



GlobalNOC Network Portals: Concept

By Edward Balas, Senior Manager of Network and Security Analysis Platforms

Summary

We are seeing interest for customer portals / public dashboard capabilities from GlobalNOC users. These interests are driven by a desire to provide a clearer sense of services health to constituents in the Research and Education Networking community. While the notion of what such a portal or dashboard would look like varies some, recent work with the NOAA COPE system and with SNAPP and Grafana give us confidence that the technology exists to provide tangible value across all customers by providing a managed Dashboard service that can provide both standard and customer-controlled dashboards. This document briefly highlights what we are hearing from customers and a possible way to support these desires.

Vision

Users often want to share 4 types of information: the set of services a network provides to its customers, the subset of those that are currently experiencing operational impact, the set of future maintenances that may impact operations, and general technical information that makes the network more transparent to its stake holders with this later type including things like traffic maps, looking glasses and usage graphs.

Additionally, customers want to provide on a per customer basis information about how those services are used including: interface usage, traffic statistics about the amount of traffic going to R&E, Commodity, Cloud, and Caching services.

Customers desire visualizations of information that are interactive, modern yet pragmatic and include: operational status maps, traffic maps, time series graphs, indicator lights, single value stats with sparklines, calendar views of events, and heatmaps that might show a grid of information like in PerfSONAR Maddash.

These visualizations and the overall system should be loosely coupled. Some dashboards should be provided by GlobalNOC as standard, others could be created and managed GlobalNOC users. The system should support both internal GlobalNOC data sources as well as external sources the customer may have. Lastly, the system needs to support both authenticated and unauthenticated access as the data shared will have potentially mixed level of sensitivity.

Approach

As a next step will be extending our Grafana portal work to add the capability to display operational status data from GlobalNOC monitoring systems. Current efforts have demonstrated an ability to provide secure user-controlled dashboards of time-series measurement data coupled with GlobalNOC-curated standard dashboards as part of our production use of Grafana in our SNAPP system. In the near term, we intend to build on this success by incorporating monitoring data about outage and maintenance events within our Grafana-based portals.

As we do this, we will build out a generalized portal service offering with a well-defined service definition, documentation, training and support. This initial offering will include standard visuals driven from GlobalNOC that will provide immediate value to customers while also allowing them to begin to directly develop their own visuals should they choose. In subsequent phases and in consultation with customers we will expand the standard set of visuals / dashboards we provide