

# Rundeck

by PagerDuty

Virtual Meetup: EMEA OSS Community  
4 April 2024



# Today's Agenda

**1pm** - Introduction from Rundeck OSS Community Organisers

**1:10pm** - Hans Erasmus - Director @ HBPS Consulting

**1:30pm** - Diego Infiesta, IT Infrastructure Manager @ Ryanair

**1:45pm** - James Pickles, Solutions Consultant @ PagerDuty

**1:55pm** - Q&A



# Today's host:



Justyn Roberts

Senior Solutions Consultant  
PagerDuty



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- We have an agenda but this is intended to be **YOUR Community** and call - we're happy to go off-topic!
- **Please keep it interactive** - ask questions in the **Q&A** or make comments at any time, participate in the **poll** and **post meetup survey!**
- Feel free to open your camera but please **keep mic off** during presentations
- We are not recording the overall session but we **WILL record the individual presentations**



# We are just getting started.

17 Months

150 Members

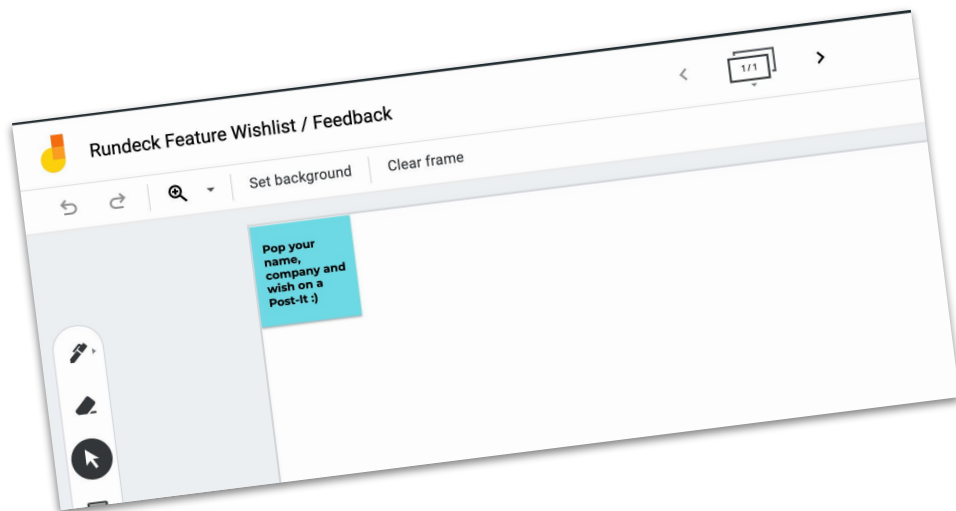
6 Meetups

18 Tech Talks



# Rundeck Meetup/Wishlist

[bit.ly/RundeckMeetup6](https://bit.ly/RundeckMeetup6)



# Today's speakers:



**Hans Erasmus**

Director  
HBPS Consulting



**Diego Infiesta**

IT Infrastructure Manager  
Ryanair



**James Pickles**

Solutions Consultant  
PagerDuty





Hans Erasmus

Director  
HBPS Consulting





# Customer-centric network management & monitoring

Hans Erasmus



**HBPS**  
CONSULTING



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# So many sheets...

## One customer:

- ~1500 Sites
- ~1520 Physical servers
- ~3000 Virtual machines
- ~13500 IP prefixes
- ~4800 Network devices
- ~21000 Access points



# So many sheets...

## One customer:

- ~1500 Sites
  - ~1520 Physical servers
  - ~3000 Virtual machines
  - ~13500 IP prefixes
  - ~4800 Network devices
  - ~21000 Access points
- ... all managed in G-sheets



# Resources

## IPAM

- NetBox (<https://github.com/netbox-community/netbox>)

## Configuration management

- GitLab (<https://about.gitlab.com/>)

## Pushing configs

- Ansible (+ Rundeck)

## Monitoring

- LibreNMS (<https://www.librenms.org/>)

## Log aggregation

- Graylog (<https://graylog.org/>)



# Why opensource?

## Customisation

Every customer tends to have unique needs.  
We try to cater to it.

## Price

Sometimes the price to develop is equal to purchasing 'OTS', but coupled with the customisation you end up with better value

## Supportive community

Our experience has been that a big community normally tends to solve a problem very quickly.



# The process

## Design + Export

- Every site gets designed in NetBox
- NetBox inventory is exported to Ansible readable inventory

## Deploy

- Ansible playbooks stored in GitLab are pulled down to Rundeck server
- Rundeck tasks are defined with underlying Ansible playbooks
- Rundeck tasks are executed on nodes (sometimes on

## Monitor

- Nodes are added to monitoring solution (SNMP based monitoring)
- Logs are aggregated for log centralised log collection



# The steps

1. Add the site with all its information to NetBox. This includes custom fields on devices etc.
2. A cron job will then generate an Ansible-ready inventory, by running a shell script which will a) create the inventory and b) push this inventory to GitLab. Inventory is created by using [the ansible nb inventory plugin](#)
3. A new play will be written and pushed to the same GitLab repository, depending on whether it is intended for servers or network gear
4. Once the repo is up to date, a cron job will run a new git pull on the Rundeck server, to get the latest inventory and plays.
5. A new job is then created in Rundeck to execute the ansible play. This job configuration can then include scheduling if needed.

# Key features in rundeck

- Scheduling (loadshedding)
- Custom commands (especially with Cisco)
- A clear and precise UI for n00bs (and management)
- Ease of use means you can get the horse to drink all on its own





# Challenges

- Each client is different (reusable playbooks become difficult)
- Resistance to change
- C-level bonuses vs enabling technicians
- “But Google Sheets works”...until it doesn’t



# Thank you

Hans Erasmus

[hans@hbps.co.za](mailto:hans@hbps.co.za)

<https://hbps.co.za>

<https://www.linkedin.com/company/hbps-consulting/>





# Diego Infiesta

IT Infrastructure Manager  
Ryanair



## The “problem”

- More than 100 servers executing jobs/crons.
- Logs got lost on server log rotate.
- Very slow to troubleshoot, no business view.
- No self service
- Inefficient work being done everyday, checking job failure, reason and actioning based on this status.



# Rundeck OSS

- Started with single Mysql backed in 2019. (v 2.4.3)
- Rejection to change phase begun.
- After 6 months, all jobs were onboarded to Rundeck
- SCM integration with Bitbucket was adopted for CI/CD approach
- Several tweaks where done: QUARTZ\_SCHEDULER and JAVA memory for example.
- Adopted rd-cli massively for bulk actions.
- Migrated from Mysql single instance to Galera cluster.
- Added prometheus exporter for monitoring and dashboards
- Moved away from Mysql to Pgsql streaming replication.
- Implemented HASHI vault for secret management.





# Webhooks

**James Pickles**  
Solutions Consultant



# Why Use Webhooks?

## Automated Job Execution

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Eliminate manual job triggers and streamline workflows.

## Real-time Response

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Respond to events instantly by automatically triggering relevant jobs.

## Improved Efficiency

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Free up time and resources by automating repetitive tasks.

## Flexibility

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Integrate Rundeck with various applications and platforms.

## Scalability

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Handle high volumes of events with ease.

# Example Use Cases

## Monitoring and Alerting

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Trigger diagnostic and remediation jobs upon receiving critical alerts from monitoring systems.

## Infrastructure Management

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Initiate automated deployments or configuration changes based on infrastructure events.

## Security Patching

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Automated Patch Deployment in Response to Security Alerts

## Self Service IT Operations

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Automated User Account Provisioning in Response to Service Desk Requests

*plus many more...*



# Security

◆ Simple Webhook

General

Handler Configuration

Post URL

When a HTTP POST request to this URL is received, the Webhook Plugin chosen below will receive the data.

HTTP Authorization String

[Optional] A Webhook authorization string can be generated to increase security of this webhook. All posts will need to include the generated string in the Authorization header.

☒ Use Authorization Header

Copy this authorization string now. After you navigate away from this webhook you will no longer be able to see the string.

Name

User

The authorization username assumed when running this webhook. All ACL policies matching this username will apply.

Roles

The authorization roles assumed when running this webhook (comma separated). All ACL policies matching these roles will apply.

☒ Enabled

```
1 curl --location --request POST 'http://your.rundeck.domain:4440/c
2 --header 'Authorization: the-authorization-string' \
3 --header 'Content-Type: application/json' \
4 --data-raw '{
5     "messages": {
6         "field1": "value1",
7         "sub1": {
8             "subfield": "subval"
9         }
10     }
11 }'
```

# Options

```
1 {"field1":"value1","sub1":{"subfield": "subval"}}
```

json

*Note: only accept JSON payloads*

- The JSON data received can be used to supply job options and node filters

```
-joboption ${data.sub1.subfield}
```

- You can also pass the full payload using `${raw}`

```
-whkpayload ${raw}
```

# Context Variables

- The following context variables are also available:

```

1  id:unique event id
2  project:the project that owns the webhook
3  sender:the ip address of the sending system
4  timestamp:the epoch milliseconds when the event was received

```

properties

```

${webhook.id} ${webhook.project} ${webhook.sender} ${webhook.timestamp}

```

```


-timestamp ${webhook.timestamp}

```

# Example

**Roles**  
  
The authorization roles assumed when running this webhook (comma separated). All ACL policies matching these roles will apply.

☒ **Enabled**

 Run Job

Run a job on webhook event. This plugin expects the incoming payload to be JSON

**Job**

Job to run.

**Options**

Job Option arguments, in the form ` -opt1 value -opt2 "other value" `

**Node Filter**

Node Filter string to apply, leave blank for default

**As User**

Username to run job as, leave blank for default, requires authorization.

# Response

Example Response:

```
1 {  
2   "executionId": "7",  
3   "jobId": "9bb310cf-fa0a-4a66-89a0-1892d73021e2"  
4 }
```

text

- Use the execution id to check the progress of the job execution

---

*Quick demo...*

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# Advanced Webhooks (*Enterprise*)

## Conditionals

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Create multiple actions each with different target jobs

Each action can have multiple conditions attached to define execution paths

## Batch Processing

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Extract a list from the event and process each item separately

Executes concurrently so associated job must have *Multiple Executions* enabled

## Debugging

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Debug view into webhook processing

Assist in setup and troubleshooting

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***Even quicker demo...***

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# Q&A

Next meetup: keep an eye on the Meetup webpage.

Willing to speak? Let us know!



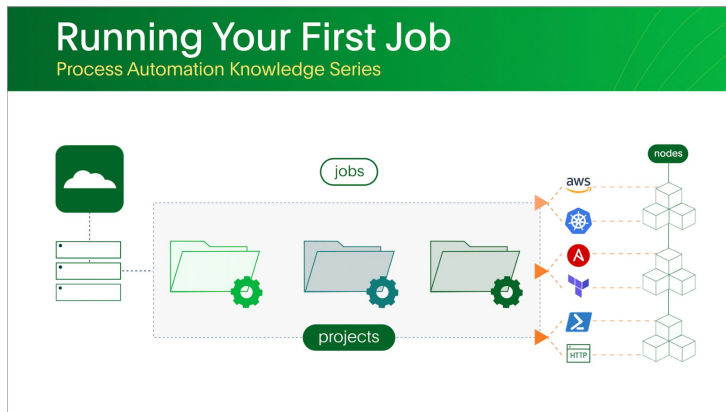
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# PagerDuty University on-demand FREE courses!

Create a new account or log in to <https://university.pagerduty.com/?q=automation>

- Introduction to PagerDuty Process Automation - 30 min
- Running Your First Job - 15 min
- Calling Webhooks from PagerDuty - 25min
- Setting Up your First Runner - 15min





# Can We Fix Incidents with Automation?

Red Hat Offices, Peninsular House, 30-36 Monument St., London , EC3R 8NB, United Kingdom



**Justyn Roberts**

Senior Solutions Consultant  
PagerDuty



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Mark your calendars: **April 18**

RSVP today: <https://oopsyevents.io/events/>



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Thanks for your participation!  
See you in the next meetup!



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Join us:

PagerDuty

Community

meetup

[community.pagerduty.com](https://community.pagerduty.com)  
[meetup.com/rundeck-europe/](https://meetup.com/rundeck-europe/)





**Diego Inflesta**  
IT Infrastructure Manager

## Ryanair's Productivity Soars with PagerDuty Automation

 **RYANAIR** × **PagerDuty**

<https://www.youtube.com/watch?v=sNjyejJkKak>

