

nGeniusONE Service Assurance for Efficient Airport and Airline Operations

Airports and airlines are undergoing digital transformation as they strive to provide exceptional customer experiences in a complex physical and digital environment. Their diverse customer bases range from the FAA and other administrations, security agencies, ground handling operations, safety administrations, customs, ground transportation and shuttle services, restaurants, passengers, etc. IT, and in particular, both internal Devops and third-party application developers, play a critical role in providing airport and airline systems such as reservations, air traffic control, ground crews, maintenance, passenger and baggage processing, security and safety systems, business, communication,

and financial systems, and facilities management. With so much reliance on IT, it is critical to maintain flawless system and network operations.

Technology issues causing delays can quickly compound, impacting the millions of passengers traveling daily on tens of thousands of flights. A single outage for one airline can represent millions of dollars in direct costs and countless additional losses from the ripple effect. With ever-increasing air traffic, airlines must process reservations and airports must reduce gate turnaround time and improve on-time departures, while maintaining high safety and security standards, in order to safely process more

flights and passengers every day. To achieve this, the airport and airline networks and systems are made up of best-of-breed, multi-vendor solutions, often hosted in the cloud. A best-of-breed, vendor independent service assurance solution is critical to keep them running efficiently.

The nGeniusONE® Service Assurance platform provides real-time analysis and visibility of the application traffic flows throughout the network the airport and airlines depend on to provide service to customers. nGeniusONE is powered by Adaptive Service Intelligence™ (ASI) technology, a patented highly-scalable deep packet inspection engine that leverages rich traffic-flow data for extracting key performance metrics from across the service domains. Using ASI, nGeniusONE provides seamless top-down workflows to quickly triage performance issues, providing significant reductions in Mean Time to Repair (MTTR).

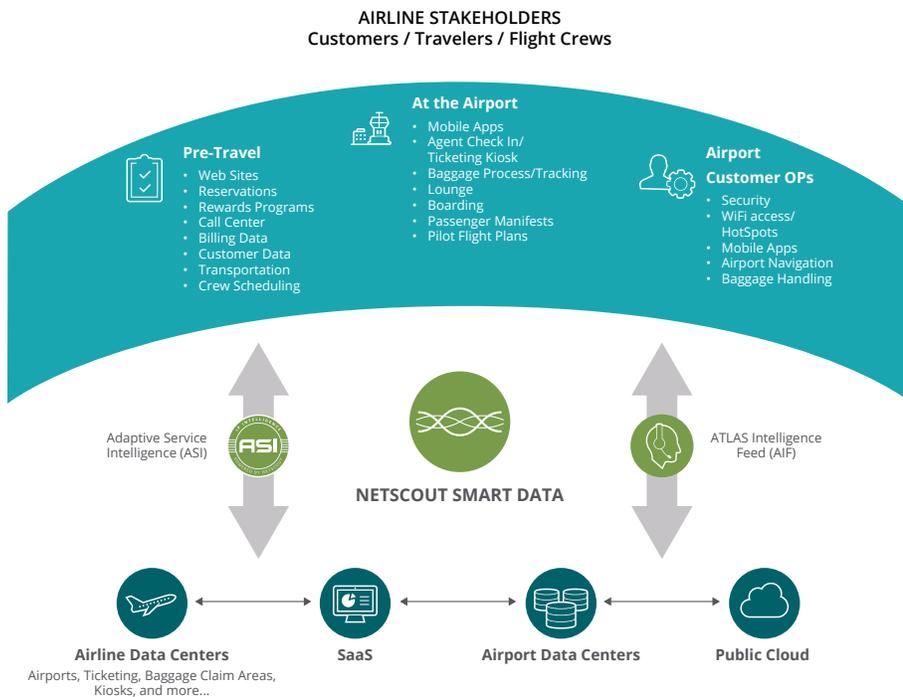


Figure 1: The nGeniusONE platform provides business assurance through monitoring applications and services ranging from passenger and baggage processing to information transfer with air traffic control, to keep the entire airport and all airlines operating efficiently and effectively to maximize profits while ensuring safety, regulatory compliance, and customer satisfaction.

nGeniusONE - Proactive Service Assurance

The nGeniusONE platform provides proactive service assurance with immediate identification of developing problems over the airport and airline IT infrastructure. It analyzes network and application traffic to deliver end-to-end visibility into the availability and performance of both internally and externally facing applications, service enablers and end-points, operating over on-premises, wired, wireless, and hybrid cloud infrastructures. By understanding the relationships between the various critical applications, databases, and service enablers such as DNS, DHCP and LDAP/AD, nGeniusONE can monitor and analyze the overall services. nGeniusONE tracks and trends the activity related to each service to provide proactive notification of problems, expedite troubleshooting, and deliver factual information promoting collaboration between system/network owners.

Examples of issues addressed by nGeniusONE for airlines and airports include:

- **Slowdowns across complex cloud-based services** – nGeniusONE delivers visibility into application services in private, public, and hybrid cloud environments, in traditional legacy infrastructure as well as virtualized environments to pinpoint the source of an issue, be it the airline or airport environment.
- **Session Latencies** – nGeniusONE can be used to troubleshoot and identify the cause of slowdowns in web-based reservation systems, kiosk-based self-check-in applications, flight manifest authorizations, and/or baggage handling services at a particular airport.
- **Impact** – nGeniusONE shows the service impact of degradations not only indicating which services are impacted and how, which communities (e.g. airline departments or airport hubs) and which users and equipment may be involved.
- **Contact Center and Voice Quality** – Particularly important for passengers calling reservation call centers, nGeniusONE supports analysis of voice, video and data applications, simultaneously with a single pane of glass view. Issues with call signaling that may impact dropped calls, quality issues like echo, and connectivity issues that may emanate across SIP trunking are all areas nGeniusONE can analyze and perform root cause analysis.

Seamless Top-Down Workflows

The nGeniusONE platform leverages the power of ASI to help IT teams maintain high availability and optimal performance of mission critical airport and airline applications. The data is efficiently organized so it can be viewed by location, local and cloud networks, Quality of Service (QoS), servers, applications, etc. This enables the nGeniusONE platform to offer a top-down workflow-based approach to problem identification, service triage, and resolution.

The nGeniusONE platform provides a consistent set of service-oriented workflows enabling seamless, contextual transitions across multiple layers of analysis. This allows the platform to facilitate efficient and informed hand-off of incident response tasks across different groups, fostering IT team collaboration.

nGeniusONE enables IT to deliver high quality, consistent user experience for airports and airlines by providing the following key analysis layers:

- **Service Dashboard** – The dashboard delivers real-time status conditions, metrics, alarms, and intelligent early warning of application performance problems. IT teams can use the dashboard to quickly spot performance issues related to composite services including 3rd-party and business application server components, integrated web and cloud components, key middleware, service enablers, and backend databases in a single view.
- **Service Dependency Map** – The Service Dependency Map provides visibility into the dependencies across the airport/airline environment including web servers, DNS servers, front-end load balancers, switches, routers and other essential elements. This enables IT teams to analyze the service delivery environment and discover the client-server relationships and performance.
- **Service Monitors** – Service monitors, including the Universal Monitor, enable IT teams to quickly triage and isolate the sources contributing to performance degradation within multiple environments, including web servers, Active Directory servers, application servers, backend databases, and virtualized components. Using these monitor views, IT teams get a consolidated view of application request workloads, traffic latencies, authentication and DNS errors providing holistic visibility into complex infrastructure supporting the airport and airlines.

- **Session Analysis** – Session Analysis views help IT teams analyze transaction latencies, network-related information (e.g., average response time and QoS class assignments), as well as detailed session and flow information.
- **Packet Analysis** – Integrated nGeniusONE Packet Analysis enables IT teams to perform deep-dive protocol level analysis and forensic evidence collection of applications and services such as reservations, baggage handling, UC&C, and other business critical services from multiple cloud-based vendors.

A majority of performance issues can be efficiently triaged by using the dashboard and service monitor screens alone. However, should deep-dive troubleshooting be needed, IT teams can contextually drill down to the Session and the Packet Analysis layers.

Benefits of nGeniusONE Solution

Airports and Airlines benefit from the value of NETSCOUT solutions:

- **Ensure Efficient Operation** – Deliver Proactive Service Assurance of critical services distributed across complex airport and airline infrastructures.
- **Optimize Passenger Experience** – Limit the impact of service issues impacting travelers.
- **Reduce MTTR** – Identify root cause of issue and pass the issue to the correct team for quick resolution.
- **Protect Revenue and Reputation** – Leverage network-wide visibility to continually improve network performance, quickly add new services, and respond to issues before they escalate.



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