Orchestrating a brighter world

NEC

NEC Express5800, iLO Embedded Server

Notice for Express Report Service (MG)

Revision 1.0

Nov 22, 2017

NEC Corporation

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Reference Sites

Name	URL
ESMPRO	http://www.58support.nec.co.jp/global/download/ -> ESMPRO

Words and Term

名前	説明
Express Report Service	Reportservice of NEC Corporation to know the trouble of the servers. There are two routes to realize Express Report Service, one is from NEC ESMPRO ServerAgentService and the other is from iLO, using Express Report Service (MG).
Express Report Service(MG)	Report service using the error information of the server from iLO, using Express Report Service (MG) software.
NEC ESMPRO ServerManager	Server management software. It enables the integrative management of multiple servers.
NEC ESMPRO ServerAgentService	Agent software which is installed on Management Target Server.
iLO	Means Integrated Lights-Out. It is server management chip embedded on the server mother board. It is called Baseboard Management Controller generally.
IML	Means Integrated Management Log. It is a log of server saved in iLO.

Revision History

Date	Revision	Description
Nov 22, 2017	1.0	Initial release.

1.Introduction

This document describes the notice of NEC Express Report Service (MG) for NEC Express5800 Servers which has iLO on its mother board. Please check the NEC iLO IML SNMP Trap List.

2.About NEC Express Report Service

NEC Express5800 servers provides Express Report Service, which send reports to the Maintenance Company. Mainly, there are two routes to realize NEC Express Report Service shown below.

① NEC Express Report Service

Agent software, NEC ESMPRO ServerAgentService, detects error information of the server and report to the Maintenance Company through system LAN.

② NEC Express Report Service (MG)

Management software, NEC ESMPRO Manager, receive error information from iLO and send report to the Maintenance Company.

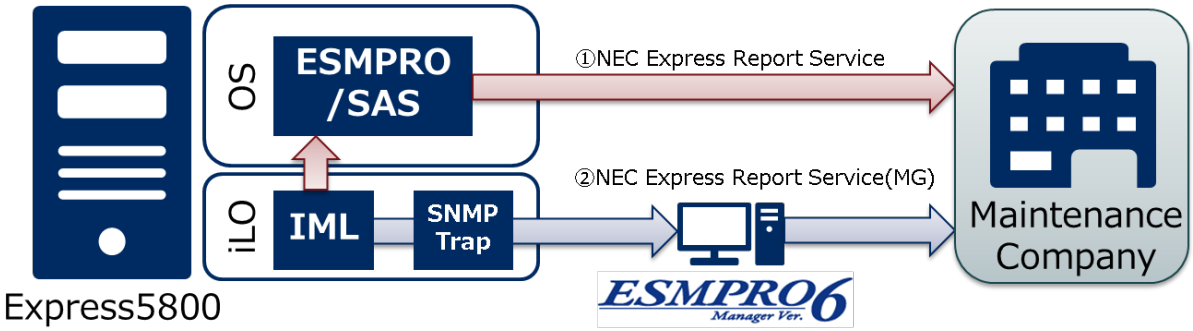
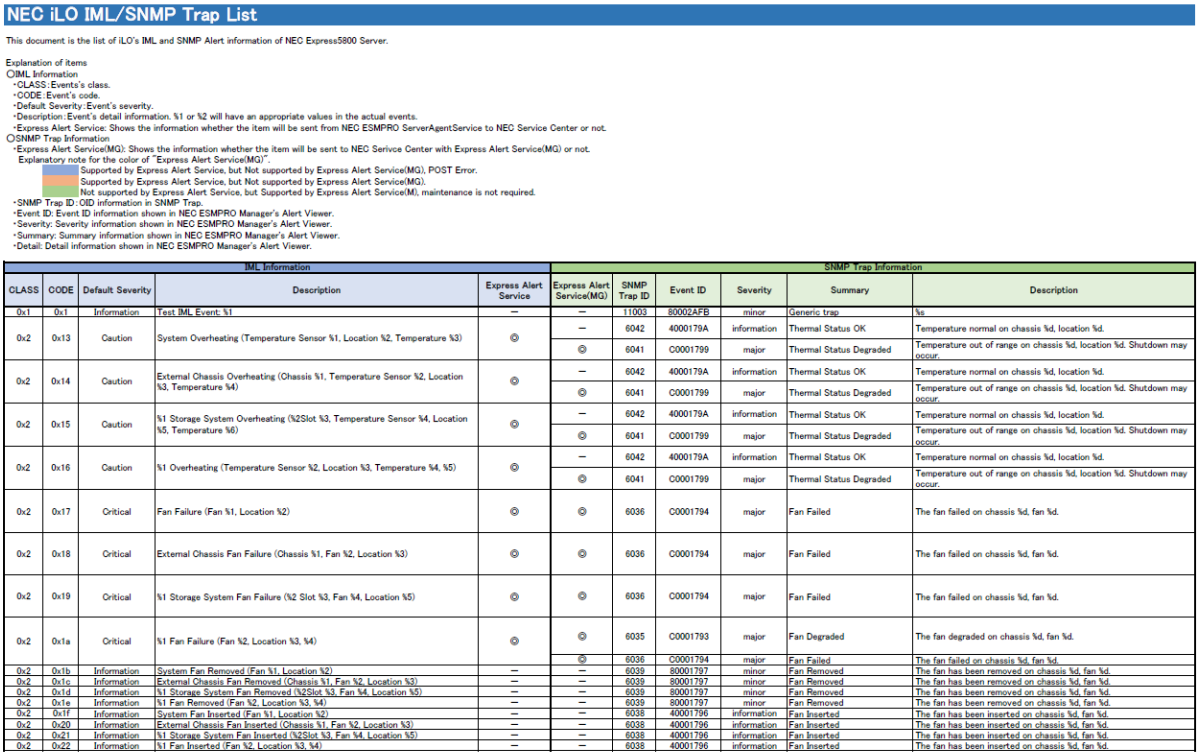


図 1 Routes of NEC Express Report Service

3.NEC iLO IML/SNMP Trap List

NEC iLO IML/SNMP Trap List is a list of IML and its SNMP trap information for NEC Express5800 iLO Embedded Servers. Occurrence of each events is depends on the model or configuration of the server.



NEC iLO IML/SNMP Trap List

This document is the list of iLO's IML and SNMP Alert information of NEC Express5800 Server.

Explanation of items
○IML Information
・CLASS: Events's class.
・CODE: Event's code.
・Default Severity: Event's severity.
・Description: Event's detail information. %1 or %2 will have an appropriate values in the actual events.
・Express Alert Service: Shows the information whether the item will be sent from NEC ESMPRO ServerAgentService to NEC Service Center or not.
○SNMP Trap Information
・Express Alert Service(MG): Shows the information whether the item will be sent to NEC Serivce Center with Express Alert Service(MG) or not.
Explanatory note for the color of "Express Alert Service(MG)".
Supported by Express Alert Service, but Not supported by Express Alert Service(MG), POST Error.
Supported by Express Alert Service, but Not supported by Express Alert Service(MG).
Not supported by Express Alert Service, but Supported by Express Alert Service(MI), maintenance is not required.
・SNMP Trap ID: OID information in SNMP Trap.
・Event ID: Event ID information shown in NEC ESMPRO Manager's Alert Viewer.
・Severity: Severity information shown in NEC ESMPRO Manager's Alert Viewer.
・Summary: Summary information shown in NEC ESMPRO Manager's Alert Viewer.
・Detail: Detail information shown in NEC ESMPRO Manager's Alert Viewer.

IML Information					SNMP Trap Information					
CLASS	CODE	Default Severity	Description	Express Alert Service	Express Alert Service(MG)	SNMP Trap ID	Event ID	Severity	Summary	Description
0x1	0x1	Information	Test IML Event: %1	–	–	11003	80002AFB	minor	Generic trap	%s
0x2	0x13	Caution	System Overheating (Temperature Sensor %1, Location %2, Temperature %3)	◎	–	6042	4000179A	information	Thermal Status OK	Temperature normal on chassis %d, location %d.
					◎	6041	C0001799	major	Thermal Status Degraded	Temperature out of range on chassis %d, location %d. Shutdown may occur.
0x2	0x14	Caution	External Chassis Overheating (Chassis %1, Temperature Sensor %2, Location %3, Temperature %4)	◎	–	6042	4000179A	information	Thermal Status OK	Temperature normal on chassis %d, location %d.
					◎	6041	C0001799	major	Thermal Status Degraded	Temperature out of range on chassis %d, location %d. Shutdown may occur.
0x2	0x15	Caution	%1 Storage System Overheating (%2Slot %3, Temperature Sensor %4, Location %5, Temperature %6)	◎	–	6042	4000179A	information	Thermal Status OK	Temperature normal on chassis %d, location %d.
					◎	6041	C0001799	major	Thermal Status Degraded	Temperature out of range on chassis %d, location %d. Shutdown may occur.
0x2	0x16	Caution	%1 Overheating (Temperature Sensor %2, Location %3, Temperature %4, %5)	◎	–	6042	4000179A	information	Thermal Status OK	Temperature normal on chassis %d, location %d.
					◎	6041	C0001799	major	Thermal Status Degraded	Temperature out of range on chassis %d, location %d. Shutdown may occur.
0x2	0x17	Critical	Fan Failure (Fan %1, Location %2)	◎	◎	6036	C0001794	major	Fan Failed	The fan failed on chassis %d, fan %d.
0x2	0x18	Critical	External Chassis Fan Failure (Chassis %1, Fan %2, Location %3)	◎	◎	6036	C0001794	major	Fan Failed	The fan failed on chassis %d, fan %d.
0x2	0x19	Critical	%1 Storage System Fan Failure (%2 Slot %3, Fan %4, Location %5)	◎	◎	6036	C0001794	major	Fan Failed	The fan failed on chassis %d, fan %d.
0x2	0x1a	Critical	%1 Fan Failure (Fan %2, Location %3, %4)	◎	◎	6035	C0001793	major	Fan Degraded	The fan degraded on chassis %d, fan %d.
					◎	6036	C0001794	major	Fan Failed	The fan failed on chassis %d, fan %d.
0x2	0x1b	Information	System Fan Removed (Fan %1, Location %2)	–	–	6039	80001797	minor	Fan Removed	The fan has been removed on chassis %d, fan %d.
0x2	0x1c	Information	External Chassis Fan Removed (Chassis %1, Fan %2, Location %3)	–	–	6039	80001797	minor	Fan Removed	The fan has been removed on chassis %d, fan %d.
0x2	0x1d	Information	%1 Storage System Fan Removed (%2Slot %3, Fan %4, Location %5)	–	–	6039	80001797	minor	Fan Removed	The fan has been removed on chassis %d, fan %d.
0x2	0x1e	Information	%1 Fan Removed (Fan %2, Location %3, %4)	–	–	6039	80001797	minor	Fan Removed	The fan has been removed on chassis %d, fan %d.
0x2	0x1f	Information	System Fan Inserted (Fan %1, Location %2)	–	–	6038	40001796	information	Fan Inserted	The fan has been inserted on chassis %d, fan %d.
0x2	0x20	Information	External Chassis Fan Inserted (Chassis %1, Fan %2, Location %3)	–	–	6038	40001796	information	Fan Inserted	The fan has been inserted on chassis %d, fan %d.
0x2	0x21	Information	%1 Storage System Fan Inserted (%2Slot %3, Fan %4, Location %5)	–	–	6038	40001796	information	Fan Inserted	The fan has been inserted on chassis %d, fan %d.
0x2	0x22	Information	%1 Fan Inserted (Fan %2, Location %3, %4)	–	–	6038	40001796	information	Fan Inserted	The fan has been inserted on chassis %d, fan %d.

図 2 NEC iLO IML/SNMP Trap List Sample

Below is explanation of column headings.

Table 1 Explanation of column headings.

Type	Name	Explanation	Example
IML Information	CLASS	Event's class.	0x2
	CODE	Event's code.	0x13
	Default Severity	Event's Severity	Caution
	Description	Event's detail information. %1 or %2 will have an appropriate values in the actual events.	System Overheating (Temperature Sensor %1, Location %2, Temperature %3)
	Express Report Service	Shows the information whether the item will be sent from NEC ESMPRO ServerAgentService to NEC Service Center or not.	◎
SNMP Trap Information	Express Report Service (MG)	Shows the information whether the item will be sent to NEC Service Center with Express Report Service (MG) or not.	◎
	SNMP Trap ID	OID information in SNMP Trap.	6041
	Event ID	Event ID information shown in NEC ESMPRO Manager's Alert Viewer.	C0001799
	Severity	Severity information shown in NEC ESMPRO Manager's Alert Viewer.	Major
	Summary	Summary information shown in NEC ESMPRO Manager's Alert Viewer.	Thermal Status Degraded
	Detail	Detail information shown in NEC ESMPRO Manager's Alert Viewer.	Temperature out of range on chassis %d, location %d. Shutdown may occur.

4.Precautions for Report Target Events

There are differences between Express Report Service and Express Report Service (MG) in terms of Report Target Events in NEC iLO IML/SNMP Trap List.

4.1. Events which doesn’t supported by Express Report Service (MG)

Events which is listed in below table are not supported by Express Report Service (MG). If you find these events on your server, please call the Maintenance Company.

- Events which doesn’t generate SNMP Trap.
- Events of POST Error.

Table 2 Events which doesn’t supported by Express Report Service (MG)

CLASS	CODE	Default Severity	Description
0x2	0x29	Critical	External Chassis Overheating (Chassis %1, Temperature Sensor %2, Location %3, Temperature %4)
0x2	0x2a	Critical	%1 Storage System Overheating (%2Slot %3, Temperature Sensor %4, Location %5, Temperature %6)
0x2	0x2b	Critical	%1 Overheating (Temperature Sensor %2, Location %3, Temperature %4, %5)
0x2	0x2c	Critical	Temperature exceeded on PCIe disk %1.
0x2	0x31	Critical	%1 Storage Enclosure Fan Failure (Fan %2, Location %3, Box %4, %5)
0x2	0x32	Caution	%1 Storage Enclosure Overheating (Temperature Sensor %2, Location %3, Box %4, %5)
0x6	0x3	Critical	Uncorrectable UPI Error was detected on Processor %1
0x8	0x2	Critical	Uncorrectable PCI Express Error Detected. Slot %1 (Segment %2, Bus %3, Device %4, Function %5). Uncorrectable Error Status: 0x%6
0x8	0x3	Critical	Uncorrectable PCI Express Error Detected. Embedded %1 (Segment %2, Bus %3, Device %4, Function %5). Uncorrectable Error Status: 0x%6
0x8	0x4	Critical	Uncorrectable PCI Express Error Detected. Slot %1 (Segment %2, Bus %3, Device %4, Function %5).

0xa	0x104	Caution	ASR Timer Failure
0xa	0x121	Critical	A Critical Error occurred prior to this power-up.
0xa	0x218	Critical	DIMM Initialization Error - All DIMMs are mapped out due to memory errors except for one to allow the system to boot. Additional errors may be present on the remaining DIMM. System is booting in a degraded state.
0xa	0x224	Caution	Power Fault Detected - FlexLOM %1
0xa	0x225	Caution	Power Fault Detected-Mezzanine %1.
0xa	0x226	Caution	Power Fault Detected - Embedded Storage Controller %1.
0xa	0x268	Caution	UEFI Non-Volatile Variable Store Corruption Detected. If enabled, Secure Boot security settings may be lost.
0xa	0x284	Critical	DIMM Failure - Uncorrectable Memory Error - %1 %2 Dimm %3
0xa	0x312	Caution	%1 %2 Failure - Communication with the battery failed. Its output may not be enabled.
0xa	0x313	Caution	%1 %2 Failure - Battery Shutdown Event Code: 0x%3.
0xa	0x315	Critical	An uncorrectable memory error was detected prior to this system boot.
0xa	0x323	Caution	%1 Dual microSD Device Error - The microSD card in Slot %2 has failed.
0xa	0x324	Critical	%1 Dual microSD Device Error - Both microSD cards have failed.
0xa	0x326	Critical	%1 Dual microSD Device Error - The microSD card in Slot %2 has failed. A microSD card is not installed in Slot %3.
0xa	0x328	Information	Power Management Controller Firmware Error - The firmware is in Recovery Mode.
0xa	0x329	Information	Power Management Controller FW Error - Unable to communicate with the FW.
0xa	0x410	Caution	Innovation Engine Error - The Innovation Engine is not operating properly. (Error Code %1).
0xa	0x411	Critical	Innovation Engine Error - The Innovation Engine is operating in recovery mode.
0xa	0x414	Caution	Server Platform Services Firmware Error - The SPS Firmware is not operating properly. (Error Code %1).
0xa	0x433	Critical	Scalable Persistent Memory backup device failure on Box %1 Bay %2. Persistent data may have been lost.

0xa	0x442	Caution	Scalable Persistent Memory backup media write error on Box %1 Bay %2. Persistent data may have been lost.
0xa	0x443	Caution	Scalable Persistent Memory backup media read error on Box %1 Bay %2. Persistent data may have been lost.
0xa	0x444	Critical	Scalable Persistent Memory arming error on %1, Logical NVDIMM %2. The Logical NVDIMM could not be armed and future backups are not possible.
0xa	0x445	Caution	Scalable Persistent Memory backup device error on Box %1 Bay %2.
0xa	0x449	Caution	Scalable Persistent Memory Address Range Scrub error threshold exceeded on %1, Logical NVDIMM %2. Logical NVDIMM Persistency is lost and future data backups are not possible.
0xa	0x452	Critical	%1 FW Communication Issue - Unable to communicate with %2 FW. One or more configuration settings may be used from the last system boot. One or more configuration changes since the last boot may not have taken affect.
0xa	0x454	Caution	NVDIMM Error - Persistent Memory Address Range Scrub error threshold exceeded on Processor %1, DIMM %2 (SN:%3-%4-%5-%6). NVDIMM Persistency is lost and future data backups are not possible.
0xa	0x455	Caution	IMPORTANT: The %1 in Bay %2 will soon be incapable of supporting the Scalable Persistent Memory backup.
0xa	0x456	Critical	IMPORTANT: The %1 in Bay %2 cannot support the Scalable Persistent Memory backup. Logical NVDIMM persistency has been lost.
0xa	0x460	Caution	Correctable Memory Error Threshold Exceeded (%1 %2, DIMM %3).
0xa	0x461	Caution	High rate of corrected memory errors, performance may be degraded (%1 %2, DIMM %3).
0xa	0x466	Caution	Memory Channel Error - Correctable Memory Error Threshold Exceeded (%1 %2, Channel %3).
0xa	0x467	Critical	Uncorrectable Error was detected on Processor %1.
0xa	0x470	Caution	SATA device on Controller %1 Port %2 is unresponsive.
0xa	0x490	Critical	System Health Error. A critical system health error requires the system to be shutdown.

0xa	0x491	Critical	System Health Error.　A critical system health error has kept the system from booting. -System Halted!
0xa	0x500	Critical	ASR NMI Detected - The Automatic Server Recovery (ASR) NMI has been signaled (per the system configuration policy).
0xa	0x501	Critical	IPMI Watchdog NMI Detected - The IPMI Watchdog NMI has been signaled (per the system configuration policy).
0xa	0x502	Critical	Application Watchdog NMI Detected - The Application Watchdog NMI has been signaled (per the system configuration policy).
0xa	0x1636	Caution	%1 Trusted Platform Module Error.
0xa	0x2404	Caution	Slot %1 SAN Error - Adapter restart failed. Firmware not ready. Boot from SAN not possible.
0xa	0x2405	Caution	Slot %1 Error - Vital Product Data (VPD) is not available.
0xa	0x2406	Caution	Slot %1 NIC Error - NIC personality (Ethernet, iSCSI, or FCoE) could not be changed. FW may require update.
0xa	0x2408	Caution	Slot %1 Error - Firmware image recovery not successful.
0xa	0x2410	Caution	Slot %1 Error - Controller I/O timeout failure.
0xa	0x2416	Caution	%1: Error - Controller firmware not ready.
0xb	0x1b	Critical	System Board Power Protection Fault
0xb	0x1c	Critical	Power Supply or Power Backplane Detection Error
0xb	0x29	Caution	External Chassis Power Supply: %1 (Chassis %2, Power Supply %3)
0xb	0x2a	Caution	%1 Storage System Power Supply: %2 (%3Slot %4, Power Supply %5)
0xb	0x2b	Critical	%1 Power Supply: %2 (Power Supply %3, %4)
0xb	0x3c	Critical	System Power Fault Detected (XR: %1 %2　MID:　%3)
0xb	0x3d	Critical	System Power Fault Detected (XR: %1 %2　MID:　%3)
0xb	0x44	Caution	%1 Storage Enclosure Power Supply Failure (Power Supply %2, Box %3, %4)
0xb	0x55	Critical	Battery Backup Unit: %1 (Power Supply %2)
0xd	0x1	Caution	ASR Detected by System ROM
0xd	0x3	Caution	ASR Reset Limit Detected by System ROM
0x13	0x12	Critical	%1 Smart Array - Controller Failure (Status: %2)
0x13	0x13	Critical	Drive Array Controller Failure (Chassis %1, Slot %2)
0x14	0x5	Critical	Unrecoverable I/O Error has occurred. System Firmware will log

			additional details in a separate IML message entry if possible.
0x14	0x7	Critical	Server Critical Fault (Service Information: %1)
0x29	0x1	Critical	Improperly seated or missing device (%1, %2)
0x32	0x120	Critical	A Critical Error Event that has kept the system from booting. -System Halted!
0x32	0x212	Critical	Processor UPI Initialization Error. A processor UPI initialization error was detected. %1 (Major Code:%2, Minor Code:%3).
0x32	0x215	Critical	DIMM Initialization Error - Processor %1 DIMM %2. The identified processor and memory failed to initialize properly. %3 (Major Code:%4, Minor Code:%5).
0x32	0x216	Critical	DIMM Initialization Error. A fatal error was detected while initializing memory. %1 (Major Code:%2, Minor Code:%3).
0x32	0x217	Critical	DIMM Initialization Error - Processor %1 DIMM %2. The identified processor and memory are operating at an incorrect voltage. %3 (Major Code:%4, Minor Code:%5).
0x32	0x220	Critical	KTI Initialization Error - A fatal KTI initialization error has been detected. %1 (Major Code: %2, Minor Code: %3).
0x32	0x221	Critical	Unknown Initialization Error. The system has experienced a fatal initialization error. %1 (Major Code: %2, Minor Code: %3).
0x32	0x232	Critical	DIMM Initialization Error - A memory initialization error was detected. %1 (Major Code:%2, Minor Code:%3).
0x32	0x233	Caution	DIMM Initialization Error - Processor %1 Channel %2. The identified memory channel could not be properly trained and has been mapped out. (Major Code:%3, Minor Code:%4).
0x32	0x234	Caution	DIMM Initialization Error - Processor %1 DIMM %2. The identified DIMM could not be properly trained and has been mapped out. (Major Code:%3, Minor Code:%4).
0x32	0x270	Critical	%1 FW Communication Issue - Unable to communicate with %2 FW. Certain management functionality is not available.
0x32	0x305	Caution	Redundant ROM Error: Both the Primary and Backup System ROMs are invalid.
0x32	0x318	Caution	Trusted Platform Module (TPM) Self-Test Error.
0x32	0x389	Caution	Unexpected Shutdown and Restart - An undetermined error type resulted in a reboot of the server.
0x32	0x412	Critical	Server Platform Services Firmware Error - The Server Platform

			Services firmware is operating in factory mode.
0x32	0x413	Critical	Innovation Engine Image Authentication Error. The Innovation Engine image could not be authenticated.
0x32	0x462	Critical	Uncorrectable Memory Error Threshold Exceeded (%1 %2, DIMM %3). The DIMM is mapped out and is currently not available.
0x32	0x3011	Critical	MemBIST MEMTEST: UnCorrectable Memory Error found at CPU %1 DIMM %2 Rank %3 - UC Count %4
0x32	0x3013	Critical	Processor Built-In Self-Test (BIST) Failure. Processor %1, Error Code = 0x%2.

4.2. Events which doesn't require maintenance

Please check below table. Some SNMP Trap is combined with multiple IML. So, if any of the combined IML is defined to send reports, the combined SNMP Trap became a report target. Then, the SNMP Trap, generated by IML which doesn't require sending report, became a report target.

Three events in below table will be sent to Maintenance Company through Express Report Service (MG), but these events doesn't require maintenance and the Maintenance Company will not access to the customers.

Table 3 Example

IML	Express Report Service	SNMP Trap ID	Express Report Service (MG)
CLASS 0x2 CODE 0x1a FAN Failure	◎ **(Report is required)**	6035	◎**(Report Target)** SNMP Trap ID 6035 became and report target of Express Report Service (MG), because FAN Failure IML is an report target of Express Report Service. But, the SNMP Trap which is generated from FAN Degraded IML has same SNMP Trap ID 6035, which Trap ID is a report target combined with FAN Failure IML. So, the SNMP Trap generated from FAN Degraded IML became a report target in spite of it doesn't require report.
CLASS 0x2 CODE 0x33 FAN Degraded	× **(Report is not required)**		

Table 4 Events which doesn't require maintenance

CLASS	CODE	Default Severity	Description
0x2	0x23	Caution	System Fans Not Redundant (Location %1)
0x2	0x33	Caution	Fan Degraded (Fan %1, Location %2)
0xb	0x42	Caution	Smart Storage Battery has exceeded the maximum amount of devices supported (Battery %1, service information: 0x07)

End.