Supporting Esports Infrastructure Requirements in PA: KINBER's Esports KESDX Service

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Internet2 Technology Exchange 2019 | Dec. 10, 2019
New Orleans, LA

KINBER Background/Overview

- **Keystone Initiative for Network Based Education and Research (KINBER)** is **Pennsylvania's statewide research, education, and community network**.
- **Non-profit**, **member-based** organization that provides a variety of **next generation broadband connectivity** solutions and services to community anchor organizations in PA.
- Formed in 2009 to receive capital funding through a **$99.6 million NTIA grant, with nearly $30M matching funds** including the founding members, establishing what KINBER is now today ten years later.
- **1800+ mile PennREN** fiber optic infrastructure in Pennsylvania.
- One of **43 Research and Education Networks nationwide**.
- KINBER offers **network connectivity** to its advanced **PennREN network** and **trusted technology solutions** to its member community.

CELEBRATING 10 YEARS
of Pennsylvania's Statewide Research, Education, and Community Network

www.kinber.org
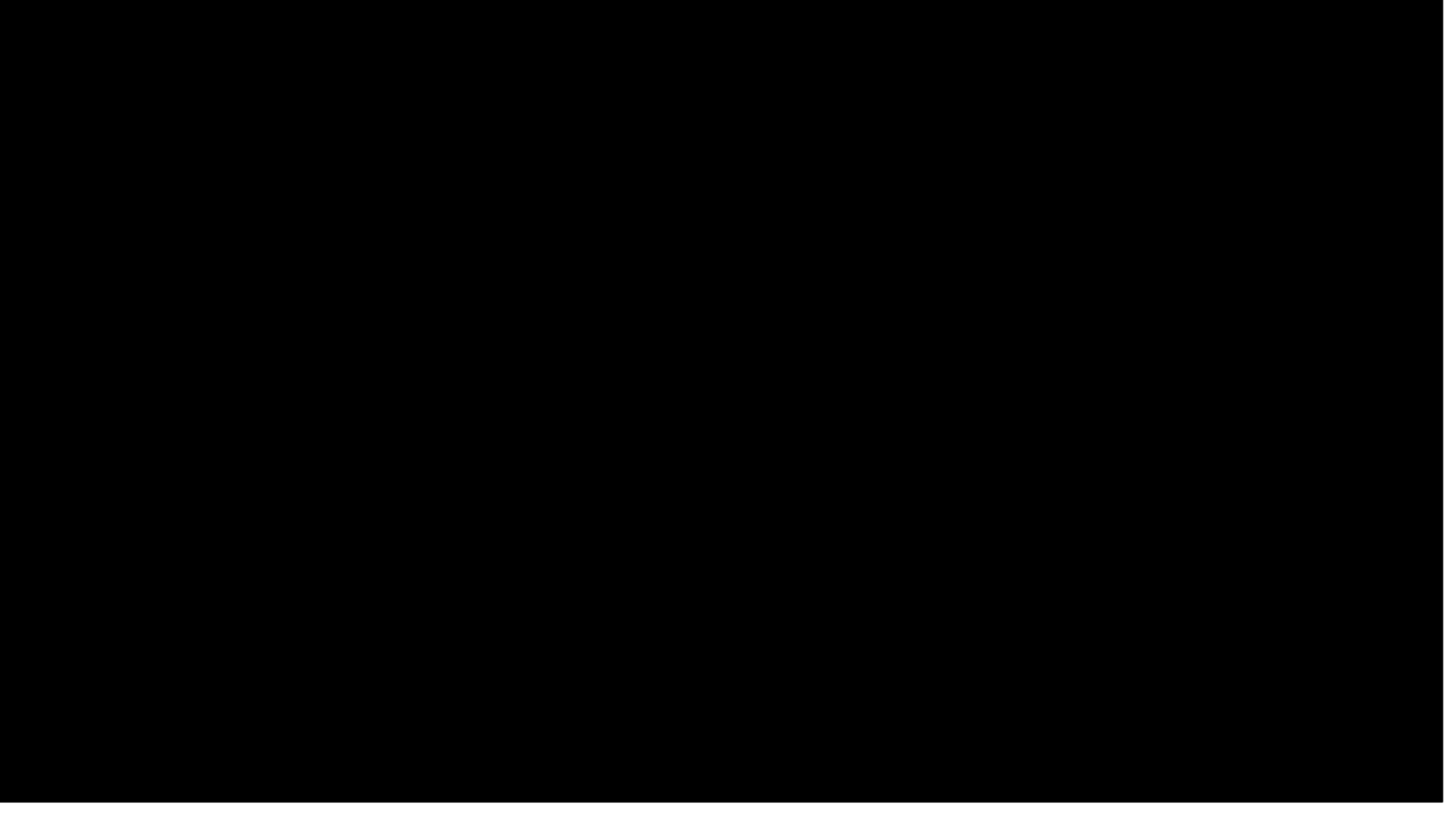
Esports Background/Overview

- Esports "Turning Point Moment" in Spring 2018
- KINBER developed concept of Esports direct connect service KESDX design and offering in summer 2018
- Engaged Internet2 at 2019 Global Summit meeting for exploring access to Equinix in Ashburn, VA
- Officially launched Esports KESDX pilot in April 2019 at KINBERCON 2019
- First pilot participant Edinboro University in Aug. 2019
- East Stroudsburg University joined pilot in Sept. 2019
- Other customers wanting to participate in the pilot and take the service: Lackawanna College, Arcadia University, La Salle University, MCCC, Franklin and Marshall College, IUs, …

Esports KESDX Pilot and Service

- Direct peering connection to select gaming service networks through Internet2 Rapid Private Interconnect (RPI) to connect to Equinix peering facility in Ashburn, VA. Internet2 is currently piloting the RPI service
- Connectivity to Riot, Twitch, Blizzard, and Valve game services
- Launched Pilot Program in April 2019
  - Goal of the pilot was to understand use cases and refine service offering to meet campus requirements
  - Understand and refine requirements and service options
- Working with the PA Esports Coalition
- For both casual gaming and competitive Esports programs

# Esports KESDX Pilot and Service

- Pilot KESDX Service in Fall 2019
  - Competitive ESports
    - Formal campus ESports program
    - Typically used as a recruiting tool, including scholarships
    - Often have a gaming arena or stadium
  - Casual Gaming
    - No formal school sanctioned team
    - Often clubs or significant on-campus gaming environment.
    - Distinguish between viewing (Twitch) and actual gaming networks

Esports KESDX Pilot and Service

- Edinboro University of PA
  - Initial pilot school
  - ESports team is part of its athletic department
  - Ties their competitiveness to their Animation and Computer Science Program
- East Stroudsburg University of PA
  - Second pilot site
- Small Colleges
  - ESports program distinguishes them from other small liberal arts colleges
- Community Colleges
  - Typically not a residential college environment
  - Provides a community environment for the school

Esports KESDX Education and Outreach

- Webinars
    - May 2019 webinar on Lackawanna's ESports program
    - Esports Community Day event in Nov. 2019 w/Merit
    - Continue to offer opportunities for education and training based on demand and interest
- Esports Working Group
    - Newest KINBER working group, launched Sept. 5
    - Very well attended
    - Monthly meeting - 1st Thurs. each month
    - Way to get input from the community about other game networks they want to get to and other areas/topics of interest
    - Open to organizations outside of PA
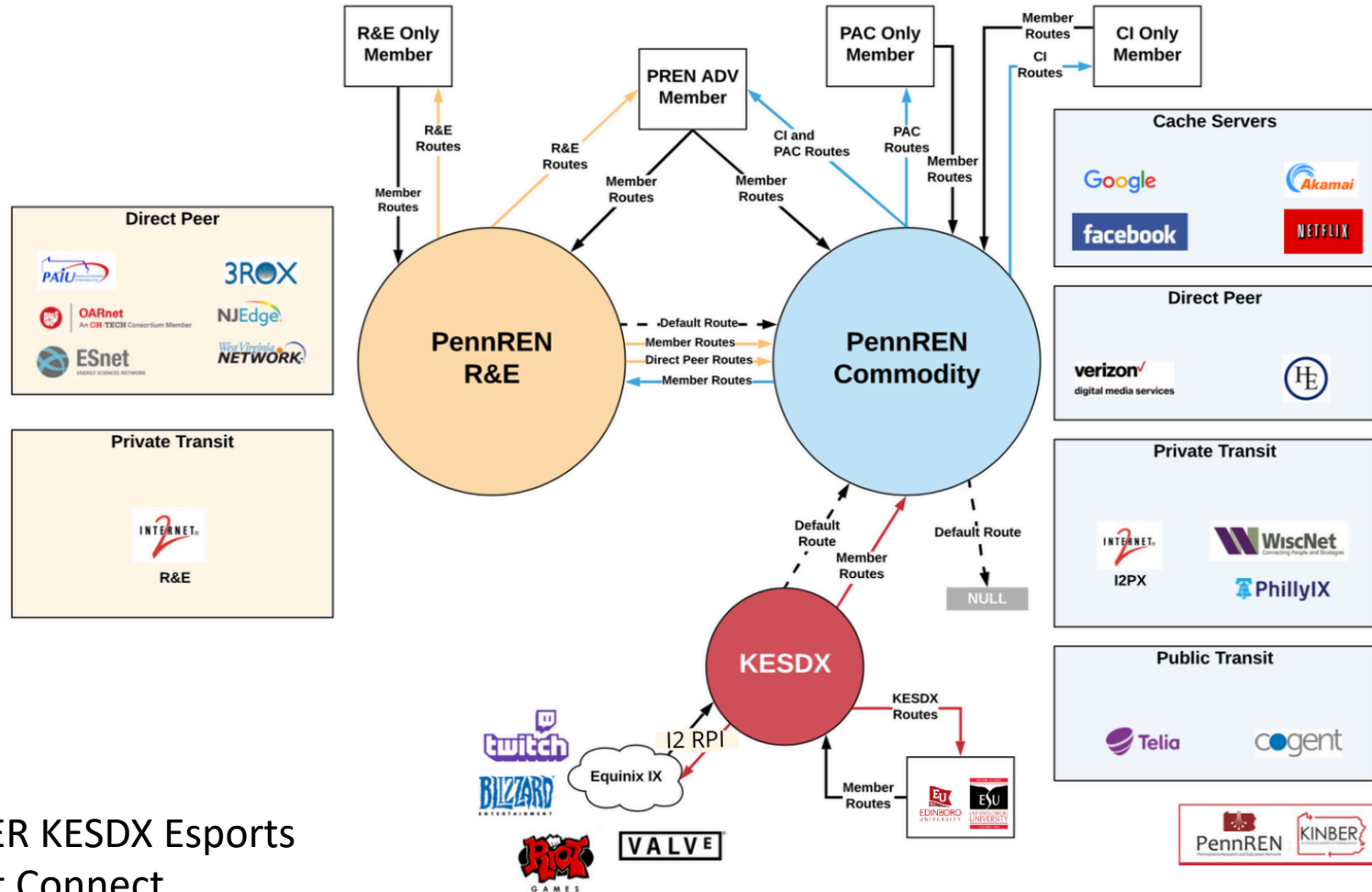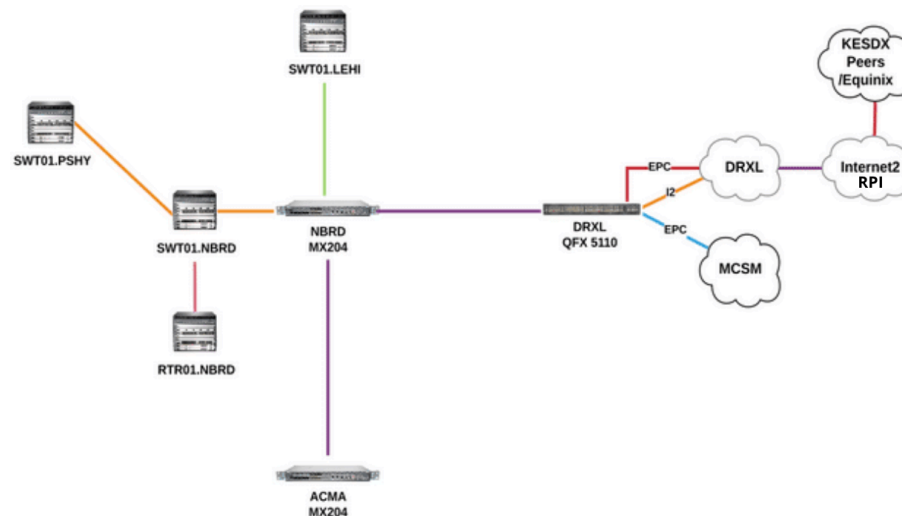
KINBER KESDX Esports Direct Connect
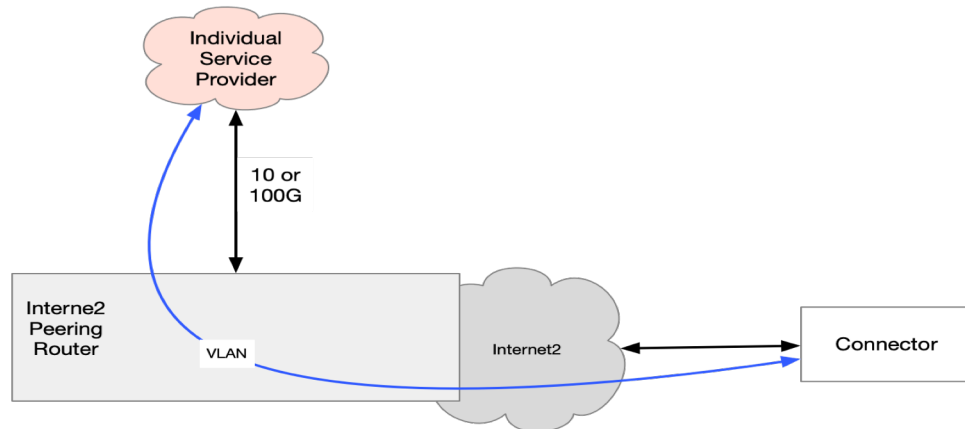
- KINBER has used the Internet2 Rapid Private Interconnect Service to utilize capacity already available on their Internet2 backbone connection to establish a dedicated 10G VLAN to the Service Provider (Equinix IX) who peers with the Esports providers.

- KINBER was an early partner in piloting the RPI Service to provide the KESDX Service.

- RPI is a key component in KINBER's technical design to lower latency and provide network path consistency.

- RPI ports are available to Internet2 Network Connectors for $5000 or less per year (plus cross connects)
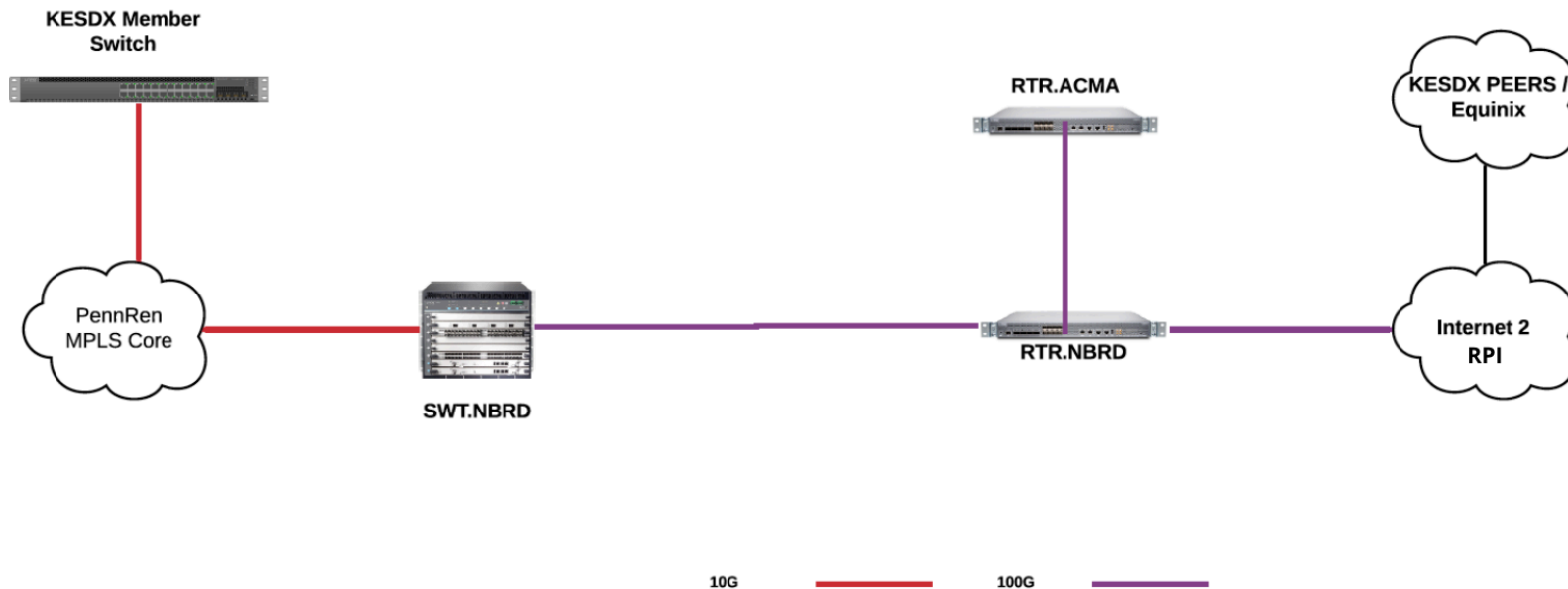
Backbone to Drexel and KESDX Connections

- Currently through KINBER's Internet2 connection through Drexel

- Migrate to KINBER's direct 100G connection to Internet2 starting Jan 2020

Future KESDX Member Connections

Esports KESDX Pilot and Service – Technical Overview

- Direct peering with the gaming servers keeps latency down by decreasing hops to game servers
- Keeps network paths consistent
- Schools also pick up the ability to peer with other schools connected to KINBER
- Impact on commodity
- Keeping the route tables separately via VRF
- Physical hand-off or MPLS VLAN

- DDoS and unique security concerns
- Other service demands – streaming, shoutcasting, etc.
- Additional game networks based on demand (Fortnite, others)
- Additional redundancy and capabilities through additional R&E partners

Esports KESDX Service – What's Next

- Technical
  - Using pilot to test, gather traffic data, and institution requirements
  - Make decisions as how to offer the service
  - Does it need to be redundant
- Marketing
  - Package as a production service
  - How to price the service
    - Depends on how we offer the service technically
    - Cost recovery for any additional infrastructure

Esports KESDX and Other Esports Services – Future

- KINBER to move from pilot to fee-based service in 2020
- Will likely still allow new subscribers to kick the tires with a three-month trial if interested
- Esports is still very much a "wild wild west"
- What will the actual demand for services be?
- Other esports service demands (consulting, A/V room design, arena space requirements, etc.)
- Rapid changes in game titles, leagues, affiliations/associations
- Continue to offer training, broker partnerships, pursue pilots, etc.

Q&A

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