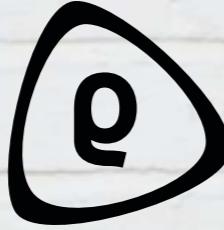


War Games

Flight training for ops teams



DevOpsDays, Berlin 2015
David Mytton, Founder, Server Density



server density



Cost of uptime?



Cost of uptime?



Cost of uptime?



\$2.9bn
Q1: 2015



Cost of uptime?



Google Cloud Platform

September 23, 2015 All services normal

Google Cloud Status

This page provides status information on the services that are part of the Google Cloud Platform. Check back here to view the current status of the services listed below. For additional information on these services, please visit cloud.google.com.

Cost of uptime?



\$2.9bn
Q1: 2015



\$1.21B
Q2: 2015



Cost of uptime?

Status History

Amazon Web Services keeps a running log of all service interruptions that we publish in the table below for the past year. Mouse over any of the status icons below to see a detailed incident report (click on the icon to persist the popup). Click on the arrow buttons at the top of the table to move forward and backwards through the calendar. All dates and times are Pacific Time (PST/PDT).

Cost of uptime?



\$2.9bn
Q1: 2015



\$1.21B
Q2: 2015



\$4.1bn
Q1: 2015

Cost of uptime?

Azure status 



Healthy

Services are operating normally



Current Status

History

For assistance when services are healthy, visit [Azure Support Options ▶](#)

Service

All

Region

All

Date

Most recent

October 2015

10/24 Visual Studio Online \ Build - East US 2 - Advisory

SUMMARY OF IMPACT: Between 12:00 and 14:10 on 24 Oct, 2015 UTC a small subset of customers using Visual Studio Online \ Build in East US 2 may have experienced delays in completing build jobs. PRELIMINARY ROOT CAUSE: Initial investigations indicate this was due to an unresponsive node in the Build process. MITIGATION: Engineers removed this node from the process, and jobs are now processing normally. NEXT STEPS: Engineers will continue to monitor the remaining items in the queue to ensure all jobs complete successfully. Further details may be available at <http://aka.ms/vsoblog>

How much are you spending?

Ltd.Exp.: Kita-senju → Shin-kanuma
16:12dep.

Date: 14 May(Today)
Train: Ltd.Exp. Kinu125
Number: Adult 1 / Child 0

Total 820yen

Amount Purchased

¥820

Amount Inserted

¥2872

Balance on card

¥2052

Change

¥0



Expect downtime

- Prepare

- Respond

- Postmortem

エサをあげないで!!

ドバトにエサを
あげないでください



●人がエサを与えると、過剰に増えて、生態系に悪影響を与えます。
●住宅のベランダや洗濯物が汚されるなどのフン害や、乾いたフン
などで健康被害をもたらすおそれがあります。

台東区役所 環境課

Prepare



Prepare

Service unavailability

Incident Report for Server Density

On July 20, between 11:03 and 11:49 UTC, devices payloads were not received and alerting was unavailable. This was caused by a power failure at our primary data centre with Softlayer in Washington, USA. The power failure was caused by a cascade of problems:

1. Utility Failure: Ancillary low voltage and ground wiring within the exterior medium voltage utility switch gear arced causing the utility main breaker feeding to trip.
2. Primary Generator Failure: A disconnected control power cable and a loose sensing wire for the PLC prevented the primary generator breaker from closing.
3. Reserve Generator Failure:
 1. A normally open contactor prevented the start signal from reaching the reserve generator. The contactor needs control power from the PLC to remain closed. Since control power was unavailable, the open contactor prevented the starting of the reserve generator.
 2. A point-of-use UPS unit that provides back-up power to the reserve generator PLC failed.

Incident process

1) Power failure to half of our servers



Incident process

1) Power failure to half of our servers

2) Automated failover unavailable (known failure condition)



Incident process

- 
- 1) Power failure to half of our servers
 - 2) Automated failover unavailable (known failure condition)
 - 3) Manual DNS switch required

Incident process

1) Power failure to half of our servers

2) Automated failover unavailable (known failure condition)

3) Manual DNS switch required

Expected impact = 20 min



Incident process

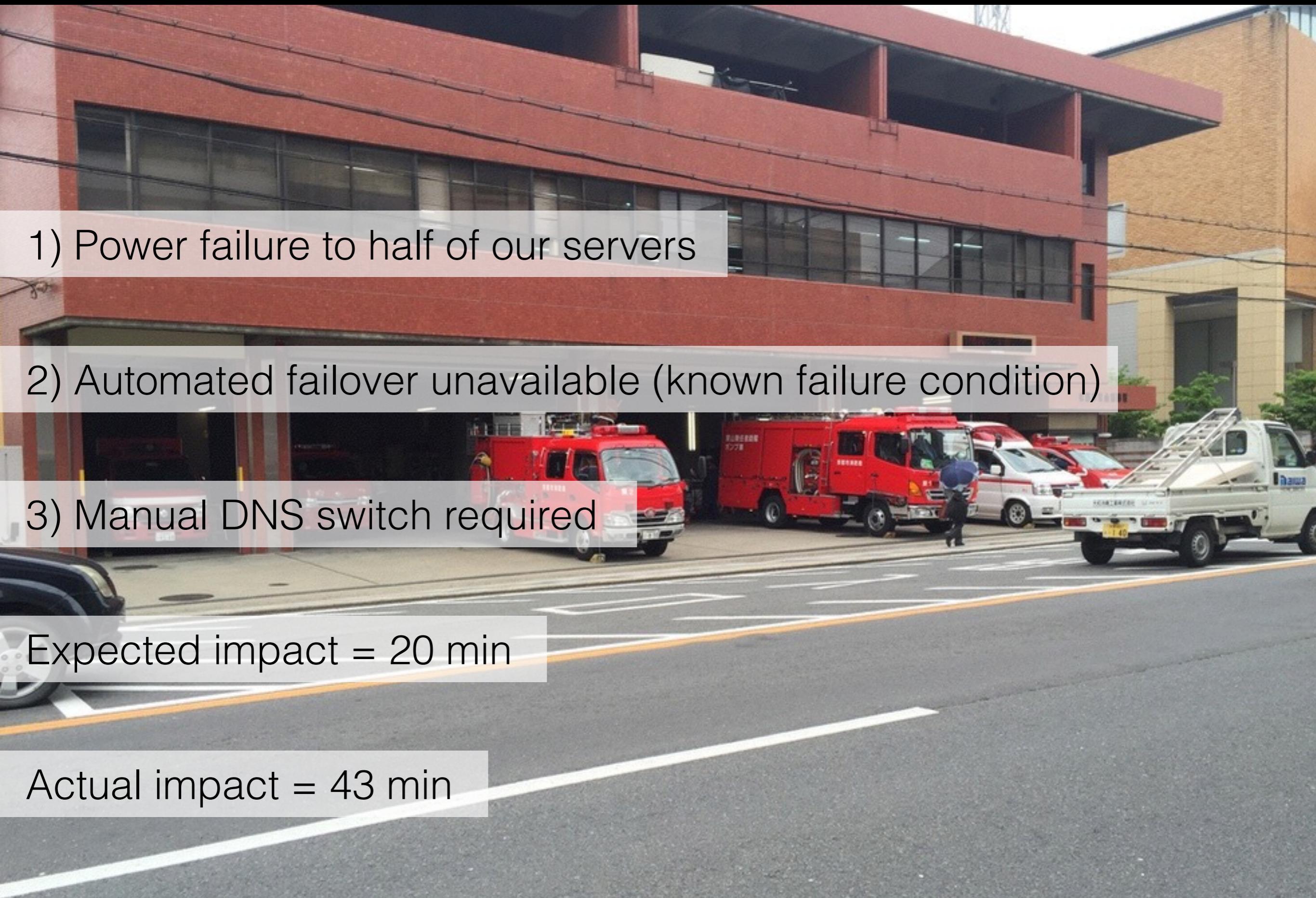
1) Power failure to half of our servers

2) Automated failover unavailable (known failure condition)

3) Manual DNS switch required

Expected impact = 20 min

Actual impact = 43 min



Human factors



Human factors

1) Unfamiliarity with DNS failover procedure

Human factors

- 1) Unfamiliarity with DNS failover procedure
- 2) Pressure of time sensitive event

Human factors

- 1) Unfamiliarity with DNS failover procedure
- 2) Pressure of time sensitive event
- 3) Escalation resulted in delay

Docs



Docs

- Searchable



Docs

- Searchable
- Independent



Docs

Google Search Drive ▼ 🔍

Drive My Drive > Ops ▾

 NEW

Name ↑	Owner	Last
Incident response	me	
Plans	Pedro Pessoa	
Services	me	
Tools & Vendors	me	
Datacenter switch checklist	Pedro Pessoa	
Incident response guide	me	
Known issues	me	
Manual processes to script	me	

My Drive Shared with me Google Photos Recent Starred Trash

Practice = War Games



Practice = War Games

- Realistic incident simulation



Practice = War Games

- Realistic incident simulation
- Practicing general response process



3F
帽子 HATS

General response process

- First responder

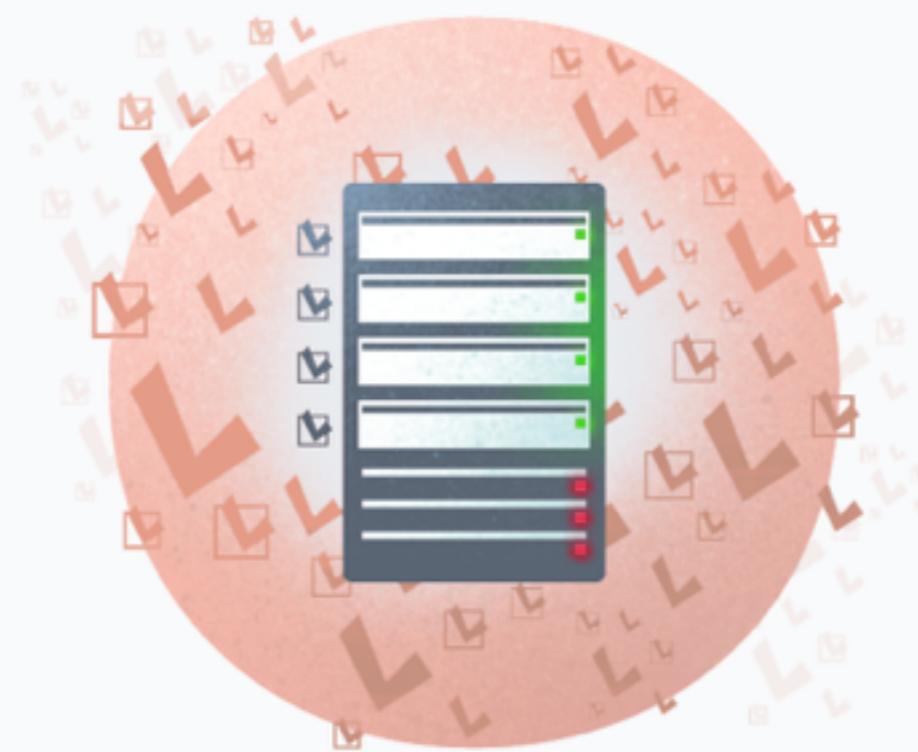


General response process

- First responder

1. Load incident response checklist





How and why we use DevOps checklists

By David Mytton, CEO & Founder of [Server Density](#).

Published on the 11th August, 2015.

General response process

- First responder

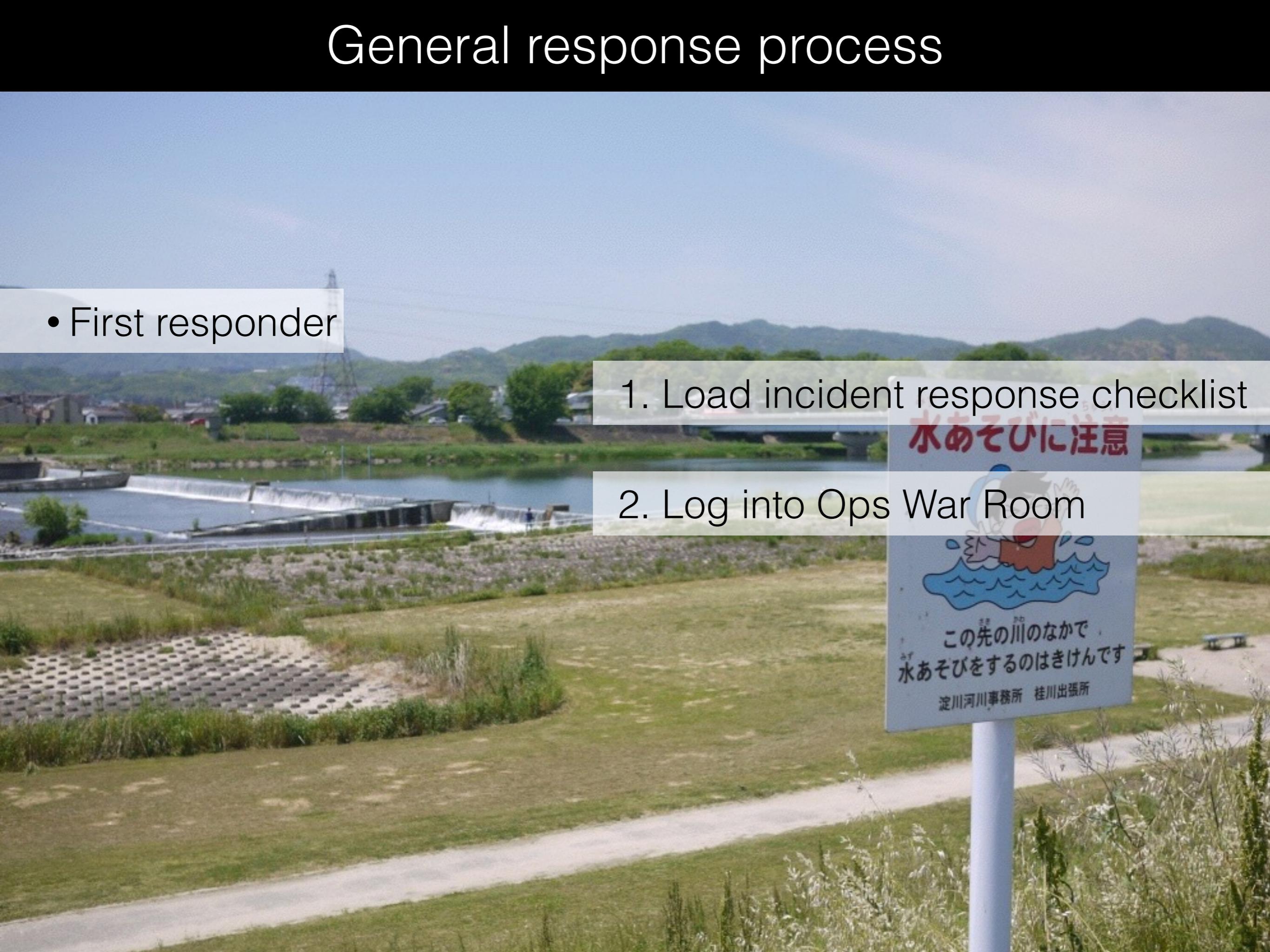
1. Load incident response checklist

2. Log into Ops War Room

水遊びに注意



この先の川のなかで
水遊びをするのはきげんです
淀川河川事務所 桂川出張所



General response process

- First responder

1. Load incident response checklist



水遊びに注意

2. Log into Ops War Room



3. Log incident in JIRA



水遊びをするのはきけんです
淀川河川事務所 桂川出張所

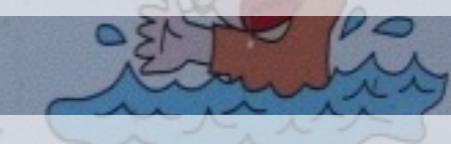
General response process

- First responder

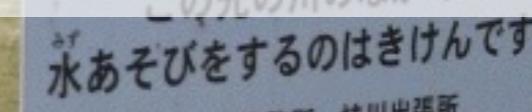
1. Load incident response checklist



2. Log into Ops War Room



3. Log incident in JIRA



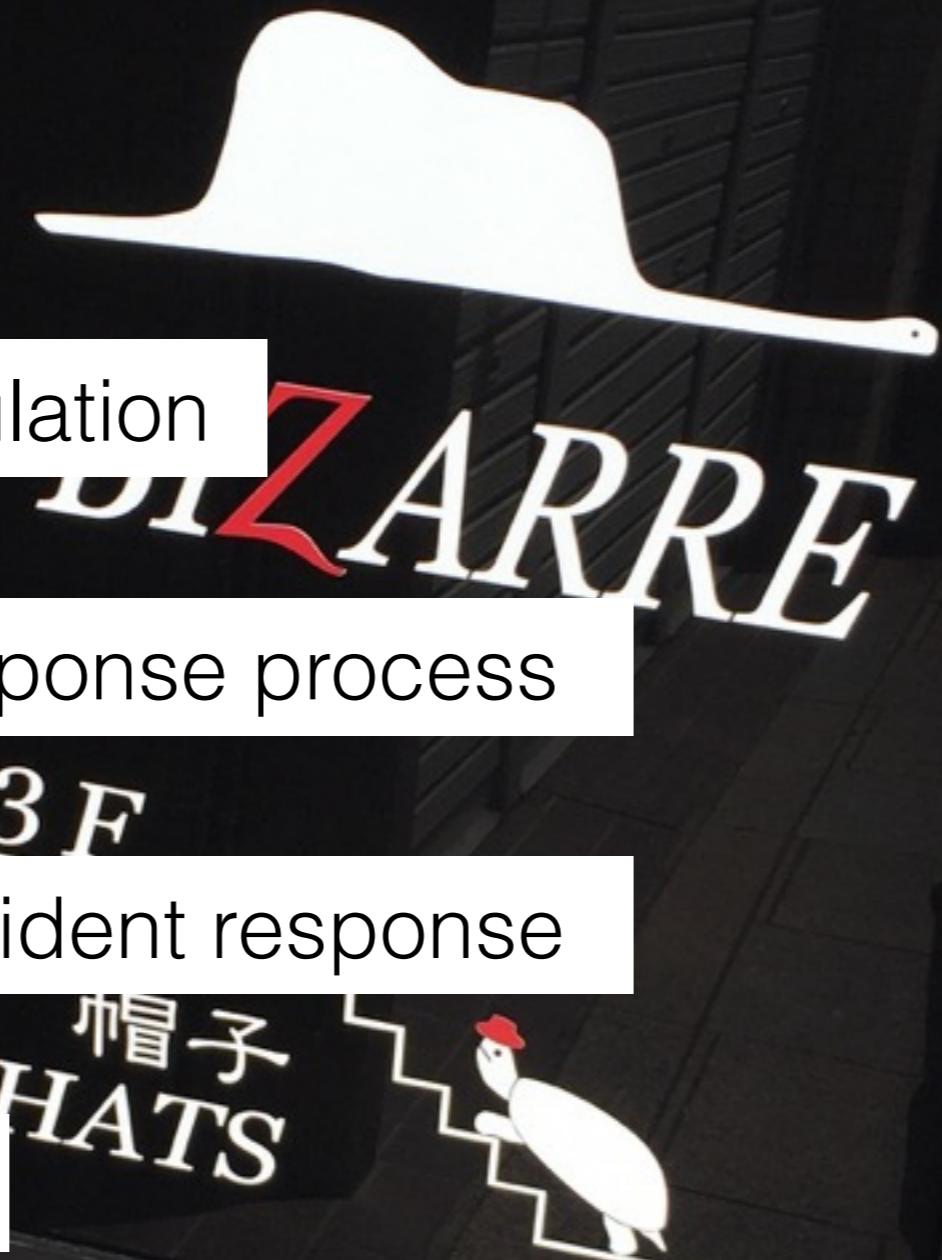
4. Begin investigation

Practice = War Games

- Realistic incident simulation
- Practicing general response process
- Practicing specific incident response

Practice = War Games

- Realistic incident simulation
- Practicing general response process
- Practicing specific incident response
- Reveals deficiencies



Human response



Human response

- Increases confidence



Human response

- Increases confidence
- Reduces panic



Human response

- Increases confidence
- Reduces panic
- Better coordination



Human response

- Increases confidence
- Reduces panic
- Better coordination
- Improves time to resolution



Simulation setup

		平 日		土曜日 / 日祝日	
5	□=〔和束小・中学校開校日〕のみ運行 中= 和束中学校 止め				
6					
7	□2 中				
8	8	57	8	57	
9					
10		54		54	
11					
12	12		12		
13		31		31	
14		31		31	
15		31		31	
16				31	

Simulation setup

		平 日		土曜日 / 日祝日		
5	□ = [和束小・中学校開校日] のみ運行					
6	• Replica environment					
7	□ 2					
8	8	57		8	57	
9						
10	54				54	
11						
12	12	12				
13	31				31	
14	31				31	
15	31				31	
16						

Simulation setup

平 日

土曜日 / 日祝日

□ = [和束小・中学校開校日] のみ運行

- Replica environment

- Mock command line

8	8	57	8	57
9				
10		54		54
11				
12	12		12	
13		31		31
14		31		31
15		31		31
16				

Simulation setup

平 日

土曜日 / 日祝日

□ = [和束小・中学校開校日] のみ運行

- Replica environment

- Mock command line

8	8	57	8	57
---	---	----	---	----

- Recording actions

10		54		54
----	--	----	--	----

11				
----	--	--	--	--

12	12		12	
----	----	--	----	--

13		31		31
----	--	----	--	----

14		31		31
----	--	----	--	----

15		31		31
----	--	----	--	----

16		31		31
----	--	----	--	----

Simulation setup

平 日

土曜日 / 日祝日

□ = [和束小・中学校開校日] のみ運行

- Replica environment

- Mock command line

8 8 57 8 57

- Recording actions

10 54 54

- Run several failure scenarios

12 12 12
13 31 31
14 31 31
15 31 31
16 31 31

Simulation goals



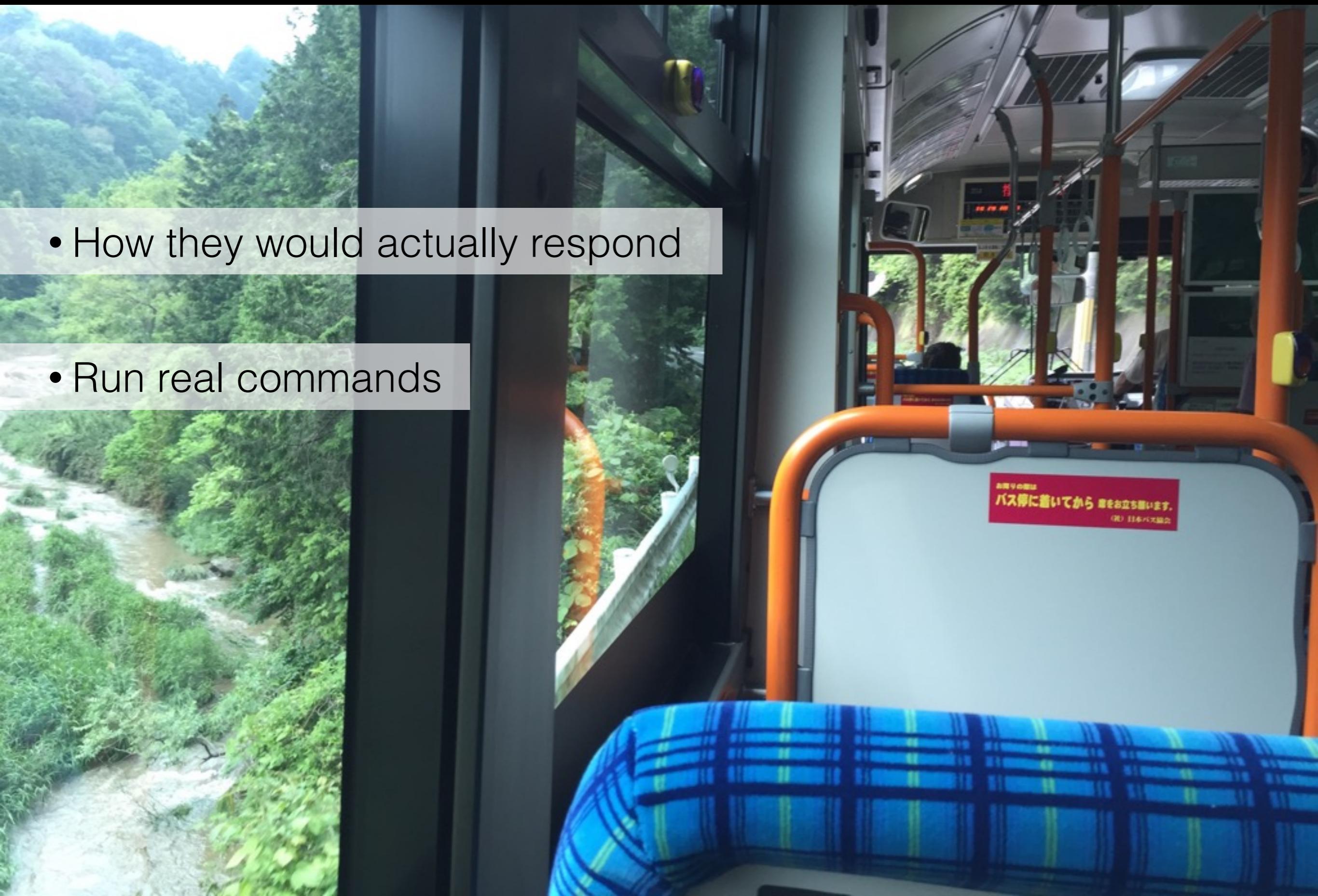
Simulation goals

- How they would actually respond



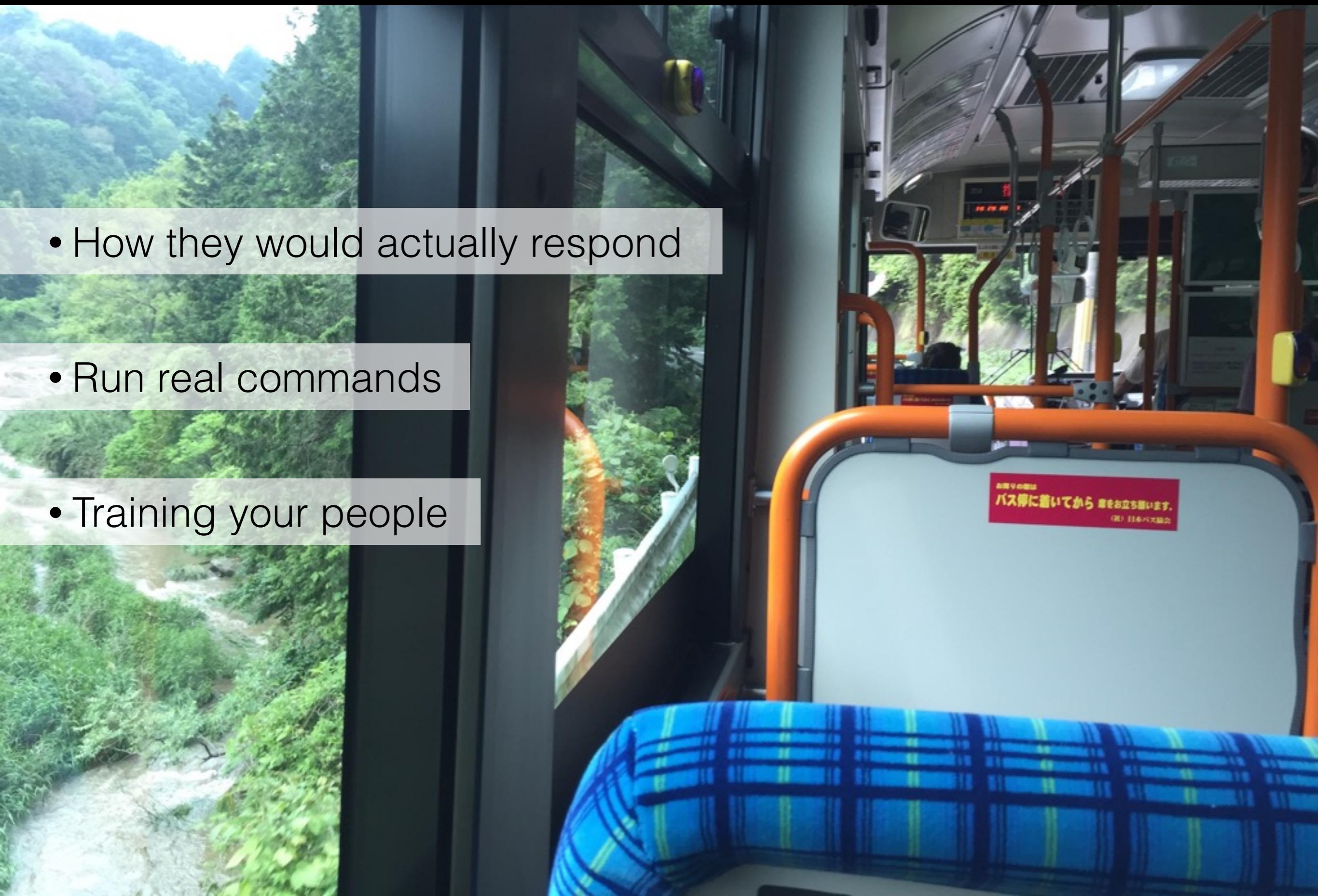
Simulation goals

- How they would actually respond
- Run real commands



Simulation goals

- How they would actually respond
- Run real commands
- Training your people



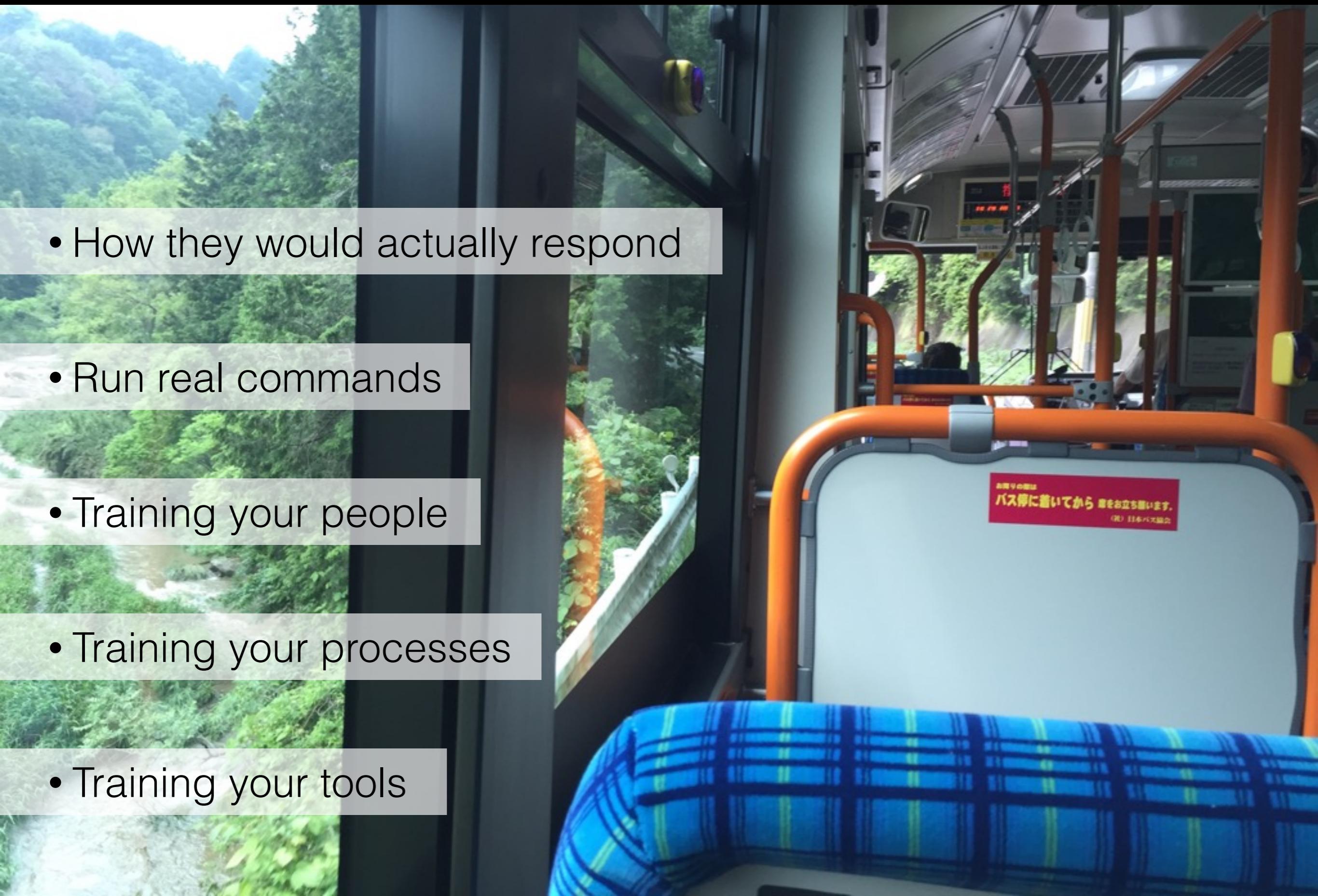
Simulation goals

- How they would actually respond
- Run real commands
- Training your people
- Training your processes



Simulation goals

- How they would actually respond
- Run real commands
- Training your people
- Training your processes
- Training your tools



Review and repeat

またやる。

Please do it again.



Review and repeat

- Objective review of the process



Review and repeat

- Objective review of the process

- Suggestions for improvements



Review and repeat

- Objective review of the process

- Suggestions for improvements

- Do it again



ありがとうございます

david@serverdensity.com

@davidmytton