SSBC i720 Session Border Controller

OptimalPath's i720 is a well-tested mid-range platform for enterprises and service providers. The 2RU i720 features OptimalPath's custom hardware design tightly integrated with CentOS Linux to provide the critical controls for delivering trusted, first-class communications voice across IP network borders.

Designed for both smaller service providers and mid-sized enterprises, the i720 platform delivers most of the same functions and features as other high-end platforms. Redundant power supplies that meet NEBS compliance, and a system architecture that leverages OptimalPath's advanced software are just a few of the attributes that make the i720 an excellent choice when reliability and performance are needed for heavy weight production call volumes.

Flexible hardware deployment options include on premise or remotely hosted. Software only deployments are available in the Amazon cloud for lower call volumes.

Multi-Tenant

Extreme power and performance on the SSBC i720 allows for head room that can be partitioned off to a third party or for customers who need to share capacity. Our proprietary software supports Multi-Tenant configuration to resell services on the SBC and partition it with capacity thresholds and throughput caps per tenant.

The SSBC i720 session border controller comes pre-configured for the entire OptimalSuite of products including dynamic routing, reporting and Billing. The SSBC i720 can also run standalone integrating seamlessly with in an existing infrastructure.

Overview OptimalPath SSBC

✓ Carrier-class functionality for both small to large-size systems
✓ Advanced system design delivers robust controls at network borders
✓ Horizontal scalability through server

clustering
- ✓ Stateful High availability and fault tolerance
- ✓ Live Traffic Monitoring
- ✓ Enterprise level SBC
- ✓ Session routing proxy (SRP)
- ✓ Integrated Cavium Mediacard with Proprietary Microcontroller code written for extreme performance

Key Features

- ✓ Multi-processor architecture
- ✓ Supports up to 32,000 signaled sessions per server
- ✓ Supports standard voice compression codec types
- ✓ High availability, redundant components
- ✓ NEBS compliant

Benefits

- ✓ Cost savings with expected industry functionality
- ✓ Flexibility: multiple configuration & deployment options
- ✓ Scale: small to high-end services & applications
- ✓ Adaptability: wide variety of applications & services

Sessions / Ports

- ➤ Each call or session takes two ports (one port for in bound media and one port for out bound media)
- ➤ 64000 Ports per server (scales with server clustering)
- ➤ 32000 SIP sessions
- ➤ 32000 calls
- ➤ Up to 32000 transcoded sessions (based upon codec type) 22000 sessions with typical mix

Call Set-Up

- ➤ Maximum call setup rate: 700 cps

Media Services

- ➤ Between 16,000 - 32,000 concurrent calls: with G.711, G.726, G.729A/B, G.723, G.722
- ➤ Wireline, wireless, wideband and clear channel codec pass through
- ➤ NAT on media
- ➤ DTMF Trigger Detection and Notification
- ➤ Generic audio codec relay

Signaling

- ➤ Back to Back User Agent (B2BUA)
- ➤ SIP, SIP-I/ SIP-T
- ➤ SIP protocol normalization/ protocol repair; SIP message manipulation
- ➤ NAT on signaling
- ➤ SIP Compliant with RFC 3261, 3264, 3325, 4457
- ➤ SIP Signaling Parameterization and Header manipulation
- ➤ Static & registration based SIP Trunks

Protocol Support

- ➤ SSH; sFTP
- ➤ SNMP; NETCONF; NTP
- ➤ HTTP/HTTPS
- ➤ RTP/RTCP
- ➤ UDP, TCP
- ➤ DNS

Routing

- ➤ Supports standalone static routing
- ➤ Optional full featured Dynamic Routing with OptimalRoute. (See the OptimalRoute Data sheet for details)

Security

- ➤ Session-aware firewall; Topology hiding
- ➤ Line rate DoS/DDoS and Rogue RTP protection
- ➤ Line rate malformed packet protection
- ➤ TLS, IPsec (IKEV1) for signaling encryption
- ➤ Secure RTP/RTCP for media encryption

Reporting

- ➤ ** Optional Full featured reporting

package with hundreds of prebuilt reports (See the OptimalView Data sheet for details)

➢ Summary reports for Origination Gateway, Destination Gateway, ACD, PDD, and ASR SIP Code by Hour and Day

➢ Abuse Reports by Dialed Number and Calling Party

➢ Customizable parameters for filtering and gathering report data

➢ Alert thresholds based on automated criteria

Billing

➢ ** Optional Billing Package includes robust, extreme performance billing easily handles up to 100 Million CDRs per hour (See OptimalBill Data Sheet for details)

➢ Domestic and international Rating and wholesale Billing

➢ Prepaid support (requires custom service work for set up and installation)

➢ Custom CDR formatting of the SSBC i720 allows for easy integration with existing billing systems

SSBC i720

Media Processing

The extreme media performance of the SSBC i720 is due in large part through proprietary microcontroller code to take advantage of the latest OCTEON II Cavium Medicard features.

Our commitment to the highest throughput and extreme performance lead us to select the OCTEON II IAP's that are used in our next generation SuperSonic Session Border Controller.

The features of the OCTEON II are available through our SSBC i720 and are explained here for clarification.

The new OCTEON II IAP processor family is designed to fuel the voice, video and data convergence driven by cloud computing, virtualization, HD video over IP, Web 2.0 and mobile 3G/4G applications which require a many fold increase in packet processing, secure application delivery and quality of service (QoS) performance.
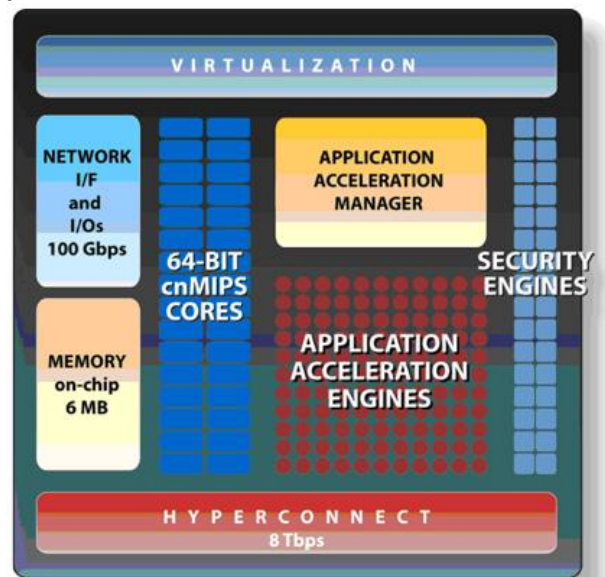

The SSBC i720 takes full advantage of the revolutionary new application acceleration engines. OCTEON II IAP's scale from 1 to 32 cores, including up to 75 Application Acceleration Engines, providing an aggregate performance of over 120 billion operations/second.

A unique Application Acceleration Manager, and high-performance memory, I/O, and interconnect, provide up to 400Gbps DDR3 bandwidth, and up

to 100Gbps of I/O bandwidth and deliver linear application performance scaling. Innovative embedded virtualization and power optimizer technology is integrated to enable robust solutions in highly constrained form factors.

SSBC i720 Server Hardware

Processor
- ✓ 2 Intel® Xeon ® Quad Core processor E5 product family 2.6 GHZ

Form Factor
- ✓ 2U rack

Internal Interconnect
- ✓ 2 x Intel QuickPath Interconnect (QPI) links; 6.4 GT/s; 7.2 GT/s; 8.0 GT/s

Operating System
- ✓ CentOS Linux

Chipset
- ✓ Intel C600

Memory
- ✓ Up to 768GB (24 DIMM slots) 2GB/4GB/8GB/16GB/32GB DDR3 up to 1600M T/s
- ✓ Standard configuration with 32 GB

Storage
- ✓ Hot-plug hard drives:
- ✓ 2.5 SAS (10K) drives (standard with 2, available with up to 6 drives)
- ✓ Self-Encrypting Drives available
- ✓ Maximum Internal Storage: 32TB

Drive Bays
- ✓ Up to eight 3.5" drives or up to sixteen 2.5" drives

Slots
- ✓ 7 PCIe slots:
- ✓ One x16 full-length, full-height
- ✓ Three x8 full-length, full-height
- ✓ Three x8 half-length, half-height

RAID Controllers
- ✓ Internal controllers:
- ✓ PERC H710

Communications
- ✓ Broadcom® 5720 Quad Port 1GbE BASE-T(no TOE or iSCSI offload)

Power
- ✓ Platinum efficiency, hot-plug redundant 495W, 750W or 1100W power supplies
- ✓ Auto-ranging power supplies

Availability
- ✓ High-efficiency, hot-plug, redundant power supplies; hot-plug drive bays; TPM; dual internal SD support; hot-plug
- ✓ redundant fan; optional bezel; luggage-tag; ECC memory, interactive LCD screen; extended thermal support; ENERGY STAR® compliant, extended power range; switch agnostic partitioning (SWAP)

** The optional Billing and Reporting packages are deployed on separate hardware to avoid performance impacts on the SSBC i720.