# NETSCOUT

# nGeniusONE Platform for Oracle Database Performance Management

Many organizations use Oracle® Database for developing highly scalable, secure, and reliable applications. Oracle servers are deployed either as single servers or in a cluster to make efficient use of resources and IT budgets. When Oracle performs poorly, users may experience slow application response times, hampering employees' use of the applications and reducing their productivity. More critically, this poor user experience may result in consumers abandoning shopping carts on company websites leading to a loss in sales, or impact to company reputation.

In addition to the backend Oracle database servers, network infrastructure, web-servers, application servers, and service enablers (such as DNS, LDAP, RADIUS and Active Directory) are also important components that together deliver services to end users. With so many possible areas that could contribute to performance degradation, the IT teams need a robust service assurance solution capable of isolating faults across multiple domains very quickly.

The nGeniusONE® platform provides real-time visibility into the performance of application services by analyzing packet data across the network, on premises or in the cloud. Powered by Adaptive Service Intelligence™ (ASI) technology, the highly scalable and patented deep-packet inspection engine, the nGeniusONE platform provides IT organizations with a comprehensive view of database performance across the service delivery environment. nGeniusONE leverages high-value packet data to generate "smart data" for smarter analytics to assure performance, manage risk, and facilitate superior decision-making regarding application and network services. With these smarter analytics, IT teams can quickly triage performance issues even in complex multi-vendor environments, ultimately reducing Mean Time to Repair (MTTR).

## Oracle Database Performance Issues Solved by nGeniusONE

Database performance is one of those essential services that is routinely taken for granted, right up until an application starts generating errors or experiencing

slow response times. It is very common for database issues to be reported as network issues, because the symptoms so often mimic those of network degradation.

nGeniusONE delivers end-to-end visibility into the performance of application tiers, network traffic, service enablers (e.g., DHCP, Active Directory/LDAP, and RADIUS), and end users to understand the full context of the service and Oracle database errors contributing to poor user experience or application performance.. With its common workflow across all tiers of a service, the nGeniusONE platform reduces the time to troubleshoot performance-impacting applications including:

· **Busy Oracle Servers –** IT teams get visibility into the load on each database server and the database commands that are contributing to the workload on the server.
· **Oracle Session Latencies –** nGeniusONE tracks database performance by monitoring session response times SQL commands and databases accessed. This enables IT teams to monitor latency in connects, queries and modifications to the database.
· **Oracle Database Errors and Messages –** Oracle errors and messages generated are automatically discovered to allow IT teams to proactively monitor and research root causes of Oracle failures.
· **Load Balancing Issues Within Oracle RAC –** IT teams can verify that the performance and workloads are evenly distributed across different nodes in an Oracle RAC.
· **Community of Users Most Impacted –** IT teams get visibility into which community of users is affected, or which particular location is the source of the problem.

## nGeniusONE Support for Oracle Database Services

In order to help NetOps resolve poor user experience issues, the nGeniusONE platform relies on the power of ASI. Using the efficient data organization provided by ASI, nGeniusONE offers an efficient top-
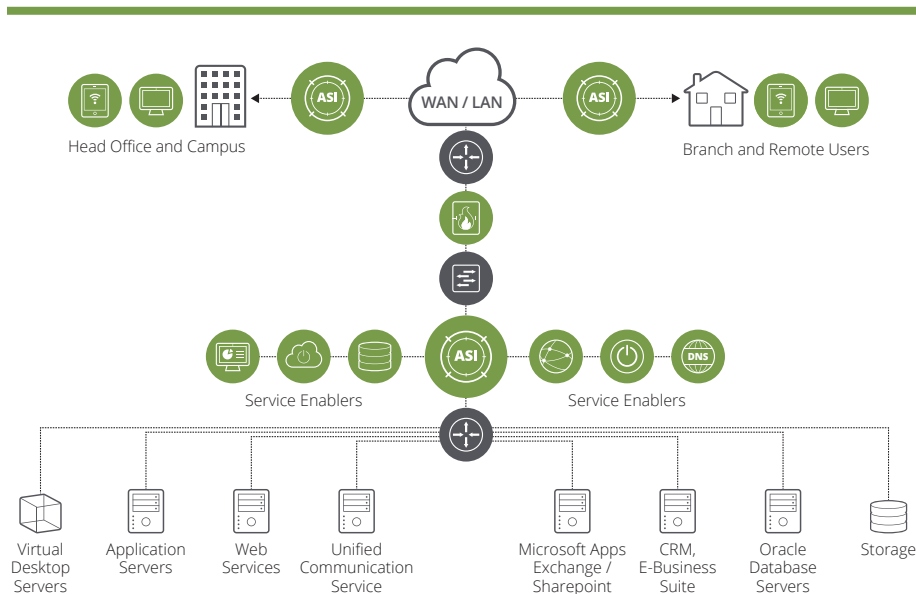


**Figure 1: The nGeniusONE platform delivers Oracle Database, Application tier, Web Servers, Service Enablers, and Network tier performance analytics to support end-to-end visibility.**

Head Office and Campus · WAN / LAN · Branch and Remote Users · Service Enablers · Service Enablers · Virtual Desktop Servers · Application Servers · Web Services · Unified Communication Service · Microsoft Apps Exchange / Sharepoint · CRM, E-Business Suite · Oracle Database Servers · Storage

down vendor agnostic approach to problem identification, service troubleshooting, and resolution of database protocols, including the protocols used by Oracle Database listeners, This highly structured data provides operational insights, situational analysis and visibility into the potential sources for database degradation including: which servers are delivering database services to which users; which of these servers are heavily loaded; what are their latencies; and what errors are generated. In addition to application performance, nGeniusONE also provides advanced TCP analysis to help identify any network level issues.

The nGeniusONE platform ultimately improves service troubleshooting times and reduces MTTR by allowing IT to:

- Identify errors and messages generated by Oracle during transaction processing
- Isolate the specific database instance generating the error when several databases are running on the same database management system
- Pinpoint which database commands are causing most problems
- Discover which users, sites, locations, and communities are experiencing the most service degradation

The nGeniusONE platform provides a consistent set of service-oriented workflows and situational analysis to enable seamless, contextual transitioning across multiple layers of analysis. This allows the platform to facilitate efficient and informed hand-off of incident response tasks across different IT groups involved in delivery of an application from one end to the other.

The nGeniusONE platform simplifies the challenge for IT in delivering high quality, consistent user experience for Oracle services by providing the following key analysis layers:

- **Service Dashboard –** Delivers real-time health status, metrics, alarms, and intelligent early warning of problems with Oracle instances. IT teams can use it to quickly spot any performance issues related to a composite service including the web components, key middleware and service enablers, and the Oracle servers in a single view.
- **Service Dependency Map –** Provides visibility into the current state of the service environment including database tier, web tier, application tier, and associated enabling protocols by automatic discovery and mapping of client - server relationships.
- **Oracle Database Monitor –** Provides a single, consolidated view of session workload affecting the Oracle Database servers for every user community. This view enables IT teams to triage and isolate the sources contributing to performance degradation issues. The view provides visibility into the latency, number of database requests, and failures/errors related to Oracle Database transactions such as DB Connect, DB Open, and SQL commands such as INSERT, UPDATE, COMMIT, ROLLBACK, and DELETE.
- **Session Analysis –** Delivers session-level analysis with hop-by-hop ladder diagrams detailing individual database transactions to help identify specific issues such as malformed queries. This view helps IT teams analyze transaction latencies, network statistics such as average round trip time, number of TCP retransmissions, timeouts; as well as detailed session and flow information such as the user name accessing the database, the name of the database instance, error codes, and server host and client information.
- **Packet Analysis –** Enables deep-dive Oracle Database protocol-level analysis and forensic evidence collection. Using packet analysis, IT teams get visibility into specific SQL query strings and table names accessed.

A majority of database performance issues can be efficiently investigated by using the Dashboard, Service Dependency Map, and Oracle Database Monitor screens alone. However, should deep dive troubleshooting be needed, IT teams can further drill down to the Session and the Packet Analysis layers.

## Benefits of nGeniusONE for Oracle Database Services

- **Quickly and Efficiently Investigate Oracle Database Issues –** Comprehensive service delivery platform covers all tiers including the web, application, and the Oracle Database tiers enabling IT teams to efficiently troubleshoot performance issues, quickly identify the root cause, and reduce MTTR.
- **Get Visibility into Production Databases Without Deploying Agents –** This non-intrusive data capture and analysis methodology helps IT teams monitor the performance of production environments without the need for logging into the Oracle directly or making changes to the database, user accounts, or application logic.
- **Isolate Specific Database Among Several Instances That Are Having Issues –** Provides visibility into the specific database instance name and the user impacted. This information helps IT teams troubleshoot problems quickly when multiple database instances are used concurrently to increase IT team productivity.
- **Improve IT Team Collaboration –** Using common workflows across all application tiers, the platform speeds time to knowledge by enabling collaboration between network, application, and database teams.
- **Monitor Data, Voice, and Video Performance within a Single Solution –** Combined visibility of data, voice, and video helps organizations optimize the performance over a converged IP network.

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