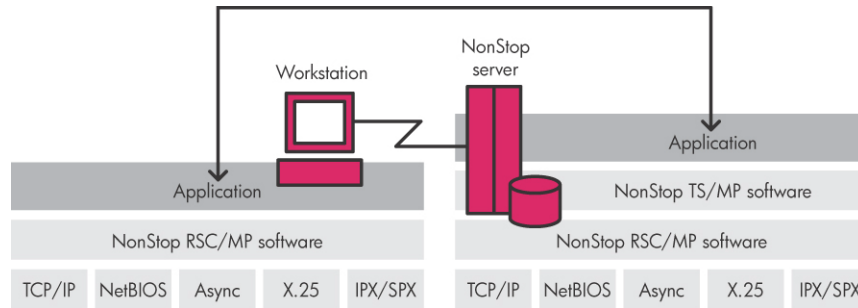
### Features at a glance

- Integration with HP NonStop TS/MP software for high-performance transaction processing
- Integration with HP NonStop TMF software for transaction protection and high availability
- Efficient client/server architecture
- Smart transport capability (no-waited and nonblocking)
- Versatile data communications
- Wide range of client software
- Robust security

### **HP NonStop Remote Server Call/MP software brings flexible client/server computing to the HP NonStop platform.**

HP NonStop Remote Server Call/MP (NonStop RSC/MP) software brings client/server computing to the world of transaction processing by combining the power and convenience of desktop systems with the speed and transaction protection of HP NonStop servers. NonStop RSC/MP software is the most widely used client/server software for NonStop systems.

NonStop RSC/MP software complements the parallel architecture of the NonStop system transaction processing environment with a client/server architecture in which processing is shared between the host and workstations. Specifically, NonStop RSC/MP software permits workstations to invoke HP NonStop Transaction Services/MP (NonStop TS/MP) software residing on NonStop servers (see figure 1). By processing much of each transaction on the workstation before it is sent to the server, NonStop RSC/MP software can improve the performance of NonStop TS/MP applications while maintaining their ability to handle high transaction volumes.



**Figure 1. NonStop RSC/MP software enables workstation-based client applications to access NonStop TS/MP software on a NonStop server host.**

The same NonStop TS/MP software can work with both NonStop RSC/MP clients and clients that use HP Pathway/TS software. If you already have servers running NonStop TS/MP software, you can begin using NonStop RSC/MP software with no code changes. Your investment in transaction processing applications is protected while you improve user productivity by taking advantage of today's powerful workstations.

NonStop RSC/MP client software is available for many different workstation platforms, enabling users on a wide variety of platforms to enjoy the performance and availability benefits of NonStop TS/MP software and NonStop servers.

## Integration with NonStop TS/MP software for high-performance OLTP

NonStop TS/MP software was designed for high-volume transaction processing, with features that guarantee the best responsiveness to incoming requests no matter how intense the transaction workload. NonStop RSC/MP software extends the transaction processing advantages of NonStop TS/MP software to workstation users.

NonStop TS/MP software creates and manages server classes: pools (of servers) whose sizes are regulated by user demand. Its automatic process management adds and deletes processes as needed to meet varying workloads, with no user or operator intervention.

It can also balance workloads by replicating and distributing processes among different NonStop processors and servers. This load balancing is transparent to users and applications.

## NonStop server and NonStop TS/MP software features

NonStop RSC/MP software is designed to take advantage of the parallel architecture of NonStop servers. You can run multiple copies of NonStop RSC/MP software on different NonStop server processors, increasing performance as well as availability.

NonStop RSC/MP software also gains higher availability from NonStop TS/MP software, which can restart server processes after a failure.

## **Integration with NonStop TMF software for transaction protection and high availability**

NonStop RSC/MP software works with HP NonStop Transaction Management Facility (NonStop TMF) software to ensure both the accuracy of your data and the availability of your applications.

### **Transaction protection**

Using NonStop RSC/MP software, workstation applications can invoke NonStop TMF servers to protect the integrity of server transactions.

A NonStop RSC/MP client can initiate and control a NonStop TMF transaction on any message or combination of messages.

This transaction can span multiple servers. NonStop RSC/MP applications can begin, end, or abort the transactions from the client.

### **Delegated commits**

Protecting transactions as they move between clients and servers presents unique challenges. There are two major approaches to providing this protection: the delegated commit and the two-phase commit. NonStop RSC/MP software uses a delegated commit.

With full two-phase commit, the client and server communicate both before and after each step of the transaction, generating many messages between them. When using no-waited I/O, this approach can also prevent the workstation from executing other useful work until the transaction is completed.

In a delegated commit, the arrival of a message at the server explicitly or implicitly delegates the BEGIN transaction and END transaction work entirely to the server. A delegated-commit mechanism gives a high degree of transaction protection without incurring the communications and processing overhead of full two-phase participation. It also requires much less processing by the workstation. The client still exercises the transaction control verbs, but the server ensures the integrity of updated data.

### **Persistent processes**

NonStop RSC/MP software provides high availability both because it runs on NonStop servers and because its Transaction Delivery Process (TDP) can be configured as a persistent process. The TDP initiates and controls NonStop TMF transactions on behalf of the workstation.

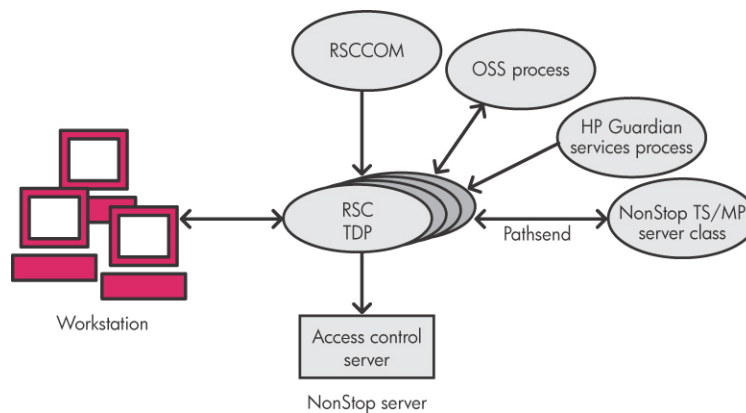
When the TDP is run in persistent mode, upon failure of the primary process, the backup process becomes available for application reconnection and to continue processing. The takeover is reported to the clients as a communication disconnection. NonStop RSC/MP software ensures database consistency in the event of a communications failure.

In addition, multiple TDPs can be configured to increase availability. With more than one TDP running, if a communications failure occurs, the TDP on the host aborts any active transactions and connections. The workstation application can then reconnect to a different TDP and send the transaction again.

## Efficient client/server architecture

NonStop RSC/MP software lets you apply the client/server model to NonStop TS/MP applications. In a traditional NonStop TS/MP application, host-based clients (called requesters) send concise transaction messages to a host-based NonStop TS/MP server. The server invokes the appropriate HP NonStop SQL or Enscribe database management system and sends the responses back to the requesters.

NonStop RSC/MP software permits the NonStop TS/MP requesters to reside on workstations. These workstation-based requesters use NonStop RSC/MP software to exchange transaction requests and responses with the host-based NonStop TS/MP servers. NonStop RSC/MP software communicates with NonStop TS/MP servers through Pathsend (see figure 2). NonStop RSC/MP software can also communicate directly with named NonStop server processes. When a message is sent from a workstation-based NonStop TS/MP client, it is received by the NonStop RSC/MP TDP on the NonStop server. The TDP sends the message to the NonStop TS/MP server via a Pathsend request. The TDP can also relay NonStop RSC/MP messages directly to a named NonStop server. RSCCOM configures and manages TDP processes. The optional access control server lets you define user authentication and authorization for NonStop RSC/MP software.



**Figure 2. Messages sent from a workstation-based NonStop TS/MP client are received by the NonStop RSC/MP TDP on the NonStop server.**

Host-based applications can initiate communications with NonStop RSC/MP workstation clients—the reverse of the usual procedure. This approach is called unsolicited message support (UMS) and is useful for such tasks as notifying users that a system is about to be taken out of service temporarily. When a NonStop TS/MP server sends an unsolicited message to the workstation, the host system in effect becomes the client and the workstation becomes the server.

## Workstation productivity

NonStop RSC/MP software works with leading desktop platforms to bring the productivity of workstations to NonStop TS/MP applications.

NonStop RSC/MP software supports the following client platforms:

- Microsoft Windows (32-bit Intel processor-based PCs)

- Microsoft Windows NT Server Terminal Server Edition (TSE)
- OS/2 (32-bit)
- Linux
- SCO UnixWare
- Sun Solaris
- IBM AIX
- HP-UX operating system

## **Smart transport capability (no-waited and nonblocking)**

NonStop RSC/MP software uses no-waited and nonblocking I/O, so users can send multiple requests without waiting for completion and can retrieve the replies as they are completed. Also, while the server is busy, the client can continue to process data. NonStop RSC/MP software offers a notification feature that may provide significant performance improvements for applications that use predominantly no-waited I/O. When an I/O is completed, NonStop RSC/MP software notifies the application. Consequently, the application does not need to poll to find out if the application is completed.

The NonStop RSC/MP software transport insulates the application from the details of link management. It can be configured to retry connections automatically and/or try alternate paths and thus automatically reconnect after a temporary link outage.

NonStop RSC/MP software also provides distributed connection routing by allowing the user to configure multiple TDPs per pipe. For example, if three TDPs are listening on the same pipe name, then connection requests from clients to that pipe name will be satisfied in a round-robin method across the TDPs.

**Flexible communications using popular protocols**

## **Versatile data communications**

NonStop RSC/MP client software products work with one or more of these popular data communications protocols:

- TCP/IP
- Internetwork Packet eXchange (IPX)/Sequenced Packet eXchange (SPX)
- NetBIOS
- Asynchronous
- X.25 with asynchronous

Concurrent NonStop RSC/MP software sessions can share a single communications session, providing more efficient use of your data communications resources. You can have multiple protocols in use simultaneously on different ports.

Data communications protocols are completely transparent to NonStop RSC/MP software applications. Should a communications failure occur, you can reestablish communications by using the same protocol over an alternate data communications path or by using a different protocol.

## Wide range of client software

The NonStop RSC/MP application program interface (API) can be used in conjunction with most workstation-based languages, development tools, and applications. For example, any Windows program that can invoke dynamic link libraries (DLLs) can use NonStop RSC/MP software:

- *Client development languages:* Any development environment that generates standard C-language calling sequences, including Microsoft Visual Basic and Visual C++ development systems, Micro Focus COBOL, and Realia COBOL
- *Client development tools:* Blythe Omnis, Kaseworks KASE:W, Oracle Developer/200, and Sybase PowerBuilder
- *NonStop RSC/MP applications:* DDE Gateway and NSX, DynaAccess and RSOM from Cornerstone Software, CirCa User Interface (CUI) from CirCa Business Systems, SA-Sculptor from Systems Automation, SCOBOL to GUI Tool and COBOL Emulation Environment from AD Technologies, Open Focus Server from Information Builders, APS from Intersolv, Message Integrator from Boston Software Works, TSQLDBA from GENSAT, COOL:Gen from Sterling Software, Matterhorn from Alta, and others

## Robust security

The access control server (ACS) feature within NonStop RSC/MP software protects your data from unauthorized access. An ACS is an optional NonStop system process that can be used to grant or deny workstation access to NonStop RSC/MP services on the host. Application developers can include ACS capability in any NonStop RSC/MP software application and can choose to protect some types of sessions but not others, as needed.

An ACS provides the ability to restrict client application access only to those server classes for which the user is authorized. When an ACS is invoked, it provides the NonStop RSC/MP TDP with a list of authorized server classes for that user.

In addition, to prevent unauthorized data capture and reintroduction of message replies, a NonStop RSC/MP TDP and NonStop RSC/MP client can be configured to stamp each message between the host and the workstation. This prevents replay and forgery of NonStop RSC/MP messages.

Application developers can also use the ACS feature to provide a central point for implementing application security functions.

## Release history

The following is a summary of previous product releases:

- *NonStop RSC/MP software:* This is the latest product line that is shipped on CD as an Independent Product.

- *HP RSC for Piccolo software Release 5.x:* This product is now supported as a Limited Availability offering to existing users only. Customers should upgrade to NonStop RSC/MP software, which is 100 percent compatible with this product.
- *HP RSC software Releases 1.x through 4.x:* These products also have Limited Availability status. Some features are not carried forward with NonStop RSC/MP software. Customers should upgrade to NonStop RSC/MP software.

## Ordering information

<i>Product ID</i>	<i>Description</i>
<b>Host software</b>	
SM58V1	NonStop RSC/MP, Host component
SM69V1	NonStop RSC/MP Demo software, Host, and 32-bit Windows client
<b>Client software</b>	
SM67V1	NonStop RSC/MP, 32-bit Windows client
SM66V1	NonStop RSC/MP, 32-bit OS/2 client
SM65V1	NonStop RSC/MP, Sun Solaris client
SM64V1	NonStop RSC/MP, IBM AIX client
SM63V1	NonStop RSC/MP, HP-UX client
SM62V1	NonStop RSC/MP, SCO UnixWare client
SM57V1	NonStop RSC/MP, Linux client
SM55V1	NonStop RSC/MP, Windows NT Server TSE client

Notes: To use NonStop RSC/MP software, you need to purchase a host component and at least one NonStop RSC/MP client package. Each client package is licensed for use with a particular host system and can be distributed to any number of workstations on that system within a given corporation. At least one host license and one client license are required for each host. Client access per host is unlimited. If the same client accesses two hosts, two client software licenses are required.

## Specifications

### Server requirements

Hardware	K-series and NonStop S-series servers
Software	HP NonStop Kernel operating system, D-series or G-series releases NonStop TS/MP software (for access to NonStop TS/MP servers) NonStop system TCP/IP (for connection to TCP/IP networks) or NonStop system TCP/IP Parallel Library (for connection to TCP/IP networks) or ATP6100 (for asynchronous connection to workstations; included with some NonStop Kernel packages) or Multilan or NetBIOS for TCP/IP (NBT) or NetBIOS for IPS/SPX (for connection to NetBIOS networks) or NonStop system IPX/SPX (for connection to IPS/SPX networks)

## Client requirements

<i>Platform</i>	<i>Communications protocols supported</i>				
	TCP/IP	IPX/SPX	NetBIOS	Async	X.25 with async
Windows (32-bit)	•	•	•	•	•
OS/2 (32-bit)	•		•	•	•
SCO UnixWare	•			•	•
Sun Solaris	•			•	•
HP-UX operating system	•				
IBM AIX	•				
Linux	•				
Windows NT Server TSE	•	•	•		•

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