Supporting Built-in Monitoring Agents in Mininet

Abstract:

Mininet\(^1\) is a system for rapidly prototyping large networks on the constrained resources of a single laptop. Mininet makes it easy to interact with your network using CLI and API, making it a great way to develop, share and experiment with OpenFlow and Software-Defined Networks.

Network traffic monitoring is a critical building block in various management, control and security applications. Analysis of monitoring data provides important information like trends in network load and utilization, performance of traffic engineering systems, or security vulnerability.

Deploying a network wide efficient monitoring algorithms usually requires deploying monitoring agents (either reactive or proactive) on various nodes, an ability that Mininet currently lacks.

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\(^1\) Mininet - An Instant Virtual Network on your Laptop (or other PC): http://www.mininet.org
> sudo mn

and agents!

controllers

switches

hosts

Stats manager

Stats Agent

H1

Stats Agent

Stats Agent

Stats Agent

S1

S2

S3

S4

H2

Co
Goals:

- Provide support for deploying extendable built-in monitoring agents in Mininet. The support should enable users to deploy monitoring agents using all of Mininet interfaces (i.e. CLI, API, topology detention, etc.). Furthermore, the implementation should consider Mininet’s design and code guidelines so you can contribute it back to the community.

Requirements:

Basic Networking Course, Basic knowledge of python and preferably Linux namespaces

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2 Mininet@GitHub: https://github.com/mininet/mininet