Ruby CI with Github, Jenkins, and EC2 Spot Instances

John Russell (@jjrussell)

Director of Tools at Tapjoy

http://tech.tapjoy.com/engineering-blog

October 23, 2014

#jenkinsconf

Who am I?

- John Russell
- Director of Tools at Tapjoy
- We make tools that make it so that product engineers can do the right thing

This is a story about…

This is a story about…

- Ruby and Rspec?

This is a story about…

- Ruby and Rspec?
- Unit testing?

This is a story about…

- Ruby and Rspec?
- Unit testing?
- Spot instances on AWS?

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- Ruby and Rspec?
- Unit testing?
- Spot instances on AWS?
- Parallelization?

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- Ruby and Rspec?
- Unit testing?
- Spot instances on AWS?
- Parallelization?
- Money?

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- Ruby and Rspec?
- Unit testing?
- Spot instances on AWS?
- Parallelization?
- Money?
- Jenkins?

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- Ruby and Rspec?
- Unit testing?
- Spot instances on AWS?
- Parallelization?
- Money?
- Jenkins?
- Intrigue?

This is a story about…

- Ruby and Rspec?
- Unit testing?
- Spot instances on AWS?
- Parallelization?
- Money?
- Jenkins?
- Intrigue?
- Betrayal?

TapjoyServer

of unit tests > 2^{14}

Unit test runtime > 2^7 minutes (2 hours)

That’s not continuous

I know!!

We can parallelize this!

https://github.com/grosser/parallel_tests

Thousands of legacy tests can't run at the same time on the same DB because…reasons.

Thousands of legacy tests can't run at the same time on the same DB because…reasons.

But this could have been any parallelization problem…

I know!!

No seriously, we have to parallelize this.

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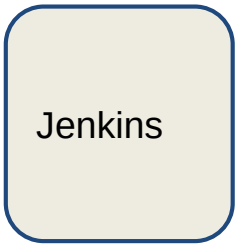
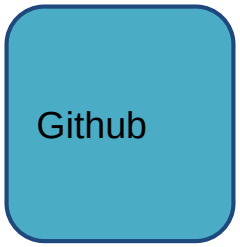


Github

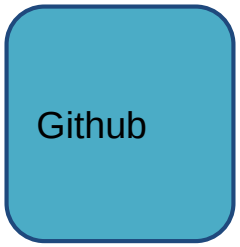


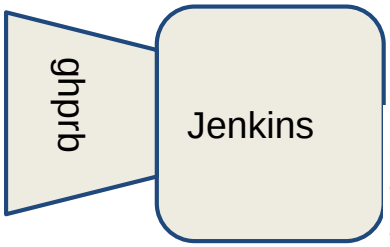
Github Pull Request Builder Plugin

Github

Jenkins

Github Pull Request Builder Plugin





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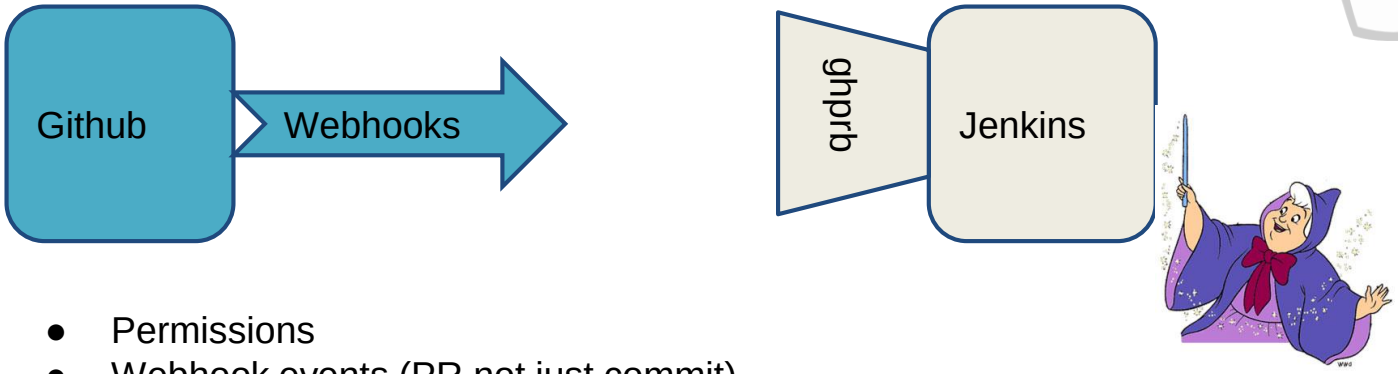
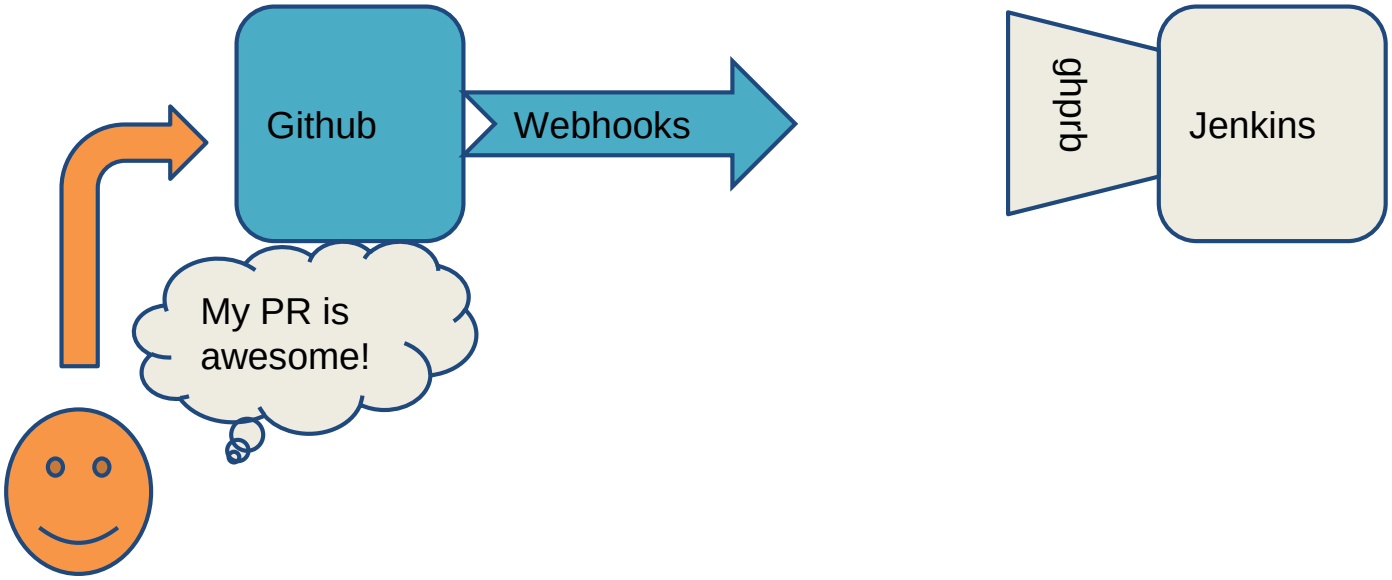


- Permissions
- Webhook events (PR not just commit)

Github Pull Request Builder Plugin



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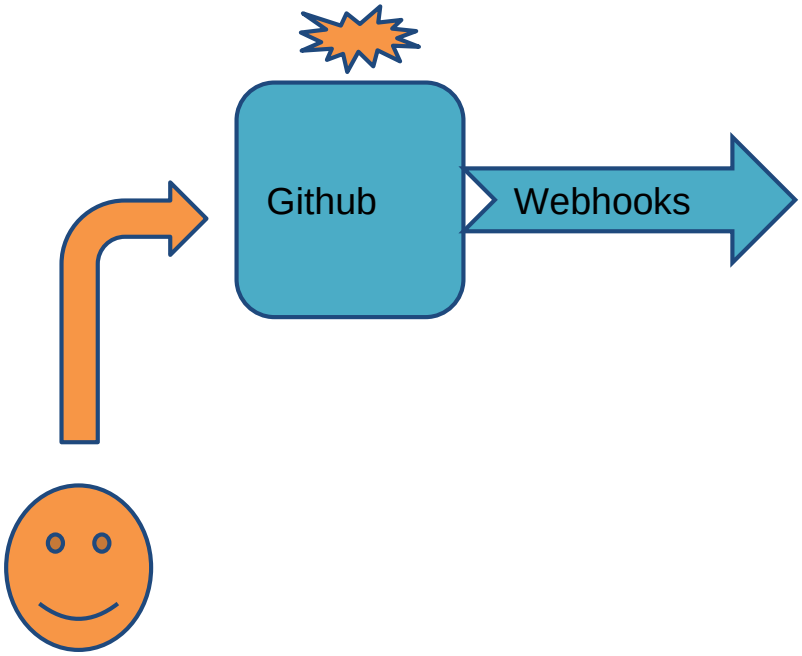

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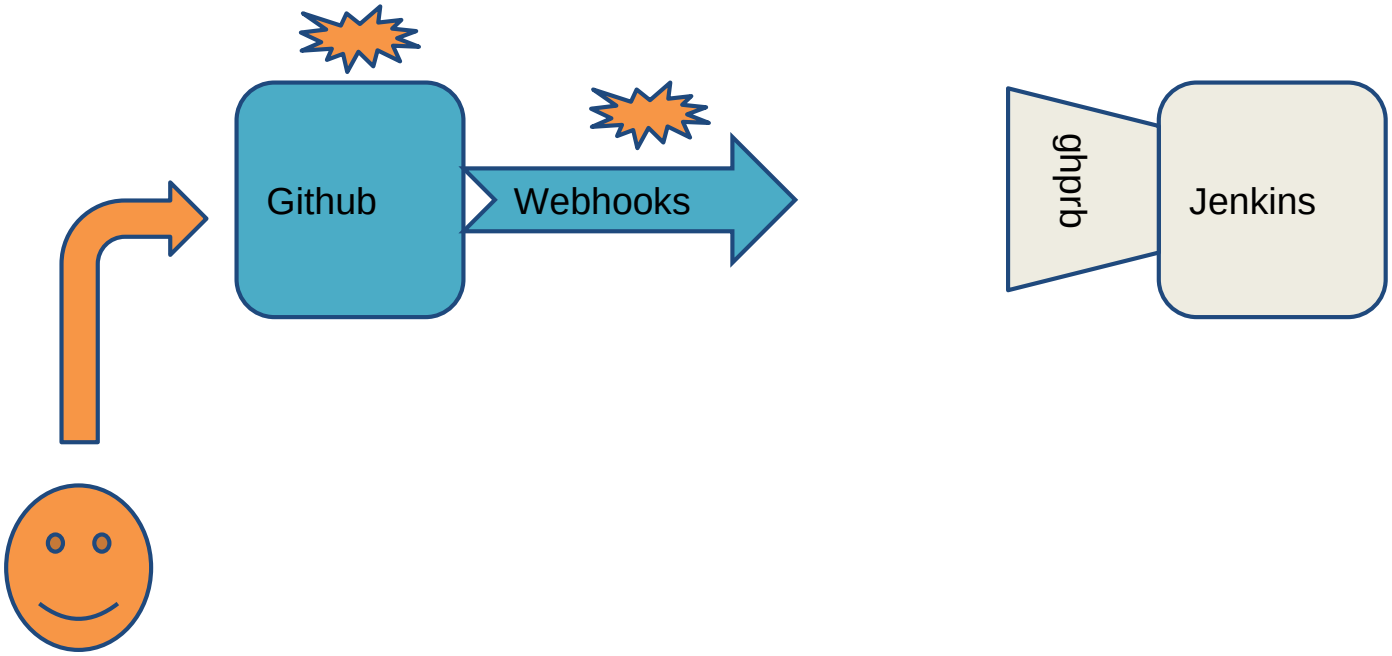

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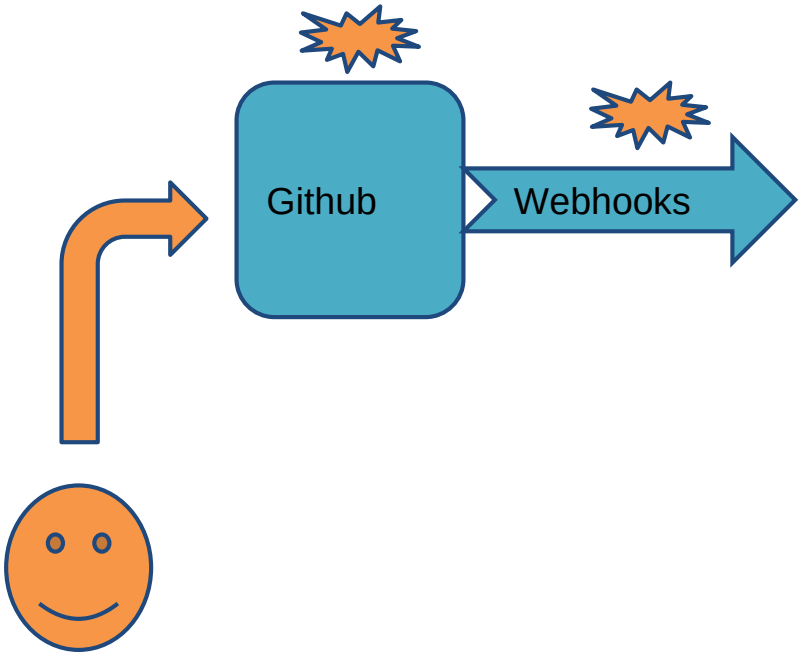

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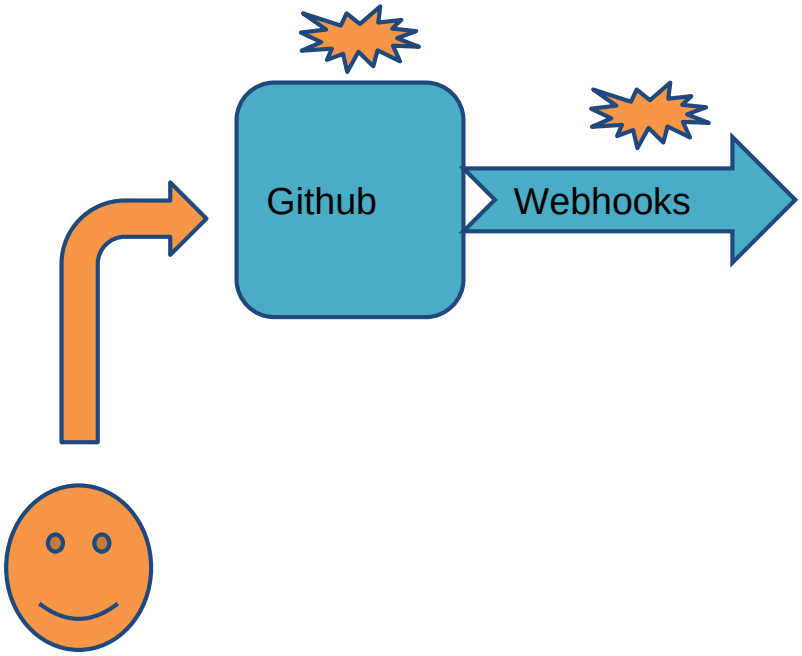
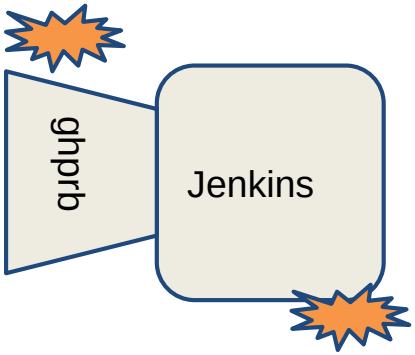
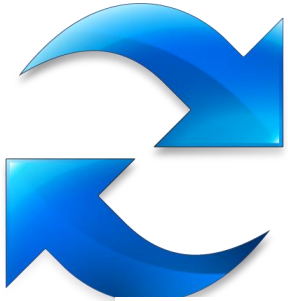
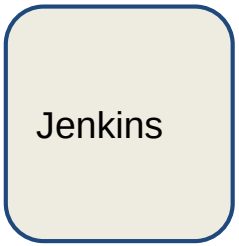


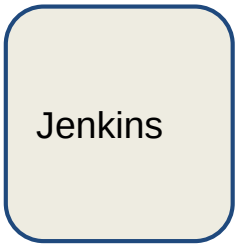




Jenkins Workflow Plugin



Jenkins Build Flow Plugin



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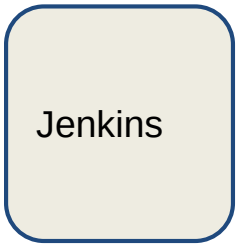

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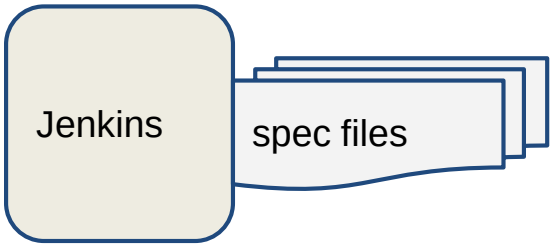

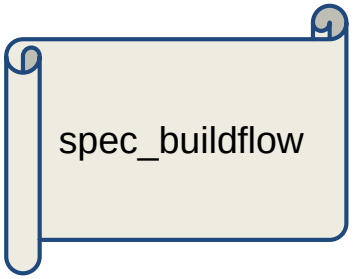

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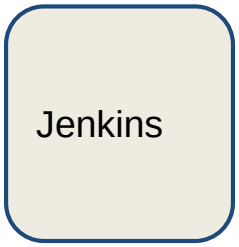

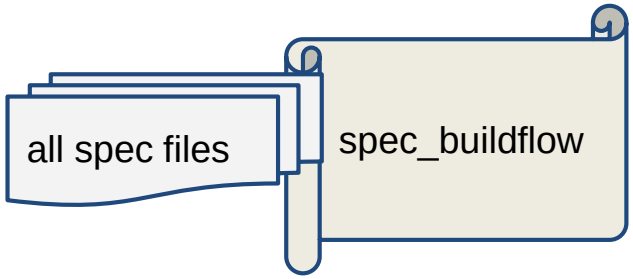

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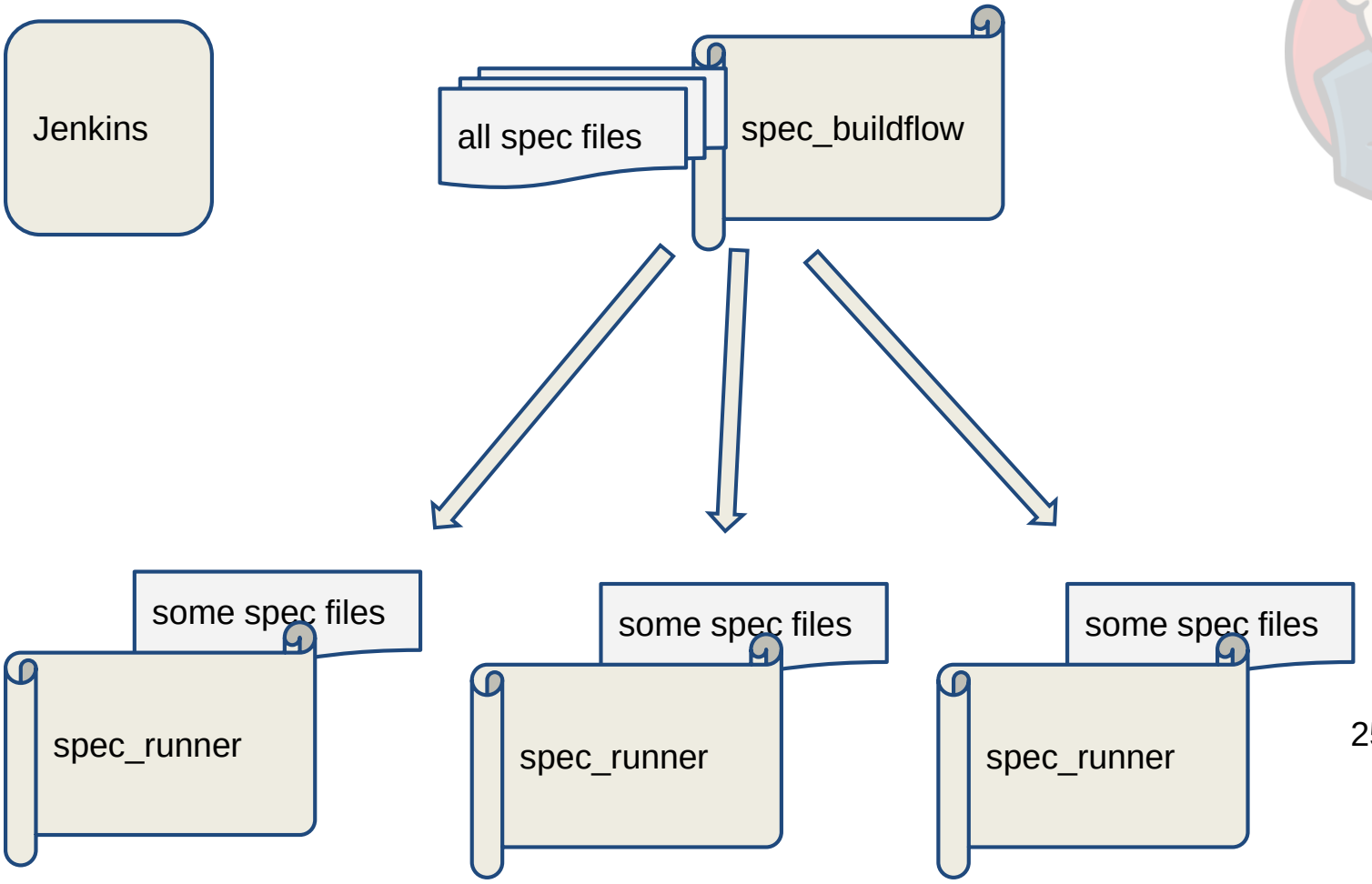

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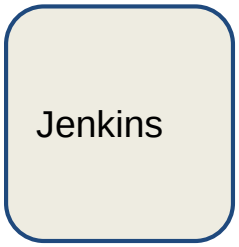
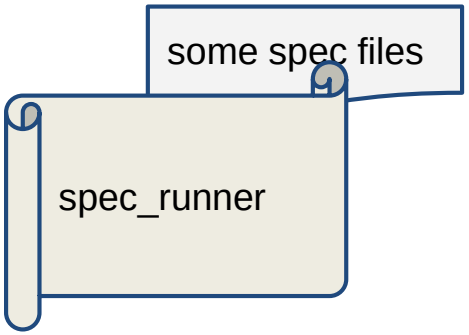
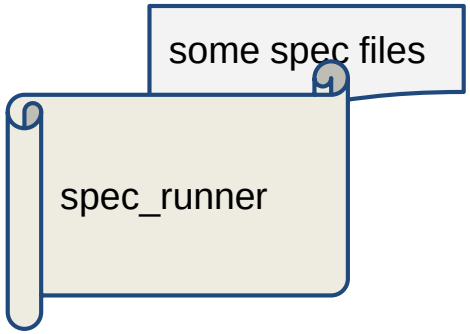
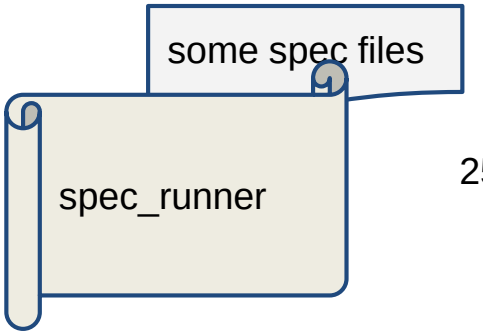


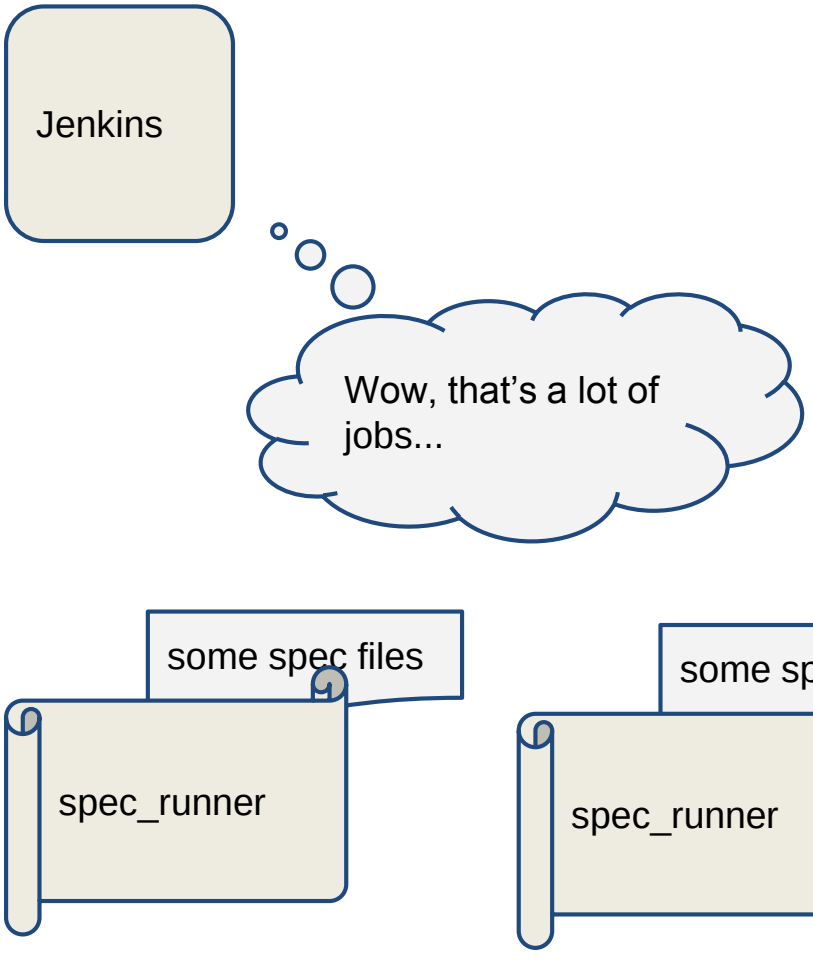




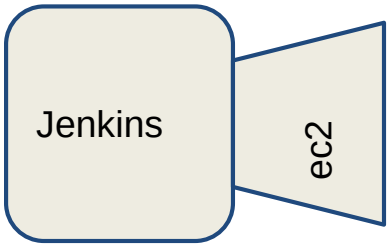


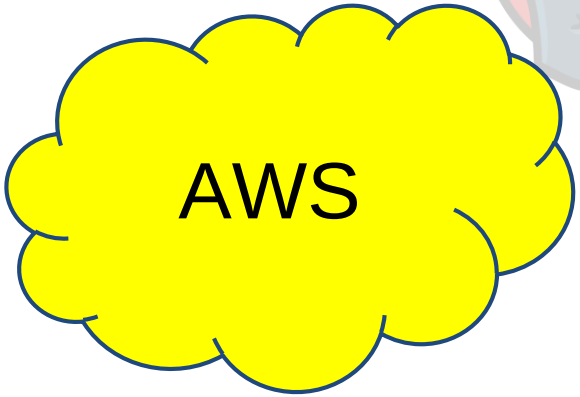
25 times

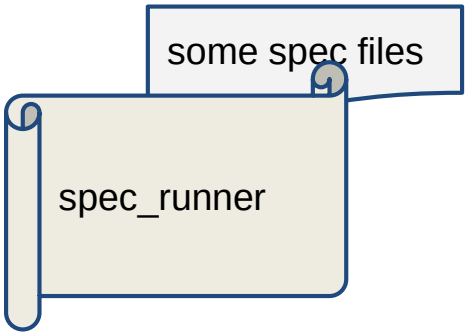
Jenkins Build Flow Plugin



EC2 Plugin - Bring in the spots







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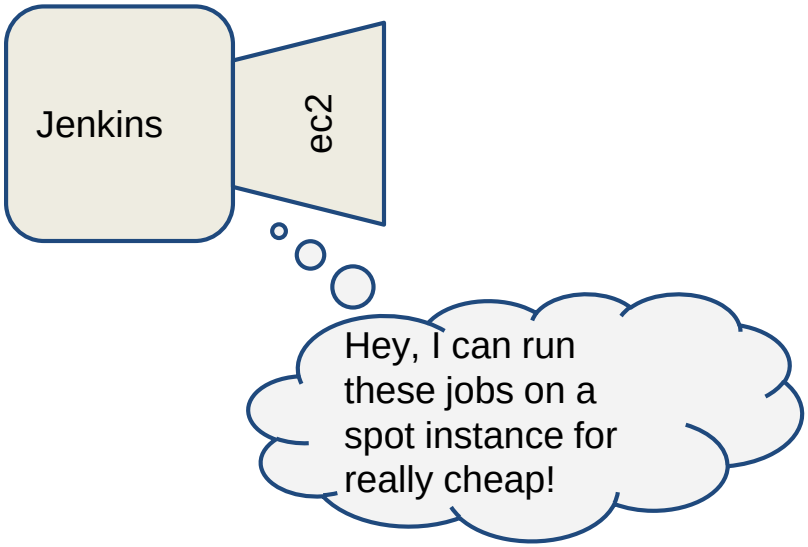

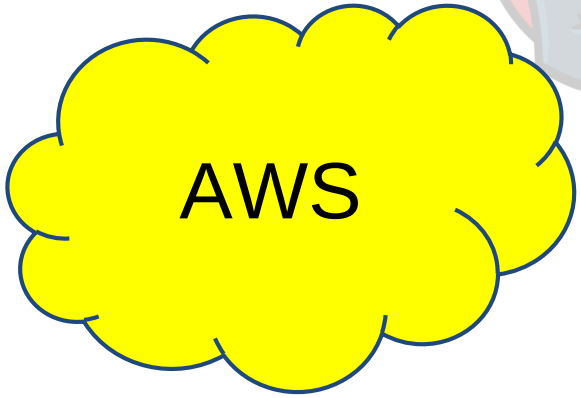

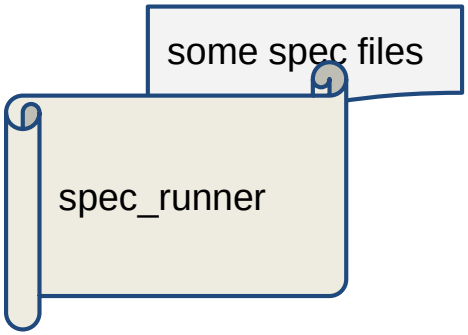

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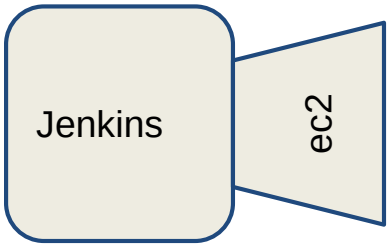
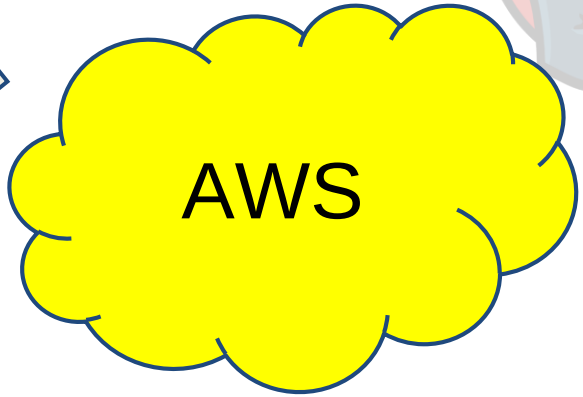
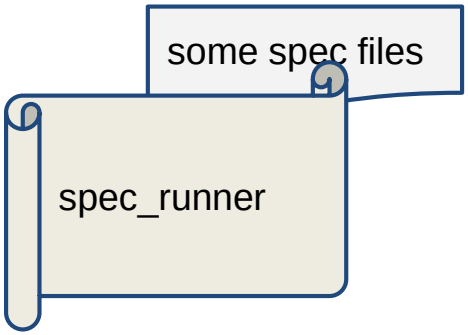


create new node and
request spot instance





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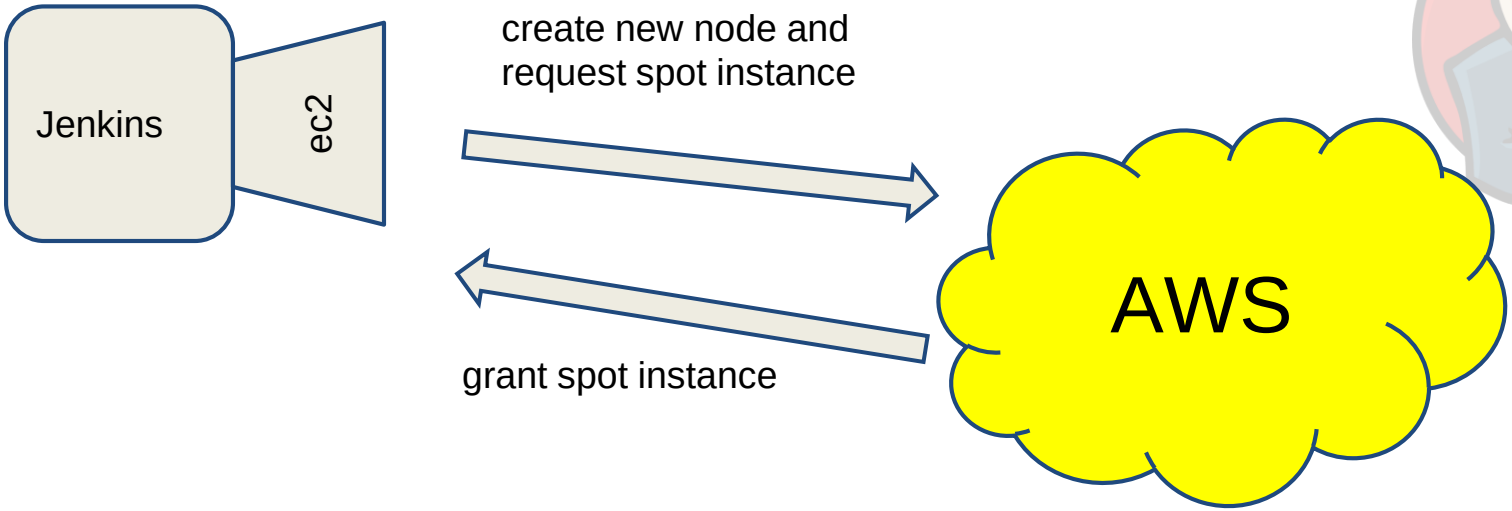

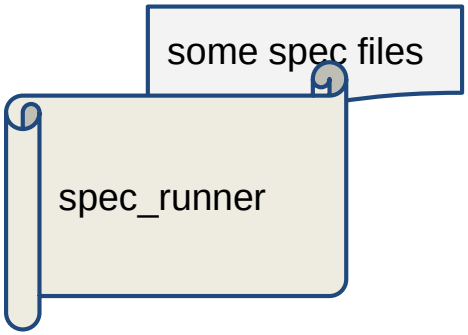

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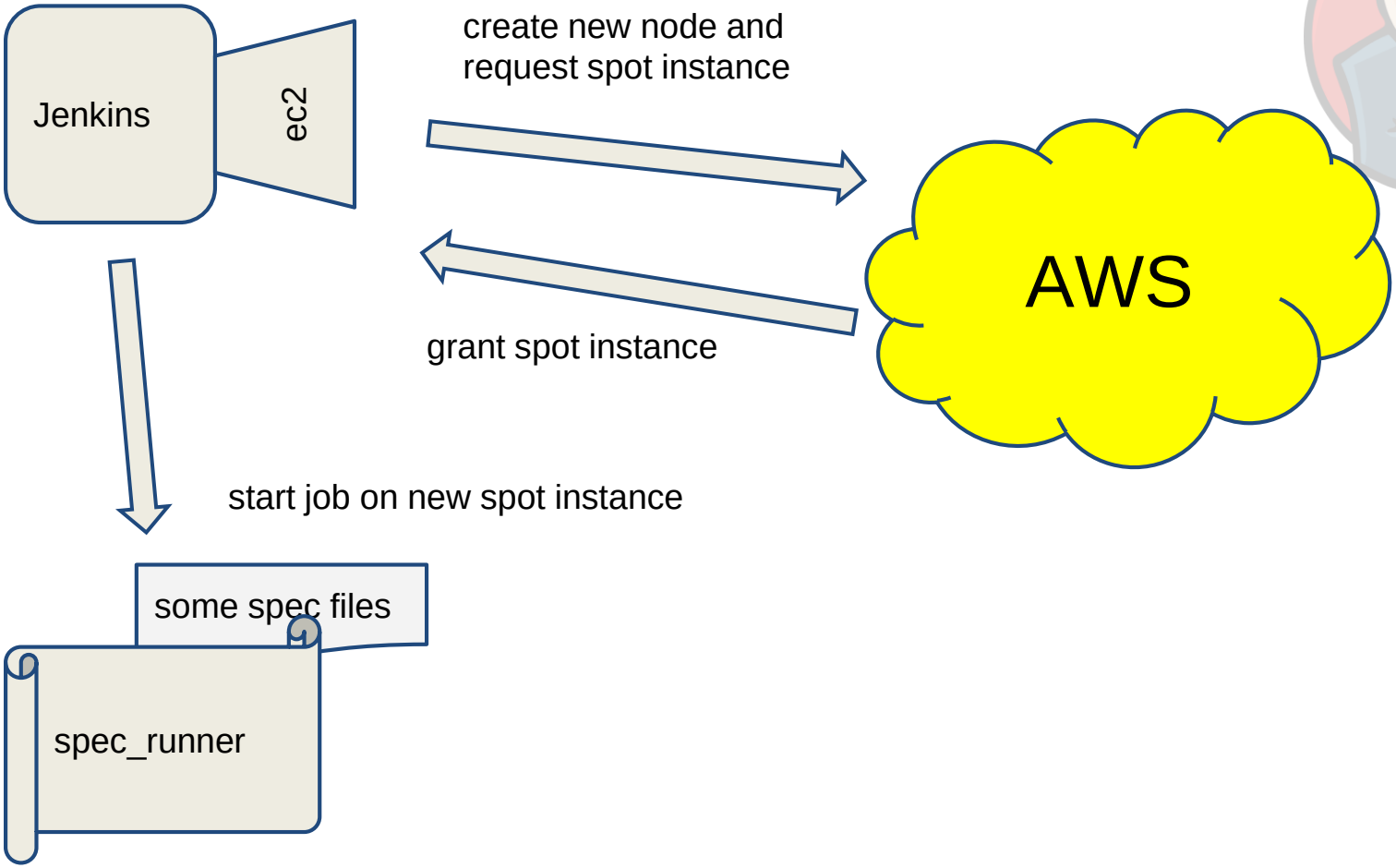


EC2 Plugin - Bring in the spots

Build Executor Status	
#	Status
master	
1	Idle
2	Idle
3	Idle
4	Idle
5	Idle
6	Idle
7	Idle
8	Idle
9	Idle
10	Idle
003ae8c5-db25-4207-b7c6-409ea006771e	
1	Idle
01fbc22b-d444-4d9d-bfae-66c05c54bfae	
1	Idle
027855ba-1bab-4a79-8049-dbd24148d373	
1	Idle
0527a37c-399b-4233-a68a-23db98ef5ba8	
1	Idle
06e51ff2-40a4-40c0-bace-076e568c2a55	
1	Idle
09d55cc0-1c1a-4be7-bebe-e92562b63030	
1	Idle
0b34c5a1-86e0-4ab9-8553-690618fd0071	
1	Idle
14087eeb-515d-442e-be65-ce0fd04b24da	
1	Idle
1871cced-0a5f-4f3b-8eb1-bf1746c67210	
1	Idle
1d618769-e83f-4748-9adb-5a1341027d36	
1	Idle
1fa0941c-0048-4965-8b0d-f0cf229428af	
1	Idle
1fdfcced-a857-4a19-88e1-2f540f9fec5a	

EC2 Plugin - Bring in the spots

Build Queue (19)

spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner
spec-runner

Build Executor Status

#	Status
	master
1	Idle
2	Idle
3	Idle
4	Idle
5	Idle
6	Idle
7	Idle
8	Idle
9	Building tapjoyserver #3189 - b306b91
10	Idle
	Building spec_workflow #19868
	003ae8c5-db25-4207-b7c6-409ea006771e
1	Idle
	01fbc22b-d444-4d9d-bfae-66c05c54bfae
1	Idle
	027855ba-1bab-4a79-8049-dbd24148d373
1	Idle

EC2 Plugin - Bring in the spots

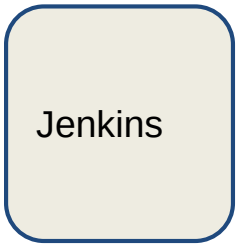
Build Queue

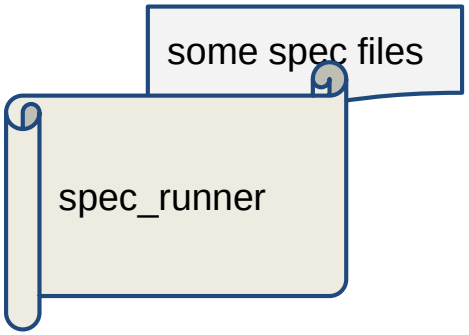
No builds in the queue.

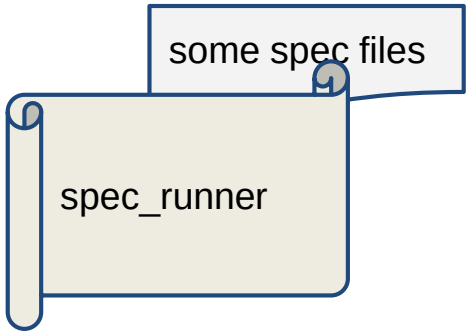
Build Executor Status

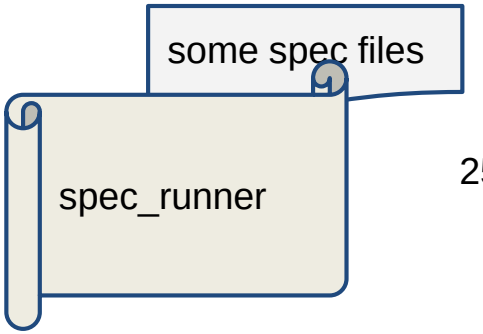
#	Status
	master
1	Idle
2	Idle
3	Idle
4	Idle
5	Idle
6	Idle
7	Idle
8	Idle
9	Building tapjoyserver #3189 - b306b91
10	Idle Building spec_workflow #19868
	003ae8c5-db25-4207-b7c6-409ea006771e
1	Idle
	01fbc22b-d444-4d9d-bfae-66c05c54bfae
1	Idle
	027855ba-1bab-4a79-8049-dbd24148d373
1	Building spec-runner #333710
	0527a37c-399b-4233-a68a-23db98ef5ba8
1	Idle
	06e51ff2-40a4-40c0-bace-076e568c2a55
1	Idle
	09d55cc0-1c1a-4be7-bebe-e92562b63030
1	Idle
	0b34c5a1-86e0-4ab9-8553-690618fd0071
1	Building spec-runner #333701
	14087eeb-515d-442e-be65-ce0fd04b24da
1	Idle
	1871cced-0a5f-4f3b-8eb1-bf1746c67210
1	Idle
	1d618769-e83f-4748-9adb-5a1341027d36

Jenkins Build Flow Plugin









25 times

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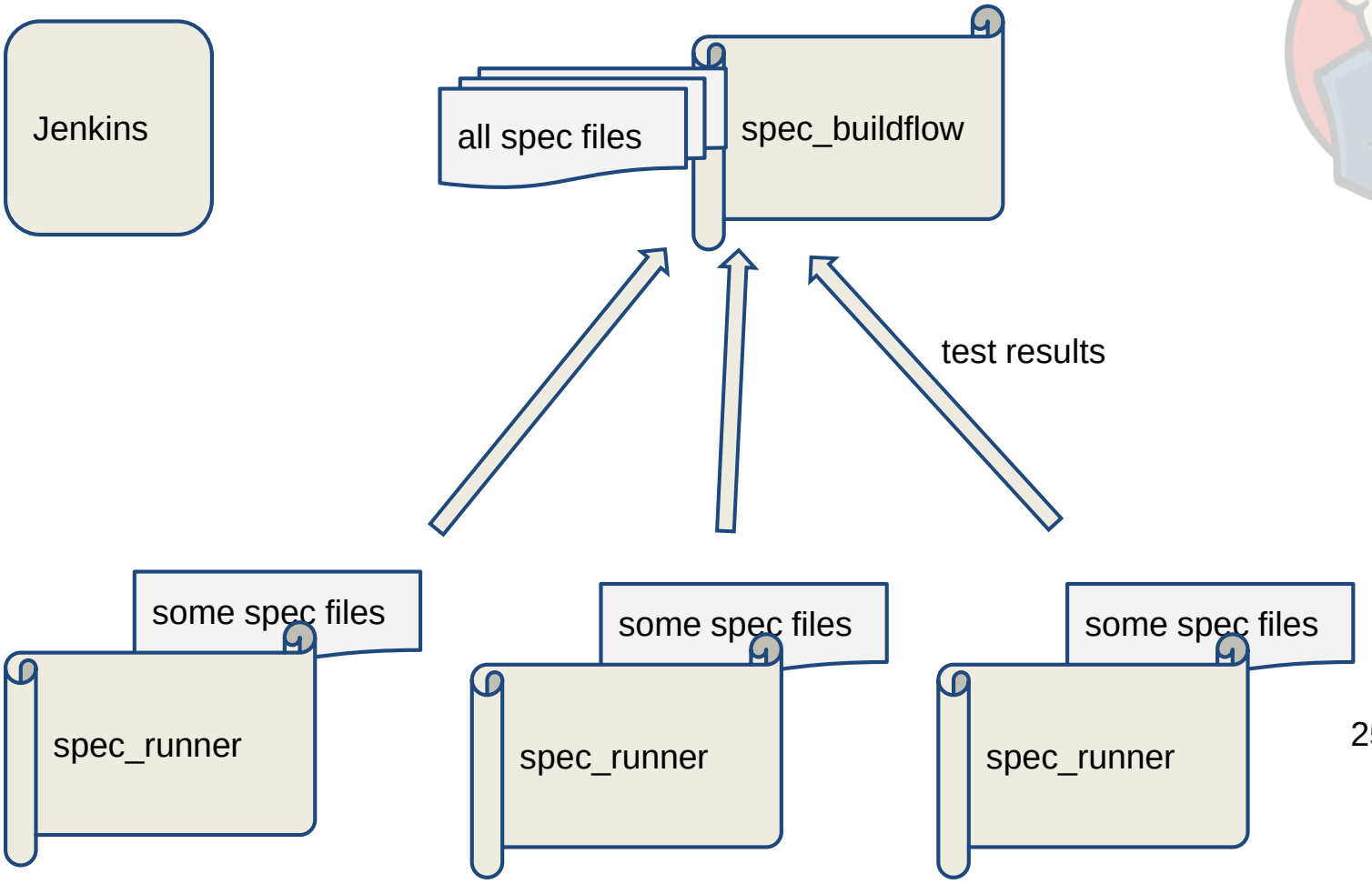
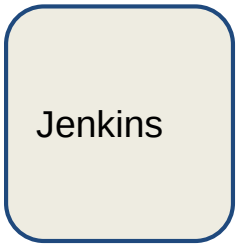
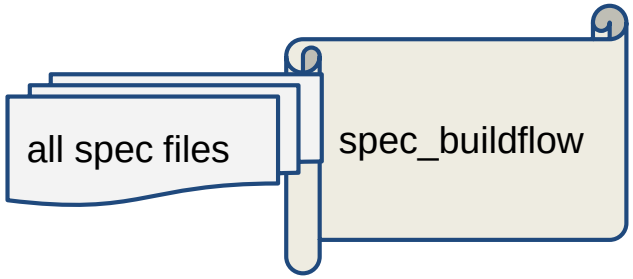
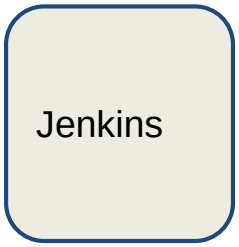


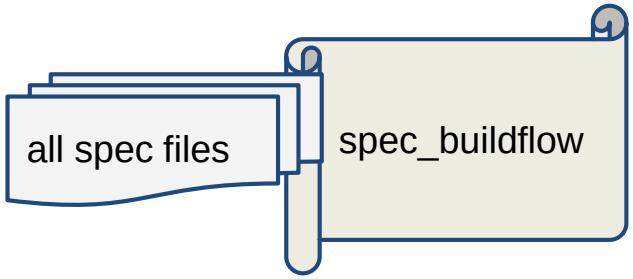
Jenkins Build Flow Plugin





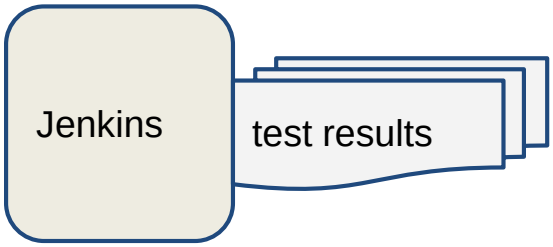
Jenkins Build Flow Plugin

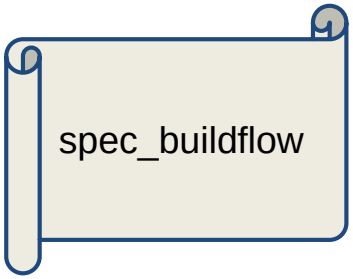




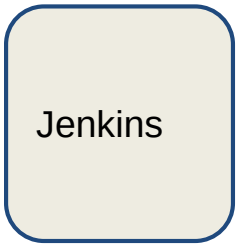
Murder some puppies in order to aggregate test results.

Jenkins Build Flow Plugin

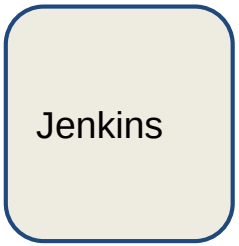




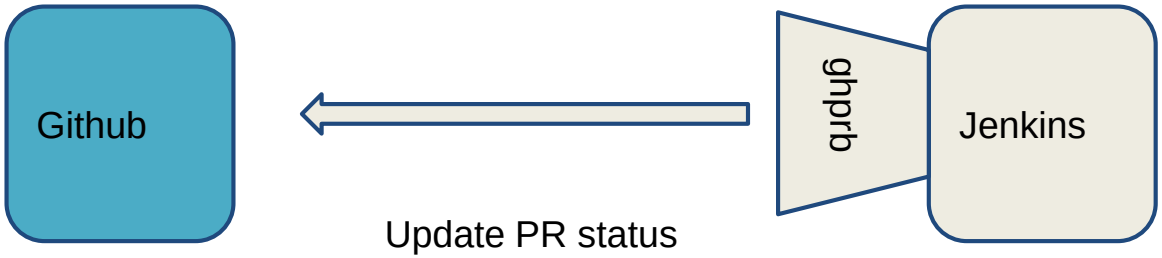
Jenkins Build Flow Plugin

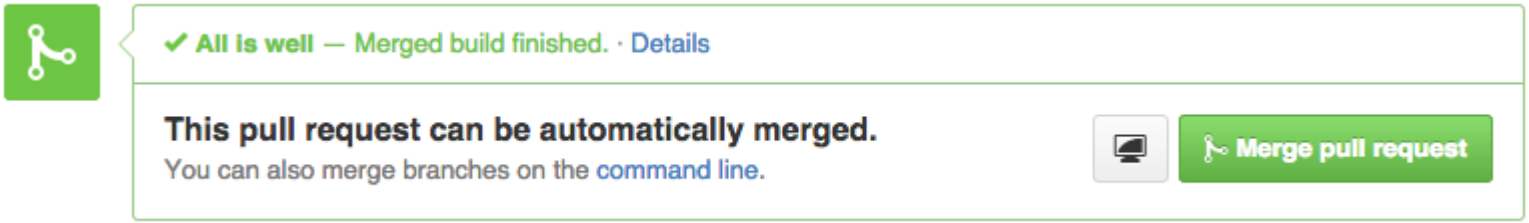


Jenkins Build Flow Plugin



Github Pull Request Builder Plugin





Phenomenal Time Vortices

- Spot instance AMI
  - Reverses Jenkins node model
  - Automation can crash spot market

Phenomenal Time Vortices

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  - Reverses Jenkins node model
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- Github
  - Webhooks config
  - Permissions

Phenomenal Time Vortices

- Spot instance AMI
  - Reverses Jenkins node model
  - Automation can crash spot market
- Github
  - Webhooks config
  - Permissions
- The craziest fscking but I’ve seen in a while
  - https://github.com/jenkinsci/ec2-plugin/pull/106

The Magic Pixie Dust

- Jenkins plugin authors

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- Jenkins plugin authors
- Build Flow Plugin groovy glue

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- Jenkins plugin authors
- Build Flow Plugin groovy glue
- Scriptler

The Magic Pixie Dust

- Jenkins plugin authors

- Build Flow Plugin groovy glue
- Scriptler
- Spot instances
  - Pick the right AWS Region Spot market

# of unit tests > 2^{14}

Unit test runtime > 2^3 minutes (8 minutes)

That’s a little more continuous

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