4th UCAAT User Conference on Advanced Automated Testing

ETSI World Class Standards

STREAMLINING PERFORMANCE VERIFICATION THROUGH AUTOMATION AND DESIGN

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BACKGROUND – HISTORICAL PROBLEMS

- Legacy test cases
  - Long setup and tear down time
  - Non reusable automation
  - Huge amount of data collected, but not alanyzed
- Low automation level in SUT deployment and configuration
  - Complex and greatly varying configuration
- No supervision over execution
  - Futile test case execution

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RENEWAL ACTIONS

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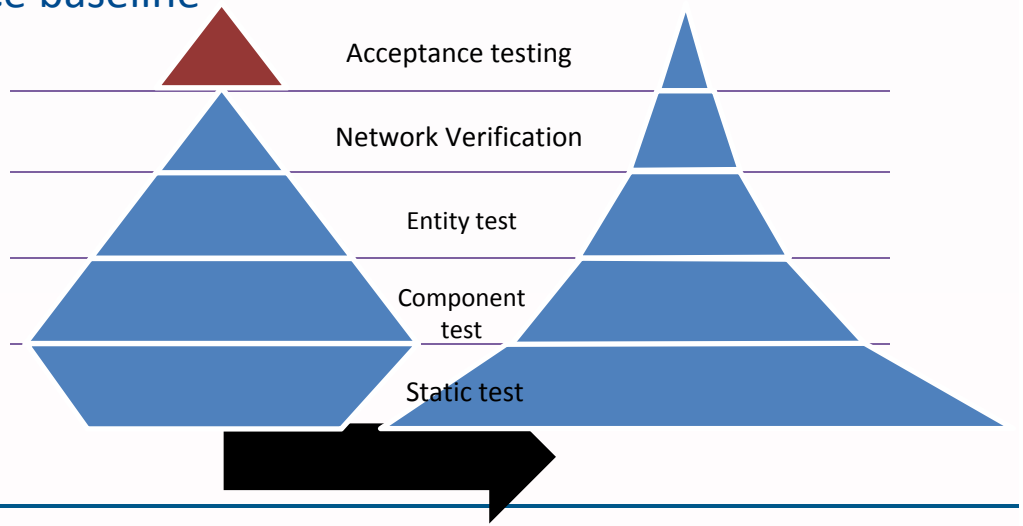
Refactoring test cases

- Differentiate between load testing and performance validation
- Test on lowest possible level
- Test with smallest possible configuration
- Create for reuse – keyword driven testing
- Infrastructure capability without deployment
  - KPI measurement against reference baseline



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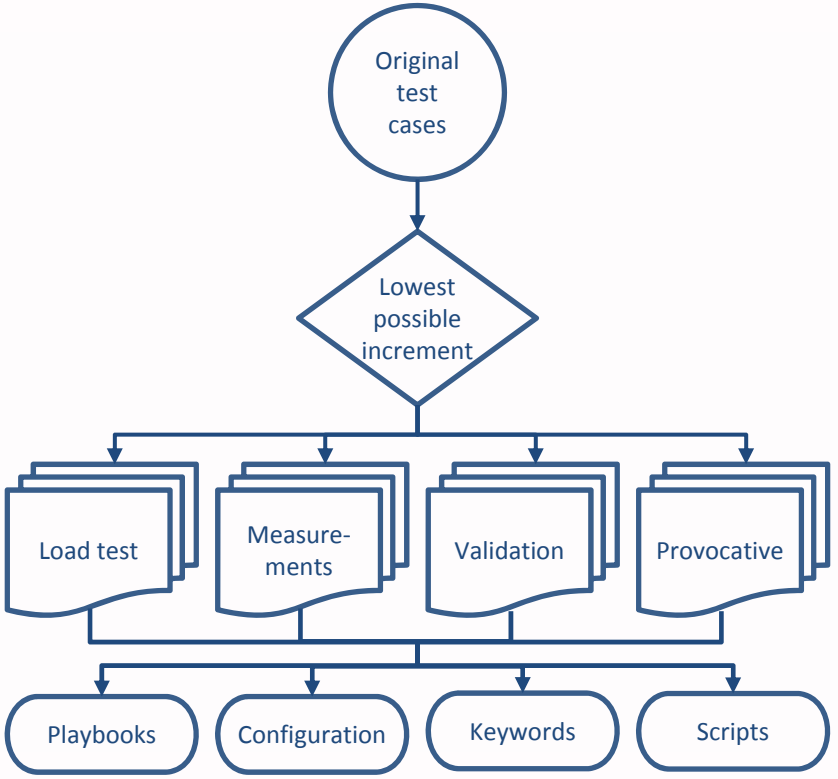
Deployment and configuration design

- Design principles
  - Deconstruct
  - Stabilze
  - Standardize
  - Automate



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Automated virtual Environment Deploy

- Performance testing environment creation and on demand deploy
  - SUT and Non SUT
- Environment lifecycle management
  - VM and container
- Multiple triggering
  - Jenkins
  - GUI with manual triggering

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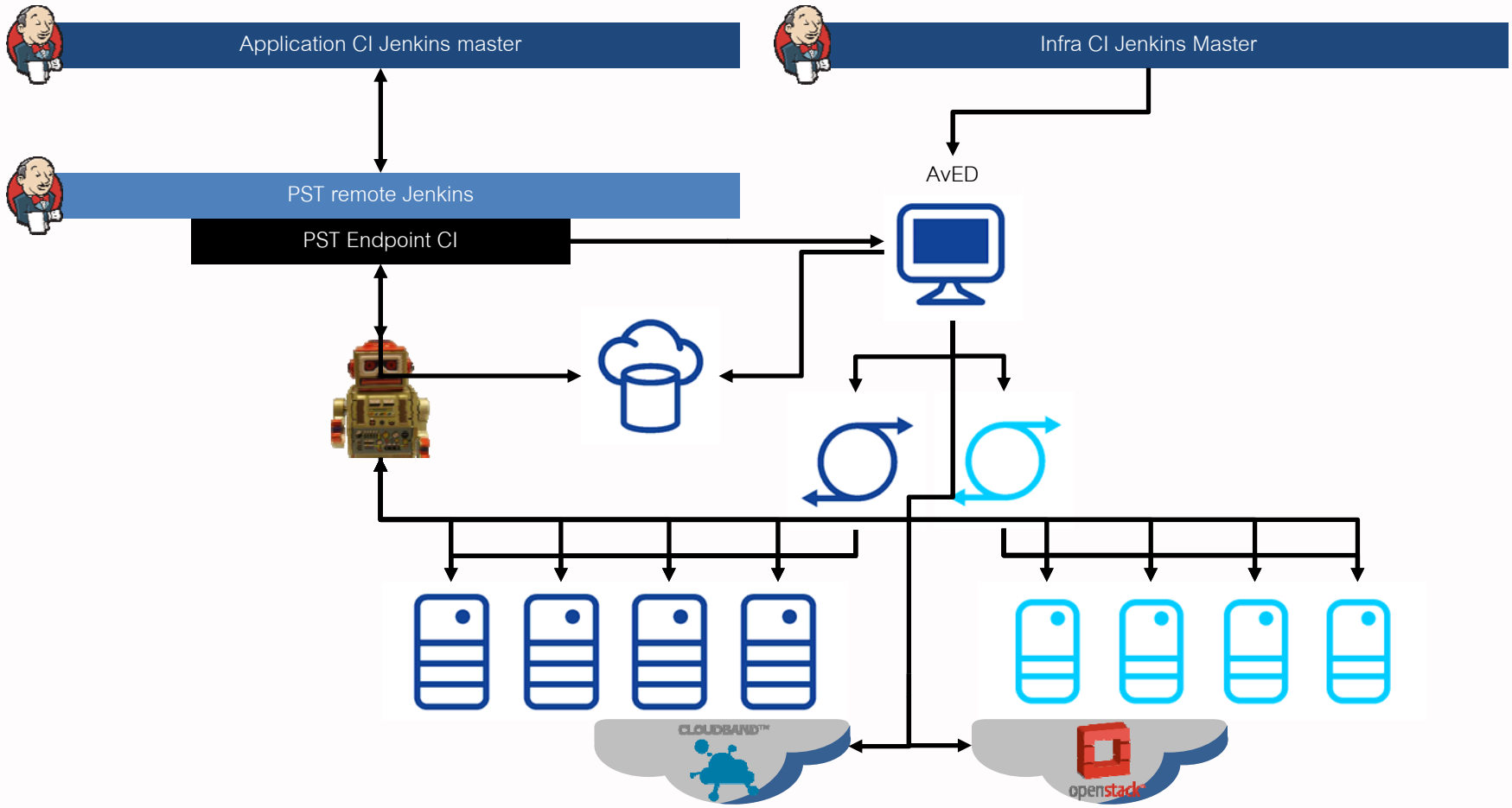
Automated virtual Environment Deploy



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➜ TestingEnvironment objects

Show 5 entries Search: Clear

name	status	TAS	HSS	Generators	Terminate and Delete Environment
vTAS19	deployed	vtas19	HSS_vTAS19	GEN1901	✖ Delete
vTAS24	deployed	vTAS24	HSS_vTAS24	GEN2401	✖ Delete

➜ TAS objects

Show 5 entries Search: Clear

TAS Name	Networks and IP Addresses	State in OS	Other info	Terminate or Update
vtas05	Show Networks and IPs	CREATE COMPLETE	Created by *admin* Download template Get IPs	✖ Delete ⬇ Update System

➜ IPSL_Generator objects

Show 5 entries Search: Clear

Stack Name	tas name	resource name	State in OS	Networks and IP Addresses	Templates	Terminate and Delete Generator
GEN0501	vtas05	vtas05_ipsl_g1	CREATE COMPLETE	Network / IP / Floating: vTAS-05-EXT-CP1-EL4 10.254.208.141 False vTAS-05-EXT-CP2-EL5 10.254.208.173 False vTAS-05-infra-pub 10.39.189.26 True vTAS-05-infra-pub 172.24.17.103 False	AvED IPSL Generator v2.1 Download template	✖ Delete ✖Delete all vtas05 generators

Test environment parameter handling

Python and Django based web application

- Store environment information
- Store traffic profiles / profile elements
- Environment selection for CI
- Environment configuration

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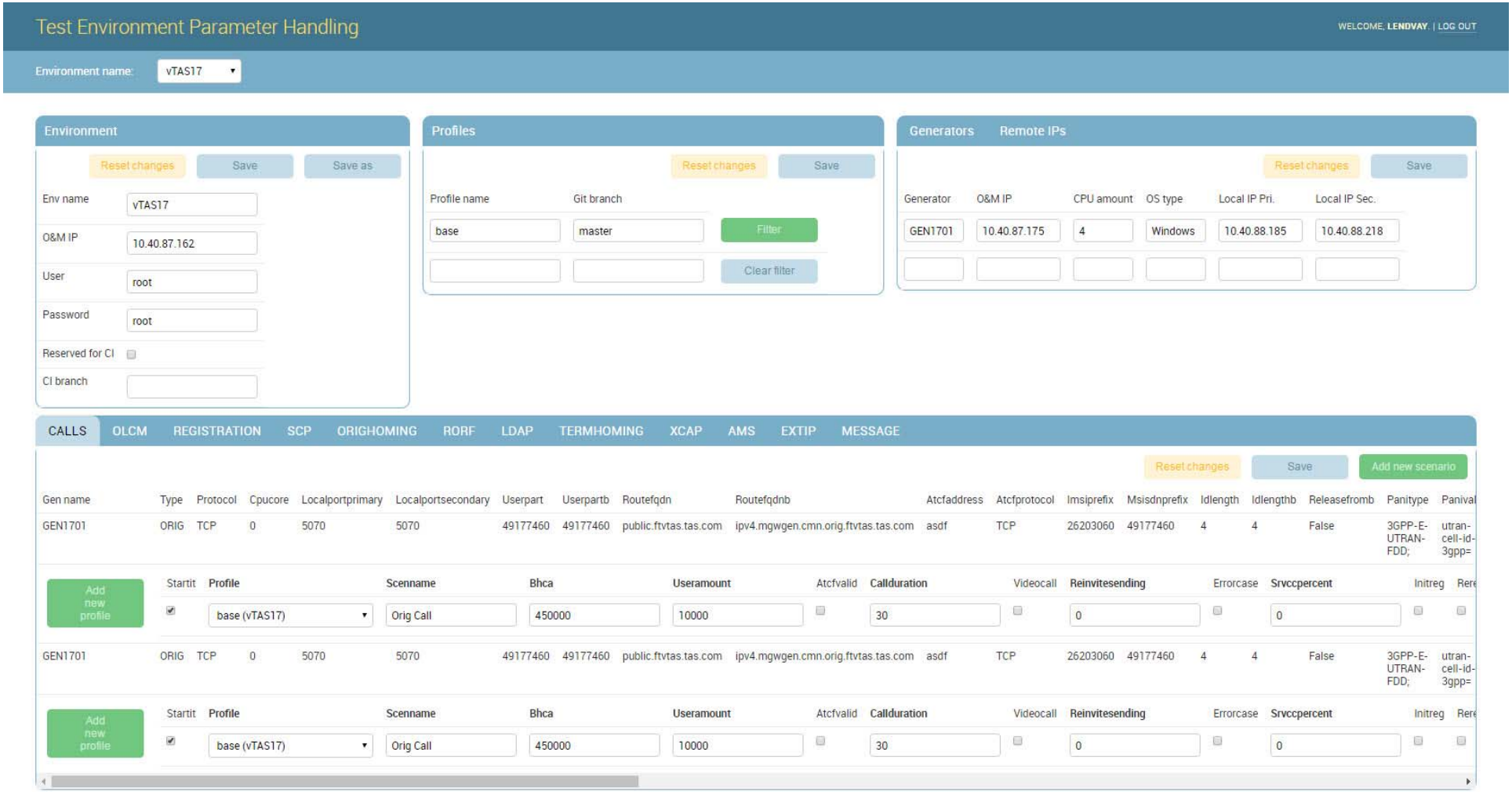

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Test execution

- ROBOT framework (generic automation framework for ATDD)
- Minimum viable unit
  - Test case
  - Environment
- System health check at start
- Continuous traffic and system check
- Collection of relevant data
- Automatic verdict

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Results in numbers

	Previous method	Renewed method
Deployment time	8 hours	30 minutes
Configuration time	10 days	17 minutes
Test execution time	3.7 hours	1.3 hours
Futile test execution ratio	27% (release average)	<3%
Number of parallel execution	Maximum 14	Maximum 58

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Benefits

- Faster feedback to development
- Decreased turonover time
  - Broader test set
  - New test cases
    - Interface tests
    - Single container tests
  - More time for exploratory testing
    - Chaos and robustness

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