DEPLOYMENT AUTOMATION
WITH ANSIBLE & BUNDLR

AWP Delivery
Bernhard Schreder / Daniela Cimpeanu
Vienna / 24.10.2017

Allianz Technology

Allianz ⑪

CONTENT
TOPICS
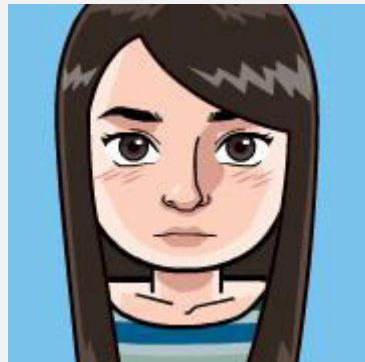
WELCOME!

01

WHY ARE WE HERE?

BERNHARD SCHREDER

Middleware & Tools Development Lead

DevOps Enthusiast

Architecture for BUNDLR & ANSIBLE Solution

DANIELA CIMPEANU
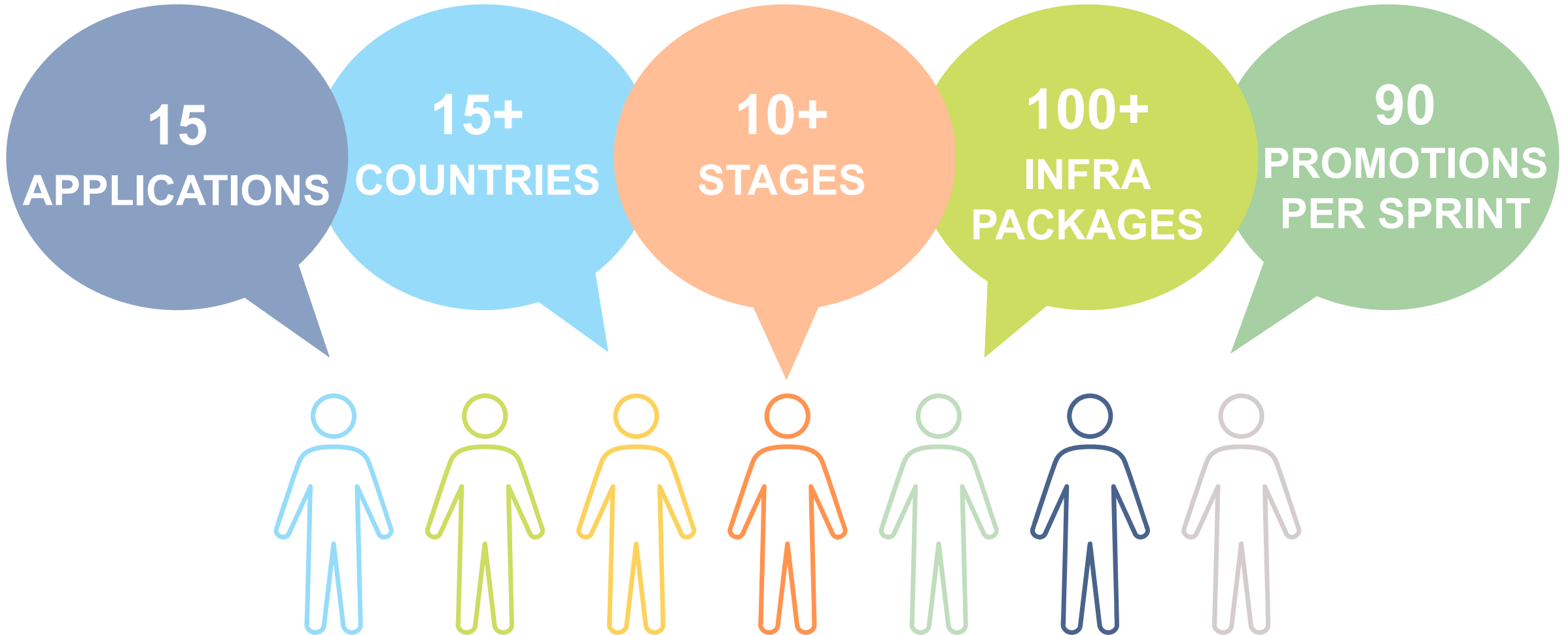
Release Management

Innovation Projects

Product Owner for BUNDLR & ANSIBLE Solution

*Our **playbook** to automate deployments in Allianz Technology!*

WHERE IS THE COMPLEXITY?

15
APPLICATIONS

15+
COUNTRIES

10+
STAGES

100+
INFRA
PACKAGES

90
PROMOTIONS
PER SPRINT

MY BOSS IS A GENIUS!

AUTOMATION? NO, I'VE GOT A GUY THAT DOES IT WHEN I ASK HIM!

02

APPLICATION AND INFRASTRUCTURE

Configuration	ESB Application

Enterprise Service Bus

Certificates	Web Infrastructure	Filetransfer

JDK	Server Properties	Monitoring

OS

Server Setup

Delivery

Dependencies

Change Log
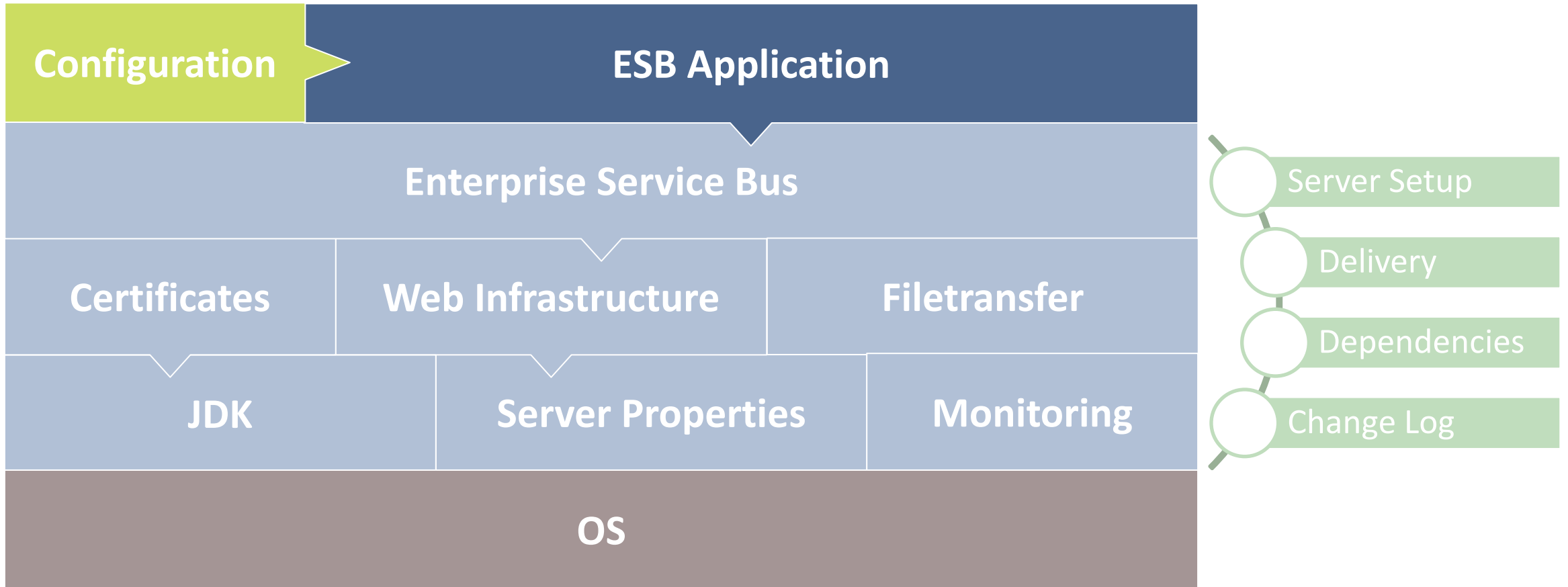
OLD SCHOOL DELIVERY PIPELINE

DEV

OPS

Source Control   Build Environment   Build Repo

CONTINUOUS INTEGRATION

???
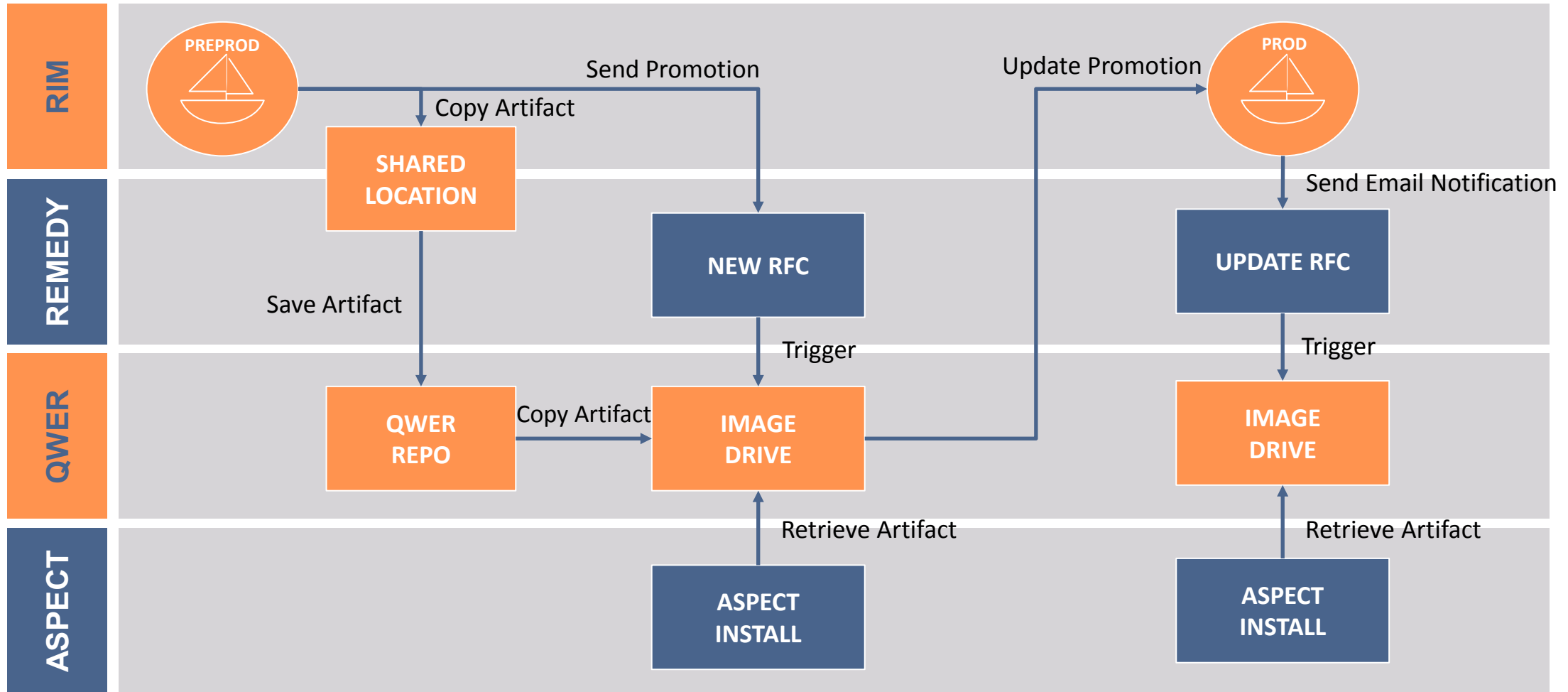
RIM

TEST

PREPROD

PRODUCTION

MANUAL DEPLOYMENTS
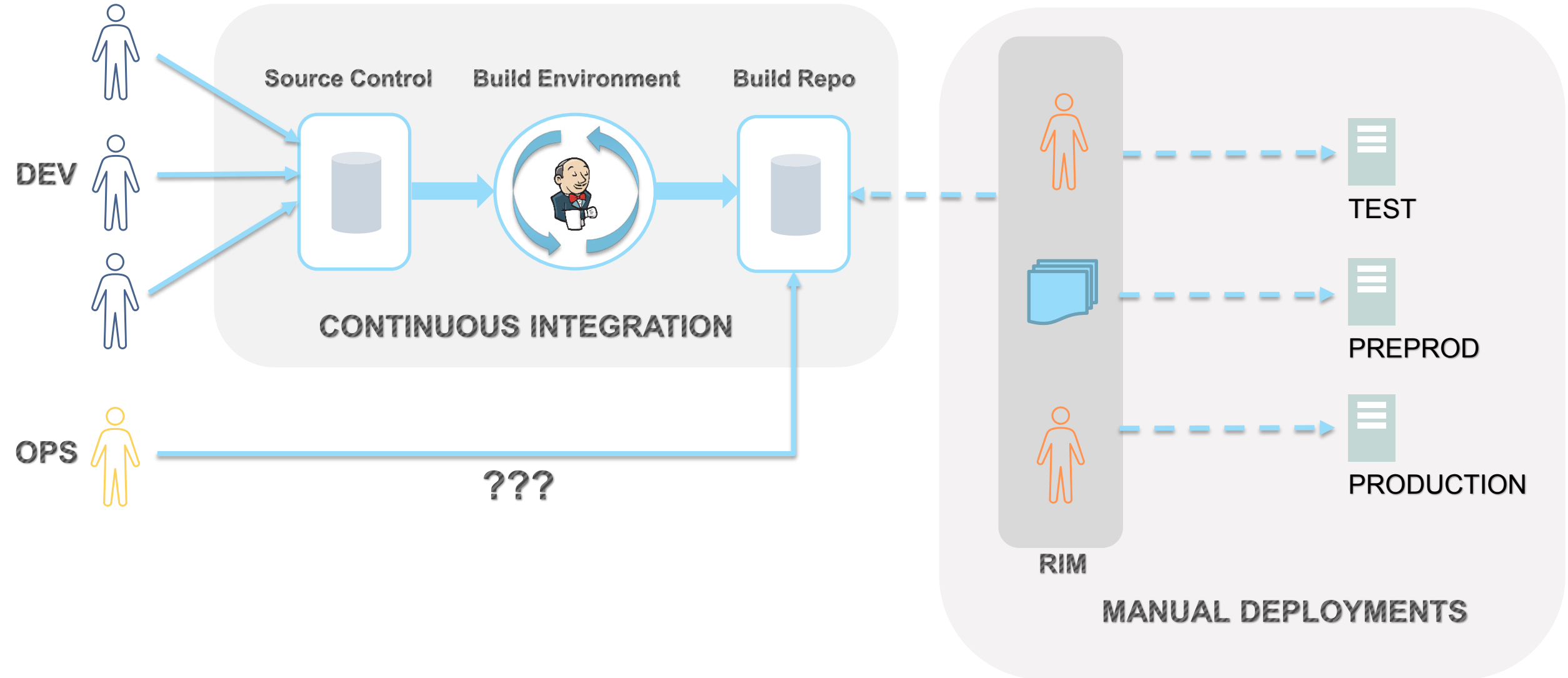
IT HAS ALWAYS BEEN DONE LIKE THIS!

03

OLD SCHOOL RELEASE PROCESS

WHAT OUR APPLICATIONS NEED!

04

INTRODUCING THE APPLICATION BUNDLE

Configuration	ESB Application	
Enterprise Service Bus		
Certificates	Web infrastructure	Filetransfer
JDK	Server properties	Monitoring
OS		
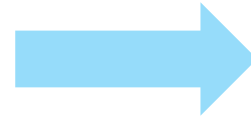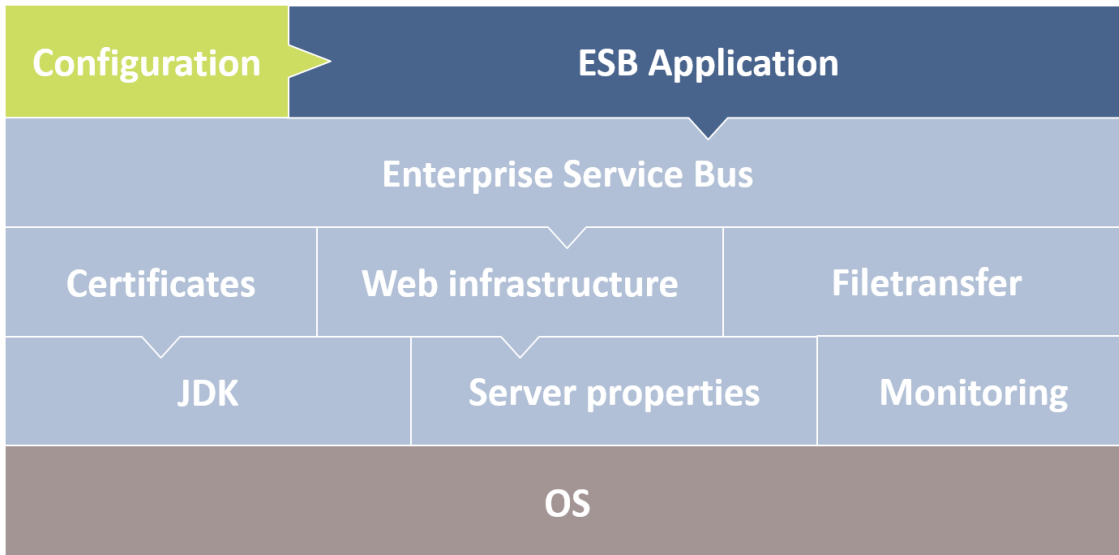
APPLICATION BUNDLE

TEMPLATE: ESB App
VERSION: 15.6.12.91

PACKAGES:
- JDK 1.8.0.66
- Certificates 1.2.5
- ESB Application 15.6.12.91

METAINFO:
- Dependencies
- Change Log

WORKING WITH APPLICATION BUNDLES

01 DEVOPS defines templates & default versions

TEMPLATE: ESB

PACKAGES	VERSIONS
• JDK	1.8.0.66
• Certificates	Latest version
• ESB Server	6.2.1
• ESB Application	Build version
• …	

02 BUILD generates new bundles

APPLICATION BUNDLE: ESB 15.6.12.91

PACKAGES	VERSIONS
• JDK	1.8.0.66
• Certificates	1.2.5
• ESB Server	6.2.1
• ESB Application	15.6.12.91
• …	

03 QA & RIM control staging based on bundles

APPLICATION BUNDLE: ESB 15.6.12.91 → **QA** → Plan automated regression tests → Tested OK → **RIM** → Promote → Promote
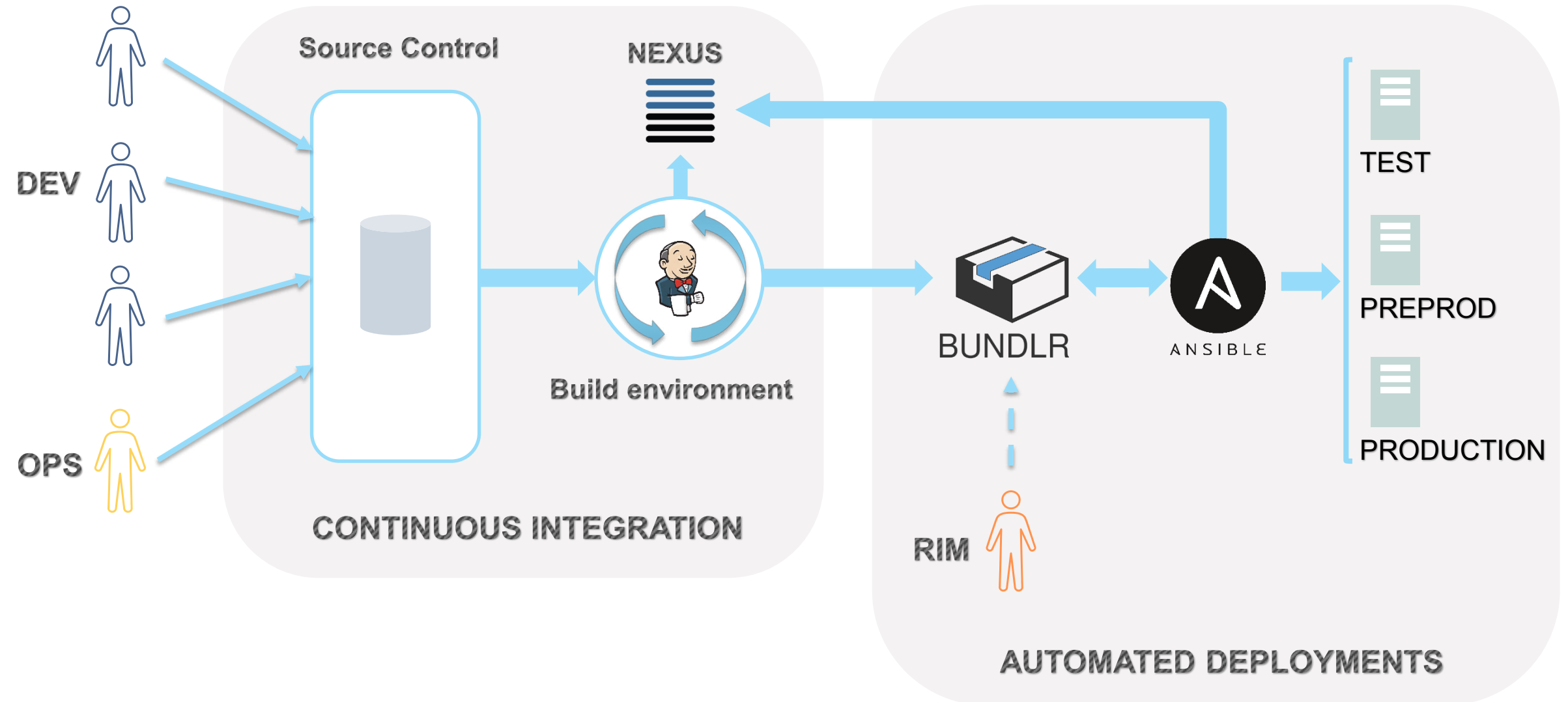
CAN'T WE DEPLOY FASTER?

05

CONTINUOUS DELIVERY PIPELINE

NEW SCHOOL RELEASE PROCESS

RIM

Rollback

Trigger deployment

[Fail]

[Success]

Coffee break

Installation Feedback

DEPLOYMENT

BUNDLR

Create scheduler

Decode bundle

REPOSITORY

ANSIBLE

Retrieve packages
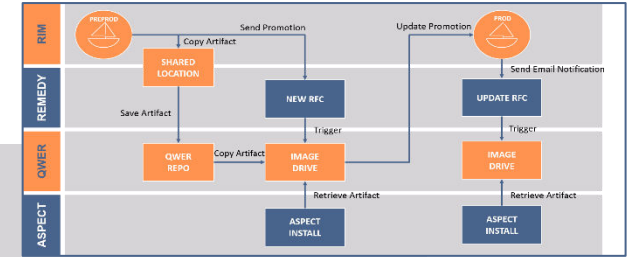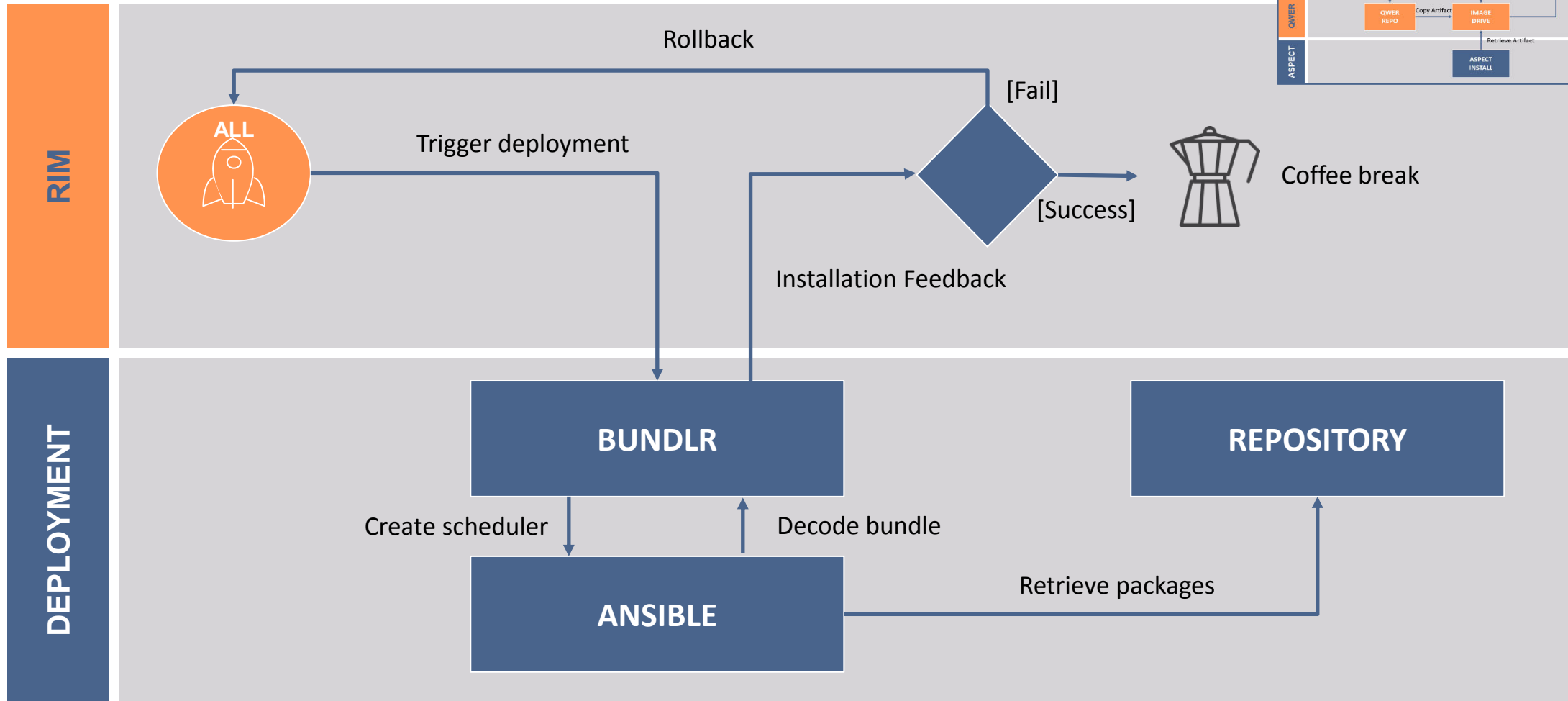
HOW DID WE ACHIEVE IT?

06

HOW ANSIBLE AND BUNDLR PLAY TOGETHER

Key Aspects of Ansible

- Ansible Tower: 200+ Managed Hosts
- Managed Inventories
- Generic Playbooks
  - Playbook task parameters imported from BUNDLR
  - Rollback mechanism
- Schedulers
- Log Trace
- Auditing

Key Aspects of Bundlr

- REST API
- Template Mechanism
- Automated Package Import
- Application Bundles Storage
- Application Bundles Decoding
- Criteria Mechanism
- Configuration Comparison
- Auditing
- Roles

SERVER PROVISIONING & CONFIGURATION AUTOMATION TOOL

FULLY BLOWN APPLICATION DEPLOYMENT ENGINE

BUT WAIT, CAN WE SEE THIS?

07

BUNDLR: PACKAGES

BUNDLR: TEMPLATES

BUNDLR | Templates | AppBundles | Packages | Apps | Users | Welcome, **Bernhard Schreder!** | Sign Out

Name	App	Parent	Version	Criteria	Actions
[*] ABS_MAG_WS <= 15.9.99	ABS_MAG_WS	[*] ABS_MAG_WS BASE	=99.99.99	tenantmatches.*	
[*] ABS_MAG_WS > = 16.0.00	ABS_MAG_WS	[*] ABS_MAG_WS BASE	≥99.0.00	tenantmatches.*	
[*] ABS_MAG_WS BASE A	ABS_MAG_WS	Master Template - Copy	any		
[CA] ABS_MAG_WS > = 16.0.00 1	ABS_MAG_WS	[*] ABS_MAG_WS BASE	≥99.0.00	tenant=AGA-CA	
[US] ABS_MAG_WS > = 16.0.00 1	ABS_MAG_WS	[*] ABS_MAG_WS BASE	≥99.0.00	tenant=AGA-US	
ABS_Configuration_Suite_AWP	ABS_Configuration_Suite_AWP		any		
ABS_MAG >= 16.0.00	ABS_MAG		any		
ABS_MAG_ADAPTER	ABS_MAG_ADAPTER	Master Template	any		
ABS_MAG_ESB	ABS_MAG_ESB	Master Template	any		
ABS_MAG_FSW ⊘	ABS_MAG_FSW	Master Template	≥15.3.01 & ≤15.6.06		
ABS_MAG_FSW >= 15.6.07	ABS_MAG_FSW	Master Template	≥15.6.07 & ≤16.5.05		
ABS_MAG_FSW >= 16.5.06	ABS_MAG_FSW	Master Template	≥16.5.06		
ABS_MAG_FUSE 1	ABS_MAG_FSW	Master Template	≥15.6.13 & <15.6.14		
ABS_MAG_WS <= 15.9.99 1	ABS_MAG_WS	Master Template	≤15.9.99		
ABS_MAG_WS > = 16.0.00 1	ABS_MAG_WS	Master Template	≥16.0.00		
Base Template Test A			any		
ELK_FILEBEAT_QMON	ELK_FILEBEAT_QMON		any		
ELK_SERVER	ELK_SERVER		any		
FSW_MONITOR	FSW_MONITOR		any		
GGI_TIP	GGI_TIP	Master Template	any		

«« « 1 2 » »» | 20 ▼ | + Add

Template Name | ▼ | Clear

Packages | History

Package	From Template	Version	Fast Moving	Actions
allianz-aga-aspect-keylist	Master Template	latest	☐	
allianz-aga-jboss-certs	Master Template	latest	☐	
allianz-aga-sectransfer	ABS_MAG_FSW >= 16.5.06	latest	☐	
allianz-amos-settings	Master Template	latest	☐	
allianz-ca	Master Template	latest	☐	
allianz-cmon-agent	Master Template	latest	☐	
allianz-elasticsearch	ABS_MAG_FSW >= 16.5.06	1.4.1.11	☐	
allianz-elk-filebeat-aga-jboss Overrides	ABS_MAG_FSW >= 16.5.06	1.0.1.2	☐	
allianz-jboss-fsw	ABS_MAG_FSW >= 16.5.06	6.0.0.14	☐	
allianz-jdk	ABS_MAG_FSW >= 16.5.06	1.7.0.79	☐	
allianz-magfsw%fswtenant%	ABS_MAG_FSW >= 16.5.06	to be defined	☑	
allianz-magfswconf%fswtenant%	ABS_MAG_FSW >= 16.5.06	to be defined	☑	
allianz-properties%fswtenant%	ABS_MAG_FSW >= 16.5.06	1.23	☐	
allianz-webinfra	ABS_MAG_FSW >= 16.5.06	1.7	☐	

| ▼ | | latest ▼ | | + Add |

«« « 1 » »» | 20 ▼ | ↻

BUNDLR: APPLICATION BUNDLES

BUNDLR   Templates   AppBundles   Packages   Apps   Users   Welcome, **Bernhard Schreder!**   Sign Out

Select App... ▾	From Date 📅	To Date 📅	Version Starts With	Select Company... ▾

Select Status... ▾	Clear

App	Version	Criteria	From Template	Created ↓⁀	Creator	Tested NOK	Actions
ABS_MAG_WS	16.7.01.252	1	ABS_MAG_WS > = 16.0.00	20.10.2017 17:08	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_ADAPTER	16.7.02.17		ABS_MAG_ADAPTER	20.10.2017 15:55	tu_ansible	Set NOK	⚖ 📊
ABS_Configuration_Suite_AWP	16.7.01.06		ABS_Configuration_Suite_AWP	20.10.2017 15:18	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_FSW	15.6.12.111		ABS_MAG_FSW >= 15.6.07	20.10.2017 14:08	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_FSW	16.5.07.32		ABS_MAG_FSW >= 16.5.06	20.10.2017 13:09	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_ESB	15.6.13.60		ABS_MAG_ESB	20.10.2017 10:18	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_ESB	15.6.14.19		ABS_MAG_ESB	20.10.2017 10:18	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_ESB	15.6.12.98		ABS_MAG_ESB	20.10.2017 10:16	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_ESB	15.3.12.19		ABS_MAG_ESB	20.10.2017 10:16	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_FSW	16.7.02.06		ABS_MAG_FSW >= 16.5.06	20.10.2017 10:16	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_FSW	16.7.01.102		ABS_MAG_FSW >= 16.5.06	20.10.2017 10:16	tu_ansible	Set NOK	⚖ 📊
GGI_TIP	15.2.19.58		GGI_TIP	20.10.2017 10:15	tu_ansible	Set NOK	⚖ 📊
GGI_TIP	15.2.20.28		GGI_TIP	20.10.2017 10:15	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_ESB	15.3.11.90		ABS_MAG_ESB	20.10.2017 10:15	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_ADAPTER	16.7.02.16		ABS_MAG_ADAPTER	20.10.2017 10:15	tu_ansible	Set NOK	⚖ 📊
GGI_TIP	15.2.18.93		GGI_TIP	20.10.2017 10:14	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_FSW	15.6.14.22		ABS_MAG_FSW >= 15.6.07	20.10.2017 09:14	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_FSW	15.6.13.64	1	ABS_MAG_FUSE	20.10.2017 09:01	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_FSW	15.6.11.166		ABS_MAG_FSW >= 15.6.07	20.10.2017 08:49	tu_ansible	Set NOK	⚖ 📊
ABS_MAG_ADAPTER	16.7.02.15		ABS_MAG_ADAPTER	20.10.2017 08:07	tu_ansible	Set NOK	⚖ 📊

« ‹ 1 2 3 4 5 … 290 › »   20 ▾

Packages	History

Package ↓⁀	Version
allianz-aga-aspect-keylist	9.5
allianz-aga-jboss-certs	1.0.38
allianz-aga-sectransfer	1.0.22
allianz-amos-settings	1.11
allianz-ca	1.0.23
allianz-cmon-agent	1.1.2.5
allianz-elasticsearch	1.4.1.11
allianz-elk-filebeat-aga-jboss	1.0.1.2
allianz-jboss-fsw	6.0.0.14
allianz-jdk	1.7.0.79
allianz-magfsw%fswtenant%	16.5.07.32
allianz-magfswconf%fswtenant%	16.5.07.32
allianz-properties	1.13
allianz-properties%fswtenant%	1.23
allianz-webinfra	1.7

« 1 »   Update Infra-Versions...   Installation Order

ANSIBLE: INVENTORIES

ANSIBLE: JOB EXECUTION

TOWER   PROJECTS   INVENTORIES   TEMPLATES   JOBS   a5084

JOBS / 11860 - AWP: SW-Deployment TEST

DETAILS

STATUS	● Successful
STARTED	10/20/2017 5:25:00 PM
FINISHED	10/20/2017 5:25:46 PM
TEMPLATE	AWP: SW-Deployment TEST
JOB TYPE	Run
LAUNCHED BY	awpdemand
INVENTORY	AWP-TEST
PROJECT	● svn-awp
REVISION	1431
PLAYBOOK	appInstall.yml
MACHINE CREDENTIAL	Ansible (Key)
FORKS	0
VERBOSITY	0 (Normal)
INSTANCE GROUP	tower

EXTRA VARIABLES ❓

```
1  APP: ABS_MAG_FSW
2  EMAIL: linux-srv@allianz.at
3  PPMURL: ''
4  REQUESTID: ''
5  STAGE: TEST2
6  VERSION: 16.7.02.06
```

AWP: SW-Deployment TEST   PLAYS 2   TASKS 79   HOSTS 2   ELAPSED 00:00:46

SEARCH   KEY

```
72  TASK [cms_installation : debug] ***************************************  17:25:22
73  ok: [sl018315.dcm.allianz] => {
74      "msg": {
75          "app": {
76              "description": null,
77              "id": 35,
78              "name": "ABS_MAG_FSW"
79          },
80          "criteriaList": {
81              "criteriaList": [],
82              "id": 247
83          },
84          "packages": [
85              {
86                  "name": "allianz-cmon-agent",
87                  "version": "1.1.2.5"
88              },
89              {
90                  "name": "allianz-elk-filebeat-aga-jboss",
91                  "version": "1.0.1.2"
92              },
```
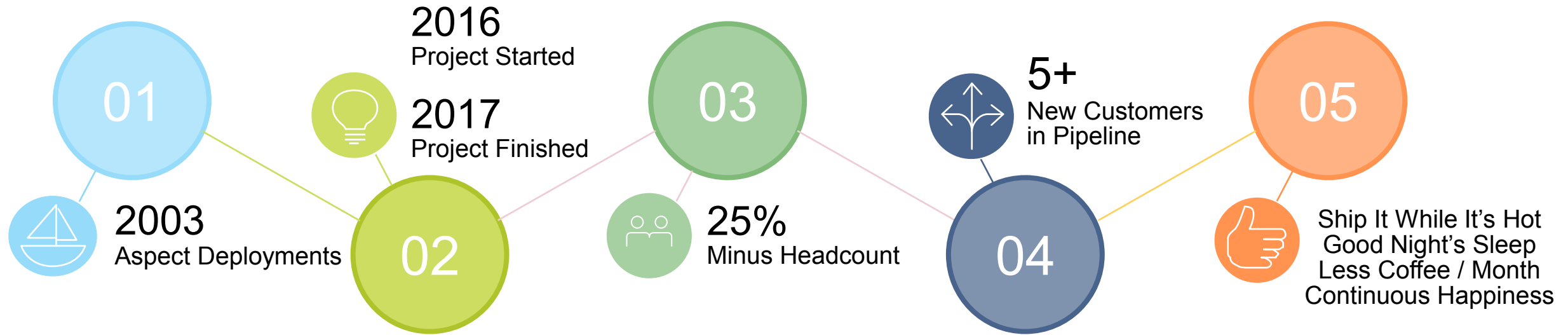
MY BOSS THINKS I'M A GENIUS!

08

WHAT HAVE WE ACHIEVED?

01

2003
Aspect Deployments

2016
Project Started

2017
Project Finished

02

03

25%
Minus Headcount

5+
New Customers
in Pipeline

04

05

Ship It While It's Hot
Good Night's Sleep
Less Coffee / Month
Continuous Happiness

CONTACT US

ALBERT BISCHOF

Head of Department AWP Delivery

Allianz Technology GmbH

Hietzinger Kai 101-105 | 1130 Vienna, Austria

phone: +43 (5) 9009 80663

e-mail: albert.bischof@allianz.at