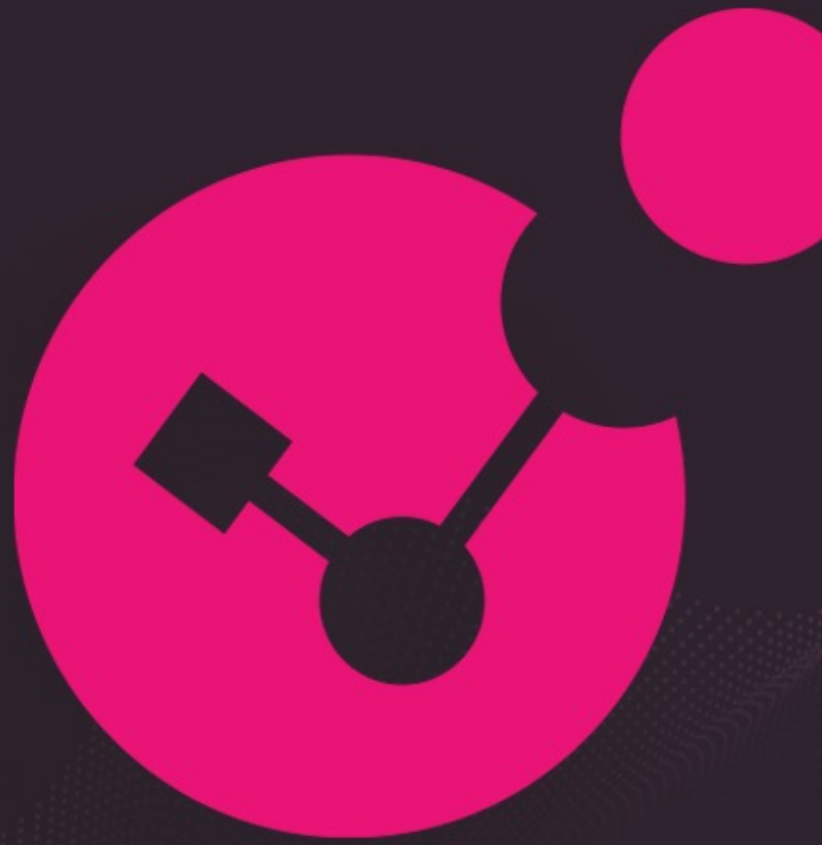
CHECK POINT™

# HyperFlow

Under The Hood | TechTalk, Mar 29th



YOU DESERVE THE
BEST SECURITY

# HyperFlow Now Available in R81.20

On by Default

- Automatic and reactive system resource management
- Load balancing on CPU cores

# HyperFlow Overview

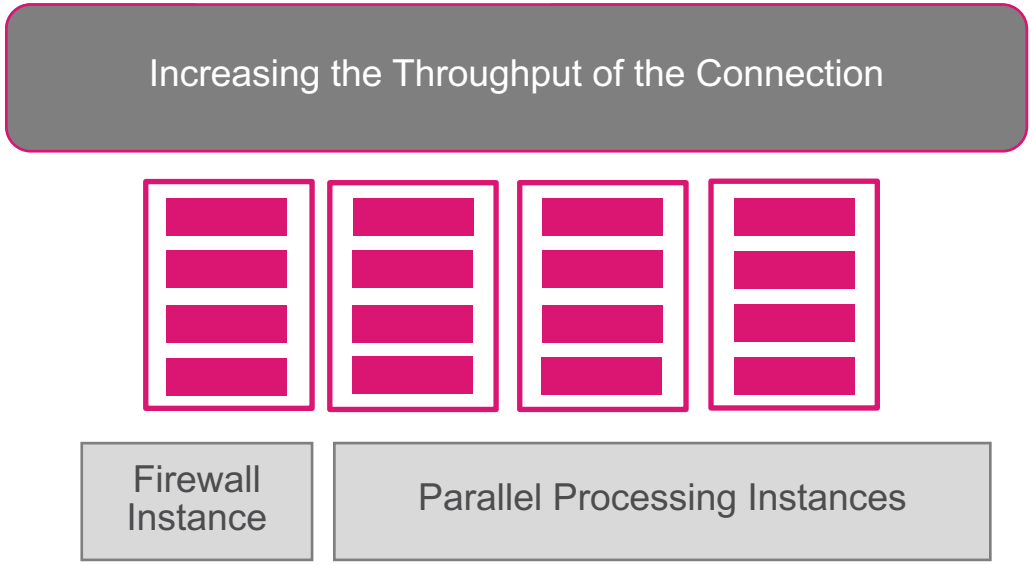
- Automatic system resource management (load balancing on CPU cores)

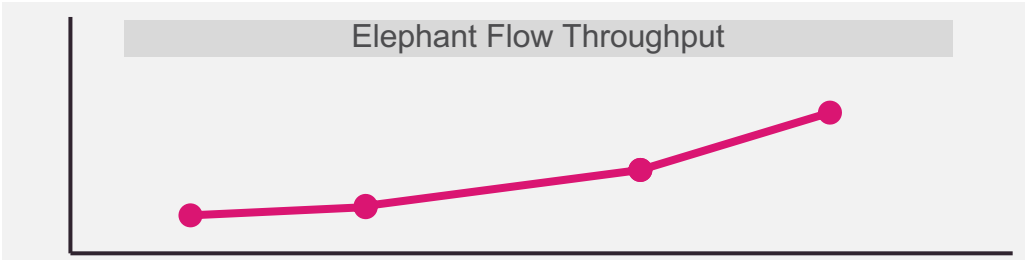
- **Reactive** - No changes in core allocation until EF is detected.

**No Manual configuration**

**No reboots needed**

**No Traffic loss**

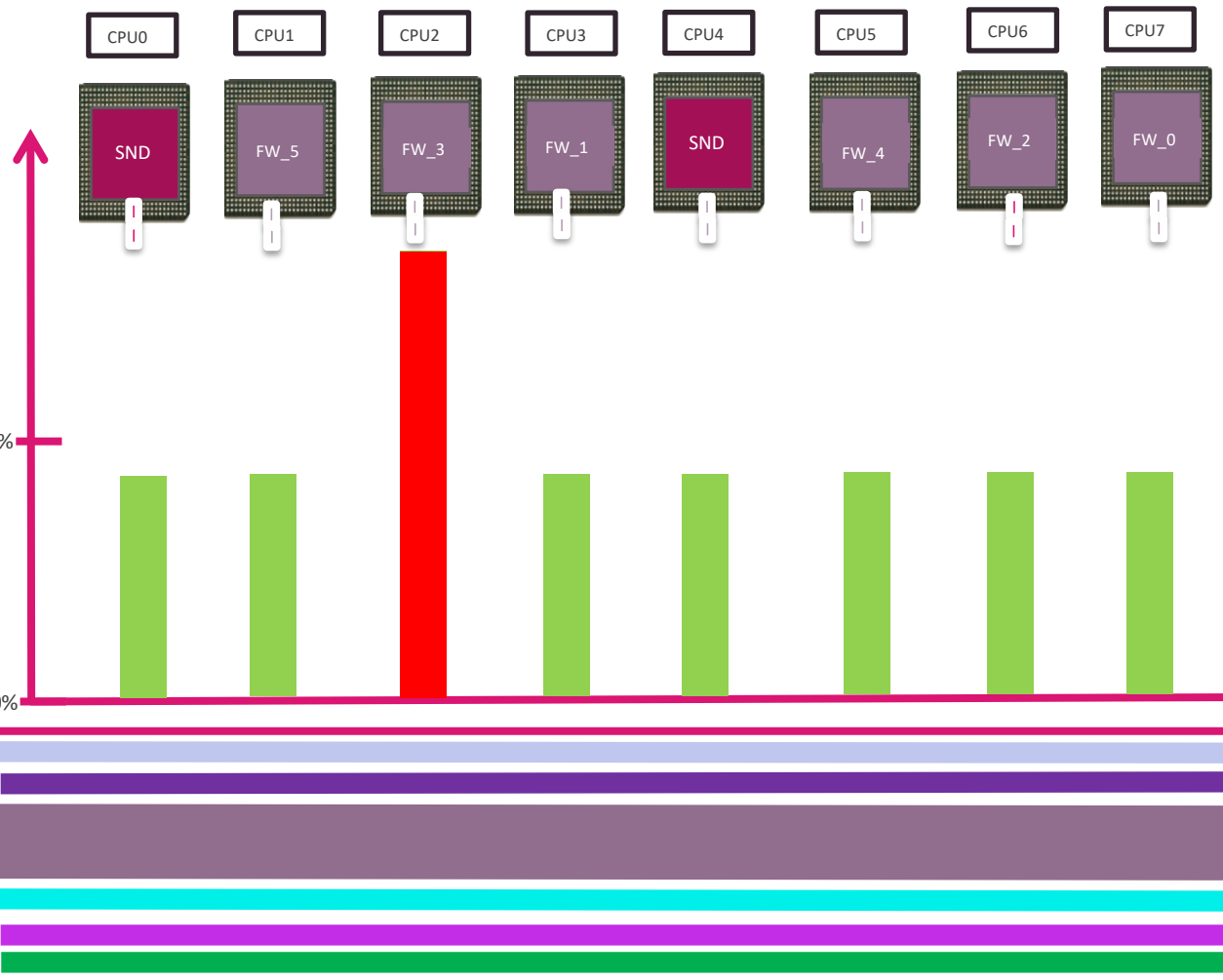


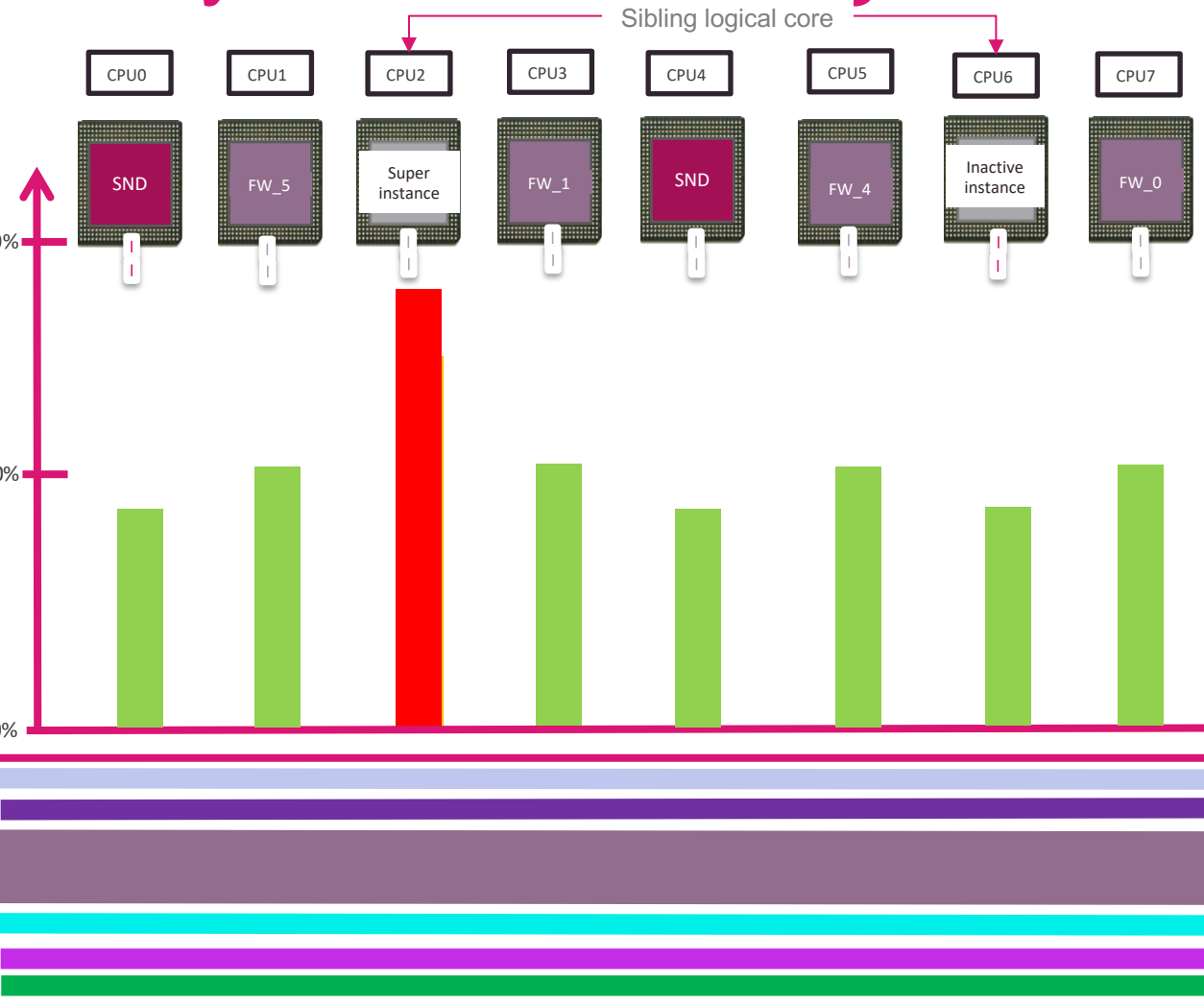
# New Solution for in R81.20 | Dynamic Balancing

## Super instance

# Dynamic Balancing – What's New in R81.20?




# Dynamic Balancing – What's New in R81.20?




# FW Architecture Overview

## Accelerated Path

The packet is completely handled by SecureXL
Processed and forwarded to the network.

## Medium Path

Packet flow starts from SecureXL which passes it directly to FireWall Streaming layer for Deep-packet inspection

## Slow Path

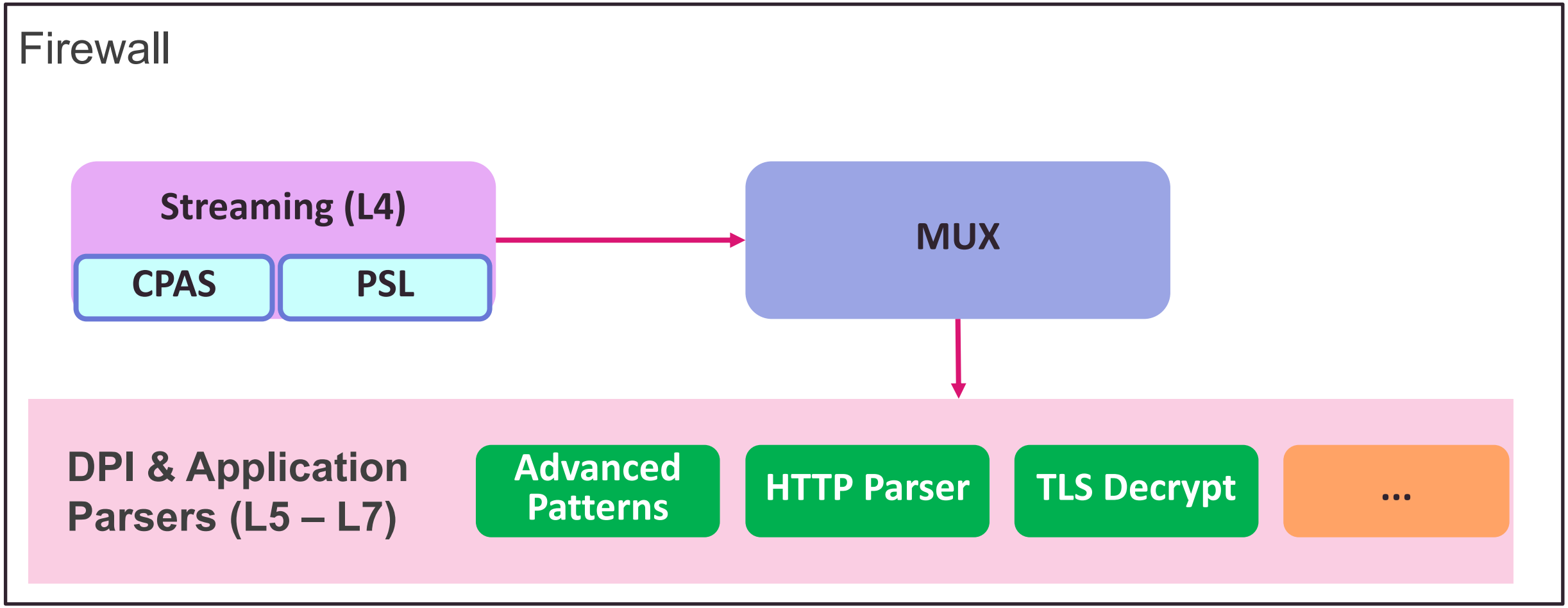
SecureXL is not able to process the packet at all

**New packet flow introduced by HyperFlow!**

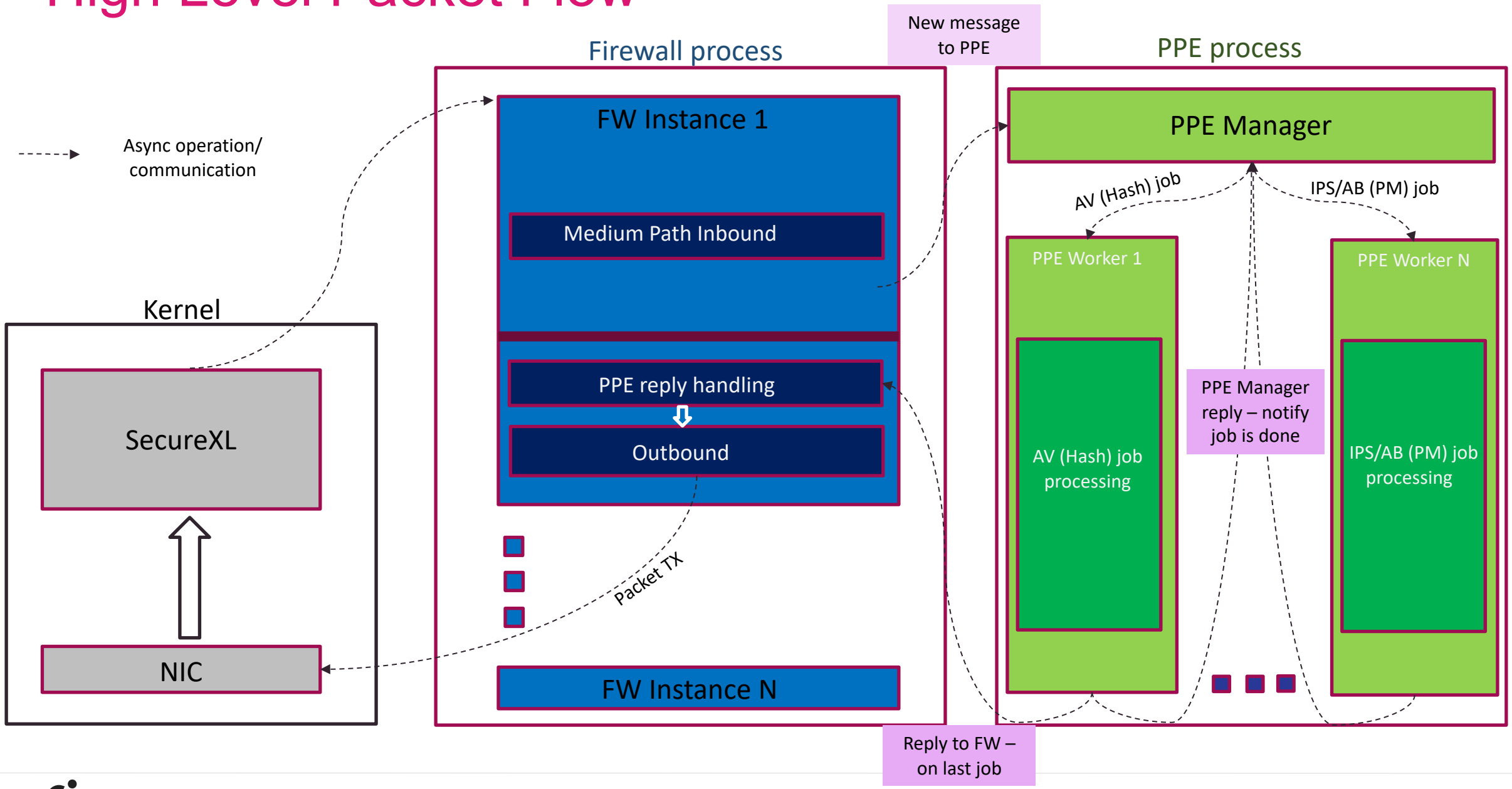
NEW

## Accelerated Pipeline Path (New)

# FW Architecture Overview – Cont.



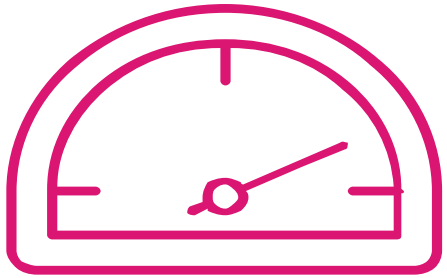
# High Level Packet Flow



# HyperFlow in R81.20

# HyperFlow Value

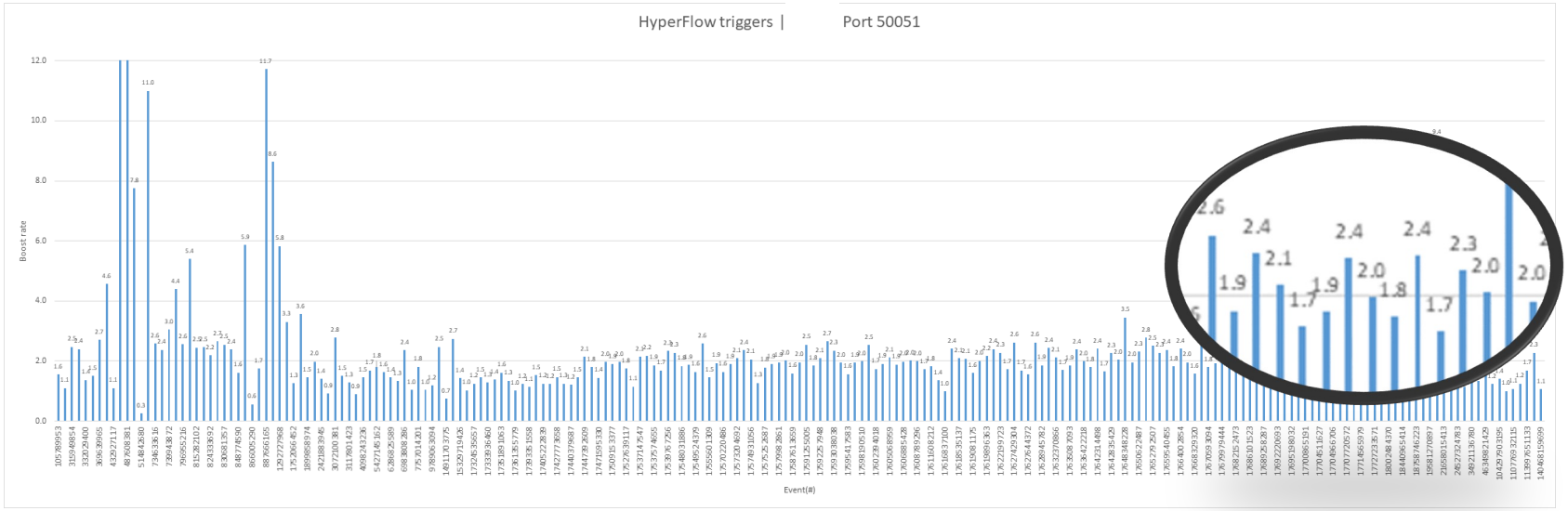
- Major parameters:



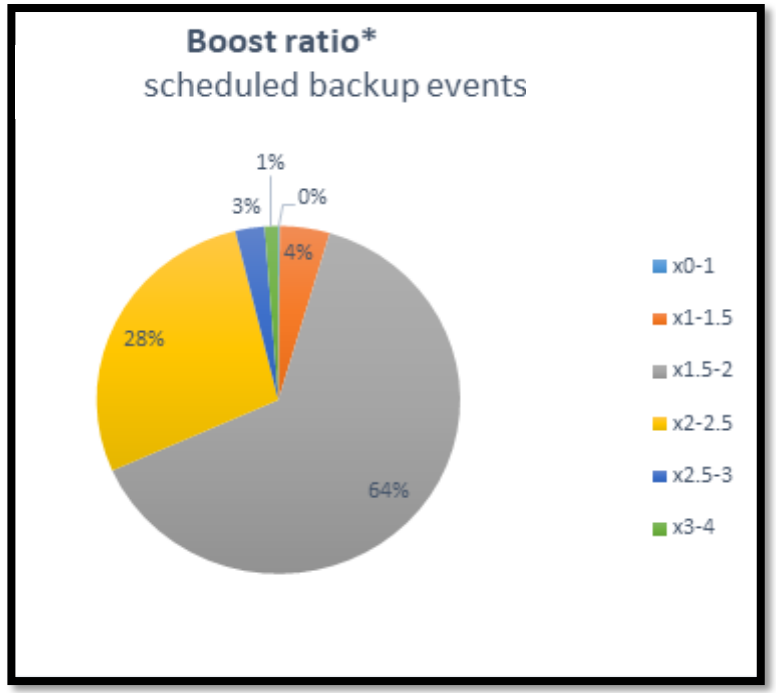
**Boost ratio**

**Reduced processing duration**

# HyperFlow Value – Boost Ratio




**Boost ratio calculated per event**

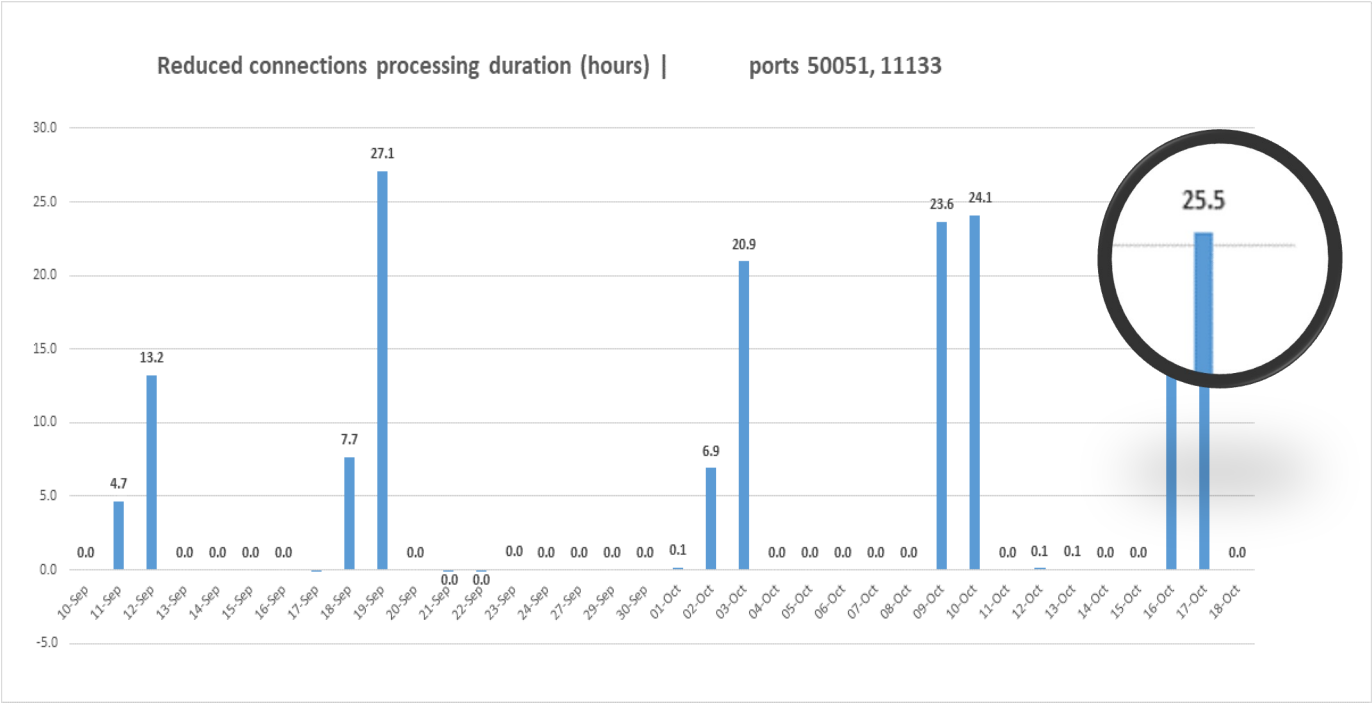



**Boost ratio breakdown**

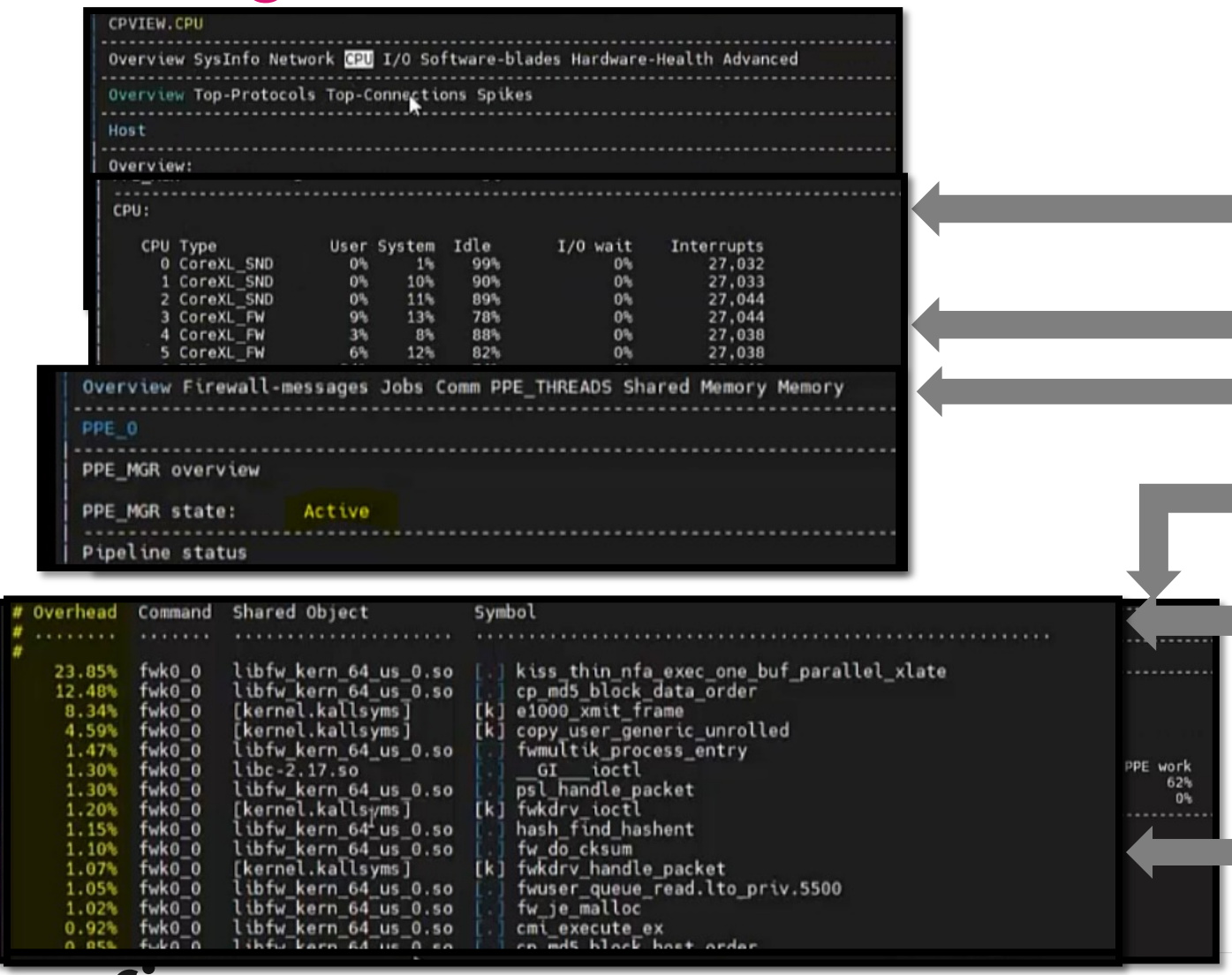
# HyperFlow Value – Reduced Processing Duration

- **Reduced processing duration**
  - 39-days timeframe
  - Ports: 50051, 11133 (backup traffic)
  - Represented in **hours**

- **The accumulated diff is calculated by:** $\mathbf{Acc_{diff}} = \sum(D_{red_i})$
  - ***i*** = Heavy connection event index



# HyperFlow
# Diagnostics

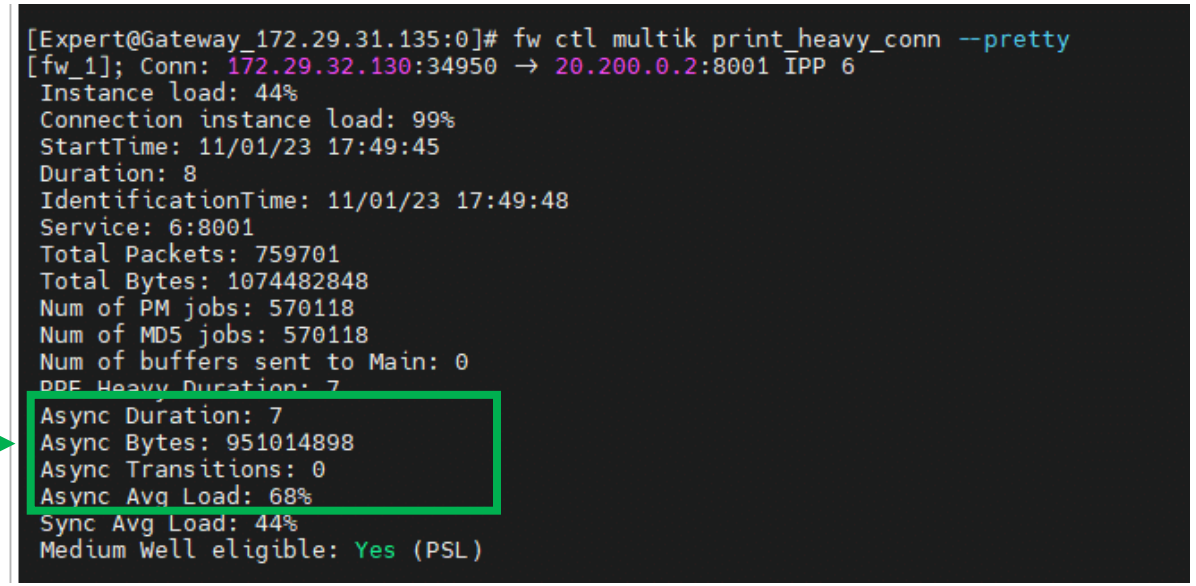



## Diagnostics majors:

- **HyperFlow cores** (dynamic) allocation monitoring
- CPU usage advanced monitoring
- **PPE_MGR state** (changing live from Asleep to Active)
- **Jobs details & count** (processed by HyperFlow engine)
- **Heavy connection logger** and functions running on the CPU during each spike(Spike detective)

# Heavy Conn Table

- Run by command: ***'fw ctl multik print_heavy_conn'***
- Contains diagnostic of HyperFlow's activity per connection event
- Listing per event
- Separate diagnostics for:
  - Async throughput
  - Sync throughput



HYPERFLOW

# FOLLOWING PLAN

# HyperFlow- Following Plan


CIFS Support

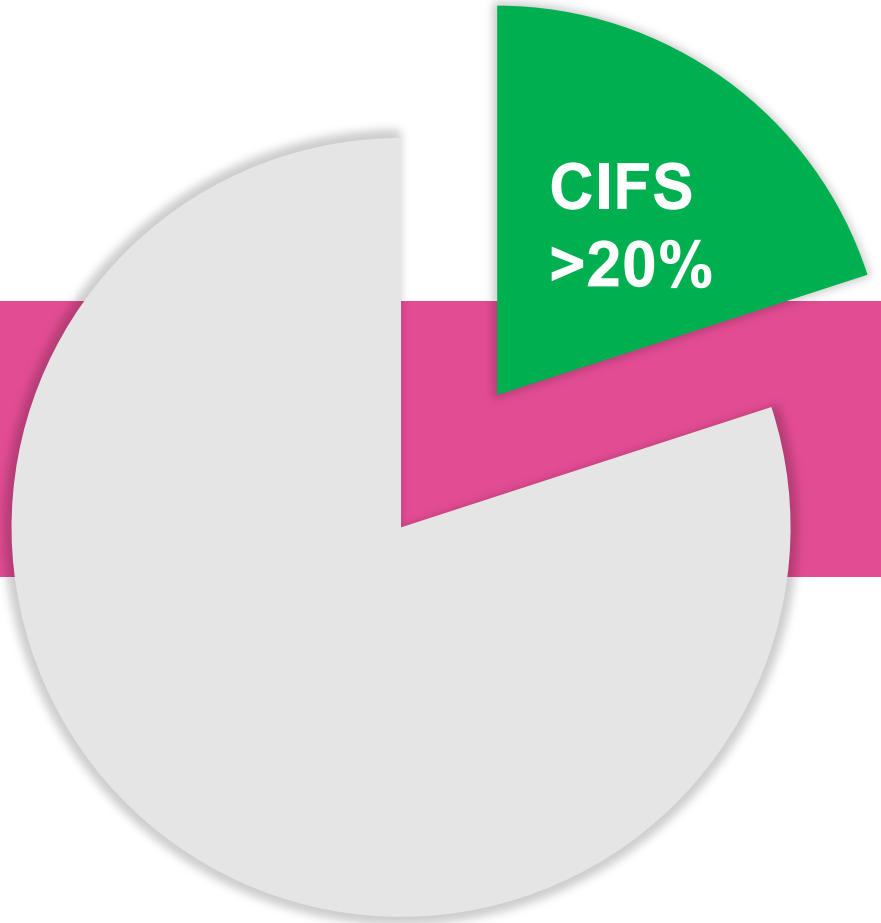

UDP traffic support


Additional protocols & jobs


Debugging and diagnostics

# HyperFlow Following Plan

## CIFS support




- Addressing customer feedbacks
- Expanding HyperFlow customers

# HyperFlow Following Plan

## Additional protocols & jobs, UDP traffic support

- Keeping customers pain-points in mind
- Improving Infrastructure to expand supported heavy connection events

# HyperFlow Following Plan

**HyperFlow activity summary**

**New heavy connections table**

## Debugging & diagnostics

**Performance statistics**

**HyperFlow triggers log**

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# THANK YOU

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