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# Classes

## WredTemplateProfileCapability

Applied stereotypes:

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

Attributes for WredTemplateProfileCapability

Table 1: Attributes for WredTemplateProfileCapability

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| availableBufferSize | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: Byte  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT | Maximum value that could be configured as thresholdHigh in Byte. |
| dropProbabilityAtThresholdLowIsAvail | 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 = It is possible to set a drop probability at the lower threshold. |
| gentleWredIsAvail | 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 = The device allows activating a linear increase of drop probability between dropProbabilityAtThresholdHigh and 100% at thresholdGentle (usually drop probability jumps to 100% at thresholdHigh). |
| sensitivitySettingIsAvail | 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 = It is possible to set the sensitivity for the burst size. |
| coloringIsAvail | 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 = The device allows marking exceeding packets yellow instead of immediately discarding them. |
| supportedWredProtocolList | ProtocolLayerType  NOT\_YET\_DEFINED | 0..\* | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Lists the values, which could be chosen, while configuring WRED by associating a protocol with a drop precedence. |
| availableDropPrecedenceKindList | DropPrecedenceType  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 | Explicit list (ALL not to be used here) of drop precedencies, which are available for this WRED template definition. |

## WredTemplateProfileConfiguration

Applied stereotypes:

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

Attributes for WredTemplateProfileConfiguration

Table 1: Attributes for WredTemplateProfileConfiguration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| wredTemplateList | wredTemplateType  ./. | 0..\* | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant if (droppingBehaviorKind==WRED). |

## WredTemplateProfileSpec

Applied stereotypes:

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

Attributes for WredTemplateProfileSpec

Table 1: Attributes for WredTemplateProfileSpec

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| \_wredTemplateProfile\_Pac | WredTemplateProfile\_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 |

## WredTemplateProfile\_Pac

Applied stereotypes:

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

Attributes for WredTemplateProfile\_Pac

Table 1: Attributes for WredTemplateProfile\_Pac

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| \_wredTemplateProfileCapability | WredTemplateProfileCapability  ./. | 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 |
| \_wredTemplateProfileConfiguration | WredTemplateProfileConfiguration  ./. | 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

## wredConfigurationType

Applied Stereotypes:

Attributes for wredConfigurationType

Table 1: Attributes for wredConfigurationType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| externalLabel | String  External label not yet defined. | 1 | R | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: NA | Identifier of the instance of WredTemplateProfile. Could be a name, could be a number. Free text field to be filled by the operator. |
| thresholdLow | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: Byte * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: LENGTH\_32\_BIT | Defines the lower threshold in Byte. When average queue content is exceeding this value, packets start getting dropped. Probability of dropping is linear increasing until it reaches the value configured in dropProbabilityAtThresholdHigh when average queue content reaches thresholdHigh. |
| dropProbabilityAtThresholdLow | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: % * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: LENGTH\_8\_BIT | Only relevant if (dropProbabilityAtLowThresholdIsAvail==true). Defines the probability (as a percentage) of an incoming packet getting dropped when the content of the queue reaches the low threshold. |
| thresholdHigh | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: Byte * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: LENGTH\_32\_BIT | Defines the upper threshold in Byte. When average queue content is reaching this value, incoming packets are dropped with the probability configured in dropProbabilityAtThresholdHigh. When average queue content is exceeding this value, all incoming packets get dropped. |
| dropProbabilityAtThresholdHigh | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: % * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: LENGTH\_8\_BIT | Defines the probability (as a percentage) of an incoming packet getting dropped when the content of the queue reaches the upper threshold. |
| gentleWredIsOn | Boolean  false | 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 (gentleWredIsAvail==true). true = The drop probability is linear increasing between dropProbabilityAtThresholdHigh and 100% at thresholdGentle (otherwise drop probability jumps to 100% at thresholdHigh). |
| thresholdGentle | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: Byte * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: LENGTH\_32\_BIT | Only relevant if (gentleWredIsAvail==true) AND (gentleWredIsOn==true). Defines the 100% dropping threshold for gentle WRED in Byte. When average queue content reaches or exceeds this value, incoming packets get dropped with 100% probability. |
| sensitivity | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: % * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: LENGTH\_8\_BIT | Only relevant if (sensitivitySettingIsAvail==true). Defines how sensitive WRED reacts on traffic burst. low values = WRED reacts quickly and is sensitive to short bursts. high values = WRED reacts slowly on short bursts, which could result in buffer overflow and tail drop. Values between 0 and 15. |
| coloringIsOn | Boolean  false | 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 (coloringIsAvail==true). true = Exceeding packets are marked yellow instead of being immediately discarded. |

## wredTemplateType

Applied Stereotypes:

Attributes for wredTemplateType

Table 1: Attributes for wredTemplateType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| affectedProtocol | ProtocolLayerType  ./. | 1 | RW | OpenModelAttribute   * partOfObjectKey: 1 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Definition of the kind of protocol, for which the WRED profile shall apply on. |
| affectedDropPrecedence | DropPrecedenceType  ./. | 1 | RW | OpenModelAttribute   * partOfObjectKey: 2 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Definition of the drop precedence, for which the WRED profile shall apply on. |
| wredConfiguration | wredConfigurationType  ./. | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NA * bitLength: NA | Associates a WRED profile to the queue, respectively drop precedence. |

# Enumeration Types

## DropPrecedenceType

Contains Enumeration Literals:

* ALL:
  + If all drop precedence are affected. This includes the case of drop precedencies are not implemented.
* 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 Profile names.

Contains Enumeration Literals:

* PROFILE\_NAME\_TYPE\_WRED\_TEMPLATE\_PROFILE:

## ProtocolLayerType

Contains Enumeration Literals:

* NONE:
* ETHERNET\_MAC:
* VLAN:
* Q\_IN\_Q:
* MPLS:
* IPV4:
* IPV6:
* TCP:
* UDP:
* RTP:
* GTP\_U:
* OTHERS:
* NOT\_YET\_DEFINED: