

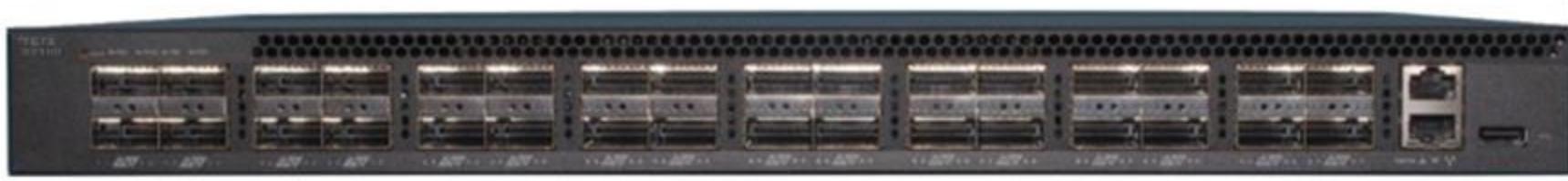
TETA7210

TETA32100

سوئیچ‌های چندلایه پر ظرفیت
در مراکز داده و شبکه‌های سرویس پرواییدر
محصول شرکت
تحقیق و توسعه ارتباط (تتا)

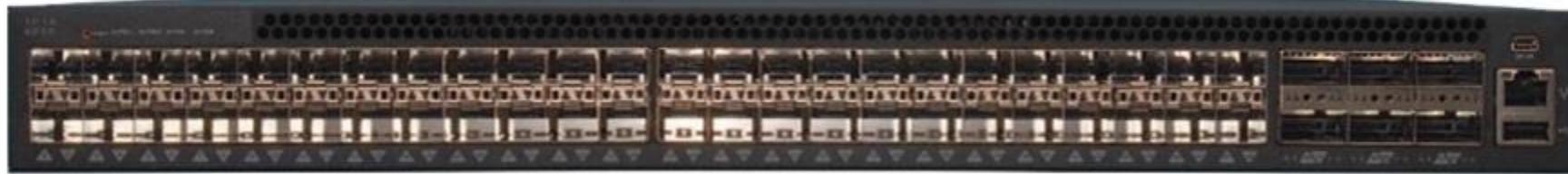
سوئیچ/روتر های پر ظرفیت شرکت تتا

TETA 32100 model: 32x100G



TETA 7210 model: 48x10G + 6x40G

Convertible to 24x10G by splitter



Usage:

Data Center: ToR, Leaf, Spine

Service Provider: Core, Aggregation, Access

Enterprise: Stackable L2/L3 switch

کاربردها

• اپراتورها:

• طراحی نسل قدیم : لایه هسته، لایه توزیع، لایه لبه و لایه دسترسی

• طراحی نوین بر مبنای SDN

• مراکز داده:

Leaf, Spine, ToR •

• طراحی نسل قدیم / طراحی نوین بر مبنای SDN

• سازمان‌های بزرگ:

• سوئیچ‌های مرکزی

کاربردهای خاص:

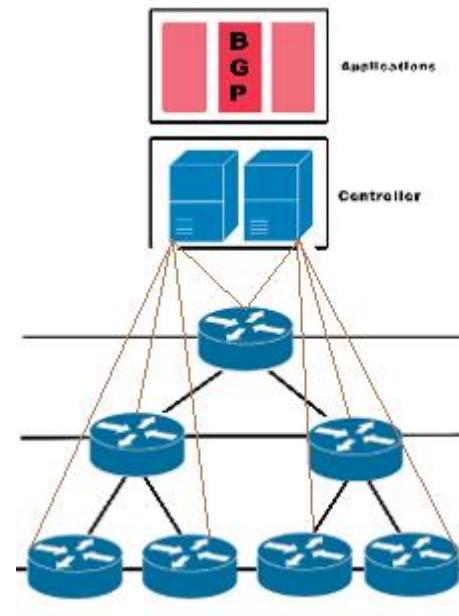
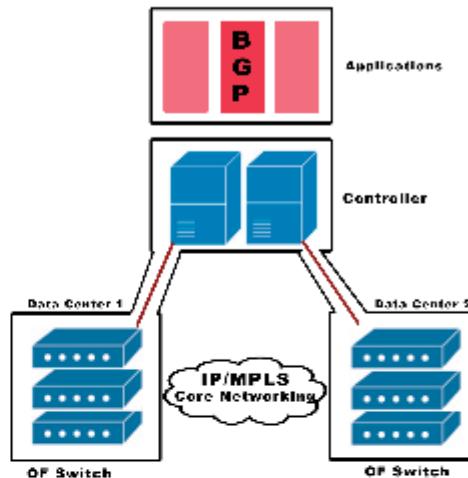
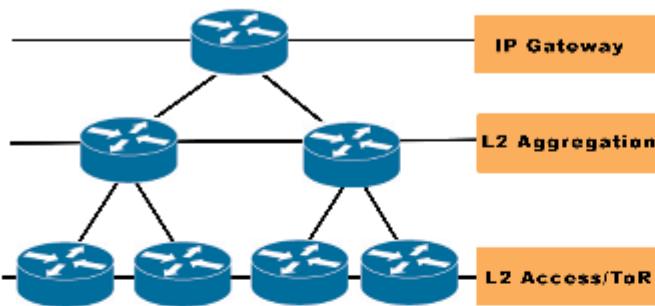
- Hardware Firewall (ACL, stateless FW)
- Network Policy Control
- DIP Packet Inspection
- Hardware Load-balancer
- Circuit Pusher(bidirectional circuit)
- Network as a service

Traditional

+

SDN

Next-Generation SDN



Features:

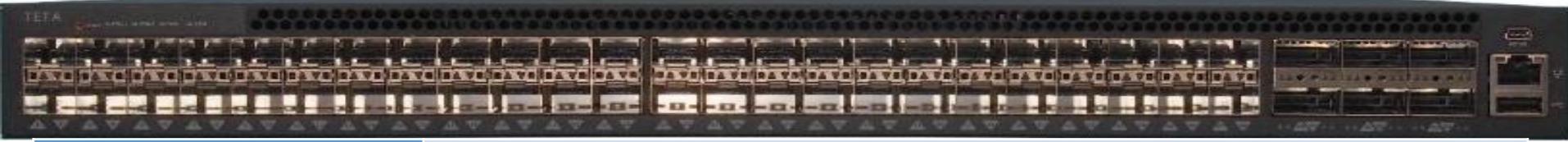
LLDP
Link Aggregation
VLAN
Spanning-tree
Storm Control
IGMP Snooping
Dual-Stack (IPV4/V6)
QOS
Multi-VRF Routing (BGP/OSPF/ISIS)

PIM
Security
Management
VXLAN
NVGRE
Fabric Path
MPLS
OpenFlow 1.3, 1.4
...

ویژگی‌های کلیدی

- Full Layer-2, Layer-3 protocol stack support.
- Multiple Architectures & Customized Operating Systems by TETA for specific scenarios.
- High Availability & Resiliency, Performance at Scale.
- Reliability, Manageability, Programmability & Extensibility.
- Modular Software, break monolithic switch software into multiple containerized components that accelerates software evolution.
- Deploy new features without impacting end users, and in-service upgrades with zero downtime.
- Roll out updates securely and reliably across the fleet in hours instead of weeks.
- Fine-grained failure recovery, early detection of failure, fault correlation, and automated recovery mechanisms without human intervention. (Netbouncer and Everflow).
- Hybrid Legacy, SDN based Operating System.
- Support OpenFlow, PCEP, SR, link-state address-family for NG-SDN application.
- Utilize cloud-scale deep telemetry and fully automated failure mitigation.
- OpenStack Neutron ML2 Integration.
- Market-leading SDN controller Integration: OpenDaylight, ONOS, Ryu, ...
- RESTful APIs, NETCONF, RESTConf, gNMI, Python for the API.
- Standard SNMP v2,v3, Yang Models.
- CLI, Linux standard shell, DevOps automation tool, Ansible Test Automation.
- Docker based software architecture.
- Fast/Warm/Cold Reboot Support .
- FEC control .
- CORD ready(central office re-architected as a datacenter for telcos and the head-end for operators).
- In Service Software Upgrade.
- Decouples Hardware & Software using SAI.

مشخصات سخت افزاری سوئیچ TETA7210



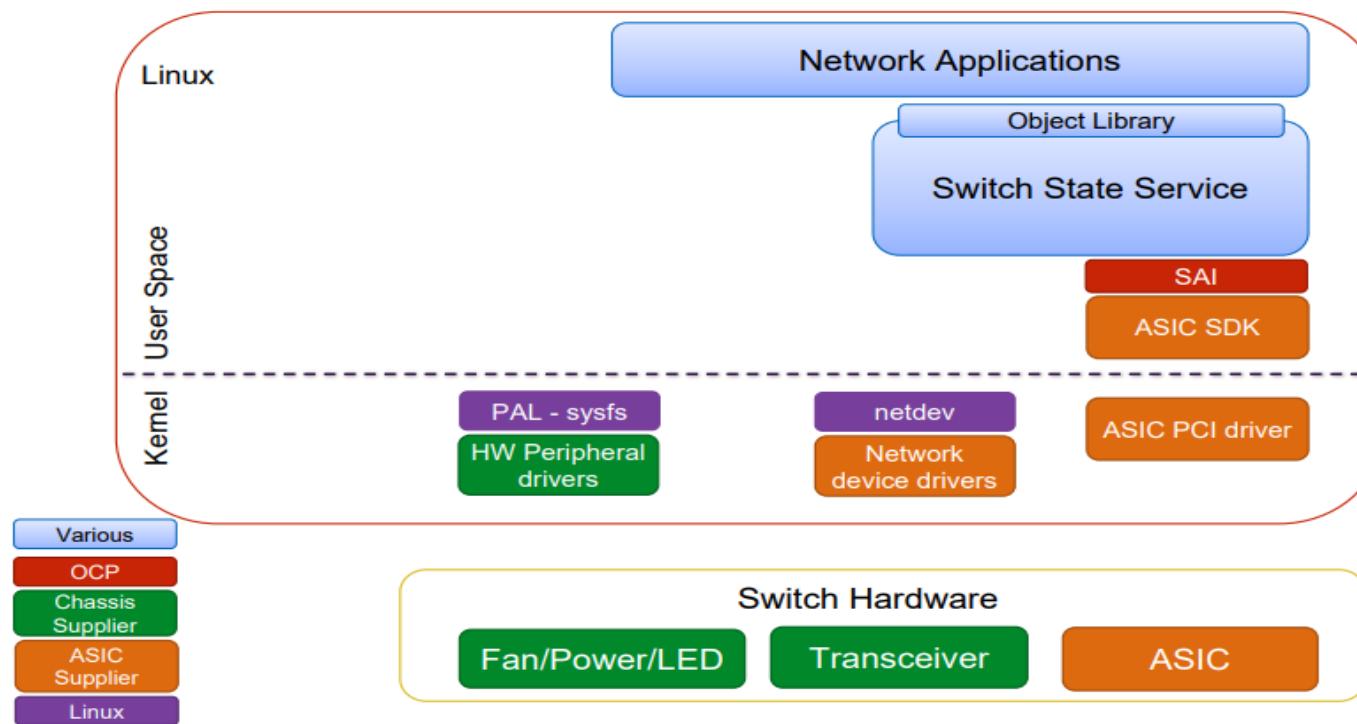
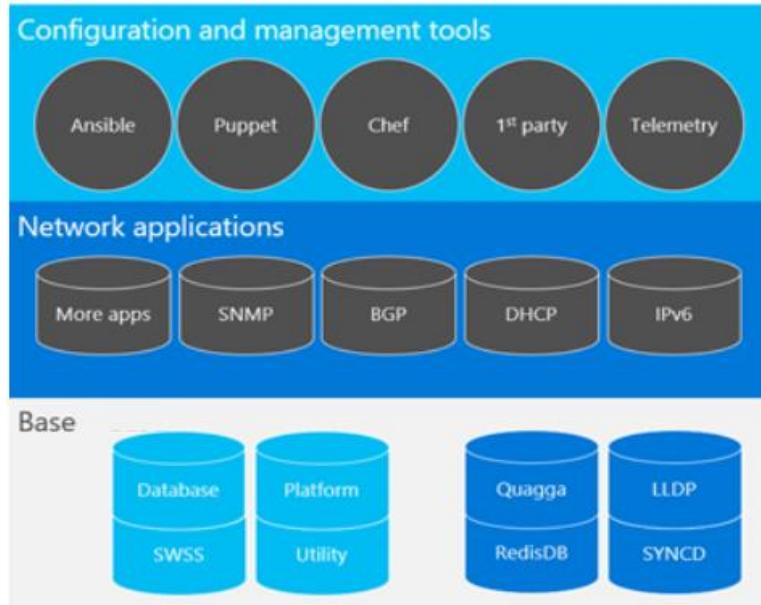
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|-------------------------------|--|
| ASIC | 720Gbps Broadcom Trident2 BCM56854 switching silicon |
| Forwarding performance | 1071 Mpps: 48x10G + 6x40G |
| Processor | Intel Atom 2558 (4 core) |
| RAM | 8GB DDR3 |
| HDD | 64GB M.2 SATA SSD |
| Latency | less than 700 ns (PHY-less) |
| Hardware accelerators | Hardware VXLAN/NVGRE acceleration |
| DCB features | 802.1Qau, 802.1Qaz, 802.1Qbb, DCBX, EVB(802.1Qbg), MLAG, 32-way ECMP |
| Power supply | Redundant 1+1 power, DC/AC power option available |
| Cooling | Redundant N+1 cooling |
| MAC address table size | 32768 |
| ARP table size | 16384 |
| Route table size | 384k |

مشخصات سخت افزاری سوئیچ TETA32100



| | |
|-------------------------------|--|
| ASIC | 3.2Tbps Broadcom Tomahawk BCM56960 switching silicon |
| Forwarding performance | 4400 Mpps: 32x100G |
| Processor | Intel Atom 2558 processor (4 core) |
| RAM | 8GB DDR3 |
| HDD | 64GB M.2 SATA SSD |
| Latency | less than 500 ns (PHY-less) |
| Hardware accelerators | VXLAN/NVGRE/GENEVE acceleration |
| DCB features | 802.1Qau, 802.1Qaz, 802.1Qbb, DCBX, EVB(802.1Qbg), MLAG, 32-way ECMP |
| Power supply | Redundant 1+1 power, DC/AC power option available |
| Cooling | Redundant N+1 cooling |
| MAC address table size | 40960 |
| ARP table size | 8192 |
| Route table size | 128k |

معماری



آماده برای SDN

- Support OpenFlow v1.3.4, integrated with OF-DPA v3.0.4.0
- Support OVS 2.5 with extensions to support OF-DPA 3.0 Experimenter protocol definitions
- Support OVSDB for SDN controller management
- Support OVS tool for configuring groups/flows
- Integration with SDN controllers OpenDaylight, ONOS, Ryu ...
- Support Hybrid Mode Operations (Both OpenFlow & L2/L3 on the same port)

قابلیت‌های لایه ۲

- | | |
|--|---|
| <ul style="list-style-type: none">• L2 MAC address table: 40K• Aging support• Static MAC• Unicast/multicast traffic balance• Broadcast• Unknown multicast• DLF (unknown unicast)• Jumbo Frame• LLDP• SPAN/RSPAN | <ul style="list-style-type: none">• FEC• MLAG• LACP• 32-way ECMP• Storm Control• VLAN• MSTP• VRRP• QinQ• Chipset Shell |
|--|---|

قابلیت‌های سوئیچ/روتر لایه ۳ (packet forwarding)

| | |
|---|--|
| <ul style="list-style-type: none">• BFD• Graceful restart• BGP ipv4[labeled] (MPLS)• BGP ipv6[labeled] (MPLS)• BGP vpng4 (MPLS)• BGP vpng6 (MPLS)• BGP LS (SDN)• BGP flowspec (SDN)• BGP evpn (SDN)• Babel• OpenFabric• LDP (MPLS)• EIGRP• ISISv4• ISISv6 | <ul style="list-style-type: none">• NHRP• OSPFv2• OSPFv3• OSPF SR (MPLS)• PIM-SM• PIM-SSM• PBR• RIP• RIPng• SHARP• Route-map• Access-list• Community-list• DHCP relay, DNS, NTPv4 |
|---|--|

قابلیت‌های امنیت و کیفیت

| | |
|---|--|
| <ul style="list-style-type: none">• Security<ul style="list-style-type: none">• Ingress/Egress/VTY/control-plane ACL• AAA: RADIUS /TACACS+/Local (on CPU)• 802.1x• QoS<ul style="list-style-type: none">• COS• DSCP | <ul style="list-style-type: none">• DWRR and Strict scheduling• WRED-ECN• Traffic shape<ul style="list-style-type: none">• ingress policing, egress shaping• PFC• CoPP |
|---|--|

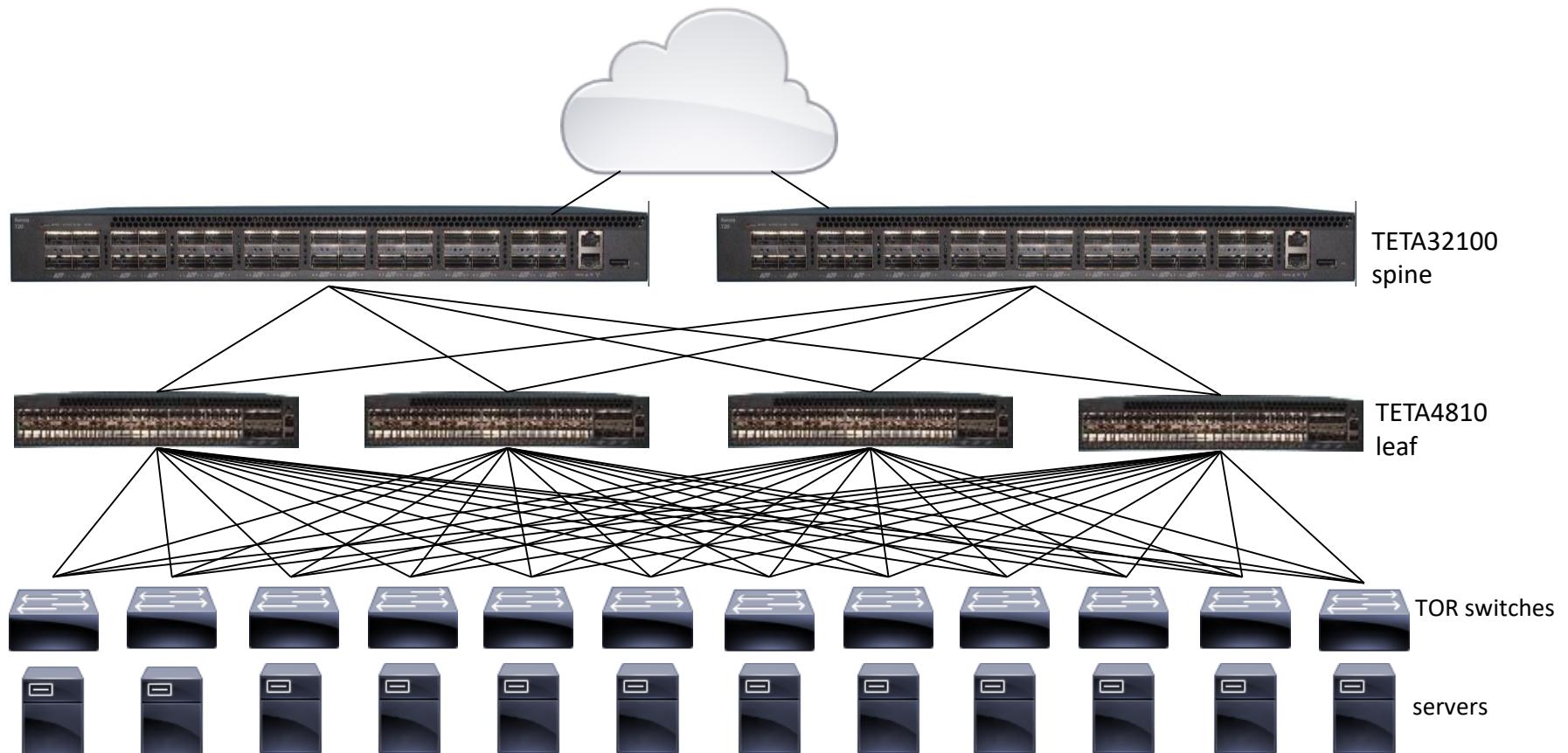
قابلیت‌های نرم افزاری مدیریت

- | | |
|---|--|
| <ul style="list-style-type: none">Industrial standard CLICLI filtering, pagination and interface rangeText-based configurationSSH v2SFTP/SCP/TFTPMultiple ImagesIncremental software updateDHCP Client/Server/RelayDocker based, Swarm/kubernetes compatibleAutomation tools: Ansible/Chef/PythonNew network applications extensibilityDistributed processing/Software mobility/ Database clusteringASIC pipeline and buffers monitoring, packet tracing. | <ul style="list-style-type: none">SyslogDiagnostic dumpsFlowNetFlow/IPFIXEverFlow/telemetryChipset pipeline monitoringSPAN / ERSPANFast/Warm/Cold rebootZTPRestful APIgNMINETCONF/RESTCONF/SNMPv2v3 |
|---|--|

قابلیت‌های اختصاصی مرکز داده

- VxLAN/HW-VTEP
- OpenFlow 1.3.4
- CORD ready
- 802.1Qau
- 802.1Qaz
- 802.1Qbb
- DCBX
- EVB(802.1Qbg)
- MLAG
- 802.3x

نمونه‌ای از جایگشت فیزیکی در مرکز داده با همبندی CLOS



نمونه‌ای از جایگشت فیزیکی در شبکه‌ی اپراتورها با استفاده از معماری سلسله مراتبی

