

IETF 103 HotRFC

Network-wide Protocol Monitoring (NPM) Framework

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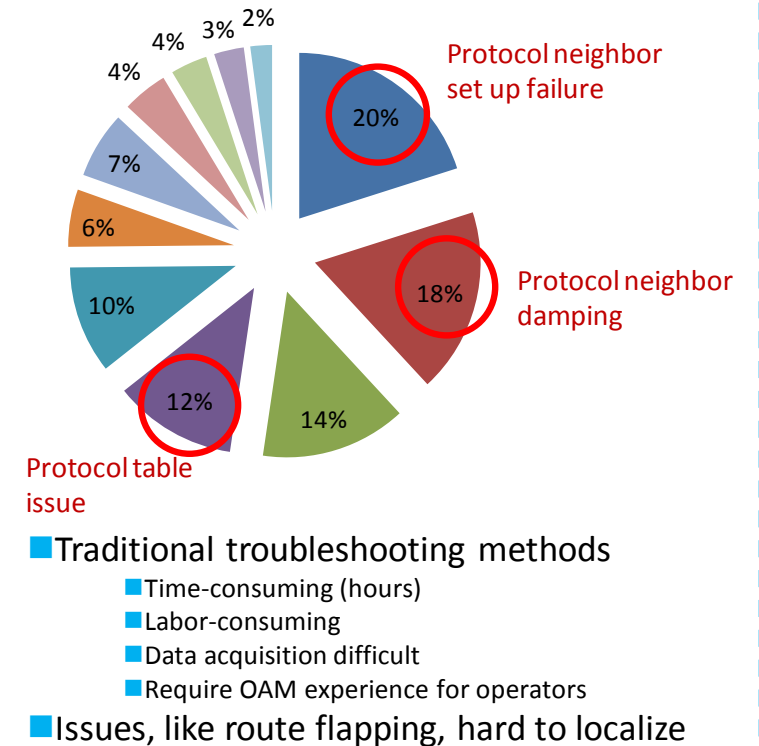
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What are the problems?

- Network troubleshooting:
 - Routing errors take about 48% of the total network issues (Internal stats)
 - Routing errors are the root causes for many data service failures
 - **A healthy control plane is the premise of high-quality service provisioning**
- Network planning
 - The need for real-time inter/intra domain route optimization
 - No effective route policy/configuration validation approach
 - Lacks route-traffic correlation insight
 - **A real-time route monitoring, providing route-traffic correlation analysis and route policy validation, is the foundation of better network planning.**

Internal Statistics: control protocol failures take up about 48% of all network issues.

2016 Internal statistics: Network Failure Cause

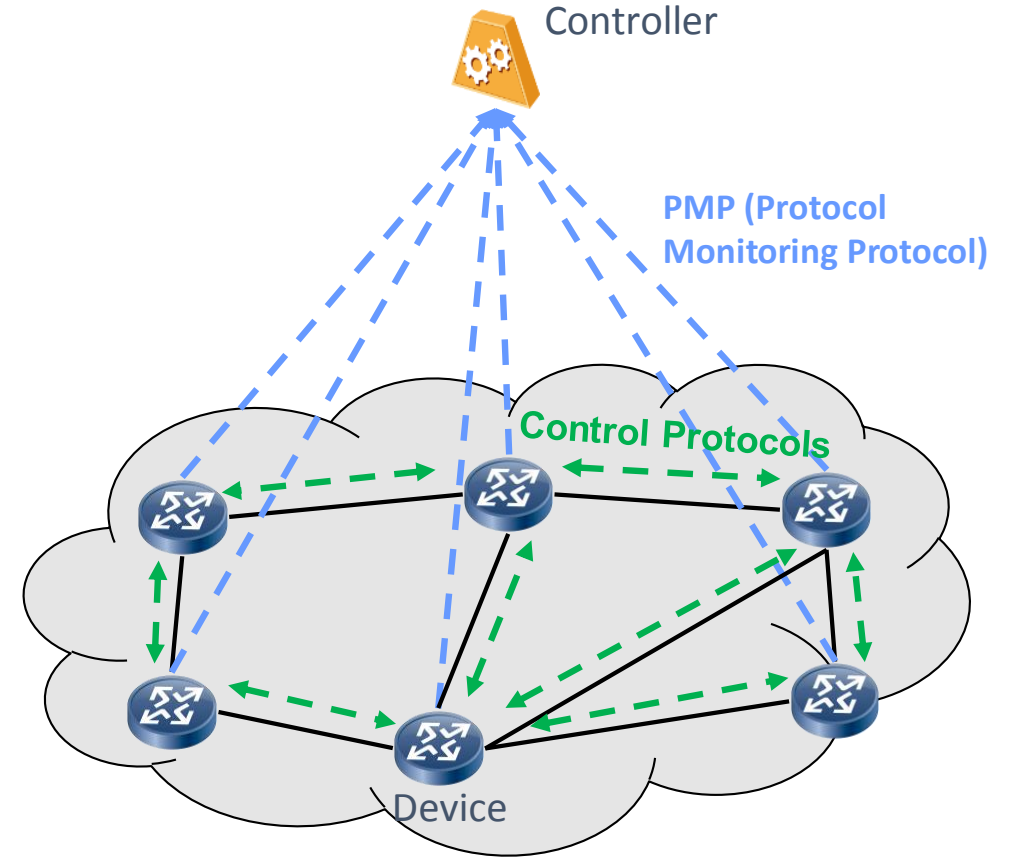


It's all about the use cases...

- Network troubleshooting use cases:
 - ISIS Adjacency Set Up Failure
 - Route Oscillation
 - Route Loop
 - ISIS LSDB Synchronization Issue
 - Tunnel Set Up Failure
- Network planning use cases:
 - Route/Path Optimization
 - Route Policy Validation
- Comment appeal from the use cases
 - A "tunnel" for the control plane data export
 - Adequate protocol data collection

NPM Framework

- **A Control Plane Telemetry Framework is needed!**
- Things to be discussed
 - Use case and requirement:
 - Identifying valuable use cases
 - Identifying and summary data types to be collected
 - Gap analysis:
 - Existing methods comparison and selection
 - Framework:
 - Architecture and components of NMPS, messages exchanged between controller and devices, ...server, type/format definition, data encoding/export options...
 - Protocol Extensions: PMP (Protocol Monitoring Protocol)
 - Messages definition and procedures of PMP
 - PMP extensions for different control protocols



Thank you!

Catch us after the talk if you
are interested!