Content Processing Module

Ixia’s Content Processing Module (CPM) is a high performance computing platform designed for content networking applications.

The CPM provides 8 independently controllable ports in an extremely dense form factor. Up to 16 modules (128 processors) are supported in a single chassis. Each CPM port is equipped with dedicated resources that generate stateful traffic at near line-rate speeds.

Ixia’s IxLoad software takes advantage of this superior architecture to emulate Triple Play subscribers generating stateful, real-world traffic. The CPM and IxLoad provide a highly scalable, integrated test solution for assessing the performance of Triple Play networks and devices.

This combination of hardware and software provides unprecedented performance and flexibility for testing the performance limits and long-term stability of content aware devices and networks. The ability of a network to deliver data traffic, intermixed with jitter and delay-sensitive VoIP and Video application traffic, can be verified and quantified.

A CPM-based system provides significant space, performance, scalability, and repeatability advantages compared with standalone workstations for network and application testing.

Highlights

- High performance computing platform designed for content networking applications
- 8 independently controllable ports in an extremely dense form factor
- Unprecedented performance and flexibility for testing the performance limits and long-term stability of content aware devices and networks
- Application Layer Testing
- Superior Processing Power
- Unmatched Scalability
- Custom Applications
- Performance Metrics
Specifications

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<th>Features</th>
<th>Details</th>
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<tbody>
<tr>
<td>Number of Port per Load Module</td>
<td>8</td>
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<tr>
<td>Processor (per port)</td>
<td>PowerPC 750FX</td>
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<tr>
<td>Processor Memory (per port)</td>
<td>2 GB RAM</td>
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<tr>
<td>Operating System</td>
<td>Linux</td>
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<tr>
<td>Network Interfaces</td>
<td>10/100/1000 Mbps Ethernet copper, auto-negotiating</td>
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<td>Network Connector Type</td>
<td>RJ-45</td>
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<td>Application Support</td>
<td>Aptixia IxLoad: Performance verification of Triple Play (data, video, voice) applications and protocols, including TCP, HTTP, SSL, FTP, MPEG2 video, IGMP, SIP, SMTP, POP3, RTSP, RTP, Telnet, DNS DHCP, and Web Application Testing Aptixia IxNetwork: integrated Layer 2-3 control plane performance and functional testing. Routing/bridging emulation includes: BGP4/4+, OSPFv2/v3, IS-ISv4/v6, RIP/RIPv2, RSVP-TE, LDP, L2 MPLS VPNs, L3 MPLS VPNs, VPLS, IGMPv1/v2/v3, MLDv1/v2, PIM-SMv4/v6, STP, RSTP, and MSTP IxExplorer: Port configuration and statistics Tcl API: Custom user script development for Layer 4-7 testing Linux Software Development Kit (SDK): Custom user application development</td>
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<tr>
<td>Statistics and Rates</td>
<td>Link State, Line Speed, Duplex Mode, Frames Sent, Valid Frames Received, Bytes Sent/Received, Fragments, Undersize, Oversize, CRC Errors, VLAN Tagged Frames, Flow Control Frames, Dribble Errors, Collisions, Late Collisions, Excessive Collision Frames, Oversize and CRC Errors, ARP and PING requests and replies, Port CPU Bytes/Frames Received, Dropped by Filter Bytes/Frames, Port CPU Bytes/Frames Dropped</td>
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<tr>
<td>VLAN</td>
<td>Statistics and generation of 802.1q/p VLAN frames</td>
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Application Layer Testing

The Content Processing Module is designed for application layer performance. A single CPM port can generate greater than 10,000 TCP connections per second, greater than 300,000 simultaneous TCP sessions, and up to gigabit line rates of stateful traffic. An Optixia chassis, full of CPMs creates more than 1.5 Million TCP sessions per second.
Superior Processing Power

With 8 test ports per single slot module, the CPM provides incredible computing density. Up to 128 test ports are supported in a single 9U high Optixia X16 chassis. Multiple Optixia chassis can be daisy-chained together to provide unprecedented scalability. Each port’s processor runs independently, allowing multiple users to control separate ports simultaneously.

Each port has a high-speed RISC processor running Linux as its own independent operating system, and is equipped with 2 GB hi-speed RAM. A dedicated 10/100/1000 Mbps Ethernet interface is available per port, producing an architecture for generating high throughput and high transaction application load on any network, device, or system being tested.

Unmatched Scalability

For large scale application testing, the CPM provides a number of benefits compared to alternative solutions. Cost, power, space, and management requirements are significantly reduced through Ixia’s integrated chassis-based design. The test ports operate as diskless systems that download applications to their linux-based processors from the local Optixia chassis. The CMP also supports remote file storage. In addition, each processor supports thousands of MAC addresses per physical interface. Thousands of hosts can be emulated on a single test port, allowing large networks to be easily emulated.

Custom Applications

The Linux Software Development Kit (SDK) enables existing Linux applications to be compiled and run on CPM ports. Additionally, users can develop custom applications that can be integrated into the Ixia test environment.

Performance Metrics

Each port supports a full set of transmit and receive network statistics:

- Real-Time 64-bit counters and frame rates
- Spread sheet format for convenient manipulation of statistics counters
- External file logging for statistics and alerts

Product Ordering Information

CPM1000T8

Part Number: 944-0011

Gigabit Ethernet Content Processing Module (CPM), 8-port RJ-45 10/100/1000 Ethernet; 2GB Memory per port; No support for L2-3 stream generation