



BullSequana SA10

Release Note SA10_TS0003

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1 Preface

This document gives information about all changes from the previous version.

It also gives information about restrictions, known problems and the associated workarounds.

Finally it lists the objects delivered in the Technical State and the features of the resources provided on the Resource and Documentation media.

2 Overview

2.1 Operating Systems Versions

2.1.1 VMware ESXi

Please refer to TS001 for ESXi 6.5 (BIOS R10)
 TS0002: ESXi 6.7, 7.0 or higher are in progress (BIOS R21_F02).
 TS0003:
 - ESXi 7.0 or higher are in progress (BIOS R21_F02).
 - ESXi 6.7 is not supported

2.1.2 Linux

RedHat 8.1 certification is in progress.

2.2 New Features and Changes

TS	item	new feature / change
TS0002	server BIOS	BIOS is upgraded to R21_F02 Please refer to the Release Note provided with the BIOS, in the zip file.
TS0002	server BIOS configuration	Added Serial Over LAN configuration (COM1)
TS0002	server BMC FW	FW is upgraded to 12.50.03 Please refer to the Release Note provided with the firmware, in the zip file.
TS0002	Avago/Broadcom SAS 9300-8i	FW is downgraded to 15.00.00.00 for VMware vSAN compatibility
TS0002	Micron 5300 MAX / PRO	new FW - version D3MU_001 provided for drive homogeneity
TS0002	Seagate Savvio 10k	new FW - version C004 provided for drive homogeneity
TS0003	server BIOS configuration	"ErP lot 9" is enabled
TS0003	Components	Added FW for : Broadcom M210TP Mellanox MCX4421A-ACQN

TS0003	Components	for Broadcom components, directory name is prefixed by "broadcom_storage_" or "broadcom_network_" followed by the name of the adapter (previous TS : prefix was "broadcom_" for all the Broadcom adapters)
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3 Known Restrictions and Issues

3.1 BIOS

3.1.1 Serial Over LAN - BIOS configuration file

Parameter "TER000" cannot be used in BIOS configuration file. This parameter is in charge of enabling/disabling the Serial Over LAN feature. Serial Over LAN can still be enabled or disabled through the BIOS menu interface (using the BMC remote console).

3.2 MegaRAID Adapter

3.2.1 Passthrough mode

When using a RAID adapter, this adapter may be preconfigured during the delivery process for RAID or "JBOD" (drive passthrough).

Without any configuration, no RAID volume is configured, and the JBOD mode is not enable.

Please refer to [storcli64 manual](#) for setting MegaRAID adapter in passthrough mode.

3.3 SAS 9300-8i

3.3.1 sas3flash P11 for ESXi

For ESXi 7.0U1, sas3flash P11 must be used for FW upgrade.

Latest release (sas3flash P16) cannot be used for FW upgrade from ESXi 7.0U1.

3.3.2 FW 15.00.00.00

For VMware vSAN 7.0U1 compatibility, LSI 9300-8i firmware is currently restricted to release 15.00.00.00 provided by package P15. This package is currently applied to the HBA for the current Technical Set.

9300-8i installed firmware may be higher than 15.00.00.00, and NVdata may have to be erased before the downgrade operation. In such case, trying to install the 15.00.00.00 FW fails, and you can see following error message in sas3flash output:

ERROR: Cannot downgrade NVDATA version

For being able to install FW 15.00.00.00, NVdata region must be previously erased. See next section.

3.3.3 Erasing 9300-8i flash regions

For erasing the NVdata region, sas3flash has to be used with the following command :

```
sas3flash -c 0 -o -e 6
```

"-c 0" flag is used to send the erase command to the first adapter. You have to set it according to the adapter ("-c" 1 for the second adapter, "-c" 2 for the third adapter ...)

"-o -e 6" flag is used to erase most of the adapter flash memory, except the manufacturing data (WWN, S/N, ...). This operation will also erase the BIOS/UEFI option ROM ("boot service") so the system won't be able to boot on drives managed by the HBA. However, at boot, the HBA initialization will be faster. As boot on drives managed by the 9300-8i HBA is not an expected feature for this system, installation of an option ROM (UEFI or BIOS) is not required.

Erasing the NVdata (and other flash regions) with sas3flash is not supported by all the operating systems :

- OK for msdos and UEFI
- KO for Windows and ESXi

When the NVdata has been erased, FW 15.00.00.00 can be applied.

Note :

If boot on HBA device is required, please use the BIOS/UEFI option ROM available from Avago web site. BIOS/UEFI option ROM can be installed but won't be supported by this Technical Set.

Boot w/o BIOS/UEFI option ROM should be faster (At boot time, BIOS is not looking for a boot device connected to the HBA).

3.4 Settings and Tuning

Tuning tips are given by AMD and VMware. Please refer to the links and details in the following subsections.

3.4.1 AMD

Please refer to AMD guides :

- Memory Population Guidelines for AMD EPYC 7002 Series Processors: [56502](#)
- Linux Network Tuning Guide for AMD EPYC 7002 Series Processors: [56739](#)
- Workload Tuning Guide for AMD EPYC 7002 Series Processors: [56745](#)
- VMware Network Tuning Guide for AMD EPYC 7002 Series Processors: [56763](#)
- VMware vSphere Tuning Guide for AMD EPYC 7002 Series Processors: [56779](#)

From this document :

- Numa.LocalityWeightActionAffinity has to be changed from 130 (default) to 0
- Numa.PreferHT has to be changed from 0 (default) to 1

3.4.2 VMware

please refer to VMware Knowledge Base :

- LINT1/NMI when using VPMC or vmkstats features on an AMD EPYC 7002 processor: [KB71314](#)

3.4.3 RedHat

from <https://access.redhat.com/support/policy/amd> :

- RHEL7 : required release for AMD EPYC 7002 processors is RHEL 7.6.6
- RHEL8 : required release for AMD EPYC 7002 processors is RHEL 8.0.2

previous RHEL releases are not supported

3.5 BMC account - password reset

On some servers, the password of the BMC "admin" account has been reset to default (factory). Please keep the factory password (if any) before applying FW 12.50.03. The password can be found on a label on the side of the server.
Note : factory password is the motherboard serial number.

3.6 Drives FW upgrade

3.6.1 Seagate 10.5kRPM SAS HDD

for Seagate 10.5Krpm HDD , use SeaChest utilities from Seagate for drive upgrade.

3.6.2 Micron 5300 Max/Pro SATA SSD

for Micron 5300 Max and Pro SSD, use msecli utility from Micron.

3.7 ESXi and vSAN - Drives and Adapters FW

PCIe Adapter
please refer to section 7.1.

Drives :
Please refer to section 7.2.

4 BIOS settings

Based on default BIOS configuration, some parameters have to be configured in the following states:

param	new value	default value	comment
FBO001	UEFI	UEFI	Boot mode Select (LEGACY/UEFI)
PCIS003	Enabled	Enabled	PCIe above 4G Decoding
PCIS007	Enabled	Enabled	SR-IOV Support
Rome0039	x2APIC	Auto	Local APIC mode
Rome0059	Auto	Auto	SMT control (core multithreading)
Rome0075	NPS1	NPS1	NUMA nodes per socket
Rome0077	Auto	Auto	Memory interleaving Size
Rome0080	Disabled	Auto	ACPI SRAT L3 Cache As NUMA Domain
Rome0162	Enabled	Disabled	IOMMU
Rome0212	Power Off	Last State	AC Loss Control
Rome0552	Lot 9	Disabled	ErP Lot 9 support
SETUP005	false	true	Quiet Boot
TER001	VT-UTF8	ANSI	Terminal compatibility for SOL

Some parameters given in the BIOS configuration file have same values as the default values => applying the BIOS configuration file will put these settings to the default value without having to reset all the parameters to the default value.

5 Related Links – External tools

PCIe Adapter
please refer to section 7.1.

Drives :
Please refer to section 7.2.

6 Delivery Content

Server Firmware and Configuration files		
Component	File	Release
SA10 Server	BIOS	R21_F02
SA10 Server (BMC)	FW	12.50.03
SA10 Server	BIOS settings	settings 002
SA10 Server	FRU	fru data

Documents		
Ref	Title	Release
86A137FS01	SA10 User Manual	July 2020

FW for PCIe Adapter :
please refer to section 7.1.

FW for Drives :
Please refer to section 7.2.

7 Components references tables

7.1 PCIe adapters

Adapter								Technical Set				Comments
Atos Reference	Type	Adapter Description	Form Factor	Vendor	PCIe bus	Vendor Model	Vendor Reference	ESXi 7.0u1	vSAN 7.0u1	Firmware	vendor support	
CKTA602G-D0TP	Network	2 x 10GbE BASE-T M210TP	OCP 2.0	Avago / Broadcom / Emulex	PCIe gen3 x8	M210TP	BCM957416M4163C	yes	NA	216.0.416.10	M210TP	ASIC BCM57416
CKTA601G-D0TP	Network	2 x 10GbE BASE-T P210TP	HHHL	Avago / Broadcom / Emulex	PCIe gen3 x8	P210TP	BCM957416A4160C	yes	NA	216.0.416.10	P210TP	ASIC BCM57416
CKTA601G-CTX4	Network	2 x 10GbE (SFP+/SFP28) - CX4	HHHL	Mellanox	PCIe gen3 x8	MCX4121A-XCAT	MCX4121A-XCAT	yes	NA	14.27.1016	MCX4121A-XCAT	
CKTA602G-CTX4	Network	2 x 10/25GbE (SFP+/SFP28) - CX4	HHHL	Mellanox	PCIe gen3 x8	MCX4121A-ACAT	MCX4121A-ACAT	yes	NA	14.27.1016	MCX4121A-ACAT	
CKTA601G-D2X4	Network	2 x 10/25GbE (SFP+/SFP28) - CX4 - OCP	OCP 2.0	Mellanox	PCIe gen3 x8	MCX4421A-ACQN	MCX4421A-ACQN	yes	NA	14.27.1016	MCX4421A-ACQN	
CKTA605G-CTX5	Network	2 x 100GbE (QSFP28) - CX5	HHHL	Mellanox	PCIe gen4 x16	MCX516A-CDAT	MCX516A-CDAT	yes	NA	16.27.1016	MCX516A-CDAT	
CKTIN208G-9361	Storage	MegaRAID 9361-8i 2GB	HHHL	Avago / Broadcom / LSI	PCIe gen3 x8	MegaRAID 9361-8i 2Gb	05-25420-17	yes	yes	4.680.00-8554	9361-8i	
CKTIN108G-9480	Storage	MegaRAID 9480-8i8e 4GB	HHHL	Avago / Broadcom / LSI			05-50031-00	Not yet Available				
CKTIN108G-9460	Storage	MegaRAID 9460-16i 4GB	HHHL	Avago / Broadcom / LSI			05-50011-00	Not yet Available				
CKTIN118G-9300	Storage	SAS 9300-8i	HHHL	Avago / Broadcom / LSI	PCIe gen3 x8	SAS 9300-8i	H5-25573-00	yes	yes	15.00.00.00	9300-8i	
CKTIN108G-9300	Storage	SAS 9300-8e	HHHL	Avago / Broadcom / LSI		SAS 9300-8e	H5-25460-00	Not yet Available				
CKTIN108G-9400	Storage	SAS 9400-16i	HHHL	Avago / Broadcom / LSI		SAS 9400-16i	05-50008-00	Not yet Available				
CKTA400G-E16D	Storage	16Gb/s F/C DP w/o LPe31002 card	HHHL	Avago / Broadcom / Emulex		LPe31002	LPe31002	Not yet Available				
CKTA400G-E32D	Storage	32Gb/s F/C DP w/o LPe32002 card	HHHL	Avago / Broadcom / Emulex		LPe32002	LPe32002	Not yet Available				

7.2 Drives

Drives									vSAN 7.0u1	Firmware	Vendor URL
MI	Type	Interface	Form Factor	Vendor	Model	Capacity	vendor P/N	Comments			
DSK400G-SDM09	SSD	SATA	2.5"	Micron	5300MAX	960GB	MTFDDAK960TDT-1AW1ZABYY		yes	D3MU001	Micron Support
DSK400G-SDM19	SSD	SATA	2.5"	Micron	5300MAX	1920GB	MTFDDAK1T9TDT-1AW1ZABYY		yes	D3MU001	Micron Support
DSK400G-SD04	SSD	SATA	2.5"	Micron	5300PRO	480GB	MTFDDAK480TDS-1AW1ZABYY		yes	D3MU001	Micron Support
DSK400G-SD09	SSD	SATA	2.5"	Micron	5300PRO	960GB	MTFDDAK960TDS-1AW1ZABYY		yes	D3MU001	Micron Support
DSK400G-SD19	SSD	SATA	2.5"	Micron	5300PRO	1920GB	MTFDDAK1T9TDS-1AW1ZABYY		yes	D3MU001	Micron Support
DSK400G-SD38	SSD	SATA	2.5"	Micron	5300PRO	3840GB	MTFDDAK3T8TDS-1AW1ZABYY		yes	D3MU401	Micron Support
P-DSK401G-SD76	SSD	SATA	2.5"	Micron	5300PRO	7680GB	MTFDDAK7T6TDS-1AW1ZABYY		yes	D3MU801	Micron Support
P-DSK400G-SD76	SSD	SAS	2.5"	Seagate	Nytro	7680GB	XS7680SE70084		yes	Not yet Available	
P-DSK400G-SD150	SSD	SAS	2.5"	Seagate	Nytro	15360GB	XS15360SE70084			Not yet Available	
DSK200G-72S10	HDD	SATA	2.5"	Seagate	Exos 7E2000	1000GB	ST1000NX0303	7.2Krpm		Not yet Available	
DSK200G-72S20	HDD	SATA	2.5"	Seagate	Exos 7E2000	2000GB	ST2000NX0243	7.2Krpm		Not yet Available	
DSK200G-10S12	HDD	SAS	2.5"	Seagate	Exos 10E2400	1200GB	ST1200MM0129	10.5Krpm	yes	C004	seagate Exos 10E2400
DSK200G-10S18	HDD	SAS	2.5"	Seagate	Exos 10E2400	1800GB	ST1800MM0129	10.5Krpm	yes	C004	seagate Exos 10E2400
DSK200G-10S24	HDD	SAS	2.5"	Seagate	Exos 10E2400	2400GB	ST2400MM0129	10.5Krpm	yes	C004	seagate Exos 10E2400