

WanStaX Carrier Ethernet

WinPath Hardware Accelerated Carrier Ethernet Control Stacks

Product brief
version 2.0



CIVICA

Transforming the way you work

Telecommunications equipment manufacturers face the dual challenges of delivering solutions which respond to service providers' constant drive for network evolution, while at the same time driving down costs.

Microsemi's WinPath Network Processor family addresses both challenges in hardware and data plane software by providing flexible, powerful and high value for money solutions for the wireline and wireless infrastructure equipment market.

Civica's WanStaX Carrier Ethernet is a portfolio of WinPath hardware accelerated Carrier Ethernet control stacks, incorporating Link Aggregation, Link OAM, CFM and Performance Monitoring.

WanStaX Carrier Ethernet components are specifically designed for the Microsemi WinPath network processor family.

Features

- ▶ An OS abstracted, standards compliant implementation of LAG (802.3ad), Link OAM (802.3ah), CFM (802.3ag) and PM (Y.1731) Ethernet protocols.
- ▶ Working demonstrations ready to deploy on Microsemi's WDS hardware reference platforms.
- ▶ Each control stack within the WanStaX Carrier Ethernet components is provided with a comprehensive documentation set and explanation of the reference applications, including details of how to port and build the stack for a new compiler or OS as well as step-by-step guides for integrating with a target solution.

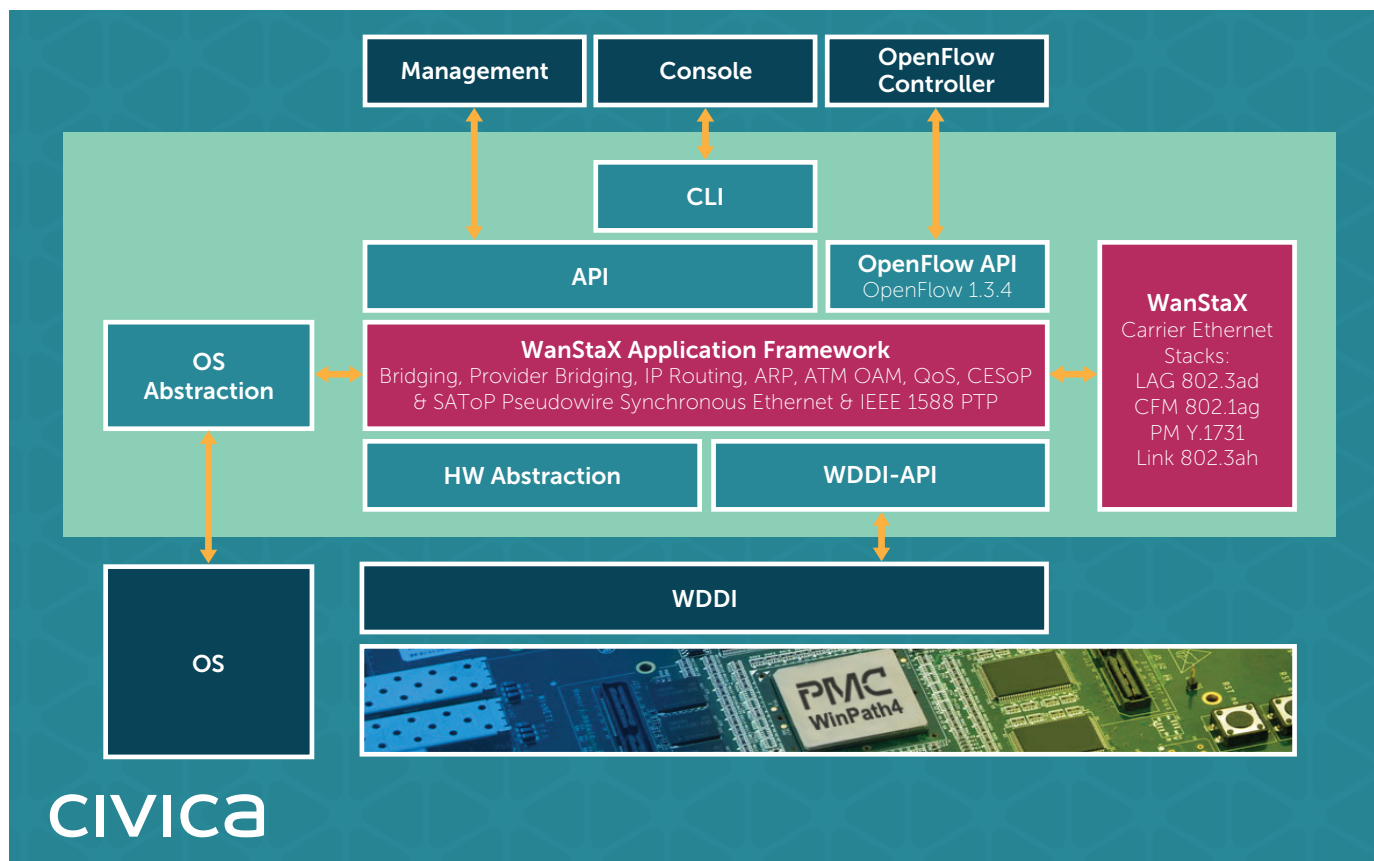
Compatibility

- ▶ Microsemi's WinPath network processor family including WinPath3, WinPath3SL and WinPath4 running WDDI 4.2 or later.

Deliverables

- ▶ Civica offers a flexible, royalty free commercial model; offered on a 'per product line' basis as a single license fee.
- ▶ Simulation package allowing accelerated x86-based host development and testing.
- ▶ Civica offers support and maintenance for all software provided.
- ▶ Civica also offers Professional Services from a pool of expert staff that has provided specialist WinPath capability to a large number of customers worldwide.

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Connectivity Fault Management (CFM)

CFM (defined in IEEE 802.1ag) allows verification of end-to-end network operation at multiple service levels. The 3 major building blocks of CFM are:

- ▶ Continuity Check – proactive service verification using periodic exchange of heartbeat messages between peers.
- ▶ Loopback – Layer 2 ‘ping’ equivalent.
- ▶ Link Trace – Layer 2 ‘traceroute’ equivalent.

Maintenance Domain Levels Supported	0-7
Maintenance Associations (MAs)	Configurable. Maximum of 4095 (provides Maximum Vlan support)
MA End Points (MEP)	Configurable. Maximum of MA*MD levels*MaxPorts (up 65535)
MA Intermediate Points (MIP)	Configurable. Maximum of MA*MaxPorts (up 65535)
Continuity Check Messages (CCM) <ul style="list-style-type: none"> - Initiate CCM - CCM Supported Rates - Route to Control Stack - Loss of Continuity Event 	Yes 7 Standard Rates No - WinPath controlled Yes
Loopback (LB) <ul style="list-style-type: none"> - Route to Control Stack - Initiate LB Messages (LBM) - Reply to LB Messages (LBR) 	Yes Yes Yes
Link trace (LT) <ul style="list-style-type: none"> - Route to Control Stack - Initiate LB Messages (LBM) - Reply to LB Messages (LBR) 	Yes Yes Yes

Performance Management (PM)

PM (defined in ITU-T Y.1731) adds performance monitoring functionality to CFM to allow SLA verification. The principal functions are:

- ▶ Frame loss measurement
- ▶ Frame delay and delay variation measurement
- ▶ Alarm Indication Signal (AIS) – avoids cascading of alarms throughout the network
- ▶ Administrative Lock (LCK) – warns MEP of consequential interruption of data traffic
- ▶ Transport of Maintenance Communication Channel and Vendor Specific frames.
- ▶ Synthetic Loss Measurement (SLM)

Enable Per Remote MEP	Yes
Loss Measurement Messages (LMM) <ul style="list-style-type: none">- Initiate LMMs- Single Ended- Dual Ended- Supported Rates- Auto Reply (LMR)	Yes Yes Yes All CCM rates Yes
Statistics <ul style="list-style-type: none">- Near End- Far End	Yes Yes
Delay Measurement (DM) <ul style="list-style-type: none">- Initiate Eth-DMs- 1-Way (1DM)- 2-Way (Round Trip)- Supported Rates- Auto Reply (DMR)	Yes Yes Yes All CCM rates Yes

Link OAM

Link OAM (defined in IEEE 802.3ah) is used for point-to-point Ethernet management, notably in emerging Ethernet in the First Mile (EFM) deployments. The principal functions of Link OAM are:

- ▶ Discovery of peer EOAM capabilities
- ▶ Critical event detection
- ▶ Wire-speed data loopback
- ▶ Remote variable retrieval
- ▶ Link event reporting

Discovery State Machine	Yes
DTE Mode	Active or Passive
Critical events: <ul style="list-style-type: none">- Link Fault- Dying Gasp- Critical Event	Yes Yes Yes
Variable Retrieval	Request & Response
Remote Loopback	Request & Response
Link Monitoring <ul style="list-style-type: none">- Errored Symbol Period- Errored Frame- Errored Frame Period- Errored Frame Seconds Summary	Yes Yes Yes Yes