

Arctica 4804i- Pica8 OS

Cost-effective 1 Gigabit Ethernet switch platform with integrated switching, routing, OpenFlow and Linux

Penguin Arctica switches are cost effective L2/L3 top-of-rack switches with integrated OpenFlow while offering a DevOps Linux operational model. Arctica switches are based on industry leading 'merchant silicon': Arctica 4804i is based on The Broadcom Triumph chipset used in switches from all major switch vendors. Unlike the switch offerings from established tier 1 vendors Arctica switches are truly open, enabling customers to deploy the firmware stack or SDN solution best suited for their environment.

The Penguin Arctica 4804i is a top-of-rack switch for datacenter buildouts with Gigabit class server connectivity. The Arctica 4804i provides four 10 Gigabit uplinks for connecting to the next aggregation switch layer. Based on the popular Broadcom Triumph switch platform, the Arctica 4804i is capable of full bidirectional line rate Layer 2 and Layer 3 processing and forwarding on all host and uplink ports. The Arctica 4804i includes RAS features such as dual redundant power supplies and hot swappable fans.

Penguin Computing recommends PicOS from Pica8 for those wanting an easy means to onboard an open switch into your existing network, with an industry standard CLI for network operations, Linux for DevOps and OpenFlow for injecting SDN. PicOS is interoperable with nine OpenFlow controllers, including ONOS, OpenDaylight and RYU. Penguin Arctica switches are available with PicOS preloaded, backed by hardware and software support options.

Penguin Computing specializes in delivering turn-key High Performance Computing clusters and Data Center systems that include software solutions for cluster and workload management, high performance interconnects, storage systems and a power delivery infrastructure. All components are integrated in rack enclosures, configured for optimal performance by Penguin's HPC experts and ready to use.

Penguin systems are tested for compatibility with all major commercial and freely available Linux distributions and are available with Red Hat Enterprise Linux, SuSE Linux Enterprise Server or CentOS pre-installed.



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Highlights

- Airflow configurations for both front and rear facing I/O layouts
- 48x 10M/100M/Gigabit RJ45 ports
- 4x 10 Gigabit SFP+ ports
- Redundant 2x 460W power supplies
- Hot swappable fans
- Physical Dimensions: 17" x 17.3" x 1.73" (LxWxH)

Hardware Features

- Interfaces - 48 RJ45 GbE ports, 4 SFP+ 10GbE ports, management (1000Base-T) and console Ports (MiniUSB-B), USB (Type A)
- Switching Capacity - 176 Gpbs, 4MB packet buffer
- Latency - < 3us port to port
- CPU - 800MHz Dual Core PowerPC, 2/4GB DRAM, 512M/1Gbit Nor Flash, 1GB Nand Flash
- Routing Tables - MAC 32K-512K, L3 16K-512K, ACL/Flow 8K-256K
- Jumbo Packet 12K bytes

Layer Two- Pica8 OS

- Spanning Tree: IEEE 802.1D STP, 802.1w RSTP, 802.1s MSTP, Per-VLAN Spanning Tree (PVST)
- Broadcast, unicast, and multicast storm protection
- IGMP snooping, up to 1K groups
- Multi-chassis Link Aggregation (MLAG) including Spanning Tree support
- Port mirroring (many-to-one)
- Port security
- 802.1X support
- 802.1Q VLAN Trunks including Q-in-Q
- 802.3ad Link Aggregation
- 802.1ab Link Layer Discovery Protocol (LLDP)

Layer Three- Pica8 OS Routing Features

- OSPFv3
- MBGP for IPv6 NLRI
- IPv6 routing

Security

- User/password protected system management
- L2/L3/L4 ACLs
- TACACS+ AAA
- SSHv1/v2
- SSLv3/TLS v1
- DoS attack protection

Quality of Service

- IEEE 802.1p-based CoS
- 8 priority queues per port
- DSCP-based CoS
- Policy-based DiffServ

Network Management

- Command line interface (CLI)
- Telnet and SSH remote login
- Centralized control plane policing and filtering
- SNMPv1/v2c
- AAA Radius support
- IPFIX (NetFlow) / sFlow

OpenFlow Implementation

- Based on Open-vSwitch (OVS) 2.3
- Compatible with OpenFlow 1.4 specification
- TCAM Flow Optimization for better scalability and performance
- Web interface / GUI for OVS configuration

Operational Programming Tools

- Automate PicOS installation via ONIE
- Auto provisioning with scripting capacity (Zero Touch Provisioning)
- Modular PicOS: Service daemon for L2/L3 Mode and OVS Mode
- Extensible CLI with Scripts and APIs including C/C++, Ruby, Python, Perl
- Standard Debian Based package upgrade (apt-get)
- Configuration Commit / Check / Rollback
- Configuration Management: Puppet, Chef, CFEngine (user-installed)
- Support for 802.1ag Connectivity Fault Management (CFM) is incorporated in PicOS OVS/OpenFlow mode.
- VLAN push/pop operation in an MPLS action