



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 a browser window displaying the Terraform Registry at registry.terraform.io/providers/AviatrixSystems/aviatrix/latest/docs. The page title is "Docs overview | AviatrixSystem". The URL bar shows the full URL. The top navigation bar includes "Browse", "Publish", and "Sign-in". The main content area is titled "Aviatrix Provider". It contains a brief description: "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." Below this is a 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](#)." On the left sidebar, there is a navigation tree under "AVIATRIX DOCUMENTATION" with sections like "aviatrix provider", "Guides", "Accounts", "CloudWAN", etc. At the bottom, there is a "Example Usage" section with a code snippet:

```
# 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

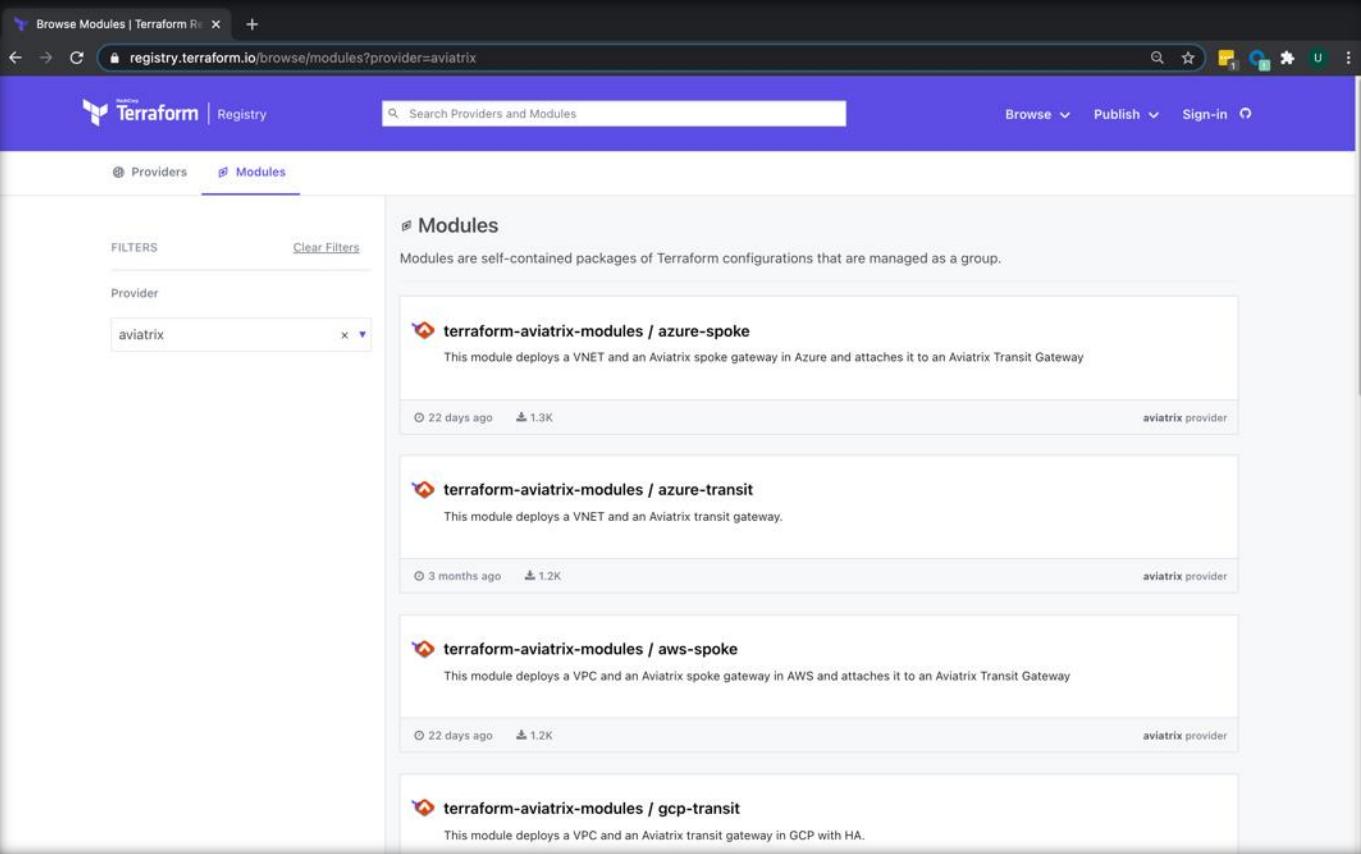
```
resource "aviatrix_gateway" "test_gateway_aws" {  
  
    cloud_type      = 1  
  
    account_name   = "devops-aws"  
  
    gw_name        = "avtx-gw-1"  
    vpc_id         = "vpc-abcdef"  
    vpc_reg        = "us-west-1"  
    gw_size        = "t2.micro"  
  
    subnet         = "10.0.0.0/24"  
  
}
```

- # 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



The screenshot shows the Terraform Registry interface with the search bar set to "registry.terraform.io/browse/modules?provider=aviatrix". The "Modules" tab is selected. A filter for "Provider" is applied, showing "aviatrix". The results list four modules:

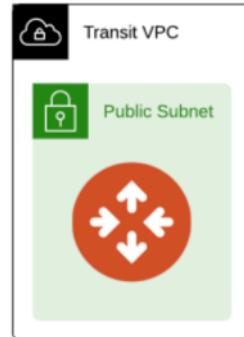
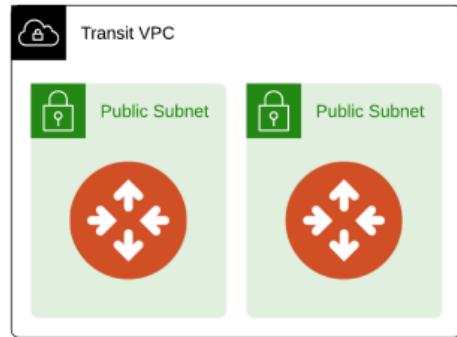
- terraform-aviatrix-modules / azure-spoke**
This module deploys a VNET and an Aviatrix spoke gateway in Azure and attaches it to an Aviatrix Transit Gateway.
22 days ago · 1.3K · aviatrix provider
- terraform-aviatrix-modules / azure-transit**
This module deploys a VNET and an Aviatrix transit gateway.
3 months ago · 1.2K · aviatrix provider
- terraform-aviatrix-modules / aws-spoke**
This module deploys a VPC and an Aviatrix spoke gateway in AWS and attaches it to an Aviatrix Transit Gateway.
22 days ago · 1.2K · aviatrix provider
- terraform-aviatrix-modules / gcp-transit**
This module deploys a VPC and an Aviatrix transit gateway in GCP with HA.



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
```

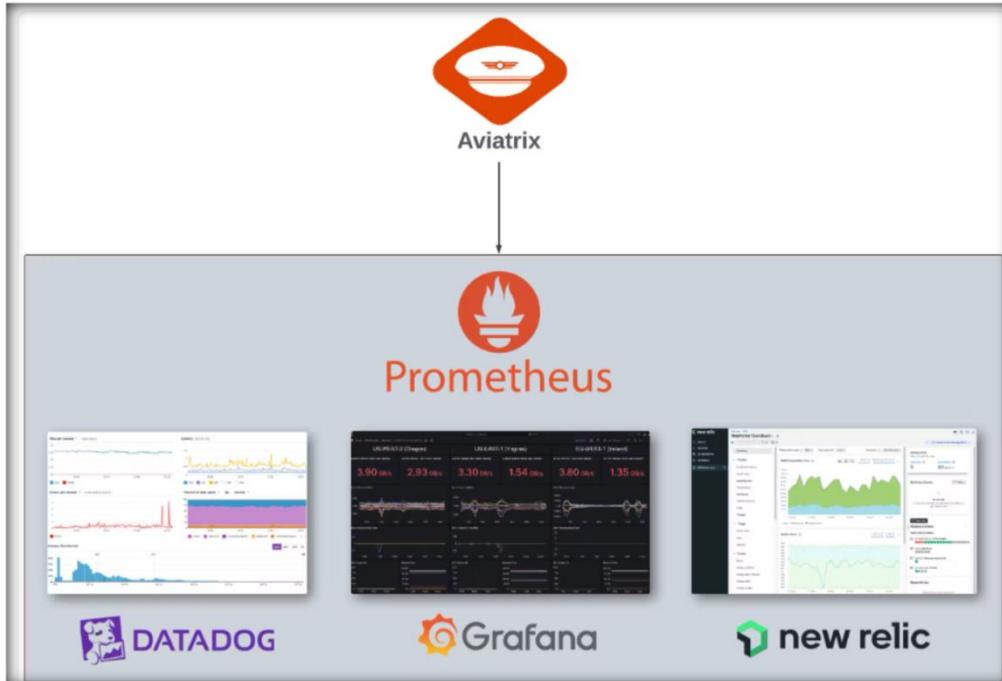




Network Insights API

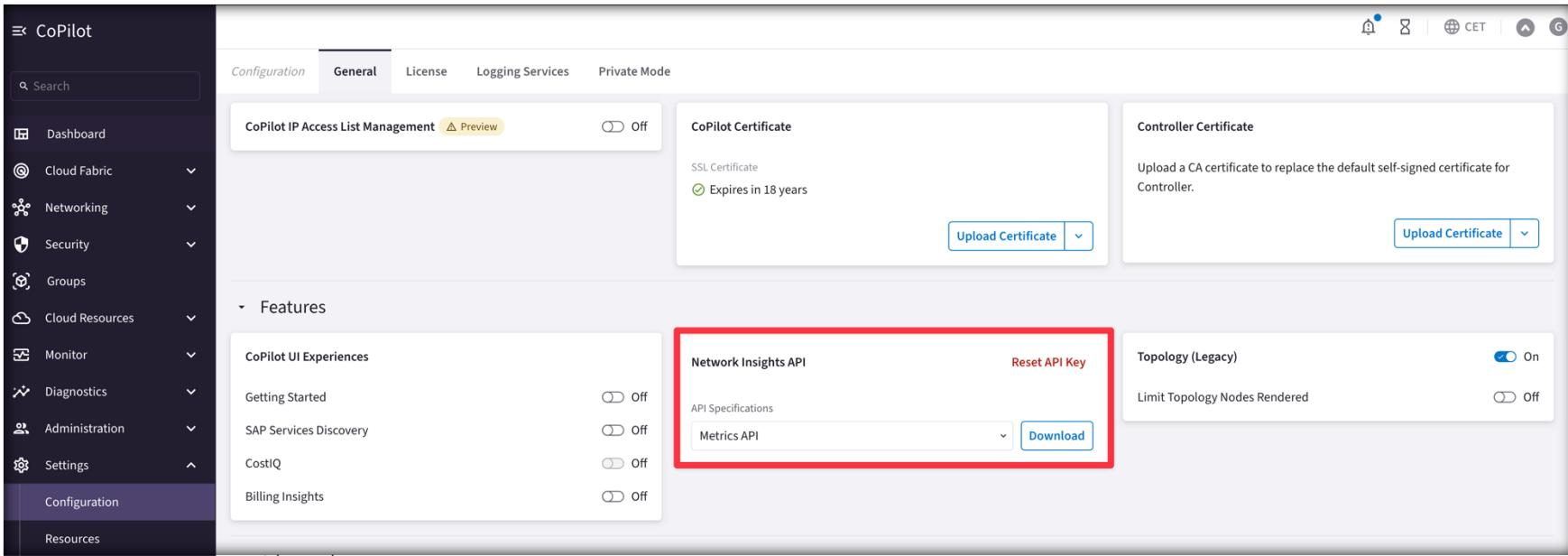
Network Insights API (part.1)

- 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 shows the Aviatrix CoPilot UI interface. The left sidebar contains navigation links for Dashboard, Cloud Fabric, Networking, Security, Groups, Cloud Resources, Monitor, Diagnostics, Administration, Settings, Configuration, and Resources. The main content area has tabs for Configuration, General (selected), License, Logging Services, and Private Mode. Under the General tab, there are sections for CoPilot IP Access List Management (disabled), CoPilot Certificate (SSL Certificate, valid for 18 years), Controller Certificate (upload CA certificate), and Features. The Features section includes CoPilot UI Experiences (Getting Started, SAP Services Discovery, CostIQ, Billing Insights, all off), Network Insights API (Metrics API selected, Download button), and Topology (Legacy) (Topology Nodes Rendered off). The Network Insights API section is highlighted with a red box.



Next: Lab 11 - Terraform and Network Insights API