



Infrastructure as Code con Pulumi

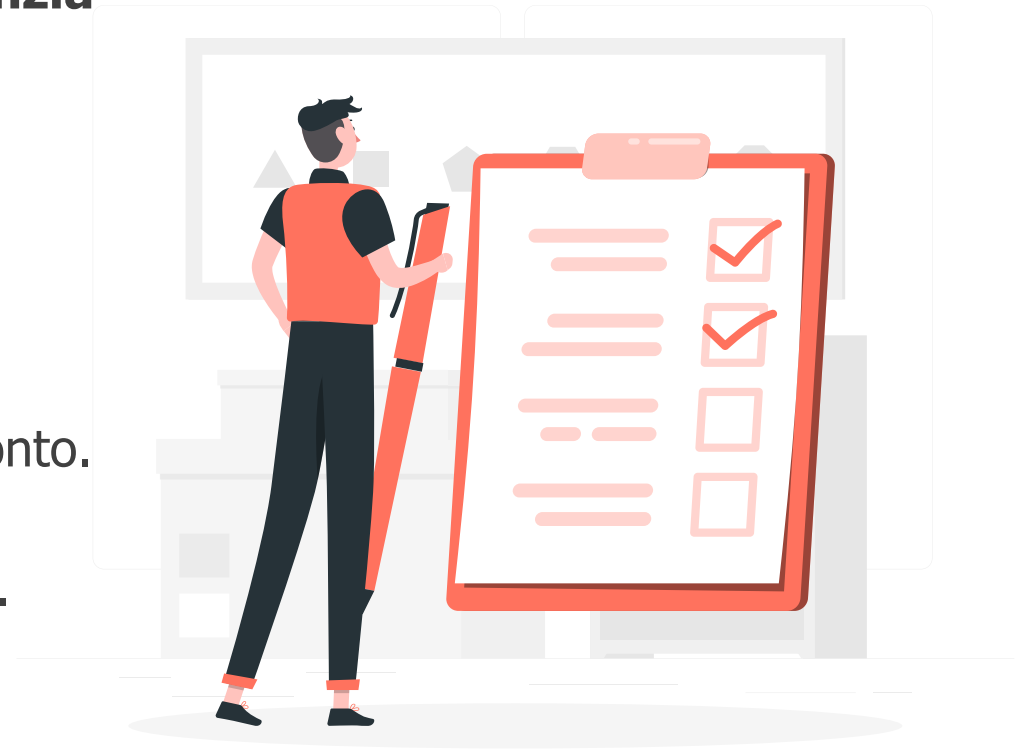
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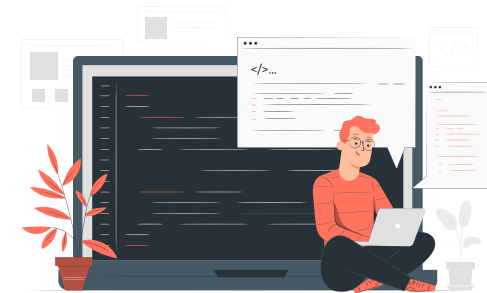
- ❑ Cos'è Pulumi e **come si differenzia** rispetto ad altri IAC tools?.
- ❑ **Concetti base** da conoscere.
- ❑ **Come partire** con Pulumi.
- ❑ **Pulumi vs. Terraform** a confronto.
- ❑ **Licenza & Pricing** del prodotto.



«Another Infrastructure as Code tool»

..ma **per i DEV**

- Gestisci l'infrastruttura con il linguaggio che conosci.
- Innesta la tua logica, sfruttando paradigmi e riutilizza codice già scritto.
- Collabora da subito con il resto del team.

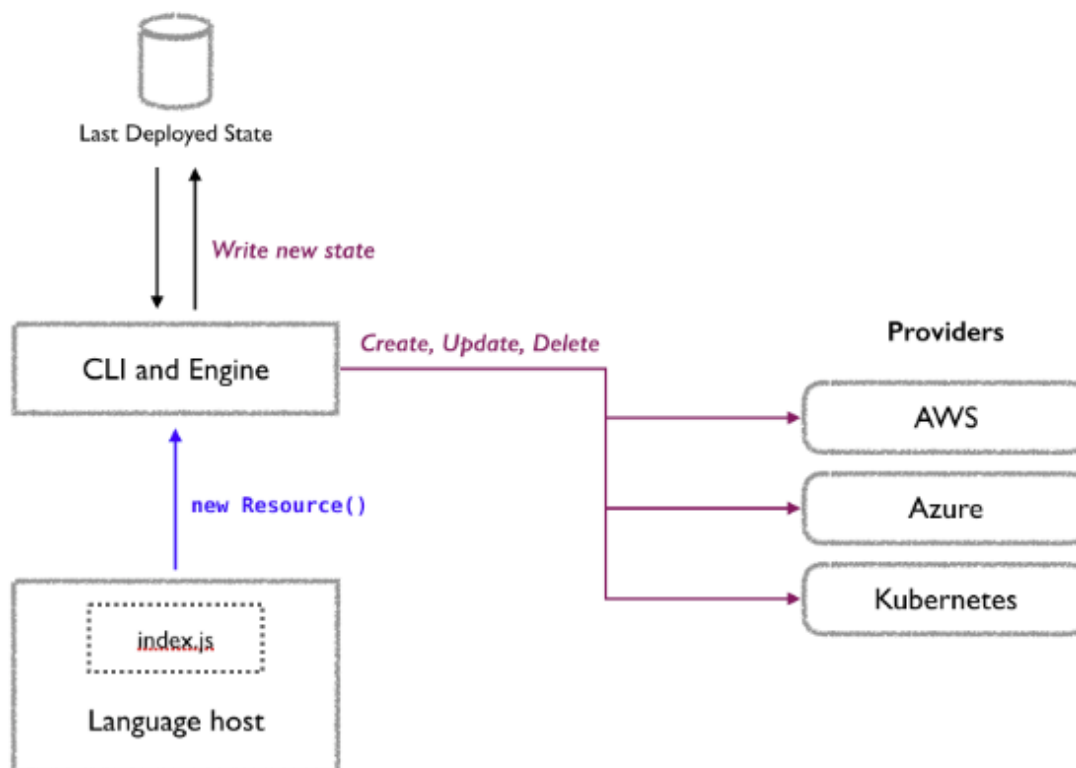


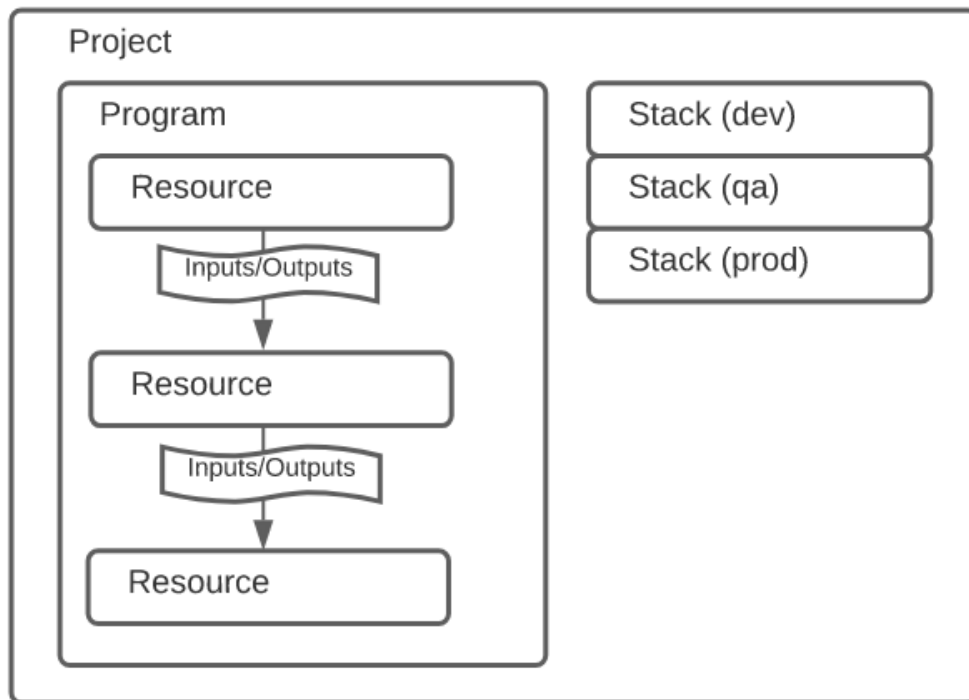
- Utilizza l'ambiente di sviluppo (IDE) di tutti i giorni



- Applica le best practices della programmazione all'infrastruttura (ex unit e integration test)

Come Lavora





- ❑ **Progetto:** definisce un singolo gruppo di deploy e contiene la definizione dell'infrastruttura.
- ❑ **Stack:** rappresenta una specifica configurazione (generalmente riconducibile all'environment)
- ❑ **Stato:** Pulumi mantiene lo stato dell'infrastruttura online e lo confronta con quello desiderato.

Come partire..



```
//installa la CLI  
> choco install pulumi  
  
//destinazione progetto  
> mkdir xe.pulumi && cd xe.pulumi  
  
//crea il tuo primo programma Pulumi specificando provider e linguaggio  
> pulumi new azure-csharp
```

```
using Pulumi;
using Pulumi.AzureNative.Resources;

return await Pulumi.Deployment.RunAsync(() =>
{
    // Crea un Resource Group
    var resourceGroup = new ResourceGroup("resourceGroup");

    // Crea uno Storage Account
    var storageAccount = new StorageAccount("sa", new StorageAccountArgs
    {
        ResourceGroupName = resourceGroup.Name,
        Sku = new SkuArgs
        {
            Name = SkuName.Standard_LRS
        },
        Kind = Kind.StorageV2
    });

    ...
});
```


Deploy (Parte 1)



```
> pulumi up
```

Previewing **update** (dev):

	Type	Name	Plan
+	pulumi:pulumi:Stack	xe.pulumi-dev	create
+	└─ azure-native:resources:ResourceGroup	resourceGroup	create
+	└─ azure-native:storage:StorageAccount	sa	create

Resources:

+ 3 to create

Do you want to perform **this** update?

yes

```
> no
```

details

Deploy (Parte 2)



Pulumi

Star 15,357 Slack Docs Registry A

ORGANIZATION: cirio89

Dashboard Stacks Favorites Settings General Integrations

Stacks / xe.pulumi / dev

Status: Update #2 succeeded 2 minutes ago

Overview README Activity Resources 4 Settings

Resources

All resources Search for resources

Resources: 4

Type	Name ↑	Status
pulumi:providers:azure-native	default_1_97_0	
azure-native:resources:ResourceGroup	resourceGroup	
azure-native:storage:StorageAccount	sa	
pulumi:pulumi:Stack	xe.pulumi-dev	

Home > Resource groups >

Resource groups Hunext Software srl

+ Create Manage view ...

Filter for any field...

Name ↑

resourceGroup15303502

Overview Activity log Access control (IAM) Tags Resource visualizer Events Settings Deployments Security

resourceGroup15303502 Resource group

Search + Create Manage view Delete resource group Refresh Export to CSV Open query Assign tags Move Delete

Essentials

Resources Recommendations

Filter for any field... Type equals all Location equals all Add filter

Showing 1 to 1 of 1 records. Show hidden types

No grouping List view

Name ↑	Type ↑	Location ↑
sa0dc60fd8	Storage account	West US 2

Pulumi vs. Terraform (maggiori differenze)

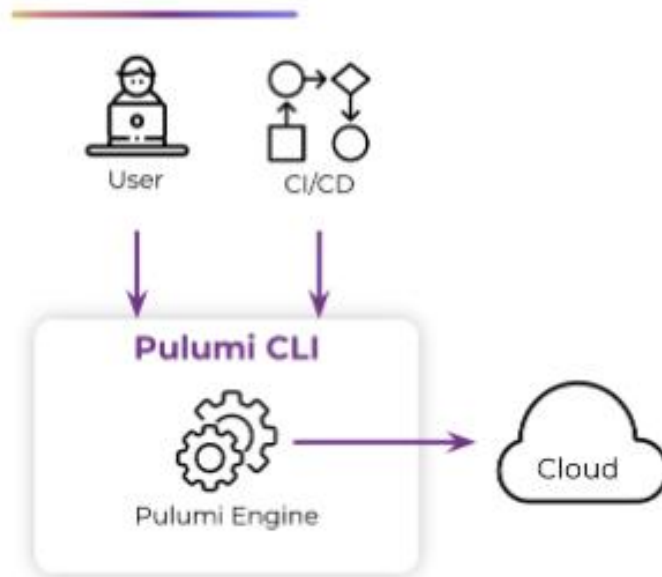


Feature	Pulumi	Terraform
<u>Linguaggio</u>	Python, TypeScript, JavaScript, Go, C#, F#, Java, YAML	Proprietario (HCL)
<u>Supporto a provider dinamici</u>	Si	No
<u>Documentazione & stabilità</u>	Docs non sempre aggiornata. Tool più recente e in grande crescita	Completa e un set di risorse molto ampio
<u>Includi nella tua soluzione</u>	Includi Pulumi nelle tue app senza la CLI grazie ad Automation API.	No
<u>Gestione sicura dei secret</u>	Si	No, ma possono essere salvati in Secret Vault dedicati.

Avanzate - Automation API

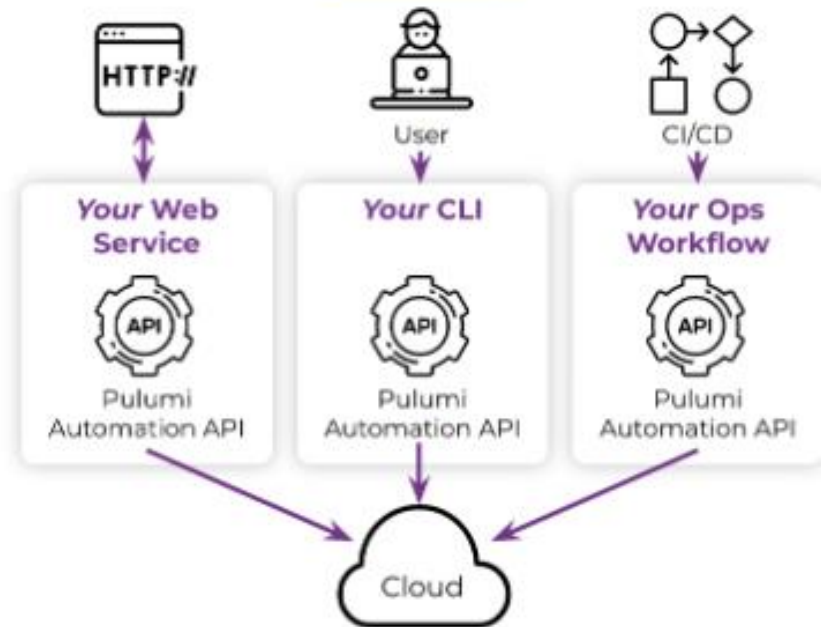


Deploy Your Workflow



Automation API

NEW!





- ❑ Azure Classic Resource Provider : basato sul provider Terraform azurem. Pienamente supportato, ma non più consigliato.
- ❑ Azure Native Provider: basato su Azure Resource Manager API , consente di accedere alle nuove risorse in tempi molto più brevi

<https://github.com/pulumi/pulumi-azure>



Licenza & Pricing

Individual	Team	Enterprise	Business Critical
Start using infrastructure as code for individual projects.	The basics of infrastructure as code for teams wanting to ship faster.	Full cloud engineering capabilities for large teams in production.	Advanced security, compliance, and hosting for mission-critical needs.
Always free	\$1 / 2000 credits 150k free credits included	Custom Contact us for a demo & quote.	Custom Contact us for a demo & quote.
Everything to get started :	Everything in Individual , plus:	Everything in Team , plus:	Everything in Enterprise , plus:
<ul style="list-style-type: none">✓ 1 member✓ State & secret management✓ Unlimited updates✓ Hosted deployments ⓘ	<ul style="list-style-type: none">✓ Up to 10 members✓ 5 concurrent updates✓ Unlimited stacks✓ CI/CD Assistant✓ Webhooks	<ul style="list-style-type: none">✓ Unlimited members & teams✓ Role-based access control (RBAC)✓ SAML/SSO✓ Commitment discounts✓ Existing IaC conversion included✓ 12 × 5 support included	<ul style="list-style-type: none">✓ Organization policies & enforcement✓ Self-hosting available✓ Automatic group & user sync (SCIM)✓ Exportable audit logs✓ 24 × 7 support included✓ Private Slack channel✓ Training, onboarding & workshops✓ Professional services

Gratuito e open source per uso personale, fee in base al consumo sulle risorse gestite con Pulumi per i piani Teams & Enterprise.

«Quello che si paga è lo storage e la gestione dello stato»