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TESTING

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Euro-PacketCable Certification - Scalability and Stability

--- Project Reference ---

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1 Introduction

The goal of this document is to define a lab setup that will be used to test the scalability and stability of the different components that will be tested during Euro-PacketCable certification testing.

The components that are within the scope of the Certification/Qualification process are MTA (E-MTA or S-MTA), CMTS, CMS and IPAT (v5.2 gateway).

2 Voice Quality Measurement

As a means to measure the Voice Quality PESQ will be used, PESQ values are translated to MOS-scores. The obtained MOS-scores can easily be compared with values that are provided by traditional POTS-lines.

3 Test scenario

3.1 Introduction

As stability problems are mainly caused by complex interactions within the components, it is important that a mix of different scenarios is used. This especially means different call sequences and the use of calls that are not succeeding because e.g. the other line is busy. It is also important to place calls that are on the same CMTS and on another CMTS (calls to a different IP-subnet).

3.2 Setup

The basic setup consists of a network with two CMTSs, one IPAT or CMS and a set of MTAs on each CMTS.

The tested call scenario's are:

- calls between MTAs on the same CMTS
- calls between MTAs on a different CMTS

As upstream bandwidth 3,2 MHz and a mixed modulation profile is used (QPSK for ranging and request, 16QAM for data), this provides a raw bandwidth of 10,24 MBit/s.

For a G711 codec with 10 ms packetization, 40 calls will be used, distributed over the 2 CMTSs:

- 10 calls on CMTS1,
- 10 calls on CMTS2,
- 10 calls from CMTS1 to CMTS2
- 10 calls from CMTS2 to CMTS1



For a G711 codec with 20 ms packetization, 50 calls will be used distributed over the 2 CMTSs:

20 calls on CMTS1 (=CMTS under test)

10 calls on CMTS2,

10 calls from CMTS1 to CMTS2

10 calls from CMTS2 to CMTS1

Each of these two tests will be done over a 1,5 hour interval, using different call length and switching MTAs that are involved in the different calls.

During the voice testing, data traffic will be added over Best-Effort flows. Two scenarios will be used during one “bulk call test”:

- ❑ a data load which does not overload the system: packet-loss should be small
- ❑ a data load which overload the system: goal is to verify voice-traffic has full priority over data-traffic

