

Cloud Visibility & Governance

Industry's only solution with single-click provisioning of the entire global multi-cloud network and network services. Connect remote users, on-premises sites and public clouds together, while cutting provisioning time from months to minutes



Cloud adoption continues to accelerate. Organizations are increasingly transitioning business critical applications from on-premise data centers to the public cloud and SaaS environments.

In response to this rapid adoption of the cloud, compute and storage have evolved beyond virtualization and automation to as-a-service offerings. Cloud architects and engineers now focus on choosing the service attributes they want to consume, such as compute instances and storage volumes, rather than worry about implementation details. Complexity has been eliminated and cloud computing has become a business enabler for compute and storage.

Key Challenges

In contrast, the network and network services have not made a similar transition, nor do they operate in true concert with the cloud. Getting visibility and governance for the cloud network comes with the following key challenges:

- Limited visibility due to the use of cloud-native services lacking a uniform multi-cloud view and a disparate cloud architectures lacking a single point of control
- Overlapping IP addresses and inconsistent security group controls resulting from lack of uniform enforcement of organizational usage policy
- Increased IT spend resulting from inability to perform departmental chargeback for consumed cloud resources.

The network and network services are under increasing pressure to provide an agile, highly performing and cost-effective solution to cloud business needs, while eliminating visibility and governance blind spots.



Alkira Cloud Network as-a-Service is the industry's only solution with single-click provisioning of the global multi-cloud network and network services. Cut provisioning time from months to minutes.

Networking for the Cloud with Alkira Cloud Network as-a-Service

It is time for the network to evolve. It is time for the network to be reinvented for cloud. Read a white paper by Atif Khan, Alkira Founder and CTO. [↗](#)

The Alkira Cloud Services Exchange® (Alkira CSX) serves as a foundation for Alkira Cloud Network as-a-Service. It consists of a highly available and resilient cloud backbone of globally interconnected Alkira Cloud Exchange Points (Alkira CXPs), virtual multi-cloud points of presence with a full routing stack and network services capabilities, and an Alkira CSX Portal.

Users, sites, data centers, regional SD-WAN fabrics, colocations, public clouds, network and security services, and SaaS/Internet exit points connect to the global network through the geographically closest Alkira Cloud Exchange Point®.

Integrated stateful security services coupled with end-to-end segmentation capabilities offered by the Alkira CSX, allow enterprises to consistently secure on-premise, hybrid and multi-cloud environments. The Alkira Cloud Services Exchange Portal offers a modern graphical interface for all design, provisioning, and day-2 operational needs.

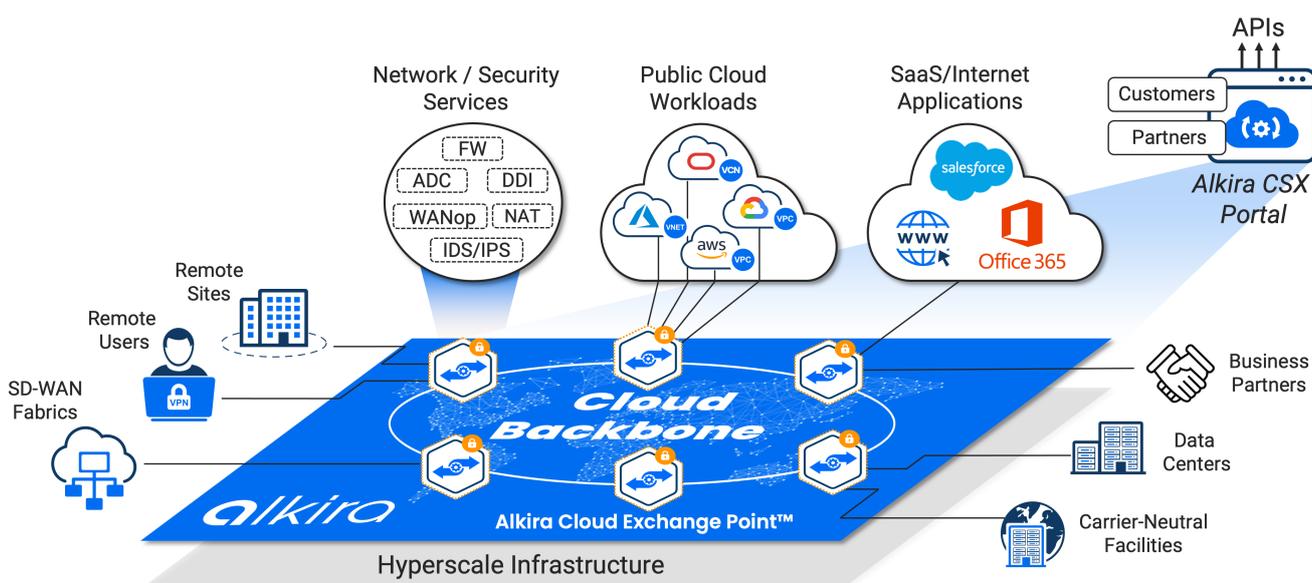


Figure 1: Alkira Cloud Services Exchange

Alkira Cloud Network as-a-Service Visibility & Governance

Alkira portal is a single web interface for designing, provisioning and operating your entire multi-cloud network. Leveraging industry-leading graphical visualization, Alkira solution offers insights into numerous critical visibility elements for applications, networks and network services, allowing organizations to not only deploy global multi-cloud network and network services in minutes, but also achieve operational excellence.

Multi-Cloud Visibility and Inventory

Alkira portal provides a single web interface for full multi-cloud view, health and inventory of all elements connected to the global Alkira Cloud Exchange Points. The elements include public cloud instances (AWS VPCs, Microsoft Azure VNets and GCP VPCs), IPsec connected sites, connected Cisco SD-WAN fabric, Internet exit points and network services. The health is expressed as either up, down or degraded (partial).

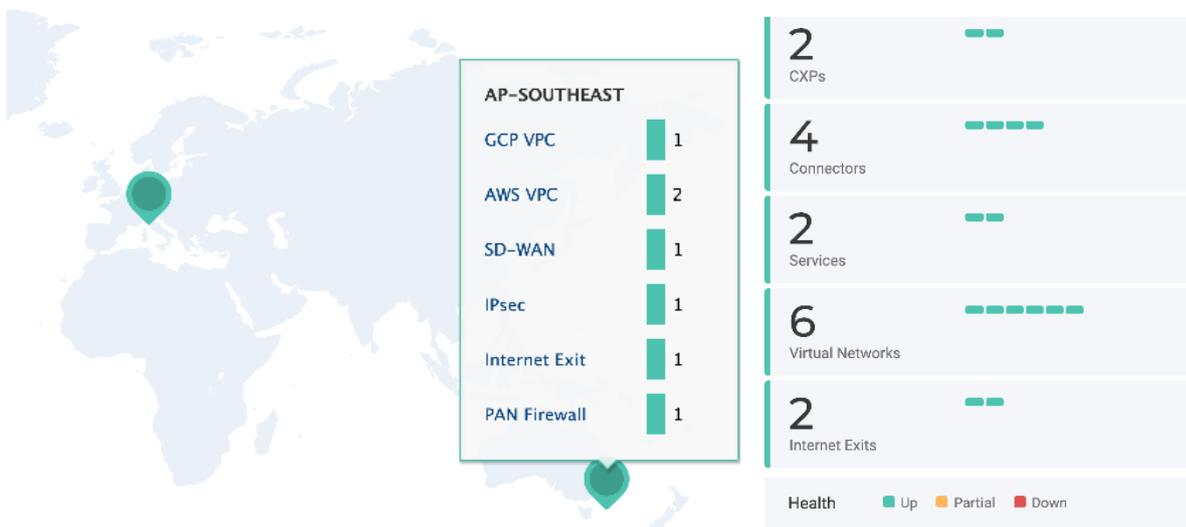


Figure 2 Multi-Cloud Visibility and Inventory

From the multi-cloud view, customers can drill deeper by accessing dashboards for each Alkira Cloud Exchange Point to get further details.

Experience the power of Alkira solution today and watch your multi-cloud network come to life in minutes. [↗](#)

Application Recognition

Alkira Cloud Services Exchange identifies application traffic flowing through the globally distributed Alkira Cloud Exchange Points. Top applications, as well as their consumed capacity, are displayed in the dashboard section of the Alkira portal.

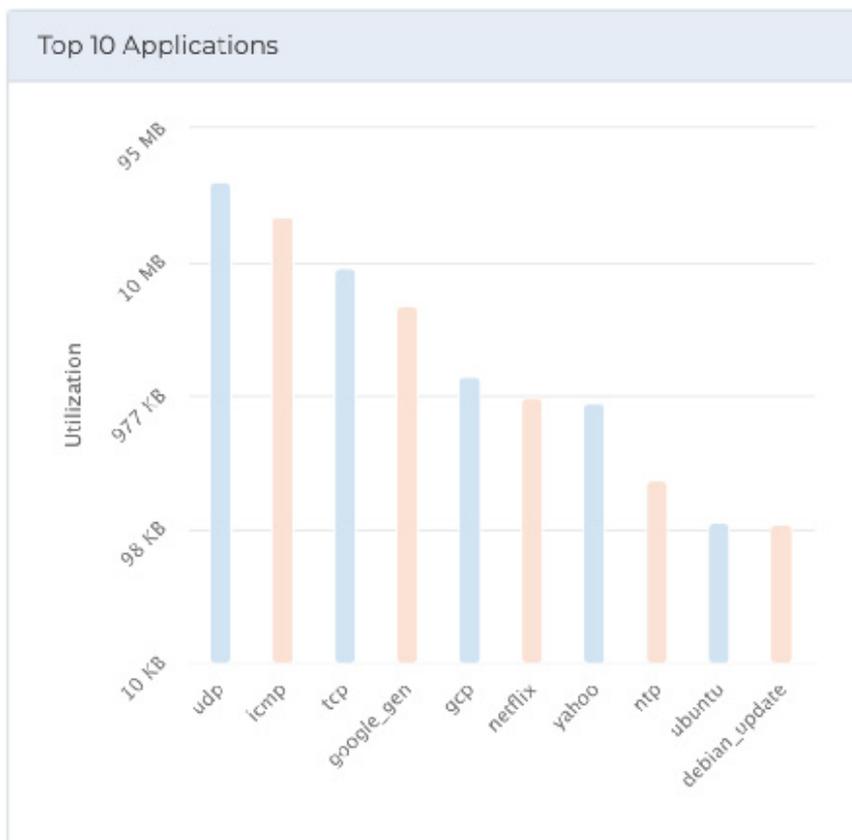


Figure 3 Application Recognition

Application identification is important for tightening security controls and ensuring appropriate use of organizational network resources by blocking unwanted application traffic. Application identification can also help with better capacity planning and cost optimization.

Network Usage Visibility

Alkira portal exposes numerous network usage statistics for all elements connected to the Alkira Cloud Exchange Points. The elements include public cloud instances (AWS VPCs, Microsoft Azure VNets and GCP VPCs), IPsec connected sites, connected Cisco SD-WAN fabric, Internet exists and network services.

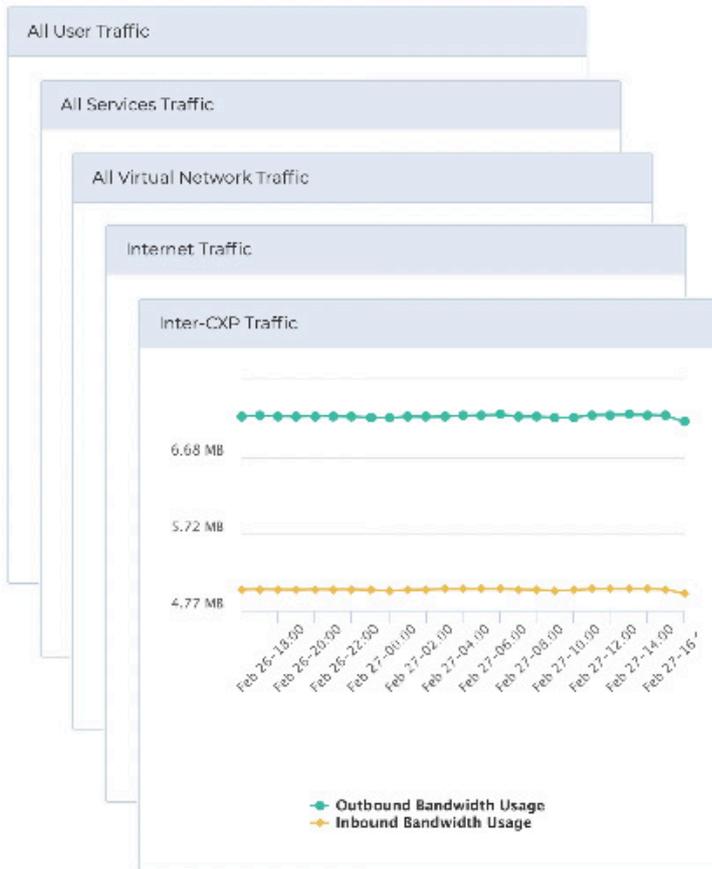


Figure 4 Network Usage

In addition to the network usage on a per-element level, Alkira portal also exposes fine-grained information about top (10) talkers communicating to and across clouds, as well as accessing SaaS/ Internet applications. The top talkers chart identifies the source and destination of the communication, the amount of network traffic transmitted and its representative percentage.

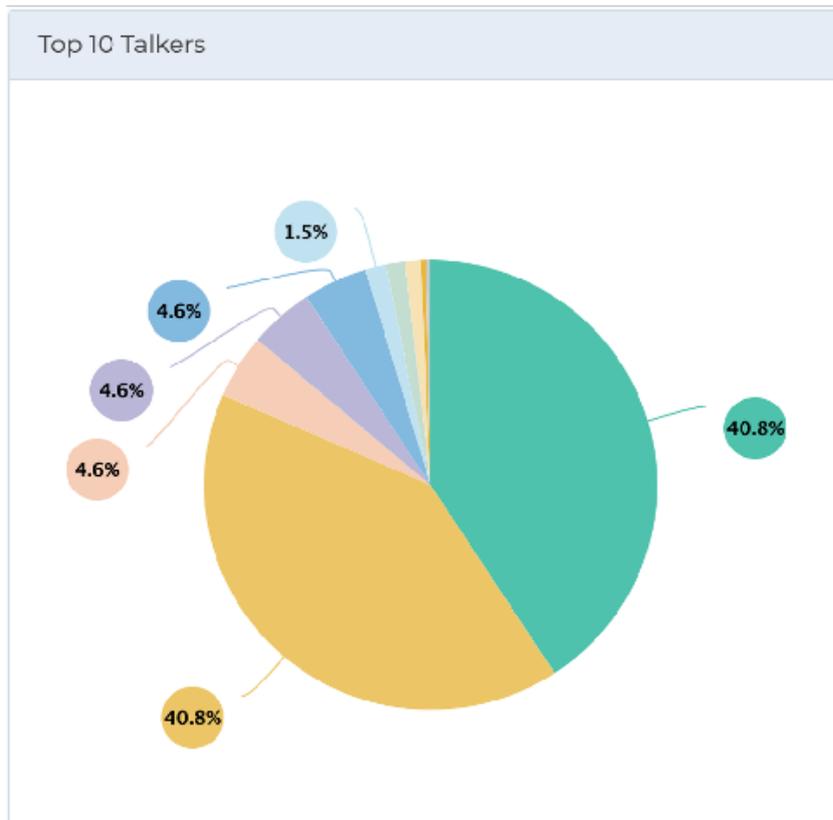


Figure 5 Top Talkers

Information about top talkers is important for tightening security controls and ensuring appropriate use of network resources by blocking unwanted application traffic. Information about top talkers can also help discover new network communication trends for better capacity planning and cost optimization.

Network Services Usage Visibility

Alkira Cloud Services Exchange network services marketplace allows customers to select and deploy network services into their global on demand multi-cloud network. The most popular network service is the next-generation firewall, which allows enforcing security policy for traffic between remote sites and public clouds, between multiple public cloud instances and multiple public clouds, and the Internet-bound traffic through the Alkira Cloud Exchange Points.

Alkira portal exposes network throughput toward the next-generation firewalls deployed in the Alkira Cloud Exchange Points. The throughput can be shown as aggregate or per-firewall zone. Alkira portal also exposes the number of sessions forwarded to the Firewall.



Figure 6: Network Services Usage Visibility

In cases of increased real-time demand for firewall capacity, the Alkira solution will automatically bring-up additional instances of the firewall in the appropriate Alkira Cloud Exchange Points up to the maximum number specified in the firewall configuration in Alkira portal. When the demand for real-time firewall capacity subsides, the Alkira solution will automatically remove unneeded instances of the firewall down to the minimum number specified in the firewall configuration in Alkira portal.

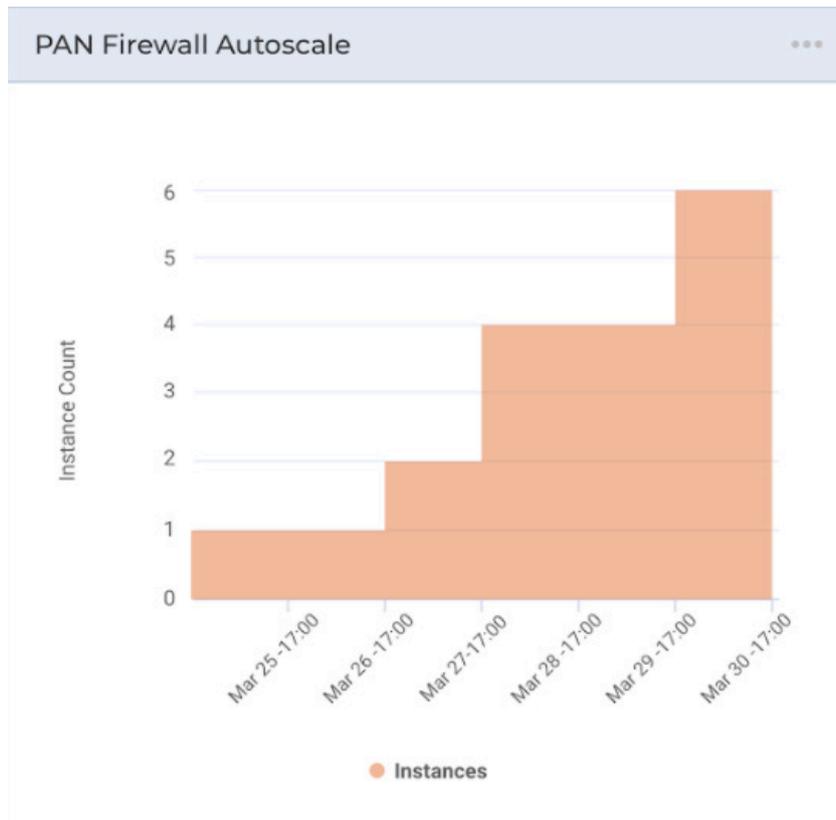


Figure 7: Firewall Autoscaling Visibility

Alerts

Alkira Cloud Services Exchange captures the details of events occurring in the global customer network. These events are logged in the Alerts section of the Alkira portal. Summary and tags associated with each alert allow administrators to quickly understand the elements affected by the alert. Alert priority allows properly prioritizing events, where high priority events can be dealt with ahead of medium or lower priority ones.

Type	Priority	Summary	Status	Tags	Timestamp
Network Provisioning	Medium	Successfully provisioned network	ACTIVE	tenantprod@redwan200 CIP@EU-CENTRAL-AP-DC1-1 Segments: Seg1,Seg2,Seg3	02/07/2020 16:31
Network Provisioning	Medium	Successfully provisioned network	ACTIVE	tenantprod@redwan200 CIP@EU-CENTRAL-AP-DC1-1 Segments: Seg1,Seg2,Seg3	02/06/2020 21:02
Network Provisioning	Medium	Network configuration available for connector instance 'tenantprod@redwan2-tenantprod@redwan20'	ACTIVE	CIP@EU-CENTRAL-AP-DC1-1 Segments: Seg1,Seg2 Group: redwan200	02/06/2020 20:34
Network Provisioning	Medium	Network configuration available for connector instance 'tenantprod@redwan1-tenantprod@redwan1'	ACTIVE	CIP@EU-CENTRAL-AP-DC1-1 Segments: Seg1,Seg2 Group: redwan100	02/06/2020 20:18
Network Provisioning	Medium	Network configuration available for connector instance 'tenantprod@redwan1-tenantprod@redwan1'	ACTIVE	CIP@EU-CENTRAL-AP-DC1-1 Segments: Seg1,Seg2 Group: redwan100	02/06/2020 20:18

Figure 8: Alerts

Audit Logs

In the environment where multiple customer administrators have access to the Alkira portal, it is important to keep track of administrative actions to ensure personal accountability. It is equally important to keep track of actions in order to simplify the process of rolling back configuration changes, if needed.

Type	Status	Description	Initiator	IP Address	Tags	Timestamp
Network Configuration	SUCCEEDED	PAN Service 'tenantprod9FW1' updated on CXP EU-CENTRAL	veera@alkira.net	10.3.11.199	CXP: EU-CENTRAL Segments: Seg1, Seg2 Service: tenantprod9FW1	02/23/2020 22:55
Network Configuration	SUCCEEDED	AZURE VNET Connector 'tenantprod9-vnet1' updated on CXP EU-CENTRAL	veera@alkira.net	10.3.11.199	CXP: EU-CENTRAL Segments: Seg Connector: tenantprod9-vnet1	02/23/2020 22:54
Network Configuration	SUCCEEDED	AWS VPC Connector 'tenantprod9-vpc1' updated on CXP AP-SOUTHEAST	veera@alkira.net	10.3.11.199	CXP: AP-SOUTHEAST Segments: Seg Connector: tenantprod9-vpc1	02/23/2020 22:53
Network Configuration	SUCCEEDED	Policy 'Seg2-PL- AllowAllIPAN' added	veera@alkira.net	10.3.11.199	PolicyName: Seg2-PL- AllowAllIPAN	02/23/2020 22:52
Network Configuration	SUCCEEDED	Policy AllowAllIPAN enabled	veera@alkira.net	10.3.11.199	PolicyName: AllowAllIPAN	02/23/2020 22:51
Network Configuration	SUCCEEDED	Policy AllowAllIPAN added	veera@alkira.net	10.3.11.199	PolicyName: AllowAllIPAN	02/23/2020 22:50

Figure 9: Audit Logs

User Management

Alkira portal integrates user management for administrative access. Each user can be assigned a role that determines the level of access allowed in the portal. Access is defined as Read Only, Read Write and No Access to specific portal elements. The system comes with three predefined roles of Admin, Netadmin and Operator. Predefined roles cannot be changed however custom roles can be created where each specific portal element can be assigned Read Only, Read Write or No Access, as needed.

Settings / Roles

DEFAULT ROLES
CUSTOM ROLES

AlertsAdmin

	Read Only	Read Write	No Access
Alerts	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Audit Logs	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Billing	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Jobs	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Figure 10: Custom User Roles

Alkira portal access can also be integrated with supported Single Sign-on (SSO) systems. This allows customers to institute uniform strong mechanisms for access authentication and authorization.

Billing & Chargeback

Cost is one of the most significant factors of cloud adoption. Alkira Cloud Services Exchange comes with full visibility and transparency in regard to costs incurred when consuming the Alkira service. The cost is broken down to geographic locations, provisioned connectors (sites, clouds and Internet exits), provisioned network services and the consumed network traffic. Customers can view past, present and forecasted spend in the Alkira portal, as well as produce invoices.

The Alkira solution allows the assignment of administrative billing tags to the configured resources. This helps IT departments institute a chargeback policy. For example, all resources provisioned for the HR department, such as connectivity to public cloud resources (VPCs and VNets), Internet exit points and the associated network traffic can be aggregated into a single bill that can be passed on to the HR department for charge.

APIs

Alkira portal supports a rich set of REST APIs. This allows customers to access, control and monitor all elements of the solution exercising the DevOps approach. Leveraging HTTP POST calls, customers can create new configurations. Meanwhile, HTTP PUT calls allow editing configuration and HTTP GET calls allow pulling data out. Pulling data out can be especially beneficial when integrating with third-party tools, such as various monitoring tools or higher-level orchestrators.

The Alkira CSX supports the Swagger interface that allows customers to easily discover the supported API calls without a need for separate documentation.

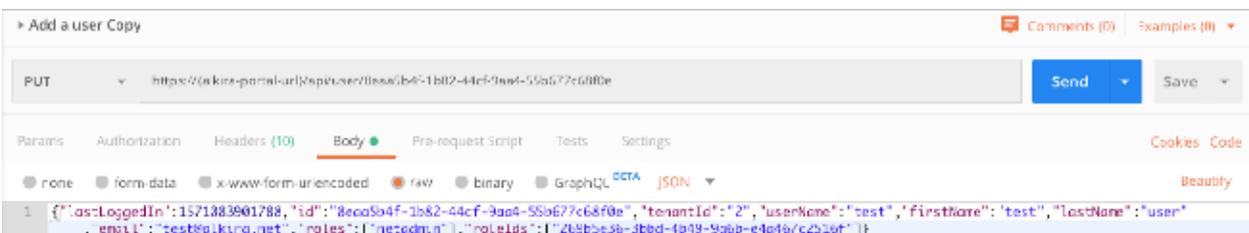


Figure 11: API Call Example (HTTP PUT)

Customer Benefits

Alkira Cloud Network as-a-Service allows organizations to turn networking and security from a business inhibitor to a business enabler, while providing the following main benefits.

- Faster time to cloud reduces deployment time from months to minutes in full alignment with business SLAs
- High bandwidth, low latency network between remote users, on-premises sites, public clouds (AWS, Microsoft Azure and GCP) and SaaS/Internet applications, and between multiple public clouds or multiple regions of the same public cloud
- Eliminate cloud-specific limitations by building a multi-region, multi-cloud overlay network, leveraging cloud-native and advance routing and security constructs
- Global security policy enforcement by leveraging firewalls of choice and global symmetric traffic steering
- Elasticity to accommodate on demand capacity, e.g. periodic high-volume data transfers, seasonal retail customer uptake, etc.
- End-to-end segmentation between remote users, on-premises sites, public cloud instances, cloud network services and SaaS/Internet exit points for compliance and sensitive or secure applications
- Pay as you go/subscription consumption cost model to ensure customers are charged for only the network and network services resources they actually consume
- High availability and resiliency backed up by high uptime service guarantee
- Full visibility to eliminate operational blind spots and improve day-2 operations



Summary

Alkira Cloud Network as-a-Service, powered by Alkira Cloud Services Exchange[®], is industry's first solution offering global unified network infrastructure as-a- service. With Alkira, enterprises can have a consistent and significantly simplified experience deploying a global cloud network for end-to-end and any-to-any network connectivity across users, sites, and clouds with integrated network and security services, full day-2 operational visibility, advanced controls, and governance. The entire network is drawn on an intuitive design canvas, deployed in a single click and is ready in minutes!

The Network. Reinvented for Cloud.[®]



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