





- **Europe 2025**

Nuno Guedes
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Speakers



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Head of Public Cloud
Millennium bcp

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Product Management Lead
Azure Open-Source Incubations
Microsoft

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👋 Are you familiar with Radius?

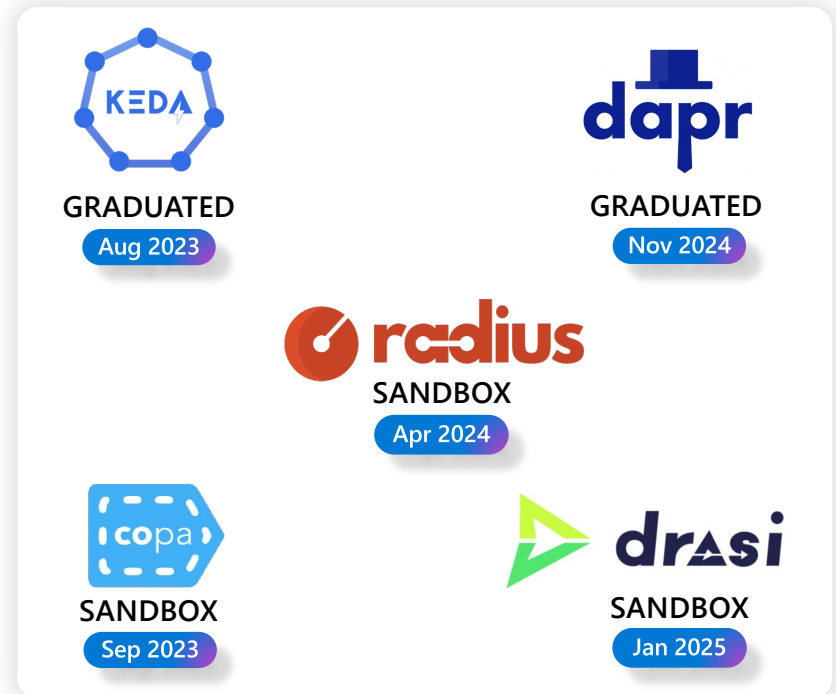
*Hint, the CNCF project, not the 90s network protocol, RADIUS :)



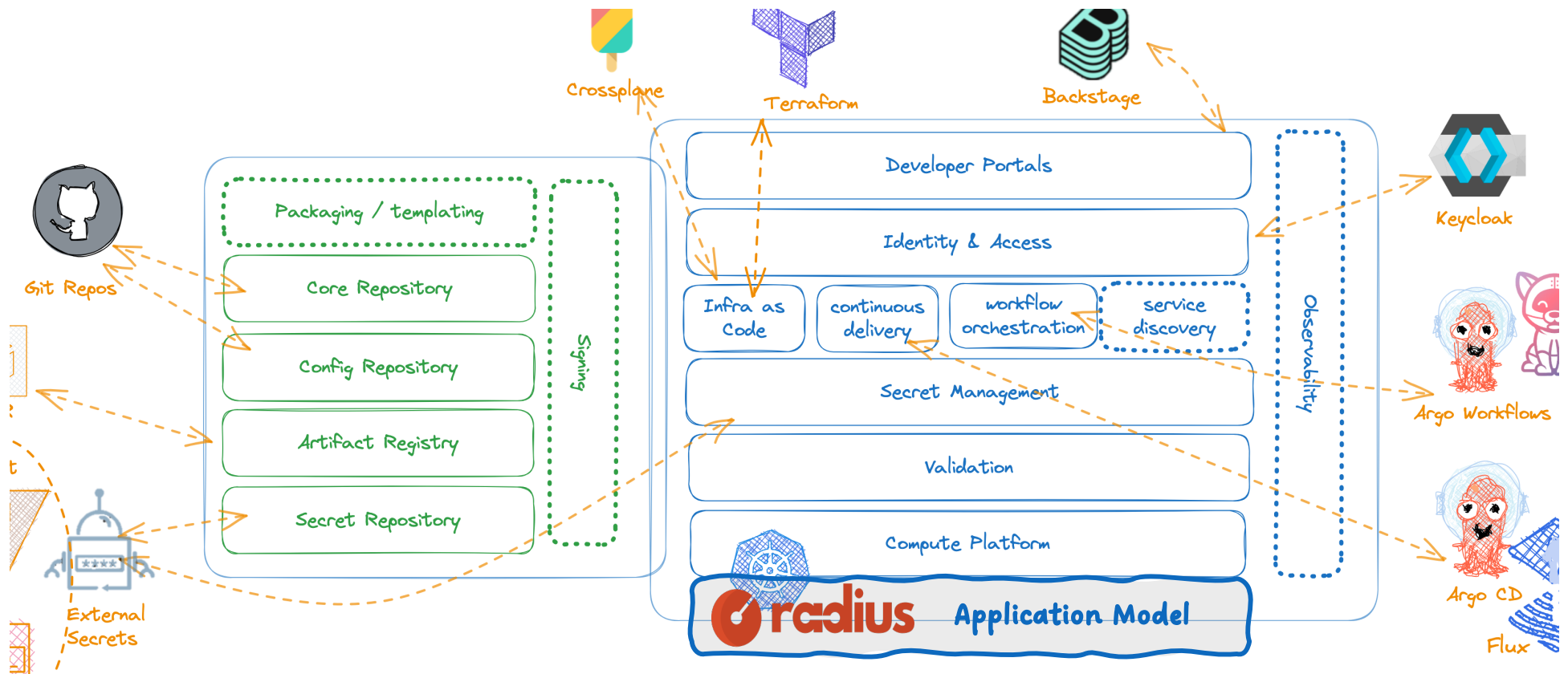
Azure Open Source Incubations

MISSION

Partner across Microsoft and the open-source community to explore and deliver industry-changing products



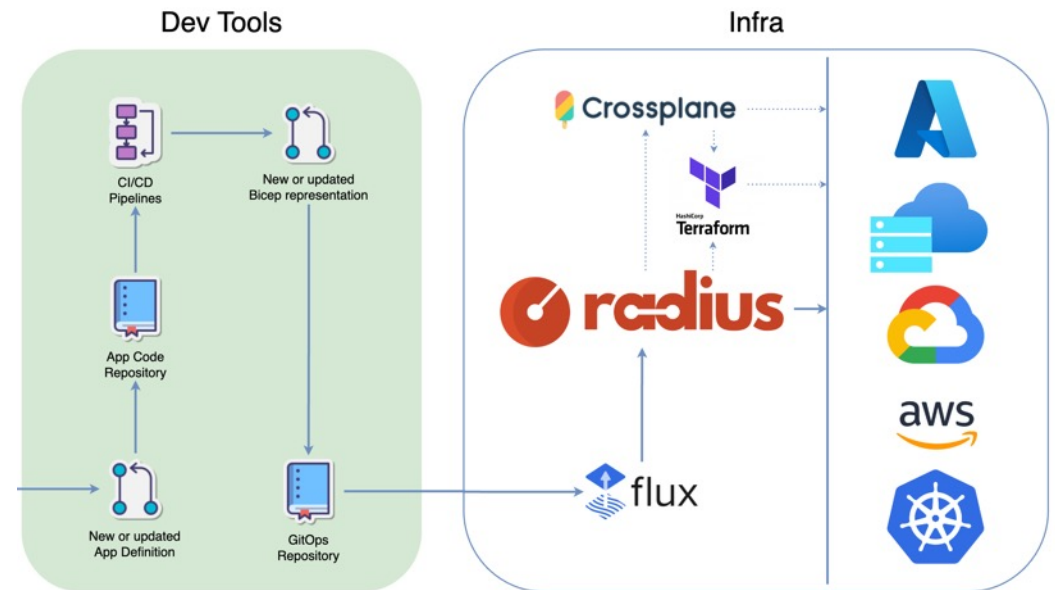
An IDP Reference Architecture from the Cloud Native Operational Excellence (CNOE) Project



source: <https://cnoe.io/docs/intro/technology>



Cloud-native application platform





Cloud-native application platform





Team Collaboration

Radius Application and Environments allow developers to work with operations on application definition + delivery



Infrastructure Recipes

Swappable infrastructure with popular IaC tools that follows org best practices and IT policy by default



Application Graph

Understand how services and infrastructure in an application are interconnected

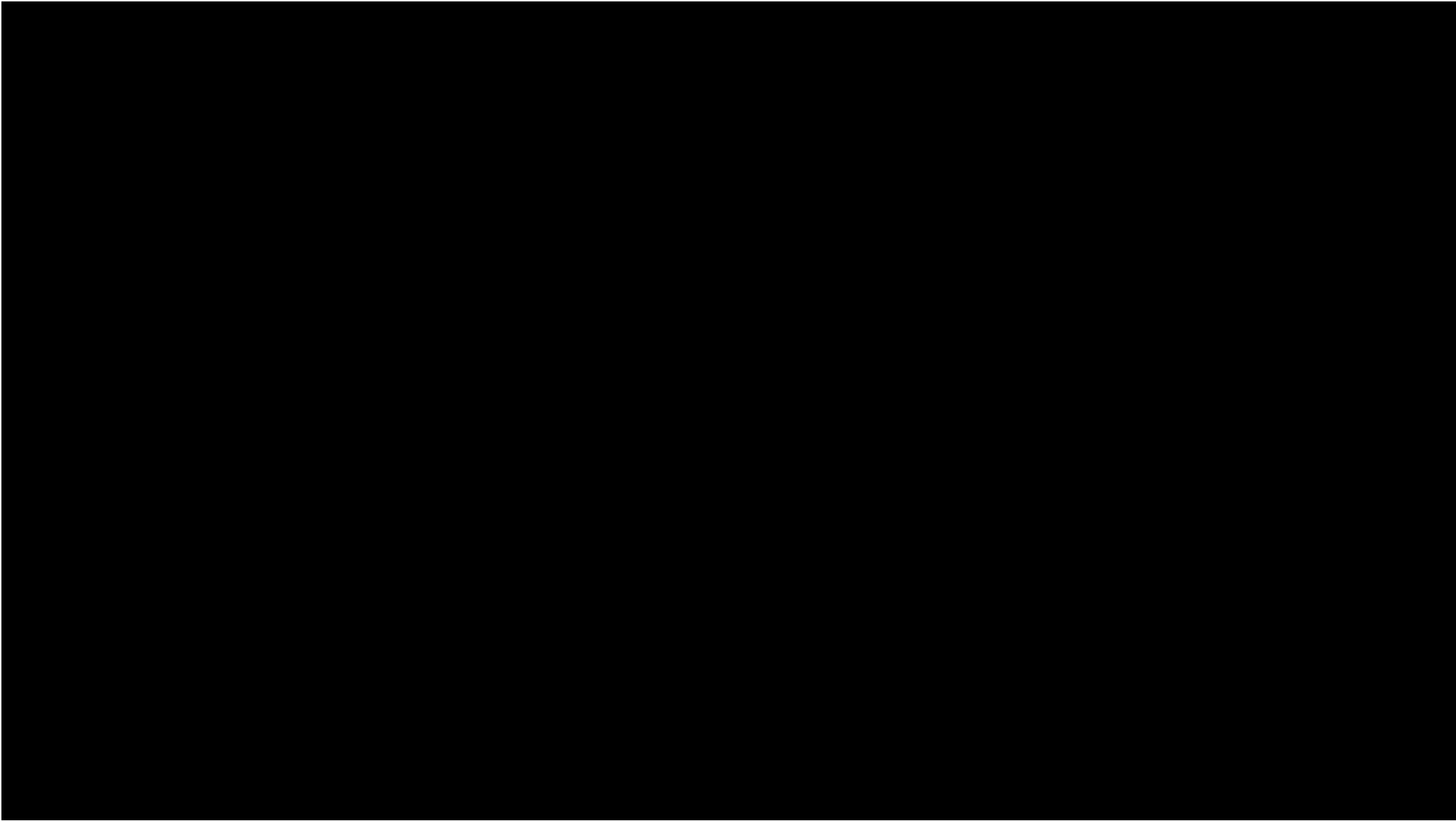


Cloud Neutral

Deploy across development, on-premises, and cloud environments with a consistent experience

DEMO

Deploying an Application On-Premises and to AWS



Radius Resource Types

Containers

L7 Gateways

Secrets

Volumes

MongoDB

SQL Server

Redis

RabbitMQ

Dapr
Config Store

Dapr
Pub/Sub

Dapr
State Store

Dapr
Secret Store

MyCompany
Application
Resources

Extending Radius Resource Types

MyCompany Resource Catalog

Enables platform engineers to build customized developer experiences

Build custom application resource catalog

Browsable by developers with documentation

Model any resource—abstract or foundational

Contract between developers and the platform

Application Types

WebService

Function

Job

Components

Container

In-memory
Cache

Relational DB

Document DB

Key/Value
Store

Event
Publisher

DEMO

Adding AI to an Existing Application

Todo list

No items yet!

Add an item

Title

Add



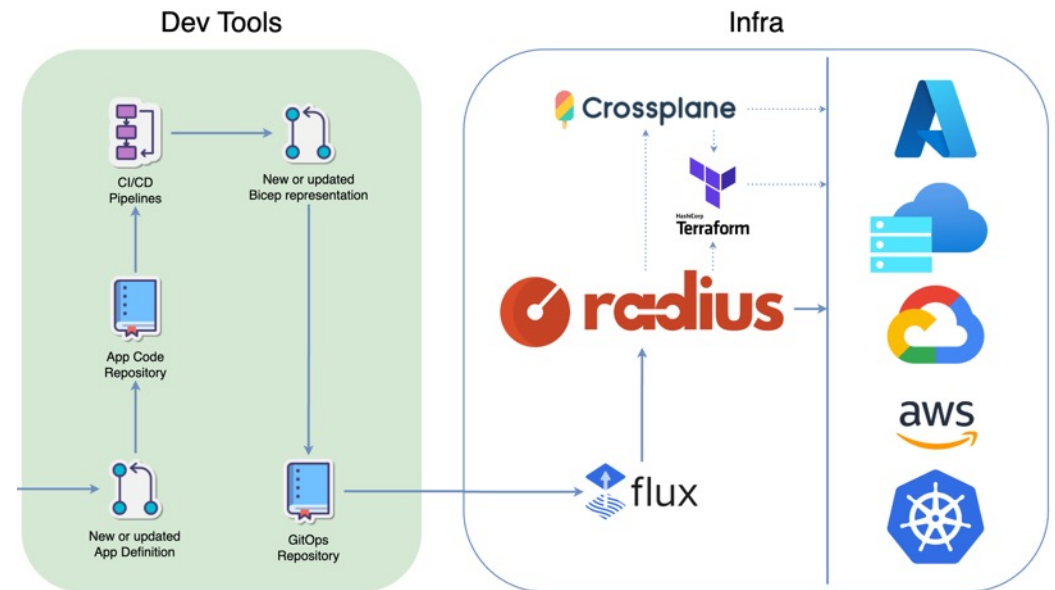
Feedback



Copilot feedback



Cloud-native application platform



From 8 days to 8 minutes



The challenge

- Accelerate service delivery
- Align Dev+Ops expectations
- Support different app and infra lifecycles
- Cover the IT lifecycle, not just infra

The guardrails

- Do not reinvent the wheel
- Prevent cognitive overload
- Help delivery, not burden devops
- Ensure a migration path for the current Terraform module library

The deliverables

- Application as a first-class entity
- Custom types for internal IT services
- An API for Dev+Ops

From 8 days to 8 minutes

1. Define your next deliverable

M

Q

Home

Settings

Templates

Recent

Help

Create a New Component
Create new software components using standard templates

Available Templates

Q Search X

PERSONAL

★ Starred 0

MILLENNIUM BCP

All 2

CATEGORIES

CATEGORIES

TAGS

TAGS

Templates

service

CRUD Service

DESCRIPTION

Create a CRUD service based on entities

OWNER

team-a

TAGS

crud backend

CHOOSE

service

Microservice

DESCRIPTION

Create a new microservice based on specific configuration

OWNER

team-a

TAGS

backend

CHOOSE



M

Q

Home

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Recent

Help

Create a New Component
Create new software components using standard templates

Microservice

1 Microservice

Fill the form with application specification

Application Information

Name *

Customer

Business Domain *

Customers
(e.g., Credit Cards, Customers)

System

ED

Description

Topology

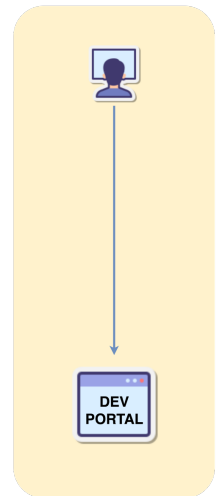
Type

Process

Technology

framework

Developers



From 8 days to 8 minutes

1. Define your next deliverable

Create a New Component
Create new software components using standard templates

Microservice

1 Microservice

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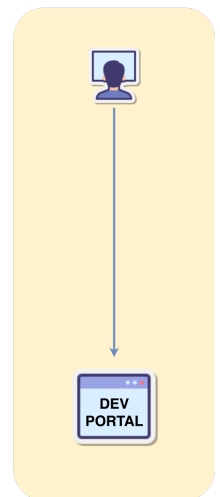
framework



Standard Application Definition File

```
1 {
2   "ServiceDefinitionSchemaVersion": "https://(../)/serviceDefinitionSchemaV1.1.0.json",
3   "Id": "01daa7cc-83bf-445b-87d3-f2e9340bd829",
4   "AppId": "991",
5   "AppName": "kubeccon",
6   "ServiceName": "radiusdemobackend",
7   "Name": "RadiusDemoBackend",
8   "FullName": "KubeCon.RadiusDemo.Backend",
9   "Description": "Micro service for Radius demo in KubeCon Europe 2025",
10  "Topology": {
11    "Type": "Experience",
12    "ShouldApiBeAccessedFromInternet": true
13  },
14  "Technology": {
15    "Type": "dotNet8"
16  },
17  "Namespace": "KubeCon",
18  "Operations": [
19    {
20      "Name": "ConvertToBase64operation",
21      "Type": "SingleInputSingleOutput"
22    },
23    {
24      "Name": "ConvertFromBase64operation",
25      "Type": "SingleInputSingleOutput"
26    }
27  ],
28  "DomainEntities": [],
29  "HostTypes": [
30    "openapi"
31  ],
32  "Events": [
33    {
34      "name": "KubeCon.RadiusDemo.ConversionRequests.V1",
35      "type": "SUB",
36      "topic": {
37        "name": "KubeCon.RadiusDemo.ConversionRequests.V1"
38      }
39    },
40    {
41      "name": "KubeCon.RadiusDemo.ConversionResults.V1",
42      "type": "PUB",
```

Developers



<https://radapp.io>

From 8 days to 8 minutes

1. Define your next deliverable

```
1 {
2   "ServiceDefinitionSchemaVersion": "https://[...]/serviceDefinitionSchemaV1.1.0.json",
3   "Id": "01daa7cc-83bf-445b-87d3-f2e9340bd829",
4   "AppId": "991",
5   "AppName": "kubecon",
6   "ServiceName": "radiusdemobackend",
7   "Name": "RadiusDemoBackend",
8   "FullName": "KubeCon.RadiusDemo.Backend",
9   "Description": "Micro service for Radius demo in KubeCon Europe 2025",
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17  "Namespace": "KubeCon",
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19    {
20      "Name": "ConvertToBase64Operation",
21      "Type": "SingleInputSingleOutput"
22    },
23    {
24      "Name": "ConvertFromBase64Operation",
25      "Type": "SingleInputSingleOutput"
26    }
27  ],
28  "DomainEntities": [],
29  "HostTypes": [
30    "openapi"
31  ],
```

App details

Exposure

Operations

Messages

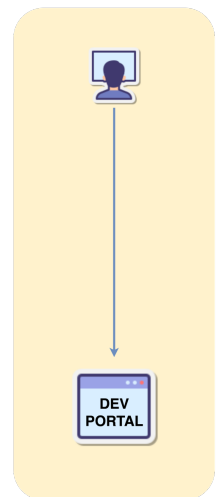
Security

Persistency

Cache

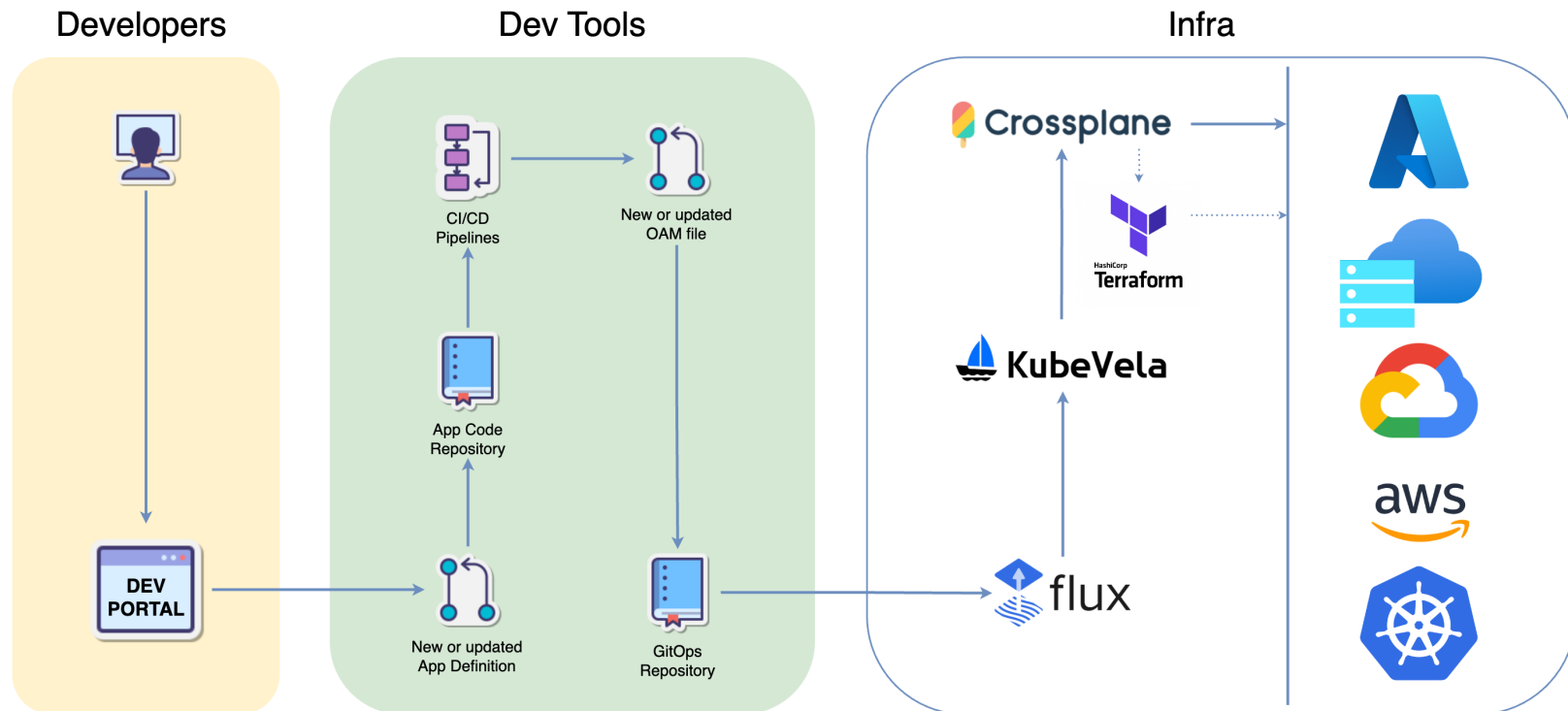
```
32 "Events": [
33   {
34     "name": "KubeCon.RadiusDemo.ConversionRequests.V1",
35     "type": "SUB",
36     "topic": {
37       "name": "KubeCon.RadiusDemo.ConversionRequests.V1"
38     }
39   },
40   {
41     "name": "KubeCon.RadiusDemo.ConversionResults.V1",
42     "type": "PUB",
43     "schema": {
44       "name": "KubeCon.RadiusDemo.ConversionResults.V1-value",
45       "location": "file://KubeCon.RadiusDemo.ConversionResults.V1.avro",
46       "format": "avro"
47     },
48     "topic": {
49       "name": "KubeCon.RadiusDemo.ConversionResults.V1"
50     }
51   }
52 ],
53 "roles": [],
54 "Dependencies": [],
55 "Persistence": {
56   "Type": "SqlServer"
57 },
58 "Cache": {
59   "Technology": "Redis"
60 }
61 }
```

Developers

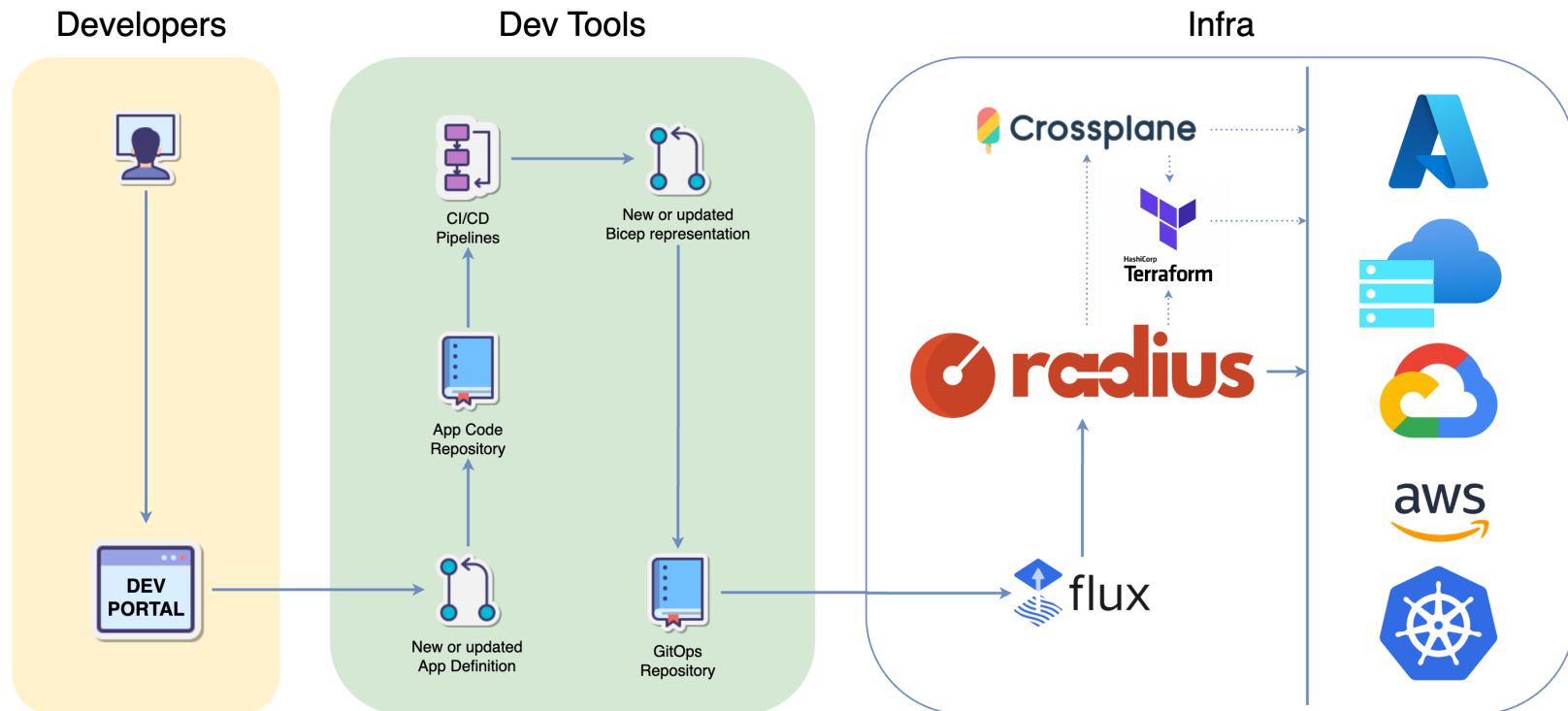


<https://radapp.io>

From 8 days to 8 minutes



Adopting Radius



Adopting Radius

2. Create a DeploymentTemplate

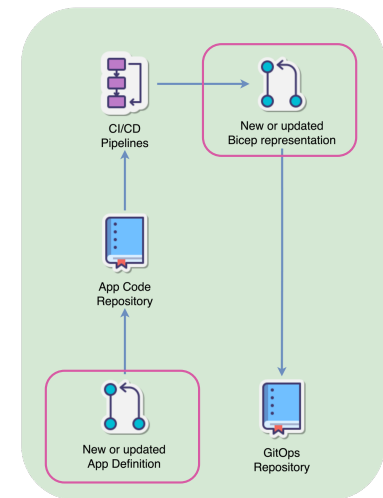
convert app.json app.yaml ghcr.io/kubecon/radiusdemo 1.0.0

```
1 {
2   "Id": "08dbcf15-b547-42fe-8d23-f085202d5793",
3   "AppId": "999",
4   "AppName": "kubecon",
5   "ServiceName": "radiusdemo",
6   "Name": "RadiusDemo",
7   "FullName": "KubeCon.RadiusDemo.Frontend",
8   "Description": "Microfrontend for Radius demo in KubeCon Europe 2025",
9   "Technology": {
10    "Type": "reactjs",
11    "FrameworkVersion": "5.0.0"
12  },
13   "Namespace": "KubeCon",
14   "Roles": []
15 }
```



```
1 kind: DeploymentTemplate
2 apiVersion: radapp.io/v1alpha3
3 metadata:
4   name: kubecon-1.0.0
5   namespace: default
6 spec:
7   parameters:
8     apiSuffix: frontend
9     appSku: xs
10    appVersion: 1.0.0
11    image: ghcr.io/kubecon/radiusdemo:1.0.0
12    observabilitySku: xs
13    observabilityStack: prometheus
14   providerConfig: |-
15     {
16       "radius": {
17         "type": "radius",
18         "value": {
19           "scope": "/planes/radius/local/resourceGroups/default"
20         }
21       },
22       "deployments": {
23         "type": "Microsoft.Resources",
24         "value": {
25           "scope": "/planes/radius/local/resourceGroups/default"
26         }
27       }
28     }
29 > template: |-
126
```

Dev Tools



Adopting Radius

2. Create a DeploymentTemplate

```
29 template: |-
30 {
31   "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",
32   "contentVersion": "1.0.0.0",
33   "imports": {
34     "Radius": {
35       "provider": "Radius",
36       "version": "latest"
37     }
38   },
39   "languageVersion": "2.1-experimental",
40   "metadata": {
41     "_EXPERIMENTAL_FEATURES_ENABLED": [
42       "Extensibility"
43     ],
44     "_EXPERIMENTAL_WARNING": "This template uses ARM features that are experimental. Experimental features",
45     "_generator": {
46       "name": "bicep",
47       "templateHash": "17517439386776100510",
48       "version": "0.31.92.45157"
49     }
50   },
51   "parameters": {
52     "apiSuffix": {
53       "metadata": {
54         "description": "The API suffix of your application."
55       },
56       "type": "string"
57     },
58   },
59 }
```

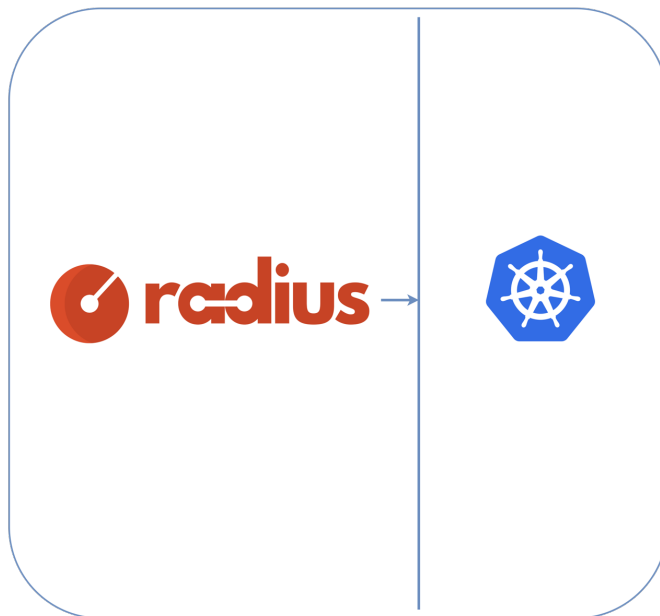
```
94   "observabilityStack": {
95     "metadata": {
96       "description": "The observability stack used for application monitoring."
97     },
98     "type": "string"
99   },
100 },
101 "resources": {
102   "staticfe": {
103     "import": "Radius",
104     "properties": {
105       "name": "staticfe",
106       "properties": {
107         "application": "[parameters('application')]",
108         "environment": "[parameters('environment')]"
109       },
110       "recipe": {
111         "name": "staticfe",
112         "parameters": {
113           "api_suffix": "[parameters('apiSuffix')]",
114           "app_sku": "[parameters('appSku')]",
115           "app_version": "[parameters('appVersion')]",
116           "image": "[parameters('image')]",
117           "observability_sku": "[parameters('observabilitySku')]",
118           "observability_stack": "[parameters('observabilityStack')]"
119         }
120       }
121     },
122     "type": "Applications.Core/extenders@2023-10-01-preview"
123   },
124 },
125 }
```

Adopting Radius

3. Use a DeploymentTemplate

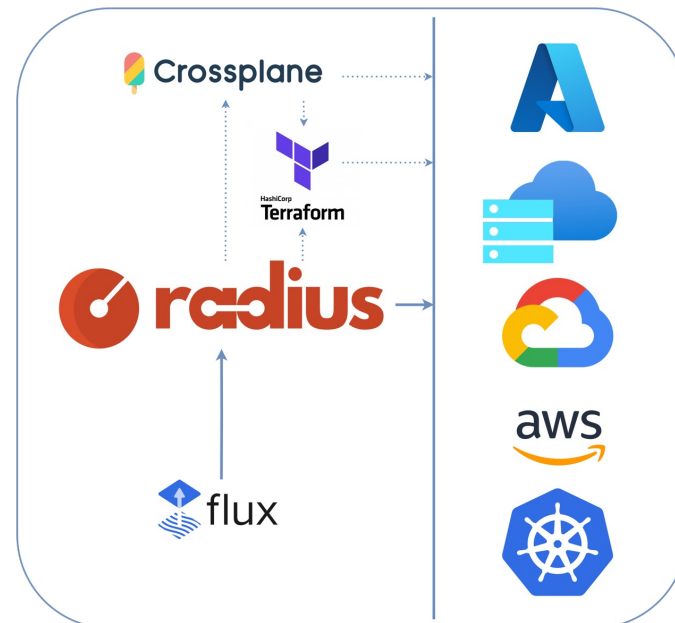
```
rad recipe register staticfe --resource-type "Applications.Core/extenders" --template-kind terraform  
--template-path "git::https://(…)/recipes/static-fe?ref=v1.0-local" or  
--template-path "git::https://(…)/recipes/static-fe?ref=v1.0"
```

Dev workstation



staticfe recipe uses local (and remote) K8s resources

Shared Infra



staticfe recipe uses shared resources

Adopting Radius

3. Use a DeploymentTemplate



kubectl



flux



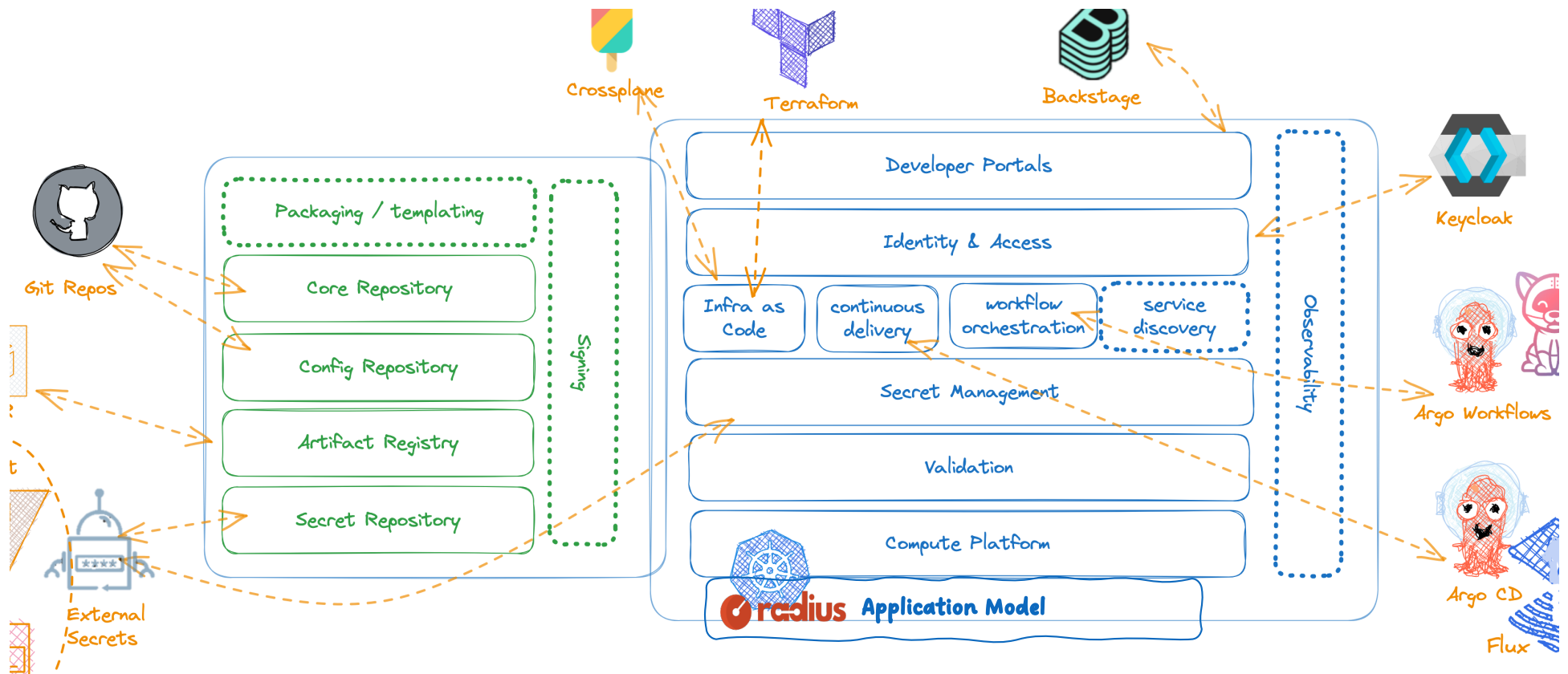
argo



ustomize



An IDP Reference Architecture from the Cloud Native Operational Excellence (CNOE) Project



source: <https://cnoe.io/docs/intro/technology>

Generating value thru Radius



A standard for application definition (and dependencies)

Enable the right conversations

- Business value
- Feature testing
- Universal observability
- Time to detect and repair

Ensure patterns, not ad-hoc choreographies

- Best of breed implementations
- Ensure security and regulatory compliance

Generating value thru Radius



Faster application lifecycles (and decoupled lifecycles)

Just-in-time infrastructure

- NFRs defined by devs
- Shared contract
- Predefined SKUs and SLAs

Independent infrastructure lifecycle

- Infra service definitions can evolve at their own pace
- Service change impact can be assessed against current requests and SLAs

Same contracts used for:

- Dev workstation
- On-prem
- Multiple cloud providers

Generating value thru Radius



Adoption of GitOps Best Practices

Use standard app processes for infra deployment

- CI/CD
- A-B testing
- Progressive deployments
- ...

Use standard app processes for infra customization

- Helm charts
- Kustomize
- ...



KubeCon



CloudNativeCon

Europe 2025

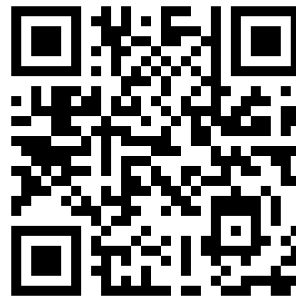
Solve the right problems

<https://radapp.io>

Next Steps !



Join the community



Documentation



docs.radapp.io

Learn how to get started with
Radius and start radifying
your own applications

<https://radapp.io>

