ISR-WAAS installatiegids op ISR 4000 Series router

Inhoud

Inleiding

Dit document beschrijft de installatiehandleiding voor Cisco ISR-WAAS op Cisco geïntegreerde services router (ISR). Het is de implementatie van Virtual Wide Area Application Services (vWAAS) op een Cisco ISR.

ISR-WAAS wordt binnen een IOS-XE container ingezet. Een container in deze context verwijst naar de hypersupervisor die gevirtualiseerde toepassingen op een Cisco ISR 4000 Series router uitvoert.

ISR-WAAS-installatievereisten

Elke WAAS-softwareversie kan verschillende resource vereisten hebben (Memory, CPU en Solid State Drives (SSD)), als u niet aan de vereisten voldoet, kan dit leiden tot prestatiekwesties of zelfs fouten tijdens de installatie.

Bekijk de configuratiehandleiding op deze link:

https://www.cisco.com/c/en/us/support/routers/virtual-wide-area-application-services-vwaas/products-installation-and-configuration-guides-list.html

Deze tabel geeft een samenvatting van de behoefte aan middelen en de ondersteunde ISR-platforms voor elk ISR-model.

ISR-WAAS Model	CPUs	Memory	Disk Storage	Supported ISR Platform
ISR-WAAS-200 (for WAAS 5.x and 6.2.1)	1	3 GB	151 GB	ISR-4321
ISR-WAAS-200 (for WAAS 6.2.3x and later	1	4 GB	151 GB	ISR-4321
ISR-WAAS-750	2	4 GB	151 GB	ISR-4351, ISR-4331, ISR-4431, ISR-4451
ISR-WAAS-1300	4	6 GB	151 GB	ISR-4431, ISR-4451
ISR-WAAS-2500	6	8 GB	338 GB	ISR-4451

Verschil tussen NIM-SSD en ISR-SSD

NIM-SSD

NIM-SSD is degene die zich buiten ISR bevindt en die hot swappable is.

```
NAME: "NIM subslot 0/3", DESCR: "NIM SSD Module"
PID: NIM-SSD          , VID: V01, SN: FOC1915299D
```

Dit is een module die wordt geïnstalleerd in een van de beschikbare netwerkinterfacemodules (NIM) van ISR-routers.

Dit zijn productidentificatoren (PID's) voor de NIM-SSD en de SSD die kunnen worden gebruikt om RMA's te verhogen:

```
NIM-SSD(=)NIM Carrier Card for SSD drives
SSD-SATA-200G(=)200 GB, SATA Solid State Disk for NIM-SSD
```
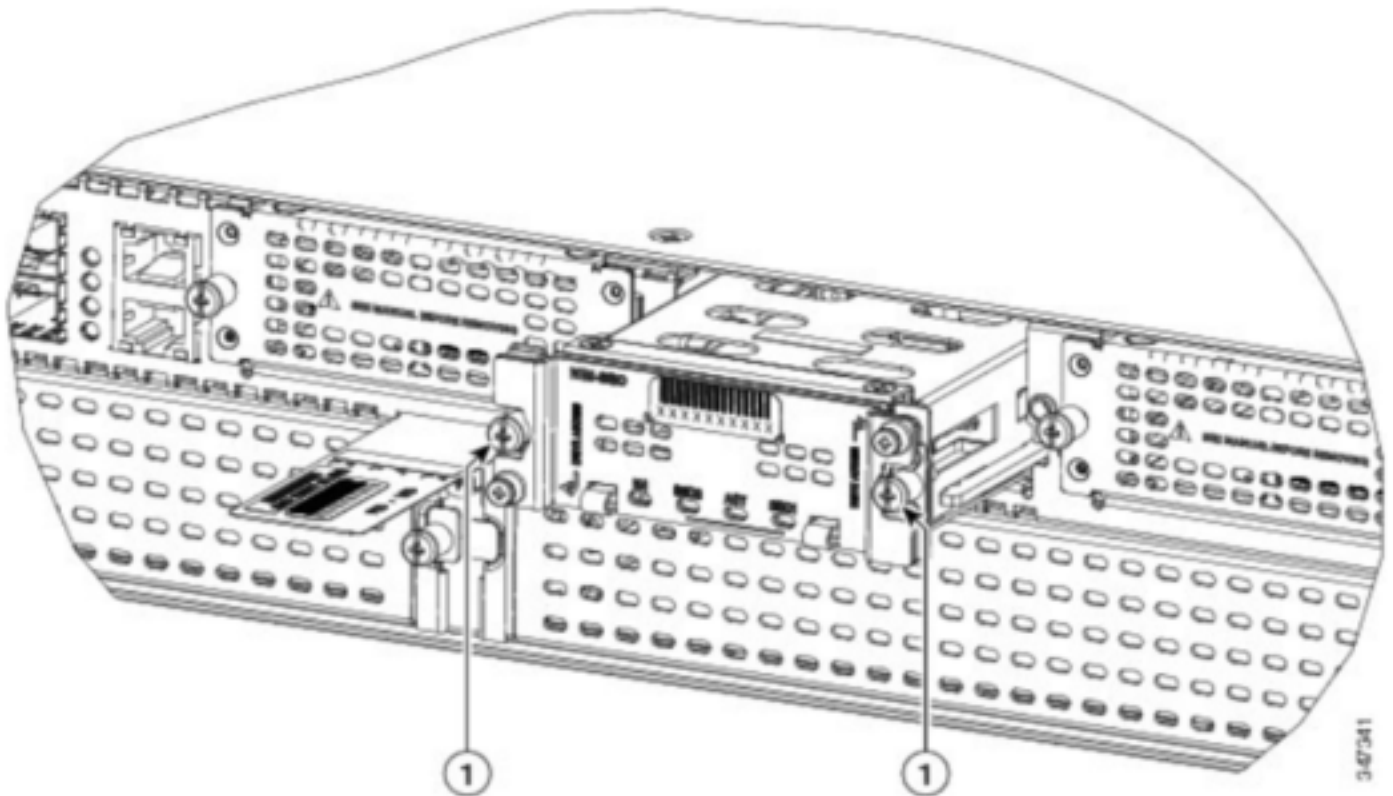
Om de NIM-SSD of NIM-HDD van de router te verwijderen, volgt u deze stappen:

Stap 1. Gebruik een kruiskopschroevendraaier om de schroeven aan weerszijden los te maken, zoals in deze afbeelding:
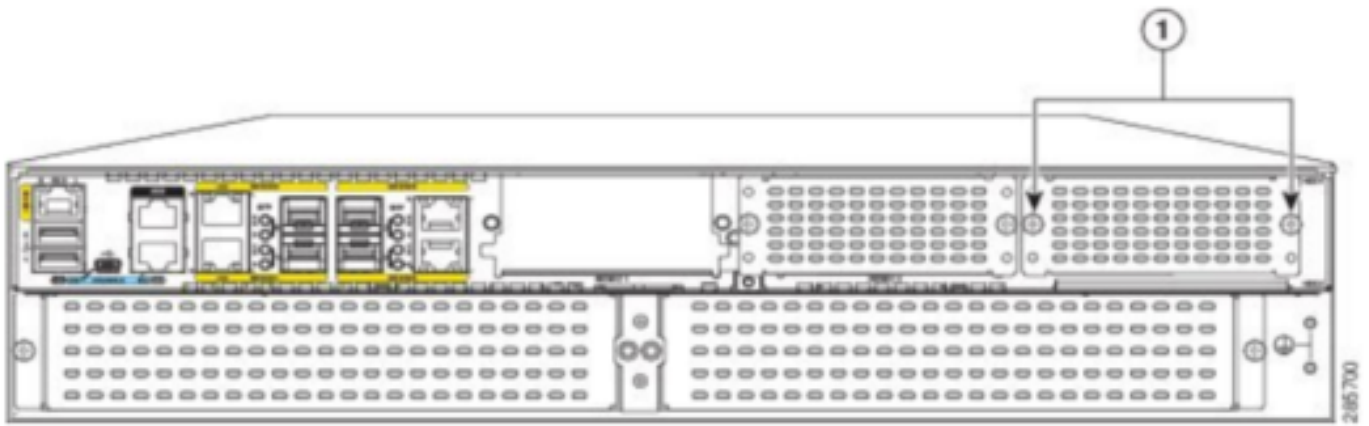
| 1 | Captive screws holding the NIM-SSD to the router |

Stap 2. Verwijder de NIM-SSD of NIM-HDD van de route zoals in deze afbeelding:

| 1 | Captive screws holding the NIM-SSD to the router |

ISR-SSD

ISR-SSD aan de andere kant is geïnstalleerd in het routerchassis, u moet de router uitzetten, het deksel openen om de ISR-SSD te vinden.

De ISR-SSD is niet heet te kunnen zwemmen.

Dit is PID voor de ISR-SSD op ISR 4300-serie die kan worden gebruikt om RMA op te halen:

```
SSD-MSATA-200G(=)200 GB, mSATA Solid State Disk
```

In deze afbeelding zijn de locaties van de Flash Memory Card en de SSD mSATA-opslagapparaten te zien:
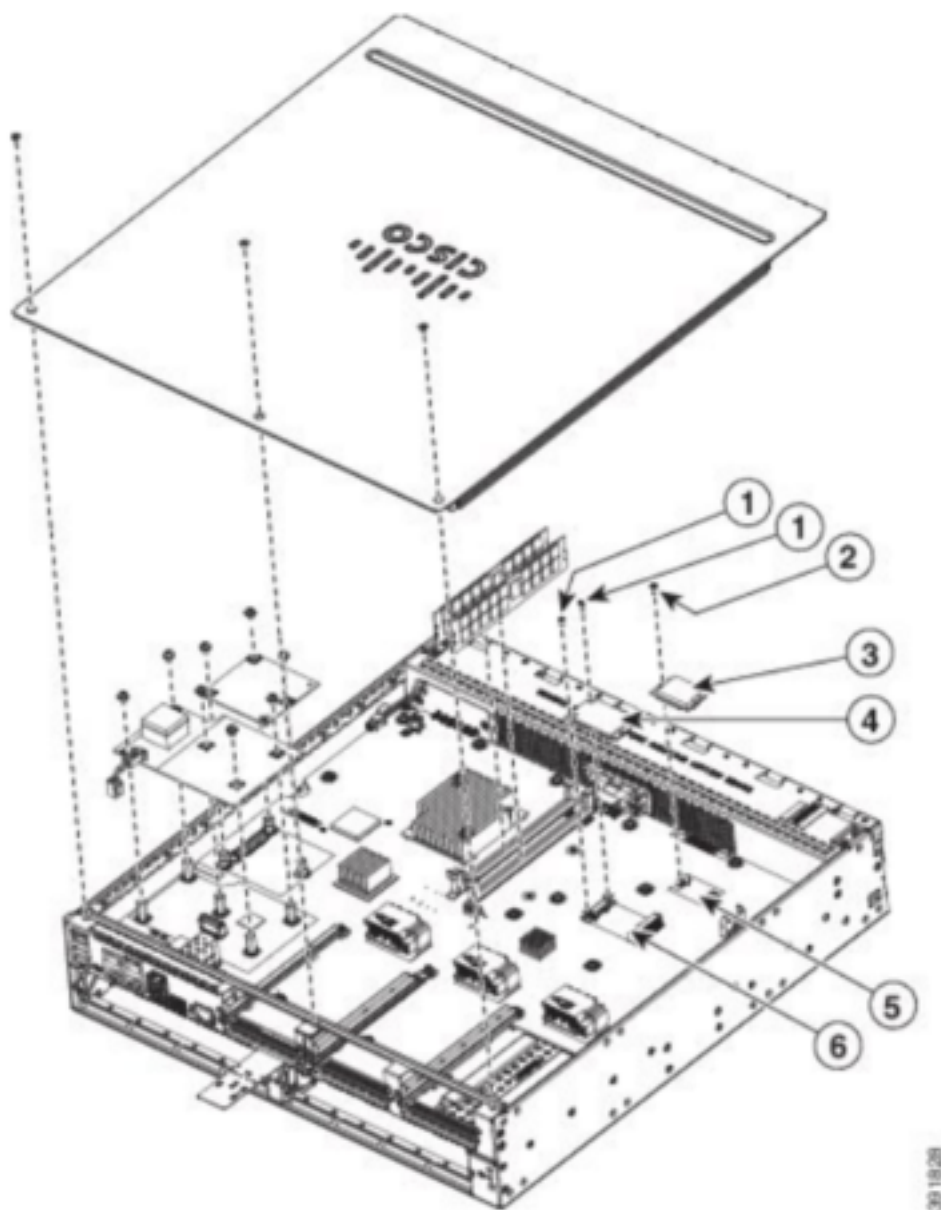
1	Supplied screw	2	Supplied screw
3	Flash memory card	4	SSD mSATA storage device
5	Flash memory card connector	6	SSD mSATA connector

ISR-WAAS-installatie

Zodra u voldoet aan alle vereisten voor de installatie van ISR-WAAS is de volgende stap het downloaden van een OVA-bestand (Open Virtualization Experience) van de ISR-WAAS versie die u wilt inzetten. U kunt software downloaden van deze link:

Nadat u de software hebt gedownload, moet u het bestand naar de flitser van de router overbrengen:

```
BR1-ISR4451#dir bootflash: | in .ova
81929   -rw-      986142720   Feb 1 2016 18:21:13 +12:00  ISR-WAAS-5.5.5a.9.ova
540682  -rw-     1057904640   May 10 2018 16:55:58 +11:00  ISR-WAAS-6.4.1a.6.ova
147457  -rw-     1002700800   Aug 20 2018 16:27:43 +11:00  ISR-WAAS-6.2.3e.45.ova
278534  -rw-     1009551360   Aug 8 2018 17:56:57 +11:00  ISR-WAAS-6.2.3d.68.ova
BR1-ISR4451#
```

Op de router CLI, volgt u deze stappen om ISR-WAAS in te zetten en gebruik het programma EZConfig:

1. Schakel de opdracht Service WAAS in.
2. Selecteer de eerder overgedragen .ova-afbeelding voor de WAAS versie die u wilt implementeren.
3. Selecteer het WAAS-profiel dat u wilt implementeren.
4. Configureer het ISR-WAAS IP-adres.
5. Configuratie van het WAAS centrale IP adres van de manager.

```
BR1-ISR4451#service waas enable
********************************************************************
****  Entering WAAS service interactive mode.                 ****
****  You will be asked a series of questions, and your answers ****
****  will be used to modify this device's configuration to     ****
****  enable a WAAS Service on this router.                     ****
********************************************************************
Continue? [y]: y
At any time: ? for help, CTRL-C to exit.
Select a WAAS image to install:
1. bootflash:/ISR-WAAS-5.5.5a.9.ova
2. bootflash:/ISR-WAAS-6.4.1a.6.ova
3. bootflash:/ISR-WAAS-6.2.3e.45.ova
4. bootflash:/ISR-WAAS-6.2.3d.68.ova
5. Enter your own image
Select option  [3]: 3
Extracting profiles from bootflash:/ISR-WAAS-6.2.3e.45.ova, this may take a couple of minutes ...
These are the available profiles
1. ISR-WAAS-2500
2. ISR-WAAS-1300
3. ISR-WAAS-750
Select option  [1]: 3
An internal IP interface and subnet is required to deploy a WAAS service on this router.
This internal subnet must contain two usable IP addresses that can route and communicate with the WAAS Central Manager (WCM).
The following ip address type supported for ISR-WAAS
 1) ipv4
 2) ipv6
Select ip address type (1 or 2):1
Enter the IPV4 address to be configured on the WAAS service: 10.66.86.44
The following ip address type supported for Host on Router
 1) ipv4
 2) ipv6
Select ip address type (1 or 2):1
The following ip address type for WCM
 1) ipv4
 2) ipv6
Select ip address type (1 or 2):1
Enter the IP address of the WAAS Central Manager (WCM): 10.66.86.106
```

6. Selecteer de WAN-interface (Wide Area Network) op de router waar u WAAS-interceptie wilt inschakelen.
7. Bewaar de configuratie nadat u klaar bent. Dit is het beeld bij een succesvolle installatie.

```
*******************************
** Configuration Summary: **
*******************************
a) WAAS Image and Profile Size:
   bootflash:/ISR-WAAS-6.2.3e.45.ova  (1002700800) bytes
   ISR-WAAS-750

b) Router IP/mask:
   Using ip unnumbered from interface GigabitEthernet0/0/2

   WAAS Service IP:
   10.66.86.44

c) WAAS Central Manager:
   10.66.86.106

d) Router WAN Interfaces:
   GigabitEthernet0/0/0

Choose one of the letter from 'a-d' to edit, 'v' to view config script, 's' to apply config [s]: s
The configuration will be applied and the status of the WAAS service will be displayed after deployment

Installing bootflash:/ISR-WAAS-6.2.3e.45.ova

installing!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

% Activating virtual-service 'AUTOWAAS', this might take a few minutes. Use 'show virtual-service list' for progress.

System is attempting to deploy and activate WAAS image, this may take up to 10 minutes
activating!!!!!!!!!

Waiting for WAAS application to be at a stage to accept WCM IP configuration.

Waiting!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
management services enabled

WAAS service activated!
Note:Please issue "copy running-config startup-config" command to save changes!
```

Probleemoplossing voor ISR-WAAS

SCALA VOOR WAAS-INSTALLATIESALENAAR

De installatie van ISR-WAAS mislukt als er geen SSD is, dus controleer eerst of de SSD aanwezig is.

```
GigabitEthernet0/1/0    unassigned    YES unset  down                    down
GigabitEthernet0/1/1    unassigned    YES unset  down                    down
GigabitEthernet0/1/2    unassigned    YES unset  down                    down
GigabitEthernet0/1/3    unassigned    YES unset  down                    down
ucse1/0/0               10.66.86.34   YES unset  administratively down   down
ucse1/0/1               unassigned    YES NVRAM  administratively down   down
GigabitEthernet0        unassigned    YES NVRAM  administratively down   down
Dialer0                 unassigned    YES unset  up                      up
Dialer1                 unassigned    YES unset  up                      up
Loopback200             unassigned    YES unset  up                      up
Tunnel0                 10.66.86.61   YES unset  up                      up
VirtualPortGroup31      10.66.86.41   YES unset  down                    down
Vlan1                   unassigned    YES NVRAM  administratively down   down
Enter a WAN interface to enable WAAS interception (blank to skip) []: GigabitEthernet0/0/0
Enter additional WAN interface (blank to finish) []:
*******************************
** Configuration Summary: **
*******************************
a) WAAS Image and Profile Size:
   bootflash:/ISR-WAAS-6.2.3e.45.ova  (1002700800) bytes
   ISR-WAAS-750
b) Router IP/mask:
   Using ip unnumbered from interface GigabitEthernet0/0/2
   WAAS Service IP:
   10.66.86.44
c) WAAS Central Manager:
   10.66.86.106
d) Router WAN Interfaces:
   GigabitEthernet0/0/0
Choose one of the letter from 'a-d' to edit, 'v' to view config script, 's' to apply config [s]: s
The configuration will be applied and the status of the WAAS service will be displayed after deployment
installation failure decision to exit
```

SCENA voor ISR-WAAS-activeringsfouten

In sommige scenario's, zal ISR-WAAS niet activeren nadat u de router hebt vervangen en de SSD in het nieuwe chassis hebt geïnstalleerd.

Deze fouten kunnen worden gezien op de ISR-router:

```
09/16 11:44:08.946 [vman]: [31298]: (note): VM (AUTOWAAS) State Transition: next_state:
LIFECYCLE_DEACTIVATE

09/16 11:44:17.613 [vman]: [31298]: (ERR): Loading of machine definition (/vol/harddisk/virtual-
instance/AUTOWAAS/ISR4331X.xml) failed

09/16 11:44:17.613 [vman]: [31298]: (ERR): Failed to load machine definition

09/16 11:44:17.613 [vman]: [31298]: (note): Setting failure response (1)

09/16 11:44:17.613 [vman]: [31298]: (ERR): Virtual Service failure
log[AUTOWAAS]::Validation::Package validation::Failed to process package-def file::File
'/vol/harddisk/virtual-instance/AUTOWAAS/ISR4331X.xml'

09/16 11:44:17.613 [errmsg]: [31298]: (ERR): %VMAN-3-PROCESS_PKG_DEF: Virtual
Service[AUTOWAAS]::Validation::Package validation::Failed to process package-def file::File
'/vol/harddisk/virtual-instance/AUTOWAAS/ISR4331X.xml'

09/16 11:44:17.613 [vman]: [31298]: (note): VM (AUTOWAAS) State Transition: next_state:
LIFECYCLE_WAIT_ACTIVATE

09/16 11:44:17.613 [vman]: [31298]: (note): IF MTU message received:

09/16 11:44:17.613 [vman]: [31298]: (ERR): Invalid bridge ID or the bridge(31) has not been
created yet

09/16 11:44:17.614 [vman]: [31298]: (ERR): Failed to set DP IF mtu for DP bridge 31

09/16 11:44:17.614 [vman]: [31298]: (note): vman IF MTU message processed

09/16 11:44:24.725 [vman]: [31298]: (note): Get local RP location rp/0/0

09/16 11:44:27.758 [vman]: [31298]: (note): Get local RP location rp/0/0

09/16 11:44:27.759 [vman]: [31298]: (note): Get local RP location rp/0/0

09/16 11:44:27.772 [vman]: [31298]: (note): Get local RP location rp/0/0

09/16 11:44:27.779 [vman]: [31298]: (note): Get local RP location rp/0/0

09/16 11:44:27.779 [vman]: [31298]: (note): Successfully removed VM init ctx for VM [AUTOWAAS]

09/16 11:44:27.780 [vman]: [31298]: (note): Per-VM message marshalled successfully into
persistent DB

09/16 11:44:27.780 [vman]: [31298]: (note): Successfully reset per-VM mac address binding into
TDL msg

09/16 11:44:28.063 [vman]: [31298]: (ERR): vman_libvirt_err: code=1

09/16 11:44:28.063 [vman]: [31298]: (ERR): internal error '/usr/sbin/lvremove -f
/dev/lvm_raid/vdc.AUTOWAAS' exited with non-zero status 5 and signal 0:   /dev/harddisk1: read
failed after 0 of 4096 at 21474770944: Input/output error
```

```
  /dev/harddisk1: read failed after 0 of 4096 at 21474828288: Input/output error

  /dev/harddisk1: read failed after 0 of 4096 at 0: Input/output error

  /dev/harddisk1: read failed after 0 of 4096 at 4096: Input/output error

  /dev/dm-1: read failed after 0 of 4096 at 4429119488: Input/output error

  /dev/dm-1: read failed after 0 of 4096 at 4429176832: Input/output error

  /dev/dm-1: read failed after 0 of 4096 at 0: Input/output error

  /dev/dm-1: read failed after 0 of 4096 at 4096: Input/output error

  /dev/dm-2: read failed after 0 of 4096 at 11072897024: Input/output error

  /dev/dm-2: read failed after 0 of 4096 at 11072954368: Input/output error

  /dev/dm-2: read failed after 0 of 4096 at 0: Input/output error

  /dev/dm-2: read failed after 0 of 4096 at 4096: Input/output error

  /dev/dm-3: read failed after 0 of 4096 at 1630
```

09/16 11:44:28.063 [vman]: [31298]: (ERR): Failed to delete volume vdc.AUTOWAAS in pool virt_strg_pool_vg

09/16 11:44:28.241 [vman]: [31298]: (ERR): vman_libvirt_err: code=1

09/16 11:44:28.241 [vman]: [31298]: (ERR): internal error '/usr/sbin/lvremove -f /dev/lvm_raid/vdb.AUTOWAAS' exited with non-zero status 5 and signal 0:   /dev/harddisk1: read failed after 0 of 4096 at 0: Input/output error

```
  /dev/dm-1: read failed after 0 of 4096 at 0: Input/output error

  /dev/dm-2: read failed after 0 of 4096 at 0: Input/output error

  /dev/dm-3: read failed after 0 of 4096 at 0: Input/output error

  /dev/harddisk1: read failed after 0 of 4096 at 21474770944: Input/output error

  /dev/harddisk1: read failed after 0 of 4096 at 21474828288: Input/output error

  /dev/harddisk1: read failed after 0 of 4096 at 4096: Input/output error

  /dev/dm-1: read failed after 0 of 4096 at 4429119488: Input/output error

  /dev/dm-1: read failed after 0 of 4096 at 4429176832: Input/output error

  /dev/dm-1: read failed after 0 of 4096 at 4096: Input/output error

  /dev/dm-2: read failed after 0 of 4096 at 11072897024: Input/output error

  /dev/dm-2: read failed after 0 of 4096 at 11072954368: Input/output error

  /dev/dm-2: read failed after 0 of 4096 at 4096: I
```

09/16 11:44:28.241 [vman]: [31298]: (ERR): Failed to delete volume vdb.AUTOWAAS in pool virt_strg_pool_vg

09/16 11:44:28.418 [vman]: [31298]: (ERR): vman_libvirt_err: code=1

09/16 11:44:28.418 [vman]: [31298]: (ERR): internal error '/usr/sbin/lvremove -f

```
/dev/lvm_raid/vda.AUTOWAAS' exited with non-zero status 5 and signal 0:   /dev/harddisk1: read
failed after 0 of 4096 at 0: Input/output error

   /dev/dm-1: read failed after 0 of 4096 at 0: Input/output error

   /dev/dm-2: read failed after 0 of 4096 at 0: Input/output error

   /dev/dm-3: read failed after 0 of 4096 at 0: Input/output error

   /dev/harddisk1: read failed after 0 of 4096 at 21474770944: Input/output error

   /dev/harddisk1: read failed after 0 of 4096 at 21474828288: Input/output error

   /dev/harddisk1: read failed after 0 of 4096 at 4096: Input/output error

   /dev/dm-1: read failed after 0 of 4096 at 4429119488: Input/output error

   /dev/dm-1: read failed after 0 of 4096 at 4429176832: Input/output error

   /dev/dm-1: read failed after 0 of 4096 at 4096: Input/output error

   /dev/dm-2: read failed after 0 of 4096 at 11072897024: Input/output error

   /dev/dm-2: read failed after 0 of 4096 at 11072954368: Input/output error

   /dev/dm-2: read failed after 0 of 4096 at 4096: I

09/16 11:44:28.418 [vman]: [31298]: (ERR): Failed to delete volume vda.AUTOWAAS in pool
virt_strg_pool_vg

09/16 11:44:28.420 [vman]: [31298]: (note): Found orphaned volume(vda.AUTOWAAS) in
pool(virt_strg_pool_vg). Deleting...
```

Het is mogelijk dat harddisk beschadigd is en deze acties kunnen worden ondernomen:

```
# show platform hardware subslot <ssd subslot> module device filesystem

# request platform hardware filesystem harddisk: destroy

# hw-module subslot 0/5 reload
```

SSD-mislukkingsscenario

In bepaalde gevallen als de SSD defect is, terwijl u opdrachten met betrekking tot de vaste schijf
en het bestandssysteem uitvoert, ziet u deze fouten.

```
"request platform hardware filesystem harddisk: destroy"
 %This operation can take some time, please be patient
  %Harddisk not present. Destroy filesystem aborted.
```

U kunt deze stappen als volgt proberen op te lossen:

Stap 1. Probeer de SSD opnieuw te gebruiken.

Stap 2. Start de router opnieuw.

Stap 3. Als deze stappen zijn mislukt, dient u alleen RMA de SSD te gebruiken.