Infrastructure Build and Test

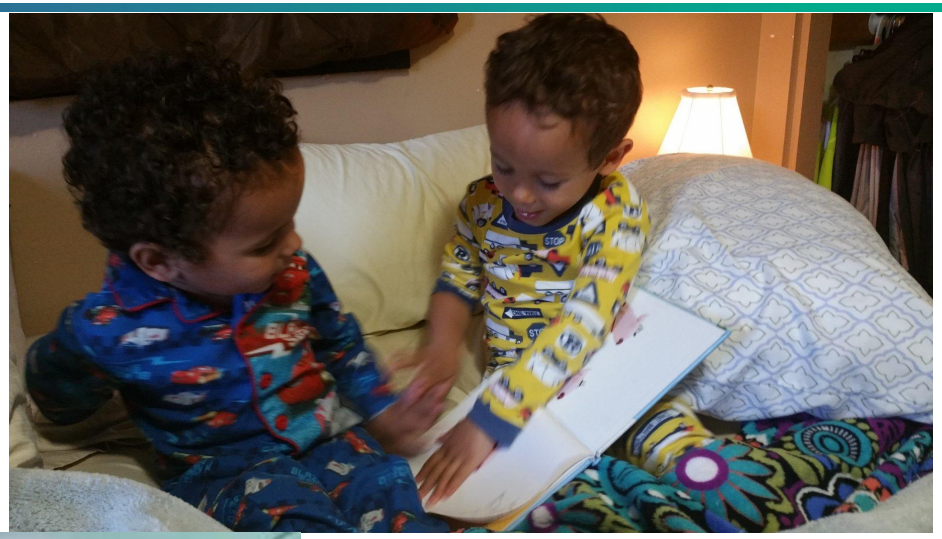
May 2017

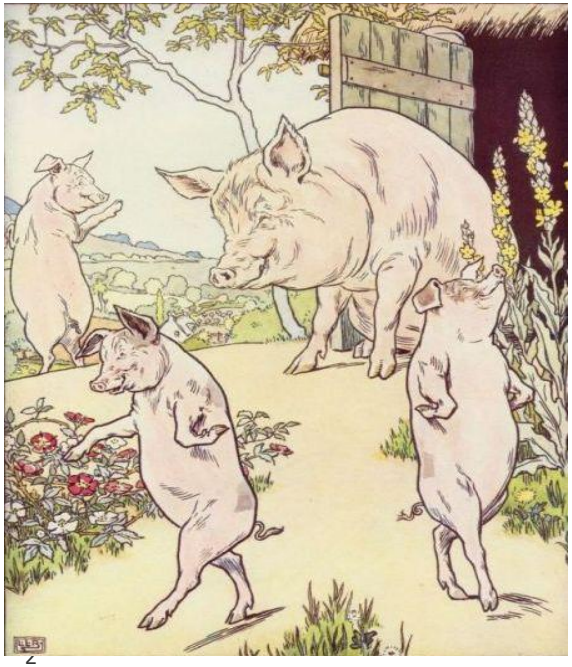




The Three Little Pigs









Straw House



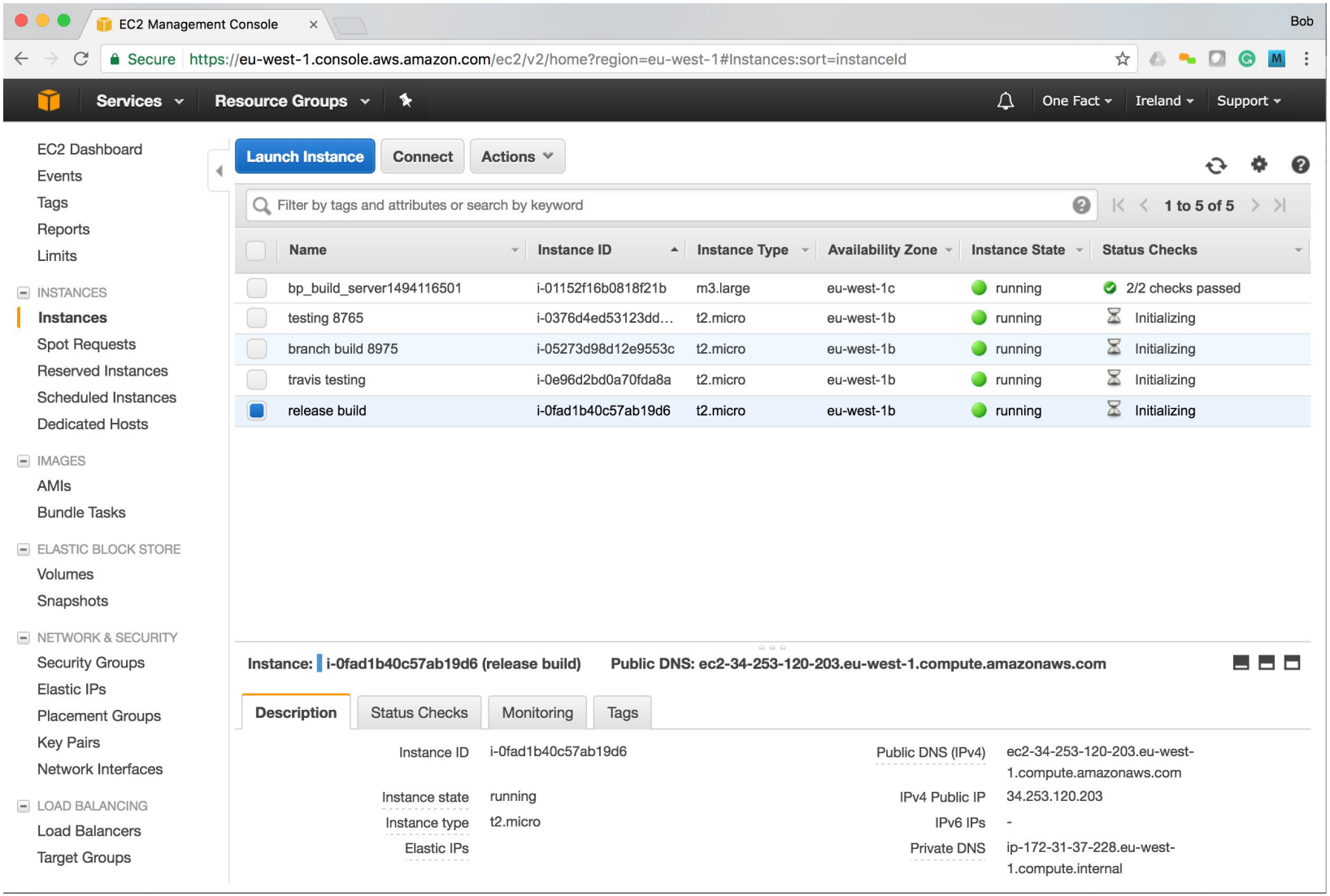


Brick house

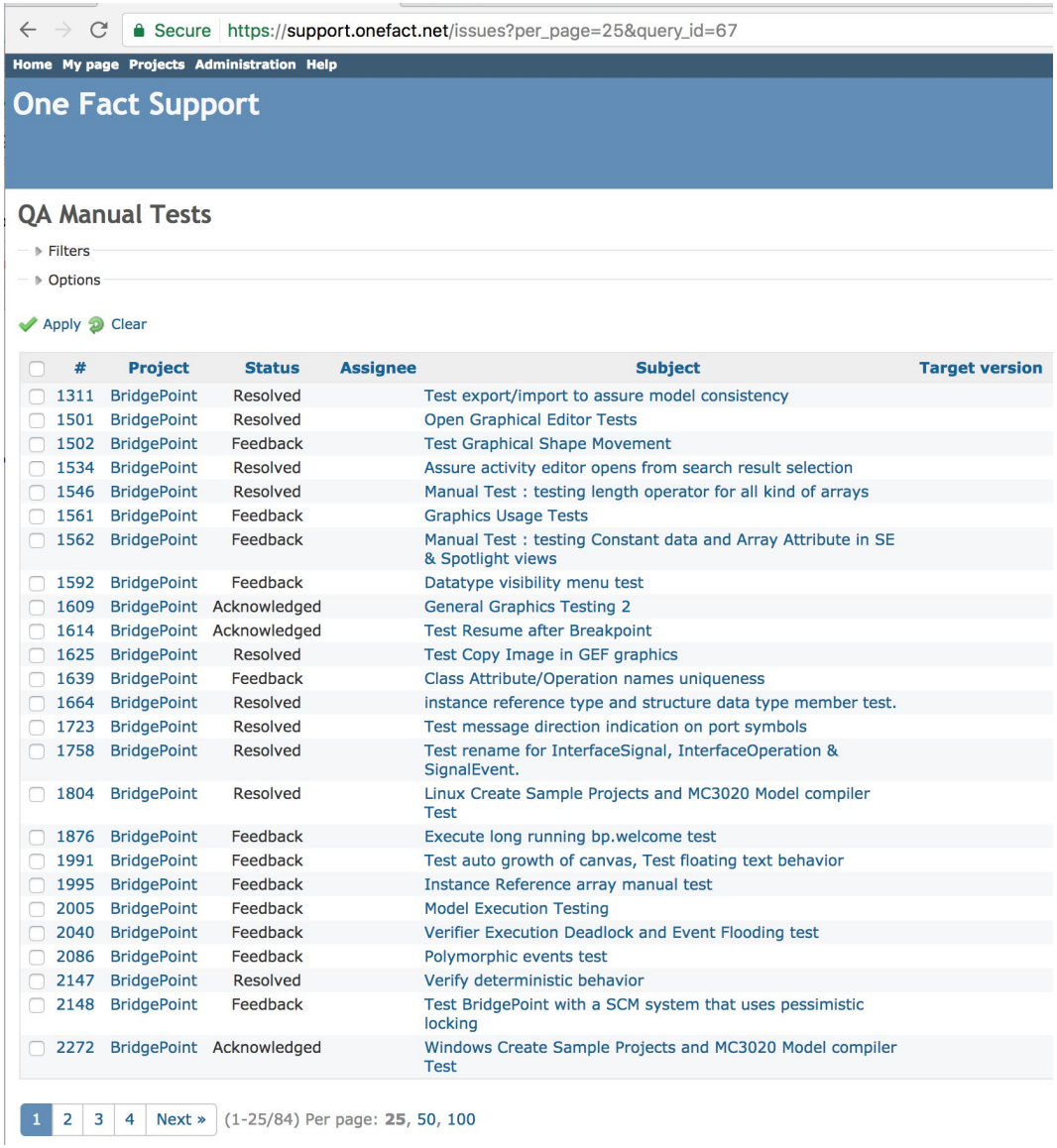
Stick House



Build - Amazon Web Services (AWS)



Testing - Manual Tests

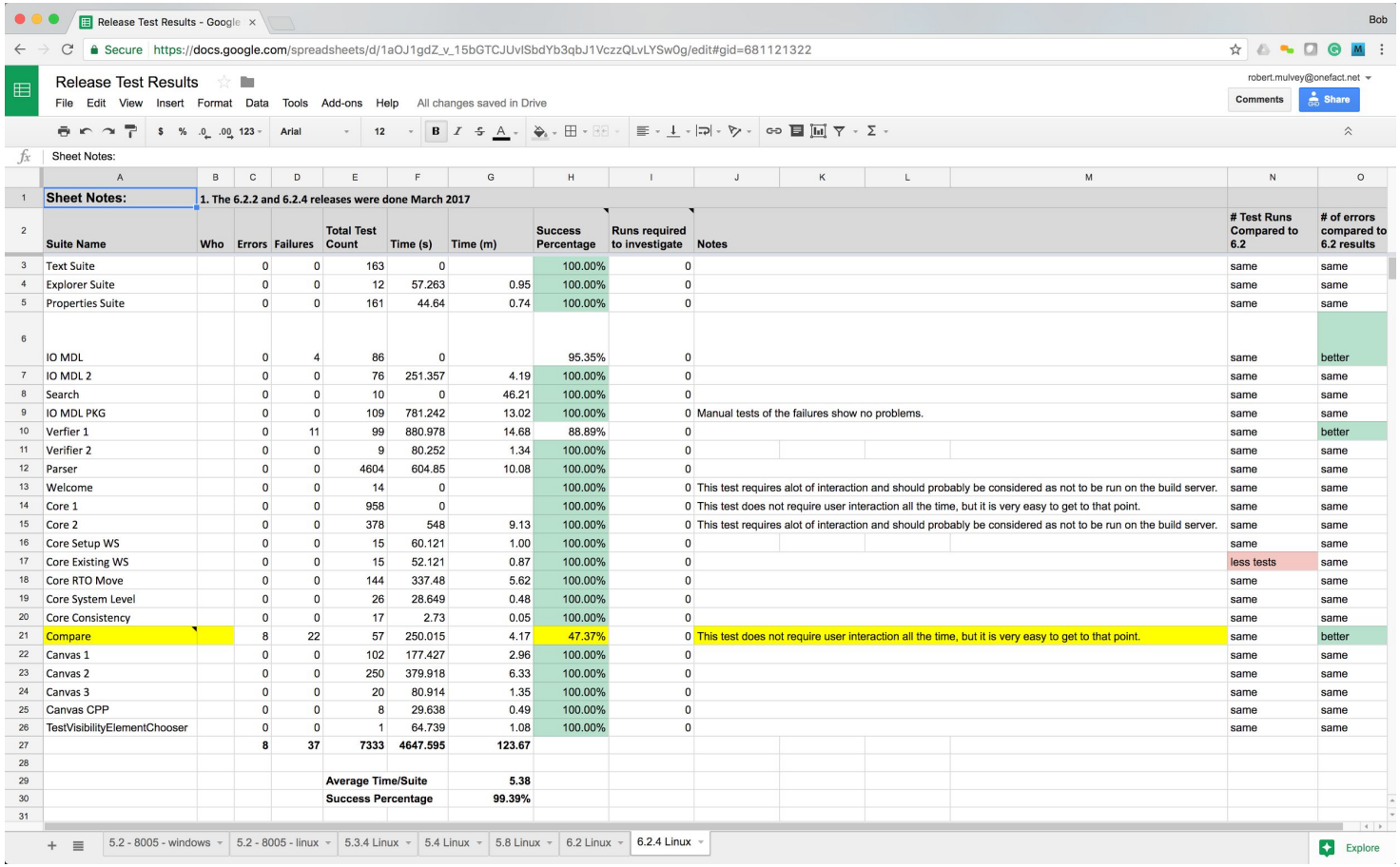


#	Project	Status	Assignee	Subject	Target version
1311	BridgePoint	Resolved		Test export/import to assure model consistency	
1501	BridgePoint	Resolved		Open Graphical Editor Tests	
1502	BridgePoint	Feedback		Test Graphical Shape Movement	
1534	BridgePoint	Resolved		Assure activity editor opens from search result selection	
1546	BridgePoint	Resolved		Manual Test : testing length operator for all kind of arrays	
1561	BridgePoint	Feedback		Graphics Usage Tests	
1562	BridgePoint	Feedback		Manual Test : testing Constant data and Array Attribute in SE & Spotlight views	
1592	BridgePoint	Feedback		Datatype visibility menu test	
1609	BridgePoint	Acknowledged		General Graphics Testing 2	
1614	BridgePoint	Acknowledged		Test Resume after Breakpoint	
1625	BridgePoint	Resolved		Test Copy Image in GEF graphics	
1639	BridgePoint	Feedback		Class Attribute/Operation names uniqueness	
1664	BridgePoint	Resolved		instance reference type and structure data type member test.	
1723	BridgePoint	Resolved		Test message direction indication on port symbols	
1758	BridgePoint	Resolved		Test rename for InterfaceSignal, InterfaceOperation & SignalEvent.	
1804	BridgePoint	Resolved		Linux Create Sample Projects and MC3020 Model compiler Test	
1876	BridgePoint	Feedback		Execute long running bp.welcome test	
1991	BridgePoint	Feedback		Test auto growth of canvas, Test floating text behavior	
1995	BridgePoint	Feedback		Instance Reference array manual test	
2005	BridgePoint	Feedback		Model Execution Testing	
2040	BridgePoint	Feedback		Verifier Execution Deadlock and Event Flooding test	
2086	BridgePoint	Feedback		Polymorphic events test	
2147	BridgePoint	Resolved		Verify deterministic behavior	
2148	BridgePoint	Feedback		Test BridgePoint with a SCM system that uses pessimistic locking	
2272	BridgePoint	Acknowledged		Windows Create Sample Projects and MC3020 Model compiler Test	

1 2 3 4 Next » (1-25/84) Per page: **25**, 50, 100

- ~75 procedures
- ~1 man month
- Run each release cycle
- Redmine tracks test progress
- Redmine tracks the test history

Testing - Unit Testing with Launch Configurations



Release Test Results - Google

Secure https://docs.google.com/spreadsheets/d/1aOJ1gdZ_v_15bGTCJUvISbdYb3qbJ1VczzQLvLYSw0g/edit#gid=681121322

Release Test Results

File Edit View Insert Format Data Tools Add-ons Help All changes saved in Drive

Sheet Notes:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	**Sheet Notes:**	**1. The 6.2.2 and 6.2.4 releases were done March 2017**													
2	**Suite Name**	**Who**	**Errors**	**Failures**	**Total Test Count**	**Time (s)**	**Time (m)**	**Success Percentage**	**Runs required to investigate**	**Notes**				**# Test Runs Compared to 6.2**	**# of errors compared to 6.2 results**
3	Text Suite		0	0	163	0		100.00%	0					same	same
4	Explorer Suite		0	0	12	57.263	0.95	100.00%	0					same	same
5	Properties Suite		0	0	161	44.64	0.74	100.00%	0					same	same
6	IO MDL		0	4	86	0		95.35%	0					same	better
7	IO MDL 2		0	0	76	251.357	4.19	100.00%	0					same	same
8	Search		0	0	10	0	46.21	100.00%	0					same	same
9	IO MDL PKG		0	0	109	781.242	13.02	100.00%	0	Manual tests of the failures show no problems.				same	same
10	Verfier 1		0	11	99	880.978	14.68	88.89%	0					same	better
11	Verifier 2		0	0	9	80.252	1.34	100.00%	0					same	same
12	Parser		0	0	4604	604.85	10.08	100.00%	0					same	same
13	Welcome		0	0	14	0		100.00%	0	This test requires alot of interaction and should probably be considered as not to be run on the build server.				same	same
14	Core 1		0	0	958	0		100.00%	0	This test does not require user interaction all the time, but it is very easy to get to that point.				same	same
15	Core 2		0	0	378	548	9.13	100.00%	0	This test requires alot of interaction and should probably be considered as not to be run on the build server.				same	same
16	Core Setup WS		0	0	15	60.121	1.00	100.00%	0					same	same
17	Core Existing WS		0	0	15	52.121	0.87	100.00%	0					less tests	same
18	Core RTO Move		0	0	144	337.48	5.62	100.00%	0					same	same
19	Core System Level		0	0	26	28.649	0.48	100.00%	0					same	same
20	Core Consistency		0	0	17	2.73	0.05	100.00%	0					same	same
21	Compare		8	22	57	250.015	4.17	47.37%	0	This test does not require user interaction all the time, but it is very easy to get to that point.				same	better
22	Canvas 1		0	0	102	177.427	2.96	100.00%	0					same	same
23	Canvas 2		0	0	250	379.918	6.33	100.00%	0					same	same
24	Canvas 3		0	0	20	80.914	1.35	100.00%	0					same	same
25	Canvas CPP		0	0	8	29.638	0.49	100.00%	0					same	same
26	TestVisibilityElementChooser		0	0	1	64.739	1.08	100.00%	0					same	same
27			**8**	**37**	**7333**	**4647.595**	**123.67**								
28															
29					**Average Time/Suite**		**5.38**								
30					**Success Percentage**		**99.39%**								
31															

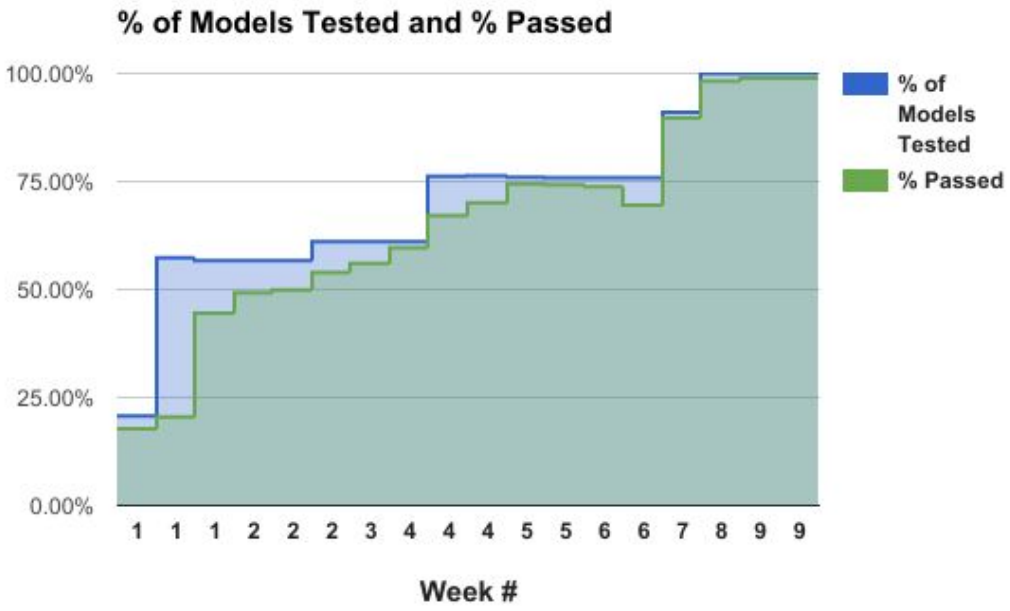
5.2 - 8005 - windows | 5.2 - 8005 - linux | 5.3.4 Linux | 5.4 Linux | 5.8 Linux | 6.2 Linux | 6.2.4 Linux | Explore

- Results for each release recorded
- Improvement with each release

Testing Customer Models

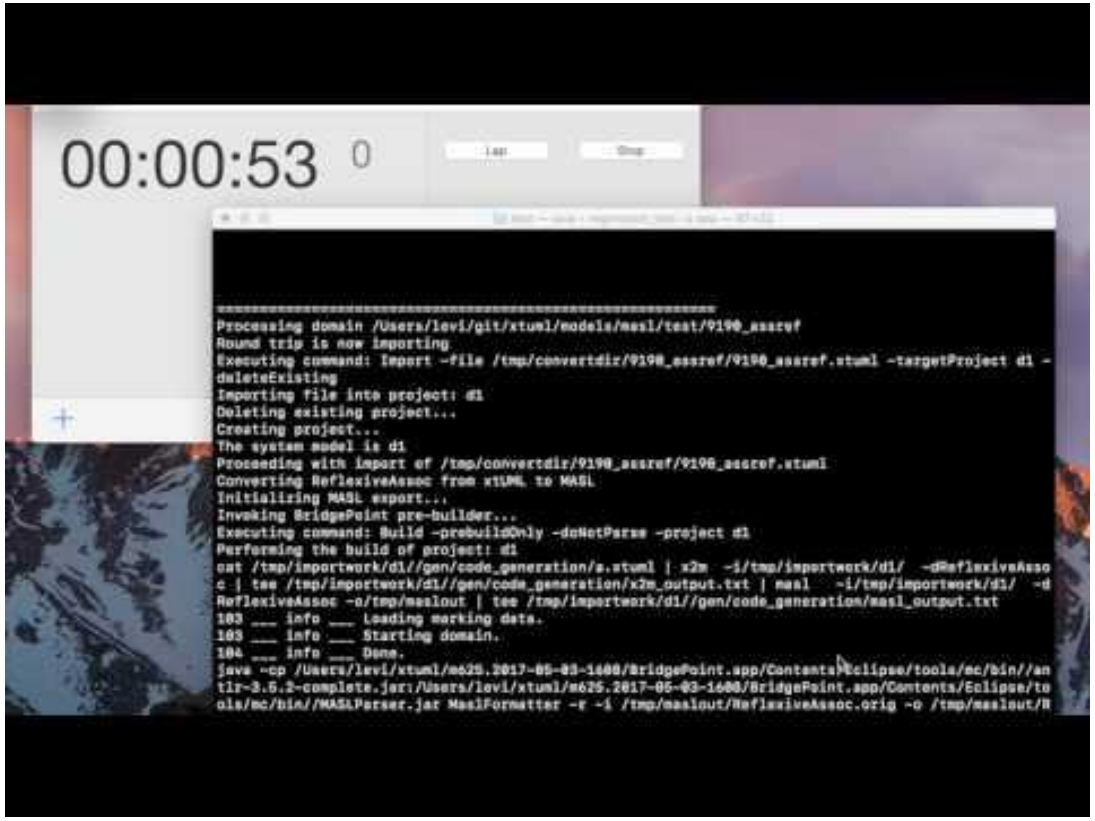
- Runnable on the build server
- Runnable locally (Linux and Mac)
  - Allows customer to quickly ***validate*** builds on their code base
  - Facilitates valuable testing ***feedback*** for the One Fact team without disclosing proprietary model data
- *MASL round trip*
  - Tests MASL flow (convert, import, export, diff)
- *MASL Xtext parser check*
  - Validates Xtext editor for action language (type checking, syntax, etc.)

Testing Customer Models - Actual Results



- Test script ran at the customer site against their models
- One Fact added regressions to the models repository for each failure case.

Testing Customer Models - Round Trip Test



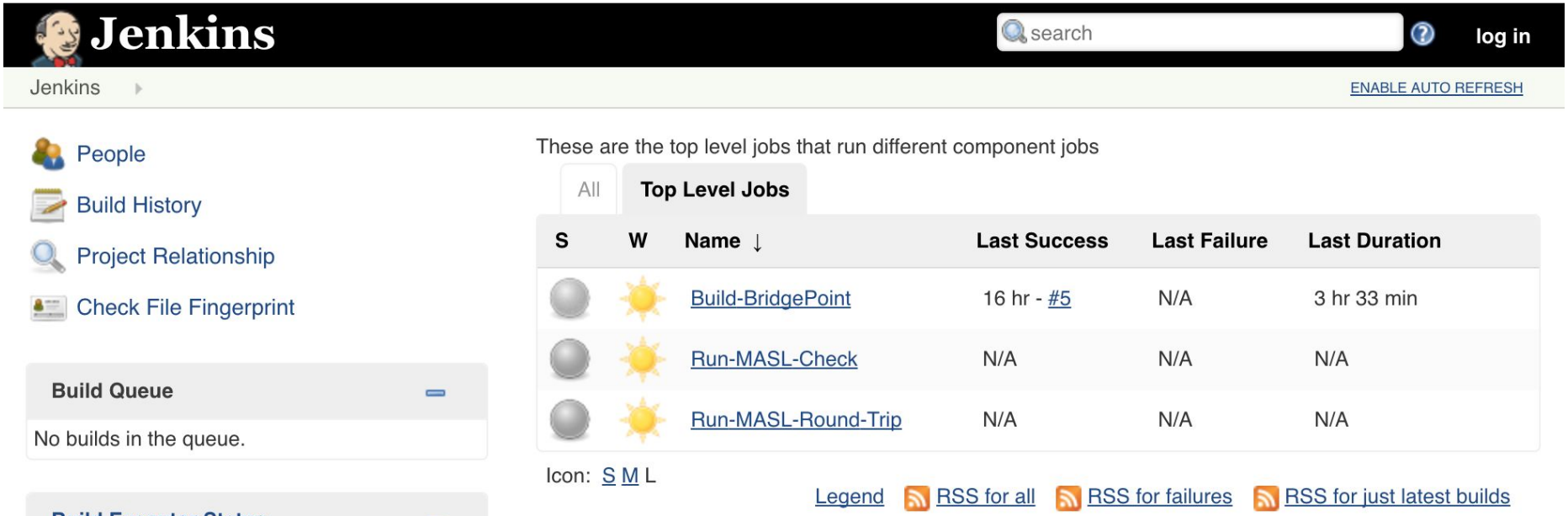
- Runs from the command line
- Converts MASL model to xtUML
- Conversion includes graphics creation
- Exports the xtUML to MASL format model
- Assure source and destination match
- Quickly exercise large numbers of models

Testing Customer Models - Xtext Parser Test



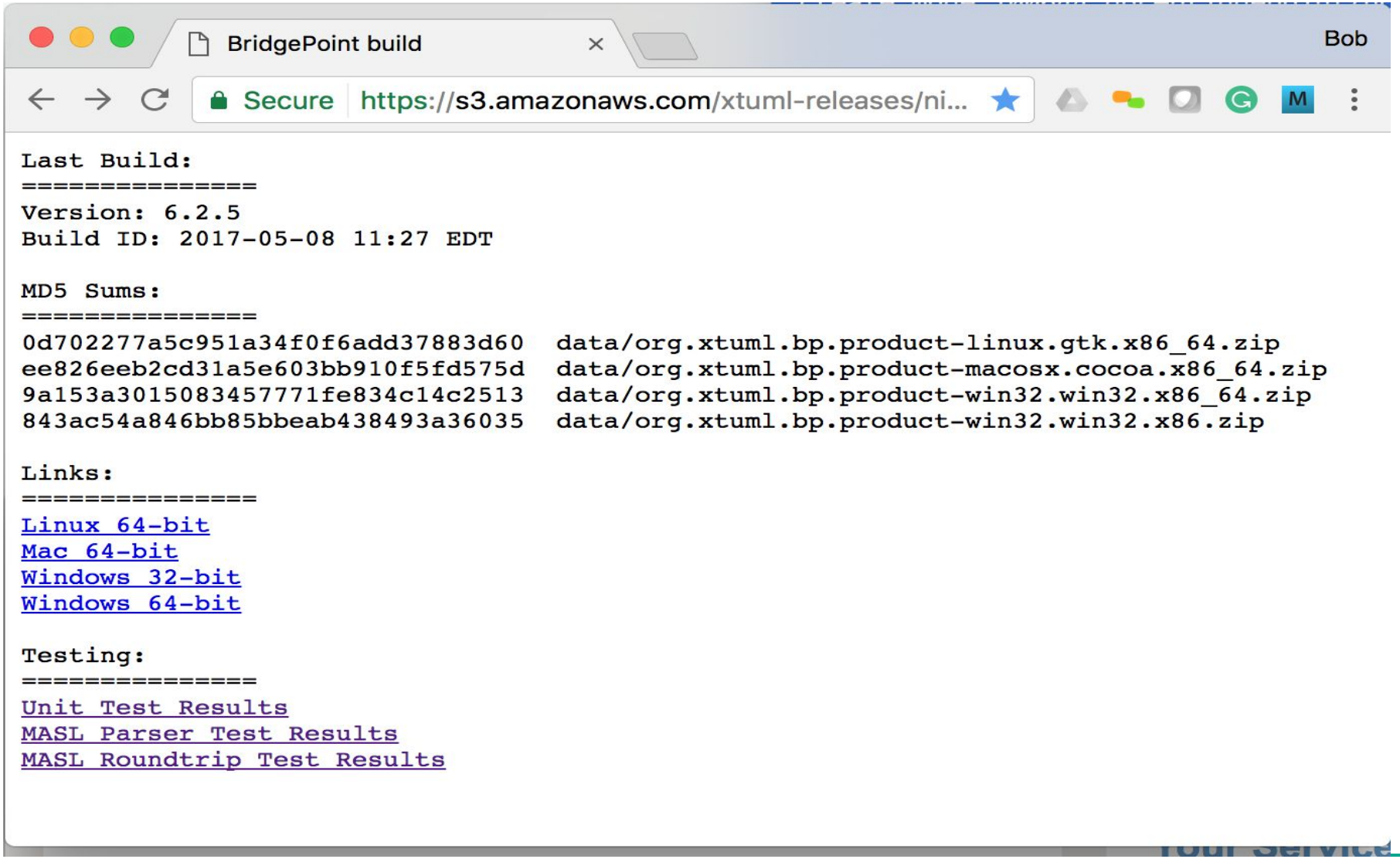
- Runs from the command line
- Imports Models
- Parses
- Reports Errors
- Quickly and easily tests large numbers of models

Build Server



- Build server backed up in git repository
- Invocable from command line or Amazon AWS console

Build Server - Build Reporting



Build Server - Unit Testing

Last Published: 2017-05-05 | Version: 6.2.5

Built by Maven

Surefire Report

Summary

[Summary] [Package List] [Test Cases]

Tests	Errors	Failures	Skipped	Success Rate	Time
7412	0	0	0	100%	5,340.597

Note: failures are anticipated and checked for with assertions while errors are unanticipated.

- Unit tests run each server build
- Unit tests are still runnable locally from developer environment

Build and Test - What's Next? Ideas?

- Automate some of the manual tests
- OAL roundtrip?
- OAL parser?
- Analysis of test
  - functional: graphics, execution, etc...
  - coverage analysis
    - plugin
    - branch
    - path
- What would you like to see?



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