

# Обслуживание и диагностика EMC VNX

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# **1. Возможные проблемы в СХД**

- Сервера
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- Массив

# **2. Методы диагностики ошибок**

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- Анализ логов
- Средства диагностики

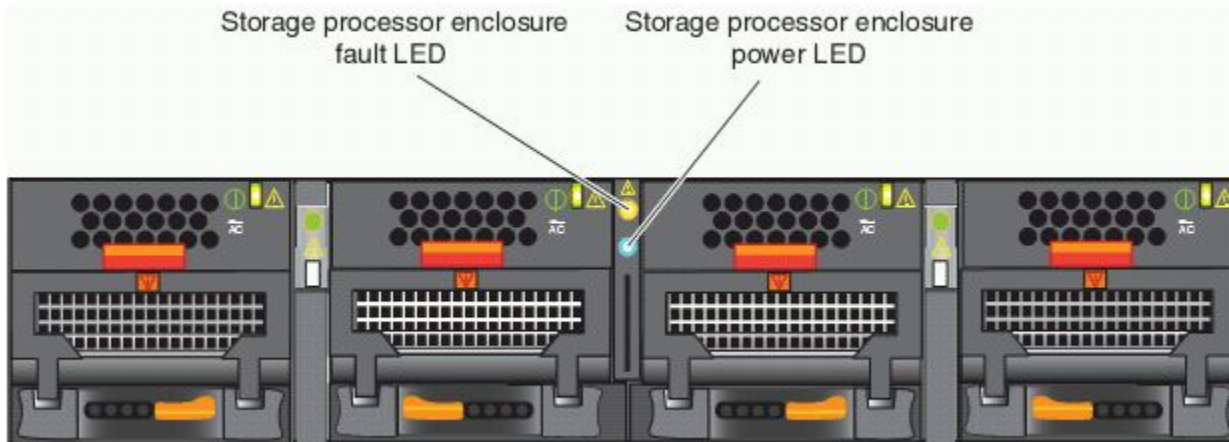
# Возможные проблемы в СХД

Обслуживание и диагностика EMC VNX



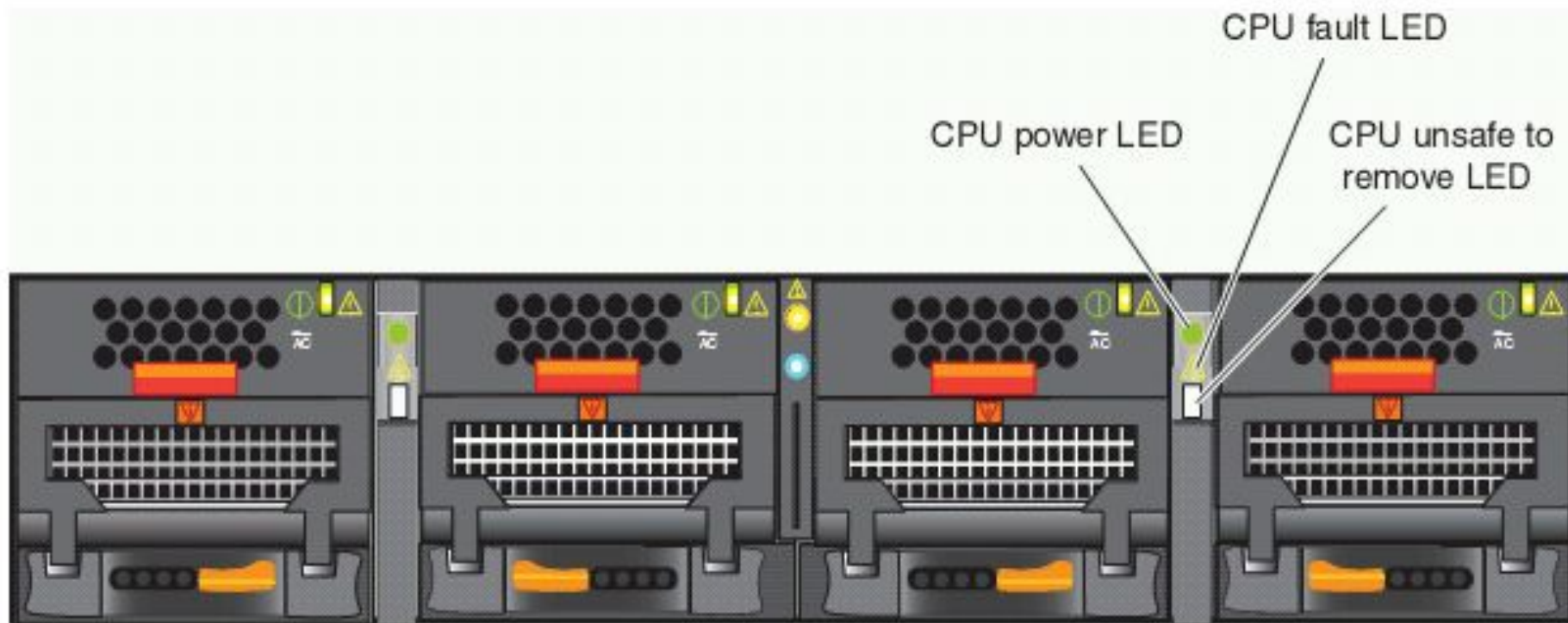
1. Ошибки на серверах
  - сбои HBA
  - настройки ПО
2. Ошибки на коммутаторах
  - Сбои SFP
  - Отказ Блоков Питания
  - ПО
3. Ошибки на массиве
  - системные ошибки
  - настройки ПО

## Индикация VNX5700 (подробнее в «Hardware Information Guide»)



LED	Color	State	Description
Power	Blue	On	Storage processor enclosure is powered up and all the FRUs in the enclosure are operating properly
	—	Off	Storage processor enclosure is powered down.
Fault	Amber	On	A FRU failed within the enclosure.
	—	Off	Storage processor enclosure operating normally.

## Индикация VNX5700

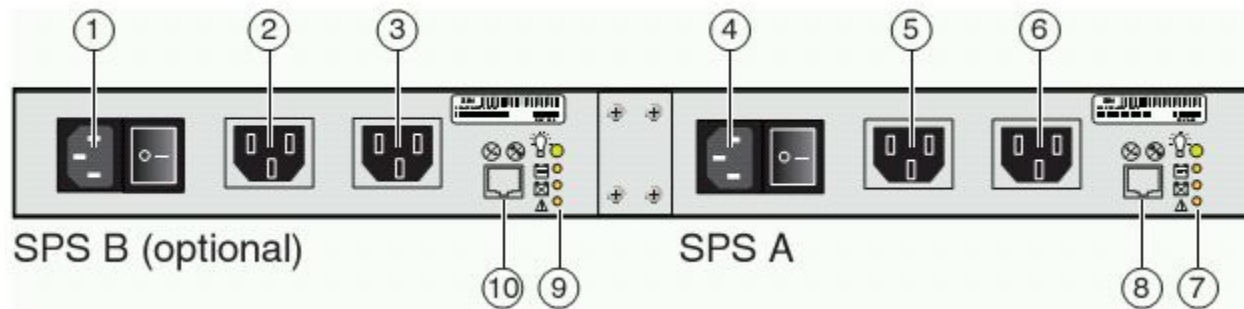


## Индикация VNX5700

LED	Color	State	Description
Power	Green	On	Storage processor is powered up and all FRUs in the Data Mover are operating properly.
	—	Off	Storage processor is powered down.
Fault	Amber	On	Storage processor has faulted.
		Blinking	Storage processor goes through six stages of power up: <ol style="list-style-type: none"> <li>1. Executes a BIOS check, blinking once every 4 seconds</li> <li>2. Executes a POST check, blinking once every second</li> <li>3. Loads the operating system, blinking four times a second</li> </ol>
	Blue (see Note)		<ol style="list-style-type: none"> <li>4. Operating system loaded, blinking once every 4 seconds</li> <li>5. Operating system starting operating system drivers, blinking once every second</li> <li>6. Operating system drivers operating, blinking four times a second</li> </ol>
	—	Off	Storage processor operating normally.
Unsafe-to-remove	White	On	Storage processor is unsafe to remove.
	—	Off	Storage processor is safe to remove.

**Note:** The fault LED changes color from amber to blue when the operating system is loading, see step 4 in the description.

## Индикация VNX (SPS)



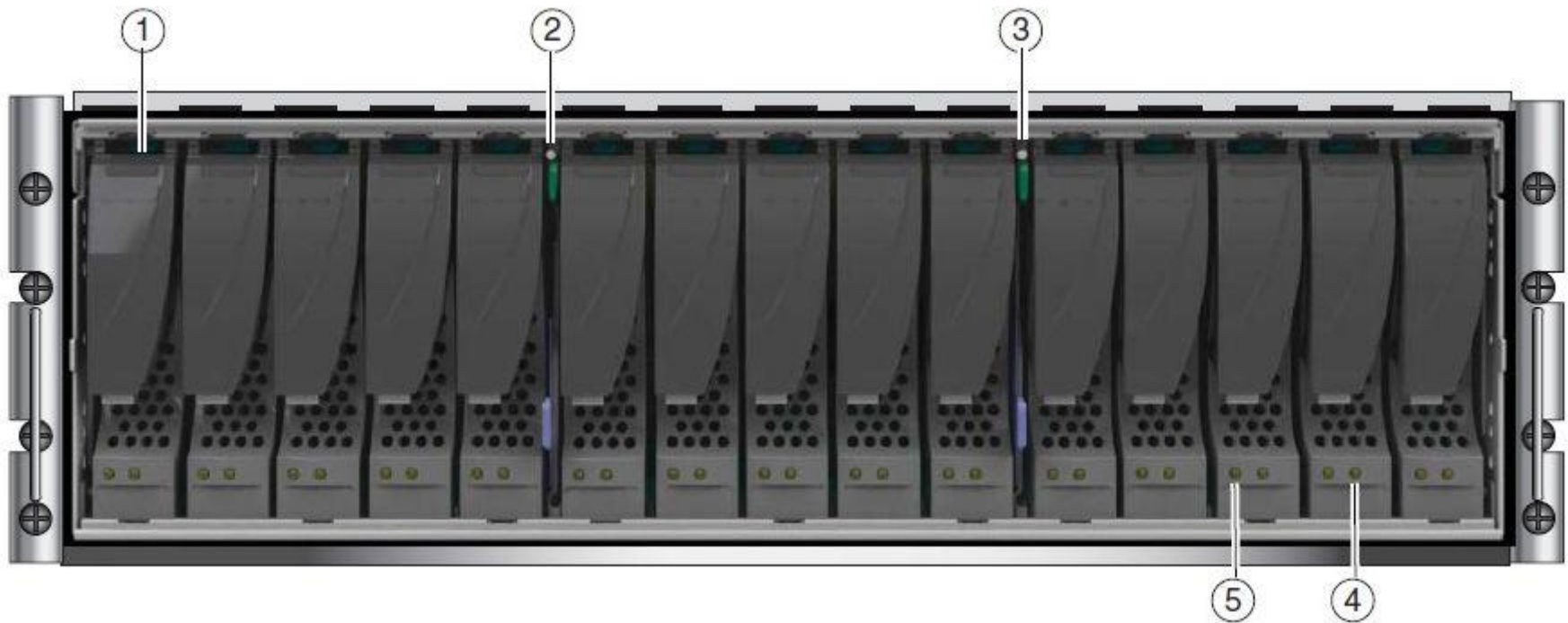
1	SPS B AC power in (recessed plug)	6	Power out socket to LCC A on the 1st DAE (ID 2)
2	Power out socket to LCC B on the 1st DAE (ID 2)	7	Four SPS A status LEDs (green and amber)
3	Power out socket to the SP B power supply on the SPE	8	SPS A to SP A management (RJ-12) connector
4	SPS A AC power in (recessed plug)	9	Four SPS B status LEDs (green and amber)
5	Power out socket to the SP A power supply on the SPE	10	SPS B to SP B management (RJ-12) connector

Led	Color	State	Description
SPS power	Green	On	SPS ready and operating normally; battery fully charged
		Blinking	On/battery charging
	—	Off	Off/disconnected





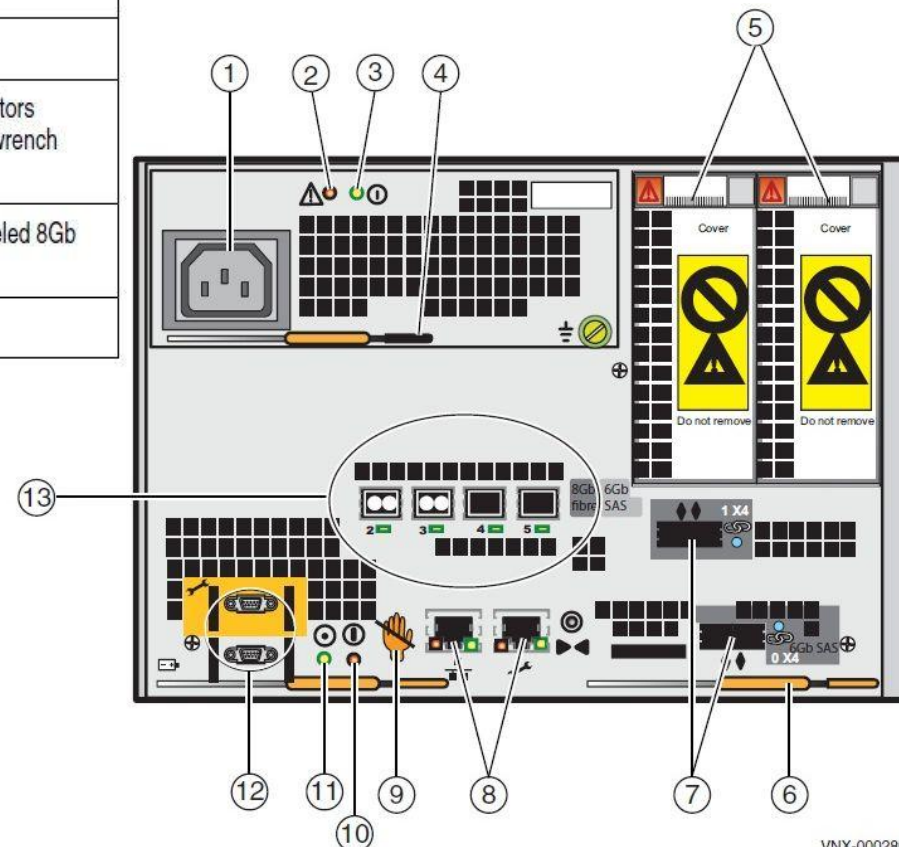
## Индикация VNX5300



1	3.5-inch 6-Gb/s SAS drives or 6-Gb/s NL-SAS disk drives	4	Disk drive fault LED (amber)
2	DPE fault LED (amber)	5	Disk drive on/activity LED (green)
3	DPE power on LED (blue)		

## Индикация VNX (SP)

1	AC power in connector (recessed plug)	8	Two RJ-45 (management and service laptop) connectors (labeled with a network management symbol and a wrench symbol, respectively)
2	Power supply fault LED (amber)	9	SP unsafe to remove LED
3	Power supply power on LED (green)	10	SP fault LED (amber)
4	Power supply latch handle	11	SP power on LED (green)
5	Two I/O module slots showing one four-port 8-Gb/s Fibre Channel (FC) I/O module and one four-port 1-Gb/s iSCSI I/O module	12	Two RS-232/EIA (micro DB-9) connectors (labeled with a battery symbol and a wrench symbol, respectively)
6	Two SP latch handles (bottom left and right)	13	Four 8-Gb/s Fibre Channel ports (labeled 8Gb fibre 2, 3, 4, and 5)
7	Two 6-Gb/s SAS ports		



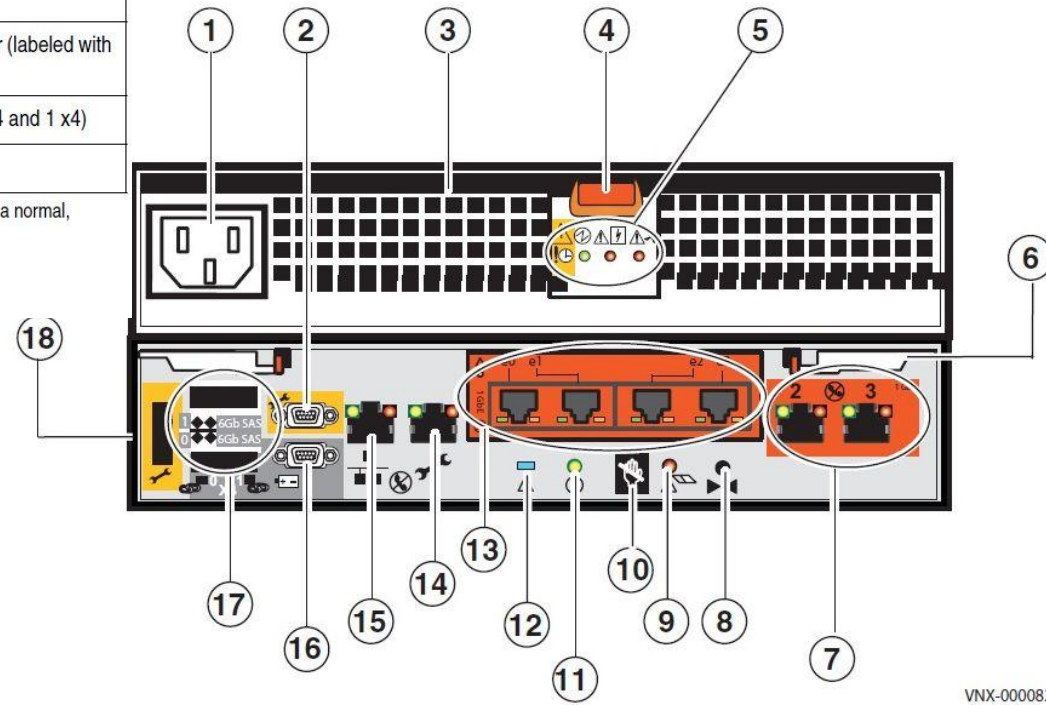
## Индикация VNXe3100

1	AC power in connector (recessed plug)	10	SP unsafe to remove LED (white)
2	RS-232/EIA (micro DB-9) connector (labeled with a wrench symbol)	11	SP power LED (green)
3	Power supply module	12	SP status/fault LED (amber/blue <sup>a</sup> )
4	Power supply latch handle (top, middle)	13	Four-port 1-Gb/s (1000BASE-T) copper Ethernet I/O personality module (labeled e0, e1, e2, and e3)
5	Power supply module status LEDs	14	Service LAN (RJ-45) port (labeled with a wrench symbol)
6	SP latch handle (middle, left and right)	15	Management LAN (RJ-45) port (labeled with a network management symbol)
7	Two 1-GbE iSCSI (host IP connect) ports (labeled 2 and 3)	16	RS-232/EIA (micro DB-9) connector (labeled with a battery symbol)
8	NMI <sup>b</sup> (password reset) push button	17	Two 6-Gb/s SAS ports (labeled 0 x4 and 1 x4)
9	CRU fault LED (amber) <sup>c</sup>	18	SP

a. The SP fault status LED amber or blue, flashing at different rates, depending on current status of SP. In a normal, operational state, it will be off.

b. NMI = non-maskable interrupt

c. CRU fault LED lights amber when an internal CRU is faulted.



# Методы диагностики ошибок

Обслуживание и диагностика EMC VNX



## Виды логов массива EMC VNX

### SPCollect

Требуется для всестороннего анализа утилитой CAP и дает полную картину всего происходящего на массиве, включая логи конфигурации, очевидные проблемы в графическом виде

### Event Log (в Unisphere)

Последовательный список событий на массиве

# Методы диагностики ошибок

## Event Log (в Unisphere)

EMC Unisphere

Pool LUN Search... Advanced Search

Dashboard System Storage Hosts Data Protection Settings Support

VNX5300T > System > Monitoring and Alerts > SP Event Logs

SP Event Logs

- Show SP A Event Log
- Show SP B Event Log
- Open Events File

VNX5300T - SPA - Events

Current SP Date and Time: 2011-10-22 23:04

Line	Date	Time	Event Code	Description	Storage Syst...	Device	SP	Host
16	2011-10-22	22					N/A	SPA
17	2011-10-22	22					N/A	SPA
18	2011-10-22	22					N/A	SPA
19	2011-10-22	22					N/A	SPA
20	2011-10-22	22					N/A	SPA
21	2011-10-22	22					N/A	SPA
22	2011-10-22	22					N/A	SPA
23	2011-10-22	22					N/A	SPA
24	2011-10-22	22					N/A	SPA
25	2011-10-22	22					N/A	SPA
26	2011-10-22	22					N/A	SPA
27	2011-10-22	22					N/A	SPA
28	2011-10-22	22					N/A	SPA
29	2011-10-22	22					N/A	SPA
30	2011-10-22	22					N/A	SPA
31	2011-10-22	22					N/A	SPA
32	2011-10-22	22					N/A	SPA
33	2011-10-22	22					N/A	SPA
34	2011-10-22	22					N/A	SPA
35	2011-10-22	22					N/A	SPA
36	2011-10-22	22					N/A	SPA
37	2011-10-22	22					N/A	SPA
38	2011-10-22	22					N/A	SPA
39	2011-10-22	22					N/A	SPA
40	2011-10-22	22					N/A	SPA
41	2011-10-22	22:46:05	0x4600	'lun' called by...	CKM0011230...	N/A	N/A	SPA
42	2011-10-22	22:46:01	0x7208	There are no ...	CKM0011230...	N/A	N/A	SPA
43	2011-10-22	22:45:50	0x2086	Unable to rea...	N/A	N/A	N/A	SPA
44	2011-10-22	22:45:50	0x2006	Able to read ...	N/A	N/A	N/A	SPA

Event Details

Field	Value	Field	Value
Date:	2011-10-22	Type:	Warning
Time:	22:51:23	Category:	N/A
Log:	Application	Sense Key:	N/A
Host:	SPA	Ext Code1:	N/A
Event Code:	0x7208	Ext Code2:	N/A
Storage System:	CKM0011230...	SP:	N/A
Source:	N/A	Device:	N/A

Description:  
There are no available hot spares on the storage system. Creating hot spares is highly recommended. See alerts for details.

<< Previous Next >> OK Help

< > Save... Clear Print... Filter... Cancel Help

Alerts: 16 8 Critical Certificates: 1 User: sysadmin

## Сбор SPCollect с массива из NaviCli

Запустить сбор SPCollect-ов на обоих SP командой:

```
NaviSECCLI.exe -h IP_ADDRESS_SP -user USER -password PASSWORD -Scope 0  
spcollect
```

Подождать минут 10 пока соберутся логи. Посмотреть файлы доступные для скачивания можно следующей командой:

```
NaviSECCLI.exe -h IP_ADDRESS_SP -user USER -password PASSWORD -Scope 0  
managefiles -list
```

Забрать последние SPCollect с обоих SP командой:

```
NaviSECCLI.exe -h IP_ADDRESS_SP -user USER -password PASSWORD -Scope 0  
managefiles -retrieve -path c:\SPCollects -file FILE_NAME.zip
```

В примере файлы загрузятся на локальный компьютер в папку c:\SPCollects

Параметры в командах это:

IP\_ADDRESS\_SP - ip адрес SP

USER - логин пользователя

PASSWORD - пароль пользователя

FILE\_NAME.zip - имя загружаемого файла (можно забрать все файлы указав вместо параметра -file параметр -all)

## Сбор логов с массива VNX в Unisphere (1/2)

The screenshot shows the EMC Unisphere web interface. The 'System' menu item in the top navigation bar is highlighted with a red box and a red number '1'. On the right-hand side, under the 'Diagnostic Files' section, three items are highlighted with red boxes and a red number '2': 'Generate Diagnostic Files - SPA', 'Get Diagnostic Files - SPA', and 'Generate Diagnostic Files - SPB'. The interface also shows sections for Hardware, Monitoring and Alerts, Reports, System Management, Monitoring, Control Station CLI, and Service Tasks.

**Для снятия логов через веб интерфейс подключаемся к системе, авторизуемся и запускаем сбор логов на SPA и SPB - отмечено цифрой 2. После чего необходимо подождать 5-10 минут.**



## Сбор логов с массива VNX в Unisphere (2/2)

The screenshot shows the EMC Unisphere interface for SP A - File Transfer Manager. The main window displays a list of files on the SP. A red box highlights the 'Transfer' button at the bottom, labeled with the number 7. Another red box highlights the 'chassisSerialNumber\_SPA\_date\_time\_spsignature\_data.zip' file in the list, labeled with the number 6. A third red box highlights the 'Destination Directory' field, which contains 'C:\Users\aleontev', labeled with the number 5. A fourth red box highlights the 'Size' column header, labeled with the number 4. A fifth red box highlights the 'Transfer Status' section, labeled with the number 5. A sixth red box highlights the 'Get Diagnostic Files - SPA' link in the right-hand sidebar, labeled with the number 3. A seventh red box highlights the 'Get Diagnostic Files - SPB' link in the right-hand sidebar, labeled with the number 3. The interface also shows a search bar, navigation tabs, and a status bar at the bottom.

**Закладываем в Get Diagnostic Files - отмечено цифрой 3, сортируем по дате - отмечено цифрой 4, выбираем папку куда копировать - отмечено цифрой 5, выбираем файл вида chassisSerialNumber\_SPA\_date\_time\_spsignature\_data.zip - отмечено цифрой 6 и нажимаем Transfer - отмечено цифрой 7. Повторяем все действия для второго SP.**

## Сбор логов с массива VNX через Unisphere Service Manager

The screenshot shows the Unisphere Service Manager interface for a VNX5300EKB system. The 'Diagnostics' tab is selected and highlighted with a red box and the number '1'. Below it, the 'Capture Diagnostic Data' option is highlighted with a red box and the number '2'. The interface also displays system information, connections, reports, and technical advisories.

**System Information**

- Serial Number: CKM00114400196
- Model: VNX5300 (Unified)
- VNX for Block: 05.31.000.5.709
- SP IP: 10.10.10.82, 10.10.10.81, 10.10.10.80
- Control Station IP: 10.10.10.80
- Name: VNX5300EKB

**Connections**

- [Logout of all systems](#)

**Reports**

- [View System Configuration](#)
- [Submit Configuration Report](#)
- [View Repository](#)

**Tools**

- LCC and Power Supply Firmware Status
- Software Maintenance Status
- Online Disk Firmware Installation Status

**Technical Advisories - Diagnostics (CKM00114400196)**

The advisories listed below are related only to system CKM00114400196 and Diagnostics.

Stat.	Description	System Type	Wizards
	VNX Block & Unified: The Verify...	VNX Block	Verify Storage System
	VNX Block & Unified: What are t...	VNX Block	Install I/O modules and/or SFPs...
	VNX Block & Unified: USM wizar...	VNX Block	Install I/O modules and/or SFPs...
	VNX Unified: ETA: Svstem does...	VNX Block	Install I/O modules and/or SFPs...

0 Selected    [Details](#)    [Show all advisories](#)    6 items

Last Refreshed: 2011-12-14 01:31:59

Advisories: 0 New    Certificates: 2    1 Unaccepted    User: sysadmin

**SPCollect-ы сохраняются по следующему пути:**  
**C:\EMC\repository\DiagnosticData\**

# Методы диагностики ошибок

## Сбор логов с массива VNXe

The screenshot displays the EMC Unisphere web interface for a VNXe3100 storage system. The browser address bar shows the IP address 10.10.10.83 and the page title is EMC Unisphere. The navigation menu includes Dashboard, System, Storage, Settings, Hosts, and Support. The breadcrumb trail is VNxe3100 > Settings > Service System, with 'Settings' and 'Service System' highlighted in red and labeled with a red '1'. The 'Service System' page is divided into three main sections: 'System Components', 'Storage System Details', and 'Service Actions'. In the 'System Components' section, 'Storage System' is selected and highlighted in red, labeled with a red '2'. Below it, 'Storage Processor SPA' and 'Storage Processor SPB' are listed. The 'Storage System Details' section shows 'Storage System: VNXe3100 Dual SP', 'Status: Both Storage Processors are running in normal mode.', 'Software Version: 2.1.2.15342', 'Product ID / SN: CKM00111000792', and 'SSH Protocol: Disabled'. The 'Service Actions' section contains a list of actions: 'Collect Service Information', 'Save Configuration', 'Restart Management Software', 'Reinitialize', 'Change Service Password', and 'Enable SSH'. 'Collect Service Information' is highlighted in red and labeled with a red '3'. Below this list is an 'Execute service action' button, which is also highlighted in red and labeled with a red '4'. At the bottom of the page, there is a 'Refresh' button, a checked box for 'Auto refresh every 60 seconds', and a status bar showing 'Name: VNXe3100', 'Alerts: 2', 'User: admin', and 'System Time: 09:32'.

## Сервисные команды VNХе

Подключение консольным кабелем и траблшутинг «VNХе Configuration Utility» (Primus emc264232):

9600 baud, 8 data bits, no parity, 1 stop bit (defaults on most software)

Перевод SP в сервисный режим (выполняется на каждом SP):

```
> svc_rescue_state -s
```

```
> svc_shutdown -r
```

Реинициализация массива выполняется с одного SP:

```
> svc_reinit
```

Реимидж массива:

```
> svc_reimage -r
```

Просмотр текущего статуса компонентов массива:

```
> svc_diag --state=cru
```

Описание остальных сервисных команд в документе:

[300-011-236\\_VNХе Unisphere CLI User Guide.pdf](#)

## Разбор логов

1. CAP2 (Clariion Array Properties)
2. SPLAT (Storage Processor Analyze Tool)

CAP: C:\Temp\ot202\cap\_CK200030700104\_05-05-04\_13-35-51.xml

Sort by: Component

Severity	Component	Issue	Action
Critical	BE Bus 1 Enclosure 0	Faulted; Bus 1 Enclosure 0 Disk 8 : Removed on SP-A	Please Verify
Informational	FBI Report	No FBI data is available.	Obtain FBI data if desired.
Critical	HDA 1_0_14	Hot Spare is in use.	Replace failed disk or call EMC support.
Critical	HDA 1_0_8	HDA is not enabled.	Replace failed disk or call EMC support.
Critical	HealthCheck	HealthCheck failed.	Analyze healthcheck report.
Critical	LUN 1	LUN is faulted.	Verify that EMC support has been contacted.
Warning	LUN 3	Trespassed!	Verify server attachment.
Warning	LUN 500	Trespassed!	Verify server attachment.
Warning	LUN 501	Trespassed!	Verify server attachment.
Warning	Non Resilient Raid Group	Raid Group 237 is bound as disk A single disk failure will cause data loss!!	Please verify that this is desired by the customer!
Critical	SP A	A fault condition (LED) is indicated.	Check array faults and logs in Navisphere (ignore if 'SPS Charging')

E:\Documents and Settings\Administrator\My Documents\Презентация\CAP\cap\_CK200033800028\_05-06-08\_13-10-34.xml doesn't exist. Can not add to report  
Loading C:\Temp\ot202\cap\_CK200030700104\_05-05-04\_13-35-51.xml

SPLAT: mergedlogs.tab

```
File Edit BookMark Mode Filter Colors Help Search
```

A	07/01/03	17:10:25	NDU	71510000	Info: spcollect: Rev: 3.3, @ SPA_data_APM00030300557
B	07/01/03	17:15:18	NDU	71510000	Info: spcollect: Rev: 3.3, @ SPB_data_APM00030300557
A	08/08/03	18:04:24	Reboot	71200002	Compiled at Dec 25 2002.
A	08/08/03	18:04:24	Reboot	71200006	Current (incremented) reboot count is 1.
B	08/08/03	18:04:28	Reboot	71200002	Compiled at Dec 25 2002.
B	08/08/03	18:04:28	Reboot	71200006	Current (incremented) reboot count is 1.
B	08/08/03	18:14:03	Reboot	71200002	Compiled at Dec 25 2002.
B	08/08/03	18:14:03	Reboot	71200006	Current (incremented) reboot count is 3.
A	08/08/03	18:43:02	Reboot	71200002	Compiled at Dec 25 2002.
A	08/08/03	18:43:02	Reboot	71200006	Current (incremented) reboot count is 2.
****: Problem. Starting t trip the Reboot Counter					
B	08/08/03	18:43:07	Reboot	71200002	Compiled at Dec 25 2002.
B	08/08/03	18:43:07	Reboot	71200006	Current (incremented) reboot count is 1.
B	08/08/03	18:46:55	Reboot	71200002	Compiled at Dec 25 2002.
B	08/08/03	18:46:55	Reboot	71200006	Current (incremented) reboot count is 2.
A	08/08/03	19:21:50	DumpManager	41004100	Created Compressed Dump C:\dumps\dump..08-08-2003_19
B	08/08/03	19:27:48	Reboot	71200002	Compiled at Dec 25 2002.
****: Tripped Reboot Counter!!					
B	08/08/03	19:27:48	Reboot	71200006	Current (incremented) reboot count is 3.
B	08/08/03	19:43:10	Save Dump	3e9	The computer has rebooted from a bugcheck. The bugcheck w
B	08/08/03	19:43:51	DumpManager	41004100	Created Compressed Dump C:\dumps\dump..08-08-2003_19
B	08/27/03	21:18:38	NDU	71510000	Info: spcollect: Rev: 3.3, @ SPB_data_APM00030300557
A	08/27/03	21:52:14	NDU	71510000	Info: spcollect: Rev: 3.3, @ SPA_data_APM00030300557
B	01/28/04	14:08:55	SP B	907	Microcode Panic 0 800094 699
A	01/28/04	14:51:15	NDU	71510000	Info: spcollect: Rev: 3.3, @ SPA_data_APM00030300557
B	01/28/04	14:53:42	NDU	71510000	Info: spcollect: Rev: 3.3, @ SPB_data_APM00030300557

Viewing mergedlogs.tab  
Filtering with spcollect.vfilt  
Removing filtering spcollect.vfilt  
Filtering with reboot.vfilt  
Removing filtering reboot.vfilt  
Filtering with dump.vfilt

## SAP2 отчеты

- Issues
- Sp information
- LUN information
- Drive modules
- RAID Groups
- RAID-Group layout
- MetaLUNs
- Host ports
- CRU information
- SAN Copy
- Snap views
- Snap sessions
- Snap clones
- Mirrors (synchronous)
- Mirrors (asynchronous)
- Storage Groups
- NDU software
- Switches
- Analysis
- Virtual Provisioning

## Triiage

Пример запуска из директории с SPCollects:

```
C:\Users\aleontev>d:
```

```
D:\>cd d:\\EMC_incidents\2152
```

```
d:\EMC_incidents\2152>trriage -l -p -f -c
```

```
TRiiAGE                                REV: 26.2.7                            BUILD DATE: 091211
*****
Input specified:      [ triage -l -p -f -c ]
Generating:          [ full ] TRiiAGE Analysis.
Accessing TOOLS in:  [ C:\Tools ]

03/21/2012 00:32:10   Checking directory for SPcollects.
03/21/2012 00:32:10   Extracting SPcollects.
03/21/2012 00:32:12   Extracting enclosure geometry information.
03/21/2012 00:32:12   Merging and annotating SP event logs.
03/21/2012 00:32:13   Merging standard Ktrace logs.
03/21/2012 00:32:14   Scanning event logs for issues.
03/21/2012 00:32:15   Scanning ktrace logs for issues.
03/21/2012 00:32:15   Annotating ktrace log.
03/21/2012 00:32:17   Analyzing Flare checksum data.
03/21/2012 00:32:18   Creating LUN STATUS report (SPA).
03/21/2012 00:32:18   Creating LUN STATUS report (SPB).
03/21/2012 00:32:18   Creating ARRAY SUMMARY report.
03/21/2012 00:32:18   Creating DISK DETAIL report.
03/21/2012 00:32:19   Creating RESUME report.
03/21/2012 00:32:19   Creating SP STATUS report (SPA).
```

## Triiage отчеты

Основной файл отчета: **TRiiAGE\_full\_Analysis.txt**

Полное описание смотреть в файле: C:\Tools\TRiiAGE\_Companion.doc

Полный лог событий в файле: **TRiiAGE\_full\_SPlogs.txt**

```
*****
ARRAY CONFIGURATION INFORMATION [ArrayInfo Script]
*****
Array Name: CK200082700617
Array Serial Number: CK200082700617
Array Model: CX3-40f

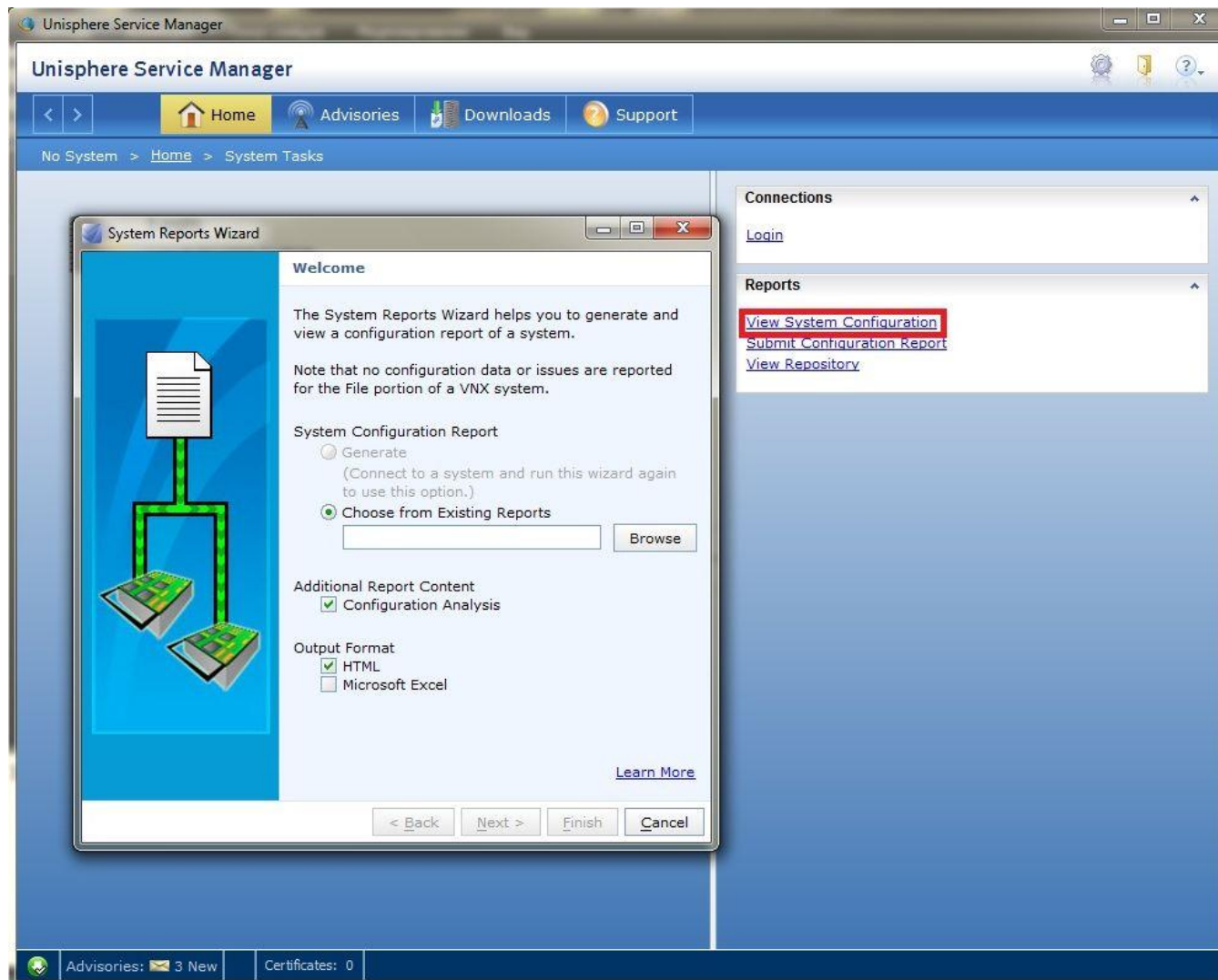
Array Software Revision: SPA----- SPB-----
                        3.26.40.5.016 3.26.40.5.016
SP Serial Number: CF2TK082400347 CF2TK082400343
IP Address: 192.168.0.149 192.168.0.150
PROM Revision: 3.58.00 3.58.00
SP Signature: 2171ba 2170d8
Agent Revision: 6.26.7 (0.87) 6.26.7 (0.87)
SP Memory: 4096 4096
SP Time: 08/29/2011 03:26:56 08/29/2011 03:25:38
Read Cache State: ENABLED ENABLED
Write Cache State: ENABLED ENABLED
Read Cache Size: 1012 1012
Write Cache Size: 2004 2004
Greater WC Availability: N/A N/A
System Fault LED: ON ON
Enclosures: 5 5
Disks: 64 64

Enclosure SPA Type Vers F SPB Type Vers F Notes
Bus 0 Enclosure 0 DAE3P 7.76 DAE3P 7.76 Stiletto 4G DAE
Bus 0 Enclosure 1 DAE3P 7.79 DAE3P 7.79 Stiletto 4G DAE
Bus 1 Enclosure 0 DAE3P 7.79 * DAE3P 7.79 * Stiletto 4G DAE
```



# Методы диагностики ошибок

## Анализ текущей конфигурации массива через USM



## Виды ошибок

### Ошибки массива

- Ошибки дисков
- Ошибки Storage Processor'ов
- Ошибки LCC/BCC
- Ошибки PS и SPS

### Ошибки хостов

- Ошибки HBA
- Ошибки ПО (PowerPath, Naviagent)

### Ошибки коммутаторов

- Ошибки SFP
- Ошибки настройки

## Критические ошибки дисков (emc123689)

A	09/29/11 03:12:38	Bus0 Enc1 Dsk0	820 Soft Media Error [Bad block]	0	0	5
A	09/29/11 03:12:39	Bus0 Enc1 Dsk0	820 Soft Media Error [Bad block]	0	0	5
A	09/29/11 03:12:46	Bus0 Enc1 Dsk0	820 Soft Media Error [Bad block]	0	0	5
A	09/29/11 03:12:48	Bus0 Enc1 Dsk0	820 Soft Media Error [Bad block]	0	0	5
A	09/29/11 03:12:55	Bus0 Enc1 Dsk0	820 Soft Media Error [Bad block]	0	0	5
A	09/29/11 03:12:57	Bus0 Enc1 Dsk0	820 Soft Media Error [Bad block]	0	0	5
A	09/29/11 03:13:03	Bus0 Enc1 Dsk0	820 Soft Media Error [Bad block]	0	0	5
A	09/29/11 03:13:04	Bus0 Enc1 Dsk0	820 Soft Media Error [Bad block]	0	0	5
A	09/29/11 03:13:06	Bus0 Enc1 Dsk0	820 Soft Media Error [Bad block]	0	0	5

- **820 – Soft Media Error**
- **920 – Hard Media Error**
- **801 – Потребовался повтор SCSI операции. Успешно.**
- **901 – Потребовался повтор SCSI операции. Неуспешно.**
- **801 и 901 ошибка создается не диском, а LCC и тоже может говорить о неисправности диска.**
- **803 – Рекомендуется заменить диск.**

## Background Verify (запуск)

```
naviseccli -h <SP_IP_address> setsniffer -rg <RAID_group_number> [-bv]  
[-bvtime <priority>]
```

\*priority - может иметь одно из следующих значений

**ASAP** = 1 minute per gigabyte or faster.

**High** = 5 minutes per gigabyte

**Medium** = 10 minutes per gigabyte

**Low** = 15 minutes per gigabyte

Вместо **-rg** можно просто указать ID конкретного луна или ключ **-all**

Н-р: **naviseccli -user admin -password 123456 -scope 0 -h 192.168.3.207  
setsniffer 3 -bv -bvtime medium**

В примере будет выполнен BV для луна, имеющего ID **3** на массиве.

## Background Verify (проверка статуса)

Проверить статус процесса можно командой:

```
naviseccli -user USERNAME -password PASSWORD -scope 0 -h  
IP_ADDRESS getsniffer -rg
```

Н-п: **naviseccli -user admin -password P@ssw0rd -scope 0 -h 10.10.10.45  
getsniffer -rg 1**

Ничего не происходит

Идет BV

Currently Running Full Unit Verify

---

```
Verify State: Idle  
Percent Complete: 0  
Corrected Uncorrectable  
Checksum errors 0 0  
Write Stamp errors 0 0  
Time Stamp errors 0 0  
Shed Stamp errors 0 0
```

Currently Running Full Unit Verify

---

```
Verify State: Sniff Running  
Percent Complete: 60  
Corrected Uncorrectable  
Checksum errors 0 0  
Write Stamp errors 0 0  
Time Stamp errors 0 0  
Shed Stamp errors 0 0
```

## E-lab Advisor

Support > Product and Diagnostic Tools > Environment Analysis Tools > E-Lab Advisor

### E-Lab Advisor

Upload

Reports Search

SANsummary

Help

File Upload (Required)



Accepts EMCGrab, EMCReport, Cisco, McData, Brocade, SYMAPI logs and Celerra files

Service Request number

Project Name

Site Name

CCA5  send to CCA5 server

CCA Party Number

Email Report  to aleontev@ocs.ru

Upload and Create Report(s)

## E-lab Advisor (справка)

E-Lab Advisor

<http://elabadvisor.emc.com/>

Upload

Reports Search

SANsummary

Help

Getting Started

Upload

Upload Summary

Data Collections

Reports Search

SANsummary

FAQ

### Data Collections

All of the following are supported for upload into E-Lab Advisor:

#### Hosts

[EMCgrab](#): TAR.GZ files produced by EMCgrab for the following operating systems: AIX, HP-UX, Linux, Solaris, and Tru64.

[EMCREPORTS](#): ZIP files produced by EMCREPORTS for Windows hosts

#### SAN Switches

Brocade: *supportshow*

Brocade: *supportsave*

Cisco: *show tech-support details*

McData: Connectrix Manager Data Collection

McData: *show all*

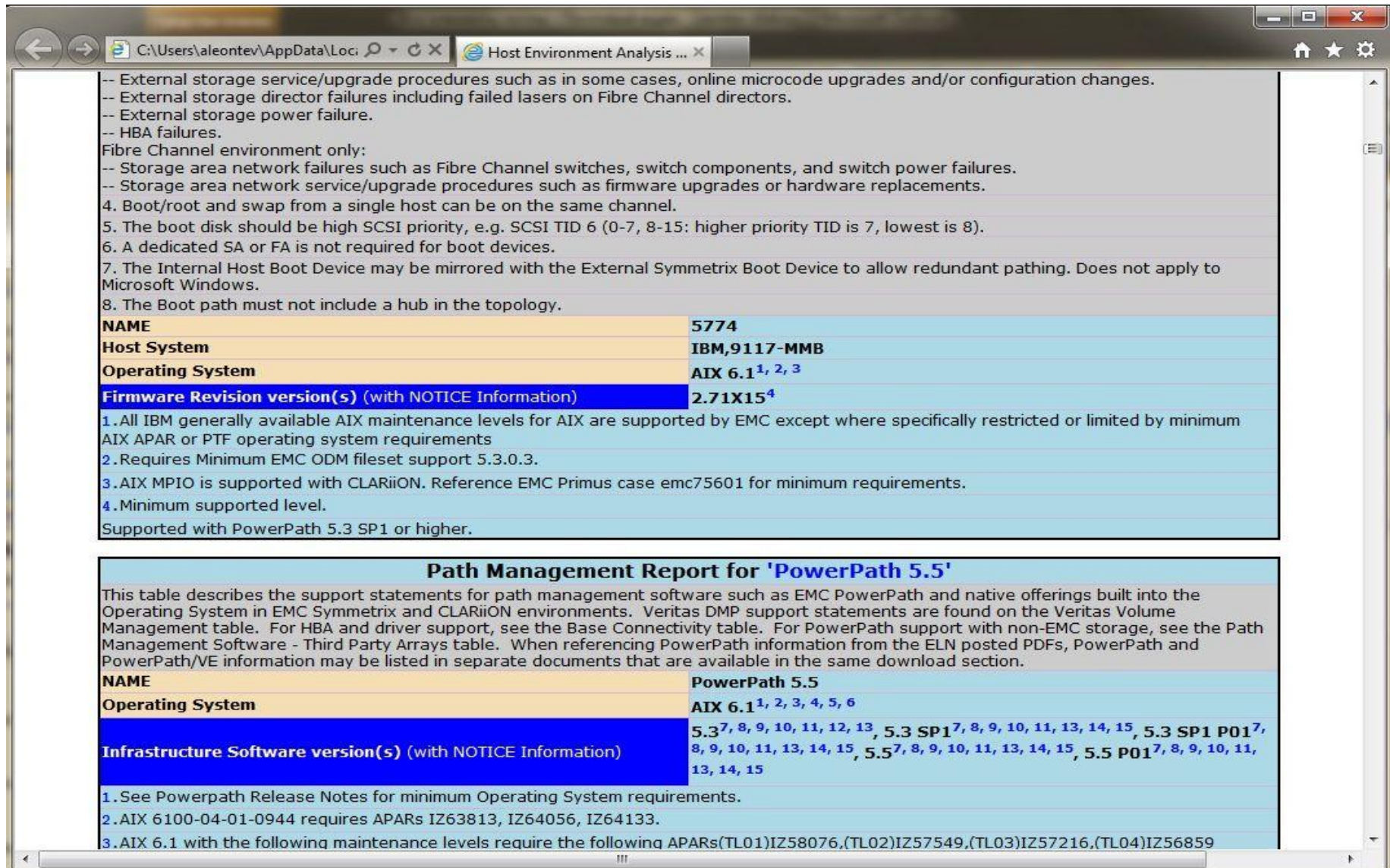
McData: Web interface -> Maintenance -> Product Information

#### Batches

ZIP file containing multiple items from Hosts or SAN Switches as described above.

**NOTE:** Batch files should not contain **folders or directories**

## E-lab Advisor (отчет)



The screenshot shows a browser window displaying a report titled "Host Environment Analysis". The report contains several sections of diagnostic information:

- External storage service/upgrade procedures such as in some cases, online microcode upgrades and/or configuration changes.
- External storage director failures including failed lasers on Fibre Channel directors.
- External storage power failure.
- HBA failures.
- Fibre Channel environment only:
  - Storage area network failures such as Fibre Channel switches, switch components, and switch power failures.
  - Storage area network service/upgrade procedures such as firmware upgrades or hardware replacements.
- 4. Boot/root and swap from a single host can be on the same channel.
- 5. The boot disk should be high SCSI priority, e.g. SCSI TID 6 (0-7, 8-15: higher priority TID is 7, lowest is 8).
- 6. A dedicated SA or FA is not required for boot devices.
- 7. The Internal Host Boot Device may be mirrored with the External Symmetrix Boot Device to allow redundant pathing. Does not apply to Microsoft Windows.
- 8. The Boot path must not include a hub in the topology.

<b>NAME</b>	5774
<b>Host System</b>	IBM,9117-MMB
<b>Operating System</b>	AIX 6.1 <sup>1, 2, 3</sup>
<b>Firmware Revision version(s) (with NOTICE Information)</b>	2.71X15 <sup>4</sup>

- All IBM generally available AIX maintenance levels for AIX are supported by EMC except where specifically restricted or limited by minimum AIX APAR or PTF operating system requirements
- Requires Minimum EMC ODM fileset support 5.3.0.3.
- AIX MPIO is supported with CLARiiON. Reference EMC Primus case emc75601 for minimum requirements.
- Minimum supported level.  
Supported with PowerPath 5.3 SP1 or higher.

### Path Management Report for 'PowerPath 5.5'

This table describes the support statements for path management software such as EMC PowerPath and native offerings built into the Operating System in EMC Symmetrix and CLARiiON environments. Veritas DMP support statements are found on the Veritas Volume Management table. For HBA and driver support, see the Base Connectivity table. For PowerPath support with non-EMC storage, see the Path Management Software - Third Party Arrays table. When referencing PowerPath information from the ELN posted PDFs, PowerPath and PowerPath/VE information may be listed in separate documents that are available in the same download section.

<b>NAME</b>	PowerPath 5.5
<b>Operating System</b>	AIX 6.1 <sup>1, 2, 3, 4, 5, 6</sup>
<b>Infrastructure Software version(s) (with NOTICE Information)</b>	5.3 <sup>7, 8, 9, 10, 11, 12, 13</sup> , 5.3 SP1 <sup>7, 8, 9, 10, 11, 13, 14, 15</sup> , 5.3 SP1 P01 <sup>7, 8, 9, 10, 11, 13, 14, 15</sup> , 5.5 <sup>7, 8, 9, 10, 11, 13, 14, 15</sup> , 5.5 P01 <sup>7, 8, 9, 10, 11, 13, 14, 15</sup>

- See Powerpath Release Notes for minimum Operating System requirements.
- AIX 6100-04-01-0944 requires APARs IZ63813, IZ64056, IZ64133.
- AIX 6.1 with the following maintenance levels require the following APARs:(TL01)IZ58076,(TL02)IZ57549,(TL03)IZ57216,(TL04)IZ56859



**Спасибо за внимание!**

