Dying Gasp Support for Loss of Power Supply Through SNMP, Syslog and Ethernet OAM

Dying Gasp — One of the following unrecoverable condition has occurred:

  • Power failure or removal of power supply cable

This type of condition is vendor specific. An Ethernet Operations, Administration, and Maintenance (OAM) notification about the condition may be sent immediately.

This document describes the Dying Gasp feature which is used to send dying gasp messsages through SNMP, syslog, or Ethernet Operation, Administration, and Maintenance (OAM) to report the abrupt loss of power to the host platform.

The SNMP server for the SNMP Dying-Gasp message is specified through the **snmp-server host** configuration command. The Ethernet-OAM Dying-Gasp packets are created for interfaces where Ethernet-OAM is enabled.

Table 1: Feature History

Feature Name	Release Information	Feature Description
Support for Dying Gasp	Cisco IOS XE Bengaluru 17.6.1	This feature enables hardware-based support of SNMP Dying Gasp for a quicker generation of SNMP Dying Gasp traps.

Restrictions for Dying Gasp Support

  • SNMP trap is sent only on power failure or removal of power supply cable.

  • The dying gasp support feature cannot be configured using CLI. To configure hosts using SNMP, refer to the SNMP host configuration examples below.

- Before Cisco IOS XE Bengaluru 17.6.1, the SNMP Dying Gasp trap generation using hardware is not supported.

- Dying Gasp is not supported on default management interface.

- A maximum of 5 SNMP Dying Gasp sessions are supported. If more sessions are configured, the first 5 SNMP Dying gasp sessions are selected based on the ascending order of the IP addresses of SNMP server host.

Example: Configuring SNMP Community Strings on a Router

Setting up the community access string to permit access to the SNMP:

```
Router> enable
Router# configure terminal
Router(config)# snmp-server community public RW
Router(config)# exit
```

For more information on command syntax and examples, refer to the Cisco IOS Network Management Command Reference.

Example: Configuring SNMP-Server Host Details on the Router Console

Specifying the recipient of a SNMP notification operation:

```
Router> enable
Router# configure terminal
Router(config)# snmp-server host X.X.X.XXX vrf vrf1 version 2c public udp-port 9800
Router(config)# exit
```

For more information on command syntax and examples, refer to the Cisco IOS Network Management Command Reference.

Dying Gasp Trap Support for Different SNMP Server Host/Port Configurations

Note   You can configure up to five different SNMP server host/port configurations.

Environmental Settings on the Network Management Server

```
setenv SR_TRAP_TEST_PORT=UDP port
setenv SR_UTIL_COMMUNITY=public
```

```
setenv SR_UTIL_SNMP_VERSION=v2c
setenv SR_MGR_CONF_DIR=Path to the executable snmpinfo.DAT file
```

The following example shows SNMP trap configuration on three hosts:

Configuration example for the first host:

```
Router# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#
Router(config)# snmp-server host 7.0.0.149 vrf vrf1 version 2c public udp-port 6264
```

Configuration example for the second host:

```
Router(config)#
Router(config)# snmp-server host 7.0.0.152 vrf vrf1 version 2c public udp-port 9988
```

Configuration example for the third host:

```
Router(config)# snmp-server host 7.0.0.166 vrf vrf1 version 2c public udp-port 9800
Router(config)#
Router(config)# ^Z
Router#
```

After performing a power cycle, the following output is displayed on the router console:

```
Router#
Press ESCAPE for boot options
NVRAM: OK

FPGA SPI Flash: OK
FPGA: OK
Rom image verified correctly

System Bootstrap, Version 1.6(20191125:124452) [ncs520-dev], RELEASE SOFTWARE
Compiled at 2019-11-25 12:44 by regvr

Current image running: Boot ROM1
Last reset cause: RSP-Board
rommon 1 >
=======================================
Dying Gasp Trap Received for the Power failure event:
-------------------------------------------------------
  Trap on Host1
+++++++++++++++
snmp-server host = 7.0.0.149 (nms1-lnx)  and SR_TRAP_TEST_PORT=6264
/auto/sw/packages/snmpr/15.4.1.9/bin> /auto/sw/packages/snmpr/15.4.1.9/bin/traprcv
Waiting for traps.
Received SNMPv2c Trap:
Community: public
From: 7.29.25.101
snmpTrapOID.0 = ciscoMgmt.305.1.3.5.0.2
ciscoMgmt.305.1.3.6 = Dying Gasp - Shutdown due to power loss
-------------------------------------------------------------------
  Trap on Host2
+++++++++++++++
snmp-server host = 7.0.0.152  (nms2-lnx)  and SR_TRAP_TEST_PORT=9988
/auto/sw/packages/snmpr/15.4.1.9/bin> /auto/sw/packages/snmpr/15.4.1.9/bin/traprcv
Waiting for traps.
Received SNMPv2c Trap:
Community: public
From: 7.29.25.101
snmpTrapOID.0 = ciscoMgmt.305.1.3.5.0.2
```

```
ciscoMgmt.305.1.3.6 = Dying Gasp - Shutdown due to power loss
---------------------------------------------------------------
   Trap on Host3
++++++++++++++
snmp-server host = 7.0.0.166  (erbusnmp-dc-lnx)  and SR_TRAP_TEST_PORT=9800
/auto/sw/packages/snmpr/15.4.1.9/bin> /auto/sw/packages/snmpr/15.4.1.9/bin/traprcv
Waiting for traps.
Received SNMPv2c Trap:
Community: public
From: 7.29.25.101
snmpTrapOID.0 = ciscoMgmt.305.1.3.5.0.2
ciscoMgmt.305.1.3.6 = Dying Gasp - Shutdown due to power loss
```

Message Displayed on the Peer Router on Receiving Dying Gasp Notification

```
*May 19 21:43:47.904: %ETHERNET_OAM-6-DYING_GASP: The client on interface Gi0/0/0 has
received a Dying Gasp indication from its remote peer (failure reason = remote client power
 failure, action = none)
```

Displaying SNMP Configuration for Receiving Dying Gasp Notification

Use the show running-config command to display the SNMP configuration for receiving dying gasp notification:

```
Router# show running-config | i snmp
snmp-server community public RW
snmp-server host 7.0.0.149 vrf vrf1 version 2c public udp-port 6264
snmp-server host 7.0.0.152 vrf vrf1 version 2c public udp-port 9988
snmp-server host 7.0.0.166 vrf vrf1 version 2c public udp-port 9800
Router#
```