

ROBAR (BS2000/OSD) Version V5.0

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Software to manage robots in archives

In data centers with large data volumes there is usually a great number of magnetic tapes. For large-scale configurations manual methods of tape processing require an inordinate amount of time and effort for the handling and archiving of tapes. By using software-controlled robots which handle magnetic tape cartridges (MTC) in archive systems from ADIC, cartridge mounting operations, cartridge retrieval and the return of cartridges to the correct racks or rotating towers can be automated. The robots can be controlled by BS2000 hosts via the software product ROBAR.

ROBAR supports both the CentricStor virtual tape library and the SBU/ITC (Smart Backup Unit / Intelligent Tape Controller). Additionally MAREN V9.0 is required. The CentricStor virtual archive system is positioned on top of the actual archive system with its real drives and real cartridges. Centricstor virtualizes the real archive. This virtualization and ROBAR-automation provide customers with key economic benefits:

- n Reduction of operation-failures via automation
- n Optimum use of tape drives and media
- n Increased performance of MTC processing through parallelization
- n Improved capacity exploitation for high-capacity media
- n Higher availability via failover-configurations and failover-automation.

ROBAR offers the following functions:

ROBAR archive software provides a communication link between BS2000 systems and the archive systems. ROBAR consists of ROBAR-Client (BS2000) and ROBAR-Server (UX/Solaris), both of which require the other in order to run.

ROBAR-Client (BS2000) runs as system support software under BS2000 and uses the console message interface. All device and volume requests from system and user tasks are handled in the usual way by the BS2000 device management facilities, and lead to insert- or remove-messages appearing on the console.

ROBAR-Client (BS2000) uses UCON to filter out those messages which are relevant to the magnetic tape cartridge system; these are then used to control the robot (they are passed on to the ROBAR server in shortened form. It must be remembered that the robot system always requires that a unique volume sequence number (VSN) is specified. For this reason, MAREN (or a comparable product) should be used for scratch tape handling. MAREN selects a free VSN and passes it on to ROBAR. ROBAR-Client (BS2000) supports a JCL/SDF interface for the retrieval/return of cartridges (data exchange).

ROBAR-Server (UX/Solaris) runs on an RM or PRIMEPOWER system and receives and coordinates incoming messages in a BS2000 multisystem-environment. The messages are converted into standardized commands and are used to control the robot system. Thus the robot system is able to perform mounting operations, retrieve

cartridges and return them to the racks. A menu-controlled operator interface allows the operator to mount, insert and remove cartridges for data exchange purposes.

In addition, any changes made are logged in the archive record. Information utilities may be used to display the archive inventory, drive assignments as well as various statistics, etc.

ROBAR produces the following benefits:

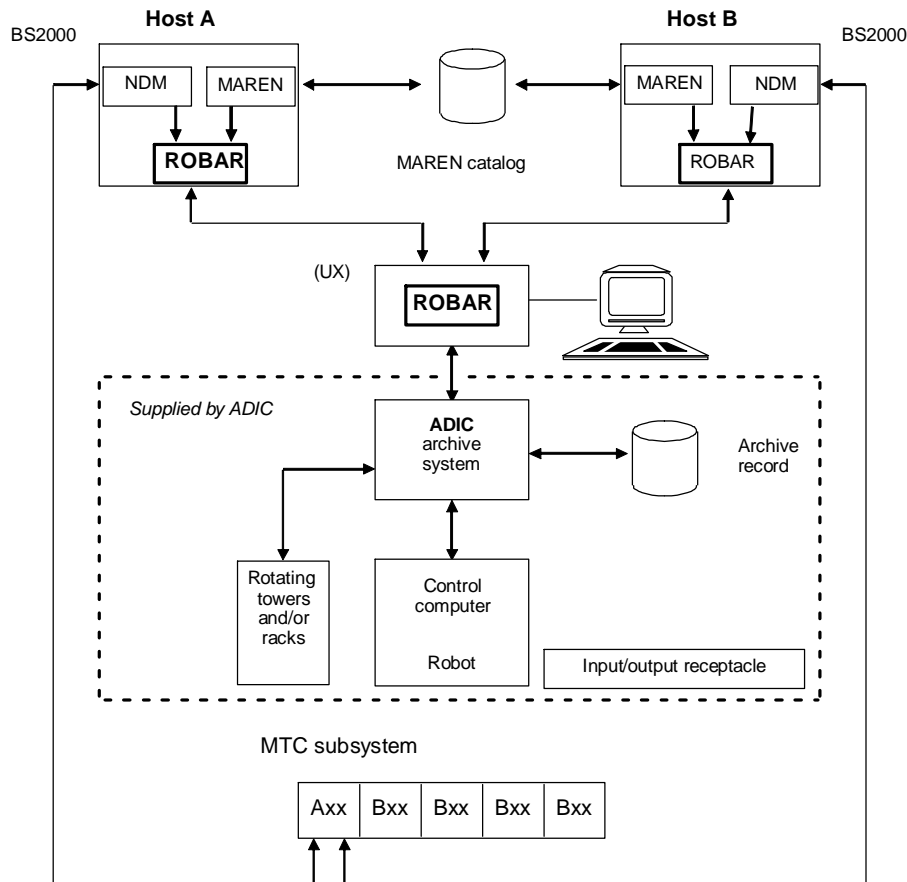
- n In a multisystem configuration (VM2000 or multi-server), several BS2000-systems function as partners of equal status in relation to the device pool.
- n Volume and device reservation continues to be performed by BS2000. No volume or device management functions are performed in ROBAR itself. Interaction with MAREN should be planned to handle the selection of scratch tapes. The DUAL AMU functionality (from ADIC) gives the ADIC archive system a high level of fault tolerance.
- n To support the function "high availability of the ROBAR-SV server", the ROBAR server can be operated as a cluster.
- n A failure of the ROBAR server would seriously disrupt operation of the archive system and therefore also of overall BS2000 operation. To guard against this eventuality, the optional product ROBAR-CLUSTER can be deployed in a server cluster comprising two UX servers to enable automatic switchover of up to three ROBAR-SV installations from the failed server to the standby system.

The product ROBAR-CLUSTER V1.0 is available for the Solaris environment and is based on the PRIMECLUSTER

high-availability product.

System overview

ADIC/ROBAR system with MTC subsystem for two BS2000 servers (see figure). Up to 110 BS2000 systems can be connected to the ROBAR server (UX system)



Supplementary data on ROBAR

Hardware

Archive system from ADIC

ROBAR V4.0 supports AML/2, AML/E AML/J and Scalar 1000 robot systems with AMU V3.0 or higher or AMU <= V2.4 depending on ADIC system; SDLC V2.2 is to be used with Scalar 1000 with LTO devices.

New: ROBAR V5.0 supports SCALAR i2000 with new SCSI connection; A condition is: ROBAR-SV on Primepower-/Solaris. For the connection of the SCALAR i2000 at BS2000 at least BS2000/OSD V6.0 is necessary for the /390-Server and BS2000/OSD V5.0C for the SX servers.

ROBAR must be used in combination with MAREN in order to support CentricStor 3595/SBU/ITC.

BS2000/OSD business server; SR2000 business server; SX-line business server.

Magnetic tape cartridge systems: All MTC devices released for BS2000 are supported (LTO devices with Scalar 1000 and i2000 only).

Up to 110 BS2000 systems can be connected to the ROBAR/UX system.

The following UX systems are supported:

- n RM200/RM300/RM400/RM600 (MIPS)
- n PRIMEPOWER 250, 400, 600 (SPARC)

Software

ROBAR-CL (BS2000) V5.0 can run with:

Product	as of version	Comment
BS2000/OSD	V4.0	
OSD/XC	V1.0	
OSD-SVP	V4.2	
openNet	V2.0	

Product	as of version	Comment
Server (DCAM)		
MAREN	V9.0	
CRTE	V2.1	
optional:		
HSMS	V6.0	
ARCHIVE	V6.0	
PROP-TPM	V3.0	for device management with multi-system configurations
JV	V13.0	for connection monitoring between BS2000 and UX

Note:

1) The new functions of ROBAR V5.0 are available only in connection with the appropriate BS2000 versions: SCALAR i2000 at least BS2000/OSD V6.0 for the /390-Server and BS2000/OSD V5.0C for the SX servers; Support of 4-Byte-Adressen for tape-units starting from BS2000/OSD V6.0.

2) With mixed configurations (manually operated devices and devices in archive systems) installation of a NDM Device Depot is recommended in conjunction with the use of MAREN for storage location management. In this case the use of MAREN together with ROBAR is required.

For ROBAR-SV (UX) V4.0 the following configuration must be adopted depending on the UX server platform (MIPS or PRIMEPOWER):

Server platform	ROBAR-SV-SP (UX)			
Hardware	RM200	RM300	RM400	RM600
SINIX	SINIX-N ≥ V5.42A	Rel. UX ≥ V5.44	SINIX-N ≥ V5.42B	SINIX-Y ≥ V5.41B
CCP-STA1				
CCP-LAN2			≥ V3.0	≥ V4.0
CCP-WAN1			≥ V3.0	≥ V4.0
CMX	≥ V5.0	≥ V5.1	≥ V3.0	≥ V4.0
CCP-FDDI				≥ V5.1

Server platform	ROBAR-SV-SP (SOLARIS)
Hardware	PRIMEPOWER
UX	SOLARIS V8.0 or higher
CMX	V5.1E30 or higher (Package name: SMAWcmx)
PRIMECLUSTER	V4.0 or higher (optional)
ROBAR-CLUSTER	V1.0 (optional)

Provided they are released on the relevant computer models, use of the following versions is recommended

n Reliant UX V5.44 or higher, particularly when disk drives greater than 2 GB are used

n CMX V5.1E30

Precise configurations with FDDI interfaces must be looked up in the SHB entries on FDDI (see SHB entry "FDDI", index: 315-354-05, and SHB entries on the individual RM machines).

With robot sharing with DAS/ACI software from ADIC AMU V3.0 or SDLC V2.2 has to be used.

The change of the software and firmware for the LIBRARY systems and the MBK devices must be agreed upon with ADIC customer care.

For implementation with CentricStor/SBU/ITC, the system requirements described in the release notice apply.

Implementation language

C, Assembler

Installation

As per the User Guide

Documentation

The documentation is available in the form of online manuals at <http://manuals.fujitsu-siemens.com/> or can be ordered in the form of printed manuals for an additional payment at <http://fsc-manualshop.com/>.

Conditions

The BS2000/UX software product is supplied to the customer under our conditions for the use of software products against a single payment or installments.

Warranty

Units offered under BS2000:

Class: A

Delivery format: Machine language

Units offered under UX:

Class: C

Delivery format: Machine language

Ordering and delivery

To order the BS2000 software the respective order unit ROBAR-CL-n (BS2000) should be selected according to the number of data volumes in the archive system.

To order UX software a basic order unit ROBAR-SV-SP with binary code for the hardware platform (MIPS or SPARC) in conjunction with a ROBAR-SV-n license, according to the number of cartridges in the archive system. UX software can only be ordered in this combination.