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November 2024

1 Datasets

Datasets are split in REAL or SYNTHETIC and are based on the the source of the routing table:

- REAL-Tier-1-A: real core backbone router in a global tier-1 ISP

- REAL-Tier-1-B: national backbone router in research and educational network of WIDE Project.

- SYN1: each procedure that is no longer than /24 and /16 is split into two and four prefixes

- SYN2: Each prefix that is no longer than /24, /20 and /16 is split into two, four and eight prefixes

Notation:

- binary radix depth: longest prefix matching

2 Traffic Patterns

Take the following traffic patterns into consideration:

- random: 2^{32} random traffic patterns (generated by xorshift).

  - overhead for generating the data is included in the measurements, but it is small.

- sequential:

  - Generates in the range 0.0.0.0 to 255.255.255.255

- repeated

  - Similar to random but each random lookup is repeated 16 times

- real-trace

  - real traffic trace

3   Using the different libraries

- modified_poptrie

  - need to copy the test data files to modified_poptrie/build/tests
  - last test doesn't pass

- modified_radix_tree

- modified_tree_bitmap

  - rm_test_v6 <u>need to pass the input file</u> here to measure runtimes.
  - use the runtime information and memory usage to compute the lookup rate

- modified_sail

  - uncomment runtime measurement commands in function sailPerformanceTest()
  - QueryPerformanceFrequency() function doesn't exist
  - QueryPerformanceCounter() doesn't exist

3.1   Datasets included in libraries

- modified_poptrie/tests

  - linx-rib.20141217.0000-p46.txt
  - linx-rib.20141217.0000-p52.txt
  - linx-rib-ipv6.20141225.0000.p69.txt
  - linx-update.20141217.0000-p52.txt

3.2   Comments on preallocation of memory for data-structures

- It makes sense to preallocate, because the data structures will be initialized once and then remain as is.

3.3   Tables

Configuration	s	# inodes	# leaves	Mem (MiB)	Compilation (ms)	Rate (Mlps)
Radix	-					
Poptrie-basic	0					
Poptrie-leafvec	0					
Poptrie	0					

Table 1: The compilation time, the number of nodes, the memory footprint, and the lookup rate for random with direct pointing (s = 0, 16, 18)