



Comet ESP

Hardwired IP Security ESP Gateway on a PCI board

iSCSI over Comet ESP 3DES is 5 times faster than software IPsec!
IPv6 version will be available in April 2003!

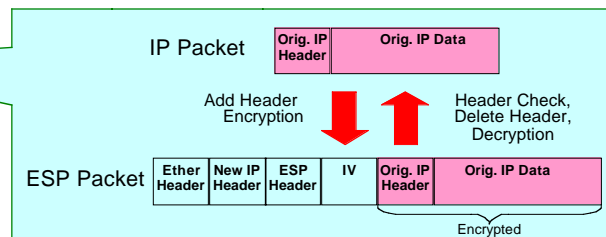
MBytes/sec (cpu load)	Comet ESP Off	Comet ESP DES	Comet ESP 3DES	Soft ESP 3DES
FTP	84.0	50.5	27.0 (22%)	6.2 (73%)
iSCSI	53.7	40.0	25.3 (30%)	5.6 (80%)
Data Reservoir (1x4x2) ^[1]	233.6	180.9	104.9 (49%)	24.6 (89%)

Up to 440Mbps bi-directional ESP with 3DES CBC!

- ✓ **Comet ESP** ^[2] implements all of IPsec ESP conversion functions on a 21cm PCI board.
- ✓ **ESP (3DES CBC) performance is 220Mbps uni-direction, 440Mbps bi-direction.**
- ✓ Supports industry standard PMC (PCI Mezzanine Card) network interface cards.



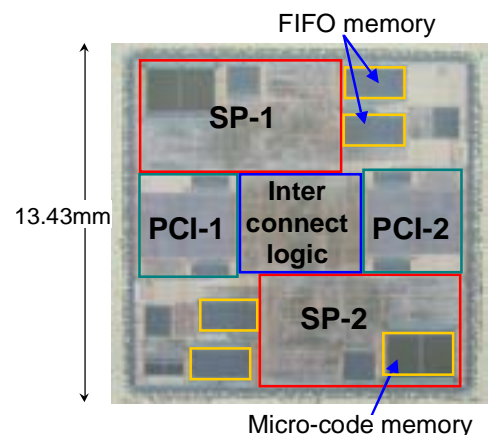
Comet ESP performs all processes required in encrypting and decrypting IPsec ESP.



Core technology is the Comet NP (Network Processor) chip

- ✓ Low-power security network processor chip for NICs.
- ✓ Two **Stream Processor (SP)** ^[3] packet engine cores.
- ✓ **SP** supports on-the-fly packet processing.

Technology	CMOS 0.35µm
Frequency	66MHz
Package	EPBGA 655pin
Power	7W@66MHz
External IF	PCI 64bit/66MHz x 2
Packet Engine	Stream Processor (SP) x 2
Hardware Functions	DES/3DES, Checksum, Table Lookup, Programmable Finite State Machine



References

- [1] <http://data-reservoir.adm.s.u-tokyo.ac.jp/>
 [2] Naganuma, An IPsec ESP gateway on the "Comet NP" encryption network processor chip, COOL Chips V, April 2002
 [3] Jinzaki, Stream Processor, Joint Symposium on Parallel Processing (JSPP) 2000, June 2000

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