It's not a network problem, I can prove it with Cisco DNA Assurance

Boaz Elgar        Cisco EMEAR ENTERPRISE Networks Marketing Lead
Hans Vasters    Senior Network Architect
PSOCR5-1102
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Agenda

- Setting the Stage. What is Assurance?
- Introducing Rewe
- What did Rewe want to solve?
- Examples of what Rewe like about the solution?
- Tips for those planning to deploy Cisco DNA Assurance
Cisco DNA Assurance
Cisco DNA Assurance is part of Cisco DNA Center

Automation
Design
• Global settings
• Site profiles
• User access

Provision
• Device inventory
• SWIM, PNP
• SDA Provisioning
• Device on-boarding

Policy
• Virtual networks
• ISE, AAA, Radius
• Access control
• Application control

Assurance
• Issues and trends
• Performance
• Proactive troubleshooting

Planning, installation and migration
Proactive and predictive network, client and application assurance
Network Quality is a Complex, End-to-End Problem

There are 100+ points of failure between user and app

What is the problem?

Where is the problem?

How can I fix the problem fast?
In this Environment, Context is Key

Rich Context Increase Business Productivity and Frees Up IT Time

Cisco Context

360-degree Visibility

Data Granularity

Historical, Real-time, Future
Cisco DNA Assurance
From network data to business insights

Network telemetry
contextual data

Complex event
processing

Correlated
insights

Suggested
remediation

Everything as a sensor

Over 150 actionable insights
Clients | Applications | Wireless | Switching | Routing
Introducing REWE International AG
REWE International AG

- Hans Vasters
- Senior Network Architect
- Responsible for design, implementation and operation
- Core networking, Security and WiFi
- 15 years
REWE International AG

- Present in 11 countries
- Headquarter in Austria/Wiener Neudorf
- ~ 4,500 stores (grocery stores, drugstores)
- ~ 60 warehouses/production facilities
- ~ 92,000 employees
- Revenue in 2018 ~ 17 Billion €
- Austria: ~ 2,600 stores with 1.9 Million customers each day
Rewe Brands
REWE International AG Network

- 11,500 Switches
- 750 Routers
- 20K APs
- 108 WLCs
- 30 AAA
- 324 Firewalls
- 20 WSA
- 95 WAAS
REWE International AG Network

Network:
- Austria is the Hub
- Every country is a “copy“ of Austria
- VPNs (leased lines, Internet based VPN, xDSL, etc.) to remote locations/each country
- Secured by FWs/IDS/IPS
REWE International AG Applications and services

Examples of Applications and Services

- Enterprise Resource Planning (ERP)
- Stock management software
- SAP and BO
- Web Services/Web Hosting
- etc.

Services/Applications are very critical

- Examples:
  - Ordering and inventory in stores
  - Goods in and out in warehouses
  - Finance/tax authority
  - Payment Services
  - Free WiFi Services for customers
  - etc.
What did you want to solve with Cisco DNA Assurance?
Things we wanted to solve with Cisco DNA Assurance

- Overall better user experience
  - Be proactive, fixing problems without the user ever seeing it

- Faster problem solving
  - Check different places to find the problem (Network Management, AAA, Logging, etc.)

- Free up resources in our team
  - Over the last decade the total number of tasks (design/implementation/operation) „exploded“, did not increase linearly but exponentially
  - Possible solution: more manpower
  - BUT: Get the approval for more headcounts, find the right skilled people on the job market, etc.
Examples of what you like about the solution
Features that we like in Cisco DNA Assurance

• Health Score
• Time Traveling
• „Drill down to the root cause of a problem“
• Information about Client Roaming and Onboarding Times
• The 360° view of clients and access points
• Wireless Sensors
Health Score and Time Traveling
Health Score and Time Traveling
Health Score and Time Traveling
Wireless Sensors
Wireless Sensors
Wireless Sensors
## Wireless Sensors

### Test Results

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Location</th>
<th>SSIDs</th>
<th>Test Types</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDV-2nd Floor</td>
<td>System Campus / EDV / 2nd Floor</td>
<td>SMARTBUSINESS</td>
<td>Onboarding, DNS, Host Reachability, Speed, Web Server</td>
<td><img src="image" alt="Test Results" /></td>
</tr>
<tr>
<td>EDV-2nd Floor Mail</td>
<td>System Campus / EDV / 2nd Floor</td>
<td>INTRANET</td>
<td>Onboarding, Outlook Server</td>
<td><img src="image" alt="Test Results" /></td>
</tr>
</tbody>
</table>
Cisco DNA Center AI Network Analytics

- Issues
  - AI-Driven
  - Onboarding

- Insights
  - Site Comparison KPIs
  - Network Heatmap KPIs
Issues AI-Driven

![Cisco DNA Center dashboard](image_url)

### Most Impacted Areas

<table>
<thead>
<tr>
<th>Issue Priority</th>
<th>System Campus</th>
<th>REWE WRN</th>
<th>Eureplatz</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>3/3 Open</td>
<td>2/3 Open</td>
<td>1/3 Open</td>
</tr>
</tbody>
</table>

### Total Open: 7

<table>
<thead>
<tr>
<th>Priority</th>
<th>Issue Type</th>
<th>Device Role</th>
<th>Category</th>
<th>Issue Count</th>
<th>Site Count (Area)</th>
<th>Device Count</th>
<th>Last Occurred Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3</td>
<td>Excessive failures to connect - High deviation from baseline</td>
<td>WIRELESS</td>
<td>Onboarding</td>
<td>3</td>
<td>2</td>
<td></td>
<td>Jan 14, 2020 0:00 am</td>
</tr>
<tr>
<td>P3</td>
<td>Excessive time to connect - High deviation from baseline</td>
<td>WIRELESS</td>
<td>Onboarding</td>
<td>2</td>
<td>1</td>
<td></td>
<td>Jan 12, 2020 1:00 am</td>
</tr>
<tr>
<td>P3</td>
<td>Drop in total radio throughput</td>
<td>ACCESS POINT</td>
<td>Application</td>
<td>1</td>
<td>0</td>
<td></td>
<td>Jan 11, 2020 11:00 am</td>
</tr>
<tr>
<td>P3</td>
<td>Drop in radio throughput for Media Applications</td>
<td>ACCESS POINT</td>
<td>Application</td>
<td>1</td>
<td>0</td>
<td></td>
<td>Jan 11, 2020 10:00 am</td>
</tr>
</tbody>
</table>

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Issues AI-Driven
Issues AI-Driven

Excessive failures to connect - At least 122% increase in failures on INTRANET in Global/System Campus/EDV.

Status: Open

Last Updated: Jan 14, 2020 8:00 AM

Cisco AI

This issue is triggered based on a deviation from a predicted baseline for your specific environment. Learn More

The network is experiencing excessive onboarding time compared to usual. Clients are taking longer than the usual time to connect to SDN INTRANET.

Time: January 14, 2020 8:00 am - 5:30 pm
Location: Global / System Campus / EDV

IMPACTED SUMMARY FOR THIS NETWORK

<table>
<thead>
<tr>
<th>1</th>
<th>Impacted Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Impacted Clients</td>
</tr>
</tbody>
</table>

Problem
Impact
Root Cause Analysis
Suggested Actions

- DHCP and EAP ID timeouts
- DHCP Verification
  - Verify that DHCP server is responsive
  - Verify that DHCP clients are responsive
- AAA Verification
  - Verify the load on AAA server
- CPU and Memory Usage
  - Verify the CPU and memory load on the WLC
- RF Conditions
  - Verify the RF conditions at clients location
Issues AI-Driven
Site Comparison: Average Onboarding Time
Issues AI-Driven

Site Comparison: Client RSSI
Network Heatmap: Channel change count

SUMMARY
December 21, 2019 was the busiest day in the selected period.

Top AP experiencing channel change: mp5-testap-61

No. of APs undergoing more than 10 daily average channel changes

Network Daily map

Showing entries 1-120 of 1718

Cisco DNA Center
Cisco DNA Center Next Steps

• Intelligent Capture
• Leverage Cisco DNA Center Platform for integration with existing tools
Video
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