NICE CXone Platform & Reliability and Uptime

99.99% Uptime

WHITE PAPER

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About NICE

With NICE (Nasdaq: NICE), it's never been easier for organizations of all sizes around the globe to create extraordinary customer experiences while meeting key business metrics. Featuring the world's #1 cloud native customer experience platform, CXone, NICE is a worldwide leader in AI-powered self-service and agent-assisted CX software for the contact center – and beyond. Over 25,000 organizations in more than 150 countries, including over 85 of the Fortune 100 companies, partner with NICE to transform - and elevate - every customer interaction.

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NICE

99.99% Uptime

NICE CXone maintains a 99.99% uptime to fortify your Business Continuity strategy within a highly reliable environment. This ensures a robust performance with virtually no downtime for maintenance windows. With this level of reliability, you can:

- Safeguard against call or session losses caused by contact center infrastructure failures.
- Protect vital company data through consistent backups and flexible data storage options.
- Execute Business Continuity plans in the contact center confidently, leveraging redundancies and failover strategies.
- Experience transparent failover processes without disruptions to active or queued sessions or calls. This commitment to uninterrupted service enhances the overall resilience and dependability of your operations.

Ensuring platform performance, fault tolerance, and operational redundancy requires a layered approach. We provide 99.99% availability service level agreements (SLA) to all our Tenants.

AWS provides multiple zones for failover and CXone leverages two availability zones to ensure high availability. Amazon cites 99.99% availability to data objects and 99.999999999% durability (data loss). CXone leverages multiple availability zones by implementing storage API servers in each of the AWS and CXone availability zones to ensure redundancy. These systems are designed for real-time failover and are engineered to allow any one API server to be able to process the entire load.

Diverse, redundant NICE CXone processing centers in different geographical areas are designed with intelligent, omnichannel technology configured to provide protection against natural and man-made disasters. Disaster strategy and planning assures protection against loss of systems, data, and utilities. The CXone computer and data networks are secure, redundant, and scalable by virtue of hardware selection, architectural design, and selected service providers.

CXone's Tenant data integrity is protected by redundant databases using real-time replication, encryption of data at rest, HTTPS, SFTP and Secure Data Transfer, and high-performance hardware storage systems.

NICE CXone is a full-service telecommunications company, in addition to being a provider of SaaS solutions. The company provides a full range of Toll Free, Dedicated, VoIP, Long Distance, and Local DID services. The NICE CXone telecommunications network with its omnichannel services uses multiple leading global service providers to maintain a redundant, scalable digital network that can meet the call contact, analytics, and channel management demands of small, medium, and large contact centers.

CXone's cloud applications are developed with secure coding management and practices using multiple tools, including Microsoft Team Foundation Server (TFS), GitHub, and Jenkins, as well as a range of AWS tools. These development-enhancing applications are designed to ensure fault tolerance and survivability of calls and services.

CXone's internal and external threat surfaces are monitored by periodic, industry-recognized, third-party vulnerability and penetration tests and methodologies. Industry leading intrusion detection and protection technologies are employed through CXone's routers, firewalls, and switches.

Network management and monitoring is provided by the Network Operations Center (NOC) which is staffed 24x7x365. CXone's performant infrastructure monitors the physical environment, hardware, network, and applications using visual, audible, and email alerts. Trained network analysts are able to identify, correct, and escalate issues that impact SaaS services.

Several security and compliance infrastructures and industry standard practices are in place, such as:

- SOC 2 Type 2 (AICPA) audited data centers
- PCI DSS Level 1 and 2 compliance
- HITRUST (HIPAA) within a SOC 2 Type 2
- GDPR Type 1 Third-Party Assessment, and a GDPR statement (position paper, compliant though DPA)
- ISO 27001
- Sarbanes Oxley (SOC) 404 Report as compliant subsidiary of parent company NICE
- SIG Core self-assessment (SIG = Standard Information Gathering) and CSA CAIQ (Consensus Assessments Initiative Questionnaire v3.0.1) and FedRAMP (within a discrete, isolated platform environment)
- GDPR observance: verification (Article 15), rectification (Article 16), erasure (Article 17), restriction (Article 18), or portability (Article 19)
- Red Flag Rule compliance
- Change control policies and management
- Regular and timely security patch management
- Business continuity (global resiliency event management) planning
- Regular security awareness and policy training

These, and other practices, combine to provide transparency into NICE CXone's regulatory compliance and service integrity.

As the world's current leading provider of cloud-native contact services, and with data centers located in the North America (US and Canada), Europe (EMEA), Australia (APAC), Singapore, Tokyo/Japan, the UK, and Brazil; NICE CXone enables Tenants to have a truly global reach.

All systems are monitored at multiple levels, including logical, functional, and environmental. Hardware and application status monitoring is fed back to the NICE CXone 24x7x365 NOC. System logs are monitored through Security Information and Event Monitoring (SIEM) applications. Additionally, CXone ACD applications are designed to allow for automatic recovery and failover of services. In many cases, systems can even fail transparently to the user.

Microsoft Dynamics (MSD) is utilized for digital forensics. It aids in the detection, evaluation, and resolution of anomalous events and threat escalation. This organization is under the Information Security Group, assuring a separate administrative line than the NOC and Systems Operations. Finally, the ability of these systems to function at the required cluster performance level is tested periodically in a process that routes all cluster contact processing from one data center to the other, effectively validating the ability for those systems to function independently at the cluster level in the event of a data center outage.

High Availability is intricately linked to the company's architecture, encompassing service deployment, microservices, service providers, and system maintenance. It encompasses all measures taken to ensure platform performance, fault tolerance, operational redundancy, and uptime. NICE CXone's deployment across multiple public clouds, regions, and availability zones ensures resilience at every level, with the primary goal of shielding customers from failures.

NICE CXone's High Availability is financially backed by a robust 99.99% SLA, supported by controls and architecture that uphold this commitment. For instance, the operation in multiple data centers/regions is designed to transparently manage and mitigate the impact of a single data center/region failure.

High Availability is a function of a company's architecture – how it deploys its services, its microservices, what service providers the company uses, and how the company maintains its systems. Ultimately, High Availability includes everything the company does to ensure platform performance, fault tolerance, operational redundancy, and uptime. CXone is deployed in multiple public clouds, within multiple regions and multiple availability zones guaranteeing global resiliency at every level. The ultimate goal of having a highly available system is to shield customers from failures. In a perfect world, every service level agreement (SLA) would be 100% and every possible failure would be accounted for. Of course, this is not a perfect world and so services are not available 100% of the time.

High Availability on CXone is financially backed by a 99.99% SLA. The controls and architecture that underpin the CXone platform ensure our ability to provide this 99.99% SLA to all of our customers. For example, CXone operates in multiple data centers. Therefore, the failure of one data center is specifically designed around and is transparent to the customer. We will go into more specific details later in this summary.

Advanced High Availability Architecture

High Availability

CXone's holistic approach to Business Continuity includes other components such as backup practices, security, and high availability.

Gartner indicates there are six components to Business Continuity Planning

- Crisis Management
- Incident Response
- IT Disaster Recovery Management
- Business Recovery
- Contingency Planning
- Pandemic Planning (people related disruptions)

NICE CXone integrates all six of these components at various levels of implementation within its business continuity model.

Data High Availability is a priority, necessitating redundant storage of customer data, with critical considerations given to database structure and replication. NICE CXone's Voice Points of Presence (POPs) are strategically distributed, incorporating intelligent, omnichannel technology for enhanced protection. The High Availability planning extends to safeguarding against potential losses of systems, data, and utilities. The computer and data networks are secured, redundant, and scalable through careful architectural design, and service provider choices. Customer data integrity is ensured through redundant databases, real-time replication, data encryption at rest, HTTPS, SFTP, Secure Data Transfer, and high-performance storage systems.

NICE CXone maintains a vigilant stance against internal and external threats, subjecting its systems to regular third-party vulnerability and penetration tests. Intrusion detection and protection technologies are seamlessly integrated into routers, firewalls, and switches. The infrastructure undergoes continuous monitoring, with alerts via visual, audible, and email channels. Regionalized Latency Reduction (RLR) servers contribute to maintaining optimal platform performance and meeting SLA uptime.

As a registered telecom carrier in all 50 US states and most of Europe, NICE CXone boasts a global presence with 19 physical Points of Presence (POPs) across nine countries on five continents. Leveraging over 30 carriers worldwide, NICE CXone ensures unparalleled redundancy and global resiliency while managing carriers and telecom vendors on behalf of customers. The global voice network supports calling to over 200 countries, surpassing major competitors like AT&T or Verizon. NICE CXone's telecom and connectivity products excel in features and functionality, available in all 200+ countries through its global, meshed network. Innovations include pioneering solutions in Call Branding/Reputation Management and the use of WebRTC for seamless browser-based calling and application development.

Voice

NICE CXone maintains redundancy for its Voice Points of Presence (POPs), housing them in carrier-grade data centers and regions for private cloud services and leveraging AWS cloud services for the public cloud. To validate operational readiness, walkthroughs and failover drills of background processes occur at least quarterly.

NICE CXone functions as a comprehensive telecommunications company, offering a spectrum of services alongside its role as a SaaS solutions provider. These services encompass Toll-Free, Dedicated, VoIP, Long Distance, and Local DID services. The NICE CXone telecommunications network, with its omnichannel capabilities, partners with leading global service providers to establish a redundant and scalable digital network. This network is designed to meet the diverse demands of call contact, analytics, and channel management across small, medium, and large contact centers. NICE CXone employs MOS (Mean Opinion Score) to assess the overall voice quality of calls and strategically utilizes multiple availability zones to ensure the High Availability of all voice services. This multifaceted approach underscores NICE CXone's commitment to delivering reliable and high-quality telecommunications solutions.

AWS

Amazon Web Services (AWS) offers multiple zones for failover, and NICE CXone strategically capitalizes on this by incorporating redundancy through the utilization of multiple availability zones. This redundancy extends to storage systems, ensuring a robust and fail-safe infrastructure. The systems are architected as "active-active", meaning they operate in parallel, and are engineered for real-time failover. In the event of a failure, the remaining servers seamlessly take over the entire processing load, emphasizing a continuous and uninterrupted service delivery. This design underscores the commitment to high availability and resilience within the NICE CXone infrastructure.

Omnichannel

The utmost emphasis within NICE CXone lies on digital Omnichannel systems, which encompass all the necessary components to facilitate the processing of customer interactions. These systems are meticulously designed to ensure virtually instantaneous failovers. Given that customer interactions may involve voice channels, it is imperative that, even in the occurrence of a High Availability failure, a voice interaction or call remains uninterrupted and is never dropped. This unwavering commitment to seamless continuity underscores the critical importance placed on delivering uninterrupted and high-quality customer communication experiences within the NICE CXone infrastructure.

Microservices

A substantial portion of NICE CXone's services operate on a microservice architecture, a design that is systematically evaluated to confirm the system's ability to detect and respond to microservice failures. These services are structured to leverage multiple availability zones within each region, ensuring continued operation even in the event of a failure in a single AWS availability zone.

To enhance global resiliency and High Availability, NICE CXone employs the blue/green deployment methodology, maintaining two separate yet identical environments. Additionally, auto-scaling mechanisms are employed to dynamically adjust resource capacity based on demand. This strategic combination of microservices, blue/green deployment, and auto-scaling not only fortifies global resiliency, but also facilitates the deployment of new functionality through "hot updates" every three weeks. NICE CXone utilizes feature toggles in cumulative updates to deploy microservices and their functionalities seamlessly, contributing to a flexible and robust software development and deployment process.

Global Services

Furthermore, NICE CXone's microservices are implemented on a global scale, strategically utilizing multiple availability zones across various regions. This global deployment strategy is designed to provide the highest level of resilience, ensuring that these services persistently operate even in the face of failures across multiple AWS regions. This approach underscores the commitment to a robust and geographically distributed infrastructure, enhancing the overall reliability and continuity of NICE CXone's services on a global scale.

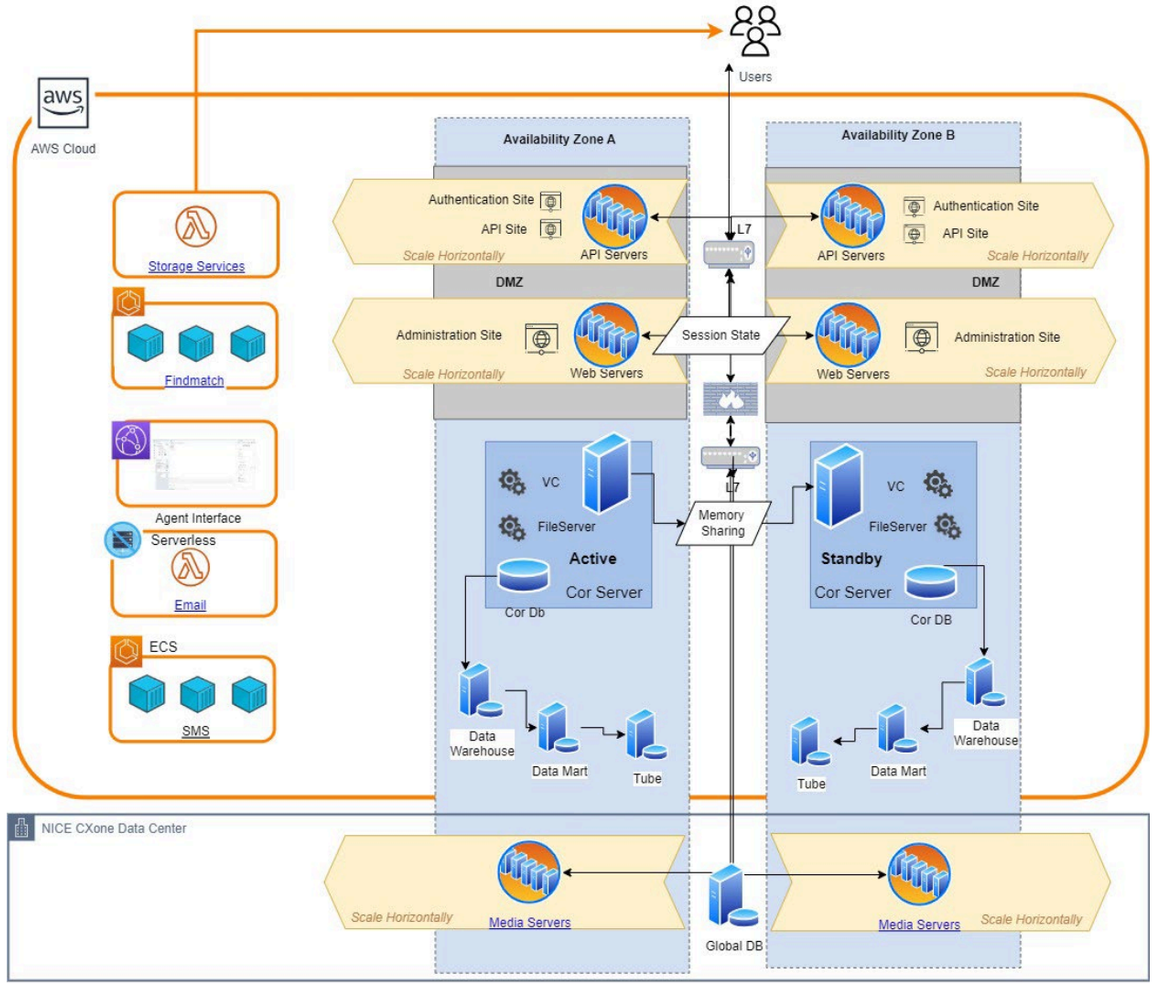
Data

The term "Data" within the context of NICE CXone encompasses both customer data access and data durability, addressing concerns related to data loss. As an illustration, Amazon sets a financially backed 99.99% availability service level agreement for data objects, ensuring accessibility, and an exceptional 99.999999999% durability to safeguard against data loss. Additionally, NICE CXone offers the flexibility to support data storage in a customer's preferred region or cloud environment. This option not only enhances uptime but also enables data sovereignty, providing customers with greater control and compliance with regional data regulations.

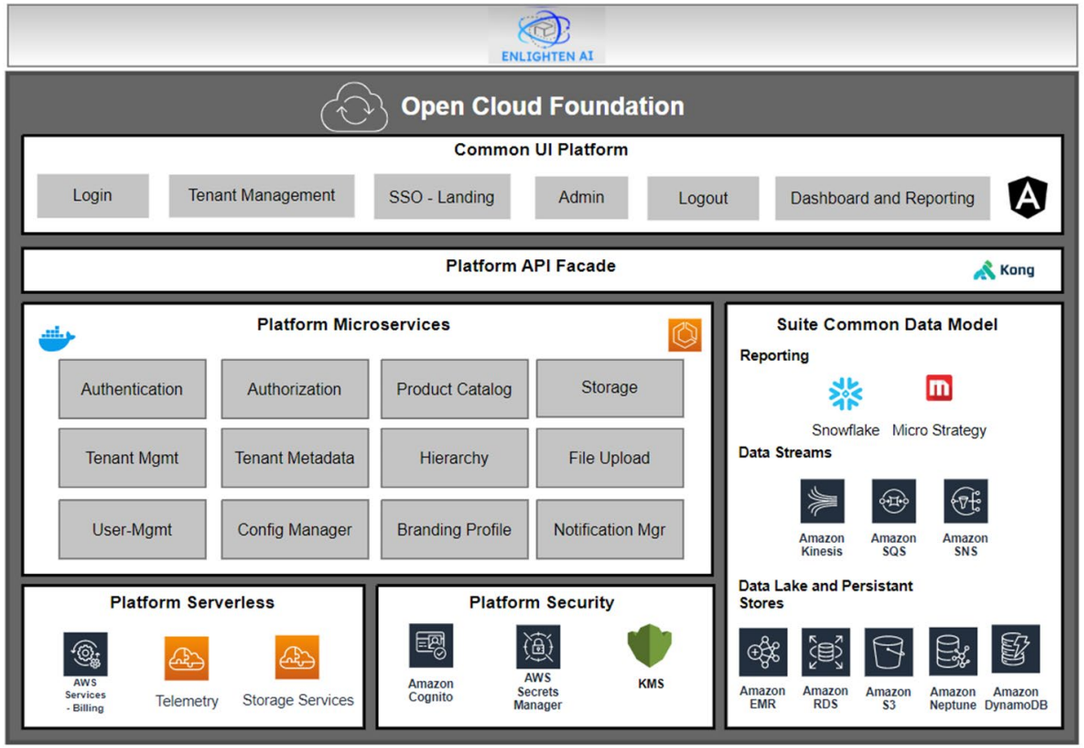
Monitoring / Event Management

High Availability events, whether internal or external, are diligently managed by the NICE CXone Network Operations Center (NOC), operating with proactive oversight 24/7/365. The NOC ensures the continuous efficiency, flexibility, and scalability of NICE CXone's robust High Availability model. Engineered with resilience and extensive failover capabilities at every layer, this model is designed to guarantee consistent and reliable availability of NICE CXone services.

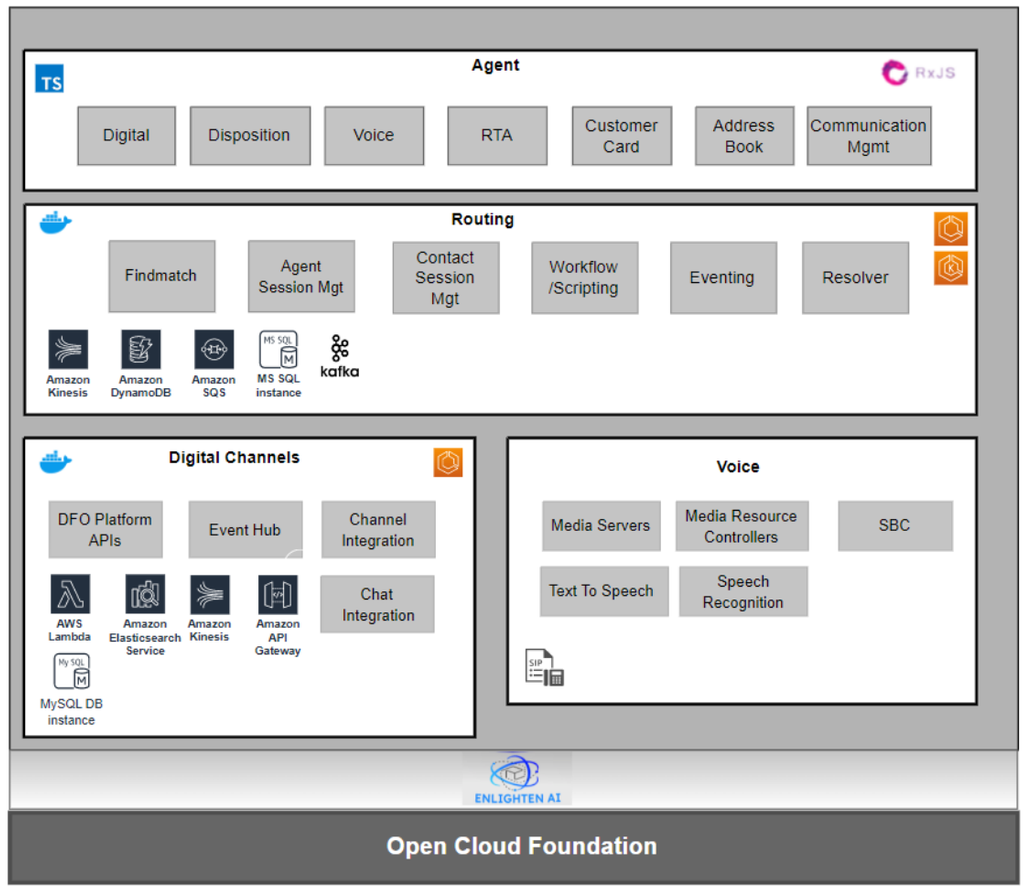
High Availability considerations extend across various aspects of NICE CXone, influencing deployment, security, and delivery processes. The monitoring scope encompasses cloud services, data services, computer networks, storage systems, applications, reporting systems, telecom, software, and network systems. Regular maintenance and patching activities include testing routes that redirect contact processing from one Voice Point of Presence (POP) to another, effectively validating redundancy and ensuring the continued reliability of the system. This comprehensive approach reflects NICE CXone's commitment to maintaining uninterrupted service and a high level of availability for its users.



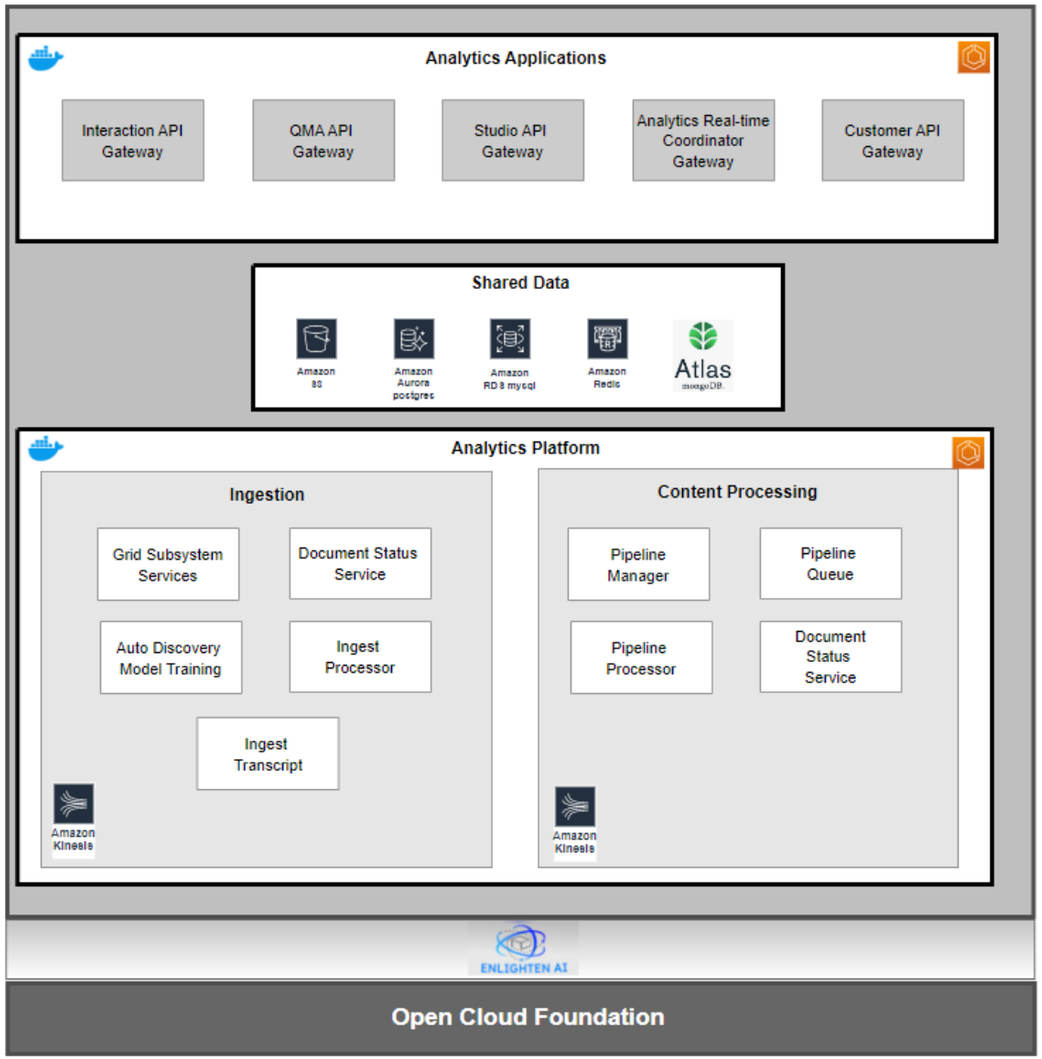
NICE CXone High Availability Overview



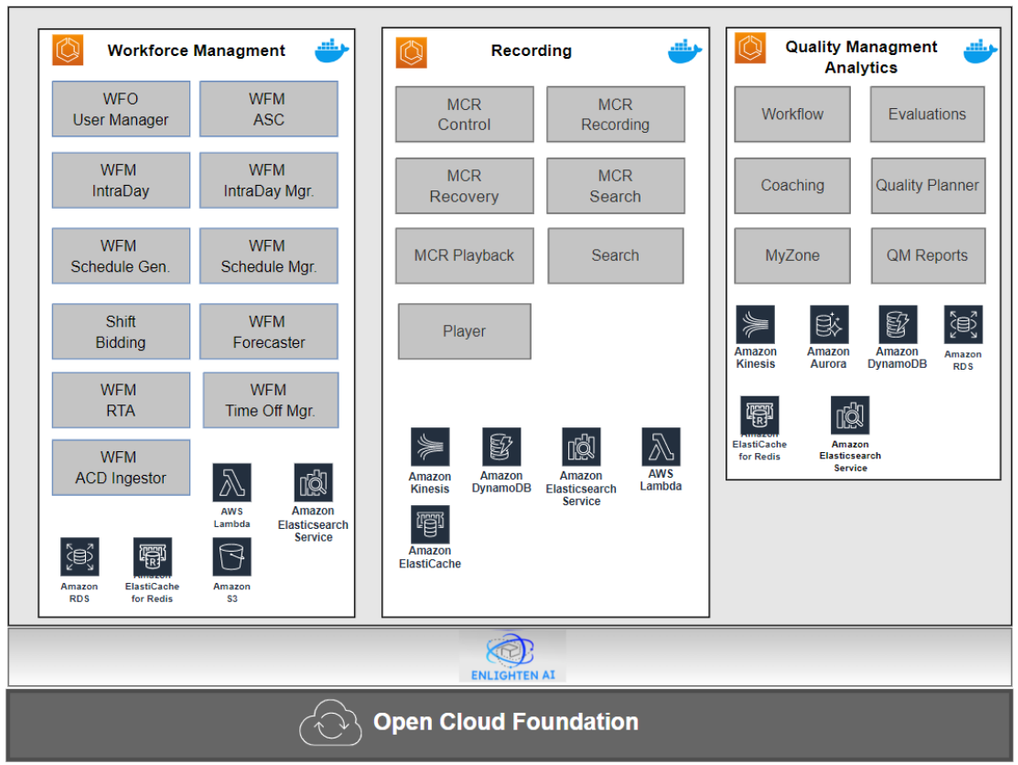
NICE CXone Cloud Native Architecture



NICE CXone Journey Orchestration



NICE CXone Analytics



NICE CXone Workforce Engagement

High Availability is a function of a company's architecture – how it deploys its services, its microservices, what service providers the company uses, and how the company maintains its systems. Ultimately, High Availability includes everything the company does to ensure platform performance, fault tolerance, operational redundancy, and uptime. CXone is deployed in multiple public clouds, within multiple regions and multiple availability zones guaranteeing global resiliency at every level. The ultimate goal of having a highly available system is to shield customers from failures.