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Arista 7368X4 Switch Specifications

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1. Revision History

Rev	Date	Description	Page	Editor
0.0	8/31/2019	Initial Draft		Narayanan
0.1	11/7/2019	Added Retimer details for 400G Linecard	7	Narayanan

2. Scope

This document provides an overview of Arista 7368X4 Series and the differences between Arista 7368X4 and Facebook Minipack

3. System Overview

3.1. Introduction:

The Arista 7368X4 is a high performance system that enables up to 128 ports of 100G, or 32 ports of 400G in a compact 4RU system with 8 interface module slots. The 7368X4 delivers 12.8Tbps of system forwarding and up to 8 Bpps with a single high capacity packet processor (Tomahawk3) in a configurable system. The system is designed for flexible configurations with a choice of interface module cards, ease of maintenance operations for cloud networks, increased network scale and resilience with advanced traffic management and congestion control.

The 7368X4 delivers high performance, with feature rich layer 2 and layer 3 forwarding, suited for both leaf or spine deployment in modern large scale networks, addressing the challenges of increasing network capacity and efficiency through lower power, enhanced automation and advances in scalability.

The 7368X4 is designed around the 7368X4 switch card (7368X4-SC), that is fully connected to 8 I/O module slots delivering 3.2Tbps of system capacity to each slot. The management module runs Arista Extensible Operating System (EOS) on a quad core CPU with 32GB of memory with the performance to run the control plane and management functions of the system. The removable interface modules provide for mix and match of interface types and density including 100G, 200G and 400G with each module supporting a range of interface speeds using industry standard optics and cables. Each IO module connects directly to the switch card without adding any oversubscription. All components of the system including the switch card are removable for ease of maintenance and simplifying upgrades.

The system supports up to 4 high efficiency AC or DC power supplies, providing sufficient power for both current and future needs, with both grid and power supply redundancy and are hot-swappable to eliminate downtime when replacing power supplies. High performance fan modules deliver resilient data center optimized system cooling in both forward and reverse airflow directions.

The Arista 7368X4 series switches support port to port latency as low as 700ns in cut-through mode, and a 64 MB packet buffer with a large shared pool allowing for superior burst absorption compared to multi-chip systems or pre-allocated fixed per-port buffering.

Find attached Datasheet for more details.

3.2. Network Operating System

Arista EOS - The Arista 7368X4 series run the same Arista EOS software as all Arista products, simplifying network administration. Arista EOS is a modular switch operating system with a unique state sharing architecture that cleanly separates switch state from protocol processing and application logic. Built on top of a standard Linux kernel, all EOS processes run in their own protected memory space and exchange state through an in-memory database. This multi-process state sharing architecture provides the foundation for in-service-software updates and self-healing resiliency. With Arista EOS, advanced monitoring and automation capabilities such as Zero Touch Provisioning, VMTracer and Linux based tools can be run natively on the switch with the powerful x86 CPU subsystem.

For more information: Visit <https://www.arista.com>

FBOSS - The Arista 7368X4 series also runs FBOSS. FBOSS is Facebook's software stack for controlling and managing network switches.

For more information: Visit <https://github.com/facebook/fboss>

3.3. FRU List & Quantity

FRU	SKU	Quantity
Supervisor	DCS-7368-SUP / DCS-7368-SUP-D	1
Switch Card	7368X4-SC	1
Linecard	DCS-7368-16C DCS-7368-4Q DCS-7368-4P	8
PSU	PWR-1900AC PWR-1900DC	4
Fan Module	FAN-7002H-F FAN-7002H-R	5

Find attached Datasheet for more details.

4. System Differences

4.1. System Comparison

Arista 7368X4 & Facebook Minipack share many similarities. However, there are some key differences which are listed below:

System Overview	Arista 7368X4	Facebook Minipack
Chassis	<ul style="list-style-type: none">• 179mm (H) x 442mm (W) x 559mm (D)• 4RU• Designed to mount in EIA 19" rack	<ul style="list-style-type: none">• 176mm (H) x 440mm (W) x 737mm (D)• 4RU• Designed to mount in EIA 19" rack
LineCards	<ul style="list-style-type: none">• DCS-7368-16C: 16 x QSFP28 100G port interface module• DCS-7368-4D: 4 x QSFP-DD 400G port interface module• DCS-7368-4P: 4 x OSFP 400G port interface module	<ul style="list-style-type: none">• PIM-16Q: 16 x QSFP28 100G port interface module• PIM-4DD: 4 x QSFP-DD 400G port interface module
Supervisor	<ul style="list-style-type: none">• Intel Broadwell-DE CPU	<ul style="list-style-type: none">• Intel Broadwell-DE CPU• Industry-standard COM-Express (COM-e) CPU module form-factor• System Control Module(SCM) carries one COM-e module.
Management plane / BMC	<ul style="list-style-type: none">• Aspeed AST2520 BMC chip• Front panel Ethernet for CPU and BMC• Front panel Console for CPU or BMC• Front panel USB for memory devices	<ul style="list-style-type: none">• Aspeed AST2520 BMC chip• OOB GbE Switch for COM-e and BMC inside Minipack Chassis• Front panel RS232 console to BMC• USB debug port that supports Facebook OCP debug dongle<ul style="list-style-type: none">◦ UART to CPU or BMC◦ I2C to BMC
Power Plane	<ul style="list-style-type: none">• 1+1 or 2 + 2 redundant AC/DC PSU• Input 200-240AC / 40-72V DC	<ul style="list-style-type: none">• 2+2 redundant AC/DC PSU• 90VAC to 400VAC input (180VAC minimum required for full PSU output power)
PSU Units	Delta - DPS1900AB (2000W)	BelPower: PFE1500-12-054NAC (1500W)

Fan Size	80mm x 80mm x 38mm Single Rotor fan	80mm x 80mm x 80mm Counter Rotating fan
Fan Quantity	5	8
Gearbox	Credo CRT50216 gearbox PHY	Broadcom BCM81724 gearbox PHY

4.2. Gearbox

Arista 7368 uses a different gear box compared to Minipack. Below are details:

DCS-7368-16C - Linecard supports 16 x QSFP28 interfaces. It has four Credo CRT50216 gearbox PHY to translate 2x 50G PAM4 100G signal from Tomahawk3 switch into 4x 25G NRZ QSFP28 100G interface (CAUI-4).

DCS-7368-4D - Linecard supports 4 x QSFP-DD 400G. It has two Credo CRT50216 gearbox used in retimer mode.

DCS-7368-4P - Linecard supports 4 x OSFP 400G. It has two Credo CRT50216 gearbox used in retimer mode.

4.3. Front Panel Ports Striping

The Front Panel Port Striping on Arista 7368 is different from Minipack. The following table shows the port mapping of Tomahawk3 Asic and Front Panel Port for Arista 7368.

Ethernet2/1/1	Port:	ce16	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet2/2/1	Port:	ce17	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet2/3/1	Port:	ce18	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet2/4/1	Port:	ce19	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet2/5/1	Port:	ce0	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet2/6/1	Port:	ce1	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet2/7/1	Port:	ce2	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet2/8/1	Port:	ce3	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet2/9/1	Port:	ce32	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2

Ethernet2/10/1	Port:	ce33	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet2/11/1	Port:	ce34	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet2/12/1	Port:	ce35	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet2/13/1	Port:	ce48	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet2/14/1	Port:	ce49	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet2/15/1	Port:	ce50	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet2/16/1	Port:	ce51	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet3/1/1	Port:	ce36	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet3/2/1	Port:	ce37	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet3/3/1	Port:	ce38	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet3/4/1	Port:	ce39	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet3/5/1	Port:	ce4	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet3/6/1	Port:	ce5	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet3/7/1	Port:	ce6	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet3/8/1	Port:	ce7	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet3/9/1	Port:	ce20	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet3/10/1	Port:	ce21	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet3/11/1	Port:	ce22	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet3/12/1	Port:	ce23	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet3/13/1	Port:	ce52	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet3/14/1	Port:	ce53	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet3/15/1	Port:	ce54	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet3/16/1	Port:	ce55	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet4/1/1	Port:	ce24	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet4/2/1	Port:	ce25	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet4/3/1	Port:	ce26	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet4/4/1	Port:	ce27	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet4/5/1	Port:	ce8	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet4/6/1	Port:	ce9	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet4/7/1	Port:	ce10	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet4/8/1	Port:	ce11	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet4/9/1	Port:	ce40	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet4/10/1	Port:	ce41	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet4/11/1	Port:	ce42	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2

Ethernet4/12/1	Port:	ce43	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet4/13/1	Port:	ce56	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet4/14/1	Port:	ce57	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet4/15/1	Port:	ce58	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet4/16/1	Port:	ce59	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet5/1/1	Port:	ce44	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet5/2/1	Port:	ce45	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet5/3/1	Port:	ce46	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet5/4/1	Port:	ce47	IngressXPE:	1	EgressXPE:	0,1	Pipe:	2
Ethernet5/5/1	Port:	ce28	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet5/6/1	Port:	ce29	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet5/7/1	Port:	ce30	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet5/8/1	Port:	ce31	IngressXPE:	0	EgressXPE:	0,1	Pipe:	1
Ethernet5/9/1	Port:	ce12	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet5/10/1	Port:	ce13	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet5/11/1	Port:	ce14	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet5/12/1	Port:	ce15	IngressXPE:	0	EgressXPE:	0,1	Pipe:	0
Ethernet5/13/1	Port:	ce60	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet5/14/1	Port:	ce61	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet5/15/1	Port:	ce62	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet5/16/1	Port:	ce63	IngressXPE:	1	EgressXPE:	0,1	Pipe:	3
Ethernet6/1/1	Port:	ce80	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet6/2/1	Port:	ce81	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet6/3/1	Port:	ce82	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet6/4/1	Port:	ce83	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet6/5/1	Port:	ce96	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet6/6/1	Port:	ce97	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet6/7/1	Port:	ce98	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet6/8/1	Port:	ce99	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet6/9/1	Port:	ce112	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet6/10/1	Port:	ce113	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet6/11/1	Port:	ce114	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet6/12/1	Port:	ce115	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet6/13/1	Port:	ce64	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4

Ethernet6/14/1	Port:	ce65	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet6/15/1	Port:	ce66	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet6/16/1	Port:	ce67	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet7/1/1	Port:	ce100	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet7/2/1	Port:	ce101	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet7/3/1	Port:	ce102	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet7/4/1	Port:	ce103	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet7/5/1	Port:	ce116	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet7/6/1	Port:	ce117	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet7/7/1	Port:	ce118	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet7/8/1	Port:	ce119	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet7/9/1	Port:	ce84	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet7/10/1	Port:	ce85	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet7/11/1	Port:	ce86	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet7/12/1	Port:	ce87	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet7/13/1	Port:	ce68	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet7/14/1	Port:	ce69	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet7/15/1	Port:	ce70	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet7/16/1	Port:	ce71	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet8/1/1	Port:	ce88	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet8/2/1	Port:	ce89	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet8/3/1	Port:	ce90	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet8/4/1	Port:	ce91	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet8/5/1	Port:	ce120	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet8/6/1	Port:	ce121	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet8/7/1	Port:	ce122	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet8/8/1	Port:	ce123	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet8/9/1	Port:	ce104	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet8/10/1	Port:	ce105	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet8/11/1	Port:	ce106	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet8/12/1	Port:	ce107	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet8/13/1	Port:	ce72	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet8/14/1	Port:	ce73	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet8/15/1	Port:	ce74	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4

Ethernet8/16/1	Port:	ce75	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet9/1/1	Port:	ce108	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet9/2/1	Port:	ce109	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet9/3/1	Port:	ce110	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet9/4/1	Port:	ce111	IngressXPE:	0	EgressXPE:	0,1	Pipe:	6
Ethernet9/5/1	Port:	ce124	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet9/6/1	Port:	ce125	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet9/7/1	Port:	ce126	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet9/8/1	Port:	ce127	IngressXPE:	0	EgressXPE:	0,1	Pipe:	7
Ethernet9/9/1	Port:	ce92	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet9/10/1	Port:	ce93	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet9/11/1	Port:	ce94	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet9/12/1	Port:	ce95	IngressXPE:	1	EgressXPE:	0,1	Pipe:	5
Ethernet9/13/1	Port:	ce76	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet9/14/1	Port:	ce77	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet9/15/1	Port:	ce78	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4
Ethernet9/16/1	Port:	ce79	IngressXPE:	1	EgressXPE:	0,1	Pipe:	4