

Figure 1: X: [\"All2All\", ]

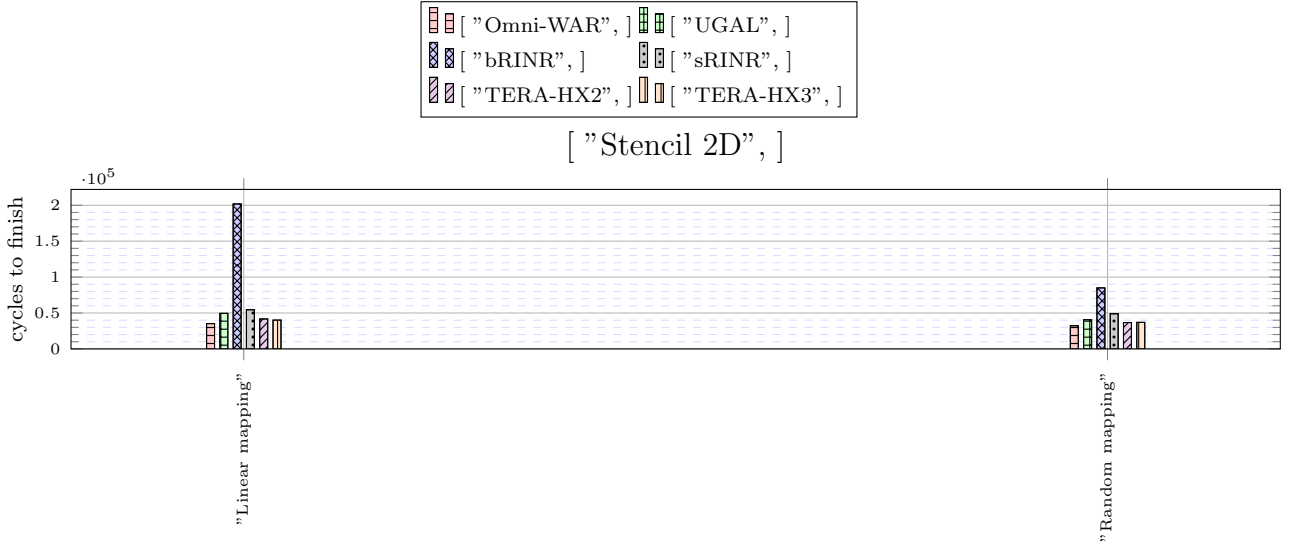


Figure 2: X: [\"Stencil 2D\", ]

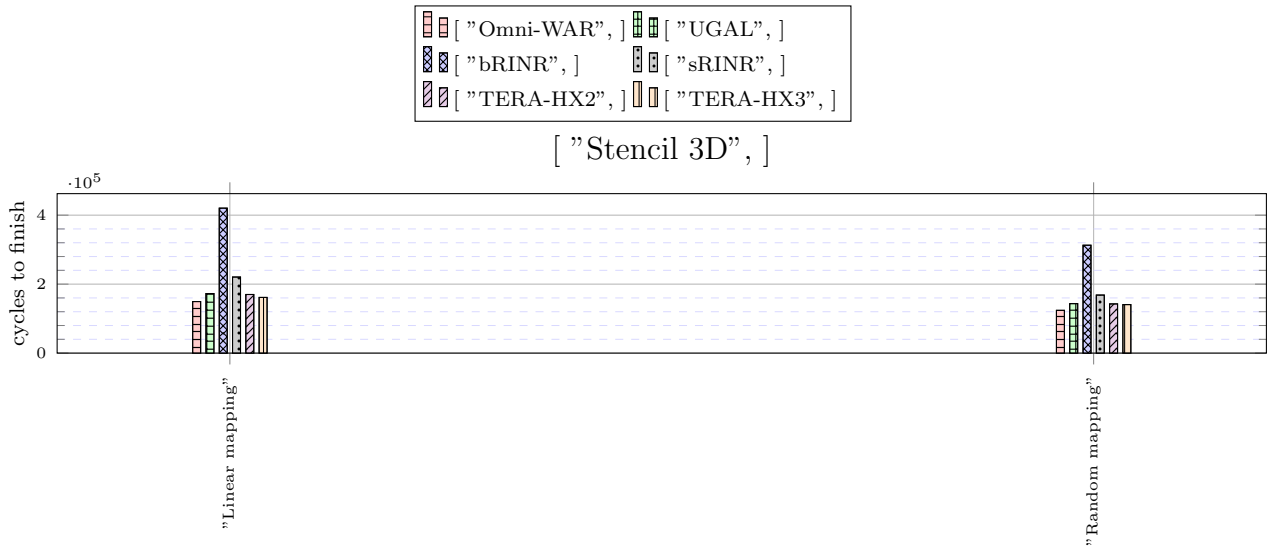


Figure 3: X: [\"Stencil 3D\", ]

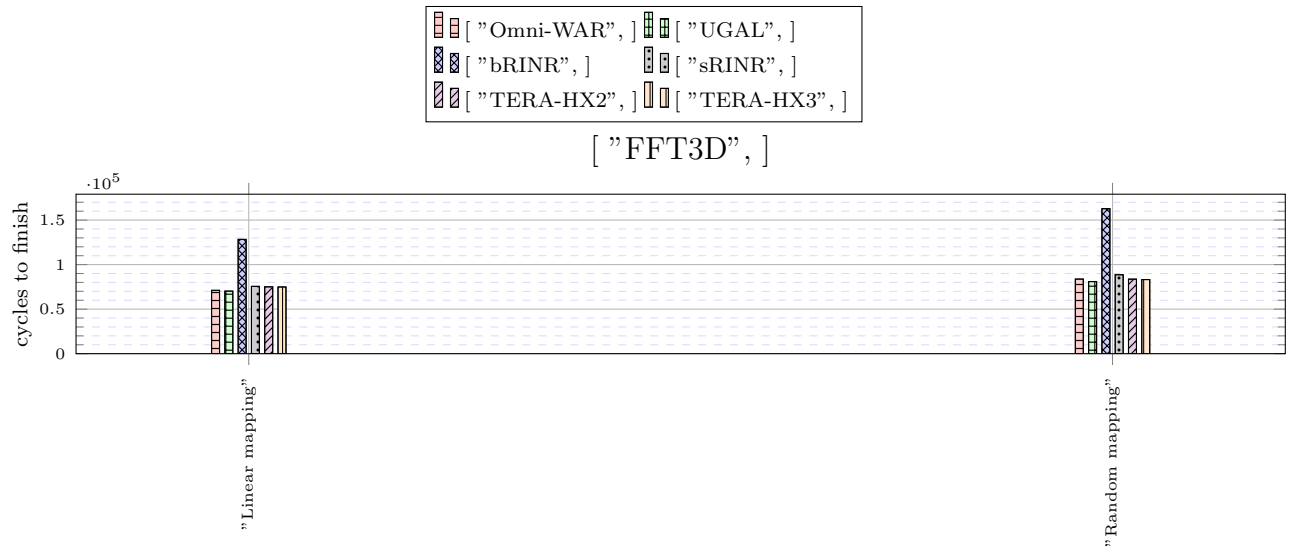


Figure 4: X: [ "FFT3D", ]

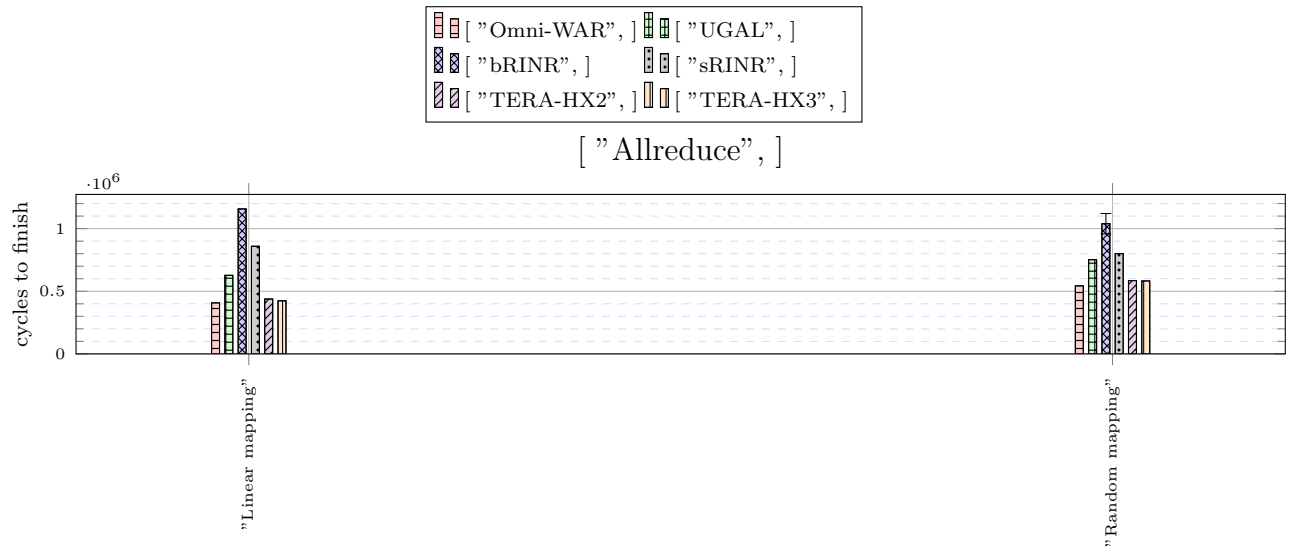


Figure 5: X: [ "Allreduce", ]

The following versions used in the simulations.

- heads/alex-stable-release-TERA-35e794829433712d102999df79a051a0256a860a(0.6.3)
- heads/alex-stable-release-TERA-bc545f9093be36b0a173d3eb574ed35e54e2c29c(0.6.3)
- heads/alex-stable-00bacb613dc89a579028965f2bb90ce93ecd6e7a(0.6.3)

```
Configuration {
  random_seed: ![ 1, 2, 3 ],
  warmup: 10000000000000,
  measured: 100000000000000,
  statistics_server_percentiles: [ 0, 5, 25, 50, 75, 95, 100 ],
  statistics_packet_percentiles: [ 0, 5, 25, 50, 75, 95, 100 ],
  general_frequency_divisor: 2,
  statistics_temporal_step: 1000,
  statistics_packet_definitions: [
    [ ],
    [ ]],
  topology: Hamming {
    servers_per_router: 64,
    sides: [ 64 ]},
  traffic: TrafficMap {
    tasks: 4096,
    map: ![
      Identity { legend_name: "Linear mapping" },
      RandomPermutation { legend_name: "Random mapping" }],
    application: ![
      All2All { tasks: 4096, data_size: 65536, legend_name: "All2All" },
      Stencil {
        tasks: 4096,
        one_to_many_pattern: KingNeighbours {
          sides: [ 64, 64 ],
          distance: 1},
        message_size: 1024,
        rounds: 1,
        legend_name: "Stencil 2D"},
      Stencil {
        tasks: 4096,
        one_to_many_pattern: KingNeighbours {
          sides: [ 16, 16, 16 ],
          distance: 1},
        message_size: 1024,
        rounds: 1,
        legend_name: "Stencil 3D"},
      All2AllLinear {
        task_space: [ 64, 64 ],
        message_size: 256,
        rounds: 16,
        legend_name: "FFT3D"},
      AllReduce { tasks: 4096, data_size: 65536, algorithm: Hypercube, legend_name: "Allreduce" }]],
  router: InputOutput {
    virtual_channels: mecanismo![ 2, 2, 1, 1, 1, 1 ],
    virtual_channel_policies: mecanismo![
      [
        WideHops { width: 1 },
        VecLabel {
          label_vector: [ 0, 64 ]},
        OccupancyFunction { label_coefficient: 1, occupancy_coefficient: 1, product_coefficient: 0, constant_coefficient: 0, use_internal_space: true,
use_neighbour_space: true, aggregate: true },
        OccupancyFunction { label_coefficient: 1, occupancy_coefficient: 1, product_coefficient: 0, constant_coefficient: 0, use_internal_space: true,
use_neighbour_space: true, aggregate: false },
        LowestLabel,
        EnforceFlowControl,
        Random],
      [
        VecLabel {
          label_vector: [ 0, 64 ]},
        OccupancyFunction { label_coefficient: 1, occupancy_coefficient: 1, product_coefficient: 0, constant_coefficient: 0, use_internal_space: true,
use_neighbour_space: true, aggregate: true },
        OccupancyFunction { label_coefficient: 1, occupancy_coefficient: 1, product_coefficient: 0, constant_coefficient: 0, use_internal_space: true,
use_neighbour_space: true, aggregate: false },
        LowestLabel,
        EnforceFlowControl,
        Random],
      [
        VecLabel {
          label_vector: [ 0, 56 ]},
        OccupancyFunction { label_coefficient: 1, occupancy_coefficient: 1, product_coefficient: 0, constant_coefficient: 0, use_internal_space: true,
use_neighbour_space: true, aggregate: true },
        LowestLabel,
        EnforceFlowControl,
        Random],
      [
        VecLabel {
          label_vector: [ 0, 56 ]},
        OccupancyFunction { label_coefficient: 1, occupancy_coefficient: 1, product_coefficient: 0, constant_coefficient: 0, use_internal_space: true,
use_neighbour_space: true, aggregate: true },
        LowestLabel,
        EnforceFlowControl,
        Random],
      [
        VecLabel {
          label_vector: [ 0, 56 ]},
        OccupancyFunction { label_coefficient: 1, occupancy_coefficient: 1, product_coefficient: 0, constant_coefficient: 0, use_internal_space: true,
use_neighbour_space: true, aggregate: true },
        LowestLabel,
        EnforceFlowControl,
        Random],
      [
        VecLabel {
          label_vector: [ 0, 56, 56 ]},
        OccupancyFunction { label_coefficient: 1, occupancy_coefficient: 1, product_coefficient: 0, constant_coefficient: 0, use_internal_space: true,
```

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use_neighbour_space: true, aggregate: true },
  LowestLabel,
  EnforceFlowControl,
  Random]],
allocator: Random,
buffer_size: 160,
bubble: false,
flit_size: 16,
intransit_priority: false,
allow_request_busy_port: true,
output_buffer_size: 80,
crossbar_frequency_divisor: 1,
crossbar_delay: 2},
maximum_packet_size: 16,
routing: mecanismo![
  OmniDimensionalDeroute{ allowed_deroutes: 1, include_labels: true, legend_name: "Omni-WAR" },
  Sum{
    policy: TryBoth,
    first_routing: Shortest,
    second_routing: Valiant{
      first: Shortest,
      second: Shortest,
      first_reserved_virtual_channels: [ 0 ],
      second_reserved_virtual_channels: [ 1 ]},
    first_allowed_virtual_channels: [ 0 ],
    second_allowed_virtual_channels: [ 0, 1 ],
    second_extra_label: 1,
    legend_name: "UGAL"},
  Sum{
    policy: TryBoth,
    first_routing: Shortest,
    second_routing: FMLabel{ balance_algorithm: bRINR },
    first_allowed_virtual_channels: [ 0 ],
    second_allowed_virtual_channels: [ 0 ],
    second_extra_label: 1,
    legend_name: "bRINR"},
  Sum{
    policy: TryBoth,
    first_routing: Shortest,
    second_routing: FMLabel{
      balance_algorithm: sRINR{ a: 0, b: 0 },
      weight_repetition: true},
    first_allowed_virtual_channels: [ 0 ],
    second_allowed_virtual_channels: [ 0 ],
    second_extra_label: 1,
    legend_name: "sRINR"},
  SubTopologyRouting{
    logical_topology: Hamming{
      servers_per_router: 2,
      sides: [ 8, 8 ]},
    map: Identity,
    logical_routing: DOR{
      order: [ 0, 1 ]},
    opportunistic_hops: true,
    legend_name: "TERA-HX2"},
  SubTopologyRouting{
    logical_topology: Hamming{
      servers_per_router: 2,
      sides: [ 4, 4, 4 ]},
    map: Identity,
    logical_routing: DOR{
      order: [ 0, 1, 2 ]},
    opportunistic_hops: true,
    livelock_avoidance: true,
    legend_name: "TERA-HX3"}],
link_classes: [
  LinkClass{ delay: 2 },
  LinkClass{ delay: 2 }],
launch_configurations: [
  Slurm{ job_pack_size: 1, time: "2-10:00:00" }]

```