

# Nimbra Trust Boundary

Partner Webinar 2024

# Speakers Today



Damien Nagle

Product Manager



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Product Manager



# Broadcasting in an IP-First Environment



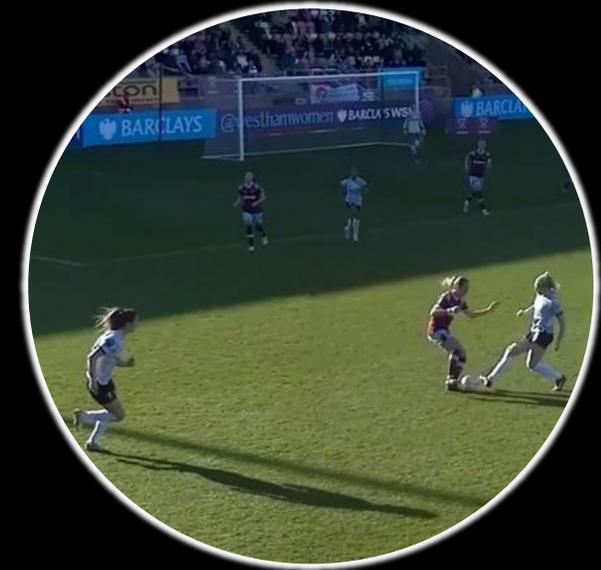
Regional Content  
Ad-In



Major Event  
Productions



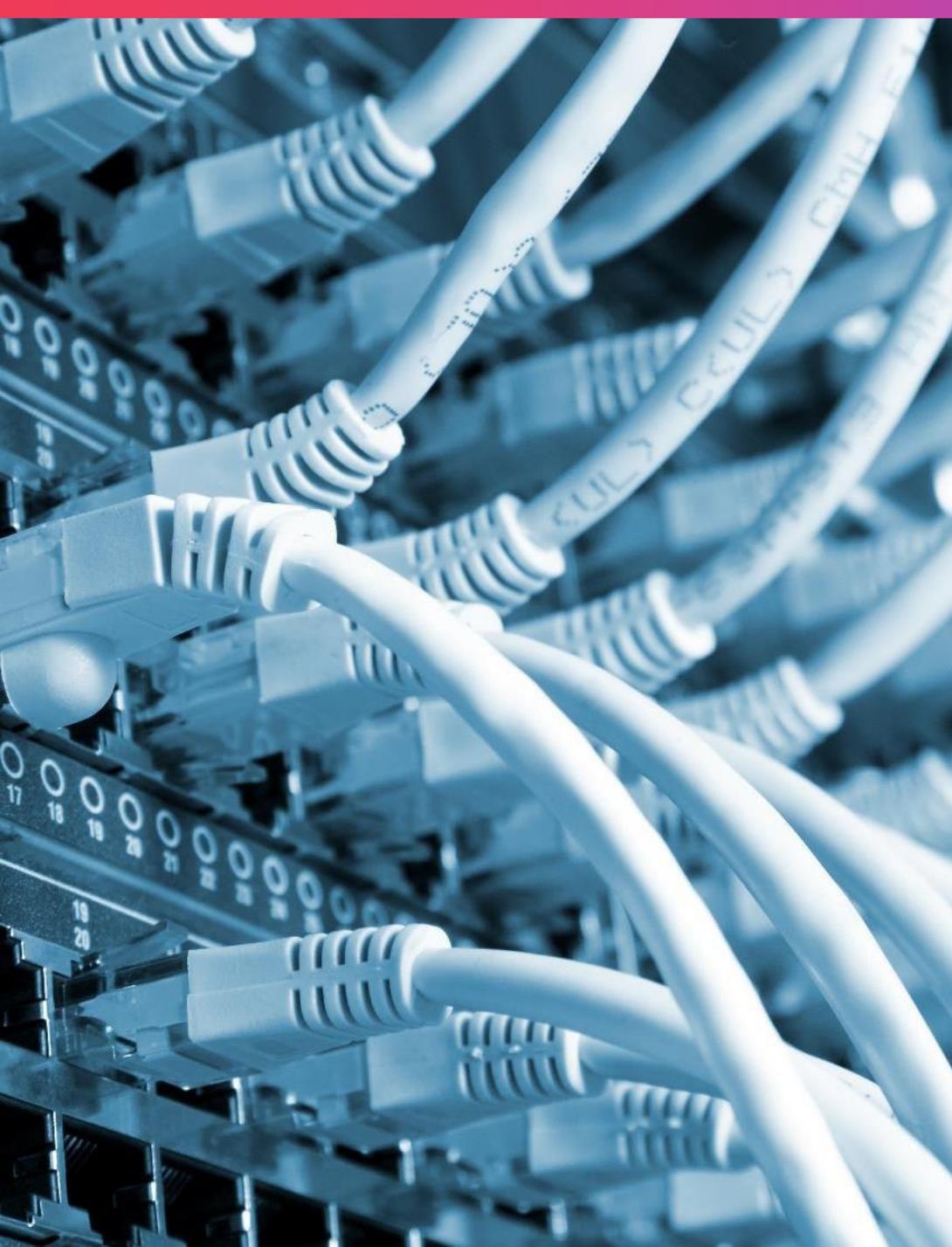
World Feed Back-  
Up Service



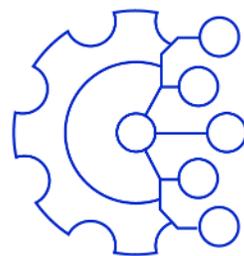
Additional OTT  
services

## IP Network Benefits

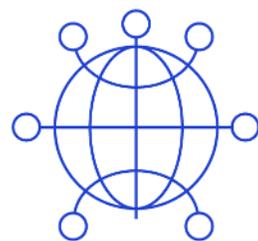
- Flexibility for more dynamic IP service provision
- Cost-effective IP connectivity to enable new service offerings
- Increased robustness with diverse IP connected architectures



# Bridging Networks in an IP-Connected World



IP network connectivity brings great operational flexibility



Great flexibility brings operational risk when interfacing to external networks

# Resolving IP Connectivity Concerns

Maintaining Quality and Security Across IP Media Networks



Challenges adapting between IP domains

- Unicast<>Multicast
- IGMP versions
- IP address ranges



Identify the source of quality issues



Increased jitter and avoidable outages from IT devices

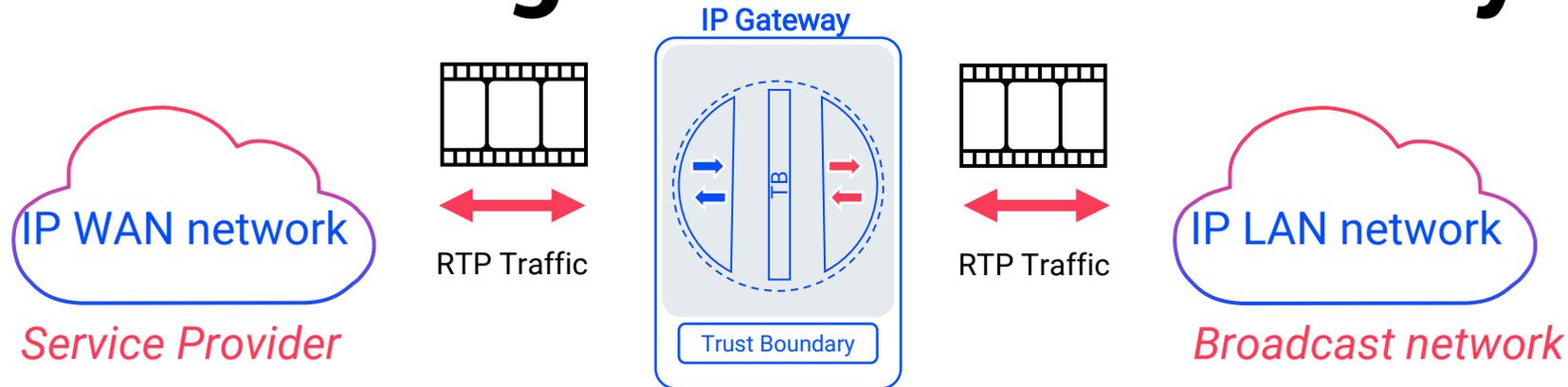


Avoiding network overloads



Apply media-centric protection to content streams

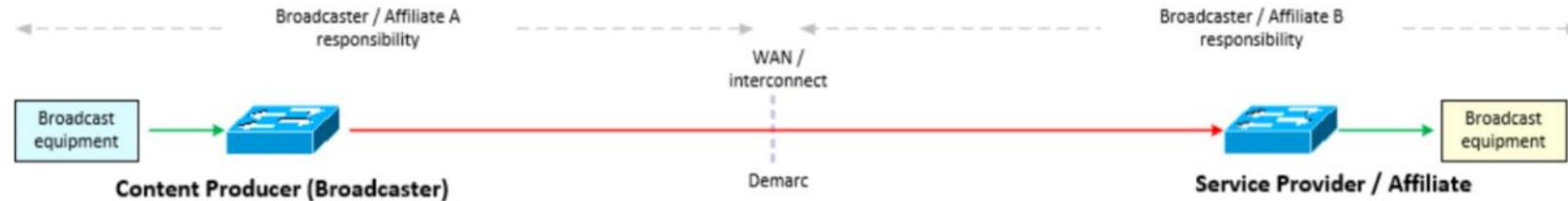
# Net Insight Trust Boundary



## Optimizing Connectivity Between IP Media Networks

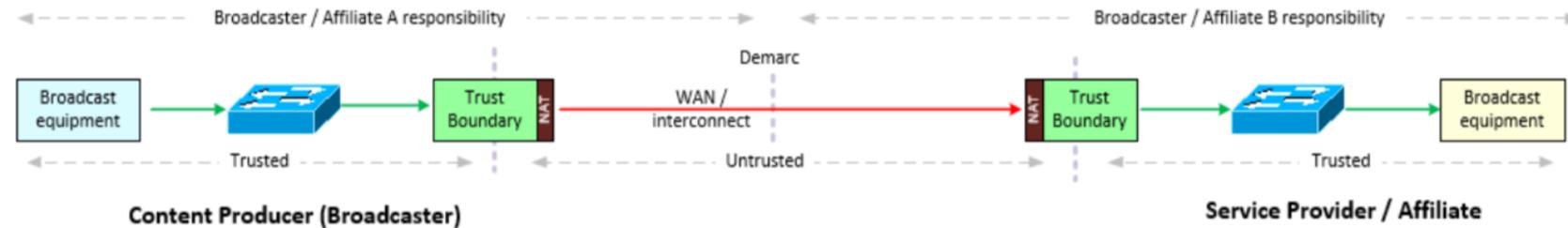
- ✓ “Fit for purpose” set of features relevant to Media
- ✓ Resolves media specific concerns with IP network interconnect
- ✓ Reduces complexity associated with non-media specific solutions

# Following SMPTE RP 2129 Recommended Practice



## Historical Implementations

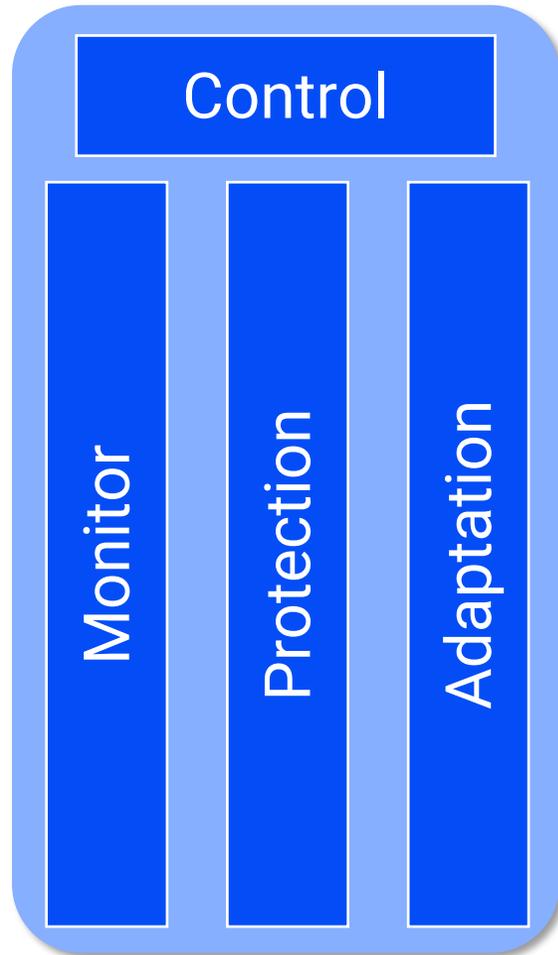
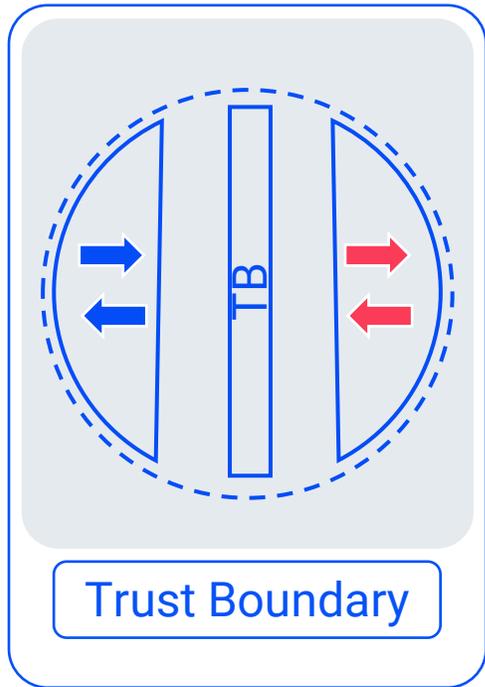
## SMPTE Recommended Practice



<https://github.com/SMPTE/rp2129/blob/main/32NF-PCD-RP-2129-Inter%20Entity%20Trust%20Boundary-2022-01-14.pdf>



# Trust Boundary Elements



Monitor, Understand and Manage Your Network



Protect and Deliver Robust Connectivity

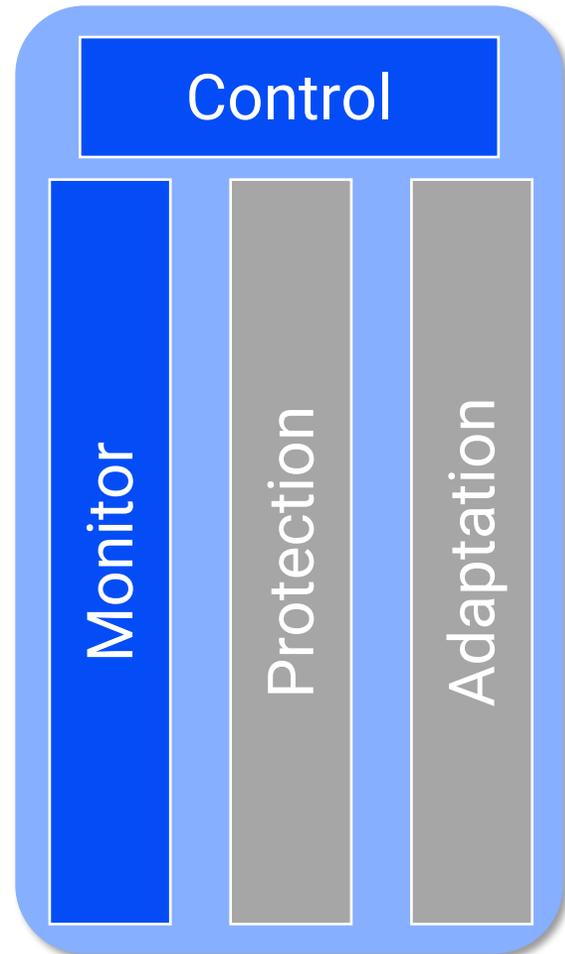


Connect Networks and Adapt Interfacing



Complete System Integration via Control and Management API Interface

# Monitor – Understand and Manage Your Network



Monitor every flow



Alarm on QoS metrics



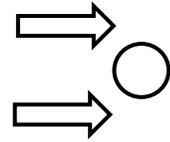
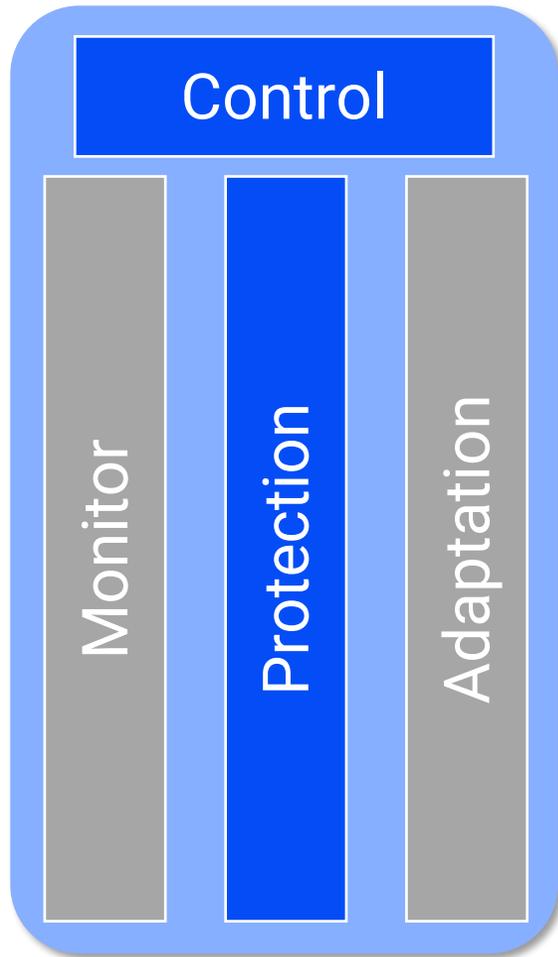
Export and analyse streams



Comprehensive IP statistics

- QoS data monitored and stored for user analysis
- User defined alarms
- Analyse RTP sequence numbers and bit rates

# Protection – Robust Network Connectivity



Deliver robust connections over non-guaranteed networks



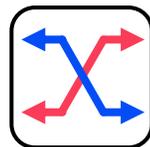
Protect inter-network transmission with FEC



Only approved flows can pass



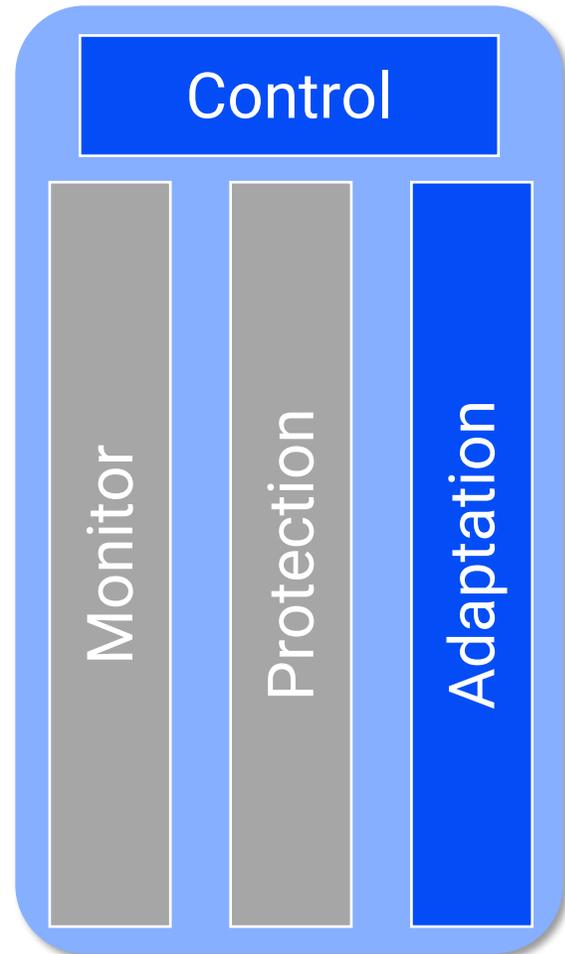
Reject unwanted traffic



Guard against network loss with Red-Blue link switching

- SMPTE 2022-7 Seamless Switching
- SMPTE 2022-1 FEC
- Police max bit rate per flow
- Media Firewall

# Adaptation – Simpler Network Interfacing



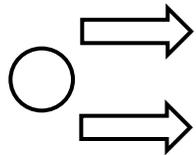
Bridge different networks



Enable different network properties / configurations



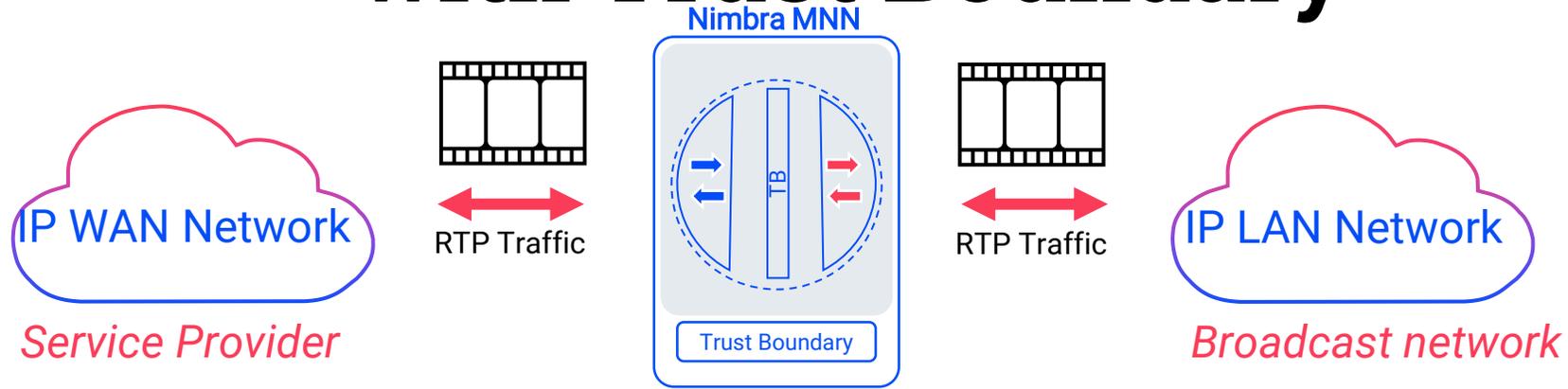
Prevent traffic flooding your network



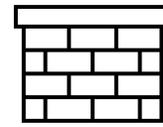
Serve different takers with flow replication

- Unicast <> Multicast Translation
- Network Address Translation
- Port Mapping
- Traffic Acceptance/Blocking Rules
- Traffic Control
- Flow replication

# Simplifying Connectivity, Reducing Risk with Trust Boundary



Have confidence in interconnecting IP domains



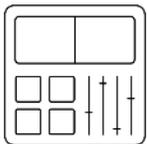
Clear demarcation assuring handoff quality



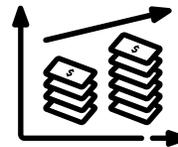
Easily manage and adapt traffic flows to 3<sup>rd</sup> party networks



Protect your flows across any domain



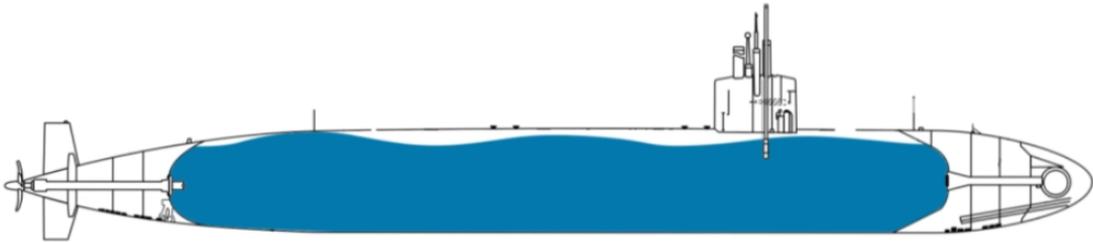
Control and monitor received traffic streams from uncontrolled sources



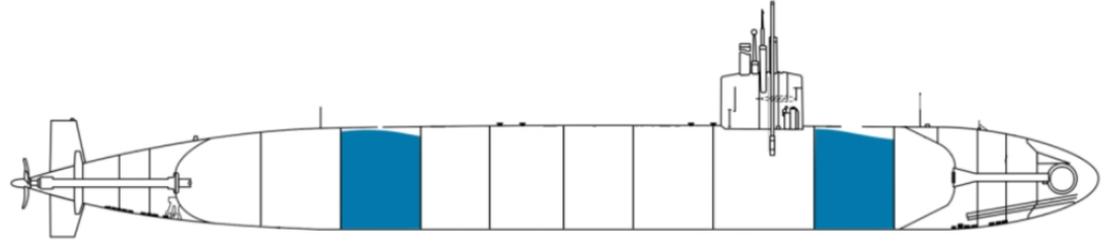
Increase operational efficiency

# Got a Problem? - Don't Sink the Ship!

Without  
Micro-Segmentation

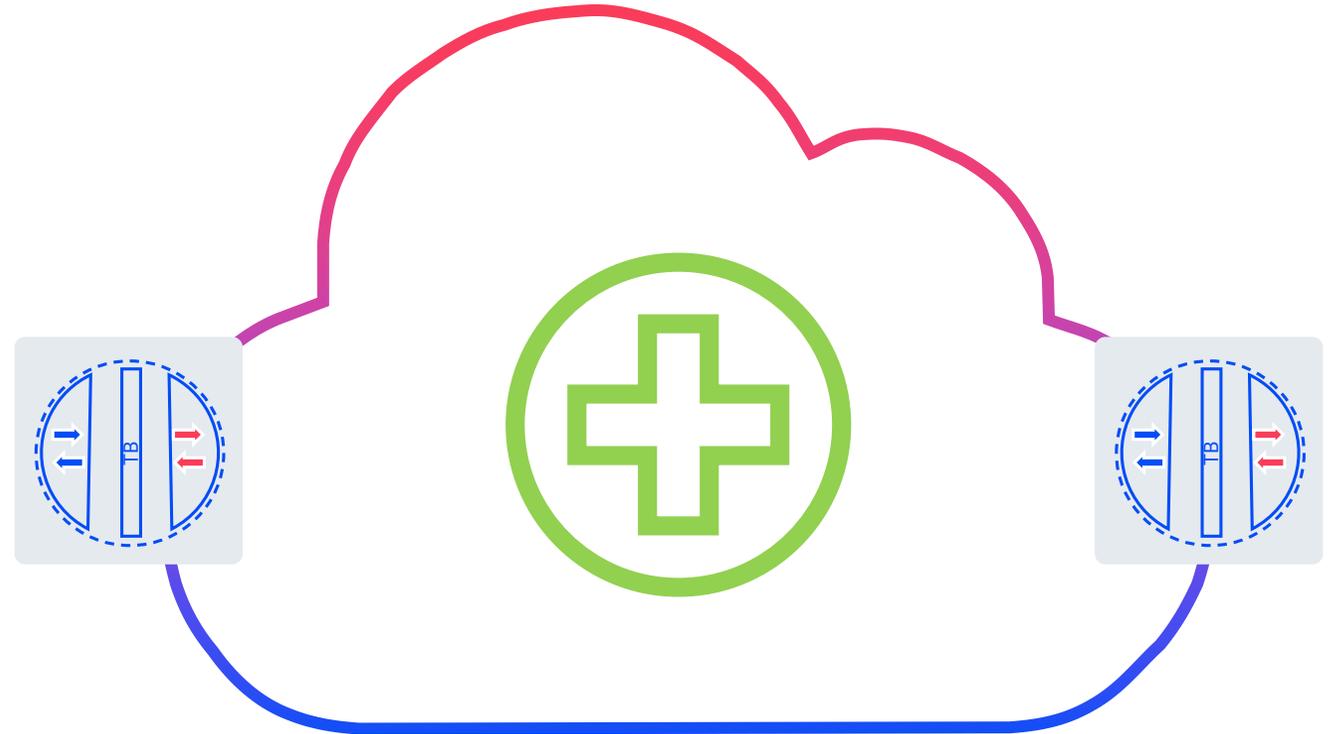


With  
Micro-Segmentation

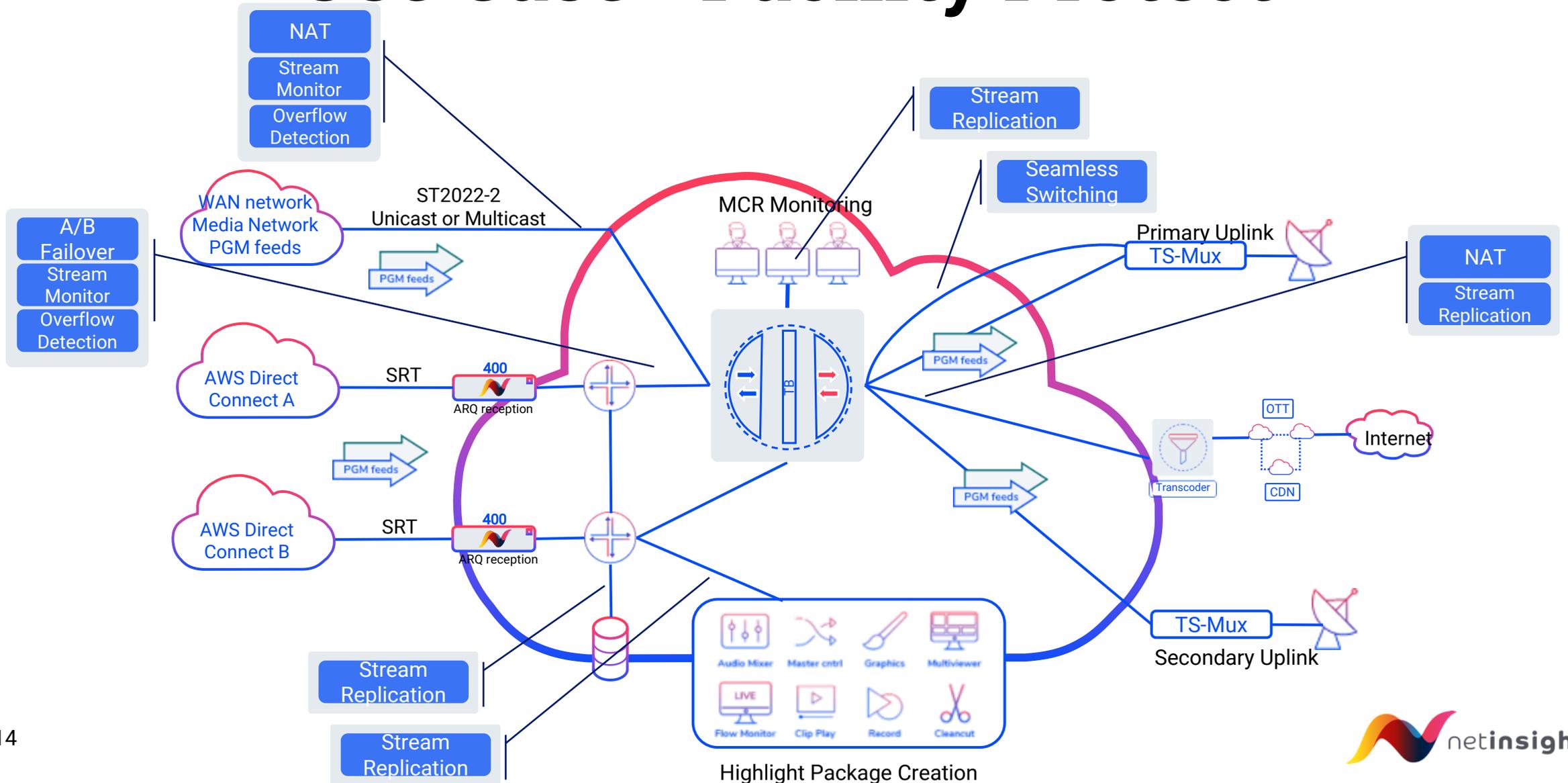


# Use Case - Facility Protect

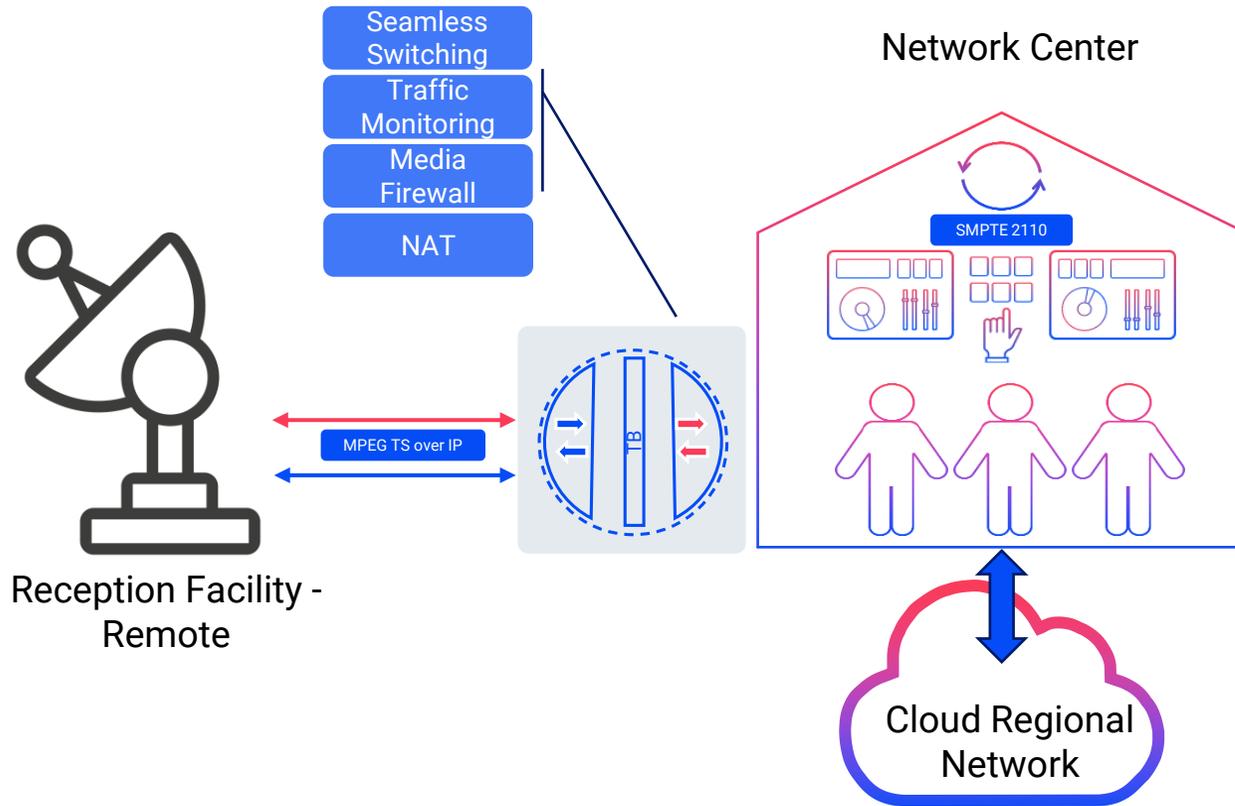
Protect your network  
from outside impacts



# Use Case - Facility Protect



# Customer Deployment – Facility Protect



Zero-trust segmentation of remote and core domains

Managed and Internet connections protected

Approximately 30 streams individually protected

Requirement fulfilled by a single Nimbra 640 chassis with on IF628 module

Looking to future Trust Boundary expansion on more connections

# Red Bee Facility Connect

Enhanced operational efficiency with seamless inter-site workflow

Dynamic disaster recovery

Diverse, hitless connectivity

Multi-format interfacing  
(SMPTE 2022-6, SMPTE 2110)

Integrated management

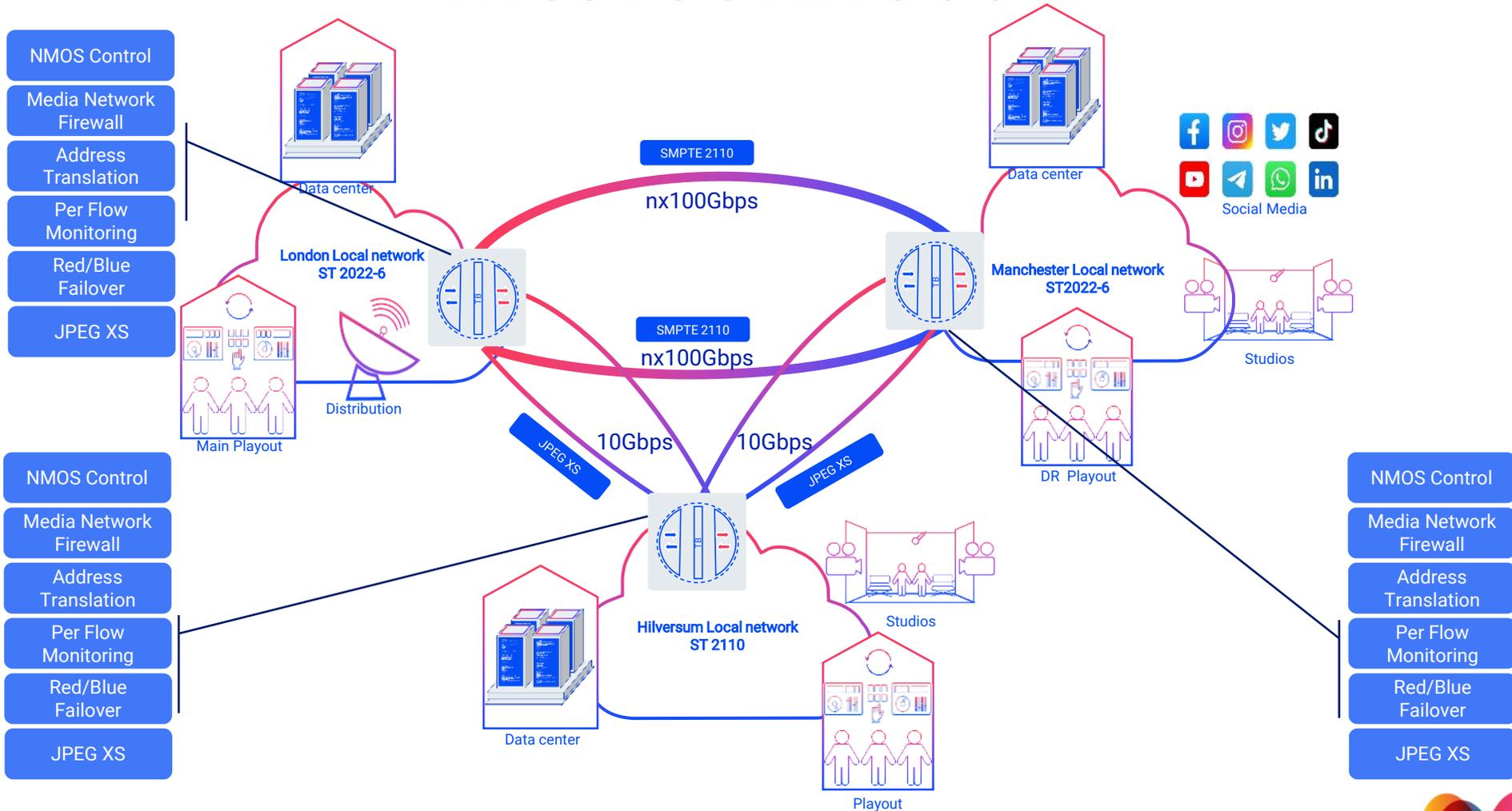
Site domain separation



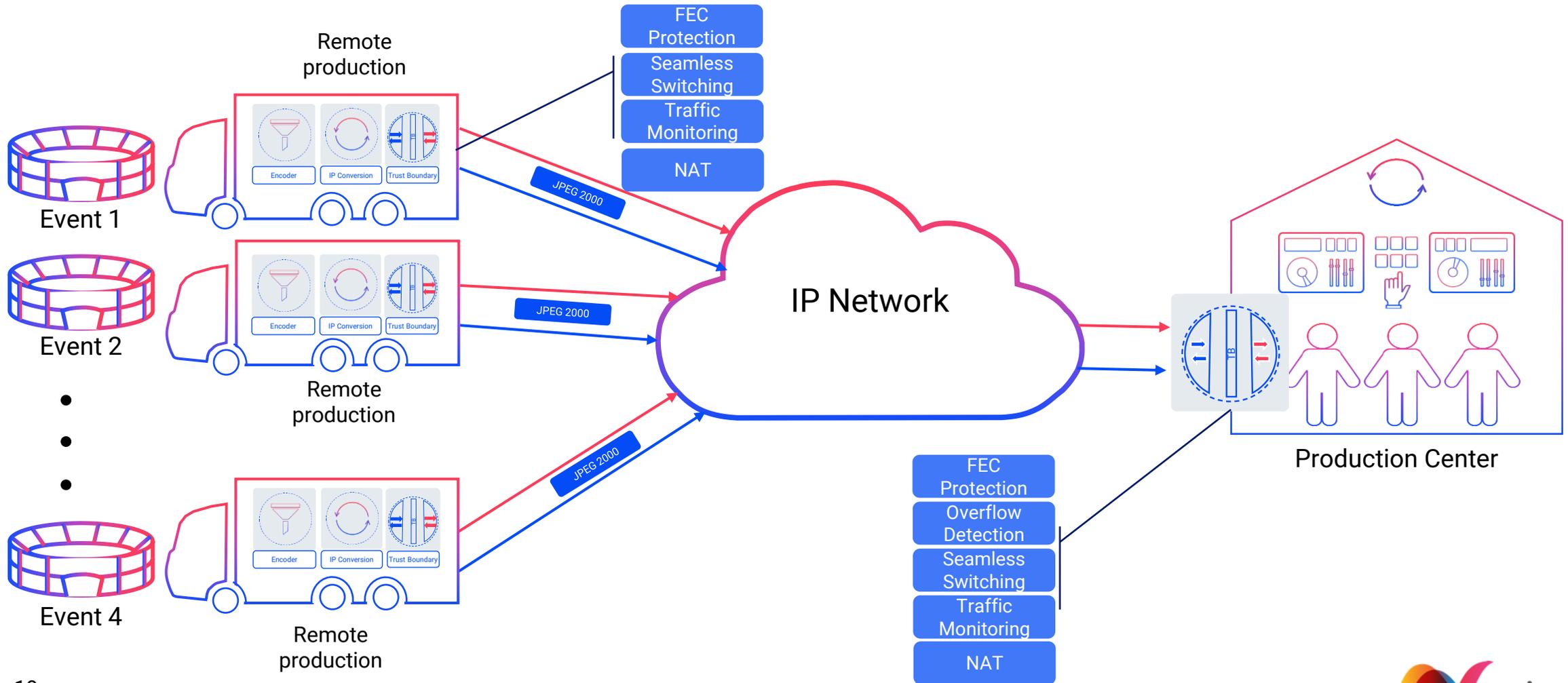
**RED  
BEE**



# Customer Deployment - Facility interconnect



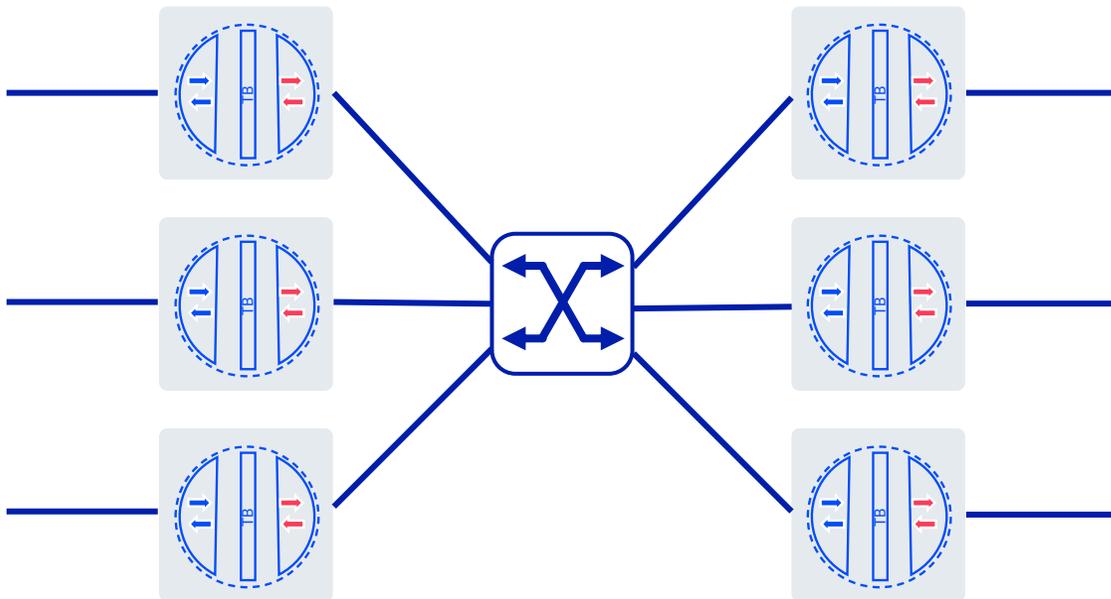
# Customer Deployment - Distributed Production



# Different Trust Boundary Implementations

## Nimbra – A Trust Boundary for Every Stream

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All streams can be isolated

## Other Trust Boundary Solutions

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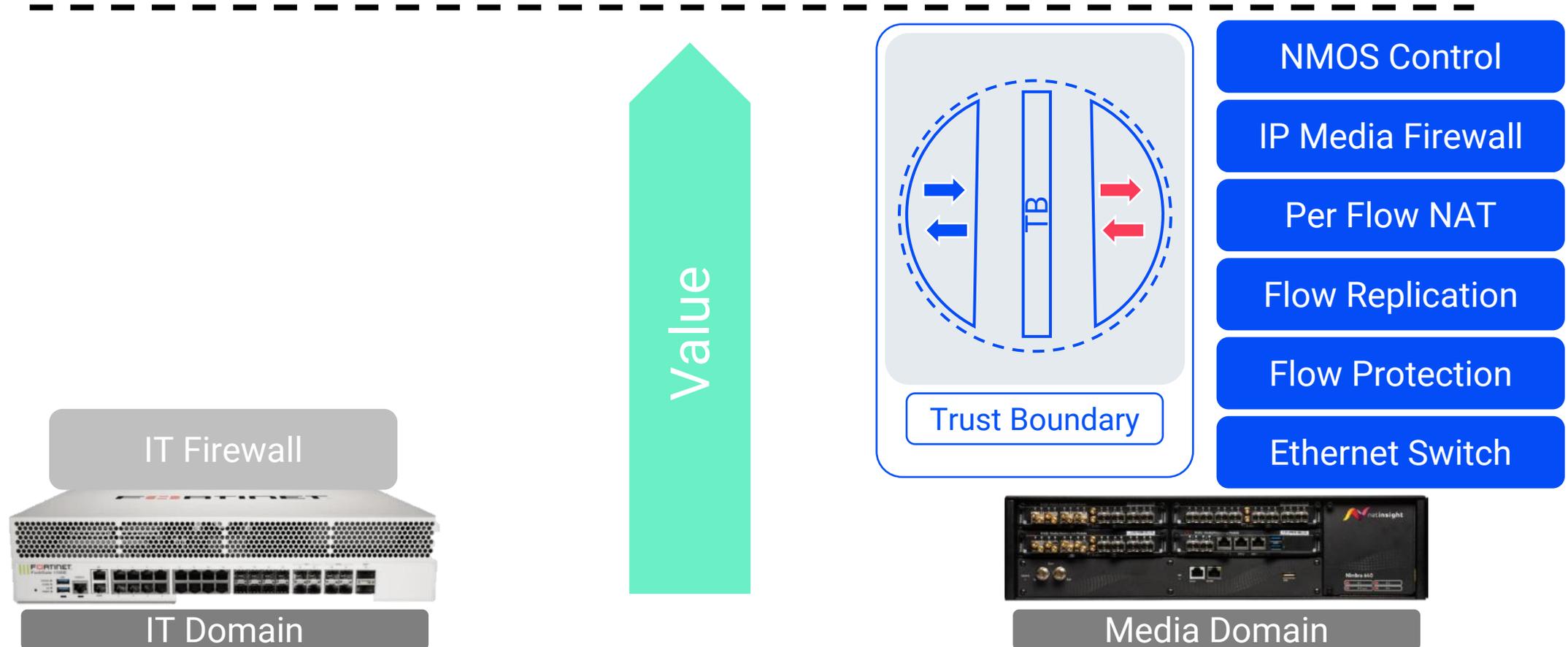


Streams can mix at the interface

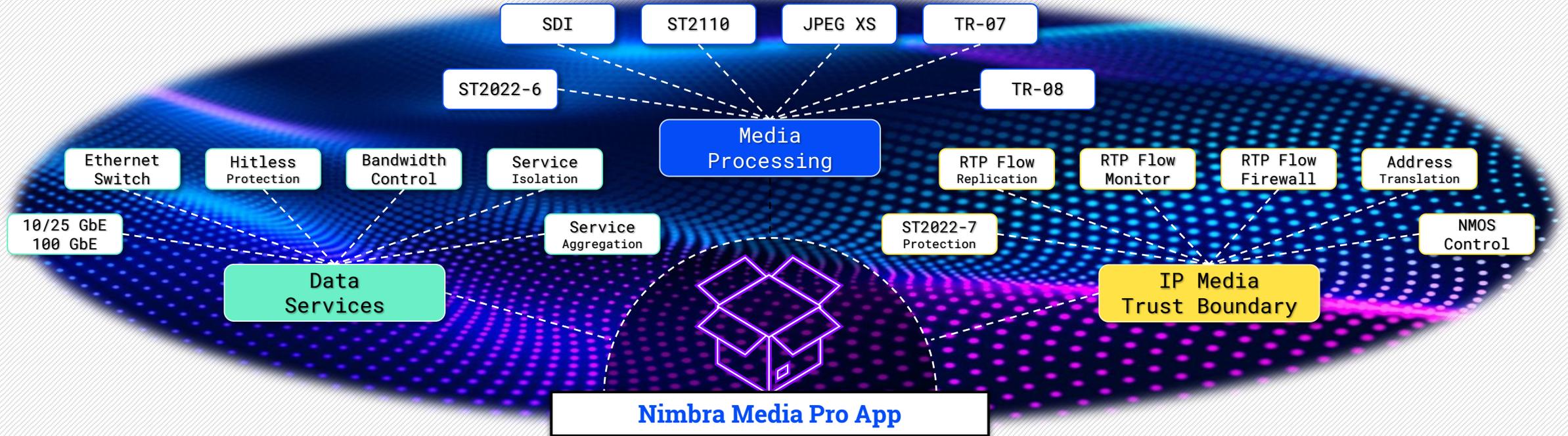
# Trust Boundary – Delivering Media Value



=Price=



# Trust Boundary with every Nimbra Media Pro App



## Simplify

- ✓ Consolidate legacy media, IP media and data flows together
- ✓ Aggregate up to 100Gbps on a single or protected hand-off
- ✓ Control IP media flows as easily as SDI using RTP "ports"
- ✓ IP/SDI conversion, JPEG XS, Trust Boundary and data services in the same app

## Assure

- ✓ Protect the network from misconfiguration – process trusted flows only
- ✓ Securely connect different IP networks with policy compliant flows on both sides
  - ✓ 24/7 monitoring of all IP media flows at source and destination
  - ✓ QoS-oriented monitoring of Ethernet switch resources and data services

# Nimbra IP Media Trust Boundary

- MPA SDI 2110 Apps
- MPA SDI TR-07 Apps
- MPA 2110 TR-07 Apps
- MPA Core Apps



**IF628 MAM**

Apps Available/**Scheduled**: 5\*  
 Ethernet: 1/10 GbE  
 Interface Quantity: Up to 8  
 Interface Types:  
 SFP, SFP+,  
 Video SFP, emSFP,  
 Sync/Mon In/Out

\*Includes apps scheduled for future release



**Nimbra 640/680/688**

IMTB Capacity: **240 to 960 Gbps**

- MPA SDI 2110 Apps
- MPA SDI TR-07 Apps
- MPA 2110 TR-07 Apps
- MPA Core Apps



**IF104x/50 MAM**

Apps Available/**Scheduled**: 21\*  
 Ethernet: 1/10/25/100GbE  
 Interface Quantity: Up to 20  
 Interface Types:  
 SFP, SFP+, SFP28,  
 Video SFP, emSFP,  
 Sync/Mon In/Out

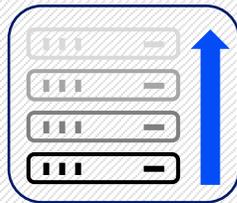


**Nimbra 1060**

IMTB Capacity: **1200 Gbps**

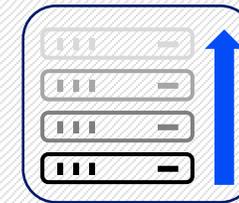
## Nimbra 600

Scalable to global network segmentation with distributed deployments



## Nimbra 1000

Scalable from single-site Trust Boundary upwards within a chassis



# Trust Boundary Business Benefits



Launch services faster



Reduce service outage risk



Greater network agility



Greater operational efficiency



Deploy more cost-effective systems

# Questions



# Need more – contact us

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**Thank you!**