

“VPN is the New Toilet Paper”

Leveraging Helix Optimize to Understand the Impact of Employees Working from Home on Businesses

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Agenda

Situation due to Corona Virus

Current Business Challenges

Use Cases

How BMC IT leveraged Helix Optimize to Solve Challenges

Situation

Corona Virus Forcing Employees to Work From Home

Companies not used to Employees Working From Home

Companies unsure of Network Demand or Constraints

How to mitigate the risk of remote workers?

Looking for Assistance and Education

Current Business Challenges

1. What kind of **data** is needed to understand my environment in the context of **remote employees**?
2. What **metrics** do I need to be concerned with while looking at my environment?
3. How do I **collect data** and get **visibility** into my **network environment**?
4. How should I execute **analyses**, and **model changes** to my environment?
5. What are other **companies doing**?

Metrics & Collecting Data

Metrics

- Number of VPN Active Sessions
- Internet Utilization
- Bandwidth of Network Interface
- Link usage per connection
- Input Bit Rate by Network Interface
- Output Bit Rate by Network Interface
- Response Times
- CPU Utilization

Collecting Data

- Network Monitoring Tools
 - Entuity
 - HP NNMI
 - Solarwinds
 - CSV files
- Business Driver Data
 - Dynatrace
 - Splunk
 - CSV files
 - AppDynamics
 - TrueSight App Visibility

Use Cases

1. Modeling your current network bandwidth
Understand where you are at and what is normal
2. Analyzing your network bandwidth use
Detect if expansion is needed
3. Model continuity scenarios to prevent slowdowns or outages
if network goes down
how can load be distributed?
what does that load do to remaining networks?
4. Correlation of end-user response-time for applications
Determine if slowdown is a network issue or compute issue

How Can BMC Helix Optimize or
BMC TrueSight Capacity Optimization Help?

How did BMC TrueSight Capacity Optimization
Help BMC IT?



Use Case 1

What: Modeling your current network bandwidth

Why: Understand where you are at and what is normal

How: TSCO Quick Analysis
TSCO Analysis
TSCO Network View

VISUALIZE

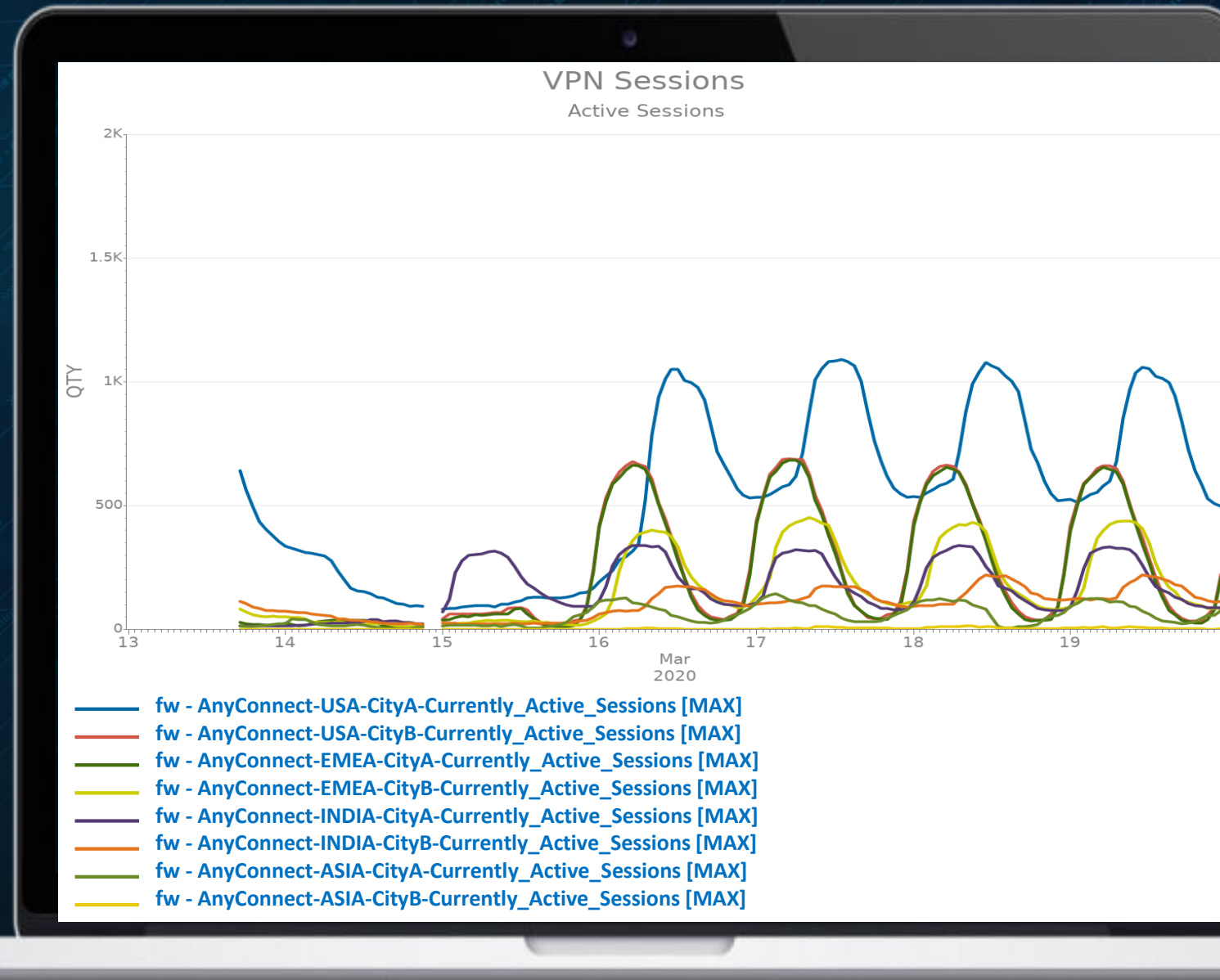
Use Case 1

Understand quantity of active VPN Sessions

Gain insights into number of VPN Sessions per location

Keep in mind that the bandwidth utilization is different per access point

Visualize active VPN Session over time to look for seasonality, trends over time, and potential anomalies



VISUALIZE

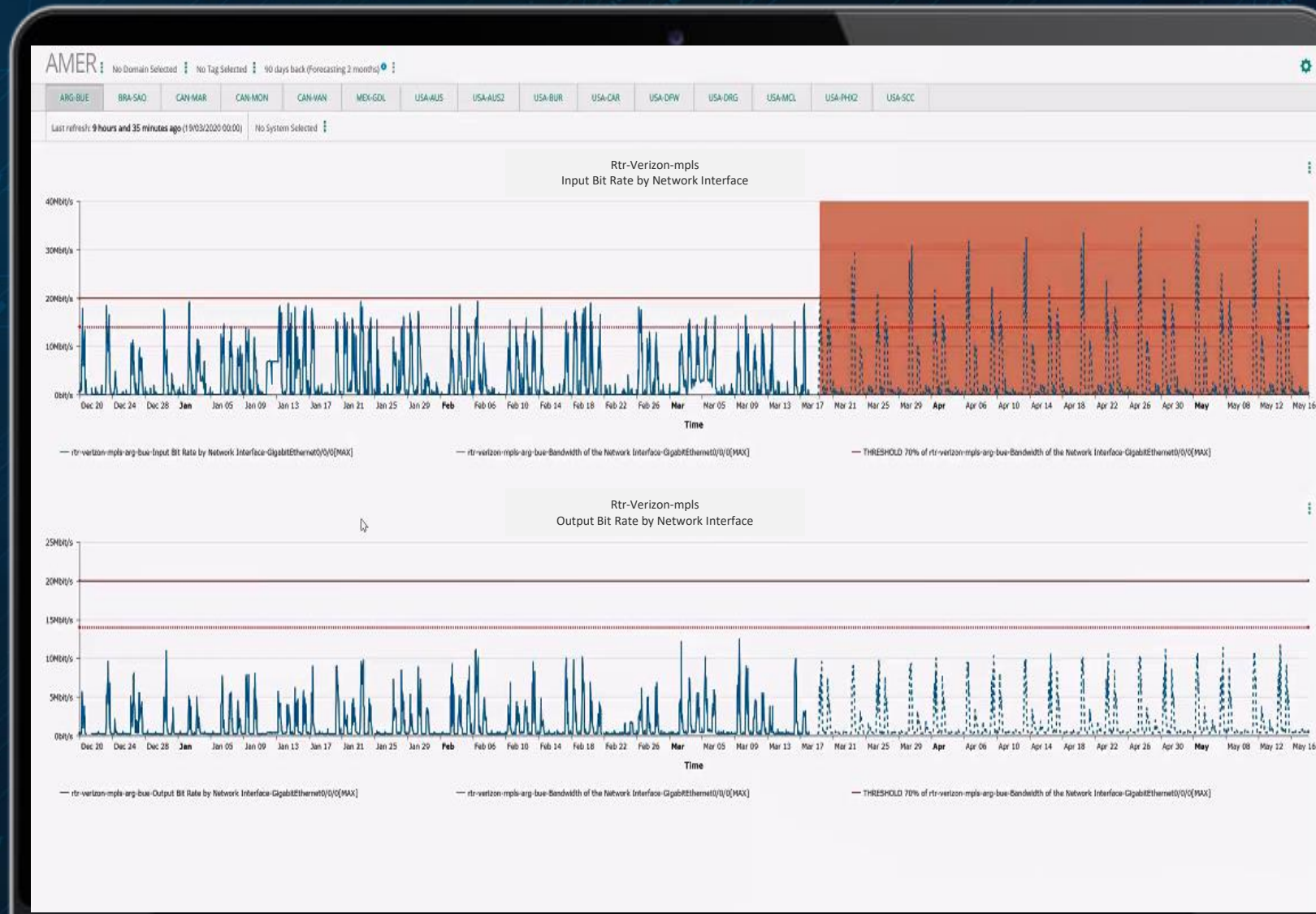
Use Case 1

Understand current bandwidth utilization on network interface devices

Predict projected bandwidth utilization over time

Anticipate spikes in usage to prevent slowdowns or saturation

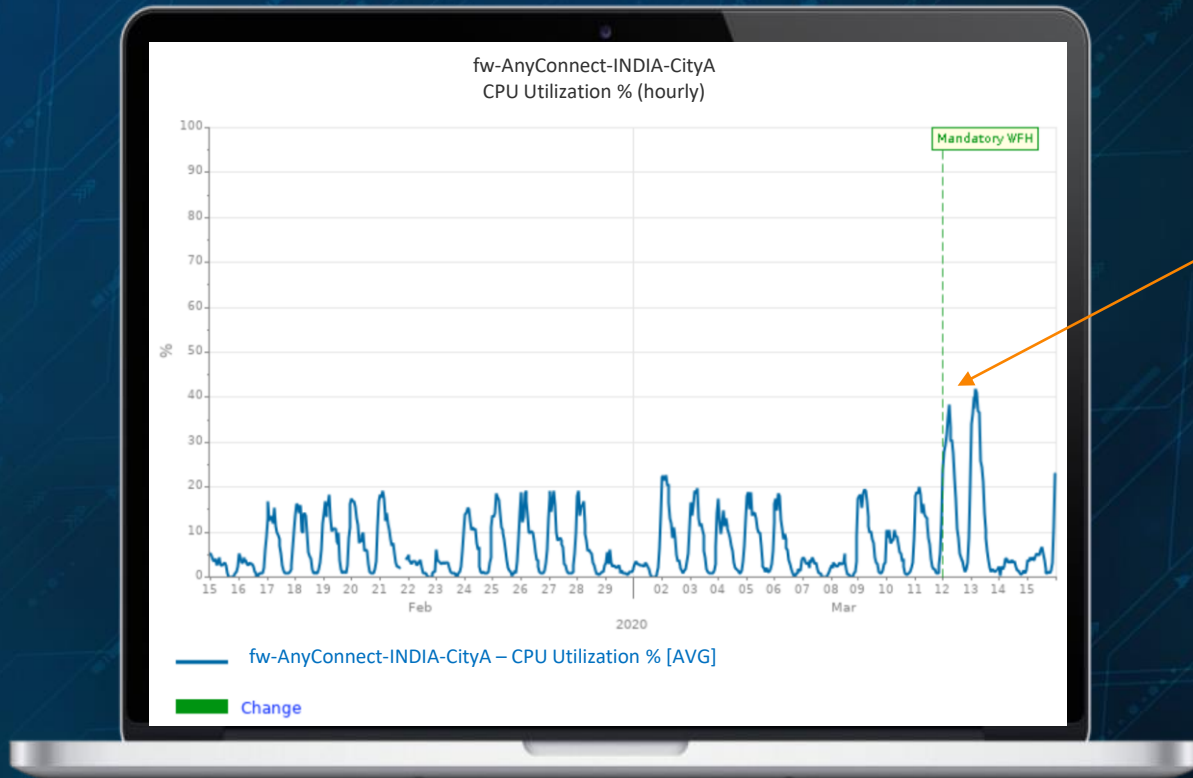
Look for seasonality, trends over time, and potential anomalies



Visualize

Use Case 1

Increase in AnyConnect device CPU utilization by 2x, but well within the threshold



Use Case 2

What: Analyzing your current network bandwidth

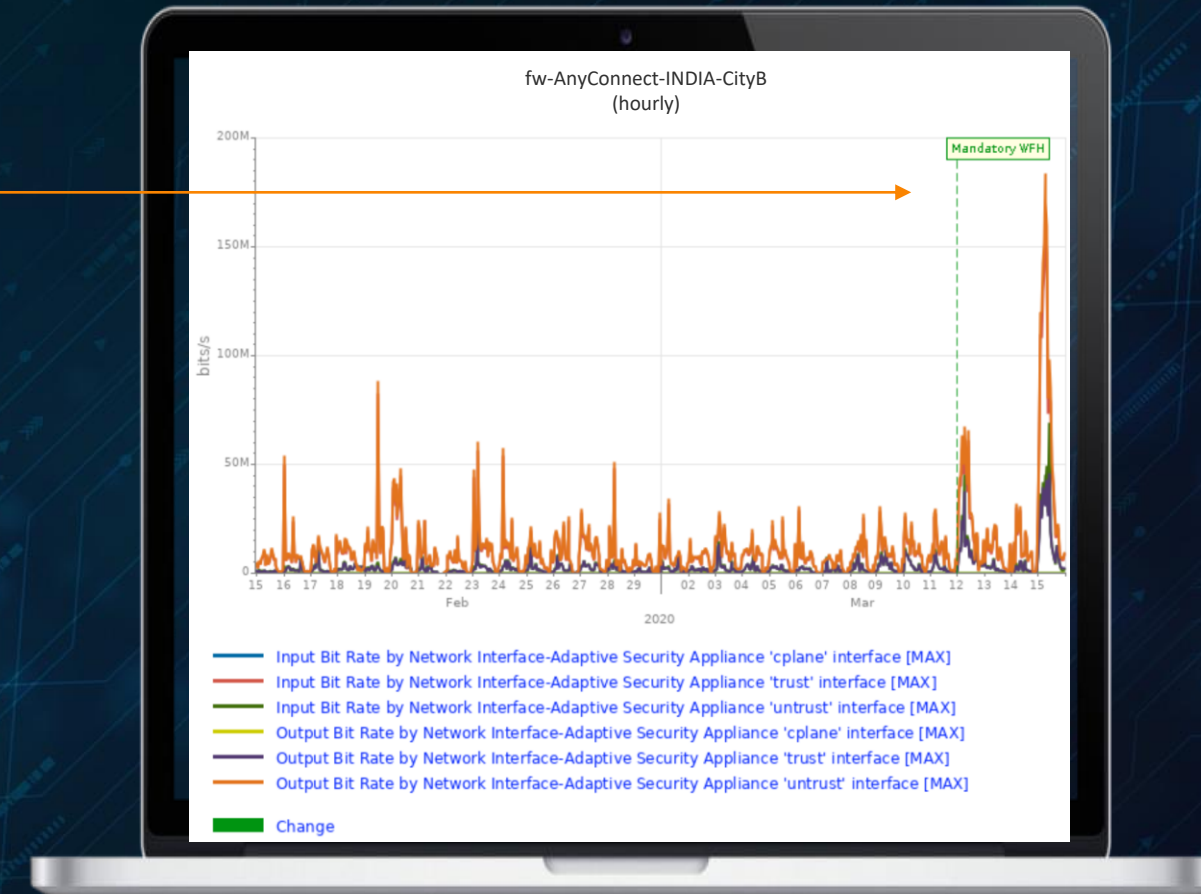
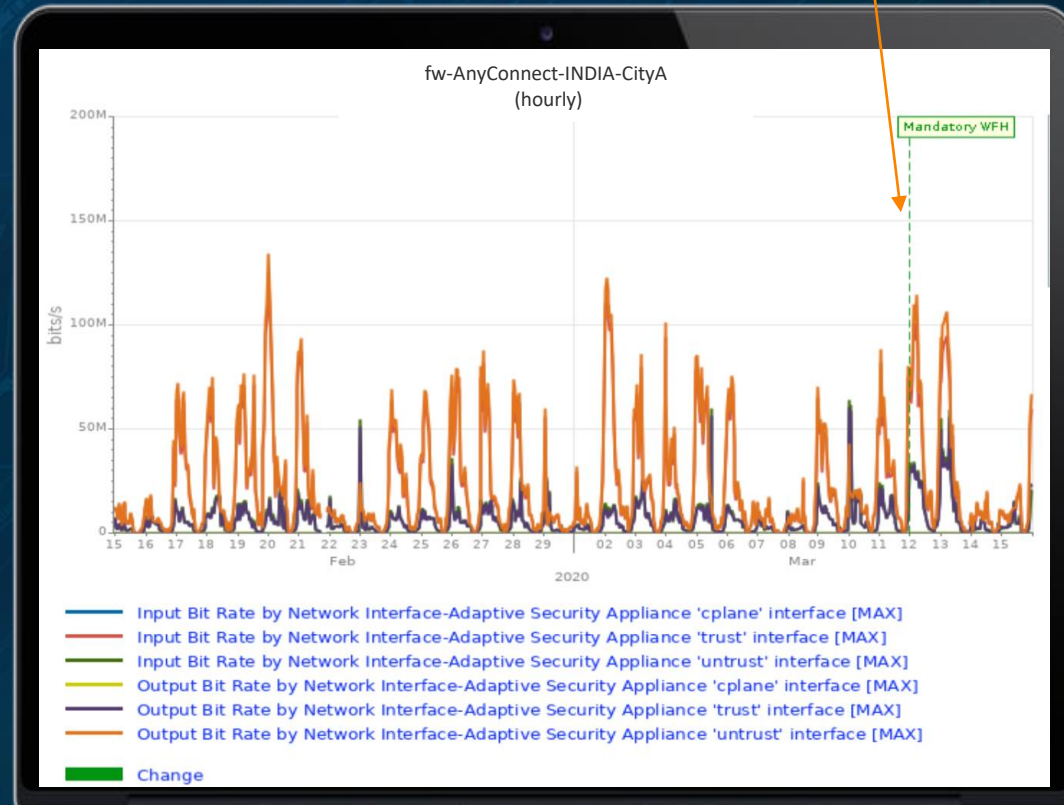
Why: Detect if expansion is needed

How: TSCO Analysis
TSCO Correlation Analysis

Visualize

Use Case 2

Increased jump in bit rate at AnyConnect device at some sites, probably due to the nature of the workload, but no cause for concern since these are 1GB Pipes.



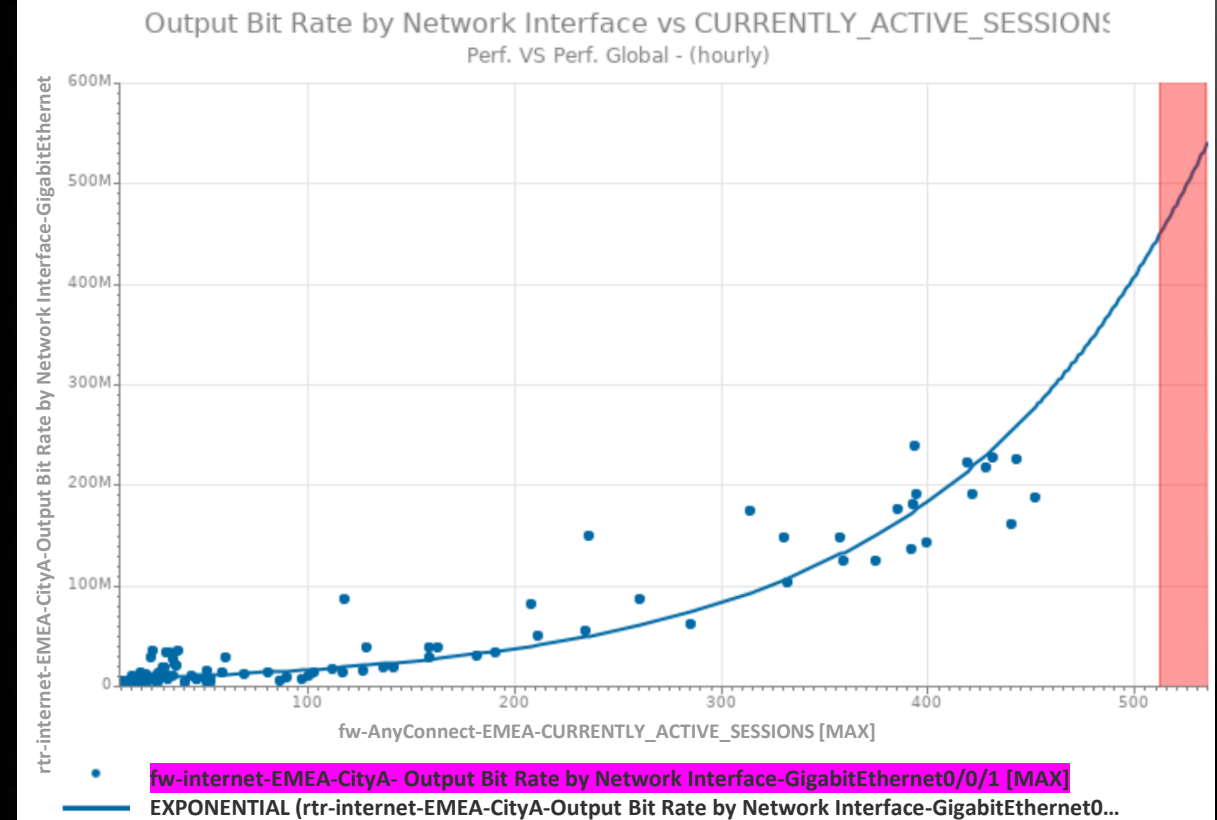
Correlate

Use Case 2

Correlate **Active Sessions** and **Output Bit Rate by Network Interface**

Looking at the **correlation** between Active sessions and Output Bit Rate by Network Interface predicts

- When the circuit will saturate for a given number of sessions
- How many sessions the circuit can handle given the bandwidth



Execution summary

X	rtr-internet-EMEA-CityA-GigabitEthernet0/0/1	Limit value
fw-anyconnect-EMEA-CityA-CURRENTLY_ACTIVE_SESSIONS	Input Bit Rate by Network Interface	568.92
	Output Bit Rate by Network Interface	511.92

Use Case 3

What: Modeling Business Continuity Scenarios

Why: Prevent Slowdowns, Outages, or Saturations
Know how can load be redistributed if part of network fails

How: TSCO Analysis
TSCO What-if Event on Forecast Model

VISUALIZE

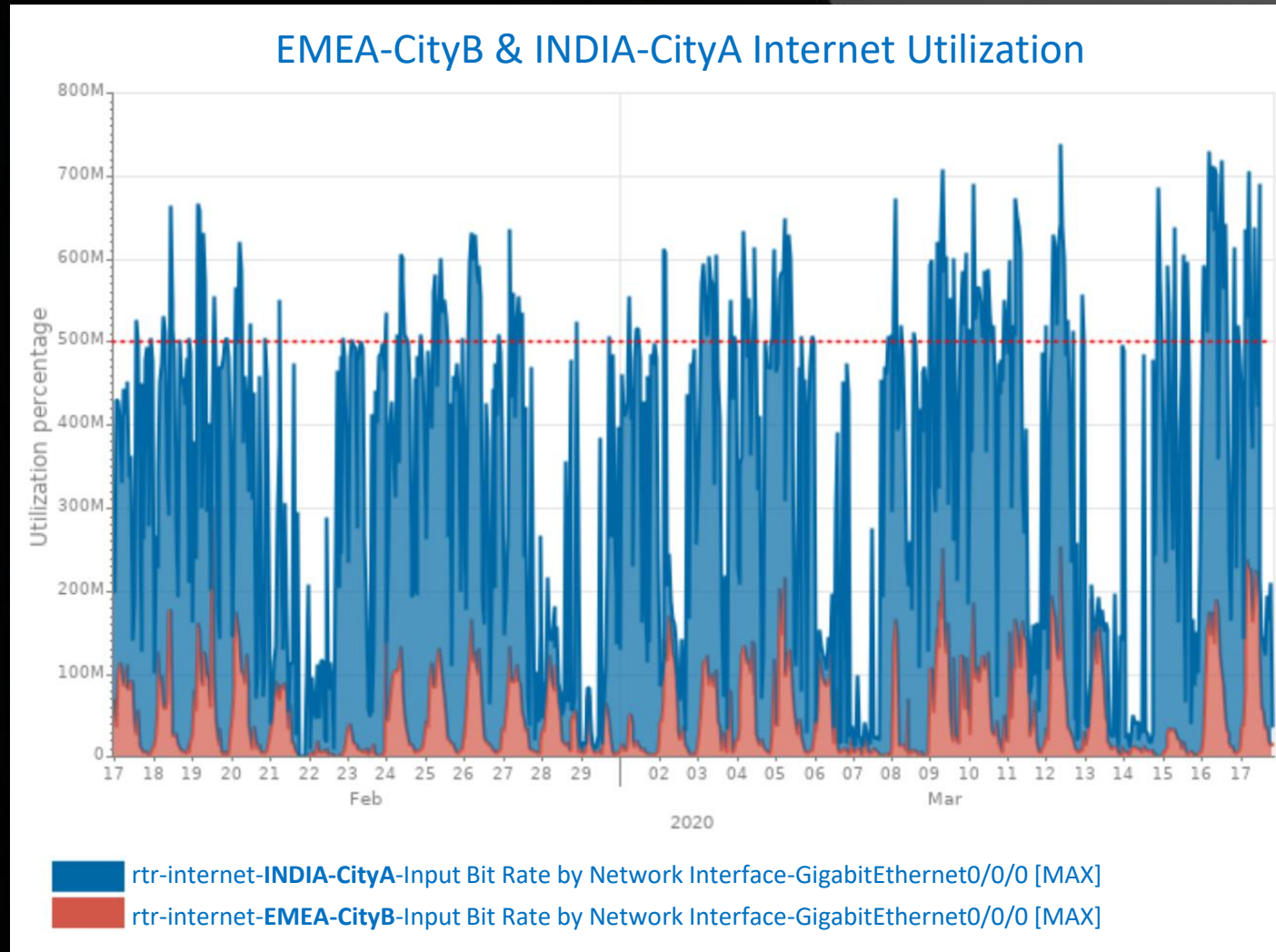
Use Case 3

Understand Internet Utilization by Region

Stack Internet Utilization of multiple regions should all traffic go through one link.

(Note: If one of the link fails, there are access points in other regions as well)

Understand total capacity of Internet Utilization

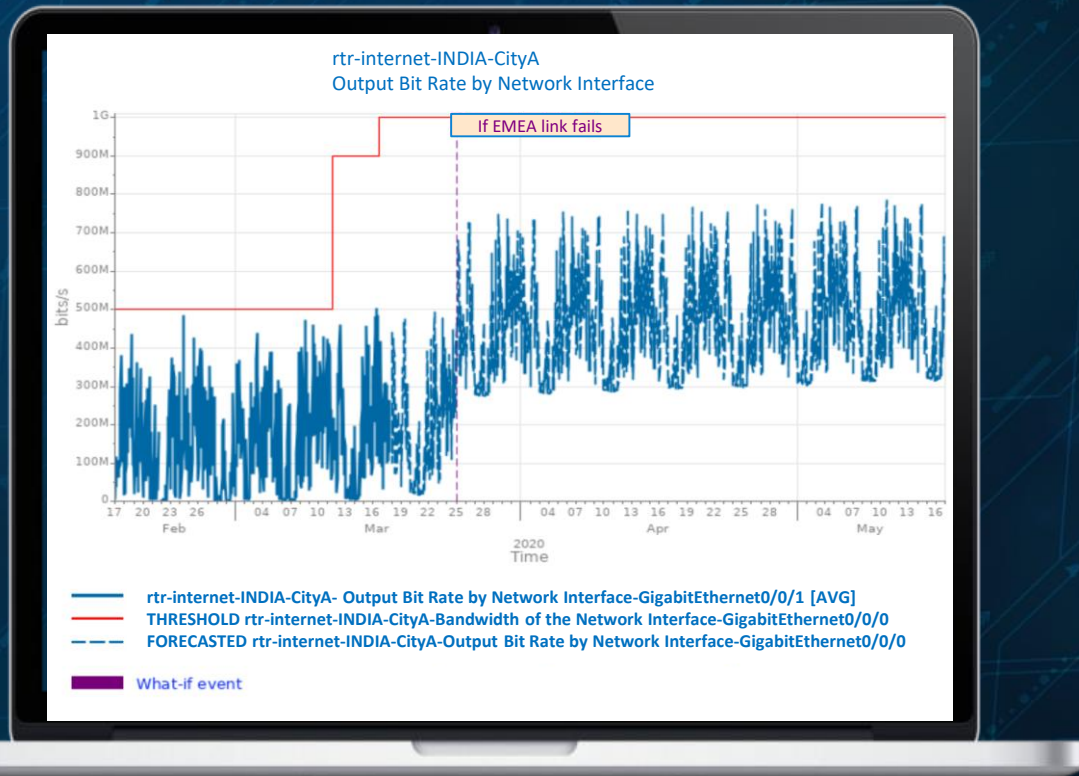


Plan

Use Case 3

Plan for **Business Continuity Situation #2**
(INDIA Link Fails, Can EMEA handle the load?)

If INDIA link Fails, EMEA Link **can't** handle load



Plan for **Business Continuity Situation #1**
(EMEA Link Fails, Can INDIA handle the load?)

If EMEA link Fails, INDIA Link **can** handle load



Use Case 4

What: Correlation of end-user response-time for applications

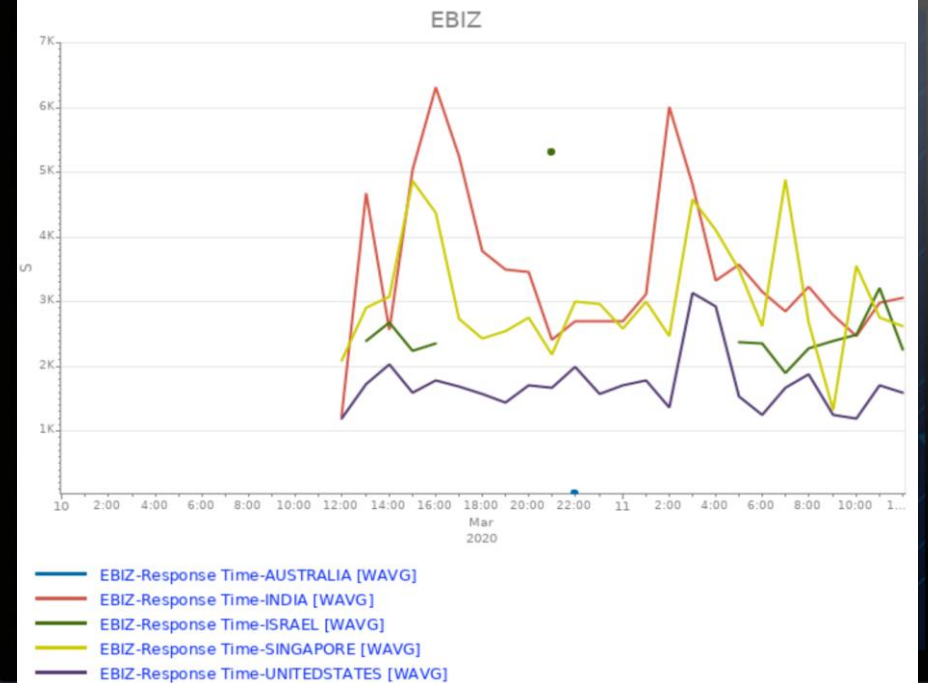
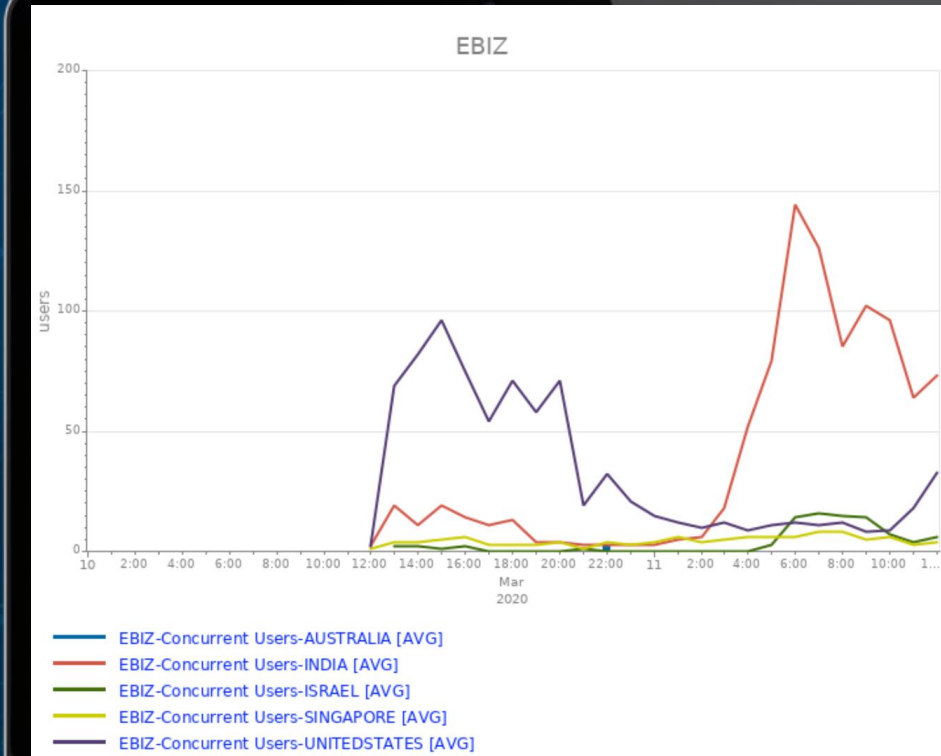
Why: Determine if potential slowdown is a network or compute issue

How: TSCO Analysis
TSCO Forecast Model
TSCO Extrapolation Model

Visualize

Use Case 4

Application user and response times from worldwide locations

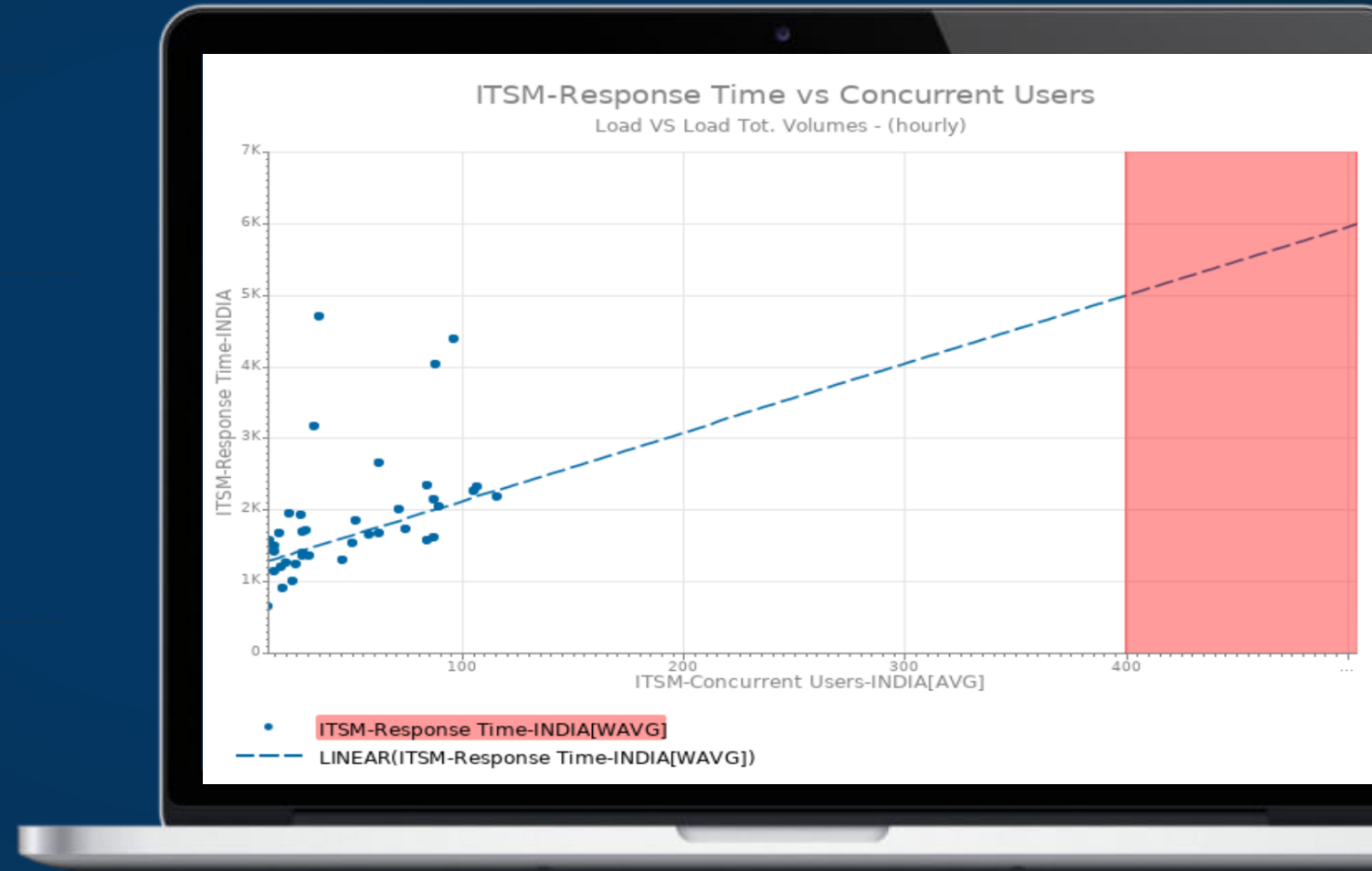


BMC TrueSight App Visibility Data

Model

Correlate Response Times with
Concurrent VPN Users

Extrapolate Correlation to
predict amount of concurrent
users prior to breaching
Response Time threshold



How to Get Started

Leverage BMC TrueSight Capacity Optimization

Configure ETL's to extract Network Data/Metrics

Recipe for Success (see Appendix)

Where to Get Help

BMC Communities – TrueSight Capacity Optimization

https://communities.bmc.com/community/bmcdn/capacity_management

- **Network with your Peers**
- **How-to Videos on BMC Playlist**

<https://www.youtube.com/playlist?reload=9&list=PLibAMtD70sYEnEM-OP7FtO7PrMH-Ce0PL>

Documentation

<https://docs.bmc.com/docs/capacityoptimization/btco115/moviri-etl-modules-830156748.html>

Recipe for Success

1. **Configure ETL's to extract Network Data/Metrics**
 1. If possible, leverage one of the OOTB Network ETL's for TrueSight Capacity Optimization
 2. Documentation on Connectors Here:
 1. <https://docs.bmc.com/docs/capacityoptimization/btco115/moviri-etl-modules-830156748.html>
2. **Execute Use Case 1**
 1. Create Quick Analysis or Analysis of Active Sessions and Network Device Utilization (How To Videos #40 and #42)
 2. Leverage Network View or Create Out of the Box View (How to Video #70)
3. **Execute Use Case 2**
 1. Create Quick Analysis or Analysis of Input/Output Bit Rate Utilization (How To Videos #40 and #42)
 2. Create Correlation Analysis of Active Sessions and Output Bit Rate by Network Interface (How to Video #64)
4. **Execute Use Case 3**
 1. Create Quick Analysis or Analysis of Input/Output Bit Rate Utilization (How To Videos #40 and #42)
 2. Create What-if Event on Forecast Model of Output Bit Rate Utilization (How to Video #58)
5. **Execute Use Case 4**
 1. Create Analysis or Quick Analysis of Response Times (How To Videos #40 and #42)
 2. Create Extrapolation Model of Response Times and Concurrent Users (How to Video #65)

How To Video Library:

<https://www.youtube.com/playlist?reload=9&list=PLibAMtD70sYEnEM-OP7FtO7PrMH-Ce0PL>

Summary

Corona Virus Forcing Employees to Work From Home

Need to model & plan for increased demand on network

Leverage BMC TrueSight Capacity Optimization

Go to BMC Communities – TrueSight Capacity Optimization for help

https://communities.bmc.com/community/bmcdn/capacity_management



VISUALIZE

Understand risk, efficiency and cost

Gain insights into resource use from the business service, to application, to resource level

Understand your cloud and on premises spend

Comprehensive data collection including performance metrics, usage metrics, spend and budget

Discovery
Integration

Self Service

