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Technical Specification

Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Customer Network Gateway Configuration Function; e3 Interface based upon CWMP

[Endorsement of ETSI ES 203 069 (V1.2.1)]



Reference

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN).

Introduction

e3 interface based upon CWMP

This clause provides an introduction to CWMP protocol, as specified by Broadband Forum, and a high-level description of how the protocol is applicable for the e3 interface specification.

CWMP is an HTTP-based protocol, defined by Broadband Forum with TR-069 Technical Report [1], that provides the remote management functionalities for performing provisioning and OAM tasks over managed devices of the Customer Premises Network (CPN). CWMP is specified in ES 203 069 [2], which references TR-069 and corresponding data models. In TR-069 [1], these devices are generically referenced as Customer Premises Equipment (CPE) devices: a CPE may correspond to the CNG (or Internet Gateway Device, as in TR-069 [1]) or a CND connected to the CNG, i.e. any kind of device behaving as Terminal Equipment.

The CWMP protocol defines a set of base communication functionalities and procedures to perform the following remote management tasks on managed devices: configuration management (including software upgrade), fault management, performance management and security management.

CPEs are managed via CWMP by a Remote Management System (RMS), or Auto Configuration Server (ACS) as referenced in TR-069 [1]. In the manager-agent paradigm, the RMS/ACS provides the CWMP manager function, while the CPE is required to provide the CWMP agent function. The functions provided by a CWMP-based RMS implement the remote management functional entity required for the CNGCF: therefore CWMP is a protocol for implementing the e3 interface.

CWMP allows the RMS to manage also CND devices connected to the CNG, in two different ways:

- a CND may be proxied by the CNG, i.e. the CND is indirectly managed by the RMS: in this case, the CNG exposes via CWMP the functionalities needed to remotely manage the CND, that is directly controlled by the CNG via other communication protocols on the e3' interface;
- a CND may be directly managed via CWMP: in this case, the CND is required to provide the CWMP agent function for direct communication with the RMS; in case the CNG provides the NAPT function, CWMP defines a STUN-based mechanism for the RMS to contact the CND, while the CND is required to provide a STUN-client function.

Taking into account the previous two possible applications of CWMP for the e3 interface, such a CWMP-manager entity provides a generic Customer Premises Network Configuration Function (CPNCF).

1 Scope

The present document provides the ETSI TISPAN endorsement of ES 203 069 [2], which references Broadband Forum TR-069 [1] "CPE WAN Management Protocol" (CWMP). The endorsement is in line with the requirements of TISPAN NGN for the specification of the e3 interface.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

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2.1 Normative references

The following referenced documents are necessary for the application of the present document.

- [1] Broadband Forum Technical Report TR-069: "CPE WAN management Protocol".
- [2] ETSI ES 203 069 (V1.2.1): "Access, Terminals, Transmission and Multiplexing (ATTM); Remote management of CPE over broadband networks; CPE WAN Management Protocol (CWMP)".

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

Not applicable.

3 Definitions and Abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ES 203 069 [2] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ES 203 069 [2] and the following apply.

ACS	Auto Configuration Server
CND	Customer Network Device
CNG	Customer Network Gateway
CNGCF	Customer Network Gateway Configuration Function
CPN	Customer Premises Network
CPNCF	Customer Premises Network Configuration Function
CWMP	CPE WAN Management Protocol
NAPT	Network Address and Port Translation
OAM	Operation Administration Maintenance
RMS	Remote Management System

STUN Simple Traversal of UDP through NAT

Endorsement notice

All elements of ES 203 069 [2] apply.

History

Document history		
V2.0.0	February 2008	Publication
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