Fujitsu Siemens Computers: PrimePower Model 850
Zeus Technology: Zeus WebServer 4.1r3

**Hardware**
- Vendor: Fujitsu Siemens Computers
- Model: PrimePower Model 850
- Processor: 810 MHz SPARC64
- # Processors: 8 cores, 8 chips, 1 core/chip
- Primary Cache: 128KBI+128KBD on chip
- Secondary Cache: 8MB(I+D) off chip
- Other Cache: None
- Memory: 64GB
- Disk Subsystem: 22 x 17GB
- Disk Controllers: Dual Channel Ultra SCSI
- Other Hardware: None

**Software**
- Operating System: Solaris 8 2/02
- File System: VxFS (for non-root disks)
- Other Software: NCA

**HTTP Software**
- Vendor: Zeus Technology
- HTTP Software: Zeus WebServer 4.1r3
- API: Zeus PEPP 0.6 ISAPI
- Server Cache: SNCA
- Log Mode: SNCA Binary CLF

**Notes/Tuning Information**

Operating System Notes

- General settings:
  - _set sq_max_size=0 (unlimited messages allowed on each IP queue)
  - _set segmap_percent=90 (def: 12, Size of kernel segmap segment)
  - _set rlim_fd_max=350000 (def: 1024 file descriptors)
  - _set rlim_fd_cur=350000 (def: max (256, rlim_fd_max))
  - _set autoutp=60 (def: 30, seconds before dirty page buffers are sync'd)
  - _set maxphys=65536 (def: 131072, maximal size of physical I/O requests)
  - _set maxpgio=128 (def: 40, maximal number of page I/O requests that can be queued)
- Specific modules:
  - _set ge:ge_intr_mode=1 (bypass normal communication layer queuing)
  - _set ge:ge_nos_tmmds = 8192 (def: 512, transmit descriptors)
  - _set ge:ge_tx_fastdvmna_min = 95 (def: 1024, min packet size to use fast dvm a interface)
  - _set ge:ge_bcopy_max = 96 (def: 256, Maximum packet size to use copy of buffer)
  - _set ge:ge_nos_txdvmna = 8192 (def: 512, transmit descriptors)
  - _set ge:ge_pci_intr_blank_time=48 (def: 6, Number of clock ticks to wait since last receive interrupt asserted)
  - _set pcipsy:pci_stream_buf_enable = 0 (disable PCI cache streaming)
  - _set nca:nca_conn_req_max_q=10240 (def: 256, Max number of TCP cnns to listen to)
  - _set nca:nca_conn_req_max_q_g=10240 (def: 256, Max number of TCP cnns to listen to)
  - _set nca:nca_conn_req_max_q_g=10240 (def: 256, Max number of 3 way handshakes open)
  - _set nca:nca_ppmax=4900000 (def: 25% of physical memory, Max amount of physical memory, in pages. used by NCA)
  - _set nca:nca_vmmax=4900000 (def: 25% of virtual memory, Max amount of virtual memory, in pages. used by NCA)
  - _set nca:nca_conn_hash_size=393209 (def: 383, hash table size)
  - _set nca:ncaconnhash_sz = 289669 (def: 8053, URI hash table size)
  - _set nca:ncaconnhash_sz = 289669 (def: 12281, Controls the vnode hash table size in the NCA module)
  - _set nca:nca_ppthresh = 128 (def: 4, threshold in pages to control when to stop using the default kernel memory allocator)
  - _set vxi:vol_maxio=128 (def: 512, controls the maximum size of logical I/O operations)

Settings in NCA control files (/etc/nca)
Notes/Tuning Information (Continued)

Operating System Notes (Continued)

__nca.if: ge0 ge1 ge2 ge3 ge4 ge5 ge6 ge7 ge8 ge9 ge10 ge11 ge12 ge13 ge14 ge15
__ncalogd.conf: status=enabled, logd_file_size=200000000
__ncalogd.conf: logd/path_name=/logs/log0 ... /logs/log15

Dynamic Settings after reboot
__ndd set /dev/nca nca_use_segmap 1 (def: 0, controls whether NCA uses the kernel segmap to share physical pages for Unix files)

Disk usage:
__1 disk (internal): OS, Paging, Zeus, and /export/home
__5 disks (striped): /logs (Zeus Webserver binary CLF files, NCA log files)
__1 disk: /web99 except file_set (r/w portion of docroot, e.g. post.log)
__15 disks (striped): /web99/file_set (r/o portion of docroot)
__File Systems, Striping with Veritas Volume Manager
__Mount /web99/file_set with noatime option

Tuning disclosure: Fujitsu-Siemens-20011126.txt

HTTP Software Notes
Zeus 4.1r3 global.cfg performance parameters
__For explanation and default values,
__refer to: http://support.zeus.com/faq/entries/tuning.html

__
tuning!modules!stats!enabled no
tuning!accelerator!nca!enabled yes
tuning!num_children 8
tuning!num_cgid 8
tuning!cache_files 419999
tuning!cache_max_bytes 0
tuning!cache_small_file 4096
tuning!cache_large_file 1048576
tuning!cache_stat_expire 31536000
tuning!cache_flush_interval 31536000
tuning!cache_cooling_time 0
tuning!sendfile yes
tuning!listen_queue_size 8192
tuning!so_wbuff_size 1048576
tuning!so_rbuff_size 0
tuning!modules!cgi!cleansize 0
tuning!cbuff_size 65536
tuning!sendfile_minsize 1

tuning!sendfile_maxsize 1048576
tuning!sendfile_reservedf 299993
tuning!bind_any no
tuning!softservers no

Other Zeus 4.1r3 global.cfg parameters
__
gid root
uid root
controlport 9080
controlallow 127.0.0.1

__Other Zeus 4.1r3 virtual_server performance parameters
__(%zeushome%:/web-4.1r3/runningsites/websvr)
__dnslookup no
__docroot /web99
HTTP API Notes
Zeus API toolkit 0.6 used for dynamic content
Archived in Fujitsu-Siemens-20011126-API.tar.gz
Compiled with Sun Forte 6.2
./Configure --sendfile=no --locking=semop
Compilation options:
-Is-INCLUDES -xarch=v8plus -Kpic -dalign -fns -f-simple=2 -f-trap=%none -xlibmil -xO5

Client Notes
Network Tuning parameters (/usr/bin/ndd):
ndd -set /dev/tcp tcp_smallest_anon_port 2048 (def: 32768)
ndd -set /dev/tcp tcp_time_wait_interval 60000 (def: 240000 ms = 4 mins.)
Client code generated with "Configure OPTIMIZE="-O2 -Wall": export OPTIMIZE and with "/configure --enable-posix-threads --enable-gethostbyname_r --enable-pthread_scope_system
--enable-rlimit --enable-nanosleep --enable-safe-usleep=no
Cisco Catalyst 6500 Series Switch
5 clients connected to NIC 66 MHz (PCI box 1, slot 0)
4 clients connected to NIC 33 MHz (PCI box 1, slot 1)
4 clients connected to NIC 66 MHz (PCI box 1, slot 4)
3 clients connected to NIC 33 MHz (PCI box 1, slot 5)
4 clients connected to NIC 66 MHz (PCI box 1, slot 8)
5 clients connected to NIC 66 MHz (PCI box 2, slot 0)
4 clients connected to NIC 33 MHz (PCI box 2, slot 1)
4 clients connected to NIC 66 MHz (PCI box 2, slot 4)
3 clients connected to NIC 33 MHz (PCI box 2, slot 5)
4 clients connected to NIC 66 MHz (PCI box 2, slot 8)
5 clients connected to NIC 66 MHz (system board 1, slot 0)
3 clients connected to NIC 33 MHz (system board 1, slot 1)
4 clients connected to NIC 66 MHz (system board 1, slot 4)
5 clients connected to NIC 66 MHz (system board 2, slot 0)
3 clients connected to NIC 33 MHz (system board 2, slot 1)
4 clients connected to NIC 66 MHz (system board 2, slot 4)

Used prime client separate from the load generators:
__PRIMEPOWER400, 4 x 500 MHz SPARC64, Solaris 8 1/01