FUJITSU Software BS2000 VM2000

Version V11.0A
October 2019

Release Notice

1 General

VM2000 is a virtual machine system that allows different, completely encapsulated system environments to be operated simultaneously on one system with a performance comparable to the "native" mode. Depending on the type of system, up to 32 BS2000 operating systems can be used simultaneously as guest systems. VM2000 V11.0 supports the current FUJITSU Server BS2000 SE series (server units /390 and x86).

This Release Notice is a summary of the major extensions, dependencies and operating information with respect to VM2000 V11.0A under the BS2000 operating system.

*3   The release level is that of: October 2019.

*3   Changes to release level June 2017 are marked with *3.
*2   Changes to release level November 2015 are marked with *2.
*1   Changes to release level June 2015 are marked with *1.

          This and other current Release Notices are shipped on the SoftBooks DVD and
*3   are available online at https://bs2manuals.ts.fujitsu.com/.

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

1.1 Ordering

VM2000 V11.0A can be ordered from your local distributors.

VM2000 V11.0A is supplied subject to a single payment or payment by instalments.

1.2 Delivery

The VM2000 V11.0A files are supplied via SOLIS.

The following delivery groups are part of the VM2000 V11.0A delivery scope:
VM2000-MON, VM2000-HPV, VM2000-UTIL

The following delivery components are required regardless of the HSI:

SYSFGM.VM2000-MON.110.D	Release Notice German
SYSFGM.VM2000-MON.110.E	Release Notice English
SYSMES.VM2000-MON.110	Message file for VM2000
SYSPAR.VM2000-MON.110.SSP	Parameter file for VM2000-Monitor
SYSRMS.VM2000-MON.110	RMS delivery set for VM2000-Monitor
SYSSDF.VM2000-MON.110	SDF syntax file for VM2000-Monitor
SYSSSC.VM2000-MON.110	Subsystem catalog for VM2000-Monitor
SYSENT.VM2000-UTIL.110	Enter file for VMDUMP
SYSLNK.VM2000-UTIL.110	Load library for VMDUMP
SYSMES.VM2000-UTIL.110	Message file for VMDUMP
SYSPRG.VM2000-UTIL.110	Program file for VMDUMP
SYSRMS.VM2000-UTIL.110	RMS delivery set for VMDUMP
SYSSII.VM2000-MON.110	Structure and installation information
SYSSII.VM2000-UTIL.110	files for installation with IMON

The following delivery components are only required on Server Unit /390 (SU /390):

SYSPRG.VM2000-HPV.110	Program file for VM2000-Hypervisor
SYSLNK.VM2000-MON.110	Load library for VM2000-Monitor
SYSRMS.VM2000-HPV.110	RMS delivery set for VM2000-Hypervisor
SYSSII.VM2000-HPV.110	Structure and installation information file for installation with IMON

The following delivery components are only required on Server Unit x86 (SU x86):

SKMLNK.VM2000-MON.110	Load library for VM2000-Monitor

The current file and volume characteristics are listed in the SOLIS2 delivery cover letter.

1.3   Documentation

The OSD/BC documentation is available in German and English on DVD with the title BS2000 SoftBooks.

The documentation is also available on the internet at http://manuals.ts.fujitsu.com. Manuals which are displayed with an order number can also be ordered in printed form.

The manuals may be supplemented with README files. These contain changes and extensions to the manual of the product concerned. The file names are made up as follows:

SYSRME.VM2000-MON.110.E   (file with English text)

When printing the files, you should specify the CONTR-CHAR=EBCDIC operand in the PRINT-FILE command.

2 Software extensions

Only the extensions and improvements over the previous version VM2000 V10.0A
are described in the following section.

2.1 Persistent VMs

A VM is denoted as a persistent VM if it has a persistent configuration description.
The configuration description of a VM is called the VM definition.
Every BS2000 VM on a server unit of a SE server has a VM definition that is
saved on an internal system disk of the SE server. The VM definition is either ex-
plicitly created when the VM is initialized or explicitly created via the new VM2000
command CREATE-VM-DEFINITION.
The VM definition of a persistent VM is also available after a restart of the server
unit or after /DELETE-VM.

2.2 Time slice extension for nucleus lock

In order to alleviate lock conflicts and associated performance losses for a higher
multiprocessor level of a VM a mechanism has been implemented between
BS2000 and the hypervisor, with which an enforced withdrawal of a virtual CPU
from a real CPU (after a time slice end) can only take place if the virtual CPU has
no nucleus lock.

2.3 VM2000 functions in the SE Manager

Fundamental VM2000 functions are also available to SE server administrators via
the SE Manager.

2.4 Command extensions

The following new commands are available for the administration of VM defini-
tions:
- ACTIVATE-VM-DEFINITION: used to activate a VM definition (initialize a VM
  according to its VM definition)
- CREATE-VM-DEFINTION: used to create a persistent VM definition
- DELETE-VM-DEFINITION: used to delete a VM definition
- MODIFY-VM-DEFINITION: used to modify a VM definition
- SHOW-VM-DEFINITION: used to show VM definitions

The following commands have new operands or operand values:
- CREATE-VM, new operand PERSISTENT
- MODIFY-VM-ATTRIBUTES, new operand PERSISTENT
- SHUTDOWN-VM, new operand value *CURRENT

3   Technical information

3.1   Resource requirements

The following memory range is required for operation:

Real address space:	static for the VM2000 Hypervisor as of 4 MB depending on the IO peripherals. Up to 255 MB can be set via the parameter service (SU /390)
	static for the monitor system at least 64 MB (SU /390), 512 MB (SU x86)
	static for the main memory required by the guest systems, at least 512 MB per guest system on SU x86
Virtual address space:	approx. 0.8 MB static (in the monitor system) approx. 0.3 MB dynamic
Static disk storage space:	less than 10 MB
Dynamic disk storage space:	up to 20 MB on the SYSDUMP ID per automatically created VMDUMP

3.2   Software configuration

VM2000 V11.0A is executable in a monitor system BS2000 OSD/BC V10.0
*2   (in the software package OSD/XC V10.0) and BS2000 OSD/BC V11.0
*2   (in the software package OSD/XC V11.0).

The following can be used as guest systems:
BS2000/OSD-BC V8.0 (in the software package OSD/XC V8.5), BS2000/OSD-BC
V9.0 (in the software package OSD/XC V9.5), BS2000 OSD/BC V10.0 (in the
*2   software package OSD/XC V10.0) and BS2000 OSD/BC V11.0 (in the software
*2   package OSD/XC V11.0).

OMNIS or a corresponding DCAM application is required for connection to
$VMCONS.

*2   For an SU300B, VM2000-MON 11.0A requires the optional object correction
*2   A0609771-001 in the monitor system.

3.3   Product installation

The installation of the product VM2000 with the installation monitor IMON is mandatory. You must follow the information concerning installation in the delivery cover letter and in the product documentation.

The necessary inputs and the sequence of the installation are described in the IMON documentation.

3.4   Product use

All activities for VM2000 V11.0A are described in the VM2000 V11.0A manual.

*2   If a monitor system BS2000 OSD/BC V11.0 is in use, the version for VM2000

*2   must be set to V11.0[A] in the parameter service, otherwise default version
*2   V11.5A is selected.

*1   Virtual consoles at a virtual type S-channel must be defined with MODE CNC and
*1   channel number FE on SU /390, if a new generation is required.

Courses for VM2000 V11.0A are offered by Fujitsu Technology Solutions
(http://training.ts.fujitsu.com/).

3.5   Discontinued functions (and those to be discontinued)

The following functions are no longer supported as of this version:

The old VM2000 commands CHANGE-VM-LOGGING-FILE and CONNECT-VM-
CONSOLE have been eliminated.
Old hidden VM2000 commands (SET-VM-ATTRIBUTES, STOP-VM, ATTACH-
and DETACH-VM-DEVICES) are no longer supported.

S servers and SQ servers are no longer supported by VM2000 V11.0A, these
server lines continue to be supported by VM2000 V10.0.

3.6   Incompatibilities

Apart from the following restrictions, VM2000 V11.0A is fully compatible with
VM2000 V10.0A:

The state of all operational virtual CPUs of a VM with the state INIT-ONLY is a uni-
form INIT, in this case the CPU state WAIT is no longer shown on SU /390. The
only exceptions are spare CPUs (OFF) on the SU /390 and blocked CPUs
(BLOCK) on the SU x86.

Modifications to SYSOUT output:
- The column GUEST in SHOW-VM-ATTRIBUTES/-RESOURCES INFOR-
  MATION=*STD is omitted. Only the VERSION is shown (always from
  GUEST=BS2-OSD).
- The memory values are shown in megabytes in the output without the add-on
  "MB".
- In the case of INFORMATION=*MEMORY the output for SU /390 and SU x86
  is standardized as far as possible.
- In the case of INFORMATION=*CONFIGURATION the output of the unneces-
  sary lines "TOTAL MIN MEMORY SIZE" and "PATH-GROUP-ID MODE" is
  suppressed.
- Only the strongest sub-state is shown (in the sequence SEL/GLB/VMA) for the
  main VM state WAIT.

3.7   Restrictions

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3.8   Procedure in the event of errors

If an error occurs, the following error documents are needed for diagnos-
tics:

- A detailed description of the error condition, indicating whether and how the error
  can be reproduced

- The error must be reported to the appropriate service provider.
  A PERLE error report will be opened for Second Level Support.

The documents to be created are list in section 7 of the VM2000 V11.0A
manual "Procedure for VM2000 in the event of errors".

4 Hardware requirements

VM2000 V11.0A can be used on all /390 und x86 server units of the SE servers
*3   SE300/SE500/SE700(B).
*3   VM2000 V11.0A is not supported on SE servers SE310/SE710.

All peripheral devices are supported that can be connected to the hardware and
are supported as of BS2000/OSD-BC V8.0.