

Metrics-Driven DevOps with Jenkins and Splunk

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Agenda

- The State of DevOps
- Metrics Matter
- Continuous Delivery with Jenkins
- Jenkins and Splunk
- Q&A

The State of DevOps



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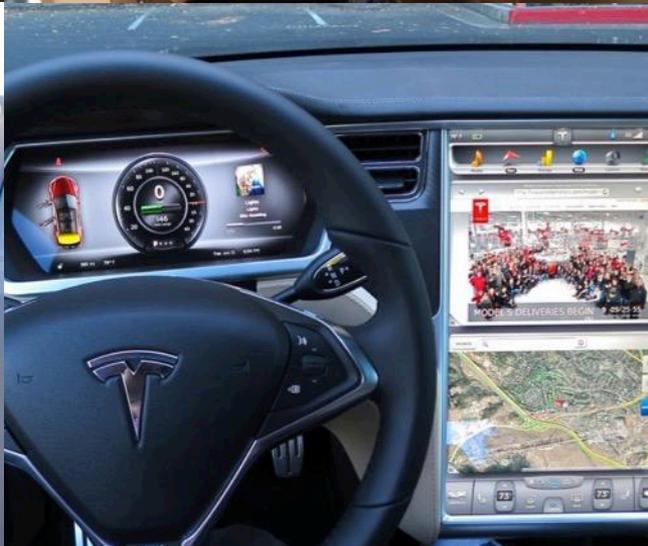


Software Update

There is a new version of your Tesla Model S software. Schedule installation, install now or close window to postpone.

12	00		8 hr 47 min from now
1	10		
2	20	AM	SET FOR THIS TIME
3	30	PM	INSTALL NOW
4	40		

⚠️ This update will take approximately 45 min
During the update process you will not be able to drive the vehicle or use the touchscreen, and your car alarm may be disarmed for a short duration. The car must be in PARK.



“Nonstop demand is the #1 problem facing IT departments today.”

Gartner

KPMG

“Continually optimize the IT delivery model”

McKinsey & Company

“Reorganizing IT for faster software delivery”

Deloitte

“Real Time DevOps”

IDC
Analyze the Future

“DevOps can accelerate delivery 15-20%”

Forbes

“#3. Speed of IT Delivery”

NAS CIO
Representing Chief Information Officers of the States

“Agile & Incremental Software Delivery”

FORRESTER

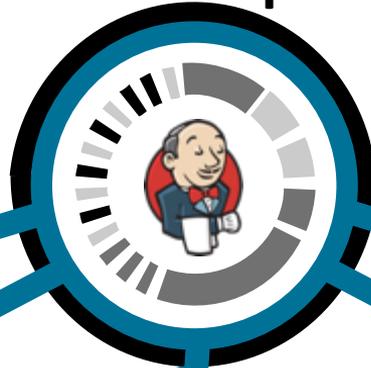
“Continuous delivery”

Continuous Delivery is the answer.

Jenkins is the Hub of DevOps

Over 1.2 Million Users

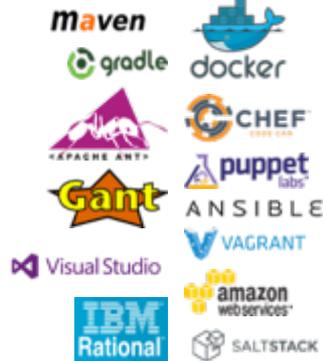
1000+ plugins cover every stage of delivery



Code & Commit



Build & Config



Scan & Test



Release



Deploy





Why?



It connects all
the things



It's extensible



A1weeka PhotoGraphy

It's a key to going fast

Metrics Matter



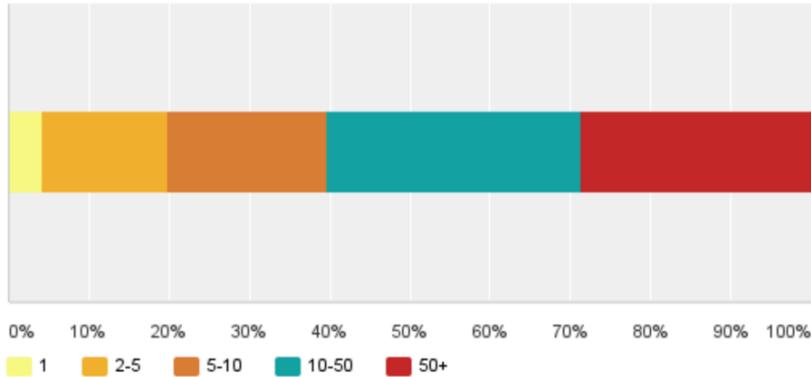
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Why do Metrics Matter?

- Remove opinion and “Normalize” view
- Aligns stakeholders
- Provide continuous visibility and feedback
- Surface
 - Bottlenecks
 - Success
 - Failures
- Enable “trust” but provide traceability

Jenkins Usage

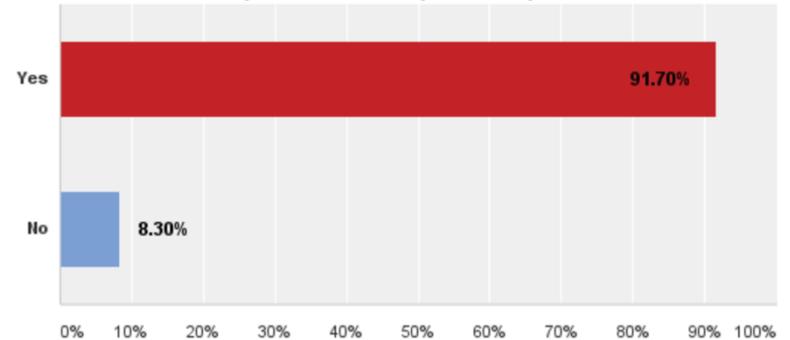
How many projects within your organization use Jenkins?



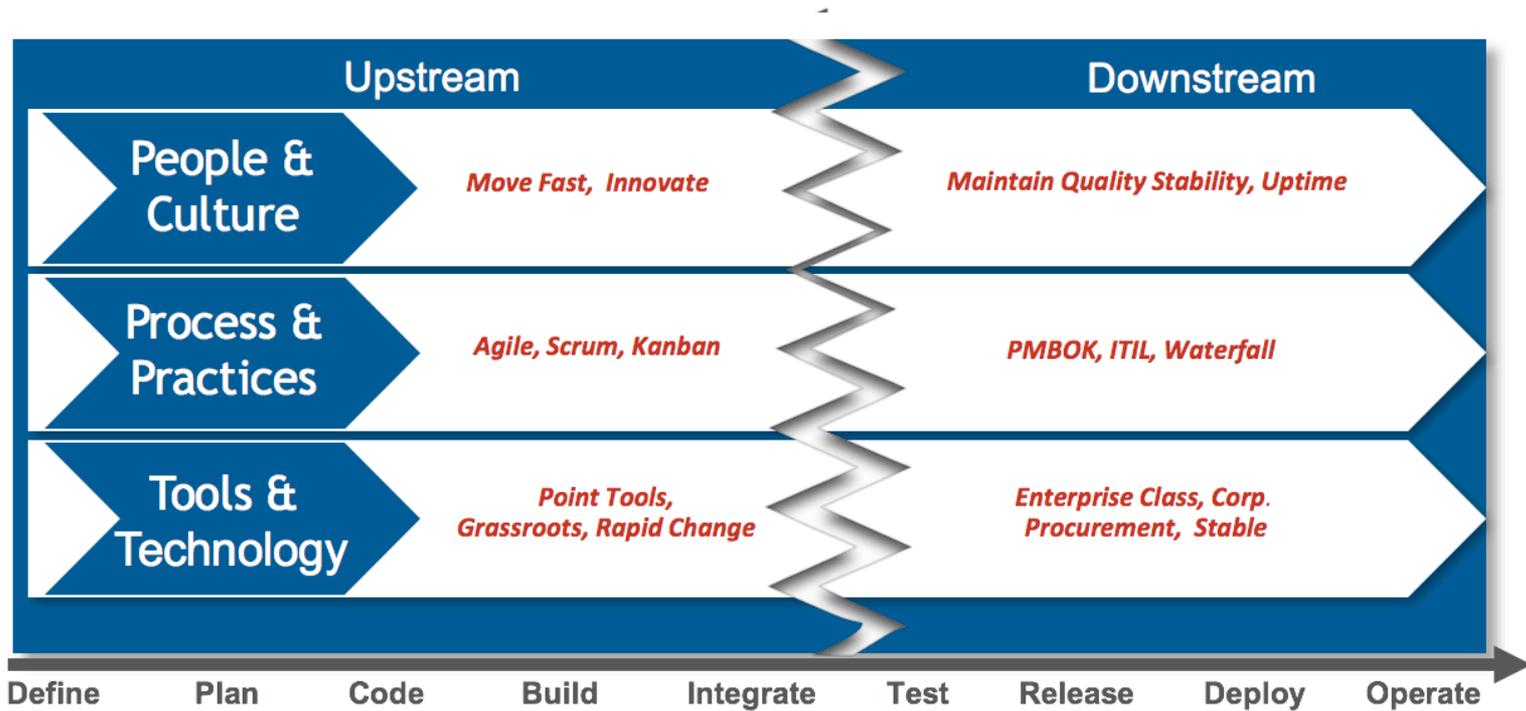
Greater than 60% use Jenkins on 10 or more team

Greater than 90% consider Jenkins mission-critical

Would you consider Jenkins Mission-Critical to your development process?



The Trinity and The Chasms



Metrics Connect

- People and Culture
 - Aligns DevOps stakeholders
 - Encourages collaboration
- Process and Practice
 - Codifies practices
- Tools and Technology
 - Connects tools and technologies
 - Ensures availability of critical systems

Tools & Technologies enable “crossing the chasm”

Normalized

- ✓ Language and practice agnostic
- ✓ Not Dev or Ops specific
- ✓ Distributed

Rich Integration Support

- ✓ Tools as microservices
- ✓ Modular

Automated

- ✓ Repeatability
- ✓ Reportability
- ✓ Flexibility

Increase Confidence In Downstream Deliverables

- ✓ Support supply-chain
- ✓ Traceability
- ✓ Immutability
- ✓ Measure and report

Scale To Enterprise

- ✓ Cross-domain visibility metrics
- ✓ Security and governance
- ✓ Supported



Jenkins

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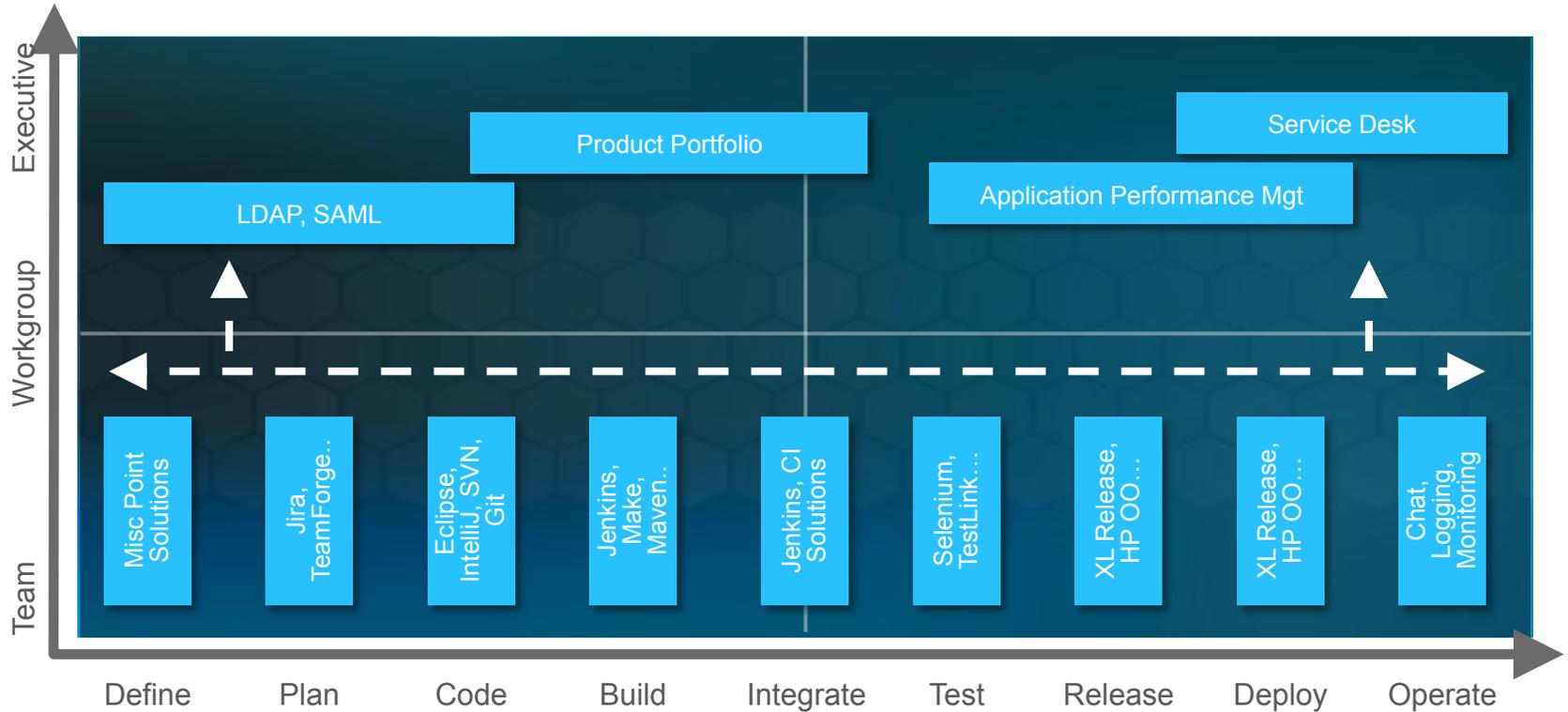


 Nexus

 artifactory

 git

Integrate and Automate



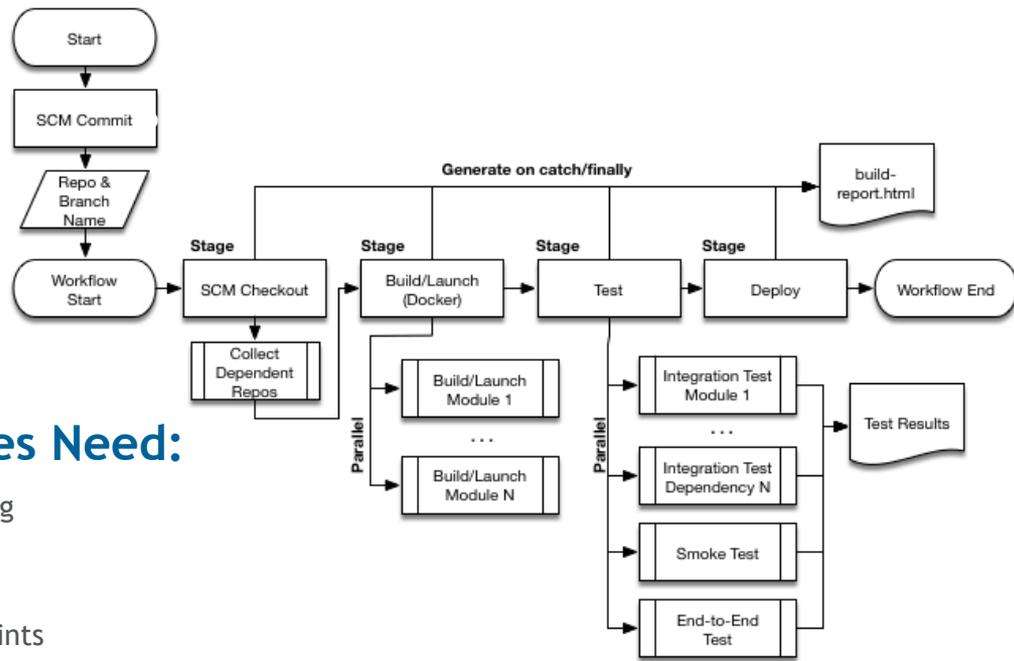
CD and Jenkins



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A CD Pipeline with Jenkins Pipeline

Jenkins Pipeline



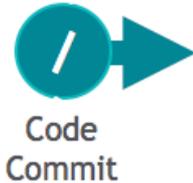
Pipelines Need:

- ✓ Branching
- ✓ Looping
- ✓ Restarts
- ✓ Checkpoints
- ✓ Manual Input

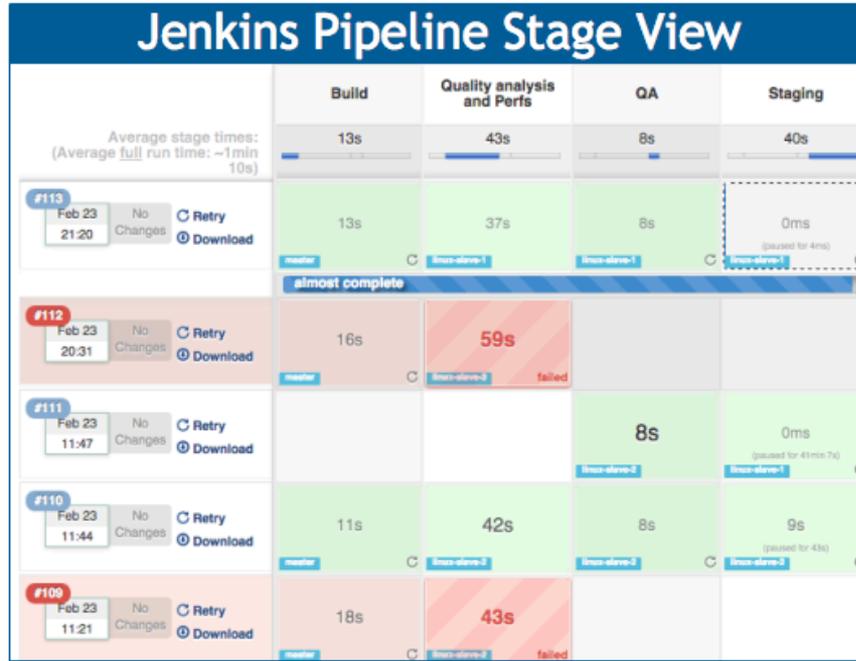
Jenkins Pipeline Stage View

Jenkins Pipeline

Development



Production

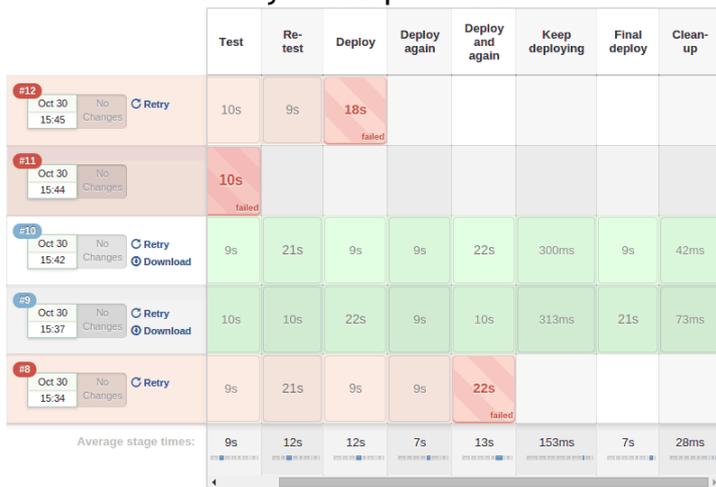


Jenkins Pipeline Demo

CloudBees Jenkins Platform: Monitoring, Visualization and Analytics

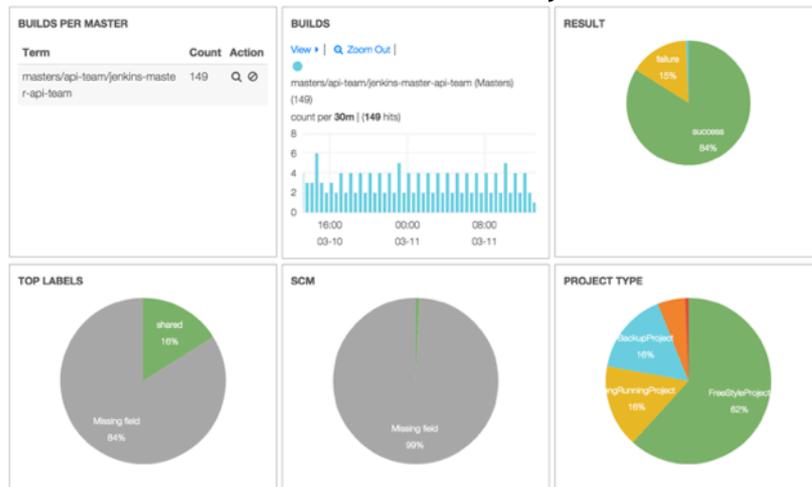
Jenkins Pipeline Stage View

Visibility into Pipeline Status



Jenkins Analytics

Cross-Team Build Analytics



... among many other features, tailored for enterprise organizations using Jenkins @ scale

Jenkins and Splunk



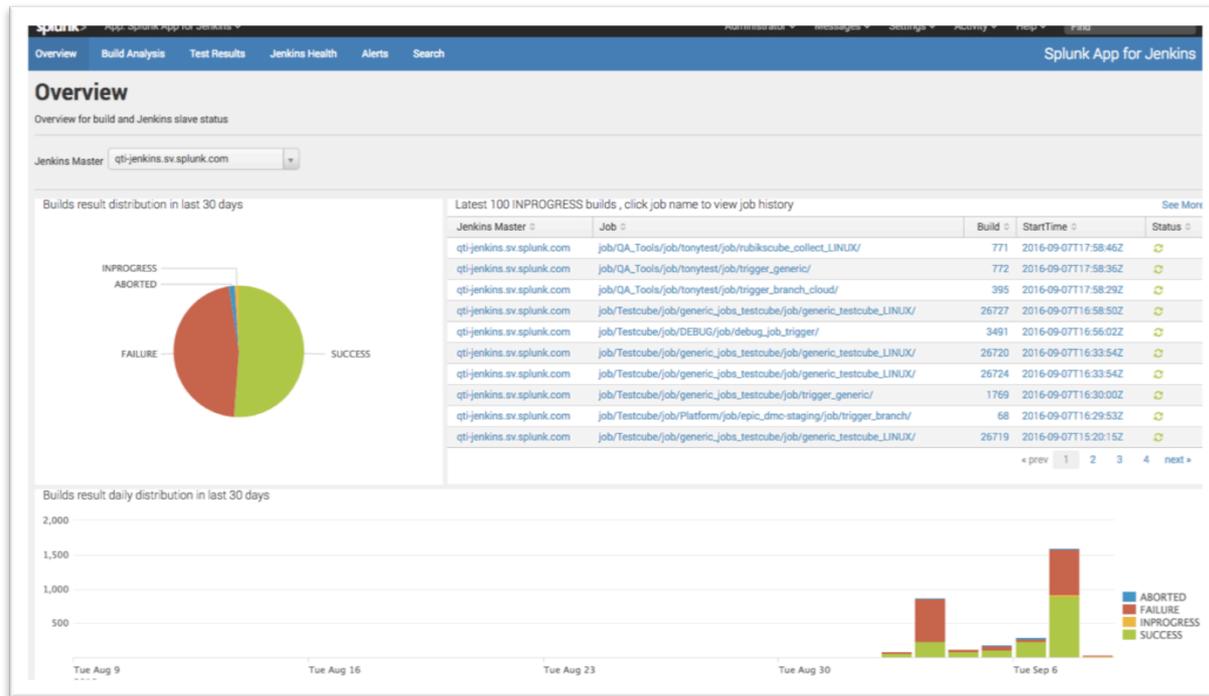
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New: Splunk App for Jenkins

This companion app to Splunk Jenkins plugin provides:

- Job monitoring
- Build analysis including trends, tests, artifacts, logs
- Test results including stack traces, regressions
- Jenkins operations

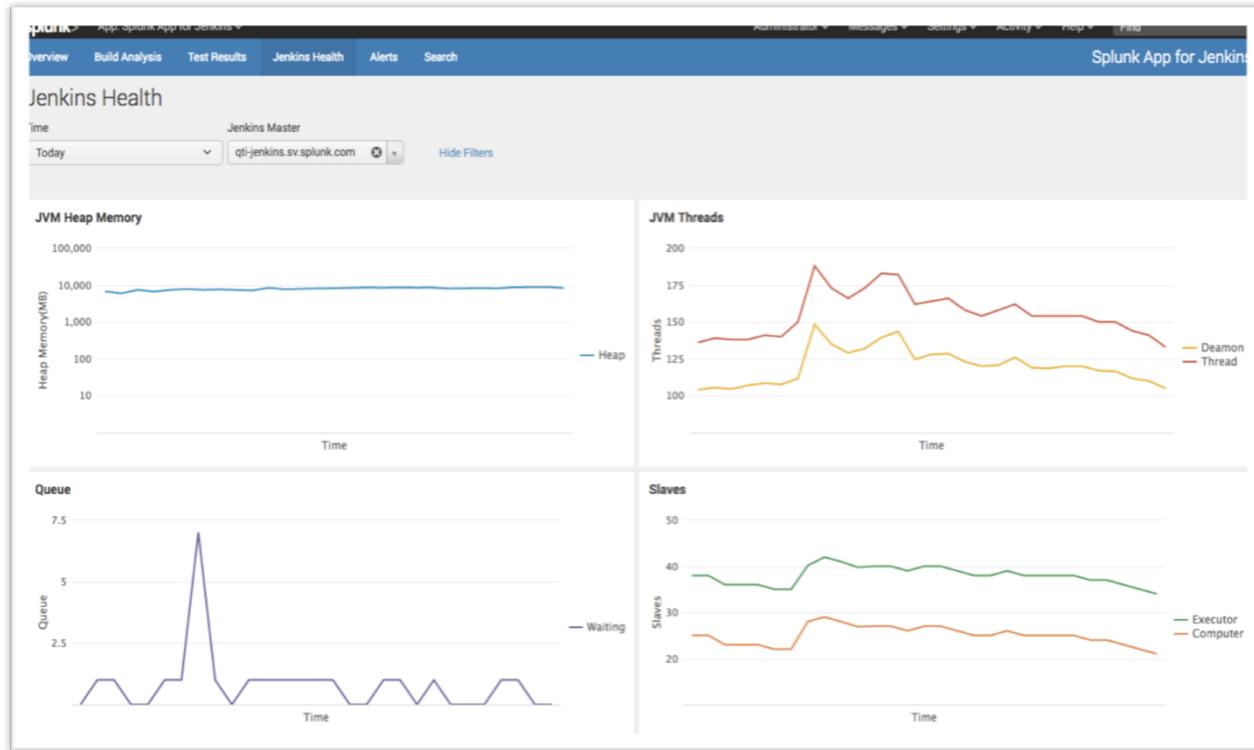


The Splunk Jenkins plugin uses the HTTP Event Collector to send the data to Splunk

Monitor Your Jenkins Cluster Health

Troubleshoot your Jenkins environment and discover bottlenecks:

- JVM heap memory
- JVM threads
- Queue size
- Number of slaves
- Disconnected slaves
- Slave health
- Sync status
- Jenkins logs



Accelerate Velocity of Build Investigations

Overview Build Analysis Test Results Jenkins Health Alerts Search Splunk App for Jenkins

Builds #394

#394 was failed for job/QA_Tools/job/tonytest/job/trigger_branch_cloud/

Build Summary

Test Results

Logs and Artifacts

Trends

Console Output

Click Here Choose Console Output or Build Artifacts

_time	Event
2016-09-07 22:38:09.655	2016-09-07T07:38:09.655-0700 line:1 Started by timer
2016-09-07 22:38:09.670	2016-09-07T07:38:09.670-0700 line:5 [Envinject] - Keeping Jen
2016-09-07 22:38:09.670	2016-09-07T07:38:09.670-0700 line:4 [Envinject] - Keeping Jen
2016-09-07 22:38:09.670	2016-09-07T07:38:09.670-0700 line:3 [Envinject] - Preparing ar
2016-09-07 22:38:09.670	2016-09-07T07:38:09.670-0700 line:2 [Envinject] - Loading nod
2016-09-07 22:38:09.671	2016-09-07T07:38:09.671-0700 line:14 at_proc.waitFor()
2016-09-07 22:38:09.671	2016-09-07T07:38:09.671-0700 line:13 def at_proc = artifactory
2016-09-07 22:38:09.671	2016-09-07T07:38:09.671-0700 line:12 * -product-\$[product]-
2016-09-07 22:38:09.671	2016-09-07T07:38:09.671-0700 line:11 * -branch-\$[splunk_bui
2016-09-07 22:38:09.671	2016-09-07T07:38:09.671-0700 line:10 def artifactory_fetcher_
2016-09-07 22:38:09.671	2016-09-07T07:38:09.671-0700 line:9 if (splunk_build_commit
2016-09-07 22:38:09.671	2016-09-07T07:38:09.671-0700 line:8
2016-09-07 22:38:09.671	2016-09-07T07:38:09.671-0700 line:7 import hudson.model.Re
2016-09-07 22:38:09.671	2016-09-07T07:38:09.671-0700 line:6 [Envinject] - Evaluation th
2016-09-07 22:38:09.672	2016-09-07T07:38:09.672-0700 line:29
2016-09-07 22:38:09.672	2016-09-07T07:38:09.672-0700 line:28
2016-09-07 22:38:09.672	2016-09-07T07:38:09.672-0700 line:27 out.println("Got splunk
2016-09-07 22:38:09.672	2016-09-07T07:38:09.672-0700 line:26 } else {
2016-09-07 22:38:09.672	2016-09-07T07:38:09.672-0700 line:25 }

Overview Build Analysis Test Results Jenkins Health Alerts Search Splunk App for Jenkins

#8539 #8202 +

Test Results

Select one particular build to analyse its test results or switch the mode to filter the test cases by arbitrary search.

Jenkins Master: qt-jenkins.sv.splunk.com Job: job/Testcube/job/generic_jobs_testcube/job/g... Build: 8202 Quick Filter: classname="test_ml_spl.TestMLSPLGrammar" testname="test_mlsq"

Switch Mode

Test Results Test Errors Environment Variables

Test Cases

#	Test Name	Class Name	Duration (sec)	Result/Failing since
1	test_mlspl_query(class_proba_LARC_check_sum)	test_ml_spl.TestMLSPLGrammar	0.00	#8199

Prior 10 Results

Error Detail: test setup failure

Stacktrace: nightysplunk + -helmut.splunk.windowslocal.WindowsLocalSplunk object at 0x00000000028F5BAB> request + <SubRequest 'nightysplunk_with_ml_apps' for <Function 'test_mlspl_query[spl_args_parsing_1]...>

```
@pytest.fixture(scope='session')
def nightysplunk_with_ml_apps(nightysplunk, request):
    ...
    Install nightly splunk with scientific python and ML showcase toolkit.

:param nightysplunk:
:return: helmut splunk object
...

splunk_psc, psc_app_url = get_psc_url(nightysplunk, request)
splunk_mltk, mltk_app_url =
get_mltk_url(request)
...
www.spl.com/install = 8
```

Splunk Vision

Code Velocity

Code Quality

Business Impact

DevSecOps

DevOps Triage

ChatOps

Other ITSI Modules

Splunk ITSI Module for Continuous Delivery

SPLUNK IT SERVICE INTELLIGENCE

splunk > enterprise

splunk > cloud

Web Hooks

JIRA



Plan

git



Visual Studio

Code

Jenkins

Bamboo

Travis CI

Build

AppScan
IBM Security

FORTIFY
An HP Company

sonarqube

Test/QA

amazon web services™

Pivotal™

docker kubernetes

Stage

Octopus Deploy
Electric Cloud

Capistrano

urban{code}

Release

puppet
ANSIBLE

VAGRANT CHEF™

Config

New Relic

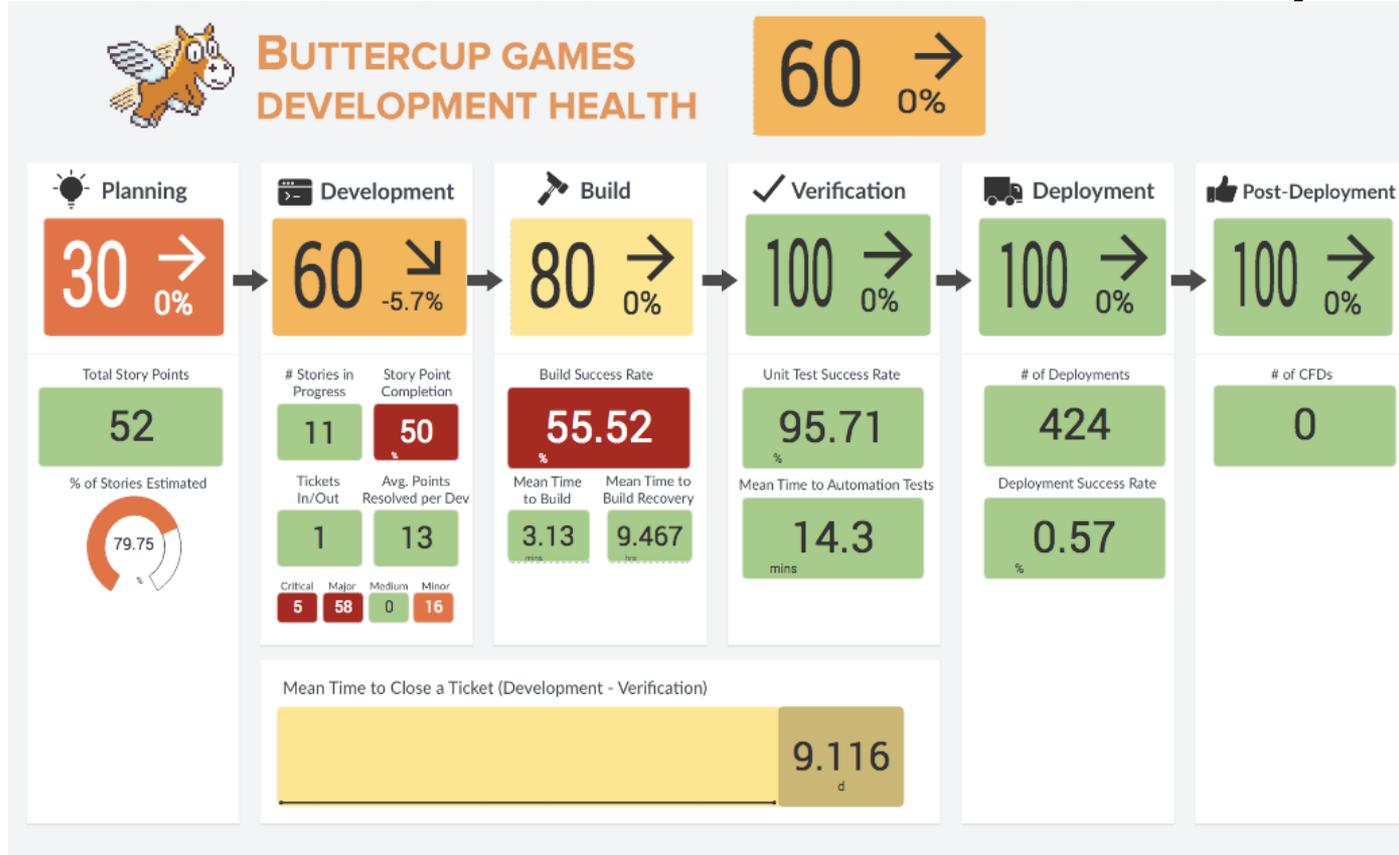


dynatrace

Monitor

Splunk ITSI Module for Continuous Delivery

- Accelerate continuous delivery with visibility into release health
- Continuously improve the release quality
- Effectively manage DevOps teams to improve collaboration, resourcing, delivery speed and business impact of IT



Resources

cloudbees



Trial CloudBees Jenkins Platform

<https://www.cloudbees.com/get-started>

Complete Post-Card for a Jenkins T-Shirt

splunk >

Free download - Splunk App for Jenkins

<https://splunkbase.splunk.com/>

DevOps resources: www.splunk.com/devops

Q&A

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THANK YOU

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