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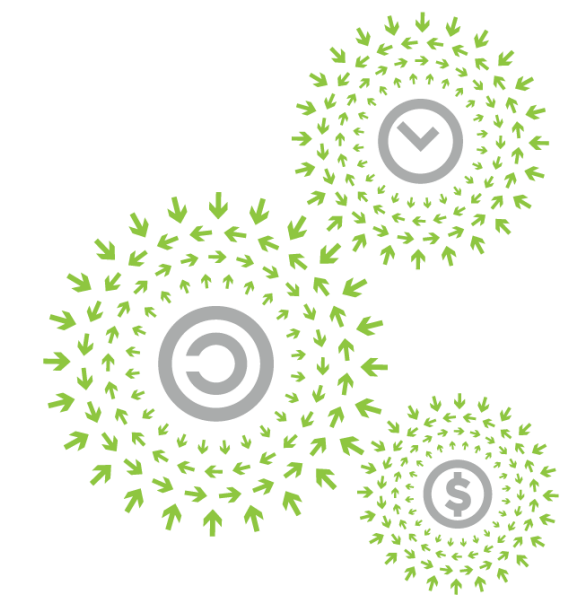
EW: Networking / SONiC



SONiC Ansible Test Automation

Taskin Ucpinar

Senior Director of SW Development
Edgecore Networks



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SONiC Development & Testing: Goals



NETWORKING

- End-to-end testing in development workflow
- Coverages and Automation
- HW platform validations
- Pre-SI RAS, Performance testing
- Sonic ecosystem integrations



Tested
Configurations



NETWORKING

Edgecore's Dedication to SONiC



Tested Configurations



NETWORKING

Edgecore's Dedication to SONiC

- SONiC Feature Set Growth
- Rapid Development Environment
- Ensure Stability/Reliability
- Testing
- Interoperability
- Regression
- CI/CD



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Configurations



NETWORKING

Regression Testing

- SONiC and Branching
- Getting the full picture
- Completing the coverage
- Hardening
- Community Services



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Configurations

SONiC Branches



NETWORKING

And How Edgecore Handles Them...

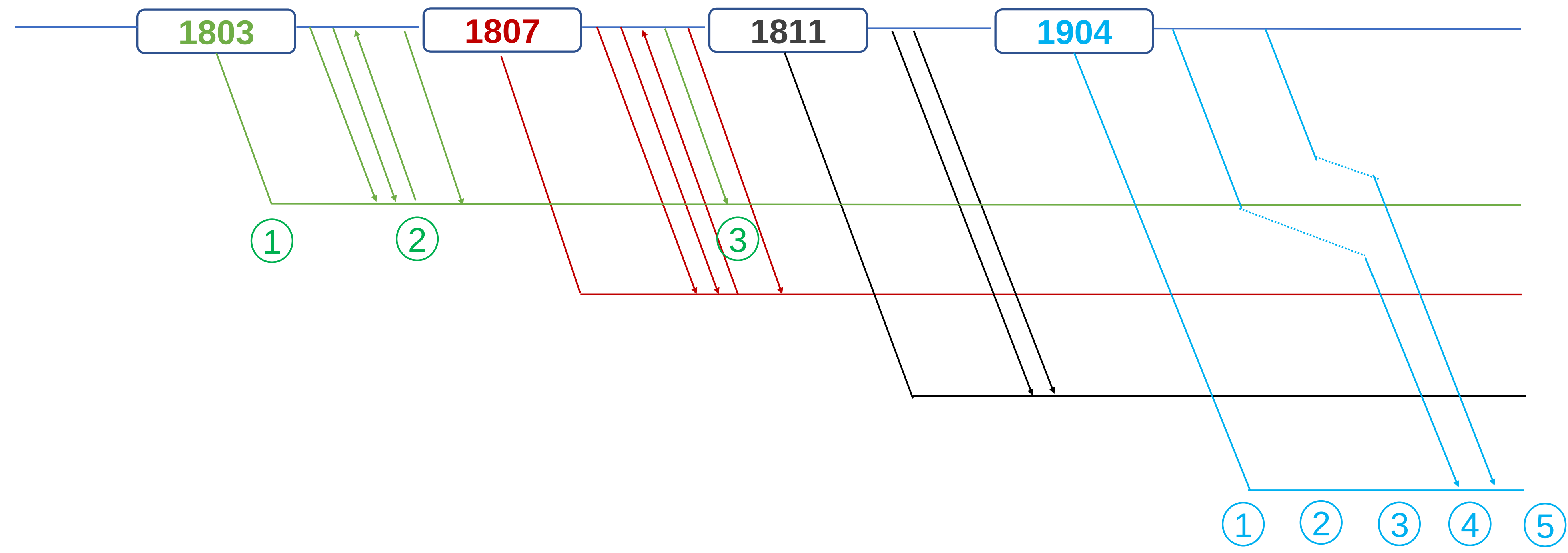


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SONiC and Releases

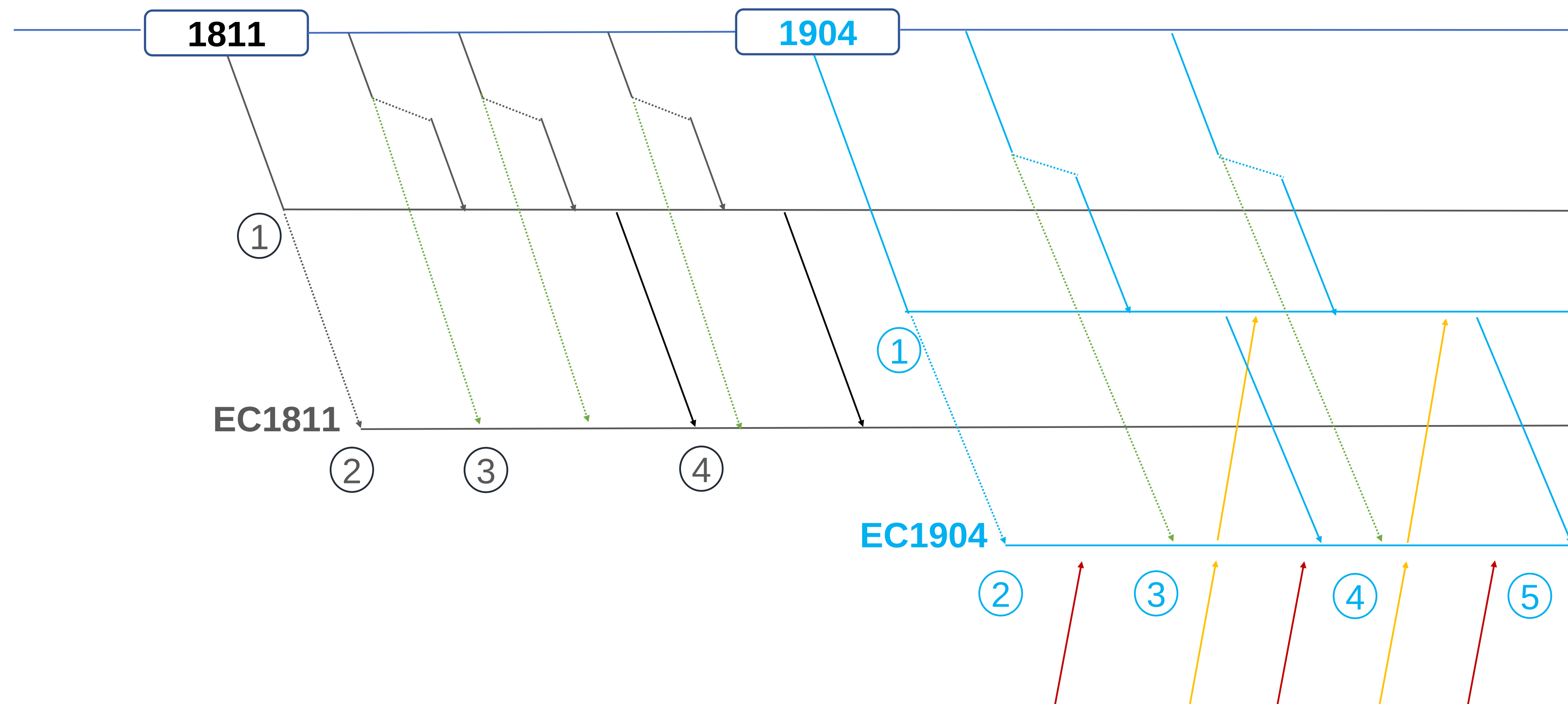


Tested Configurations



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Edgecore's Release Test Branches



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Testing Releases

(and some more)

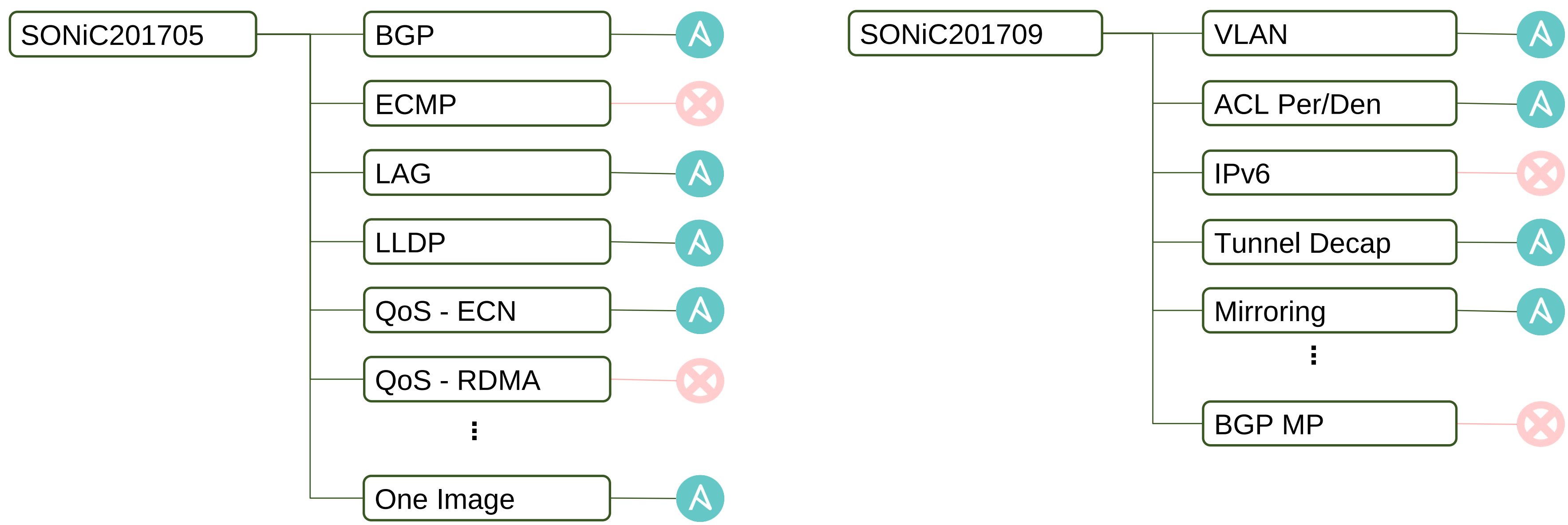


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Getting The Full Picture



Tested Configurations

Getting The Full Picture



NETWORKING

Release	SAI Version	No of Features	No of Ansible Tests
SONiC201705	0.9.4	18	9
SONiC201709	0.9.4	8	4
SONiC201712	1.0	7	2
SONiC201803	1.2	5	2
SONiC201807	1.3	3	0
SONiC201811	1.3	6	2
SONiC.201904	1.4	16	5
Total		63	24



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Testing From All Angles

- Test units/components/functions/functionality
- Not only for testing, but for training purposes
- Independent on features/platforms
- Unit Tests: Typically implemented by developers
- Functional Tests: Implemented by developers and testers
- Test Frameworks
 - gtest
 - pyunit



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NETWORKING

Completing The Picture



100% Coverage

Automation

- All Features Missing Tests
- Coverage % Unknown
- Stability Unknown
- Auto detect and execute
- Regression Testing

Hardening

- Stability Improvements
- Measure Coverage %
- New tests

Edgecore Community Labs

- Multiple Community Labs Across Globe
- SONiC Devices and Packet Generators
- Available to Edgecore Partners, Customers, Community



Tested Configurations

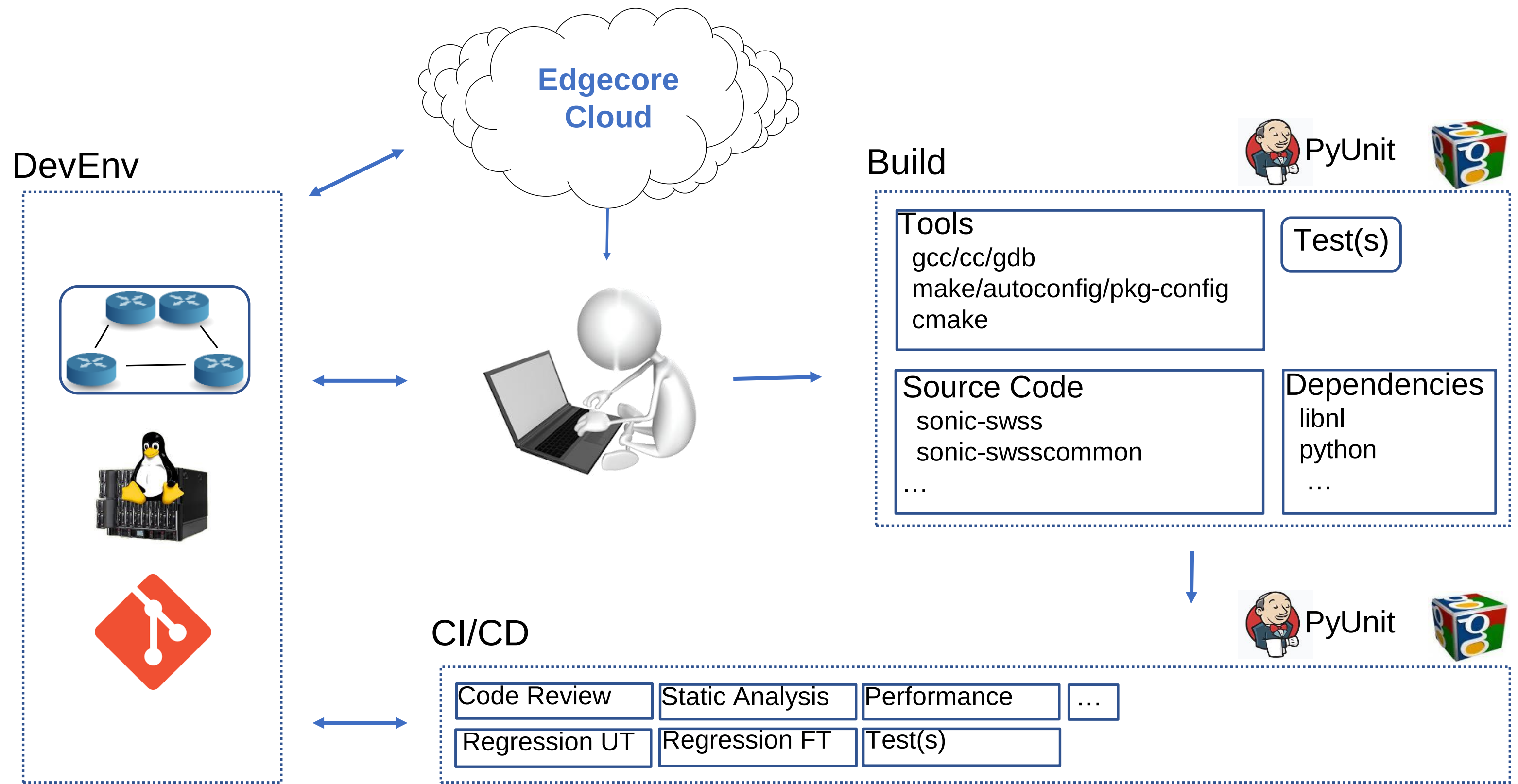


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Development Environment

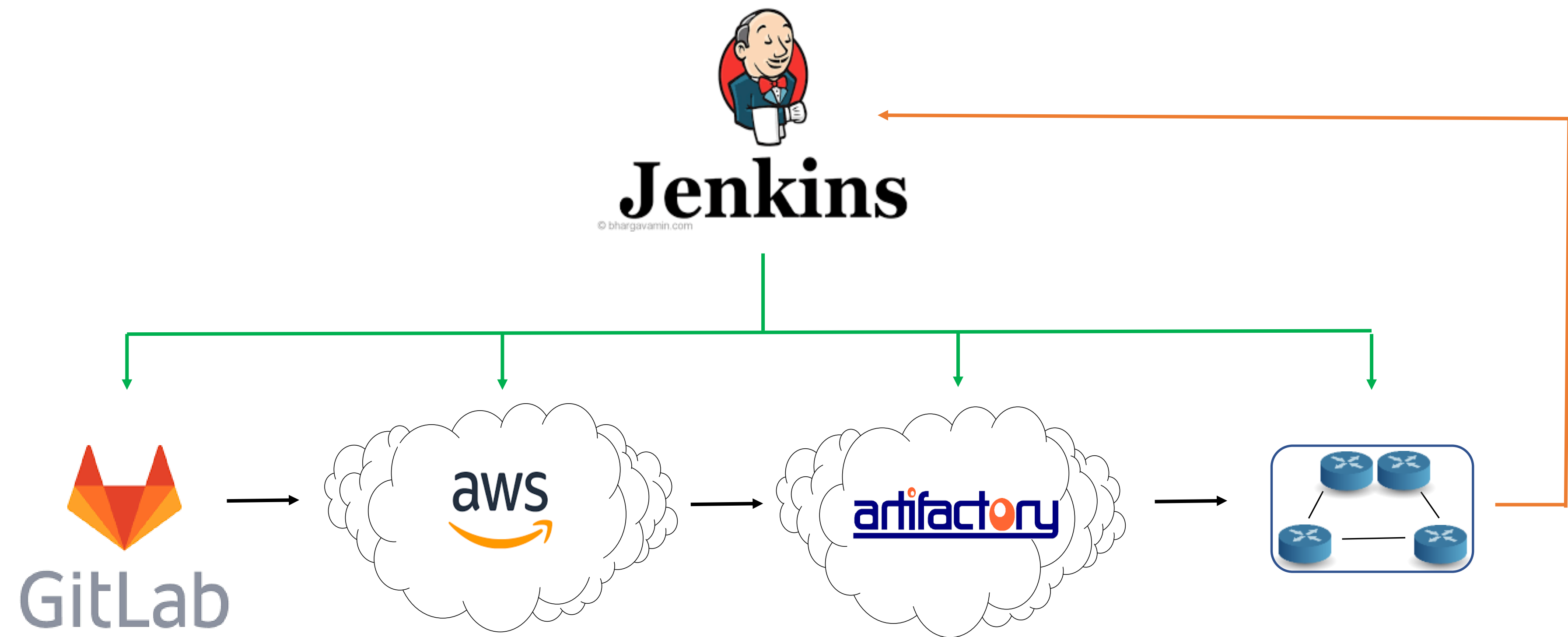


Tested Configurations



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Automated Testing Environment

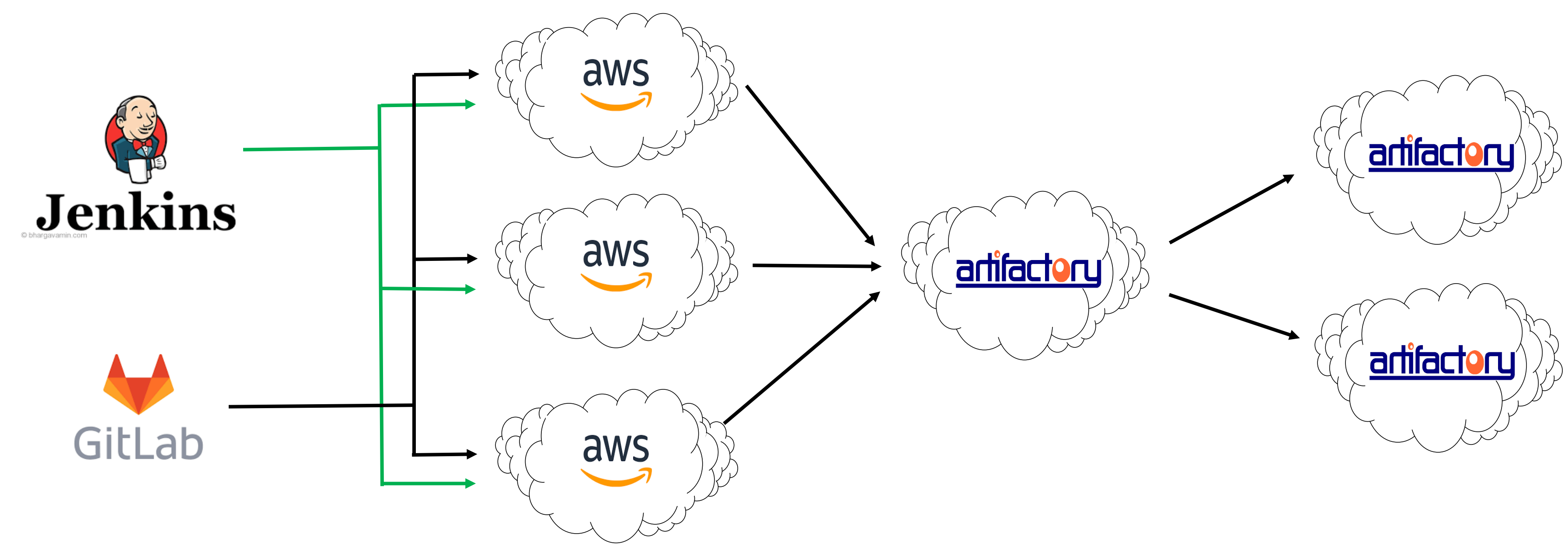


Tested Configurations



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Automated Testing Environment

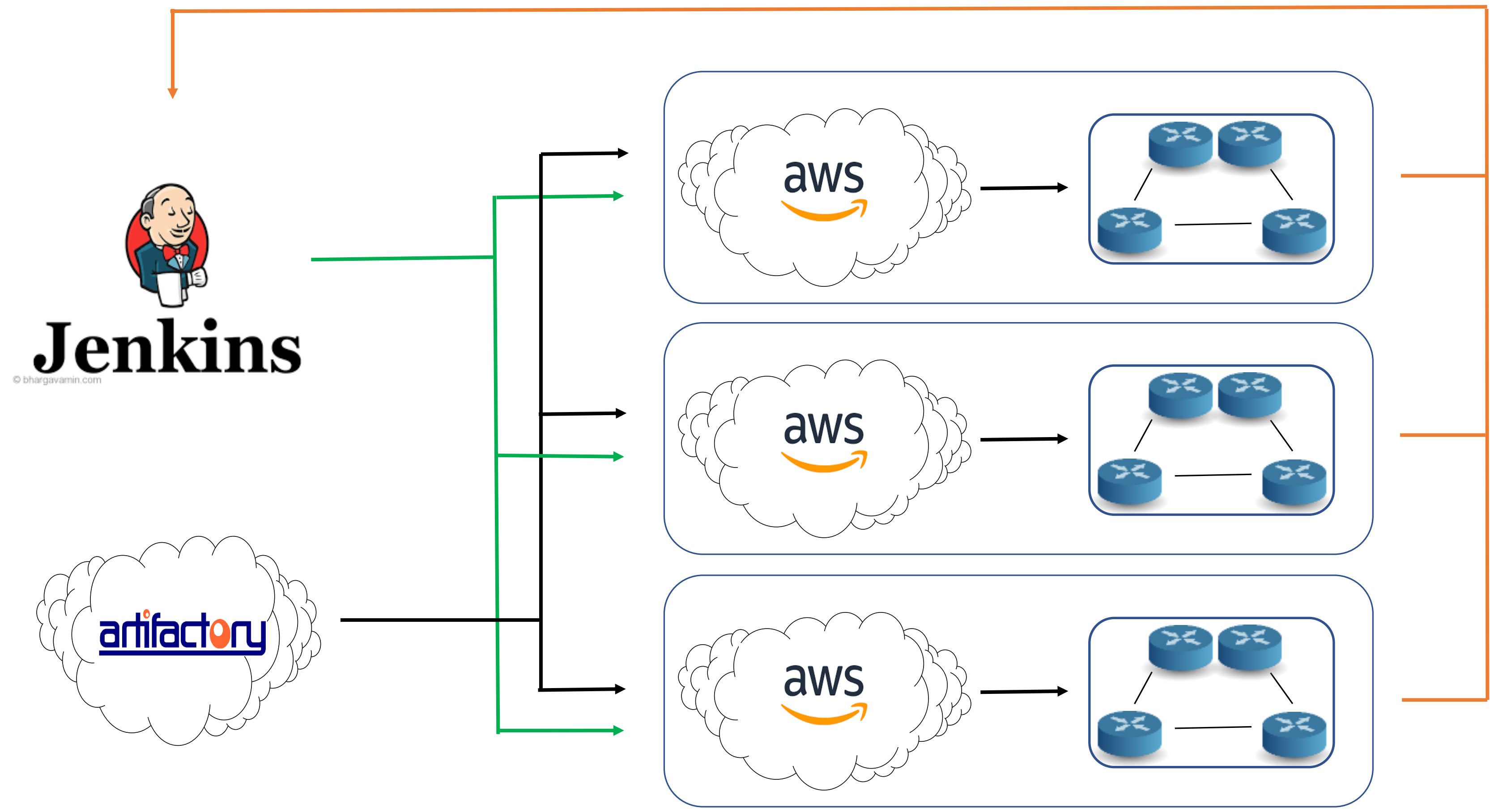


Tested Configurations



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Automated Testing Environment



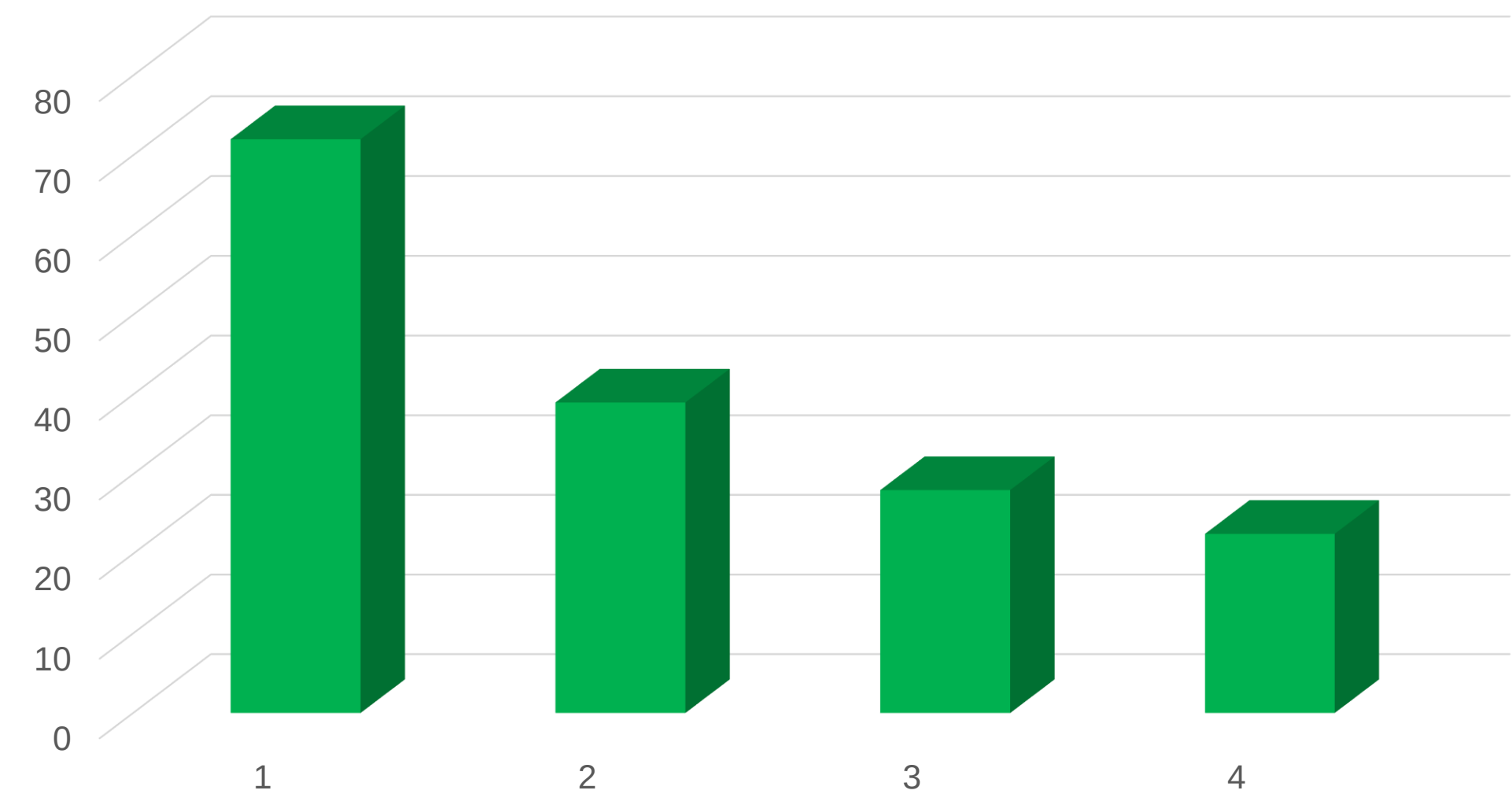
Tested Configurations



NETWORKING

Automated Testing Environment

No of Testbeds vs Execution Time (hrs) *



- Target AST7816-64X
- Release 1904
- 234 Test Cases
- Clean build before tests
- Cleanup Between Runs
 - Reset Image & Config
 - Reboot



Tested Configurations



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Edgecore's Contribution on 1904

	In Progress	Plan to Submit	Submitted	Merged	Total
unit test	5	12	11	11	38
SONiC			6	4	10
sonic-mgmt (test case)			10	7	17
Total	5	12	27	22	65

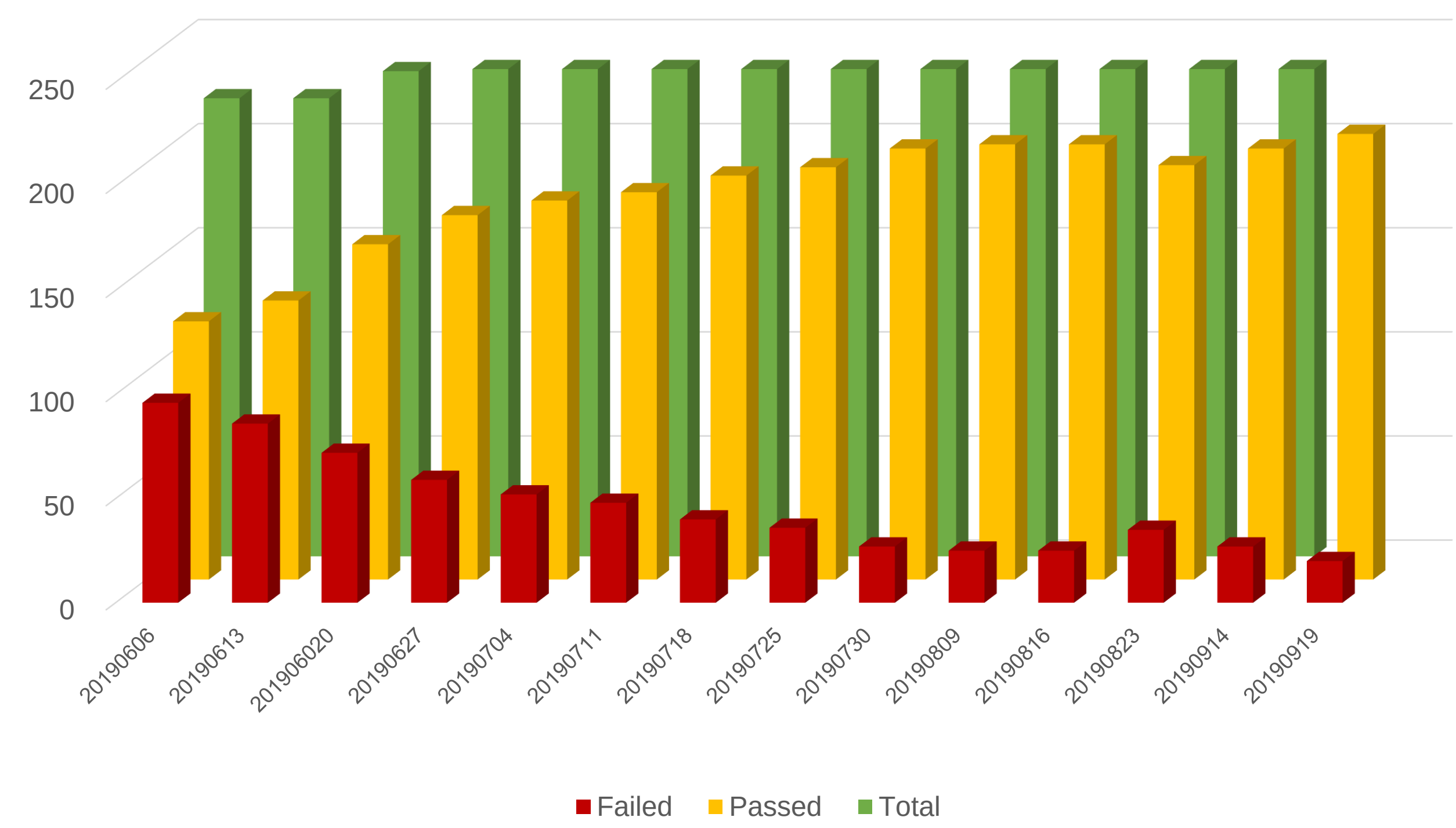


Tested Configurations



NETWORKING

Automated Testing Environment



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OCP Regional Summit
26–27, September, 2019