

# Satellites, Choropleth Maps and ITSI... oh my!

Jeffery Trujillo

Performance Engineer, ViaSat

Contributors:

David Millis, Splunk

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# Jeffery Allen Trujillo

<http://linkedin.com/in/jefferytrujillo>

[jeffery.trujillo@viasat.com](mailto:jeffery.trujillo@viasat.com)

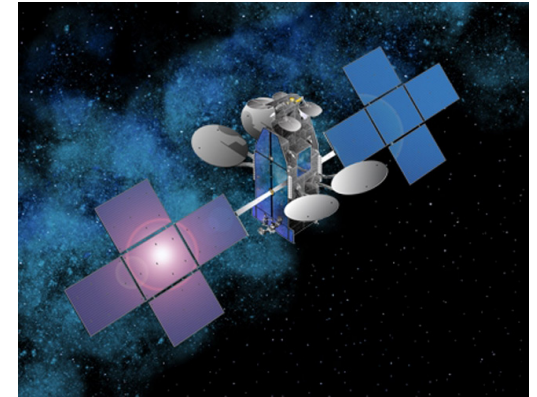
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# ViaSat At-A-Glance



- Overview: Broadband services and technology company
- Headquarters: Carlsbad, California, USA
- Founded / IPO: 1986 / 1996 (NASDAQ: VSAT)
- Revenues: \$1.4B
- Employees: 3,800+ Globally
- Markets Served: Residential and Enterprise Internet; In-flight Internet, Commercial Wi-Fi; Government and Military Communications Systems; Cybersecurity
- Innovation Highlights: Leaders in High Capacity Satellite Design and Development
  - ViaSat-1 class satellites (domestic): 140Gbps
  - ViaSat-2 class satellites (regional): 300 Gbps (launch 2017)
  - ViaSat-3 class satellites (global): 1,000 Gbps (launch 2019)



# What was the problem?

- Network Operations group needed to display Timely, Relevant, Meaningful Service Impact.
- Reduce Mean Time to Repair (MTTR) for a service outage
- Visualize product offering status in an easier way

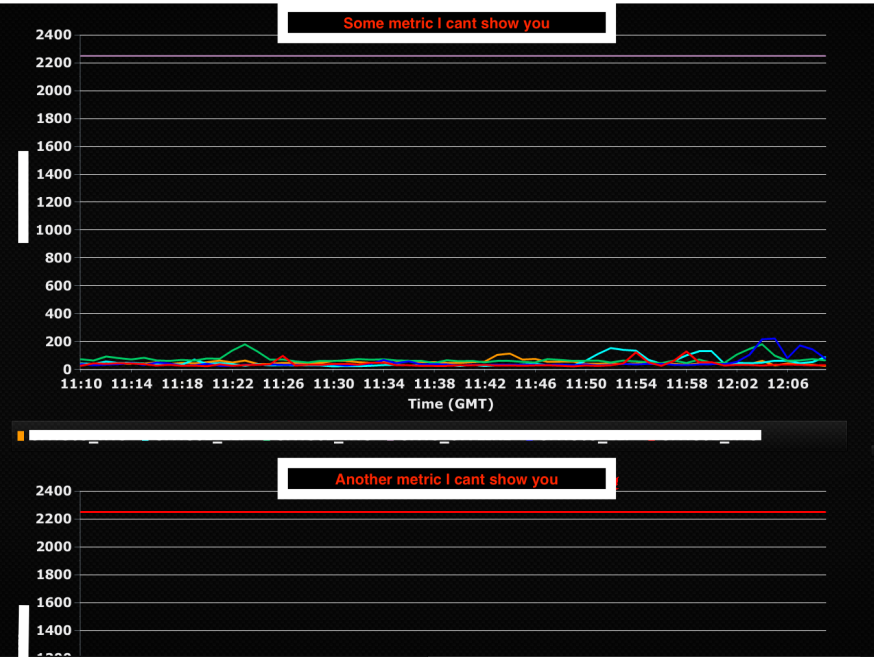
# KPI's that may Impact Service

- Network Speeds
- Phone Call Volume (IVR)
- Modem Speeds (Synthetic Transactions)
- Error Rates
- Throughput Rates (Machine Data)

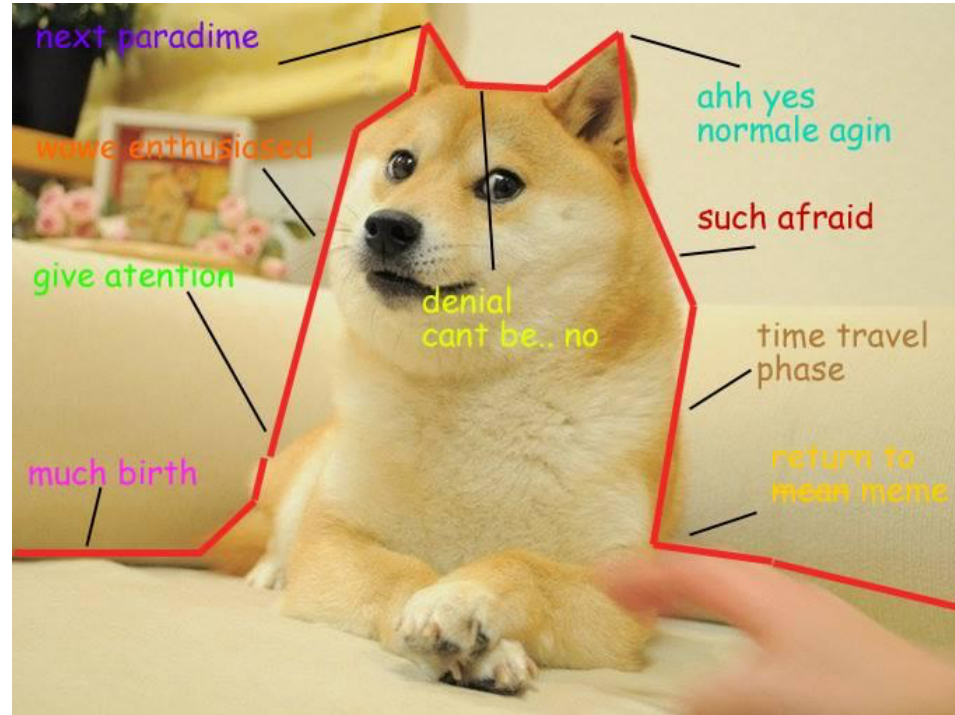
# Put that KPI on a graph!?



# Timecharts are tired.



Lots of Real Estate, questionable value

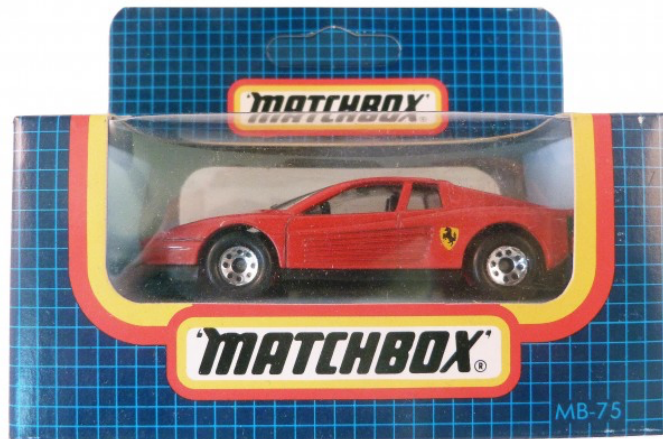
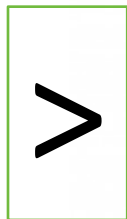




# 6.4 Introduced Choropleth Support



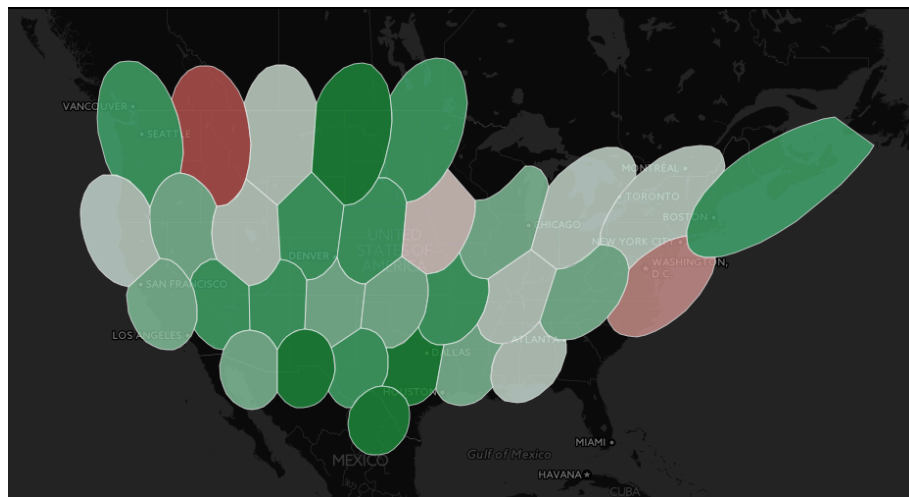
Choropleth Maps



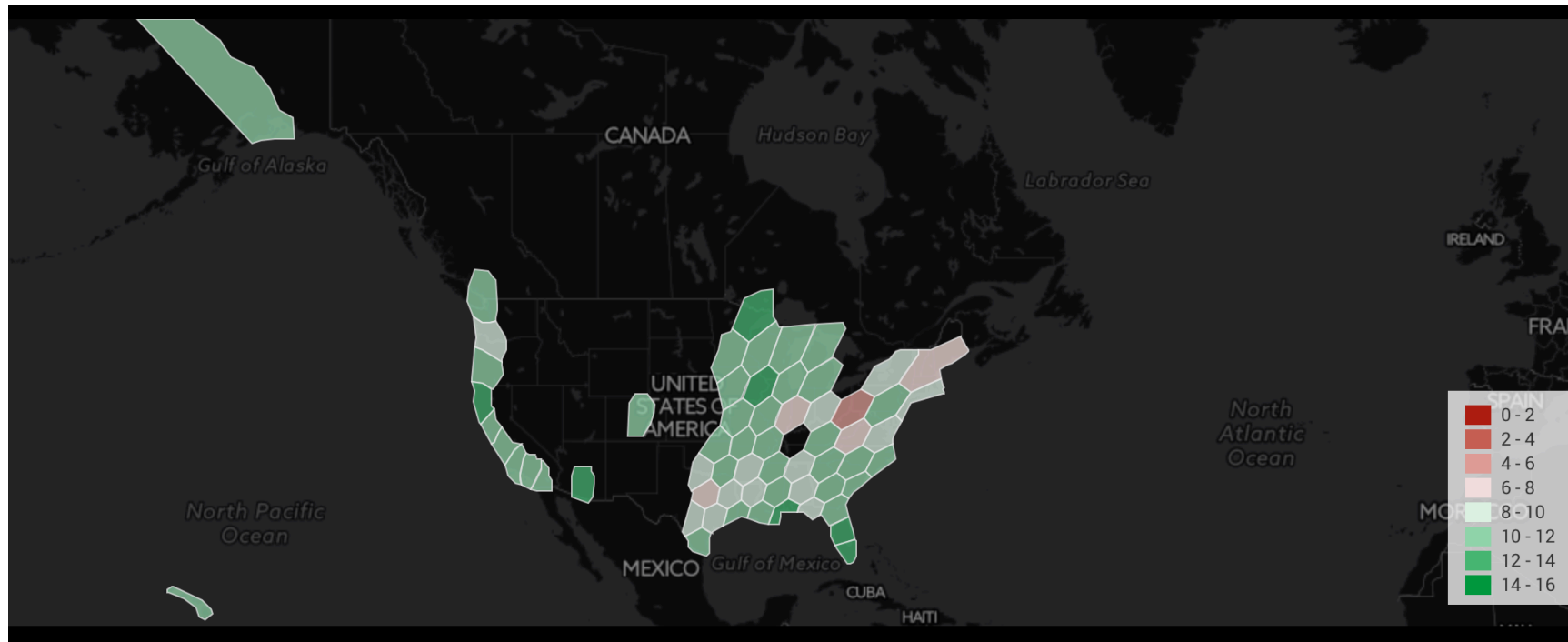
Line Charts

# Choropleth Maps (the good)

- Immediate visual diagnosis
- Big Impact to a broad audience
- Management loves pretty things
- Great for reporting functionality



# Divergent Color Schemes



# Choropleth Maps (the bad)

- Single KPI display
- Miopic
- Real Time Analytics can be hard (no context/timecharts)
- Usually no Service relationship
- Static Thresholds and Divergence
- Real Estate is a Premium



# What we have VS. What we want



# Can we be smarter about this?



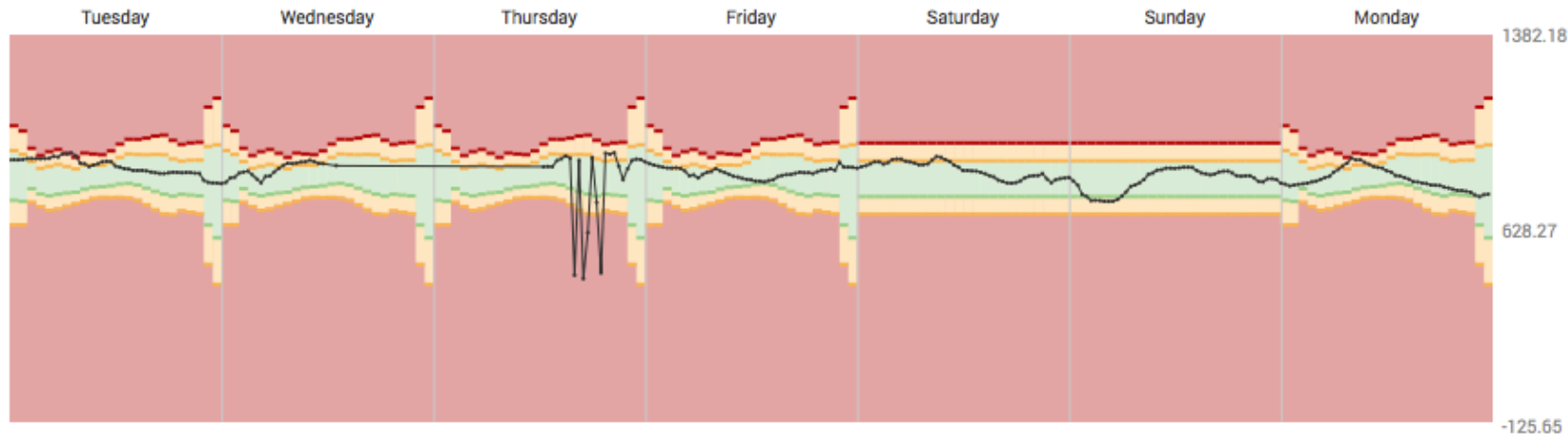
# Leveraging Service Intelligence

- Build Custom Service Models
- Adaptive Thresholds
- Multi-KPI Health Scores
- Custom Service Instrumentation

# Adaptive Thresholding

Not all hours are created equal

Preview Aggregate Thresholds

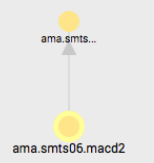




# Custom Service Definition

Service Analyzer / ama.smts06.macd2 Last 24 hours

[Open Service Definition](#) [Show Dependent Service: 1 Level](#)



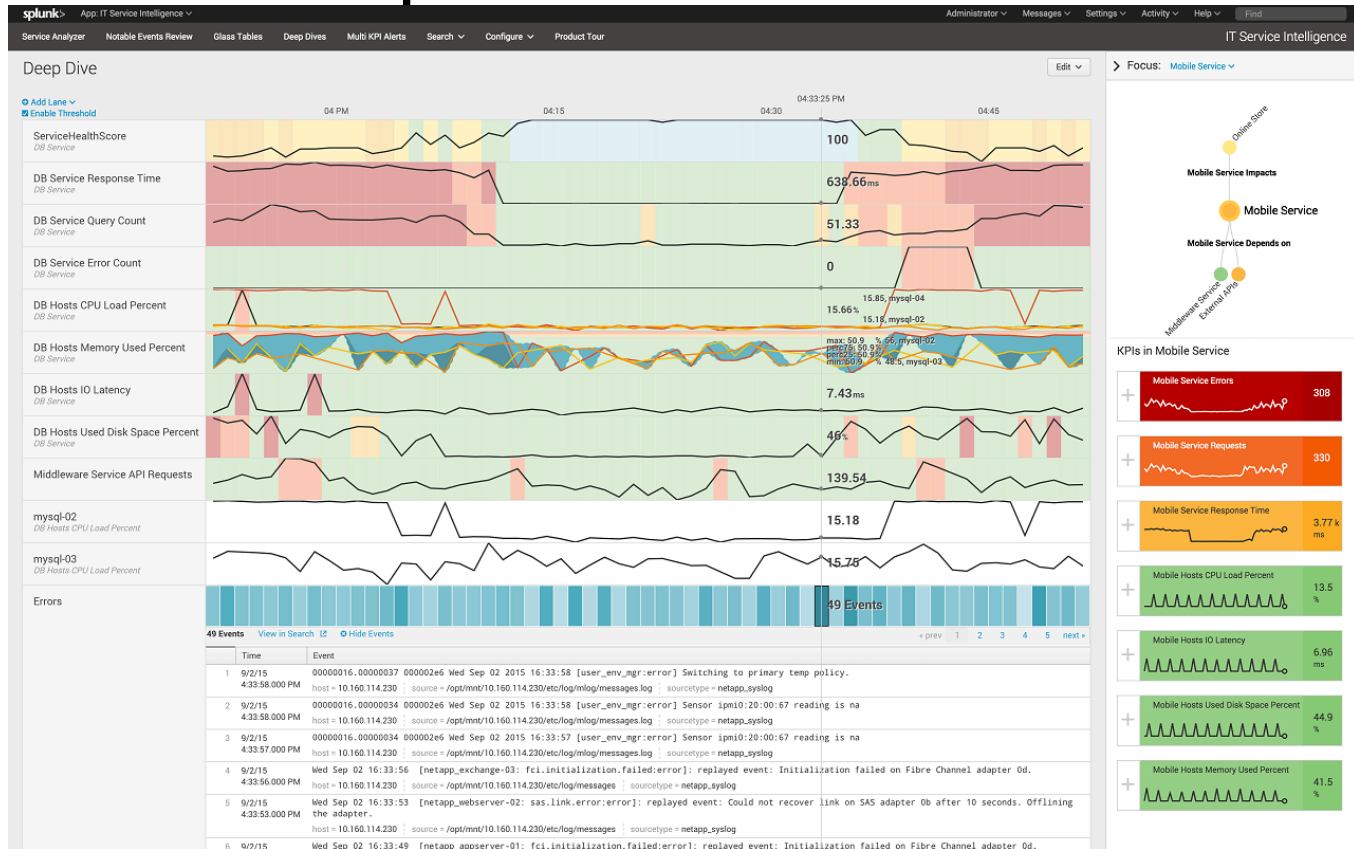
**KPIs in ama.smts06.macd2**  
12 KPIs [Open in Deep Dive](#)

- High UT Network Exit
- High 625 Ksps Return Usage
- Low Active UT Count
- Low ServiceHealthScore
- Normal Online UT Count
- Normal RL Burst Error Rate
- Normal RL Average SINR
- Normal EIRPO
- Normal FL Average SINR
- Normal FL Percent Xport
- Normal RL Percent Xport
- Unknown MPSS FPA Pool 6 Utilization

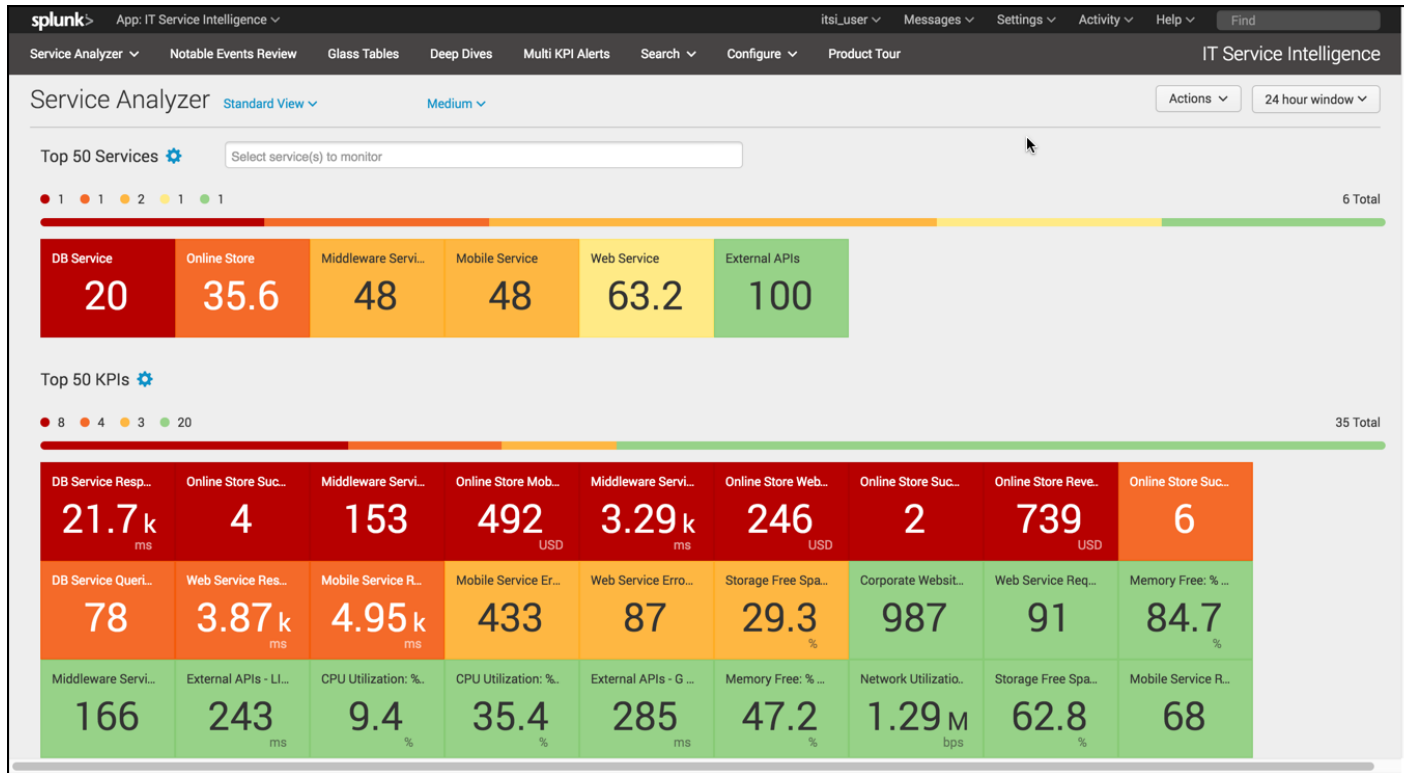
**Entities in UT Network Exit**  
1 Entities

Alert_Level	Entity_Title	sparkline	alert_value
Normal	ama.smts06.macd2		8

# Multiple KPI Health Scores



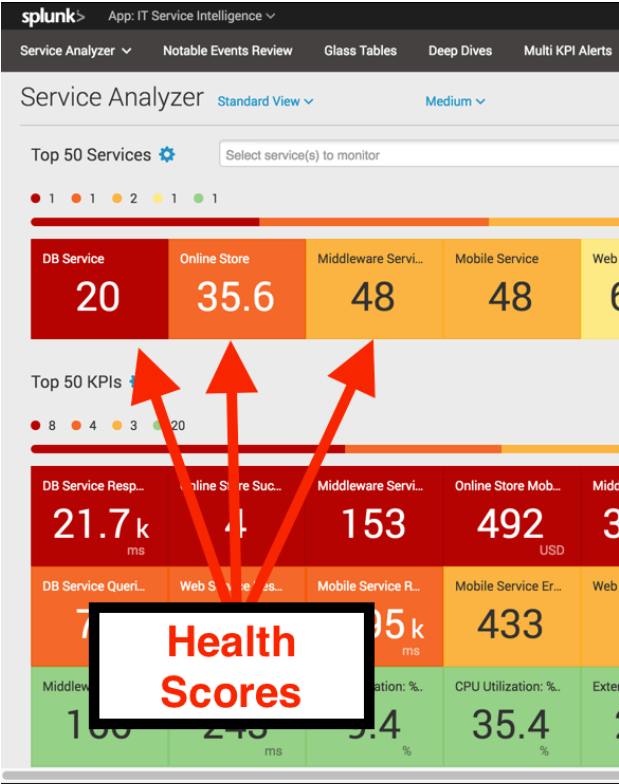
# Tada! Service Health Scores



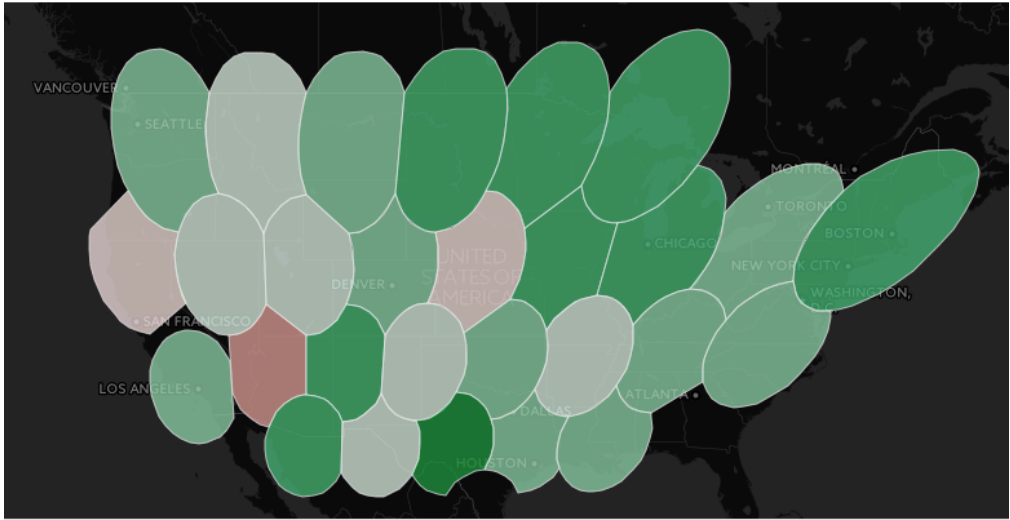
# Can we be smarter about this?



# But we want a score and a map!



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= :) )

# Using Search Macros to gather health\_score

splunk> Apps ▾ Administrator ▾ Messages ▾ Settings ▾ Activity ▾ Help ▾ Fin

get\_service\_health(1)  
[Advanced search](#) » [Search macros](#) » get\_service\_health(1)

**Definition \***  
Enter the string the search macro expands to when it is referenced in another search. If arguments are included, enclose them in dollar signs. For example: \$arg1\$

```
index=itsi_summary source=service_health_monitor
| eval service_name="$arg1$"
| lookup alarm_console_lookup title as service_name OUTPUT kpis_key as service_id_mv
| eval service_id=mvindex(service_id_mv, mvfind(service_id_mv, "SHKPT"))
```

Use eval-based definition?

**Arguments**  
Enter a comma-delimited string of argument names. Argument names may only contain alphanumeric, '\_' and '^' characters.

arg1

**Validation Expression**  
Enter an eval or boolean expression that runs over macro arguments.

**Validation Error Message**  
Enter a message to display when the validation expression returns 'false'.

you screwed up

Cancel Save





# THANK YOU

Jeffery Allen Trujillo

<http://linkedin.com/in/jefferytrujillo>

[jeffery.trujillo@viasat.com](mailto:jeffery.trujillo@viasat.com)

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