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# Classes

## QosProfileCapability

Applied stereotypes:

* OpenModelClass
* support: MANDATORY
* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO

Attributes for QosProfileCapability

Table 1: Attributes for QosProfileCapability

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| profileNamingIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | true = There is a free text field available for naming the profile. |
| availableQueueList | AvailableQueueType  ./. | 0..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | List of queues and the configurable queue depth values. |
| dropPrecedenceAtBeQueueIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | true = Configuration of the drop precedence is available at the best effort queue. |
| dropPrecedenceAtAfQueuesIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | true = Configuration of the drop precedence is available at the assured forwarding queues. |
| dropPrecedenceAtPrioQueuesIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | true = Configuration of the drop precedence is available at the priority queues. |
| availableQosProfileKindList | QosProfileKindType  NOT\_YET\_DEFINED | 0..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | List of header information that are supported to be base of the QoS definition. |
| queueDepthConfigurationIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | true = queue depth can be configured as a profile and applied on several interfaces or even the entire switch. |

## QosProfileConfiguration

Defines the profile that will be used for mapping between header information and queues (next hop behavior).

Applied stereotypes:

* OpenModelClass
* support: MANDATORY
* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO

Attributes for QosProfileConfiguration

Table 1: Attributes for QosProfileConfiguration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| externalLabel | String  External label not yet defined. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Identifier of the instance of QosProfile. Could be a name, could be a number. Free text field to be filled by the operator. |
| queueDepthList | QueueDepthType  ./. | 0..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | The device has to represent a list of its queues. |
| qosProfileKind | QosProfileKindType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Defines whether the sorting into queues is done based on VLAN, MPLS or IP header information. |
| ingress8021pToPerHopBehaviorMappingList | P8021PerHopBehaviorType  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant when qosProfileKind == IEEE8021P. Associates the value of the three p-bits of the VLAN header with a per hop behavior at the physical interface. First entry in the list [0] relates to p-bit value '0'. Last entry in the list [7] relates to p-bit value '7'. |
| ingressExpToPerHopBehaviorMappingList | ExpPerHopBehaviorType  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant when qosProfileKind == MPLS\_EXP. Associates the value of the three p-bits of the MPLS header with a per hop behavior at the physical interface. First entry in the list [0] relates to p-bit value '0'. Last entry in the list [7] relates to p-bit value '7'. |
| ingressIpDscpToPerHopBehaviorMappingList | DscpPerHopBehaviorType  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant when qosProfileKind == IP\_DSCP. Associates the value of the 8 dscp bits of the IP header with a per hop behavior at the physical interface. First entry in the list [0] relates to dscp value '0'. Last entry in the list [63] relates to dscp value '63'. |
| writingPerHopBehaviorInto8021pIsOn | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | true = Original content of 802.1p bits is overwritten with local per hop behavior. |
| egressPerHopBehaviorTo8021pMappingList | EgressPerHopBehaviorToPriorityBitsMappingType  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant if (writingPerHopBehaviorInto8021pIsOn==true). Translates (queue and drop precedence) into values of the three p-bits of the VLAN header. |
| writingPerHopBehaviorIntoMplsExpIsOn | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | true = Original content of MPLS EXP bits is overwritten with local per hop behavior. |
| egressPerHopBehaviorToMplsExpMappingList | EgressPerHopBehaviorToPriorityBitsMappingType  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant if (writingPerHopBehaviorIntoMplsExpIsOn==true). Translates (queue and drop precedence) into values of the three p-bits of the MPLS header. |
| writingPerHopBehaviorIntoIpDscpIsOn | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | true = Original content of IP DSCP bits is overwritten with local per hop behavior. |
| egressPerHopBehaviorToIpDscpMappingList | EgressPerHopBehaviorToPriorityBitsMappingType  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant if (writingPerHopBehaviorIntoIpDscpIsOn==true). Translates (queue and drop precedence) into values of the six dscp bits of the IP header. |

## QosProfileSpec

Applied stereotypes:

* OpenModelClass
* support: MANDATORY
* OpenInterfaceModelClass
* objectCreationNotification: YES
* objectDeletionNotification: YES

Attributes for QosProfileSpec

Table 1: Attributes for QosProfileSpec

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| \_qosProfile\_Pac | QosProfile\_Pac  ./. | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |

## QosProfile\_Pac

Applied stereotypes:

* OpenModelClass
* support: MANDATORY
* OpenInterfaceModelClass
* objectCreationNotification: NO
* objectDeletionNotification: NO

Attributes for QosProfile\_Pac

Table 1: Attributes for QosProfile\_Pac

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| \_qosProfileCapability | QosProfileCapability  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |
| \_qosProfileConfiguration | QosProfileConfiguration  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | See referenced class |

# Data Types

## AvailableQueueType

Applied Stereotypes:

Attributes for AvailableQueueType

Table 1: Attributes for AvailableQueueType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| queueName | QueueNameType  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Name of the queue. |
| supportedQueueDepthList | Integer  -1 | 0..\* | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: Byte * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | If configuration of the depth of the queue is available as a profile, which can be applied at several interfaces or even the entire switch, this attribute would represent the configurable values in Byte. The supportedQueueDepthList attribute must exclusively contain values, which are actually configurable at the hardware (except of the default value -1, in case buffer size cannot be configured at all as a profile). The values listed here might be all or a subset of values actually configurable at the hardware. To allow configuring the device according to its full capabilities, the values entered into the QueueDepthType::queueDepth attribute are not limited to the ones stated here. If a value, which is supported by the hardware, but not listed in the supportedQueueDepthList attribute, would be tried to be configured, the device-software or mediator-software shall successfully validate (and operate) it. |

## DscpPerHopBehaviorType

Applied Stereotypes:

Attributes for DscpPerHopBehaviorType

Table 1: Attributes for DscpPerHopBehaviorType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| dscpPriority | Integer  ./. | 1 | RW | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_8\_BIT | Value of the dscp bits of the IP header. |
| queueName | QueueNameType  NOT\_YET\_DEFINED | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: NA | Name of the queue. |
| dropPrecedenceInsideQueue | DropPrecedenceType  NOT\_YET\_DEFINED | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: NA | (if dropPrecedenceAt\*QueueIsAvail for the referenced queue == false) default value shall be kept and configuration attempts shall be ignored. |

## EgressPerHopBehaviorToPriorityBitsMappingType

Applied Stereotypes:

Attributes for EgressPerHopBehaviorToPriorityBitsMappingType

Table 1: Attributes for EgressPerHopBehaviorToPriorityBitsMappingType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| mappingNumber | Integer  ./. | 1 | RW | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_8\_BIT |  |
| queueName | QueueNameType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Name of the queue. |
| dropPrecedenceInsideQueue | DropPrecedenceType  NOT\_YET\_DEFINED | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | (if dropPrecedenceAt\*QueueIsAvail for the referenced queue == false) default value shall be kept and configuration attempts shall be ignored. |
| valueOfPriorityBits | Integer  -1 | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: LENGTH\_8\_BIT | Associated value of the three, three or six p-bits of the VLAN, MPLS or IP header. |

## ExpPerHopBehaviorType

Applied Stereotypes:

Attributes for ExpPerHopBehaviorType

Table 1: Attributes for ExpPerHopBehaviorType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| expPriority | Integer  ./. | 1 | RW | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_8\_BIT | Value of the Exp bits of the MPLS header. |
| queueName | QueueNameType  NOT\_YET\_DEFINED | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: NA | Name of the queue. |
| dropPrecedenceInsideQueue | DropPrecedenceType  NOT\_YET\_DEFINED | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: NA | (if dropPrecedenceAt\*QueueIsAvail for the referenced queue == false) default value shall be kept and configuration attempts shall be ignored. |

## P8021PerHopBehaviorType

Applied Stereotypes:

Attributes for P8021PerHopBehaviorType

Table 1: Attributes for P8021PerHopBehaviorType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| p8021Priority | Integer  ./. | 1 | RW | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_8\_BIT | Value of the p-bits of the VLAN header. |
| queueName | QueueNameType  NOT\_YET\_DEFINED | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: NA | Name of the queue. |
| dropPrecedenceInsideQueue | DropPrecedenceType  NOT\_YET\_DEFINED | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: NA | (if dropPrecedenceAt\*QueueIsAvail for the referenced queue == false) default value shall be kept and configuration attempts shall be ignored. |

## QueueDepthType

Applied Stereotypes:

Attributes for QueueDepthType

Table 1: Attributes for QueueDepthType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| queueName | QueueNameType  ./. | 1 | RW | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Name of the queue. |
| queueDepth | Integer  -1 | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: Byte * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | If supportedQueueDepthList != -1 for the same queue, this attribute has to represent the currently configured queue depth, otherwise the default value. |

# Enumeration Types

## DropPrecedenceType

Contains Enumeration Literals:

* NONE:
* LOW:
  + Would be equal to GREEN.
* MEDIUM:
  + Would be equal to YELLOW.
* HIGH:
  + Would be equal to RED.
* NOT\_YET\_DEFINED:

## ProfileNameType

A controlled list of LayerProtocol names.

Contains Enumeration Literals:

* PROFILE\_NAME\_TYPE\_QOS\_PROFILE:

## QosProfileKindType

Contains Enumeration Literals:

* NONE:
* IEEE8021P:
* MPLS\_EXP:
* IP\_DSCP:
* NOT\_YET\_DEFINED:

## QueueNameType

Contains Enumeration Literals:

* BEST\_EFFORT\_QUEUE:
  + Queue 0.
* ASSURED\_FORWARDING\_QUEUE1:
  + Queue 1.
* ASSURED\_FORWARDING\_QUEUE2:
  + Queue 2.
* ASSURED\_FORWARDING\_QUEUE3:
  + Queue 3.
* ASSURED\_FORWARDING\_QUEUE4:
  + Queue 4.
* EXPEDITED\_FORWARDING\_QUEUE:
  + Queue 5.
* CLASS\_SELECTOR\_QUEUE6:
  + Queue 6.
* CLASS\_SELECTOR\_QUEUE7:
  + Queue 7.
* NOT\_YET\_DEFINED: