The new NAT-MCH Gen4

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The new NAT-MCH Gen4 in 12 minutes

- Why a next generation MCH
- Differences between Gen3 and Gen4
- How to transit and when to transit

Why a next generation MCH

- Current NAT-MCH Gen3
  - Deployed since early 2007 => almost 17 years
  - More than 17.000 deployed MCHs
  - Facing upcoming component obsolescence
  - Difficult to extend to new functions, both HW and SW
- Goals with NAT-MCH Gen4
  - Backward compatibility to ensure continuity for existing customer base
  - Update to state-of-the-art chipsets and technology
  - Comply with most recent version 3 of MTCA.0
  - Provide new features and functions
  - Meet future requirements of customers

Main differences between Gen3 and Gen4 (excerpt)

	NAT-MCH Gen3	NAT-MCH Gen4 (improvements)
CPU + O/S + memory	Single core NXP Coldfire + OK1 + 64Mb	**Dual** ARM core (A9, Xilinx Zynq) + FreeRTOS + **1GB**
Base Switch	Broadcom 1GbE	Microchip 1/**10**/**40**GbE, **dual ARM core** (A53)
Base Fabric + Uplinks	12x 1GbE + 2x 1GbE (RJ45)	12x 1/**2.5**/**10**GbE + 2x 1/**10**GbE (RJ45/**iX**/**SFP-DD**)
Clock Module + ext. Input/output	CLK123, CLK12F, CLK-PHYS + dual input/output	CLK-G4 + dual input/output and **GPS**
IEEE1588/SyncE + TSN support + OXCO	Not supported+ Not supported + NAMC-PTM	**Supported** + **Supported** + **OCXO**
Fat pipe Ethernet switch	Marvell Amstrong-LP 40GbE	Marvell Amstrong-LP 40GbE
Fat Pipe + Uplinks	12x XAUI + MPO	12x XAUI/**10**/**40**G + **SFP-DD**
Fat pipe PCIe Switch + PCIe Gen	PLX + Gen3	MicroChip + **Gen4**
Fat Pipe + Uplinks	12x PCIe Gen3 + Finisar BOA (NAT-MCH-PHYS80)	12x PCIe **Gen4** + **SFP-DD**
Fat pipe SRIO Switch + SRIO Gen	IDT + Gen2	?
Fat Pipe + Uplinks	12x SRIO Gen2 + Infiniband	?
User Interfaces	CLI, Web (GoAhead) => Update with 2.22.x	**unified** CLI, **reworked** Web (Mongoose) **incl. CLI**
NATView: HPM update + backplane viewer + FRU-Ed	JRE on external device	**Integrated into Web interface** (excl. FRU-Editor)

How to transit from Gen3 to Gen4 and when

	NAT-MCH Gen3	NAT-MCH Gen4
Compliance	MTCA.0 Rev 2	MTCA.0 Rev 3
General Availability single width	available	Q1/2024 (orders accepted)
double width	Available	scheduled for late Q2/2024
Lead Time	approx. 10-12 weeks	approx. 12-14 weeks
Firmware + updates	will be frozen at 2.22.x by Q1/2024 + major bugs only	> 3.1 and continued
EOL + LTB	~ 2025 + ~ 2024	n/a
Function/Form/Fit replacement	NAT-MCH Gen4	n/a

- NAT-MCH Gen4 is a full function + form + fit replacement for NAT-MCH-Gen3
- We expect users to start migrating from Gen3 to Gen4 during 2024.
- We expect to ship the last NAT-MCH Gen3 in 2025.

Summary

- Why a next generation MCH
  - New functions and requirements
  - Upcoming obsolescences with Gen3
  - New MTCA.0 Rev 3
- Differences between Gen3 and Gen4
  - State of the art technology
  - **New** functions and **major** improvements,
- How to migrate and when
  - Migration is expected to be smooth and easy
  - Minor changes in CLI if running shell scripts
  - Start migrating during 2024, most likely in 2nd half
  - Migration is expected to be finished during 2025

Thank you very much!

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