



IaC and Network Insights API

ACE Team



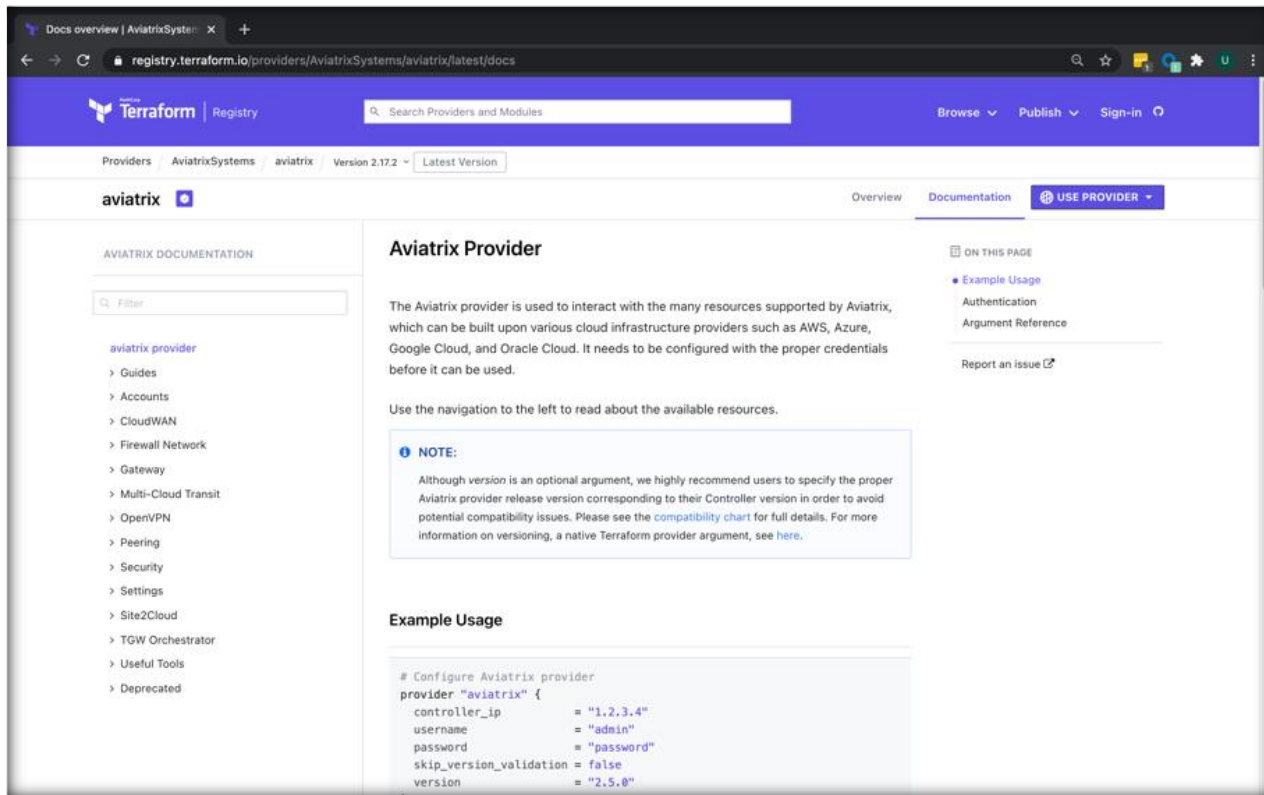
Infrastructure as Code

What it is

- Use Infrastructure as Code to provision and manage any cloud, infrastructure, or service
- Write declarative configuration files – define desired state
- Plan and predict changes
- Create reproducible infrastructure – if resource already exists, it won't recreate it
- Maintains knowledge of resources in a database called **State**
 - State maps config to real world

Aviatrix Terraform Provider

- Multi-lingual entity responsible for API interactions with CSPs
- Exposes resources in those CSPs for any account/subscription that has been onboarded
- Feature parity with Controller code



The screenshot shows the Terraform Registry page for the Aviatrix Provider. The page is titled "Aviatrix Provider" and includes a search bar, navigation tabs for "Providers", "AviatrixSystems", and "aviatrix", and a "Latest Version" button. The main content area is divided into two sections: "Aviatrix Documentation" on the left and "Aviatrix Provider" on the right. The "Aviatrix Documentation" section contains a list of links for various resources, including Guides, Accounts, CloudWAN, Firewall Network, Gateway, Multi-Cloud Transit, OpenVPN, Peering, Security, Settings, Site2Cloud, TGW Orchestrator, Useful Tools, and Deprecated. The "Aviatrix Provider" section contains a description of the provider, a "NOTE" about versioning, and an "Example Usage" section with a Terraform configuration snippet.

Aviatrix Provider

The Aviatrix provider is used to interact with the many resources supported by Aviatrix, which can be built upon various cloud infrastructure providers such as AWS, Azure, Google Cloud, and Oracle Cloud. It needs to be configured with the proper credentials before it can be used.

Use the navigation to the left to read about the available resources.

NOTE:

Although version is an optional argument, we highly recommend users to specify the proper Aviatrix provider release version corresponding to their Controller version in order to avoid potential compatibility issues. Please see the [compatibility chart](#) for full details. For more information on versioning, a native Terraform provider argument, see [here](#).

Example Usage

```
# Configure Aviatrix provider
provider "aviatrix" {
  controller_ip    = "1.2.3.4"
  username         = "admin"
  password         = "password"
  skip_version_validation = false
  version          = "2.5.0"
}
```

Aviatrix Terraform Resources – Examples

- # Create an Aviatrix AWS Gateway

```
resource "aviatrix_gateway"
"test_gateway_aws" {

    cloud_type    = 1

    account_name = "devops-aws"

    gw_name      = "avtx-gw-1"
    vpc_id       = "vpc-abcdef"
    vpc_reg      = "us-west-1"
    gw_size      = "t2.micro"

    subnet       = "10.0.0.0/24"

}
```

- # Create an Aviatrix Azure Gateway

```
resource "aviatrix_gateway"
"test_gateway_azure" {

    cloud_type    = 8

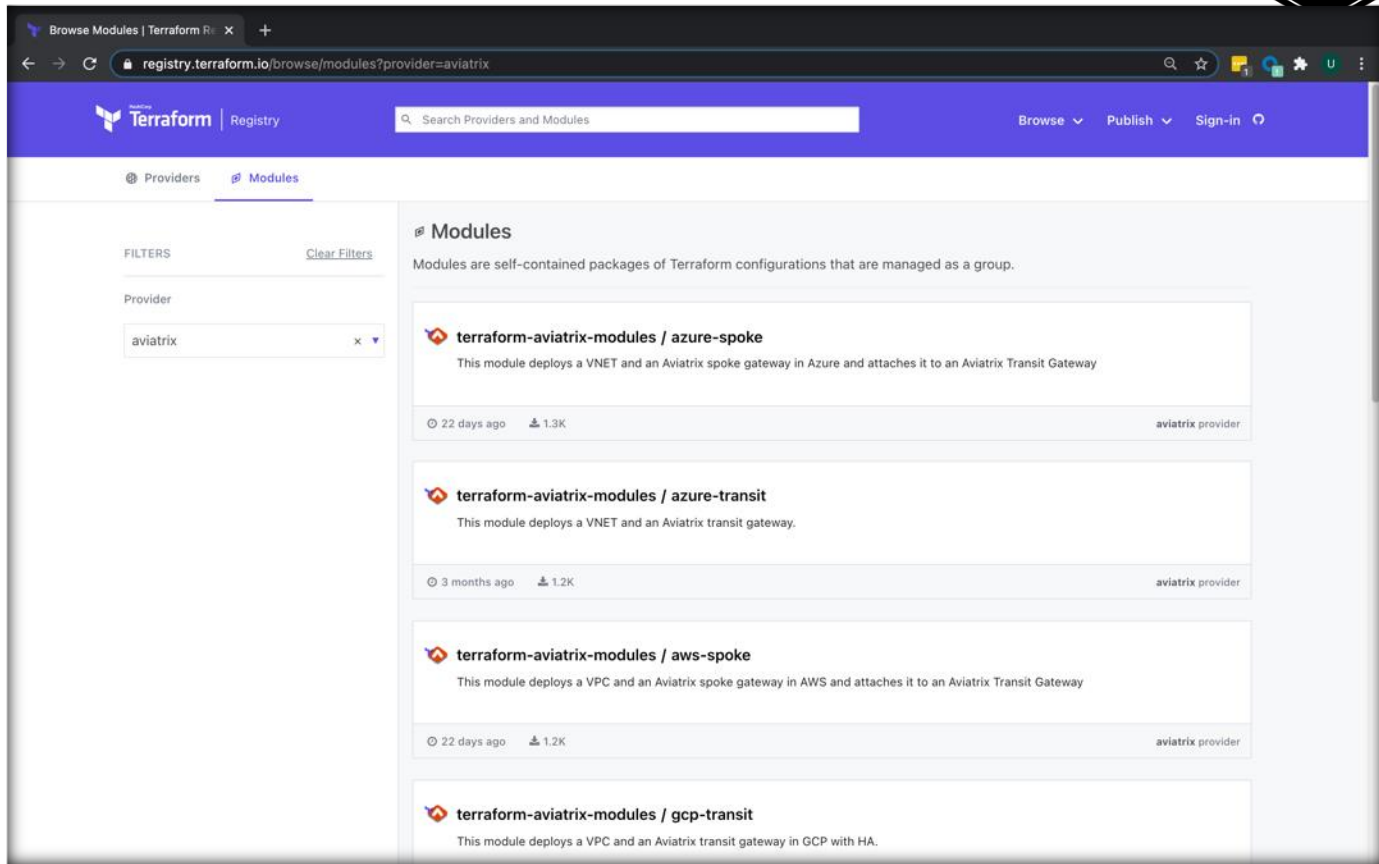
    account_name = "devops-azure"

    gw_name      = "avtx-gw-azure"
    vpc_id       = "gateway:test-gw-123"
    vpc_reg      = "West US"
    gw_size      = "Standard_D2"
    subnet       = "10.13.0.0/24"

}
```

Aviatrix Terraform Modules

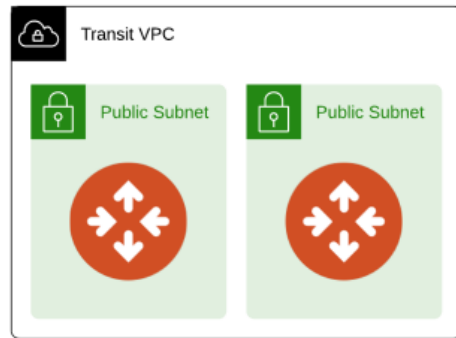
- **“Repeatable++”**
- Similar to the concepts of libraries, packages, or modules found in most programming languages
- Provide many of the same benefits
- ~10X reduction in lines of code
- Can be found on Terraform Registry



Aviatrix Terraform Module – Example

- # Create a VPC and a set of Aviatrix transit gateways.

```
module "transit_aws_1" {  
    source  = "terraform-aviatrix-modules/mc-transit/aviatrix"  
    version = "1.1.2"  
    cloud   = "aws"  
    cidr    = "10.1.0.0/20"  
    region  = "eu-west-1"  
    account = "AWS-account"  
}  
  
ha_gw set to true by default
```

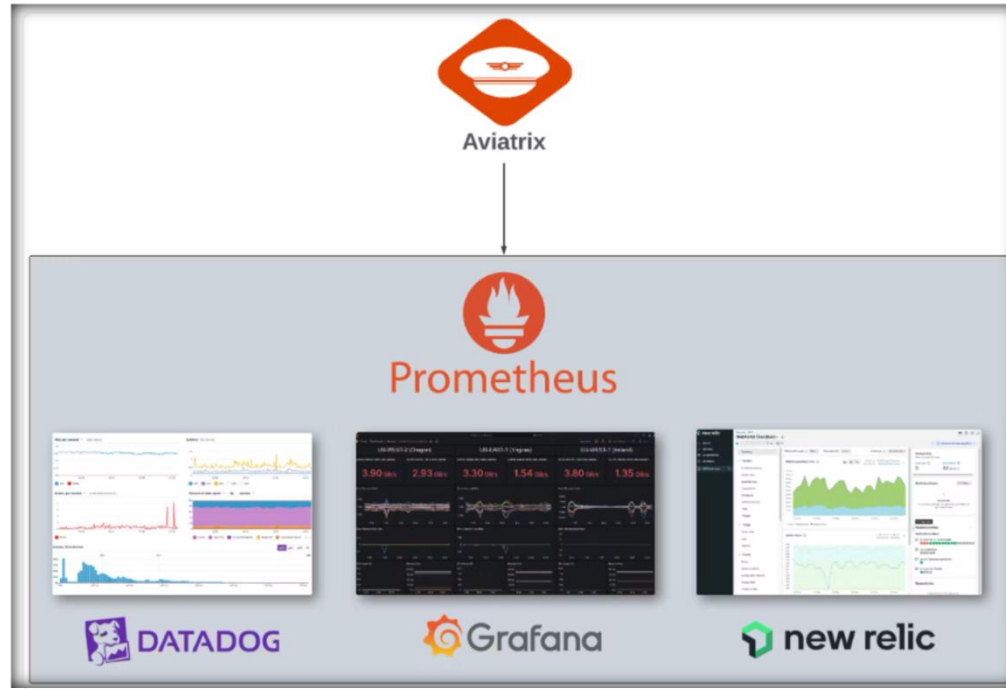




Network Insights API

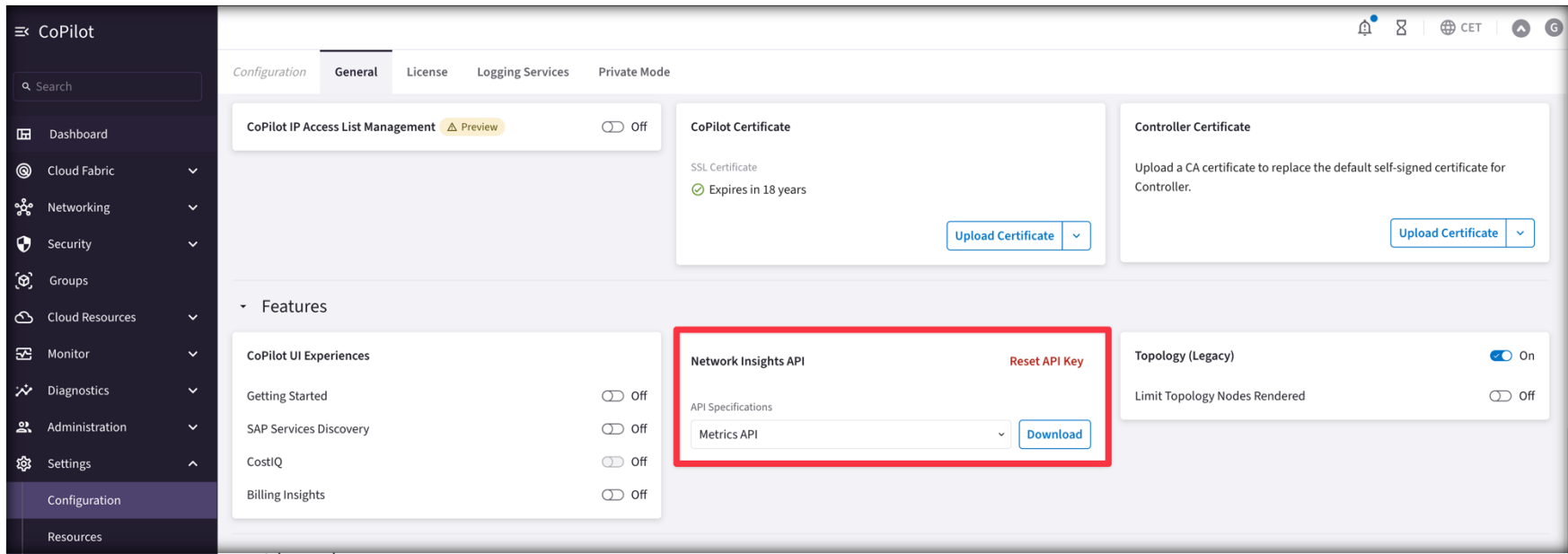
Network Insights API (part.1)

- The Aviatrix Network Insights API allows you to retrieve network metric and status data across your Aviatrix data plane. Using the metric and status APIs, you can integrate with **third-party tools** for data analysis and visualization of the performance and health of your Aviatrix-managed resources. The APIs also support data retention for compliance.



Network Insights API (part.2)

- The Network Insights API supports **Prometheus** and JSON formats. All data transmissions are encrypted using industry-standard protocols.
- An **API key** is used to authenticate requests for your Aviatrix services.
 - The Aviatrix API uses port 443, the same port as the CoPilot UI. Ensure that port 443 is accessible and not restricted by any Security Groups.



The screenshot displays the Aviatrix CoPilot Configuration interface. The left sidebar contains navigation links: CoPilot, Search, Dashboard, Cloud Fabric, Networking, Security, Groups, Cloud Resources, Monitor, Diagnostics, Administration, Settings, Configuration (selected), and Resources. The main content area is titled 'Configuration' and includes tabs for General, License, Logging Services, and Private Mode. The 'General' tab is active, showing several configuration sections:

- CoPilot IP Access List Management**: A toggle switch is currently 'Off'.
- CoPilot Certificate**: Shows 'SSL Certificate' with a status 'Expires in 18 years' and an 'Upload Certificate' button.
- Controller Certificate**: Includes instructions to 'Upload a CA certificate to replace the default self-signed certificate for Controller' and an 'Upload Certificate' button.
- Features**: A section containing several toggle switches:
 - CoPilot UI Experiences**: Includes 'Getting Started', 'SAP Services Discovery', 'CostIQ', and 'Billing Insights', all currently 'Off'.
 - Network Insights API**: This section is highlighted with a red border. It includes a 'Reset API Key' link, 'API Specifications' with a dropdown menu set to 'Metrics API', and a 'Download' button.
 - Topology (Legacy)**: A toggle switch is currently 'On'.
 - Limit Topology Nodes Rendered**: A toggle switch is currently 'Off'.



Next: Lab 11 - Terraform and
Network Insights API