

# Threshold-based Probability Estimation

Measurement	Threshold	Threshold_Value	Probability_Larger	Probability_Smaller
load-15m	mean	0.0859	0.4627	0.5373
load-15m	10%(max)	0.031	0.7272	0.2728
load-15m	90%(max)	0.279	0.008	0.992
memory_used_pct	mean	11.5202	0.3681	0.6319
memory_used_pct	10%(max)	1.8159	1.0	0.0
memory_used_pct	90%(max)	16.3431	0.0025	0.9975
cpu-user	mean	0.0437	0.3904	0.6096
cpu-user	10%(max)	0.0119	1.0	0.0
cpu-user	90%(max)	0.1071	0.01	0.99
cpu-system	mean	0.0298	0.3566	0.6434
cpu-system	10%(max)	0.0074	1.0	0.0
cpu-system	90%(max)	0.0662	0.0171	0.9829
sys-thermal	mean	1.121	0.6383	0.3617
sys-thermal	10%(max)	0.355	0.6401	0.3599
sys-thermal	90%(max)	3.195	0.0093	0.9907
sys-interrupt-rate	mean	1132.4305	0.3997	0.6003
sys-interrupt-rate	10%(max)	151.48	1.0	0.0
sys-interrupt-rate	90%(max)	1363.32	0.0351	0.9649
disk-io-time	mean	0.0058	0.5397	0.4603
disk-io-time	10%(max)	0.0014	0.8675	0.1325
disk-io-time	90%(max)	0.0126	0.0117	0.9883

## Crosstable Analysis Based on Mean Threshold

	x > Mean	x < Mean	Total
load-15m	32214	37401	69615
memory_used_pct	25627	43988	69615
cpu-user	27176	42439	69615
cpu-system	24828	44787	69615
sys-thermal	44433	25182	69615
sys-interrupt-rate	27827	41788	69615
disk-io-time	37570	32045	69615

Conditional Probability Analysis

Condition	Probability
P(load-15m > (mean)   memory_used_pct > (mean))	0.317
P(load-15m < (mean)   memory_used_pct > (mean))	0.0512
P(load-15m > (mean)   cpu-user > (mean))	0.2411
P(load-15m < (mean)   cpu-user > (mean))	0.1493
P(load-15m > (mean)   cpu-system > (mean))	0.2287
P(load-15m < (mean)   cpu-system > (mean))	0.1279
P(load-15m > (mean)   sys-thermal > (mean))	0.3001
P(load-15m < (mean)   sys-thermal > (mean))	0.3382
P(load-15m < 10%(max)   sys-thermal < 10%(max))	0.1019
P(load-15m < 10%(max)   sys-thermal > 90%(max))	0.0017
P(sys-thermal < 10%(max)   load-15m > 90%(max))	0.0027
P(load-15m > 90%(max)   sys-thermal < 10%(max))	0.0027
P(sys-thermal > 90%(max)   load-15m < 10%(max))	0.0017
P(load-15m > (mean)   sys-interrupt-rate > (mean))	0.2555
P(load-15m < (mean)   sys-interrupt-rate > (mean))	0.1442
P(load-15m > (mean)   disk-io-time > (mean))	0.2989
P(load-15m < (mean)   disk-io-time > (mean))	0.2408
P(load-15m < 10%(max)   disk-io-time < 10%(max))	0.056
P(load-15m < 10%(max)   disk-io-time > 90%(max))	0.0013
P(disk-io-time > 90%(max)   load-15m < 10%(max))	0.0013
P(memory_used_pct > (mean)   cpu-user > (mean))	0.2301
P(memory_used_pct < (mean)   cpu-user > (mean))	0.1603
P(memory_used_pct > (mean)   cpu-system > (mean))	0.2226
P(memory_used_pct < (mean)   cpu-system > (mean))	0.134
P(memory_used_pct > (mean)   sys-thermal > (mean))	0.2436
P(memory_used_pct < (mean)   sys-thermal > (mean))	0.3947
P(sys-thermal < 10%(max)   memory_used_pct > 90%(max))	0.001
P(memory_used_pct > 90%(max)   sys-thermal < 10%(max))	0.001
P(memory_used_pct > (mean)   sys-interrupt-rate > (mean))	0.247
P(memory_used_pct < (mean)   sys-interrupt-rate > (mean))	0.1527
P(memory_used_pct > 90%(max)   sys-interrupt-rate > 90%(max))	0.0011
P(memory_used_pct > (mean)   disk-io-time > (mean))	0.2684
P(memory_used_pct < (mean)   disk-io-time > (mean))	0.2713
P(cpu-user > (mean)   cpu-system > (mean))	0.3013
P(cpu-user < (mean)   cpu-system > (mean))	0.0553
P(cpu-user > 90%(max)   cpu-system > 90%(max))	0.0047
P(cpu-user > (mean)   sys-thermal > (mean))	0.2512
P(cpu-user < (mean)   sys-thermal > (mean))	0.3871
P(sys-thermal < 10%(max)   cpu-user > 90%(max))	0.0032
P(cpu-user > 90%(max)   sys-thermal < 10%(max))	0.0032
P(cpu-user > (mean)   sys-interrupt-rate > (mean))	0.2645
P(cpu-user < (mean)   sys-interrupt-rate > (mean))	0.1353
P(cpu-user > 90%(max)   sys-interrupt-rate > 90%(max))	0.0013
P(cpu-user > (mean)   disk-io-time > (mean))	0.2449
P(cpu-user < (mean)   disk-io-time > (mean))	0.2948
P(cpu-system > (mean)   sys-thermal > (mean))	0.2299
P(cpu-system < (mean)   sys-thermal > (mean))	0.4084
P(sys-thermal < 10%(max)   cpu-system > 90%(max))	0.0058
P(cpu-system > 90%(max)   sys-thermal < 10%(max))	0.0058
P(cpu-system > (mean)   sys-interrupt-rate > (mean))	0.2615
P(cpu-system < (mean)   sys-interrupt-rate > (mean))	0.1383
P(cpu-system > 90%(max)   sys-interrupt-rate > 90%(max))	0.0066
P(cpu-system > (mean)   disk-io-time > (mean))	0.2253
P(cpu-system < (mean)   disk-io-time > (mean))	0.3143
P(sys-thermal > (mean)   sys-interrupt-rate > (mean))	0.2622
P(sys-thermal < (mean)   sys-interrupt-rate > (mean))	0.1375
P(sys-thermal < 10%(max)   sys-interrupt-rate > 90%(max))	0.01
P(sys-interrupt-rate > 90%(max)   sys-thermal < 10%(max))	0.01
P(sys-thermal > (mean)   disk-io-time > (mean))	0.344
P(sys-thermal < (mean)   disk-io-time > (mean))	0.1956
P(sys-thermal < 10%(max)   disk-io-time < 10%(max))	0.0468
P(sys-thermal < 10%(max)   disk-io-time > 90%(max))	0.0041
P(disk-io-time > 90%(max)   sys-thermal < 10%(max))	0.0041
P(sys-interrupt-rate > (mean)   disk-io-time > (mean))	0.2643
P(sys-interrupt-rate < (mean)   disk-io-time > (mean))	0.2754