Network Functions Virtualization (NFV); Testing; Specification of Networking Benchmarks and Measurement Methods for NFVI

ETSI GS NFV-TST009 V0.0.4

ETSI NFV Testing & Open Source WG

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Background

- RFC 2544 (originally RFC 1944) ~ 22 years old
  - It can vote and drive in any US state.
- The demands for benchmarking and DUT complexity grew exponentially with NFV
  - Approx. the last 4 years
- Time to take a look at the specific problems of benchmarking the NFVI.
- Time for a Normative Specification
  - Consistency and Repeatability are critical in NFVI

ToC Topics

Known Open Issues (spec gaps)

- Clause 11 Search Algorithms, possibly some with verification steps (especially when the outcome is ~ one lost frame).

- Clause A.1.7 Monitor Infrastructure (CPU & Memory Util) during benchmarking (Trial and Test procedures). Currently mentioned in "Method" procedure, clause 11

Tool Gaps

- Clause 6 "automated collection of software and hardware configuration in all meaningful dimensions," with smart comparison (diffs).

Set Proceduce

Start

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Set-01: Prepare a Test ←

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Set-02: Conduct a Test

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Set-03: Collect & Store Test Results

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Test Results

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More tests in the Set? → Yes ↑

↓ No

Set-04b: Process test results accoding to the Benchmark or Metric requirements

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End

(left partial panel: "roceduce")

Method-04a: Update test configuration

Yes

Test Proceduce

Start

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Test-01: Prepare a Trial ←

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Test-02: Conduct a Trial

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Test-03: Store & Evaluate the Trial Results

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Benchmark or Metric Results

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Measurement Goal Achieved? → No →

↓ Yes

Test-04a: Communicate results to Set Processing

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End

Test-06: Revise parameters and configuration for a new Trial

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Test-05: Apply Search Strategy

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Offered Load and any other parameters

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Test-04b: Store Offered Load and any other parameters

Trial Procedure

Start

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Perform Pre-Test Procedure

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Trial-01: Priming Layer 3

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Trial-02: Priming Layer 2

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Trial-03: Execute the Trial

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Trial-04: Wait for DUT Queues to empty

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Trial-05: Communicate results to Test Evaluation

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Trial Result