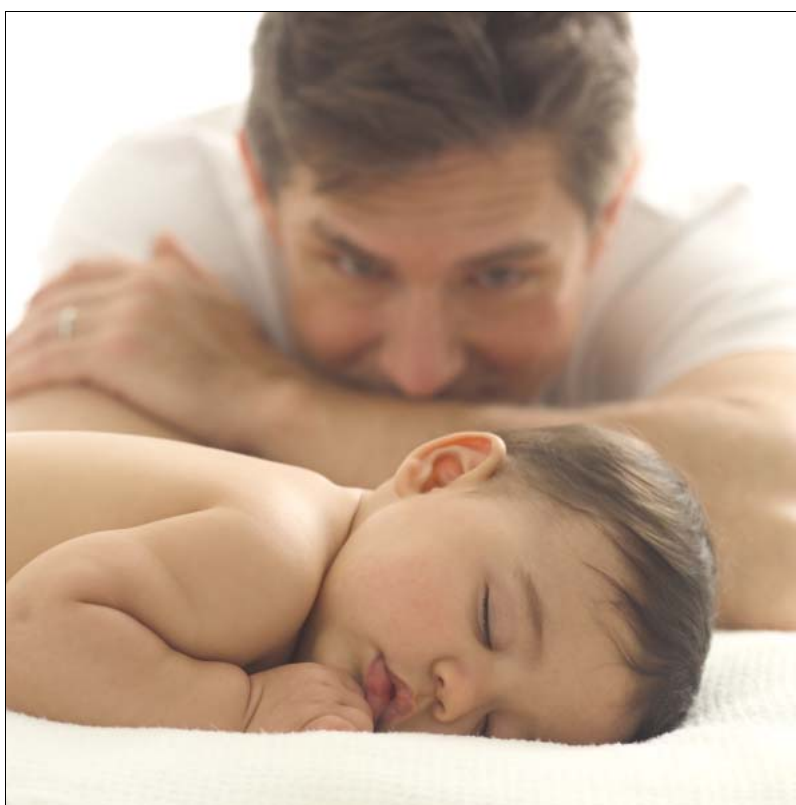


ESA XML Interface for Performance Management

Ericsson SNMP Agent 18.0.1 ICP 18-01

INTERFACE DESCRIPTION



Copyright

© Ericsson AB 2018. All rights reserved. No part of this document may be reproduced in any form without the written permission of the copyright owner.

Disclaimer

The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing. Ericsson shall have no liability for any error or damage of any kind resulting from the use of this document.

Trademark List

Ericsson is the trademark or registered trademark of Ericsson AB. All other products or service names mentioned in this document are trademarks of their respective companies.



Contents

1	About This Document	1
1.1	Purpose	1
1.2	Target Group	1
1.3	Prerequisites	1
1.4	Typographic Conventions	1
2	Introduction	3
3	Use Cases	5
3.1	Create 3GPP XML File	5
3.2	Read 3GPP XML File	5
3.3	Processing XML Files	5
4	3GPP XML File Format	7
4.1	Filename	7
4.2	File Content	7
4.3	Reporting Process	10
	Glossary	11
	Reference List	13





1 About This Document

1.1 Purpose

The purpose of this document is to describe the 3GPP XML interface for Performance Management (PM) that is used in the Ericsson SNMP Agent (ESA). The interface is of interest for the Network Management System (NMS), which is the network entity reading counters and statistics data from systems.

1.2 Target Group

The target group for this document is personnel working on NMS administration and need to understand the ESA Performance Management interface.

1.3 Prerequisites

It is assumed that the user of this document fulfils the following prerequisites.

- Has knowledge about XML and how to read XML content.
- Has knowledge about technical English.

1.4 Typographic Conventions

The typographic conventions used in this document are described in Reference [1].





2 Introduction

The ESA follows the 3GPP forum standard for PM data reporting. It is done in a strictly specified XML format, which can be used by any PM Manager independent of choice of vendor, choice of platform and choice of reporting tools.

The reporting of counter data to XML file is following the 3GPP standard as well. Valid reporting intervals are 5, 15, 30 and 60 minutes. Also the filename is following the standard.

The following versions of the 3GPP standards are supported in the ESA PM Agent.

- 3GPP TS 32.432 v11.0.0 (201209)

3GPP reference: See Reference [4].

- 3GPP TS 32.435 v11.0.0 (2012-09)

3GPP reference: See Reference [5].

The Section 3 on page 5 describes a few use cases and scenarios that describes the use of the XML interface for Performance Management while section Section 4 on page 7 describes the file format and content in more detail.





3 Use Cases

3.1 Create 3GPP XML File

The creation of output files in 3GPP XML format is done by the ESA according to the jobs that are setup for the ESA. Each job will create one file at each interval defined in the job, such as 12 files each hour and 4 files each quarter depending on which granularity period is chosen. See configuration of jobs in Reference [3].

The target directory of the 3GPP XML files being created is configurable. See Reference [3].

The content of the XML file is all counter values for the group specified.

3.2 Read 3GPP XML File

The ESA creates the files and stores them on the file system. There is no mechanism provided in the ESA to push the XML files to another destination. Instead, the PM Manager must be setup to fetch and read the files.

3.3 Processing XML Files

Please note that this is **not** applicable for the ESA.

The ESA is responsible for reporting the PM data for the counters setup in the ESA. The reporting is done to 3GPP XML file. The ESA does not perform processing and presentation of the PM data into tables or graphs. That is a work to be done by the PM Manager, which reads the XML files from the file system.





4 3GPP XML File Format

4.1 Filename

This chapter contains an introduction and an overview of the 3GPP XML file name format. The full description is found in standard specification 3GPP TS 32.432, see Reference [4].

The file name of each PM result file is built on the following format:

A<date>.<starttime>-<stoptime>-<jobname>_<uniqueid>.xml

The variables in the file name are the following:

— <date>

The date of the measurement in format YYYYMMDD.

— <starttime>

The start time of the measurement in format HHMM.

— <stoptime>

The stop time of the measurement in format HHMM.

— <jobname>

The job name of the measurement. In the ESA job configuration file the job identity represents the job name.

— <uniqueid>

A string used as unique identity representing the node that runs the ESA.

This parameter is configurable. Default string is "ESA". For further details, see Reference [2].

The following is an example file name:

A20140921.1315-1330-MYJOB_ESA.xml

4.2 File Content

This chapter contains an introduction and an overview of the 3GPP XML file content. The full description is found in standard specification 3GPP TS 32.435, see Reference [5].

The following is an example:



```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<measCollecFile>
  <fileHeader fileFormatVersion="3GPP_PM_32.435_XML_v7.2.0">
    <measCollec beginTime="2014-09-21T14:10:00+02:00"/>
  </fileHeader>
  <measData>
    <measInfo>
      <job jobId="MYFIVEMINJOB"/>
      <granPeriod endTime="2014-09-21T14:15:00+02:00"
        duration="PT300S"/>
      <repPeriod duration="PT300S"/>
      <measType p="0">mycntGC.actual</measType>
      <measType p="1">mycntGC.min</measType>
      <measType p="2">mycntGC.max</measType>
      <measType p="3">mycntCC.actual</measType>
      <measType p="4">mycntCC.delta</measType>
      <measValue>
        <r p="0">12</r>
        <r p="1">6</r>
        <r p="2">14</r>
        <r p="3">28869</r>
        <r p="4">1221</r>
      </measValue>
    </measInfo>
  </measData>
  <fileFooter>
    <measCollec endTime="2014-09-21T14:15:00+02:00"/>
  </fileFooter>
</measCollecFile>
```

Example format for abstract counters:



```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<measCollecFile>
  <fileHeader fileFormatVersion="3GPP_PM_32.435.XML_v11.0.0">
    <fileSender/>
    <measCollec beginTime="2018-07-09T17:55:00+08:00"/>
  </fileHeader>
  <metadata>
    <managedElement localDn="ALL=1, MYTESTGROUP_ABSTRACT=default"/>
    <measInfo>
      <job jobId="MYTESTJOB1_ABSTRACT"/>
      <granPeriod duration="PT300S" endTime="2018-07-09T18:00:00+08:00"/>
      <repPeriod duration="PT300S"/>
      <measType p="0">MYABSTRACTCOUNTER.APP1.actualmeasType
p="0">MYABSTRACTCOUNTER.APP1.actual>
      <measType p="1">MYABSTRACTCOUNTER.APP1.maxmeasType
p="1">MYABSTRACTCOUNTER.APP1.max>
      <measType p="2">MYABSTRACTCOUNTER.APP1.minmeasType
p="2">MYABSTRACTCOUNTER.APP1.min>
      <measValue measObjLdn="">
        <r p="0">20r p="0">20>
        <r p="1">20r p="1">20>
        <r p="2">20r p="2">20>
      </measValue>
    </measInfo>
  </measData>
  <measData>
    <managedElement localDn="traffic_instance_node-1=1,
MYTESTGROUP_ABSTRACT=default"/>
    <measInfo>
      <job jobId="MYTESTJOB1_ABSTRACT"/>
      <granPeriod duration="PT300S" endTime="2018-07-09T18:00:00+08:00"/>
      <repPeriod duration="PT300S"/>
      <measType p="0">MYABSTRACTCOUNTER.APP1.actualmeasType p=
"0">MYABSTRACTCOUNTER.APP1.actual>
      <measType p="1">MYABSTRACTCOUNTER.APP1.maxmeasType p="1">MYABSTRACTCOUNTER.APP1.max>
      <measType p="2">MYABSTRACTCOUNTER.APP1.minmeasType p="2">MYABSTRACTCOUNTER.APP1.min>
      <measValue measObjLdn="">
        <r p="0">20r p="0">20>
        <r p="1">20r p="1">20>
        <r p="2">20r p="2">20>
      </measValue>
    </measInfo>
  </measData>
  <fileFooter>
    <measCollec endTime="2018-07-09T18:00:00+08:00"/>
  </fileFooter>
</measCollecFile>
```

The output contains three main sections; Header, Measurement data and Footer. The values are found within element `r` within element `measValue`. In the example above the header and footer indicate a 5 minute measurement, that is between 14:10 to 14:15 at September 21, 2014.

The counters that are defined as “Cumulative” or “CC” will always have two output values.

— Actual value (*.actual)

This is the actual value of the counter, which means the value at the end of the measurement period.

— Delta value (*.delta)

This is the delta value of the counter within the measurement period, which means the delta value between the start and the end of the measurement period.

The delta value is always a positive number and if the actual value is lower than the value in the previous measurement period, the delta will be same as actual value.

The counters that are defined as “Gauge” or “GC” will always have three output values.

— Actual value (*.`actual`)

This is the actual value of the counter, which means the value at the end of the measurement period.

— Minimum value (*.`min`)

This is the minimum value of the counter within the measurement period, which means the smallest value of the counter between the start and the end of the measurement period. This value is always smaller or equal to the actual value.

— Maximum value (*.`max`)

This is the maximum value of the counter within the measurement period, which means the highest value of the counter between the start and the end of the measurement period. This value is always higher or equal to the actual value.

4.3 Reporting Process

The interval of creating XML files is set according to the granularity period that is specified in the job configuration. The 3PP standard allows intervals of 5, 15, 30 and 60 minutes. The interval used for a XML file, can be read in both the file name as well as in the file content.



Glossary

Glossary

ESA Glossary of Terms and Acronyms,
0033-CSH 109 654





Reference List

User Guides

- [1] ESA Library Overview
DIRECTIONS FOR USE, 1/1553-CSH 109 654
- [2] ESA Setup and Configuration
SYSTEM ADMINISTRATION GUIDE, 1/1543-CSH 109 654
- [3] ESA Performance Management
SYSTEM ADMINISTRATION GUIDE, 3/1543-CSH 109 654

Standardization Documentation

- [4] 3GPP TS 32.432, Performance measurement: File format definition,
<http://www.3gpp.org/DynaReport/32432.htm>
- [5] 3GPP TS 32.435, Performance measurement: eXtensible Markup Language
(XML) file format definition, <http://www.3gpp.org/DynaReport/32435.htm>