Interface Masters
T E C H N O L O G I E S
Innovative Network Solutions

Niagara 2972-OCP Family
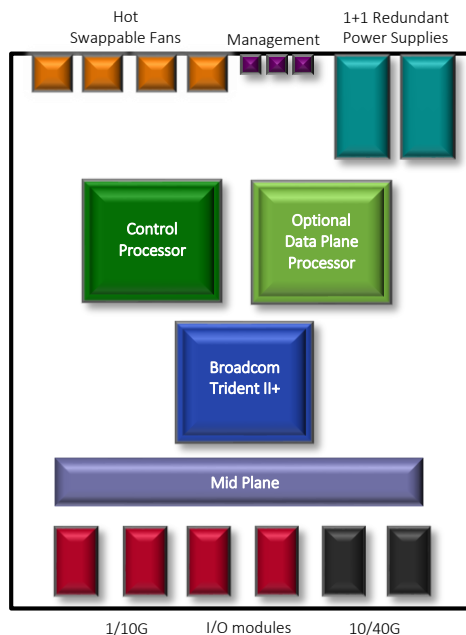## Open Compute Project Switch
Up to 72x10G or 48x10G+12x40G

Product Brief

OVERVIEW

Niagara 2972-OCP Switch family includes Niagara 2972Xm, Niagara 2948X12XLm and Niagara 2960X6XLm. This is the initial switch contribution Interface Masters designed and built for the Open Compute Project. Niagara 2972-OCP Family is a modular 10GbE / 40GbE switch system based on Broadcom's StrataXGS Trident II switch. The system is targeted to be used as 10GbE/40GbE Top of Rack (TOR) or Leaf Switches. It is designed to be compatible with 19" Enterprise Rack specifications.

The Niagara 2972-OCP platform is designed for maximum flexibility and highest density in a 1U form factor. Factory configurable options permit for up to 72 ports of 10GbE or up to 48 ports of 10GbE and 12 ports of 40GbE in 1U. This is a modular platform that can support multiple CPU and mass storage options including x86 and PowerPC. An optional Data Plane processor is also available for Network Function Virtualization. Customization services are offered.

Software configurations include white box with ONIE, complete SDK for custom development, L2-4, Open Flow and several software partner solutions. Interface Masters and our software partners provide comprehensive technical support for multiple engagement scenarios. Interface Masters proudly designs and manufactures our products in the USA. For a complete list of factory options and services, please contact Interface Masters.

Niagara 2972-OCP Functional Block Diagram

PRODUCT FEATURES

- Broadcom Trident II+ StrataXGS
- Mid-plane architecture with 6 I/O sockets
  - 4 left side sockets – 12x10GbE each
  - 2 right sockets – 12x10GbE each or 6x40GbE each
- Multiple control plane processor options
  - x86 and PowerPC
- Data plane processor option
- Dual redundant power supplies
  - 1+1 redundant, hot swappable power supplies
- Field replaceable fans
  - 4 dual hot swappable fan assemblies
- Management interfaces
  - RS232 CLI interface
  - 10/100/1000 management port
  - Optional USB port*
- Lower OPEX with high efficiency power conversion
  - High efficiency internal components
  - High efficiency AC/DC and DC/DC power supplies

The many configuration options of the Niagara 2972-OCP Family offer the opportunity to create a unique product solution. With unparalleled density, this is the first Broadcom Trident II switch to offer up to 72 ports of 10G or up to 48 ports of 10G with 12 ports of 40G in a 1U form factor. The system is designed for enterprise class data center operations. Interface Masters' long history of providing high reliability systems was leveraged in the design of the Niagara 2972-OCP switch family. High efficiency power conversion is utilized in all aspects of the design to provide lower capex. A mid-plane architecture enables the addition of different IO modules and features. Interface Masters' Boardkeeper is a set of Linux drivers and utilities that provides all the necessary interfaces for hardware configuration and system health verification. Boardkeeper greatly assists our software partners and customer software developers to quickly get to the point of focusing on their value add without having to worry about hardware dependent configuration and verification.

Interface Masters and our software partners provide Enterprise and Carrier grade complete solutions for Open Flow, L2-L4 switching and routing, and MPLS. The advent of SDN and disaggregation in the data center is well underway. Interface Masters is your solid partner in the process. Embedded and server class standard Linux distributions form a foundation for network operating systems. Interface Masters' modular, pluggable form factor for various CPU options make this platform highly flexible. The optional Data Plane offload processor enables Network Function Virtualization (NFV). Interface Masters' tradition of supporting tier one OEMs ensures that any partner we work with will have a timely and successful project. Our standard products are available under the Niagara brand name. Private labeling and full customization services are available and based upon the technology in our standard products.

SOFTWARE DEVELOPMENT AND SUPPORT

White Box
- ONIE – Open Network Install Environment
- Linux – Debian and Ubuntu
- SDK – Broadcom

Interface Masters Boardkeeper
- Set of Linux drivers to manage all system level hardware (greatly assists software development)

Network Operating System
- Broadcom ICOS / OFDPA
- IPInfusion OcNOS
- Pica8 PicOS
- Custom development and support

ABOUT INTERFACE MASTERS TECHNOLOGIES, INC.

Interface Masters Technologies is a leading provider of Switches, Smart NICS and full custom appliances focused on Gigabit, 10 Gigabit, 40 Gigabit and 100 Gigabit Ethernet. For over 20 years, Interface Masters has been providing innovative networking solutions with customization services. Interface Masters is an OCP member and has contributed multiple white box designs to the project while supporting customer SDN development. Interface Masters OCP switches can be modified according to customer requirements and are provided with complete SDK and source code required to support software development. All products are designed and manufactured in San Jose, CA.

ENVIRONMENTAL	
Operating Temperature	0º to 40ºC
Operating Humidity	5% to 95%
Typical Power – Direct Attached Cable	305 Watts
Maximum Power – Direct Attached Cable	406 Watts
AirFlow	200 lfm

OPTICAL MODULE POWER CONSUMPTION				
Media	Speed	Mode	Typical Power	Maximum Power
SFP+	10 GE	SR	0.5775	0.825
SFP+	10 GE	LR	0.66	0.9405
QSFP	40 GE	SR	0.8085	1.155
QSFP	40 GE	LR	2.541	3.63

DIMENSIONS		
	Millimeter	Inches
Length	622.30	24.50
Height	44.45	1.75
Width	438.25	17.25

ORDERING INFORMATION	
Part Number	Description
Niagara 2972Xm	72 ports 1G/10G SFP+
Niagara 2948X12XLm	48 ports 1G/10G SFP+ and 12 ports 40G QSFP+
Niagara 2960X6XLm	60 ports 1G/10G SFP+ and 6 ports 40G QSFP+
Options*	• Control Processor • Data Plane Processor • Memory • Mass Storage • 1+1 redundant AC/DC and DC/DC power supplies • Custom configurations * Contact Interface Masters for complete part numbers.

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