

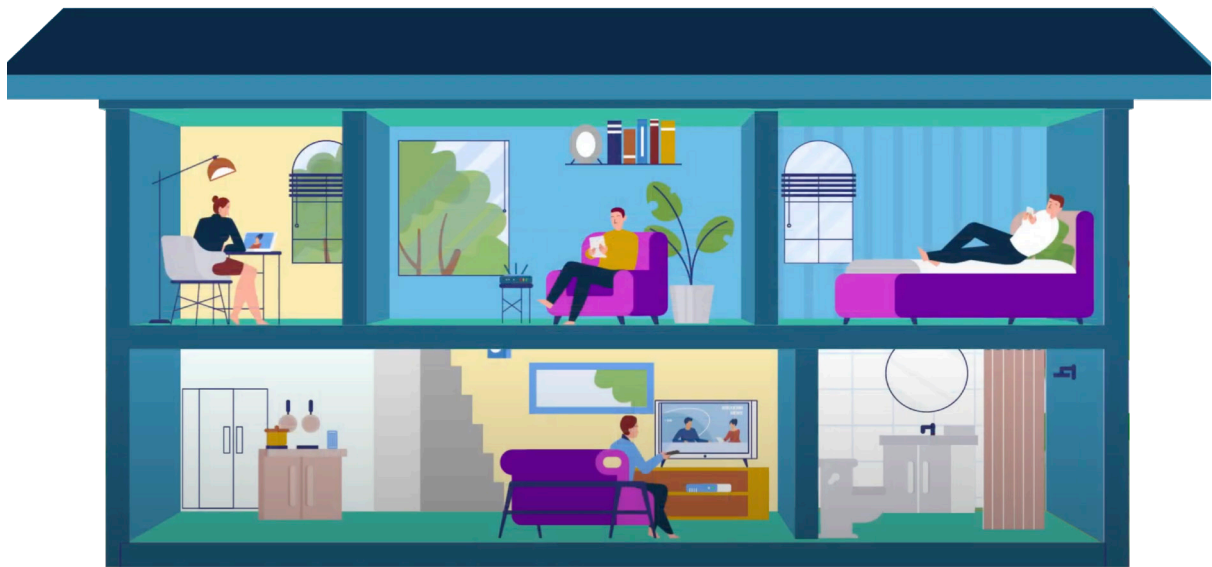
Enabling the Hyper-Connected World



Deliver The Highest Quality-of-Experience to Your Residential Subscribers

DZS
CloudCheck

Deliver The Highest Quality-of-Experience to Your Residential Subscribers



The ideal cloud-based solution for service providers to monitor, manage, and optimize home WiFi networks for their subscribers, supporting the widest-array of consumer premise equipment on the market.

Utilizing a robust API architecture that connects upstream to gateways and downstream to consumer premise equipment, DZS CloudCheck utilizes contextual analytics and machine-learning algorithms to proactively optimize subscriber WiFi networks.

Your challenges

Today's CSPs face significant headwinds in supporting their subscribers as demand for bandwidth and number of devices connected to in-home WiFi networks explodes.



Congestion-Crowded Networks

The WiFi experience can often suffer from many environmental factors, such as coverage, congestion, noise, and interference as well as system issues such as configuration issues.



Lack Of WiFi Visibility And Control

Service providers today lack tools to diagnose and resolve WiFi related issues to assess and improve their subscriber's Quality-of-Experience.



Operations Costs Grow Exponentially

Half of inbound technical related service calls today are due to problems in the WiFi Network. All too often, hardware is replaced even though the issues are not hardware-related.

Product Features

CloudCheck helps operators meet the demands of their subscribers by delivering the best possible WiFi quality-of-experience; improving customer satisfaction, increasing revenue, and reducing support costs. Our layered architecture combines the advantages of both real-time analytics and decision-making with long-term diagnostics and optimization policies in the cloud.



Intelligent Optimization

Our patented, layered structure, is designed to provide the best WiFi performance. We continuously monitor the WiFi environment, adapting to environmental changes, while analyzing historical data to provide policies that the system should follow for ideal optimization.

Depending on the specifics of each customer's implementation requirements, a variety of optimization actions will be deployed. Once deployed, automated reporting will provide an understanding of the technical benefits from the optimization actions, including before and after comparisons to show the overall interference per interface on the network.

Features Include:

- **Channel Change:** Dynamic channel change optimization reduces interference for access points and extenders in high-interference environments.
- **Band Steering:** When a device is close to the access point, it is steered from the 2.4GHz interface to the 5GHz interface to improve throughput. When a device is far from the access point it is steered from the 5GHz interface to the 2.4GHz interface to improve coverage.
- **Roaming:** Used to move the connection of a device between different access points to ensure whole home coverage for that device.
- **Auto-Reboot:** Automatically restarts customer premise equipment, WiFi driver, or station WiFi link in scenarios where only a reboot can solve a problem, including losing internet connection or the system health of the customer premise equipment, Wif-Fi driver, or station WiFi link is deteriorating.



Reactive Customer Care

CloudCheck is used by customer care teams to help troubleshoot subscriber technical complaints through a rich set of analytics and diagnostic algorithms that provide complete visibility into the subscriber's home and help pinpoint the underlying problem.

The system can be made available to customer care users through the CloudCheck WiFi GUI or by ingesting the information into existing operator tools using a northbound API (NAPI).

Customer care agents are given guided flows to assist in troubleshooting subscriber issues. Field technicians use the tool for verification during install or for fix validation on repair calls.

Features Include:

- **WiFi GUI:** used by all levels of customer support to help triage customer technical problems. Logging and reporting features help you monitor customer service agent adoption.
- **API:** A northbound API (NAPI) allows for the integration of CloudCheck directly into operator tools so that customer care agents can access all relevant information through a standardized interface. All of the data displayed in the CloudCheck WiFi GUI is available via the NAPI.



Subscriber Control and Self-help

The CloudCheck Home mobile app can be provided to subscribers giving them the ability to make network changes and limit internet access for children with the simple push of a button. More advanced subscribers can avoid contacting customer support and troubleshoot issues directly on their own, improving the subscriber experience and reducing support costs.

All of these capabilities can be accessed through the CloudCheck Home App, a 3rd party mobile app, or by building it via the NAPI.



Internal Analysis Reporting

Data and analysis designed for internal technical teams that can be combined with other sources of operator data.

Features Include:

- **Internet Down Reporting:** Tracking of internet disconnections for all of the APs connected to the system, including the timestamping and durations of the outages.
- **Broadband Speed Test:** Continuously monitor the broadband performance of every customer on the network.
- **Diagnostic Recommendations:** AI-based diagnostic recommendations that boil down the vast amount of complex WiFi, broadband, and systems information into easy-to-understand diagnostic recommendations.



Firmware Analysis

Improves the testing and rollout of new firmware with QA testing automation tools and rollout analysis that gives insight and visibility to field performance, identifying potential issues prior to pushing firmware out to subscribers.

Features Include:

- **Firmware Lab Testing:** Provides analysis of all key CPE metrics to the lab testing team.
- **Firmware Upgrade Analysis:** Once firmware has been validated in the lab you can set up an internal dashboard/reporting program to track how the new firmware is performing in the field. Analyses include before and after comparisons, A/B testing reports when new CPEs are rolled out, and device health metrics reports.



Alerting

Automated processes that flag diagnostic changes on a week-to-week basis to identify potential changes not related to a firmware upgrade, including network, station, configuration or cloud changes.



Network-Wide Reporting

Standard reports targeted for specific teams within your organization used to measure the success of campaigns. These reports allow you to build a better understanding of your subscribers.

Features Include:

- **Customer Knowledge Report:** This report focuses on how your subscribers are consuming your internet service by showing you broadband speed, broadband usage, number of stations used, WiFi vs. wired, and many other useful statistics.
- **WiFi Performance Report:** This report gets into a more detailed view of WiFi performance across different models and firmware versions.
- **Broadband Performance Report:** This report provides a more detailed view of broadband performance across different models and firmware versions.
- **Video & Gaming Station Report:** This report provides details on how many of your subscribers are using video set-top boxes and gaming stations, what brand those are and how much they are using them.
- **OTT Streaming Report:** This report provides details on how many of your subscribers are using OTT streaming stations, what brand of stations those are and how much they are using them.
- **Device Performance Report:** This report provides details to see how performance of the most common devices (ie. iPhones and Samsung Phones) have changed over time.
- **3rd Party WiFi Extender Report:** This report provides details on how many of your subscribers are using 3rd party extenders connected to your access point, the brand of those extenders and how many are deployed in a typical home.



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