Case Study: Gaming Company Transition to IPv6 for Improved Latency

A report by

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Background/;

NetherRealm Gaming, founded in 2015 in Seattle, is a mid-sized online gaming company specializing in multiplayer online battle arena (MOBA) and first-person shooter (FPS) games. With 5 million active users globally and $75 million in annual revenue, they faced significant networking challenges as they grew.

Problem

NetherRealm encountered several critical issues:

1. High latency in Asia and South America (>150ms vs. ideal <50ms)
2. IPv4 address exhaustion (95% utilization of allocated addresses)
3. Complex network management due to IPv4 workarounds
4. Limited scalability for increasing concurrent players

Solution

In June 2023, NetherRealm initiated a transition to IPv6 with the following objectives:

- Reduce latency by 20% in problem regions
- Eliminate IPv4 address constraints
- Decrease network management complexity
- Improve player experience and reduce churn
- Increase concurrent player capacity

The transition was executed in three phases:

1. Assessment and Planning (2 months):
   - Audited infrastructure and IPv6 readiness

   o Trained IT and development teams

   o Developed dual-stack transition strategy

2. Infrastructure Upgrades (3 months):

   o Upgraded network hardware

   o Implemented dual-stack configurations on game servers

   o Acquired IPv6 address block and reconfigured routing

3. Software Updates (4 months):

   o Modified game engines and matchmaking algorithms

   o Updated backend services and databases

   o Released IPv6-compatible client software

Results

By March 2024, NetherRealm achieved:

- 25% latency reduction in Asia and South America
- Virtually unlimited IP address space
- 30% decrease in network management complexity
- 18% reduction in player churn rate
- 60% increase in concurrent player capacity

This successful IPv6 implementation has become a model for other gaming companies facing similar networking challenges in the online gaming industry.