

# Enable Dynamic Firewalling

## The Challenge

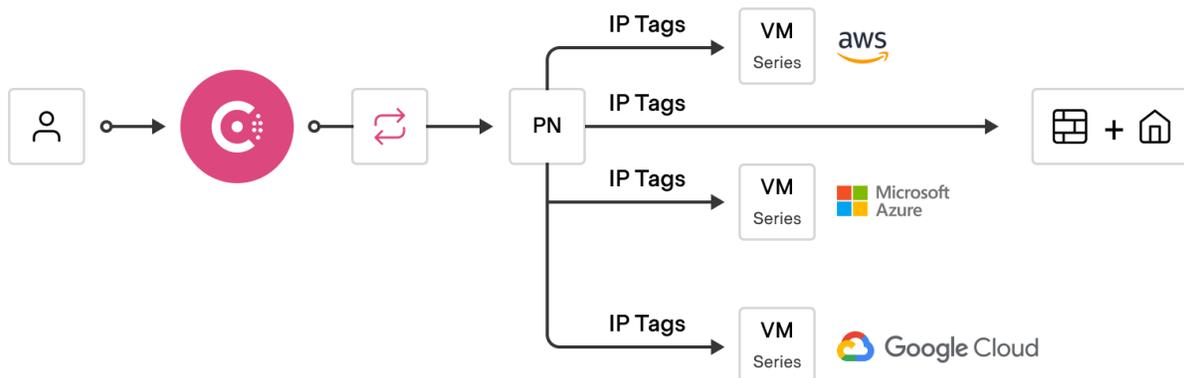
Organizations are looking for greater agility and scale for their application deployments. Application teams are adopting new practices and technology such as DevOps, Infrastructure-as-Code, and microservices architectures with a focus on enabling self-service and faster application deployment.

With that comes increased complexity for managing the security policies and compliance for those applications. This is exacerbated by the impedance mis-match with the security teams which use manual processes which are much slower. Organizations like HashiCorp and Palo Alto Networks are partnering together to help address this challenge and enable faster, more secure application deployments.

## Product Integration

Palo Alto Networks Terraform modules for Consul-Terraform-Sync enable network infrastructure automation (NIA) for security & network operators to dynamically configure address groups and dynamic address tags. As new services are registered or de-registered from the Consul catalog, Consul-Terraform-Sync updates address groups and dynamic address tags for the relevant endpoints on PAN-OS based NGFW devices.

Consul-Terraform-Sync is also designed to automate many different tasks across many different network devices that are traditionally handled manually by networking operators, for example updating load balancer member pools or applying firewall rules, thus alleviating ticket wait times and improving delivery.



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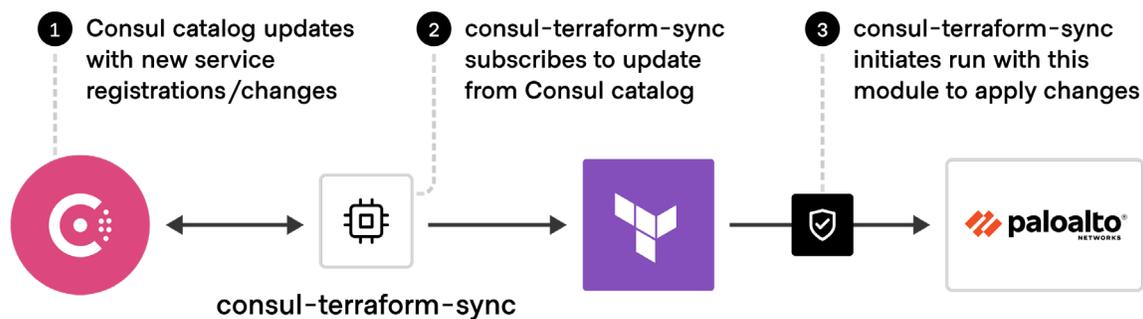
## How It Works

### Palo Alto Networks PAN-OS Dynamic Address Group (DAG) Tags module for Consul-Terraform-Sync

This Terraform module allows users to support Dynamic Firewalling by integrating **Consul** with Palo Alto Networks PAN-OS based **PA-Series and VM-Series NGFW** devices to dynamically manage dynamic registration/de-registration of Dynamic Address Group (DAG) tags based on services in Consul catalog.

Using this Terraform module in conjunction with `consul-terraform-sync` enables teams to reduce manual ticketing processes and automate Day-2 operations related to application scale up/down in a way that is both declarative and repeatable across the organization and across multiple PAN-OS devices.

The `consul-terraform-sync` runs as a daemon that enables a publisher-subscriber paradigm between Consul and PAN-OS based devices to support Network Infrastructure Automation (NIA).



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## Use Cases

This module supports the following:

- Create, update and delete Dynamic Address Tags
- Reduce manual ticketing tasks
- Leverage Terraform for robust automation

Consul-terraform-sync subscribes to updates from the Consul catalog and executes one or more automation “tasks” with appropriate value of service variables based on those updates. consul-terraform-sync leverages Terraform as the underlying automation tool and utilizes the Terraform provider ecosystem to drive relevant change to the network infrastructure.

Each task consists of a runbook automation written as a compatible Terraform module using resources and data sources for the underlying network infrastructure provider.

### Company Info

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