

## Pencake/Sonic Scalability limits tested:

Parameter	Max tested limit	Variable setting
Sonic Core count	10	kenv
Pencake CPU mask	0xff	kenv
Storage Blocksize	4k only	Pattern/Data
Buffer size	8k	Pencake YAML
Batch depth	64	Pencake YAML
Repeat count	1000000(1 million)	Pencake YAML
Turbo mode	0 or 1	Recommended 1 for performance

## Pencake CPDC test performance numbers:

Buffer size	Block size	Batch depth	Repeat count	CPU mask	CPU core count	Compression Gbps	Decompression Gbps
8192	4k	32	1000000	0xff	10	100	95

Sample YAML for performance test :

Compression and Decompression with random pattern

### **Sample CPDC.YML file**

```
svc_chains:
- svc_chain:
  idx: 1
  input:
    random: 12345
    random_len: 128
    len: '8192'
  ops:
    - compress:
      flags: 'zero_pad,insert_header'
      hdr_fmt_idx: 1
      hdr_algo: 1
      threshold_delta: 8
      output_file: '%chain_id%_compressed.bin'
- svc_chain:
  idx: 2
  input:
    file: '1_compressed.bin'
  ops:
    - decompress:
      flags: 'header_present'
      hdr_fmt_idx: 1
      output_file: '%chain_id%_decompressed.bin'
tests:
- test:
  idx: 1
  name: 'COMPRESSION_TEST-RAND-PATTERN'
  svc_chains: 1
  turbo: '1'
  batch_depth: '64'
  repeat: '1000000'
  validations:
```

```

- retcode_compare:
  idx: 1
  retcode: 0
  svc_retcodes: 0
- test:
idx: 2
name: 'DECOMPRESSION_TEST-RAND-PATTERN'
svc_chains: 2
turbo: '1'
batch_depth: '64'
repeat: '1000000'
validations:
- retcode_compare:
  idx: 1
  retcode: 0
  svc_retcodes: 0

```

### Sample 4k.YML

```

alias_group1:
- alias: '1block=4096'
- alias: '2block=8192'
- alias: '4block=16384'
- alias: '8block=32768'
- alias: '16block=65536'

```

### Sample global parameter YML file

```

alias_group3:
- alias: 'key1=abcd1234ABCD1234abcd1234ABCD1234'
- alias: 'iter_high=1000000'
- alias: 'iter_low=1000'
- alias: 'default_turbo=1'
- alias: 'default_batch=32'
- alias: 'size=8192'
global_params:
  per_core_qdepth: 10
  cpu_mask: 0xff
  block_size: '4096'
cp_hdr_formats:
- format:
  idx: 1
  cp_hdr_fields:
  - field:
    type: indata_chksum
    offset: 0
    len: 4
    val: 0
  - field:
    type: outdata_length
    offset: 4
    len: 2
    val: 0
  - field:
    type: algo
    offset: 6
    len: 2
    val: 1
cp_hdr_mapping:
- entry:
  pnso_algo: 1
  hdr_algo: 1
crypto_keys:

```

### FreeBSD kernv variable settings for custom tests with 16 sonic core count:

```

compat.linuxkpi.sonic_core_count="16"
compat.linuxkpi.pencake_cpu_mask="0xffff"
compat.linuxkpi.pencake_feat_mask="0"

```



```
},
"validations": [
  { "retcode_compare": {
    "idx": 1,
    "success": 1000000,
    "failure": 0
  }},
]
}}}
```