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A Hardware Framework For Disaggregated Scale-Out Firewall (DSOFW)

AT&T

Janet Peng, Director of Technical Staff

Tuan Duong, Lead Member of Technical Staff

Palo Alto Networks

Jim Sugg, Senior Product Manager

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[Telco & Edge]

TELCO

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Goals

- Cost effectively extend security functions using whitebox concepts
- Allow firewall to scale incrementally as network bandwidth scales
- Move firewall protection and security services closer to the edge of the network
- Support new session aware applications that leverage inline hardware

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Approach

- Provide an open hardware and software design
- Flexible physical deployment models
- NGFW software and in-line security communicate via an open API to allow customer choice in both dimensions

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Open Hardware and Software

Hardware Leverages OCP Designs

- Firewall software runs on 1 RU Servers and above
- Session offload uses industry standard switching elements

Open Software API

- Open API for independent selection of firewall and session offload technology
- Designed to be firewall and switch vendor agnostic

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Application Programming Interface

Defines the Interface Between the Firewall and In-line Security Functions

- Designed to be firewall operating system and hardware switching technology independent
- Implementation is open with respect to Network OS and Security OS

Focused on Session Tracking

- Supports session creation, session teardown, and statistics tracking

Allows for New Security Applications at High Scale

- Decoupling of session tracking and L4-L7 firewall processing to meet scale requirements

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Deployment Models

Distributed

- Firewalls and session offload in separate enclosures
- Multiple firewall session offload elements can be serviced by 1 firewall
- Allows independent scaling of each element

Integrated

- Firewall processor and session offload switch in a single enclosure
- Conserves rack space
- Can simplify deployment for some use cases
- Ratio of firewall to session offload capacity is fixed

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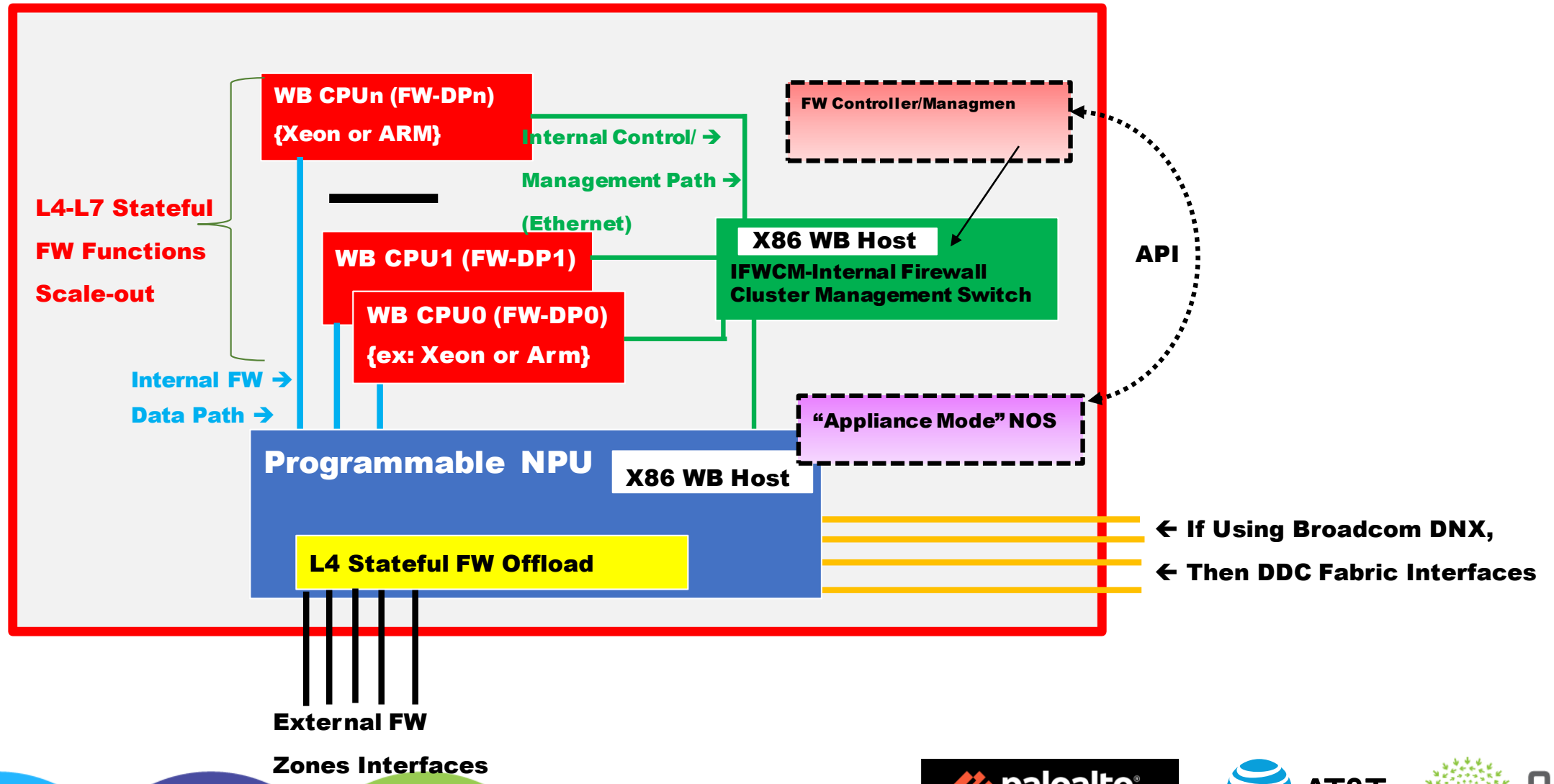
Hardware Overview of Stand-Alone Disaggregated Scale-Out Firewall



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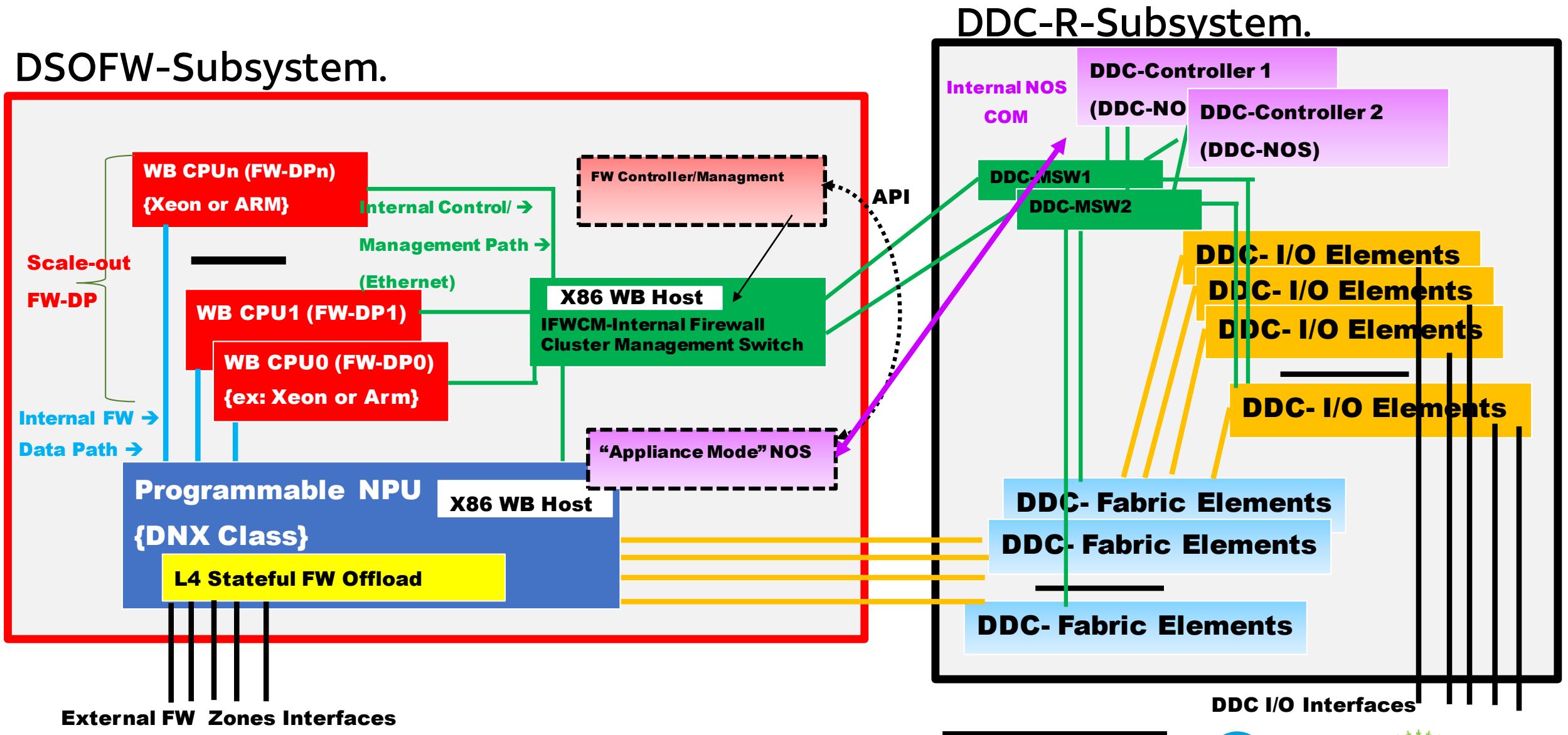
Hardware View of DSOFW integrated with DDC



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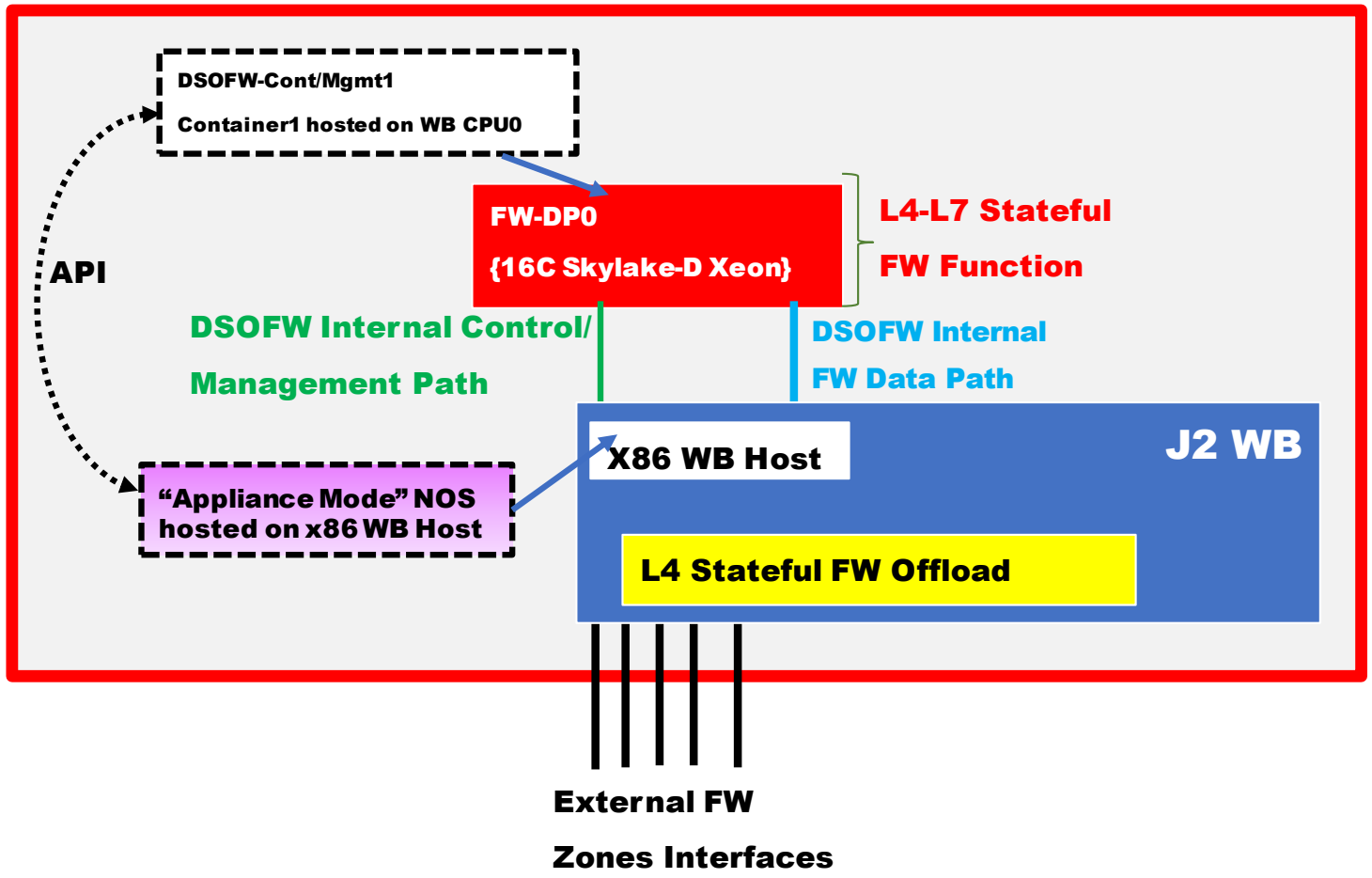
Possible Hardware Configuration for First POC/Use Case



- WB CPU is a uCPE with 16 Core Skylake D.
- Programmable NPU is the NCP1-1 from UFI

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Call to Action

- **White Paper- (To be published in the project wiki)**
- **Soliciting Participation in API Specification**
- **Check out the DDC Setup in OCP Experience Center**

ODM Making DDC White Box Components
https://www.ufispace.com/contact
sales@ufispace.com

Project Wiki with latest specification : https://www.opencompute.org/wiki/Telcos
Mailing list: **OCP-Telco@OCP-All.groups.io**

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