

Linux on Z and LinuxONE



Kernel Messages on SUSE Linux Enterprise Server 12 SP4

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Note

Before using this document, be sure to read the information in “Notices” on page 143.

This edition applies to SUSE Linux Enterprise Server 12 SP4 and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this publication

This message reference document contains the messages that are issued by IBM Z[®] specific Linux kernel modules on SUSE Linux Enterprise Server 12 SP4.

On SUSE Linux Enterprise Server 12 SP4, these messages are issued with message numbers, which consist of a module identifier, a dot, and six hexadecimal digits. In this message reference the messages are grouped by the issuing module and listed in descending sort order.

Reasonable effort has been made to capture all kernel messages that are issued with message numbers on SUSE Linux Enterprise Server 12 SP4. For message numbers that are not included in this publication, see the kernel messages reference at www.ibm.com/support/knowledgecenter/linuxonibm/com.ibm.linux.l0kmsg.doc/l0km_plugin_top.html.

You can find the newest version of this publication on IBM[®] Knowledge Center at www.ibm.com/support/knowledgecenter/linuxonibm/liaaf/lnz_r_suse.html

Other relevant Linux on IBM Z publications

Go to IBM Knowledge Center or to developerWorks[®] for Linux on IBM Z publications about SUSE Linux Enterprise Server 12 SP4.

You can find the latest versions of these publications on IBM Knowledge Center at www.ibm.com/support/knowledgecenter/linuxonibm/liaaf/lnz_r_suse.html or on developerWorks at www.ibm.com/developerworks/linux/linux390/documentation_suse.html

- *Device Drivers, Features, and Commands on SUSE Linux Enterprise Server 12 SP4*, SC34-2745
- *Device Drivers, Features, and Commands on SUSE Linux Enterprise Server 12 SP4 as a KVM Guest*, SC34-2756
- *Using the Dump Tools on SUSE Linux Enterprise Server 12 SP1*, SC34-2746

For each of the following publications, you can find the version that most closely reflects SUSE Linux Enterprise Server 12 SP4:

- *How to use FC-attached SCSI devices with Linux on z Systems[®]*, SC33-8413
- *libica Programmer's Reference*, SC34-2602
- *Exploiting Enterprise PKCS #11 using openCryptoki*, SC34-2713
- *Secure Key Solution with the Common Cryptographic Architecture Application Programmer's Guide*, SC33-8294
- *Linux on z Systems Troubleshooting*, SC34-2612
- *Linux Health Checker User's Guide*, SC34-2609
- *How to Improve Performance with PAV*, SC33-8414
- *How to Set up a Terminal Server Environment on z/VM*, SC34-2596

Chapter 1. Displaying a message man page

This document lists IBM Z specific kernel messages with message identifiers. SUSE Linux Enterprise Server 12 SP4 provides an RPM with a man page for each of these messages.

Before you begin

Ensure that the RPM with the message man pages is installed on your Linux system. This RPM is called `kernel-default-man-<kernel-version>s390x.rpm` and shipped on DVD1.

Procedure

Enter a command of this form, to display a message man page:

```
# man <message_identifier>
```

Example

Enter the following command to display the man page for message `xpram.ab9aa4`:

```
# man xpram.ab9aa4
```

The corresponding man page looks like this:

```
xpram.ab9aa4(9)                                xpram.ab9aa4(9)
Message
  xpram.ab9aa4: %d is not a valid number of XPRAM devices
Severity
  Error
Parameters
  @1: number of partitions
Description
  The number of XPRAM partitions specified for the 'devs' module parameter or with the 'xpram.parts' kernel parameter must be an integer in the range 1 to 32. The XPRAM device driver created a maximum of 32 partitions that are probably not configured as intended.
User action
  If the XPRAM device driver has been compiled as a separate module, unload the module and load it again with a correct value for the 'devs' module parameter. If the XPRAM device driver has been compiled into the kernel, correct the 'xpram.parts' parameter in the kernel parameter line and restart Linux.
LINUX                                Linux Messages                                xpram.ab9aa4(9)
```

Chapter 2. Viewing messages with the IBM Doc Buddy app

You can view documentation for IBM Z specific Linux kernel messages through IBM Doc Buddy, an app for mobile devices.

IBM Doc Buddy is helpful in environments from where the message documentation on the internet is not directly accessible.

Before you begin

Obtain IBM Doc Buddy from Apple App Store or from Google Play. While your device is online, you can display message documentation by entering the IDs for messages of interest in the main search field of the app.

Procedure


Perform the following steps to enable IBM Doc Buddy in offline mode:

1. While your mobile device is online, start IBM Doc Buddy and tap **My Account** in the lower right corner of the main pane.
2. Under **Messages and codes**, tap **Components** to list the available components in alphabetical order.
3. Scroll down to “Linux on Z and LinuxONE” and download the component.
4. Return to the main pane.

Results

You can now display message documentation for Linux on Z and LinuxONE while your mobile device is offline.

Related information:

 <http://ibmdocbuddy.mybluemix.net>

Chapter 3. Summary of prefixes

The messages in this book are grouped by the prefixes used by the modules that issue the message.

aes_s390

Messages with a prefix `aes_s390` are issued by the kernel module that supports the IBM Z hardware-accelerated implementation of the AES cipher algorithms (FIPS-197).

af_iucv

Messages with a prefix `af_iucv` are issued by the kernel module that supports the AF_IUCV address family for communication and addressing with z/VM[®] IUCV.

ap

Messages with a prefix `ap` are issued by the kernel module that supports special processors for cryptographic operations.

apldata

Messages with a prefix `apldata` are issued by the kernel modules that gather kernel performance data and statistics, and export this data to z/VM through APPLDATA monitor records.

bpf_jit

Messages with a prefix `bpf_jit` are issued by the s390 Berkeley Packet Filter (BPF) JIT compiler.

cio

Messages with a prefix `cio` are issued by the kernel module that provides basic I/O functions for channel-attached devices.

cpcmd

Messages with a prefix `cpcmd` are issued by the `cpcmd` kernel function.

cpu

Messages with a prefix `cpu` are issued by the IBM Z specific CPU management functions.

cpum_cf

Messages with a prefix `cpum_cf` are issued by kernel functions that support the z/Architecture[®] CPU-measurement counter facility.

cpum_sf

Messages with a prefix `cpum_sf` are issued by kernel functions that support the z/Architecture CPU-measurement sampling facility.

ctcm

Messages with a prefix `ctcm` are issued by the Channel-to-Channel (CTC) device driver. CTC connections are high-speed point-to-point connections between two operating system instances on IBM Z.

dasd-eckd

Messages with a prefix `dasd-eckd` are issued by the DASD device driver module that handles DASDs with the Extended Count Key Data (ECKD™) format.

dasd-fba

Messages with a prefix `dasd-fba` are issued by the DASD device driver module that handles DASDs with the Fixed Block Access (FBA) format.

dasd

Messages with a prefix `dasd` are issued by the DASD device driver.

dcssblk

Messages with a prefix `dcssblk` are issued by the z/VM discontinuous saved segments (DCSS) device driver. The DCSS device driver provides disk-like fixed block access to z/VM discontinuous saved segments.

diag288_wdt

Messages with a prefix `diag288_wdt` are issued by the `diag288_wdt` kernel module.

extmem

Messages with a prefix `extmem` are issued by the kernel module that provides an interface to the z/VM DCSS management functions.

hmcdrv

Messages with a prefix `hmcdrv` are issued by the `hmcdrv` kernel module that supports the DVD drive of the HMC or SE.

hugetlb

Messages with a prefix `hugetlb` are issued by the support for large memory pages.

hvc_iucv

Messages with a prefix `hvc_iucv` are issued by the z/VM IUCV Hypervisor Console (HVC) device driver. This device driver supports terminal access through the `iucvconn` program to instances of Linux on z/VM.

hypfs

Messages with a prefix hypfs are issued by the S/390[®] hypervisor file system, which provides access to LPAR and z/VM hypervisor data.

iucv

Messages with a prefix iucv are issued by the Inter-User Communication Vehicle (IUCV) device driver. IUCV is a z/VM communication facility that enables a program running in one z/VM guest to communicate with another z/VM guest, or with a control program, or even with itself.

lcs

Messages with a prefix lcs are issued by the LAN channel station device driver. The LCS device driver supports non-QDIO communications through Open Systems Adapters (OSA).

monreader

Messages with a prefix monreader are issued by the z/VM *MONITOR record reader device driver. This device driver enables monitoring software on Linux to access z/VM *MONITOR records, which contain data about z/VM guest virtual machines.

monwriter

Messages with a prefix monwriter are issued by the monitor stream application device driver. Applications can use this device driver to write monitor data in the form of APPLDATA records to the z/VM monitor stream.

netiucv

Messages with a prefix netiucv are issued by the NETIUCV device driver. This network device driver uses IUCV to connect instances of Linux on z/VM, or to connect an instance of Linux on z/VM to another z/VM guest such as a TCP/IP service machine.

numa

Messages with a prefix numa are issued by a kernel function that supports non-uniform memory access (NUMA).

numa_emu

Messages with a prefix numa_emu are issued by a kernel function that emulates non-uniform memory access (NUMA).

os_info

Messages with a prefix os_info are issued by Linux in kdump mode.

perf

Messages with a prefix perf are issued by kernel functions that support the z/Architecture CPU-measurement facility.

prng

Messages with a prefix `prng` are issued by the pseudo-random number device driver.

qeth

Messages with a prefix `qeth` are issued by the `qeth` device driver. The `qeth` device driver supports a multitude of network connections, for example, connections through Open Systems Adapters (OSA), HiperSockets™, guest LANs, and virtual switches.

s390dbf

Messages with a prefix `s390dbf` are issued by the S/390 debug feature.

sclp_cmd

Messages with a prefix `sclp_cmd` are issued in the context of SCLP commands.

sclp_config

Messages with a prefix `sclp_config` are issued by SCLP configuration management events.

scm_block

Messages with a prefix `scm_block` are issued by the storage-class memory (SCM) device driver.

setup

Messages with a prefix “`setup`” are issued when Linux starts.

tape

Messages with a prefix “`tape`” are issued by the channel-attached tape device driver.

tape_34xx

Messages with a prefix `tape_34xx` are issued by the channel-attached tape device driver and relate to an IBM 3480 or IBM 3490 magnetic tape subsystem.

tape_3590

Messages with a prefix `tape_3590` are issued by the channel-attached tape device driver and relate to an IBM 3590 or IBM 3592 magnetic tape subsystem.

time

Messages with a prefix “`time`” are issued by the IBM Z specific time functions.

vmlogrdr

Messages with a prefix `vmlogrdr` are issued by the z/VM recording device driver. With the z/VM recording device driver, an instance of Linux on z/VM can read from the z/VM CP recording services.

vmur

Messages with a prefix `vmur` are issued by the z/VM virtual unit record device driver. This device driver provides Linux with access to z/VM virtual unit record devices like punch card readers, card punches, and line printers.

xpram

Messages with a prefix `xpram` are issued by the XPRAM device driver. This block device driver enables Linux on Z to access expanded storage.

zcrypt

Messages with a prefix `zcrypt` are issued by the cryptographic device driver.

zdump

Messages with a prefix `zdump` are issued by the `zfcpdump` functions.

zfc

Messages with a prefix `zfc` are issued by the SCSI-over-Fibre Channel device driver (`zfc` device driver) for the QDIO-based IBM Z SCSI-over-Fibre Channel adapter. The `zfc` device driver supports Fibre Channel-attached SCSI devices on Linux on Z.

zpci

Messages with a prefix `zpci` are issued by the kernel module that provides PCIe support.

Chapter 4. aes_s390

Messages with a prefix aes_s390 are issued by the kernel module that supports the IBM Z hardware-accelerated implementation of the AES cipher algorithms (FIPS-197).

aes_s390.cb83bb AES hardware acceleration is only available for 128-bit keys

Explanation: The advanced encryption standard (AES) algorithm includes three modes with 128-bit, 192-bit, and 256-bit keys. Your hardware system only provides hardware acceleration for the 128-bit key mode. The aes_s390 module will use the less performant software fallback algorithm for the 192-bit and 256-bit key modes.

User response: None.

Severity: Informational

aes_s390.dc0a3b Allocating AES fallback algorithm <algorithm name> failed

Explanation: The advanced encryption standard (AES) algorithm includes three modes with 128-bit, 192-bit, and 256-bit keys. Your hardware system only provides hardware acceleration for the 128-bit mode. The aes_s390 module failed to allocate a software fallback for the AES modes that are not supported by the hardware. A possible reason for this problem is that the aes_generic module that provides the fallback algorithms is not available.

User response: Use the 128-bit mode only or ensure that the aes_generic module is available and loaded and reload the aes_s390 module.

Severity: Error

aes_s390.e37463 Allocating XTS fallback algorithm <algorithm name> failed

Explanation: The aes_s390 module failed to allocate a software fallback for the AES modes that are not supported by the hardware. A possible reason for this problem is that the aes_generic module that provides the fallback algorithms is not available.

User response: Ensure that the aes_generic module is available and loaded and reload the aes_s390 module.

Severity: Error

Chapter 5. af_iucv

Messages with a prefix af_iucv are issued by the kernel module that supports the AF_IUCV address family for communication and addressing with z/VM IUCV.

af_iucv.5c08c7 Application <application name> on z/VM guest <z/VM user ID> exceeds message limit

Explanation: Messages or packets destined for the application have accumulated and reached the maximum value. The default for the message limit is 65535. You can specify a different limit as the value for MSGLIMIT within the IUCV statement of the z/VM virtual machine on which the application runs.

User response: Ensure that you do not send data faster than the application retrieves them. Ensure that the message limit on the z/VM guest virtual machine on which the application runs is high enough.

Severity: Error

Chapter 6. ap

Messages with a prefix `ap` are issued by the kernel module that supports special processors for cryptographic operations.

ap.2e0ad5 **Registering adapter interrupts for AP device <AP device ID>.<AP queue> failed**

Explanation: The hardware system supports AP adapter interrupts but failed to enable an adapter for interrupts. Possible causes for this error are: i) The AP adapter firmware does not support AP interrupts. ii) An AP adapter firmware update to a firmware level that supports AP adapter interrupts failed. iii) The AP adapter firmware has been successfully updated to a level that supports AP interrupts but the new firmware has not been activated.

User response: Ensure that the firmware on your AP adapters support AP interrupts and that any firmware updates have completed successfully. If necessary, deconfigure your cryptographic adapters and reconfigure them to ensure that any firmware updates become active, then reload the `ap` module. If the `ap` module has been compiled into the kernel, reboot Linux.

Severity: Error

ap.3677f7 **The hardware system does not support AP instructions**

Explanation: The `ap` module addresses AP adapters through AP instructions. The hardware system on which the Linux instance runs does not support AP instructions. The `ap` module cannot detect any AP adapters.

User response: Load the `ap` module only if your Linux instance runs on hardware that supports AP instructions. If the `ap` module has been compiled into the kernel, ignore this message.

Severity: Warning

ap.7564a4 **<AP domain index> is not a valid cryptographic domain**

Explanation: The cryptographic domain specified for the `'domain='` module or kernel parameter must be an integer in the range 0 to 15.

User response: Reload the cryptographic device driver with a correct module parameter. If the device driver has been compiled into the kernel, correct the value in the kernel parameter line and reboot Linux.

Severity: Warning

Chapter 7. appldata

Messages with a prefix `appldata` are issued by the kernel modules that gather kernel performance data and statistics, and export this data to z/VM through APPLDATA monitor records.

appldata.0ae163 Stopping the data collection for
<appldata module> failed with rc=<return code>

Explanation: The specified data collection module used the z/VM diagnose call DIAG 0xDC to stop writing data. z/VM returned an error and the data collection continues.

User response: See the section about DIAGNOSE Code X'DC' in "z/VM CP Programming Services".

Severity: Error

appldata.81e326 Maximum OS record size *<no of bytes>* **exceeds the maximum record size**
<no of bytes>

Explanation: The OS record size grows with the number of CPUs and is adjusted by the `appldata_os` module in response to CPU hotplug events. For more than 110 CPUs the record size would exceed the maximum record size of 4024 bytes that is supported by the z/VM hypervisor. To prevent the maximum supported record size from being exceeded while data collection is in progress, you cannot load the `appldata_os` module on Linux instances that are configured for a maximum of more than 110 CPUs.

User response: If you do not want to collect operating system data, you can ignore this message. If you want to collect operating system data, reconfigure your Linux instance to support less than 110 CPUs.

Severity: Error

appldata.887845 Stopping a faulty OS data collection
failed with rc=<return code>

Explanation: After a CPU hotplug event, the record size for the running operating system data collection is no longer correct. The `appldata_os` module tried to stop the faulty data collection but received an error from the z/VM diagnose call DIAG 0xDC. Any data collected with the current record size might be faulty.

User response: Try to restart `appldata_os` monitoring. For information about stopping and starting data collections see "Device Drivers, Features, and Commands". For information about the return codes see the section about DIAGNOSE Code X'DC' in "z/VM CP Programming Services".

Severity: Error

appldata.ccf8e3 Starting a new OS data collection
failed with rc=<return code>

Explanation: After a CPU hotplug event, the record size for the running operating system data collection is no longer correct. The `appldata_os` module tried to start a new data collection with the correct record size but received an error from the z/VM diagnose call DIAG 0xDC. Any data collected with the current record size might be faulty.

User response: Start a new data collection with the `appldata_os` module. For information about starting data collections see "Device Drivers, Features, and Commands". For information about the return codes see the section about DIAGNOSE Code X'DC' in "z/VM CP Programming Services".

Severity: Error

appldata.f26e28 Starting the data collection for
<appldata module> failed with rc=<return code>

Explanation: The specified data collection module used the z/VM diagnose call DIAG 0xDC to start writing data. z/VM returned an error and the data collection could not start. If the return code is 5, your z/VM guest virtual machine is not authorized to write data records.

User response: If the return code is 5, ensure that your z/VM guest virtual machine's entry in the z/VM directory includes the OPTION APPLMON statement. For other return codes see the section about DIAGNOSE Code X'DC' in "z/VM CP Programming Services".

Severity: Error

Chapter 8. bpf_jit

Messages with a prefix `bpf_jit` are issued by the s390 Berkeley Packet Filter (BPF) JIT compiler.

bpf_jit.7b9347 Unknown opcode *<Instruction opcode>*

Explanation: The BPF JIT compiler has found an unknown instruction in the BPF program and therefore stops the compilation. As a fallback, the interpreter is used.

User response: Report this problem and the error message to your support organization.

Severity: Error

Chapter 9. cio

Messages with a prefix cio are issued by the kernel module that provides basic I/O functions for channel-attached devices.

cio.0e0832 *<device number>*: **No interrupt was received within *<timeout value>* (CS=*<channel status>*, DS=*<device status>*, CHPID=*<channel subsystem ID>*,*<CHPID>*)**

Explanation: Internal I/Os are used by the common I/O layer to ensure that devices are operational and accessible. The common I/O layer did not receive an interrupt for an internal I/O during the specified timeout period. As a result, the device might assume a state that makes the device unusable to Linux until the problem is resolved.

User response: Make sure that the device is working correctly and try the action again.

Severity: Warning

cio.0f6270 **No CCW console was found**

Explanation: Linux did not find the expected CCW console and tries to use an alternative console. A possible reason why the console was not found is that the console has been specified in the cio_ignore list.

User response: None, if an appropriate alternative console has been found, and you want to use this alternative console. If you want to use the CCW console, ensure that is not specified in the cio_ignore list, explicitly specify the console with the 'condev=' kernel parameter, and reboot Linux.

Severity: Warning

cio.1c5e61 *<Device bus-ID>*: **The device entered boxed state while being set offline**

Explanation: While the device was set offline, it did not respond in time or it was reserved by another operating system. The device is now inactive, but setting it online again might fail.

User response: None.

Severity: Warning

cio.2943d5 **Processing *<configuration change>* for channel path *<channel subsystem ID>*,*<CHPID>***

Explanation: A configuration change is in progress for the given channel path.

User response: None.

Severity: Notice

cio.2b995e *<device bus-ID>* **is not a valid device for the cio_ignore kernel parameter**

Explanation: The device specification for the cio_ignore kernel parameter is syntactically incorrect or specifies an unknown device. This device is not excluded from being sensed and analyzed.

User response: Correct your device specification in the kernel parameter line to have the device excluded when you next reboot Linux. You can write the correct device specification to /proc/cio_ignore to add the device to the list of devices to be excluded. This does not immediately make the device inaccessible but the device is ignored if it disappears and later reappears.

Severity: Warning

cio.390dcf *<Device bus-ID>*: **The device stopped operating while being set offline**

Explanation: While the device was set offline, it was not present or not operational. The device is now inactive, but setting it online again might fail.

User response: None.

Severity: Warning

cio.582533 **Logging for subchannel 0.*<subchannel set ID>*,*<subchannel number>* was triggered**

Explanation: Model-dependent logs and traces may be captured for the specified subchannel.

User response: None.

Severity: Notice

cio.5b32ec **0.*<from subchannel set ID>*,*<from device number>* to 0.*<to subchannel set ID>*,*<to device number>* is not a valid range for cio_ignore**

Explanation: The device range specified for the cio_ignore kernel parameter is syntactically incorrect. No devices specified with this range are excluded from being sensed and analyzed.

User response: Correct your range specification in the kernel parameter line to have the range of devices excluded when you next reboot Linux. You can write the correct range specification to /proc/cio_ignore to

add the range of devices to the list of devices to be excluded. This does not immediately make the devices in the range inaccessible but any of these devices are ignored if they disappear and later reappear.

Severity: Warning

cio.7a35c2 **Logging for subchannel 0.<subchannel set ID>.<subchannel number> failed with errno=<errno>**

Explanation: Capturing model-dependent logs and traces could not be triggered for the specified subchannel.

User response: See the errno man page to find out what caused the problem.

Severity: Warning

cio.8665f1 **The CSS device driver initialization failed with errno=<Return code>**

Explanation: The channel subsystem bus could not be established.

User response: See the errno man page to find out what caused the problem.

Severity: Alert

cio.8e4d4c **<Device bus-ID>: Setting the device online failed because it is boxed**

Explanation: Initialization of a device did not complete because it did not respond in time or it was reserved by another operating system.

User response: Make sure that the device is working correctly, then try again to set it online. For devices that support the reserve/release mechanism (for example DASDs), you can try to override the reservation of the other system by writing 'force' to the 'online' sysfs attribute of the affected device.

Severity: Warning

cio.96a34f **<Device bus-ID>: Setting the device online failed because it is not operational**

Explanation: Initialization of a device did not complete because it is not present or not operational.

User response: Make sure that the device is present and working correctly, then try again to set it online.

Severity: Warning

cio.b5d5f6 **Channel measurement facility initialized using format <format> (mode <mode>)**

Explanation: The channel measurement facility has been initialized successfully. Format 'extended' should be used for z990 and later mainframe systems. Format

'basic' is intended for earlier mainframes. Mode 'autodetected' means that the format has been set automatically. Mode 'parameter' means that the format has been set according to the 'format=' kernel parameter.

User response: None.

Severity: Informational

cio.d25039 **Link stopped: RS=<reporting source> RSID=<reporting source ID> IC=<incident code> IUPARAMS=<incident unit parameters> IUNODEID=<incident unit node ID> AUPARAMS=<attached unit parameters> AUNODEID=<attached unit node ID>**

Explanation: A hardware error has occurred. A unit at one end of an interface link has detected a failure in the link or in one of the units attached to the link. As a result, data transfer across the link has stopped. In the message text, the node IDs of involved units are represented in the following format: TTTTTT/MDL,MMM.PPSSSSSSSSSS,XXXX where TTTTTT refers to the machine type, MDL the model number, MMM the manufacturer, PP the manufacturing plant, SSSSSSSSSSS the unit sequence number and XXXX the machine type-dependent physical interface number. If no data is available for the unit parameters or node ID field, "n/a" is used instead.

User response: Report the problem to your support organization.

Severity: Error

cio.e99758 **Link degraded: RS=<reporting source> RSID=<reporting source ID> IC=<incident code> IUPARAMS=<incident unit parameters> IUNODEID=<incident unit node ID> AUPARAMS=<attached unit parameters> AUNODEID=<attached unit node ID>**

Explanation: A hardware error has occurred. A unit at one end of an interface link has detected a failure in the link or in one of the units attached to the link. As a result, data transfer across the link is degraded. In the message text, the node IDs of involved units are represented in the following format: TTTTTT/MDL,MMM.PPSSSSSSSSSS,XXXX where TTTTTT refers to the machine type, MDL the model number, MMM the manufacturer, PP the manufacturing plant, SSSSSSSSSSS the unit sequence number and XXXX the machine type-dependent physical interface number. If no data is available for the unit parameters or node ID field, "n/a" is used instead.

User response: Report the problem to your support organization.

Severity: Warning

Chapter 10. cpcmd

Messages with a prefix cpcmd are issued by the cpcmd kernel function.

cpcmd.5984fe The cpcmd kernel function failed to allocate a response buffer

Explanation: IPL code, console detection, and device drivers like vmcp or vmlogrdr use the cpcmd kernel function to send commands to the z/VM control program (CP). If a program that uses the cpcmd function does not allocate a contiguous response buffer below 2 GB guest real storage, cpcmd creates a bounce buffer to be used as the response buffer. Because of low memory or memory fragmentation, cpcmd could not create the bounce buffer.

User response: Look for related page allocation failure messages and at the stack trace to find out which program or operation failed. Free some memory and retry the failed operation. Consider allocating more memory to your z/VM guest virtual machine.

Severity: Warning

Chapter 11. cpu

Messages with a prefix `cpu` are issued by the IBM Z specific CPU management functions.

cpu.33a262 *<number of configured CPUs>* **configured CPUs, <number of standby CPUs> standby CPUs**

Explanation: The kernel detected the given number of configured and standby CPUs.

User response: None.

Severity: Informational

cpu.643eaf **The CPU configuration topology of the machine is: <Mag6> <Mag5> <Mag4> <Mag3> <Mag2> <Mag1> / <Mnest>**

Explanation: The first six values of the topology information represent fields `Mag6` to `Mag1` of system-information block (SYSIB) 15.1.2. These fields specify the maximum numbers of topology-list entries (TLE) at successive topology nesting levels. The last value represents the `MNest` value of SYSIB 15.1.2 which specifies the maximum possible nesting that can be configured through dynamic changes. For details see the SYSIB 15.1.2 information in the "Principles of Operation."

User response: None.

Severity: Informational

cpu.e2917c **CPU <CPU number> exceeds the maximum <maximum CPU number> and is excluded from the dump**

Explanation: The Linux kernel is used as a system dumper but it runs on more CPUs than it has been compiled for with the `CONFIG_NR_CPUS` kernel configuration option. The system dump will be created but information on one or more CPUs will be missing.

User response: Update the system dump kernel to a newer version that supports more CPUs or reduce the number of installed CPUs and reproduce the problem that should be analyzed. If you send the system dump that prompted this message to a support organization, be sure to communicate that the dump does not include all CPU information.

Severity: Warning

Chapter 12. cpum_cf

Messages with a prefix cpum_cf are issued by kernel functions that support the z/Architecture CPU-measurement counter facility.

cpum_cf.094d6c Registering the cpum_cf PMU failed with rc=<error code>

Explanation: The device driver could not register the Performance Measurement Unit (PMU) for the CPU-measurement counter facility. A possible cause of this problem is memory constraints.

User response: If the error code is -12 (ENOMEM), consider assigning more memory to your Linux instance.

Severity: Error

cpum_cf.1606b2 Enabling the performance measuring unit failed with rc=<error condition>

Explanation: The device driver failed to enable CPU counter sets with the load counter controls (lcctl) instruction. See the section about lcctl in "The Load-Program-Parameter and the CPU-Measurement Facilities", SA23-2260, for an explanation of the error conditions.

User response: Stop the performance measurement programs and try again.

Severity: Error

cpum_cf.2419af CPU[<cpu number>] MT counter data was lost

Explanation: CPU counter data in the MT-diagnostic counter was lost because of machine internal high-priority activities.

User response: None.

Severity: Warning

cpum_cf.74a342 Registering for CPU-measurement alerts failed with rc=<error code>

Explanation: The device driver could not register to receive CPU-measurement alerts. Alerts make you aware of measurement errors. A possible cause of this problem is memory constraints.

User response: If the error code is -12 (ENOMEM), consider assigning more memory to your Linux instance.

Severity: Error

cpum_cf.a9d681 CPU[<cpu number>] Counter data was lost

Explanation: CPU counter data was lost because of machine internal high-priority activities.

User response: None.

Severity: Error

cpum_cf.db48c1 Disabling the performance measuring unit failed with rc=<error condition>

Explanation: The device driver failed to disable CPU counter sets with the load counter controls (lcctl) instruction. See the section about lcctl in "The Load-Program-Parameter and the CPU-Measurement Facilities", SA23-2260, for an explanation of the error conditions.

User response: Stop the performance measurement programs and try again.

Severity: Error

Chapter 13. cpum_sf

Messages with a prefix cpum_sf are issued by kernel functions that support the z/Architecture CPU-measurement sampling facility.

cpum_sf.13a98c Switching off the sampling facility failed with rc=<error condition>

Explanation: The CPU-measurement sampling facility could not be switched off and continues to run. For details, see LOAD SAMPLING CONTROLS in "The Load-Program-Parameter and the CPU-Measurement Facilities", SA23-2260.

User response: If this problem persists, reboot your Linux instance.

Severity: Error

cpum_sf.20f026 A sampling buffer entry is incorrect (alert=0x<Alert code>)

Explanation: An incorrect sampling facility buffer entry was detected. The alert code indicates the root cause, for example, an incorrect entry address or an incorrect sample-data-block-table entry.

User response: End active performance measurement sessions, for example, perf processes. If the problem persists, reboot your Linux instance.

Severity: Error

cpum_sf.72392d Loading sampling controls failed: op=<Type of operation> err=<Error condition>

Explanation: The sampling facility support could not load sampling controls to enable (operation type 1) or disable (operation type 2) the CPU-measurement sampling facility. For details of the error condition, see LOAD SAMPLING CONTROLS in "The Load-Program-Parameter and the CPU-Measurement Facilities", SA23-2260.

User response: If the problem persists, reboot your Linux instance.

Severity: Error

cpum_sf.856c05 Registering for s390dbf failed

Explanation: The device driver failed to register for the s390 debug feature. You will not receive any debug information. A possible cause of this problem is memory constraints.

User response: Consider assigning more memory to your Linux instance.

Severity: Error

cpum_sf.96d859 Sampling facility support for perf is not available: reason=<reason code>

Explanation: The device driver could not initialize the sampling facility support. Possible reason codes are: 0001: The device driver failed to query CPU-measurement sampling facility information. 0002: The device driver does not support the basic-sampling function that is available on the LPAR within which the Linux instance runs. 0003: The device driver could not register to receive CPU-measurement alerts. A possible cause of this problem is memory constraints. 0004: The device driver could not register the Performance Measurement Unit (PMU) for the CPU-measurement sampling facility. A possible cause of this problem is memory constraints.

User response: Consider assigning more memory to your Linux instance.

Severity: Error

cpum_sf.9aaa3d Sample data was lost

Explanation: Sample data was lost because of machine-internal high-priority activities. The sampling facility is stopped.

User response: End all performance measurement sessions. Discard the measurement data, which are likely to be flawed. Repeat your measurements. If the problem persists, contact your hardware administrator.

Severity: Error

cpum_sf.a2e96f The sampling buffer limits have changed to: min=<minimum size in sample-data-blocks> max=<maximum size in sample-data-blocks> (diag=x<size factor for buffering diagnostic-sampling data entries>)

Explanation: The minimum or maximum size limit for the sampling facility buffer was changed. The change is effective immediately.

User response: None.

Severity: Informational

Chapter 14. ctcM

Messages with a prefix ctcM are issued by the Channel-to-Channel (CTC) device driver. CTC connections are high-speed point-to-point connections between two operating system instances on IBM Z.

ctcm.06c639 *<bus ID of the CTCM device>*: **The adapter received a non-specific IRQ**

Explanation: The adapter hardware used by the CTCM device received an IRQ that cannot be mapped to a particular device. This is a hardware problem.

User response: Check the status of the CTCM device, for example, with ifconfig. Check if the connection to the remote device still works. If the CTCM device is not operational, set it offline and back online. If this does not resolve the problem, perform a manual recovery. See "Device Drivers, Features, and Commands" for details about how to recover a CTCM device. If this problem persists, gather Linux debug data, collect the hardware logs, and report the problem to your support organization.

Severity: Warning

ctcm.0e17de *<bus ID of the CTCM device>*: **An error occurred on the adapter hardware**

Explanation: The CTCM device uses an adapter to physically connect to its communication peer. An operation on this adapter returned an error.

User response: Check the status of the CTCM device, for example, with ifconfig. If the device is not operational, perform a manual recovery. See "Device Drivers, Features, and Commands" for details about how to recover a CTCM device.

Severity: Error

ctcm.3c5812 *<bus ID of the CTCM device>*: **Initialization failed with RX/TX init handshake error** *<error information>*

Explanation: A problem occurred during the initialization of the connection. If the connection can be established after an automatic recovery, a success message is issued.

User response: If the problem is not resolved by the automatic recovery process, check the local and remote device. If this problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

ctcm.4b5292 *<bus ID of the CTCM device>*: **A check**

occurred on the subchannel

Explanation: A check condition has been detected on the subchannel.

User response: Check if the connection to the remote device still works. If the CTCM device is not operational, set it offline and back online. If this does not resolve the problem, perform a manual recovery. See "Device Drivers, Features, and Commands" for details about how to recover a CTCM device. If this problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

ctcm.58aa19 *<channel ID>*: **The remote operating system is not available**

Explanation: The operating system instance with the communication peer has disconnected. Possible reasons are that the operating system instance has been rebooted or shut down.

User response: Ensure that the peer operating system instance is running and that the peer interface is operational.

Severity: Notice

ctcm.8079b5 *<bus ID of the CTCM device>*: **An adapter hardware operation timed out**

Explanation: The CTCM device uses an adapter to physically connect to its communication peer. An operation on this adapter timed out.

User response: Check the status of the CTCM device, for example, with ifconfig. If the device is not operational, perform a manual recovery. See "Device Drivers, Features, and Commands" for details about how to recover a CTCM device.

Severity: Error

ctcm.95ba79 *<bus ID of the CTCM device>*: **An I/O-error occurred on the CTCM device**

Explanation: An I/O error was detected on one of the subchannels of the CTCM device. Depending on the error, the CTCM device driver might attempt an automatic recovery.

User response: Check the status of the CTCM device,

for example, with `ifconfig`. If the device is not operational, perform a manual recovery. See "Device Drivers, Features, and Commands" for details about how to recover a CTCM device.

Severity: Error

ctcm.ad45a0 *<channel ID>*: **The communication peer is busy**

Explanation: A busy target device was reported. This might be a temporary problem.

User response: If this problem persists or is reported frequently ensure that the target device is working properly.

Severity: Informational

ctcm.afe161 *<channel ID>*: **The communication peer has disconnected**

Explanation: The remote device has disconnected. Possible reasons are that the remote interface has been closed or that the operating system instance with the communication peer has been rebooted or shut down.

User response: Check the status of the peer device. Ensure that the peer operating system instance is running and that the peer interface is operational.

Severity: Notice

ctcm.c97a8e **An I/O operation resulted in error**
<channel ID>

Explanation: A hardware operation ended with an error.

User response: Check the status of the CTCM device, for example, with `ifconfig`. If the device is not operational, perform a manual recovery. See "Device Drivers, Features, and Commands" for details about how to recover a CTCM device. If this problem persists, gather Linux debug data, collect the hardware logs, and report the problem to your support organization.

Severity: Error

ctcm.defd4f *<bus ID of the CTCM device>*: **The XID used in the MPC protocol is not valid, rc = *<return code>***

Explanation: The exchange identification (XID) used by the CTCM device driver when in MPC mode is not valid.

User response: Note the error information provided with this message and contact your support organization.

Severity: Warning

ctcm.ec4b8d *<bus ID of the CTCM device>*: **The network backlog for *<calling function>* is exceeded, package dropped**

Explanation: There is more network traffic than can be handled by the device. The device is closed and some data has not been transmitted. The device might be recovered automatically.

User response: Investigate and resolve the congestion. If necessary, set the device online to make it operational.

Severity: Warning

ctcm.fde68a *<channel ID>*: **The specified target device is not valid**

Explanation: A target device was called with a faulty device specification. This is an adapter hardware problem.

User response: Gather Linux debug data, collect the hardware logs, and contact IBM support.

Severity: Error

Chapter 15. dasd-eckd

Messages with a prefix dasd-eckd are issued by the DASD device driver module that handles DASDs with the Extended Count Key Data (ECKD) format.

dasd-eckd.00f842 <bus ID of the DASD>: **An I/O control call used incorrect flags 0x<flags>**

Explanation: The DASD format I/O control was used incorrectly.

User response: Contact the owner of the formatting tool.

Severity: Warning

dasd-eckd.01a684 <bus ID of the DASD>: **FORMAT 4 - No sync byte in key area**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.01f692 <bus ID of the DASD>: **FORMAT 9 - Reserved**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.02c01a <bus ID of the DASD>: **FORMAT 7 - No response to selection after a poll interruption**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.0471ed <bus ID of the DASD>: **FORMAT 0 - Reserved**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.04ae78 <bus ID of the DASD>: **FORMAT 7 - Missing end operation; device transfer incomplete**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.05b6e3 <bus ID of the DASD>: **FORMAT 8 - End operation with transfer count zero**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.05c8ba <bus ID of the DASD>: **FORMAT 6 - Overrun on channel F**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.06e412 <bus ID of the DASD>: **FORMAT 0 - Status Not As Required: reason <reason code>**

Explanation: This is an operating system independent message that is issued by the storage system. There are several potential reasons for this message; byte 8 contains the reason code.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.07541e <bus ID of the DASD>: **FORMAT 0 - CCW Count less than required**

Explanation: The CCW count of a command is less than required. This is an operating system independent message that is issued by the storage system.

User response: For more information see the

documentation of your storage system.

Severity: Warning

dasd-eckd.08b7b8 <bus ID of the DASD>: **FORMAT 4**
- **No sync byte in data area**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.08d1ee <bus ID of the DASD>: **FORMAT 9** -
Head address did not compare

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.094439 <bus ID of the DASD>: **FORMAT 3** -
Reserved

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.0ad5d2 <bus ID of the DASD>: **FORMAT 4**
- **No sync byte in home address area**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.0af298 <bus ID of the DASD>: **FORMAT 4** -
No sync byte in count address area;
offset active

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.0af728 <bus ID of the DASD>: **FORMAT 6** -
Overrun on channel B

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.0d6cb0 <bus ID of the DASD>: **FORMAT F**
- **Subsystem Processing Error**

Explanation: A firmware logic error has been detected. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.0e881a <bus ID of the DASD>: **FORMAT 7** -
Invalid tag-in for an immediate
command sequence

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.0ec8bb <bus ID of the DASD>: **Reading**
device feature codes failed (rc=<return
code>) for new path <path mask>

Explanation: A new path has been made available to the a device. A command to read the device feature codes on this device returned an error. The new path will not be used for I/O.

User response: Set the new path offline and online again to repeat the path verification. Alternatively, set the device offline and online again to verify all available paths for this device. If this problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

dasd-eckd.120e7f <bus ID of the DASD>: **Channel path**
<logical path mask> lost HPF functionality
and is disabled

Explanation: A channel path has lost High Performance FICON (HPF) functionality and was removed from regular operations.

User response: Report the problem to your support organization. Ensure that the cabling between the storage server and the mainframe system is securely in place. Reset the device and channel paths by writing "all" or a logical path mask to the path_reset sysfs attribute of the device.

Severity: Error

dasd-eckd.126bfe <bus ID of the DASD>: **ERP chain at BEGINNING of ERP-ACTION**

Explanation: This message provides debug information for the enhanced error recovery procedure (ERP).

User response: If you do not need this information, you can suppress this message by switching off ERP logging, for example, by writing '1' to the 'erplug' sysfs attribute of the DASD.

Severity: Error

dasd-eckd.1577ff <bus ID of the DASD>: **FORMAT F - Caching terminated**

Explanation: The storage system was unable to initiate caching or had to suspend caching for a 3990 control unit. If this problem is caused by a failure condition, an additional message will provide more information about the failure. This is an operating system independent message that is issued by the storage system.

User response: Check for additional messages that point out possible failures. For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.1c04cd <bus ID of the DASD>: **FORMAT 4 - Key area error; offset active**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.1cfbb8 <bus ID of the DASD>: **FORMAT 1 - Offset active cannot be reset**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.1dd1a2 <bus ID of the DASD>: **FORMAT 2 - Reserved**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.1fd065 <bus ID of the DASD>: **Detecting the maximum supported data size for zHPF requests failed**

Explanation: High Performance FICON (zHPF) requests are limited to a hardware-dependent maximum data size. The DASD device driver failed to detect this size and zHPF is not available for this device.

User response: Set the device offline and online again. If this problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

dasd-eckd.20b59b <bus ID of the DASD>: **FORMAT 0 - Invalid Command Sequence**

Explanation: An incorrect sequence of commands has occurred. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.252dae <bus ID of the DASD>: **An error occurred in the DASD device driver, reason=09**

Explanation: This problem indicates a program error in the DASD device driver.

User response: Note the reason code and contact your support organization.

Severity: Error

dasd-eckd.2567a1 <bus ID of the DASD>: **FORMAT 0 - Invalid Command**

Explanation: A command was issued that is not in the 2107/1750 command set. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.27f2cd <bus ID of the DASD>: **The DASD is not operating in multipath mode**

Explanation: The DASD channel path group could not be configured to use multipath mode. This might negatively affect I/O performance on this DASD.

User response: Make sure that the DASD is working correctly, then try again to set it online. If initialization still fails, reboot.

Severity: Informational

dasd-eckd.29f189 <bus ID of the DASD>: **0x**<command>
is not a known command

Explanation: This problem is likely to be caused by a programming error.

User response: Contact your support organization.

Severity: Error

dasd-eckd.2aa01a <bus ID of the DASD>: **New DASD**
<device type>/<device model> **(CU** <control
unit type>/<control unit model>) **with**
<number of cylinders> **cylinders**, <tracks
per cylinder> **heads**, <sectors per track>
sectors<access mode>

Explanation: A DASD with the shown characteristics has been set online. If the DASD is configured as read-only to the real or virtual hardware, the message includes an indication of this hardware access mode. The hardware access mode is independent from the 'readonly' attribute of the device in sysfs.

User response: None.

Severity: Informational

dasd-eckd.2dd933 <bus ID of the DASD>: **FORMAT 1**
- **Device check-2 error or Set Sector is**
not complete

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.2ebc2e <bus ID of the DASD>: **FORMAT 5 -**
Data Check in the count area; offset
active

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.308a03 <bus ID of the DASD>: **FORMAT 5 -**
Reserved

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.331a2a <bus ID of the DASD>: **FORMAT 1 -**
Reserved

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.36ac9b <bus ID of the DASD>: **Start track**
<track number> **used in formatting**
exceeds end track

Explanation: The DASD format I/O control was used incorrectly by a formatting tool.

User response: Contact the owner of the formatting tool.

Severity: Warning

dasd-eckd.39c600 <bus ID of the DASD>: **FORMAT 8 -**
Unexpected end operation response code

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.3dd39b <bus ID of the DASD>: **FORMAT 7**
- **RCC 1 and RCC 2 sequences not**
successful

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.3ea257 <bus ID of the DASD>: **FORMAT 1 -**
Device not ready

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.400105 <bus ID of the DASD>: **FORMAT 6 -**
Overrun on channel C

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.412b53 <bus ID of the DASD>: **DASD with <block size> KB/block, <DASD size> KB total size, <track size> KB/track, <disc layout>**

Explanation: A DASD with the shown characteristics has been set online.

User response: None.

Severity: Informational

dasd-eckd.4170f2 <bus ID of the DASD>: **The UID of the DASD has changed**

Explanation: The Unique Identifier (UID) of a DASD that is currently in use has changed. This indicates that the physical disk has been replaced.

User response: None if the replacement was intentional. If the disk change is not expected, stop using the disk to prevent possible data loss.

Severity: Error

dasd-eckd.423705 <bus ID of the DASD>: **FORMAT 0 - Channel Returned with Incorrect retry CCW**

Explanation: A command portion of the CCW returned after a command retry sequence does not match the command for which retry was signaled. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.423d5b <bus ID of the DASD>: **FORMAT 7 - Missing end operation; device transfer complete**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.42a207 <bus ID of the DASD>: **The specified record was not found**

Explanation: The record to be accessed does not exist. The DASD might be unformatted or defect.

User response: Try to format the DASD or replace it. ATTENTION: Formatting irreversibly destroys all data on the DASD.

Severity: Error

dasd-eckd.43830c <bus ID of the DASD>: **FORMAT F - Caching reinitiated**

Explanation: Caching has been automatically reinitiated following an error. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.459c47 <bus ID of the DASD>: **log SIM - SRC: <sense byte><sense byte><sense byte><sense byte>**

Explanation: This System Information Message (SIM) is generated by the storage system. The System Reference Code (SRC) defines the error in detail.

User response: Look up the SRC in the storage server documentation.

Severity: Warning

dasd-eckd.45f2d1 <bus ID of the DASD>: **The disk layout of the DASD is not supported**

Explanation: The DASD device driver only supports the following disk layouts: CDL, LDL, FBA, CMS, and CMS RESERVED.

User response: None.

Severity: Warning

dasd-eckd.46d841 <bus ID of the DASD>: **FORMAT 5 - Data Check in the key area**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.47fcac <bus ID of the DASD>: **ERP <pointer to ERP> (<ERP status>) refers to <cqr>**

Explanation: This message provides debug information for the enhanced error recovery procedure (ERP).

User response: If you do not need this information, you can suppress this message by switching off ERP logging, for example, by writing '1' to the 'erplug' sysfs attribute of the DASD.

Severity: Error

dasd-eckd.481dec <bus ID of the DASD>: **FORMAT F - Cache fast write access not authorized**

Explanation: A request for Cache Fast Write Data access cannot be satisfied because of missing access authorization for the storage system. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.487b65 <bus ID of the DASD>: **SIM - SRC:**
<sense byte><sense byte><sense byte><sense byte>

Explanation: This error message is a System Information Message (SIM) generated by the storage system. The System Reference Code (SRC) defines the error in detail.

User response: Look up the SRC in the storage server documentation.

Severity: Error

dasd-eckd.4a5b55 <bus ID of the DASD>: **FORMAT 7 - DASD controller not available on disconnected command chain**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.4aeb6d <bus ID of the DASD>: **FORMAT 8 - DASD controller failed to set or reset the long busy latch**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.4cdcde <bus ID of the DASD>: **ERP chain at END of ERP-ACTION**

Explanation: This message provides debug information for the enhanced error recovery procedure (ERP).

User response: If you do not need this information, you can suppress this message by switching off ERP logging, for example, by writing '1' to the 'erplog' sysfs attribute of the DASD.

Severity: Error

dasd-eckd.4dfdcd <bus ID of the DASD>: **High Performance FICON disabled**

Explanation: High Performance FICON (HPF) has been disabled. Either the device lost HPF functionality, or none of the remaining channel paths are HPF capable.

User response: Report the problem to your support organization. Ensure that the cabling between the storage server and the mainframe system is securely in place. Reset the device and channel paths by writing "all" or a logical path mask to the path_reset sysfs attribute of the device.

Severity: Error

dasd-eckd.5005eb <bus ID of the DASD>: **FORMAT 8 - Reserved**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.538dcc <bus ID of the DASD>: **FORMAT 4 - Reserved**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.55aa2f <bus ID of the DASD>: **FORMAT 1 - Missing device address bit**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.5806f8 <bus ID of the DASD>: **FORMAT 8 - DPS checks after a system reset or selective reset**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.58865b *<bus ID of the DASD>*: **FORMAT 1 - Cylinder address did not compare**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.58c328 *<bus ID of the DASD>*: **FORMAT 0 - Invalid Defective/Alternate Track Pointer**

Explanation: A defective track has been accessed. The subsystem generates an invalid Defective/Alternate Track Pointer as a part of RAID Recovery. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.5cf324 *<bus ID of the DASD>*: **FORMAT F - Volume is suspended duplex**

Explanation: The duplex pair volume has entered the suspended duplex state because of a failure. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.5efa1b *<bus ID of the DASD>*: **FORMAT 4 - No sync byte in count address area**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.5f55a6 **Path** *<channel subsystem ID>*.*<CHPID>* **is back online after service on the storage server**

Explanation: A path had been set offline temporarily because of a service action on the storage server. The service action has completed, and the channel path is available again.

User response: None.

Severity: Informational

dasd-eckd.637cf1 *<bus ID of the DASD>*: **Reading device feature codes failed with rc=<return code>**

Explanation: The device feature codes state which advanced features are supported by a device. Examples for advanced features are PAV or high performance FICON. Some early devices do not provide feature codes and no advanced features are available on these devices.

User response: None, if the DASD does not provide feature codes. If the DASD provides feature codes, make sure that it is working correctly, then set it offline and back online.

Severity: Warning

dasd-eckd.648dca *<bus ID of the DASD>*: **FORMAT 6 - Overrun on channel D**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.65917e *<bus ID of the DASD>*: **Data recovered during retry with PCI fetch mode active**

Explanation: A data error has been recovered on the storages system but the Linux file system cannot be informed about the data mismatch. To prevent Linux from running with incorrect data, the DASD device driver will trigger a kernel panic.

User response: Reset your real or virtual hardware and reboot Linux.

Severity: Emerg

dasd-eckd.65b8de *<bus ID of the DASD>*: **FORMAT 7 - Reserved**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.680aac *<bus ID of the DASD>*: **Allocating memory for private DASD data failed**

Explanation: The DASD device driver maintains data structures for each DASD it manages. There is not enough memory to allocate these data structures for one or more DASD.

User response: Free some memory and try the operation again.

Severity: Warning

dasd-eckd.6e3fdc <bus ID of the DASD>: **FORMAT 6 - Overrun on channel G**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.6eae2d <bus ID of the DASD>: **is offline or not installed - INTERVENTION REQUIRED!!**

Explanation: The DASD to be accessed is not in an accessible state. The I/O operation will wait until the device is operational again. This is an operating system independent message that is issued by the storage system.

User response: Make the DASD accessible again. For details see the storage system documentation.

Severity: Error

dasd-eckd.7109ed <bus ID of the DASD>: **FORMAT 1 - Interruption cannot be reset**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.72eaa3 <bus ID of the DASD>: **FORMAT 6 - Overrun on channel A**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.74be4d <bus ID of the DASD>: **FORMAT 8 - DPS cannot be filled**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.75ca81 <bus ID of the DASD>: **FORMAT 0 - Device Error Source**

Explanation: The device has completed soft error logging. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.767039 **Service on the storage server caused path <channel subsystem ID>.<CHPID> to go offline**

Explanation: A channel path to the DASD has been set offline because of a service action on the storage server. The path will be set back online automatically when the service action is completed.

User response: None.

Severity: Warning

dasd-eckd.792e2f <bus ID of the DASD>: **FORMAT 8 - End operation with transfer count not zero**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.7b19bf <bus ID of the DASD>: **FORMAT 3 - Allegiance terminated**

Explanation: Allegiance terminated because of a Reset Allegiance or an Unconditional Reserve command on another channel. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.7bb394 <bus ID of the DASD>: **FORMAT 7 - Invalid DCC selection response or timeout**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.7c1681 <bus ID of the DASD>: **FORMAT 0 - Storage Path Restart**

Explanation: An operation for an active channel program was queued in a Storage Control when a warm start was received by the path. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.7eabfd <bus ID of the DASD>: **FORMAT 0 - Diagnostic of Special Command Violates File Mask**

Explanation: A command is not allowed under the Access Authorization specified by the File Mask. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.7f0765 <bus ID of the DASD>: **Track 0 has no records following the VTOC**

Explanation: Linux has identified a volume table of contents (VTOC) on the DASD but cannot read any data records following the VTOC. A possible cause of this problem is that the DASD has been used with another System z operating system.

User response: Format the DASD for usage with Linux, for example, with dasdfmt. ATTENTION: Formatting irreversibly destroys all data on the DASD.

Severity: Warning

dasd-eckd.81757d <bus ID of the DASD>: **FORMAT 1 - Device Status 1 not as expected**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.840169 <bus ID of the DASD>: **FORMAT 6 - Overrun on channel E**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.869e5e <bus ID of the DASD>: **FORMAT 6 - Overrun on channel H**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.87ddea <bus ID of the DASD>: **A channel path group could not be established**

Explanation: Initialization of a DASD did not complete because a channel path group could not be established.

User response: Make sure that the DASD is working correctly, then try again to set it online. If initialization still fails, reboot.

Severity: Warning

dasd-eckd.894a4b <bus ID of the DASD>: **FORMAT 7 - 3990 microcode time out when stopping selection**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.8b4bdf <bus ID of the DASD>: **FORMAT 2 - Microcode detected error <error code>**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.910d5f <bus ID of the DASD>: **FORMAT 0 - Data Pinned for Device**

Explanation: Modified data in cache or in persistent storage exists for the DASD. The data cannot be destaged to the device. This track is the first track pinned for this device. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.91bb3c *<bus ID of the DASD>*: **FORMAT F - Reserved**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.948ccf *<bus ID of the DASD>*: **FORMAT 4 - Key area error**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.96f088 *<bus ID of the DASD>*: **FORMAT 7 - RCC 1 sequence not successful**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.9957b7 *<bus ID of the DASD>*: **FORMAT 1 - Head address does not compare**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.9bb776 *<bus ID of the DASD>*: **FORMAT 4 - Data area error; offset active**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.9e183a *<bus ID of the DASD>*: **FORMAT 4 - Count area error**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.9f31f9 *<bus ID of the DASD>*: **FORMAT 7 - RCC initiated by a connection check alert**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.a0ce75 *<bus ID of the DASD>*: **FORMAT 4 - No sync byte in key area; offset active**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.a28dc6 *<bus ID of the DASD>*: **The DASD cache mode was set to *<operation mode>* (*<number of cylinders>*) cylinder prestage)**

Explanation: The DASD cache mode has been changed. See the storage system documentation for information about the different cache operation modes.

User response: None.

Severity: Informational

dasd-eckd.a3c651 *<bus ID of the DASD>*: **FORMAT 9 - Device check-2 error**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.a4325c *<bus ID of the DASD>*: **FORMAT 0 - Reset Notification**

Explanation: A system reset or its equivalent was received on an interface. The Unit Check that generates this sense is posted to the next channel initiated selection following the resetting event. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.a56dba <bus ID of the DASD>: **The DASD cannot be formatted with block size <block size>**

Explanation: The block size specified for a format instruction is not valid. The block size must be between 512 and 4096 byte and must be a power of 2.

User response: Call the format command with a supported block size.

Severity: Warning

dasd-eckd.a77e4f <bus ID of the DASD>: **FORMAT 1 - Track physical address did not compare**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.a7b39e <bus ID of the DASD>: **Path <cssid>.<chpid> (pathmask <logical path mask>) is disabled - IFCC threshold exceeded**

Explanation: Due to numerous interface or channel control checks (IFCCs), a channel path was removed from regular operations to retain good I/O performance.

User response: Ensure that the cabling between the storage server and the mainframe system is securely in place. Reset the device and channel paths by writing "all" or a logical path mask to the path_reset sysfs attribute of the device. If the problem persists, report it to your support organization.

Severity: Error

dasd-eckd.a9cbd8 <bus ID of the DASD>: **FORMAT 1 - Drive motor switch is off**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.aac43a <bus ID of the DASD>: **FORMAT 0 - Device Fenced - device = <sense data byte 4>**

Explanation: The device shown in sense byte 4 has been fenced. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.ac6397 <bus ID of the DASD>: **FORMAT 1 - Index missing**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.acd228 <bus ID of the DASD>: **FORMAT 7 - extra RCC required**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.adb621 <bus ID of the DASD>: **ERP failed for the DASD**

Explanation: An error recovery procedure (ERP) was performed for the DASD but failed.

User response: Check the message log for previous related error messages.

Severity: Error

dasd-eckd.b14557 <bus ID of the DASD>: **FORMAT 4 - Data area error**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.b22b7e <bus ID of the DASD>: **An I/O request was rejected because writing is inhibited**

Explanation: An I/O request was returned with an error indication of 'command reject' and 'write inhibited'. The most likely reason for this error is a failed write request to a device that was attached as read-only in z/VM.

User response: Set the device offline, ensure that the device is configured correctly in z/VM, then set the device online again.

Severity: Error

dasd-eckd.b281ed *<bus ID of the DASD>*: **The DASD is not formatted**

Explanation: A DASD has been set online but it has not been formatted yet. You must format the DASD before you can use it.

User response: Format the DASD, for example, with dasdfmt.

Severity: Warning

dasd-eckd.b3193d *<bus ID of the DASD>*: **An error occurred in the DASD device driver, reason=<reason code>**

Explanation: This problem indicates a program error in the DASD device driver.

User response: Note the reason code and contact your support organization.

Severity: Error

dasd-eckd.b3f650 *<bus ID of the DASD>*: **The newly added channel path <logical path mask> will not be used because it leads to a different device <UID>**

Explanation: The newly added channel path has a different UID than the DASD device. This indicates an incorrect cabling. This path is not going to be used.

User response: Check the cabling of the DASD device. Disconnect and reconnect the cable.

Severity: Error

dasd-eckd.b81b6c *<bus ID of the DASD>*: **The DASD cannot be reached on any path (lpum=<last path used mask>/opm=<online path mask>)**

Explanation: After a path to the DASD failed, the error recovery procedure of the DASD device driver tried but failed to reconnect the DASD through an alternative path.

User response: Ensure that the cabling between the storage server and the mainframe system is securely in place. Check the file systems on the DASD when it is accessible again.

Severity: Error

dasd-eckd.b98207 *<bus ID of the DASD>*: **FORMAT 7 - Invalid tag-in for an extended command sequence**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.bba496 *<bus ID of the DASD>*: **FORMAT 9 - Track physical address did not compare while oriented**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.bbe891 *<bus ID of the DASD>*: **FORMAT F - Subsystem status cannot be determined**

Explanation: The status of a DASD Fast Write or PPRC volume cannot be determined. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.be85b8 *<bus ID of the DASD>*: **FORMAT F - Cache or nonvolatile storage equipment failure**

Explanation: An equipment failure has occurred in the cache storage or nonvolatile storage of the storage system. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.bfc2cb *<bus ID of the DASD>*: **FORMAT F - Nonvolatile storage terminated**

Explanation: The storage director has stopped using nonvolatile storage or cannot initiate nonvolatile storage. If this problem is caused by a failure, an additional message will provide more information about the failure. This is an operating system independent message that is issued by the storage system.

User response: Check for additional messages that point out possible failures. For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.c28ccc <bus ID of the DASD>: **FORMAT 0 - DPS Installation Check**

Explanation: This operating system independent message is issued by the storage system for one of the following reasons: - A 3380 Model D or E DASD does not have the Dynamic Path Selection (DPS) feature in the DASD A-unit. - The device type of an attached DASD is not supported by the firmware. - A type 3390 DASD is attached to a 3 MB channel.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.c3ebff <bus ID of the DASD>: **FORMAT 5 - Data Check in the data area**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.c55c2f <bus ID of the DASD>: **Unable to allocate DCTL-CQR**

Explanation: This is an internal error.

User response: Contact your support organization.

Severity: Error

dasd-eckd.c67479 <bus ID of the DASD>: **FORMAT 1 - Seek incomplete**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.c87cc2 <bus ID of the DASD>: **FORMAT 5 - Data Check in the key area; offset active**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.c9cc06 <bus ID of the DASD>: **FORMAT 1 - Device status 1 not valid**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.c9f7f5 <bus ID of the DASD>: **FORMAT 7 - Invalid tag-in during selection sequence**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.ca8dfc <bus ID of the DASD>: **FORMAT 7 - Permanent path error (DASD controller not available)**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.cf8d3d <bus ID of the DASD>: **FORMAT 5 - Data Check in the count area**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.d1a88a <bus ID of the DASD>: **Detecting the DASD disk layout failed because of an I/O error**

Explanation: The disk layout of the DASD could not be detected because of an unexpected I/O error. The DASD device driver treats the device like an unformatted DASD, and partitions on the device are not accessible.

User response: If the DASD is formatted, make sure that the DASD is working correctly, then set it offline and back online. If the DASD is unformatted, format the DASD, for example, with dasdfmt. ATTENTION: Formatting irreversibly destroys all data on the DASD.

Severity: Error

dasd-eckd.d2af02 <bus ID of the DASD>: **FORMAT 0 - Channel requested ... <reason code>**

Explanation: This is an operating system independent message that is issued by the storage system. The possible reason codes indicate the following problems: 00 No Message. 01 The channel has requested unit check sense data. 02 The channel has requested retry and retry is exhausted. 03 A SA Check-2 error has occurred. This sense is presented with Equipment

Check. 04 The channel has requested retry and retry is not possible.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.d2bf98 *<bus ID of the DASD>*: **ERP** *<ERP pointer>* **has run out of retries and failed**

Explanation: The error recovery procedure (ERP) tried to recover an error but the number of retries for the I/O was exceeded before the error could be resolved.

User response: Check for related previous error messages.

Severity: Error

dasd-eckd.d35646 *<bus ID of the DASD>*: **FORMAT 8 - No interruption from device during a command chain**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.d4a740 *<bus ID of the DASD>*: **Write inhibited path encountered**

Explanation: This is an informational message.

User response: None.

Severity: Informational

dasd-eckd.d4d6d2 *<bus ID of the DASD>*: **FORMAT F - DASD Fast Write inhibited**

Explanation: DASD Fast Write is not allowed because of a nonvolatile storage battery check condition. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.d608df *<bus ID of the DASD>*: **Start track number** *<track number>* **used in formatting is too big**

Explanation: The DASD format I/O control was used incorrectly by a formatting tool.

User response: Contact the owner of the formatting tool.

Severity: Warning

dasd-eckd.d66c5d *<bus ID of the DASD>*: **FORMAT 4 - No sync byte in home address area; offset active**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.d74b52 *<bus ID of the DASD>*: **FORMAT F - Track format incorrect**

Explanation: A track format error occurred while data was being written to the DASD or while a duplex pair was being established. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.d7a598 *<bus ID of the DASD>*: **FORMAT 5 - Data Check in the home address area**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.d82ca0 *<bus ID of the DASD>*: **FORMAT 2 - Support facility errors**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.dc4849 *<bus ID of the DASD>*: **The maximum data size for zHPF requests** *<size in bytes>* **on a new path** *<path mask>* **is below the active maximum** *<size in bytes>*

Explanation: High Performance FICON (zHPF) requests are limited to a hardware-dependent maximum data size. The maximum of the new path is below the previously established common maximum for the existing paths for this device. This could cause requests on the new path to fail. The new path will not be used for I/O.

User response: Set the device offline and online again to establish a new common maximum data size for the device.

Severity: Warning

dasd-eckd.dcc26f <bus ID of the DASD>: **FORMAT 0 - Invalid Parameter**

Explanation: A data argument of a command is not valid. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.e0558d <bus ID of the DASD>: **FORMAT 9 - Cylinder address did not compare**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.e0679b <bus ID of the DASD>: **FORMAT 8 - Short busy time-out during device selection**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.e181a1 <bus ID of the DASD>: **FORMAT 4 - Home address area error**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.e698e6 <bus ID of the DASD>: **FORMAT 8 - Error correction code hardware fault**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.e951ba <bus ID of the DASD>: **FORMAT 4 - Count area error; offset active**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the

documentation of your storage system.

Severity: Warning

dasd-eckd.ec6f52 <bus ID of the DASD>: **Stop track number <track number> used in formatting is too big**

Explanation: The DASD format I/O control was used incorrectly by a formatting tool.

User response: Contact the owner of the formatting tool.

Severity: Warning

dasd-eckd.ed1a53 <bus ID of the DASD>: **FORMAT 5 - Data Check in the home address area; offset active**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.f02333 <bus ID of the DASD>: **The cylinder data for accessing the DASD is inconsistent**

Explanation: An error occurred in the storage system hardware.

User response: For more information see the documentation of your storage system.

Severity: Error

dasd-eckd.f0ba2c <bus ID of the DASD>: **FORMAT 4 - Home address area error; offset active**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.f4346b <bus ID of the DASD>: **The device reservation was lost**

Explanation: This Linux instance has lost its reservation of the device to another operating system instance. Depending on the reservation policy for the device, I/O might be blocked until the other operating system instance surrenders the reservation or all I/O requests might fail until the device is reset.

User response: None, if this situation is handled by system automation software. If this situation is not handled by automation, check the `last_known_reservation_state` attribute of the device in

sysfs. If the value is 'lost', verify that the device is no longer reserved by another operating system instance, then set the device offline and online again. For any other value of the `last_known_reservation_state` no action is required. I/O will resume when the device reservation is surrendered by the other operating system instance.

Severity: Error

dasd-eckd.f453eb *<bus ID of the DASD>*: **FORMAT 1 - Device did not respond to selection**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.f4a01e *<bus ID of the DASD>*: **FORMAT 0 - Command Invalid on Secondary Address**

Explanation: A command or order not allowed on a PPRC secondary device has been received by the secondary device. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.f4ccb9 *<bus ID of the alias>*: **An Alias device was reassigned to a new base device with UID: <UID of new base device>**

Explanation: The alias device with the indicated bus ID has been reassigned. The UID of the new base device is shown in the message.

User response: None.

Severity: Informational

dasd-eckd.f546ed *<bus ID of the DASD>*: **Detecting the maximum data size for zHPF requests failed (rc=<return code>) for a new path <path mask>**

Explanation: High Performance FICON (zHPF) requests are limited to a hardware-dependent maximum data size. A command to detect this size for a new path returned an error. The new path will not be used for I/O.

User response: Set the new path offline and online again to repeat the path verification. Alternatively, set the device offline and online again to verify all available paths for this device. If this problem persists,

gather Linux debug data and report the problem to your support organization.

Severity: Warning

dasd-eckd.f58554 *<bus ID of the DASD>*: **FORMAT 5 - Data Check in the data area; offset active**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.f59fd6 *<bus ID of the DASD>*: **FORMAT 6 - Reserved**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.f6f541 *<bus ID of the DASD>*: **FORMAT F - Caching status reset to default**

Explanation: The storage director has assigned two new subsystem status devices and resets the status to its default value. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.f716c1 *<bus ID of the DASD>*: **The storage server does not support raw-track access**

Explanation: The DASD cannot be accessed in raw-track access mode because the storage server does not have all required features for this access mode. In raw-track access mode, the DASD device driver accesses complete ECKD tracks. By default, the DASD device driver accesses only the data fields of ECKD devices and omits the count and key data fields.

User response: Ensure that the `raw_track_access` sysfs attribute of the DASD has the value 0 to access the device in default ECKD mode.

Severity: Error

dasd-eckd.f85adb *<bus ID of the DASD>*: **FORMAT 4 - No sync byte in data area; offset active**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.f99a70 *<bus ID of the DASD>*: **FORMAT F - Operation Terminated**

Explanation: The storage system ends an operation related to an active channel program when termination and redrive are required and logging is not desired. This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

dasd-eckd.fba34e *<bus ID of the DASD>*: **Accessing the DASD failed because of a hardware error**

Explanation: An error occurred in the storage system hardware.

User response: For more information see the documentation of your storage system.

Severity: Error

dasd-eckd.fe3f84 *<bus ID of the DASD>*: **Not all channel paths lead to the same device, path *<logical path mask>* leads to device *<UID>* instead of *<UID>***

Explanation: Some channel paths have a different UID than others. This indicates an incorrect cabling. The DASD device is not enabled.

User response: Check cabling of the DASD device and retry to enable the device.

Severity: Error

dasd-eckd.ffd164 *<bus ID of the DASD>*: **FORMAT 2 - 3990 check-2 error**

Explanation: This is an operating system independent message that is issued by the storage system.

User response: For more information see the documentation of your storage system.

Severity: Warning

Chapter 16. dasd-fba

Messages with a prefix dasd-fba are issued by the DASD device driver module that handles DASDs with the Fixed Block Access (FBA) format.

dasd-fba.680aac *<bus ID of the DASD>*: **Allocating memory for private DASD data failed**

Explanation: The DASD device driver maintains data structures for each DASD it manages. There is not enough memory to allocate these data structures for one or more DASD.

User response: Free some memory and try the operation again.

Severity: Warning

dasd-fba.f36f2f *<bus ID of the DASD>*: **New FBA DASD** *<device type>/<device model>* **(CU** *<control unit type>/<control unit model>*) **with** *<size>* **MB and** *<bytes per block>* **B/blk***<access mode>*

Explanation: A DASD with the shown characteristics has been set online. If the DASD is configured as read-only to the real or virtual hardware, the message includes an indication of this hardware access mode. The hardware access mode is independent from the 'readonly' attribute of the device in sysfs.

User response: None.

Severity: Informational

Chapter 17. dasd

Messages with a prefix `dasd` are issued by the DASD device driver.

dasd.04422e **Registering the device driver with major number <DASD major> failed**

Explanation: Major number 94 is reserved for the DASD device driver. The DASD device driver failed to register with this major number. Another device driver might have used major number 94.

User response: Determine which device driver uses major number 94 instead of the DASD device driver and unload this device driver. Then try again to load the DASD device driver.

Severity: Warning

dasd.0ae5e4 **Discipline <discipline name> cannot be used without z/VM**

Explanation: The discipline that is specified with the `dasd=` kernel or module parameter is only available for Linux instances that run as guest operating systems of the z/VM hypervisor.

User response: Remove the unsupported discipline from the parameter string.

Severity: Informational

dasd.0c0534 *<bus ID of the DASD>* **Setting the DASD online failed because the required module <kernel module name> could not be loaded (rc=<return code>)**

Explanation: The DASD was to be set online with discipline `DIAG` but this discipline of the DASD device driver is not available and an attempt to load the corresponding kernel module failed with the specified return code.

User response: Ensure that the kernel module with the specified name is correctly installed or set the `sysfs 'use_diag'` attribute of the DASD to 0 to switch off `DIAG`.

Severity: Warning

dasd.1211d0 *<value>* **is not a supported value for /proc/dasd/statistics**

Explanation: An incorrect value has been written to `/proc/dasd/statistics`. The supported values are: 'set on', 'set off', and 'reset'.

User response: Write a supported value to `/proc/dasd/statistics`.

Severity: Warning

dasd.157e58 *<bus ID of the DASD>*: **cqr <request> timed out (<timeout value>), <number of retries left> retries remaining**

Explanation: A try of the error recovery procedure (ERP) for the channel queued request (cqr) timed out and failed to recover the error. ERP continues for the DASD.

User response: Ignore this message if it occurs infrequently and if the recovery succeeds during one of the retries. If this error persists, check for related previous error messages and report the problem to your support organization. The timeout can be changed by writing a new value to the `sysfs 'expires'` attribute of the DASD. The value specifies the timeout in seconds.

Severity: Error

dasd.1ac0f4 *<bus ID of the DASD>*: **Flushing the DASD request queue failed for request <pointer to request>**

Explanation: As part of the unloading process, the DASD device driver flushes the request queue. This failed because a previously started I/O operation could not be canceled.

User response: Try again to unload the DASD device driver or to shut down Linux.

Severity: Error

dasd.1c9171 *<bus ID of the DASD>*: **DIAG initialization failed with rc=<return code>**

Explanation: Initializing the DASD with the `DIAG` discipline failed. Possible reasons for this problem are that the device has a device type other than `FBA` or `ECKD`, or has a block size other than one of the supported sizes: 512 byte, 1024 byte, 2048 byte, or 4096 byte.

User response: Ensure that the device can be written to and has a supported device type and block size. For details about the return code see the section about the `INITIALIZE` function for `DIAGNOSE Code X'250'` in "z/VM CP Programming Services". If you cannot resolve the error, note the error code and contact your support organization.

Severity: Warning

dasd.1e2d81 **'nopav' is not supported on z/VM**

Explanation: For Linux instances that run as guest operating systems of the z/VM hypervisor Parallel Access Volume (PAV) support is controlled by z/VM not by Linux.

User response: Remove 'nopav' from the dasd= module or kernel parameter specification.

Severity: Informational

dasd.2529f2 *<bus ID of the DASD>*: **Accessing the DASD failed because it is in probeonly mode**

Explanation: The dasd= module or kernel parameter specified the probeonly attribute for the DASD you are trying to access. The DASD device driver cannot access DASDs that are in probeonly mode.

User response: Change the dasd= parameter as to omit probeonly for the DASD and reload the DASD device driver. If the DASD device driver has been compiled into the kernel, reboot Linux.

Severity: Informational

dasd.2741d8 *<bus ID of the DASD>*: **DIAG ERP failed with rc=<return code>**

Explanation: An error in the DIAG processing could not be recovered by the error recovery procedure (ERP) of the DIAG discipline.

User response: Note the return code, check for related I/O errors, and report this problem to your support organization.

Severity: Warning

dasd.2f6a90 **The probeonly mode has been activated**

Explanation: The probeonly mode of the DASD device driver has been activated. In this mode the device driver rejects any 'open' syscalls with EPERM.

User response: None.

Severity: Informational

dasd.35e4e6 *<bus ID of the DASD>*: **A timeout error occurred for cqr** *<pointer to request>*

Explanation: A channel queued request (cqr) failed because it timed out. One possible reason for this error is that a request did not complete within the timeout interval specified for the DASD. The timeout interval is set as the value of the 'timeout' sysfs attribute of a DASD. A value of 0 disables the timeout function. The timeout function can be used; for example, by mirroring setups; to quickly process a request queue for a DASD that has become unavailable.

User response: Check the message log for previous related error messages. Verify that the storage server and the connection from host to storage server are

operational. If the 'timeout' sysfs attribute of the DASD has been set to a value other than 0, verify that this setting is intentional and change it if required.

Severity: Error

dasd.3dba87 **The autodetection mode has been activated**

Explanation: The autodetection mode of the DASD device driver has been activated. In this mode the DASD device driver sets all detected DASDs online.

User response: None.

Severity: Informational

dasd.3e7d29 *<bus ID of the DASD>* **Setting the DASD online with discipline** *<discipline>* **failed with rc=<return code>**

Explanation: The DASD could not be set online because of previous errors.

User response: Look for previous error messages. If you cannot resolve the error, note the return code and contact your support organization.

Severity: Warning

dasd.401b68 *<bus ID of the DASD>*: **A channel path to the device has become operational**

Explanation: At least one channel path of this device has become operational again. The DASD device driver resumes I/O operations to the device and processes the I/O requests that were queued while there was no operational channel path.

User response: None.

Severity: Informational

dasd.50a6e5 *<bus ID of the DASD>*: **Formatting unit** *<start track>* **failed with rc=<return code>**

Explanation: The formatting process might have been interrupted by a signal, for example, CTRL+C. If the process was not interrupted intentionally, an I/O error might have occurred.

User response: Retry to format the device. If the error persists, check the log file for related error messages. If you cannot resolve the error, note the return code and contact your support organization.

Severity: Error

dasd.5303a1 **PAV support has been deactivated**

Explanation: The 'nopav' keyword has been specified with the dasd= kernel or module parameter. The Parallel Access Volume (PAV) support of the DASD device driver has been deactivated.

User response: None.

Severity: Informational

dasd.56adec *<bus ID of the DASD>*: **A transport error occurred for cqr** *<pointer to request>*

Explanation: A channel queued request (cqr) failed because the connection to the device was lost and the 'failfast' flag is set for the request. This flag can result from, for example:

- A software layer above the DASD device driver; for example, in a host based mirroring setup.
- Value 1 for the 'failfast' sysfs attribute of the DASD. This setting applies to all requests on the DASD.

User response: Ensure that each channel path to the device has been set up correctly and that the related physical cable connections are in place. If the 'failfast' attribute of the DASD is set to 1, verify that this setting is intentional and change it to 0 if required.

Severity: Error

dasd.5c0c98 *<bus ID of the DASD>*: **default ERP has run out of retries and failed**

Explanation: The error recovery procedure (ERP) tried to recover an error but the number of retries for the I/O was exceeded before the error could be resolved.

User response: Check for related previous error messages.

Severity: Error

dasd.696eb5 *<option>* **is not a supported device option**

Explanation: The dasd= parameter includes an unknown option for a DASD or a device range. Options are specified in parenthesis and immediately follow a device or device range.

User response: Check the dasd= syntax and remove any unsupported options from the dasd= parameter specification.

Severity: Warning

dasd.75373e *<bus ID of the DASD>*: **Cancelling request** *<pointer to request>* **failed with rc=<return code of previous function>**

Explanation: In response to a user action, the DASD device driver tried but failed to cancel a previously started I/O operation.

User response: Try the action again.

Severity: Error

dasd.760a94 *<bus ID of the DASD>*: **The specified DASD is a partition and cannot be checked**

Explanation: The DASD you try to check is a partition. Partitions cannot be checked separately. You can only check a complete DASD including all its partitions.

User response: Check the complete DASD.

Severity: Warning

dasd.781738 **High Performance FICON support has been deactivated**

Explanation: The 'nofcx' keyword has been specified with the dasd= kernel or module parameter. The High Performance FICON (transport mode) support of the DASD device driver has been deactivated.

User response: None.

Severity: Informational

dasd.7854c0 *<bus ID of the DASD>*: **The DASD cannot be set offline while it is in use**

Explanation: The DASD cannot be set offline because it is in use by an internal process. An action to free the DASD might not have completed yet.

User response: Wait some time and set the DASD offline later.

Severity: Warning

dasd.78e1df **A closing parenthesis ')' is missing in the dasd= parameter**

Explanation: The specification for the dasd= kernel or module parameter has an opening parenthesis '(' * without a matching closing parenthesis ')'.

User response: Correct the parameter value.

Severity: Warning

dasd.939f75 **The statistics have been reset**

Explanation: The DASD statistics data have been reset.

User response: None.

Severity: Informational

dasd.966201 **The statistics feature has been switched on**

Explanation: The statistics feature of the DASD device driver has been switched on.

User response: None.

Severity: Informational

dasd.9d6a8a *<bus ID of the DASD>*: **No verified channel paths remain for the device**

Explanation: All verified channel paths to the device have become non-operational. Any other paths to the device have previously been identified as not usable. The DASD device driver suspends I/O operations and queues I/O requests for this device until at least one channel path becomes operational again.

User response: Ensure that each channel path to the device has been set up correctly and that the related physical cable connections are in place. Set all paths to the device offline and online again to repeat the path verification. Alternatively, set the device offline and online again to verify all available paths for this device. If this problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

dasd.a2cf19 *<bus ID of the DASD>*: **Unable to terminate request <pointer to request> on suspend**

Explanation: As part of the suspend process, the DASD device driver terminates requests on the request queue. This failed because a previously started I/O operation could not be canceled. The suspend process will be stopped.

User response: Try again to suspend the system.

Severity: Error

dasd.a35e01 *<bus ID of the DASD>* **Setting the DASD online failed because of a missing discipline**

Explanation: The DASD was to be set online with a DASD device driver discipline that is not available.

User response: Ensure that all DASD modules are loaded correctly.

Severity: Warning

dasd.a3baba *<bus ID of the DASD>*: **I/O operations have been resumed on the DASD**

Explanation: The DASD is no longer in state quiesce and I/O operations can be performed on the device.

User response: None.

Severity: Informational

dasd.a3bece *<bus ID of the DASD>*: **The DASD cannot be formatted while it is enabled**

Explanation: The DASD you try to format is enabled. Enabled devices cannot be formatted.

User response: Contact the owner of the formatting tool.

Severity: Warning

dasd.a6cafa **The statistics feature has been switched off**

Explanation: The statistics feature of the DASD device driver has been switched off.

User response: None.

Severity: Informational

dasd.a7b0fb *<bus ID of the DASD>*: **The DASD has been put in the quiesce state**

Explanation: No I/O operation is possible on this device.

User response: Resume the DASD to enable I/O operations.

Severity: Informational

dasd.adb621 *<bus ID of the DASD>*: **ERP failed for the DASD**

Explanation: An error recovery procedure (ERP) was performed for the DASD but failed.

User response: Check the message log for previous related error messages.

Severity: Error

dasd.b3193d *<bus ID of the DASD>*: **An error occurred in the DASD device driver, reason=<reason code>**

Explanation: This problem indicates a program error in the DASD device driver.

User response: Note the reason code and contact your support organization.

Severity: Error

dasd.bba7e6 *<bus ID of the DASD>*: **The specified DASD is a partition and cannot be formatted**

Explanation: The DASD you try to format is a partition. Partitions cannot be formatted separately. You can only format a complete DASD including all its partitions.

User response: Format the complete DASD. ATTENTION: Formatting irreversibly destroys all data on all partitions of the DASD.

Severity: Warning

dasd.c0aa71 *<bus ID of the DASD>* **Setting the DASD online failed because of missing DIAG discipline**

Explanation: The DASD was to be set online with discipline DIAG but this discipline of the DASD device driver is not available.

User response: Ensure that the `dasd_diag_mod` module is loaded. If your Linux system does not include this module, you cannot set DASDs online with the DIAG discipline.

Severity: Warning

dasd.c1bf11 *<bus ID of the DASD>*: **The DASD cannot be set offline with open count *<count>***

Explanation: The DASD is being used by one or more processes and cannot be set offline.

User response: Ensure that the DASD is not in use anymore, for example, unmount all partitions. Then try again to set the DASD offline.

Severity: Warning

dasd.c533c6 *<bus ID of the DASD>*: **No operational channel path is left for the device**

Explanation: All channel paths to the device have become non-operational. The DASD device driver suspends I/O operations and queues I/O requests for this device until at least one channel path becomes operational again.

User response: Ensure that each channel path to the device has been set up correctly and that the related physical cable connections are in place.

Severity: Warning

dasd.c81491 *<bus ID of the DASD>*: **Device type *<device type>* is not supported in DIAG mode**

Explanation: Only DASD of type FBA and ECKD are supported in DIAG mode.

User response: Set the `sysfs 'use_diag'` attribute of the DASD to 0 and try again to access the DASD.

Severity: Warning

dasd.d0c64e *<bus ID of the DASD>*: **A 64-bit DIAG call failed**

Explanation: 64-bit DIAG calls require a 64-bit z/VM version.

User response: Use z/VM 5.2 or later or set the `sysfs 'use_diag'` attribute of the DASD to 0 to switch off DIAG.

Severity: Warning

dasd.d303ec *<bus ID of the DASD>*: **The access mode of a DIAG device changed to read-only**

Explanation: A device changed its access mode from writeable to read-only while in use.

User response: Set the device offline, ensure that the device is configured correctly in z/VM, then set the device online again.

Severity: Warning

dasd.da6176 *<bus ID of the DASD>*: **cqr *<request>* timed out (*<timeout value>*) but cannot be ended, retrying in 5 s**

Explanation: A try of the error recovery procedure (ERP) for the channel queued request (cqr) timed out and failed to recover the error. The I/O request submitted during the try could not be canceled. The ERP waits for 5 seconds before trying again.

User response: Ignore this message if it occurs infrequently and if the recovery succeeds during one of the retries. If this error persists, check for related previous error messages and report the problem to your support organization. The timeout can be changed by writing a new value to the `sysfs 'expires'` attribute of the DASD. The value specifies the timeout in seconds.

Severity: Error

dasd.de3a76 **The DASD device driver could not be initialized**

Explanation: The initialization of the DASD device driver failed because of previous errors.

User response: Check for related previous error messages.

Severity: Informational

dasd.df34c6 **The IPL device is not a CCW device**

Explanation: The value for the `dasd=` parameter contains the 'ipldev' keyword. During the boot process this keyword is replaced with the device from which the IPL was performed. The 'ipldev' keyword is not valid if the IPL device is not a CCW device.

User response: Do not specify the 'ipldev' keyword when performing an IPL from a device other than a CCW device.

Severity: Error

dasd.e8d084 *<bus ID of the DASD>*: **Accessing the DASD failed because of an incorrect format (*rc=<return code>*)**

Explanation: The format of the DASD is not correct.

User response: Check the device format. For details about the return code see the section about the

dasd.eac657 • dasd.ff4c45

INITIALIZE function for DIAGNOSE Code X'250' in "z/VM CP Programming Services". If you cannot resolve the error, note the return code and contact your support organization.

Severity: Warning

dasd.eac657 *<bus ID of the DASD>*: **New DASD with**
<bytes per block> **byte/block, total size**
<size> **KB***<access mode>*

Explanation: A DASD with the indicated block size and total size has been set online. If the DASD is configured as read-only to the real or virtual hardware, the message includes an indication of this hardware access mode. The hardware access mode is independent from the 'readonly' attribute of the device in sysfs.

User response: None.

Severity: Informational

dasd.f97899 *<bus ID of the DASD>*: **Setting the DASD**
online failed with rc=*<return code>*

Explanation: The DASD could not be set online because of previous errors.

User response: Look for previous error messages. If you cannot resolve the error, note the return code and contact your support organization.

Severity: Warning

dasd.ff4c45 *<range>* **is not a valid device range**

Explanation: A device range specified with the dasd= parameter is not valid.

User response: Examine the dasd= parameter and correct the device range.

Severity: Error

Chapter 18. dcssblk

Messages with a prefix `dcssblk` are issued by the z/VM discontinuous saved segments (DCSS) device driver. The DCSS device driver provides disk-like fixed block access to z/VM discontinuous saved segments.

dcssblk.0a9a59 The address range of DCSS *<device name>* changed while the system was suspended

Explanation: After resuming the system, the start address or end address of a DCSS does not match the address when the system was suspended. DCSSs must not be changed after the system was suspended. This error cannot be recovered. The system is stopped with a kernel panic.

User response: Reboot Linux.

Severity: Error

dcssblk.14ff71 Device *<device name>* cannot be removed because it is not a known device

Explanation: The DCSS device you are trying to remove is not known to the DCSS device driver.

User response: List the entries under `/sys/devices/dcssblk/` to see the names of the existing DCSS devices.

Severity: Warning

dcssblk.1e441c Suspending the system failed because DCSS device *<device name>* is writable

Explanation: A system cannot be suspended if one or more DCSSs are accessed in exclusive-writable mode. DCSS segment types EW, SW, and EN are always writable and must be removed before a system is suspended.

User response: Remove all DCSSs of segment types EW, SW, and EN by writing the DCSS name to the sysfs 'remove' attribute. Set the access mode for all DCSSs of segment types SR and ER to read-only by writing 1 to the sysfs 'shared' attribute of the DCSS. Then try again to suspend the system.

Severity: Error

dcssblk.247a44 Device *<device name>* cannot be removed while it is in use

Explanation: You are trying to remove a device that is in use.

User response: Make sure that all users of the device close the device before you try to remove it.

Severity: Warning

dcssblk.257c8b Device *<device name>* is in use, its DCSSs will be saved when it becomes idle

Explanation: A save request for the device has been deferred until the device becomes idle. Then changes to all DCSSs that the device maps to will be saved permanently.

User response: None.

Severity: Informational

dcssblk.3c90ef Writing to *<device name>* failed because it is a read-only device

Explanation: The DCSS device is in shared access mode and cannot be written to. Depending on the type of the DCSSs that the device maps to, you might be able to change the access mode to exclusive-writable.

User response: If the DCSSs of the device are of type SC, do not attempt to write to the device. If the DCSSs of the device are of type ER or SR, change the access mode to exclusive-writable before writing to the device.

Severity: Warning

dcssblk.3d858e DCSS *<device name>* is of type SC and cannot be loaded as exclusive-writable

Explanation: You cannot load a DCSS device in exclusive-writable access mode if the DCSS device maps to one or more DCSSs of type SC.

User response: Load the DCSS in shared access mode.

Severity: Error

dcssblk.50ebd0 Device *<device name>* has become idle and is being saved now

Explanation: A save request for the DCSSs that map to a DCSS device has been pending while the device was in use. The device has become idle and all changes to the DCSSs are now saved permanently.

User response: None.

Severity: Informational

dcssblk.6ac195 DCSS device *<device name>* is removed after a failed access mode change

Explanation: To change the access mode of a DCSS device, all DCSSs that map to the device were unloaded. Reloading the DCSSs for the new access mode failed and the device is removed.

User response: Look for related messages to find out why the DCSSs could not be reloaded. If necessary, add the device again.

Severity: Error

dcssblk.784873 DCSS *<DCSS name>* is of type SN or EN and cannot be saved

Explanation: DCSSs of type SN or EN cannot be saved.

User response: If the DCSS was set up with the intention to prevent the content from being saved, no action is necessary. To be able to save the content, you must define the DCSS with a type other than SN or EN.

Severity: Warning

dcssblk.7b5aa7 A pending save request for device *<device name>* has been canceled

Explanation: A save request for the DCSSs that map to a DCSS device has been pending while the device was in use. This save request has been canceled. Changes to the DCSSs will not be saved permanently.

User response: None.

Severity: Informational

dcssblk.9a4530 All DCSSs that map to device *<device name>* are saved

Explanation: A save request has been submitted for the DCSS device. Changes to all DCSSs that map to the device are saved permanently.

User response: None.

Severity: Informational

dcssblk.dd556f DCSS *<name 1>* and DCSS *<name 2>* have incompatible types

Explanation: You can only map a set of two or more DCSSs to a single DCSS device if either all DCSSs in the set have the same type or if the set contains DCSSs of the two types EW and EN but no other type. The DCSS device cannot be created because at least two of the specified DCSSs are not compatible.

User response: Check the definitions of the DCSSs on the z/VM hypervisor to verify that their types are compatible.

Severity: Error

dcssblk.f259b2 Loaded *<DCSS names>* with total size *<total size in bytes>* bytes and capacity *<total size in 512 byte sectors>* sectors

Explanation: The listed DCSSs have been verified as contiguous and successfully loaded. The displayed sizes are the sums of all DCSSs.

User response: None.

Severity: Informational

dcssblk.f85784 Adjacent DCSSs *<name 1>* and *<name 2>* are not contiguous

Explanation: You can only map a set of two or more DCSSs to a single DCSS device if the DCSSs in the set form a contiguous memory space. The DCSS device cannot be created because there is a memory gap between two adjacent DCSSs.

User response: Ensure that you have specified all DCSSs that belong to the set. Check the definitions of the DCSSs on the z/VM hypervisor to verify that they form a contiguous memory space.

Severity: Error

Chapter 19. diag288_wdt

Messages with a prefix `diag288_wdt` are issued by the `diag288_wdt` kernel module.

diag288_wdt.3941b2 Linux cannot be suspended while the watchdog is in use

Explanation: The watchdog must not time out while Linux is suspended. Therefore, the `diag288` watchdog device driver prevents Linux from being suspended while the watchdog is in use.

User response: i) Stop the watchdog application. ii) If the problem persists, close the watchdog device node by issuing `'echo V > /dev/watchdog'`. iii) If the device driver still prevents Linux from being suspended, contact your support organization.

Severity: Error

diag288_wdt.684692 The watchdog cannot be deactivated

Explanation: Diagnose instruction `0x288` was called to deactivate the `diag288` watchdog. The diagnose call returned an error that cannot be handled by the device driver. The watchdog stays active and a watchdog timeout will trigger the configured timeout action. The `diag288` watchdog device driver might intentionally be configured to prevent deactivation.

User response: You can configure the `diag288` watchdog device driver such that it can be deactivated. If the `diag288` device driver has been compiled as a separate module, `diag288_wdt`, reload the module without specifying the `'nowayout'` module parameter. If the `diag288` device driver has been compiled into your kernel, reboot Linux without specifying the `'diag288.nowayout'` kernel parameter'.

Severity: Error

diag288_wdt.8ca5c3 The watchdog timer cannot be started or reset

Explanation: Diagnose instruction `0x288` was called to start the `diag288` watchdog or to set timer back to zero. The diagnose call returned an error that cannot be handled by the device driver. The watchdog stays inactive or becomes inactive.

User response: Contact your support organization.

Severity: Error

diag288_wdt.a00fff The watchdog cannot be activated

Explanation: Diagnose instruction `0x288` was called to activate the `diag288` watchdog. The diagnose call returned an error that cannot be handled by the device

driver. The watchdog stays inactive.

User response: Contact your support organization.

Severity: Error

diag288_wdt.d41079 The watchdog cannot be initialized

Explanation: Diagnose instruction `0x288` was called to initialize the `diag288` watchdog. The diagnose call returned an error that cannot be handled by the device driver. The watchdog stays inactive. A possible reason for this error is that your real or virtual hardware does not support the `diag288` watchdog.

User response: Confirm that the `diag288` watchdog is supported in your environment. Use a watchdog that is supported in your environment.

Severity: Error

Chapter 20. extmem

Messages with a prefix `extmem` are issued by the kernel module that provides an interface to the `z/VM` DCSS management functions.

extmem.06a5dd DCSS <DCSS name> has multiple page ranges and cannot be loaded or queried

Explanation: You can only load or query a DCSS with multiple page ranges if:

- The DCSS has 6 or fewer page ranges
- The page ranges form a contiguous address space
- The page ranges are of type `EW` or `EN`

User response: Check the definition of the DCSS to make sure that the conditions for DCSSs with multiple page ranges are met.

Severity: Error

extmem.262f7b Loading or querying DCSS <DCSS name> resulted in a hardware error

Explanation: Either the `z/VM` `DIAGNOSE X'64'` query or load call issued for the DCSS returned with an error.

User response: Look for previous `extmem` message to find the return code from the `DIAGNOSE X'64'` query or load call. For details about the return codes see the section about `DIAGNOSE Code X'64'` in "`z/VM CP Programming Services`".

Severity: Error

extmem.326775 DCSS <DCSS name> overlaps with used memory resources and cannot be reloaded

Explanation: The DCSS has been unloaded and cannot be reloaded because it overlaps with another loaded DCSS or with the memory of the `z/VM` guest virtual machine (guest storage).

User response: Ensure that no DCSS is loaded that has overlapping memory resources with the DCSS you want to reload. If the DCSS overlaps with guest storage, use the `DEF STORE CONFIG z/VM CP` command to create a sufficient storage gap for the DCSS. For details, see the section about the DCSS device driver in "`Device Drivers, Features, and Commands`".

Severity: Warning

extmem.584f8e Unloading unknown DCSS <DCSS name> failed

Explanation: The specified DCSS cannot be unloaded.

The DCSS is known to the DCSS device driver but not to the DCSS kernel interface. This problem indicates a program error in `extmem.c`.

User response: Report this problem to your support organization.

Severity: Error

extmem.6bd595 Loading DCSS <DCSS name> failed with rc=<return code>

Explanation: The DCSS kernel interface used `diagnose call X'64'` to load a DCSS. `z/VM` failed to load the DCSS and returned an error.

User response: For details about the return codes see the section about `DIAGNOSE Code X'64'` in "`z/VM CP Programming Services`".

Severity: Warning

extmem.7c6a46 Querying a DCSS type failed with rc=<return code>

Explanation: The DCSS kernel interface used `z/VM` `diagnose call X'64'` to query the type of a DCSS. `z/VM` failed to determine the type and returned an error.

User response: Look for related messages to find out which DCSS is affected. For details about the return codes see the section about `DIAGNOSE Code X'64'` in "`z/VM CP Programming Services`".

Severity: Warning

extmem.7fb545 DCSS <DCSS name> is already in the requested access mode

Explanation: A request to reload a DCSS with a new access mode has been rejected because the new access mode is the same as the current access mode.

User response: None.

Severity: Informational

extmem.8b00b5 DCSS <DCSS name> cannot be loaded or queried

Explanation: You cannot load or query the specified DCSS because it either is not defined in the `z/VM` hypervisor, or it is a class `S` DCSS, or it is above 2047 MB and the Linux system is a 31-bit system.

User response: Use the `CP` command "`QUERY NSS`" to

find out if the DCSS is a valid DCSS that can be loaded.

Severity: Error

extmem.8e36b2 DCSS <DCSS name> exceeds the kernel mapping range (<kernel mapping range in bytes>) and cannot be loaded

Explanation: You cannot load the DCSS because it exceeds the kernel mapping range limit.

User response: Ensure that the DCSS range is defined below the kernel mapping range.

Severity: Error

extmem.972edd Reloading DCSS <DCSS name> failed with rc=<return code>

Explanation: The DCSS kernel interface used z/VM diagnose call X'64' to reload a DCSS in a different access mode. The DCSS was unloaded but z/VM failed to reload the DCSS.

User response: For details about the return codes see the section about DIAGNOSE Code X'64' in "z/VM CP Programming Services".

Severity: Warning

extmem.99ae11 DCSS <DCSS name> is already loaded in a different access mode

Explanation: The DCSS you are trying to load has already been loaded in a different access mode. You cannot simultaneously load the DCSS in different modes.

User response: Reload the DCSS in a different mode or load it with the same mode in which it has already been loaded.

Severity: Error

extmem.9e2ee4 DCSS <DCSS name> cannot be loaded or queried without z/VM

Explanation: A DCSS is a z/VM resource. Your Linux instance is not running as a z/VM guest operating system and, therefore, cannot load DCSSs.

User response: Load DCSSs only on Linux instances that run as z/VM guest operating systems.

Severity: Error

extmem.aa62ff DCSS <DCSS name> of range <starting page address> to <ending page address> and type <DCSS type> loaded in shared access mode

Explanation: The DCSS was loaded successfully in shared access mode.

User response: None.

Severity: Informational

extmem.b8acd6 Saving a DCSS failed with DEFSEG response code <response-code>

Explanation: The DEFSEG z/VM CP command failed to permanently save changes to a DCSS.

User response: Ensure that the z/VM guest virtual machine is authorized to issue the CP DEFSEG command (typically privilege class E). Look for related messages to find the cause of this error. See also message HCP<response-code>E in the DEFSEG section of the "z/VM CP Command and Utility Reference".

Severity: Error

extmem.c55583 Saving a DCSS failed with SAVESEG response code <response-code>

Explanation: The SAVESEG z/VM CP command failed to permanently save changes to a DCSS.

User response: Ensure that the z/VM guest virtual machine is authorized to issue the CP SAVESEG command (typically privilege class E). Look for related messages to find the cause of this error. See also message HCP<response-code>E in the SAVESEG section of the "z/VM CP Command and Utility Reference".

Severity: Error

extmem.cb0afe <DCSS name> needs used memory resources and cannot be loaded or queried

Explanation: You cannot load or query the DCSS because it overlaps with an already loaded DCSS or with the memory of the z/VM guest virtual machine (guest storage).

User response: Ensure that no DCSS is loaded that has overlapping memory resources with the DCSS you want to load or query. If the DCSS overlaps with guest storage, use the DEF STORE CONFIG z/VM CP command to create a sufficient storage gap for the DCSS. For details, see the section about the DCSS device driver in "Device Drivers, Features, and Commands".

Severity: Error

extmem.d03247 Saving unknown DCSS <DCSS name> failed

Explanation: The specified DCSS cannot be saved. The DCSS is known to the DCSS device driver but not to the DCSS kernel interface. This problem indicates a program error in extmem.c.

User response: Report this problem to your support organization.

Severity: Error

extmem.da1614 DCSS <DCSS name> of range <starting page address> to <ending page address> and type <DCSS type> loaded as exclusive-writable

Explanation: The DCSS was loaded successfully in exclusive-writable access mode.

User response: None.

Severity: Informational

extmem.e08a4c DCSS <DCSS name> overlaps with used storage and cannot be loaded

Explanation: You cannot load the DCSS because it overlaps with an already loaded DCSS or with the memory of the z/VM guest virtual machine (guest storage).

User response: Ensure that no DCSS is loaded that has overlapping memory resources with the DCSS you want to load. If the DCSS overlaps with guest storage, use the DEF STORE CONFIG z/VM CP command to create a sufficient storage gap for the DCSS. For details, see the section about the DCSS device driver in "Device Drivers, Features, and Commands".

Severity: Error

extmem.f0af04 DCSS <DCSS name> is in use and cannot be reloaded

Explanation: Reloading a DCSS in a different access mode has failed because the DCSS is being used by one or more device drivers. The DCSS remains loaded with the current access mode.

User response: Ensure that the DCSS is not used by any device driver then try again to load the DCSS with the new access mode.

Severity: Warning

extmem.febf72 There is not enough memory to load or query DCSS <DCSS name>

Explanation: The available memory is not enough to load or query the DCSS.

User response: Free some memory and repeat the failed operation.

Severity: Error

Chapter 21. hmcdrv

Messages with a prefix hmcdrv are issued by the hmcdrv kernel module that supports the DVD drive of the HMC or SE.

hmcdrv.a3150c Allocating the requested cache size of
<size> bytes failed

Explanation: You cannot use the 'hmcdrv' module. Either the cache size that was specified for the 'hmcdrv' module exceeded the maximum of 1048576 (1 megabyte), or not enough free memory was available. If the 'hmcdrv' module was compiled into the kernel, the cache size was specified with the 'hmcdrv.cachesize' kernel parameter. For a separate 'hmcdrv' module, the cache size was specified with the 'cachesize=' module parameter.

User response: Specify a smaller cache size and try again to load the module. Do not exceed the maximum specification of 1048576 (1 megabyte). If necessary, free some memory and try again. If the module is compiled into the kernel, you must reboot Linux to change the cache size specification.

Severity: Error

Chapter 22. hugetlb

Messages with a prefix hugetlb are issued by the support for large memory pages.

hugetlb.87d848 hugepagesz= specifies an unsupported page size <size>

Explanation: The hugepagesz= kernel parameter specifies a huge page size that is not supported.

User response: Specify "1M" for 1 MB huge pages. These are supported as of z10. Specify "2G" for 2 GB huge pages. These are supported as of zEC12 and zBC12 machines.

Severity: Error

Chapter 23. hvc_iucv

Messages with a prefix `hvc_iucv` are issued by the z/VM IUCV Hypervisor Console (HVC) device driver. This device driver supports terminal access through the `iucvconn` program to instances of Linux on z/VM.

`hvc_iucv.09cae6` A connection request from z/VM user ID <ID> was refused

Explanation: An IUCV connection request from another z/VM guest virtual machine has been refused. The request was from a z/VM guest virtual machine that is not listed by the "`hvc_iucv_allow=`" kernel parameter.

User response: Check the "`hvc_iucv_allow=`" kernel parameter setting. Consider adding the z/VM user ID to the "`hvc_iucv_allow=`" list in the kernel parameter line and reboot Linux.

Severity: Informational

`hvc_iucv.1bc1e0` `hvc_iucv_allow=` specifies too many z/VM user IDs

Explanation: The "`hvc_iucv_allow=`" kernel parameter specifies a comma-separated list of z/VM user IDs that are permitted to connect to the z/VM IUCV hypervisor device driver. The number of z/VM user IDs that are specified with the "`hvc_iucv_allow=`" kernel parameter exceeds the maximum of 500.

User response: Correct the "`hvc_iucv_allow=`" setting by reducing the z/VM user IDs in the list and reboot Linux.

Severity: Error

`hvc_iucv.339854` Creating a new HVC terminal device failed with error code=<errno>

Explanation: The device driver initialization failed to allocate a new HVC terminal device. A possible cause of this problem is memory constraints.

User response: If the error code is -12 (ENOMEM), consider assigning more memory to your z/VM guest virtual machine.

Severity: Error

`hvc_iucv.5a5e90` Registering HVC terminal device as Linux console failed

Explanation: The device driver initialization failed to set up the first HVC terminal device for use as Linux console.

User response: If the error code is -12 (ENOMEM),

consider assigning more memory to your z/VM guest virtual machine.

Severity: Error

`hvc_iucv.5bc646` Allocating memory failed with reason code=<reason>

Explanation: The z/VM IUCV hypervisor console (HVC) device driver initialization failed, because of a general memory allocation failure. The reason code indicates the memory operation that has failed: `kmem_cache` (reason code=1), `mempool` (reason code=2), or `hvc_iucv_allow=` (reason code=3)

User response: Consider assigning more memory to your z/VM guest virtual machine.

Severity: Error

`hvc_iucv.691dff` The z/VM IUCV HVC device driver cannot be used without z/VM

Explanation: The z/VM IUCV hypervisor console (HVC) device driver requires the z/VM inter-user communication vehicle (IUCV).

User response: Set "`hvc_iucv=`" to zero in the kernel parameter line and reboot Linux.

Severity: Notice

`hvc_iucv.9f5b40` `hvc_iucv_allow=` does not specify a valid z/VM user ID list

Explanation: The "`hvc_iucv_allow=`" kernel parameter specifies a comma-separated list of z/VM user IDs that are permitted to connect to the z/VM IUCV hypervisor device driver. The z/VM user IDs in the list must not exceed eight characters and must not contain spaces.

User response: Correct the "`hvc_iucv_allow=`" setting in the kernel parameter line and reboot Linux.

Severity: Error

`hvc_iucv.d4fcff` Registering IUCV handlers failed with error code=<errno>

Explanation: The device driver initialization failed to register with z/VM IUCV to handle IUCV connections, as well as sending and receiving of IUCV messages.

User response: Check for related IUCV error messages

hvc_iucv.e38b47

and see the errno manual page to find out what caused the problem.

Severity: Error

hvc_iucv.e38b47 *<hvc_iucv_devices>* **is not a valid value for the hvc_iucv= kernel parameter**

Explanation: The "hvc_iucv=" kernel parameter specifies the number of z/VM IUCV hypervisor console (HVC) terminal devices. The parameter value ranges from 0 to 8. If zero is specified, the z/VM IUCV HVC device driver is disabled and no IUCV-based terminal access is available.

User response: Correct the "hvc_iucv=" setting in the kernel parameter line and reboot Linux.

Severity: Error

Chapter 24. hypfs

Messages with a prefix hypfs are issued by the S/390 hypervisor file system, which provides access to LPAR and z/VM hypervisor data.

**hypfs.7a79f0 Initialization of hypfs failed with
rc=<error code>**

Explanation: Initialization of hypfs failed because of resource or hardware constraints. Possible reasons for this problem are insufficient free memory or missing hardware interfaces.

User response: See errno.h for information about the error codes.

Severity: Error

User response: None.

Severity: Error

**hypfs.7f5705 The hardware system does not support
hypfs**

Explanation: hypfs requires DIAGNOSE Code X'204' but this diagnose code is not available on your hardware. You need more recent hardware to use hypfs.

User response: None.

Severity: Error

hypfs.90c29b Updating the hypfs tree failed

Explanation: There was not enough memory available to update the hypfs tree.

User response: Free some memory and try again to update the hypfs tree. Consider assigning more memory to your LPAR or z/VM guest virtual machine.

Severity: Error

**hypfs.a2406e <mount option> is not a valid mount
option**

Explanation: hypfs has detected mount options that are not valid.

User response: See "Device Drivers Features and Commands" for information about valid mount options for hypfs.

Severity: Error

**hypfs.cccfb8 The hardware system does not provide
all functions required by hypfs**

Explanation: hypfs requires DIAGNOSE Code X'224' but this diagnose code is not available on your hardware. You need more recent hardware to use hypfs.

Chapter 25. iucv

Messages with a prefix iucv are issued by the Inter-User Communication Vehicle (IUCV) device driver. IUCV is a z/VM communication facility that enables a program running in one z/VM guest to communicate with another z/VM guest, or with a control program, or even with itself.

iucv.1d65b1 Suspending Linux did not completely close all IUCV connections

Explanation: When resuming a suspended Linux instance, the IUCV base code found data structures from one or more IUCV connections that existed before the Linux instance was suspended. Modules that use IUCV connections must close these connections when a Linux instance is suspended. This problem indicates an error in a program that used an IUCV connection.

User response: Report this problem to your support organization.

Severity: Warning

iucv.beb348 Defining an interrupt buffer on CPU <CPU number> failed with 0x<hexadecimal error value> (<short error code explanation>)

Explanation: Defining an interrupt buffer for external interrupts failed. Error value 0x03 indicates a problem with the z/VM directory entry of the z/VM guest virtual machine. This problem can also be caused by a program error.

User response: If the error value is 0x03, examine the z/VM directory entry of your z/VM guest virtual machine. If the directory entry is correct or if the error value is not 0x03, report this problem to your support organization.

Severity: Warning

Chapter 26. lcs

Messages with a prefix `lcs` are issued by the LAN channel station device driver. The LCS device driver supports non-QDIO communications through Open Systems Adapters (OSA).

lcs.23ff8e *<bus ID of the LCS device>*: **Sending data from the LCS device to the LAN failed with rc=<ccw_device_resume return code in decimal notation>**

Explanation: The LAN channel station (LCS) device driver could not send data to the LAN using the LCS device. This might be a temporary problem. Operations continue on the LCS device.

User response: If this problem occurs frequently, initiate a recovery process, for example, by writing '1' to the 'recover' sysfs attribute of the device. If the problem persists, contact IBM support.

Severity: Error

lcs.2a7553 *<bus ID of the LCS device>*: **The LCS device stopped because of an error, dstat=0x<device status>, cstat=0x<subchannel status>**

Explanation: The LAN channel station (LCS) device reported an error. The LCS device driver might start a device recovery process.

User response: If the device driver does not start a recovery process, initiate a recovery process, for example, by writing '1' to the 'recover' sysfs attribute of the device. If the problem persists, note the status information provided with the message and contact IBM support.

Severity: Warning

lcs.432fb3 *<bus ID of the LCS device>*: **An I/O-error occurred on the LCS device**

Explanation: The LAN channel station (LCS) device reported a problem that can be recovered by the LCS device driver. Repeated occurrences of this problem indicate a malfunctioning device.

User response: If this problem occurs frequently, initiate a recovery process for the device, for example, by writing '1' to the 'recover' sysfs attribute of the device.

Severity: Warning

lcs.5d4e1a *<bus ID of the LCS device>*: **Shutting down the LCS device failed**

Explanation: A request to shut down a LAN channel station (LCS) device resulted in an error. The error is logged in the LCS trace at trace level 4.

User response: Try again to shut down the device. If the error persists, see the LCS trace to find out what causes the error.

Severity: Error

lcs.618a07 *<bus ID of the LCS device>*: **A command timed out on the LCS device**

Explanation: The LAN channel station (LCS) device reported a problem that can be recovered by the LCS device driver. Repeated occurrences of this problem indicate a malfunctioning device.

User response: If this problem occurs frequently, initiate a recovery process for the device, for example, by writing '1' to the 'recover' sysfs attribute of the device.

Severity: Warning

lcs.64a3d7 *<bus ID of the LCS device>*: **Allocating a socket buffer to interface <network interface> failed**

Explanation: LAN channel station (LCS) devices require a socket buffer (SKB) structure for storing incoming data. The LCS device driver failed to allocate an SKB structure to the LCS device. A likely cause of this problem is memory constraints.

User response: Free some memory and repeat the failed operation.

Severity: Error

lcs.b44620 *<bus ID of the LCS device>*: **An error occurred on the LCS device, rc=<return code>**

Explanation: The LAN channel station (LCS) device reported a problem that can be recovered by the LCS device driver. Repeated occurrences of this problem indicate a malfunctioning device.

User response: If this problem occurs frequently, initiate a recovery process for the device, for example, by writing '1' to the 'recover' sysfs attribute of the device.

lcs.c375fd • lcs.f3f094

Severity: Warning

lcs.c375fd *<bus ID of the LCS device>*: **Detecting a network adapter for LCS devices failed with rc=<lcs_detect return code in decimal notation> (0x<lcs_detect return code in hexadecimal notation>)**

Explanation: The LCS device driver could not initialize a network adapter.

User response: Ensure that the physical connection from the port to the network is in place. If the error persists, note the return code from the error message and contact IBM support.

Severity: Error

lcs.e47e1f *<bus ID of the LCS device>*: **Starting an LCS device resulted in an error, rc=<ccw_device_start return code in decimal notation>!**

Explanation: The LAN channel station (LCS) device driver failed to initialize an LCS device. The device is not operational.

User response: Initiate a recovery process, for example, by writing '1' to the 'recover' sysfs attribute of the device. If the problem persists, contact IBM support.

Severity: Error

lcs.f3f094 *<bus ID of the LCS device>*: **A recovery process has been started for the LCS device**

Explanation: The LAN channel station (LCS) device is shut down and restarted. The recovery process might have been initiated by a user or started automatically as a response to a device problem.

User response: Wait until a message indicates the completion of the recovery process.

Severity: Warning

Chapter 27. monreader

Messages with a prefix `monreader` are issued by the z/VM *MONITOR record reader device driver. This device driver enables monitoring software on Linux to access z/VM *MONITOR records, which contain data about z/VM guest virtual machines.

monreader.0111fc The specified *MONITOR DCSS <DCSS name> does not have the required type SC

Explanation: The DCSS that was specified with the `monreader.mondcss` kernel parameter or with the `mondcss` module parameter cannot be a *MONITOR DCSS because it is not of type SC.

User response: Confirm that you are using the name of the DCSS that has been configured as the *MONITOR DCSS on the z/VM hypervisor. If the default name, `MONDCSS`, is used, omit the `monreader.mondcss` or `mondcss` parameter.

Severity: Error

monreader.029e2e The read queue for monitor data is full

Explanation: The read function of the z/VM *MONITOR device driver returns `EOverflow` because not enough monitor data has been read since the monitor device has been opened. Monitor data already read are valid and subsequent reads return valid data but some intermediate data might be missing.

User response: Be aware that monitor data might be missing. Assure that you regularly read monitor data after opening the monitor record device.

Severity: Warning

monreader.15a7a1 z/VM *MONITOR system service disconnected with rc=<IPUSER SEVER return code>

Explanation: The z/VM *MONITOR record device driver receives monitor records through an IUCV connection to the z/VM *MONITOR system service. This connection has been severed and the read function of the z/VM *MONITOR device driver returns `EIO`. All data received since the last read with 0 size is incorrect.

User response: Disregard all monitor data read since the last read with 0 size. Close and reopen the monitor record device. For information about the `IPUSER SEVER` return codes see "z/VM Performance".

Severity: Error

monreader.1a46fe The z/VM *MONITOR record device driver cannot be loaded without z/VM

Explanation: The z/VM *MONITOR record device driver uses z/VM system services to provide monitor data about z/VM guest operating systems to applications on Linux. On Linux instances that run in environments other than the z/VM hypervisor, the z/VM *MONITOR record device driver does not provide any useful function and the corresponding `monreader` module cannot be loaded.

User response: Load the z/VM *MONITOR record device driver only on Linux instances that run as guest operating systems of the z/VM hypervisor. If the z/VM *MONITOR record device driver has been compiled into the kernel, ignore this message.

Severity: Error

monreader.6f04b5 The z/VM *MONITOR record device driver failed to register with IUCV

Explanation: The z/VM *MONITOR record device driver receives monitor data through an IUCV connection and needs to register with the IUCV device driver. This registration failed and the z/VM *MONITOR record device driver was not loaded. A possible cause of this problem is insufficient memory.

User response: Free some memory and try again to load the module. If the z/VM *MONITOR record device driver has been compiled into the kernel, you might have to configure more memory and reboot Linux. If you do not want to read monitor data, ignore this message.

Severity: Error

monreader.88c26a Connecting to the z/VM *MONITOR system service failed with rc=<IUCV CONNECT return code>

Explanation: The z/VM *MONITOR record device driver receives monitor records through an IUCV connection to the z/VM *MONITOR system service. This connection could not be established when the monitor record device was opened. If the return code is 15, your z/VM guest virtual machine is not authorized to connect to the *MONITOR system service.

User response: If the return code is 15, ensure that the IUCV *MONITOR statement is included in the z/VM directory entry for your z/VM guest virtual machine. For other IUCV CONNECT return codes see the IUCV section in "CP Programming Services" and the *MONITOR section in "z/VM Performance".

Severity: Error

monreader.c042b6 Reading monitor data failed with
rc=<return code>

Explanation: The z/VM *MONITOR record device driver failed to read monitor data because the IUCV REPLY function failed. The read function against the monitor record device returns EIO. All monitor data that has been read since the last read with 0 size is incorrect.

User response: Disregard all monitor data that has been read since the last read with 0 size. If the device driver has been compiled as a separate module, unload and reload the monreader module. If the device driver has been compiled into the kernel, reboot Linux. For more information about possible causes of the error see the IUCV section in "z/VM CP Programming Services" and the *MONITOR section in "z/VM Performance".

Severity: Error

monreader.ca6466 Disconnecting the z/VM
***MONITOR system service failed with**
rc=<IUCV SEVER return code>

Explanation: The z/VM *MONITOR record device driver receives monitor data through an IUCV connection to the z/VM *MONITOR system service. This connection could not be closed when the monitor record device was closed. You might not be able to resume monitoring.

User response: No immediate action is necessary. If you cannot open the monitor record device in the future, reboot Linux. For information about the IUCV SEVER return codes see the IUCV section in "CP Programming Services" and the *MONITOR section in "z/VM Performance".

Severity: Warning

Chapter 28. monwriter

Messages with a prefix monwriter are issued by the monitor stream application device driver. Applications can use this device driver to write monitor data in the form of APPLDATA records to the z/VM monitor stream.

monwriter.fcbea9 Writing monitor data failed with **rc=<return code>**

Explanation: The monitor stream application device driver used the z/VM diagnose call DIAG X'DC' to start writing monitor data. z/VM returned an error and the monitor data cannot be written. If the return code is 5, your z/VM guest virtual machine is not authorized to write monitor data.

User response: If the return code is 5, ensure that your z/VM guest virtual machine's entry in the z/VM directory includes the OPTION APPLMON statement. For other return codes see the section about DIAGNOSE Code X'DC' in "z/VM CP Programming Services".

Severity: Error

Chapter 29. netiucv

Messages with a prefix `netiucv` are issued by the NETIUCV device driver. This network device driver uses IUCV to connect instances of Linux on z/VM, or to connect an instance of Linux on z/VM to another z/VM guest such as a TCP/IP service machine.

netiucv.04ce63 *<bus ID of the IUCV device>*: **The IUCV device failed to connect to the peer on z/VM guest <z/VM user ID>**

Explanation: The connection cannot be established because the z/VM guest virtual machine with the peer interface is not configured for IUCV connections.

User response: Configure the z/VM guest virtual machine with the peer interface for IUCV connections; then try again to establish the connection.

Severity: Warning

netiucv.297069 *<bus ID of the IUCV device>*: **z/VM guest <remote z/VM user ID> has too many IUCV connections to connect with the IUCV device**

Explanation: Connecting to the remote z/VM guest virtual machine failed because the maximum number of IUCV connections for the remote z/VM guest virtual machine has been reached.

User response: Close some of the established IUCV connections on the remote z/VM guest virtual machine; then try again to establish the connection.

Severity: Error

netiucv.55da31 *<bus ID of the IUCV device>*: **The IUCV interface to <remote z/VM user ID> has been established successfully**

Explanation: The IUCV interface to the remote z/VM guest virtual machine has been established and can be activated with "ifconfig up" or an equivalent command.

User response: None.

Severity: Informational

netiucv.56149b *<bus ID of the IUCV device>*: **Connecting the IUCV device failed with error <error code>**

Explanation: The connection cannot be established because of an IUCV CONNECT error.

User response: Report this problem to your support organization.

Severity: Error

netiucv.5be5dc *<bus ID of the IUCV device>*: **The peer interface of the IUCV device has closed the connection**

Explanation: The peer interface on the remote z/VM guest virtual machine has closed the connection. Do not expect further packets on this interface. Any packets you send to this interface will be dropped.

User response: None.

Severity: Informational

netiucv.6b758f *<bus ID of the IUCV device>*: **The IUCV device has been connected successfully to <remote z/VM user ID>**

Explanation: The connection has been established and the interface is ready to transmit communication packages.

User response: None.

Severity: Informational

netiucv.863549 *<bus ID of the IUCV device>*: **The IUCV device cannot connect to a z/VM guest with no IUCV authorization**

Explanation: Because the remote z/VM guest virtual machine is not authorized for IUCV connections, the connection cannot be established.

User response: Add the statements 'IUCV ALLOW' and 'IUCV ANY' to the z/VM directory entry of the remote z/VM guest virtual machine; then try again to establish the connection. See "z/VM CP Planning and Administration" for details about the IUCV statements.

Severity: Error

netiucv.bcbc54 *<bus ID of the IUCV device>*: **The IUCV device failed to connect to z/VM guest <z/VM user ID>**

Explanation: The connection cannot be established because the z/VM guest virtual machine with the peer interface is not running.

User response: Ensure that the z/VM guest virtual machine with the peer interface is running; then try again to establish the connection.

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Severity: Warning

netiucv.c1b7ef *<bus ID of the IUCV device>*: **The IUCV device is connected to *<remote z/VM user ID>* and cannot be removed**

Explanation: Removing a connection failed because the interface is active with a peer interface on a remote z/VM guest virtual machine.

User response: Deactivate the interface with "ifconfig down" or an equivalent command; then try again to remove the interface.

Severity: Warning

netiucv.cfb810 *<bus ID of the IUCV device>*:
Connecting the IUCV device would exceed the maximum number of IUCV connections

Explanation: The connection cannot be established because the maximum number of IUCV connections has been reached on the local z/VM guest virtual machine.

User response: Close some of the established IUCV connections on the local z/VM guest virtual machine; then try again to establish the connection.

Severity: Error

netiucv.e9590c *<bus ID of the IUCV device>*: **The peer z/VM guest *<remote z/VM user ID>* has closed the connection**

Explanation: The peer interface is no longer available.

User response: Either deactivate and remove the interface, or wait for the peer z/VM guest to re-establish the interface.

Severity: Informational

Chapter 30. numa

Messages with a prefix `numa` are issued by a kernel function that supports non-uniform memory access (NUMA).

numa.196305 NUMA mode: *<mode>*

Explanation: Linux started with the specified NUMA mode.

User response: None.

Severity: Informational

Chapter 31. numa_emu

Messages with a prefix `numa_emu` are issued by a kernel function that emulates non-uniform memory access (NUMA).

numa_emu.4e9f29 Not enough memory for *<requested number of nodes>* nodes, reducing node count

Explanation: Using the requested memory stripe size for emulating the requested number of NUMA nodes requires more than the available memory. The number of nodes is specified with the `emu_nodes=` kernel parameter. The memory stripe size to be used for distributing the available memory among the nodes is specified with the `emu_size=` kernel parameter. Fewer nodes were created than the requested number; each node has one memory stripe of the requested size.

User response: Specify fewer nodes, reduce the memory stripe size, or make more memory available to your Linux instance.

Severity: Warning

numa_emu.5bb827 Increasing memory stripe size from *<requested memory stripe size>* MB to *<adjusted memory stripe size>* MB

Explanation: NUMA emulation could not use the requested memory stripe size and therefore has increased it to the next possible value. The requested memory stripe size is a default value or it was specified with the `emu_size=` kernel parameter. The memory stripe size must be a multiple of the memory block size that can be read in hexadecimal notation from `/sys/devices/system/memory/block_size_bytes`.

User response: To avoid this message in the future, specify a valid memory stripe size with the `emu_size=` kernel parameter.

Severity: Warning

numa_emu.84b6f1 Creating *<number of nodes>* nodes with memory stripe size *<stripe size>* MB

Explanation: NUMA emulation is activated with the reported number of NUMA nodes. The specified memory stripe size is used to distribute, in round-robin fashion, the available memory among the nodes.

User response: None.

Severity: Informational

Chapter 32. os_info

Messages with a prefix `os_info` are issued by Linux in `kdump` mode.

os_info.2fdede entry *<entry ID>*: *<entry state>*
(**addr=0x***<entry address>* **size=***<entry size>*)

Explanation: Linux is running in `kdump` mode and reports information defined by the previously running production kernel. Possible values for "entry state" are:

- copied: The entry has been found, verified, and copied
- not available: The entry has not been defined
- checksum failed: The entry has been found, but it is not valid

User response: If `kdump` fails, contact your service organization and include this message in the error report.

Severity: Informational

os_info.d3cf4c crashkernel: addr=0x*<address>*
size=*<size>*

Explanation: Linux is running in `kdump` mode and reports the address and size of the memory area that was reserved for `kdump` by the previously running production kernel.

User response: None.

Severity: Informational

Chapter 33. perf

Messages with a prefix perf are issued by kernel functions that support the z/Architecture CPU-measurement facility.

perf.2308eb CPU[<cpu number>] CPUM_SF:
Basic-sampling: a=<authorization control>
e=<enable control> c=<activation control>
bsdes=<basic-sampling-data-entry size>
tear=<tear register contents> dear=<dear
register contents>

Explanation: This message displays information about the basic-sampling function of the CPU-measurement sampling facility (CPUM_SF) on a particular CPU. For details, see "The Load-Program-Parameter and the CPU-Measurement Facilities", SA23-2260.

User response: None.

Severity: Informational

perf.444429 CPU[<cpu number>] CPUM_SF:
basic=<authorization status for the
basic-sampling function>
diag=<authorization status for the
diagnostic-sampling function>
min=<minimum sampling interval>
max=<maximum sampling interval>
cpu_speed=<cpu speed>

Explanation: This message displays generic information about the CPU-measurement sampling facility (CPUM_SF) on a particular CPU. For details, see "The Load-Program-Parameter and the CPU-Measurement Facilities", SA23-2260.

User response: None.

Severity: Informational

perf.ad938e The sampling facility is already reserved
by <address of perf sampling support owner>

Explanation: A process tried to reserve the sampling facility support, but it was already reserved by another process.

User response: Check whether another process, for example, the perf program or OProfile is currently active. Retry activating the sampling facility after the other process has ended.

Severity: Warning

perf.c7b342 CPU[<cpu number>] CPUM_SF:
Diagnostic-sampling: a=<authorization
control> e=<enable control> c=<activation
control> dsdes=<diagnostic-sampling-data-
entry size> tear=<tear register contents>
dear=<dear register contents>

Explanation: This message displays information about the diagnostic-sampling function of the CPU-measurement sampling facility (CPUM_SF) on a particular CPU. For details, see "The Load-Program-Parameter and the CPU-Measurement Facilities", SA23-2260.

User response: None.

Severity: Informational

perf.ee05c5 CPU[<cpu number>] CPUM_CF:
ver=<first version number>.<second version
number> **A**=<counter set authorization>
E=<counter set enable controls> **C**=<counter
set activation controls>

Explanation: This message displays information about the CPU-measurement counter facility (CPUM_CF) on a particular CPU. For details, see "The Load-Program-Parameter and the CPU-Measurement Facilities", SA23-2260.

User response: None.

Severity: Informational

Chapter 34. prng

Messages with a prefix prng are issued by the pseudo-random number device driver.

prng.21a20e The prng self test data test for the SHA-512 mode failed

Explanation: The pseudo-random number device driver is not operational because the self test failed. After processing a published National Institute of Standards and Technology (NIST) test vector for the Deterministic Random Bit Generator (DRBG) algorithm, the device driver did not produce the expected pseudo-random data. This failure might indicate that the cryptographic software or hardware is not working correctly. The processed NIST test vector was: Hash Drbg, Sha-512, Count #0.

User response: Unload and reload the prng module, or if prng was compiled into the kernel, restart Linux. If the error persists, contact your support organization.

Severity: Error

prng.22c4d8 prng runs in TDES mode with chunksize=<read chunk size in bytes> and reseed_limit=<reseed limit>

Explanation: The pseudo-random number device driver started in triple DES mode. For IBM mainframes earlier than IBM zEnterprise EC12 (zEC12), triple DES is the only available mode. As of zEC12, the preferred mode is SHA-512.

User response: If triple DES is the expected mode, no action is required. Otherwise, verify that the prng started with the mode= module or prng.mode= kernel parameter set to a value other than 1. The value 1 forces triple DES mode. Also ensure that the mainframe runs with the latest firmware level.

Severity: Informational

prng.75a4bd The prng module stopped after running in SHA-512 mode

Explanation: The pseudo-random number device driver was running in SHA-512 mode. The device driver module, prng, was unloaded, or stopped because Linux shut down.

User response: None.

Severity: Informational

prng.83a5b3 The prng self test state test for the SHA-512 mode failed

Explanation: The pseudo-random number device

driver is not operational because the self test failed. After processing a published National Institute of Standards and Technology (NIST) test vector for the Deterministic Random Bit Generator (DRBG) algorithm, the device driver was not in the expected working state. This failure might indicate that the cryptographic software or hardware is not working correctly. The processed NIST test vector was: Hash Drbg, Sha-512, Count #0.

User response: Unload and reload the prng module, or if prng was compiled into the kernel, restart Linux. If the error persists, contact your support organization.

Severity: Error

prng.a1c284 The prng module stopped after running in triple DES mode

Explanation: The pseudo-random number device driver was running in triple DES mode. The device driver module, prng, was unloaded, or it stopped because Linux shut down.

User response: None.

Severity: Informational

prng.a1d3da The prng module cannot start in SHA-512 mode

Explanation: The pseudo-random number device driver was loaded with the mode= module parameter or the prng.mode= kernel parameter set to 2. This setting forces SHA-512 mode, but the required support for MSA 5 is not available. This support requires an IBM zEnterprise EC12 (zEC12) or later mainframe.

User response: If your mainframe is earlier than zEC12, set the mode= module or prng.mode= kernel parameter to 0 or 1 to run the pseudo-random number device driver in triple DES mode. Otherwise, ensure that MSA 5 support available.

Severity: Error

prng.e9e54e prng runs in SHA-512 mode with chunksize=<read chunk size in bytes> and reseed_limit=<reseed limit>

Explanation: The pseudo-random number device driver started in SHA-512 mode. As of IBM zEnterprise EC12, this is the preferred mode.

User response: None.

Severity: Informational

Chapter 35. qeth

Messages with a prefix qeth are issued by the qeth device driver. The qeth device driver supports a multitude of network connections, for example, connections through Open Systems Adapters (OSA), HiperSockets, guest LANs, and virtual switches.

qeth.03aa42 *<bus ID of the qeth device>*: **Interface <interface name> is down because the adjacent port is no longer in reflective relay mode**

Explanation: The ISOLATION_FORWARD policy is active for the QDIO data connection isolation of the qeth device. This policy requires a network adapter in Virtual Ethernet Port Aggregator (VEPA) mode with an adjacent switch port in reflective relay mode. The reflective relay mode on the adjacent switch port was disabled. The qeth device was set offline and the interface was deactivated to prevent any unintended network traffic.

User response: Enable the reflective relay mode again on the adjacent port or use the 'isolation' sysfs attribute of the qeth device to set a different policy for the QDIO data connection isolation. You can then resume operations by setting the qeth device back online and activating the interface.

Severity: Error

qeth.0650b1 *<bus ID of the qeth device>*: **The device is not configured as a Bridge Port**

Explanation: The Bridge Port role cannot be withdrawn from a device that is not configured as a Bridge Port.

User response: None.

Severity: Error

qeth.0815b7 *<bus ID of the qeth device>*: **The device is already a primary Bridge Port**

Explanation: A device cannot be configured as a primary or secondary Bridge Port if it is already configured as a primary Bridge Port.

User response: None, if you want the device to be a primary Bridge Port. If you want to configure the device as a secondary Bridge Port, withdraw the primary role by writing 'none' to the 'bridgeport_role' sysfs attribute of the device. Then try again to configure the device as the secondary Bridge Port.

Severity: Error

qeth.0d069c *<bus ID of the qeth device>*: **portname is**

deprecated and is ignored

Explanation: An OSA-Express port name was required to identify a shared OSA port. All operating system instances that shared the port had to use the same port name. This requirement no longer applies, and the specified portname attribute is ignored.

User response: For future upgrades, remove OSA port name specifications from your network configuration.

Severity: Warning

qeth.123aa6 *<bus ID of the qeth device>*: **The LAN cannot have more secondary Bridge Ports**

Explanation: A LAN can have up to five secondary Bridge Ports. You cannot configure a further device as a secondary Bridge Port unless the Bridge Ports role is withdrawn from one of the existing secondary Bridge Ports.

User response: Assure that the Bridge Port role is withdrawn from one of the existing secondary Bridge Ports before trying again to configure your device as a secondary Bridge Port.

Severity: Error

qeth.1d3c1d *<bus ID of the qeth device>*: **Registering IP address <IP address> failed**

Explanation: An IP address could not be registered with the network adapter.

User response: Check if another operating system instance has already registered the IP address with the same network adapter or at the same logical IP subnet.

Severity: Warning

qeth.1e4c70 *<bus ID of the qeth device>*: **The device is not authorized to run as a HiperSockets network traffic analyzer**

Explanation: The sysfs 'sniffer' attribute of the HiperSockets device has the value '1'. The corresponding HiperSockets interface is switched into promiscuous mode but the network traffic analyzer (NTA) rules configured at the Support Element (SE) do not allow tracing. Possible reasons are:

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- Tracing is not authorized for all HiperSockets LANs in the mainframe system
- Tracing is not authorized for this HiperSockets LAN
- LPAR is not authorized to enable an NTA

User response: Configure appropriate HiperSockets NTA rules at the SE.

Severity: Warning

qeth.21a074 *<bus ID of the qeth device>*: **There is no kernel module to support discipline <discipline>**

Explanation: The qeth device driver or a user command requested a kernel module for a particular qeth discipline. Either the discipline is not supported by the qeth device driver or the requested module is not available to your Linux system.

User response: Check if the requested discipline module has been compiled into the kernel or is present in /lib/modules/<version>/kernel/drivers/s390/net.

Severity: Error

qeth.2211d4 *<bus ID of the qeth device>*: **The LAN is offline**

Explanation: A start LAN command was sent by the qeth device driver but the physical or virtual adapter has not started the LAN. The LAN might take a few seconds to become available.

User response: Check the status of the qeth device, for example, with the lsqeth command. If the device does not become operational within a few seconds, initiate a recovery process, for example, by writing '1' to the 'recover' sysfs attribute of the device.

Severity: Warning

qeth.2f18a4 *<bus ID of the qeth device>*: **Starting multicast support for <network interface name> failed**

Explanation: The qeth device driver could not start multicast support on the network adapter.

User response: Ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.3acf0c *<bus ID of the qeth device>*: **The qeth device driver failed to recover an error on the device**

Explanation: The qeth device driver performed an automatic recovery operation to recover an error on a qeth device. The recovery operation failed.

User response: Try the following actions in the given order: i) Check the status of the qeth device, for example, with the lsqeth command. ii) Initiate a recovery process by writing '1' to the 'recover' sysfs attribute of the device. iii) Ungroup and regroup the subchannel triplet of the device. vi) Reboot Linux. v) If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.3d0305 *<bus ID of the qeth device>*: **The adapter is used exclusively by another host**

Explanation: The qeth adapter is exclusively used by another host.

User response: Use another qeth adapter or configure this one not exclusively to a particular host.

Severity: Error

qeth.48d0da *<bus ID of the qeth device>*: **The network adapter failed to generate a unique ID**

Explanation: In IBM mainframe environments, network interfaces are not identified by a specific MAC address. Therefore, the network adapters provide the network interfaces with unique IDs to be used in their IPv6 link local addresses. Without such a unique ID, duplicate addresses might be assigned in other LPARs.

User response: Install the latest firmware on the adapter hardware. Manually, configure an IPv6 link local address for this device.

Severity: Warning

qeth.4a588d *<bus ID of the qeth device>*: **Completion Queue support disabled**

Explanation: The HiperSockets device is disabled for completion queueing. This device cannot or no longer be used to set up AF_IUCV communication in an LPAR.

User response: None.

Severity: Informational

qeth.4da7f2 **Initializing the qeth device driver failed**

Explanation: The base module of the qeth device driver could not be initialized.

User response: See errno.h to determine the reason for the error. i) Reboot Linux. ii) If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Error

qeth.531375 *<bus ID of the qeth device>*: **Hardware checksumming is performed only if *<network interface name>* and its peer use different OSA Express 3 ports**

Explanation: Offloaded checksum calculations apply only to packets that go out to the LAN or come in from the LAN. Linux instances that share an OSA Express 3 port exchange packets directly. Packets transmitted through a shared port, and for which you have turned on hardware checksumming, are neither checksummed by the OSA adapter nor by Linux.

User response: To use hardware checksumming, ensure that the peers use separate ports. To use software checksumming in Linux instead, turn off hardware checksumming. If you can risk running without checksumming for your connection, ignore this message.

Severity: Warning

qeth.53237e *<bus ID of the qeth device>*: **A connection could not be established because of an OLM limit**

Explanation: z/OS has activated Optimized Latency Mode (OLM) for a connection through an OSA Express3 adapter. This reduces the maximum number of concurrent connections per physical port for shared adapters. The new connection would exceed the maximum. Linux cannot establish further connections using this adapter.

User response: If possible, deactivate an existing connection that uses this adapter and try again to establish the new connection. If you cannot free an existing connection, use a different adapter for the new connection.

Severity: Error

qeth.5cb8a3 *<bus ID of the qeth device>*: **The qeth device is not configured for the OSI layer required by z/VM**

Explanation: A qeth device that connects to a virtual network on z/VM must be configured for the same Open Systems Interconnection (OSI) layer as the virtual network. An ETHERNET guest LAN or VSWITCH uses the data link layer (layer 2) while an IP guest LAN or VSWITCH uses the network layer (layer 3).

User response: If you are connecting to an ETHERNET guest LAN or VSWITCH, set the layer2 sysfs attribute of the qeth device to 1. If you are connecting to an IP guest LAN or VSWITCH, set the layer2 sysfs attribute of the qeth device to 0.

Severity: Error

qeth.5d5e5c **There is no IPv6 support for the layer 3 discipline**

Explanation: If you want to use IPv6 with the layer 3 discipline, you need a Linux kernel with IPv6 support. Because your Linux kernel has not been compiled with IPv6 support, you cannot use IPv6 with the layer 3 discipline, even if your adapter supports IPv6.

User response: Use a Linux kernel that has been compiled to include IPv6 support if you want to use IPv6 with layer 3 qeth devices.

Severity: Warning

qeth.5ff844 *<bus ID of the qeth device>*: **Completion Queue support enabled**

Explanation: The HiperSockets device is enabled for completion queueing. This is part of the process to set up AF_UCV communication in an LPAR.

User response: None.

Severity: Informational

qeth.666544 *<bus ID of the qeth device>*: **MAC address *<MAC-address>* already exists**

Explanation: Setting the MAC address for the qeth device fails, because this MAC address is already defined on the OSA CHPID.

User response: Use a different MAC address for this qeth device.

Severity: Warning

qeth.6adf49 *<bus ID of the qeth device>*: **The device represents a Bridge Capable Port**

Explanation: You can configure this device as a Bridge Port.

User response: None.

Severity: Informational

qeth.72880f *<bus ID of the qeth device>*: **A HiperSockets network traffic analyzer is already active in the HiperSockets LAN**

Explanation: The sysfs 'sniffer' attribute of the HiperSockets device has the value '1'. The HiperSockets interface is switched into promiscuous mode but another HiperSockets device on the same HiperSockets LAN is already running as a network traffic analyzer. A HiperSockets LAN can only have one active network traffic analyzer.

User response: Do not configure multiple HiperSockets devices in the same HiperSockets LAN as tracing devices.

Severity: Warning

qeth.760272 *<bus ID of the qeth device>*: **The reflective relay mode cannot be enabled at the adjacent switch port**

Explanation: The 'isolation' sysfs attribute of the qeth device could not be set to 'forward'. This setting selects the ISOLATION_FORWARD policy for the QDIO data connection isolation. The ISOLATION_FORWARD policy requires a network adapter in Virtual Ethernet Port Aggregator (VEPA) mode with an adjacent switch port in reflective relay mode. The qeth device driver failed to enable the required reflective relay mode on the adjacent switch port although the switch port supports this mode.

User response: Enable reflective relay mode on the switch for the adjacent port and try again.

Severity: Error

qeth.77cf86 *<bus ID of the qeth device>*: **Enabling broadcast filtering for <network interface name> failed**

Explanation: The qeth device driver could not enable broadcast filtering on the network adapter.

User response: Ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.7ade71 *<bus ID of the qeth device>*: **Starting VLAN support for <network interface name> failed**

Explanation: The qeth device driver could not start VLAN support on the network adapter.

User response: None if you do not require VLAN support. If you need VLAN support, ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.86d925 *<bus ID of the qeth device>*: **Turning off reflective relay mode at the adjacent switch failed**

Explanation: The policy for the QDIO data connection isolation was changed successfully, and communications are now handled according to the new policy. The ISOLATION_FORWARD policy is no longer used, but the qeth device driver could not turn off the reflective relay mode on the adjacent switch port.

User response: Check the adjacent switch for errors and correct the problem.

Severity: Warning

qeth.883aa0 *<bus ID of the qeth device>*: **Starting HW checksumming for <network interface name> failed, using SW checksumming**

Explanation: The network adapter supports hardware checksumming for IP packages but the qeth device driver could not start hardware checksumming on the adapter. The qeth device driver continues to use software checksumming for IP packages.

User response: None if you do not require hardware checksumming for network traffic. If you want to enable hardware checksumming, ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.8a7bb9 *<bus ID of the qeth device>*: **Starting IP fragmentation support for <network interface name> failed**

Explanation: The qeth device driver could not start IP fragmentation support on the network adapter.

User response: Ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.8aead2 *<bus ID of the qeth device>*: **Device recovery failed to restore all offload features**

Explanation: The qeth device driver performed a recovery operation on a qeth device. Part of the recovery is to restore the offload features that were enabled before the recovery. At least one of those offload features could not be restored.

User response: Check which offload features are enabled on the device, for example with the "ethtool -k" command. Try to explicitly re-enable the missing offload features for the device, for example with the "ethtool -K" command.

Severity: Warning

qeth.8c5944 *<bus ID of the qeth device>*: **The LAN already has a primary Bridge Port**

Explanation: A LAN can have multiple secondary Bridge Ports, but only one primary Bridge Port. Configuring the device as a primary Bridge Port failed because another port on the LAN has been configured as the primary Bridge Port.

User response: Find out which operating system instance has configured the primary Bridge Port. Assure that the primary role for this port is withdrawn before trying again to configure your device as the primary Bridge Port. Alternatively, consider configuring your device as a secondary Bridge Port.

Severity: Error

qeth.90d7eb *<bus ID of the qeth device>*: **MAC address <MAC-address> is not authorized**

Explanation: This qeth device is a virtual network interface card (NIC), to which z/VM has already assigned a MAC address. z/VM MAC address verification does not allow you to change this predefined address.

User response: None; use the MAC address that has been assigned by z/VM.

Severity: Warning

qeth.9b3034 *<bus ID of the qeth device>*: **Setting the device online failed because of insufficient authorization**

Explanation: The qeth device is configured with OSX CHPIDs. An OSX CHPID cannot be activated unless the LPAR is explicitly authorized to access it. For z/VM guest operating systems, the z/VM user ID must be explicitly authorized in addition to the LPAR. You grant these authorizations through the Service Element.

User response: At the Service Element, authorize the LPAR and, if applicable, the z/VM user ID for using the OSX CHPIDs with which the qeth device has been configured. Then try again to set the device online.

Severity: Error

qeth.9e9f31 *<bus ID of the qeth device>*: **Setting up broadcast echo filtering for <network interface name> failed**

Explanation: The qeth device driver could not set up broadcast echo filtering on the network adapter.

User response: Ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.a4a7ee *<bus ID of the qeth device>*: **The link for <network interface name> on CHPID 0x<CHPID> has been restored**

Explanation: A failed network link has been re-established. A device recovery is in progress.

User response: Wait until a message indicates the

completion of the recovery process.

Severity: Informational

qeth.a853bd *<bus ID of the qeth device>*: **Reading the adapter MAC address failed**

Explanation: The qeth device driver could not read the MAC address from the network adapter.

User response: Ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.aa2df0 *<bus ID of the qeth device>*: **The HiperSockets network traffic analyzer is deactivated**

Explanation: The sysfs 'sniffer' attribute of the HiperSockets device has the value '1'. Promiscuous mode has been switched off for the corresponding HiperSockets interface. As a result, the HiperSockets network traffic analyzer is stopped on the device.

User response: None.

Severity: Informational

qeth.aa55b2 *<bus ID of the qeth device>*: **The adapter hardware is of an unknown type**

Explanation: The qeth device driver does not recognize the adapter hardware. The cause of this problem could be a hardware error or a Linux level that does not support your adapter hardware.

User response: i) Investigate if your adapter hardware is supported by your Linux level. Consider using hardware that is supported by your Linux level or upgrading to a Linux level that supports your hardware. ii) Install the latest firmware on your adapter hardware. iii) If the problem persists and is not caused by a version mismatch, contact IBM support.

Severity: Error

qeth.ad45e9 *<bus ID of the qeth device>*: **Setting address notification failed**

Explanation: Enabling or disabling the address notification feature of a HiperSockets device failed. The device might not be configured as a Bridge Port.

User response: None, unless you need address notifications for this device. If you need notifications, confirm that your device is attached to a HiperSockets LAN that supports Bridge Capable Ports and that your device is configured as a Bridge Port. If the 'bridgeport_role' sysfs attribute of the device contains, one of the values 'primary' or 'secondary' and you

cannot set the address notification, contact your support organization.

Severity: Error

qeth.aed751 *<bus ID of the qeth device>*: **Configuring the VNIC characteristics failed**

Explanation: A qeth device was set online or subject to device recovery. Not all virtual network interface card (VNIC) characteristics for this device could be configured. The device might not support VNIC characteristics or might support only a subset of the possible VNIC characteristics. The state of the sysfs attributes reflects the current configuration of VNIC characteristics on the device.

User response: Read the sysfs attributes in the vnic subdirectory of the device to find out the current settings.

Severity: Error

qeth.c0a93c *<bus ID of the qeth device>*: **Enabling HW checksumming for <network interface name> failed, using SW checksumming**

Explanation: The network adapter supports hardware checksumming for IP packages but the qeth device driver could not enable hardware checksumming on the adapter. The qeth device driver continues to use software checksumming for IP packages.

User response: None if you do not require hardware checksumming for network traffic. If you want to enable hardware checksumming, ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.c13293 *<bus ID of the qeth device>*: **The adjacent switch port does not support reflective relay mode**

Explanation: The 'isolation' sysfs attribute of the qeth device could not be set to 'forward'. This setting selects the ISOLATION_FORWARD policy for the QDIO data connection isolation. The ISOLATION_FORWARD policy requires a network adapter in Virtual Ethernet Port Aggregator (VEPA) mode with an adjacent switch port in reflective relay mode.

User response: Use a switch port that supports reflective relay mode if you want to use the ISOLATION_FORWARD policy for the qeth device.

Severity: Error

qeth.c4e1a6 *<bus ID of the qeth device>*: **The HiperSockets network traffic analyzer is activated**

Explanation: The sysfs 'sniffer' attribute of the HiperSockets device has the value '1'. The corresponding HiperSockets interface has been switched into promiscuous mode. As a result, the HiperSockets network traffic analyzer is started on the device.

User response: None.

Severity: Informational

qeth.c98a58 *<bus ID of the qeth device>*: **Enabling HW TX checksumming for <network interface name> failed, using SW TX checksumming**

Explanation: The network adapter supports hardware checksumming for outgoing IP packages but the qeth device driver could not enable hardware TX checksumming on the adapter. The qeth device driver continues to use software checksumming for outgoing IP packages.

User response: None if you do not require hardware checksumming for outgoing network traffic. If you want to enable hardware checksumming, ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.c9b70b *<bus ID of the qeth device>*: **The device is already a secondary Bridge Port**

Explanation: A device cannot be configured as a primary or secondary Bridge Port if it is already configured as a secondary Bridge Port.

User response: None, if you want the device to be a secondary Bridge Port. If you want to configure the device as the primary Bridge Port, withdraw the secondary role by writing 'none' to the 'bridgeport_role' sysfs attribute of the device. Then try again to configure the device as the primary Bridge Port.

Severity: Error

qeth.cc86d9 *<bus ID of the qeth device>*: **Activating IPv6 support for <network interface name> failed**

Explanation: The qeth device driver could not activate IPv6 support on the network adapter.

User response: None if you do not require IPv6 communication. If you need IPv6 support, ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the

problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Error

qeth.d41e42 *<bus ID of the qeth device>*: **Completion Queuing supported**

Explanation: The HiperSockets device supports completion queuing. This is required to set up AF_IUCV communication in an LPAR.

User response: None.

Severity: Informational

qeth.d5b6b3 *<bus ID of the qeth device>*: **Starting outbound TCP segmentation offload for <network interface name> failed**

Explanation: The network adapter supports TCP segmentation offload, but the qeth device driver could not start this support on the adapter.

User response: None if you do not require TCP segmentation offload. If you want to enable TCP segmentation offload, ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.da9a6a *<bus ID of the qeth device>*: **The device is not authorized to be a Bridge Port**

Explanation: The device cannot be configured as a Bridge Port because the required authorizations in the hardware are not in place.

User response: See your hardware documentation about how to authorize ports for becoming a Bridge Port.

Severity: Error

qeth.deb9bd *<bus ID of the qeth device>*: **Address notification from the Bridge Port stopped <network interface name> (<error reported by the hardware>)**

Explanation: A Bridge Port no longer provides address notifications. Possible reasons include traffic overflow and that the device is no longer configured as a Bridge Port. A udev event with BRIDGEDHOST=abort was emitted to alert applications that rely on the address notifications.

User response: None.

Severity: Informational

qeth.df0225 *<bus ID of the qeth device>*: **The qeth driver ran out of channel command buffers**

Explanation: Command buffers can temporarily run out during periods of intense network configuration activities. The device driver recovers from this condition as outstanding commands are completed.

User response: Wait for a short time. If the problem persists, initiate a recovery process by writing '1' to the 'recover' sysfs attribute of the device.

Severity: Warning

qeth.e73874 *<bus ID of the qeth device>*: **Starting ARP processing support for <network interface name> failed**

Explanation: The qeth device driver could not start ARP support on the network adapter.

User response: Ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.eb4e01 *<bus ID of the qeth device>*: **Failed to create completion queue**

Explanation: The HiperSockets device could not be configured with a completion queue. A completion queue is required to operate AF_IUCV communication in an LPAR.

User response: i) Investigate if you have the latest firmware level in place. ii) If the problem persists and is not caused by a version mismatch, contact IBM support.

Severity: Error

qeth.ec9725 *<bus ID of the qeth device>*: **A Bridge Port is already configured by a different operating system**

Explanation: Linux instances cannot configure the target port as a Bridge Port. Another operating system already uses a Bridge Port on the HiperSockets or on the OSA adapter. For example, a z/VM instance might be using a port in a VSWITCH configuration. Multiple Bridge Ports on the same HiperSockets or OSA adapter must be configured by instances of the same operating system, for example, all Linux or all z/VM.

User response: Reconsider your network topology. Configure Bridge Ports only for ports on adapters where any other Bridge Ports are configured by other Linux instances.

Severity: Error

qeth.ef9329 *<bus ID of the qeth device>*: **A hardware operation timed out on the device**

Explanation: A hardware operation timed out on the qeth device.

User response: Check the status of the qeth device, for example, with the `lsqeth` command. If the device is not operational, initiate a recovery process, for example, by writing '1' to the 'recover' sysfs attribute of the device.

Severity: Warning

qeth.f56315 *<bus ID of the qeth device>*: **The link for interface *<network interface name>* on CHPID 0x*<CHPID>* failed**

Explanation: A network link failed. A possible reason for this error is that a physical network cable has been disconnected.

User response: Ensure that the network cable on the adapter hardware is connected properly. If the connection is to a guest LAN, ensure that the device is still coupled to the guest LAN.

Severity: Warning

qeth.f6c89f *<bus ID of the qeth device>*: **Enabling the passthrough mode for *<network interface name>* failed**

Explanation: The qeth device driver could not enable the passthrough mode on the network adapter. The passthrough mode is required for all network traffic other than IPv4. In particular, the passthrough mode is required for IPv6 traffic.

User response: None if all you want to support is IPv4 communication. If you want to support IPv6 or other network traffic apart from IPv4, ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.f823af *<bus ID of the qeth device>*: **QDIO reported an error, rc=*<return code>***

Explanation: The QDIO subsystem reported an error.

User response: Check for related QDIO errors. Check the status of the qeth device, for example, with the `lsqeth` command. If the device is not operational, initiate a recovery process, for example, by writing '1' to the 'recover' sysfs attribute of the device.

Severity: Warning

qeth.faf3f3 *<bus ID of the qeth device>*: **Starting source MAC-address support for *<network interface name>* failed**

Explanation: The qeth device driver could not enable source MAC-address on the network adapter.

User response: Ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.fce5bf *<bus ID of the qeth device>*: **Setting up broadcast filtering for *<network interface name>* failed**

Explanation: The qeth device driver could not set up broadcast filtering on the network adapter.

User response: Ungroup and regroup the subchannel triplet of the device. If this does not resolve the problem, reboot Linux. If the problem persists, gather Linux debug data and report the problem to your support organization.

Severity: Warning

qeth.fd0b7c *<bus ID of the qeth device>*: **A recovery process has been started for the device**

Explanation: A recovery process was started either by the qeth device driver or through a user command.

User response: Wait until a message indicates the completion of the recovery process.

Severity: Warning

Chapter 36. s390dbf

Messages with a prefix s390dbf are issued by the S/390 debug feature.

s390dbf.2d934d Root becomes the owner of all s390dbf files in sysfs

Explanation: The S/390 debug feature you are using only supports uid/gid = 0.

User response: None.

Severity: Warning

s390dbf.8e20d2 Flushing debug data failed because *<debug area number>* is not a valid area

Explanation: Flushing a debug area by using the 'flush' sysfs attribute failed. Valid values are the minus sign (-) for flushing all areas, or the number of the respective area for flushing a single area.

User response: Write a valid area number or the minus sign (-) to the 'flush' sysfs attribute.

Severity: Informational

s390dbf.a1b9ad Registering view *<feature name>/<view name>* would exceed the maximum number of views *<maximum>*

Explanation: The maximum number of allowed debug feature views has been reached. The view has not been registered. The system keeps running but the new view will not be available in sysfs. This is a program error.

User response: Report this problem to your support partner.

Severity: Error

s390dbf.ac1eb1 Registering debug feature *<feature name>* failed

Explanation: The initialization of an S/390 debug feature failed. A likely cause of this problem is memory constraints. The system keeps running, but the debug data for this feature will not be available in sysfs.

User response: Consider assigning more memory to your LPAR or z/VM guest virtual machine.

Severity: Error

s390dbf.d8734b Allocating memory for *<number of pages>* pages failed

Explanation: Setting the debug feature size by using the 'page' sysfs attribute failed. Linux did not have

enough memory for expanding the debug feature to the requested size.

User response: Use a smaller number of pages for the debug feature or allocate more memory to your LPAR or z/VM guest virtual machine.

Severity: Informational

s390dbf.ee54db *<level>* is not a valid level for a debug feature

Explanation: Setting a new level for a debug feature by using the 'level' sysfs attribute failed. Valid levels are the minus sign (-) and the integers in the range 0 to 6. The minus sign switches off the feature. The numbers switch the feature on, where higher numbers produce more debug output.

User response: Write a valid value to the 'level' sysfs attribute.

Severity: Warning

Chapter 37. sclp_cmd

Messages with a prefix `sclp_cmd` are issued in the context of SCLP commands.

sclp_cmd.4336b4 Standby memory at 0x<start address of standby memory> (<usable memory in MB> of <total detected memory in MB> usable)

Explanation: Standby memory was detected. It can be used for memory hotplug only if it is aligned to the Linux hotplug memory block size. If the aligned amount of memory matches the total amount, all detected standby memory can be used. Otherwise, some of the detected memory is unaligned and cannot be used.

User response: None, if the usable and the total amount of detected standby memory match. If the amounts of memory do not match, check the memory setup of your guest virtual machine and ensure that the standby memory start and end address is aligned to the Linux hotplug memory block size. On Linux, issue "cat /sys/devices/system/memory/block_size_bytes" to find the hotplug memory block size value in hexadecimal notation. On z/VM, query your memory setup with "vmcp q v store".

Severity: Informational

sclp_cmd.c01fec Memory hotplug state changed, suspend refused.

Explanation: Suspend is refused after a memory hotplug operation was performed.

User response: The system needs to be restarted and no memory hotplug operation must be performed in order to allow suspend.

Severity: Error

Chapter 38. sclp_config

Messages with a prefix `sclp_config` are issued by SCLP configuration management events.

`sclp_config.12c7a1` CPU capability may have changed

Explanation: The capability of the CPUs in the configuration may have been upgraded or downgraded. This message may also appear if the capability of the CPUs in the configuration did not change. For details see the STORE SYSTEM INFORMATION description in the "Principles of Operation."

User response: The user can examine `/proc/sysinfo` for CPU capability values.

Severity: Informational

Chapter 39. scm_block

Messages with a prefix scm_block are issued by the storage-class memory (SCM) device driver.

scm_block.1ab3e5 An I/O operation to SCM failed
with rc=<return code>

Explanation: An error occurred during I/O to storage class memory (SCM). The operation was repeated, but the maximum number of retries was exceeded before the request could be fulfilled.

User response: Contact your support organization.

Severity: Error

scm_block.5ab56e <start address of the SCM increment>:
**The capabilities of the SCM increment
changed**

Explanation: A configuration change is in progress for the storage class memory (SCM) increment.

User response: Verify that the capability of the SCM increment is as intended; for example, with lsscm.

Severity: Informational

scm_block.81e66f <start address of the SCM increment>:
**Write access to the SCM increment is
restored**

Explanation: Write access to the storage class memory (SCM) increment was restored after a temporary suspension during a concurrent firmware upgrade.

User response: None.

Severity: Informational

scm_block.93981a <start address of the SCM increment>:
**Write access to the SCM increment is
suspended**

Explanation: A concurrent firmware upgrade is in progress. For the duration of the upgrade, write access to the storage class memory (SCM) increment has been suspended.

User response: None.

Severity: Informational

Chapter 40. setup

Messages with a prefix “setup” are issued when Linux starts.

setup.0471f6 crashkernel reservation failed: *<reason string>*

Explanation: The memory reservation for the kdump “crashkernel” parameter was not successful. The Linux kernel was either not able to find a free memory area or an invalid area has been defined. The reason string describes the cause of the failure in more detail.

User response: Increase the memory footprint of your virtual machine or adjust the values for the “crashkernel” kernel parameter. Then boot your Linux system again.

Severity: Informational

setup.0961dd Linux is running as a z/VM guest operating system in 31-bit mode

Explanation: The 31-bit Linux kernel detected that it is running as a guest operating system of the z/VM hypervisor.

User response: None.

Severity: Informational

setup.1a06a7 Linux is running as a z/VM guest operating system in 64-bit mode

Explanation: The 64-bit Linux kernel detected that it is running as a guest operating system of the z/VM hypervisor.

User response: None.

Severity: Informational

setup.262f23 The hardware system has IEEE compatible floating point units

Explanation: The Linux kernel detected that it is running on a hardware system with CPUs that have IEEE compatible floating point units.

User response: None.

Severity: Informational

setup.289988 Linux is running under KVM in 64-bit mode

Explanation: The 64-bit Linux kernel detected that it is running as a guest operating system of the KVM hypervisor.

User response: None.

Severity: Informational

setup.6bac7a Linux is running natively in 64-bit mode

Explanation: The 64-bit Linux kernel detected that it is running on an IBM mainframe, either as the sole operating system in an LPAR or as the sole operating system on the entire mainframe. The Linux kernel is not running as a guest operating system of the z/VM hypervisor.

User response: None.

Severity: Informational

setup.9d71f8 The hardware system has no IEEE compatible floating point units

Explanation: The Linux kernel detected that it is running on a hardware system with CPUs that do not have IEEE compatible floating point units.

User response: None.

Severity: Informational

setup.a2ec39 The initial RAM disk does not fit into the memory

Explanation: The load address and the size of the initial RAM disk specify a memory area that is not available.

User response: Lower the load address of the initial RAM disk, reduce the size of the initial RAM disk, or increase the size of the system memory to make the initial RAM disk fit into the memory.

Severity: Error

setup.b050d0 The maximum memory size is *<size in MB>*

Explanation: The system memory size cannot exceed the amount of memory that is provided by the real or virtual hardware. It can be further reduced through an upper memory address limit that is specified with the mem= kernel parameter.

User response: None.

Severity: Notice

setup.d5d221 Saving the Linux kernel NSS failed with rc=*<return code>*

setup.dae2e8 • setup.df70d5

Explanation: The Linux kernel could not save the named saved system (NSS) with the z/VM CP SAVESYS command. The return code represents the numeric portion of the CP SAVESYS error message.

User response: For return code 1, the z/VM guest virtual machine is not authorized to save named saved systems. Ensure that the z/VM guest virtual machine is authorized to issue the CP SAVESYS command (typically privilege class E). For other return codes, see the help and message documentation for the CP SAVESYS command.

Severity: Error

setup.dae2e8 Reserving *<amount of reserved memory>* **of memory at** *<storage location of reserved memory>* **for crashkernel (System RAM:** *<amount of system RAM>*)

Explanation: The memory reservation for the kdump "crashkernel" parameter was successful and a kdump kernel can now be loaded with the kexec tool.

User response: None.

Severity: Informational

setup.db58c7 Linux is running natively in 31-bit mode

Explanation: The 31-bit Linux kernel detected that it is running on an IBM mainframe, either as the sole operating system in an LPAR or as the sole operating system on the entire mainframe. The Linux kernel is not running as a guest operating system of the z/VM hypervisor.

User response: None.

Severity: Informational

setup.df70d5 Defining the Linux kernel NSS failed
with rc=*<return code>*

Explanation: The Linux kernel could not define the named saved system (NSS) with the z/VM CP DEFSYS command. The return code represents the numeric portion of the CP DEFSYS error message.

User response: For return code 1, the z/VM guest virtual machine is not authorized to define named saved systems. Ensure that the z/VM guest virtual machine is authorized to issue the CP DEFSYS command (typically privilege class E). For other return codes, see the help and message documentation for the CP DEFSYS command.

Severity: Error

Chapter 41. tape

Messages with a prefix “tape” are issued by the channel-attached tape device driver.

tape.8ce1c3 *<bus ID of the tape device>*: **The tape cartridge has been successfully unloaded**

Explanation: The tape cartridge has been unloaded from the tape unit. Insert a tape cartridge before accessing the tape device.

User response: None.

Severity: Informational

the tape unit. The tape in the tape unit is ready to be accessed.

User response: None.

Severity: Informational

tape.aaef3e *<bus ID of the tape device>*: **A tape unit was detached while in use**

Explanation: A tape unit has been detached from the I/O configuration while a tape was being accessed. This typically results in I/O error messages and potentially in damaged data on the tape.

User response: Check the output of the application that accesses the tape device. If this problem occurred during a write-type operation, consider repeating the operation after bringing the tape device back online.

Severity: Warning

tape.bede0 **Tape device** *<bus ID of the tape device>* **is busy, refusing to suspend**

Explanation: A request to suspend a tape device being currently in use is rejected.

User response: Terminate applications performing tape operations and then try to suspend the system again.

Severity: Error

tape.d10f9d **A cartridge is loaded in tape device** *<bus ID of the tape device>*, **refusing to suspend**

Explanation: A request to suspend a tape device currently loaded with a cartridge is rejected.

User response: Unload the tape device. Then try to suspend the system again.

Severity: Error

tape.fbea0c *<bus ID of the tape device>*: **A tape cartridge has been mounted**

Explanation: A tape cartridge has been inserted into

Chapter 42. tape_34xx

Messages with a prefix `tape_34xx` are issued by the channel-attached tape device driver and relate to an IBM 3480 or IBM 3490 magnetic tape subsystem.

tape_34xx.01b705 *<bus ID of the tape device>*: **The tape unit is not ready**

Explanation: The tape unit is online but not ready.

User response: Turn the ready switch on the tape unit to the ready position and try the operation again.

Severity: Warning

tape_34xx.0a2df0 *<bus ID of the tape device>*: **The tape information states an incorrect length**

Explanation: The tape is shorter than stated at the beginning of the tape data. A possible reason for this problem is that the tape might have been physically truncated. Data written to the tape might be incomplete or damaged.

User response: If this problem occurred during a write-type operation, consider repeating the operation with a different tape cartridge.

Severity: Warning

tape_34xx.0dcb6e *<bus ID of the tape device>*: **A parity error occurred on the tape bus**

Explanation: A data parity check error occurred on the bus. Data that was read or written while the error occurred is not valid.

User response: Reposition the tape and repeat the read-type or write-type operation.

Severity: Warning

tape_34xx.1438e6 *<bus ID of the tape device>*: **A channel interface error cannot be recovered**

Explanation: An error has occurred on the channel interface. This error cannot be recovered by the control unit error recovery process.

User response: See the documentation of the control unit.

Severity: Warning

tape_34xx.150bb7 *<bus ID of the tape device>*: **The tape unit does not support tape format 3480-2 XF**

Explanation: The tape unit does not support tapes recorded in the 3480-2 XF format.

User response: If you do not need the data recorded on the current tape, rewind the tape and overwrite it with a supported format. If you need the data on the current tape, use a tape unit that supports the tape format.

Severity: Warning

tape_34xx.15d49e *<bus ID of the tape device>*: **The maximum block size for buffered mode is exceeded**

Explanation: The block to be written is larger than allowed for the buffered mode.

User response: Use a smaller block size.

Severity: Warning

tape_34xx.257c56 *<bus ID of the tape device>*: **A path equipment check occurred for the tape device**

Explanation: A path equipment check has occurred. This check indicates problems with the connection between the mainframe system and the tape control unit.

User response: Ensure that the cable connections between the mainframe system and the control unit are securely in place and not damaged.

Severity: Warning

tape_34xx.2caadc *<bus ID of the tape device>*: **I/O error recovery failed on the tape control unit**

Explanation: An I/O error occurred that cannot be recovered by the automatic error recovery process of the tape control unit. The application that operates the tape unit will receive a return value of -EIO which indicates an I/O error. The data on the tape might be damaged.

User response: If this problem occurred during a write-type operation, consider repositioning the tape and repeating the operation.

Severity: Warning

tape_34xx.33278e *<bus ID of the tape device>*: **A write error on the tape cannot be recovered**

Explanation: A write error has occurred that could not be recovered by the automatic error recovery process.

tape_34xx.3be0ed • tape_34xx.69f60e

User response: Use a different tape cartridge.

Severity: Warning

tape_34xx.3be0ed *<bus ID of the tape device>*: **Reading the tape beyond the end of the recorded area failed**

Explanation: A read-type operation failed because it extended beyond the end of the recorded area on the tape medium.

User response: None.

Severity: Warning

tape_34xx.3f2d36 *<bus ID of the tape device>*: **The tape unit does not support format 3480 XF**

Explanation: The tape unit does not support tapes recorded in the 3480 XF format.

User response: If you do not need the data recorded on the current tape, rewind the tape and overwrite it with a supported format. If you need the data on the current tape, use a tape unit that supports the tape format.

Severity: Warning

tape_34xx.3f38f7 *<bus ID of the tape device>*: **A data overrun occurred between the control unit and tape unit**

Explanation: A data overrun error has occurred on the connection between the control unit and the tape unit. If this problem occurred during a write-type operation, the integrity of the data on the tape might be compromised.

User response: Use a faster connection. If this problem occurred during a write-type operation, consider repositioning the tape and repeating the operation.

Severity: Warning

tape_34xx.442701 *<bus ID of the tape device>*: **The tape unit does not support the tape length**

Explanation: The length of the tape in the cartridge is incompatible with the tape unit.

User response: Either use a different tape unit or use a tape with a supported length.

Severity: Warning

tape_34xx.553e40 *<bus ID of the tape device>*: **Writing the ID-mark failed**

Explanation: The ID-mark at the beginning of tape could not be written. The tape medium might be write-protected.

User response: Try a different tape cartridge. Ensure

that the write-protection on the cartridge is switched off.

Severity: Warning

tape_34xx.633cc6 *<bus ID of the tape device>*: **The tape unit requires a firmware update**

Explanation: The tape unit requires firmware patches from the tape control unit but the required patches are not available on the control unit.

User response: Make the require patches available on the control unit then reposition the tape and retry the operation. For details about obtaining and installing firmware updates see the control unit documentation.

Severity: Warning

tape_34xx.64dd87 *<bus ID of the tape device>*: **The tape medium has been rewound or unloaded manually**

Explanation: The tape unit rewind button, unload button, or both have been used to rewind or unload the tape cartridge. A tape cartridge other than the intended cartridge might have been inserted or the tape medium might not be at the expected position.

User response: Verify that the correct tape cartridge has been inserted and that the tape medium is at the required position before continuing to work with the tape.

Severity: Warning

tape_34xx.696dc8 *<bus ID of the tape device>*: **The tape medium is write-protected**

Explanation: A write-type operation failed because the tape medium is write-protected.

User response: Eject the tape cartridge, switch off the write protection on the cartridge, insert the cartridge, and try the operation again.

Severity: Warning

tape_34xx.69f60e *<bus ID of the tape device>*: **The tape unit does not support the current tape length**

Explanation: The length of the tape in the cartridge is incompatible with the tape unit.

User response: Either use a different tape unit or use a tape with a supported length.

Severity: Warning

tape_34xx.6bcece <bus ID of the tape device>: **The tape unit is already assigned**

Explanation: The tape unit is already assigned to another channel path.

User response: Free the tape unit from the operating system instance to which it is currently assigned then try again.

Severity: Warning

tape_34xx.7f9ae4 <bus ID of the tape device>: **A channel protocol error occurred**

Explanation: An error was detected in the channel protocol.

User response: Reposition the tape and try the operation again.

Severity: Warning

tape_34xx.85efa7 <bus ID of the tape device>: **The block ID sequence on the tape is incorrect**

Explanation: The control unit has detected an incorrect block ID sequence on the tape. This problem typically indicates that the data on the tape is damaged.

User response: If this problem occurred during a write-type operation reposition the tape and repeat the operation.

Severity: Warning

tape_34xx.956e53 <bus ID of the tape device>: **The tape does not have the required tape tension**

Explanation: The tape does not have the required tape tension.

User response: Rewind and reposition the tape, then repeat the operation.

Severity: Warning

tape_34xx.b334e9 <bus ID of the tape device>: **The tape unit is not online**

Explanation: The tape unit is not online to the tape device driver.

User response: Ensure that the tape unit is operational and that the cable connections between the control unit and the tape unit are securely in place and not damaged.

Severity: Warning

tape_34xx.c5ee4a <bus ID of the tape device>: **Automatic unloading of the tape cartridge failed**

Explanation: The tape unit failed to unload the cartridge.

User response: Unload the cartridge manually by using the eject button on the tape unit.

Severity: Warning

tape_34xx.c7fc10 <bus ID of the tape device>: **The tape unit does not support the compaction algorithm**

Explanation: The tape unit cannot read the current tape. The data on the tape has been compressed with an algorithm that is not supported by the tape unit.

User response: Use a tape unit that supports the compaction algorithm used for the current tape.

Severity: Warning

tape_34xx.ccc5ad <bus ID of the tape device>: **The tape unit failed to load the cartridge**

Explanation: An error has occurred while loading the tape cartridge.

User response: Unload the cartridge and load it again.

Severity: Warning

tape_34xx.cfc6c4 <bus ID of the tape device>: **An equipment check has occurred on the tape unit**

Explanation: Possible reasons for the check condition are a unit adapter error, a buffer error on the lower interface, an unusable internal path, or an error that has occurred while loading the cartridge.

User response: Examine the tape unit and the cartridge loader. Consult the tape unit documentation for details.

Severity: Warning

tape_34xx.d2b071 <bus ID of the tape device>: **A read error occurred that cannot be recovered**

Explanation: A read error has occurred that cannot be recovered. The current tape might be damaged.

User response: None.

Severity: Warning

tape_34xx.d56330 <bus ID of the tape device>: **The tape contains an incorrect block ID sequence**

Explanation: The control unit has detected an incorrect block ID sequence on the tape. This problem

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typically indicates that the data on the tape is damaged.

User response: If this problem occurred during a write-type operation reposition the tape and repeat the operation.

Severity: Warning

tape_34xx.d608a6 *<bus ID of the tape device>*: **The control unit has fenced access to the tape volume**

Explanation: The control unit fences further access to the current tape volume. The data integrity on the tape volume might have been compromised.

User response: Rewind and unload the tape cartridge.

Severity: Warning

tape_34xx.e473c9 *<bus ID of the tape device>*: **The tape subsystem is running in degraded mode**

Explanation: The tape subsystem is not operating at its maximum performance.

User response: Contact your service representative for the tape unit and report this problem.

Severity: Warning

tape_34xx.e96040 *<bus ID of the tape device>*: **The tape unit cannot process the tape format**

Explanation: Either the tape unit is not able to read the format ID mark, or the specified format is not supported by the tape unit.

User response: If you do not need the data recorded on the current tape, use a different tape or write a new format ID mark at the beginning of the tape. Be aware that writing a new ID mark leads to a loss of all data that has been recorded on the tape. If you need the data on the current tape, use a tape unit that supports the tape format.

Severity: Warning

tape_34xx.f06a05 *<bus ID of the tape device>*: **An unexpected condition *<number>* occurred in tape error recovery**

Explanation: The control unit has reported an error condition that is not recognized by the error recovery process of the tape device driver.

User response: Report this problem and the condition number from the message to your support organization.

Severity: Error

Chapter 43. tape_3590

Messages with a prefix tape_3590 are issued by the channel-attached tape device driver and relate to an IBM 3590 or IBM 3592 magnetic tape subsystem.

tape_3590.07e630 *<bus ID of the tape device>*: **DEVSIM**
SEV=*<SEV>*, **DEVTYPE**=3590/*<model>*,
MC=*<message code>*, **ES**=*<exception>*/
<required service action>,
REF=0x*<refcode1>*-0x*<refcode2>*-
0x*<refcode3>*

Explanation: This is an operating system independent device subsystem information message issued by the tape unit. The information in the message is intended for the IBM customer engineer.

User response: See the documentation for the tape unit for further information.

Severity: Warning

tape_3590.18dc29 *<bus ID of the tape device>*: **The tape medium must be loaded into a different tape unit**

Explanation: The tape device has indicated an error condition that requires loading the tape cartridge into a different tape unit to recover.

User response: Unload the cartridge and use a different tape unit to retry the operation.

Severity: Warning

tape_3590.3c5600 *<bus ID of the tape device>*: **I/O subsystem information: exception**
<exception>, **service** *<required service action>*

Explanation: This is an operating system independent I/O subsystem information message that was issued by the tape unit. The information in the message is intended for the IBM customer engineer.

User response: See the documentation for the tape unit for further information.

Severity: Warning

tape_3590.3f6a17 *<bus ID of the tape device>*: **IOSIM**
SEV=*<SEV>*, **DEVTYPE**=3590/*<model>*,
MC=*<message code>*, **ES**=*<exception>*/
<required service action>,
REF=0x*<refcode1>*-0x*<refcode2>*-
0x*<refcode3>*

Explanation: This is an operating system independent I/O subsystem information message that was issued by the tape unit. The information in the message is

intended for the IBM customer engineer.

User response: See the documentation for the tape unit for further information.

Severity: Warning

tape_3590.497827 *<bus ID of the tape device>*: **The tape unit failed to obtain the encryption key from EKM**

Explanation: The tape unit was unable to retrieve the encryption key required to decode the data on the tape from the enterprise key manager (EKM).

User response: See the EKM and tape unit documentation for information about how to enable the tape unit to retrieve the encryption key.

Severity: Error

tape_3590.4b2253 *<bus ID of the tape device>*: **Device subsystem information: exception**
<exception>, **service** *<required service action>*

Explanation: This is an operating system independent device subsystem information message that was issued by the tape unit. The information in the message is intended for the IBM customer engineer.

User response: See the documentation for the tape unit for further information.

Severity: Warning

tape_3590.575a6b *<bus ID of the tape device>*: **The tape unit has issued sense message** *<sense message code>*

Explanation: The tape unit has issued an operating system independent sense message.

User response: See the documentation for the tape unit for further information.

Severity: Warning

tape_3590.601044 *<bus ID of the tape device>*: **The tape unit has issued an unknown sense message code** 0x*<code>*

Explanation: The tape device driver has received an unknown sense message from the tape unit.

User response: See the documentation for the tape

tape_3590.7ad0ac • tape_3590.ff1db8

unit for further information.

Severity: Warning

tape_3590.7ad0ac *<bus ID of the tape device>*: **MIM**
SEV=*<SEV>*, **MC**=*<message code>*,
ES=*<exception>*/*<required service action>*,
RC=*<refcode>*-*<mid>*-*<fid>*

Explanation: This is an operating system independent information message that was issued by the tape unit. The information in the message is intended for the IBM customer engineer.

User response: See to the documentation for the tape unit for further information.

Severity: Warning

tape_3590.991401 *<bus ID of the tape device>*: **Tape media information: exception**
<exception>, **service** *<service>*

Explanation: This is an operating system independent tape medium information message that was issued by the tape unit. The information in the message is intended for the IBM customer engineer.

User response: See the documentation for the tape unit for further information.

Severity: Warning

tape_3590.fca498 *<bus ID of the tape device>*: **A different host has privileged access to the tape unit**

Explanation: You cannot access the tape unit because a different operating system instance has privileged access to the unit.

User response: Unload the current cartridge to solve this problem.

Severity: Warning

tape_3590.ff1db8 *<bus ID of the tape device>*: **The tape unit has issued an unknown sense message code** *<code>*

Explanation: The tape device has issued a sense message, that is unknown to the device driver.

User response: Use the message code printed as hexadecimal value and see the documentation for the tape unit for further information.

Severity: Warning

Chapter 44. time

Messages with a prefix “time” are issued by the IBM Z specific time functions.

time.93fc64 The real or virtual hardware system does not provide an STP interface

Explanation: The 'stp=' parameter has been passed on the kernel parameter line for a Linux instance that does not have access to the server time protocol (STP) facility.

User response: To avoid this warning remove the 'stp=' kernel parameter.

Severity: Warning

time.c4bd65 The real or virtual hardware system does not provide an ETR interface

Explanation: The 'etr=' parameter has been passed on the kernel parameter line for a Linux instance that does not have access to the external time reference (ETR) facility.

User response: To avoid this warning remove the 'etr=' kernel parameter.

Severity: Warning

time.eb7580 The ETR interface has adjusted the clock by *<number of microseconds>* microseconds

Explanation: The external time reference (ETR) interface has synchronized the system clock with the external reference and set it to a new value. The time difference between the old and new clock value has been passed to the network time protocol (NTP) as a single shot adjustment.

User response: None.

Severity: Notice

Chapter 45. vmlogrdr

Messages with a prefix `vmlogrdr` are issued by the z/VM recording device driver. With the z/VM recording device driver, an instance of Linux on z/VM can read from the z/VM CP recording services.

vmlogrdr.c1d147 vmlogrdr: device <device name> is busy. Refuse to suspend.

Explanation: Suspending `vmlogrdr` devices that are in uses is not supported. A request to suspend such a device is refused.

User response: Close all applications that use any of the `vmlogrdr` devices and then try to suspend the system again.

Severity: Error

Chapter 46. vmur

Messages with a prefix `vmur` are issued by the z/VM virtual unit record device driver. This device driver provides Linux with access to z/VM virtual unit record devices like punch card readers, card punches, and line printers.

vmur.386675 **Unit record device** *<bus ID of the unit record device>* **is busy**, *<z/VM virtual unit record device driver>* **refusing to suspend**.

Explanation: Linux cannot be suspended while a unit record device is in use.

User response: Stop all applications that work on z/VM spool file queues, for example, the `vmur` tool. Then try again to suspend Linux.

Severity: Error

vmur.53bf56 **The** *<z/VM virtual unit record device driver>* **cannot be loaded without z/VM**

Explanation: The z/VM virtual unit record device driver provides Linux with access to z/VM virtual unit record devices like punch card readers, card punches, and line printers. On Linux instances that run in environments other than the z/VM hypervisor, the device driver does not provide any useful function and the corresponding `vmur` module cannot be loaded.

User response: Load the `vmur` module only on Linux instances that run as guest operating systems of the z/VM hypervisor. If the z/VM virtual unit record device has been compiled into the kernel, ignore this message.

Severity: Error

vmur.ff8847 **Kernel function** `alloc_chrdev_region` **failed with error code** *<error code according to `errno` definitions>*

Explanation: The z/VM virtual unit record device driver (`vmur`) needs to register a range of character device minor numbers from `0x0000` to `0xffff`. This registration failed, probably because of memory constraints.

User response: Free some memory and reload the `vmur` module. If the z/VM virtual unit record device driver has been compiled into the kernel reboot Linux. Consider assigning more memory to your LPAR or z/VM guest virtual machine.

Severity: Error

Chapter 47. xpram

Messages with a prefix `xpram` are issued by the XPRAM device driver. This block device driver enables Linux on Z to access expanded storage.

xpram.9f7762 Resuming the system failed: *<cause of the failure>*

Explanation: A system cannot be resumed if the expanded memory setup changes after hibernation. Possible reasons for the failure are:

- Expanded memory was removed after hibernation.
- Size of the expanded memory changed after hibernation.

The system is stopped with a kernel panic.

User response: Reboot Linux.

Severity: Error

xpram.ab9aa4 <number of partitions> is not a valid number of XPRAM devices

Explanation: The number of XPRAM partitions specified for the 'devs' module parameter or with the 'xpram.parts' kernel parameter must be an integer in the range 1 to 32. The XPRAM device driver created a maximum of 32 partitions that are probably not configured as intended.

User response: If the XPRAM device driver has been compiled as a separate module, unload the module and load it again with a correct value for the 'devs' module parameter. If the XPRAM device driver has been compiled into the kernel, correct the 'xpram.parts' parameter in the kernel command line and restart Linux.

Severity: Error

xpram.f004d1 Not enough expanded memory available

Explanation: The amount of expanded memory required to set up your XPRAM partitions depends on the 'sizes' parameter specified for the xpram module or on the specifications for the 'xpram.parts' parameter if the XPRAM device driver has been compiled into the kernel. Your current specification exceed the amount of available expanded memory. Your XPRAM partitions are probably not configured as intended.

User response: If the XPRAM device driver has been compiled as a separate module, unload the xpram module and load it again with an appropriate value for the 'sizes' module parameter. If the XPRAM device driver has been compiled into the kernel, adjust the 'xpram.parts' parameter in the kernel command line

and restart Linux. If you need more than the available expanded memory, increase the expanded memory allocation for your virtual hardware or LPAR.

Severity: Error

xpram.f6ae78 No expanded memory available

Explanation: The XPRAM device driver has been loaded in a Linux instance that runs in an LPAR or virtual hardware without expanded memory. No XPRAM partitions are created.

User response: Allocate expanded memory for your LPAR or virtual hardware or do not load the xpram module. You can ignore this message, if you do not want to create XPRAM partitions.

Severity: Error

Chapter 48. zcrypt

Messages with a prefix zcrypt are issued by the cryptographic device driver.

zcrypt.ce7ec0 Cryptographic device <AP device ID>.<AP queue> failed and was set offline

Explanation: A cryptographic device failed to process a cryptographic request. The cryptographic device driver could not correct the error and set the device offline. The application that issued the request received an indication that the request has failed.

User response: Use the lszcrypt command to confirm that the cryptographic hardware is still configured to your LPAR or z/VM guest virtual machine. If the device is available to your Linux instance the command output contains a line that begins with 'card<device index>', where <device index> is the two-digit decimal number in the message text. After ensuring that the device is available, use the chzcrypt command to set it online again. If the error persists, contact your support organization.

Severity: Error

Chapter 49. zdump

Messages with a prefix zdump are issued by the zfcpdump functions.

zdump.54a0dd The 32-bit dump tool cannot be used for a 64-bit system

Explanation: The dump process ends without creating a system dump.

User response: Use a 64-bit dump tool to obtain a system dump for 64-bit Linux instance.

Severity: Alert

zdump.aa9461 The dump process started for a 64-bit operating system

Explanation: The SCSI dump process started to create a dump for a 64-bit operating system instance.

User response: None.

Severity: Alert

zdump.d05784 The 64-bit dump tool cannot be used for a 32-bit system

Explanation: The dump process ends without creating a system dump.

User response: Use a 32-bit dump tool to obtain a system dump for 32-bit Linux instance.

Severity: Alert

Chapter 50. zfc

Messages with a prefix `zfc` are issued by the SCSI-over-Fibre Channel device driver (`zfc` device driver) for the QDIO-based IBM Z SCSI-over-Fibre Channel adapter. The `zfc` device driver supports Fibre Channel-attached SCSI devices on Linux on Z.

zfc.000866 *<bus ID of the zfc device>*: **The FCP adapter cannot support more NPIV ports**

Explanation: N_Port ID Virtualization (NPIV) ports consume physical resources on the FCP adapter. The FCP adapter resources are exhausted. The connection is not operational.

User response: Analyze the number of available NPIV ports and which operating system instances use them. If necessary, reconfigure your setup to move some NPIV ports to an FCP adapter with free resources.

Severity: Warning

zfc.01a8f2 *<bus ID of the zfc device>*: **All NPIV ports on the FCP adapter have been assigned**

Explanation: The number of N_Port ID Virtualization (NPIV) ports that can be assigned on an FCP adapter is limited. Once assigned, NPIV ports are not released automatically but have to be released explicitly through the support element (SE).

User response: Identify NPIV ports that have been assigned but are no longer in use and release them from the SE.

Severity: Warning

zfc.020115 *<bus ID of the zfc device>*: **Registering port 0x<WWPN> failed**

Explanation: The Linux kernel could not allocate enough memory to register the remote port with the indicated WWPN with the SCSI stack. The remote port is not available.

User response: Free some memory and trigger the rescan for ports.

Severity: Error

zfc.058803 *<bus ID of the zfc device>*: **FCP adapter maximum QTCB size (<maximum supported size> bytes) is too small**

Explanation: The queue transfer control block (QTCB) size requested by the `zfc` device driver is not supported by the FCP adapter hardware.

User response: Update the firmware on your FCP

adapter hardware to the latest available level and update the Linux kernel to the latest supported level. If the problem persists, contact your support organization.

Severity: Error

zfc.0cf3fa *<bus ID of the zfc device>*: **Creating an ERP thread for the FCP device failed.**

Explanation: The `zfc` device driver could not set up error recovery procedure (ERP) processing for the FCP device. The FCP device is not available for use in Linux.

User response: Free some memory and try again to load the `zfc` device driver. If the `zfc` device driver has been compiled into the kernel, reboot Linux. Consider assigning more memory to your LPAR or z/VM guest virtual machine. If the problem persists, contact your support organization.

Severity: Error

zfc.10efb5 *<bus ID of the zfc device>*: **Opening WKA port 0x<destination ID of the WKA port> failed**

Explanation: The FCP adapter rejected a request to open the specified well-known address (WKA) port. No retry is possible.

User response: Verify the setup and check if the maximum number of remote ports used through this adapter is below the maximum allowed. If the problem persists, gather Linux debug data, collect the FCP adapter hardware logs, and report the problem to your support organization.

Severity: Warning

zfc.128ff1 *<bus ID of the zfc device>*: **The WWPN assignment file on the FCP adapter has been damaged**

Explanation: This is an FCP adapter hardware problem.

User response: Report this problem with FCP hardware logs to IBM support.

Severity: Warning

zfc.19bff2 <bus ID of the zfc device>: **Incorrect CDB length <value in length field>, LUN 0x<LUN> on port 0x<WWPN> closed**

Explanation: The control-data-block (CDB) length field in a SCSI request is not valid or too large for the FCP adapter. The zfc device driver closed down the SCSI device at the indicated LUN.

User response: Gather Linux debug data and report this problem to your support organization.

Severity: Error

zfc.219537 <bus ID of the zfc device>: **The fibre channel fabric does not support NPIV**

Explanation: The FCP adapter requires N_Port ID Virtualization (NPIV) from the adjacent fibre channel node. Either the FCP adapter is connected to a fibre channel switch that does not support NPIV or the FCP adapter tries to use NPIV in a point-to-point setup. The connection is not operational.

User response: Verify that NPIV is correctly used for this connection. Check the FCP adapter configuration and the fibre channel switch configuration. If necessary, update the fibre channel switch firmware.

Severity: Warning

zfc.29fa1a <bus ID of the zfc device>: **The adjacent fibre channel node does not support FCP**

Explanation: The fibre channel switch or storage system that is connected to the FCP channel does not support the fibre channel protocol (FCP). The zfc device driver stopped using the FCP device.

User response: Check the adjacent fibre channel node.

Severity: Warning

zfc.2a747e <bus ID of the zfc device>: **No handle is available for LUN 0x<LUN> on port 0x<WWPN>**

Explanation: The FCP adapter can only open a limited number of SCSI devices. This limit has been reached and the SCSI device at the indicated LUN cannot be opened.

User response: For FCP subchannels running in non-NPIV mode, check all SCSI devices opened through the FCP adapter and close some of them. For FCP subchannels running in NPIV mode, verify the SAN zoning and host connections on the storage systems. Ensure that the zoning and host connections only allow access to the required LUNs. As a workaround, disable the automatic LUN scanning by setting the `zfc.allow_lun_scan` kernel parameter or the `allow_lun_scan` module parameter to 0.

Severity: Warning

zfc.2c93b9 <bus ID of the zfc device>: **The FCP adapter only supports older control block versions**

Explanation: The protocol supported by the FCP adapter is not compatible with the zfc device driver.

User response: Install the latest firmware on your FCP adapter.

Severity: Error

zfc.306272 <bus ID of the zfc device>: **The FCP adapter reported a problem that cannot be recovered**

Explanation: The FCP adapter has a problem that cannot be recovered by the zfc device driver. The zfc device driver stopped using the FCP device.

User response: Gather Linux debug data, collect the FCP adapter hardware logs, and report this problem to your support organization.

Severity: Error

zfc.307c0c <bus ID of the zfc device>: **FCP device not operational because of an unsupported FC class**

Explanation: The FCP adapter hardware does not support the fibre channel service class requested by the zfc device driver. This problem indicates a program error in the zfc device driver.

User response: Gather Linux debug data, collect the FCP adapter hardware logs, and report this problem to your support organization.

Severity: Error

zfc.308f45 <bus ID of the zfc device>: **The mode table on the FCP adapter has been damaged**

Explanation: This is an FCP adapter hardware problem.

User response: Report this problem with FCP hardware logs to IBM support.

Severity: Warning

zfc.3dff9c <bus ID of the zfc device>: **Setting up the QDIO connection to the FCP adapter failed**

Explanation: The zfc device driver failed to establish a QDIO connection with the FCP adapter.

User response: Set the FCP adapter offline or detach it from the Linux system, free some memory and set the FCP adapter online again or attach it again. If this

problem persists, gather Linux debug data, collect the FCP adapter hardware logs, and report the problem to your support organization.

Severity: Error

zfcP.4a463f <bus ID of the zfcP device>: **ERP failed for remote port 0x<WWPN>**

Explanation: An error occurred on a remote port. The error recovery procedure (ERP) could not resolve the error. The port is not available.

User response: Verify that the WWPN is correct and check the fibre channel fabric for errors related to the WWPN.

Severity: Error

zfcP.4c0e02 <bus ID of the zfcP device>: **The FCP adapter does not recognize the command 0x<command>**

Explanation: A command code that was sent from the zfcP device driver to the FCP adapter is not valid. The zfcP device driver stopped using the FCP device.

User response: Gather Linux debug data, collect the FCP adapter hardware logs, and report this problem to your support organization.

Severity: Error

zfcP.566303 <bus ID of the zfcP device>: **The CHPID for the FCP device is offline**

Explanation: The CHPID for an FCP device has been set offline, either logically in Linux or on the hardware.

User response: Find out which CHPID corresponds to the FCP device, for example, with the lscss command. Check if the CHPID has been set logically offline in sysfs. Write 'on' to the CHPID's status attribute to set it online. If the CHPID is online in sysfs, find out if it has been varied offline through a hardware management interface, for example the service element (SE).

Severity: Warning

zfcP.56747f <bus ID of the zfcP device>: **The adjacent switch cannot support more NPIV ports**

Explanation: N_Port ID Virtualization (NPIV) ports consume physical resources. The resources of the fibre channel switch that is connected to the FCP adapter are exhausted. The connection is not operational.

User response: Analyze the number of available NPIV ports on the adjacent fibre channel switch and how they are used. If necessary, reconfigure your fibre channel fabric to accommodate the required NPIV ports.

Severity: Warning

zfcP.574d43 <bus ID of the zfcP device>: **ERP cannot recover an error on the FCP device**

Explanation: An error occurred on an FCP device. The error recovery procedure (ERP) could not resolve the error. The FCP device driver cannot use the FCP device.

User response: Check for previous error messages for the same FCP device to find the cause of the problem.

Severity: Error

zfcP.646ca0 <bus ID of the zfcP device>: **QTCB version 0x<requested version> not supported by FCP adapter (0x<lowest supported version> to 0x<highest supported version>)**

Explanation: See message text. The queue transfer control block (QTCB) version requested by the zfcP device driver is not supported by the FCP adapter hardware.

User response: If the requested version is higher than the highest version supported by the hardware, install more recent firmware on the FCP adapter. If the requested version is lower than the lowest version supported by the hardware, upgrade to a Linux level with a more recent zfcP device driver.

Severity: Error

zfcP.657cf6 <bus ID of the zfcP device>: **Setting up data structures for the FCP adapter failed**

Explanation: The zfcP device driver could not allocate data structures for an FCP adapter. A possible reason for this problem is memory constraints.

User response: Set the FCP adapter offline or detach it from the Linux system, free some memory and set the FCP adapter online again or attach it again. If this problem persists, gather Linux debug data, collect the FCP adapter hardware logs, and report the problem to your support organization.

Severity: Error

zfcP.6dbb23 <bus ID of the zfcP device>: **Incorrect direction <value in direction field>, LUN 0x<LUN> on port 0x<WWPN> closed**

Explanation: The direction field in a SCSI request contains an incorrect value. The zfcP device driver closed down the SCSI device at the indicated LUN.

User response: Gather Linux debug data and report this problem to your support organization.

Severity: Error

zfcplib.7059a3 *<bus ID of the zfcplib device>*: **0x<status information> is not a valid transfer protocol status**

Explanation: The transfer protocol status information reported by the FCP adapter is not a valid status for the zfcplib device driver. The zfcplib device driver stopped using the FCP device.

User response: Gather Linux debug data, collect the FCP adapter hardware logs, and report this problem to your support organization.

Severity: Error

zfcplib.747e7d *<bus ID of the zfcplib device>*: **LUN 0x<LUN> on port 0x<remote port WWPN> is already in use by CSS<channel subsystem ID>, MIF Image ID <MIF Image ID of the LPAR>**

Explanation: The SCSI device at the indicated LUN is already in use by another system. Only one system at a time can use the SCSI device.

User response: Ensure that the other system stops using the device before trying to use it.

Severity: Warning

zfcplib.772dc6 *<bus ID of the zfcplib device>*: **Unknown or unsupported arbitrated loop fibre channel topology detected**

Explanation: The FCP device is connected to a fibre channel arbitrated loop or the FCP adapter reported an unknown fibre channel topology. The zfcplib device driver supports point-to-point connections and switched fibre channel fabrics but not arbitrated loop topologies. The FCP device cannot be used.

User response: Check the fibre channel setup and ensure that only supported topologies are connected to the FCP adapter.

Severity: Error

zfcplib.787564 *<bus ID of the zfcplib device>*: **A port opened with WWPN 0x<expected WWPN> returned data that identifies it as WWPN 0x<reported WWPN>**

Explanation: A remote port was opened successfully, but it reported an unexpected WWPN in the returned port login (PLOGI) data. This condition might have been caused by a change applied to the SAN configuration while the port was being opened.

User response: If this condition is only temporary and access to the remote port is possible, no action is required. If the condition persists, identify the storage system with the specified WWPN and contact the support organization of the storage system.

Severity: Warning

zfcplib.7d0b42 *<bus ID of the zfcplib device>*: **The FCP device has been detached**

Explanation: An FCP device is no longer available to Linux.

User response: Ensure that the FCP adapter is operational and attached to the LPAR or z/VM virtual machine.

Severity: Warning

zfcplib.7d6999 *<bus ID of the zfcplib device>*: **There is no light signal from the local fibre channel cable**

Explanation: There is no signal on the fibre channel cable that connects the FCP adapter to the fibre channel fabric.

User response: Ensure that the cable is in place and connected properly to the FCP adapter and to the adjacent fibre channel switch or storage system.

Severity: Warning

zfcplib.7f96f9 *<bus ID of the zfcplib device>*: **The name server reported <number of words in residual data> words residual data**

Explanation: The fibre channel name server sent too much information about remote ports. The zfcplib device driver did not receive sufficient information to attach all available remote ports in the SAN.

User response: Verify that you are running the latest firmware level on the FCP adapter. Check your SAN setup and consider reducing the number of ports visible to the FCP adapter by using more restrictive zoning in the SAN.

Severity: Warning

zfcplib.82bb71 *<bus ID of the zfcplib device>*: **The FCP device did not respond within the specified time**

Explanation: The common I/O layer waited for a response from the FCP adapter but no response was received within the specified time limit. This might indicate a hardware problem.

User response: Consult your hardware administrator. If this problem persists, gather Linux debug data, collect the FCP adapter hardware logs, and report the problem to your support organization.

Severity: Warning

zfcplib.87c4d0 <bus ID of the zfcplib device>: **The error threshold for checksum statistics has been exceeded**

Explanation: The FCP adapter has reported a large number of bit errors. This might indicate a problem with the physical components of the fibre channel fabric. Details about the errors have been written to the HBA trace for the FCP adapter.

User response: Check for problems in the fibre channel fabric and ensure that all cables are properly plugged.

Severity: Warning

zfcplib.8bdb34 <bus ID of the zfcplib device>: **ERP failed for LUN 0x<LUN> on port 0x<WWPN>**

Explanation: An error occurred on the SCSI device at the specified LUN. The error recovery procedure (ERP) could not resolve the error. The SCSI device is not available.

User response: Verify that the LUN is correct. Check the fibre channel fabric for errors related to the specified WWPN and LUN, the storage server, and Linux.

Severity: Error

zfcplib.9b70c0 <bus ID of the zfcplib device>: **Not enough FCP adapter resources to open remote port 0x<WWPN>**

Explanation: Each port that is opened consumes physical resources of the FCP adapter to which it is attached. These resources are exhausted and the specified port cannot be opened.

User response: Reduce the total number of remote ports that are attached to the FCP adapter.

Severity: Warning

zfcplib.9d2a6b <bus ID of the zfcplib device>: **There is a wrap plug instead of a fibre channel cable**

Explanation: The FCP adapter is not physically connected to the fibre channel fabric.

User response: Remove the wrap plug from the FCP adapter and connect the adapter with the fibre channel fabric.

Severity: Warning

zfcplib.a9953d <bus ID of the zfcplib device>: **The FCP device is suspended because of a firmware update**

Explanation: The FCP device is not available while a firmware update is in progress. This problem is

temporary. The FCP device will resume operations when the firmware update is completed.

User response: Wait 10 seconds and try the operation again.

Severity: Warning

zfcplib.ac341f <bus ID of the zfcplib device>: **The local link has been restored**

Explanation: A problem with the connection between the FCP adapter and the adjacent node on the fibre channel fabric has been resolved. The FCP adapter is now available again.

User response: None.

Severity: Informational

zfcplib.ad5387 <bus ID of the zfcplib device>: **Registering the FCP device with the SCSI stack failed**

Explanation: The FCP adapter could not be registered with the Linux SCSI stack. A possible reason for this problem is memory constraints.

User response: Set the FCP adapter offline or detach it from the Linux system, free some memory and set the FCP adapter online again or attach it again. If this problem persists, gather Linux debug data, collect the FCP adapter hardware logs, and report the problem to your support organization.

Severity: Error

zfcplib.afba9a <bus ID of the zfcplib device>: **The link between the FCP adapter and the FC fabric is down**

Explanation: The FCP adapter is not usable. Specific error information is not available.

User response: Check the cabling and the fibre channel fabric configuration. If this problem persists, gather Linux debug data, collect the FCP adapter hardware logs, and report the problem to your support organization.

Severity: Warning

zfcplib.b2d959 **The zfcplib device driver could not register with the common I/O layer**

Explanation: The device driver initialization failed. A possible cause of this problem is memory constraints.

User response: Free some memory and try again to load the zfcplib device driver. If the zfcplib device driver has been compiled into the kernel, reboot Linux. Consider assigning more memory to your LPAR or z/VM guest virtual machine. If the problem persists, contact your support organization.

zfcplib.b2ef0a • zfcplib.f16820

Severity: Error

zfcplib.b2ef0a *<bus ID of the zfcplib device>*: **The FCP device is operational again**

Explanation: An FCP device has been unavailable because it had been detached from the Linux system or because the corresponding CHPID was offline. The FCP device is now available again and the zfcplib device driver resumes all operations to the FCP device.

User response: None.

Severity: Informational

zfcplib.c2c546 *<bus ID of the zfcplib device>*: **The FCP adapter could not log in to the fibre channel fabric**

Explanation: The fibre channel switch rejected the login request from the FCP adapter.

User response: Check the fibre channel fabric or switch logs for possible errors.

Severity: Warning

zfcplib.cf1c58 *<bus ID of the zfcplib device>*: **The QTCB type is not supported by the FCP adapter**

Explanation: The queue transfer control block (QTCB) type requested by the zfcplib device driver is not supported by the FCP adapter hardware.

User response: Install the latest firmware on your FCP adapter hardware. If this does not resolve the problem, upgrade to a Linux level with a more recent zfcplib device driver. If the problem persists, contact your support organization.

Severity: Error

zfcplib.cfb51a *<device specification>* **is not a valid SCSI device**

Explanation: The specification for an initial SCSI device provided with the 'zfcplib.device' kernel parameter or with the 'device' module parameter is syntactically incorrect. The specified SCSI device could not be attached to the Linux system.

User response: Correct the value for the 'zfcplib.device' or 'device' parameter and reboot Linux. See "Device Drivers, Features, and Commands" for information about the syntax.

Severity: Error

zfcplib.d4aea8 *<bus ID of the zfcplib device>*: **0x<request ID> is an ambiguous request identifier**

Explanation: The FCP adapter reported that it received the same request ID twice. This is an error. The zfcplib device driver stopped using the FCP device.

User response: Gather Linux debug data, collect the FCP adapter hardware logs, and report this problem to your support organization.

Severity: Error

zfcplib.dda2e3 *<bus ID of the zfcplib device>*: **The FCP device detected a WWPN that is duplicate or not valid**

Explanation: This condition indicates an error in the FCP adapter hardware or in the z/VM hypervisor.

User response: Gather Linux debug data, collect the FCP adapter hardware logs, and report this problem to IBM support.

Severity: Warning

zfcplib.e78dec *<bus ID of the zfcplib device>*: **A QDIO problem occurred**

Explanation: QDIO reported a problem to the zfcplib device driver. The zfcplib device driver tries to recover this problem.

User response: Check for related error messages. If this problem occurs frequently, gather Linux debug data and contact your support organization.

Severity: Warning

zfcplib.f16820 *<bus ID of the zfcplib device>*: **The FCP adapter only supports newer control block versions**

Explanation: The protocol supported by the FCP adapter is not compatible with the zfcplib device driver.

User response: Upgrade your Linux kernel to a level that includes a zfcplib device driver with support for the control block version required by your FCP adapter.

Severity: Error

Chapter 51. zpci

Messages with a prefix `zpci` are issued by the kernel module that provides PCIe support.

zpci.1bc6a2 *<device name of the function>*: **Event**
0x<PCI event code> reconfigured PCI
function 0x<function ID>

Explanation: The availability of a PCI function has changed. Possible reasons for the change include PCI configuration actions on the Hardware Management Console or hypervisor. For shared PCI functions, the function might also have been reserved or released by another system. If the device name of a function is shown as 'n/a', the device registration with the PCI device driver has not completed. The function ID identifies the function to the I/O configuration (IOCDs). The PCI event code can be useful diagnostic information for your support organization.

User response: None.

Severity: Informational

zpci.9b6a12 *<device name of the function>*: **Event**
0x<PCI event code> reports an error for
PCI function 0x<function ID>

Explanation: A PCI function entered an error state from which it cannot recover automatically.

User response: Trigger a recovery action by writing '1' to the 'recover' sysfs attribute of the PCI function. In sysfs, PCI functions are represented as `/sys/bus/pci/devices/<name>`, where `<name>` is the device name of the function. If the device name of a function is shown as 'n/a', the device registration with the PCI device driver has not completed. If the problem persists, contact your support organization.

Severity: Error

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