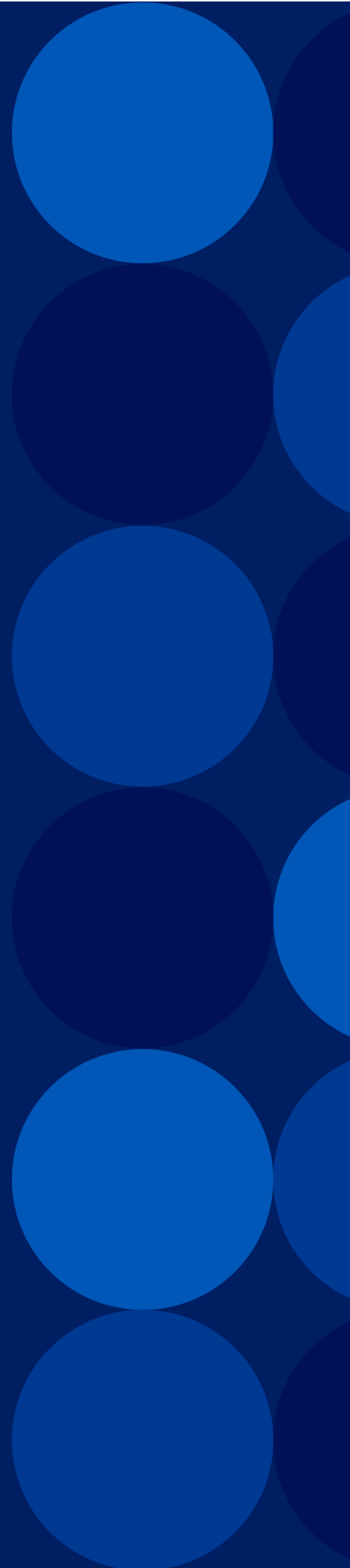


**A10**

# Thunder Terraform Provider

Version 1.2.2

June, 2023



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# Overview

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Terraform is a tool for deploying and managing Infrastructure as Code (IaC). The A10 Thunder Terraform Provider (TTP) is a plug-in for provisioning and configuring objects for Thunder devices.

It includes both low-level components such as compute instances, storage, and networking, and high-level components such as DNS entries and SaaS features. It supports core features for ADC. For detailed information, see [GitHub](#). For more information on Terraform, see <https://www.terraform.io/intro>.

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**NOTE:** If you are familiar with Terraform, you can skip this Quick Start Guide and check the documentation at [terraform.registry](https://terraform.registry) for details.

---

## Compatibility and Versioning

The following table shows A10 ACOS versions and respective TTP supported versions.

Table 1 : TTP Support Matrix

ACOS version	<a href="#">TTP 1.0.0</a>	<a href="#">TTP 1.1.0</a>	<a href="#">TTP 1.2.1</a>	<a href="#">TTP 1.2.2</a>
6.0.0-P2-SP1-build 5	No	No	Yes	Yes
6.0.0-P1-build 47	No	No	Yes	Yes
5.2.1-P7-build 158	No	Yes	No	No
5.2.1-P6-build 74	No	Yes	No	No
5.2.1-P5-build 114	No	Yes	No	No
5.2.1-P4-build 70	Yes	No	No	No
5.2.1-P3-build 70	Yes	No	No	No

---

**NOTE:** The MAC M1 processors are supported with TTP 1.2.2.

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## Supported aXAPI

The following aXAPI endpoints are supported in TTP 1.2.2.

Table 2 : Supported aXAPI

Display Name	ACOS-AXAPI URI
Access List Extended	/axapi/v3/access-list/extended
Access List Standard	/axapi/v3/access-list/standard
Banner	/axapi/v3/banner
Bgp	/axapi/v3/bgp
Class List	/axapi/v3/class-list
Configure Sync	/axapi/v3/configure/sync
Ethernet	/axapi/v3/interface/ethernet/
File Aflex	/axapi/v3/file/aflex
File Bw List	/axapi/v3/file/bw-list
File Ca Cert	/axapi/v3/file/ca-cert
File Class List	/axapi/v3/file/class-list
File Class List Convert	/axapi/v3/file/class-list
File Csr	/axapi/v3/file/csr
File Ssl Cert	/axapi/v3/file/ssl-cert
File Ssl Cert Key	/axapi/v3/file/ssl-cert-key
File Ssl Crl	/axapi/v3/file/ssl-crl
File Ssl Key	/axapi/v3/file/ssl-key
Fw Active Rule Set	/axapi/v3/fw/active-rule-set
Fw Alg Dns	/axapi/v3/fw/alg/dns
Fw Alg Ftp	/axapi/v3/fw/alg/ftp
Fw Alg Icmp	/axapi/v3/fw/alg/icmp
Fw Alg Pptp	/axapi/v3/fw/alg/pptp
Fw Alg Rtsp	/axapi/v3/fw/alg/rtsp
Fw Alg Sip	/axapi/v3/fw/alg/sip

Display Name	ACOS-AXAPI URI
Fw Alg Tftp	/axapi/v3/fw/alg/tftp
Fw App	/axapi/v3/fw/app
Fw Apply Changes	/axapi/v3/fw/apply-changes
Fw Clear Session Filter	/axapi/v3/fw/clear-session-filter
Fw Full Cone Session	/axapi/v3/fw/full-cone-session
Fw Global	/axapi/v3/fw/global
Fw Gtp	/axapi/v3/fw/gtp
Fw Gtp In Gtp Filtering	/axapi/v3/fw/gtp-in-gtp-filtering
Fw Gtp V0	/axapi/v3/fw/gtp-v0
Fw Helper Sessions	/axapi/v3/fw/helper-sessions
Fw Limit Entry	/axapi/v3/fw/limit-entry
Fw Local Log	/axapi/v3/fw/local-log
Fw Logging	/axapi/v3/fw/logging
Fw Radius Server	/axapi/v3/fw/radius/server
Fw Usage	/axapi/v3/fw/resource-usage
Fw Server	/axapi/v3/fw/server
Fw Service Group	/axapi/v3/fw/service-group
Fw Status	/axapi/v3/fw/status
Fw System Status	/axapi/v3/fw/system-status
Fw Tap Monitor	/axapi/v3/fw/tap-monitor
Fw Tcp Mss Clamp	/axapi/v3/fw/tcp/mss-clamp
Fw Tcp Reset On Error	/axapi/v3/fw/tcp/reset-on-error
Fw Tcp Rst Close Immediate	/axapi/v3/fw/tcp-rst-close-immediate
Fw Tcp Window Check	/axapi/v3/fw/tcp-window-check
Fw Template Logging	/axapi/v3/fw/template/logging
Fw Top K Rules	/axapi/v3/fw/top-k-rules
Fw Urpf	/axapi/v3/fw/urpf
Fw Vrid	/axapi/v3/fw/vrid

Display Name	ACOS-AXAPI URI
Glm	/axapi/v3/glm
Glm Send	/axapi/v3/glm/send
Harmony Controller Profile	/axapi/v3/harmony-controller/profile
Health Monitor	/axapi/v3/health/monitor
Hostname	/axapi/v3/hostname
Interface Ethernet	/axapi/v3/interface/ethernet
Interface Ethernet Bfd	/axapi/v3/interface/ethernet/{ethernet-ifnum}/bfd
Interface Ethernet Ip	/axapi/v3/interface/ethernet/{ethernet-ifnum}/ip
Interface Ethernet Ipv6	/axapi/v3/interface/ethernet/{ethernet-ifnum}/ipv6
Interface Ethernet Lldp	/axapi/v3/interface/ethernet/{ethernet-ifnum}/lldp
Interface Ethernet Trunk Group	/axapi/v3/interface/ethernet/{ethernet-ifnum}/trunk-group
Interface Lif	/axapi/v3/interface/lif
Interface Lif Ip	/axapi/v3/interface/lif/{lif-ifname}/ip
Interface Loopback	/axapi/v3/interface/loopback
Interface Management	/axapi/v3/interface/management
Interface Ve	/axapi/v3/interface/ve
Interface Ve Bfd	/axapi/v3/interface/ve/{ve-ifnum}/bfd
Interface Ve Ip	/axapi/v3/interface/ve/{ve-ifnum}/ip
Interface Ve Ipv6	/axapi/v3/interface/ve/{ve-ifnum}/ipv6
Ip Access List	/axapi/v3/ip/access-list
Ip Address	/axapi/v3/ip/address
Ip Dns Primary	/axapi/v3/ip/dns/primary
Ip Dns Secondary	/axapi/v3/ip/dns/secondary
Ip Dns Suffix	/axapi/v3/ip/dns/suffix

Display Name	ACOS-AXAPI URI
Ip Frag	/axapi/v3/ip/frag
Ip Icmp	/axapi/v3/ip/icmp
Ip Nat Alg Pptp	/axapi/v3/ip/nat/alg/pptp
Ip Nat Global	/axapi/v3/ip/nat-global
Ip Nat Icmp	/axapi/v3/ip/nat/icmp
Ip Nat Pool	/axapi/v3/ip/nat/pool
Ip Prefix List	/axapi/v3/ip/prefix-list
Ip Reroute	/axapi/v3/ip/reroute
Ip Route Rib	/axapi/v3/ipv6/route/rib
Ip Route Static Bfd	/axapi/v3/ipv6/route/static/bfd
Ip Tcp	/axapi/v3/ip/tcp
Ipv6 Frag	/axapi/v3/ipv6/frag
Ipv6 Icmpv6	/axapi/v3/ipv6/icmpv6
Ipv6 Nat Icmpv6	/axapi/v3/ipv6/nat/icmpv6
Ipv6 Nat Pool	/axapi/v3/ipv6/nat/pool
Ipv6 Route Rib	/axapi/v3/ipv6/route/rib
Ipv6 Route Static Bfd Bfd Ipv6	/axapi/v3/ipv6/route/static/bfd/bfd-ipv6
Ipv6 Route Static Bfd Ethernet	/axapi/v3/ipv6/route/static/bfd/ethernet
Ipv6 Route Static Bfd Trunk	/axapi/v3/ipv6/route/static/bfd/trunk
Ipv6 Route Static Bfd Ve	/axapi/v3/ipv6/route/static/bfd/ve
Logging Auditlog	/axapi/v3/logging/auditlog
Logging Console	/axapi/v3/logging/console
Logging Host Ipv4addr	/axapi/v3/logging/host/ipv4addr
Logging Host Ipv6addr	/axapi/v3/logging/host/ipv6addr
Logging Host Partition	/axapi/v3/logging/host/partition
Ntp Auth Key	/axapi/v3/ntp/auth-key
Ntp Server Hostname	/axapi/v3/ntp/server/hostname
Ntp Trusted Key	/axapi/v3/ntp/trusted-key



Display Name	ACOS-AXAPI URI
Overlay Tunnel Options	/axapi/v3/overlay-tunnel/options
Overlay Tunnel Vtep	/axapi/v3/overlay-tunnel/vtep
Partition	/axapi/v3/partition
Reboot	/axapi/v3/reboot
Rib Route	/axapi/v3/reboot
Route Map	/axapi/v3/router/ipv6/rip/route-map
Router Bgp	/axapi/v3/router/bgp
Router Bgp Address Family Ipv6	/axapi/v3/router/bgp/{bgp-as-number}/address-family/ipv6
Router Bgp Address Family Ipv6 Neighbor Ethernet Neighbor Ipv6	/axapi/v3/router/bgp/{bgp-as-number}/address-family/ipv6/neighbor/ethernet-neighbor-ipv6
Router Bgp Address Family Ipv6 Neighbor Ipv4 Neighbor	/axapi/v3/router/bgp/{bgp-as-number}/address-family/ipv6/neighbor/ipv4-neighbor
Router Bgp Address Family Ipv6 Neighbor Ipv6 Neighbor	/axapi/v3/router/bgp/{bgp-as-number}/address-family/ipv6/neighbor/ipv6-neighbor
Router Bgp Address Family Ipv6 Neighbor Peer Group Neighbor	/axapi/v3/router/bgp/{bgp-as-number}/address-family/ipv6/neighbor/peer-group-neighbor
Router Bgp Address Family Ipv6 Neighbor Trunk Neighbor Ipv6	/axapi/v3/router/bgp/{bgp-as-number}/address-family/ipv6/neighbor/trunk-neighbor-ipv6
Router Bgp Address Family Ipv6 Neighbor Ve Neighbor Ipv6	/axapi/v3/router/bgp/{bgp-as-number}/address-family/ipv6/neighbor/ve-neighbor-ipv6
Router Bgp Address Family Ipv6 Network Ipv6 Network	/axapi/v3/router/bgp/{bgp-as-number}/address-family/ipv6/network/ipv6-network
Router Bgp Address Family Ipv6 Network Synchronization	/axapi/v3/router/bgp/{bgp-as-

Display Name	ACOS-AXAPI URI
	number}/address-family/ipv6/network/synchronization
Router Bgp Address Family Ipv6 Redistribute	/axapi/v3/router/bgp/{bgp-as-number}/address-family/ipv6/redistribute
Router Bgp Neighbor Ethernet Neighbor	/axapi/v3/router/bgp/{bgp-as-number}/neighbor/ethernet-neighbor
Router Bgp Neighbor Ipv4 Neighbor	/axapi/v3/router/bgp/{bgp-as-number}/neighbor/ipv4-neighbor
Router Bgp Neighbor Ipv6 Neighbor	/axapi/v3/router/bgp/{bgp-as-number}/neighbor/ipv6-neighbor
Router Bgp Neighbor Peer Group Neighbor	/axapi/v3/router/bgp/{bgp-as-number}/neighbor/peer-group-neighbor
Router Bgp Neighbor Trunk Neighbor	/axapi/v3/router/bgp/{bgp-as-number}/neighbor/trunk-neighbor
Router Bgp Neighbor Ve Neighbor	/axapi/v3/router/bgp/{bgp-as-number}/neighbor/ve-neighbor
Router Bgp Network Ip Cidr	/axapi/v3/router/bgp/{bgp-as-number}/network/ip-cidr
Router Bgp Network Synchronization	/axapi/v3/router/bgp/{bgp-as-number}/network/synchronization
Router Bgp Redistribute	/axapi/v3/router/bgp/{bgp-as-number}/redistribute
Router Isis	/axapi/v3/router/isis
Router Ospf	/axapi/v3/router/ospf
Router Ospf Area	/axapi/v3/router/ospf/{ospf-process-id}/area
Router Ospf Default Information	/axapi/v3/router/ospf/{ospf-process-id}/default-information
Router Ospf Redistribute	/axapi/v3/router/ospf/{ospf-process-id}/redistribute
Rule Set	/axapi/v3/rule-set

Display Name	ACOS-AXAPI URI
Server	/axapi/v3/slb/server
Service Group	/axapi/v3/slb/service-group
Slb Aflow	/axapi/v3/slb/aflow
Slb Common	/axapi/v3/slb/common
Slb Common Conn Rate Limit Src Ip	/axapi/v3/slb/common/conn-rate-limit/src-ip
Slb Common Buffer Threshold	/axapi/v3/slb/common
Slb Connection Reuse	/axapi/v3/slb/connection-reuse
Slb Crl Srcip	/axapi/v3/slb/crl-srcip
Slb Dns	/axapi/v3/slb/dns
Slb Dns Cache	/axapi/v3/slb/dns-cache
Slb Dns Response Rate Limiting	/axapi/v3/slb/dns-response-rate-limiting
Slb Fast Http Proxy	/axapi/v3/slb/fast-http-proxy
Slb Fix	/axapi/v3/slb/fix
Slb Ftp Ctl	/axapi/v3/slb/ftp-ctl
Slb Ftp Data	/axapi/v3/slb/ftp-data
Slb Ftp Proxy	/axapi/v3/slb/ftp-proxy
Slb Generic Proxy	/axapi/v3/slb/generic-proxy
Slb Health Gateway	/axapi/v3/slb/health-gateway
Slb Health Stat	/axapi/v3/slb/health-gateway/stats
Slb Http2	/axapi/v3/slb/http2
Slb Http Proxy	/axapi/v3/slb/http-proxy
Slb Hw Compress	/axapi/v3/slb/hw-compress
Slb Icap	/axapi/v3/slb/icap
Slb Icap Http	/axapi/v3/slb/icap_http
Slb Imapproxy	/axapi/v3/slb/imap-proxy
Slb L4	/axapi/v3/slb/l4
Slb L7session	/axapi/v3/slb/l7session

Display Name	ACOS-AXAPI URI
Slb Mlb	/axapi/v3/slb/mlb
Slb Mssql	/axapi/v3/slb/mssql
Slb Mysql	/axapi/v3/slb/mysql
Slb Passthrough	/axapi/v3/slb/passthrough
Slb Perf	/axapi/v3/slb/perf
Slb Persist	/axapi/v3/slb/persist
Slb Player Id Global	/axapi/v3/slb/player-id-global
Slb Pop3 Proxy	/axapi/v3/slb/pop3-proxy
Slb Proxy	/axapi/v3/slb/proxy
Slb Rate Limit Log	/axapi/v3/slb/rate-limit-log
Slb Rc Cache Global	/axapi/v3/slb/rc-cache-global
Slb Usage	/axapi/v3/slb/resource-usage
Slb Server Port	/axapi/v3/slb/service-group/{service-group-name}/member/{member-name}+{member-port}
Slb Sip	/axapi/v3/slb/sip
Slb Smp	/axapi/v3/slb/smp
Slb Smt	/axapi/v3/slb/smt
Slb Spdy Proxy	/axapi/v3/slb/spdy-proxy
Slb Sport Rate Limit	/axapi/v3/slb/sport-rate-limit
Slb Ssl Cert Revoke	/axapi/v3/slb/ssl-cert-revoke
Slb Ssl Expire Check	/axapi/v3/slb/ssl-expire-check
Slb Ssl Forward Proxy	/axapi/v3/slb/ssl-forward-proxy
Slb Svm Source Nat	/axapi/v3/slb/svm-source-nat
Slb Switch	/axapi/v3/slb/switch
Slb Template Cache	/axapi/v3/slb/template/cache
Slb Template Cipher	/axapi/v3/slb/template/cipher
Slb Template Client Ssh	/axapi/v3/slb/template/client-ssh

Display Name	ACOS-AXAPI URI
Slb Template Client Ssl	/axapi/v3/slb/template/client-ssl
Slb Template Connection Reuse	/axapi/v3/slb/template/connection-reuse
Slb Template Csv	/axapi/v3/gslb/template/csv
Slb Template Dblb	/axapi/v3/slb/template/dblb
Slb Template Diameter	/axapi/v3/slb/template/diameter
Slb Template Dns	/axapi/v3/slb/template/dns
Slb Template Dns Class List	/axapi/v3/slb/template/dns/{dns-name}/class-list
Slb Template Dns Logging	/axapi/v3/slb/template/dns-logging
Slb Template Dynamic Service	/axapi/v3/slb/template/dynamic-service
Slb Template External Service	/axapi/v3/slb/template/external-service
Slb Template Fix	/axapi/v3/slb/template/fix
Slb Template Ftp	/axapi/v3/slb/template/ftp
Slb Template Http	/axapi/v3/slb/template/http
Slb Template Http Policy	/axapi/v3/slb/template/http-policy
Slb Template Imap Pop3	/axapi/v3/slb/template/imap-pop3
Slb Template Logging	/axapi/v3/slb/template/logging
Slb Template Monitor	/axapi/v3/slb/template/monitor
Slb Template Mqtt	/axapi/v3/slb/template/mqtt
Slb Template Persist Cookie	/axapi/v3/slb/template/persist/cookie
Slb Template Persist Source Ip	/axapi/v3/slb/template/persist/source-ip
Slb Template Policy	/axapi/v3/slb/template/policy
Slb Template Port	/axapi/v3/slb/template/port
Slb Template Reqmod Icap	/axapi/v3/slb/template/reqmod-icap
Slb Template Respmo d Icap	/axapi/v3/slb/template/respmo d-icap
Slb Template Server	/axapi/v3/slb/template/server
Slb Template Server Ssh	/axapi/v3/slb/template/server-ssh
Slb Template Server Ssl	/axapi/v3/slb/template/server-ssl

Display Name	ACOS-AXAPI URI
Slb Template Sip	/axapi/v3/slb/template/sip
Slb Template Smpp	/axapi/v3/slb/template/smpp
Slb Template Smtpp	/axapi/v3/slb/template/smtpp
Slb Template Sntp	/axapi/v3/slb/template/sntp
Slb Template Ssl	/axapi/v3/slb/template/ssl
Slb Template Tcps	/axapi/v3/slb/template/tps
Slb Template Tcps Proxy	/axapi/v3/slb/template/tps-proxy
Slb Template Udp	/axapi/v3/slb/template/udp
Slb Template Virtual Port	/axapi/v3/slb/template/virtual-port
Slb Template Virtual Server	/axapi/v3/slb/template/virtual-server
Slb Transparent Acl Template	/axapi/v3/slb/transparent-acl-template
Slb Transparent Tcps Template	/axapi/v3/slb/transparent-tps-template
Slb Virtual Server Port	/axapi/v3/slb/virtual-server/{virtual-server-name}/port
Snmp Server Contact	/axapi/v3/snmp-server/contact
Snmp Server Disable Traps	/axapi/v3/snmp-server/disable/traps
Snmp Server Enable Traps	/axapi/v3/snmp-server/enable/traps
Snmp Server Enable Traps Gslb	/axapi/v3/snmp-server/enable/traps/gslb
Snmp Server Enable Traps Lsn	/axapi/v3/snmp-server/enable/traps/lsn
Snmp Server Enable Traps Network	/axapi/v3/snmp-server/enable/traps/network
Snmp Server Enable Traps Routing Bgp	/axapi/v3/snmp-server/enable/traps/routing/bgp
Snmp Server Enable Traps Routing Isis	/axapi/v3/snmp-server/enable/traps/routing/isis
Snmp Server Enable Traps Routing Ospf	/axapi/v3/snmp-server/enable/traps/routing/ospf
Snmp Server Enable Traps Slb	/axapi/v3/snmp-server/enable/traps/slb
Snmp Server Enable Traps Slb	/axapi/v3/snmp-server/enable/traps/slb-

Display Name	ACOS-AXAPI URI
Change	change
Snmp Server Enable Traps Snmp	/axapi/v3/snmp-server/enable/traps/snmp
Snmp Server Enable Traps Ssl	/axapi/v3/snmp-server/enable/traps/ssl
Snmp Server Enable Traps System	/axapi/v3/snmp-server/enable/traps/system
Snmp Server Enable Traps Vcs	/axapi/v3/snmp-server/enable/traps/vcs
Snmp Server Enable Traps Vrrp A	/axapi/v3/snmp-server/enable/traps/vrrp-a
Snmp Server Engine Id	/axapi/v3/snmp-server/engineID
Snmp Server Group	/axapi/v3/snmp-server/group
Snmp Server Host Host Name	/axapi/v3/snmp-server/host/host-name
Snmp Server Host Ipv4 Host	/axapi/v3/snmp-server/host/ipv4-host
Snmp Server Host Ipv6 Host	/axapi/v3/snmp-server/host/ipv6-host
Snmp Server Location	/axapi/v3/snmp-server/location
Snmp Server Management Index	/axapi/v3/snmp-server/management-index
Snmp Server Slb Data Cache Timeout	/axapi/v3/snmp-server/slb-data-cache-timeout
Snmp Server Snmpv1 V2c User	/axapi/v3/snmp-server/SNMPv1-v2c/user
Snmp Server Snmpv1 V2c User Oid	/axapi/v3/snmp-server/SNMPv1-v2c/user/{user-user}/oid
Snmp Server Snmpv3 User	/axapi/v3/snmp-server/SNMPv3/user
Snmp Server User	/axapi/v3/snmp-server/user
Snmp Server View	/axapi/v3/snmp-server/view
System	/axapi/v3/system
System Ve Mac Scheme	/axapi/v3/system/ve-mac-scheme
Timezone	/axapi/v3/timezone
Virtual Server	/axapi/v3/rrd/slb-virtual-server
Vrrp A Vrid	/axapi/v3/vrrp-a/vrid
Vrrp Common	/axapi/v3/vrrp-a/common

Display Name	ACOS-AXAPI URI
Vrrp Peer Group	/axapi/v3/vrrp-a/peer-group
Vrrp Session Sync	/axapi/v3/vrrp-a/session-sync
Web Category	/axapi/v3/web-category
Web Category Category List	/axapi/v3/web-category/category-list
Web Category Proxy Server	/axapi/v3/web-category/proxy-server
Web Category Reputation Scope	/axapi/v3/web-category/reputation-scope
Web Category Statistics	/axapi/v3/web-category/statistics
Write Memory	/axapi/v3/write/memory
Gslb Policy	/axapi/v3/gslb/policy
Gslb Zone	/axapi/v3/gslb/zone
Terminal	/axapi/v3/terminal
Admin Password	/axapi/v3/admin/{admin-user}/password
Gslb Service Ip	/axapi/v3/gslb/service-ip
Gslb Group	/axapi/v3/debug/gslb/group
Gslb Protocol	/axapi/v3/gslb/protocol
Gslb Site	/axapi/v3/gslb/site
System Cpu Ctrl Cpu Oper	/axapi/v3/system-cpu/ctrl-cpu/oper
System Cpu Data Cpu Oper	/axapi/v3/system-cpu/data-cpu/oper



# Installing and Initializing Terraform

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This section describes the steps to install, initialize, and configure Terraform.

The following topics are covered:

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## Installing Terraform

To install Terraform, download the appropriate package as a zip archive from <https://www.terraform.io/downloads>. Unzip the downloaded package. Terraform runs as a single binary named **terraform**.

Make sure to include the terraform binary path to the PATH variable. The binary path may differ depending on the operating system.

## Initializing Thunder Terraform Provider

After installing Terraform, create a .cfg file as shown below:

### **version.cfg**

```
terraform {
  required_providers {
    thunder = {
      source = "a10networks/thunder"
      version = "1.2.2" //Change it to the actual version
    }
  }
}
```

Execute `terraform init` in the same directory where `version.cfg` is placed. If the execution is successful, the following output is displayed:

```
$ terraform init

Initializing the backend...

Initializing provider plugins...
- Finding a10networks/thunder versions matching "1.2.2"...
- Installing a10networks/thunder v1.2.2...
- Installed a10networks/thunder v1.2.2 (signed by a HashiCorp partner, key
ID F192222783C8DB3D)

Partner and community providers are signed by their developers.
If you'd like to know more about provider signing, you can read about it
here:
https://www.terraform.io/docs/cli/plugins/signing.html

Terraform has created a lock file .terraform.lock.hcl to record the
provider
selections it made above. Include this file in your version control
repository
so that Terraform can guarantee to make the same selections by default
when
you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to
see
any changes that are required for your infrastructure. All Terraform
commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget,
other
commands will detect it and remind you to do so if necessary.
```

## Configuring Thunder Ethernet Interfaces

Create a terraform script file (example `test.tf`) as shown below:

**test.tf:**

```
provider "thunder" {
  address = "x.x.x.x" //your device IP
  username = "x"      //your admin account
  password = "x"      //password of admin account
}

resource "thunder_interface_ethernet" "eth1" {
  ifnum = 1
  action = "enable"
  ip {
    address_list {
      ipv4_address = "10.101.0.1"
      ipv4_netmask = "/24"
    }
    address_list {
      ipv4_address = "10.101.0.81"
      ipv4_netmask = "/24"
    }
    address_list {
      ipv4_address = "10.102.0.1"
      ipv4_netmask = "/24"
    }
  }
}

resource "thunder_interface_ethernet" "eth7" {
  ifnum = 7
  action = "enable"
  ip {
    address_list {
      ipv4_address = "10.107.0.1"
      ipv4_netmask = "/24"
    }
  }
}
```

```
    }
    address_list {
      ipv4_address = "10.107.0.18"
      ipv4_netmask = "/24"
    }
    address_list {
      ipv4_address = "10.108.0.1"
      ipv4_netmask = "/24"
    }
  }
}
```

Execute **terraform apply** to apply the configuration as shown below:

```
$ terraform apply
```

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:

```
+ create
```

Terraform will perform the following actions:

```
# thunder_interface_ethernet.eth1 will be created
+ resource "thunder_interface_ethernet" "eth1" {
  + action = "enable"
  + id     = (known after apply)
  + ifnum  = 1

  + ip {
    + address_list {
      + ipv4_address = "10.101.0.1"
      + ipv4_netmask = "/24"
    }
    + address_list {
      + ipv4_address = "10.101.0.81"
      + ipv4_netmask = "/24"
    }
    + address_list {
      + ipv4_address = "10.102.0.1"
      + ipv4_netmask = "/24"
    }
  }
}
```

```
    }  
  }  
}  
  
# thunder_interface_ethernet.eth7 will be created  
+ resource "thunder_interface_ethernet" "eth7" {  
  + action = "enable"  
  + id      = (known after apply)  
  + ifnum   = 7  
  
  + ip {  
    + address_list {  
      + ipv4_address = "10.107.0.1"  
      + ipv4_netmask = "/24"  
    }  
    + address_list {  
      + ipv4_address = "10.107.0.18"  
      + ipv4_netmask = "/24"  
    }  
    + address_list {  
      + ipv4_address = "10.108.0.1"  
      + ipv4_netmask = "/24"  
    }  
  }  
}
```

Plan: 2 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?

Terraform will perform the actions described above.

Only 'yes' will be accepted to approve.

Enter a value: yes

thunder\_interface\_ethernet.eth1: Creating...

thunder\_interface\_ethernet.eth7: Creating...

thunder\_interface\_ethernet.eth7: Creation complete after 3s [id=7]

thunder\_interface\_ethernet.eth1: Creation complete after 4s [id=1]

```
Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
```

## Setting Up HTTPS Virtual Service

Create a terraform script file (example `test_https.tf`) as shown below:

**test\_https.tf:**

```
provider "thunder" {
  address = "x.x.x.x"
  username = "x"
  password = "x"
}

//client-side
resource "thunder_interface_ethernet" "eth1" {
  ifnum = 1
  action = "enable"
  ip {
    address_list {
      ipv4_address = "10.101.151.1"
      ipv4_netmask = "/16"
    }
  }
}

//server-side
resource "thunder_interface_ethernet" "eth8" {
  ifnum = 8
  action = "enable"
  ip {
    address_list {
      ipv4_address = "10.102.151.1"
      ipv4_netmask = "/16"
    }
  }
}
```

```
resource "thunder_file_ssl_cert" "cert_1" {
  name = "cert_1"
  protocol = "http"
  host = "192.168.92.200"
  path = "/ssl/test/foobar.cert"
  use_mgmt_port = 1
}

resource "thunder_file_ssl_key" "cert_1_key" {
  name = "cert_1_key"
  protocol = "http"
  host = "192.168.92.200"
  path = "/ssl/test/foobar_nopass.key"
  use_mgmt_port = 1
}

resource "thunder_slb_template_client_ssl" "client_ssl_1" {
  name = "client_ssl_1"
  certificate_list {
    cert = thunder_file_ssl_cert.cert_1.name
    key = thunder_file_ssl_key.cert_1_key.name
  }
}

resource "thunder_server" "server1" {
  name = "server1"
  host = "10.102.156.128"
  port_list {
    port_number = 80
    protocol = "tcp"
  }
}

resource "thunder_service_group" "sg1" {
  name = "sg1"
  protocol = "tcp"
  member_list {
```

```
        name = thunder_server.server1.name
        port = 80
    }
}

resource "thunder_virtual_server" "vs1" {
    name = "vs1"
    ip_address = "10.101.151.80"
    port_list {
        auto = 1 //source-nat
        port_number = 443
        protocol = "https"
        service_group = thunder_service_group.sgl.name
        template_client_ssl = thunder_slb_template_client_ssl.client_ssl_
1.name
    }
}
```

Execute **terraform apply** to apply configuration as shown below:

```
$ terraform apply --auto-approve
```

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:

```
+ create
```

Terraform will perform the following actions:

```
# thunder_file_ssl_cert.cert_1 will be created
+ resource "thunder_file_ssl_cert" "cert_1" {
    + certificate_type = "pem"
    + host             = "192.168.92.200"
    + id              = (known after apply)
    + name            = "cert_1"
    + overwrite       = 0
    + path            = "/ssl/test/foobar.cert"
    + protocol        = "http"
    + secured         = 0
    + use_mgmt_port   = 1
}
```



```
# thunder_file_ssl_key.cert_1_key will be created
+ resource "thunder_file_ssl_key" "cert_1_key" {
  + host          = "192.168.92.200"
  + id            = (known after apply)
  + name          = "cert_1_key"
  + overwrite     = 0
  + path          = "/ssl/test/foobar_nopass.key"
  + protocol      = "http"
  + secured       = 0
  + use_mgmt_port = 1
}

# thunder_interface_ethernet.eth1 will be created
+ resource "thunder_interface_ethernet" "eth1" {
  + action = "enable"
  + id     = (known after apply)
  + ifnum  = 1

  + ip {
    + address_list {
      + ipv4_address = "10.101.151.1"
      + ipv4_netmask = "/16"
    }
  }
}

# thunder_interface_ethernet.eth8 will be created
+ resource "thunder_interface_ethernet" "eth8" {
  + action = "enable"
  + id     = (known after apply)
  + ifnum  = 8

  + ip {
    + address_list {
      + ipv4_address = "10.102.151.1"
      + ipv4_netmask = "/16"
    }
  }
}
```

```
    }
  }

# thunder_server.server1 will be created
+ resource "thunder_server" "server1" {
  + host = "10.102.156.128"
  + id   = (known after apply)
  + name = "server1"

  + port_list {
    + port_number = 80
    + protocol    = "tcp"
  }
}

# thunder_service_group.sg1 will be created
+ resource "thunder_service_group" "sg1" {
  + id          = (known after apply)
  + name        = "sg1"
  + protocol    = "tcp"

  + member_list {
    + name = "server1"
    + port = 80
  }
}

# thunder_slb_template_client_ssl.client_ssl_1 will be created
+ resource "thunder_slb_template_client_ssl" "client_ssl_1" {
  + id      = (known after apply)
  + name    = "client_ssl_1"

  + certificate_list {
    + cert = "cert_1"
    + key  = "cert_1_key"
  }
}
```

```
# thunder_virtual_server.vs1 will be created
+ resource "thunder_virtual_server" "vs1" {
  + id          = (known after apply)
  + ip_address  = "10.101.151.80"
  + name       = "vs1"

  + port_list {
    + auto            = 1
    + port_number    = 443
    + protocol       = "https"
    + service_group  = "sg1"
    + template_client_ssl = "client_ssl_1"
  }
}
```

Plan: 8 to add, 0 to change, 0 to destroy.

thunder\_server.server1: Creating...

thunder\_file\_ssl\_cert.cert\_1: Creating...

thunder\_file\_ssl\_key.cert\_1\_key: Creating...

thunder\_interface\_ethernet.eth8: Creating...

thunder\_interface\_ethernet.eth1: Creating...

thunder\_server.server1: Creation complete after 1s [id=server1]

thunder\_file\_ssl\_key.cert\_1\_key: Creation complete after 1s [id=cert\_1\_key]

thunder\_service\_group.sg1: Creating...

thunder\_file\_ssl\_cert.cert\_1: Creation complete after 1s [id=cert\_1]

thunder\_interface\_ethernet.eth1: Creation complete after 1s [id=1]

thunder\_slb\_template\_client\_ssl.client\_ssl\_1: Creating...

thunder\_interface\_ethernet.eth8: Creation complete after 1s [id=8]

thunder\_service\_group.sg1: Creation complete after 0s [id=sg1]

thunder\_slb\_template\_client\_ssl.client\_ssl\_1: Creation complete after 0s [id=client\_ssl\_1]

thunder\_virtual\_server.vs1: Creating...

thunder\_virtual\_server.vs1: Creation complete after 0s [id=vs1]

Apply complete! Resources: 8 added, 0 changed, 0 destroyed.

## Troubleshooting

If an error occurs on executing the `terraform apply` command, you need to check the error messages in the logs.

Execute `show audit` command to view a full log message on the Thunder device as shown below:

```
DEMO>show audit
Feb 25 2022 16:09:04 [admin] cli: [192.168.98.151:61650] show audit
Feb 25 2022 16:02:46 [admin] axapi: [75:192.168.92.193:52286] RESP HTTP
status 404 Not Found : Object specified does not exist
Feb 25 2022 16:02:46 [admin] axapi: [75:192.168.92.193:52286] payload
section 1
{"port":{"port-number":80,"protocol":"tcp","template-server-ssl":"no-such-
template"}}
Feb 25 2022 16:02:46 [admin] axapi: [75:192.168.92.193:52286] POST:
/axapi/v3/slb/server/server1/port
```

### Object specified does not exist

When you configure an object that does not exist, the following error message is displayed:

```
thunder_server.server1: Creating...
thunder_server.server1: Creation complete after 0s [id=server1]
thunder_slb_server_port.svr_port_1: Creating...
|
| Error: axapi failure:CM:err=Object specified does not exist (object:
no-such-template)
|
|   with thunder_slb_server_port.svr_port_1,
|   on main.tf line 12, in resource "thunder_slb_server_port" "svr_port_
1":
|   12: resource "thunder_slb_server_port" "svr_port_1" {
```

# Additional Information

---

This section provides additional information related to Terraform Provider.

The following topics are covered:

<a href="#">Support Information</a> .....	29
<a href="#">References</a> .....	29

## Support Information

You can contact A10 Networks Technical Support by either phone or email. For more information, see [A10 Networks Support](#) site.

Additionally, you can raise feature requests and report defects using [GitHub](#).

While reporting defects, make sure to include the Terraform script that throws errors and the command output. It would be helpful if the stack traces are also included.

---

**NOTE:** While raising a defect or sending a feedback, do not include any sensitive information as the **Issues** and **Pull Requests** are publicly viewable.

---

## References

- <https://registry.terraform.io/providers/a10networks/thunder/latest>
- <https://github.com/a10networks/terraform-provider-thunder>
- <https://documentation.a10networks.com/index.html>



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