Content

[2 Classes 1](#_Toc30523621)

[2.1 CurrentPerformance 1](#_Toc30523622)

[2.2 CurrentProblem 2](#_Toc30523623)

[2.3 EthernetContainerCapability 3](#_Toc30523624)

[2.4 EthernetContainerConfiguration 8](#_Toc30523625)

[2.5 EthernetContainerCurrentPerformance 13](#_Toc30523626)

[2.6 EthernetContainerCurrentProblems 14](#_Toc30523627)

[2.7 EthernetContainerHistoricalPerformances 15](#_Toc30523628)

[2.8 EthernetContainerLpSpec 16](#_Toc30523629)

[2.9 EthernetContainerStatus 17](#_Toc30523630)

[2.10 EthernetContainer\_Pac 20](#_Toc30523631)

[2.11 HeaderCompressionKind 21](#_Toc30523632)

[2.12 HistoricalPerformance 23](#_Toc30523633)

[3 Data Types 24](#_Toc30523634)

[3.1 AvailableQueueType 24](#_Toc30523635)

[3.2 ContainerCurrentPerformanceType 26](#_Toc30523636)

[3.3 ContainerCurrentProblemType 26](#_Toc30523637)

[3.4 ContainerHistoricalPerformanceType 27](#_Toc30523638)

[3.5 ContainerPerformanceType 27](#_Toc30523639)

[3.6 ProblemKindSeverityType 29](#_Toc30523640)

[3.7 QueueBehaviorType 30](#_Toc30523641)

[3.8 QueueUtilizationType 31](#_Toc30523642)

[3.9 wredBehaviorType 32](#_Toc30523643)

[4 Enumeration Types 33](#_Toc30523644)

[4.1 DropPrecedenceType 33](#_Toc30523645)

[4.2 DroppingBehaviorKindType 33](#_Toc30523646)

[4.3 FecInterleaverDepthType 34](#_Toc30523647)

[4.4 FecInterleaverKindType 34](#_Toc30523648)

[4.5 FecRedundancySizeType 34](#_Toc30523649)

[4.6 GranularityPeriodType 35](#_Toc30523650)

[4.7 InterfaceStatusType 35](#_Toc30523651)

[4.8 LayerProtocolNameType 36](#_Toc30523652)

[4.9 LoopBackType 36](#_Toc30523653)

[4.10 ProtocolLayerType 36](#_Toc30523654)

[4.11 QueueNameType 37](#_Toc30523655)

[4.12 SchedulerKindType 37](#_Toc30523656)

[4.13 SeverityType 38](#_Toc30523657)

[4.14 headerCompressionModeType 38](#_Toc30523658)

[4.15 mplsPayloadKindType 38](#_Toc30523659)

[5 Primitive Types 39](#_Toc30523660)

# Classes

## CurrentPerformance

Applied stereotypes:

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

Attributes for CurrentPerformance

Table 1: Attributes for CurrentPerformance

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| timestamp | DateTime  2010-11-20T14:00:00+01:00 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | The timestamp associated with when the current data was collected. |
| suspectIntervalFlag | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | This attribute is used to indicate that the performance data for the current period may not be reliable. Some reasons for this to occur are: – Suspect data were detected by the actual resource doing data collection. – Transition of the administrativeState attribute to/from the 'lock' state. – Transition of the operationalState to/from the 'disabled' state. – Scheduler setting that inhibits the collection function. – The performance counters were reset during the interval. – The currentData (or subclass) object instance was created during the monitoring period. |
| elapsedTime | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: s  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT | Number of seconds that elapsed since the last reset of the counter. |
| scannerId | String  Scanner ID not defined. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA |  |
| granularityPeriod | GranularityPeriodType  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 1  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Time period between reset of the underlying counter. |

## CurrentProblem

Applied stereotypes:

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

Attributes for CurrentProblem

Table 1: Attributes for CurrentProblem

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| sequenceNumber | Integer  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 1  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_16\_BIT | Unique sequence number of the current problem object. |
| timestamp | DateTime  2010-11-20T14:00:00+01:00 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Time when the alarm was raised. |
| problemSeverity | SeverityType  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 | Severity of the alarm. |

## EthernetContainerCapability

Applied stereotypes:

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

Attributes for EthernetContainerCapability

Table 1: Attributes for EthernetContainerCapability

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| availableQueueList | AvailableQueueType  ./. | 1..8 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | List of queues, which are available at the physical interface. |
| explicitCongestionNotificationIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = Explicit Congestion Notification is available at this queue. |
| ingressPolicingIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = This interface supports policing. |
| egressShapingIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = This interface supports shaping. |
| informationRateMin | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: kbit/s  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT | Only relevant if (egressShapingIsAvail==1): Minimum configurable throuput in kbit/s. |
| informationRateMax | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: kbit/s  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT | Only relevant if (egressShapingIsAvail==1): Maximum configurable throuput in kbit/s. |
| burstSizeMin | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: kByte  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_16\_BIT | Only relevant if (egressShapingIsAvail==1): Minimum configurable value for the number of kBytes, which could be sent in a single burst. |
| burstSizeMax | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: kByte  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_16\_BIT | Only relevant if (egressShapingIsAvail==1): Maximum configurable value for the number of kBytes, which could be sent in a single burst. |
| bundlingIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | This attribute has to be set on 'true', if the device allows combining resources from several air interfaces for transporting this Ethernet container. |
| bundlingGroupSizeMax | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_8\_BIT | 802.3 according to 30.11.1.1.6 aLocalPAFCapacity and ITU-T Rec. G.998.3 Appendix II aGroupCapacity. No Mbit/s value, but number of Ethernet Segments that can be aggregated for transporting this Ethernet Container. Reasonable values are between1 and 32. |
| supportOfManagementFramesWithoutPreambleIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 802.3. 1 = Management frames with suppressed preamble are also accepted. |
| \_supportedHeaderCompressionKindList | HeaderCompressionKind  ./. | 1..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Lists the kinds of header compression, which are supported by the device. |
| fecIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 802.3 according to 30.5.1.1.15 aFECAbility, 45.2.1.92.1 BASE-R FEC ability and 45.2.3.37 10GBASE-PR and 10/1GBASE-PRX FEC ability register and ITU-T Rec. G.998.3 Appendix II aFECSupported. 1 = Indicates that an optional Forward Error Correction (FEC) is supported. |
| fecWordSizeMax | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: Byte  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_16\_BIT | ITU-T Rec. G.998.3 Appendix II aFECWordSize. Indicates maximum supported Forward Error Correction (FEC) code word size in Bytes. Expected values between 20 and 255. |
| supportedFecRedundancySizeList | FecRedundancySizeType  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 | ITU-T Rec. G.998.3 Appendix II aFECRedundancySize. Indicates maximum supported Forward Error Correction (FEC) redundancy word size. |
| supportedFecInterleaverKindList | FecInterleaverKindType  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 | ITU-T Rec. G.998.3 Appendix II aFECInterleaverType. Supported kinds of Forward Error Correction (FEC) interleaver |
| supportedFecInterleaverDepthList | FecInterleaverDepthType  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 | ITU-T Rec. G.998.3 Appendix II aFECInterleaverDepth. Indicates the supported depths of the Forward Error Correction (FEC) interleaver. |
| encryptionIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Shall be marked 'true', if Ethernet payload encryption is available. |
| adminShutDownIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = Manual switching on and off of the interface without deleting it (underlying OSI network layers are also not affected) is available. |
| supportedLoopBackKindList | LoopBackType  NOT\_YET\_DEFINED | 1..3 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | List of supported kinds of looping back. |
| maintenanceTimerRange | String  Range of the maintenance timer 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 | Available time periods for maintenance configurations to be described. Concrete values shall be separated by commas (e.g. '10, 60, 360'). Ranges shall be expressed as two values separated by a minus (e.g. '10-360'). |
| statisticsIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = Continuous statistics counters are available. |
| supportedAlarmList | String  Supported alarms not yet defined. | 2..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Available alarms to be listed. Mandatory:'framingIsFaulty' and 'containerIsDown'. Further alarms might be added by the vendor. |
| performanceMonitoringIsAvail | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | 1 = Collection and aggregation of performance values is available. |

## EthernetContainerConfiguration

Serving Structures are identified by LogicalTerminationPoint::\_serverLtpRefList. If (bundlingIsAvail==1), multiplicity might be \*. If (bundlingIsAvail==0), multiplicity must be 0..1. It is assumed that there is just one Ethernet segment per Structure.

Applied stereotypes:

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

Attributes for EthernetContainerConfiguration

Table 1: Attributes for EthernetContainerConfiguration

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| interfaceName | String  Interface name 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 | Description of the interface, could be a name, could be a number. Free text field to be filled by the operator. |
| interfaceIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant if (adminShutDownIsAvail==1). 1 = Activation of the interface. 0 = De-activation of the interface without deleting it (underlying OSI network layers are not affected). |
| queueBehaviorList | QueueBehaviorType  ./. | 1..8 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Defines scheduling and dropping behavior of all queues. |
| explicitCongestionNotificationIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | 1 = Explicit Congestion Notification is activitated at this queue. |
| \_ingressPolicingProfile | Profile  ./. | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  PassedByReference  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Reference to the policing profile, which is active on this interface. Attribute to point to an instance of Profile with profileName=='PROFILE\_NAME\_TYPE\_POLICING\_PROFILE'. |
| egressShapingIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | 1 = Shaping on the egress is activated. |
| maximumInformationRate | Integer  -1 | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: kbit/s  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: LENGTH\_32\_BIT | Only relevant if (egressShapingIsAvail==1): Limits the throughput on the egress. |
| maximumBurstSize | Integer  -1 | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: kByte  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: LENGTH\_16\_BIT | Only relevant if (egressShapingIsAvail==1): Limits the number of kBytes, which are sent in a single burst. |
| bundlingIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | 802.3 according to 30.11.1.1.5 aPAFAdminState and 45.2.3.26.3 PAF enable. 1 = Algorithm for bundling Ethernet segments is activated (, even if only a single Structure would be associated). |
| \_headerCompressionKind | HeaderCompressionKind  ./. | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  PassedByReference  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Defines the kind of header compression to be used. |
| fecIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | 802.3 according to 30.5.1.1.16 aFECmode, 45.2.1.93.1 FEC enable and 45.2.3.38.2 10 Gb/s FEC Enable and ITU-T Rec. G.998.3 Appendix II aFECAdminState. Only relevant if (fecIsAvail==1). 1 = Activation of the Forward Error Correction (FEC). |
| fecWordSize | Integer  -1 | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: Byte  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: LENGTH\_16\_BIT | ITU-T Rec. G.998.3 Appendix II aFECWordSize. Only relevant if (fecIsSupported==1). Defining the Forward Error Correction (FEC) code word size in Bytes. Expected values between 20 and 255. |
| fecRedundancySize | FecRedundancySizeType  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 | ITU-T Rec. G.998.3 Appendix II aFECRedundancySize. Only relevant if (fecIsSupported==1). Defining the Forward Error Correction (FEC) redundancy word size. |
| fecInterleaverKind | FecInterleaverKindType  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 | ITU-T Rec. G.998.3 Appendix II aFECInterleaverType. Only relevant if (fecIsSupported==1). Defining the kind of Forward Error Correction (FEC) interleaver. |
| fecInterleaverDepth | FecInterleaverDepthType  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 | ITU-T Rec. G.998.3 Appendix II aFECInterleaverDepth. Only relevant if (fecIsSupported==1). Defining the depth of Forward Error Correction (FEC) interleaver. |
| encryptionIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Activates encryption of the Ethernet payload. |
| cryptographicKey | String  Cryptographic key 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 | Key for transforming plaintext into cipher text data. |
| loopBackKindOn | LoopBackType  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 | Maintenance Feature. Configuration of a loop back of TDM time slots on this interface. |
| maintenanceTimer | Integer  -1 | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: s  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: LENGTH\_32\_BIT | Time of existence of any maintenance configuration. 0 = maintenance timer is switched off. Valid values are defined in \*Capability::maintenanceTimerRange. |
| statisticsIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant if (statisticsIsAvail==1). 1 = Continuous statistics counters are switched on. |
| problemKindSeverityList | ProblemKindSeverityType  ./. | 2..\* | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Severity of the problem to be configured. |
| performanceMonitoringIsOn | Boolean  false | 1 | RW | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | Only relevant if (performanceMonitoringIsAvail==1). 1 = Collection and aggregation of performance values is switched on. |

## EthernetContainerCurrentPerformance

Aggregated performance information of the Ethernet container at a particular moment.

Applied stereotypes:

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

Attributes for EthernetContainerCurrentPerformance

Table 1: Attributes for EthernetContainerCurrentPerformance

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| currentPerformanceDataList | ContainerCurrentPerformanceType  ./. | 1..2 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA |  |
| numberOfCurrentPerformanceSets | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_8\_BIT | Number of sets of current performance values, which are provided in the list. |

## EthernetContainerCurrentProblems

Applied stereotypes:

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

Attributes for EthernetContainerCurrentProblems

Table 1: Attributes for EthernetContainerCurrentProblems

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| currentProblemList | ContainerCurrentProblemType  ./. | 0..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA |  |
| numberOfCurrentProblems | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_8\_BIT | Number of alarms, which are currently active on this interface. |
| timeOfLatestChange | 2010-11-20T14:00:00+01:00 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Date and time when the list of alarms has been changed for the last time. |

## EthernetContainerHistoricalPerformances

Aggregated performance information of the Ethernet container for a pre-defined measurement interval.

Applied stereotypes:

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

Attributes for EthernetContainerHistoricalPerformances

Table 1: Attributes for EthernetContainerHistoricalPerformances

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| historicalPerformanceDataList | ContainerHistoricalPerformanceType  ./. | 0..\* | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA |  |
| numberOfHistoricalPerformanceSets | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_16\_BIT | Number of sets of historical performance values, which are provided in the list. |
| timeOfLatestChange | 2010-11-20T14:00:00+01:00 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Date and time when the list of sets of historical performance values has been changed for the last time (e.g. new one added or existing one deleted). |

## EthernetContainerLpSpec

Applied stereotypes:

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

Attributes for EthernetContainerLpSpec

Table 1: Attributes for EthernetContainerLpSpec

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| \_ethernetContainer\_Pac | EthernetContainer\_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 |

## EthernetContainerStatus

Applied stereotypes:

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

Attributes for EthernetContainerStatus

Table 1: Attributes for EthernetContainerStatus

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| interfaceStatus | InterfaceStatusType  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 | Operational status of the interface. |
| bundlingIsUp | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | 802.3 and ITU-T Rec. G.998.3 Appendix II aGroupStatus. 1 = Algorithm for bundling Ethernet segments is operative (, even if only a single Structure would be associated). |
| remoteSiteIsFaulty | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | 802.3. 1 = remote fault condition detected. |
| loopBackKindUp | LoopBackType  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 | The currently active (not just configured) type of loop back. |
| statisticsIsUp | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | 1 = Statistics are currently counted |
| performanceMonitoringIsUp | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: YES  • bitLength: NA | 1 = Performance values are currently collected and aggregated. |
| timestamp | DateTime  2010-11-20T14:00:00+01:00 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | The timestamp associated with when the statistic values were read/retrieved. |
| last10SecDataInputRate | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: kbit/s  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT | Data receive rate over the last 10 second interval in kbit/s. |
| last10SecDataOutputRate | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: kbit/s  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_32\_BIT | Data transmit rate over the last 10 second interval in kbit/s. |
| totalBytesInput | Integer  0 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: Byte  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT | Received data volume in Byte. |
| totalBytesOutput | Integer  0 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: Byte  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT | Sent data volume in Byte. |
| forwardedBytesInput | Integer  0 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: Byte  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT | Number of received Bytes, for which the device was not their final destination and for which the device attempted to find a route to forward them to that final destination. |
| forwardedBytesOutput | Integer  0 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: false  • valueRange: no range constraint  • unit: Byte  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_64\_BIT | Number of Bytes, for which the device was not their final destination and for which it was successful in finding a path to their final destination. |

## EthernetContainer\_Pac

Applied stereotypes:

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

Attributes for EthernetContainer\_Pac

Table 1: Attributes for EthernetContainer\_Pac

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| \_ethernetContainerCapability | EthernetContainerCapability  ./. | 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 |
| \_ethernetContainerConfiguration | EthernetContainerConfiguration  ./. | 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 |
| \_ethernetContainerStatus | EthernetContainerStatus  ./. | 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 |
| \_ethernetContainerCurrentProblems | EthernetContainerCurrentProblems  ./. | 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 |
| \_ethernetContainerCurrentPerformance | EthernetContainerCurrentPerformance  ./. | 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 |
| \_ethernetContainerHistoricalPerformances | EthernetContainerHistoricalPerformances  ./. | 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 |

## HeaderCompressionKind

Applied stereotypes:

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

Attributes for HeaderCompressionKind

Table 1: Attributes for HeaderCompressionKind

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| headerCompressionName | String  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 1  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA |  |
| headerCompressionMode | headerCompressionModeType  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 | Defines the way of configuring the header compression. |
| compressedProtocolLayerList | ProtocolLayerType  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 | Only relevant if (headerCompressionMode==PROTOCOL\_BASED). List of protocol layers that get compressed with this kind of header compression. |
| mplsPayloadKindList | mplsPayloadKindType  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 | Defines how the header bytes inside the MPLS header has to be interpreted. |
| compressedHeaderLength | Integer  -1 | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: Byte  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: LENGTH\_16\_BIT | Only relevant if (headerCompressionMode==LENGTH\_BASED). Number of Bytes of header information that get compressed. |

## HistoricalPerformance

Applied stereotypes:

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

Attributes for HistoricalPerformance

Table 1: Attributes for HistoricalPerformance

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| suspectIntervalFlag | Boolean  false | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | This attribute indicates that the data collected during the interval is suspect. |
| historyDataId | String  History Data ID not defined. | 1 | R | OpenModelAttribute  • partOfObjectKey: 0  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA |  |
| granularityPeriod | GranularityPeriodType  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 1  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Time period between reset of the underlying counter. |
| periodEndTime | DateTime  ./. | 1 | R | OpenModelAttribute  • partOfObjectKey: 2  • isInvariant: true  • valueRange: no range constraint  • unit: no unit defined  • support: MANDATORY  OpenInterfaceModelAttribute  • AVC: NO  • bitLength: NA | Time when the counter values have been recorded and the counter reset. |

# 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. |
| maxQueueDepth | 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 configurable depth of the queue in Byte. openconfig-qos-interfaces.yang |
| 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 | 1 = Size of the individual queue is configurable (setting thresholdHigh of a WRED profile might be an alternative way of configuring the effective queue depth). |
| availableDroppingBehaviorKindList | DroppingBehaviorKindType  NOT\_YET\_DEFINED | 1..4 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Lists the available types of behavior in case of congestions. |
| availableDropPrecedenceKindList | DropPrecedenceType  NOT\_YET\_DEFINED | 1..3 | 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 precedences, which are available for this queue. |
| wredProfilePerDropPrecedenceIsAvailable | Boolean  false | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | 1 = Separate WRED profiles can be defined for every drop precedence. |
| availableSchedulingKindList | SchedulerKindType  NOT\_YET\_DEFINED | 1..4 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Lists the available types of scheduling. |

## ContainerCurrentPerformanceType

Turns performance information into current performance information by inheriting from OTN\_CurrentData.

Applied Stereotypes:

Attributes for ContainerCurrentPerformanceType

Table 1: Attributes for ContainerCurrentPerformanceType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| performanceData | ContainerPerformanceType  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA |  |

## ContainerCurrentProblemType

Applied Stereotypes:

Attributes for ContainerCurrentProblemType

Table 1: Attributes for ContainerCurrentProblemType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| problemName | String  Problem name not specified. | 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 alarm according to Container::ContainerCapability::supportedAlarms |

## ContainerHistoricalPerformanceType

Turns performance information into historical performance information by inheriting from OTN\_HistoryData.

Applied Stereotypes:

Attributes for ContainerHistoricalPerformanceType

Table 1: Attributes for ContainerHistoricalPerformanceType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| performanceData | ContainerPerformanceType  ./. | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA |  |

## ContainerPerformanceType

Consolidated performance information of the Container.

Applied Stereotypes:

Attributes for ContainerPerformanceType

Table 1: Attributes for ContainerPerformanceType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| txEthernetBytesMaxS | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: Bytes/s * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | Counts the number of Bytes of Ethernet traffic (before header compression) transmitted within a second and keeps the highest value within the measurement period. Field to be left blank for all types of TDM containers. |
| txEthernetBytesMaxM | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: Bytes/min * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_64\_BIT | Counts the number of Bytes of Ethernet traffic (before header compression) transmitted within a minute and keeps the highest value with in the measurement period. Field to be left blank for all types of TDM containers. |
| txEthernetBytesSum | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: Bytes * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_64\_BIT | Total number of Bytes of Ethernet traffic (before header compression) transmitted (in direction out of the device) during the measurement period. Field to be left blank for all types of TDM containers. |
| queueUtilizationList | QueueUtilizationType  ./. | 0..8 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: NA | Utilization of the respective queue. openconfig-qos-interfaces.yang |
| fecCorrectedBlocks | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: Blocks * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | 802.3 according to 30.5.1.1.17 aFECCorrectedBlocks and 30.11.2.1.8 aPMEFECCorrectedBlocks and 45.2.1.94 10GBASE-R FEC corrected blocks counter. Counts received blocks that have been corrected by the Forward Error Correction (FEC) function. |
| fecUncorrectableBlocks | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: Blocks * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | 802.3 according to 30.5.1.1.18 aFECUncorrectableBlocks and 30.11.2.1.9 aPMEFECUncorrectableBlocks and 45.2.1.95 10GBASE-R FEC uncorrected blocks counter. Counts received blocks that could not been corrected by the Forward Error Correction (FEC) function. |
| timePeriod | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: s * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | Total length of the measurement period in seconds. |

## ProblemKindSeverityType

Applied Stereotypes:

Attributes for ProblemKindSeverityType

Table 1: Attributes for ProblemKindSeverityType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| problemKindName | String  ./. | 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 alarm according to supportedAlarmList |
| problemKindSeverity | SeverityType  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 | Severity of this type of alarm. |

## QueueBehaviorType

Applied Stereotypes:

Attributes for QueueBehaviorType

Table 1: Attributes for QueueBehaviorType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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: false * valueRange: no range constraint * unit: Byte * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: LENGTH\_32\_BIT | Only relevant if (queueDepthConfigurationIsAvail==1). Size of the queue in Byte. |
| droppingBehaviorKind | DroppingBehaviorKindType  ./. | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: NA | Defines the behavior in case of congestions. |
| wredBehaviorList | wredBehaviorType  ./. | 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). |
| schedulerKind | SchedulerKindType  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 | Type of scheduler to be used for this queue. |
| weighting | Integer  -1 | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: % * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: YES * bitLength: LENGTH\_8\_BIT | Only relevant if (schedulerKind==WFQ) OR (schedulerKind==DWRR) OR (schedulerKind==WRR). Serving rate for this weighted fair queueing queue as a percentage value. |

## QueueUtilizationType

Applied Stereotypes:

Attributes for QueueUtilizationType

Table 1: Attributes for QueueUtilizationType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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. |
| maxQueueLength | 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 observed queue length. openconfig-qos-interfaces.yang |
| avgQueueLength | Integer  -1 | 1 | R | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: true * valueRange: no range constraint * unit: Byte * support: MANDATORY   OpenInterfaceModelAttribute   * AVC: NO * bitLength: LENGTH\_32\_BIT | Average observed queue length. openconfig-qos-interfaces.yang |

## wredBehaviorType

Applied Stereotypes:

Attributes for wredBehaviorType

Table 1: Attributes for wredBehaviorType

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute Name** | **Type** | **Multiplicity** | **Access** | **Stereotypes** | **Description** |
| affectedDropPrecedence | DropPrecedenceType  ./. | 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 drop precedence, for which the WRED profile shall apply on. |
| affectedProtocol | ProtocolLayerType  ./. | 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 kind of protocol, for which the WRED profile shall apply on. |
| \_wredProfile | Profile  ./. | 1 | RW | OpenModelAttribute   * partOfObjectKey: 0 * isInvariant: false * valueRange: no range constraint * unit: no unit defined * support: MANDATORY   PassedByReference  OpenInterfaceModelAttribute   * AVC: YES * bitLength: NA | Associates a WRED profile to the queue, respectively drop precedence. Attribute to point to an instance of Profile with profileName=='PROFILE\_NAME\_TYPE\_WRED\_PROFILE'. |

# Enumeration Types

## DropPrecedenceType

Contains Enumeration Literals:

* ALL:
  + If all drop precedence are affected. This includes the case of drop precedences are not implemented.
* LOW:
  + Would be equal to GREEN.
* MEDIUM:
  + Would be equal to YELLOW.
* HIGH:
  + Would be equal to RED.
* NOT\_YET\_DEFINED:

## DroppingBehaviorKindType

Contains Enumeration Literals:

* DROP\_TAIL:
  + When the queue is filled to capacity, newly arriving packets are discarded until there is room in the queue to accept new traffic. Packets are not differentiated, i.e., all packets are treated identically.
* RED:
  + Queue management based on Random Early Detection (RED). RED drops packets based on a drop probability that is based on the average queue length, and settings of mininum and maximum queue thresholds. On ECN-capable devices, packets may be marked instead of dropped to signal congestion to the sender.
* WRED:
  + Queue management based on a variant of RED in which the packet drop probability is based on its traffic class.
* NOT\_YET\_DEFINED:

## FecInterleaverDepthType

ITU-T Rec. G.998.3 Appendix II aFECInterleaverDepth

Contains Enumeration Literals:

* 1:
* 2:
* 3:
* 4:
* 6:
* 8:
* 12:
* 16:
* 24:
* 32:
* 48:
* 96:
* NOT\_YET\_DEFINED:

## FecInterleaverKindType

Contains Enumeration Literals:

* NONE:
* BLOCK:
* CONVOLUTION:
* NOT\_YET\_DEFINED:

## FecRedundancySizeType

Contains Enumeration Literals:

* 2:
* 4:
* 8:
* 16:
* 20:
* NOT\_YET\_DEFINED:

## GranularityPeriodType

The enumeration with the options for granularity period of the performance data.

Contains Enumeration Literals:

* UNKNOWN:
* PERIOD-15-MIN:
* PERIOD-24-HOURS:
* NOT\_YET\_DEFINED:

## InterfaceStatusType

Current Interface Status

Contains Enumeration Literals:

* UP:
  + Ready to pass packets.
* DOWN:
  + The interface does not pass any packets.
* TESTING:
  + In some test mode. No operational packets can be passed.
* UNKNOWN:
  + Status cannot be determined for some reason.
* DORMANT:
  + Waiting for some external event.
* NOT\_PRESENT:
  + Some component (typically hardware) is missing.
* LOWER\_LAYER\_DOWN:
  + Down due to state of lower-layer interface(s).
* ADMIN\_DOWN:
  + Down due to configuration.
* NOT\_YET\_DEFINED:

## LayerProtocolNameType

A controlled list of LayerProtocol names.

Contains Enumeration Literals:

* LAYER\_PROTOCOL\_NAME\_TYPE\_ETHERNET\_CONTAINER\_LAYER:

## LoopBackType

Contains Enumeration Literals:

* NONE:
* BACK\_TO\_LOCAL:
  + Returning the Ethernet frames of the local site on the outgoing interface back to the local site.
* BACK\_TO\_REMOTE:
  + Returning the incoming Ethernet frames back to the remote site.
* NOT\_YET\_DEFINED:

## ProtocolLayerType

Contains Enumeration Literals:

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

## QueueNameType

Contains Enumeration Literals:

* BEST\_EFFORT\_QUEUE:
  + QueueNumber=0;
* ASSURED\_FORWARDING\_QUEUE1:
  + QueueNumber=1;
* ASSURED\_FORWARDING\_QUEUE2:
  + QueueNumber=2;
* ASSURED\_FORWARDING\_QUEUE3:
  + QueueNumber=3;
* ASSURED\_FORWARDING\_QUEUE4:
  + QueueNumber=4;
* EXPEDITED\_FORWARDING\_QUEUE:
  + QueueNumber=5;
* CLASS\_SELECTOR\_QUEUE6:
  + QueueNumber=6;
* CLASS\_SELECTOR\_QUEUE7:
  + QueueNumber=7;
* QUEUENAME\_NOT\_YET\_DEFINED:

## SchedulerKindType

Contains Enumeration Literals:

* STRICT:
  + Strict Priority
* WFQ:
  + Weighted-Fair-Queuing
* WRR:
  + Weighted Round Robin
* DWRR:
  + Deficit Weighted Round Robin
* NOT\_YET\_DEFINED:

## SeverityType

According to ITU-T M.3160

Contains Enumeration Literals:

* NON\_ALARMED:
* WARNING:
* MINOR:
* MAJOR:
* CRITICAL:
* NOT\_YET\_DEFINED:

## headerCompressionModeType

Contains Enumeration Literals:

* AUTO:
  + The header compression algorithm determines the optimum compression.
* PROTOCOL\_BASED:
  + Predefined protocol layers are to be compressed.
* LENGTH\_BASED:
  + Predefined amount of header bytes are to be compressed.
* NOT\_YET\_DEFINED:

## mplsPayloadKindType

Contains Enumeration Literals:

* NONE:
  + Parameter not required.
* AUTO:
  + If the Control Word (CW) will be present, it would be Ethernet Over MPLS. OtherwiseI, it would be Pv4/IPv6.
* ETH\_O\_MPLS:
  + Always Ethernet over MPLS
* IP\_O\_MPLS:
  + Always IPv4/IPv6 over MPLS
* NOT\_YET\_DEFINED:

# Primitive Types