Value of ADEM Webinar

Customer Success Team

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Day 1

Few things to keep in mind!

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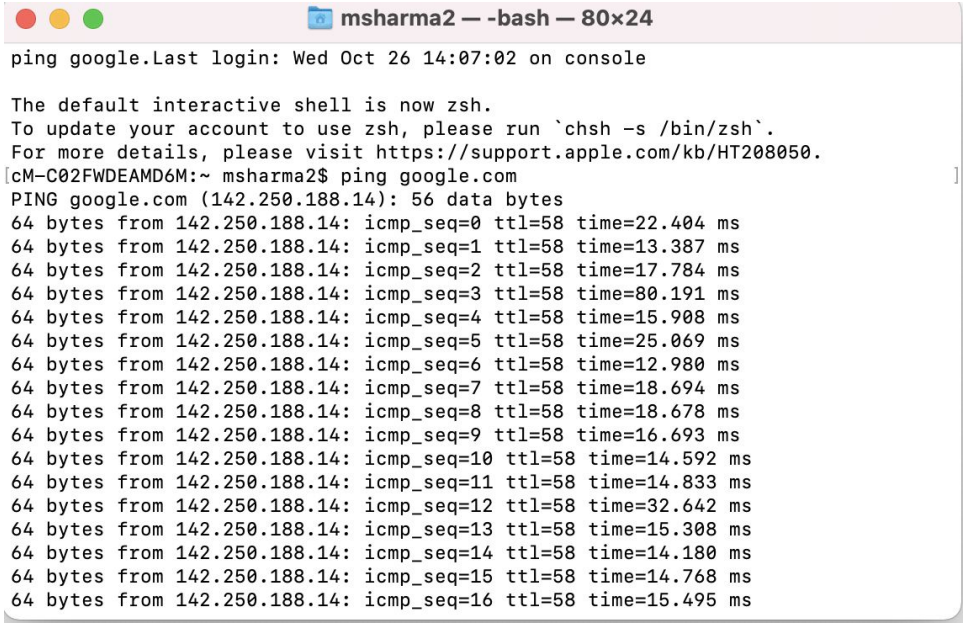
Check GP version and device support

Entity		Supported version
Device OS	MacOS	10.15 and newer
	Windows	Windows 10, Build 1809 and newer
GlobalProtect		Version 5.2.11 or newer

Check that the network isn't blocking ICMP tests

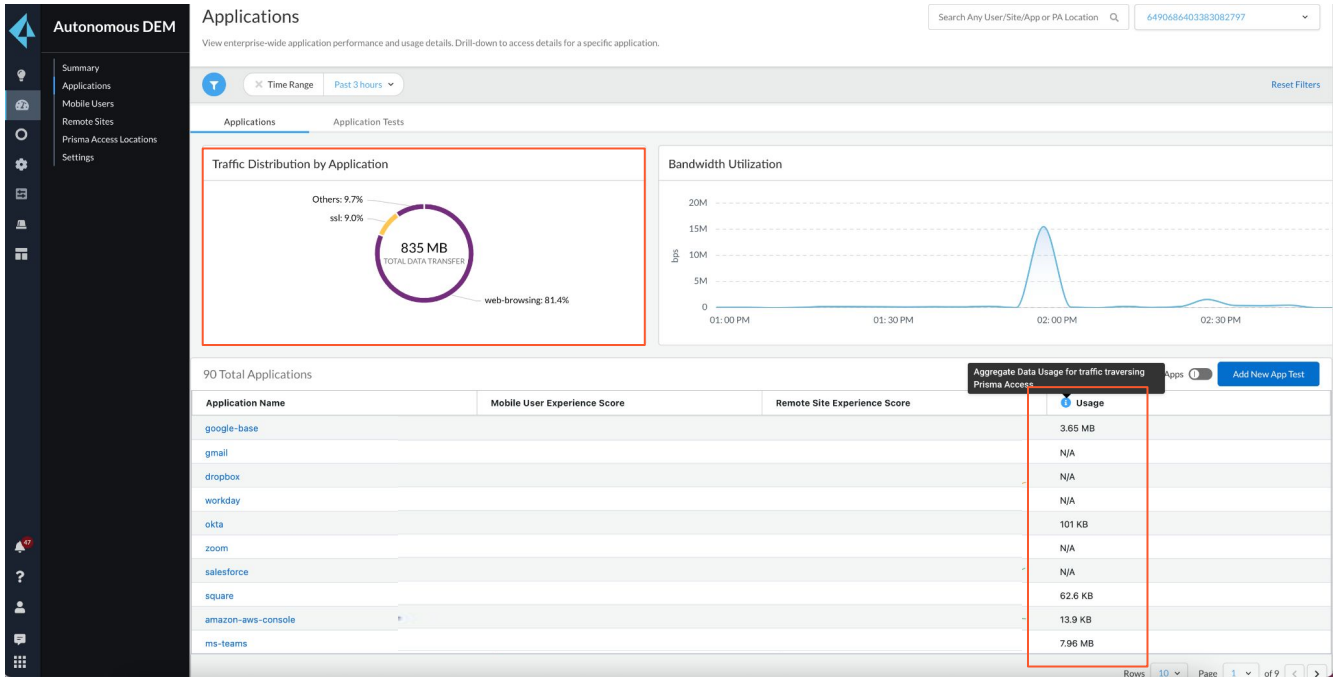


Whitelist application processes

MACOS PROCESS		
PROCESS	PROCESS DESCRIPTION	USER/PERMISSION LEVEL
/Applications/GlobalProtect Autonomous DEM.app/Contents/MacOS/crypter	(This is a debugging tool as of 3.0.0) In previous versions it was used to read encrypted data from GlobalProtect: username, subtenant_id,certificate password.	_panwdem (sudo)
/Applications/GlobalProtect Autonomous DEM.app/Contents/Services/DemPathTestService.xpc/Contents/MacOS/mtr	Path Trace test for showing path visualization data on ADEM portal	_panwdem (sudo)
/Applications/GlobalProtect Autonomous DEM.app/Contents/Services/DemPathTestService.xpc/Contents/MacOS/DemPathTestService	Invokes the mtr process for path traces.	_panwdem
/Applications/GlobalProtect Autonomous DEM.app/Contents/Services/DemWebTestService.xpc/Contents/MacOS/DemWebTestService	Runs the curl process.	_panwdem
/Applications/GlobalProtect Autonomous DEM.app/Contents/Services/DemWebTestService.xpc/Contents/MacOS/curl	Application Performance test using Curl	_panwdem
/Applications/GlobalProtect Autonomous DEM.app/Contents/Services/DemUpdateService.xpc/Contents/MacOS/DemUpdateService	Endpoint DEM service software update manager	root
/Applications/GlobalProtect Autonomous DEM.app/Contents/Services/DemNetworkTestService.xpc/Contents/MacOS/DemNetworkTestService	Runs ICMP/TCP ping tests.	_panwdem
/Applications/GlobalProtect Autonomous DEM.app/Contents/Services/DemCollectionService.xpc/Contents/MacOS/DemCollectionService	Collects local system metrics such as cpu, memory, and wifi statistics.	_panwdem
/Applications/GlobalProtect Autonomous DEM.app/Contents/Services/DemPortalService.xpc/Contents/MacOS/DemPortalService	Provides connectivity to the ADEM portal for incoming configuration and transmission of test results.	_panwdem
/Applications/GlobalProtect Autonomous DEM.app/Contents/Services/DemTransmissionService.xpc/Contents/MacOS/DemTransmissionService	Runs periodically to collect test results from the other services and transmits them to the portal via the portal service.	_panwdem
/etc/sudoers.d/'palo_alto_networks_dem.tmp'	File lists processes that requires sudo access	_panwdem (sudo)

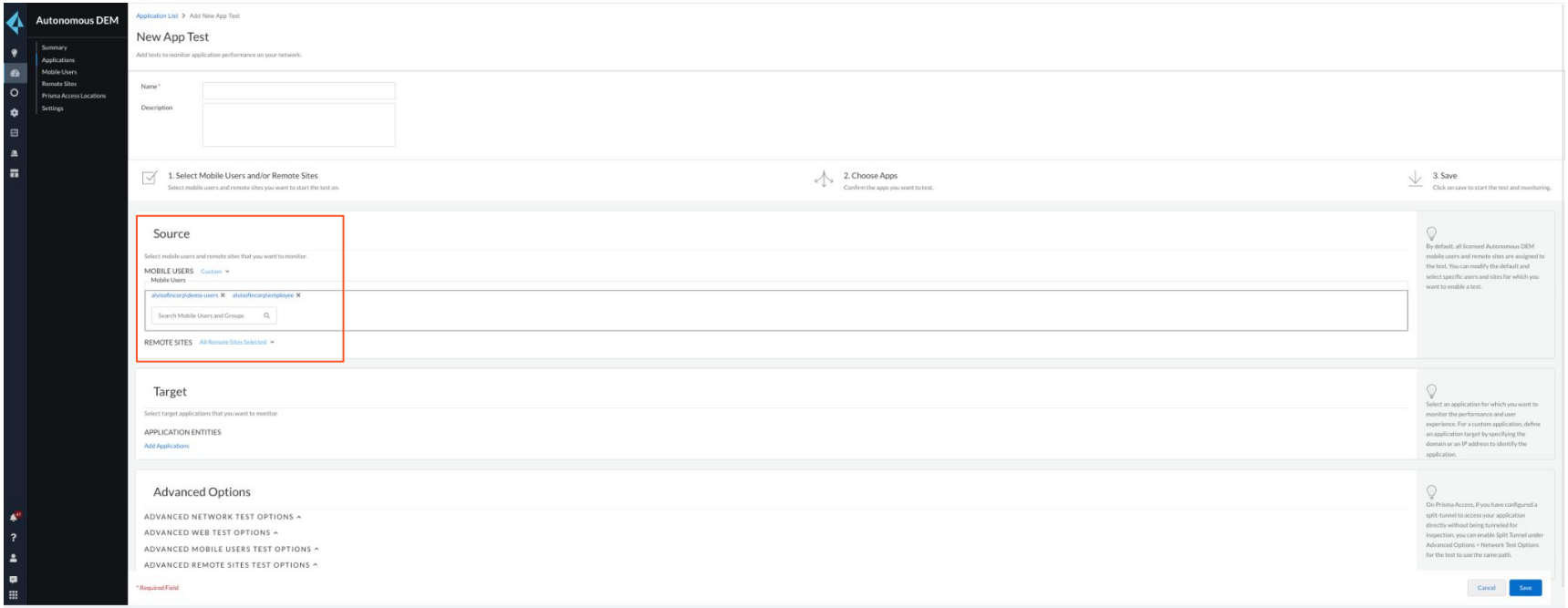
WINDOWS PROCESS		
PROCESS	PROCESS DESCRIPTION	USER/PERMISSION LEVEL
C:\Program Files\Palo Alto Networks\DEM\bin\curl	Application Performance test using Curl	Network Service
C:\Program Files\Palo Alto Networks\DEM\bin\mtr-packet	Path Trace test for showing path visualization data on ADEM portal	Network Service
C:\Program Files\Palo Alto Networks\DEM\bin\mtr	Invokes the mtr process for path traces.	Network Service
C:\Program Files\Palo Alto Networks\DEM\bin\tcping	Network Performance test for Applications using TCP Ping	Network Service
C:\Program Files\Palo Alto Networks\DEM\AgentProcess	This is the main agent process that provides portal connectivity and test coordination.	Local System
C:\Program Files\Palo Alto Networks\DEM\GlobalProtectAutonomousDEM	The main service that launches the AgentProcess.	Local System
C:\Program Files\Palo Alto Networks\DEM\GlobalProtectAutonomousDEMUpdater	Endpoint DEM service software update manager	Local System

Decide which apps to configure tests for



Configure tests and associate users with tests

Enable ADEM for selected user groups



Reference links for ADEM registration and set up

TechDocs : Get started with Autonomous DEM

TechDocs : ADEM Monitoring and Tests

Video on ADEM registration and activation

Week 1

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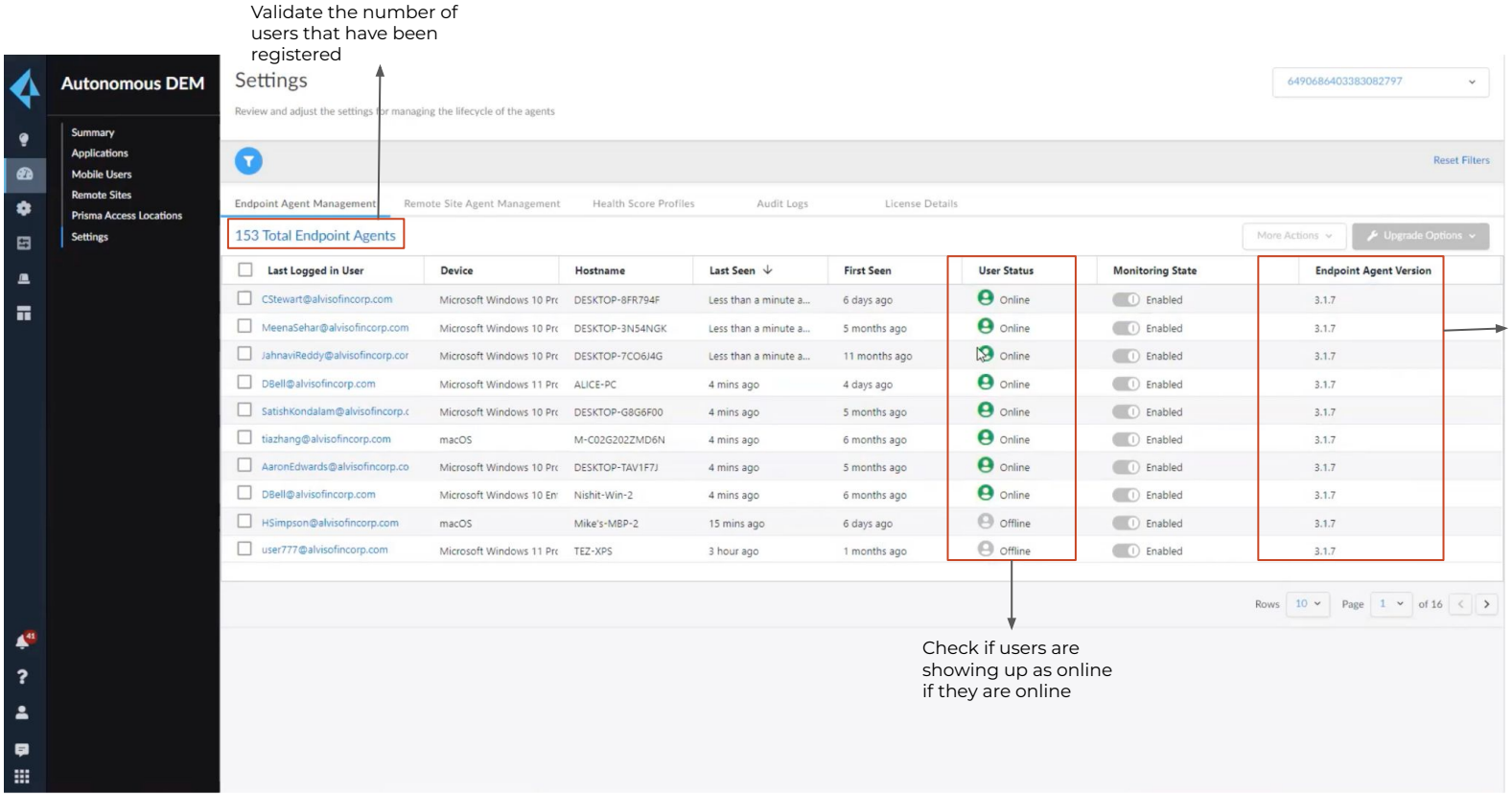
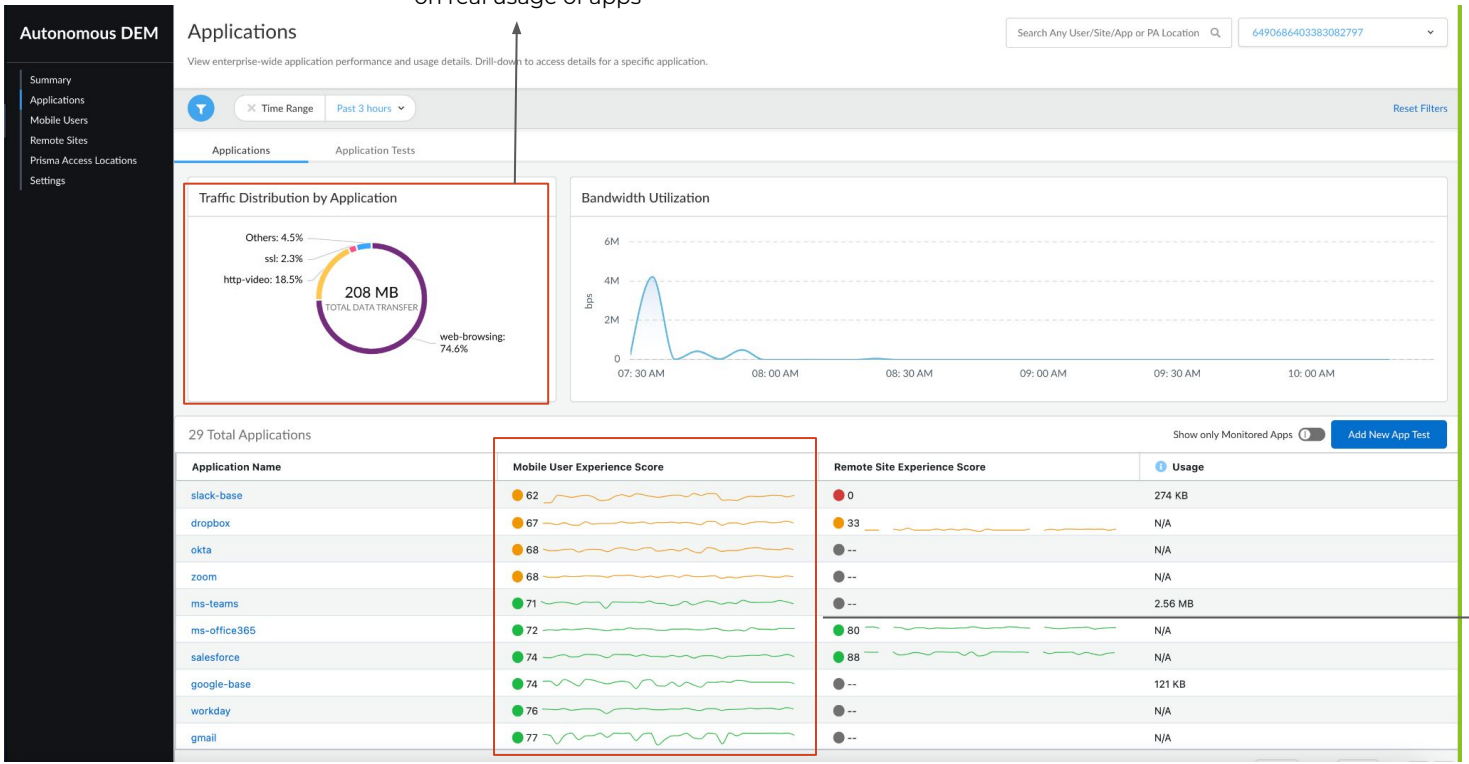
Step 1 : Validate information on settings page



Step 2 : Validate information on applications page

Check if app traffic looks accurate based on real usage of apps

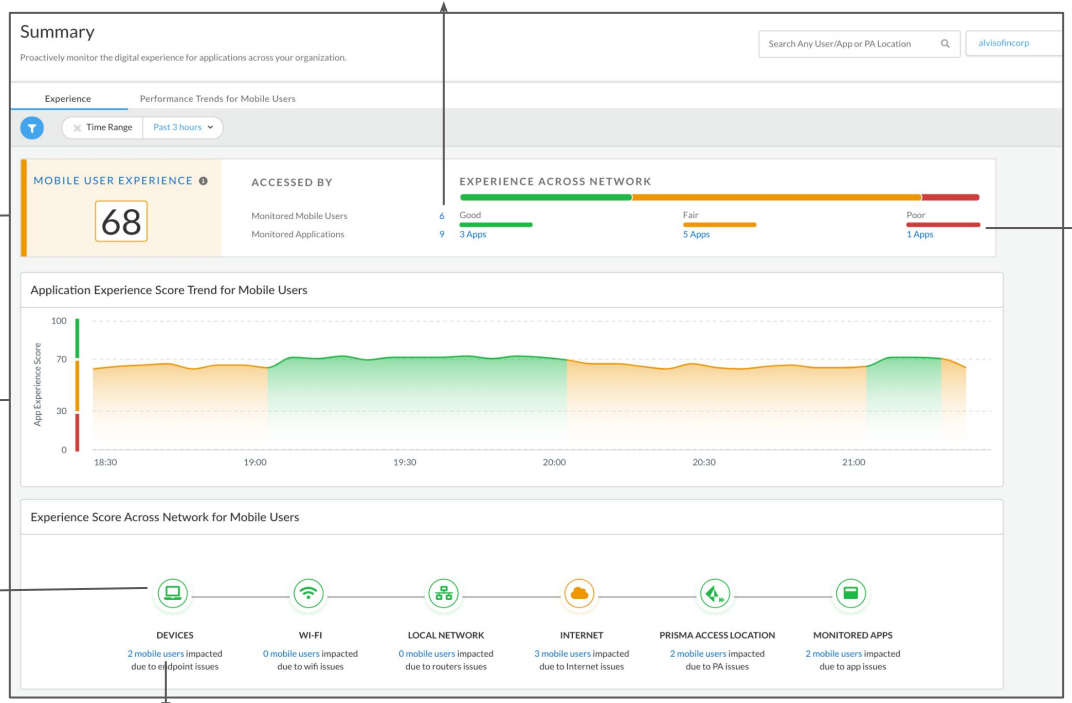


Average of MU experience for all apps

Step 3 : Summary page

Total number of monitored users

Total number of monitored applications



Average MU experience for all apps

Based on the MU experience score across apps

Time series graph of average MU experience for all apps

Coloring based on average of segment health score for all MUs.

<u>Example:</u> Average of Device health score for all MUs. Color will be based on the range in which the average falls.

Number of MUs for whom this segment is amber/red

Summary page

Average of experience scores of MUs connected to this PA location

Total number of MUs connected to this PA location

Total number of Applications monitored for all the MUs connected to this PA location

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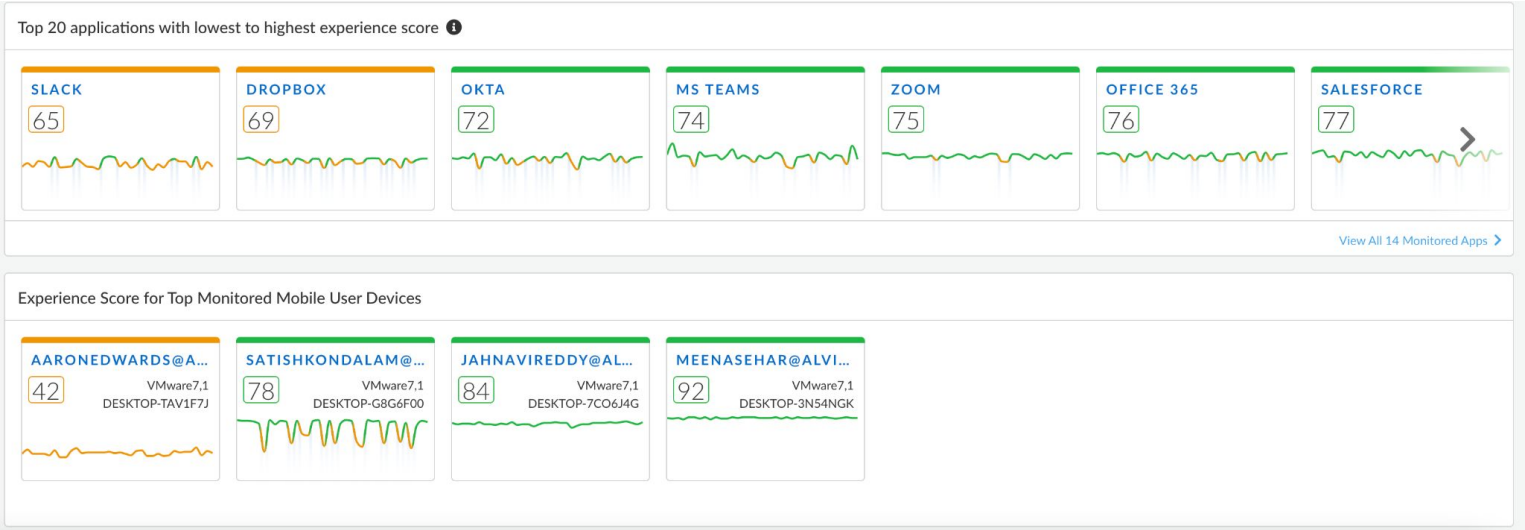
Summary page

Average application experience score for all monitored MUs

User experience score of top monitored MUs across all apps



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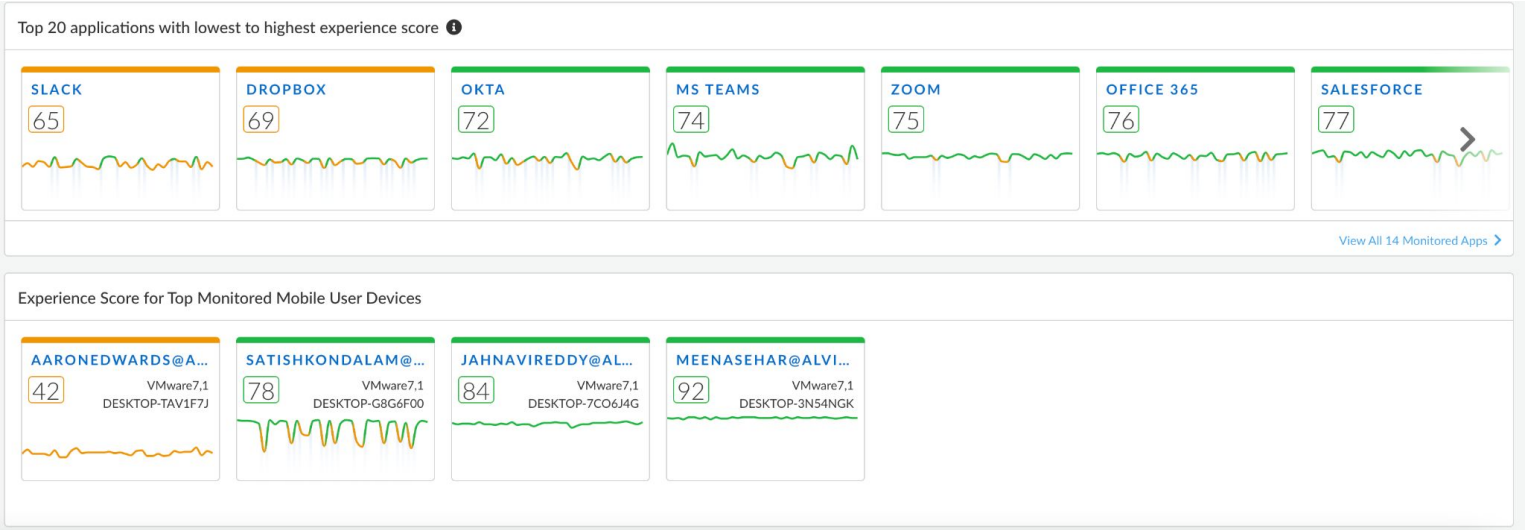

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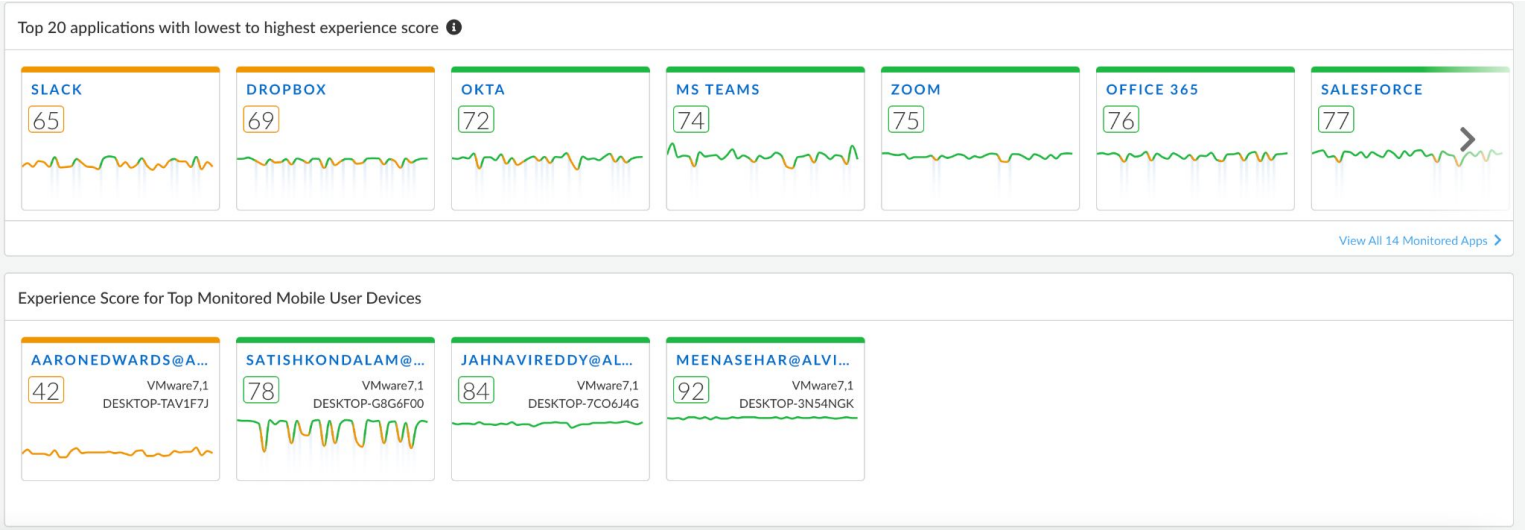
Summary page

Average application experience score for all monitored MUs

User experience score of top monitored MUs across all apps



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Experience Thresholds

Entity	Threshold	Total Impact when threshold is out of range
Device	CPU usage: 20 -100 %	40%
	Memory: 80-100%	30%
	Disk Queue Length: 0 -8	20%
	Disk usage: 90- 100 %	10%
Local Area Network	Jitter: 0 -4 ms	20%
	Loss: 0 - 10 %	50%
	Latency: 2 - 10 ms	30%
WIFI	Rx : 0 - 200 Mbps	10%
	Signal : 0 - 100 dBm	80%
	Tx : 0 - 200 Mbps	10%

Entity	Threshold	Total Impact when threshold is out of range
Internet	Jitter: 5 - 50 ms	20%
	Loss: 0.5 - 10 %	50%
	Latency: 20 - 250 ms	30%
Prisma Access	Jitter: 5 - 50 ms	20%
	Loss: 0.5 - 10 %	50%
	Latency: 20 - 250 ms	30%
Application	TCP Lookup : 50 - 500 ms	20%
	Dns Lookup : 20 - 200 ms	20%
	SSL Connect : 50 - 500 ms	20%
	HTTP Latency : 50 - 1000 ms	40%

Experience Score

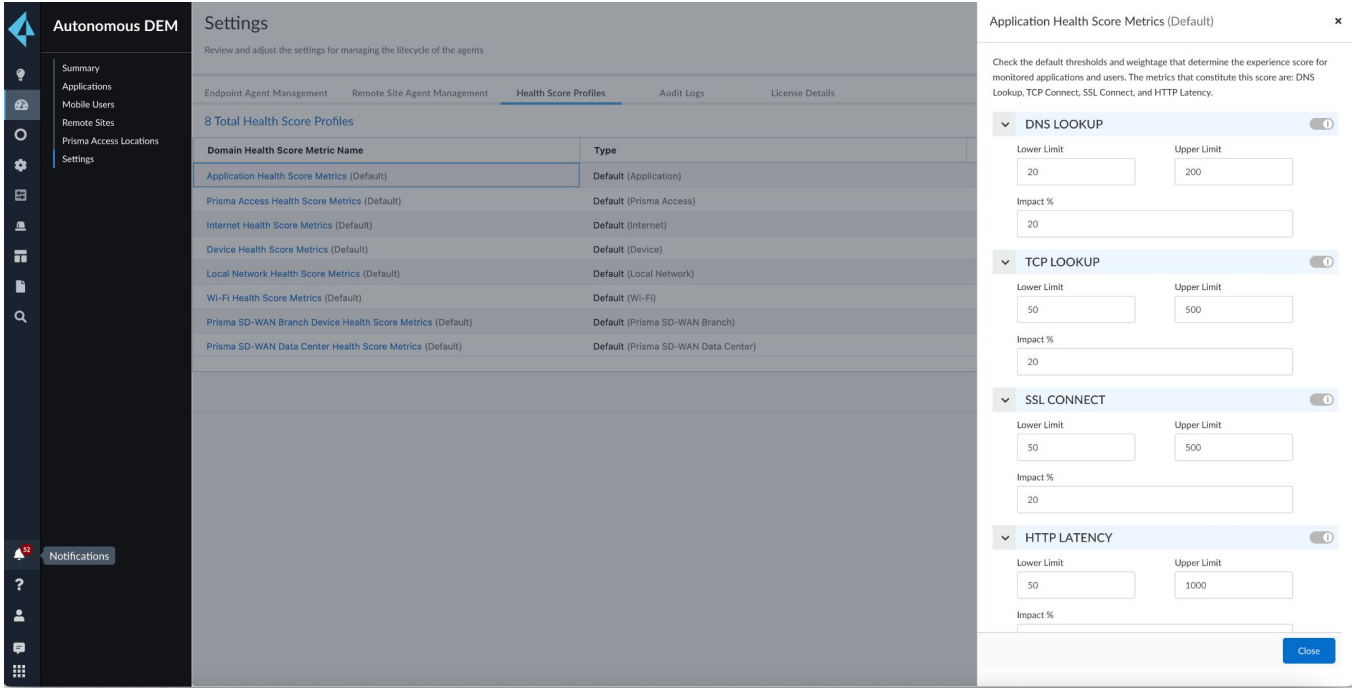
- Experience score is based on the HTTP/S “app/web” test results only.

Experience Score

- Experience score starts at 100.
- If Availability is 0 (app is unavailable), then the score is 0.
- DNS Lookup
    - If the DNS Lookup time is <20 msec, there is no impact.
    - If the DNS Lookup time is >200 msec, the impact is 20.
- TCP Connect
    - If the TCP Connect time is <50 msec, there is no impact.
    - If the TCP Connect time is >500 msec, the impact is 20.
- SSL Connect
    - If the SSL Connect time is <50 msec, there is no impact.
    - If the SSL Connect time is >500 msec, the impact is 20.
- HTTP Latency
    - If the HTTP Latency time is <50 msec, there is no impact.
    - If the HTTP Latency time is >=1,000 msec, the impact is 40.

Application	TCP Lookup : 50 - 500 ms	20%
	Dns Lookup : 20 - 200 ms	20%
	SSL Connect : 50 - 500 ms	20%
	HTTP Latency : 50 - 1000 ms	40%

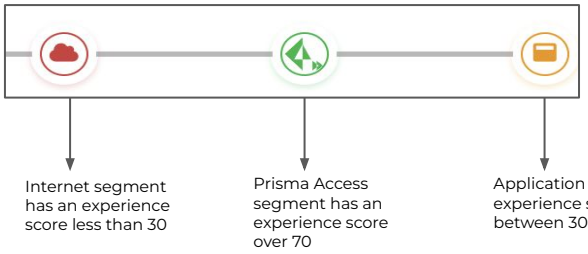
Summary page

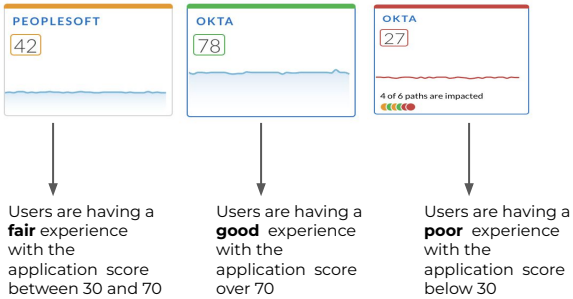


Experience Indicators

Score range	Icon Color Indication	Experience Level
Score >= 70	GREEN	Good
30 < = Score < =70	YELLOW	Fair
Score < 30	RED	Poor

Examples of Color Indicator across portal





Synthetic Test Frequency

- Network Performance Synthetics runs every **10 seconds**, results sent to DEM portal **every 5 mins**, contains average delay, jitter and loss comprising of up to 30 measurements.
  - ICMP test to LAN
  - Underlay ICMP test to SPN
  - Overlay ICMP test to SPN
  - End-to-End TCP Ping test to IP/Domain

- Path Trace Synthetic Test runs **5 traces in 5 minute sample period,** contains average delay, jitter and loss comprising of up to 5 measurements.
  - Underlay Path trace to SPN
  - End-to-End path trace to IP/Domain

- App (Web) Performance Synthetics Test uses HTTP/S to “GET” any user-defined IP/domain as part of a configured “test” **once every 5 mins**. Results sent to DEM portal **every 5 mins**, and contains HTTP/S timing metrics (DNS resolution, TCP Connect, SSL Connect, HTTP Latency

Month 1
Top ADEM use cases

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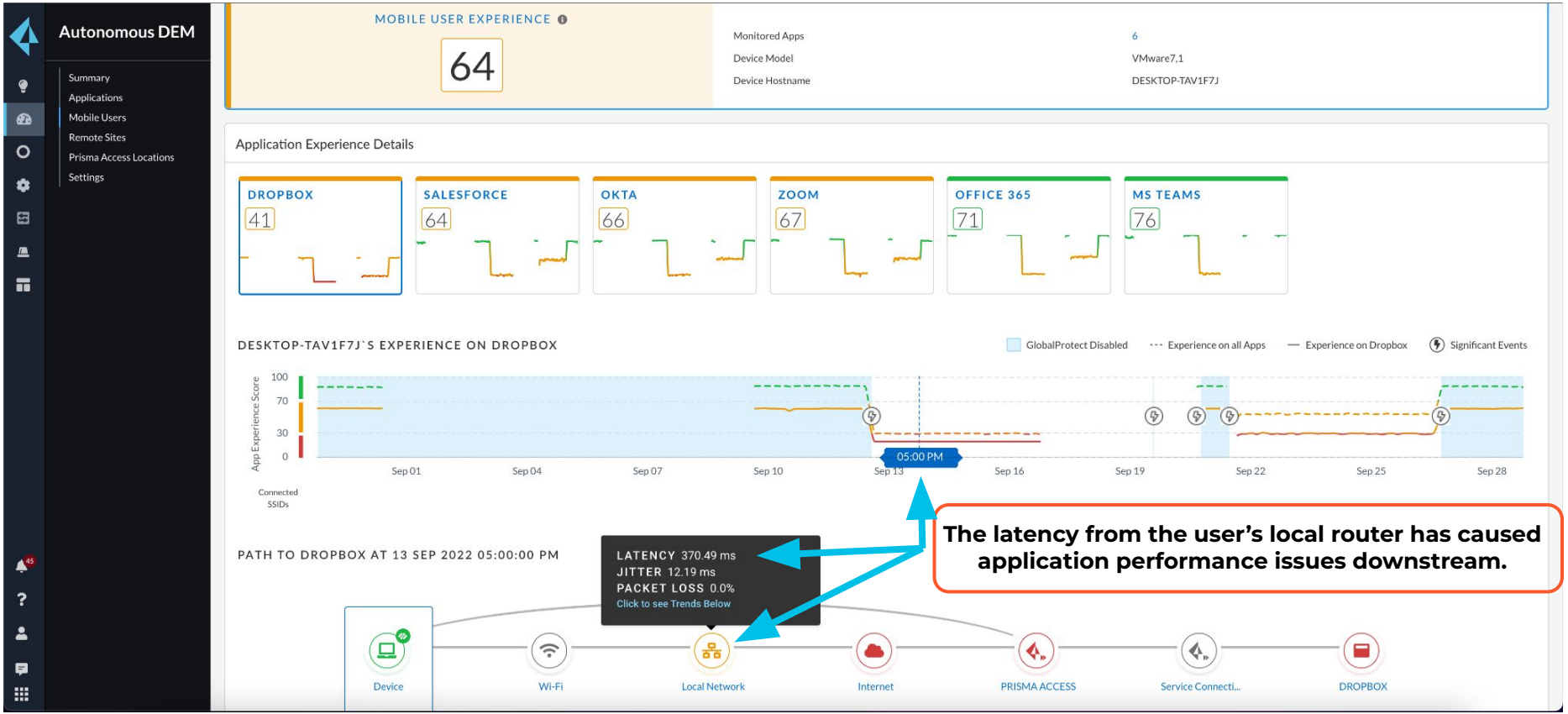
Issue #1 : LAN



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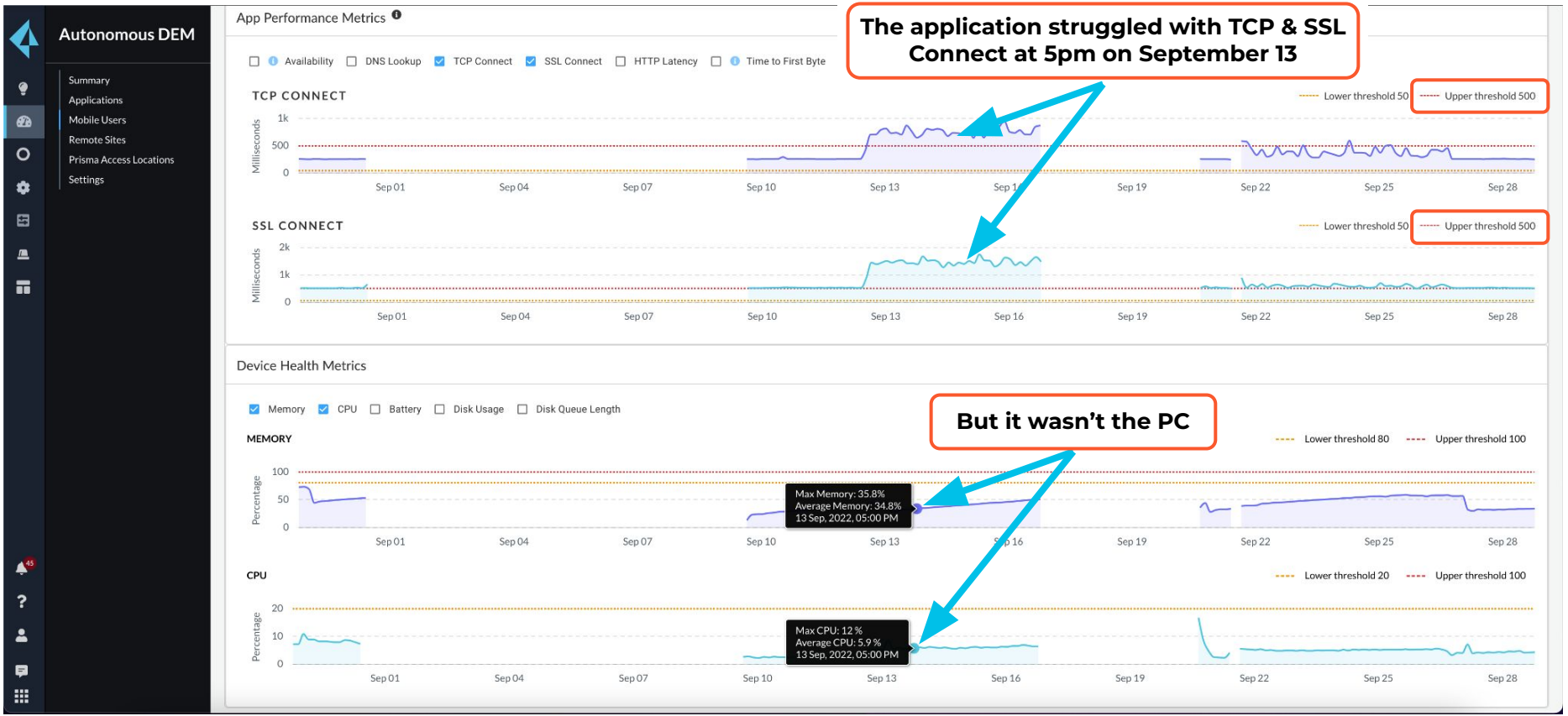

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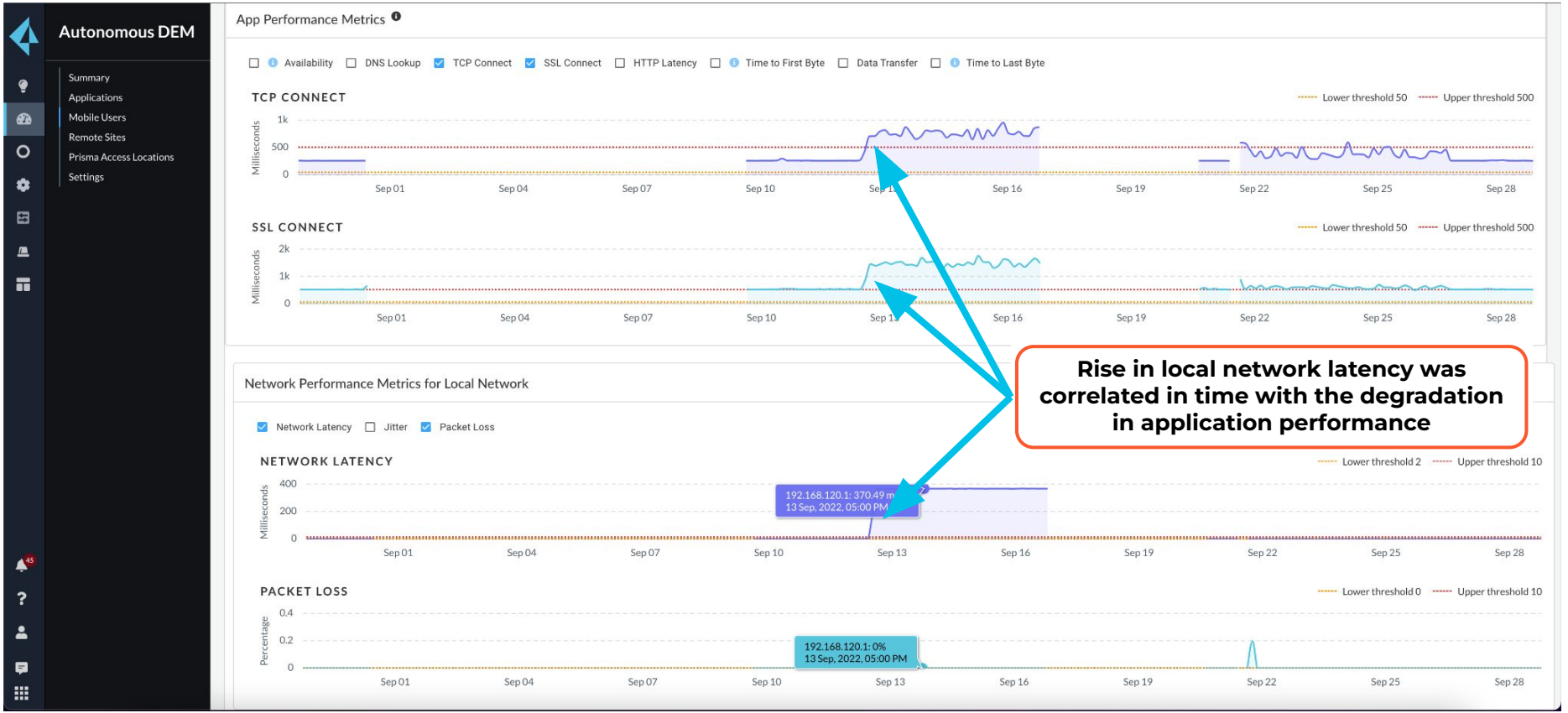

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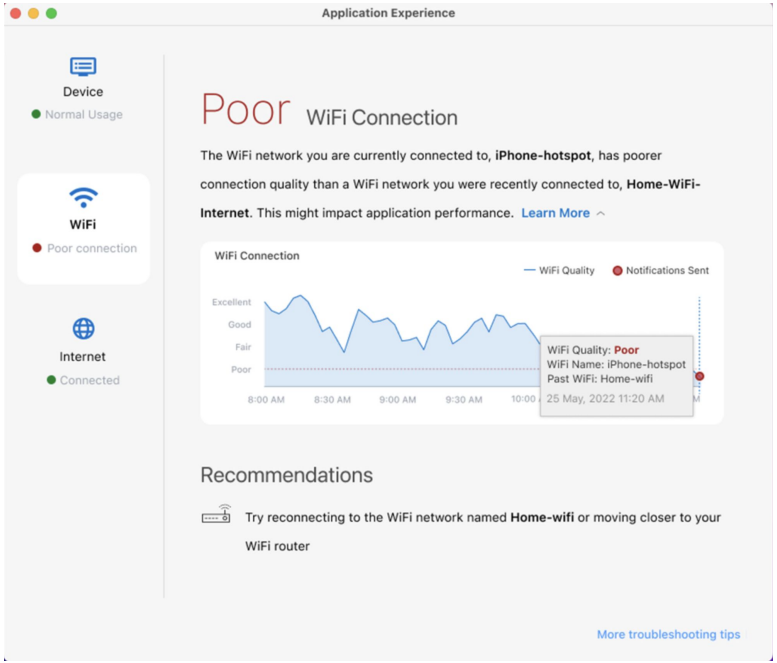
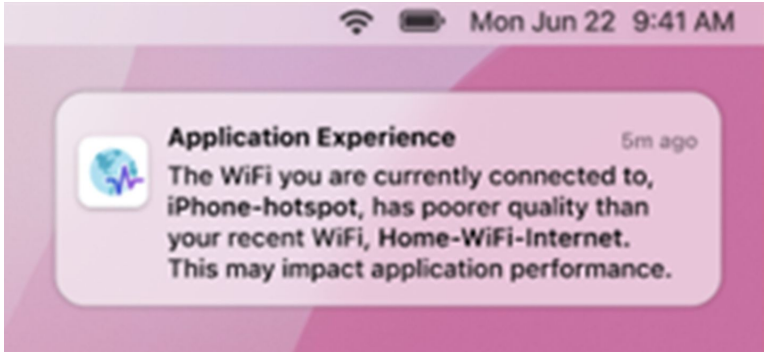
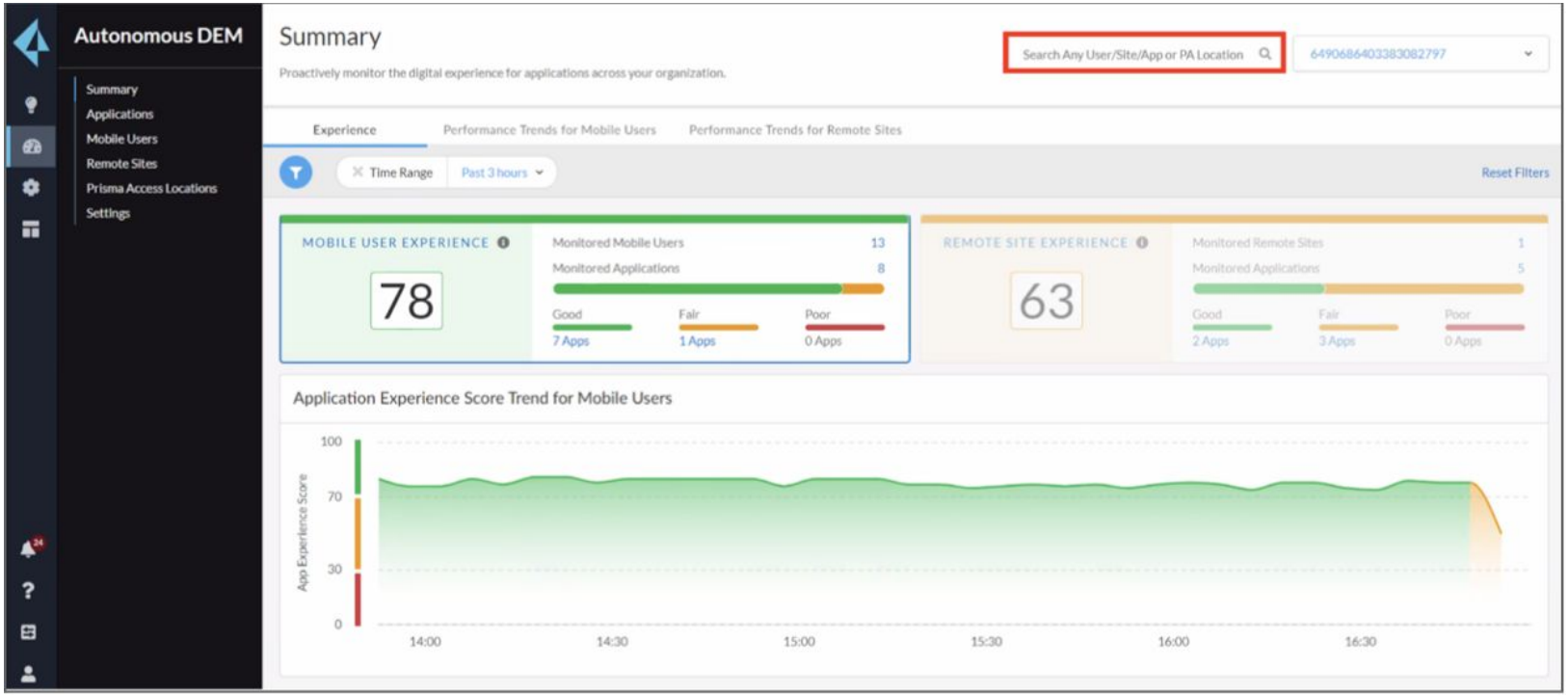
Issue #1 : Wifi


Application Experience
Device
Normal Usage
WiFi
Poor connection
Internet
Connected
Poor WiFi Connection
The WiFi network you are currently connected to, iPhone-hotspot, has poorer connection quality than a WiFi network you were recently connected to, Home-WiFi-Internet. This might impact application performance. Learn More
WiFi Connection
WiFi Quality
Notifications Sent
Excellent
Good
Fair
Poor
8:00 AM
8:30 AM
9:00 AM
9:30 AM
WiFi Quality: Poor
WiFi Name: iPhone-hotspot
Past WiFi: Home-wifi
25 May, 2022 11:20 AM
Recommendations
Try reconnecting to the WiFi network named Home-wifi or moving closer to your WiFi router
More troubleshooting tips


Mon Jun 22 9:41 AM
Application Experience
5m ago
The WiFi you are currently connected to, iPhone-hotspot, has poorer quality than your recent WiFi, Home-WiFi-Internet. This may impact application performance.

Issue #3 : High CPU



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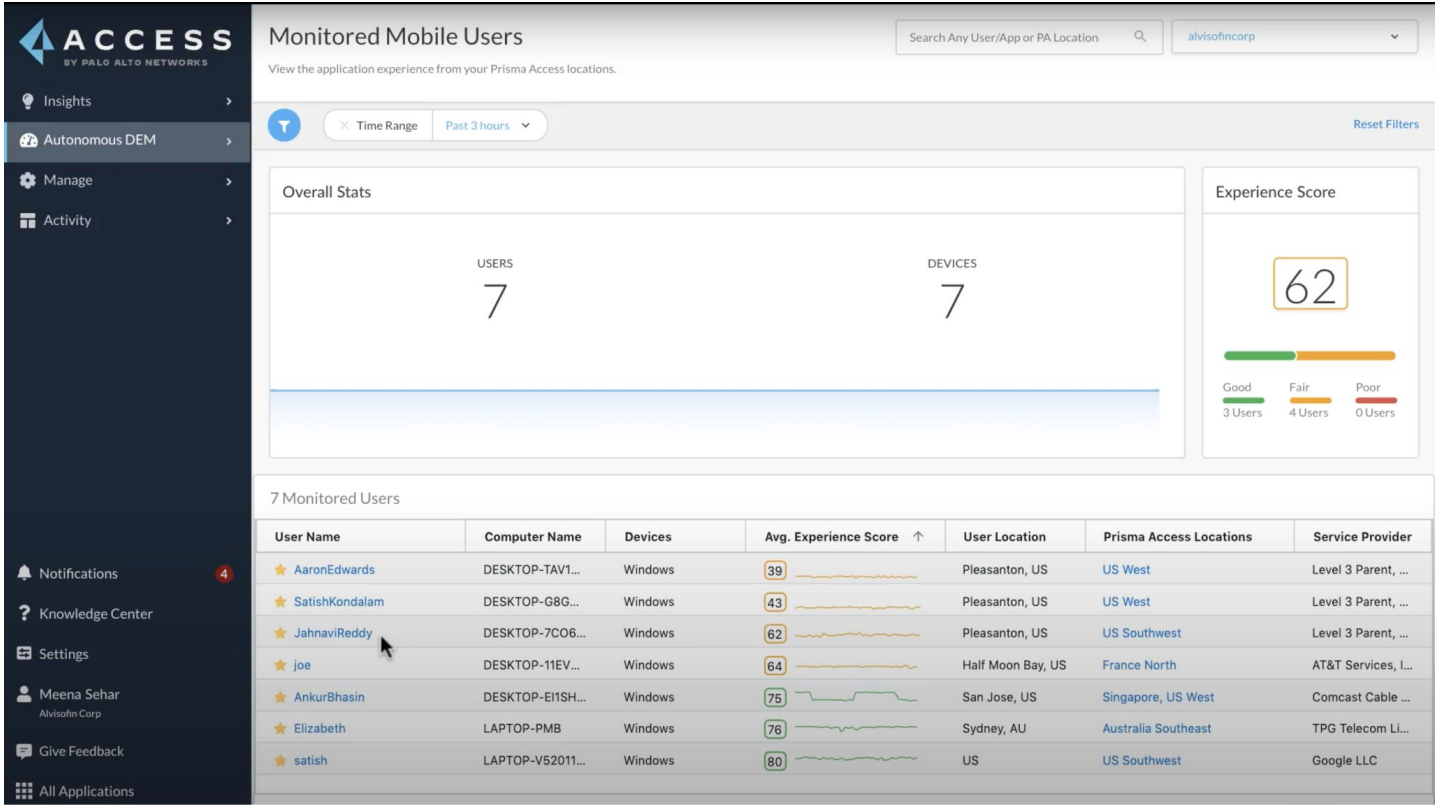

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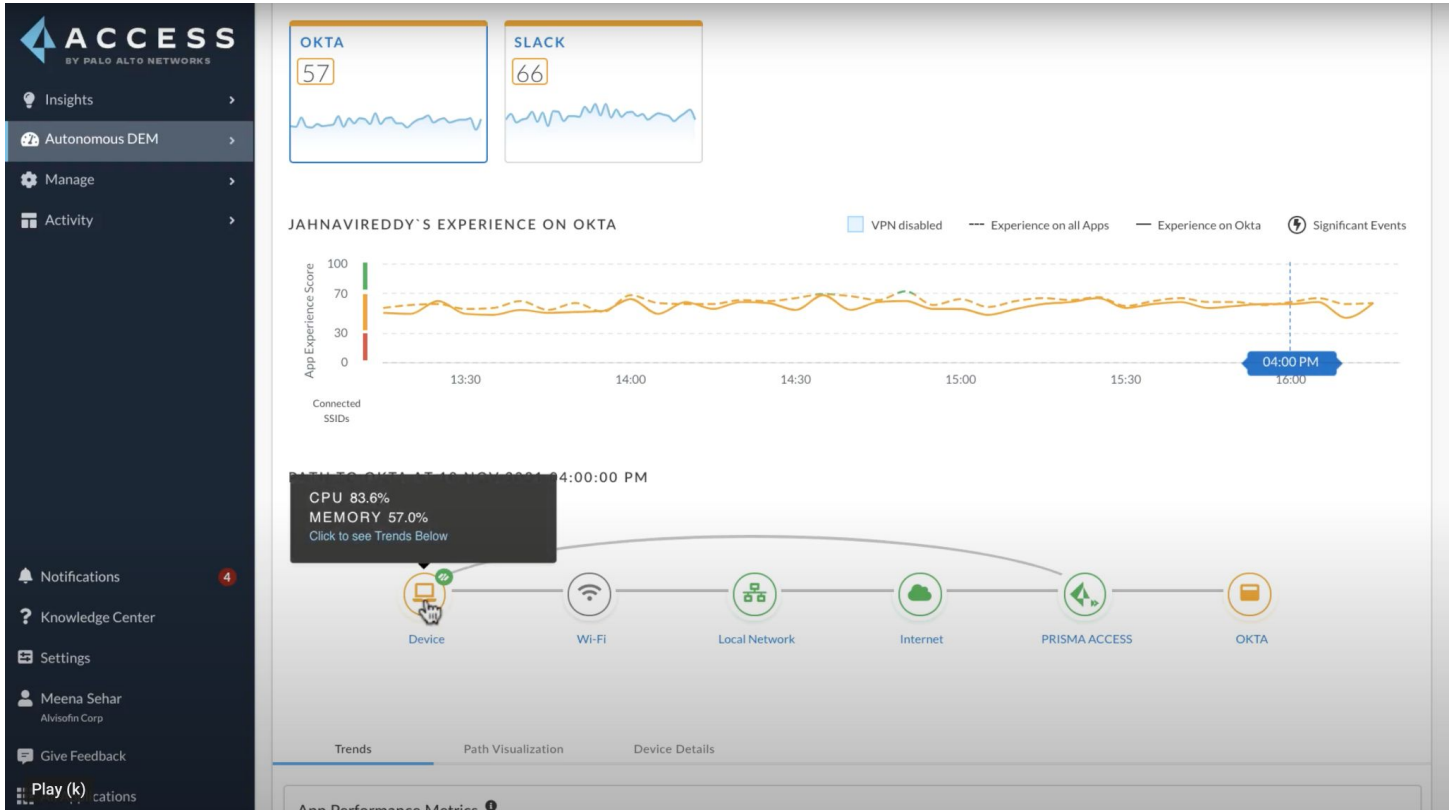

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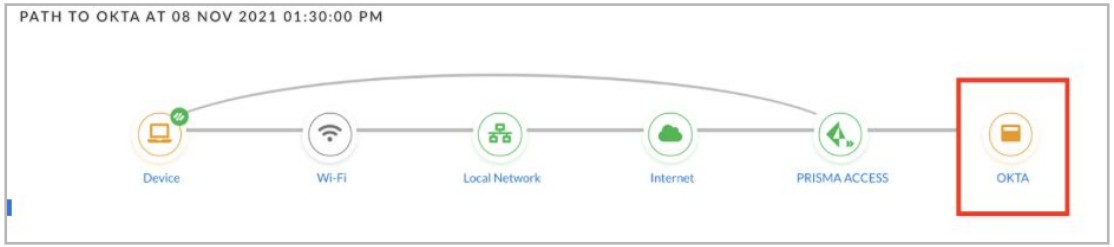
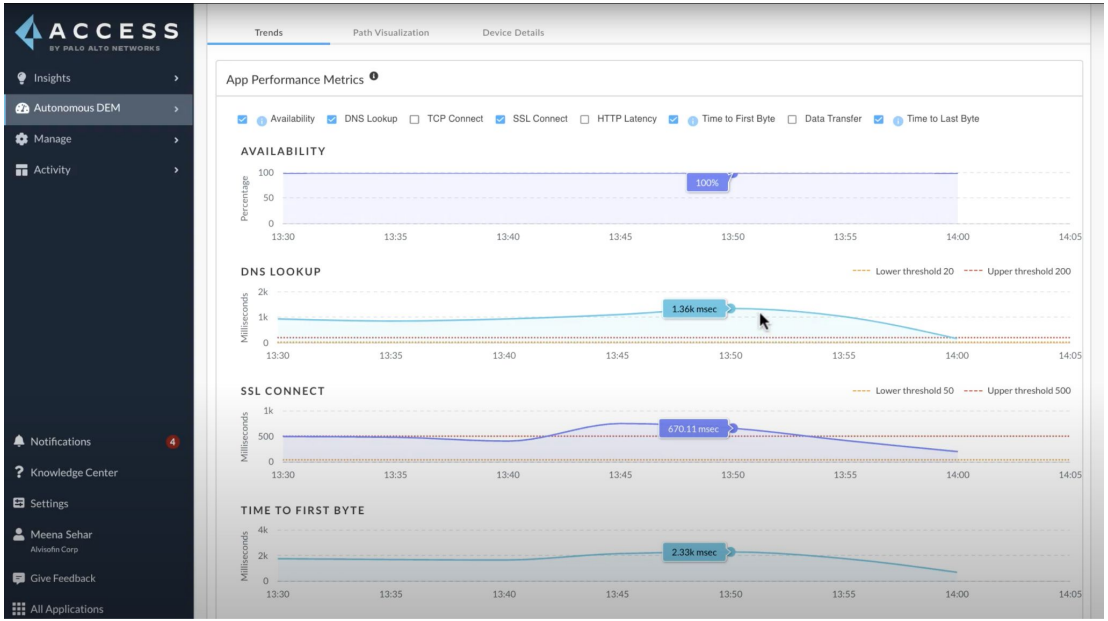
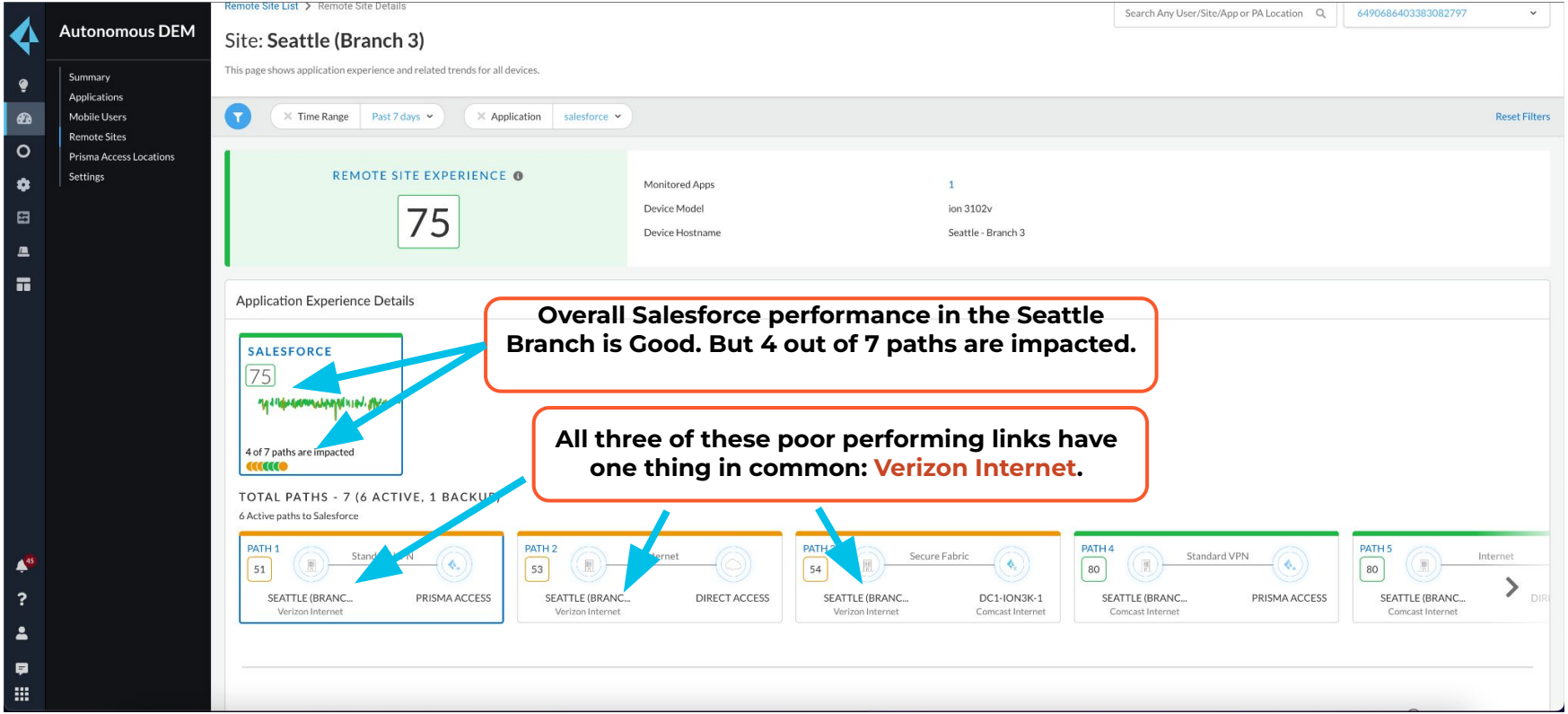




Issue #4 : ISP



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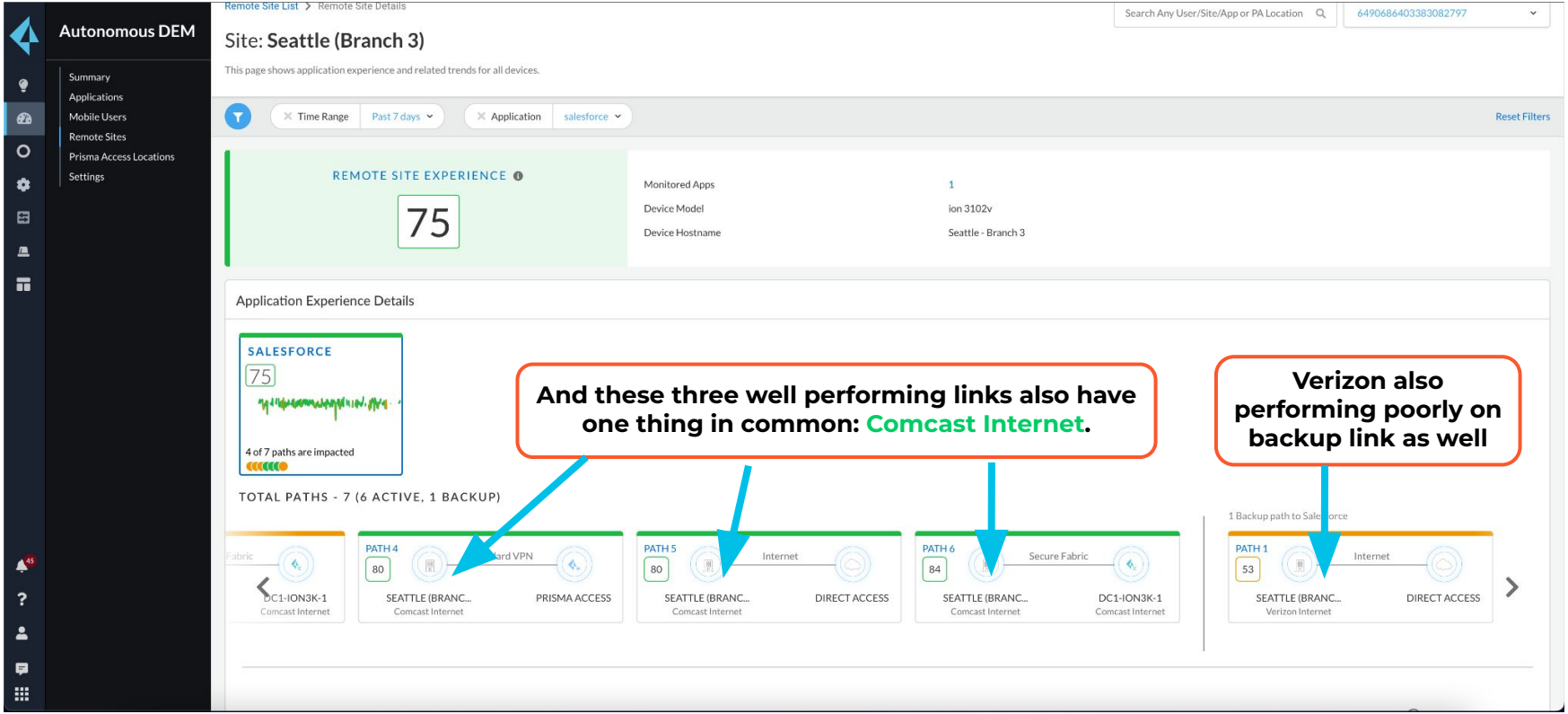
Issue #4 : ISP



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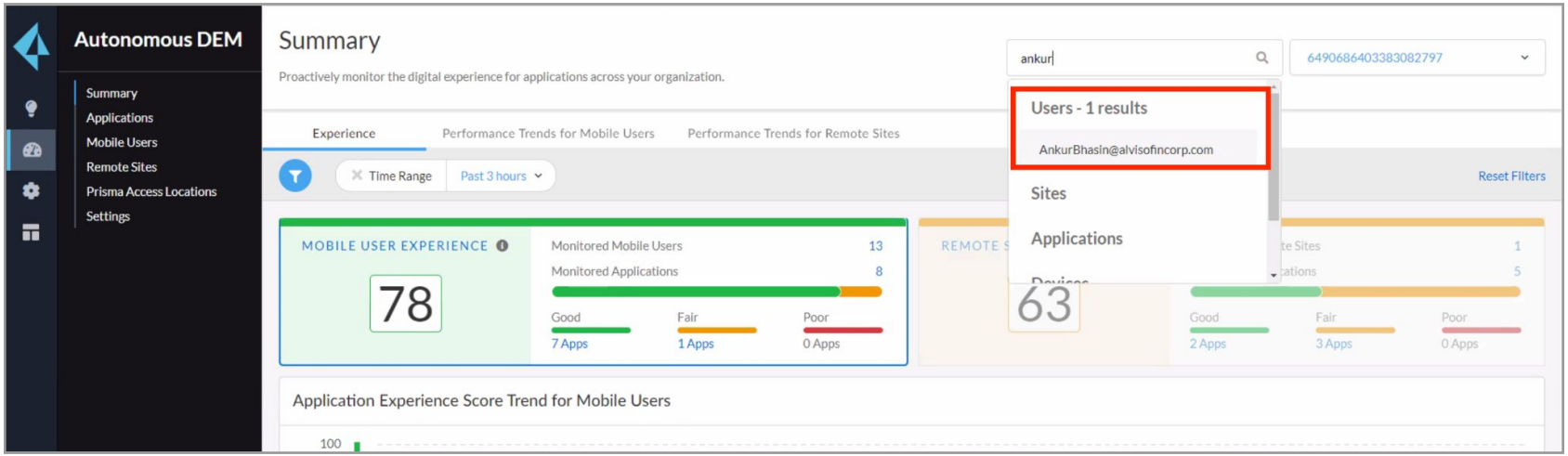
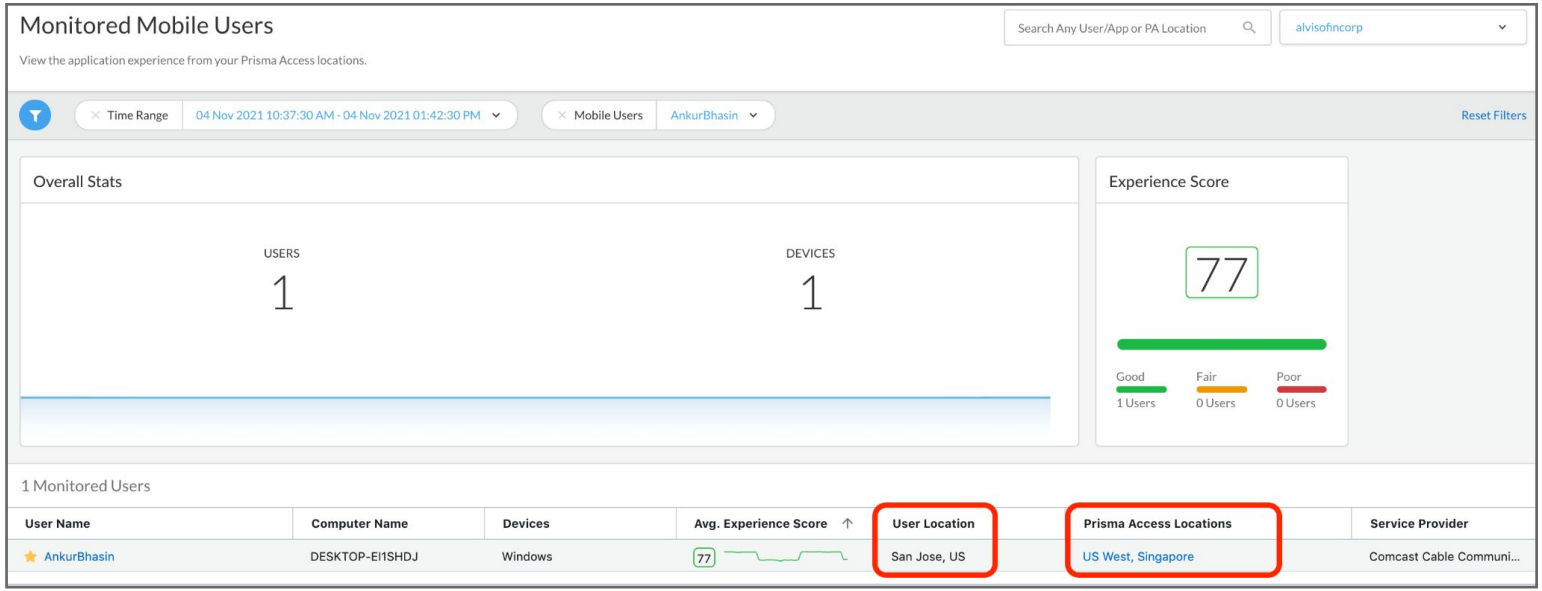
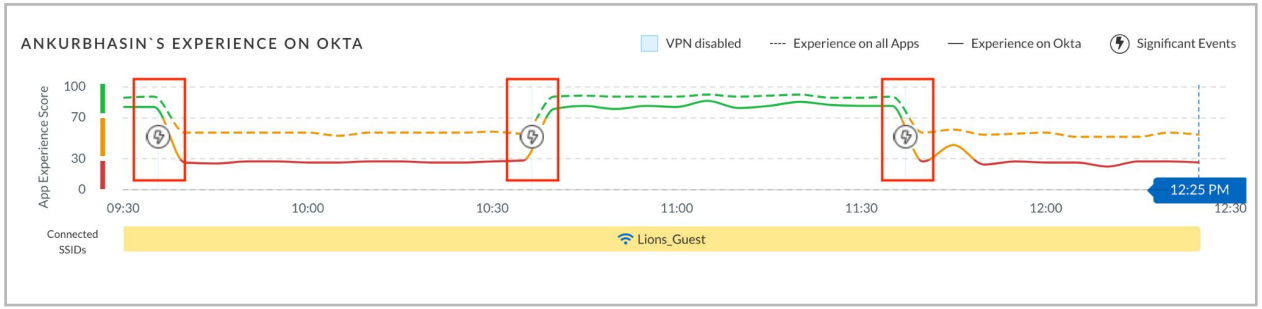
Issue # 5 : PA gateway

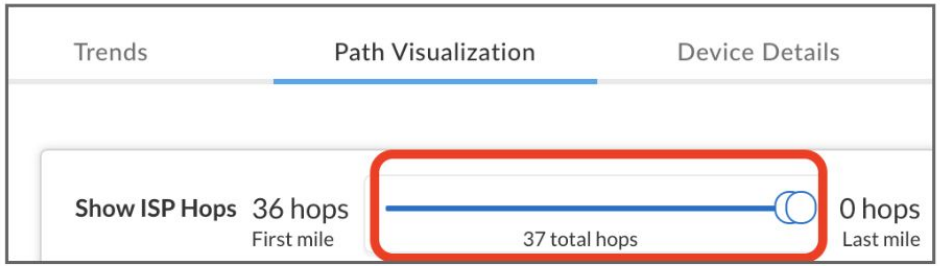


Issue # 5 : PA gateway



Issue # 5 : PA gateway





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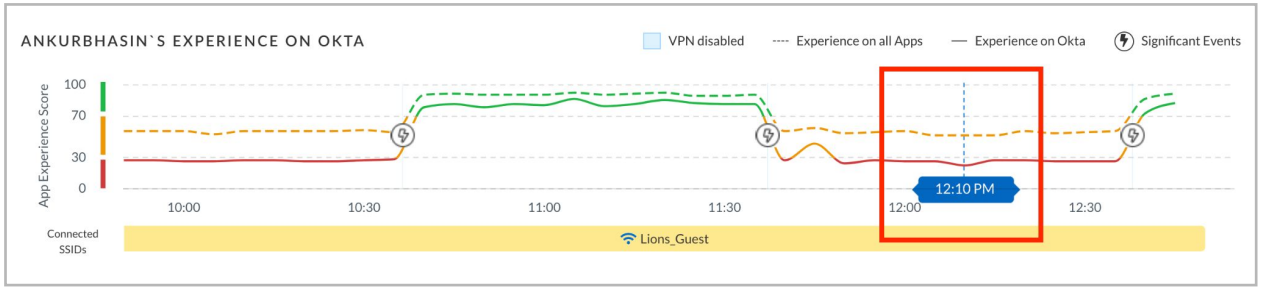

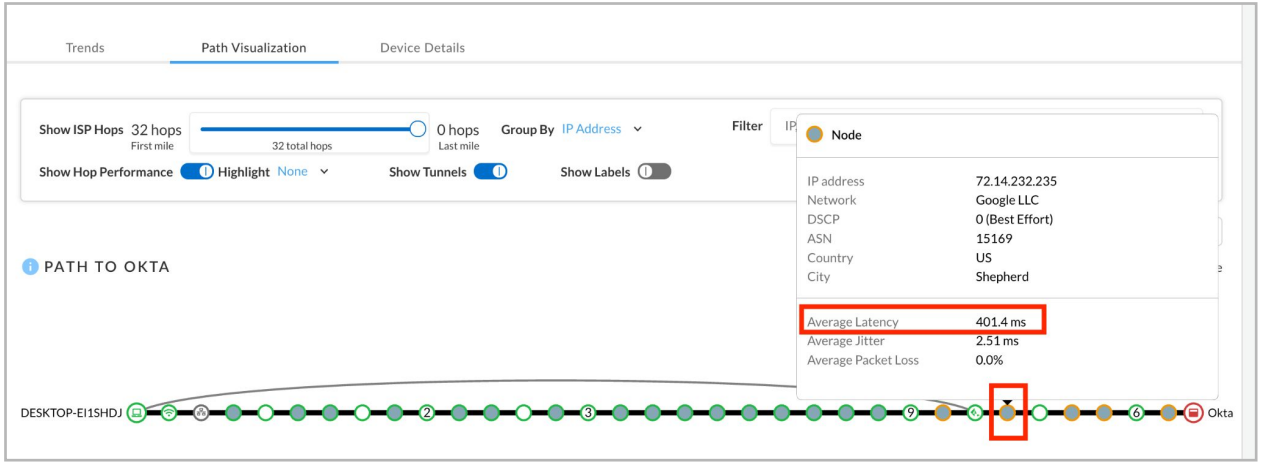

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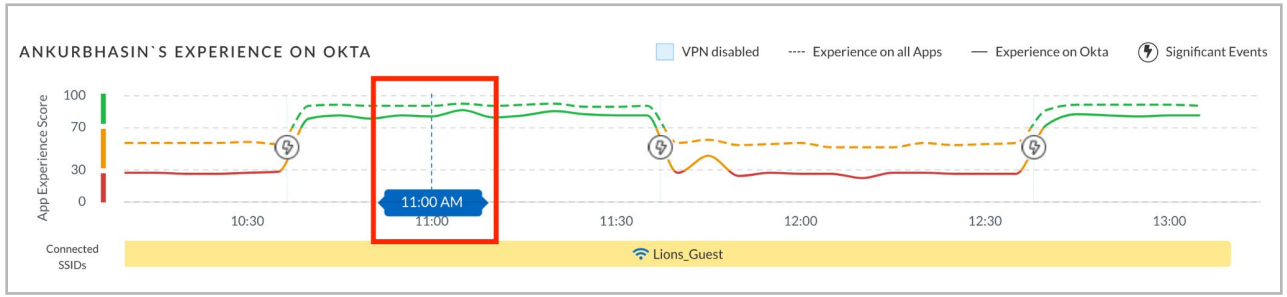
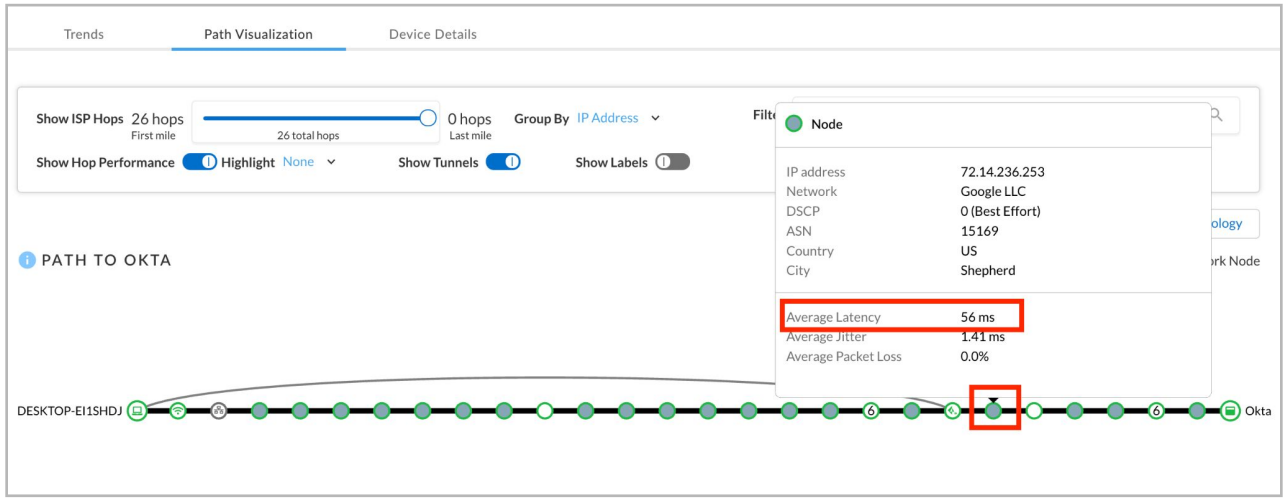
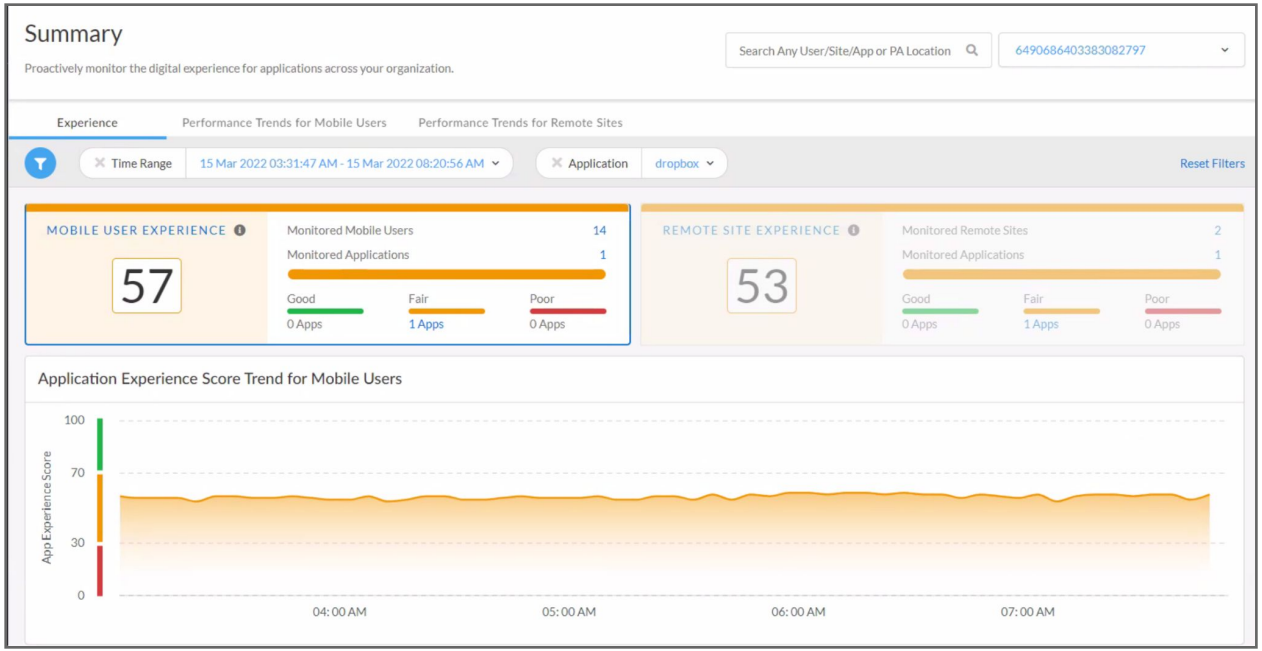
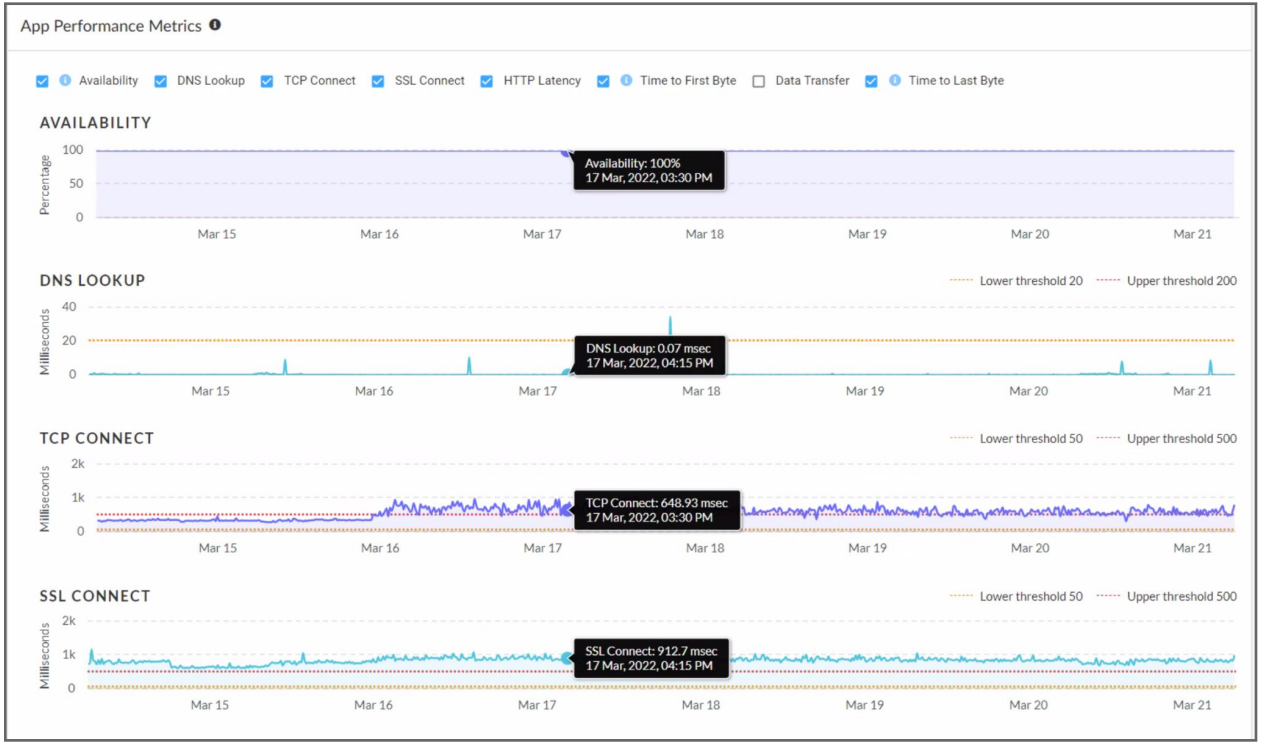




Issue # 6 : Saas App



Issue # 6 : Saas App

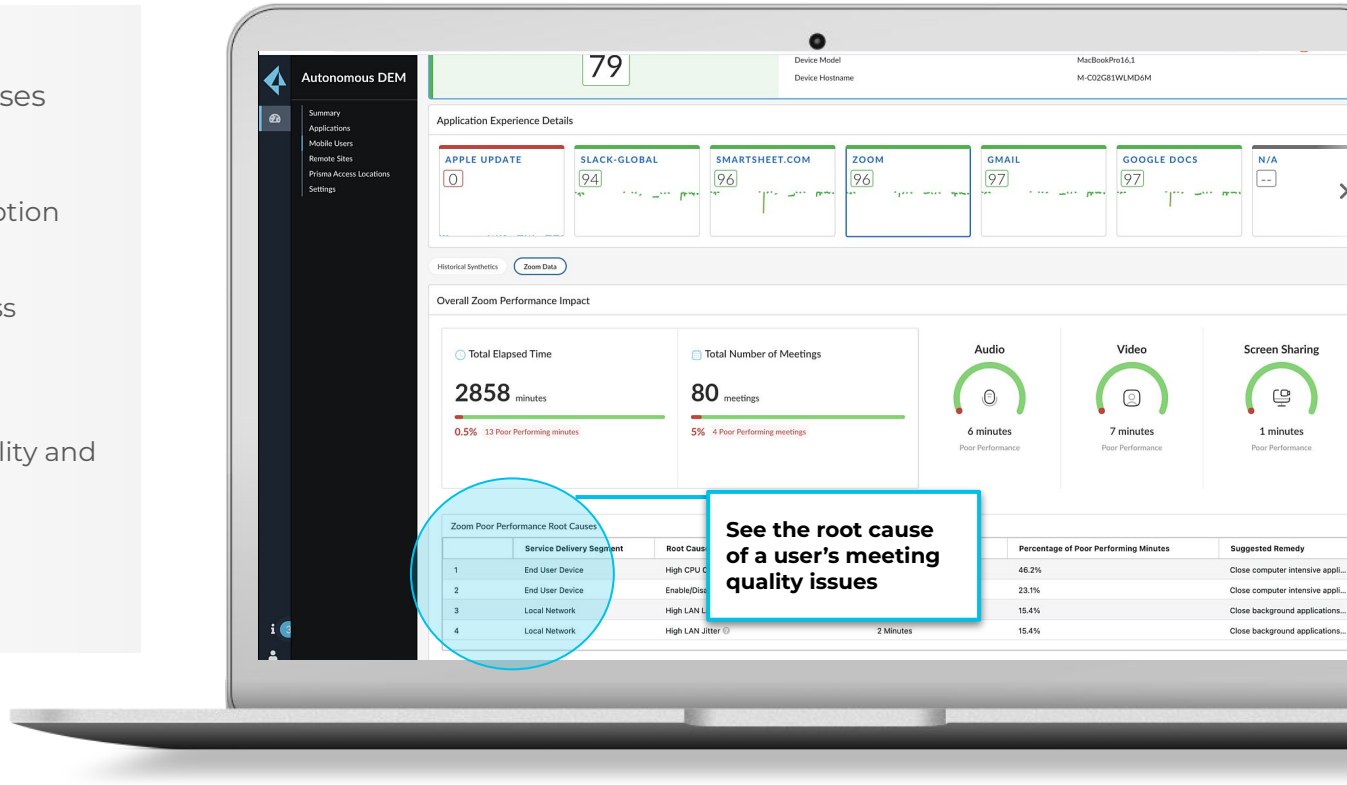


Issue # 7 : Zoom

See the root cause of a user's Zoom meeting quality issue

Quickly identify root causes including:

- CPU/RAM Consumption
- WiFi Issues
- Network Packet Loss
- Jitter
- Latency
- Application availability and performance



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