

Hanwha Techwin

# SNMP MIB 가이드

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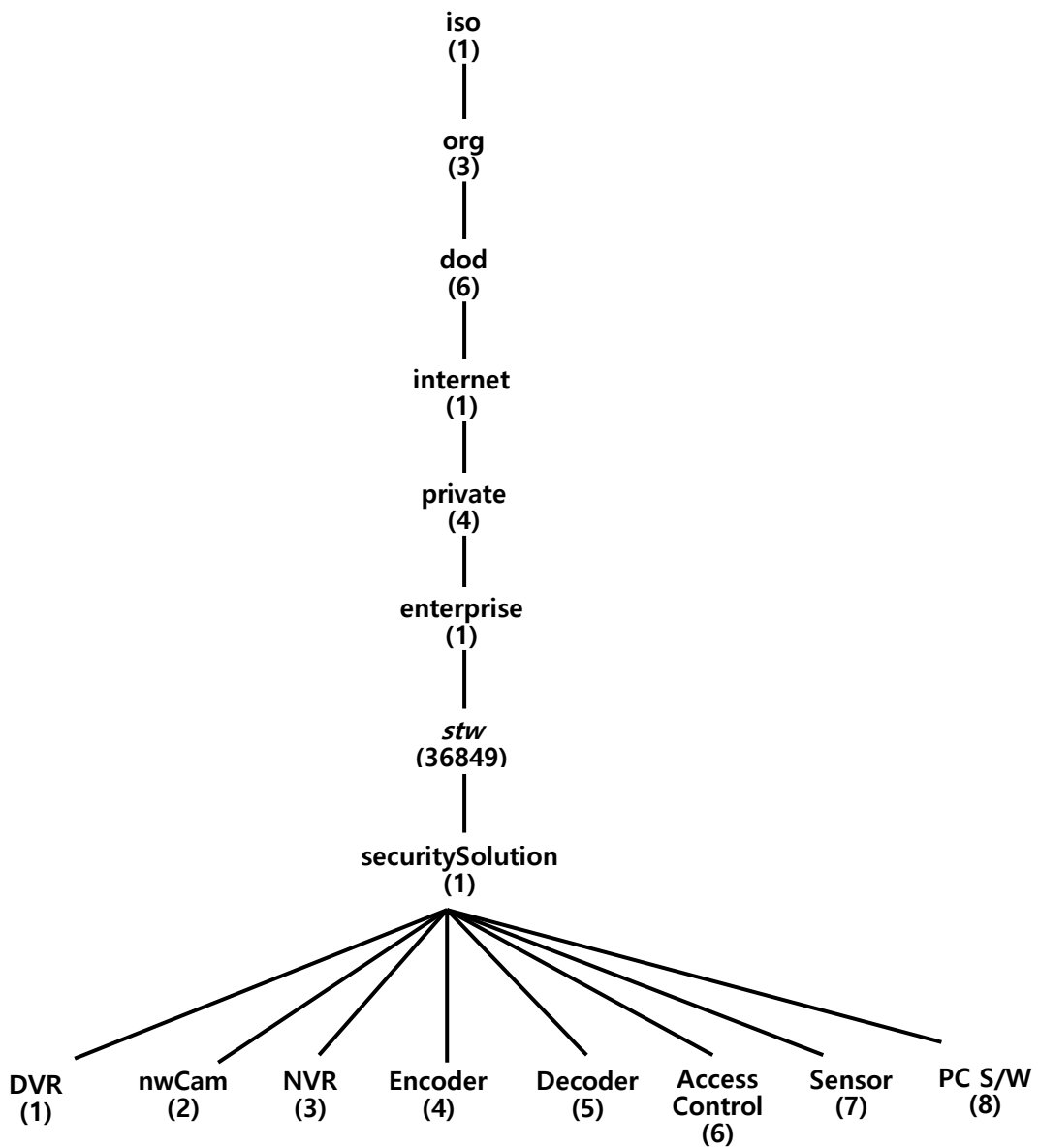
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# MIB 계층

한화테크윈에서 제공하는 OID (Object ID)는 다음과 같습니다. "enterprise(1)" 하부에 "한화테크윈 (htw, 36849)"이 위치하고, 한화테크윈 하부에 위치한 "시큐리티 사업부(securitySolution)"는 "1"로 할당되어 있습니다. securitySolution 하부에 제품군(Product Family)별로 분류되며, 이 중 네트워크 카메라(nwCam, 2)와 엔코더(encoder, 4)에 해당하는 제품군은 모델별 OID를 사용하고 있습니다. 모델별 OID를 확인하려면 'SNMP 제품 ID (HTW\_SNMP\_Product\_ID\_ko.pdf)' 문서를 참조하십시오.



제품군(ProductFamily)별 MIB 계층과 개체 ID는 다음과 같습니다.

## DVR MIB 계층과 개체 ID

MIB 계층				개체이름	값	읽기/쓰기
10	11	12	13			
1				ModelName	"SRD-1670"	RO
2				SystemInfo		
	1			SystemSubInfo		
		1		FwVersionInfo	"v1.xx_XXXXXXXXXXXX"	RO
		2		DateTimeInfo	"yyyy-mm-dd hh-mm-ss"	RO
		3		TimeZoneInfo	"GMT+hh:mm"	RO
		4		DSTInfo	"mm:ww:dd:hh to mm:ww:dd:hh"	RO
		5		RebootInfo	0 or 1	RW
		6		FactoryResetInfo	0 or 1	RO
		7		SnmpVersion	"V1.0"	RO
	2			AVInfo		
		1		VideoType	"NTSC" or "PAL"	RO
		2		AudioType	"PCM"	RO
	3			netInfo		
		1		net1		
			1	NetMacInfo	"XX:XX:XX:XX:XX:XX"	RO
			2	NetIPInfo	"xxx.xxx.xxx.xxx"	RO
			3	GWInfo	"xxx.xxx.xxx.xxx"	RO
			4	MaskInfo	"xxx.xxx.xxx.xxx"	RO
			5	DNSInfo	"xxx.xxx.xxx.xxx"	RO
3				SystemNotification		
	1			PowerNotifcation		
		1		ColdPowerOnDate	"yyyy-mm-dd hh-mm-ss"	RO
		2		WarmPowerOnDate	"yyyy-mm-dd hh-mm-ss"	RO
		3		ShutDownDate	"yyyy-mm-dd hh-mm-ss"	RO
		4		AbnormalStartDate	"yyyy-mm-dd hh-mm-ss"	RO
	2			VideoStatus		
		1		Ch1VideoStatus	"On" or "Vloss" or "Disable" or "NotSupported"	RO
		2		Ch2VideoStatus	"On" or "Vloss" or "Disable" or "NotSupported"	RO

		3	Ch3VideoStatus	"On" or "Vloss" or "Disable" or "NotSupported"	RO
		4	Ch4VideoStatus	"On" or "Vloss" or "Disable" or "NotSupported"	RO
		16	Ch16VideoStatus	"On" or "Vloss" or "Disable" or "NotSupported"	RO
	3		OtherStatus		
		1	RecordStatus	"On" or "Off" or "Fail"	RO
		2	FanStatus	"OK" or "Fail"	RO
		3	BatteryStatus	"OK" or "Fail"	RO
		4	BeepStatus	"On" or "Off"	RO
4			EventStatus		
	1		AlarmInput		
		1	AlarmInput1		
		1	AlarmInputStatus1	"Open" or "Close" or "Disable" or "NotSupported"	RO
		2	AlarmInput2		
		1	AlarmInputStatus2	"Open" or "Close" or "Disable" or "NotSupported"	RO
		16	AlarmInput16		
		1	AlarmInputStatus16	"Open" or "Close" or "Disable" or "NotSupported"	RO
	2		AlarmOutput		
		1	AlarmOutput1		
		1	AlarmOutputStatus1	"On" or "Off" or "Disable" or "NotSupported"	RO
		2	AlarmOutput2		
		1	AlarmOutputStatus2	"On" or "Off" or "Disable" or "NotSupported"	RO
		16	AlarmOutput16		
		1	AlarmOutputStatus16	"On" or "Off" or "Disable" or "NotSupported"	RO
	3		MotionDetection		
		1	MotionDetection1		
		1	MotionDetectionStatus1	"On" or "Off" or "Disable" or "NotSupported"	RO
		2	MotionDetection2		
		1	MotionDetectionStatus2	"On" or "Off" or "Disable" or "NotSupported"	RO
		16	MotionDetection16		

		1	MotionDetectionStatus16	"On" or "Off" or "Disable" or "NotSupported"	RO
	4		TamperingDetection		
		1	TamperingDetection1		
		1	TamperingDetectionStatus1	"On" or "Off" or "Disable" or "NotSupported"	RO
		2	TamepringDetection2		
		1	TamepringDetectionStatus2	"On" or "Off" or "Disable" or "NotSupported"	RO
		16	TamepringDetection16		
		1	TamepringDetectionStatus16	"On" or "Off" or "Disable" or "NotSupported"	RO
5			HDDStatus		
		1	HDD1Status		
		1	HDD1Check	"Not Installed" or "Installed"	RO
		2	HDD1TotalSize	"xxxGB"	RO
		3	HDD1FullStatus	"Not Full" or "Full"	RO
		4	HDD1FailStatus	"Normal" or "Fail"	RO
		2	HDD2Status		
		1	HDD2Check	"Not Installed" or "Installed"	RO
		2	HDD2TotalSize	"xxxGB"	RO
		2	HDD2FullStatus	"Not Full" or "Full"	RO
		3	HDD2FailStatus	"Normal" or "Fail"	RO
		8	HDD8Status		
		1	HDD8Check	"Not Installed" or "Installed"	RO
		2	HDD8TotalSize	"xxxGB"	RO
		2	HDD8FullStatus	"Not Full" or "Full"	RO
		3	HDD8FailStatus	"Normal" or "Fail"	RO

## 카메라 MIB 계층과 개체 ID

DetectionStatus 항목의 "Low" 또는 "High"는 해당 이벤트가 발생하면 "High"로 출력되고, 이벤트가 발생되지 않을 때는 "Low"로 출력된다는 의미입니다.

네트워크 카메라의 경우 모델별 OID가 상이하니 해당 모델에 맞게 사용하기 바랍니다. 제품별 OID 번호는 'SNMP 제품 ID(HTW\_SNMP\_Product\_ID\_ko.pdf)'문서를 참조하십시오.

MIB 계층					개체 이름	값	읽기/쓰기
10	11	12	13	14			

1				snb1001		RO
	1			modelName	SNB-1001	RO
	2			systemInfo		
		1		systemSubInfo		
			1	fwVersion	ex) "v1.00_110731"	RO
			2	datetime	"yy-mm-dd hh:mm:ss"	RW
			3	reboot	"OK"	RW
			4	factoryReset	"Soft" or "Hard"	RW
		2		avInfo		
			1	videoType	"NTSC" or "PAL"	RW
		3		netInfo		
			1	mac	ex) "00:09:18:30:0F:E0"	RO
			2	ip	ex) "192.168.1.100"	RW
			3	gw	ex) "192.168.1.1"	RW
			4	mask	ex) "255.255.255.0"	RW
	3			eventStatus		
		1		alarmInput		
			1	alarmInput1		
				1	alarmInputStatus1	"Low" or "High"
				2	alarmInputDate1	"yy-mm-dd hh:mm:ss"
			2	alarmInput2		
				1	alarmInputStatus2	"Low" or "High"
				2	alarmInputDate2	"yy-mm-dd hh:mm:ss"
			3	alarmInput3		
				1	alarmInputStatus3	"Low" or "High"
				2	alarmInputDate3	"yy-mm-dd hh:mm:ss"
			4	alarmInput4		
				1	alarmInputStatus4	"Low" or "High"
				2	alarmInputDate4	"yy-mm-dd hh:mm:ss"
		2		relayOutput		
			1	relayOutput1		
				1	relayOutputStatus1	"Low" or "High"
				2	relayOutputDate1	"yy-mm-dd hh:mm:ss"
			2	relayOutput2		
				1	relayOutputStatus2	"Low" or "High"
				2	relayOutputDate2	"yy-mm-dd hh:mm:ss"
			3	relayOutput3		

		1	relayOutputStatus3	"Low" or "High"	RW
		2	relayOutputDate3	"yy-mm-dd hh:mm:ss"	RW
	4		relayOutput4		
		1	relayOutputStatus4	"Low" or "High"	RW
		2	relayOutputDate4	"yy-mm-dd hh:mm:ss"	RW
	3		motionDetection		
		1	motionDetectionStatus	"Low" or "High"	RO
		2	motionDetectionDate	"yy-mm-dd hh:mm:ss"	RO
	4		videoAnalytics		
		1	videoAnalyticsStatus	"Low" or "High"	RO
		2	videoAnalyticsDate	"yy-mm-dd hh:mm:ss"	RO
	5		faceDetection		
		1	faceDetectionStatus	"Low" or "High"	RO
		2	faceDetectionDate	"yy-mm-dd hh:mm:ss"	RO
	6		networkDisconnection		
		1	networkDisconnectionStatus	"Low" or "High"	RO
		2	networkDisconnectionDate	"yy-mm-dd hh:mm:ss"	RO
	7		tampering		
		1	tamperingStatus	"Low" or "High"	RO
		2	tamperingDate	"yy-mm-dd hh:mm:ss"	RO
	8		audioDetection		
		1	audioDetectionStatus	"Low" or "High"	RO
		2	audioDetectionDate	"yy-mm-dd hh:mm:ss"	RO
	9		auxOutput		
		1	auxStatus1	Write: "ON" or "OFF" Read: "Low" or "High"	RW
		2	auxDate1	"yy-mm-dd hh:mm:ss"	RO
	10		defocus		
		1	defocusStatus	"Low" or "High"	RO
		2	defocusDate	"yy-mm-dd hh:mm:ss"	RO
	11		fogDetection		
		1	fogDetectionStatus	"Low" or "High"	RO
		2	fogDetectionDate	"yy-mm-dd hh:mm:ss"	RO
	12		soundClassification		
		1	soundClassificationStatus	"Low" or "High"	RO
		2	soundClassificationDate	"yy-mm-dd hh:mm:ss"	RO
	13		shockDetection		



		1	shockDetectionStatus	"Low" or "High"	RO
		2	shockDetectionDate	"yy-mm-dd hh:mm:ss"	RO
	14		temperatureDetection		
		1	temperatureDetectionStatus	"Low" or "High"	RO
		2	temperatureDetectionDate	"yy-mm-dd hh:mm:ss"	RO
4			sdStatus		
		1	sdCheck	"Not Install" or "Install"	RO
		2	sdFullStatus	"Not Full" or "Full"	RO
		3	sdFailStatus	"Normal" or "Fail"	RO
		4	sdFormat	"OK"	RW

카메라 중 Multi-directional 카메라의 경우 하기와 같은 개체 ID를 갖습니다.

MIB 계층					개체 이름	값	읽기/쓰기
10	11	12	13	14			
1					MDC		RO
	1				ModelName	PNM-9080VQ	RO
	2				SystemInfo		
		1			SystemSubInfo		
			1		FwVersionInfo	ex)"v1.00_110731"	RO
			2		DateTimeInfo	"yyyy-mm-dd hh:mm:ss"	RW
			3		Reboot	"OK"	WO
			4		FactoryReset	"Soft" or "Hard"	WO
		2			AVInfo		
			1		VideoType	"NTSC" or "PAL"	RW
		3			NetInfo		
			1		MACAddress	ex) "00:09:18:30:0F:E0"	RO
			2		IPAddress	ex) "192.168.1.100"	RW
			3		Gateway	ex) "192.168.1.1"	RW
			4		SubnetMask	ex) "255.255.255.0"	RW
		3			EventStatus		
			1		AlarmInput		
				1	AlarmInput01		
				1	AlarmInputStatus01	"Low" or "High"	RO
				2	AlarmInputDate01	"yyyy-mm-dd hh:mm:ss"	RO
			2		AlarmOutput		
				1	AlarmOutput01		

		1	AlarmOutputStatus01	"Low" or "High"	RW
		2	AlarmOutputDate01	"yyyy-mm-dd hh:mm:ss"	RO
	3		MotionDetection		
		1	MotionDetectionAtCH01		
		1	MotionDetectionStatusAtCH01	"Low" or "High"	RO
		2	MotionDetectionDateAtCH01	"yyyy-mm-dd hh:mm:ss"	RO
		2	MotionDetectionAtCH02		
		1	MotionDetectionStatusAtCH02	"Low" or "High"	RO
		2	MotionDetectionDateAtCH02	"yyyy-mm-dd hh:mm:ss"	RO
		3	MotionDetectionAtCH03		
		1	MotionDetectionStatusAtCH03	"Low" or "High"	RO
		2	MotionDetectionDateAtCH03	"yyyy-mm-dd hh:mm:ss"	RO
		4	MotionDetectionAtCH04		
		1	MotionDetectionStatusAtCH04	"Low" or "High"	RO
		2	MotionDetectionDateAtCH04	"yyyy-mm-dd hh:mm:ss"	RO
		5	MotionDetectionAtCH05		
		1	MotionDetectionStatusAtCH05	"Low" or "High"	RO
		2	MotionDetectionDateAtCH05	"yyyy-mm-dd hh:mm:ss"	RO
	4		VideoAnalytics		
		1	VideoAnalyticsAtCH01		
		1	VideoAnalyticsStatusAtCH01	"Low" or "High"	RO
		2	VideoAnalyticsDateAtCH01	"yyyy-mm-dd hh:mm:ss"	RO
		2	VideoAnalyticsAtCH02		
		1	VideoAnalyticsStatusAtCH02	"Low" or "High"	RO
		2	VideoAnalyticsDateAtCH02	"yyyy-mm-dd hh:mm:ss"	RO
		3	VideoAnalyticsAtCH03		
		1	VideoAnalyticsStatusAtCH03	"Low" or "High"	RO
		2	VideoAnalyticsDateAtCH03	"yyyy-mm-dd hh:mm:ss"	RO
		4	VideoAnalyticsAtCH04		
		1	VideoAnalyticsStatusAtCH04	"Low" or "High"	RO
		2	VideoAnalyticsDateAtCH04	"yyyy-mm-dd hh:mm:ss"	RO
		5	VideoAnalyticsAtCH05		
		1	VideoAnalyticsStatusAtCH05	"Low" or "High"	RO
		2	VideoAnalyticsDateAtCH05	"yyyy-mm-dd hh:mm:ss"	RO

5		FaceDetection		
	1	FaceDetectionAtCH01		
		1	FaceDetectionStatusAtCH01	"Low" or "High" RO
		2	FaceDetectionDateAtCH01	"yyyymmdd hh:mm:ss" RO
	2	FaceDetectionAtCH02		
		1	FaceDetectionStatusAtCH02	"Low" or "High" RO
		2	FaceDetectionDateAtCH02	"yyyymmdd hh:mm:ss" RO
	3	FaceDetectionAtCH03		
		1	FaceDetectionStatusAtCH03	"Low" or "High" RO
		2	FaceDetectionDateAtCH03	"yyyymmdd hh:mm:ss" RO
	4	FaceDetectionAtCH04		
		1	FaceDetectionStatusAtCH04	"Low" or "High" RO
		2	FaceDetectionDateAtCH04	"yyyymmdd hh:mm:ss" RO
	5	FaceDetectionAtCH05		
		1	FaceDetectionStatusAtCH05	"Low" or "High" RO
		2	FaceDetectionDateAtCH05	"yyyymmdd hh:mm:ss" RO
6		TamperingDetection		
	1	TamperingDetectionAtCH01		
			TamperingDetectionStatusAtCH01	"Low" or "High" RO
			TamperingDetectionDateAtCH01	"yyyymmdd hh:mm:ss" RO
	2	TamperingDetectionAtCH02		
			TamperingDetectionStatusAtCH02	"Low" or "High" RO
			TamperingDetectionDateAtCH02	"yyyymmdd hh:mm:ss" RO
	3	TamperingDetectionAtCH03		
			TamperingDetectionStatusAtCH03	"Low" or "High" RO
			TamperingDetectionDateAtCH03	"yyyymmdd hh:mm:ss" RO
	4	TamperingDetectionAtCH04		
			TamperingDetectionStatusAtCH04	"Low" or "High" RO
			TamperingDetectionDateAtCH04	"yyyymmdd hh:mm:ss" RO
	5	TamperingDetectionAtCH05		
			TamperingDetectionStatusAtCH05	"Low" or "High" RO
			TamperingDetectionDateAtCH05	"yyyymmdd hh:mm:ss" RO
7		DefocusDetection		
	1	DefocusDetectionAtCH01		

		1	DefocusDetectionStatusAtCH01	"Low" or "High"	RO
		2	DefocusDetectionDateAtCH01	"yyyy-mm-dd hh:mm:ss"	RO
	2		DefocusDetectionAtCH02		
		1	DefocusDetectionStatusAtCH02	"Low" or "High"	RO
		2	DefocusDetectionDateAtCH02	"yyyy-mm-dd hh:mm:ss"	RO
	3		DefocusDetectionAtCH03		
		1	DefocusDetectionStatusAtCH03	"Low" or "High"	RO
		2	DefocusDetectionDateAtCH03	"yyyy-mm-dd hh:mm:ss"	RO
	4		DefocusDetectionAtCH04		
		1	DefocusDetectionStatusAtCH04	"Low" or "High"	RO
		2	DefocusDetectionDateAtCH04	"yyyy-mm-dd hh:mm:ss"	RO
	5		DefocusDetectionAtCH05		
		1	DefocusDetectionStatusAtCH05	"Low" or "High"	RO
		2	DefocusDetectionDateAtCH05	"yyyy-mm-dd hh:mm:ss"	RO
	8		FogDetection		
		1	FogDetectionAtCH01		
		1	FogDetectionStatusAtCH01	"Low" or "High"	RO
		2	FogDetectionDateAtCH01	"yyyy-mm-dd hh:mm:ss"	RO
	2		FogDetectionAtCH02		
		1	FogDetectionStatusAtCH02	"Low" or "High"	RO
		2	FogDetectionDateAtCH02	"yyyy-mm-dd hh:mm:ss"	RO
	3		FogDetectionAtCH03		
		1	FogDetectionStatusAtCH03	"Low" or "High"	RO
		2	FogDetectionDateAtCH03	"yyyy-mm-dd hh:mm:ss"	RO
	4		FogDetectionAtCH04		
		1	FogDetectionStatusAtCH04	"Low" or "High"	RO
		2	FogDetectionDateAtCH04	"yyyy-mm-dd hh:mm:ss"	RO
	5		FogDetectionAtCH05		
		1	FogDetectionStatusAtCH05	"Low" or "High"	RO
		2	FogDetectionDateAtCH05	"yyyy-mm-dd hh:mm:ss"	RO
	4		SDCard		
		1	SDCard01		
		1	SDCardCheck01	"Not Install" or "Install"	RO
		2	SDCardFormat01	"Ok"	WO

		3	SDCardFullStatus01	"Not Full" or "Full"	RO
		4	SDCardFailStatus01	"Normal" or "Fail"	RO
	2		SDCard02		
		1	SDCardCheck02	"Not Install" or "Install"	RO
		2	SDCardFormat02	"Ok"	WO
		3	SDCardFullStatus02	"Not Full" or "Full"	RO
		4	SDCardFailStatus02	"Normal" or "Fail"	RO
	3		SDCard03		
		1	SDCardCheck03	"Not Install" or "Install"	RO
		2	SDCardFormat03	"Ok"	WO
		3	SDCardFullStatus03	"Not Full" or "Full"	RO
		4	SDCardFailStatus03	"Normal" or "Fail"	RO
	4		SDCard04		
		1	SDCardCheck04	"Not Install" or "Install"	RO
		2	SDCardFormat04	"Ok"	WO
		3	SDCardFullStatus04	"Not Full" or "Full"	RO
		4	SDCardFailStatus04	"Normal" or "Fail"	RO
	5		SDCard05		
		1	SDCardCheck05	"Not Install" or "Install"	RO
		2	SDCardFormat05	"Ok"	WO
		3	SDCardFullStatus05	"Not Full" or "Full"	RO
		4	SDCardFailStatus05	"Normal" or "Fail"	RO

## NVR MIB 계층과 개체 ID

MIB 계층		개체 이름	값	읽기/쓰기
1		modelName	"SRN-4000"	RO
2		systemInfo		
1	1	systemSubInfo		
	1	fwVersionInfo	"v1.xx_XXXXXXXXXX"	RO
	2	dateTimelInfo	"yyyy-mm-dd hh-mm-ss"	RW
	3	timeZoneInfo	"GMT+hh:mm"	RW
	4	DSTInfo	"MxxWxxDxxHxx-MxxWxxDxxHxx"	RW
	5	reboot	"Ok" or "No"	RW
	6	factoryReset	"Ok" or "No"	RW
	7	snmpVersion	"v1.x"	RO
	2	avInfo		
	1	videoType	"NOT SUPPORTED"	RO
	2	audioType	"NOT SUPPORTED"	RO
	3	netInfo		
	1	net1		
	1	mac	xx:xx:xx:xx:xx:xx	RO
	2	ip	xx.xx.xx.xx	RW
	3	gw	xx.xx.xx.xx	RW
	4	mask	xx.xx.xx.xx	RW
	5	dns	xx.xx.xx.xx	RW
	4	net4		
	1	mac	xx:xx:xx:xx:xx:xx	RO
	2	ip	xx.xx.xx.xx	RW
3	gw	xx.xx.xx.xx	RW	
4	mask	xx.xx.xx.xx	RW	
5	dns	xx.xx.xx.xx	RW	
3		systemNotification		
1	1	powerNotifcation		
	1	coldPowerOnDate	"yyyy-mm-dd hh-mm-ss"	RO
	2	warmPowerOnDate	"yyyy-mm-dd hh-mm-ss"	RO
	3	shutDownDate	"yyyy-mm-dd hh-mm-ss"	RO
	4	abnomalStartDate	"yyyy-mm-dd hh-mm-ss"	RO
2		videoStatus		

		1	ch1VideoStatus	ON, VLOSS, DISABLE, NOT SUPPORTED, NOT-REGISTERED	RO
		2	ch2VideoStatus	ON, VLOSS, DISABLE, NOT SUPPORTED, NOT-REGISTERED	RO
		3	ch3VideoStatus	ON, VLOSS, DISABLE, NOT SUPPORTED, NOT-REGISTERED	RO
		4	ch4VideoStatus	ON, VLOSS, DISABLE, NOT SUPPORTED, NOT-REGISTERED	RO
		64	ch64VideoStatus	ON, VLOSS, DISABLE, NOT SUPPORTED, NOT-REGISTERED	RO
	3		otherStatus		
		1	recordStatus	ON, OFF, FAIL	RO
		2	fanStatus	OK, FAIL	RO
		3	batteryStatus	OK, FAIL	RO
		4	beepStatus	ON, OFF	RO
4			eventStatus		
	1		alarmInput		
		1	alarmInput1		
		1	alarmInputStatus1	CLOSE, OPEN, DISABLE, NOT SUPPORTED	RO
		2	alarmInput2		
		1	alarmInputStatus2	CLOSE, OPEN, DISABLE, NOT SUPPORTED	RO
		8	alarmInput8		
		1	alarmInputStatus8	CLOSE, OPEN, DISABLE, NOT SUPPORTED	RO
	2		alarmOutput		
		1	alarmOutput1		
		1	alarmOutputStatus1	OFF, ON, DISABLE, NOT SUPPORTED	RW
		2	alarmOutput2		
		1	alarmOutputStatus2	OFF, ON, DISABLE, NOT SUPPORTED	RW
		4	alarmOutput4		
		1	alarmOutputStatus4	OFF, ON, DISABLE, NOT SUPPORTED	RW
	3		motionDetection		
		1	motionDetection1		
		1	motionDetectionStatus1	OFF, ON, DISABLE, NOT SUPPORTED	RO
		2	motionDetection2		
		1	motionDetectionStatus2	OFF, ON, DISABLE, NOT SUPPORTED	RO
		64	motionDetection64		
		1	motionDetectionStatus64	OFF, ON, DISABLE, NOT SUPPORTED	RO
5			HDDStatus		

1			HDD1Status		
	1		HDD1Check	NOT INSTALLED, INSTALLED	RO
	2		HDD1TotalSize	"xxxGB"	RO
	3		HDD1FullStatus	NOT FULL, FULL, UNDER-RAID	RO
	4		HDD1FailStatus	NORMAL, FAIL, UNDER-RAID	RO
2			HDD2Status		
	1		HDD2Check	NOT INSTALLED, INSTALLED	RO
	2		HDD2TotalSize	"xxxGB"	RO
	2		HDD2FullStatus	NOT FULL, FULL, UNDER-RAID	RO
	3		HDD2FailStatus	NORMAL, FAIL, UNDER-RAID	RO
12			HDD12Status		
	1		HDD12Check	NOT INSTALLED, INSTALLED	RO
	2		HDD12TotalSize	"xxxGB"	RO
	2		HDD12FullStatus	NOT FULL, FULL, UNDER-RAID	RO
	3		HDD12FailStatus	NORMAL, FAIL, UNDER-RAID	RO

## 엔코더 MIB 계층과 개체 ID

엔코더 제품별 코드 번호는 'SNMP 제품 ID(HTW\_SNMP\_Product\_ID\_ko.pdf)' 문서를 참조하십시오.

MIB 계층					개체 이름	값	읽기/쓰기
10	11	12	13	14			
1					SPE		RO
	1				ModelName	ex) "SPE-100"	RO
	2				SystemInfo		
		1			SystemSubInfo		
			1		FwVersionInfo	ex)"v1.00_110731"	RO
			2		DateTimeInfo	"yyyy-mm-dd hh:mm:ss"	RW
			3		Reboot	"OK"	WO
			4		FactoryReset	"Soft" or "Hard"	WO
		2			AVInfo		
			1		VideoType	"NTSC" or "PAL"	RW
		3			NetInfo		
			1		MACAddress	ex) "00:09:18:30:0F:E0"	RO
			2		IPAddress	ex) "192.168.1.100"	RW
			3		Gateway	ex) "192.168.1.1"	RW



		4	SubnetMask	ex) "255.255.255.0"	RW
3			EventStatus		
	1		AlarmInput		
		1	AlarmInput01		
		1	AlarmInputStatus01	"Low" or "High"	RO
		2	AlarmInputDate01	"yyyy-mm-dd hh:mm:ss"	RO
		2	AlarmInput02		
		1	AlarmInputStatus02	"Low" or "High"	RO
		2	AlarmInputDate02	"yyyy-mm-dd hh:mm:ss"	RO
		16	AlarmInput16		
		1	AlarmInputStatus16	"Low" or "High"	RO
		2	AlarmInputDate16	"yyyy-mm-dd hh:mm:ss"	RO
	2		AlarmOutput		
		1	AlarmOutput01		
		1	AlarmOutputStatus01	"Low" or "High"	RW
		2	AlarmOutputDate01	"yyyy-mm-dd hh:mm:ss"	RO
		2	AlarmOutput02		
		1	AlarmOutputStatus02	"Low" or "High"	RW
		2	AlarmOutputDate02	"yyyy-mm-dd hh:mm:ss"	RO
		3	AlarmOutput03		
		1	AlarmOutputStatus03	"Low" or "High"	RW
		2	AlarmOutputDate03	"yyyy-mm-dd hh:mm:ss"	RO
		4	AlarmOutput04		
		1	AlarmOutputStatus04	"Low" or "High"	RW
		2	AlarmOutputDate04	"yyyy-mm-dd hh:mm:ss"	RO
	3		MotionDetection		
		1	MotionDetectionAtCH01		
		1	MotionDetectionStatusAtCH01	"Low" or "High"	RO
		2	MotionDetectionDateAtCH01	"yyyy-mm-dd hh:mm:ss"	RO
		2	MotionDetectionAtCH02		
		1	MotionDetectionStatusAtCH02	"Low" or "High"	RO
		2	MotionDetectionDateAtCH02	"yyyy-mm-dd hh:mm:ss"	RO
		16	MotionDetectionAtCH16		
		1	MotionDetectionStatusAtCH16	"Low" or "High"	RO
		2	MotionDetectionDateAtCH16	"yyyy-mm-dd hh:mm:ss"	RO
	4		VideoAnalytics		

			1	VideoAnalyticsAtCH01			
			1	VideoAnalyticsStatusAtCH01	"Low" or "High"	RO	
				VideoAnalyticsDateAtCH01	"yyyy-mm-dd hh:mm:ss"	RO	
			2	VideoAnalyticsAtCH02			
				VideoAnalyticsStatusAtCH02	"Low" or "High"	RO	
			2	VideoAnalyticsDateAtCH02	"yyyy-mm-dd hh:mm:ss"	RO	
				VideoAnalyticsAtCH16			
			16	VideoAnalyticsStatusAtCH16	"Low" or "High"	RO	
				VideoAnalyticsDateAtCH16	"yyyy-mm-dd hh:mm:ss"	RO	
			5		FaceDetection		
			1	FaceDetectionAtCH01			
				1	FaceDetectionStatusAtCH01	"Low" or "High"	RO
					FaceDetectionDateAtCH01	"yyyy-mm-dd hh:mm:ss"	RO
				2	FaceDetectionAtCH02		
					FaceDetectionStatusAtCH02	"Low" or "High"	RO
				2	FaceDetectionDateAtCH02	"yyyy-mm-dd hh:mm:ss"	RO
					FaceDetectionAtCH16		
				16	FaceDetectionStatusAtCH16	"Low" or "High"	RO
FaceDetectionDateAtCH16	"yyyy-mm-dd hh:mm:ss"	RO					
6		TamperingDetection					
1	TamperingDetectionAtCH01						
	TamperingDetectionStatusAtCH01	"Low" or "High"	RO				
		TamperingDetectionDateAtCH01	"yyyy-mm-dd hh:mm:ss"	RO			
	2	TamperingDetectionAtCH02					
		TamperingDetectionStatusAtCH02	"Low" or "High"	RO			
	2	TamperingDetectionDateAtCH02	"yyyy-mm-dd hh:mm:ss"	RO			
		TamperingDetectionAtCH16					
	16	TamperingDetectionStatusAtCH16	"Low" or "High"	RO			
TamperingDetectionDateAtCH16		"yyyy-mm-dd hh:mm:ss"	RO				
7		DefocusDetection					
1	DefocusDetectionAtCH01						
	1	DefocusDetectionStatusAtCH01	"Low" or "High"	RO			
		DefocusDetectionDateAtCH01	"yyyy-mm-dd hh:mm:ss"	RO			
	2	DefocusDetectionAtCH02					
		DefocusDetectionStatusAtCH02	"Low" or "High"	RO			

		2	DefocusDetectionDateAtCH02	"yyyy-mm-dd hh:mm:ss"	RO
	16		DefocusDetectionAtCH16		
		1	DefocusDetectionStatusAtCH16	"Low" or "High"	RO
		2	DefocusDetectionDateAtCH16	"yyyy-mm-dd hh:mm:ss"	RO
	8		FogDetection		
		1	FogDetectionAtCH01		
		1	FogDetectionStatusAtCH01	"Low" or "High"	RO
		2	FogDetectionDateAtCH01	"yyyy-mm-dd hh:mm:ss"	RO
		2	FogDetectionAtCH02		
		1	FogDetectionStatusAtCH02	"Low" or "High"	RO
		2	FogDetectionDateAtCH02	"yyyy-mm-dd hh:mm:ss"	RO
		16	FogDetectionAtCH16		
		1	FogDetectionStatusAtCH16	"Low" or "High"	RO
		2	FogDetectionDateAtCH16	"yyyy-mm-dd hh:mm:ss"	RO
	4		SDCard		
		1	SDCard01		
		1	SDCardCheck01	"Not Install" or "Install"	RO
		2	SDCardFormat01	"Ok"	WO
		3	SDCardFullStatus01	"Not Full" or "Full"	RO
		4	SDCardFailStatus01	"Normal" or "Fail"	RO
		2	SDCard02		
		1	SDCardCheck02	"Not Install" or "Install"	RO
		2	SDCardFormat02	"Ok"	WO
		3	SDCardFullStatus02	"Not Full" or "Full"	RO
		4	SDCardFailStatus02	"Normal" or "Fail"	RO
		16	SDCard16		
		1	SDCardCheck16	"Not Install" or "Install"	RO
		2	SDCardFormat16	"Ok"	WO
		3	SDCardFullStatus16	"Not Full" or "Full"	RO
		4	SDCardFailStatus16	"Normal" or "Fail"	RO

# Traps

SNMP trap은 각 제품이 관리 프로그램에 자의적으로 보내는 SNMP 메시지로, 중요한 이벤트 내용을 전송합니다.

DVR과 NVR은 일반적인 SNMP trap 타입을 지원하며 총 5개의 타입(coldStart, warmStart, linkDown, linkUp, 및 authenticationFailure)을 지원합니다. 카메라의 경우, linkDown을 제외한 4개의 일반적인 SNMP trap 타입(coldStart, warmStart, linkUp 및 authenticationFailure)을 지원합니다.

지원하는 SNMP trap 타입은 아래와 같습니다.

- coldStart: coldStart trap 메시지는 제품이 다시 시작하여 설정이나 구현이 변경되었음을 의미합니다.
- warmStart: warmStart trap 메시지는 제품이 다시 시작하였으나 설정이나 구현이 변경되지 않았음을 의미합니다.
- linkDown: linkDown trap 메시지는 제품의 설정에 포함된 여러 통신 채널 중에 에러가 발생했음을 의미합니다.
- linkUp: linkUp trap 메시지는 제품의 설정에 포함된 통신 채널이 발생했음을 의미합니다.
- authenticationFailure: authenticationFailure trap 메시지는 프로토콜 메시지 수신자가 인증되지 않았음을 의미합니다.

# SNMP 커맨드

한화테크윈 SNMP 커맨드는 다음과 같습니다.

- snmpget: 해당 OID의 데이터만 가져오는 커맨드
  - ex) snmpget -v [version] -c public [ip address] [OID값]
- snmpwalk: 한번에 하위 트리의 모든 데이터를 가져오는 커맨드
  - ex) snmpwalk -v [version] -c public [ip address] [OID값]
- snmpset : 해당 OID의 데이터 값을 설정하는 커맨드
  - ex) snmpset -v [version] -c public [ip address] [OID값] [OID값 Type]

---

## SNMP version별 커맨드 예시

- SNMP version 1, 2c
  - ex1) snmpwalk -v 1 -c public 192.168.1.100 system
  - ex2) snmpwalk -v 2c -c public 192.168.1.100 system
  - ex3) snmpset -v 2c -c write 192.168.1.100 enterprises.36849.1.2.1.2.1.2.3.0 s "OK"
- Option 설명
  - v: snmp version to use (1 | 2c | 3)
  - c: set the community string
- Types of OID values
  - i INTEGER
  - u UNSIGNED
  - s STRING
  - x HEX STRING
  - d DECIMAL STRING
  - n NULLOBJ
  - o OBJID
  - t TIMETICKS
  - a IPADDRESS
  - b BITS

- SNMP version 3

```
snmpwalk(snmpget) -v 3 -u [name] -l [level] -a [auth protocol] -A [password]  
[ip address] [OID 값]
```

```
ex1) snmpwalk -v 3 -u admin -l authNoPriv -a MD5 -A admin 192.168.1.100  
system
```

```
ex2) snmpset -v 3 -u admin -l authNoPriv -a MD5 -A admin 192.168.1.100  
enterprises.36849.1.2.1.2.1.2.3.0 s "OK"
```

- Option 설명

- u: security name

- l: security level (noAuthNoPriv | authNoPriv | authPriv)

- A: authentication protocol pass phrase.

- a: authentication protocol (MD5 | SHA)

# SNMP 쿼리와 결과 예제

## SNMP Query

SNMP 결과를 받기 위한 쿼리문 예제입니다.

```
#!/bin/sh
target_ip=192.168.1.100
echo
echo "#####"
echo $target_ip
echo "#####"
echo
echo "-----MIB Tree-----"
echo "iso.org.dod.intenet.private.enterprise (1.3.6.1.4.1)"
echo " ~.HanwhaTechwin.SecuritySolution.NWCAM.SNB1001 (~.36849.1.2.1)"
echo " ~.HanwhaTechwin.SecuritySolution.NWCAM.SND1011 (~.36849.1.2.2)"
echo " ~.HanwhaTechwin.SecuritySolution.NWCAM.SND1080 (~.36849.1.2.3)"
echo " ~.HanwhaTechwin.SecuritySolution.NWCAM.SNV1080 (~.36849.1.2.4)"
echo " ~.HanwhaTechwin.SecuritySolution.NWCAM.SNO1080R (~.36849.1.2.5)"
echo "-----"
echo
echo "-----System Information-----"
echo "[제품설명, 제품 ID, 부팅 후 경과 시간, 제품명]"
snmpget -v 1 -c public $target_ip sysDescr.0
snmpget -v 1 -c public $target_ip sysObjectID.0
snmpget -v 1 -c public $target_ip sysUpTime.0
snmpget -v 1 -c public $target_ip sysName.0
echo
echo "-----Disk Information-----"
echo "[Flash 메모리의 전체 용량, 사용 중인 용량, 남아 있는 용량, 사용 비율]"
snmpget -v 1 -c public $target_ip dskTotal.1
snmpget -v 1 -c public $target_ip dskAvail.1
snmpget -v 1 -c public $target_ip dskUsed.1
snmpget -v 1 -c public $target_ip dskPercent.1
echo
echo "-----Storage Information-----"
echo "[Ram 메모리의 크기, 사용 중인 크기(integer * 1K = xxxKbytes)]"
snmpget -v 1 -c public $target_ip hrStorageDescr.1
snmpget -v 1 -c public $target_ip hrStorageSize.1
snmpget -v 1 -c public $target_ip hrStorageUsed.1
```

```

echo "[/ 디렉토리의 크기, 사용 중인 크기 (integer * 4K = xxxKbytes)]"
snmpget -v 1 -c public $target_ip hrStorageDescr.31
snmpget -v 1 -c public $target_ip hrStorageSize.31
snmpget -v 1 -c public $target_ip hrStorageUsed.31
echo "[/mnt/mmc(SD Card) 디렉터리 크기, 사용 중인 크기 (integer * 4K = xxxKbytes)]"
[SNB-6004, SNB-6003, SND-6084, SND-6083, SNO-6084R, SND-6084R, SNV-6084R, SNV-
6012M]
snmpget -v 1 -c public $target_ip hrStorageDescr.41
snmpget -v 1 -c public $target_ip hrStorageSize.41
snmpget -v 1 -c public $target_ip hrStorageUsed.41
[Other Models: 6004계열이 아닌 모델]
snmpget -v 1 -c public $target_ip hrStorageDescr.36
snmpget -v 1 -c public $target_ip hrStorageSize.36
snmpget -v 1 -c public $target_ip hrStorageUsed.36
echo
echo "-----CPU Load Information-----"
echo "[1분간 평균 부하, 5분간 평균 부하, 15분간 평균 부하]"
snmpget -v 1 -c public $target_ip laLoad.1
snmpget -v 1 -c public $target_ip laLoad.2
snmpget -v 1 -c public $target_ip laLoad.3
echo
echo "-----Network Interface Information-----"
echo "[네트워크의 물리적인 속도, MAC 주소, 입력 트래픽(bytes), 출력 트래픽(bytes)]"
snmpget -v 1 -c public $target_ip ifSpeed.1
snmpget -v 1 -c public $target_ip ifPhysAddress.1
snmpget -v 1 -c public $target_ip ifInOctets.1
snmpget -v 1 -c public $target_ip ifOutOctets.1
snmpget -v 1 -c public $target_ip ifName.1

snmpget -v 1 -c public $target_ip ifSpeed.2
snmpget -v 1 -c public $target_ip ifPhysAddress.2
snmpget -v 1 -c public $target_ip ifInOctets.2
snmpget -v 1 -c public $target_ip ifOutOctets.2
snmpget -v 1 -c public $target_ip ifName.2

snmpget -v 1 -c public $target_ip ifSpeed.3
snmpget -v 1 -c public $target_ip ifPhysAddress.3
snmpget -v 1 -c public $target_ip ifInOctets.3
snmpget -v 1 -c public $target_ip ifOutOctets.3
snmpget -v 1 -c public $target_ip ifName.3

snmpget -v 1 -c public $target_ip ifSpeed.4
snmpget -v 1 -c public $target_ip ifPhysAddress.4
snmpget -v 1 -c public $target_ip ifInOctets.4

```



```

snmpget -v 1 -c public $target_ip ifOutOctets.4
snmpget -v 1 -c public $target_ip ifName.4

echo
echo "-----Memory Information-----"
echo "[전체 메모리, 남아 있는 메모리]"
snmpget -v 1 -c public $target_ip memTotalReal.0
snmpget -v 1 -c public $target_ip memAvailReal.0
echo
echo "-----Test End-----"
echo

```

## SNMP Result

네트워크 카메라 SNB-1001의 SNMP 결과는 다음과 같습니다.

SNB-1001 SNMP Output

```

#####
192.168.1.100
#####

```

아래 내용은 MIB Tree 결과입니다.

```

-----MIB Tree-----
iso.org.dod.intenet.private.enterprise (1.3.6.1.4.1)
~.HanwhaTechwin.SecuritySolution.NWCAM.SNB1001 (~.36849.1.2.1)
~.HanwhaTechwin.SecuritySolution.NWCAM.SND1011 (~.36849.1.2.2)
~.HanwhaTechwin.SecuritySolution.NWCAM.SND1080 (~.36849.1.2.3)
~.HanwhaTechwin.SecuritySolution.NWCAM.SNV1080 (~.36849.1.2.4)
~.HanwhaTechwin.SecuritySolution.NWCAM.SNO1080R (~.36849.1.2.5)
-----

```

아래 내용은 System Information입니다. 제품설명, 제품 ID, 부팅 후 경과 시간(0:10:54.49 10 분 54 초49), 제품명이 표시됩니다.

```

-----System Information-----
SNMPv2-MIB::sysDescr.0 = STRING: Hanwha WiseNet IP Camera
SNMPv2-MIB::sysObjectID.0 = OID: SNMPv2-SMI::enterprises.36849.1.2.1
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (65449) 0:10:54.49
SNMPv2-MIB::sysName.0 = STRING: SNB-1001

```

아래 내용은 Disk Information입니다. Flash 메모리의 전체 용량(약 678G), 사용 가능 용량(약 63G),

사용한 용량(약 579G), 사용 비율(90%)이 표시됩니다.

```
-----Disk Information-----
UCD-SNMP-MIB::dskTotal.1 = INTEGER: 711016128
UCD-SNMP-MIB::dskAvail.1 = INTEGER: 67092156
UCD-SNMP-MIB::dskUsed.1 = INTEGER: 607223936
UCD-SNMP-MIB::dskPercent.1 = INTEGER: 90
```

아래 내용은 Storage Information입니다.

```
-----Storage Information-----
HOST-RESOURCES-MIB::hrStorageDescr.1 = STRING: Physical memory
HOST-RESOURCES-MIB::hrStorageSize.1 = INTEGER: 96788
HOST-RESOURCES-MIB::hrStorageUsed.1 = INTEGER: 36908
RAM 메모리 크기(96788x 1K = 99119012Bytes), 사용 중인 크기(36908x 1K =
37793792Bytes)가 표시됩니다.
HOST-RESOURCES-MIB::hrStorageDescr.31 = STRING: /
HOST-RESOURCES-MIB::hrStorageSize.31 = INTEGER: 177754036
HOST-RESOURCES-MIB::hrStorageUsed.31 = INTEGER: 151800863
/ 디렉터리의 크기(177754036x 4K = 711016144Kbytes), 사용 중인 크기(151800863x 4K =
621776334848Kbytes)가 표시됩니다.
HOST-RESOURCES-MIB::hrStorageDescr.36 = STRING: /mnt/logdb
HOST-RESOURCES-MIB::hrStorageSize.36 = INTEGER: 1024
HOST-RESOURCES-MIB::hrStorageUsed.36 = INTEGER: 209
/mnt/mmc(SD Card) 디렉터리의 크기(1024x 4K = 4096Kbytes), , 사용 중인 크기(209x 4K =
836Kbytes)가 표시됩니다.
```

아래 내용은 CPU Load Information입니다.

```
-----CPU Load Information-----
UCD-SNMP-MIB::laLoad.1 = STRING: 0.00
UCD-SNMP-MIB::laLoad.2 = STRING: 0.09
UCD-SNMP-MIB::laLoad.3 = STRING: 0.06
laLoad.1 은 1 분간 평균부하, laLoad.2 는 5 분간 평균부하, laLoad.3 은 15 분간 평균부하
를 나타냅니다.. 즉, CPU 1개당 프로세스가 해당 시간 동안 평균적으로 몇 개가 동작되고 있었
는지 표시해 줍니다. 예를 들어 laLoad.1 이 1.50 이면 1동안 평균적으로 프로세스 1개가
Active 상태에 있었고 0.5개의 프로세스는 대기상태였음을 보여줍니다. 높을수록 과부하 상태임
을 의미합니다.
```

아래 내용은 Network Interface Information입니다.

```
-----Network Interface Information-----
IF-MIB::ifSpeed.1 = Gauge32: 10000000
IF-MIB::ifPhysAddress.1 = STRING:
IF-MIB::ifInOctets.1 = Counter32: 0
```

```
IF-MIB::ifOutOctets.1 = Counter32: 0
IF-MIB::ifName.1 = STRING: lo
IF-MIB::ifSpeed.2 = Gauge32: 100000000
IF-MIB::ifPhysAddress.2 = STRING: 0:9:18:70:9b:e0
IF-MIB::ifInOctets.2 = Counter32: 23640565
IF-MIB::ifOutOctets.2 = Counter32: 1294399
IF-MIB::ifName.2 = STRING: eth0
IF-MIB::ifSpeed.2 = Gauge32: 100000000은 네트워크의 물리적인 속도(100Mbps)를 나타내
며, MAC 주소(0:9:18:70:9b:e0), 입력 트래픽(3237762 bytes), 출력 트래픽
(135629515bytes)이 표시됩니다.
```

아래 내용은 Memory Information입니다.

```
-----Memory Information-----
UCD-SNMP-MIB::memTotalReal.0 = INTEGER: 96788 kB
UCD-SNMP-MIB::memAvailReal.0 = INTEGER: 61164 kB
전체 메모리(96788 kB), 남아있는 메모리(61164 kB)가 표시된다.

-----Test End-----
```

# SNMP 테스트

한화테크윈 SNMP MIB를 통해 시스템, 이벤트, 데이터 저장 장치 등의 정보를 설정할 수 있습니다.

한화테크윈의 각 디바이스별 OID 정보는 "MIB 계층"(3쪽)을 참고하십시오.

SNMP 커맨드는 OID 값으로만 동작하며, 개체 이름으로는 동작하지 않습니다. 또한 SNMP 커맨드 중 `snmpget`을 요청 할 때는 해당 OID 마지막의 `.0`을 붙여서 실행합니다.

## snmpwalk Command

- SNMP v1: `snmpwalk -v 1 -c public 192.168.1.100 enterprises.36849`
- SNMP v2c: `snmpwalk -v 2c -c public 192.168.1.100 enterprises.36849`

### 참고

`public`은 해당 디바이스 웹뷰어에서 설정한 `read community` 이름입니다.

- SNMP v3: `snmpwalk -v 3 -u admin -l authNoPriv -a MD5 -A admin4321 192.168.1.100 enterprises.36849`

### Note

SNMP version3을 사용하려면 디바이스 웹뷰어에서 접속 모드를 HTTPS 보안 접속 모드로 설정해야 합니다.

SNMP version3의 ID와 비밀번호 초기값은 각 `admin`과 `admin4321`입니다. 비밀번호는 디바이스 웹뷰어의 SNMP 설정 페이지에서 설정할 수 있으며 최소 8자 이상으로 지정해야 합니다.

## snmpget Command

- SNMP v1: `snmpget -v 1 -c public 192.168.1.100 enterprises.36849.1.2.1.1.0`
- SNMP v2c: `snmpget -v 2c -c public 192.168.1.100 enterprises.36849.1.2.1.1.0`

### 참고

`public`은 해당 디바이스 웹뷰어에서 설정한 `read community` 이름입니다

- SNMP v3: `snmpget -v 3 -u admin -l authNoPriv -a MD5 -A admin4321 192.168.1.100 enterprises.36849.1.2.1.1.0`

<결과 값> SNMPv2-SMI::enterprises.36849.1.2.1.1.0 = STRING: "SNB-1001"

---

## snmpset Command

- SNMP v1: `snmpset -v 1 -c public 192.168.1.100 enterprises.36849.1.2.1.2.1.2.0 s "2011-10-30 11:40:31"`
- SNMP v2c : `snmpset -v 2c -c write 192.168.1.100 enterprises.36849.1.2.1.2.1.2.0 s "2011-10-30 11:40:31"`

### 참고

public은 해당 디바이스 웹뷰어에서 설정한 read community 이름입니다.

- SNMP v3: `snmpset -v 3 -u admin -l authNoPriv -a MD5 -A admin4321 192.168.1.100 enterprises.36849.1.2.1.2.1.2.0 s "2011-10-30 11:40:31"`  
<결과 값> SNMPv2-SMI::enterprises.36849.1.2.1.2.1.2.0 = STRING: "2011-10-30 11:40:31"