https://www.twitch.tv/azureishlive

https://theCloudMarathoner.com

Elkhan Yusubov
Speaker | Author | Cloud Architect
Founder at #cloudmarathoner

Elkhan is a principal cloud architect and 15 times MSFT MCT with experience in cloud solutions, enterprise healthcare systems and healthcare data, and API standards (HL7 FHIR, EDI X12).

He is an active MCT, a Microsoft Tech Community Contributor, Cloud Lunch and Learn Speaker and Team Member, and Azure SME (Architecture, DevOps, Security).

He is a frequent speaker at tech meetups and has volunteered for Give Camps, Azure Data Fest, SQL Saturdays, Azure communities and Global Azure events.

ElkhanYusubov

@ElYusubov

https://theCloudMarathoner.com

Company Snapshot: T- Rex Is…

- **An Innovative NGIT Provider:** a leading solutions provider of innovative and modernizing Next Generation IT capabilities and enabling skills to the federal government
- **A first to market in migrating large federal mission applications and data** into a citizen-facing public cloud, giving the Company the capabilities and past performance to bid and win future NGIT opportunities in adjacent federal agencies
- **A Prime Contractor** on **2020 Census,** one of the largest (scale) and most complex mission critical cloud/cyber/data analytics integration projects within the federal government

Concurrent Web Respondents (Peak)	Mobile Census Enumerators	Regional & Local Census Offices	Business Systems	Application Components
600,000+	500,000+	254 / 20K Workers	52	285+

- **Integrated 52 mission-critical systems comprised of 200+ applications** operating in a hybrid hyper-converged data center and Amazon Web Service ("AWS") public facing GovCloud protected by a world class active cyber defense (ACD) solution. Also includes a VDI-based Office 365 solution supporting 40k+ users and MS Azure AD managing 350k+ mobile users

Achievements & Partnerships

Silver Microsoft Partner

Silver Datacenter
Silver Data Analytics
Silver Data Platform
Silver App Dev
Silver App Integration

aws partner network
Advanced Consulting Partner
Government Competency
Public Sector Partner

ISO 9001:2015 BUREAU VERITAS Certification
ISO 27001 BUREAU VERITAS Certification

CMMIDEV/3
CMMISVC/3

#1 Bloomberg Government Government Cloud Support Services PROVIDER 2016-20

Washington Technology 2021 Top 100 Government Contractors, Federal Market T-REX #48

TOP WORK PLACES 2020 The Washington Post

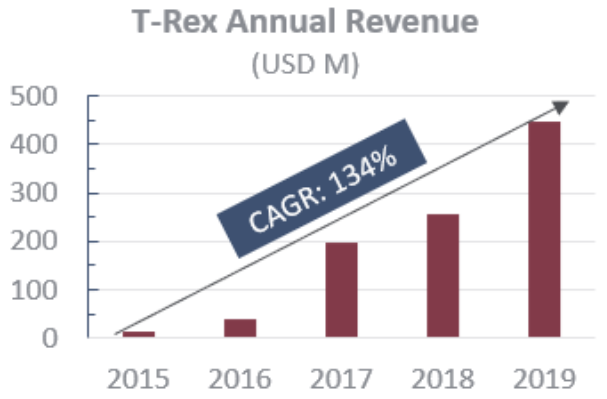
Company Info

- **Established:** 1999
- **Legal Structure:** LLC
- **Headquarters:** Greenbelt, MD
- **8(a)/HUBZone & SDVOSB Joint Ventures:** Ability to deliver services as a small business concern
- **Prime/**Sub (07/21): 95.5% Prime
- **Backlog** (07/21): $242.6M

Prime Vehicles/BPAs:

- GSA MAS:
  - Cloud SIN
  - Professional Svcs SIN
  - Highly Adaptive Cyber SIN
  - CIO-SP3 Small Business
- COBRA Other Transaction Authority (OTA)
- Dept of Commerce ESF

Financial Summary



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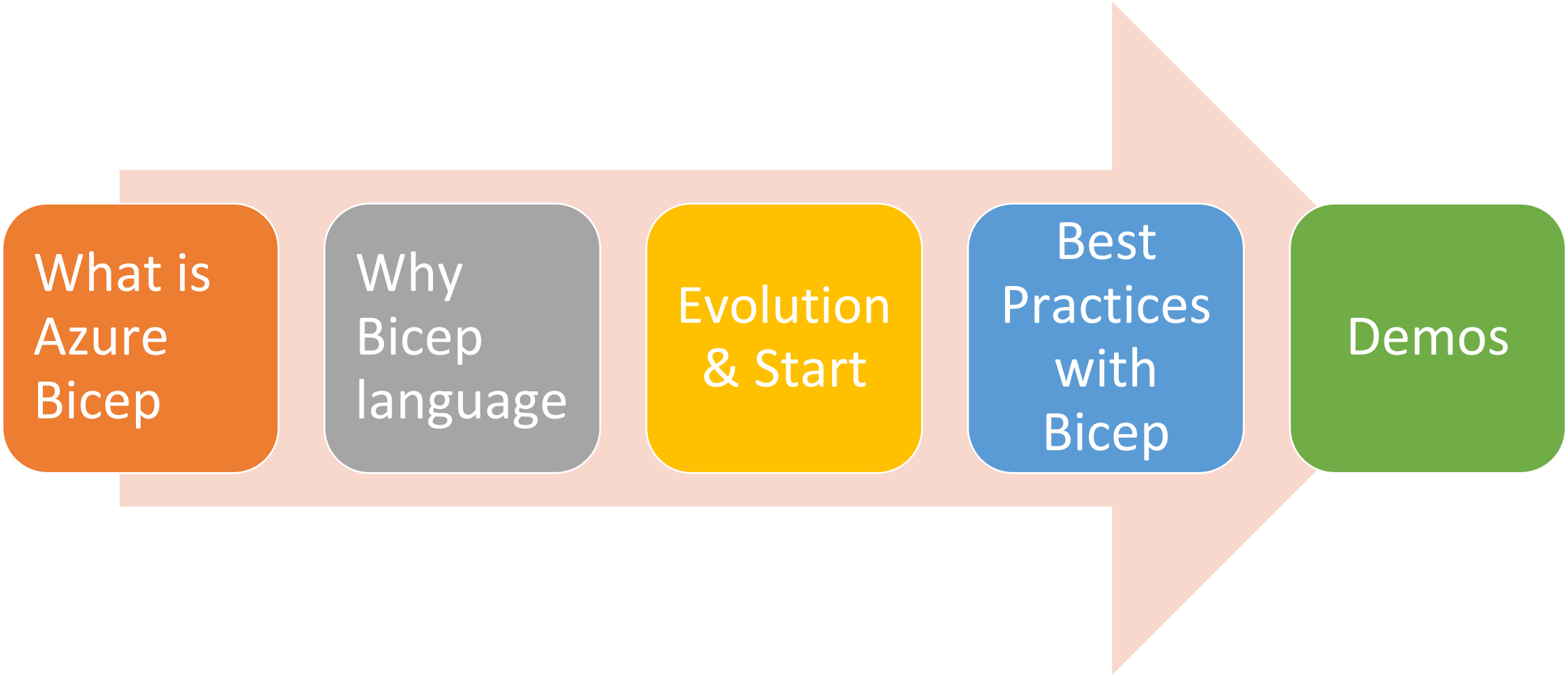
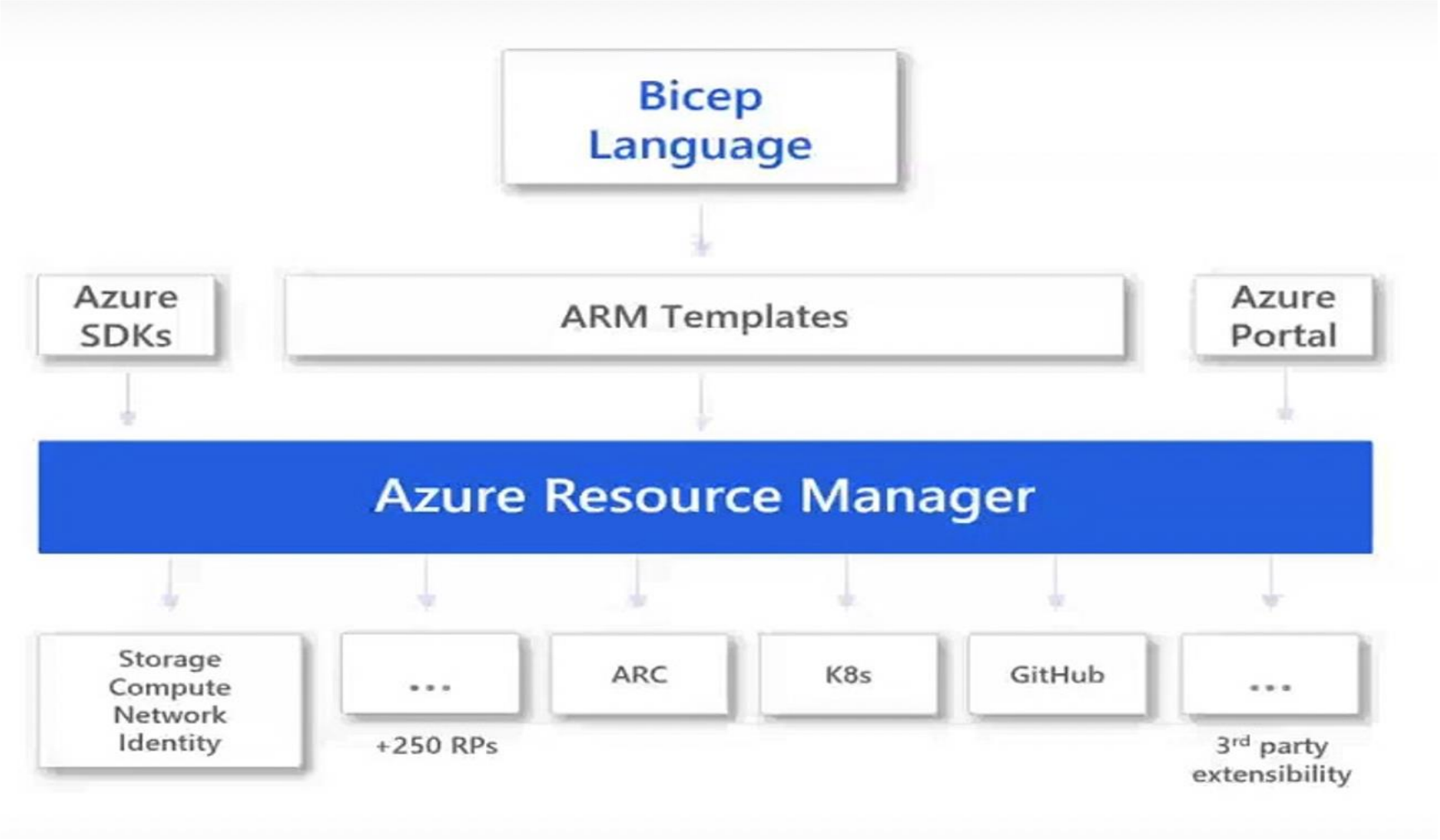
What we will cover



What is Azure Bicep?

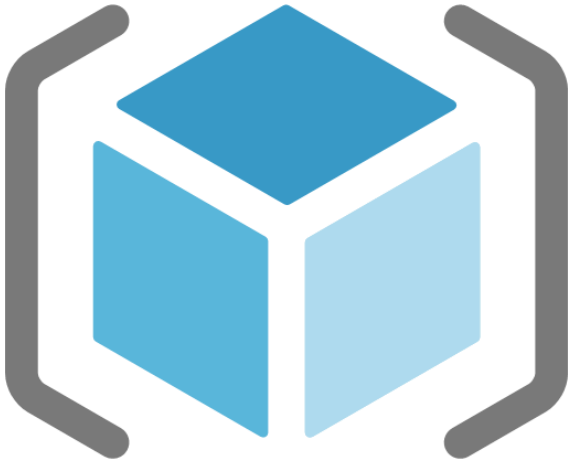
- DSL for deploying Azure resources
- Transparent abstraction over ARM and ARM templates
- Simple way to author Azure resources
- Transpiled to standard ARM Template JSON files

Relationship between Bicep and ARM templates



Why Bicep language?

- Easy to understand and maintain
- Day Zero support
- Transparent abstraction
- Awesome tooling in VS Code
- Clean code syntax
- Code re-use and modularity
- Deep integration with Azure
- Preflight validation
- No state management
- Production support



Azure Bicep evolution from 2020

- Started as alpha version in 2020
- Supported version: v0.3.1
- Latest version: v0.4.1272
- Expected version March: v0.5
- Stable version v1.0 this year ☺

```
PS C:\Work\Learn-Bicep> az bicep list-versions
[
  "v0.4.1272",
  "v0.4.1124",
  "v0.4.1008",
  "v0.4.613",
  "v0.4.451",
  "v0.4.412",
  "v0.4.63",
  "v0.4.1",
  "v0.3.539",
  "v0.3.255",
  "v0.3.126",
  "v0.3.1",
  "v0.2.328",
  "v0.2.317",
  "v0.2.212",
  "v0.2.59",
  "v0.2.14",
  "v0.2.3",
  "v0.1.226-alpha",
  "v0.1.223-alpha",
  "v0.1.37-alpha",
  "v0.1.1-alpha"
]
```

How to start with Azure Bicep?

README.md

AWESOME Azure Bicep 💪

awesome | Markdown Link Checker passing

A curated list of AWESOME blogs, videos, tips-and-tricks, codes, tools, scripts... Hand-picked tips and tricks to help you learn Azure Bicep and get you ready to start deploying Azure resources to your favorite environment(s).

> Community contributions are very welcome! Check out the contribution guide and submit a **Pull Request** with your adds/removes/changes to the content!

Table Of Contents

- Official
  - Learn
  - Docs
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Readme
CC0-1.0 License
34 stars
1 watching
11 forks

Releases

No releases published
Create a new release

Packages

No packages published
Publish your first package

Contributors 4

ElYusubov Elkhan Yusubov
kasunsjc Kasun Rajapakse
lukemurraynz Luke Murray
willsonmatt82

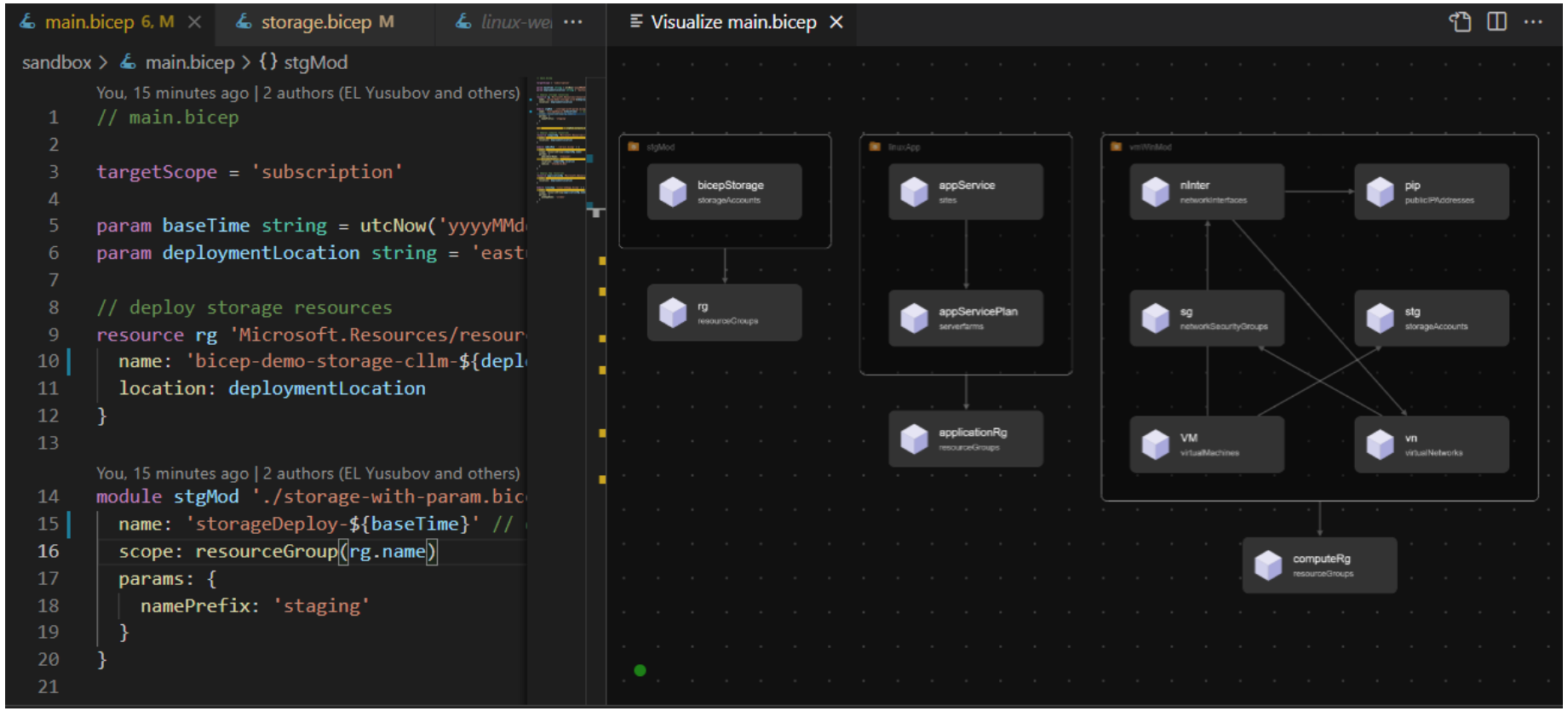
Azure Bicep First Look video course

VS Code & Bicep configuration file

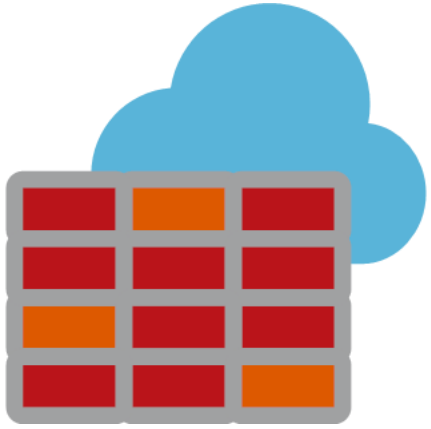
- What is config file ?
- Why you need it ?
- How to add one ?
- What are the default configurations ?

Bicep file visualizer

Visualized Bicep file resources



Azure Bicep IaC best practices



Demos

2-deploy-param-storage.bicep 1, M | bicepconfig.json

{} bicepconfig.json > {} analyzers > {} core > {} rules > {} secure-parameter-default

You, 3 weeks ago | 1 author (You)

```
{
  "analyzers": {
    "core": {
      "enabled": true,
      "verbose": true,
      "rules": {
        "no-hardcoded-env-urls": {
          "level": "warning"
        },
        "no-unused-params": {
          "level": "warning"
        },
        "no-unused-vars": {
          "level": "error"
        },
        "prefer-interpolation": {
          "level": "warning"
        },
        "secure-parameter-default": {
          "level": "error"
        },      You, a month ago • add bicepconfig file
        "simplify-interpolation": {
          "level": "warning"
        }
      }
    }
  }
}
```

TERMINAL DEBUG CONSOLE PROBLEMS 3 OUTPUT

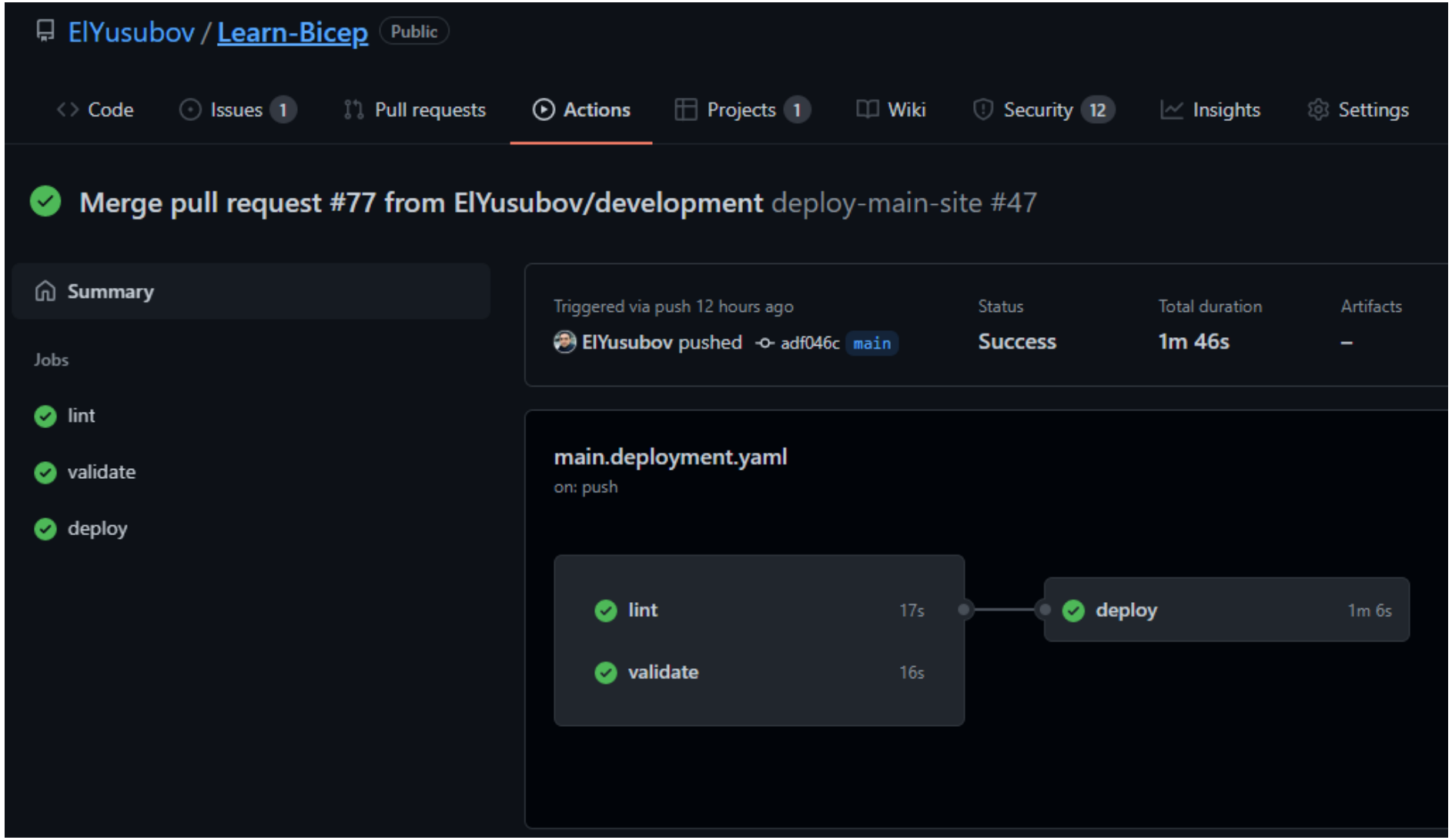
```
@description('Azure region to deploy all resources')
@allowed([
  'eastus'
  'eastus2'
  'westus'
  'wes
])
param
param environment string      You, a minute ago • Uncommitted changes

resource myResourceGroup 'Microsoft.Resources/resourceGroups@2021-04-0
```

Parameter "environment" is declared but never used. bicep core(

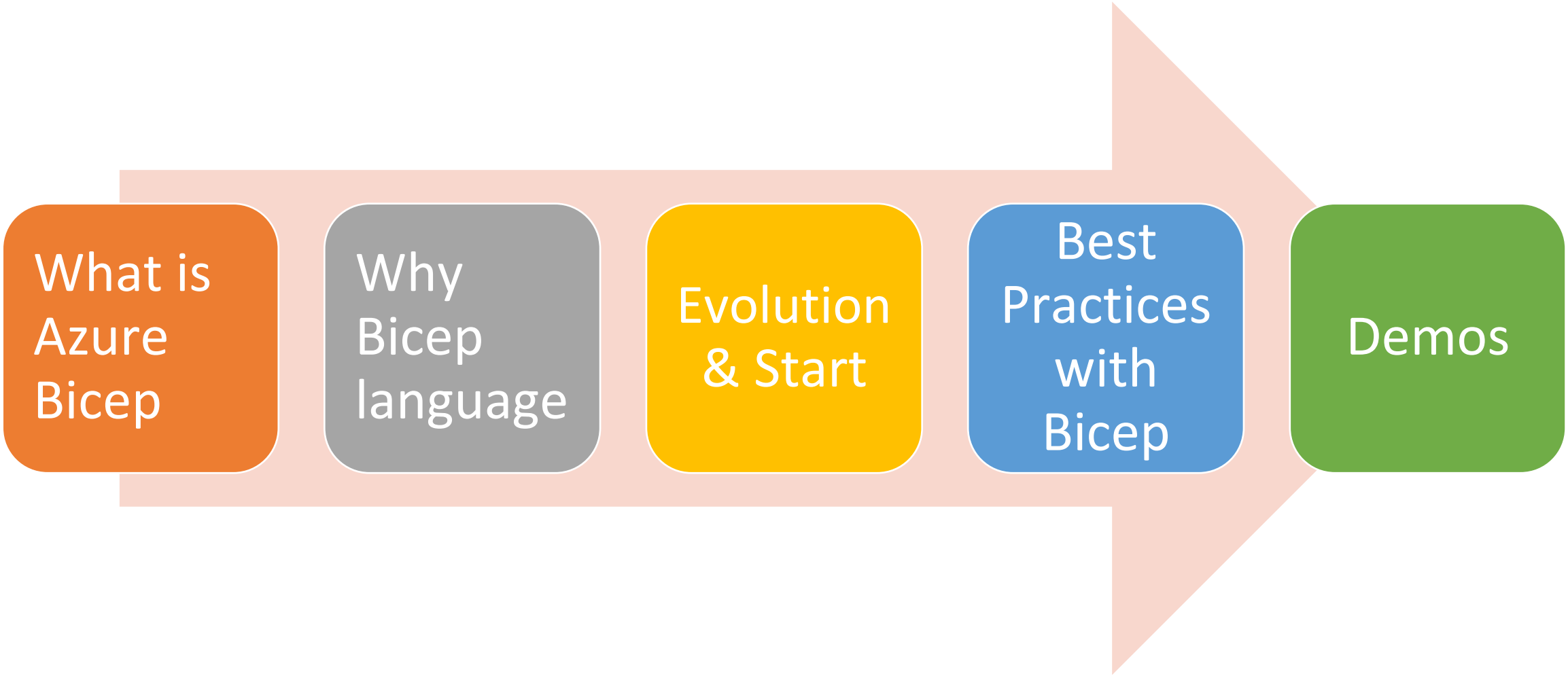
param environment: string

View Problem No quick fixes available

Automating with GitHub workflow



What we covered



What is next?

Learn Bicep – GitHub

Azure Bicep – First Look course

Bicep Project - GitHub

AWESOME Azure Bicep - GitHub

Thank you !

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