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# SONiC test

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# Agenda

SONiC test eco system

Challenges

Shifting to the left

Road to future

# SONiC test eco system

- Build test (Build time)
- Virtual Switch Test (PR time)
- KVM Virtual Switch test (PR time)
- Pytest / ansible test (Nightly integration test)

# PR tests - buildimage

The screenshot shows the Jenkins web interface for a pipeline named 'buildimage-vs-all-pr'. The left sidebar contains navigation options: Up, Status, Changes, Full Stage View, Github, Embeddable Build Status, and Test Results Analyzer. The main area displays the pipeline's build history and a 'Stage View' table.

**Build History**

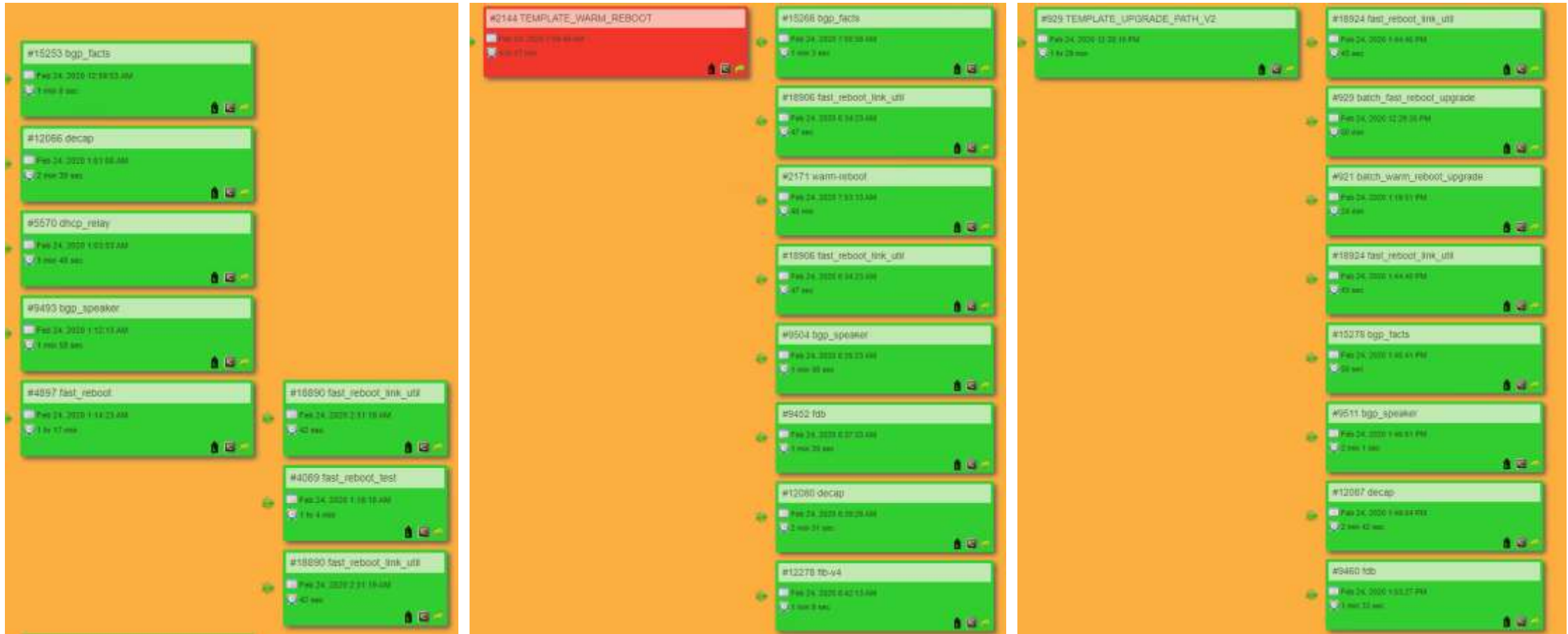
- #2562 Mar 2, 2020 12:52 AM
- #2561 Mar 2, 2020 8:15 PM
- #2560 Mar 2, 2020 8:08 PM
- #2559 Mar 2, 2020 7:45 PM

**Stage View**

	Declarative: Checkout SCM	Prepare	Build	Test	Declarative: Post Actions
Average stage times (average of all runs): ~2h 33min	2h	1min 35s	1h 24min	10min 51s	54s
#2562	3h 11m	1min 18s			
#2561	2h	1min 45s	1h 43min	10min 32s	1min 40s
#2560	2h	1min 37s	1h 32min	10min 17s	1min 20s
#2559	2h 20min	1min 15s	1h 38min	10min 48s	1min 10s

●	baseimage	Pending — Build started for merge commit.	<a href="#">Details</a>
●	default	Pending — Build started for merge commit.	<a href="#">Details</a>
●	mellanox	Pending — Build started for merge commit.	<a href="#">Details</a>
●	vs	Pending — Build started for merge commit.	<a href="#">Details</a>
●	vsimage	Pending — Build started for merge commit.	<a href="#">Details</a>
●	license/ids	All CLA requirements met	<a href="#">Details</a>

# Nightly tests



# Challenges



STABILIZE MASTER  
BRANCH



REDUCE FEATURE BRANCH  
STABILIZATION TIME



ROLL OUT NEW FEATURE  
BRANCH FASTER

# Responses – Redefine test



Shift to the left



Shape development  
behaviors



Test Driven Development



# TDD: Reshape development behaviors

```
def one_plus_two():  
    return 5
```

```
def one_plus_two():  
    return 5  
  
@must_fail('Bug detected')  
def test_one_plus_two():  
    result = one_plus_two()  
    assert(result == (1 + 2))
```

```
def one_plus_two():  
    return 3  
  
@must_pass  
def test_one_plus_two():  
    result = one_plus_two()  
    assert(result == (1 + 2))
```

# Road to the future: improve tests

- Improve test infrastructures
- Improve test predictabilities
- Add more test cases
- Run more test cases in PR tests
- Shorten test execution time
- Visible, auditable test results
- CICD

# Near future



Improve PR test wait mechanism (February 2020)



Improve PR test stability (March 2020)



Run PR test for sonic-mgmt repo. (April 2020)



Multi-DUT deployment support



Embrace community test infrastructures and test cases

# Mid to long term



Embrace more community test infrastructures and test cases



SONiC fanout switch link state propagation support



Test coverage



Combined PR test across repos

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