

# Property- and Model- Based Testing

with Alertmanager



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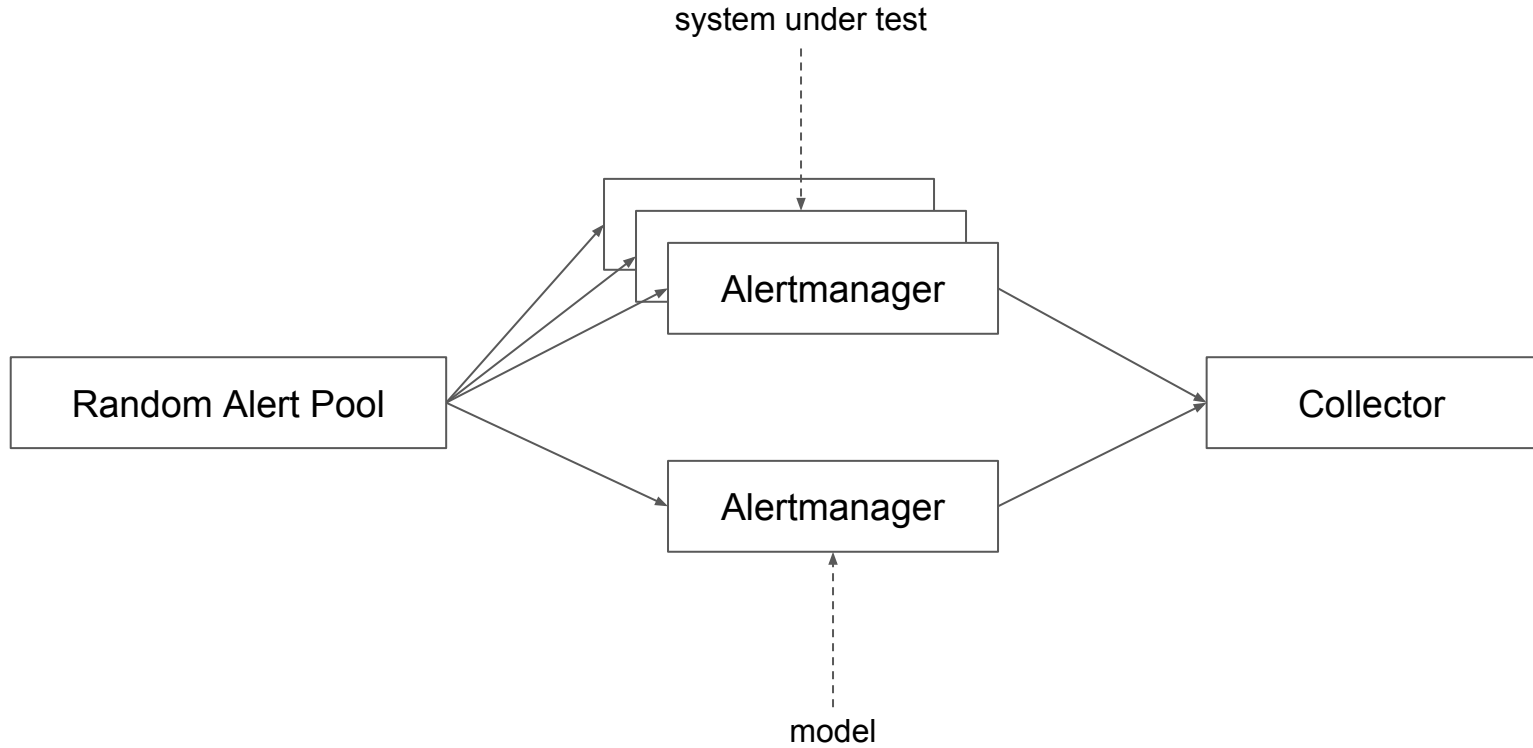
# Model-based testing

- Run input against system-under-test and model
- Compare output

# Property-based testing

- Randomly find input that breaks property
- Reduce input to minimal failing input
- E.g. Haskell QuickCheck, ...

# Architecture



# What can be randomized

- Amount alerts
- Time
- Labels
- Cluster size
- ....

# Status Quo

- Amount alerts
- Time
- ~~— Labels~~
- ~~— Cluster size~~
- ~~— ....~~

```

tmux
1 [|||||] 20.5%] 13 [|||||] 20.1%] 25 [|||||] 18.7%] 37 [|||||] 19.9%]
2 [|||||] 20.5%] 14 [|||||] 21.6%] 26 [|||||] 16.4%] 38 [|||||] 15.6%]
3 [|||||] 17.0%] 15 [|||||] 23.2%] 27 [|||||] 13.2%] 39 [|||||] 18.5%]
4 [|||||] 19.6%] 16 [|||||] 21.9%] 28 [|||||] 15.6%] 40 [|||||] 19.4%]
5 [|||||] 18.7%] 17 [|||||] 22.7%] 29 [|||||] 18.7%] 41 [|||||] 17.3%]
6 [|||||] 16.5%] 18 [|||||] 18.6%] 30 [|||||] 15.0%] 42 [|||||] 17.4%]
7 [|||||] 17.4%] 19 [|||||] 16.9%] 31 [|||||] 20.9%] 43 [|||||] 17.4%]
8 [|||||] 19.1%] 20 [|||||] 18.6%] 32 [|||||] 18.5%] 44 [|||||] 19.2%]
9 [|||||] 21.3%] 21 [|||||] 18.2%] 33 [|||||] 21.0%] 45 [|||||] 19.1%]
10 [|||||] 18.5%] 22 [|||||] 29.7%] 34 [|||||] 17.4%] 46 [|||||] 16.5%]
11 [|||||] 16.9%] 23 [|||||] 21.7%] 35 [|||||] 17.2%] 47 [|||||] 23.4%]
12 [|||||] 19.7%] 24 [|||||] 21.5%] 36 [|||||] 20.2%] 48 [|||||] 17.5%]
Mem[|||||]
Swp[|||||]
2.79G/62.7G] Tasks: 202, 4548 thr, 436 kthr; 1 running
0K/1.90G] Load average: 5.53 1.64 0.58
Uptime: 21:58:11

```

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
100535	root	20	0	1662M	33816	7360	S	2.7	0.1	0:00.45	go test -run TestClusterVSInstance github.com/prometheus/alertmanager/test/with_api
40604	root	20	0	32136	11340	3256	R	0.7	0.0	0:21.54	htop
100543	root	20	0	1662M	33816	7360	S	0.0	0.1	0:00.02	go test -run TestClusterVSInstance github.com/prometheus/alertmanager/test/with_api
100548	root	20	0	1662M	33816	7360	S	0.0	0.1	0:00.02	go test -run TestClusterVSInstance github.com/prometheus/alertmanager/test/with_api
100551	root	20	0	1662M	33816	7360	S	0.0	0.1	0:00.02	go test -run TestClusterVSInstance github.com/prometheus/alertmanager/test/with_api
100563	root	20	0	1662M	33816	7360	S	0.0	0.1	0:00.02	go test -run TestClusterVSInstance github.com/prometheus/alertmanager/test/with_api
100537	root	20	0	1662M	33816	7360	S	0.0	0.1	0:00.01	go test -run TestClusterVSInstance github.com/prometheus/alertmanager/test/with_api
100539	root	20	0	1662M	33816	7360	S	0.0	0.1	0:00.01	go test -run TestClusterVSInstance github.com/prometheus/alertmanager/test/with_api
100544	root	20	0	1662M	33816	7360	S	0.0	0.1	0:00.01	go test -run TestClusterVSInstance github.com/prometheus/alertmanager/test/with_api
100555	root	20	0	1662M	33816	7360	S	0.0	0.1	0:00.01	go test -run TestClusterVSInstance github.com/prometheus/alertmanager/test/with_api
100559	root	20	0	1662M	33816	7360	S	0.0	0.1	0:00.01	go test -run TestClusterVSInstance github.com/prometheus/alertmanager/test/with_api
100561	root	20	0	1662M	33816	7360	S	2.4	0.1	0:00.08	go test -run TestClusterVSInstance github.com/prometheus/alertmanager/test/with_api
100566	root	20	0	1662M	33816	7360	S	0.0	0.1	0:00.01	go test -run TestClusterVSInstance github.com/prometheus/alertmanager/test/with_api
1	root	20	0	37672	5684	4108	S	0.0	0.0	0:07.45	/lib/systemd/systemd --system --deserialize 23
341	root	20	0	0	0	0	S	0.0	0.0	0:00.02	kworker/25:1
1537	root	20	0	0	0	0	S	0.0	0.0	0:00.02	kworker/12:2
42	root	20	0	0	0	0	S	0.0	0.0	0:00.02	ksoftirqd/6
8	root	20	0	0	0	0	S	0.3	0.0	0:00.81	rcu_sched
41270	root	20	0	0	0	0	S	0.0	0.0	0:00.11	kworker/u256:1

```

F1Help F2Setup F3Search F4Filter F5Tree F6SortBy F7Nice F8Nice +F9Kill F10Quit

```

```

[0] 0:ssh*Z 1:zsh- "arch-t460" 15:24 08-Aug-18

```





# [PROPOSAL] api: Introduce OpenAPI generated Alertmanager API V2 #1352

 Open mxinden wants to merge 7 commits into `prometheus:master` from `mxinden:apiv2`

- Specified in OpenAPI
- Generated server and client code
- Generated docs