

Fujitsu Technology Solutions

DRV (BS2000/OSD)
Version 3.2A
May 2009

Release Notice

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1 General

DRV (Dual Recording by Volume) is a process for recording data mirrored on two disks. In contrast, single recording is known as SRV (Single Recording by Volume).

DRV is implemented in the BS2000/OSD I/O system and does not have to be taken notice of by either DMS or the user program. DRV operation is started, controlled, monitored and stopped with a series of commands by the operator or system administrator. The DRV mode that mirrors the data is called dual mode. It increases availability of the data stored on the disk. Each DMS write request is executed on both disks and each read request is executed on the disk with the shortest access, thus making read execution faster than in SRV mode.

Dual mode also has extended correction options for recording errors. As long as the data can be read correctly from at least one disk, the error can be corrected by assigning a replacement track or block on the defective disk to which the data is then copied from the intact disk. The dual data recording does not have to be stopped for this.

If one disk fails, the system can be switched to mono mode. DRV can thereby be instructed as to the maximum time that operation can be interrupted with a disk failure. If the error is not removed within this time, DRV switches to mono mode, as long as the mirror disk is still available. The operator does not have to intervene for this.

The faulty disk can be replaced by one of the same type by the operator or system administrator without interrupting the application. Mono mode differs from SRV mode in that dual mode can be resumed by adding a disk with an identical VSN. The transition from mono to dual mode is known as reconstruction. The data is copied to the added disk, where user inputs/outputs can be handled concurrently to this.

Both PVS (Public Volume Sets) and private disks can be operated in dual recording mode with DRV, this applies particularly for home and paging subsets.

However, DRV cannot be used for disks shared by several computers (multiple computer configurations with SPD (Shareable Private Disk) and SPVS (Shared Public Volume Set)).

This Release Notice is a summary of the major extensions, requirements and operating information with regard to DRV V3.2A under the operating system BS2000/OSD (*) or OSD/XC.

The release level is that of May 2009.

This Release Notice is supplied as a file in uppercase/lowercase. Customers will receive an updated version of this file should any subsequent changes be made.

To print this file, use

```
/PRINT-DOCUMENT FROM-FILE=SYSFGM.DRV.032.E, -  
/ DOCUMENT-FORMAT=*TEXT(LINE-SPACING=BY-EBCDIC-CONTR)  
(English)
```

*) BS2000/OSD is a trademark of Fujitsu Technology Solutions

This Release Notice is also available online under <http://manuals.ts.fujitsu.com/mainframes.html>.

If one or more previous product versions are skipped when this version is installed, the information from the Release Notices (and README files) of the previous versions must be noted.

1.1 Ordering

DRV V3.2A can be ordered from your local distributors and is subject to the general terms and conditions of the software product use and service agreement.

1.2 Delivery

The DRV V3.2A files are supplied via SOLIS.

The following delivery components are required regardless of the HSI:

Delivery component:	Product description:
-----	-----
SIPLIB.DRV.032	DRV macro library
SYSMES.DRV.032	Message file
SYSPRC.DRV.032	Migration procedure library
SYSRMS.DRV.032	RMS delivery set for DRV
SYSSDF.DRV.032	Syntax file
SYSSSC.DRV.032	Subsystem declaration file
SYSSII.DRV.032	Structure and installation information for IMON
SYSSMB.DRV.032	Symbol file for Damp
SYSDMP.DRV.032	Procedure file for Damp
SYSFGM.DRV.032.D	Release Notice (German)
SYSFGM.DRV.032.E	Release Notice (English)
SYSRME.DRV.032.D	README file in German
SYSRME.DRV.032.E	README file in English

The following delivery components are only required on S servers:

Delivery component:	Product description:
-----	-----
SYSLNK.DRV.032	DRV module library (/390)

The following delivery components are only required on SX servers:

Delivery component:	Product description:
-----	-----
SPMLNK.DRV.032	DRV module library (SPARC)

The following delivery components are only required on SQ servers:

Delivery component:	Product description:
-----	-----
SKMLNK.DRV.032	DRV module library (x86)

1.3 Documentation

The following documentation is available for DRV 3.2A:

Title:		Order number:
-----		-----
DRV V3.0A Benutzerhandbuch	German	U6515J-Z125-4
DRV V3.0A User Guide	English	U6515J-Z125-4-76

The BS2000/OSD basic configuration manuals are also required to operate DRV.

The BS2000/OSD documentation is also available in German and English on CD-ROM under the title "BS2000/OSD Softbooks".

The documentation is available in the form of online manuals at <http://manuals.ts.fujitsu.com> or can be ordered at extra cost at <http://manualshop.ts.fujitsu.com>.

The product Adobe Acrobat Reader is required for reading and printing the manuals in PDF format.

There may be additional README files for the above manuals that contain changes and extensions for the manual of the respective product. The filenames are structured as follows:

SYSRME.<prod>.<vers>.D	(file with text in German)
SYSRME.<prod>.<vers>.E	(file with text in English)

When printing the files, you should specify the operand DOCUMENT-FORMAT=*TEXT (LINE-SPACING=BY-EBCDIC-CONTR) in the PRINT-DOCUMENT command.

2 Software extensions

As of BS2000/OSD-BC V8.0, DRV V3.2A supports the new SQ servers based on High End Intel x86 processors.

3 Technical information

3.1 Resource requirements

DRV V3.2A occupies less than 0.5 MB in class 4 memory and less than 10 MB disk space.

3.2 Software configuration

The product DRV V3.2A will run with BS2000/OSD-BC as of V6.0 or OSD/XC as of V2.0.

The latest correction level must be used in each case.

3.3 Product installation

Installation of the product in BS2000 with the installation monitor IMON is mandatory. The information concerning installation in the delivery cover letter and in the product documentation must be followed.

3.4 Product use

Note on ACCOUNTING:

Double write operations are executed and are accordingly recorded and accounted doubly by ACCOUNTING. Read operations are accounted singly.

If the procedure EXECUTE-PUBSET-MIGRATION is used, PROP-XT is required.

3.5 Obsolete functions (and those to be discontinued)

- none -

3.6 Incompatibilities

- none-

3.7 Restrictions

- none -

3.8 Procedure in the event of errors

In the event of a DRV error, the following documentation is required for diagnostic purposes:

- Console log
- NDM dump
- If the problem is reproducible, NDM traces should be enabled with /START-TRACE TRACE-NAME=TNDM#ALL. Then the error condition should be repeated and a NDM dump should be taken.
- SYSOUT log
- IO trace

4 Hardware support

DRV 3.2A will run on all servers supported by BS2000/OSD as of V6.0A and OSD/XC as of V2.0A respectively.

Disks of all device types are supported in DRV operation both as Private Disk and as PVS, apart from type D3409-GS disks emulated in global storage.

Private disks in SPD mode and pubsets in SPVS mode (CCS and XCS) are not supported by DRV.

DRV can also be used on integrated disk controllers.

Requirements for DRV-DUAL operation:

The following conditions must be satisfied to allow two disks to be operated as a DRV mirror disk-pair:

- 1) Device, controller and channels types or controllers and-busses for SCSI must be identical since, for performance-reasons, only one channel program is generated.
- 2) The VSN of both disks must be identical.
- 3) The disk topology must be identical, i.e. the division into label, use and replacement track/block areas, the PAMKEY property "key" or "nokey" and the formatting "2K" or "4K".
- 4) If FASTDISKS are used (device type D3409) they must be configured to the same size.