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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Infrastructure of audiovisual services – Communication
procedures

Gateway control protocol: Session description protocol RFC and capabilities packages

ITU-T Recommendation H.248.49

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ITU-T Recommendation H.248.49

Gateway control protocol: Session description protocol RFC and capabilities packages

Summary

ITU-T Recommendation H.248.1 uses the session description protocol (SDP) to convey information in the local and remote descriptors of the text encoding of the protocol. Typically this SDP has been based on the use of IETF RFC 2327. New variants of SDP have been developed which contain some incompatibilities with IETF RFC 2327. ITU-T Recommendation H.248.49 allows a media gateway controller to firstly determine which SDP IETF RFC the media gateway is compliant to, as well as being able to determine the SDP capabilities. This allows greater interoperability between the media gateway controller and media gateway.

Source

ITU-T Recommendation H.248.49 was approved on 29 August 2007 by ITU-T Study Group 16 (2005-2008) under the ITU-T Recommendation A.8 procedure.

FOREWORD

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The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

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In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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ITU-T Recommendation H.248.49

Gateway control protocol: Session description protocol RFC and capabilities packages

1 Scope

When the text encoding of [ITU-T H.248.1] is used, local descriptors (LD) and remote descriptors (RD) consisting of "session" descriptions are based on the session description protocol (SDP) (clause 7.1.8 of [ITU-T H.248.1]). As a result, SDP information elements are embedded in the H.248 protocol syntax. The encoder/decoder for H.248 Messages for Annex B of [ITU-T H.248.1] text mode therefore comprises of an SDP encoder/decoder in addition to the basic H.248 encoder/decoder.

There are multiple versions of H.248.1, and multiple variants of SDP [IETF RFC 2327], and [IETF RFC 4566]. H.248 versions and SDP variants are orthogonal in the sense, that principally any H.248 version could be operated with any SDP variant. However, there are dependencies due to the history concerning the different timelines of H.248.1 and SDP developments, e.g.,:

- H.248.1 Version 1 (03/2002) is based on SDP [IETF RFC 2327];
- H.248.1 Version 2 (05/2002) is based on SDP [IETF RFC 2327]; or
- H.248.1 Version 3 (09/2005) is based on SDP [IETF RFC 2327].

The protocol versioning of H.248 and SDP, as well as backward compatibility, requires a negotiation mechanism to select a common H.248 protocol version as well as a common SDP RFC for the text-based encoding of LD and RD on MGC and MG side. Whereas H.248 protocol version negotiation is already supported by H.248 ServiceChange elements, an explicit mechanism is still missing for SDP version determination.

This Recommendation enables a media gateway controller to determine which SDP RFC a media gateway supports. Once the SDP RFC has been determined the media gateway controller can then indicate to the media gateway which SDP RFC version it will use.

SDP based on [IETF RFC 4566] may be of use when a media gateway controller is already using [IETF RFC 4566] in its call/session control protocols.

By setting a particular SDP RFC version, the MG will behave as if all references in H.248.1 to the use of [IETF RFC 2327] have been replaced by that particular version of SDP RFC.

In order for media gateway controllers and media gateways to be backward compatible, they shall support [IETF RFC 2327] even if a new SDP RFC is also supported.

In addition to providing a capability to determine the supported SDP RFC, this Recommendation provides the capability to determine which SDP parameters the MG supports.

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*.

- [IETF RFC 2327] IETF RFC 2327 (1998), *SDP: Session Description Protocol*.
- [IETF RFC 3266] IETF RFC 3266 (2002), *Support for IPv6 in Session Description Protocol (SDP)*.
- [IETF RFC 4566] IETF RFC 4566 (2006), *SDP: Session Description Protocol*.

3 Terms and definitions

3.1 Terms defined elsewhere

None.

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

3.2.1 AuditCapabilities.req: H.248.1 AuditCapabilities command request.

3.2.2 AuditValue.req: H.248.1 AuditValue command request.

3.2.3 SDP RFC: The IETF RFCs for SDP specifications are **not** explicitly denoted as "protocol versions" (Note 1). The H.248.49 property "SDP RFC" shall be related to the definition.

NOTE 1 – The SDP "v=" line is aimed at signalling the SDP protocol version. Nevertheless, all existing SDP RFCs [IETF RFC 2327] and [IETF RFC 3266] define protocol version 0 (see clause 5.1 in [IETF RFC 4566]: "The "v=" field gives the version of the Session Description Protocol. This memo defines version 0. There is no minor version number.")

NOTE 2 – The SDP "o=" line contains the "version number of the session description" (field <sess-version>). This session version should not be confused with the SDP or H.248.1 protocol version.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

LD	Local Descriptor
MG	Media Gateway
MGC	Media Gateway Controller
RD	Remote Descriptor
SDP	Session Description Protocol

5 Conventions

None.

6 Session Description Protocol RFC Package

Package Name: Session Description Protocol RFC

PackageID: sdpr (0x00bb)

Description: This package allows the MGC to determine which SDP RFCs the MG supports. It also allows the MGC to choose and indicate to the MG which SDP RFC both the MG and the MGC can support and shall use for the control association.

Version: 1

Extends: None

6.1 Properties

6.1.1 SDP RFC

Property Name: SDP RFC

PropertyID: RFC (0x0001)

Description: This property indicates the supported SDP RFC.

Type: Integer

Possible values: The IETF RFC number that defines the SDP RFC.

E.g.,

2327 for RFC 2327

3266 for RFC 3266

NOTE – Support of RFC 3266 implies support of RFC 2327 also.

4566 for RFC 4566

Default: 2327

Defined in: TerminationState (Root Termination only)

Characteristics: Read/Write

6.2 Events

None.

6.3 Signals

None.

6.4 Statistics

None.

6.5 Error codes

6.5.1 Invalid SDP Syntax

Error Code #: 474

Name: Invalid SDP Syntax

Definition: The SDP received by the MG contains invalid or unexpected syntax according to the expected SDP RFC syntax.

Error Text in the Error Descriptor: None

Comment: The command is disregarded.

6.6 Procedures

6.6.1 Version determination and specification

As a general rule, upon establishment of a new H.248 control association and before the MGC has modified the MG's Root termination LocalControl descriptor property *sdpr/RFC*, both the MGC and the MG should implicitly assume that the default SDP [IETF RFC 2327] is used within this H.248 control association where [ITU-T H.248.1] version 1, 2 or 3 is used. However, this default may change if a H.248 profile is negotiated.