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Introduction

Kamil
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@kamilsmuga

Mihai
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@mihaibojin
We Have an Idea...
We Will Start Small
Running Our Site on One “Server”
Eyeball Logs on Issues
Life Is Good
Fast Forward Few Years
#pleasedontdropthekettle
Our Architecture Is More Complex
We Can *No Longer* Eyeball Logs For Issues
We Need Monitoring

Metrics ⇒ Dashboards ⇒ Alerts

Metrics Collection

Data Visualisation

Alerting
Our Monitoring
Fits on One Screen
Fast Forward Few Years
Life Is Great!
How Does Monitoring Scale?
We Use Graphs. We Love Graphs!
We Don’t Have Enough Screens
We Have More Alerts Than We Can Handle

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**507 Active Alerts!**
Drowning in Metrics and Alerts

507 Active Alerts!
Take a Moment to Refocus
Refocus On a Single Display
Data Hierarchy Model
It All Starts With a Root

#weselltea
Subjects
Anything That Can Be Monitored

#weselltea

Drone Alpha
Drone Bravo
Drone Charlie
Aspects
Anything That Is Measurable

#weselltea

Drone Bravo
Drone Charlie

Drone Alpha

Speed
Flight Time
Battery Level
Water Level
Water Temperature
Milk Level
Samples
Value of an Aspect for a Particular Subject

#weselltea

Drone Alpha
- Speed: 10 km/h
- Flight Time: 5 mins
- Battery Level: 90%
- Water Level: 40%
- Water Temperature
- Milk Level

Drone Bravo
- Speed: 3 km/h
- Flight Time: 60 mins
- Battery Level: 30%
- Water Level: 80%
- Water Temperature
- Milk Level

Drone Charlie
- Speed: 60 km/h
- Flight Time: 3 mins
- Battery Level: 70%
- Water Level: 10%
- Water Temperature
- Milk Level: 1%
Build a Lens For a Custom View of Your Data
One Screen with Refocus
Tells More Than Multiple Screens with Graphs
Filtered Refocus Perspective
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**LIFE IS GOOD**

**WITH REFOCUS**
But We Keep Growing!
And Then This Happens...

DATA GAP!
Argus
Service Health & Observability at Scale

What can it do?
● Data
● Events
● Alerts
● Dashboards

Why?
● Performance
● Multi-tenancy
● Correlation
Set Up Alerts

- CRON
- Inertia & Cooldown
- Notifications
  - Email
  - Operations Consoles
  - Salesforce Chatter
  - Third party tools
Manage Data Ingestion Limits with Warden

- Per-user limits and suspension
Create Dashboards

- HTML-based
- managed by users
Manage everything via a REST API

- Get out of your user’s way!
How Does Argus Scale?
How Does Argus Scale?
How Does Argus Scale?
How Does Argus Scale?
How Does Argus Scale?

UI
WS
CORE

HBASE/TSDB/RDBMS

UI
WS
CORE

MESSAGE BUS

ROUTE/FORK/JOIN+M/R

CL
CORE

MESSAGE BUS

ROUTE/FORK/JOIN+M/R

HBASE/TSDB/RDBMS

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CORE

MESSAGE BUS

ROUTE/FOR
Store All the Data You Want!
What Happens to Your Metrics With Scale?

Simulation of metric growth proportional to number of hosts

Servers, VMs, Containers, etc.
What Do All These Graphs Mean?
I.T. Crowd - The red door
Make Data Meaningful with Pyplyn!

- Process metrics from multiple data sources
- No-code required: JSON
- Will scale better than ingress scripts
The Drone is Leaving the Base

Drone Alpha

- Battery Level: 100%
- Order Queue: 0
- Water level: 3 liters
- Water temperature

Status

- All parameters nominal

#weselltea
Surge in Orders

Drone Alpha

- Battery Level: 90%
- Order Queue: 8
- Water level: 3 liters
- Water temperature

#weselltea

Status
- The drone has work to do!
The Drone Has Fulfilled Its Orders

Drone Alpha

- Battery Level: 64%
- Order Queue: 0
- Water level: 1000 ml
- Water temperature

Status

- Drone operational
- Water starting to get cold

#weselltea
More Incoming Orders

Drone Alpha

Battery Level: 64%
Order Queue: 4
Water level: 1000 ml
Water temperature

Status

- We have both water and orders
- Fulfilling them will leave the drone without water!
Option 1: Add Another Parameter

Drone Alpha

Battery Level: 64%
Order Queue: 4
Water level: 1000 ml
Water temperature
Level after fulfillment

Status
- Should take an action!

#weselltea
Option 2: Smart Alerts

Drone Alpha

- Battery Level: 64%
- Order Queue: 4
- Water level: 1000 ml
- Water temperature

Status

- water level / order queue * CUP < THRESHOLD

#weselltea
Another Drone. Different Parameters

#weselltea

Drone Bravo

Status

- Only carries **two liters** of hot water
How does Pyplyn work?

1. Any data store containing time-series data
How does Pyplyn work?

1. Any data store containing time-series data
2. Extract metrics from data source(s)
How does Pyplyn work?

1. DATA SOURCE
   Any data store containing time-series data

2. Pyplyn EXTRACT
   Extract metrics from data source(s)

3. Pyplyn TRANSFORM
   Interpret multiple metrics
   Determine context and next steps
How does Pyplyn work?

1. **DATA SOURCE**: Any data store containing time-series data

2. **Pyplyn EXTRACT**: Extract metrics from data source(s)

3. **Pyplyn TRANSFORM**: Interpret multiple metrics, determine context and next steps

4. **Pyplyn LOAD**: Publish results to designated destinations
How does Pyplyn work?

1. **DATA SOURCE**
   - Any data store containing time-series data

2. **Pyplyn EXTRACT**
   - Extract metrics from data source(s)

3. **Pyplyn TRANSFORM**
   - Interpret multiple metrics
   - Determine context and next steps

4. **Pyplyn LOAD**
   - Publish results to designated destinations

5. **OUTCOME**
   - Any system that allows users to understand symptoms and take appropriate actions
Processing Metrics with Pyplyn

**EXTRACT**
Extracts metrics from Argus and other data stores

**TRANSFORM**
Applies transformations on incoming data
Interprets context and determines next steps

**LOAD**
Publishes results to Refocus, allowing a real-time view of systems health
Summary
Scaling Up Your Monitoring

#1: Too Many Graphs, Not Enough Screens

#2: Noisy Alerts

#3: How Many Metrics Can You Ingest?

#4: What Does Your Data Mean?
Demo
Open Source

https://github.com/salesforce

Argus

- [github.com/salesforce/argus](https://github.com/salesforce/argus)
- Blog post: Argus time-series monitoring and alerting

Pyplyn

- [github.com/salesforce/pyplyn](https://github.com/salesforce/pyplyn)

Refocus

- [github.com/salesforce/refocus](https://github.com/salesforce/refocus)
- Blog post: Take a moment to Refocus
Thank You