

Application Layer Information Export in IP Flow Information Export (IPFIX)
- Requirements and IE definitions

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draft-fan-ipfix-content-info-ie-01

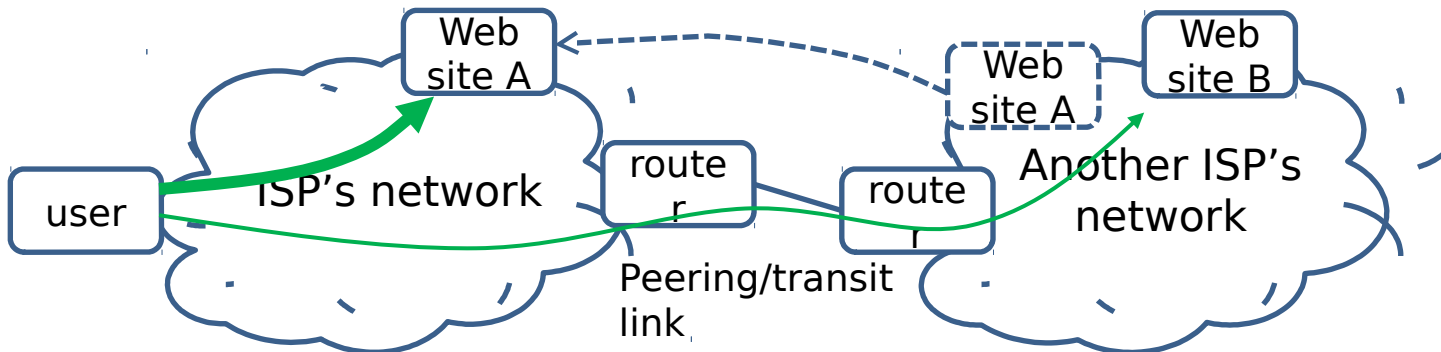
Motivation

- Administrators constantly rely on application related information for network monitoring
 - Information is within protocols above L4, and can not be achieved with normal L2-L4 metering method.
- IPFIX has not defined IEs for this kind of information
 - There are some coarse-grained IEs that can be referred to:
 - RFC6759 defined application (L2-L7) IEs, e.g. applicationDescription, applicationId, applicationName, applicationCategoryName, etc.
 - Packet Section IEs, e.g. ipHeaderPacketSection, ipPayloadPacketSection, mplsLabelStackSection, mplsPayloadPacketSection, etc.
 - We need more granular IEs to export detailed application information

Use case #1:

Internet Content Introducing in Data Centers

- Traffic for local resources (web sites, service platforms, etc.) is within network; traffic for outside resources goes out, causing
 - Pressure on interconnecting links; user experience degradation; Interconnection fees

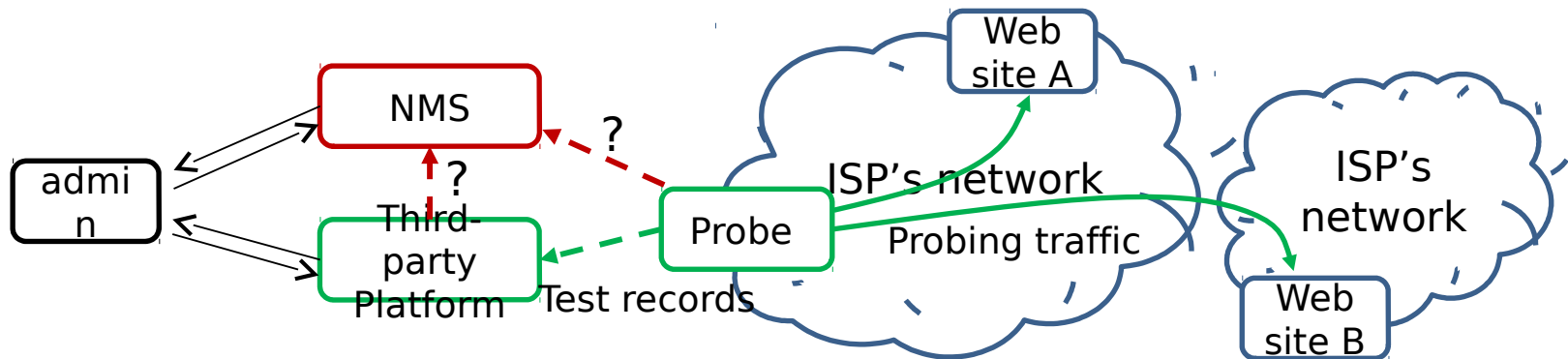


• Problems:

- Weak ISPs (with few local resources) have bad internet access speed -> bring the content of ICPs into the ISP's own DCs
- Speed of DC expansion is far slower than internet traffic booming
 - > a list of “hot spots” has to be given to show the priorities

Use case #2: Web Site Performance Monitoring

- To evaluate performance of web sites and user experience of internet access; probes are deployed at selected locations
- Typical metrics: duration, status, counting, etc.



- Problems:
 - Export and storage of the test results are done in proprietary ways
 - Better to get distributed test records through network management system; but no standard way to export the information

Requirements

- Information in protocols above transport layer is required to be exported based on needs
- The Metering Process should parse certain fields in application protocols to get and export information needed
- The Metering Process should be able to do counting and timing for application protocols to be measured.

Proposed New IEs

- httpRequestMethod
- httpResponseStatusCode
- httpVersion
- httpRequestURI
- httpRequestHost
- httpRequestReferer
- httpContentType
- httpOctetDeltaCount
- httpOctetTotalCount
- dnsQueryName
- dnsQueryType
- dnsQueryDeltaCount
- dnsQueryTotalCount

Next Steps

- Request for WG adoption