



## KEY BENEFITS

- **Deferred CAPEX:** Optimize current infrastructure usage, delaying the need for significant upgrades
- **Enhanced Subscriber Visibility:** Maintain enriched subscriber insights despite NAT deployment
- **Simplified Operations:** Reduce complexity with centralized NAT management and analytics

## OPTIMIZE IP UTILIZATION WHILE ENSURING NETWORK AND SUBSCRIBER EFFICIENCY

**The depletion of IPv4 addresses poses significant challenges for network operators, requiring immediate strategies to meet growing demands while transitioning to IPv6.**

AppLogic Networks' Carrier Grade NAT (CGNAT) provides a scalable, application and subscriber aware solution to conserve IPv4 resources, streamline network operations, and ensure seamless subscriber visibility. CGNAT enables efficient traffic management, advanced analytics, and compliance with regulatory standards, allowing operators to optimize network resources and deliver high-quality services without compromising scalability.

### FEATURES, FUNCTIONALITY AND CAPABILITIES

CGNAT delivers powerful analytics and tools to address the challenges address offloading:

#### Advanced IP Address Management

- Dynamic and Deterministic NAT
- Supports NAT44 and NAT64 for efficient IP address usage.
- Dynamic port block allocation ensures optimal resource distribution.
- Deterministic NAT eliminates the need for IP and Port Block allocation logging

#### Application and Subscriber-Aware Insights

- Integrates with OSS/BSS systems for detailed subscriber and traffic insights.
- Offers actionable analytics for better decision-making.
- Application-aware NAT

#### Scalable and Redundant Deployment

- Synchronizes NAT session states across systems using NATSync technology.
- NATsync – maintains NAT mappings in the event of a node loss
- Supports asymmetric traffic conditions and geographic redundancy.

#### Robust Logging and Compliance

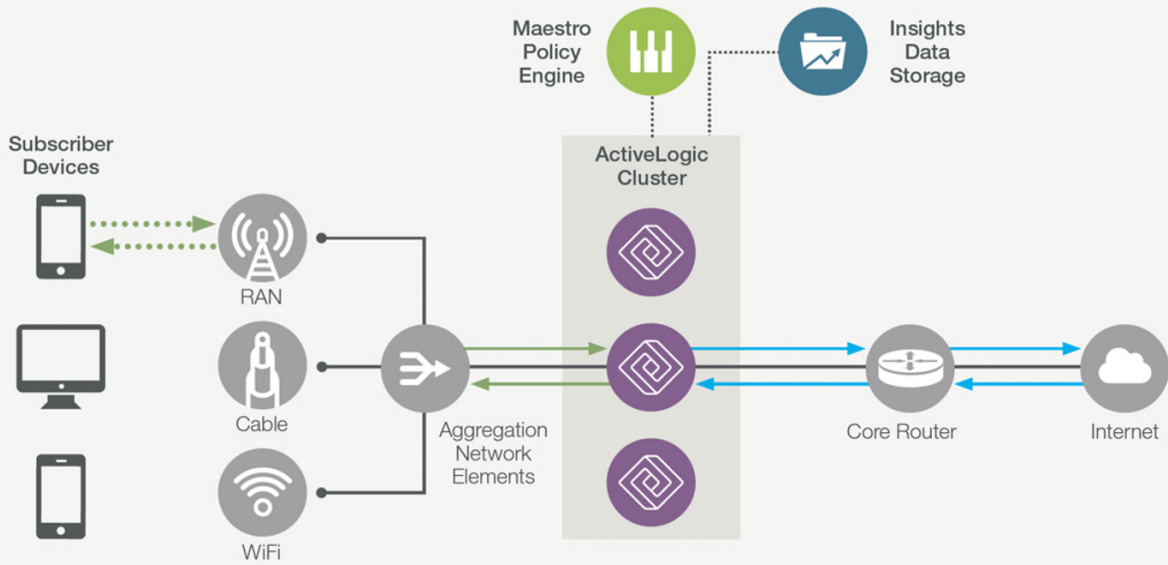
- Advanced logging options, including Syslog and IPFIX, ensure compliance with regulatory requirements.
- RFC compliance – RFC 4787 and RFC 5382
- Real-time monitoring and troubleshooting w/ LiveView

#### Optimized Performance

- High-performance processing with minimal packet overhead.
- Supports high-volume traffic environments, including 100GE interfaces.
- Low latency
- Overload protection – won't take down the network

Figure 1

Can be deployed as a new CGNAT deployment or transparently plug into networks replacing existing NAT solutions



**HOW CGNAT IS PACKAGED**

AppLogic Networks offers three Packages; Analyze, Optimize and Monetize:

<b>ANALYZE</b>	<b>OPTIMIZE</b>	<b>MONETIZE</b>
Gain Insights to Drive Decisions	Maximize Efficiency and Improve Spending	Unlock Revenue Potential

CGNAT is part of AppLogic Networks' Analyze Package, enabling operators to efficiently manage network traffic while enhancing subscriber visibility. It integrates seamlessly with other solutions, including:

- **Heavy User Management:** Proactively manages high-bandwidth subscribers.
- **Fair Usage Congestion Management:** Ensures equitable distribution of network resources.

**HOW CGNAT FUNCTIONS IN APPLOGICS' FUNCTIONAL ARCHITECTURE**

The solution operates across AppLogic Networks' core architecture layers, ensuring seamless integration and robust functionality:

Figure 2

How Carrier Grade NAT leverages AppLogic Networks' Functional Architecture

Value Delivery	AI/Big Data Use Cases	Dashboards & Workflows	VAS/BI Services	Managed Services
Data Enrichment	Data Orchestration & Export			
	Data Contextualization and Advanced KQIs (incl. QoE Scoring)			
Data Intelligence	Real-time control & data plane analysis	ML/AI driven application identification, classification and categorization		Granular KPI creation
Deployment Options	Certified Server & Qualified Software Appliances, Virtual, and Cloud			

- **Deployment Options:** Variety of access-agnostic deployment options for fixed, mobile, and converged operators to deploy a single solution to manage IPv4 addresses smartly.
- **Data Intelligence:** Real-time rich data and log collection for measuring the performance and usage of NAT blocks and private-to-public mapping for IP address translation and enforcing translation rules.
- **Data Enrichment:** Contextualization for enabling subscriber and application-aware flexible CGNAT policies.
- **Value Delivery:** Superior flexibility and control for cost-effective, fully RFC-compliant NAT deployment by maintaining subscriber identity and rich visibility throughout the network infrastructure.

**BENEFITS**

AppLogic Networks' CGNAT delivers measurable value to service providers:

- **Deferred CAPEX:** Optimize IP address usage to delay costly infrastructure upgrades.
- **Enhanced Subscriber Experience:** Maintain visibility and deliver high-quality services even in NAT environments.
- **Improved Operational Efficiency:** Simplify network design with consolidated NAT functionality and centralized management.
- **Regulatory Compliance:** Ensure adherence to industry standards with advanced logging and detailed session tracking.
- **Future-Ready Transition:** Support dual-stack environments for gradual IPv6 adoption.

**KEY USE CASES**

CGNAT supports critical service provider initiatives:

- **Addressing IPv4 Exhaustion:** Enable efficient IPv4 address management while preparing for IPv6 adoption.
- **Subscriber Visibility:** Enhance traffic visibility and regulatory compliance in NAT-enabled environments.
- **Optimized Traffic Management:** Offload high-bandwidth applications like video streaming to reduce network congestion.

**KEY SOLUTION COMPONENTS**

AppLogic Networks' use cases feature key software components, visualizations and tools, across each layer that enable each use case's full value:

<b>Value Delivery</b>	Deep Insights
	3 <sup>rd</sup> party Data Lakes
<b>Data Enrichment</b>	Insights Data Storage
	App QoE Engine, ANI Score Engine, Maestro Policy Engine, Maestro Automation Engine, Maestro Security Engine
<b>Data Intelligence</b>	ActiveLogic, AppLogic, Intelligent Feeds
<b>Deployment Options</b>	iQ42100, iQ42300, iQ52600, iQ2080 Dell PowerEdge XR-12, R760, VNF, CNF

**OUR COMMITMENT TO PROVIDING VISIBILITY**

Our industry-leading AppLogic core technology delivers deep visibility into network traffic, unlocking new opportunities across every department. Key features include:

- **Accurate Application Identification:** Over 95% coverage, including encrypted traffic, ensuring precise network insights.
- **Content Classification:** Granular categorization of applications and services to enhance decision-making.
- **QoE KPIs and Sentiment Analysis:** Provides critical metrics and behavioral insights to optimize user experience.

AppLogic’s capabilities empower operators with actionable insights, driving operational efficiency, customer satisfaction, and revenue growth.

**Contact us today** to learn how CGNAT can enhance your network capabilities.

**Our Industry-leading unique core technology**



**Unlock New Business Opportunities**

Department	Business KPIs Improved
<b>Ops</b>	Operational Efficiency
<b>Planning</b>	Reduced CAPEX
<b>Performance</b>	Improved QoE
<b>Customer Care</b>	CSAT, Retention & ARPU Growth
<b>Marketing</b>	New Revenue Streams
<b>Big Data</b>	Enhanced Data Modeling
<b>Regulatory</b>	Compliance
<b>Security</b>	Rev Assurance & Fraud Prevention

**ABOUT APPLOGIC NETWORKS**

AppLogic Networks’ cloud-based App QoE portfolio helps customers deliver high quality, optimized experiences to consumers and enterprises. Customers use our solutions to analyze, optimize, and monetize application experiences using contextual machine learning-based insights and real-time actions. Market-leading classification of more than 95% of traffic across mobile and fixed networks by user, application, device, and location creates uniquely rich, real-time data that significantly enhances interactions between users and applications and drives revenues. For more information visit <https://www.applogicnetworks.com> or follow AppLogic Networks on X @AppLogic Networks.



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