epiCure

Beyond traditional troubleshooting

- ✓ Complete monitoring and diagnostic platform ensuring superior customer experience
- ✓ Applicable to both broadcast and broadband services
- ✓ Multi-source data ingestion
- ✓ Integrated with analytics tools
- ✓ Flexible dashboard fully customizable by the operator
- ✓ Cloud-based head-end system

epiCure

ADB is a one-stop shop offering innovative and high-quality full system solutions for content distributors, TV operators and property owners, who want to deliver best-in-class video and broadband services to their customers.

ADB combines innovation, software and hardware expertise with user expectations to provide reliable and fully integrated products with a guarantee of on-time deployment and long-term support.

The company is a valued partner of choice to service providers and operators around the globe. ADB's solutions empower the world's leading content distributors, Pay-TV and broadband operators.

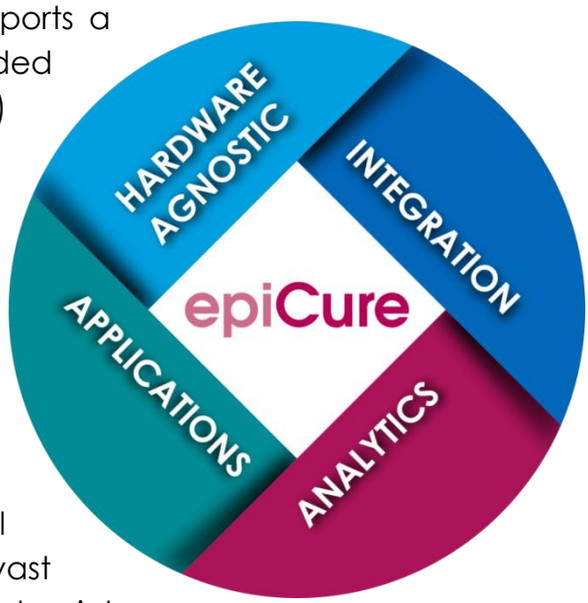
epiCure suite is a complete family of solutions designed by ADB to help broadband and broadcast operators to enhance devices monitoring and diagnostic processes, reduce help-desk cost, monitor overall end-point devices health, set complex and correlated KPI, collect and analyze data metrics. The platform enables failure prediction and analytics of end-users' behavior. With one setup, the operator can run all services or start with one and then extend or shift to the other.

epiCure is a successor of field-deployed Trouble Shooting Suite (TSS) with several functional enhancements and a completely renewed architecture designed to deliver the highest degree of configurability and flexibility. ADB has developed epiCure to enable operators to further enhance the quality of their service.

epiCure pillars

HW agnostic

Leveraging Elasticsearch flexibility, **epiCure** supports a very rich set of input plugins additionally extended with TR-069, MQTT, and tools (i.e. QoE agent) that are applicable to both broadband and broadcast industries and enable monitoring and diagnostic of ADB and third party devices, reducing integration effort and time-to-market.



Integration

epiCure back-end is designed to operate from the cloud, in the operator's infrastructure as well as in cloud services like AWS. It supports a vast range of protocols and APIs to interface with end-point devices, existing operator's CRM and ACS systems.

Applications

epiCure offers a dedicated dashboard for flexible alarm configuration based on frequency and threshold logic. A graphic tool powered by Kibana allows to easily create custom dashboards, apply filters, zoom in/out, and generate heatmaps. Easy-to-use dashboard for "in-home" connectivity summary provides helpdesk with relevant data to increase efficiency and improve the end-user's experience.

Analytics

Embedded big-data inventory facilitates profound analytics in order to identify end-users behaviors, performance degradation, possible correlation between metrics and end-users experience. Collected information enables the operator to move from passive to predictive troubleshooting.

epiCure features

→ **Silent monitoring**
epiCure enables silent monitoring by collecting massive amounts of metrics from large populations of devices, without interfering with normal operation

→ **Real-Time computing**
Collected data is processed in real-time to raise alarms upon detection of anomalous conditions but also stored for further process and trend analysis

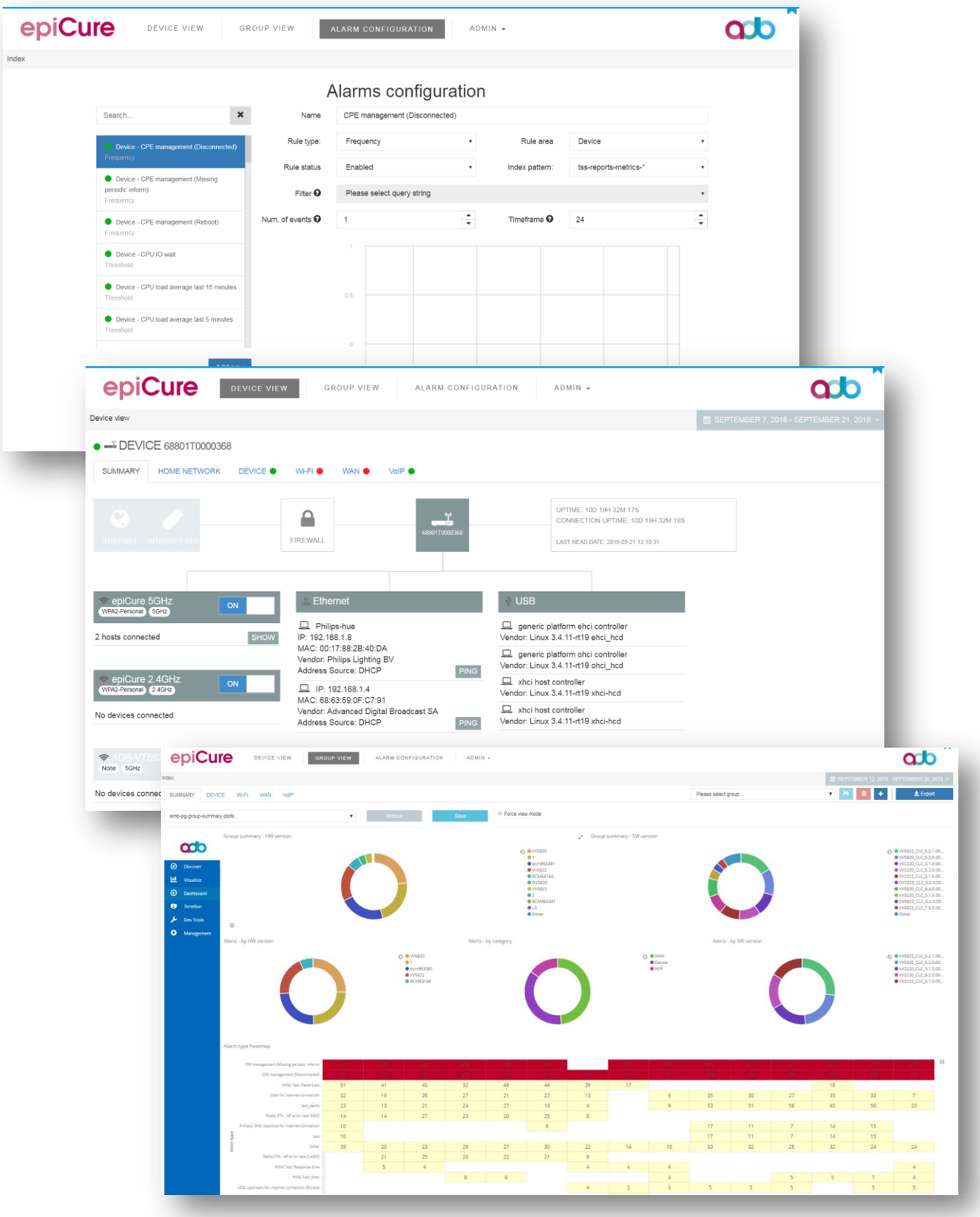
→ **Multisource data ingestion**
Facilitates integration with multiple data sources beyond CPE, like CRM, SysLog, ticketing systems and with existing operator's provisioning systems

→ **Diagnostic**
Execution of pre-built test (Web browsing and YouTube quality, Speed test, etc.)
Monitoring of pre-defined parameters and alert generation by head-end for proactive analysis and easier troubleshooting
Pre-defined alert categories (device, WAN, Wi-Fi, audio & video, etc.) to quickly isolate issues

→ **Reporting**
Rich set of graphics and exportable reports (xml, xls)

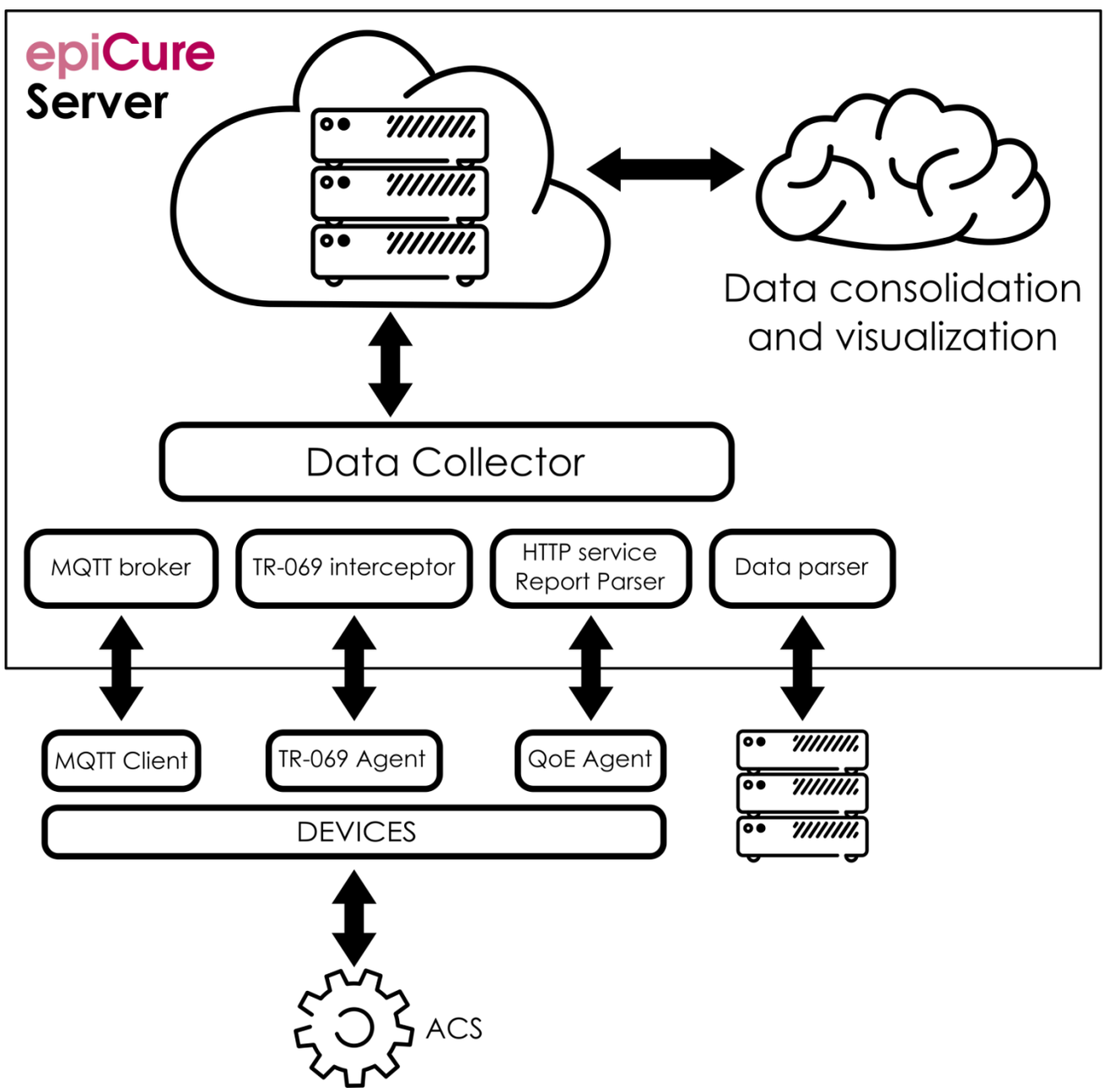
→ **Customizable visualizations – flexible graphic dashboards**
Highly customizable dashboard UI enables various and easy data consolidation and assisted interpretation of all collected information addressing needs of different audiences inside the operator's organization (help-desk, network engineering, product managers)

epiCure


epiCure
DEVICE VIEW
GROUP VIEW
ALARM CONFIGURATION
ADMIN
Index
Alarms configuration
Search...
Name
CPE management (Disconnected)
Rule type:
Frequency
Rule area
Device
Rule status
Enabled
Index pattern:
tss-reports-metrics-*
Filter
Please select query string
Num. of events
1
Timeframe
24
Device - CPE management (Disconnected)
Frequency
Device - CPE management (Missing periodic inform)
Frequency
Device - CPE management (Reboot)
Frequency
Device - CPU IO wait
Threshold
Device - CPU load average last 15 minutes
Threshold
Device - CPU load average last 5 minutes
Threshold
epiCure
DEVICE VIEW
GROUP VIEW
ALARM CONFIGURATION
ADMIN
Device view
SEPTEMBER 7, 2018 - SEPTEMBER 21, 2018
DEVICE 68801T0000368
SUMMARY
HOME NETWORK
DEVICE
Wi-Fi
WAN
VoIP
INTERNET
INTERNET KEY
FIREWALL
68801T0000368
UPTIME: 10D 19H 32M 17S
CONNECTION UPTIME: 10D 19H 32M 18S
LAST READ DATE: 2018-09-21 12:10:31
epiCure 5GHz
WPA2-Personal
5GHz
ON
2 hosts connected
SHOW
epiCure 2.4GHz
WPA2-Personal
2.4GHz
ON
No devices connected
Ethernet
Philips-hue
IP: 192.168.1.8
MAC: 00:17:88:2B:40:DA
Vendor: Philips Lighting BV
Address Source: DHCP
PING
IP: 192.168.1.4
MAC: 68:63:59:0F:C7:91
Vendor: Advanced Digital Broadcast SA
Address Source: DHCP
PING
USB
generic platform ehci controller
Vendor: Linux 3.4.11-rt19 ehci_hcd
generic platform ohci controller
Vendor: Linux 3.4.11-rt19 ohci_hcd
xhci host controller
Vendor: Linux 3.4.11-rt19 xhci-hcd
xhci host controller
Vendor: Linux 3.4.11-rt19 xhci-hcd
epiCure
DEVICE VIEW
GROUP VIEW
ALARM CONFIGURATION
ADMIN
Export
Refresh
Save
Force view mode
Group summary - HW version
Group summary - SW version
Alerts - by HW version
Alerts - by category
Alerts - by SW version
Alarm type heatmap

Three main components of epiCure

- **Big-data inventory** – stores all information coming from data collector engine
- **Data collector engine** – encompasses all protocols and interfaces to external data sources
- **Data consolidation and visualization engine** – enables graphic, dashboard creation, analytics and reporting



epiCure metrics

With epiCure, operators can track and monitor an extended set of parameters to provide the best quality of service. The troubleshooting management encompasses a set of pre-defined categories of issues common for both broadband and broadcast devices. Those categories apply to single device view as well as subgroups and entire devices' population.

WAN Performance and Stability metrics

- SNR Measurement
- PPPoE Dialer Disconnection
- WAN Ethernet Disconnection
- Speed Test results vs Sync Rate
- Ethernet/DSL Errors Monitoring
- Ping test (packet loss, response time, jitter)
- DNS response time
- Round trip delay

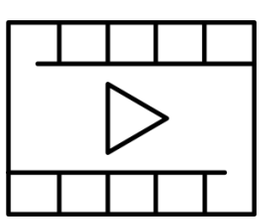
Wi-Fi metrics

- Access Point – Station packet errors rate
- Access Point – Station transmission speed
- SSID – Station packet errors rate
- SSID – Station transmission speed
- Radio channel changes
- Radio channel load
- Access Point signal strength

Device metrics

- System load
- Number of running processes
- Memory status
- Reboot and disconnections
- HW and SW version
- Manufacturer
- Heart beats

Video and Audio quality metrics



- Stream profile rate changes over time
- Video resolution
- Error generated per video component

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