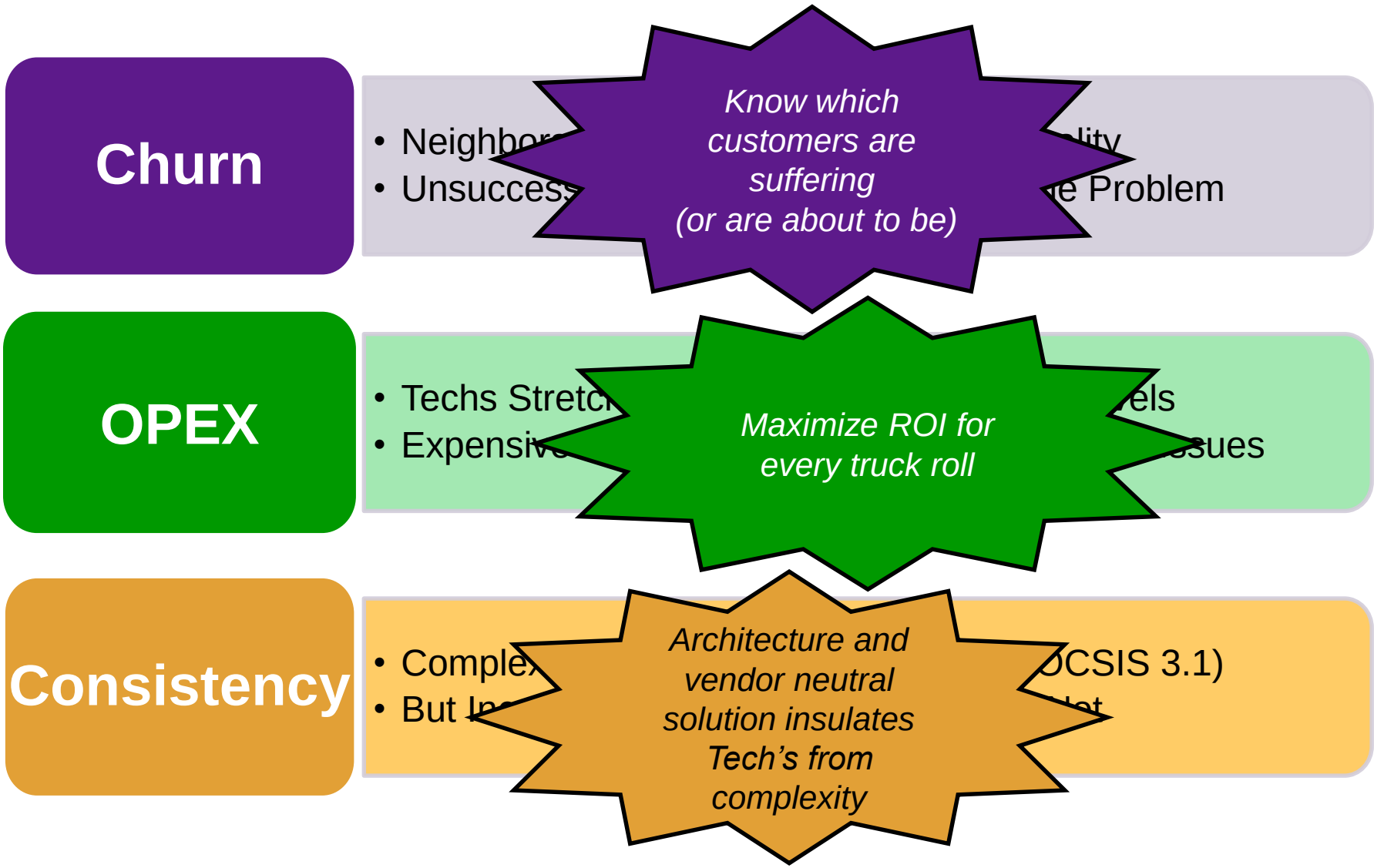
Viavi XPERTrak

Resolve Problems That Matter Most

Common MSO Challenges and How Viavi Will Help:



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The HFC Is Transforming At An Unprecedented Rate

- N+0/Fiber Deep Bring Exponential Node Count Growth
  - Rack space/power/cooling crunch in hubs, cost challenges as # subs/node shrink
- **Distributed Access Architecture (R-PHY, etc) Roll Out**
  - **RF no longer present in hubs, Many new vendors enter NEM market**
- DOCSIS 3.1 Is Here
  - New protocol→new gear, new metrics/practices for tech's to learn
- Frequency Extensions
  - Must qualify new spectrum, much of existing gear not capable
- ***Parallel, Phased Implementation Of All Of The Above***
  - **Tech's will be challenged to deal with the proliferation, multi-year continuous state of change**

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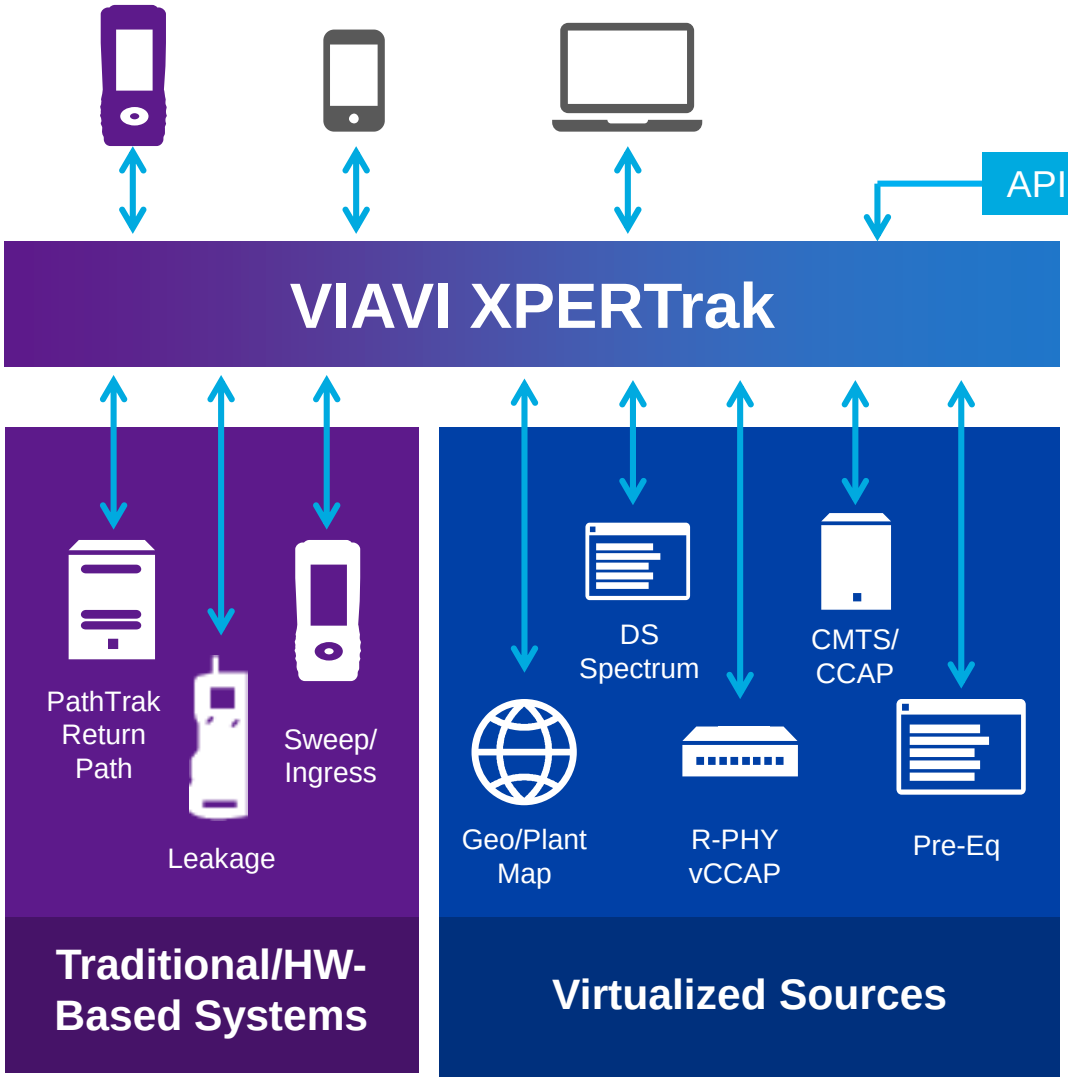
VIAVI XPERTrak – Resolve Problems That Matter Most

Not just more red lights, but insight and tools to turn them green



- **Identify At-Risk Subscribers**
  - Identify issues before customers call
  - Prioritize repairs on service impact
- **Tell Where To Go, What To Do To Fix Their Issues**
  - Smart dispatch to fix, not find
  - Eliminate unneeded maintenance
  - Optimize existing infrastructure
- **Superior Find and Fix Process**
  - Consistent across architecture/vendors
  - R-PHY & DOCSIS 3.1 leaders
  - Integrated with VIAVI instruments

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XPERTrak Demo 101: 1-Pager

URL:
http://173.165.99.70:8083/pathtrak
Username = demo
Password = Demo1

- **Lay Groundwork With 3 Positioning Slides**
  - Rest of demo will be proof points backing up 3rd slide
- **Maintenance Tech Workflow**
  - **What nodes most require attention today?**
    - Quickly cover pie charts, focus on Churn Priority Table. Mention User visibility.
  - **Element Analysis - What is the problem?**
    - Show impacted Subs per data source
    - Drill to live analyzer(s) - HW & Virtual – Ease the R-PHY transition, mention impulse present in PT SA
    - Shows impulse noise is on the node in live SA then Perf History, show Spectrum Power Density area plot
  - **PNM/QoE Screens – Where is the problem?**
    - US PNM – Show Analysis panel, toggle from raw groups to QoE view – show identified group as GREEN on QoE
      - ***Huge differentiator – would waste time chasing impairment with zero QoE impact with competitors tools***
    - Downstream – show auto-impairment detection, ***CPE are RED due to SNR QoE issue (Not due to US Pre-Eq)***
      - ***Competing systems do not offer video SNR***
- **NOC Workflow**
  - Show modem search by MAC in main dashboard
  - Shows impairments on the node – same story as above
  - Click on the map to see how he is doing relative to his peers
  - Click on table view of map and sort to also show he is relative to others on that node, what problems impact that subs
  - Show HomeCheck to see what is going on with him right now

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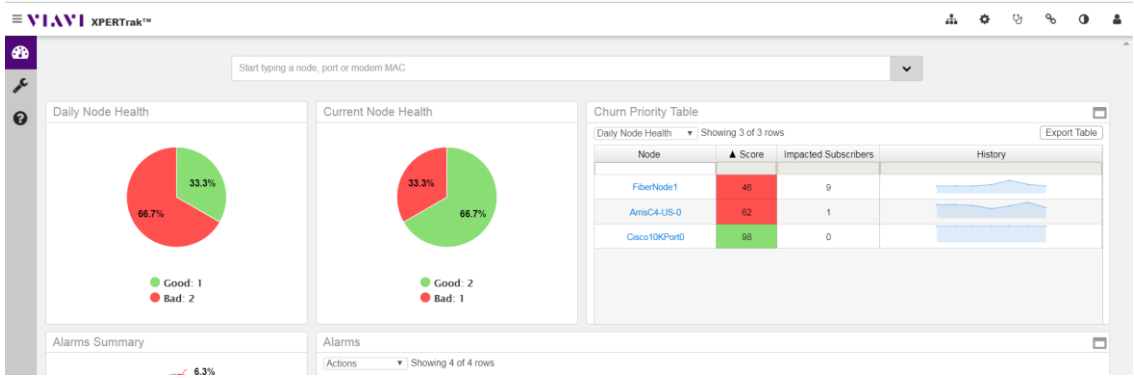
Demo 101



- **QoE Dashboard**
  - Pie Charts: % of nodes failing QoE threshold
    - QoE performance index based largely on CMTS/CPE metrics, includes MACTrak data if available
  - Daily Node Health – % failing in last 24 hours (Mention visibility controls)
  - Current Node Health – % failing since last poll (what does system look like now)
  - Churn Priority Table: List of which nodes are creating greatest risk for subs churn it not addressed
    - Index is 0-100 score – great input for broader MSO system if applicable
    - 7 day trend shows whether poor performance is recent or chronic issue
  - Alarms Summary
    - Reinforce that XPERTrak fully supports PathTrak HW, move on quickly

- **Transition:** Click on **FiberNode1** From Churn Priority Table (go to Element Analysis)

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Demo 101

- **Element Analysis**
  - Explain # of columns = # of QAM's
  - Point out # Impacted Subs values – reinforce QoE focus
  - Point out Upstream, Downstream, Spectrum, and Alarms sections
    - Explain Red/Yellow/Green meaning
  - Demonstrate ability to go to CMTS/R-PHY based SA and PathTrak SA from same screen
    - ***Ease the transition to R-PHY***
    - Show impulse noise on RPM card
  - Go to performance View
    - Show Surface Plot for Spectrum Power Density, impulse noise trend chart in MACTrak Perf Monitoring View (double click on a carrier in MTPM view to see trend chart)
  - **Transition to PNM View** by clicking on 36.8MHz carrier in Pre-Eq row

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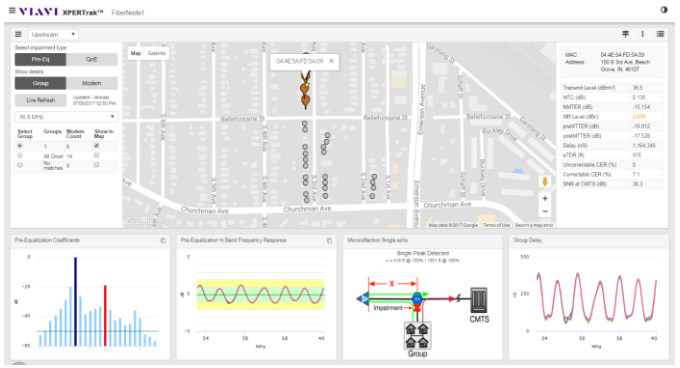
Demo 101



- **PNM Analysis**
  - Focus early on Analysis Panel – part of how Viavi takes PNM from being science project for a few smart engineers to a tool for the average tech
  - Show not all upstreams have linear impairments
  - Focus on grouped modems, discuss that not all issues detected by PNM warrant immediate truck roll,
- Click over to QoE view
  - Note that modems in identified group are GREEN in QoE view
    - ***Key differentiator: Competitive tools would drive unnecessary truck roll***
    - Discuss how knowing QoE impact enables maximizing ROI from all truck rolls – defer fixing non-impacting issues until the next time a truck is in the area for something else
- Click over to Downstream view
  - Downstream issue causing QoE impact (DS SNR) – and only XPT provides video carrier SNR
  - Show plant map toggle
    - Just population density for demo server but shows zoom functionality, etc
  - Drop person on street with line of red modems. Rotate view to show problem start at street intersection
  - Explain that once DS problems fixed, can do instant refresh to see if US was fixed (fix while onsite)
    - Preventative vs reactive maintenance models
  - Close out by showing table view, copy MAC of a modem to clipboard

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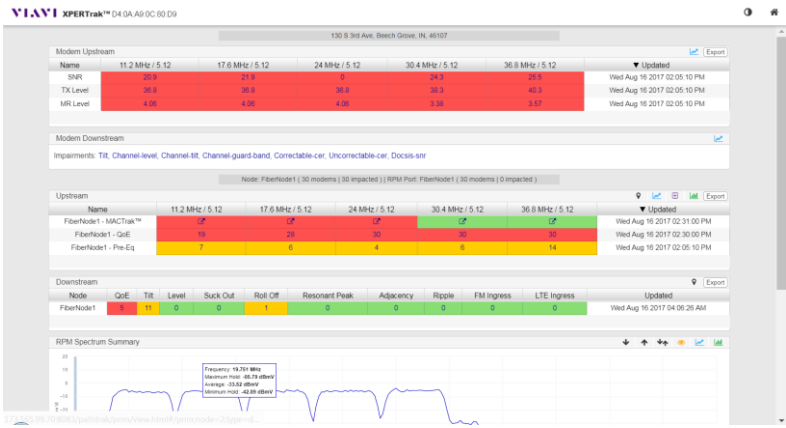
Demo 101



- **NOC Workflow – Modem MAC Search**
  - Go back to QoE Dashboard
  - Paste In MAC from previous step
  - Shows impairments on the node – same story as previous
  - Click on the map to see how he is doing relative to his peers
  - Click on the table view of the map and sort to also show he is relative to others on that node, what problems impact that subscriber.
  - Show HomeCheck to see what is going on with him right now
    - How to get there? Bookmark or have another tab open
    - Need single home impairment

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XPERTrak Value To Cable Operators:

It's As Easy As 1-2-3

Identify At-Risk Subscribers

Tell Where To Go, What To Do To Fix Their Issues

Superior Field Find & Fix Process

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Backup Material

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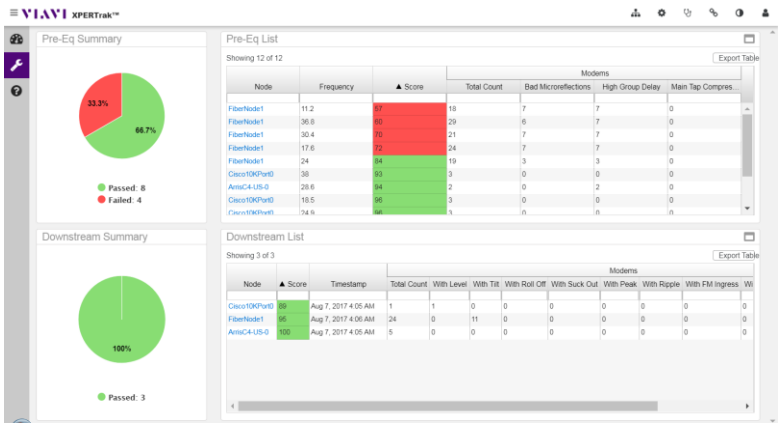
Demo 101 - Optional



- **Proactive Maintenance View**
  - Remind customer of use case – prioritize proactive maintenance
    - Focus is on worst impairments at physical layer, QoE impact NOT considered
    - Great for prioritizing sweep, etc

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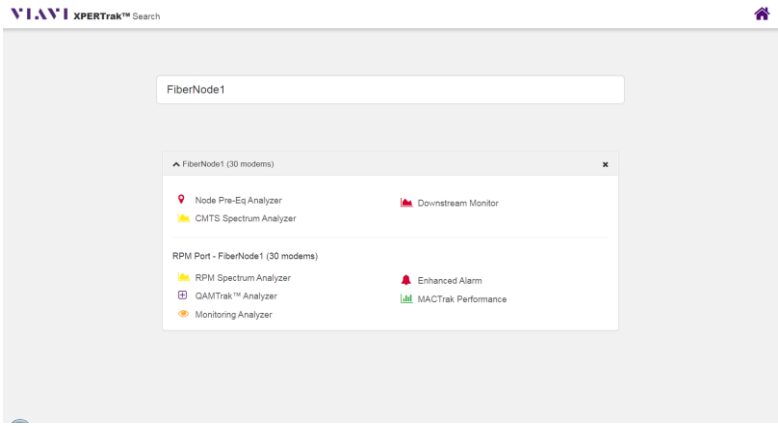
Demo 101 - Optional



- **Enterprise Search/Tech View**
  - Simpler view for Tech's to access all find and fix tools – especially on mobile device
    - Use case is for when they know what the problem is, just want access to tools to find/fix

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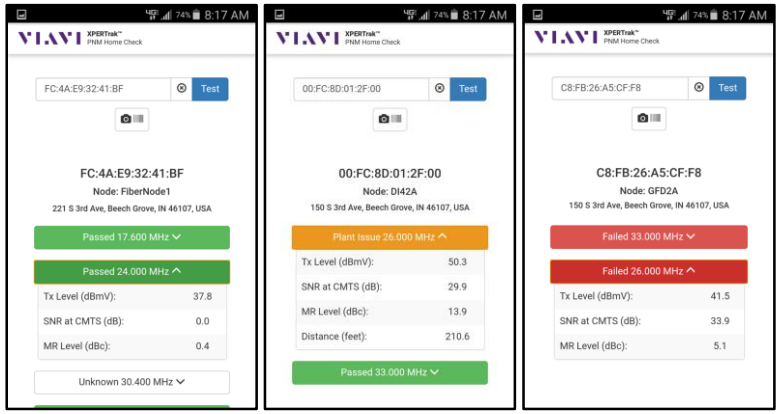
Demo 101: Optional



- **XPERTrak Home Check**
  - Simple Go/No-Go Test For a Given MAC Address
  - URL: http://173.165.99.70:8083/pathtrak/homepnm/app/index.html#/homepnm
    - Alt: Navigate to Help screen (http://173.165.99.70:8083/pathtrak/help.html), click to Home Check
  - Either paste in MAC copied to clipboard in previous step or start typing
    - Single home Fail MAC: TBD
    - Fail - Network Issue MAC: TBD
    - Green MAC: TBD

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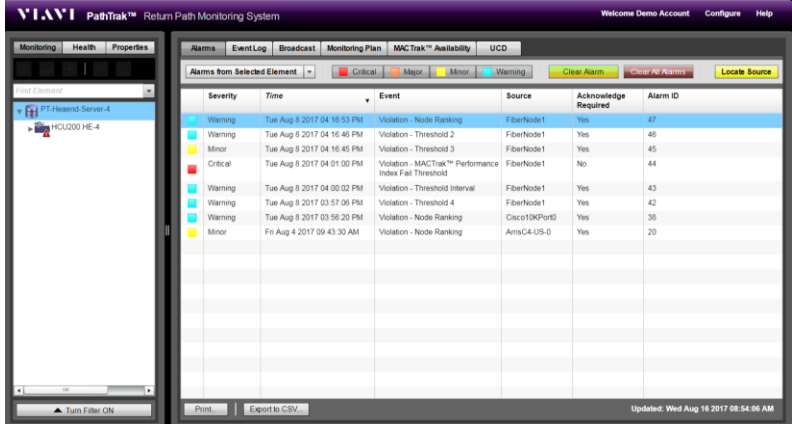
Demo 101 - Optional



- **PathTrak Admin View**
  - Used only for existing PathTrak power-users/admins
    - Show them how setup works, not much different than what they are used to
    - Minimize anxiety over additional workload to admin much more powerful system

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