

SECTION 9

# Thermal Group

The Thermal Group provides information about cooling units, cooling devices, and temperature probes. Cooling units are sets of fans or other cooling devices in a system chassis. Thermal Group variables include threshold values and types of cooling devices and temperature probes.

## Thermal Group Tables

The following management information base (MIB) tables define the objects in the Thermal Group:

- Cooling Unit Table
- Cooling Device Table
- Temperature Probe Table

### Cooling Unit Table

<b>Name</b>	coolingUnitTable
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.10
<b>Description</b>	Defines the Cooling Unit Table.
<b>Syntax</b>	TableEntry
<b>Access</b>	Not accessible

### Cooling Unit Table Entry

<b>Name</b>	coolingUnitTableEntry
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.10.1
<b>Description</b>	Defines the Cooling Unit Table entry.
<b>Syntax</b>	TableEntry
<b>Access</b>	Not accessible
<b>Index</b>	coolingUnitchassisIndex, coolingUnitIndex

## Cooling Unit Chassis Index

<b>Name</b>	coolingUnitChassisIndex
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.10.1.1
<b>Description</b>	Defines the index (ones-based) of this chassis.
<b>Syntax</b>	TableEntry
<b>Access</b>	Read-only

## Cooling Unit Index

<b>Name</b>	coolingUnitIndex
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.10.1.2
<b>Description</b>	Defines the index (ones-based) of cooling units.
<b>Syntax</b>	DellObjectRange
<b>Access</b>	Read-only

## Cooling Unit State Capabilities

<b>Name</b>	coolingUnitStateCapabilities
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.10.1.3
<b>Description</b>	Defines the capabilities of the cooling unit.
<b>Syntax</b>	DellStateCapabilities
<b>Access</b>	Read-only

## Cooling Unit State Settings

<b>Name</b>	coolingUnitStateSettings
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.10.1.4
<b>Description</b>	Defines the state and settings of the cooling unit.
<b>Syntax</b>	DellStateSettings
<b>Access</b>	Read-write

### Cooling Unit Redundancy Status

<b>Name</b>	coolingUnitRedundancyStatus
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.10.1.5
<b>Description</b>	Defines the redundancy status of the cooling unit.
<b>Syntax</b>	DellStatusRedundancy
<b>Access</b>	Read-only

### Cooling Device Count For Redundancy

<b>Name</b>	coolingDeviceCountForRedundancy
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.10.1.6
<b>Description</b>	Defines the total number of cooling devices required for this cooling unit to have redundancy.
<b>Syntax</b>	DellObjectRange
<b>Access</b>	Read-only

### Cooling Unit Name

<b>Name</b>	coolingUnitName
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.10.1.7
<b>Description</b>	Defines the cooling unit name in this chassis.
<b>Syntax</b>	DellString
<b>Access</b>	Read-only

### Cooling Device Table

<b>Name</b>	coolingDeviceTable
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12
<b>Description</b>	Defines the Cooling Device Table.
<b>Syntax</b>	CoolingDeviceTableEntry
<b>Access</b>	Not accessible

## Cooling Device Table Entry

<b>Name</b>	coolingDeviceTableEntry
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1
<b>Description</b>	Defines the Cooling Device Table entry.
<b>Syntax</b>	CoolingDeviceTableEntry
<b>Access</b>	Not accessible
<b>Index</b>	cooling DevicechassisIndex, coolingDeviceIndex

## Cooling Device Chassis Index

<b>Name</b>	coolingDevicechassisIndex
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.1
<b>Description</b>	Defines the index (ones-based) of this chassis.
<b>Syntax</b>	DellObjectRange
<b>Access</b>	Read-only

## Cooling Device Index

<b>Name</b>	coolingDeviceIndex
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.2
<b>Description</b>	Defines the index of cooling devices in this chassis.
<b>Syntax</b>	DellObjectRange
<b>Access</b>	Read-only

## Cooling Device State Capabilities

<b>Name</b>	coolingDeviceStateCapabilities
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.3
<b>Description</b>	Defines the capabilities of the cooling device.
<b>Syntax</b>	DellStateCapabilities
<b>Access</b>	Read-only

## Cooling Device State Settings

<b>Name</b>	coolingDeviceStateSettings
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.4
<b>Description</b>	Defines the state and settings of the cooling device.
<b>Syntax</b>	DellStateSettings
<b>Access</b>	Read-write

## Cooling Device Status

<b>Name</b>	coolingDeviceStatus
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.5
<b>Description</b>	Defines the status of the cooling device.
<b>Syntax</b>	DellStatusProbe
<b>Access</b>	Read-only

## Cooling Device Reading

<b>Name</b>	coolingDeviceReading
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.6
<b>Description</b>	Defines either the cooling device's speed in revolutions per minute (RPM), or the off/on value of the fan.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-only

## Cooling Device Type

<b>Name</b>	coolingDeviceType
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.7
<b>Description</b>	Defines the cooling device type.
<b>Syntax</b>	DellCoolingDeviceType (See Table 9-1.)
<b>Access</b>	Read-only

## Cooling Device Location Name

<b>Name</b>	coolingDeviceLocationName
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.8
<b>Description</b>	Defines the location of the cooling device in this chassis.
<b>Syntax</b>	DellString
<b>Access</b>	Read-only

## Cooling Device Upper Nonrecoverable Threshold

<b>Name</b>	coolingDeviceUppernonrecoverableThreshold
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.9
<b>Description</b>	Defines the value of the fan's upper nonrecoverable threshold.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-only

## Cooling Device Upper Critical Threshold

<b>Name</b>	coolingDeviceUpperCriticalThreshold
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.10
<b>Description</b>	Defines the value of the fan's upper critical threshold.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-only

## Cooling Device Upper Noncritical Threshold

<b>Name</b>	coolingDeviceUpperNonCriticalThreshold
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.11
<b>Description</b>	Defines the user-assigned value of the fan's upper noncritical threshold.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-write

### Cooling Device Lower Noncritical Threshold

<b>Name</b>	coolingDeviceLowerNonCriticalThreshold
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.12
<b>Description</b>	Defines the user-assigned value of the fan's lower noncritical threshold.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-write

### Cooling Device Lower Critical Threshold

<b>Name</b>	coolingDeviceLowerCriticalThreshold
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.13
<b>Description</b>	Defines the value of the fan's lower critical threshold.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-only

### Cooling Device Lower Nonrecoverable Threshold

<b>Name</b>	coolingDeviceLowerNonRecoverableThreshold
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.14
<b>Description</b>	Defines the value of the fan's lower nonrecoverable threshold.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-only

### Cooling Device Cooling Unit Index Reference

<b>Name</b>	coolingDevicecoolingUnitIndexReference
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.15
<b>Description</b>	Defines the index for the associated system cooling unit in this chassis.
<b>Syntax</b>	DellObjectRange
<b>Access</b>	Read-only

## Cooling Device Subtype

<b>Name</b>	coolingDeviceSubType
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.16
<b>Description</b>	Defines the cooling device subtype.
<b>Syntax</b>	DellCoolingDeviceSubType (See Table 9-2.)
<b>Access</b>	Read-only

## Cooling Device Probe Capabilities

<b>Name</b>	coolingDeviceProbeCapabilities
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.12.1.17
<b>Description</b>	Defines the probe capabilities of the cooling device.
<b>Syntax</b>	DellProbeCapabilities
<b>Access</b>	Read-only

## Temperature Probe Table

<b>Name</b>	temperatureProbeTable
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20
<b>Description</b>	Defines the Temperature Probe Table.
<b>Syntax</b>	TemperatureProbeTableEntry
<b>Access</b>	Not accessible

## Temperature Probe Table Entry

<b>Name</b>	temperatureProbeTableEntry
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1
<b>Description</b>	Defines the Temperature Probe Table entry.
<b>Syntax</b>	TemperatureProbeTableEntry
<b>Access</b>	Not accessible
<b>Index</b>	temperatureProbechassisIndex, temperatureProbeIndex

**Temperature Probe Chassis Index**

<b>Name</b>	temperatureProbechassisIndex
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.1
<b>Description</b>	Defines the index (ones-based) of this chassis.
<b>Syntax</b>	DellObjectRange
<b>Access</b>	Read-only

**Temperature Probe Index**

<b>Name</b>	temperatureProbeIndex
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.2
<b>Description</b>	Defines the index of temperature probes in this chassis.
<b>Syntax</b>	DellObjectRange
<b>Access</b>	Read-only

**Temperature Probe State Capabilities**

<b>Name</b>	temperatureProbeStateCapabilities
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.3
<b>Description</b>	Defines the capabilities of the temperature probe.
<b>Syntax</b>	DellStateCapabilities
<b>Access</b>	Read-only

**Temperature Probe State Settings**

<b>Name</b>	temperatureProbeStateSettings
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.4
<b>Description</b>	Defines the state and settings of the temperature probe.
<b>Syntax</b>	DellStateSettings
<b>Access</b>	Read-write

## Temperature Probe Status

<b>Name</b>	temperatureProbeStatus
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.5
<b>Description</b>	Defines the status of the temperature probe in tenths of degrees Celsius.
<b>Syntax</b>	DellStatusProbe
<b>Access</b>	Read-only

## Temperature Probe Reading

<b>Name</b>	temperatureProbeReading
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.6
<b>Description</b>	Defines the value of the temperature probe.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-only

## Temperature Probe Type

<b>Name</b>	temperatureProbeType
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.7
<b>Description</b>	Defines the temperature probe type.
<b>Syntax</b>	DellTemperatureProbeType (See Table 9-3.)
<b>Access</b>	Read-only

## Temperature Probe Location Name

<b>Name</b>	temperatureProbeLocationName
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.8
<b>Description</b>	Defines the location of the temperature probe in this chassis.
<b>Syntax</b>	DellString
<b>Access</b>	Read-only

**Temperature Probe Upper Nonrecoverable Threshold**

<b>Name</b>	temperatureProbeUpperNonRecoverableThreshold
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.9
<b>Description</b>	Defines the value of the temperature probe's upper nonrecoverable threshold.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-only

**Temperature Probe Upper Critical Threshold**

<b>Name</b>	temperatureProbeUpperCriticalThreshold
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.10
<b>Description</b>	Defines the value of the temperature probe's upper critical threshold.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-only

**Temperature Probe Upper Noncritical Threshold**

<b>Name</b>	temperatureProbeUpperNonCriticalThreshold
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.11
<b>Description</b>	Defines the user-assigned value of the temperature probe's upper noncritical threshold.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-write

**Temperature Probe Lower Noncritical Threshold**

<b>Name</b>	temperatureProbeLowerNonCriticalThreshold
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.12
<b>Description</b>	Defines the user-assigned value of the temperature probe's lower noncritical threshold.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-write

### Temperature Probe Lower Critical Threshold

<b>Name</b>	temperatureProbeLowerCriticalThreshold
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.13
<b>Description</b>	Defines the value of the temperature probe's lower critical threshold.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-only

### Temperature Probe Lower Nonrecoverable Threshold

<b>Name</b>	temperatureProbeLowerNonRecoverableThreshold
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.14
<b>Description</b>	Defines the value of the temperature probe's lower nonrecoverable threshold.
<b>Syntax</b>	DellSigned32BitRange
<b>Access</b>	Read-only

### Temperature Probe Probe Capabilities

<b>Name</b>	temperatureProbeProbeCapabilities
<b>Object ID</b>	1.3.6.1.4.1.674.10892.1.700.20.1.15
<b>Description</b>	Defines the probe capabilities of the temperature probe.
<b>Syntax</b>	DellProbeCapabilities
<b>Access</b>	Read-only

# Thermal Group Variable Values

This section includes definitions for server administrator-specific variable values used in this section.

**Table 9-1. Cooling Device Type**

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<b>Variable Name:</b> DellCoolingDeviceType	
<b>Data Type:</b> Integer	
<b>Possible Data Values</b>	<b>Meaning of Data Value</b>
coolingDeviceTypeIsOther(1)	The cooling device type is not one of the following:
coolingDeviceTypeIsUnknown(2)	The cooling device type is unknown (not known or not monitored).
coolingDeviceTypeIsAFan(3)	The cooling device type is a fan.
coolingDeviceTypeIsABlower(4)	The cooling device type is a centrifugal blower.
coolingDeviceTypeIsAChipFan(5)	The cooling device type is a fan on an integrated circuit.
coolingDeviceTypeIsACabinetFan(6)	The cooling device type is a cabinet fan.
coolingDeviceTypeIsAPowerSupplyFan(7)	The cooling device type is a power supply fan.
coolingDeviceTypeIsAHeatPipe(8)	The cooling device type is a heat pipe.
coolingDeviceTypeIsRefrigeration(9)	The cooling device type is an integrated refrigeration unit.
coolingDeviceTypeIsActiveCooling(10)	The cooling device type is an active cooling device.
coolingDeviceTypeIsPassiveCooling(11)	The cooling device type is a passive cooling device.

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**Table 9-2. Cooling Device Subtype**

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<b>Variable Name:</b> DellCoolingDeviceSubType	
<b>Data Type:</b> Integer	
<b>Possible Data Values</b>	<b>Meaning of Data Value</b>
coolingDeviceSubTypesOther(1)	The cooling device subtype is not one of the following:
coolingDeviceSubTypesUnknown(2)	The cooling device subtype is unknown (not known or not monitored).
coolingDeviceSubTypesAFanThatReadsInRPM(3)	The cooling device subtype is a fan that reads in RPMs.
coolingDeviceSubTypesAFanReadsONorOFF(4)	The cooling device subtype is a fan that reads 0 (off) or 1 (on).
coolingDeviceSubTypesAPowerSupplyFanThatReadsinRPM(5)	The cooling device subtype is a power supply fan that reads in RPMs.
coolingDeviceSubTypesAPowerSupplyFanThatReads-ONorOFF(6)	The cooling device subtype is a power supply fan that reads 0 (off) or 1 (on).

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**Table 9-3. Temperature Probe Type**

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<b>Variable Name:</b> DellTemperatureProbeType	
<b>Data Type:</b> Integer	
<b>Possible Data Values</b>	<b>Meaning of Data Value</b>
temperatureProbeTypesOther(1)	The temperature probe subtype is not one of the following:
temperatureProbeTypesUnknown(2)	The temperature probe subtype is unknown (not known or not monitored).
temperatureProbeTypesAmbientESM(3)	The temperature probe is for ambient Embedded Systems Management (ESM).

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