

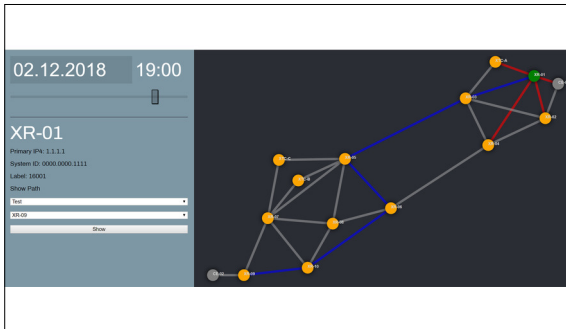
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## Streaming Telemetry



Frontend

**Introduction:** When running a network, it is important for the operator to gain insight. They need to know which routers are online, and which network routes are taken. Additionally, they need to know how the network behaved in the past.

In order to obtain data from a network, Cisco added streaming telemetry to their routers. This is an approach in which data is not polled from the routers, but is sent as a continuous stream to a server.

Although network monitoring tools already exist, they mostly display the physical and data layer of the network. By introducing technologies such as segment routing into a network, the paths taken by packets in the network may depend on the service these packets are part of.

**Result:** In this thesis we developed a collection of services which consume the streaming telemetry data from the routers. This data is then used to display a graph which represents the network with its routers and neighbors. Moreover, the application displays information about the individual routers. However, focus was placed on analyzing the segment routing paths. As a result the user can display the path packets take, in conjunction with a service.

As the networks can get very big, emphasis was placed on scalability of the solution. This was achieved by using a very scalable data stream-processing software, and by splitting the application into separate stateless services.