

# Welcome to Zabbix Conference 2016!

# Who am I?

Alexei Vladishev

Creator of Zabbix

CEO, Architect and Product Manager

Twitter: [@avladishev](https://twitter.com/avladishev)



# Our sponsors



# Conference stats

223 participants

223 participants  
from 38 countries

# Top five countries

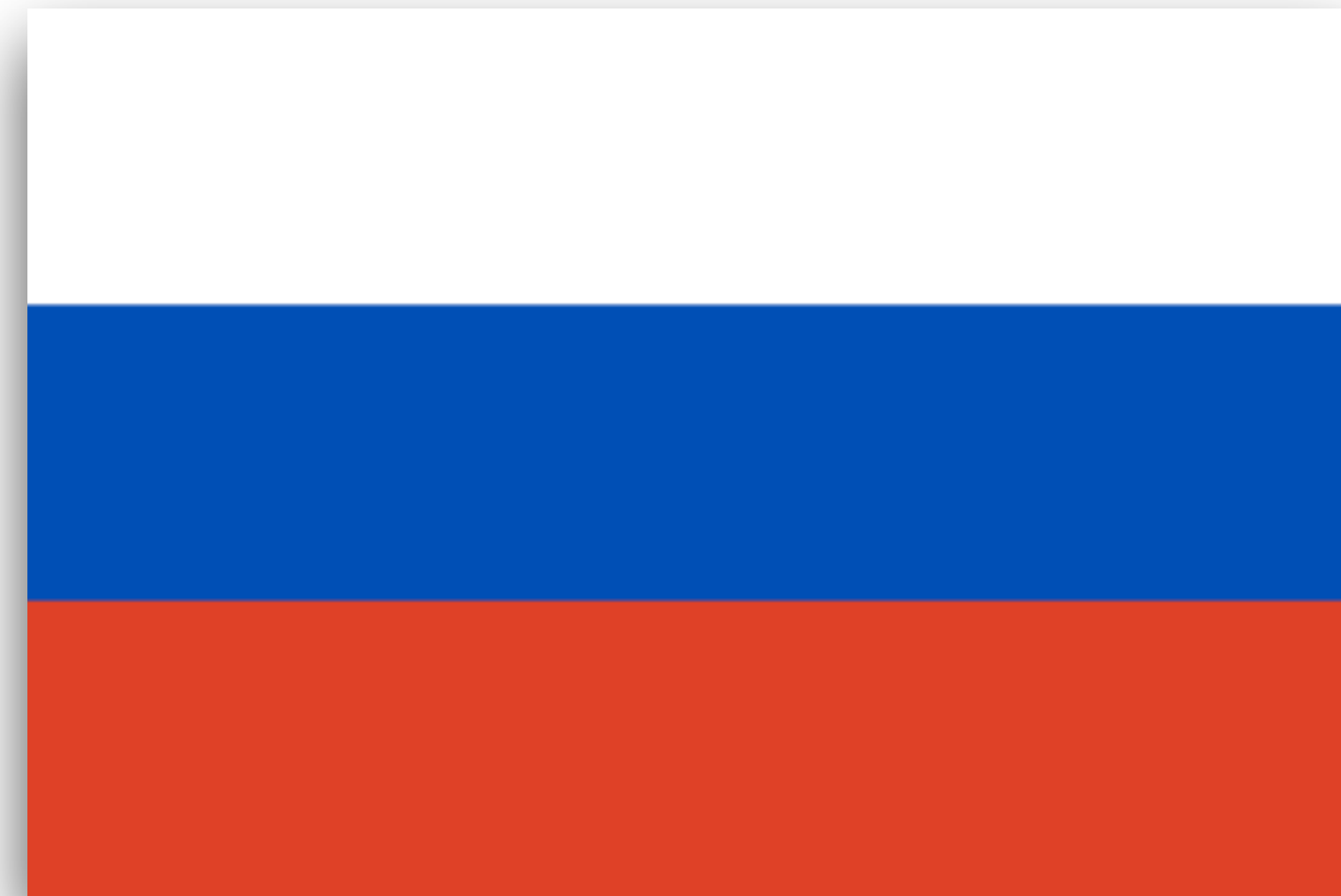
1. .... **16**
2. France **13**
3. Netherlands **11**
4. Lithuania **10**
5. Germany **9**

\* excluding Latvia

# Top five countries

1. **Russia 16**
2. France **13**
3. Netherlands **11**
4. Lithuania **10**
5. Germany **9**

\* excluding Latvia





# What's happened in 2016

# Release of Zabbix 3.0 LTS

Long Term Support (LTS) till 2021

# Faster development, better support

45 people in Riga, Tokyo and New York

# Last but not least...

Zabbix is a True Open Source software and  
will always be.

# Let's talk about Zabbix 3.2

## Quick reminder

Zabbix 3.2 is the next major release,  
non LTS, 6-7 months support period

# Event correlation

# Example of a local event correlation



# Log file monitoring

`/var/log/services.log`

...

```
10/Aug/2016:06:25:30 service Jira stopped
10/Aug/2016:06:25:32 service MySQL stopped
10/Aug/2016:06:26:11 service MySQL started
10/Aug/2016:06:26:22 service Redis stopped
10/Aug/2016:06:26:58 service Redis started
10/Aug/2016:06:27:31 service Jira started
```

...

How many items and triggers we need to monitor state of each service and have independent notification?

Zabbix 3.2:

One item and one trigger to monitor  
**all** services!

Name Service {{ITEM.VALUE}.regsub("^.\*service ([a-zA-Z]\*) .\*\$", "\1")} stopped

Severity Not classified Information Warning Average High Disaster

Problem expression {Template Services:log[/var/log/services].regexp("stopped")}=1

Add

[Expression constructor](#)

OK event generation Expression Recovery expression None

Recovery expression {Template Services:log[/var/log/services].regexp("started")}=1

Add

[Expression constructor](#)

PROBLEM event generation mode Single Multiple

PROBLEM event generation mode

Single

Multiple

OK event closes

All problems

All problems if tag values match

Tag for matching

Service

Tags

Datacenter	FR2	<a href="#">Remove</a>
Env	Staging	<a href="#">Remove</a>
Service	{{ITEM.VALUE}.regsub("^.*service ([a-zA-Z]*) .*\$", "\1")}	<a href="#">Remove</a>
<a href="#">Add</a>		

Allow manual close

☒

# How will it work?

10/Aug/2016:06:25:30 service **Jira** stopped

“Service **Jira** stopped”

**PROBLEM**

# How will it work?

10/Aug/2016:06:25:30 service Jira stopped	“Service Jira stopped”	<b>PROBLEM</b>
10/Aug/2016:06:27:32 service <b>MySQL</b> stopped	“Service <b>MySQL</b> stopped”	<b>PROBLEM</b>

# How will it work?

10/Aug/2016:06:25:30 service Jira stopped	“Service Jira stopped”	<b>PROBLEM</b>
10/Aug/2016:06:27:32 service MySQL stopped	“Service <b>MySQL</b> stopped”	<b>RESOLVED</b>
10/Aug/2016:06:28:11 service <b>MySQL</b> started		



# How will it work?

10/Aug/2016:06:25:30 service Jira stopped	"Service Jira stopped"	<b>PROBLEM</b>
10/Aug/2016:06:27:32 service MySQL stopped	"Service MySQL stopped"	<b>RESOLVED</b>
10/Aug/2016:06:28:11 service MySQL started		
10/Aug/2016:06:34:22 service <b>Redis</b> stopped	"Service <b>Redis</b> stopped"	<b>PROBLEM</b>



# How will it work?

10/Aug/2016:06:25:30 service Jira stopped	"Service Jira stopped"	<b>PROBLEM</b>
10/Aug/2016:06:27:32 service MySQL stopped	"Service MySQL stopped"	<b>RESOLVED</b>
10/Aug/2016:06:28:11 service MySQL started		
10/Aug/2016:06:34:22 service Redis stopped	"Service <b>Redis</b> stopped"	<b>RESOLVED</b>
10/Aug/2016:06:37:58 service <b>Redis</b> started		

# How will it work?

10/Aug/2016:06:25:30 service Jira stopped	“Service <b>Jira</b> stopped”	<b>RESOLVED</b>
10/Aug/2016:06:27:32 service MySQL stopped	“Service MySQL stopped”	<b>RESOLVED</b>
10/Aug/2016:06:28:11 service MySQL started		
10/Aug/2016:06:34:22 service Redis stopped	“Service Redis stopped”	<b>RESOLVED</b>
10/Aug/2016:06:37:58 service Redis started		
10/Aug/2016:06:55:31 service <b>Jira</b> started		

Tags give us ability to switch from host-  
to **service-centric** problem reporting  
and notifications

But it's not limited only to  
services!

# Different dimensions

Service: Oracle

Service: {{ITEM.VALUE}.regsub('...', '\1 \2')}

Datacenter: NY2

Datacenter: {\$DATACENTER}

Area: Performance

Area: Availability

Area: Security

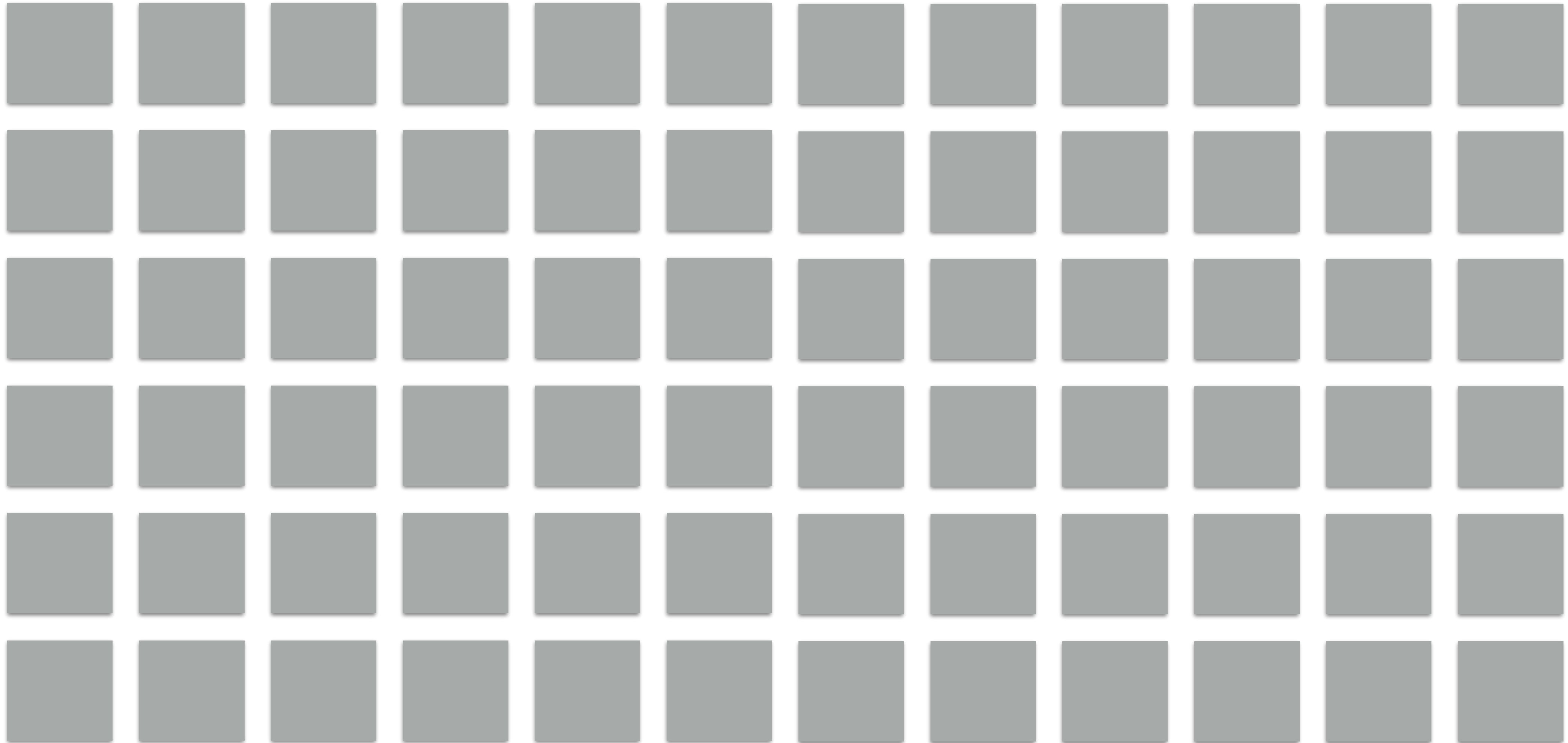
Environment: Staging

Environment: Test

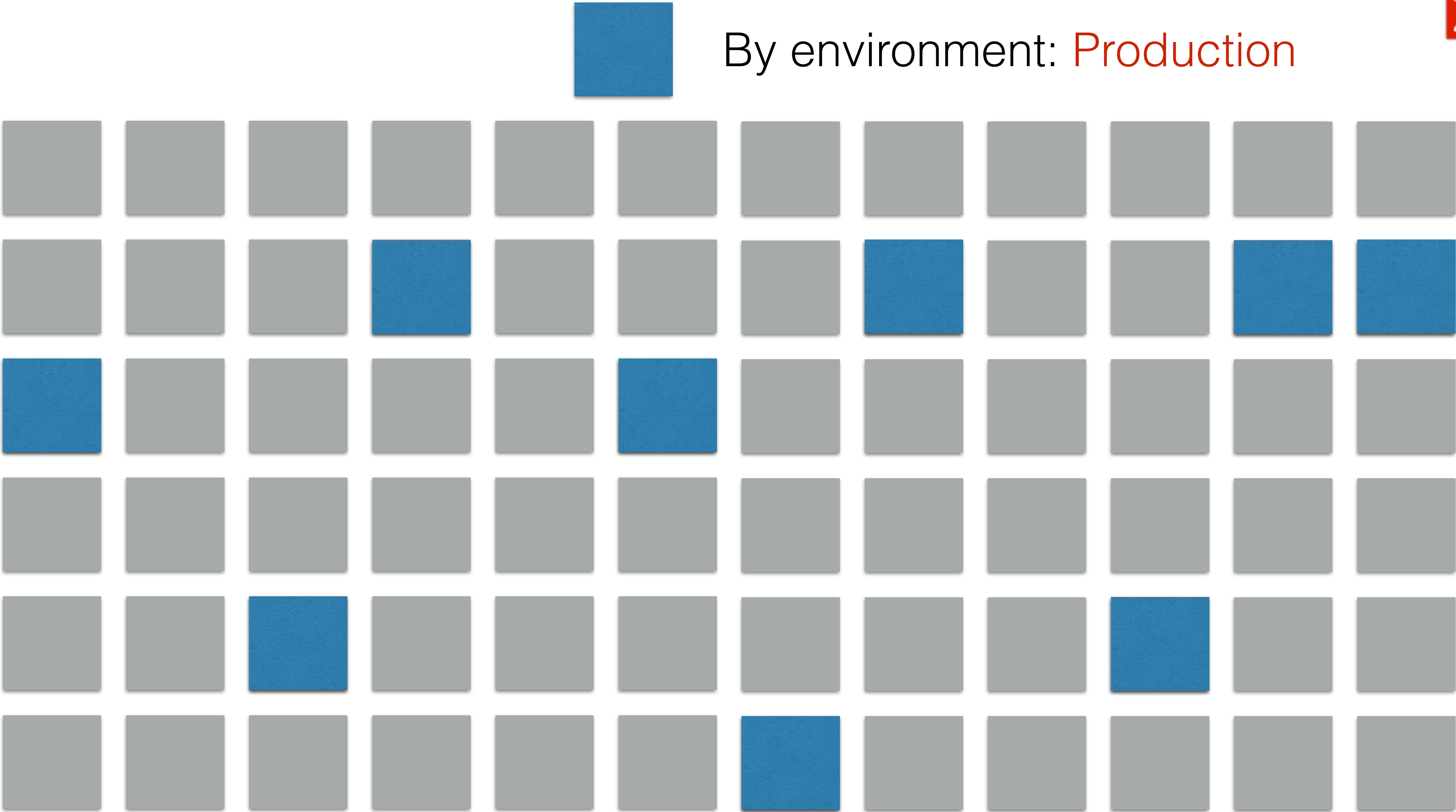
User impact: None

User impact: Critical

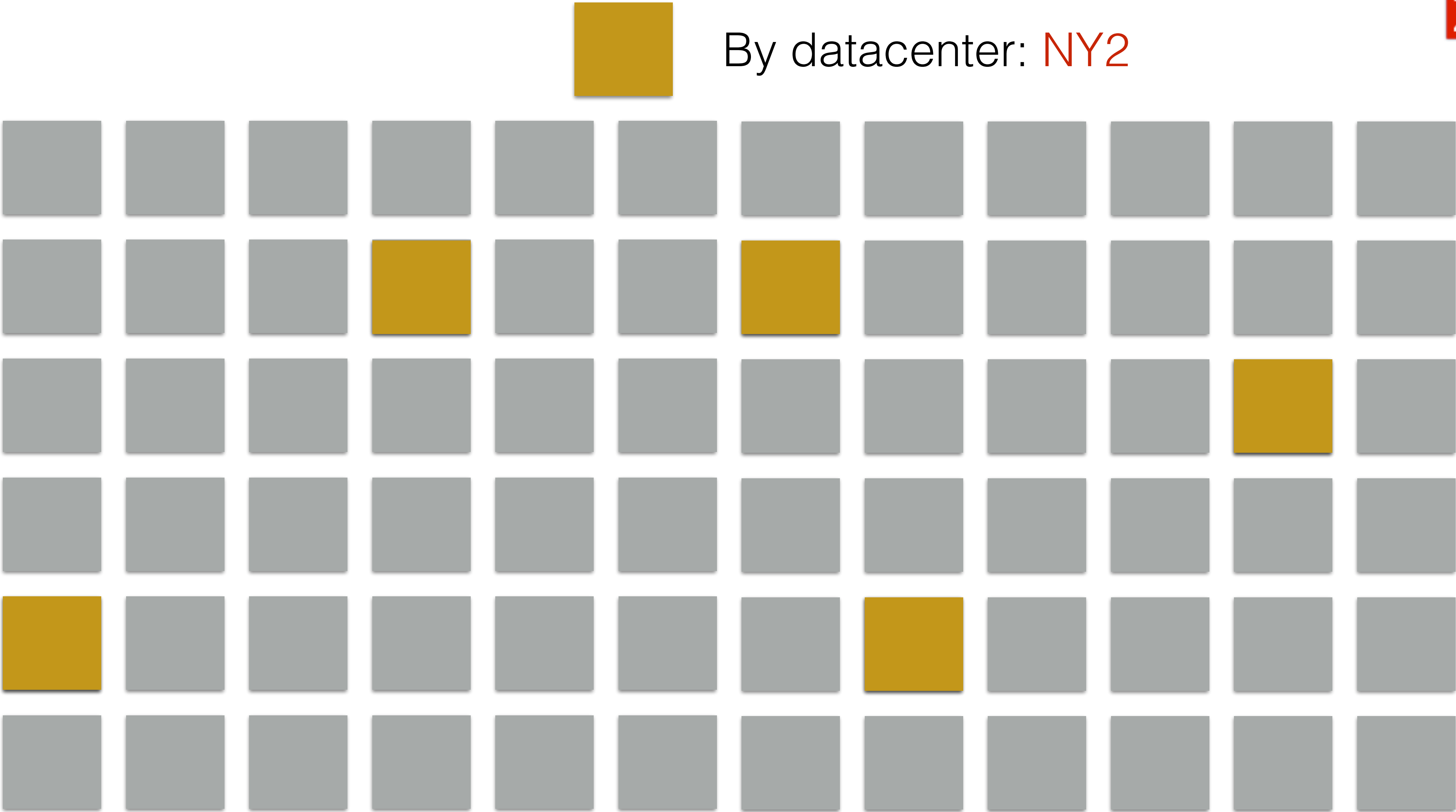
# So many problems



By environment: Production

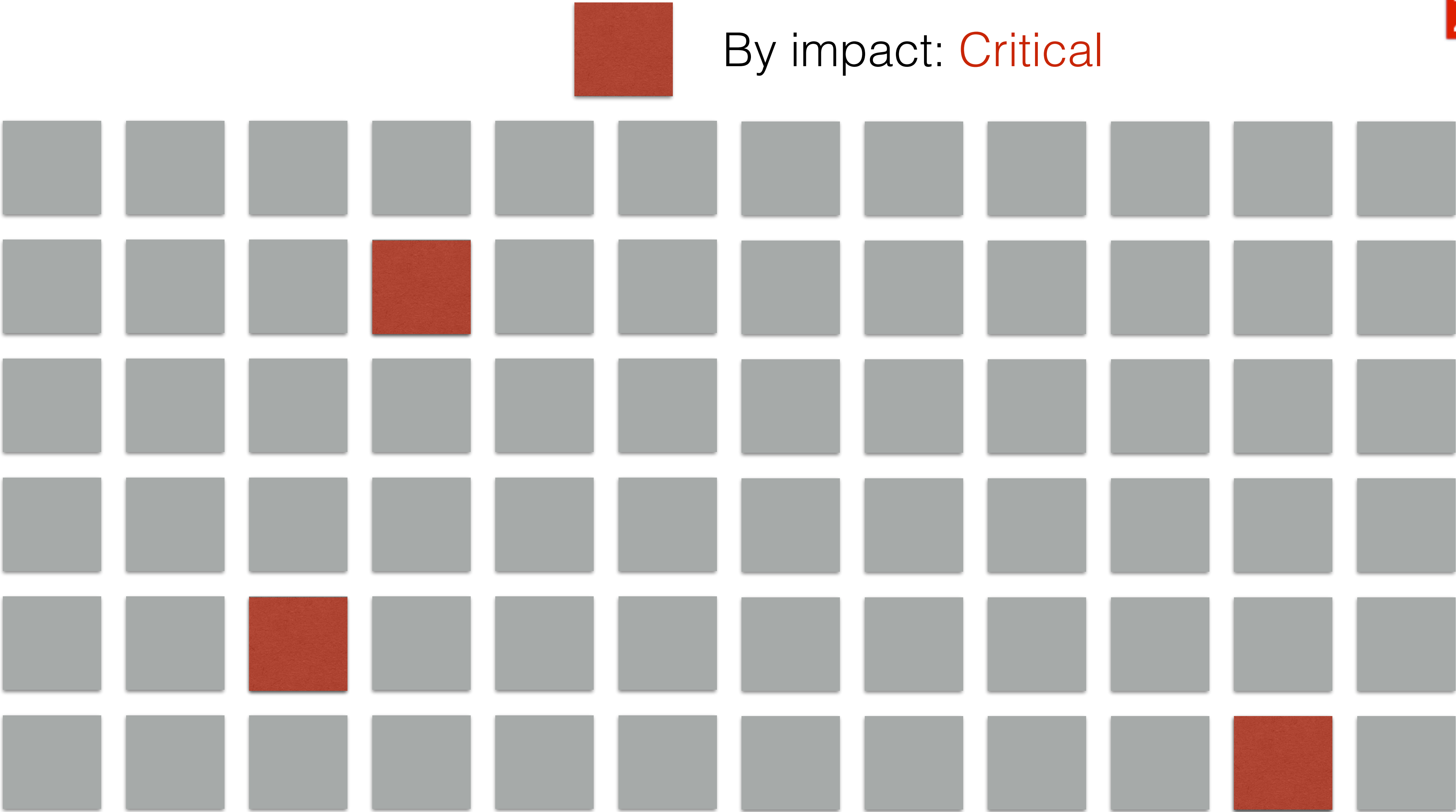


By datacenter: NY2



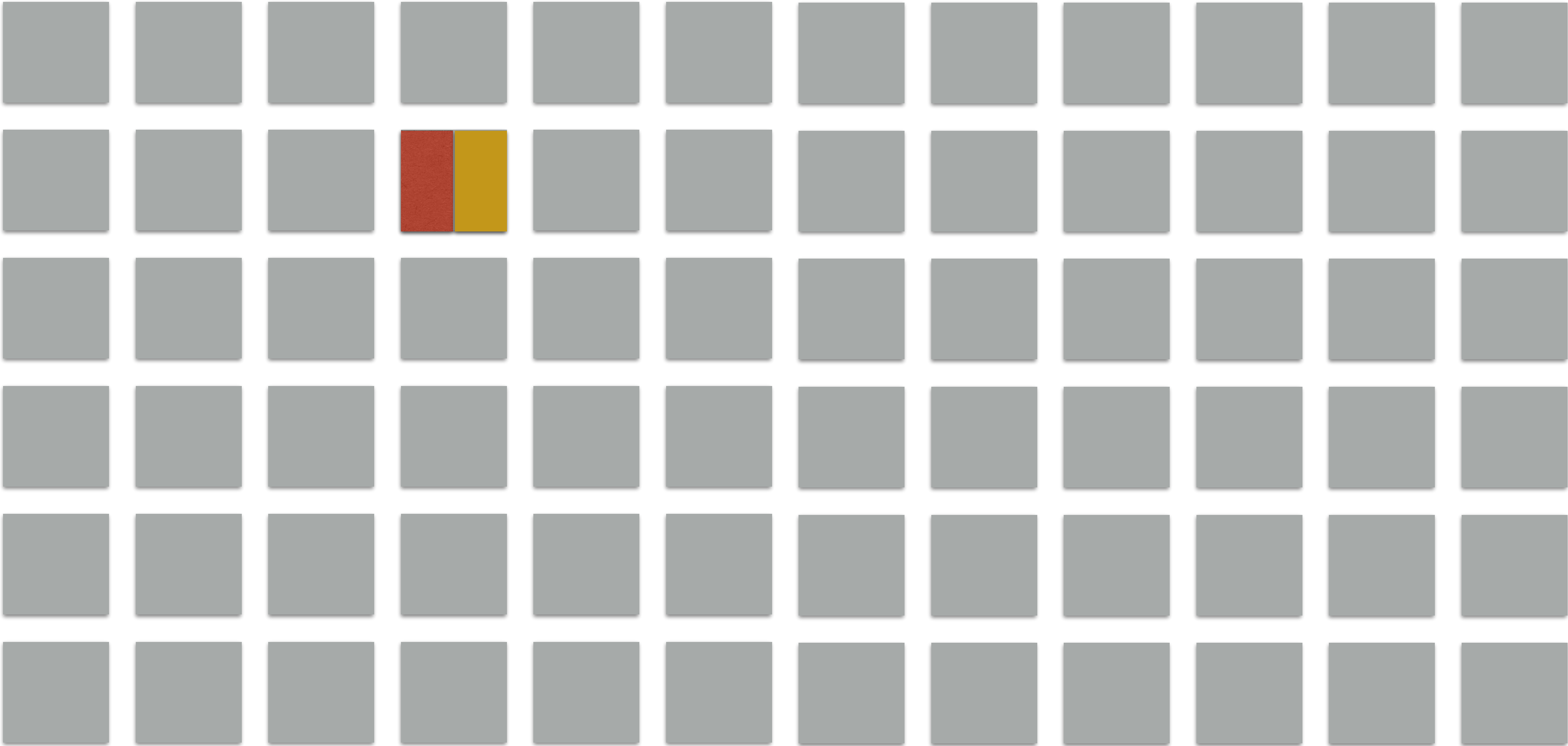


By impact: Critical





By impact: Critical AND in NY2



# Problem view

Problems

Export to CSV

Filter

Time	<input type="checkbox"/>	Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
15:01:48	<input type="checkbox"/>	Average		PROBLEM		Linux009	Too many queries per second	1m 19s	Yes 1	In progress 2	Datacenter: NY1 Env: Production Service: HTTP balancer
15:00											
13:06:05	<input type="checkbox"/>	High		PROBLEM		Linux005	Service Jira stopped	1h 57m 2s	No	Done 2	Datacenter: FR2 Env: Staging Service: Jira
13:00											
10:33:02	<input type="checkbox"/>	High		PROBLEM		Linux005	Service Redis stopped	4h 30m 5s	No	Done 2	Datacenter: FR2 Env: Staging Service: Redis
Today											
2016-09-07 17:09:38	<input type="checkbox"/>	Information		PROBLEM		Linux008	Low CPU utilization on host machines	21h 53m 29s	No		Datacenter: FR2 Service: Kubernetes
2016-09-07 09:58:08	<input type="checkbox"/>	Average		PROBLEM		Linux001	Too many transactions per second	1d 5h 4m	Yes 1	Failures 1	Datacenter: FR2 Service: Oracle
Yesterday											
2016-07-18 11:06:38	<input type="checkbox"/>	Warning		PROBLEM		Linux002	Too many processes running on Linux002	1m 22d 3h	No		
2016-07-18 11:06:38	<input type="checkbox"/>	Warning		PROBLEM		Linux007	Too many processes running on Linux007	1m 22d 3h	Yes 1		
2016-07-18 11:06:26	<input type="checkbox"/>	Warning		PROBLEM		Linux001	Too many processes running on Linux001	1m 22d 3h	No		
2016-07-18 11:06:14	<input type="checkbox"/>	Warning		PROBLEM		Linux010	Too many processes running on Linux010	1m 22d 3h	No		

# Filtering!

ZABBIX

MonitoringInventoryReportsConfigurationAdministration

Share?

DashboardProblemsOverviewWebLatest dataTriggersGraphsScreensMapsDiscoveryIT services

Problems

Export to

Filter ▲

Show

Recent problemsProblemsHistory

Host groups

Europe/Germany/Berlin ×type here to search

Select

Hosts

type here to search

Select

Application

Select

Triggers

type here to search

Select

Problem

Minimum trigger severity

Warning

Age less than

☐

14

days

Host inventory

Type

Remove

Add

Tags

Datcenter

NY1

Remove

Env

Production

Remove

Add

Show hosts in maintenance

☐

Show unacknowledged only

☐

Show details

☐

Apply

Reset

Time ▼

☐

Severity

Recovery time

Status

Info

Host

Problem

Duration

Ack

Actions

Tags

15:06:56

☐

Average

PROBLEM

Linux009

Too many queries per second

1s

No

Datcenter: NY1

Env: Production

Service: HTTP balancer

15:01:48

☐

Average

15:06:49

RESOLVED

Linux009

Too many queries per second

5m 1s

Yes 1

In progress 3

Datcenter: NY1

Env: Production

Service: HTTP balancer

38

# Notifications



# Actions

Action

Operations

Recovery operations

Name

Critical problems with production load balancer

Type of calculation

And

A and B and C

Conditions

Label	Name	Action
A	Tag Service = HTTP balancer	<a href="#">Remove</a>
B	Tag Impact = Critical	<a href="#">Remove</a>
C	Tag Env = Production	<a href="#">Remove</a>

New condition

Trigger name

like

[Add](#)

Enabled

☒

Update

Clone

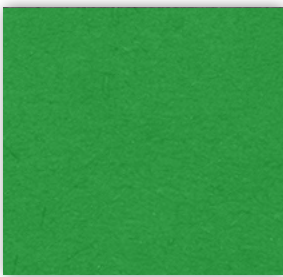
Delete

Cancel

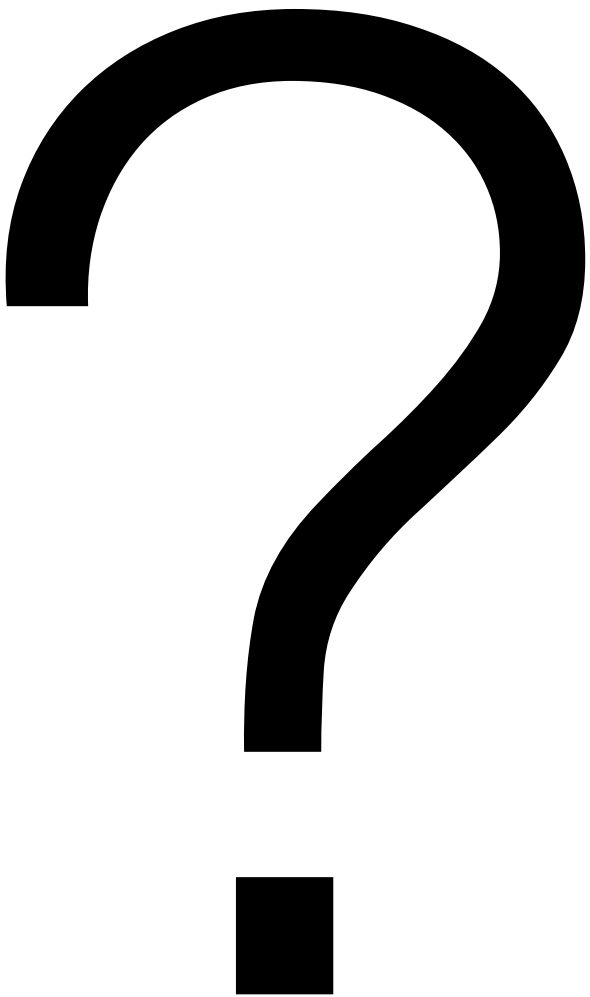
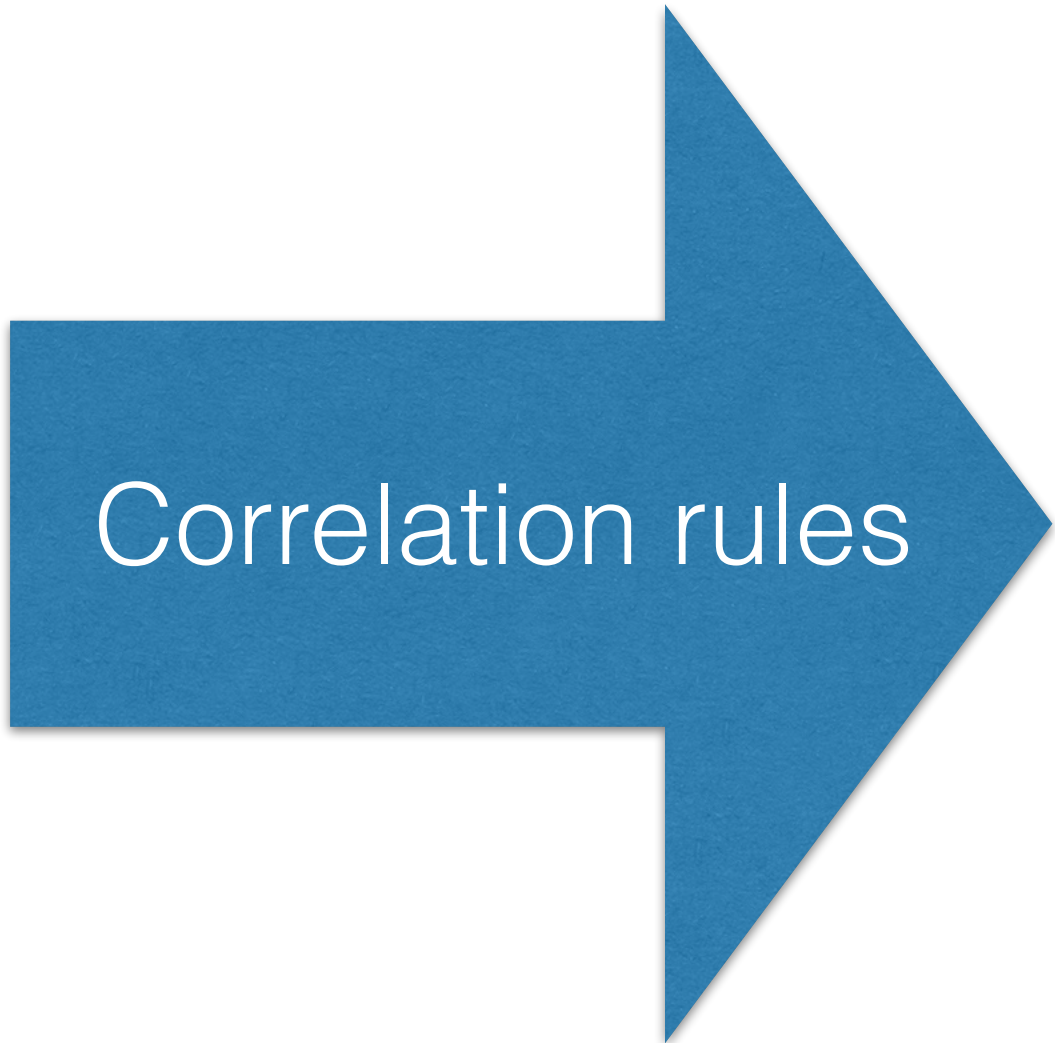
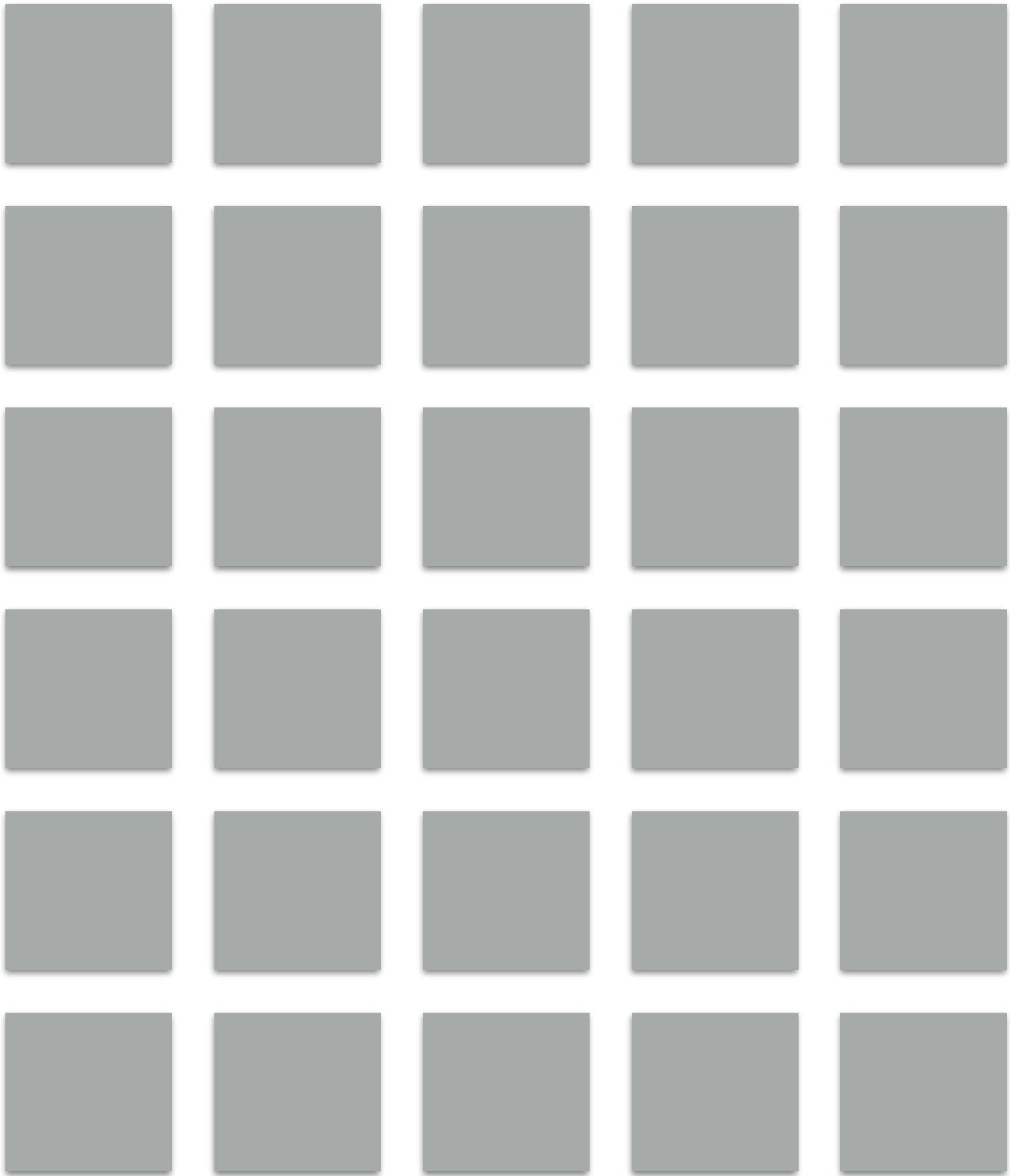


# Global correlation

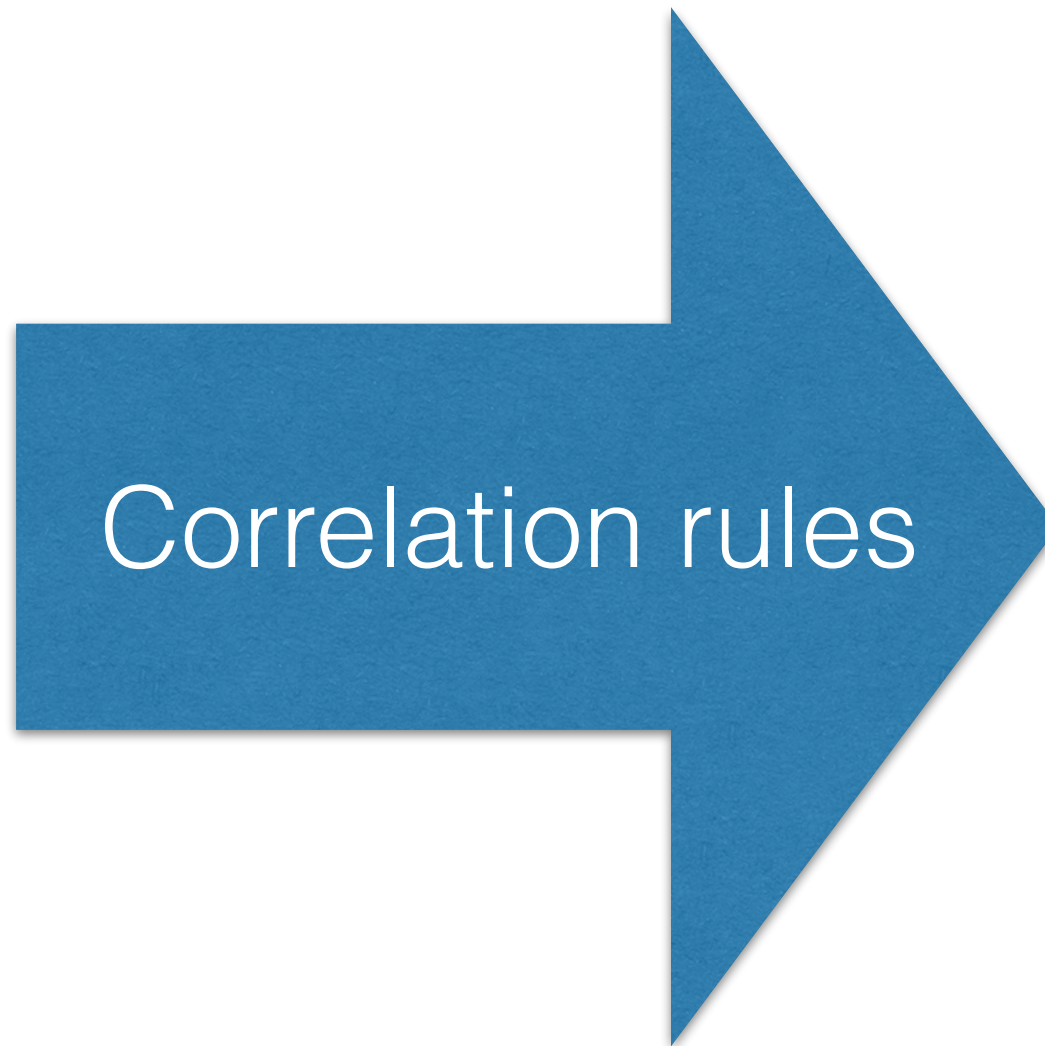
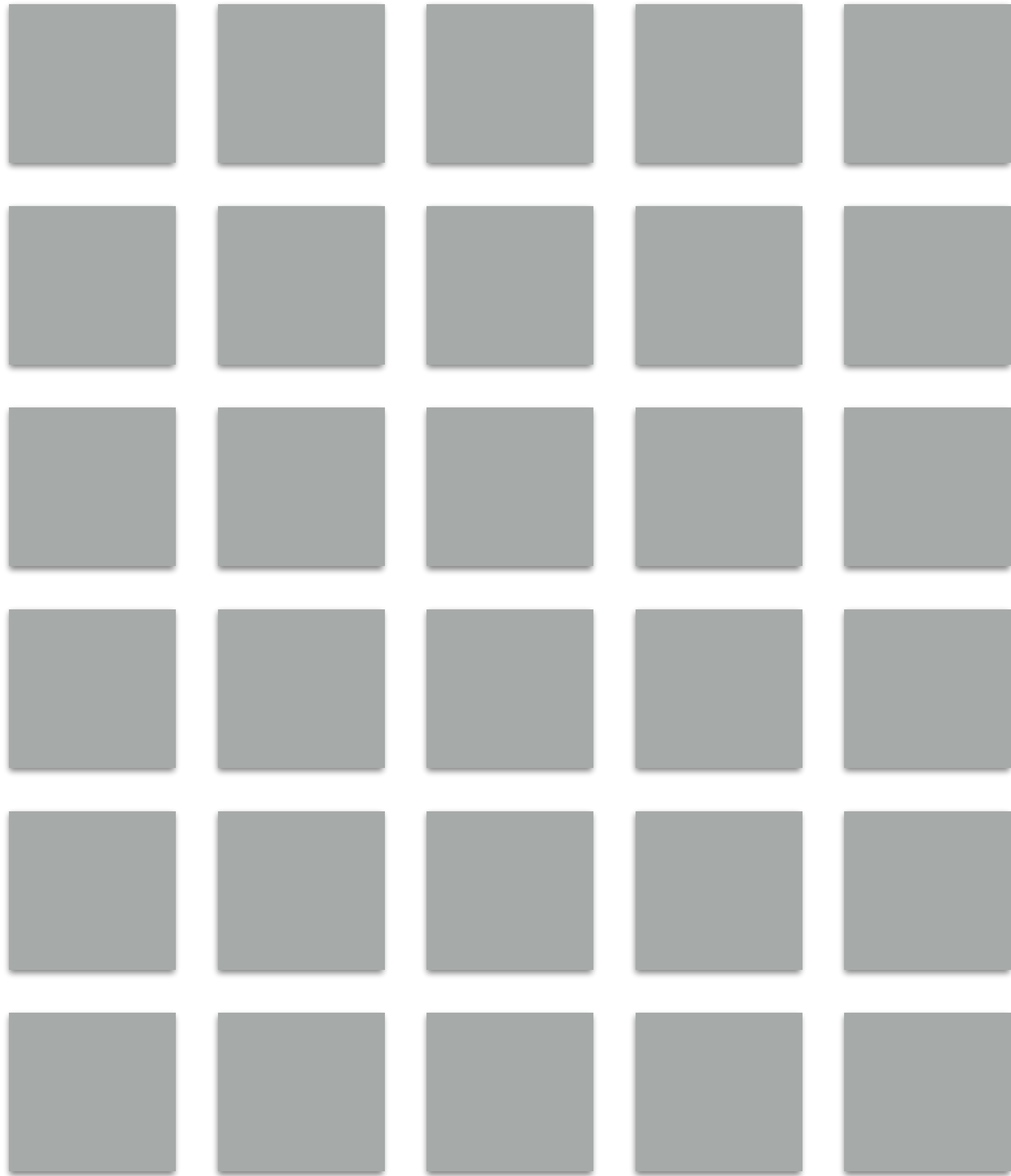
New problem comes



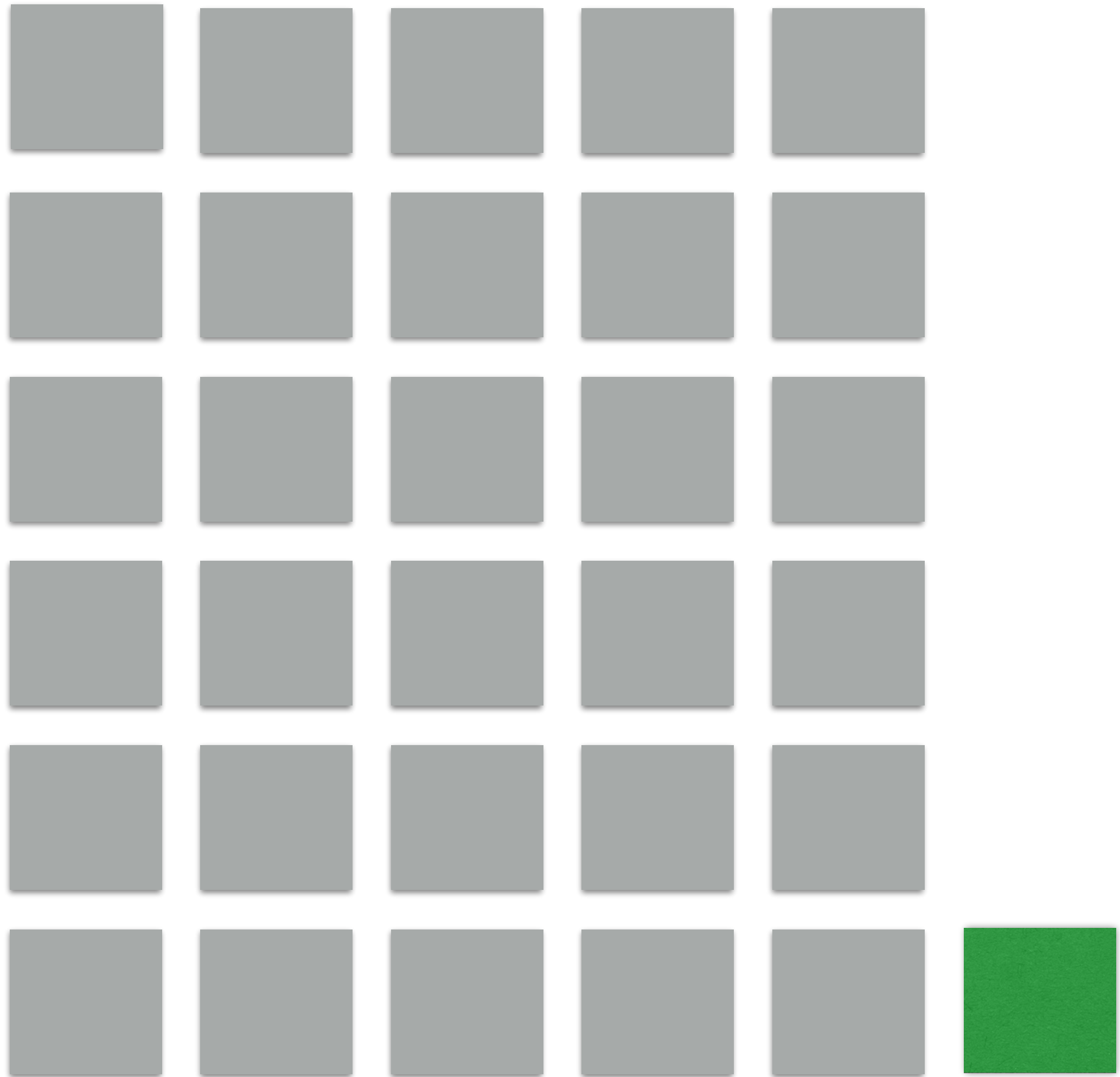
Existing problems



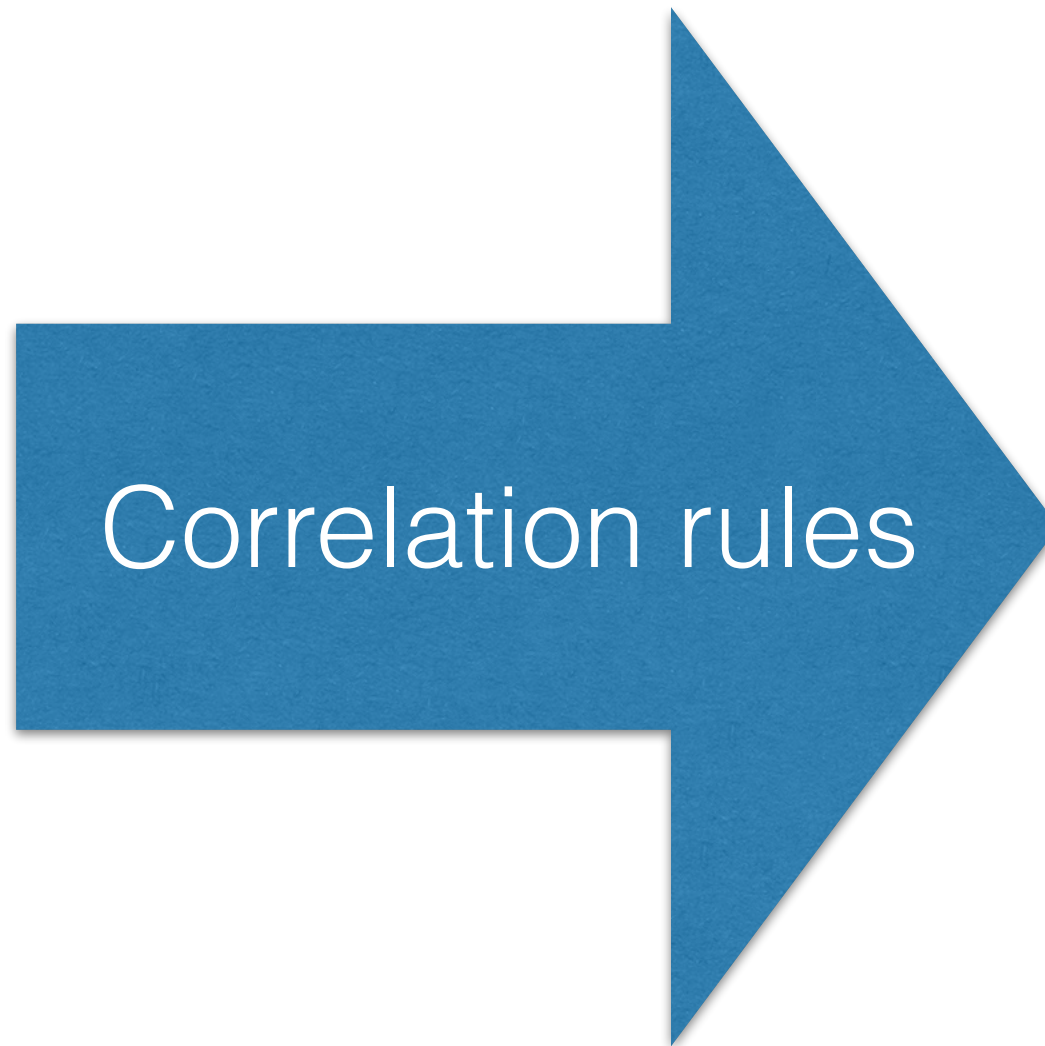
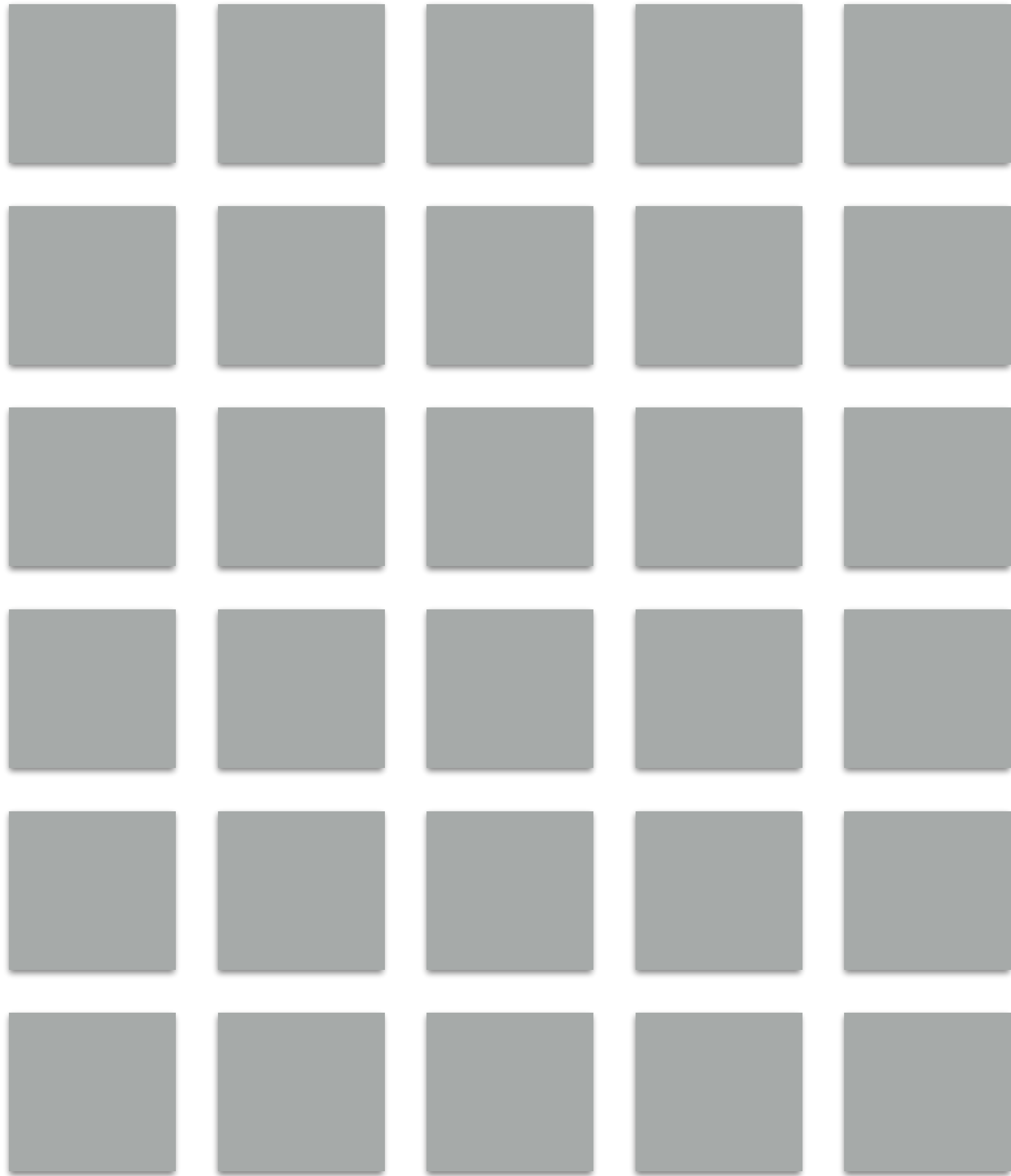
Existing problems



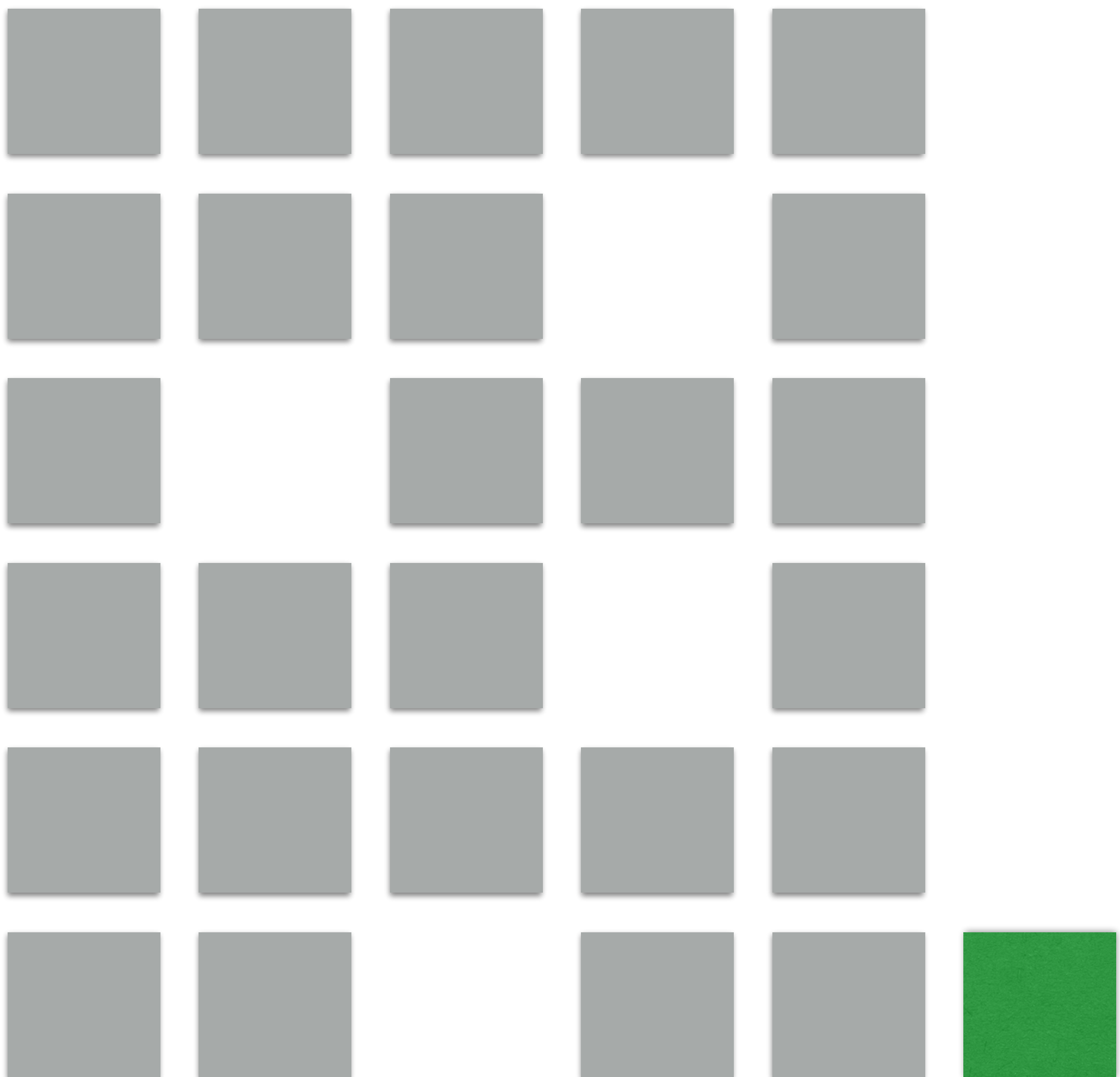
No correlation found



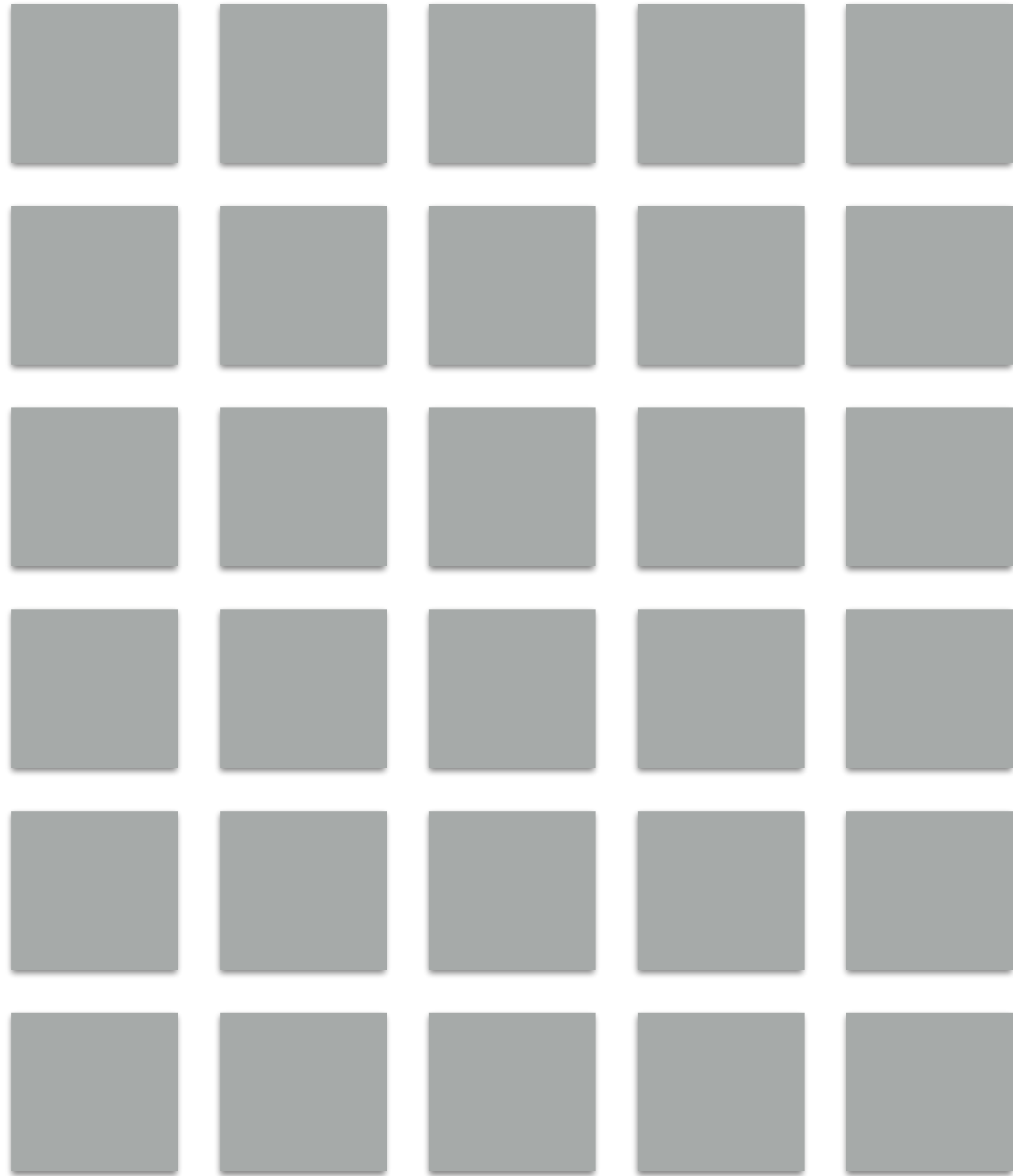
Existing problems



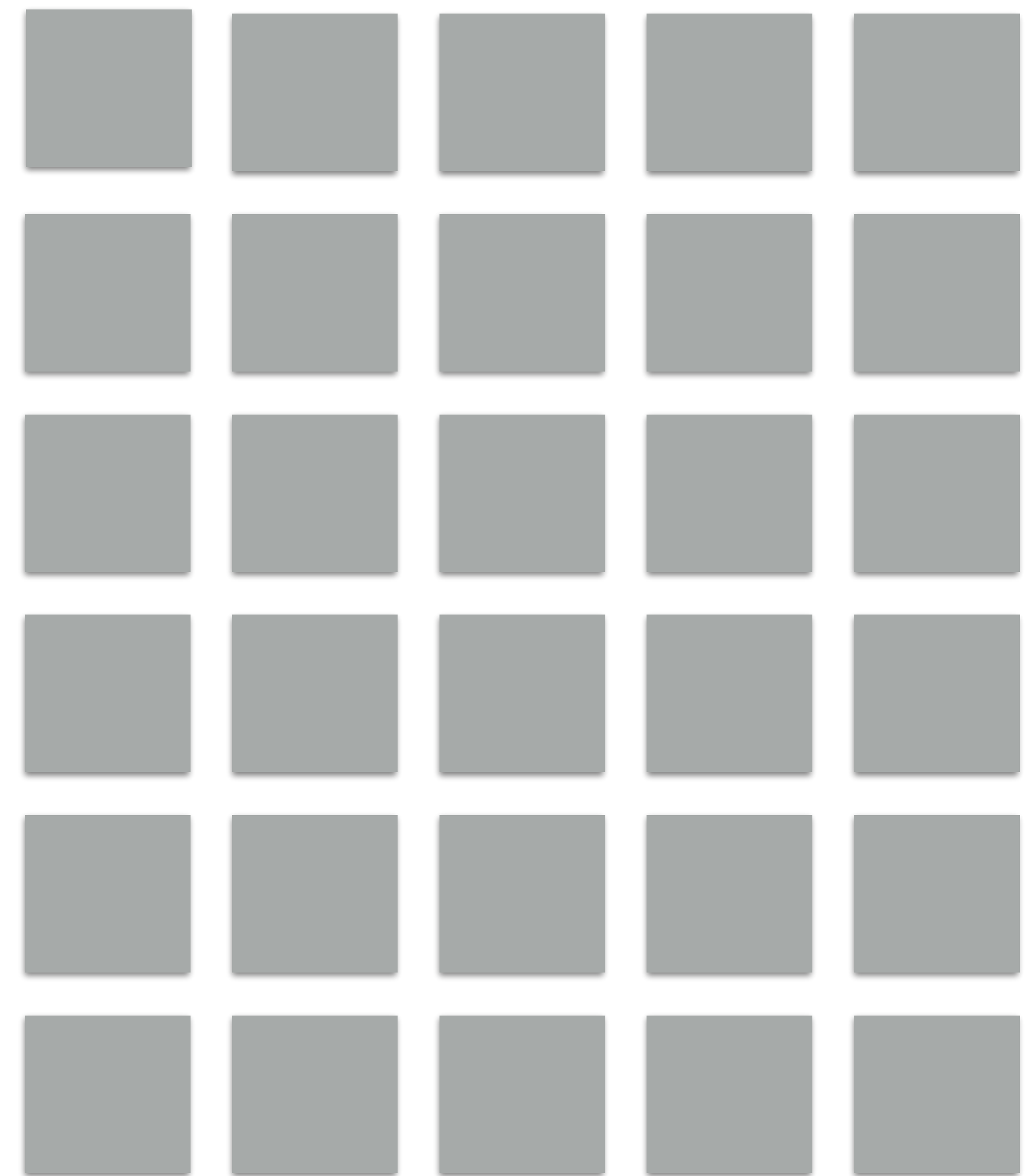
Close older problems



Existing problems



New problem will be closed immediately



Correlation rules

## Event correlation rules

Correlation

Operations

Name Correlate network port problems

Type of calculation And/Or A or B

Conditions

Label

Name

Action

A

Old event tag *Port* = new event tag *Port*[Remove](#)

B

Old event tag *Host* = new event tag *Host*[Remove](#)

New condition

Old event tag

=

tag

[Add](#)

Description

Keep only one problem per network port.

Enabled ☒

Update

Clone

Delete

Cancel



# Event correlation rules

Correlation Operations

Operations

Details

Close new event

Action

[Remove](#)

New operation

Close old events

[Add](#)

Update

Clone

Delete

Cancel

Problem tags and correlation  
is a **solid foundation** for  
further improvements



# Nested host groups

Servers

Servers/Physical

Servers/VMs

Location/Africa

Location/Europe

Location/Japan

Location/North America

Templates

Templates/Official

Templates/SNMP

Templates/Services

Templates/Vendors

Templates/Vendors/HP

# Redesigned permissions

ZABBIX

MonitoringInventoryReportsConfigurationAdministration

GeneralProxiesAuthenticationUser groupsUsersMedia typesScriptsQueue

User groups

User groupPermissions

Permissions

Host group

\*

England/\*

Europe/\*

North America/\*

Permissions

None

Read-write	Read	Deny	None
Read-write	Read	Deny	None
Read-write	Read	Deny	None

type here to search

Select

Read-write

Read

Deny

None

Add

Update

Delete

Cancel

# Filtering

**ZABBIX** Monitoring Inventory Reports Configuration Administration

Dashboard Problems Overview Web Latest data Triggers Graphs Screens Maps Discovery IT services

Dashboard

Dashboard filter **Enabled**

Host groups Selected

Show selected groups Europe/\* × type here to search Select

Hide selected groups type here to search Select

Hosts ☒ Show hosts in maintenance

Triggers with severity ☒ Not classified ☒ Information ☒ Warning ☒ Average ☒ High ☒ Disaster

Trigger name

Problem display All Separated Unacknowledged only

Update Cancel

# Manually close problems

## Event acknowledgements

Message

There was a problem with version of MySQL in production. Updated, restarted, should be fine now.

History

Time

User

Message

User action

Acknowledge


☒ Only selected problem☐ Selected and all other unacknowledged problems of related triggers 6 events

Close problem



Acknowledge

Cancel

Time ▼	<input type="checkbox"/>	Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
15:06:56	<input type="checkbox"/>	Average		PROBLEM		Linux009	Too many queries per second	8h 50m 10s	<u>No</u>	<u>Done</u> 2	Datacenter: NY1 Env: Production Service: HTTP balancer
15:00											
13:06:05	<input type="checkbox"/>	High	23:57:00	RESOLVED		Linux005	Service Jira stopped	10h 50m 55s	<u>Yes</u> 1	<u>In progress</u> 3	Datacenter: FR2 Env: Staging Service: Jira
13:00											
10:33:02	<input type="checkbox"/>	High		PROBLEM		Linux005	Service Redis stopped	13h 24m 4s	<u>No</u>	<u>Done</u> 2	Datacenter: FR2 Env: Staging Service: Redis
Today											
2016-09-07 17:09:38	<input type="checkbox"/>	Information		PROBLEM		Linux008	Low CPU utilization on host machines	1d 6h 47m	<u>No</u>		Datacenter: FR2 Service: Kubernetes

Resolved by user "Admin (Zabbix Administrator)".

# Trigger hysteresis? Easy!



Trigger

Dependencies

Name Too many queries per second

Severity

Not classified

Information

Warning

Average

High

Disaster

Problem expression

{Template Services:http.qps.avg(1m)}>5000

Add

[Expression constructor](#)

OK event generation

Expression

Recovery expression

None

Recovery expression

{Template Services:http.qps.avg(5m)}<1000

Add

[Expression constructor](#)



Viewable items, triggers,  
graphs created by LLD

# Items

<a href="#">Mounted filesystem discovery: Free disk space on /</a>		vfs.fs.size[/,free]	1m	7d	365d	Zabbix agent	Filesystems	<a href="#">Enabled</a>
<a href="#">Mounted filesystem discovery: Free disk space on /boot</a>		vfs.fs.size[/boot,free]	1m	7d	365d	Zabbix agent	Filesystems	<a href="#">Enabled</a>
<a href="#">Mounted filesystem discovery: Free disk space on / (percentage)</a>	<a href="#">Triggers</a> 1	vfs.fs.size[/,pfree]	1m	7d	365d	Zabbix agent	Filesystems	<a href="#">Enabled</a>
<a href="#">Mounted filesystem discovery: Free disk space on /boot (percentage)</a>	<a href="#">Triggers</a> 1	vfs.fs.size[/boot,pfree]	1m	7d	365d	Zabbix agent	Filesystems	<a href="#">Enabled</a>
<a href="#">Mounted filesystem discovery: Free inodes on / (percentage)</a>	<a href="#">Triggers</a> 1	vfs.fs.inode[/,pfree]	1m	7d	365d	Zabbix agent	Filesystems	<a href="#">Enabled</a>
<a href="#">Mounted filesystem discovery: Free inodes on /boot (percentage)</a>	<a href="#">Triggers</a> 1	vfs.fs.inode[/boot,pfree]	1m	7d	365d	Zabbix agent	Filesystems	<a href="#">Enabled</a>

# Triggers

Warning	<a href="#">Mounted filesystem discovery: Free disk space is less than 20% on volume /</a>	{ <a href="#">Linux001:vfs.fs.size[/,pfree].last(0)</a> <20}		<a href="#">Enabled</a>
Warning	<a href="#">Mounted filesystem discovery: Free disk space is less than 20% on volume /boot</a>	{ <a href="#">Linux001:vfs.fs.size[/boot,pfree].last(0)</a> <20}		<a href="#">Enabled</a>
Warning	<a href="#">Mounted filesystem discovery: Free inodes is less than 20% on volume /</a>	{ <a href="#">Linux001:vfs.fs.inode[/,pfree].last(0)</a> <20}		<a href="#">Enabled</a>
Warning	<a href="#">Mounted filesystem discovery: Free inodes is less than 20% on volume /boot</a>	{ <a href="#">Linux001:vfs.fs.inode[/boot,pfree].last(0)</a> <20}		<a href="#">Enabled</a>

# Better actions and escalations

# Actions

Action   Operations   Recovery operations

Default operation step duration    (minimum 60 seconds)

Default subject  

Default message   

Trigger: {TRIGGER.NAME}

Trigger status: {TRIGGER.STATUS}

Trigger severity: {TRIGGER.SEVERITY}

Trigger URL: {TRIGGER.URL}

Pause operations while in maintenance   ☒

Operations		Steps	Details	Start in	Duration (sec)	Action
1		Send message to users:	alex (Alexei Vladishev) via all media	Immediately	Default	<a href="#">Edit</a> <a href="#">Remove</a>
2		Run remote commands on current host		00:01:00	Default	<a href="#">Edit</a> <a href="#">Remove</a>
		New				

# Actions

Action

Operations

Recovery operations

Default subject

{TRIGGER.STATUS}: {TRIGGER.NAME}

Default message

Trigger: {TRIGGER.NAME}  
Trigger status: {TRIGGER.STATUS}  
Trigger severity: {TRIGGER.SEVERITY}  
Trigger URL: {TRIGGER.URL}

Item values:

Operations

Details

**Send message to users:** alex (Alexei Vladishev) via all media

[New](#)

Action

[Edit](#) [Remove](#)

Update

Clone

Delete

Cancel



# Also...

Web scenario export/import  
Function evaluation for NOTSUPPORTED items  
Coping with fast-growing log files  
Support of regex in count ()  
and **much more!**

For detailed list of new  
features see  
Documentation of Zabbix 3.2

Zabbix 3.2 is a result of **active cooperation** with our partners and customers.

Special thanks to **S&T Slovakia s.r.o.**





# How to upgrade?

# Nothing special, except ...

Some history tables are affected: `history_log`, `history_text`

It may take time to execute `depending on size` of log and text data stored in the database

# Where is Zabbix 3.2?

Zabbix 3.2.0 is expected to  
be released *very soon*

# Enjoy the conference!

Thanks for your support

