Exinda AI NetworkOrchestrator

Exinda for Malls and Venues

Optimizing Bandwidth Management

Use case overview

In the modern world, internet coverage is ubiquitous in public spaces, serving both recreational purposes and supporting the marketing efforts of host organizations.

GFI Exinda Network Orchestrator AI is a versatile solution designed for a wide range of network management scenarios across various industries. While it offers powerful capabilities for many different environments, this document focuses on two specific use cases that highlight its flexibility and effectiveness: malls and event venues.

Use case #1 – Bandwidth Allocation in Malls

In most malls across the world, visitors can log in to a publicly available Wi-Fi network to use internet services provided by the mall. Simultaneously, retailers use the internet connection for their systems (e.g., cashier systems, in-house entertainment systems, info screens). Since retailers pay for their spot in the mall, their needs must be prioritized.

Mall infrastructure needs to:

- Prioritize bandwidth consumption for retailers.
- Prioritize different applications (often custom) based on their importance for individual retailers.
- Provide bandwidth for all visitors (shoppers) to enhance their experience.
- Consider prioritizing certain visitor applications (e.g., social networks) to support marketing efforts.
- Manage dynamic bandwidth allocation as the number of visitors and connected devices varies over time.

Based on this, we can identify 4 pain points:

1. Ability to divide and prioritize bandwidth between Retailers and Visitors.
2. Ability to prioritize bandwidth between individual applications used by single retailer.
3. Ability to provide dynamic but equal share between visitors.
4. Ability to prioritize bandwidth allocation to certain applications used by the visitors.

Addressing points 1,2 & 3

With GFI Exinda Network Orchestrator AI's QoS system, admins can easily create Virtual Circuits for every retailer segment along with one or multiple visitor segments. Virtual Circuits allow admins to allocate and maintain bandwidth consumption and prioritize different applications within a single segment/virtual circuit, as shown in the picture above.

Addressing point 4

Using the Dynamic Virtual Circuit feature, admins can deliver seamless and automatic equal bandwidth allocation among all hosts recognized within this Virtual Circuit. This option is available for each created virtual circuit (see more details in the previous section).

Use case #2 – Bandwidth allocation between visitors and internal systems at Venues

Venues (Arenas) are typically buildings capable of hosting thousands or tens of thousands of visitors in a single event. Paid visitors expect a certain level of hospitality, including mandatory Wi-Fi availability. At the same time, venues have various high-tech subsystems such as multimedia systems, security systems, and others.

Venue infrastructure should:

- Provide bandwidth for all event visitors to enhance their experience.

- Consider prioritizing certain visitor applications (e.g., social networks, streaming) to support marketing efforts.

- Manage dynamic bandwidth allocation as the number of visitors and connected devices varies.

- Prioritize streaming without impacting content quality.

- Ensure uninterrupted, stable bandwidth allocation for in-house systems (security, entertainment, broadcasting).

- Allow prioritization of emergency applications.

- Continuously measure the quality of key applications for broadcasters and venue entertainment systems.

Based on this we can identify 5 pain points:

1. Ability to divide and prioritize bandwidth between Venue (arena) systems and visitors.

2. Ability to prioritize bandwidth between individual applications used by venue systems.

3. Ability to provide dynamic but equal share between visitors.

4. Ability to prioritize bandwidth allocation to certain applications used by the visitors (e.g., social networks, streaming).

5. Ability to continuously measure quality of top applications used by broadcasters or venue multimedia systems.

Addressing points 1,2 & 4

Using GFI Exinda Network Orchestrator AI's QoS system, admins can easily create Virtual Circuits for every in-house venue segment along with one or multiple visitor segments. Virtual Circuits allow admins to allocate and maintain bandwidth consumption and prioritize different applications within a single segment/virtual circuit, as shown in the picture above.

Addressing point 3

With the Dynamic Virtual Circuit feature, admins can deliver seamless and automatic equal bandwidth allocation among all hosts recognized within this Virtual Circuit. This option is available for each created virtual circuit (see more details in the previous section).

Addressing point 5

Name	Score	Normalized Delays (ms/kb)		Transaction Delays (ms)		Jitter (ms)	Loss (%)		RTT (ms)
		Network	Server	Network	Server		Inbound	Outbound	
✓ YouTube Solution Center (205)	8.46	23.50	8.27	182.69	22.56	119.12	0.00	0.00	20.67
✓ Facebook Solution Center (204)	2.24	2866.03	796.34	760.08	185.27	407.76	5.30	0.00	49.43
✓ Netflix Solution Center (556)	10.00	13.27	2.86	49.29	11.45	2.24	0.00	0.00	48.91
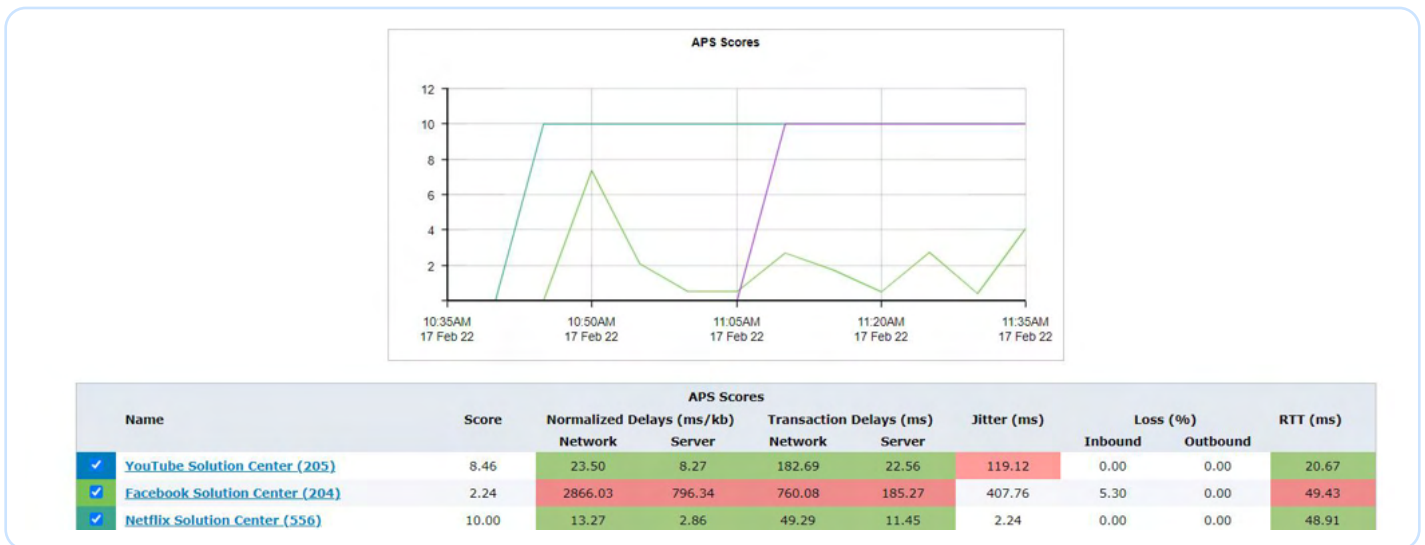
Using the native GFI Exinda Network Orchestrator AI function - APS score, admins can set continuous evaluation of performance for chosen applications. This evaluation is done in the form of a "score" ranging from 1 to 10. This score is calculated from values such as Jitter, RTT, packet loss, transaction delay, etc. The value is measured every 10 seconds, providing early warnings on the poor performance of key applications or proof that the required performance has been delivered throughout the entire event.