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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Infrastructure of audiovisual services – Communication procedures

Gateway control protocol: Statistic conditional reporting package

ITU-T Recommendation H.248.47

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ITU-T Recommendation H.248.47

Gateway control protocol: Statistic conditional reporting package

Summary

This Recommendation defines a H.248 Package with a generic method of reporting when statistics meet a pre-defined condition. Enabling the reporting of statistics allows the MGC to better manage resources particularly in the areas of Charging and Quality of Service.

Source

ITU-T Recommendation H.248.47 was approved on 13 January 2007 by ITU-T Study Group 16 (2005-2008) under the ITU-T Recommendation A.8 procedure.

FOREWORD

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Gateway control protocol: Statistic conditional reporting package

1 Scope

This package defines a generic method of reporting when statistics meet a pre-defined condition. By enabling the reporting of statistics it allows the MGC to better manage resources particularly in the areas of Charging and Quality of Service.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T H.248.1] ITU-T Recommendation H.248.1 (2005), *Gateway control protocol: Version 3.*

[ITU-T H.248.30] ITU-T Recommendation H.248.30 (2007), *Gateway control protocol: RTCP extended performance metrics packages.*

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 **ADD.req**: H.248.1 Add command request.

3.1.2 **MOD.req**: H.248.1 Modify command request.

3.1.3 **MOV.req**: H.248.1 Move command request.

3.1.4 **NOTIFY.req**: H.248.1 Notify command request.

4 Abbreviations

This Recommendation uses the following abbreviations:

MG Media Gateway

MGC Media Gateway Controller

5 Conventions

None.

6 Statistic Conditional Reporting Package

Package Name: Statistic Conditional Reporting Package

Package ID: scr, 0x00ae

Description: This package defines a mechanism for supporting the real-time reporting of specific statistics based on a particular condition. The term "real-time" means that the MG should immediately notify the MGC when the conditions are met (see clause 6.6.2).

Version: 1

Extends: None

6.1 Properties

None.

6.2 Events

6.2.1 Conditional Reporting

Event Name: Conditional Reporting

Event ID: cr, 0x0001

Description: This event indicates the identifier of the statistic specified to be reported when it matches a given condition trigger.

6.2.1.1 EventsDescriptor parameters

6.2.1.1.1 Statistic Identifier

Parameter Name: Statistic Identifier

Parameter ID: si, 0x0001

Description: This parameter indicates the statistic specified to be reported.

Type: Binary: octet (string), Text: string

Optional: No

Possible values: Any valid H.248 PackageID/StatisticID pair.

Formatted according to the pkgdName syntax.

Default: None

6.2.1.1.2 Duration

Parameter Name: Duration

Parameter ID: dur, 0x0002

Description: This parameter indicates the time span over which the statistic should be monitored, and in which other conditions may trigger a report of the statistic. If there is no other condition, the value of the statistic is reported at the expiration of the Duration.

Type: Double

Optional: Yes

Possible values: 1 or more seconds

Default: None

6.2.1.1.3 Period

Parameter Name:	Period
Parameter ID:	per, 0x0003
Description:	This parameter indicates the time interval from one statistic report trigger to the next.
Type:	Double
Optional:	Yes
Possible values:	1 or more seconds
Default:	None

6.2.1.1.4 Maximum

Parameter Name:	Maximum
Parameter ID:	max, 0x0004
Description:	This parameter indicates the top threshold to trigger the statistic reporting. When this parameter is crossed in the upward direction, the statistic reporting is triggered.
Type:	Double
Optional:	Yes
Possible values:	Values according to the statistic to be reported.
Default:	None

6.2.1.1.5 Minimum

Parameter Name:	Minimum
Parameter ID:	min, 0x0005
Description:	This parameter indicates the bottom threshold to trigger the statistic reporting. When this parameter is crossed in the downward direction, the statistic reporting is triggered.
Type:	Double
Optional:	Yes
Possible values:	Values according to the statistic to be reported.
Default:	None

6.2.1.1.6 Normal

Parameter Name:	Normal
Parameter ID:	nor, 0x0006
Description:	This parameter indicates when the statistic passes through the minimum or maximum threshold into the normal range.
Type:	Boolean
Optional:	Yes
Possible values:	On/Off
Default:	None

6.2.1.2 ObservedEventsDescriptor parameters

6.2.1.2.1 Statistic Identifier

Parameter Name:	Statistic Identifier
Parameter ID:	si, 0x0001
Description:	This parameter indicates the statistic specified that is reported.
Type:	Binary: octet (string), Text: string
Optional:	No
Possible values:	Any valid H.248 PackageID/StatisticID pair. Formatted according to the pkgdName syntax.
Default:	None

6.2.1.2.2 Value

Parameter Name:	Value
Parameter ID:	val, 0x0002
Description:	This parameter indicates the current value of the statistic.
Type:	Double
Optional:	No
Possible values:	Values according to the statistic to be reported.
Default:	None

6.3 Signals

None.

6.4 Statistics

None.

6.5 Error Codes

None.

6.6 Procedures

6.6.1 General

To request a MG to provide real-time reporting of a particular statistic, the MGC shall set the Conditional Reporting (cr) event on the MG via an ADD.req, MOD.req or MOV.req with the Statistic Identifier (si) parameter set to the required statistic. A single event shall be set for each statistic required to be reported.

In addition to the Statistic Identifier parameter, the MGC shall set at least one of the report condition parameters including Duration (dur), Period (per), Maximum (max), Minimum (min) and Normal (nor).

The usage of report condition parameters such as dur, per, nor, max and min may be individual or together according to the following rules:

– If the dur parameter exists independently, the statistic shall be reported at the expiry of the dur parameter.

– If the per parameter exists independently without the dur parameter, the statistic shall be reported every time at the expiry of the per parameter.
– If the max, min or nor parameters exist independently without the dur parameter, the statistic shall be reported every time the value exceeds the top threshold of the max, exceeds the bottom threshold of the min, and crosses back through the max or min threshold into the normal range if the nor parameter is set to "On". The nor parameter shall only be set with the max and/or min parameters.
– If the per parameter exists together with the dur parameter, the statistic shall be reported every time the per parameter is expired during the time of the dur parameter.
– If the max, min or nor parameters exist with the dur parameter, the statistic shall be reported every time the value exceeds the top threshold of the max parameter, exceeds the bottom threshold of the min parameter, and crosses back through the max or min threshold into the normal range if the nor parameter is set to "On" during the time of the dur parameter.
– The existence of the per and the max, min or nor parameters are generally independent and shall not be considered together.

When the MG detects that the above report conditions are met, it shall send a NOTIFY.req to the MGC indicating the Statistic Identity (si) and the Value (val) of the statistic. The value of the statistic is not reset upon reporting of the value of the statistic.

For example:

– If the MGC wanted to determine when the Gap Duration (see 6.4.4 of [ITU-T H.248.30]) exceeds a range of 200-1500 ms. The MGC would issue a MOD.req with the Conditional Reporting (cr) Event with parameter Statistic Identity (si) equal to xrbm/gd, parameter Minimum (min) equal to 200 and parameter Maximum (max) equal to 1500.
– When the MG detects that the xrbm/gd statistic exceeds either the Minimum (min) or Maximum (max) parameter, then it issues a NOTIFY.req containing a Conditional Reporting (cr) ObservedEvent with the Statistic Identity (si) parameter equal to xrbm/gd and the Value (val) parameter indicating the value of the statistic.

6.6.2 Guidelines on real-time reporting

The rationale behind "real-time reporting" is the fact that there could be many different types of served users instances for statistic reports processing, either physically located to the MGC or remote entities, which may lead to slight differences concerning the real-time time-scale. Recommendations are given by below clauses. The required behaviour in a specific environment could be defined e.g., in an H.248 profile specification.

6.6.2.1 Reporting without timestamp

The MG must immediately notify the MGC when the conditions are met. The immediate transfer of statistic reports from MG to MGC subjects only to the normal transmission delays and those imposed by the H.248 message encoding/decoding processes.

6.6.2.2 Time-stamped reporting

The MG must immediately notify the MGC when the conditions are met. The MG must insert parameter "detection time" (timestamp) in the ObservedEvents Descriptor (see 7.1.17 of [ITU-T H.248.1]; "*Detection times are reported with a precision of hundredths of a second*."). The timestamp may be that used for a "precise" time-correlation with regard to the granularity of the Period (per) parameter.

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