Traceroute Metrics and Data Model

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Motivation & Scope

- There is no standard way for exchanging traceroute measurements
  - Local storage
  - Exchange measurement data
  - Accumulate in a measurement database
  - Compare measurements performed by different implementations
- What would be needed for doing so?
  - A metrics defining
    - How to measure traceroutes? (What is the procedure?)
    - What are parameters of a traceroute measurement?
    - Which are the resulting values?
  - An information model defining
    - traceroute parameters
    - traceroute measurement results
  - A data format allowing traceroute information to be stored and transmitted

Content of the draft (I)

- Definition of traceroute
  - description of configuration parameters for most common implementation
- Known problems with traceroute and alternatives
- Description of output common to all considered implementations
- Information model
  - compatible with DISMAN-TRACEROUTE-MIB (RFC 2925)
  - Data types
  - Information elements
    - Measurement parameters
    - Measurement results

Glance at the Information Model

Configuration Information Elements

- traceRouteCtlTestName
- traceRouteCtlTargetAddressType
- traceRouteCtlTargetAddress
- traceRouteCtlByPassRouteTable
- traceRouteCtlProbeDataSize
- traceRouteCtlTimeOut
- traceRouteCtlProbesPerHop
- traceRouteCtlPort
- traceRouteCtlMaxTtl
- traceRouteCtlDSField
- traceRouteCtlSourceAddressType
- traceRouteCtlSourceAddress
- traceRouteCtlIfIndex
- traceRouteCtlMiscOptions
- traceRouteCtlMaxFailures
- traceRouteCtlDontFragment
- traceRouteCtlInitialTtl
- traceRouteCtlDescr
- traceRouteCtlType

Results Information Elements

- traceRouteResultsStartDateAndTime
- traceRouteResultsIpTgtAddrType
- traceRouteResultsIpTgtAddr
- traceRouteResultsProbeIndex
- traceRouteResultsProbeHopIndex
- traceRouteResultsProbeIndexPerHop
- traceRouteResultsProbeHopAddrType
- traceRouteResultsProbeHopAddr
- traceRouteResultsProbeHopASNumber
- traceRouteResultsProbeHopGeoLocation
- traceRouteResultsProbeRoundTripTime
- traceRouteResultsProbeResponseStatus
- traceRouteResultsProbeTime
- traceRouteResultsEndDateAndTime

For descriptiontions, please see the I-D and RFC 2925

Content of the draft (II)

- Data model
  - straight forward XML encoding of information model
- Relationship to existing IPPM metrics
  - traceroute does not conform
- Security considerations
- Something missing?

The Data Format Discussion

Formats:	Binary	Plain ASCII	XML
machine parsing	+	o	+
extensibility	o	o	+
consistency check	–	–	+
human readability	–	+	+
storage/link resources	+	o	–
processing resources	+	o	–

Shall we define more than one data format ???

Shall this become an IPPM work item?