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#GLOBALAZURE
2023

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Empowering Efficiency

The benefits of Automation and how to achieve it with Azure

Dimitris Pantazis

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Agenda

Steps in your Automation journey

Azure Services and Automation tools

Steps in your Automation Journey

My own experience…

Manual Processes in Word docs

Time consuming

Prone to errors

Not so smart

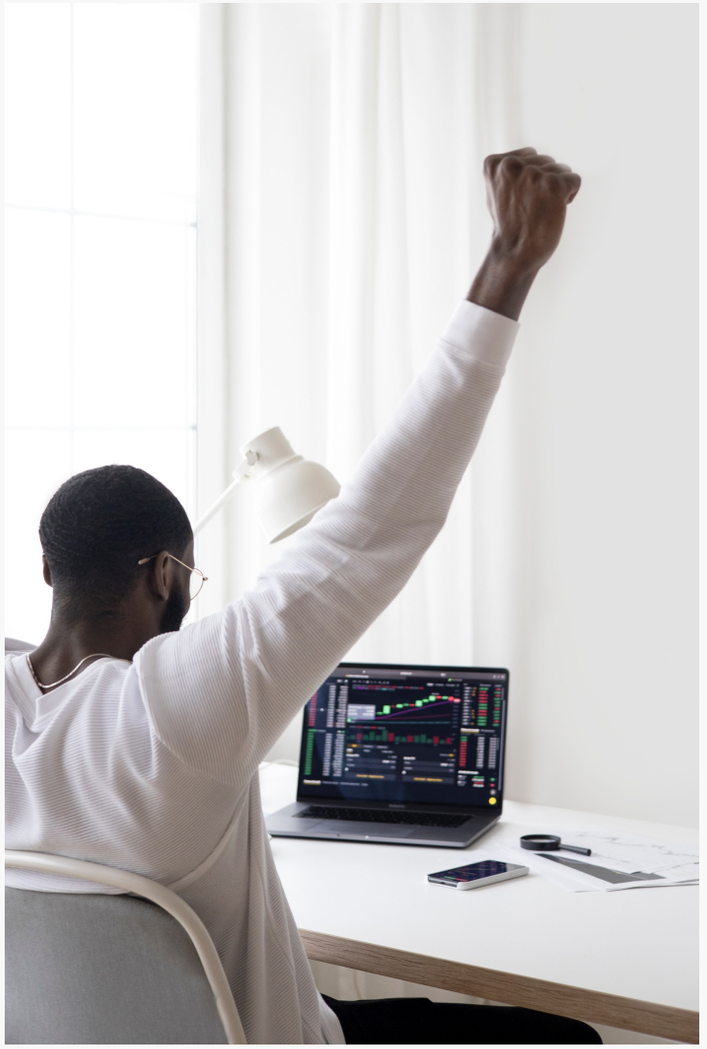
BORING!!!

…and how I worked

- Started to challenge my colleagues
- Picked trivial activities that could be automated easily
- PowerShell ♥♥♥
- Then cloud came into my life

Why should I consider Automation?

- Automation = Code
- Consistency
- Repeatability
- New skills
- FUN!!



Objections to Automation (and how to overcome)

- Don’t know how to start
- Need to deliver my project on time
- Learning curve
- If all tasks are automated what happens with my job?
- The rest of the team is not really into this

How to start…?

- Look for repetitive manual tasks in your routine
- Search on the Internet (e.g. Github)
- Read some code and try to get familiar with the technology
- Try! Try! Try!

How to gain others' attention?

- Look for people that share similar interests
- Tell them about the exciting tools you build
- Ask them to start using your tools and listen to their feedback
- Earn management buy-in
- Expand in more projects

Establish clear metrics that show your work

Examples:

- Saved 1hr of daily manual work
- I can apply changes to 20 servers/hr instead of 5
- Errors reduced by 50%

Make sure to…

- Orientate
- Test and measure
- Stay up to date
- Secure

Automate with Purpose!

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Azure Services

and Automation tools

Az PowerShell / Az CLI

- Imperative syntax
- Used in scripts that execute commands in specific order

Az PowerShell

```
PS /home/dimitris> get-azresourcegroup | select resourcegroupname,location

ResourceGroupName          Location
-----------------          --------
dpantazblog                westeurope
cloud-shell-rg             westeurope
myorg-storage              westeurope
```

Az CLI

```
PS /home/dimitris> az group list --output table
Name                       Location    Status
-------------------------  ----------  ---------
dpantazblog                westeurope  Succeeded
cloud-shell-rg             westeurope  Succeeded
myorg-storage              westeurope  Succeeded
```

Infra as Code

- Declarative syntax
- Store in Git
- Repo becomes infra source of truth
- Pipelines to apply changes
- Bicep / Terraform

Bicep

```
resource pip 'Microsoft.Network/publicIPAddresses@2021-02-01' = {
  name: publicIpName
  location: location
  sku: {
    name: 'Standard'
  }
  properties: {
    publicIPAllocationMethod: 'Static'
  }
}
```

Terraform

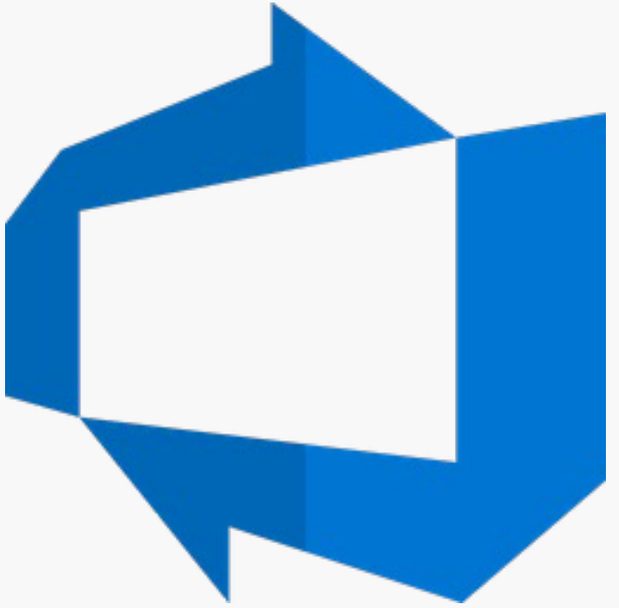
```
# Create public IPs
resource "azurerm_public_ip" "pip" {
  name                = var.pipname
  location            = var.location
  resource_group_name = azurerm_resource_group.rg.name
  allocation_method   = "Static"
  sku                 = "Standard"
}

```

Azure Automation

- Cloud-based automation
- PowerShell / Python
- Configuration Management
- Automated patching

Azure DevOps

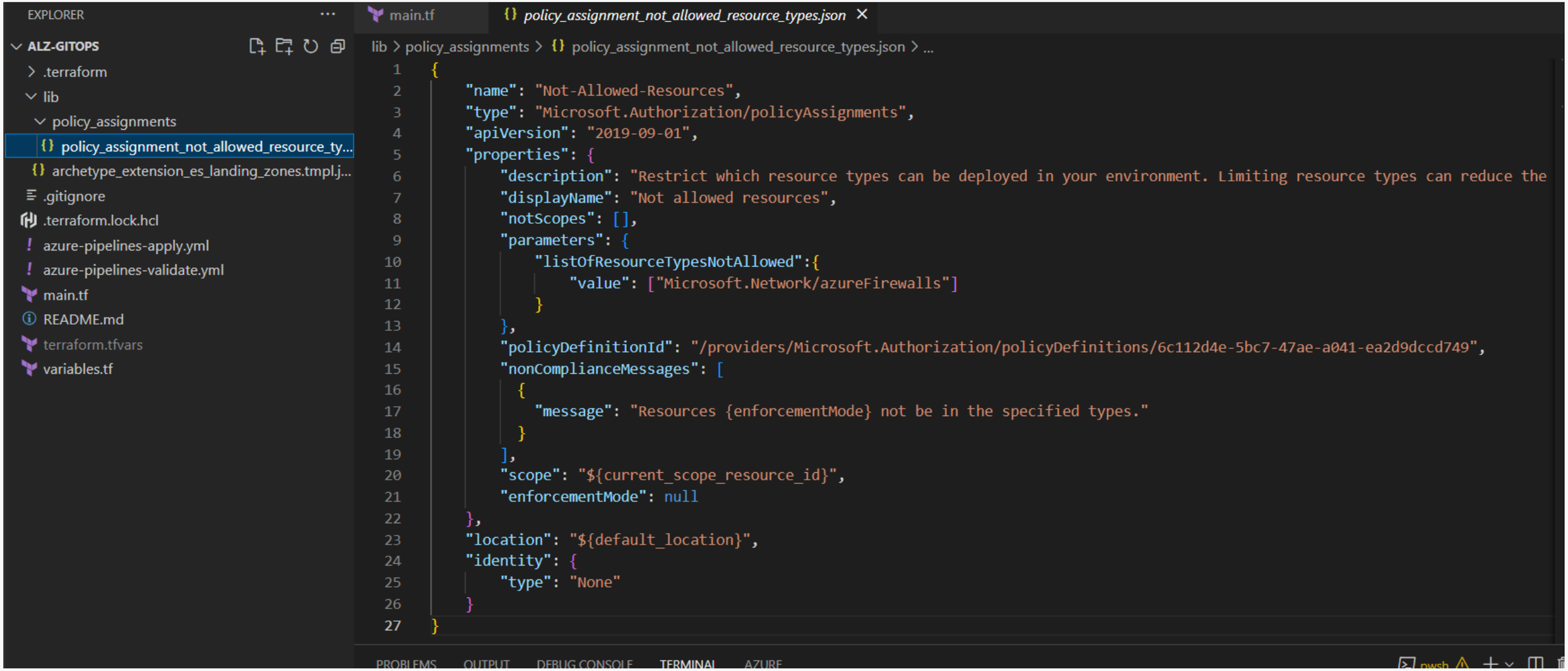
- Complete CI/CD solution
- Code / Build / Test / Deploy
- Project Management
- Store your code in repos
- Create pipelines to deploy automation



Azure Policy

- Compliance
- Consistency
- Deploy If Not Exists / Modify
- Policy as Code
- Use pipelines to test and then deploy
- Azure Landing Zone Policies

Policy as Code

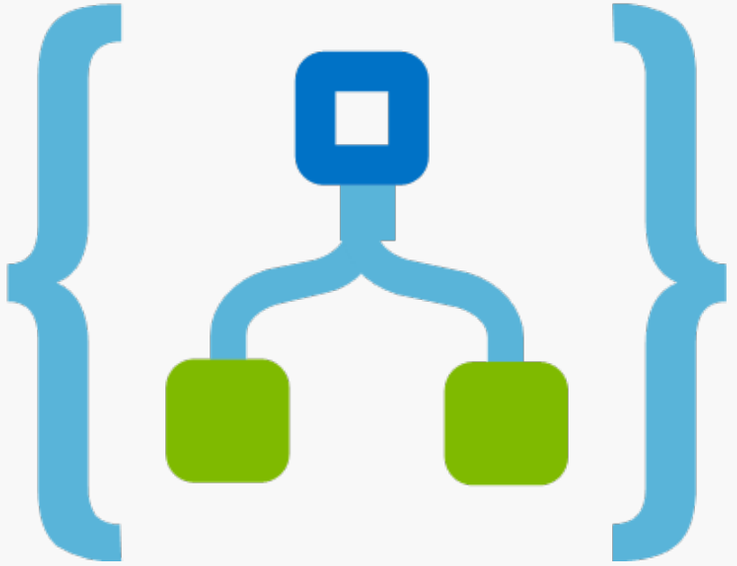


Azure Functions

- Small pieces of code
- Run scripts in the cloud
- Serverless
- Multiple programming languages
- Input / Process / Output

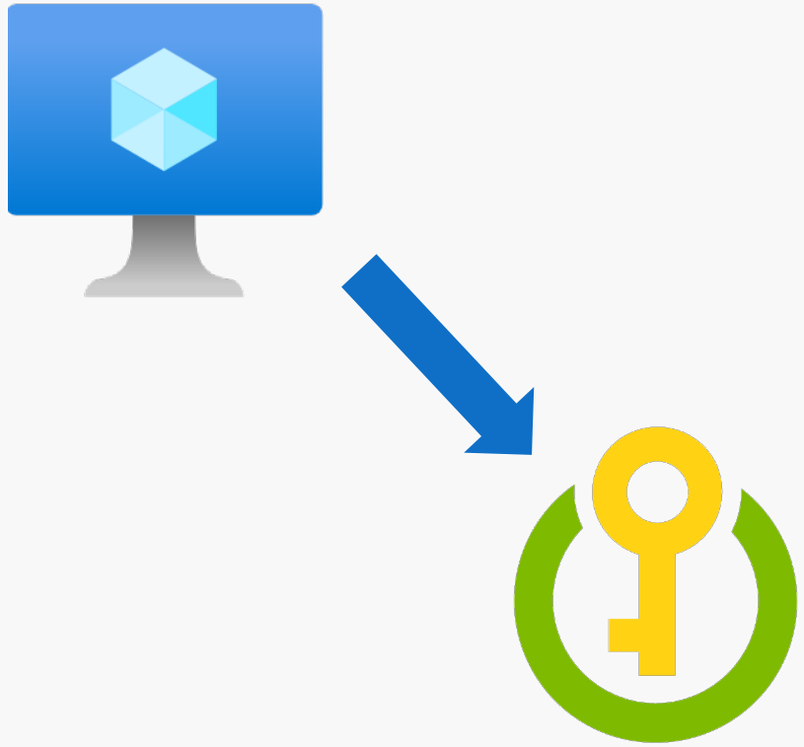
Azure Logic Apps

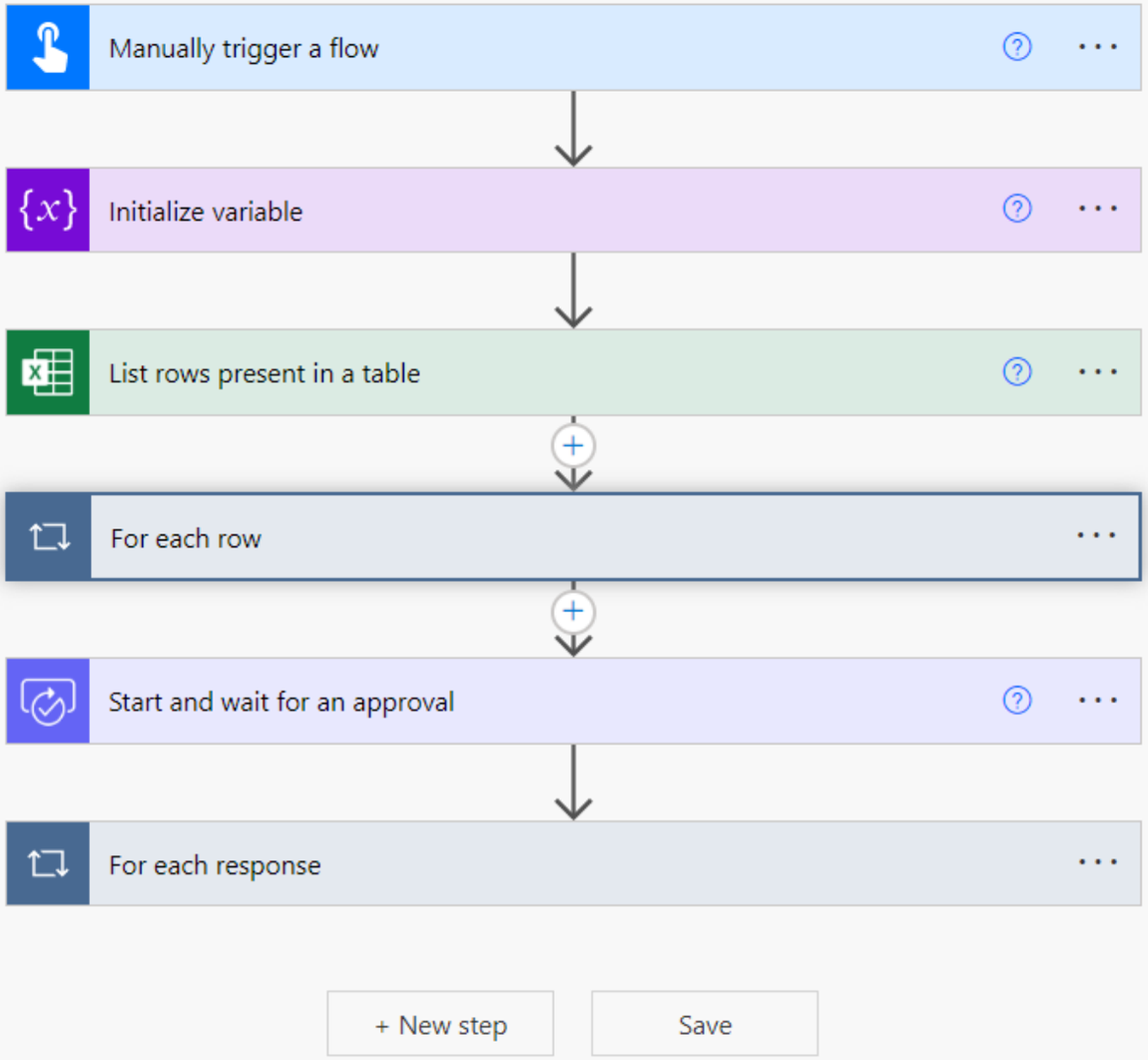
- Workflow based automation
- Apply business logic
- Endlessly integrate with internal/external systems
- Trigger based schedules/events or manually



Managed Identities

- System-assigned
- User-assigned
- Allow Azure Services to authenticate against other services without passwords
- RBAC compatible




Manually trigger a flow
Initialize variable
List rows present in a table
For each row
Start and wait for an approval
For each response
+ New step
Save

Azure Monitor

- Configure alerts
- Create tickets in your ITSM
- Respond to alerts with automation
- Autoscale
- Call a function or an Azure Automation runbook

Azure Site Recovery

- Automate your disaster recovery
- Recovery plans
- Failover your VMs in the right order
- Save costs and make your DR process consistent

Microsoft Sentinel

- SOAR capabilities
- Automate your response to security incidents
- Create automation rules
- Execute playbooks
- Huge collection available on Github

Closing

Final thoughts

- Find the ideal starting point
- Identify the tooling that fits better
- Store code in repo
- Validate
- Continuously Improve

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