# Dataflow in Practice: Computing Recursive Fibonacci in Parallel Using Transparent Dataflow Programming Model for Multicore and Many-core

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## Introduction

The number of cores in modern Multicore/ Many-core computer systems grows and will continue to grow in the future up to hundreds and thousands. The parallel multithreading programming for multiple cores becomes a great challenge for those who would like to use multiple cores for speeding-up their applications. The community is getting more and more convinced that a revival of dataflow should close the gap between the evolving number of Multicores/ Many-cores and the difficulties of parallel programming for them.

How do we want to program Multicores/ Many-cores with dataflow? We want to program them like this:

1. We do not want to use any unconventional programming paradigm. We want to use a normal traditional control flow, however, a dataflow engine will run our control flow in a different order according to the dataflow principle: **when operands are ready then operators are executed in parallel on the underlying Multicores/ Many-cores hiding all synchronization issues from us**:

```
a = foo0(i);
b = foo1(i+1);
b = b + 1;
c = foo2(b);
```

2. We do not want to be restricted with a single-assignment. **A dataflow engine should be able to create a different instance of a variable when the variable is re-assigned and then handle all instances correctly.**

Is there such a dataflow engine that can do this for us? Yes, BMDFM (Binary Modular Dataflow Machine; http://bmdfm.com) can do this. Further in this document, we provide a comprehensive test application example of recursive Fibonacci on how we program Multicores/ Many-cores using the BMDFM dataflow engine.

What do we want to achieve? We want to program our test application example of recursive Fibonacci sequentially with no special directives for parallel execution. We run our test using the BMDFM single-threaded engine that executes the test on a single processor core. Then we run our test using the BMDFM multithreaded engine that executes the test automatically on all available cores in parallel. **We expect to get a speedup that is almost equal to the number of cores!**

## Test Application of Recursive Fibonacci

Fibonacci numbers are the integer sequence produced by the following recursive relationship:

**Recursive Fibonacci Algorithm (Pseudo-Code)**

```
Fibonacci(0) = 0;
Fibonacci(1) = 1;
Fibonacci(N) = Fibonacci(N - 1) + Fibonacci(N - 2);
```

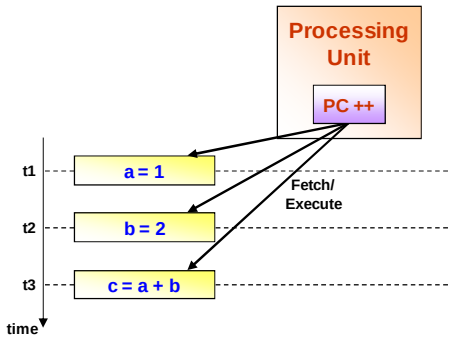
Thus, the Fibonacci sequence is: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, . . . The next number in the sequence is found by adding up the two numbers before it. Our Fibonacci function receives one argument, which is a number in the sequence, and returns the Fibonacci value for this number in the sequence.

We program our test application of recursive Fibonacci sequentially with conventional control flow and let the BMDFM dataflow engine run everything (what is possible) in parallel on Multicores/ Many-cores.

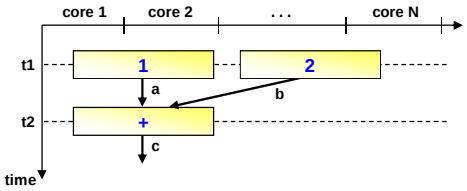
# Background (experts may skip this chapter)

1. **Control flow vs. dataflow:** control flow assumes that a processing unit has a Program Counter (PC) register pointing to executing instruction. The processing unit increments PC, fetches instruction that is pointed by PC and executes the instruction. Contrarily, dataflow tags operands with a token when they are ready. Operators of the dataflow graph process operands with ready-tokens.

**Control Flow**




**Dataflow**




2. **Transparent dataflow semantics:** an assignment <***variable***> = <***expression_of_operators_constants_variables***> creates a new instance of the variable and adds new nodes with dependencies to the dataflow graph dynamically at runtime (later on, variable instances and nodes will be garbage collected from the dataflow graph).

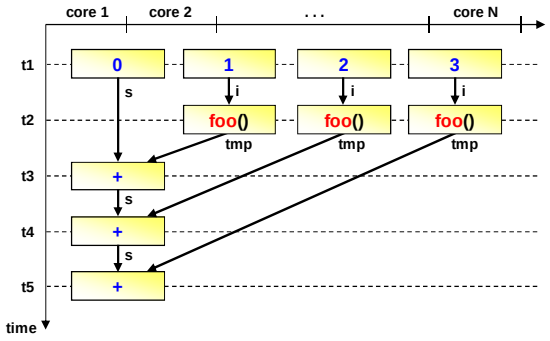
**Transparent Dataflow Semantics**

```
s = 0;
for(i = 1; i <= 3; i++)
  s += foo(i);

will be automatically reorganized to:

s = 0;
for(i = 1; i <= 3; i++){
  tmp = foo(i);  // coarse-grain processing
                 // can be done in parallel
  s += tmp;
}
```

**Dataflow Graph**




3. **C vs. LISP:** we program our applications in C and in a tiny subset of LISP in sake of convenience. We program our seamless helper functions in C. These are low-level coarse-grain functions. A dataflow engine does not apply any parallelization techniques to them. We program the rest of the code in LISP. This code is loaded into the dataflow engine for automatic parallelization. LISP programs are written in a prefix-form that is easy to understand from the following example (refer to the BMDFM comprehensive manual for more information; http://bmdfm.com/download.html).

**C**

```
for(i = 1; i <= N; i++){
  a = foo0(i);
  b = foo1(i + 1);
  b++;
  printf("a = %d\n", a);
  printf("b = %d\n", b);
}
```

**LISP**

```
(for i 1 1 N (progn
  (setq a (foo0 i))
  (setq b (foo1 (+ i 1)))
  (setq b (++ b))
  (outf "a = %d\n" a)
  (outf "b = %d\n" b)
))
```

## Implementation of Recursive Fibonacci

We can implement our recursive Fibonacci seamless helper function in LISP or in pure C. However, we use implementation in pure C for our tests due to better performance. We keep our helper functions away from the dataflow engine (they are seamless for the dataflow engine) in order to avoid unnecessary dataflow scheduling:

Recursive Fibonacci Seamless Helper Function (LISP)

```
# Refer to the BMDFM comprehensive manual for more information.

(defun FibonacciSeamless
  (progn
    (setq n (+ 0 $1))
    (if (< n 2)
      n
      (+ (FibonacciSeamless (-- n))
         (FibonacciSeamless (- n 2))
      )
    )
  )
)
```

Recursive Fibonacci Seamless Helper Function (Pure C)

```
#include <cflp_udf.h>  /* BMDFM C-interface */
/* Refer to the BMDFM comprehensive manual for more information. */

#define ULO unsigned long int
#define SLO signed long int
#define UCH unsigned char

SLO _dffib_FibonacciSeamless(SLO n){
  return noterror()&&n>1?_dffib_FibonacciSeamless(n-1)+_dffib_FibonacciSeamless(n-2):n;
}

void dffib_FibonacciSeamless(const ULO *dat_ptr, struct fastlisp_data *ret_dat){
  SLO n;
  ret_ival(dat_ptr,&n);  /* read argument from the stack */
  if(noterror()){
    ret_dat->single=1;
    ret_dat->type='I';
    ret_dat->value.ival=_dffib_FibonacciSeamless(n);
  }
  return;
}

/* Register function. */
INSTRUCTION_STRU INSTRUCTION_SET[]={
  {"FIBONACCISEAMLESS",1,'I',(UCH*)"I",&dffib_FibonacciSeamless}
};
const ULO INSTRUCTIONS=sizeof(INSTRUCTION_SET)/sizeof(INSTRUCTION_STRU);
```

Using transparent dataflow semantics, we write a simple trivial implementation of our parallel multithreaded recursive Fibonacci function into the ***fib.flp*** file. Note that we need neither special parallelization directives nor special reserved function names. We have "wrapped" the ***FibonacciSeamless*** function with the ***FibonacciCoordinator*** function in order to limit "unlimited parallelism":

Implementation of Parallel Multithreaded Recursive Fibonacci Using Transparent Dataflow Semantics

```
# fib.flp
# Refer to the BMDFM comprehensive manual for more information.

(defun FibonacciCoordinator
  (progn
    (setq n (+ 0 $1))
    (setq spawn (+ 0 $2))
    (if (< n 2)
      n
      (if (> spawn 0)
        (+ (FibonacciCoordinator (-- n) (>> spawn 1))
           (FibonacciCoordinator (- n 2) (>> spawn 1))
        )
        (+ (FibonacciSeamless (-- n))
           (FibonacciSeamless (- n 2))
        )
      )
    )
  )
)

(defun Fibonacci
  (progn
    (setq n (+ 0 $1))
    (setq spawn (n_cpuproc))
    (FibonacciCoordinator n spawn)
  )
)

# main() begins here
(setq n (+ 0 $1))
(Fibonacci n)
```

## Running the Tests

We run our tests using the BMDFM single-threaded engine and multithreaded dataflow engine with the following batch shell-script:

```
#!/bin/sh

# Run fib.flp with single-threaded engine and log
fastlisp fib.flp 50 >fib.fastlisp

# Run fib.flp with multithreaded dataflow engine and log
BMDFM1dr fib.flp 50 >fib.BMDFM1dr
```

We tested our recursive Fibonacci on an affordable 128-way SMP x86-64 machine. The Linux OS reported in total 128 2.3GHz available processors (that actually are ***<processors_on_dies>*** multiplied by ***<cores_per_processor_die>*** multiplied by ***<simultaneous_threads_per_core>***):

| Test Application | Single-threaded Control Flow | Multithreaded Dataflow |
|---|---|---|
| **Recursive Fibonacci** (fib.flp 50) | **138sec.** | **1.2sec.** |

We also tested our recursive Fibonacci on the 192-way SMP IBM Power System S822L (8247-22L) based on IBM POWER8 processors. The Linux OS reported in total 192 3.7GHz available processors (that actually are ***<processors_on_dies>*** multiplied by ***<cores_per_processor_die>*** multiplied by ***<simultaneous_threads_per_core>***):

| Test Application | Single-threaded Control Flow | Multithreaded Dataflow |
|---|---|---|
| **Recursive Fibonacci** (fib.flp 50) | **242sec.** | **1.6sec.** |

And finally, in sake of political correctness, we tested our recursive Fibonacci on older parallel hardware too. We took the 256-way SMP Sun SPARC Enterprise T5440 Server based on UltraSPARC-T2+ (Niagara2) processors. The Linux OS reported in total 256 1.6GHz available processors (that actually are ***<processors_on_dies>*** multiplied by ***<cores_per_processor_die>*** multiplied by ***<simultaneous_threads_per_core>***):

| Test Application | Single-threaded Control Flow | Multithreaded Dataflow |
|---|---|---|
| **Recursive Fibonacci** (fib.flp 50) | **923sec.** | **8.2sec.** |

# Appendix: Log Files

The log files are provided in this document for those who are interested in automatic control-flow-to-dataflow code transformations and time measurements:

## cat /proc/cpuinfo

```
processor       : 0
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2849.933
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 0
cpu cores       : 16
apicid          : 0
initial apicid  : 0
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 1
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2821.632
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 1
cpu cores       : 16
apicid          : 2
initial apicid  : 2
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 2
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2784.707
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 2
cpu cores       : 16
apicid          : 4
initial apicid  : 4
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 3
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2818.308
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 3
cpu cores       : 16
apicid          : 6
initial apicid  : 6
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 4
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2836.277
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 4
cpu cores       : 16
apicid          : 8
initial apicid  : 8
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 5
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2810.042
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 5
cpu cores       : 16
apicid          : 10
initial apicid  : 10
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 6
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2825.585
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 6
cpu cores       : 16
apicid          : 12
initial apicid  : 12
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
```

```
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 7
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2828.011
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 7
cpu cores       : 16
apicid          : 14
initial apicid  : 14
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 8
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2838.613
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 8
cpu cores       : 16
apicid          : 16
initial apicid  : 16
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 9
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2709.957
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 9
cpu cores       : 16
apicid          : 18
initial apicid  : 18
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 10
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2712.023
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 10
cpu cores       : 16
apicid          : 20
initial apicid  : 20
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 11
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2788.210
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 11
cpu cores       : 16
apicid          : 22
initial apicid  : 22
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 12
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2836.546
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 12
cpu cores       : 16
apicid          : 24
initial apicid  : 24
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 13
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2808.156
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 13
cpu cores       : 16
apicid          : 26
initial apicid  : 26
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 14
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2826.125
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 14
cpu cores       : 16
apicid          : 28
initial apicid  : 28
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
```

```
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 15
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2829.179
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 15
cpu cores       : 16
apicid          : 30
initial apicid  : 30
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 16
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2830.078
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 0
cpu cores       : 16
apicid          : 64
initial apicid  : 64
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 17
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2856.402
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 1
cpu cores       : 16
apicid          : 66
initial apicid  : 66
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 18
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2819.207
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 2
cpu cores       : 16
apicid          : 68
initial apicid  : 68
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 19
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2801.867
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 3
cpu cores       : 16
apicid          : 70
initial apicid  : 70
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 20
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2756.226
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 4
cpu cores       : 16
apicid          : 72
initial apicid  : 72
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 21
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2809.144
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 5
cpu cores       : 16
apicid          : 74
initial apicid  : 74
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 22
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2821.273
cache size      : 46080 KB
physical id     : 1
```

```
siblings        : 32
core id         : 6
cpu cores       : 16
apicid          : 76
initial apicid  : 76
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 23
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2826.035
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 7
cpu cores       : 16
apicid          : 78
initial apicid  : 78
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 24
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2828.460
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 8
cpu cores       : 16
apicid          : 80
initial apicid  : 80
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 25
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2828.730
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 9
cpu cores       : 16
apicid          : 82
initial apicid  : 82
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 26
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2821.902
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 10
cpu cores       : 16
apicid          : 84
initial apicid  : 84
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 27
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2816.601
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 11
cpu cores       : 16
apicid          : 86
initial apicid  : 86
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 28
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2797.285
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 12
cpu cores       : 16
apicid          : 88
initial apicid  : 88
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 29
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2820.464
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 13
cpu cores       : 16
apicid          : 90
initial apicid  : 90
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 30
vendor_id       : GenuineIntel
```

```
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2833.941
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 14
cpu cores       : 16
apicid          : 92
initial apicid  : 92
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 31
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2826.574
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 15
cpu cores       : 16
apicid          : 94
initial apicid  : 94
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 32
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1581.789
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 0
cpu cores       : 16
apicid          : 128
initial apicid  : 128
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 33
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1524.378
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 1
cpu cores       : 16
apicid          : 130
initial apicid  : 130
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 34
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1564.539
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 2
cpu cores       : 16
apicid          : 132
initial apicid  : 132
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 35
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1528.960
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 3
cpu cores       : 16
apicid          : 134
initial apicid  : 134
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 36
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1545.402
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 4
cpu cores       : 16
apicid          : 136
initial apicid  : 136
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 37
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1619.703
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 5
cpu cores       : 16
apicid          : 138
initial apicid  : 138
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
```

```
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 38
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1526.535
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 6
cpu cores       : 16
apicid          : 140
initial apicid  : 140
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 39
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1555.285
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 7
cpu cores       : 16
apicid          : 142
initial apicid  : 142
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 40
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1562.742
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 8
cpu cores       : 16
apicid          : 144
initial apicid  : 144
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 41
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1556.273
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 9
cpu cores       : 16
apicid          : 146
initial apicid  : 146
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 42
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1565.886
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 10
cpu cores       : 16
apicid          : 148
initial apicid  : 148
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 43
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1574.691
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 11
cpu cores       : 16
apicid          : 150
initial apicid  : 150
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 44
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1542.347
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 12
cpu cores       : 16
apicid          : 152
initial apicid  : 152
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 45
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1513.328
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 13
cpu cores       : 16
apicid          : 154
initial apicid  : 154
fpu             : yes
fpu_exception   : yes
```

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cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 46
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1554.566
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 14
cpu cores       : 16
apicid          : 156
initial apicid  : 156
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 47
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1599.398
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 15
cpu cores       : 16
apicid          : 158
initial apicid  : 158
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 48
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1611.257
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 0
cpu cores       : 16
apicid          : 192
initial apicid  : 192
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 49
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1956.886
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 1
cpu cores       : 16
apicid          : 194
initial apicid  : 194
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 50
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1619.523
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 2
cpu cores       : 16
apicid          : 196
initial apicid  : 196
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 51
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1706.492
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 3
cpu cores       : 16
apicid          : 198
initial apicid  : 198
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 52
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2738.886
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 4
cpu cores       : 16
apicid          : 200
initial apicid  : 200
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 53
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1640.367
cache size      : 46080 KB
```

```
physical id     : 3
siblings        : 32
core id         : 5
cpu cores       : 16
apicid          : 202
initial apicid  : 202
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 54
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1635.425
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 6
cpu cores       : 16
apicid          : 204
initial apicid  : 204
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 55
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1605.867
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 7
cpu cores       : 16
apicid          : 206
initial apicid  : 206
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 56
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1602.722
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 8
cpu cores       : 16
apicid          : 208
initial apicid  : 208
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 57
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1587.628
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 9
cpu cores       : 16
apicid          : 210
initial apicid  : 210
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 58
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1641.265
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 10
cpu cores       : 16
apicid          : 212
initial apicid  : 212
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 59
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1559.328
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 11
cpu cores       : 16
apicid          : 214
initial apicid  : 214
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 60
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1653.484
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 12
cpu cores       : 16
apicid          : 216
initial apicid  : 216
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 61
```

```
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1649.531
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 13
cpu cores       : 16
apicid          : 218
initial apicid  : 218
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 62
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1603.261
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 14
cpu cores       : 16
apicid          : 220
initial apicid  : 220
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 63
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1552.230
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 15
cpu cores       : 16
apicid          : 222
initial apicid  : 222
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 64
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2852.000
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 0
cpu cores       : 16
apicid          : 1
initial apicid  : 1
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 65
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2804.742
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 1
cpu cores       : 16
apicid          : 3
initial apicid  : 3
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 66
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2813.457
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 2
cpu cores       : 16
apicid          : 5
initial apicid  : 5
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 67
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2822.531
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 3
cpu cores       : 16
apicid          : 7
initial apicid  : 7
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 68
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2840.769
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 4
cpu cores       : 16
apicid          : 9
initial apicid  : 9
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
```

```
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 69
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2820.734
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 5
cpu cores       : 16
apicid          : 11
initial apicid  : 11
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 70
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2821.273
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 6
cpu cores       : 16
apicid          : 13
initial apicid  : 13
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 71
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2821.812
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 7
cpu cores       : 16
apicid          : 15
initial apicid  : 15
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 72
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2841.218
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 8
cpu cores       : 16
apicid          : 17
initial apicid  : 17
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 73
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2829.269
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 9
cpu cores       : 16
apicid          : 19
initial apicid  : 19
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 74
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2831.335
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 10
cpu cores       : 16
apicid          : 21
initial apicid  : 21
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 75
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2829.449
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 11
cpu cores       : 16
apicid          : 23
initial apicid  : 23
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 76
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2822.710
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 12
cpu cores       : 16
apicid          : 25
initial apicid  : 25
```

```
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 77
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2827.742
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 13
cpu cores       : 16
apicid          : 27
initial apicid  : 27
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 78
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2826.304
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 14
cpu cores       : 16
apicid          : 29
initial apicid  : 29
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 79
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2831.246
cache size      : 46080 KB
physical id     : 0
siblings        : 32
core id         : 15
cpu cores       : 16
apicid          : 31
initial apicid  : 31
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4600.07
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 80
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2828.371
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 0
cpu cores       : 16
apicid          : 65
initial apicid  : 65
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 81
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2797.464
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 1
cpu cores       : 16
apicid          : 67
initial apicid  : 67
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 82
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2815.882
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 2
cpu cores       : 16
apicid          : 69
initial apicid  : 69
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 83
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2829.269
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 3
cpu cores       : 16
apicid          : 71
initial apicid  : 71
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 84
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
```

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cpu MHz         : 2833.761
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 4
cpu cores       : 16
apicid          : 73
initial apicid  : 73
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 85
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2822.171
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 5
cpu cores       : 16
apicid          : 75
initial apicid  : 75
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 86
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2841.128
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 6
cpu cores       : 16
apicid          : 77
initial apicid  : 77
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 87
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2833.132
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 7
cpu cores       : 16
apicid          : 79
initial apicid  : 79
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 88
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2830.707
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 8
cpu cores       : 16
apicid          : 81
initial apicid  : 81
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 89
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2831.695
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 9
cpu cores       : 16
apicid          : 83
initial apicid  : 83
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 90
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2824.867
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 10
cpu cores       : 16
apicid          : 85
initial apicid  : 85
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 91
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2823.968
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 11
cpu cores       : 16
apicid          : 87
initial apicid  : 87
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:
```

```
processor       : 92
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2804.652
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 12
cpu cores       : 16
apicid          : 89
initial apicid  : 89
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 93
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2821.812
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 13
cpu cores       : 16
apicid          : 91
initial apicid  : 91
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 94
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2834.031
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 14
cpu cores       : 16
apicid          : 93
initial apicid  : 93
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 95
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2828.371
cache size      : 46080 KB
physical id     : 1
siblings        : 32
core id         : 15
cpu cores       : 16
apicid          : 95
initial apicid  : 95
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4843.33
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 96
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1576.039
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 0
cpu cores       : 16
apicid          : 129
initial apicid  : 129
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 97
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1506.140
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 1
cpu cores       : 16
apicid          : 131
initial apicid  : 131
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 98
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1535.070
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 2
cpu cores       : 16
apicid          : 133
initial apicid  : 133
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 99
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1556.812
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 3
cpu cores       : 16
apicid          : 135
initial apicid  : 135
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
```

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eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 100
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1534.351
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 4
cpu cores       : 16
apicid          : 137
initial apicid  : 137
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 101
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1610.449
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 5
cpu cores       : 16
apicid          : 139
initial apicid  : 139
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 102
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1536.328
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 6
cpu cores       : 16
apicid          : 141
initial apicid  : 141
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 103
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1557.710
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 7
cpu cores       : 16
apicid          : 143
initial apicid  : 143
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 104
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1551.601
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 8
cpu cores       : 16
apicid          : 145
initial apicid  : 145
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 105
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1535.160
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 9
cpu cores       : 16
apicid          : 147
initial apicid  : 147
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 106
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1551.421
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 10
cpu cores       : 16
apicid          : 149
initial apicid  : 149
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 107
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1584.664
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 11
cpu cores       : 16
apicid          : 151
```

```
initial apicid  : 151
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 108
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1566.335
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 12
cpu cores       : 16
apicid          : 153
initial apicid  : 153
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 109
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1536.148
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 13
cpu cores       : 16
apicid          : 155
initial apicid  : 155
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 110
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1538.753
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 14
cpu cores       : 16
apicid          : 157
initial apicid  : 157
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 111
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1580.351
cache size      : 46080 KB
physical id     : 2
siblings        : 32
core id         : 15
cpu cores       : 16
apicid          : 159
initial apicid  : 159
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.72
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 112
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 2185.539
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 0
cpu cores       : 16
apicid          : 193
initial apicid  : 193
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 113
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1578.195
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 1
cpu cores       : 16
apicid          : 195
initial apicid  : 195
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 114
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1599.218
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 2
cpu cores       : 16
apicid          : 197
initial apicid  : 197
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 115
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
```

```
microcode       : 0x9
cpu MHz         : 1672.531
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 3
cpu cores       : 16
apicid          : 199
initial apicid  : 199
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 116
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1585.832
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 4
cpu cores       : 16
apicid          : 201
initial apicid  : 201
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 117
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1640.906
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 5
cpu cores       : 16
apicid          : 203
initial apicid  : 203
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 118
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1630.035
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 6
cpu cores       : 16
apicid          : 205
initial apicid  : 205
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 119
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1597.421
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 7
cpu cores       : 16
apicid          : 207
initial apicid  : 207
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 120
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1588.167
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 8
cpu cores       : 16
apicid          : 209
initial apicid  : 209
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 121
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1593.019
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 9
cpu cores       : 16
apicid          : 211
initial apicid  : 211
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 122
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1648.992
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 10
cpu cores       : 16
apicid          : 213
initial apicid  : 213
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
```

```
power management:

processor       : 123
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1564.808
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 11
cpu cores       : 16
apicid          : 215
initial apicid  : 215
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 124
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1641.445
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 12
cpu cores       : 16
apicid          : 217
initial apicid  : 217
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 125
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1647.464
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 13
cpu cores       : 16
apicid          : 219
initial apicid  : 219
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 126
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1612.785
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 14
cpu cores       : 16
apicid          : 221
initial apicid  : 221
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:

processor       : 127
vendor_id       : GenuineIntel
cpu family      : 6
model           : 63
model name      : Intel(R) Xeon(R) CPU E7-8880 v3 @ 2.30GHz
stepping        : 4
microcode       : 0x9
cpu MHz         : 1567.144
cache size      : 46080 KB
physical id     : 3
siblings        : 32
core id         : 15
cpu cores       : 16
apicid          : 223
initial apicid  : 223
fpu             : yes
fpu_exception   : yes
cpuid level     : 13
wp              : yes
flags           : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ht syscall nx pdpe1gb rdtscp lm
constant_tsc arch_perfmon rep_good nopl xtopology nonstop_tsc aperfmperf
eagerfpu pni pclmulqdq monitor est ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic
movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm
abm ida fsgsbase bmi1 hle avx2 smep bmi2 erms invpcid rtm xsaveopt
bogomips        : 4845.77
clflush size    : 64
cache_alignment : 64
address sizes   : 46 bits physical, 48 bits virtual
power management:
```

# fib.fastlisp

```
Current termcap settings:
  TERM_TYPE=`xterm'; LINES_TERM=`51'; COLUMNS_TERM=`109';
  CLRSCR_TERM=`\e[H\e[2J'; REVERSE_TERM=`\e[7m'; BLINK_TERM=`\e[5m';
  BOLD_TERM=`\e[1m'; NORMAL_TERM=`\e[0m'; HIDECURSOR_TERM=`\e[?25l';
  SHOWCURSOR_TERM=`\e[?12l\e[?25h'; GOTOCURSOR_TERM=`\e[%i%d;%dH'.
Checking whether the `fib.flp' file is already precompiled...
Reading the `fib.flp' source FastLisp file...
*** Resetting time counters (first null assignment)... ***
Modifying the FastLisp code (PATTERN No# 1)...
  (PROGN <FastLisp_prog>)
Checking the syntax of the source FastLisp file...
Modifying the FastLisp code (PATTERN No# 2)...
  (PROGN {(SETQ <termcap_var> <termcap_val>) }<FastLisp_prog>)
Modifying the FastLisp code (PATTERN No# 3)...
  (PROGN {(SETQ $<arg_numb> <arg_val>) }<FastLisp_prog>)
Squeezing the nested source PROGN statements...
  Redundant nested source PROGN statements removed: 2.
Looking for uninitialized variables/arrays in the FastLisp code...
Resolving data types in the FastLisp code...
```

```
(PROGN
  (SETQ@I $1 50)
  (SETQ@S TERM_TYPE@S "xterm")
  (SETQ@I LINES_TERM@I 51)
  (SETQ@I COLUMNS_TERM@I 109)
  (SETQ@S CLRSCR_TERM@S "\e[H\e[2J")
  (SETQ@S REVERSE_TERM@S "\e[7m")
  (SETQ@S BLINK_TERM@S "\e[5m")
  (SETQ@S BOLD_TERM@S "\e[1m")
  (SETQ@S NORMAL_TERM@S "\e[0m")
  (SETQ@S HIDECURSOR_TERM@S "\e[?25l")
  (SETQ@S SHOWCURSOR_TERM@S "\e[?12l\e[?25h")
  (SETQ@S GOTOCURSOR_TERM@S "\e[%i%d;%dH")
  (DEFUN
    FIBONACCICOORDINATOR
    (PROGN
      (SETQ@I N@I (+ 0 $1))
      (SETQ@I SPAWN@I (+ 0 $2))
      (IF@J
        (<@I N@I 2)
        N@I
        (IF@J
          (>@I SPAWN@I 0)
          (+@J
            (FIBONACCICOORDINATOR (--@J N@I) (>>@J SPAWN@I 1))
            (FIBONACCICOORDINATOR (-@J N@I 2) (>>@J SPAWN@I 1))
          )
          (+@J
            (FIBONACCISEAMLESS@J (--@J N@I))
            (FIBONACCISEAMLESS@J (-@J N@I 2))
          )
        )
      )
    )
  )
  (DEFUN
    FIBONACCI
    (PROGN
      (SETQ@I N@I (+ 0 $1))
      (SETQ@I SPAWN@I (N_CPUPROC))
      (FIBONACCICOORDINATOR N@I SPAWN@I)
    )
  )
  (SETQ@I N@I (+@J 0 $1))
  (FIBONACCI N@I)
)
```

```
(PROGN (SETQ@I $1 50) (SETQ@S TERM_TYPE@S "xterm") (SETQ@I LINES_TERM@I 51) (SE
TQ@I COLUMNS_TERM@I 109) (SETQ@S CLRSCR_TERM@S "\e[H\e[2J") (SETQ@S REVERSE_TER
M@S "\e[7m") (SETQ@S BLINK_TERM@S "\e[5m") (SETQ@S BOLD_TERM@S "\e[1m") (SETQ@S
 NORMAL_TERM@S "\e[0m") (SETQ@S HIDECURSOR_TERM@S "\e[?25l") (SETQ@S SHOWCURSOR
_TERM@S "\e[?12l\e[?25h") (SETQ@S GOTOCURSOR_TERM@S "\e[%i%d;%dH") (DEFUN FIBON
ACCICOORDINATOR (PROGN (SETQ@I N@I (+ 0 $1)) (SETQ@I SPAWN@I (+ 0 $2)) (IF@J (<
```

```
@I N@I 2) N@I (IF@J (>@I SPAWN@I 0) (+@J (FIBONACCICOORDINATOR (--@J N@I) (>>@J
 SPAWN@I 1)) (FIBONACCICOORDINATOR (-@J N@I 2) (>>@J SPAWN@I 1))) (+@J (FIBONAC
CISEAMLESS@J (--@J N@I)) (FIBONACCISEAMLESS@J (-@J N@I 2)))))))) (DEFUN FIBONACC
I (PROGN (SETQ@I N@I (+ 0 $1)) (SETQ@I SPAWN@I (N_CPUPROC)) (FIBONACCICOORDINAT
OR N@I SPAWN@I))) (SETQ@I N@I (+@J 0 $1)) (FIBONACCI N@I))
--------------------------------------------------------------------------------
*You may recompile the `fastlisp' with commented `#define _NOISY_MODE_'
 to disable print of the FastLisp code.
Compiling the Global FastLisp function source code (Pass One)...
Compiled Global function bytecode size is 56bytes.
--------------------------------------------------------------------------------
 D5 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  T 00
 00 00 00 00 00 00 01 00 00 00 00 00 00 00 01 00 00 00 00 00 00 00  Z 00 00 00
 00 00 00 00
--------------------------------------------------------------------------------
*You may recompile the `fastlisp' with commented `#define _NOISY_MODE1_'
 to disable print of the compiled Global function bytecode.
Compiling the FastLisp source code (Pass One)...
Compiled bytecode size is 1976bytes.
--------------------------------------------------------------------------------
  U  H 00 00 00 00 00 0D 00 00 00 00 00 00 00 02 00 00 00 00 00 00 00 00 02 00
 00 00 00 00 00  m 00 00 00 00 00 00 00 D5 01 00 00 00 00 00 00 04 00 00 00 00
 00 00 00 00 00 00 00 00 00 00 00 00 00  T 00 00 00 00 00 00 00 03 00 00 00 00
 00 00 03 00 00 00 00 00 00 00 0C 00 00 00 00 00 00 00 15 00 00 00 00 00 00 00
 D4 04 00 00 00 00 00 00 02 00 00 00 00 00 00 00 01 00 00 00 00 00 00 00  T BC
 00 00 00 00 00 00 02 00 00 00 00 00 00 00 03 00 00 00 00 00 00 00  I 00 00 00
 00 00 00 00 00 00 00 00 00 00 00  V 00 00 00 00 00 00 00 00 00 00 00 00 00 00
 00 00 D4 04 00 00 00 00 00 00 03 00 00 00 00 00 00 00 01 00 00 00 00 00 00 00
  T BC 00 00 00 00 00 00 02 00 00 00 00 00 00 00 03 00 00 00 00 00 00 00  I 00
 00 00 00 00 00 00 00 00 00 00 00 00 00  V 00 00 00 00 00 00 00 01 00 00 00 00
 00 00 00 00 D4 1C 00 00 00 00 00 00 03 00 00 00 00 00 00 00 09 00 00 00 00 00
 00 00 0A 00 00 00 00 00 00 00 D4  x 00 00 00 00 00 02 00 00 00 00 00 00 00 00
 03 00 00 00 00 00 00 00  i 00 00 00 00 00 00 00 02 00 00 00 00 00 00 00  I 00
 00 00 00 00 00 00 02 00 00 00 00 00 00 00  i 00 00 00 00 00 00 00 02 00 00 00
 00 00 00 00 D4 1C 00 00 00 00 00 00 03 00 00 00 00 00 00 00 09 00 00 00 00 00
 00 00  . 00 00 00 00 00 00 00 D4 80 00 00 00 00 00 00 02 00 00 00 00 00 00 00
 03 00 00 00 00 00 00 00  i 00 00 00 00 00 00 00 03 00 00 00 00 00 00 00  I 00
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 D4 BC 00 00 00 00 00 00 02 00 00
 00 00 00 00 11 00 00 00 00 00 00 00 00  L 18 00 00 00 00 00 00 00 00 00 00 00
 00 00 02 00 00 00 00 00 00 00 02 00 00 00 00 00 00 00 05 00 00 00 00 00 00 00
 D4 F4 00 00 00 00 00 00 01 00 00 00 00 00 00 00  i 00 00 00 00 00 00 00 02 00
 00 00 00 00 00 D4 \( 01 00 00 00 00 00 00 02 00 00 00 00 00 00 03 00 00 00 00
 00 00 00 00  i 00 00 00 00 00 00 00 03 00 00 00 00 00 00 00  I 00 00 00 00 00
 00 00 01 00 00 00 00 00 00 00  L 18 00 00 00 00 00 00 00 00 00 00 00 00 00 00
 02 00 00 00 00 00 00 00 02 00 00 00 00 00 00 00 08 00 00 00 00 00 00 00 D4 C4
 00 00 00 00 00 00 02 00 00 00 00 00 00 00 03 00 00 00 00 00 00 00  i 00 00 00
 00 00 00 00 02 00 00 00 00 00 00 00  I 00 00 00 00 00 00 00 02 00 00 00 00 00
 00 00 D4 \( 01 00 00 00 00 00 00 02 00 00 00 00 00 00 03 00 00 00 00 00 00 00
  i 00 00 00 00 00 00 00 03 00 00 00 00 00 00 00  I 00 00 00 00 00 00 00 01 00
 00 00 00 00 00 00 D4 BC 00 00 00 00 00 00 02 00 00 00 00 00 00 00 07 00 00 00
 00 00 00 00  t B4 03 00 00 00 00 00 00 01 00 00 00 00 00 00 00 D4 F4 00 00 00
 00 00 01 00 00 00 00 00 00 00  i 00 00 00 00 00 00 00 02 00 00 00 00 00 00 00
  t B4 03 00 00 00 00 00 01 00 00 00 00 00 00 00 D4 C4 00 00 00 00 00 00 02 00
 00 00 00 00 00 03 00 00 00 00 00 00 00  i 00 00 00 00 00 00 00 02 00 00 00 00
 00 00 00 00  I 00 00 00 00 00 00 00 02 00 00 00 00 00 00 00 D5 01 00 00 00 00
 00 00 03 00 00 00 00 00 00 00 00 00 00 00 00 00  T 00 00 00 00 00 00 00 00 00
 03 00 00 00 00 00 00 00 03 00 00 00 00 00 00 00 0C 00 00 00 00 00 00 00 0F 00
 00 00 00 00 00 D4 04 00 00 00 00 00 00 01 00 00 00 00 00 00 00 01 00 00 00 00
 00 00 00 00  T BC 00 00 00 00 00 00 02 00 00 00 00 00 00 00 03 00 00 00 00 00
 00 00  I 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  V 00 00 00 00 00 00 00
 00 00 00 00 00 00 00 00 D4 04 00 00 00 00 00 00 02 00 00 00 00 00 00 00 01 00
 00 00 00 00 00 00  T D0 02 00 00 00 00 00 00  L 18 00 00 00 00 00 00 00 00 00
 00 00 00 00 02 00 00 00 00 00 00 00 02 00 00 00 00 00 00 00 03 00 00 00 00 00
 00 00  P 00 00 00 00 00 00 00 01 00 00 00 00 00 00 00  P 00 00 00 00 00 00 00
 02 00 00 00 00 00 00 00  T 00 00 00 00 00 00 00 0E 00 00 00 00 00 00 00 0E 00
 00 00 00 00 00 12 00 00 00 00 00 00 00 17 00 00 00 00 00 00 00 1B 00 00 00 00
 00 00 00 1F 00 00 00 00 00 00 00  $ 00 00 00 00 00 00 00 \) 00 00 00 00 00 00
 00 00  . 00 00 00 00 00 00 00  3 00 00 00 00 00 00 00  8 00 00 00 00 00 00 00
  = 00 00 00 00 00 00 00  C 00 00 00 00 00 00 00  I 00 00 00 00 00 00 00  R 00
 00 00 00 00 00 00 D4 04 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 00 00 00
 00 00 00 00  I 00 00 00 00 00 00 00 00  2 00 00 00 00 00 00 00 D4 05 00 00 00
 00 00 01 00 00 00 00 00 00 00 01 00 00 00 00 00 00 00  S 00 00 00 00 00 00 00
 05 00 00 00 00 00 00 00  x  t  e  r  m 00 00 00 D4 04 00 00 00 00 00 00 02 00
 00 00 00 00 00 00 01 00 00 00 00 00 00 00  I 00 00 00 00 00 00 00  3 00 00 00
 00 00 00 D4 04 00 00 00 00 00 00 03 00 00 00 00 00 00 00 01 00 00 00 00 00 00
 00 00  I 00 00 00 00 00 00 00 00  m 00 00 00 00 00 00 00 D4 05 00 00 00 00 00
 04 00 00 00 00 00 00 00 01 00 00 00 00 00 00 00  S 00 00 00 00 00 00 00 07 00
 00 00 00 00 00 00 1B  [  H 1B  [  2  J 00 D4 05 00 00 00 00 00 00 05 00 00 00
 00 00 00 00 01 00 00 00 00 00 00 00  S 00 00 00 00 00 00 00 04 00 00 00 00 00
 00 00 1B  [  7  m 00 00 00 00 D4 05 00 00 00 00 00 00 06 00 00 00 00 00 00 00
 01 00 00 00 00 00 00 00  S 00 00 00 00 00 00 00 04 00 00 00 00 00 00 00 1B  [
  5  m 00 00 00 00 D4 05 00 00 00 00 00 00 07 00 00 00 00 00 00 00 01 00 00 00
 00 00 00 00  S 00 00 00 00 00 00 00 04 00 00 00 00 00 00 00 1B  [  1  m 00 00
 00 00 D4 05 00 00 00 00 00 00 08 00 00 00 00 00 00 00 01 00 00 00 00 00 00 00
  S 00 00 00 00 00 00 00 04 00 00 00 00 00 00 00 1B  [  0  m 00 00 00 00 D4 05
 00 00 00 00 00 00 00 09 00 00 00 00 00 00 00 01 00 00 00 00 00 00 00  S 00 00 00
 00 00 00 00 06 00 00 00 00 00 00 00 1B  [  ?  2  5  l 00 00 D4 05 00 00 00 00
 00 00 0A 00 00 00 00 00 00 00 01 00 00 00 00 00 00 00  S 00 00 00 00 00 00 00
 0C 00 00 00 00 00 00 00 1B  [  ?  1  2  l 1B  [  ?  2  5  h 00 00 00 00 D4 05
 00 00 00 00 00 00 00 0B 00 00 00 00 00 00 00 01 00 00 00 00 00 00 00  S 00 00 00
 00 00 00 00 0A 00 00 00 00 00 00 00 1B  [  %  i  %  d  ;  %  d  H 00 00 00 00
 00 00  @ 84  @ 00 00 00 00 00 00 00 0C 00 00 00 00 00 00 00 00 00 00 00 00 00
  0  7  @ 00 00 00 00 00 F0 E4 D2 00 00 00 00 00 00 00 E5 D2 00 00 00 00 00 E0  +
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
--------------------------------------------------------------------------------
*You may recompile the `fastlisp' with commented `#define _NOISY_MODE1_'
 to disable print of the Linked Global function bytecode.
Linking the compiled Global function bytecode (Pass Two)...
--------------------------------------------------------------------------------
  `  DB D2 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  `  ,
  @ 00 00 00 00 00 01 00 00 00 00 00 00 00  x DB D2 00 00 00 00 00  0  ,  @ 00
 00 00 00 00
--------------------------------------------------------------------------------
*You may recompile the `fastlisp' with commented `#define _NOISY_MODE1_'
 to disable print of the Linked Global function bytecode.
Linking the compiled bytecode (Pass Two)...
--------------------------------------------------------------------------------
 08 E2 D2 00 00 00 00 00 0D 00 00 00 00 00 00 00 02 00 00 00 00 00 00 00 B0 DD
 D2 00 00 00 00 00 10 E1 D2 00 00 00 00 00 C8 DD D2 00 00 00 00 00 04 00 00 00
 00 00 00 00 00 00 00 00 00 00 00 00 00 00  `  ,  @ 00 00 00 00 00 03 00 00 00
 00 00 F0 DD D2 00 00 00 00 00 00  @ DE D2 00 00 00 00 00 90 DE D2 00 00 00 00
  @ 84  @ 00 00 00 00 00 02 00 00 00 00 00 00 00 08 DE D2 00 00 00 00 00  p 10
  A 00 00 00 00 00 __ DE D2 00 00 00 00 00 00  0 DE D2 00 00 00 00 00 E0  +  @ 00
 00 00 00 00 00 00 00 00 00 00 00 00 00 E0 FE  @ 00 00 00 00 00 00 00 00 00 00
 00 00  @ 84  @ 00 00 00 00 00 00 03 00 00 00 00 00 00 00  X DE D2 00 00 00 00 00
  p 10  A 00 00 00 00 00  p DE D2 00 00 00 00 00 00 80 DE D2 00 00 00 00 00 E0  +
  @ 00 00 00 00 00 00 00 00 00 00 00 00 00 E0 FE  @ 00 00 00 00 00 00 01 00 00 00
 00 00 00 00 B0  ,  @ 00 00 00 00 00 00 B0 DE D2 00 00 00 00 00 E8 DE D2 00 00 00
 00 00 F8 DE D2 00 00 00 00 00 00 00  0  @ 00 00 00 00 00 00 C8 DE D2 00 00 00 00 00
 D8 DE D2 00 00 00 00 00 00 D0 FD  @ 00 00 00 00 00 00 00 02 00 00 00 00 00 00 E0  +
  @ 00 00 00 00 00 02 00 00 00 00 00 00 00 00 00 00 D0 FD  @ 00 00 00 00 00 00 02 00 00 00
 00 00 00 00 B0  ,  @ 00 00 00 00 00 00 18 DF D2 00 00 00 00 00 00 00  P DF D2 00 00 00 00 00
 00 00 80 E0 D2 00 00 00 00 00 00  P  1  @ 00 00 00 00 00 00  0 DF D2 00 00 00 00 00 00
  @ DF D2 00 00 00 00 00 00 D0 FD  @ 00 00 00 00 00 00 03 00 00 00 00 00 00 00 E0  +
  @ 00 00 00 00 00 00 00 00 00 00 00 00 00  0  7  @ 00 00 00 00 00 00 00  h DF D2 00
 00 00 00 00 E8 DF D2 00 00 00 00 00 00 __  j  @ 00 00 00 00 00 B0 DD D2 00 00 00 00
 00 00 02 00 00 00 00 00 00 00 00 00 90 DF D2 00 00 00 00 00 B0 DF D2 00 00 00 00 00
  @  9  @ 00 00 00 00 00 A0 DF D2 00 00 00 00 00 D0 FD  @ 00 00 00 00 00 02 00 00
 00 00 00 00 00 00 `  ;  @ 00 00 00 00 00 C8 DF D2 00 00 00 00 00 D8 DF D2 00
 00 00 00 00 D0 FD  @ 00 00 00 00 00 03 00 00 00 00 00 00 00 E0  +  @ 00 00 00 00
 00 00 01 00 00 00 00 00 00 00 __  j  @ 00 00 00 00 00 B0 DD D2 00 00 00 00 00
 02 00 00 00 00 00 00 00 10 E0 D2 00 00 00 00 00  H E0 D2 00 00 00 00 00 A0  7
  @ 00 00 00 00 00 \( E0 D2 00 00 00 00 00  8 E0 D2 00 00 00 00 00 D0 FD  @ 00
 00 00 00 00 02 00 00 00 00 00 00 00 00 00 E0  +  @ 00 00 00 00 00 02 00 00 00 00
 00 00  `  ;  @ 00 00 00 00 00  ` E0 D2 00 00 00 00 00  p E0 D2 00 00 00 00 00
 D0 FD  @ 00 00 00 00 00 03 00 00 00 00 00 00 00 E0  +  @ 00 00 00 00 00 01 00
 00 00 00 00 00 00  0  7  @ 00 00 00 00 00 98 E0 D2 00 00 00 00 00 C8 E0 D2 00
 00 00 00 00 80  v  D 00 00 00 00 00 A8 E0 D2 00 00 00 00 00  @  9  @ 00 00 00
 00 00 B8 E0 D2 00 00 00 00 00 D0 FD  @ 00 00 00 00 00 02 00 00 00 00 00 00 00
 80  v  D 00 00 00 00 00 D8 E0 D2 00 00 00 00 00 A0  7  @ 00 00 00 00 00 F0 E0
 D2 00 00 00 00 00 00 E1 D2 00 00 00 00 00 D0 FD  @ 00 00 00 00 00 02 00 00 00
 00 00 00 00 E0  +  @ 00 00 00 00 00 02 00 00 00 00 00 00 00 \( E1 D2 00 00 00 00
 00 00 03 00 00 00 00 00 00 00 00 00 00 00 00 00  `  ,  @ 00 00 00 00 00 00 00
 03 00 00 00 00 00 00 00  P E1 D2 00 00 00 00 00 A0 E1 D2 00 00 00 00 00 C0 E1
 D2 00 00 00 00 00 00  @ 84  @ 00 00 00 00 00 01 00 00 00 00 00 00 00  h E1 D2 00
 00 00 00 00  p 10  A 00 00 00 00 00 80 E1 D2 00 00 00 00 00 90 E1 D2 00 00 00
 00 00 E0  +  @ 00 00 00 00 00 00 00 00 00 00 00 00 00 E0 FE  @ 00 00 00 00 00
 00 00 00 00 00 00 00  @ 84  @ 00 00 00 00 00 02 00 00 00 00 00 00 00 B8 E1
 D2 00 00 00 00 00 A0  @  @ 00 00 00 00 00 00 __  j  @ 00 00 00 00 00 B0 DD D2 00
 00 00 00 00 02 00 00 00 00 00 00 00 E8 E1 D2 00 00 00 00 00 F8 E1 D2 00 00 00
 00 00 __ FA  @ 00 00 00 00 00 01 00 00 00 00 00 00 00 __ FA  @ 00 00 00 00 00
 02 00 00 00 00 00 00 00 `  ,  @ 00 00 00 00 00 0E 00 00 00 00 00 00 00 88 E2
 D2 00 00 00 00 00 00 B0 E2 D2 00 00 00 00 00 E0 E2 D2 00 00 00 00 00 08 E3 D2 00
 00 00 00 00  0 E3 D2 00 00 00 00 00  ` E3 D2 00 00 00 00 00 90 E3 D2 00 00 00
 00 00 C0 E3 D2 00 00 00 00 00 F0 E3 D2 00 00 00 00 00 __ E4 D2 00 00 00 00 00
  P E4 D2 00 00 00 00 00 88 E4 D2 00 00 00 00 00 C0 E4 D2 00 00 00 00 00 10 E5
 D2 00 00 00 00 00 00 @ 84  @ 00 00 00 00 00 00 00 00 00 00 00 00 00 A0 E2 D2 00
 00 00 00 00 E0  +  @ 00 00 00 00 00  2 00 00 00 00 00 00 00 F0 82  @ 00 00 00
 00 00 01 00 00 00 00 00 00 00 C8 E2 D2 00 00 00 00 00 00 __  s  @ 00 00 00 00 00
 05 00 00 00 00 00 00 00  x  t  e  r  m 00 00 00  @ 84  @ 00 00 00 00 00 02 00
 00 00 00 00 00 00 F8 E2 D2 00 00 00 00 00 E0  +  @ 00 00 00 00 00  3 00 00 00
 00 00 00 00 00 @ 84  @ 00 00 00 00 00 03 00 00 00 00 00 00 00 __ E3 D2 00 00 00
 00 00 E0  +  @ 00 00 00 00 00  m 00 00 00 00 00 00 00 F0 82  @ 00 00 00 00 00
 04 00 00 00 00 00 00 00 H E3 D2 00 00 00 00 00 __  s  @ 00 00 00 00 00 07 00
 00 00 00 00 00 00 1B  [  H 1B  [  2  J 00 F0 82  @ 00 00 00 00 00 05 00 00 00
 00 00 00 00  x E3 D2 00 00 00 00 00 __  s  @ 00 00 00 00 00 04 00 00 00 00 00
 00 00 1B  [  7  m 00 00 00 00 F0 82  @ 00 00 00 00 00 06 00 00 00 00 00 00 00
A8 E3 D2 00 00 00 00 00 __  s  @ 00 00 00 00 00 04 00 00 00 00 00 00 00 1B  [
  5  m 00 00 00 00 F0 82  @ 00 00 00 00 00 07 00 00 00 00 00 00 00 D8 E3 D2 00
 00 00 00 00 __  s  @ 00 00 00 00 00 04 00 00 00 00 00 00 00 1B  [  1  m 00 00
 00 00 F0 82  @ 00 00 00 00 00 08 00 00 00 00 00 00 00 08 E4 D2 00 00 00 00 00
__  s  @ 00 00 00 00 00 04 00 00 00 00 00 00 00 1B  [  0  m 00 00 00 00 F0 82
  @ 00 00 00 00 00 09 00 00 00 00 00 00 00  8 E4 D2 00 00 00 00 00 __  s  @ 00
 00 00 00 00 06 00 00 00 00 00 00 00 1B  [  ?  2  5  l 00 00 F0 82  @ 00 00 00
 00 00 0A 00 00 00 00 00 00 00  h E4 D2 00 00 00 00 00 __  s  @ 00 00 00 00 00
 0C 00 00 00 00 00 00 00 1B  [  ?  1  2  l 1B  [  ?  2  5  h 00 00 00 00 F0 82
  @ 00 00 00 00 00 0B 00 00 00 00 00 00 00 A0 E4 D2 00 00 00 00 00 __  s  @ 00
 00 00 00 00 0A 00 00 00 00 00 00 00 1B  [  %  i  %  d  ;  %  d  H 00 00 00 00
 00 00  @ 84  @ 00 00 00 00 00 00 00 0C 00 00 00 00 00 00 00 D8 E4 D2 00 00 00 00 00
  0  7  @ 00 00 00 00 00 F0 E4 D2 00 00 00 00 00 00 00 E5 D2 00 00 00 00 00 E0  +
  @ 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 E0 FE  @ 00 00 00 00 00 00 00 00 00 00
 00 00 00 00 __  j  @ 00 00 00 00 00 10 E1 D2 00 00 00 00 00 01 00 00 00 00 00 00
 00 00  0 E5 D2 00 00 00 00 00 __ FA  @ 00 00 00 00 00 0C 00 00 00 00 00 00 00 00
--------------------------------------------------------------------------------
*You may recompile the `fastlisp' with commented `#define _NOISY_MODE1_'
 to disable print of the linked bytecode.
*** Immediate running of the compiled and linked bytecode will start
    here just after the time report!
Time spent to check and prepare the task approx.:
   Used by process: 0.008999sec.
   Used by  system: 0.000000sec.
   Total used time: 8.999000000000E-03sec.
Real absolute time: 9.9279880523688E-03sec.
*** Resetting time counters (second event controlpoint)... ***
================================================================================
12586269025
================================================================================
Time spent to run the task:
   Used by process: 137.122274sec.
   Used by  system: 0.001000sec.
   Total used time: 1.371232740000E+02sec.
Real absolute time: 1.378973873289E+02sec.
```

## BMDFMsrv.cfg

```
# BMDFMsrv.cfg

SHMEM_POOL_SIZE    =8000000000 # Shared memory pool size             [Bytes]
SHMEM_POOL_MNTADDR = 999999999 # ShMemPool mount address (0=auto)
SHMEM_POOL_PERMS   =       432 # ShMemPool permissions (0660=="rw-rw----")
SHMEM_POOL_BANKS   =       300 # Number of banks in pool
POSIX_SEMA4_SYNC   =  RW+Count # Replace None/RW/RW+Count SVR4 with POSIX sema4
ARRAYBLOCK_SIZE    =        80 # Array block size                   [Entities]
OQ_FUNC_ARG_COUNT  =        80 # OQ function argument count         [Entities]

Q_OQ               =      5000 # Operation Queue (OQ) size          [Entities]
Q_DB               =       500 # Data Buffer (DB) size              [Entities]
Q_IORBP            =       100 # I/O Ring Buffer Port (IORBP) size  [Entities]
N_IORBP            =        10 # Number of the IORBPs
N_TRACEPORT        =         5 # Number of the Trace Ports (TPs)

N_CPUPROC          =       300 # Number of the CPU PROCs
N_OQPROC           =       300 # Number of the OQ PROCs
N_IORBPPROC        =       300 # Number of the IORBP PROCs

CPUPROC_MTHREAD    =       Yes # CPU PROC is multithreaded
OQPROC_MTHREAD     =       Yes # OQ PROC is multithreaded
IORBPPROC_MTHREAD  =       Yes # IORBP PROC is multithreaded
BMDFMLDR_MTHREAD   =       Yes # BMDFMldr is multithreaded
```

```
T_STATISTIC         =          1 # Time to scan DFM for statistic     [Seconds]
PROC_HEARTBEATS     =        Yes # Heartbeats for the CPU, OQ && IORBP PROCs
DFSTLHAZARD_DETECT  =        Yes # Detection of dataflow stall hazards
ALLOW_DROP_NONPROD  =         No # Allow dropping nonproductive instructions
PROC_CPU_LOGS       =         No # Logs registration for the CPU && IORBP PROCs
HARD_ARRAY_SYNCHRO  =         No # Hard synchronization of the arrays
EXT_IN_OUT_SYNCHRO  =        Yes # I/O synchronization of external task
OQ_DB_SEM_LIMIT     =          0 # Max number of OQ&&DB semaphores (0=unlim.)

# <EOF>
```

# fib.BMDFMldr

```
Current termcap settings:
  TERM_TYPE=`xterm'; LINES_TERM=`51'; COLUMNS_TERM=`109';
  CLRSCR_TERM=`\e[H\e[2J'; REVERSE_TERM=`\e[7m'; BLINK_TERM=`\e[5m';
  BOLD_TERM=`\e[1m'; NORMAL_TERM=`\e[0m'; HIDECURSOR_TERM=`\e[?251';
  SHOWCURSOR_TERM=`\e[?12l\e[?25h'; GOTOCURSOR_TERM=`\e[%i%d;%dH'.
Reading the `/tmp/.BMDFMsrv' BM_DFM connection file...
Opening the `/tmp/.BMDFMsrv_npipe' BM_DFM named FIFO pipe...
Accessing the BM_DFM Server...
Receiving the Global FastLisp function set from the BM_DFM Server...
Linked Global function bytecode size is 64bytes.
--------------------------------------------------------------------------------
  h  w  [ BC 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  P  U
  @ 00 00 00 00 00 01 00 00 00 00 00 00 00 00 80  w  [ BC 00 00 00 00 D0  T  @ 00
 00 00 00 00 01 00 00 00 00 00 00 00
--------------------------------------------------------------------------------
*You may recompile the `BMDFMldr' with commented `#define _NOISY_MODE1_'
 to disable print of the linked Global function bytecode.
Connection with the BM_DFM Server has been established but not yet registered.
Checking whether the `fib.flp' file is already precompiled...
Reading the `fib.flp' source FastLisp file...
*** Resetting time counters (first null assignment)... ***
Modifying the FastLisp code (PATTERN No# 1)...
  (PROGN <Global_FastLisp_function_set> <FastLisp_prog>)
Checking the syntax of the source FastLisp file...
Modifying the FastLisp code (PATTERN No# 3)...
  (PROGN {(SETQ <termcap_var> <termcap_val>) }<FastLisp_prog>)
Looking for uninitialized variables/arrays in the FastLisp code...
Checking the CODE STYLE RESTRICTIONS for the BM_DFM parallel processing...
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                                             *
*  Summary of the BM_DFM CODE STYLE RESTRICTIONS:                             *
*  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~  *
*                                                                             *
*  o Variable names within the inclusive range of                             *
*    [`TMP__000000000'; `TMP__999999999'] are reserved.                       *
*  o `SHADOW' is the reserved name for a UDF.                                 *
*  o Array names should differ from ordinary variable names.                  *
*  o Every variable should be initialized before use.                         *
*    The following is an example of how to copy an array:                     *
*      ...                                                                    *
*      (arsetq a 0 1)                                                         *
*      (arsetq a 1 5)                                                         *
*      (alsetq b (alindex a 2))    # instead of `(setq b a)'                  *
*      ...                                                                    *
*  o The <step> and <limit> values of a <for> loop should be                  *
*    the integer numeric constants, function arguments or                     *
*    initialized variables which are not changed inside this                  *
*    <for> loop.                                                              *
*  o Second argument of the booleans <or> and <and> should                    *
*    not include any assignments, I/O, conditional/                           *
*    iteration processing and UDF calls.                                      *
*                                                                             *
*  NOTE: Any conventional program can be converted by a                       *
*        formal procedure to the program that is compliant                    *
*        with the above mentioned code style restrictions.                    *
*                                                                             *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*You may recompile BMDFMldr module with commented `#define EXPLAIN_RULE'
 to disable print of the code style restriction rule summary.
Modifying the FastLisp code (PATTERN No# 4)...
  (PROGN {(SETQ $<arg_numb> <arg_val>) }<FastLisp_prog>)
Squeezing the nested source PROGN statements...
  Redundant nested source PROGN statements removed: 2.
Modifying the FastLisp code (PATTERN No# 5)...
  (PROGN (OUTF (PRN_STRING_FMT) (CAT "" <FastLisp_prog>)) "")
Reorganizing the FastLisp code...
Resolving data types in the FastLisp code...
Registering in the BM_DFM Server Task Connection Zone...
Forking up the message queue listener...
Listener engine has been commenced.
The Loader/Listener pair is fully attached by the BM_DFM Server:
  Loader PID=9523, Listener PID=9523, SocketN# is 0.
--------------------------------------------------------------------------------
```

```
(PROGN
  (SETQ@I MAIN:$1 50)
  (SETQ@S MAIN:TERM_TYPE@S "xterm")
  (SETQ@I MAIN:LINES_TERM@I 51)
  (SETQ@I MAIN:COLUMNS_TERM@I 109)
  (SETQ@S MAIN:CLRSCR_TERM@S "\e[H\e[2J")
  (SETQ@S MAIN:REVERSE_TERM@S "\e[7m")
  (SETQ@S MAIN:BLINK_TERM@S "\e[5m")
  (SETQ@S MAIN:BOLD_TERM@S "\e[1m")
  (SETQ@S MAIN:NORMAL_TERM@S "\e[0m")
  (SETQ@S MAIN:HIDECURSOR_TERM@S "\e[?251")
  (SETQ@S MAIN:SHOWCURSOR_TERM@S "\e[?12l\e[?25h")
  (SETQ@S MAIN:GOTOCURSOR_TERM@S "\e[%i%d;%dH")
  (DEFUN
    MAIN:FIBONACCICOORDINATOR
    (PROGN
      (DEFUN
        MAIN:FIBONACCICOORDINATOR:SHADOW
        (PROGN
          (SETQ@I
            MAIN:FIBONACCICOORDINATOR:SHADOW:N@I
            (+ 0 MAIN:FIBONACCICOORDINATOR:SHADOW:$1)
          )
          (SETQ@I
            MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I
            (+ 0 MAIN:FIBONACCICOORDINATOR:SHADOW:$2)
          )
          (IF@J
            MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000004@I
            (SETQ@I
              MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I
              MAIN:FIBONACCICOORDINATOR:SHADOW:N@I
            )
            (PROGN
              (SETQ@I
                MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000003@I
                (>@I MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I 0)
              )
              (IF@J
                MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000003@I
                (PROGN
                  (SETQ@I
                    MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I
                    (MAIN:FIBONACCICOORDINATOR
                      (--@J MAIN:FIBONACCICOORDINATOR:SHADOW:N@I)
                      (>>@J MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I 1)
                    )
                  )
                  (SETQ@I
                    MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I
                    (MAIN:FIBONACCICOORDINATOR
                      (-@J MAIN:FIBONACCICOORDINATOR:SHADOW:N@I 2)
                      (>>@J MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I 1)
                    )
                  )
                  (SETQ@I
                    MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I
                    (+@J
                      MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I
                      MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I
                    )
                  )
                )
                (PROGN
                  (SETQ@I
                    MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I
                    (FIBONACCISEAMLESS@J
                      (--@J MAIN:FIBONACCICOORDINATOR:SHADOW:N@I)
                    )
                  )
                  (SETQ@I
                    MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I
                    (FIBONACCISEAMLESS@J
                      (-@J MAIN:FIBONACCICOORDINATOR:SHADOW:N@I 2)
                    )
                  )
                  (SETQ@I
                    MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I
                    (+@J
                      MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I
                      MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I
                    )
                  )
                )
              )
            )
          )
        )
      )
      (SETQ@I MAIN:FIBONACCICOORDINATOR:N@I (+ 0 MAIN:FIBONACCICOORDINATOR:$1))
      (SETQ@I
        MAIN:FIBONACCICOORDINATOR:SPAWN@I
        (+ 0 MAIN:FIBONACCICOORDINATOR:$2)
      )
      (SETQ@I
        MAIN:FIBONACCICOORDINATOR:TMP__000000004@I
        (<@I MAIN:FIBONACCICOORDINATOR:N@I 2)
      )
      (IF@J
        MAIN:FIBONACCICOORDINATOR:TMP__000000004@I
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:TMP__000000000@I
          MAIN:FIBONACCICOORDINATOR:N@I
        )
        (PROGN
          (SETQ@I
            MAIN:FIBONACCICOORDINATOR:TMP__000000003@I
            (>@I MAIN:FIBONACCICOORDINATOR:SPAWN@I 0)
          )
          (IF@J
            MAIN:FIBONACCICOORDINATOR:TMP__000000003@I
            (PROGN
              (SETQ@I
                MAIN:FIBONACCICOORDINATOR:TMP__000000001@I
                (MAIN:FIBONACCICOORDINATOR:SHADOW
                  (--@J MAIN:FIBONACCICOORDINATOR:N@I)
                  (>>@J MAIN:FIBONACCICOORDINATOR:SPAWN@I 1)
                )
              )
              (SETQ@I
                MAIN:FIBONACCICOORDINATOR:TMP__000000002@I
                (MAIN:FIBONACCICOORDINATOR:SHADOW
                  (-@J MAIN:FIBONACCICOORDINATOR:N@I 2)
                  (>>@J MAIN:FIBONACCICOORDINATOR:SPAWN@I 1)
                )
              )
              (SETQ@I
                MAIN:FIBONACCICOORDINATOR:TMP__000000000@I
                (+@J
                  MAIN:FIBONACCICOORDINATOR:TMP__000000001@I
                  MAIN:FIBONACCICOORDINATOR:TMP__000000002@I
                )
              )
            )
            (PROGN
              (SETQ@I
                MAIN:FIBONACCICOORDINATOR:TMP__000000001@I
                (FIBONACCISEAMLESS@J (--@J MAIN:FIBONACCICOORDINATOR:N@I))
              )
              (SETQ@I
                MAIN:FIBONACCICOORDINATOR:TMP__000000002@I
                (FIBONACCISEAMLESS@J (-@J MAIN:FIBONACCICOORDINATOR:N@I 2))
```

```
              )
              (SETQ@I
                MAIN:FIBONACCICOORDINATOR:TMP__000000000@I
                (+@J
                  MAIN:FIBONACCICOORDINATOR:TMP__000000001@I
                  MAIN:FIBONACCICOORDINATOR:TMP__000000002@I
                )
              )
            )
          )
        )
      )
    )
  )
  (DEFUN
    MAIN:FIBONACCI
    (PROGN
      (SETQ@I MAIN:FIBONACCI:N@I (+ 0 MAIN:FIBONACCI:$1))
      (SETQ@I MAIN:FIBONACCI:SPAWN@I (N_CPUPROC))
      (SETQ@I
        MAIN:FIBONACCI:TMP__000000000@I
        (MAIN:FIBONACCICOORDINATOR MAIN:FIBONACCI:N@I MAIN:FIBONACCI:SPAWN@I)
      )
    )
  )
  (SETQ@I MAIN:N@I (+@J 0 MAIN:$1))
  (SETQ@I MAIN:TMP__000000001 (MAIN:FIBONACCI MAIN:N@I))
  (SETQ@S
    MAIN:TMP__000000001
    (OUTF (PRN_STRING_FMT) (CAT "" MAIN:TMP__000000001))
  )
  (SETQ@S MAIN:TMP__000000000@S "")
)
--------------------------------------------------------------------------------
(PROGN (SETQ@I MAIN:$1 50) (SETQ@S MAIN:TERM_TYPE@S "xterm") (SETQ@I MAIN:LINES
_TERM@I 51) (SETQ@I MAIN:COLUMNS_TERM@I 109) (SETQ@S MAIN:CLRSCR_TERM@S "\e[H\e
[2J") (SETQ@S MAIN:REVERSE_TERM@S "\e[7m") (SETQ@S MAIN:BLINK_TERM@S "\e[5m") (
SETQ@S MAIN:BOLD_TERM@S "\e[1m") (SETQ@S MAIN:NORMAL_TERM@S "\e[0m") (SETQ@S MA
IN:HIDECURSOR_TERM@S "\e[?25l") (SETQ@S MAIN:SHOWCURSOR_TERM@S "\e[?12l\e[?25h"
) (SETQ@S MAIN:GOTOCURSOR_TERM@S "\e[%i%d;%dH") (DEFUN MAIN:FIBONACCICOORDINATO
R (PROGN (DEFUN MAIN:FIBONACCICOORDINATOR:SHADOW (PROGN (SETQ@I MAIN:FIBONACCIC
OORDINATOR:SHADOW:N@I (+ 0 MAIN:FIBONACCICOORDINATOR:SHADOW:$1)) (SETQ@I MAIN:F
IBONACCICOORDINATOR:SHADOW:SPAWN@I (+ 0 MAIN:FIBONACCICOORDINATOR:SHADOW:$2)) (
SETQ@I MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000004@I (<@I MAIN:FIBONACCICOO
RDINATOR:SHADOW:N@I 2)) (IF@J MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000004@I
 (SETQ@I MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I MAIN:FIBONACCICOORDI
NATOR:SHADOW:N@I) (PROGN (SETQ@I MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__00000000
3@I (>@I MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I 0)) (IF@J MAIN:FIBONACCICOORD
INATOR:SHADOW:TMP__000000003@I (PROGN (SETQ@I MAIN:FIBONACCICOORDINATOR:SHADOW:
TMP__000000001@I (MAIN:FIBONACCICOORDINATOR (--@J MAIN:FIBONACCICOORDINATOR:SHA
DOW:N@I) (>>@J MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I 1))) (SETQ@I MAIN:FIBON
ACCICOORDINATOR:SHADOW:TMP__000000002@I (MAIN:FIBONACCICOORDINATOR (-@J MAIN:FI
BONACCICOORDINATOR:SHADOW:N@I 2) (>>@J MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I
 1))) (SETQ@I MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I (+@J MAIN:FIBON
ACCICOORDINATOR:SHADOW:TMP__000000001@I MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__0
00000002@I))) (PROGN (SETQ@I MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I
(FIBONACCISEAMLESS@J (--@J MAIN:FIBONACCICOORDINATOR:SHADOW:N@I))) (SETQ@I MAIN
:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I (FIBONACCISEAMLESS@J (-@J MAIN:FI
BONACCICOORDINATOR:SHADOW:N@I 2))) (SETQ@I MAIN:FIBONACCICOORDINATOR:SHADOW:TMP
__000000000@I (+@J MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I MAIN:FIBON
ACCICOORDINATOR:SHADOW:TMP__000000002@I))))))))) (SETQ@I MAIN:FIBONACCICOORDINAT
OR:N@I (+ 0 MAIN:FIBONACCICOORDINATOR:$1)) (SETQ@I MAIN:FIBONACCICOORDINATOR:SP
AWN@I (+ 0 MAIN:FIBONACCICOORDINATOR:$2)) (SETQ@I MAIN:FIBONACCICOORDINATOR:TMP
__000000004@I (<@I MAIN:FIBONACCICOORDINATOR:N@I 2)) (IF@J MAIN:FIBONACCICOORDI
NATOR:TMP__000000004@I (SETQ@I MAIN:FIBONACCICOORDINATOR:TMP__000000000@I MAIN:
FIBONACCICOORDINATOR:N@I) (PROGN (SETQ@I MAIN:FIBONACCICOORDINATOR:TMP__0000000
03@I (>@I MAIN:FIBONACCICOORDINATOR:SPAWN@I 0)) (IF@J MAIN:FIBONACCICOORDINATOR
:TMP__000000003@I (PROGN (SETQ@I MAIN:FIBONACCICOORDINATOR:TMP__000000001@I (MA
IN:FIBONACCICOORDINATOR:SHADOW (--@J MAIN:FIBONACCICOORDINATOR:N@I) (>>@J MAIN:
FIBONACCICOORDINATOR:SPAWN@I 1))) (SETQ@I MAIN:FIBONACCICOORDINATOR:TMP__000000
002@I (MAIN:FIBONACCICOORDINATOR:SHADOW (-@J MAIN:FIBONACCICOORDINATOR:N@I 2) (
>>@J MAIN:FIBONACCICOORDINATOR:SPAWN@I 1))) (SETQ@I MAIN:FIBONACCICOORDINATOR:T
MP__000000000@I (+@J MAIN:FIBONACCICOORDINATOR:TMP__000000001@I MAIN:FIBONACCIC
OORDINATOR:TMP__000000002@I))) (PROGN (SETQ@I MAIN:FIBONACCICOORDINATOR:TMP__00
0000001@I (FIBONACCISEAMLESS@J (--@J MAIN:FIBONACCICOORDINATOR:N@I))) (SETQ@I M
AIN:FIBONACCICOORDINATOR:TMP__000000002@I (FIBONACCISEAMLESS@J (-@J MAIN:FIBONA
CCICOORDINATOR:N@I 2))) (SETQ@I MAIN:FIBONACCICOORDINATOR:TMP__000000000@I (+@J
 MAIN:FIBONACCICOORDINATOR:TMP__000000001@I MAIN:FIBONACCICOORDINATOR:TMP__0000
00002@I))))))))) (DEFUN MAIN:FIBONACCI (PROGN (SETQ@I MAIN:FIBONACCI:N@I (+ 0 MA
IN:FIBONACCI:$1)) (SETQ@I MAIN:FIBONACCI:SPAWN@I (N_CPUPROC)) (SETQ@I MAIN:FIBO
NACCI:TMP__000000000@I (MAIN:FIBONACCICOORDINATOR MAIN:FIBONACCI:N@I MAIN:FIBON
ACCI:SPAWN@I)))) (SETQ@I MAIN:N@I (+@J 0 MAIN:$1)) (SETQ@I MAIN:TMP__000000001
(MAIN:FIBONACCI MAIN:N@I)) (SETQ@S MAIN:TMP__000000001 (OUTF (PRN_STRING_FMT) (
CAT "" MAIN:TMP__000000001))) (SETQ@S MAIN:TMP__000000000@S ""))
--------------------------------------------------------------------------------
*You may recompile BMDFMldr module with commented `#define _NOISY_MODE_'
 to disable print of the FastLisp code.
Performing preliminary STATIC SCHEDULING (HARD_ARRAY_SYNCHRO=NO,
  EXT_IN_OUT_SYNCHRO=YES)...
Progress: *S*U*U*i*i*i*i*U
The translator module has finished the static scheduling.
The translator has returned the following exit code: 0(Success).
The following generated control sequence (so-called `BM_DFM UNICODE')
will be transferred to the BM_DFM kernel:
--------------------------------------------------------------------------------
(CTRL
  (N# 0)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 0 "MAIN:$1")
      (1 34 "MAIN:TERM_TYPE@S")
      (2 29 "MAIN:LINES_TERM@I")
      (3 4 "MAIN:COLUMNS_TERM@I")
      (4 3 "MAIN:CLRSCR_TERM@S")
      (5 32 "MAIN:REVERSE_TERM@S")
      (6 1 "MAIN:BLINK_TERM@S")
      (7 2 "MAIN:BOLD_TERM@S")
      (8 31 "MAIN:NORMAL_TERM@S")
      (9 28 "MAIN:HIDECURSOR_TERM@S")
      (10 33 "MAIN:SHOWCURSOR_TERM@S")
      (11 27 "MAIN:GOTOCURSOR_TERM@S")
    )
    (Fnc
      (N# 0)
      (FLP (SETQ@I MAIN:$1 50))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " I 00 00 00 00 00 00 00" " 2 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0)
    )
    (Fnc
      (N# 1)
      (FLP (SETQ@S MAIN:TERM_TYPE@S "xterm"))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 05 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " S 00 00 00 00 00 00 00" "05 00 00 00 00 00 00 00"
        " x  t  e  r  m 00 00 00"
      )
      (Var_Ptrs 1)
    )
    (Fnc
      (N# 2)
      (FLP (SETQ@I MAIN:LINES_TERM@I 51))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " I 00 00 00 00 00 00 00" " 3 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 2)
    )
    (Fnc
      (N# 3)
      (FLP (SETQ@I MAIN:COLUMNS_TERM@I 109))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " I 00 00 00 00 00 00 00" " m 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 3)
    )
    (Fnc
      (N# 4)
      (FLP (SETQ@S MAIN:CLRSCR_TERM@S "\e[H\e[2J"))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 05 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " S 00 00 00 00 00 00 00" "07 00 00 00 00 00 00 00"
        "1B  [  H 1B  [  2  J 00"
      )
      (Var_Ptrs 4)
    )
    (Fnc
      (N# 5)
      (FLP (SETQ@S MAIN:REVERSE_TERM@S "\e[7m"))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 05 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " S 00 00 00 00 00 00 00" "04 00 00 00 00 00 00 00"
        "1B  [  7  m 00 00 00 00"
      )
      (Var_Ptrs 5)
    )
    (Fnc
      (N# 6)
      (FLP (SETQ@S MAIN:BLINK_TERM@S "\e[5m"))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 05 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " S 00 00 00 00 00 00 00" "04 00 00 00 00 00 00 00"
        "1B  [  5  m 00 00 00 00"
      )
      (Var_Ptrs 6)
    )
    (Fnc
      (N# 7)
      (FLP (SETQ@S MAIN:BOLD_TERM@S "\e[1m"))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 05 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " S 00 00 00 00 00 00 00" "04 00 00 00 00 00 00 00"
        "1B  [  1  m 00 00 00 00"
      )
      (Var_Ptrs 7)
    )
    (Fnc
      (N# 8)
      (FLP (SETQ@S MAIN:NORMAL_TERM@S "\e[0m"))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 05 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " S 00 00 00 00 00 00 00" "04 00 00 00 00 00 00 00"
        "1B  [  0  m 00 00 00 00"
      )
      (Var_Ptrs 8)
    )
    (Fnc
      (N# 9)
      (FLP (SETQ@S MAIN:HIDECURSOR_TERM@S "\e[?25l"))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 05 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " S 00 00 00 00 00 00 00" "06 00 00 00 00 00 00 00"
        "1B  [  ?  2  5  l 00 00"
      )
      (Var_Ptrs 9)
    )
    (Fnc
      (N# 10)
      (FLP (SETQ@S MAIN:SHOWCURSOR_TERM@S "\e[?12l\e[?25h"))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 05 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " S 00 00 00 00 00 00 00" "0C 00 00 00 00 00 00 00"
        "1B  [  ?  1  2  l 1B  [" " ?  2  5  h 00 00 00 00"
```

```
      )
      (Var_Ptrs 10)
    )
    (Fnc
      (N# 11)
      (FLP (SETQ@S MAIN:GOTOCURSOR_TERM@S "\e[%i%d;%dH"))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 05 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " S 00 00 00 00 00 00 00" "0A 00 00 00 00 00 00 00"
        "1B  [  %  i  %  d  ;  %" " d  H 00 00 00 00 00 00"
      )
      (Var_Ptrs 11)
    )
  )
)
(CTRL
  (N# 1)
  (OpGroup 2)
  (COP 14)
  (GOTO 51)
  (REM "Pass over UDF `MAIN:FIBONACCICOORDINATOR' body")
)
(CTRL
  (N# 2)
  (OpGroup 2)
  (COP 14)
  (GOTO 27)
  (REM "Pass over UDF `MAIN:FIBONACCICOORDINATOR:SHADOW' body")
)
(CTRL
  (N# 3)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 12 "MAIN:FIBONACCICOORDINATOR:SHADOW:$1")
      (1 14 "MAIN:FIBONACCICOORDINATOR:SHADOW:N@I")
      (2 13 "MAIN:FIBONACCICOORDINATOR:SHADOW:$2")
      (3 15 "MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I")
      (4 20 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000004@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:SHADOW:N@I
          (+ 0 MAIN:FIBONACCICOORDINATOR:SHADOW:$1)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " T BC 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " V 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 1 0)
    )
    (Fnc
      (N# 1)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I
          (+ 0 MAIN:FIBONACCICOORDINATOR:SHADOW:$2)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " T BC 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " V 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 3 2)
    )
    (Fnc
      (N# 2)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000004@I
          (<@I MAIN:FIBONACCICOORDINATOR:SHADOW:N@I 2)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4  x 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "02 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 4 1)
    )
  )
)
(CTRL
  (N# 4)
  (OpGroup 1)
  (COP 70)
  (dfmput_zdata
    (VarRef 20)
    (VarName "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000004@I")
    (Inq_Dest Ld)
  )
)
(CTRL (N# 5) (OpGroup 1) (COP 81) (<accum_slo> (dfmget_idata)))
(CTRL
  (N# 6)
  (OpGroup 2)
  (COP 17)
  (IF_NOT <accum_slo> (GOTO 9))
  (REM
    "Pass over `MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000004@I' <if>
conditional branch"
  )
)
(CTRL
  (N# 7)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 14 "MAIN:FIBONACCICOORDINATOR:SHADOW:N@I")
      (1 16 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I
          MAIN:FIBONACCICOORDINATOR:SHADOW:N@I
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 1 0)
    )
  )
)
(CTRL
  (N# 8)
  (OpGroup 2)
  (COP 14)
  (GOTO 26)
  (REM
    "Pass over `MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000004@I' <else>
conditional branch"
  )
)
(CTRL
  (N# 9)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 15 "MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I")
      (1 19 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000003@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000003@I
          (>@I MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I 0)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 80 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 1 0)
    )
  )
)
(CTRL
  (N# 10)
  (OpGroup 1)
  (COP 70)
  (dfmput_zdata
    (VarRef 19)
    (VarName "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000003@I")
    (Inq_Dest Ld)
  )
)
(CTRL (N# 11) (OpGroup 1) (COP 81) (<accum_slo> (dfmget_idata)))
(CTRL
  (N# 12)
  (OpGroup 2)
  (COP 17)
  (IF_NOT <accum_slo> (GOTO 25))
  (REM
    "Pass over `MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000003@I' <if>
conditional branch"
  )
)
(CTRL
  (N# 13)
  (OpGroup 2)
  (COP 12)
  (ENTER_RECURSION)
  (Vars_N#_Ref_Name_[Array]
    (0 11 "MAIN:FIBONACCICOORDINATOR:N@I")
    (1 9 "MAIN:FIBONACCICOORDINATOR:$1")
    (2 21 "MAIN:FIBONACCICOORDINATOR:SPAWN@I")
    (3 10 "MAIN:FIBONACCICOORDINATOR:$2")
    (4 26 "MAIN:FIBONACCICOORDINATOR:TMP__000000004@I")
    (5 22 "MAIN:FIBONACCICOORDINATOR:TMP__000000000@I")
    (6 25 "MAIN:FIBONACCICOORDINATOR:TMP__000000003@I")
    (7 23 "MAIN:FIBONACCICOORDINATOR:TMP__000000001@I")
    (8 24 "MAIN:FIBONACCICOORDINATOR:TMP__000000002@I")
  )
)
(CTRL
  (N# 14)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 9 "MAIN:FIBONACCICOORDINATOR:$1")
      (1 14 "MAIN:FIBONACCICOORDINATOR:SHADOW:N@I")
      (2 10 "MAIN:FIBONACCICOORDINATOR:$2")
      (3 15 "MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I")
    )
```

```
    (Fnc
      (N# 0)
      (FLP
        (ALSETQ
          MAIN:FIBONACCICOORDINATOR:$1
          (--@J MAIN:FIBONACCICOORDINATOR:SHADOW:N@I)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 F4 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0 1)
    )
    (Fnc
      (N# 1)
      (FLP
        (ALSETQ
          MAIN:FIBONACCICOORDINATOR:$2
          (>>@J MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I 1)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 \( 01 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 2 3)
    )
  )
  (REM
    "UDF `MAIN:FIBONACCICOORDINATOR' invoke initialization (passing the
arguments)"
  )
)
(CTRL
  (N# 15)
  (OpGroup 2)
  (COP 15)
  (GOSUB 2)
  (REM "UDF `MAIN:FIBONACCICOORDINATOR' call")
)
(CTRL
  (N# 16)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 17 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I")
      (1 22 "MAIN:FIBONACCICOORDINATOR:TMP__000000000@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (ALSETQ
          MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I
          MAIN:FIBONACCICOORDINATOR:TMP__000000000@I
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0 1)
    )
  )
  (REM "UDF `MAIN:FIBONACCICOORDINATOR' returned value")
)
(CTRL (N# 17) (OpGroup 2) (COP 13) (LEAVE_RECURSION))
(CTRL
  (N# 18)
  (OpGroup 2)
  (COP 12)
  (ENTER_RECURSION)
  (Vars_N#_Ref_Name_[Array]
    (0 11 "MAIN:FIBONACCICOORDINATOR:N@I")
    (1 9 "MAIN:FIBONACCICOORDINATOR:$1")
    (2 21 "MAIN:FIBONACCICOORDINATOR:SPAWN@I")
    (3 10 "MAIN:FIBONACCICOORDINATOR:$2")
    (4 26 "MAIN:FIBONACCICOORDINATOR:TMP__000000004@I")
    (5 22 "MAIN:FIBONACCICOORDINATOR:TMP__000000000@I")
    (6 25 "MAIN:FIBONACCICOORDINATOR:TMP__000000003@I")
    (7 23 "MAIN:FIBONACCICOORDINATOR:TMP__000000001@I")
    (8 24 "MAIN:FIBONACCICOORDINATOR:TMP__000000002@I")
  )
)
(CTRL
  (N# 19)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 9 "MAIN:FIBONACCICOORDINATOR:$1")
      (1 14 "MAIN:FIBONACCICOORDINATOR:SHADOW:N@I")
      (2 10 "MAIN:FIBONACCICOORDINATOR:$2")
      (3 15 "MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (ALSETQ
          MAIN:FIBONACCICOORDINATOR:$1
          (-@J MAIN:FIBONACCICOORDINATOR:SHADOW:N@I 2)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 C4 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "02 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0 1)
    )
    (Fnc
      (N# 1)
      (FLP
        (ALSETQ
          MAIN:FIBONACCICOORDINATOR:$2
          (>>@J MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I 1)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 \( 01 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 2 3)
    )
  )
  (REM
    "UDF `MAIN:FIBONACCICOORDINATOR' invoke initialization (passing the
arguments)"
  )
)
(CTRL
  (N# 20)
  (OpGroup 2)
  (COP 15)
  (GOSUB 2)
  (REM "UDF `MAIN:FIBONACCICOORDINATOR' call")
)
(CTRL
  (N# 21)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 18 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I")
      (1 22 "MAIN:FIBONACCICOORDINATOR:TMP__000000000@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (ALSETQ
          MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I
          MAIN:FIBONACCICOORDINATOR:TMP__000000000@I
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0 1)
    )
  )
  (REM "UDF `MAIN:FIBONACCICOORDINATOR' returned value")
)
(CTRL (N# 22) (OpGroup 2) (COP 13) (LEAVE_RECURSION))
(CTRL
  (N# 23)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 17 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I")
      (1 18 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I")
      (2 16 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I
          (+@J
            MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I
            MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I
          )
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "03 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 BC 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "02 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 2 0 1)
    )
  )
)
(CTRL
  (N# 24)
  (OpGroup 2)
  (COP 14)
  (GOTO 26)
  (REM
    "Pass over `MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000003@I' <else>
conditional branch"
  )
)
(CTRL
  (N# 25)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 14 "MAIN:FIBONACCICOORDINATOR:SHADOW:N@I")
      (1 17 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I")
      (2 18 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I")
      (3 16 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I")
```

```
    )
    (Fnc
      (N# 0)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I
          (FIBONACCISEAMLESS@J (--@J MAIN:FIBONACCICOORDINATOR:SHADOW:N@I))
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " t B4 03 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 F4 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 1 0)
    )
    (Fnc
      (N# 1)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I
          (FIBONACCISEAMLESS@J (-@J MAIN:FIBONACCICOORDINATOR:SHADOW:N@I 2))
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " t B4 03 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 C4 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "02 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 2 0)
    )
    (Fnc
      (N# 2)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I
          (+@J
            MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I
            MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I
          )
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "03 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 BC 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "02 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 3 1 2)
    )
  )
)
(CTRL
  (N# 26)
  (OpGroup 2)
  (COP 16)
  (RETURN)
  (REM "End of UDF `MAIN:FIBONACCICOORDINATOR:SHADOW' body")
)
(CTRL
  (N# 27)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 9 "MAIN:FIBONACCICOORDINATOR:$1")
      (1 11 "MAIN:FIBONACCICOORDINATOR:N@I")
      (2 10 "MAIN:FIBONACCICOORDINATOR:$2")
      (3 21 "MAIN:FIBONACCICOORDINATOR:SPAWN@I")
      (4 26 "MAIN:FIBONACCICOORDINATOR:TMP__000000004@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:N@I
          (+ 0 MAIN:FIBONACCICOORDINATOR:$1)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " T BC 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " V 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 1 0)
    )
    (Fnc
      (N# 1)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:SPAWN@I
          (+ 0 MAIN:FIBONACCICOORDINATOR:$2)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " T BC 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " V 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 3 2)
    )
    (Fnc
      (N# 2)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:TMP__000000004@I
          (<@I MAIN:FIBONACCICOORDINATOR:N@I 2)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4  x 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "02 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 4 1)
    )
  )
)
(CTRL
  (N# 28)
  (OpGroup 1)
  (COP 70)
  (dfmput_zdata
    (VarRef 26)
    (VarName "MAIN:FIBONACCICOORDINATOR:TMP__000000004@I")
    (Inq_Dest Ld)
  )
)
(CTRL (N# 29) (OpGroup 1) (COP 81) (<accum_slo> (dfmget_idata)))
(CTRL
  (N# 30)
  (OpGroup 2)
  (COP 17)
  (IF_NOT <accum_slo> (GOTO 33))
  (REM
    "Pass over `MAIN:FIBONACCICOORDINATOR:TMP__000000004@I' <if> conditional
branch"
  )
)
(CTRL
  (N# 31)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 11 "MAIN:FIBONACCICOORDINATOR:N@I")
      (1 22 "MAIN:FIBONACCICOORDINATOR:TMP__000000000@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:TMP__000000000@I
          MAIN:FIBONACCICOORDINATOR:N@I
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 1 0)
    )
  )
)
(CTRL
  (N# 32)
  (OpGroup 2)
  (COP 14)
  (GOTO 50)
  (REM
    "Pass over `MAIN:FIBONACCICOORDINATOR:TMP__000000004@I' <else> conditional
branch"
  )
)
(CTRL
  (N# 33)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 21 "MAIN:FIBONACCICOORDINATOR:SPAWN@I")
      (1 25 "MAIN:FIBONACCICOORDINATOR:TMP__000000003@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:TMP__000000003@I
          (>@I MAIN:FIBONACCICOORDINATOR:SPAWN@I 0)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 80 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 1 0)
    )
  )
)
(CTRL
  (N# 34)
  (OpGroup 1)
  (COP 70)
  (dfmput_zdata
    (VarRef 25)
    (VarName "MAIN:FIBONACCICOORDINATOR:TMP__000000003@I")
    (Inq_Dest Ld)
  )
)
(CTRL (N# 35) (OpGroup 1) (COP 81) (<accum_slo> (dfmget_idata)))
```

```
(CTRL
  (N# 36)
  (OpGroup 2)
  (COP 17)
  (IF_NOT <accum_slo> (GOTO 49))
  (REM
    "Pass over `MAIN:FIBONACCICOORDINATOR:TMP__000000003@I' <if> conditional
branch"
  )
)
(CTRL
  (N# 37)
  (OpGroup 2)
  (COP 12)
  (ENTER_RECURSION)
  (Vars_N#_Ref_Name_[Array]
    (0 14 "MAIN:FIBONACCICOORDINATOR:SHADOW:N@I")
    (1 12 "MAIN:FIBONACCICOORDINATOR:SHADOW:$1")
    (2 15 "MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I")
    (3 13 "MAIN:FIBONACCICOORDINATOR:SHADOW:$2")
    (4 20 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000004@I")
    (5 16 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I")
    (6 19 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000003@I")
    (7 17 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I")
    (8 18 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I")
  )
)
(CTRL
  (N# 38)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 12 "MAIN:FIBONACCICOORDINATOR:SHADOW:$1")
      (1 11 "MAIN:FIBONACCICOORDINATOR:N@I")
      (2 13 "MAIN:FIBONACCICOORDINATOR:SHADOW:$2")
      (3 21 "MAIN:FIBONACCICOORDINATOR:SPAWN@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (ALSETQ
          MAIN:FIBONACCICOORDINATOR:SHADOW:$1
          (--@J MAIN:FIBONACCICOORDINATOR:N@I)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 F4 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0 1)
    )
    (Fnc
      (N# 1)
      (FLP
        (ALSETQ
          MAIN:FIBONACCICOORDINATOR:SHADOW:$2
          (>>@J MAIN:FIBONACCICOORDINATOR:SPAWN@I 1)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 \( 01 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 2 3)
    )
  )
  (REM
    "UDF `MAIN:FIBONACCICOORDINATOR:SHADOW' invoke initialization (passing the
arguments)"
  )
)
(CTRL
  (N# 39)
  (OpGroup 2)
  (COP 15)
  (GOSUB 3)
  (REM "UDF `MAIN:FIBONACCICOORDINATOR:SHADOW' call")
)
(CTRL
  (N# 40)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 23 "MAIN:FIBONACCICOORDINATOR:TMP__000000001@I")
      (1 16 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (ALSETQ
          MAIN:FIBONACCICOORDINATOR:TMP__000000001@I
          MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0 1)
    )
  )
  (REM "UDF `MAIN:FIBONACCICOORDINATOR:SHADOW' returned value")
)
(CTRL (N# 41) (OpGroup 2) (COP 13) (LEAVE_RECURSION))
(CTRL
  (N# 42)
  (OpGroup 2)
  (COP 12)
  (ENTER_RECURSION)
  (Vars_N#_Ref_Name_[Array]
    (0 14 "MAIN:FIBONACCICOORDINATOR:SHADOW:N@I")
    (1 12 "MAIN:FIBONACCICOORDINATOR:SHADOW:$1")
    (2 15 "MAIN:FIBONACCICOORDINATOR:SHADOW:SPAWN@I")
    (3 13 "MAIN:FIBONACCICOORDINATOR:SHADOW:$2")
    (4 20 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000004@I")
    (5 16 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I")
    (6 19 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000003@I")
    (7 17 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000001@I")
    (8 18 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000002@I")
  )
)
(CTRL
  (N# 43)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 12 "MAIN:FIBONACCICOORDINATOR:SHADOW:$1")
      (1 11 "MAIN:FIBONACCICOORDINATOR:N@I")
      (2 13 "MAIN:FIBONACCICOORDINATOR:SHADOW:$2")
      (3 21 "MAIN:FIBONACCICOORDINATOR:SPAWN@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (ALSETQ
          MAIN:FIBONACCICOORDINATOR:SHADOW:$1
          (-@J MAIN:FIBONACCICOORDINATOR:N@I 2)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 C4 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "02 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0 1)
    )
    (Fnc
      (N# 1)
      (FLP
        (ALSETQ
          MAIN:FIBONACCICOORDINATOR:SHADOW:$2
          (>>@J MAIN:FIBONACCICOORDINATOR:SPAWN@I 1)
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 \( 01 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 2 3)
    )
  )
  (REM
    "UDF `MAIN:FIBONACCICOORDINATOR:SHADOW' invoke initialization (passing the
arguments)"
  )
)
(CTRL
  (N# 44)
  (OpGroup 2)
  (COP 15)
  (GOSUB 3)
  (REM "UDF `MAIN:FIBONACCICOORDINATOR:SHADOW' call")
)
(CTRL
  (N# 45)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 24 "MAIN:FIBONACCICOORDINATOR:TMP__000000002@I")
      (1 16 "MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (ALSETQ
          MAIN:FIBONACCICOORDINATOR:TMP__000000002@I
          MAIN:FIBONACCICOORDINATOR:SHADOW:TMP__000000000@I
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0 1)
    )
  )
  (REM "UDF `MAIN:FIBONACCICOORDINATOR:SHADOW' returned value")
)
(CTRL (N# 46) (OpGroup 2) (COP 13) (LEAVE_RECURSION))
(CTRL
  (N# 47)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 23 "MAIN:FIBONACCICOORDINATOR:TMP__000000001@I")
      (1 24 "MAIN:FIBONACCICOORDINATOR:TMP__000000002@I")
      (2 22 "MAIN:FIBONACCICOORDINATOR:TMP__000000000@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:TMP__000000000@I
          (+@J
```

```
            MAIN:FIBONACCICOORDINATOR:TMP__000000001@I
            MAIN:FIBONACCICOORDINATOR:TMP__000000002@I
          )
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "03 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 BC 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "02 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 2 0 1)
    )
  )
)
(CTRL
  (N# 48)
  (OpGroup 2)
  (COP 14)
  (GOTO 50)
  (REM
    "Pass over `MAIN:FIBONACCICOORDINATOR:TMP__000000003@I' <else> conditional
branch"
  )
)
(CTRL
  (N# 49)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 11 "MAIN:FIBONACCICOORDINATOR:N@I")
      (1 23 "MAIN:FIBONACCICOORDINATOR:TMP__000000001@I")
      (2 24 "MAIN:FIBONACCICOORDINATOR:TMP__000000002@I")
      (3 22 "MAIN:FIBONACCICOORDINATOR:TMP__000000000@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:TMP__000000001@I
          (FIBONACCISEAMLESS@J (--@J MAIN:FIBONACCICOORDINATOR:N@I))
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " t B4 03 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 F4 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 1 0)
    )
    (Fnc
      (N# 1)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:TMP__000000002@I
          (FIBONACCISEAMLESS@J (-@J MAIN:FIBONACCICOORDINATOR:N@I 2))
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " t B4 03 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 C4 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "02 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 2 0)
    )
    (Fnc
      (N# 2)
      (FLP
        (SETQ@I
          MAIN:FIBONACCICOORDINATOR:TMP__000000000@I
          (+@J
            MAIN:FIBONACCICOORDINATOR:TMP__000000001@I
            MAIN:FIBONACCICOORDINATOR:TMP__000000002@I
          )
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "03 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 BC 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00" " i 00 00 00 00 00 00 00"
        "02 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 3 1 2)
    )
  )
)
(CTRL
  (N# 50)
  (OpGroup 2)
  (COP 16)
  (RETURN)
  (REM "End of UDF `MAIN:FIBONACCICOORDINATOR' body")
)
(CTRL
  (N# 51)
  (OpGroup 2)
  (COP 14)
  (GOTO 59)
  (REM "Pass over UDF `MAIN:FIBONACCI' body")
)
(CTRL
  (N# 52)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 5 "MAIN:FIBONACCI:$1")
      (1 6 "MAIN:FIBONACCI:N@I")
      (2 7 "MAIN:FIBONACCI:SPAWN@I")
    )
    (Fnc
      (N# 0)
      (FLP (SETQ@I MAIN:FIBONACCI:N@I (+ 0 MAIN:FIBONACCI:$1)))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " T BC 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " V 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 1 0)
    )
    (Fnc
      (N# 1)
      (FLP (SETQ@I MAIN:FIBONACCI:SPAWN@I (N_CPUPROC)))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " T D0 02 00 00 00 00 00"
      )
      (Var_Ptrs 2)
    )
  )
)
(CTRL
  (N# 53)
  (OpGroup 2)
  (COP 12)
  (ENTER_RECURSION)
  (Vars_N#_Ref_Name_[Array]
    (0 11 "MAIN:FIBONACCICOORDINATOR:N@I")
    (1 9 "MAIN:FIBONACCICOORDINATOR:$1")
    (2 21 "MAIN:FIBONACCICOORDINATOR:SPAWN@I")
    (3 10 "MAIN:FIBONACCICOORDINATOR:$2")
    (4 26 "MAIN:FIBONACCICOORDINATOR:TMP__000000004@I")
    (5 22 "MAIN:FIBONACCICOORDINATOR:TMP__000000000@I")
    (6 25 "MAIN:FIBONACCICOORDINATOR:TMP__000000003@I")
    (7 23 "MAIN:FIBONACCICOORDINATOR:TMP__000000001@I")
    (8 24 "MAIN:FIBONACCICOORDINATOR:TMP__000000002@I")
  )
)
(CTRL
  (N# 54)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 9 "MAIN:FIBONACCICOORDINATOR:$1")
      (1 6 "MAIN:FIBONACCI:N@I")
      (2 10 "MAIN:FIBONACCICOORDINATOR:$2")
      (3 7 "MAIN:FIBONACCI:SPAWN@I")
    )
    (Fnc
      (N# 0)
      (FLP (ALSETQ MAIN:FIBONACCICOORDINATOR:$1 MAIN:FIBONACCI:N@I))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0 1)
    )
    (Fnc
      (N# 1)
      (FLP (ALSETQ MAIN:FIBONACCICOORDINATOR:$2 MAIN:FIBONACCI:SPAWN@I))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 2 3)
    )
  )
  (REM
    "UDF `MAIN:FIBONACCICOORDINATOR' invoke initialization (passing the
arguments)"
  )
)
(CTRL
  (N# 55)
  (OpGroup 2)
  (COP 15)
  (GOSUB 2)
  (REM "UDF `MAIN:FIBONACCICOORDINATOR' call")
)
(CTRL
  (N# 56)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 8 "MAIN:FIBONACCI:TMP__000000000@I")
      (1 22 "MAIN:FIBONACCICOORDINATOR:TMP__000000000@I")
    )
    (Fnc
      (N# 0)
      (FLP
        (ALSETQ
          MAIN:FIBONACCI:TMP__000000000@I
          MAIN:FIBONACCICOORDINATOR:TMP__000000000@I
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0 1)
    )
```

```
  )
  (REM "UDF `MAIN:FIBONACCICOORDINATOR' returned value")
)
(CTRL (N# 57) (OpGroup 2) (COP 13) (LEAVE_RECURSION))
(CTRL
  (N# 58)
  (OpGroup 2)
  (COP 16)
  (RETURN)
  (REM "End of UDF `MAIN:FIBONACCI' body")
)
(CTRL
  (N# 59)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array] (0 0 "MAIN:$1") (1 30 "MAIN:N@I"))
    (Fnc
      (N# 0)
      (FLP (SETQ@I MAIN:N@I (+@J 0 MAIN:$1)))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 04 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "D4 BC 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "03 00 00 00 00 00 00 00" " I 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " V 00 00 00 00 00 00 00"
        "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 1 0)
    )
  )
)
(CTRL
  (N# 60)
  (OpGroup 2)
  (COP 12)
  (ENTER_RECURSION)
  (Vars_N#_Ref_Name_[Array]
    (0 6 "MAIN:FIBONACCI:N@I")
    (1 5 "MAIN:FIBONACCI:$1")
    (2 7 "MAIN:FIBONACCI:SPAWN@I")
    (3 8 "MAIN:FIBONACCI:TMP__000000000@I")
  )
)
(CTRL
  (N# 61)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array] (0 5 "MAIN:FIBONACCI:$1") (1 30 "MAIN:N@I"))
    (Fnc
      (N# 0)
      (FLP (ALSETQ MAIN:FIBONACCI:$1 MAIN:N@I))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0 1)
    )
  )
  (REM "UDF `MAIN:FIBONACCI' invoke initialization (passing the arguments)")
)
(CTRL
  (N# 62)
  (OpGroup 2)
  (COP 15)
  (GOSUB 52)
  (REM "UDF `MAIN:FIBONACCI' call")
)
(CTRL
  (N# 63)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 36 "MAIN:TMP__000000001")
      (1 8 "MAIN:FIBONACCI:TMP__000000000@I")
    )
    (Fnc
      (N# 0)
      (FLP (ALSETQ MAIN:TMP__000000001 MAIN:FIBONACCI:TMP__000000000@I))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" " T 08 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " i 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 0 1)
    )
  )
  (REM "UDF `MAIN:FIBONACCI' returned value")
)
(CTRL (N# 64) (OpGroup 2) (COP 13) (LEAVE_RECURSION))
(CTRL
  (N# 65)
  (OpGroup 1)
  (COP 50)
  (dfmput_marshaled_cluster
    (Vars_N#_Ref_Name_[Array]
      (0 36 "MAIN:TMP__000000001")
      (1 36 "MAIN:TMP__000000001")
      (2 35 "MAIN:TMP__000000000@S")
    )
    (Fnc
      (N# 0)
      (FLP
        (SETQ@S
          MAIN:TMP__000000001
          (OUTF (PRN_STRING_FMT) (CAT "" MAIN:TMP__000000001))
        )
      )
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 05 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " T  8 00 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "02 00 00 00 00 00 00 00" " T 80 02 00 00 00 00 00"
        " T F4 01 00 00 00 00 00" "02 00 00 00 00 00 00 00"
        "04 00 00 00 00 00 00 00" " S 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "00 00 00 00 00 00 00 00"
        " V 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
      )
      (Inq_Dest Ls)
      (Var_Ptrs 1 0)
    )
    (Fnc
      (N# 1)
      (FLP (SETQ@S MAIN:TMP__000000000@S ""))
      (FLP_COMPILED
        "D5 01 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "D4 05 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00" "01 00 00 00 00 00 00 00"
        " S 00 00 00 00 00 00 00" "00 00 00 00 00 00 00 00"
        "00 00 00 00 00 00 00 00"
      )
      (Var_Ptrs 2)
    )
  )
)
(CTRL (N# 66) (OpGroup 4) (COP 200) (END) (REM "End of the control sequence"))
--------------------------------------------------------------------------------
*You may recompile BMDFM1dr module with commented `#define _NOISY_MODE1_'
 to disable print of the BM_DFM control sequence.
*** Uploading and immediate running of the BM_DFM control sequence by
    the BM_DFM kernel will start here just after the time report!
Time spent to check and prepare the task approx.:
   Used by process: 0.019996sec.
   Used by  system: 0.003000sec.
   Total used time: 2.299600000000E-02sec.
Real absolute time: 2.221202850342E-02sec.
*** Resetting time counters (second event controlpoint)... ***
================================================================================
The task is being carried out on SocketN# 0.
================================================================================
12586269025
================================================================================
Time spent to run the task (by PARENT loader and CHILD listener):
   Used by process: 0.006747sec.
   Used by  system: 0.004828sec.
   Total used time: 1.157500000000E-02sec.
Real absolute time: 1.231257863478E+00sec.
Task has been detached (logged out) from the BM_DFM Server.
The BM_DFM Task Loader/Listener pair has done its job decently and gracefully.
```

## cat /proc/cpuinfo

```
processor       : 0
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 1
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 2
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 3
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 4
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 5
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 6
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 7
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 8
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 9
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 10
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 11
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 12
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
```

```
revision        : 2.1 (pvr 004b 0201)

processor       : 13
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 14
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 15
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 16
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 17
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 18
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 19
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 20
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 21
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 22
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 23
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 24
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 25
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 26
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 27
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 28
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 29
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 30
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 31
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 32
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 33
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 34
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 35
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 36
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 37
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 38
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 39
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 40
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 41
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 42
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 43
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 44
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 45
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 46
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 47
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 48
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 49
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 50
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 51
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 52
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 53
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 54
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 55
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 56
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 57
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 58
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 59
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 60
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
```

```
revision        : 2.1 (pvr 004b 0201)

processor       : 61
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 62
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 63
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 64
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 65
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 66
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 67
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 68
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 69
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 70
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 71
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 72
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 73
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 74
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 75
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 76
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 77
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 78
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 79
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 80
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 81
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 82
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 83
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 84
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 85
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 86
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 87
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 88
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 89
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 90
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 91
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 92
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 93
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 94
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 95
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 96
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 97
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 98
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 99
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 100
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 101
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 102
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 103
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 104
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 105
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 106
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 107
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 108
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
```

```
revision        : 2.1 (pvr 004b 0201)

processor       : 109
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 110
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 111
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 112
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 113
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 114
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 115
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 116
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 117
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 118
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 119
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 120
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 121
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 122
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 123
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 124
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 125
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 126
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 127
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 128
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 129
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 130
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 131
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 132
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 133
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 134
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 135
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 136
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 137
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 138
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 139
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 140
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 141
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 142
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 143
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 144
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 145
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 146
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 147
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 148
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 149
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 150
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 151
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 152
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 153
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 154
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 155
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 156
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
```

```
revision        : 2.1 (pvr 004b 0201)

processor       : 157
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 158
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 159
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 160
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 161
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 162
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 163
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 164
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 165
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 166
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 167
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 168
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 169
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 170
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 171
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 172
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 173
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 174
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 175
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 176
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 177
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 178
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 179
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 180
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 181
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 182
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 183
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 184
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 185
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 186
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 187
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 188
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 189
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 190
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

processor       : 191
cpu             : POWER8E (raw), altivec supported
clock           : 3690.000000MHz
revision        : 2.1 (pvr 004b 0201)

timebase        : 512000000
platform        : PowerNV
model           : 8247-22L
machine         : PowerNV 8247-22L
firmware        : OPAL v3
```

## fib.fastlisp

. . .

```
Time spent to check and prepare the task approx.:
   Used by process: 0.018573sec.
   Used by  system: 0.000000sec.
   Total used time: 1.857300000000E-02sec.
Real absolute time: 1.614522933960E-02sec.
*** Resetting time counters (second event controlpoint)... ***
================================================================================
12586269025
================================================================================
Time spent to run the task:
   Used by process: 242.339492sec.
   Used by  system: 0.007174sec.
   Total used time: 2.423466660000E+02sec.
Real absolute time: 2.423509399891E+02sec.
```

## BMDFMsrv.cfg

```
# BMDFMsrv.cfg

SHMEM_POOL_SIZE    =8000000000 # Shared memory pool size            [Bytes]
SHMEM_POOL_MNTADDR = 999999999 # ShMemPool mount address (0=auto)
SHMEM_POOL_PERMS   =       432 # ShMemPool permissions (0660=="rw-rw----")
SHMEM_POOL_BANKS   =       400 # Number of banks in pool
POSIX_SEMA4_SYNC   =  RW+Count # Replace None/RW/RW+Count SVR4 with POSIX sema4
ARRAYBLOCK_SIZE    =        80 # Array block size                   [Entities]
OQ_FUNC_ARG_COUNT  =        80 # OQ function argument count         [Entities]

Q_OQ               =      5000 # Operation Queue (OQ) size          [Entities]
Q_DB               =       500 # Data Buffer (DB) size              [Entities]
Q_IORBP            =       100 # I/O Ring Buffer Port (IORBP) size  [Entities]
N_IORBP            =        10 # Number of the IORBPs
N_TRACEPORT        =         5 # Number of the Trace Ports (TPs)

N_CPUPROC          =       400 # Number of the CPU PROCs
N_OQPROC           =       400 # Number of the OQ PROCs
N_IORBPPROC        =       400 # Number of the IORBP PROCs
```

```
CPUPROC_MTHREAD     =        Yes # CPU PROC is multithreaded
OQPROC_MTHREAD      =        Yes # OQ PROC is multithreaded
IORBPPROC_MTHREAD   =        Yes # IORBP PROC is multithreaded
BMDFMLDR_MTHREAD    =        Yes # BMDFMldr is multithreaded

T_STATISTIC         =          1 # Time to scan DFM for statistic     [Seconds]
PROC_HEARTBEATS     =        Yes # Heartbeats for the CPU, OQ && IORBP PROCs
DFSTLHAZARD_DETECT  =        Yes # Detection of dataflow stall hazards
ALLOW_DROP_NONPROD  =         No # Allow dropping nonproductive instructions
PROC_CPU_LOGS       =         No # Logs registration for the CPU && IORBP PROCs
HARD_ARRAY_SYNCHRO  =         No # Hard synchronization of the arrays
EXT_IN_OUT_SYNCHRO  =        Yes # I/O synchronization of external task
OQ_DB_SEM_LIMIT     =          0 # Max number of OQ&&DB semaphores (0=unlim.)

# <EOF>
```

# fib.BMDFMldr

. . .

```
Time spent to check and prepare the task approx.:
   Used by process: 0.018784sec.
   Used by  system: 0.004000sec.
   Total used time: 2.278400000000E-02sec.
Real absolute time: 2.351703960373E-02sec.
*** Resetting time counters (second event controlpoint)... ***
================================================================================
The task is being carried out on SocketN# 0.
================================================================================
12586269025
================================================================================
Time spent to run the task (by PARENT loader and CHILD listener):
   Used by process: 0.009467sec.
   Used by  system: 0.002846sec.
   Total used time: 1.231300000000E-02sec.
Real absolute time: 1.610240067235E+00sec.
Task has been detached (logged out) from the BM_DFM Server.
The BM_DFM Task Loader/Listener pair has done its job decently and gracefully.
```

# cat /proc/cpuinfo

```
cpu             : UltraSparc T2 (Niagara2)
fpu             : UltraSparc T2 integrated FPU
pmu             : niagara2
prom            : OBP 4.33.4 2011/11/17 13:47
type            : sun4v
ncpus probed    : 256
ncpus active    : 256
D$ parity tl1   : 0
I$ parity tl1   : 0
cpucaps         : flush,stbar,swap,muldiv,v9,blkinit,n2,mul32,div32,v8plus,
popc,vis,vis2,ASIBlkInit
Cpu0ClkTck      : 000000005e2a9910
Cpu1ClkTck      : 000000005e2a9910
Cpu2ClkTck      : 000000005e2a9910
Cpu3ClkTck      : 000000005e2a9910
Cpu4ClkTck      : 000000005e2a9910
Cpu5ClkTck      : 000000005e2a9910
Cpu6ClkTck      : 000000005e2a9910
Cpu7ClkTck      : 000000005e2a9910
Cpu8ClkTck      : 000000005e2a9910
Cpu9ClkTck      : 000000005e2a9910
Cpu10ClkTck     : 000000005e2a9910
Cpu11ClkTck     : 000000005e2a9910
Cpu12ClkTck     : 000000005e2a9910
Cpu13ClkTck     : 000000005e2a9910
Cpu14ClkTck     : 000000005e2a9910
Cpu15ClkTck     : 000000005e2a9910
Cpu16ClkTck     : 000000005e2a9910
Cpu17ClkTck     : 000000005e2a9910
Cpu18ClkTck     : 000000005e2a9910
Cpu19ClkTck     : 000000005e2a9910
Cpu20ClkTck     : 000000005e2a9910
Cpu21ClkTck     : 000000005e2a9910
Cpu22ClkTck     : 000000005e2a9910
Cpu23ClkTck     : 000000005e2a9910
Cpu24ClkTck     : 000000005e2a9910
Cpu25ClkTck     : 000000005e2a9910
Cpu26ClkTck     : 000000005e2a9910
Cpu27ClkTck     : 000000005e2a9910
Cpu28ClkTck     : 000000005e2a9910
Cpu29ClkTck     : 000000005e2a9910
Cpu30ClkTck     : 000000005e2a9910
Cpu31ClkTck     : 000000005e2a9910
Cpu32ClkTck     : 000000005e2a9910
Cpu33ClkTck     : 000000005e2a9910
Cpu34ClkTck     : 000000005e2a9910
Cpu35ClkTck     : 000000005e2a9910
Cpu36ClkTck     : 000000005e2a9910
Cpu37ClkTck     : 000000005e2a9910
Cpu38ClkTck     : 000000005e2a9910
Cpu39ClkTck     : 000000005e2a9910
Cpu40ClkTck     : 000000005e2a9910
Cpu41ClkTck     : 000000005e2a9910
Cpu42ClkTck     : 000000005e2a9910
Cpu43ClkTck     : 000000005e2a9910
Cpu44ClkTck     : 000000005e2a9910
Cpu45ClkTck     : 000000005e2a9910
Cpu46ClkTck     : 000000005e2a9910
Cpu47ClkTck     : 000000005e2a9910
Cpu48ClkTck     : 000000005e2a9910
Cpu49ClkTck     : 000000005e2a9910
Cpu50ClkTck     : 000000005e2a9910
Cpu51ClkTck     : 000000005e2a9910
Cpu52ClkTck     : 000000005e2a9910
Cpu53ClkTck     : 000000005e2a9910
Cpu54ClkTck     : 000000005e2a9910
Cpu55ClkTck     : 000000005e2a9910
Cpu56ClkTck     : 000000005e2a9910
Cpu57ClkTck     : 000000005e2a9910
Cpu58ClkTck     : 000000005e2a9910
Cpu59ClkTck     : 000000005e2a9910
Cpu60ClkTck     : 000000005e2a9910
Cpu61ClkTck     : 000000005e2a9910
Cpu62ClkTck     : 000000005e2a9910
Cpu63ClkTck     : 000000005e2a9910
Cpu64ClkTck     : 000000005e2a9910
Cpu65ClkTck     : 000000005e2a9910
Cpu66ClkTck     : 000000005e2a9910
Cpu67ClkTck     : 000000005e2a9910
Cpu68ClkTck     : 000000005e2a9910
Cpu69ClkTck     : 000000005e2a9910
Cpu70ClkTck     : 000000005e2a9910
Cpu71ClkTck     : 000000005e2a9910
Cpu72ClkTck     : 000000005e2a9910
Cpu73ClkTck     : 000000005e2a9910
Cpu74ClkTck     : 000000005e2a9910
Cpu75ClkTck     : 000000005e2a9910
Cpu76ClkTck     : 000000005e2a9910
Cpu77ClkTck     : 000000005e2a9910
Cpu78ClkTck     : 000000005e2a9910
Cpu79ClkTck     : 000000005e2a9910
Cpu80ClkTck     : 000000005e2a9910
Cpu81ClkTck     : 000000005e2a9910
Cpu82ClkTck     : 000000005e2a9910
Cpu83ClkTck     : 000000005e2a9910
Cpu84ClkTck     : 000000005e2a9910
Cpu85ClkTck     : 000000005e2a9910
Cpu86ClkTck     : 000000005e2a9910
Cpu87ClkTck     : 000000005e2a9910
Cpu88ClkTck     : 000000005e2a9910
Cpu89ClkTck     : 000000005e2a9910
Cpu90ClkTck     : 000000005e2a9910
Cpu91ClkTck     : 000000005e2a9910
Cpu92ClkTck     : 000000005e2a9910
Cpu93ClkTck     : 000000005e2a9910
Cpu94ClkTck     : 000000005e2a9910
Cpu95ClkTck     : 000000005e2a9910
Cpu96ClkTck     : 000000005e2a9910
Cpu97ClkTck     : 000000005e2a9910
Cpu98ClkTck     : 000000005e2a9910
Cpu99ClkTck     : 000000005e2a9910
Cpu100ClkTck    : 000000005e2a9910
Cpu101ClkTck    : 000000005e2a9910
Cpu102ClkTck    : 000000005e2a9910
Cpu103ClkTck    : 000000005e2a9910
Cpu104ClkTck    : 000000005e2a9910
Cpu105ClkTck    : 000000005e2a9910
Cpu106ClkTck    : 000000005e2a9910
Cpu107ClkTck    : 000000005e2a9910
Cpu108ClkTck    : 000000005e2a9910
Cpu109ClkTck    : 000000005e2a9910
Cpu110ClkTck    : 000000005e2a9910
Cpu111ClkTck    : 000000005e2a9910
Cpu112ClkTck    : 000000005e2a9910
Cpu113ClkTck    : 000000005e2a9910
Cpu114ClkTck    : 000000005e2a9910
Cpu115ClkTck    : 000000005e2a9910
Cpu116ClkTck    : 000000005e2a9910
Cpu117ClkTck    : 000000005e2a9910
Cpu118ClkTck    : 000000005e2a9910
Cpu119ClkTck    : 000000005e2a9910
Cpu120ClkTck    : 000000005e2a9910
Cpu121ClkTck    : 000000005e2a9910
Cpu122ClkTck    : 000000005e2a9910
Cpu123ClkTck    : 000000005e2a9910
Cpu124ClkTck    : 000000005e2a9910
Cpu125ClkTck    : 000000005e2a9910
Cpu126ClkTck    : 000000005e2a9910
Cpu127ClkTck    : 000000005e2a9910
Cpu128ClkTck    : 000000005e2a9910
Cpu129ClkTck    : 000000005e2a9910
Cpu130ClkTck    : 000000005e2a9910
Cpu131ClkTck    : 000000005e2a9910
Cpu132ClkTck    : 000000005e2a9910
Cpu133ClkTck    : 000000005e2a9910
Cpu134ClkTck    : 000000005e2a9910
Cpu135ClkTck    : 000000005e2a9910
Cpu136ClkTck    : 000000005e2a9910
Cpu137ClkTck    : 000000005e2a9910
Cpu138ClkTck    : 000000005e2a9910
Cpu139ClkTck    : 000000005e2a9910
Cpu140ClkTck    : 000000005e2a9910
Cpu141ClkTck    : 000000005e2a9910
Cpu142ClkTck    : 000000005e2a9910
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Cpu144ClkTck    : 000000005e2a9910
Cpu145ClkTck    : 000000005e2a9910
Cpu146ClkTck    : 000000005e2a9910
Cpu147ClkTck    : 000000005e2a9910
Cpu148ClkTck    : 000000005e2a9910
Cpu149ClkTck    : 000000005e2a9910
Cpu150ClkTck    : 000000005e2a9910
Cpu151ClkTck    : 000000005e2a9910
Cpu152ClkTck    : 000000005e2a9910
Cpu153ClkTck    : 000000005e2a9910
Cpu154ClkTck    : 000000005e2a9910
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Cpu160ClkTck    : 000000005e2a9910
Cpu161ClkTck    : 000000005e2a9910
Cpu162ClkTck    : 000000005e2a9910
Cpu163ClkTck    : 000000005e2a9910
Cpu164ClkTck    : 000000005e2a9910
Cpu165ClkTck    : 000000005e2a9910
Cpu166ClkTck    : 000000005e2a9910
Cpu167ClkTck    : 000000005e2a9910
Cpu168ClkTck    : 000000005e2a9910
Cpu169ClkTck    : 000000005e2a9910
```

```
Cpu170ClkTck    : 000000005e2a9910
Cpu171ClkTck    : 000000005e2a9910
Cpu172ClkTck    : 000000005e2a9910
Cpu173ClkTck    : 000000005e2a9910
Cpu174ClkTck    : 000000005e2a9910
Cpu175ClkTck    : 000000005e2a9910
Cpu176ClkTck    : 000000005e2a9910
Cpu177ClkTck    : 000000005e2a9910
Cpu178ClkTck    : 000000005e2a9910
Cpu179ClkTck    : 000000005e2a9910
Cpu180ClkTck    : 000000005e2a9910
Cpu181ClkTck    : 000000005e2a9910
Cpu182ClkTck    : 000000005e2a9910
Cpu183ClkTck    : 000000005e2a9910
Cpu184ClkTck    : 000000005e2a9910
Cpu185ClkTck    : 000000005e2a9910
Cpu186ClkTck    : 000000005e2a9910
Cpu187ClkTck    : 000000005e2a9910
Cpu188ClkTck    : 000000005e2a9910
Cpu189ClkTck    : 000000005e2a9910
Cpu190ClkTck    : 000000005e2a9910
Cpu191ClkTck    : 000000005e2a9910
Cpu192ClkTck    : 000000005e2a9910
Cpu193ClkTck    : 000000005e2a9910
Cpu194ClkTck    : 000000005e2a9910
Cpu195ClkTck    : 000000005e2a9910
Cpu196ClkTck    : 000000005e2a9910
Cpu197ClkTck    : 000000005e2a9910
Cpu198ClkTck    : 000000005e2a9910
Cpu199ClkTck    : 000000005e2a9910
Cpu200ClkTck    : 000000005e2a9910
Cpu201ClkTck    : 000000005e2a9910
Cpu202ClkTck    : 000000005e2a9910
Cpu203ClkTck    : 000000005e2a9910
Cpu204ClkTck    : 000000005e2a9910
Cpu205ClkTck    : 000000005e2a9910
Cpu206ClkTck    : 000000005e2a9910
Cpu207ClkTck    : 000000005e2a9910
Cpu208ClkTck    : 000000005e2a9910
Cpu209ClkTck    : 000000005e2a9910
Cpu210ClkTck    : 000000005e2a9910
Cpu211ClkTck    : 000000005e2a9910
Cpu212ClkTck    : 000000005e2a9910
Cpu213ClkTck    : 000000005e2a9910
Cpu214ClkTck    : 000000005e2a9910
Cpu215ClkTck    : 000000005e2a9910
Cpu216ClkTck    : 000000005e2a9910
Cpu217ClkTck    : 000000005e2a9910
Cpu218ClkTck    : 000000005e2a9910
Cpu219ClkTck    : 000000005e2a9910
Cpu220ClkTck    : 000000005e2a9910
Cpu221ClkTck    : 000000005e2a9910
Cpu222ClkTck    : 000000005e2a9910
Cpu223ClkTck    : 000000005e2a9910
Cpu224ClkTck    : 000000005e2a9910
Cpu225ClkTck    : 000000005e2a9910
Cpu226ClkTck    : 000000005e2a9910
Cpu227ClkTck    : 000000005e2a9910
Cpu228ClkTck    : 000000005e2a9910
Cpu229ClkTck    : 000000005e2a9910
Cpu230ClkTck    : 000000005e2a9910
Cpu231ClkTck    : 000000005e2a9910
Cpu232ClkTck    : 000000005e2a9910
Cpu233ClkTck    : 000000005e2a9910
Cpu234ClkTck    : 000000005e2a9910
Cpu235ClkTck    : 000000005e2a9910
Cpu236ClkTck    : 000000005e2a9910
Cpu237ClkTck    : 000000005e2a9910
Cpu238ClkTck    : 000000005e2a9910
Cpu239ClkTck    : 000000005e2a9910
Cpu240ClkTck    : 000000005e2a9910
Cpu241ClkTck    : 000000005e2a9910
Cpu242ClkTck    : 000000005e2a9910
Cpu243ClkTck    : 000000005e2a9910
Cpu244ClkTck    : 000000005e2a9910
Cpu245ClkTck    : 000000005e2a9910
Cpu246ClkTck    : 000000005e2a9910
Cpu247ClkTck    : 000000005e2a9910
Cpu248ClkTck    : 000000005e2a9910
Cpu249ClkTck    : 000000005e2a9910
Cpu250ClkTck    : 000000005e2a9910
Cpu251ClkTck    : 000000005e2a9910
Cpu252ClkTck    : 000000005e2a9910
Cpu253ClkTck    : 000000005e2a9910
Cpu254ClkTck    : 000000005e2a9910
Cpu255ClkTck    : 000000005e2a9910
MMU Type        : Hypervisor (sun4v)
MMU PGSZs       : 8K,64K,4MB,256MB
State:
CPU0:           online
CPU1:           online
CPU2:           online
CPU3:           online
CPU4:           online
CPU5:           online
CPU6:           online
CPU7:           online
CPU8:           online
CPU9:           online
CPU10:          online
CPU11:          online
CPU12:          online
CPU13:          online
CPU14:          online
CPU15:          online
CPU16:          online
CPU17:          online
CPU18:          online
CPU19:          online
CPU20:          online
CPU21:          online
CPU22:          online
CPU23:          online
CPU24:          online
CPU25:          online
CPU26:          online
CPU27:          online
CPU28:          online
CPU29:          online
CPU30:          online
CPU31:          online
CPU32:          online
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CPU41:          online
CPU42:          online
CPU43:          online
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CPU58:          online
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CPU62:          online
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CPU64:          online
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CPU67:          online
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CPU116:         online
CPU117:         online
CPU118:         online
CPU119:         online
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CPU137:         online
CPU138:         online
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CPU145:         online
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CPU148:         online
CPU149:         online
CPU150:         online
```

```
CPU151:          online
CPU152:          online
CPU153:          online
CPU154:          online
CPU155:          online
CPU156:          online
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CPU160:          online
CPU161:          online
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CPU240:          online
CPU241:          online
CPU242:          online
CPU243:          online
CPU244:          online
CPU245:          online
CPU246:          online
CPU247:          online
CPU248:          online
CPU249:          online
CPU250:          online
CPU251:          online
CPU252:          online
CPU253:          online
CPU254:          online
CPU255:          online
```

## fib.fastlisp

. . .

```
Time spent to check and prepare the task approx.:
   Used by process: 0.055763sec.
   Used by  system: 0.004685sec.
   Total used time: 6.044800000000E-02sec.
Real absolute time: 6.417322158813E-02sec.
*** Resetting time counters (second event controlpoint)... ***
================================================================================
12586269025
================================================================================
Time spent to run the task:
   Used by process: 923.045942sec.
   Used by  system: 0.026860sec.
   Total used time: 9.230728020000E+02sec.
Real absolute time: 9.230729768276E+02sec.
```

## BMDFMsrv.cfg

```
# BMDFMsrv.cfg

SHMEM_POOL_SIZE =250000000000 # Shared memory pool size            [Bytes]
SHMEM_POOL_MNTADDR =999999999 # ShMemPool mount address (0=auto)
SHMEM_POOL_PERMS    =       432 # ShMemPool permissions (0660=="rw-rw----")
SHMEM_POOL_BANKS    =       500 # Number of banks in pool
POSIX_SEMA4_SYNC    = RW+Count # Replace None/RW/RW+Count SVR4 with POSIX sema4
ARRAYBLOCK_SIZE     =        80 # Array block size                    [Entities]
OQ_FUNC_ARG_COUNT   =        80 # OQ function argument count          [Entities]

Q_OQ                =      5000 # Operation Queue (OQ) size           [Entities]
Q_DB                =       500 # Data Buffer (DB) size               [Entities]
Q_IORBP             =       100 # I/O Ring Buffer Port (IORBP) size   [Entities]
N_IORBP             =        10 # Number of the IORBPs
N_TRACEPORT         =         5 # Number of the Trace Ports (TPs)

N_CPUPROC           =       512 # Number of the CPU PROCs
N_OQPROC            =       512 # Number of the OQ PROCs
N_IORBPPROC         =       512 # Number of the IORBP PROCs

CPUPROC_MTHREAD     =       Yes # CPU PROC is multithreaded
OQPROC_MTHREAD      =       Yes # OQ PROC is multithreaded
IORBPPROC_MTHREAD   =       Yes # IORBP PROC is multithreaded
BMDFMLDR_MTHREAD    =       Yes # BMDFMldr is multithreaded

T_STATISTIC         =         1 # Time to scan DFM for statistic     [Seconds]
PROC_HEARTBEATS     =       Yes # Heartbeats for the CPU, OQ && IORBP PROCs
DFSTLHAZARD_DETECT  =       Yes # Detection of dataflow stall hazards
ALLOW_DROP_NONPROD  =        No # Allow dropping nonproductive instructions
PROC_CPU_LOGS       =        No # Logs registration for the CPU && IORBP PROCs
HARD_ARRAY_SYNCHRO  =        No # Hard synchronization of the arrays
EXT_IN_OUT_SYNCHRO  =       Yes # I/O synchronization of external task
OQ_DB_SEM_LIMIT     =         0 # Max number of OQ&&DB semaphores (0=unlim.)

# <EOF>
```

## fib.BMDFMldr

. . .

```
Time spent to check and prepare the task approx.:
   Used by process: 0.304499sec.
   Used by  system: 0.033705sec.
   Total used time: 3.382040000000E-01sec.
Real absolute time: 3.363530635834E-01sec.
*** Resetting time counters (second event controlpoint)... ***
================================================================================
The task is being carried out on SocketN# 0.
================================================================================
12586269025
================================================================================
Time spent to run the task (by PARENT loader and CHILD listener):
   Used by process: 0.259550sec.
   Used by  system: 0.892591sec.
   Total used time: 1.152141000000E+00sec.
Real absolute time: 8.248299002647E+00sec.
Task has been detached (logged out) from the BM_DFM Server.
The BM_DFM Task Loader/Listener pair has done its job decently and gracefully.
```

**# <EOF>**