CICS Cloud + CICS DevOps = Agility²

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SHARE is an independent volunteer-run information technology association
that provides **education**, professional **networking** and industry **influence**.
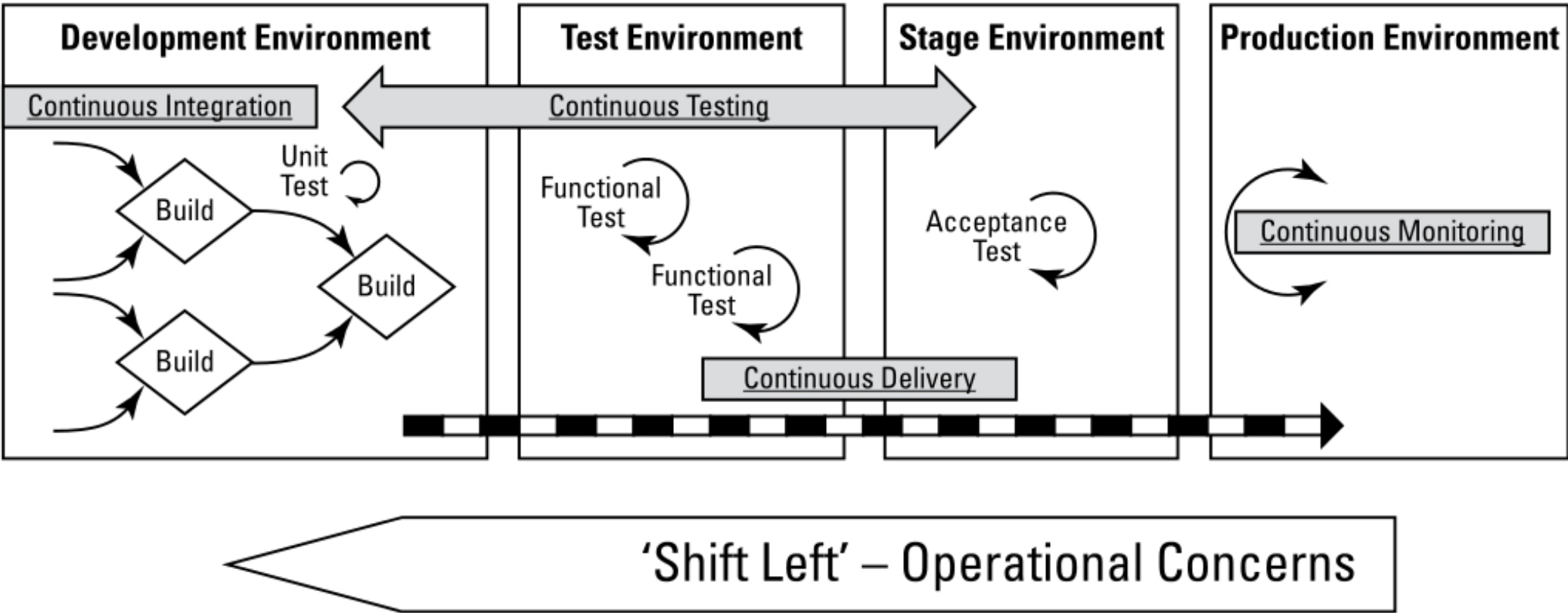
What is DevOps?

DevOps: care

Processes:
Remove uncertainty

Great
Artists
Ship

Great
Developers
Deploy

Processes:
Remove uncertainty
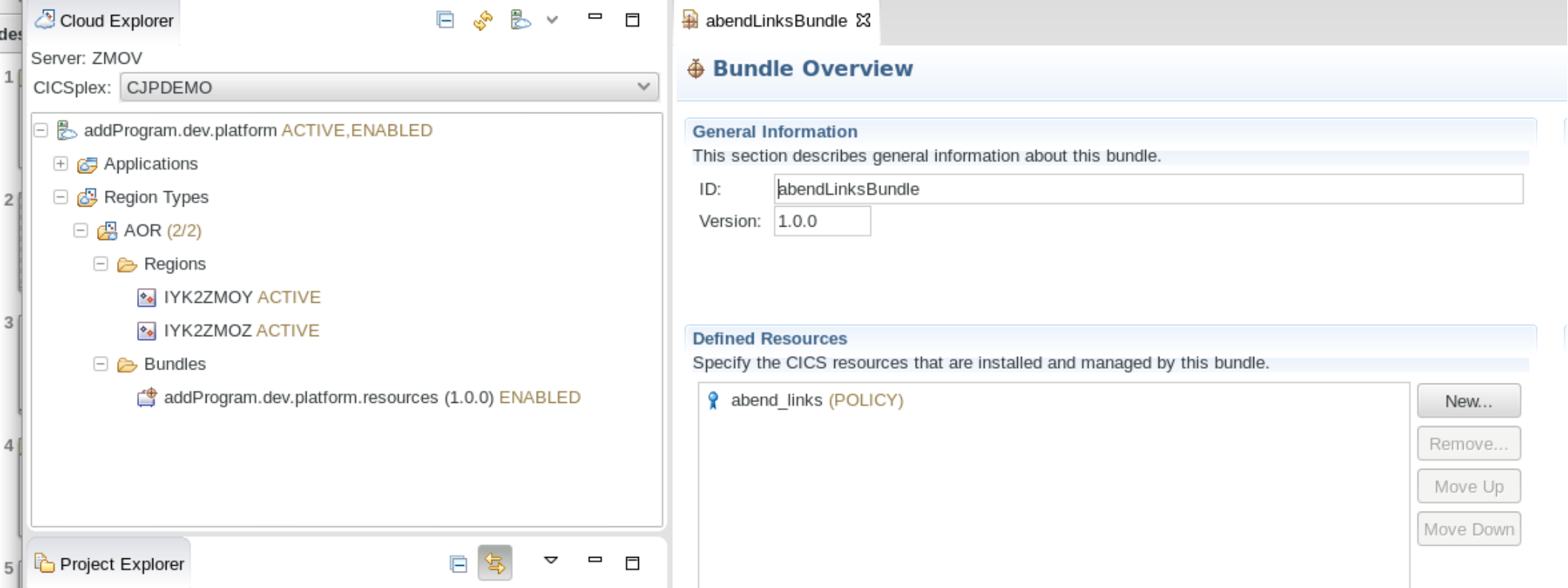
How to achieve this in CICS?

CICS Build Toolkit
DFHDPLOY
UrbanCode Deploy

CICS Bundles & Applications

Policy
Web services
App multi-versioning

Cloud Explorer

Server: ZMOV

CICSplex: CJPDEMO

- ⊟ 🖳 addProgram.dev.platform ACTIVE,ENABLED
  - ⊞ 📦 Applications
  - ⊟ 📇 Region Types
    - ⊟ 🗺 AOR (2/2)
      - ⊟ 📂 Regions
        - 🔹 IYK2ZMOY ACTIVE
        - 🔹 IYK2ZMOZ ACTIVE
      - ⊟ 📂 Bundles
        - 📥 addProgram.dev.platform.resources (1.0.0) ENABLED

Project Explorer

🐞 abendLinksBundle ✖

🐞 Bundle Overview

General Information

This section describes general information about this bundle.

ID: abendLinksBundle

Version: 1.0.0

Defined Resources

Specify the CICS resources that are installed and managed by this bundle.

🔑 abend_links (POLICY)

New...

Remove...

Move Up

Move Down

CICS Explorer

Build bundles

Deploy CICS bundles and apps to zFS

Create definitions

Install, enable, make available

Disable, discard

Automation?

Deploy at 1am Remove uncertainty!

Coordination?

CICS TS v5.3
Open Beta

CICS Build Toolkit

Write scripts to build CICS bundles & applications for different environments

DFHDPLOY

Batch job to script deployment of CICS bundles & applications

UrbanCode Deploy plug-in
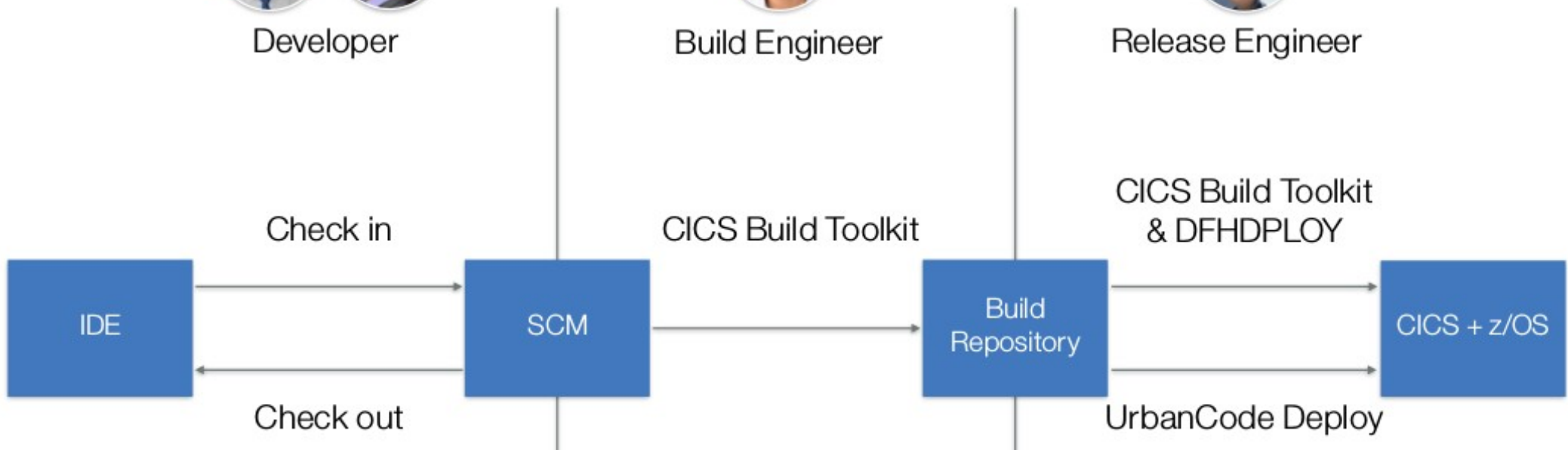
Coordinate the deployment of CICS resources

Developer Build Engineer Release Engineer

Check in CICS Build Toolkit CICS Build Toolkit & DFHDPLOY

IDE SCM Build Repository CICS + z/OS

Check out UrbanCode Deploy

Process

CICS Build Toolkit

Command line alternative to "Export…"
Install with
jar -xf cicsbt_v5.3.0.0.zip
Requires Java 7+,
z/OS IBM 31,64-bit SDK

Build a CICS bundle

Bundle name, bundle name+version, several bundles, all bundles

```
cicsbt  --input my/source/dir/*
        --build
MyBundleProject(1.0.1)
    --output my/output/dir
```

Build a CICS bundle with OSGi Java project

Can use a CICS version target, or your own

```
cicsbt  --input my/source/dir/*
        --build OSGiBundleProject
        --target
com.ibm.cics.explorer.sdk.runtime51.ta
rget
        --output my/output/dir
```

Build a CICS cloud application
Application name, name+version, all apps

```
cicsbt  --input my/source/dir/*
        --build MyApplication(1.0.1)
        --output my/output/dir
```

```
            -u $BUILDUSER -P $BUILDPASS \
            -d $SANDBOX \
            $COMPONENT || exit $?

scm accept -t "$WORKSPACE" \
            -r $REPOSITORY \
            -u $BUILDUSER -P $BUILDPASS \
            -d $SANDBOX

#############################################################################
echo "Building com.ibm.cics.server.examples.bundle          and referenced Java projects"
cicsbt build --source $SANDBOX/* \
            --bundle com.ibm.cics.server.examples.bundle \
            --output $OUTPUT \
            --target com.ibm.cics.explorer.sdk.runtime52.target

if [[ $? -gt 6 ]] ; then
    exit $?
fi
```

Run from a continuous build server, such as Jenkins or RTC

DFHDPLOY

Batch job:
Automate deployment of
bundles and apps
Synchronous APIs
Don't write polling code

```
>>-SET CICSPLEX(data-value)--+--------------------+-><
                             '-CMAS(data-value)-'
```

```
>>-DEPLOY BUNDLE(data-value)--BUNDLEDIR(data-value)->

>--SCOPE(data-value)--+-STATE(DISABLED)--+->
                      +-STATE(ENABLED)---+
                      '-STATE(AVAILABLE)-'


   .-TIMEOUT(300)---------.
>--+----------------------+->
   '-TIMEOUT(data-value)-'


>---+------------------------------------------------------+-
    '-+-CSDGROUP(data-value)-+--+---------------------+-'
      '-RESGROUP(data-value)-'  '-DESCRIPTION(text)-'
```

```
>>-UNDEPLOY BUNDLE(data-value)--SCOPE(data-value)->

                                 .-TIMEOUT(300)---------.
>--+-STATE(UNAVAILABLE)-+--+------------------------+-->
   +-STATE(DISABLED)----+   '-TIMEOUT(data-value)-'
   '-STATE(DISCARDED)---'


>--+---------------------------+-><
   +-CSDGROUP(data-value)-+
   '-RESGROUP(data-value)-'
```

```
>>-SET BUNDLE(data-value)--SCOPE(data-value)->

                                    .-TIMEOUT(300)---------.
>--+-STATE(AVAILABLE)---+--+---------------------------+--><
   +-STATE(UNAVAILABLE)-+  '-TIMEOUT(data-value)-'
   +-STATE(ENABLED)-----+
   +-STATE(DISABLED)----+
   '-PHASEIN------------'
```

```
>>-DEPLOY APPLICATION(data-value)--APPLDIR(data-value)-

>--BINDDIR(data-value)--+--------------------+->
                        '-DESCRIPTION(text)-'

                     .-TIMEOUT(300)---------.
>--+-STATE(DISABLED)--+--+--------------------------+->-<
   +-STATE(ENABLED)---+  '-TIMEOUT(data-value)-'
   '-STATE(AVAILABLE)-'
```

```
>>-UNDEPLOY APPLICATION(data-value)--VERSION(data-value)

>--PLATFORM(data-value)--+-STATE(UNAVAILABLE)-+->
                         +-STATE(DISABLED)----+
                         '-STATE(DISCARDED)---'

   .-TIMEOUT(300)---------.
>--+----------------------+-><
   '-TIMEOUT(data-value)-'
```

```
>>-SET APPLICATION(data-value)--VERSION(data-value)->

>--PLATFORM(data-value)--+-STATE(AVAILABLE)---+->
                         +-STATE(UNAVAILABLE)-+
                         +-STATE(ENABLED)-----+
                         '-STATE(DISABLED)----'


   .-TIMEOUT(300)---------.
>--+----------------------+-><
   '-TIMEOUT(data-value)-'
```

```
000001 //DPLYAPP0 JOB CLASS=A,MSGCLASS=A,NOTIFY=&SYSUID
000002 /*JOBPARM  ROOM=A413,SYSAFF=MV2C
000003 //*
000004 //DFHDPLOY   EXEC PGM=DFHDPLOY
000005 //*
000006 //STEPLIB   DD    DISP=SHR,DSN=UTL.DFHDPLOY.SDFHLOAD
000007 //          DD    DISP=SHR,DSN=UTL.DFHDPLOY.SEYUAUTH
000008 //          DD    DISP=SHR,DSN=ANTZ.CICS.TS.DEV.INTEGRAT.SDFHLOAD
000009 //          DD    DISP=SHR,DSN=ANTZ.CICS.TS.DEV.INTEGRAT.SEYUAUTH
000010 //*
000011 //SYSTSPRT  DD    SYSOUT=*
000012 //DPLOYTRC  DD    SYSOUT=*
000013 //EYUTRCF   DD    SYSOUT=*
000014 //*
000015 //SYSIN  DD    *
000016 SET CICSPLEX(CJPDEMO) CMAS(IYK2ZMOV);
000017 *
000018 DEPLOY APPLICATION(ADDAPP)
000019 APPLDIR(/u/chpoole/demo/DevOps/addProgram.dev.platform/applications/addP
000020 rogram.app_1.0.0)
000021 BINDDIR(/u/chpoole/demo/DevOps/addProgram.dev.platform/bindings/addProgr
000022 am.app_dev.platform_binding_1.0.0)
000023 STATE(AVAILABLE);
```

Batch job

DEV
QA
STAGING
PRODUCTION

Attributes

type here to filter on Name and CICS Name

Name	CICS Name	Value
Basic		
Critical	CRITICAL	
Data Set Name 01	DSNAME01	CHPOOLE.DEMO.POLICY.ROUTER.V110
Data Set Name 02	DSNAME02	
Data Set Name 03	DSNAME03	
Data Set Name 04	DSNAME04	
Data Set Name 05	DSNAME05	
Data Set Name 06	DSNAME06	
Data Set Name 07	DSNAME07	

Extract value to variable

Insert variable

Copy all

Copy   Ctrl+C

ABLED

sources (1.0.0) ENABLED

${Variable Substition}
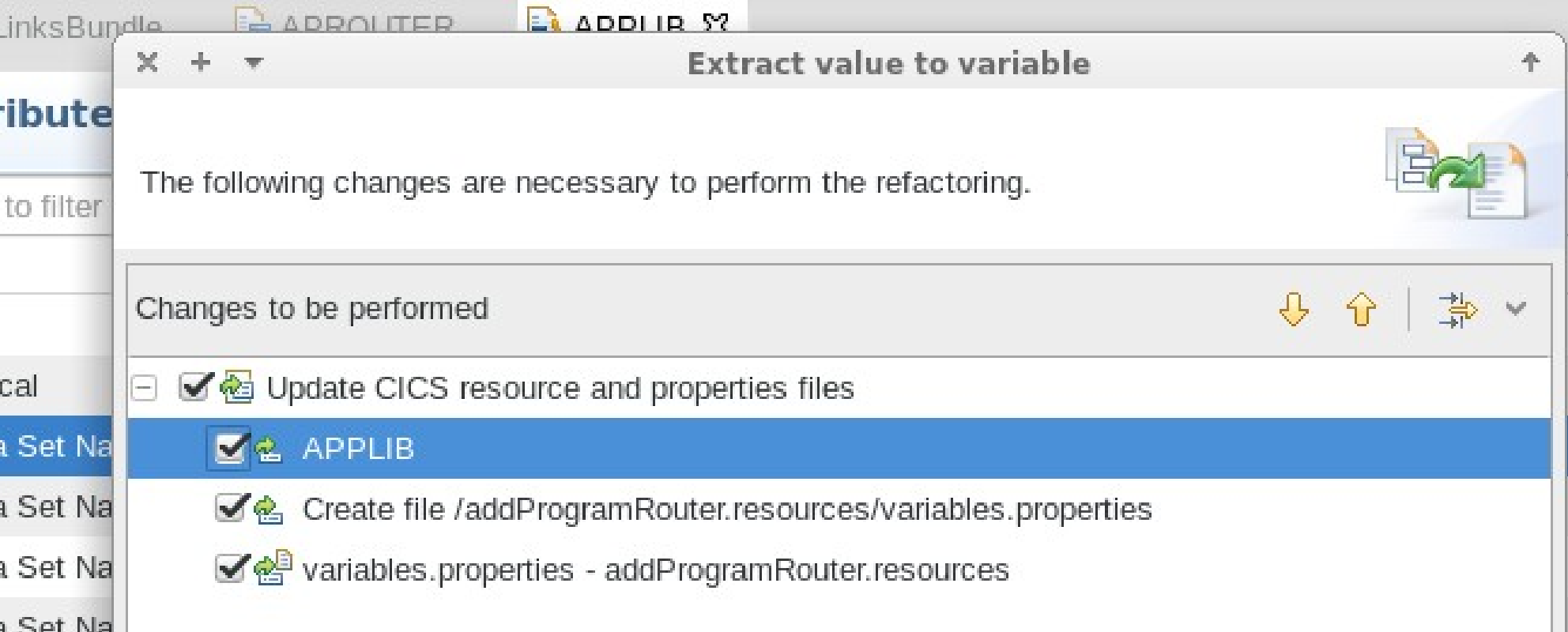
Resolve with
a properties file

variables.properties in:

Bundle
Application binding
Standalone bundle

Developer — Build Engineer — Release Engineer

| IDE | | SCM | | Build Repository | | CICS + z/OS |

Check in → Check out

CICS Build Toolkit

CICS Build Toolkit & DFHDPLOY
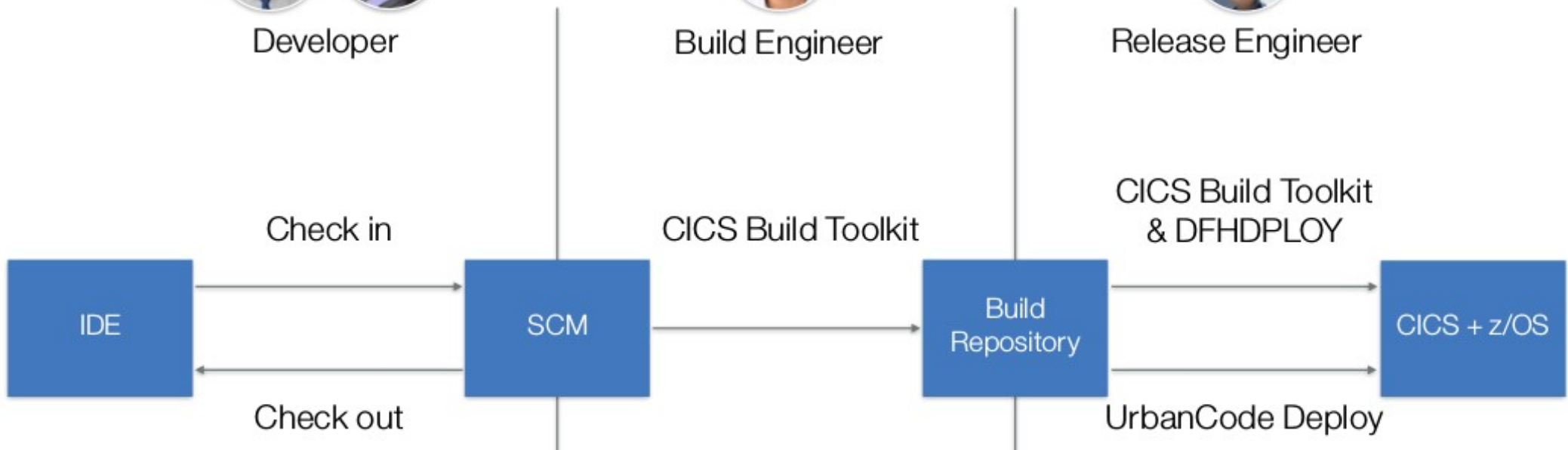
UrbanCode Deploy

Process

IBM UrbanCode Deploy

Configure:
- Applications
- Middleware
- Databases

Development SCM Build Package Repo Deploy Test Stage Prod
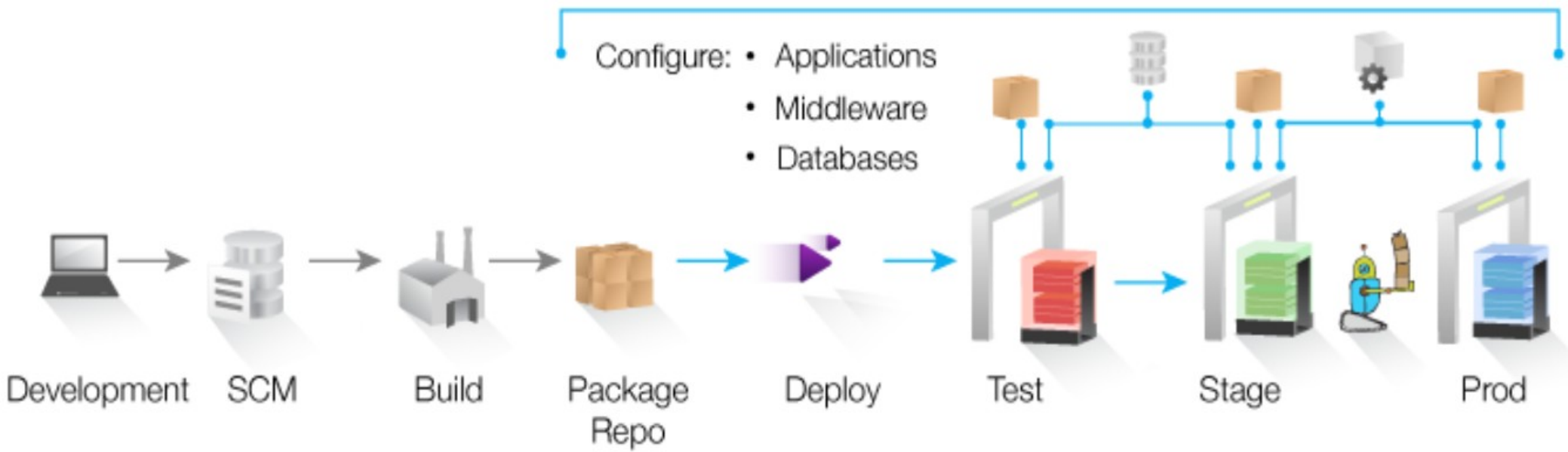
UrbanCode Deploy

Continuous delivery
Orchestrate deployments
Self-service: push to go
Incremental updates
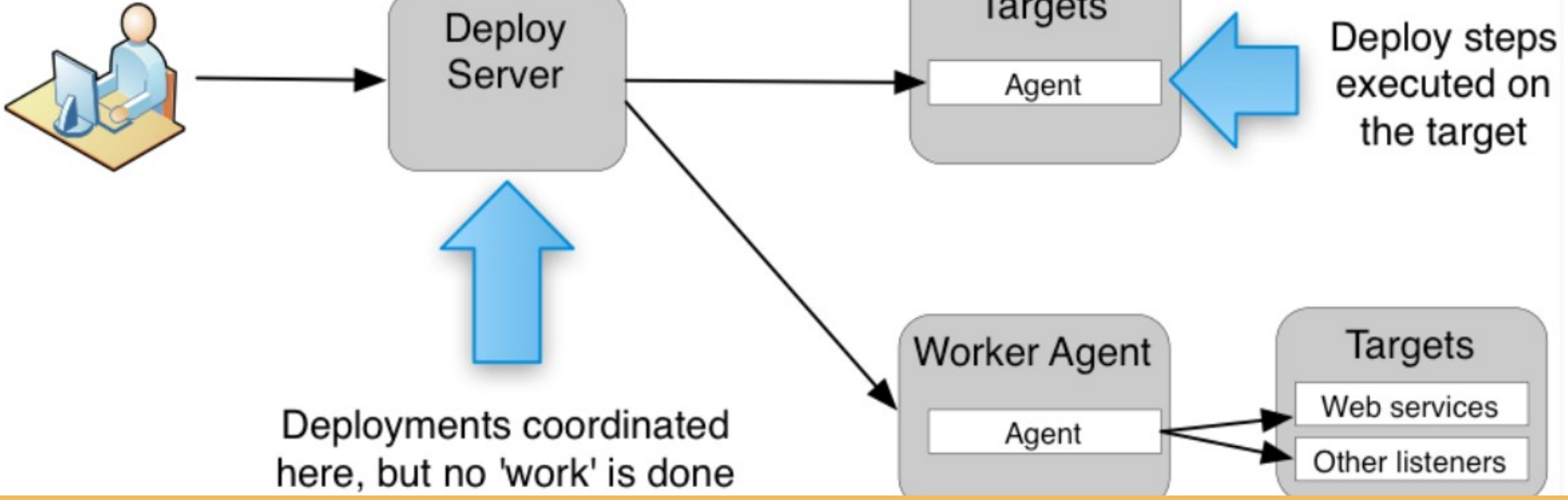
Architecture

Application Server

▼ 📁 CICS TS

⚙ Close resources

❌ Disable resources

⚙ Discard resources

⏻ Enable resources

🚀 Deploy Data Sets
Deploy Data Sets (v. 5)

⚙ New copy resources
New copy resources (v. 22)

Finish

Web UI

Install CSD resources, groups, and lists

Install BAS resources, resource descriptions and groups

Discard resources

Enable and disable resources

Open and close resources

New copy and phase in resources

Scan pipelines

Check the enabled or open status of resources

Summary

CICS Build Toolkit

CLI to build bundles and apps from a CI server; v4.1+

DFHDPLOY

JCL utlity to deploy and undeploy bundles & apps in a single step

UrbanCode Deploy plug-in

Orchestrate and control CICS resources

Questions?

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Seth Godin: https://www.flickr.com/photos/jurvetson/3275235423/
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