# stateless

DATA SHEET
THE STATELESS PLATFORM

Stateless is a turnkey orchestration and routing software solution for Data Center Operators (DCOs) and Network Service Providers (NSPs) enabling customers to automate and network communication paths.

The evolvable platform provides microservice based Layer 3 network functions via Stateless Software Router (SSR), Layer 2 virtual cross-connect automation, and our Connectivity Orchestration Engine (COE) for automating connectivity products seamlessly.

Simplicity　　**Scalability**

Separated State

API Driven

Microservices Arch

Evolvability
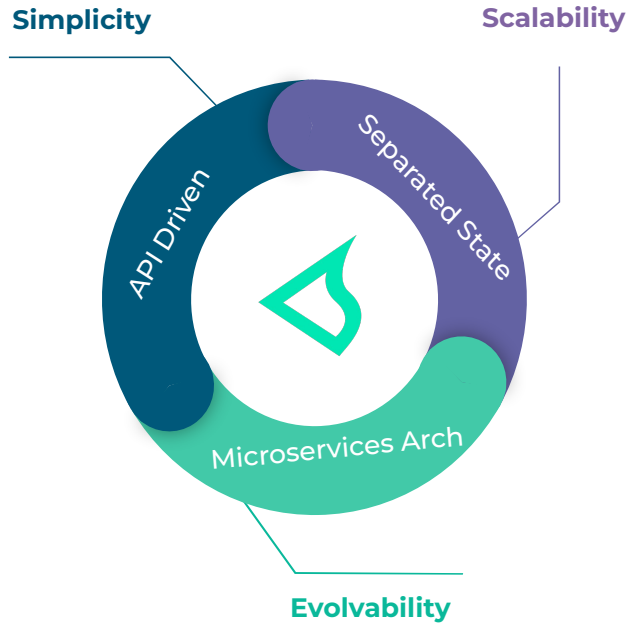
- **Layer 2** and **Layer 3** service auto-scaling and API based provisioning

- Deploy **multi-tenant** BGP routing, NAT, FW Layer 3 network function services

- Web **portal based** provisioning

- End-user consumable services **on-demand** via white-label web based provisioning portal

- Implement and consume network products **at software speed**

- **Network as a Service** (NaaS) transport fabric integrations

- **Interoperability** and management of DCO Layer 2 virtual cross-connect automation

- Ability to bring your own **API enabled** Layer 2 networking infrastructure

STATELESS ENABLED SERVICES

CLOUD CONNECT SERVICE (CCS)
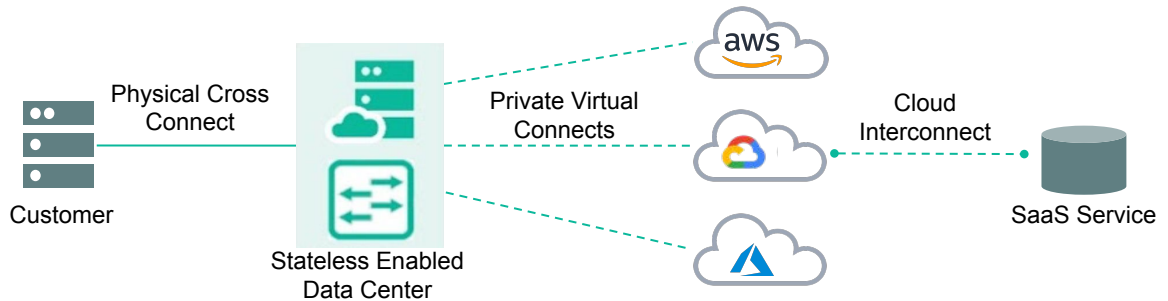
- Hybrid Multicloud Enabled Layer 2 and Layer 3 services
- Cloud virtual connection provisioning
- Automated provisioning of BGP routing end-end into target cloud environments
- Pre-integrated with NaaS fabrics including Megaport, ConsoleConnect and PacketFabric
- Pre-integrated with AWS, Microsoft Azure and Google Cloud private connectivity
- Integrate cloud-native services with on-prem and other cloud services

LOCAL INTERCONNECT EXCHANGE (LIX)
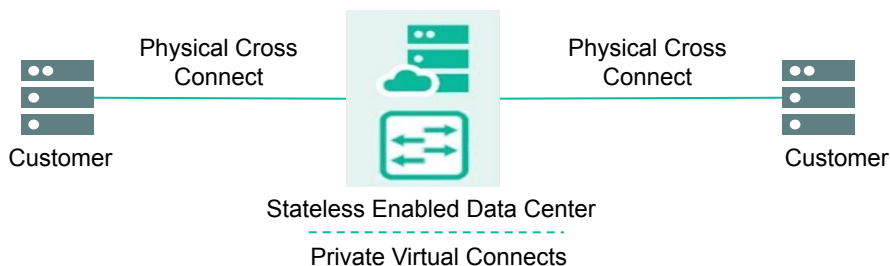
- Connect between customers within a single data center environment, on-demand
- Intra-data center virtual cross connect provisioning
- Automated provisioning of BGP routing end-end into target environments
- One:one and one:many connection patterns to enable customized private connectivity

STATELESS ENABLED SERVICES

METRO INTERCONNECT EXCHANGE (MIX)
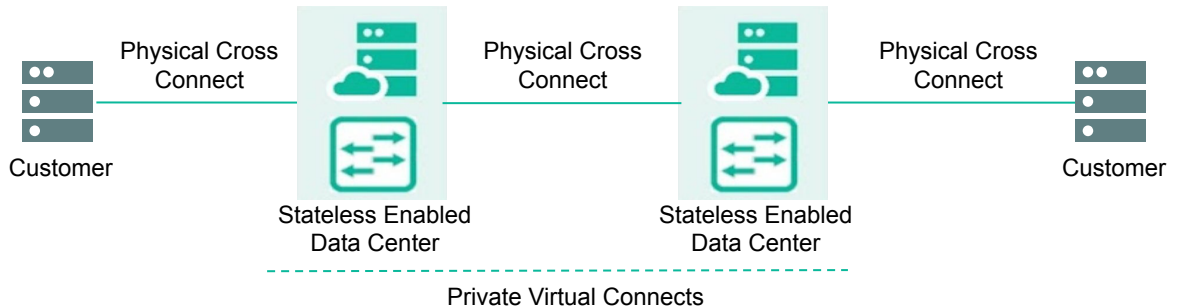
- Connect customers in separate data center environments, on-demand
- Inter-data center virtual cross connect provisioning
- Automated provisioning of BGP routing end-end into target environments
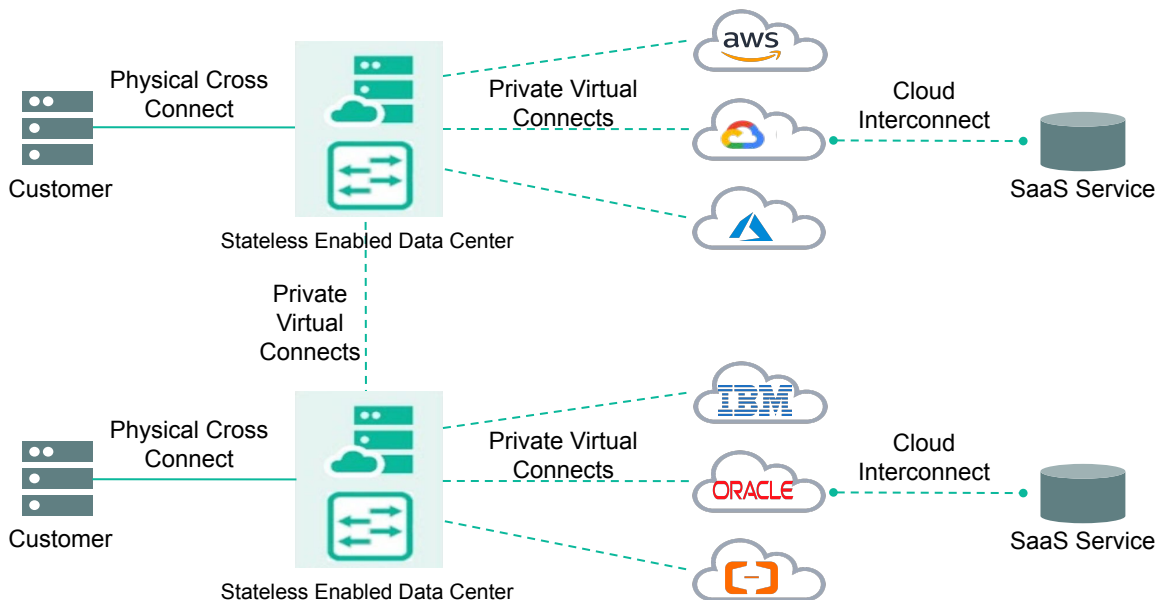- One:one and one:many connection patterns to enable customized private connectivity

MULTI-SERVICE EXCHANGE (MSX)

- Include Stateless CCS, LIX, and MIX capabilities
- Allow customers to define their own connection product
- Integrate custom DCO or NSP transport infrastructure
- Integrate custom MSP offerings, such as private cloud and bare metal services

STATELESS SOFTWARE ROUTER (SSR)
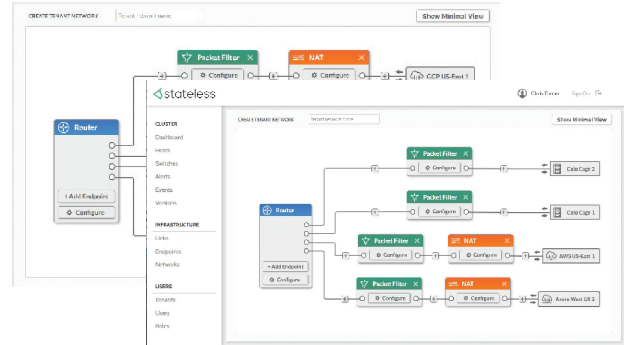
Layer 3 Network Functions Software Solution

SCALE-OUT CLUSTER

Multi-dimensional scalability reduces capital outlay and supports limitless growth.

MULTI-TENANCY

Manage and build thousands of isolated and custom tenant networks

END-TO-END AUTOMATION

Design, configure and deploy tenant networks in seconds for faster quote to cash

Dynamic auto-scaling of networks as throughput and capacity demands

Inherent resiliency through automated N+1 High Availability eliminating downtime and disruption

CONTROL & VISIBILITY

Zero disruption maintenance and software updates

API-driven visibility for rich system-wide diagnostics

Rich logging data supports required compliance requirements

EASILY INTEGRATED

Simple, API-driven, low risk integration into existing network architectures

VLAN support

SDN enabled switches for integration into top-of-rack distribution

Open REST API simplifies integration with SDN and back-office systems

EVOLVABLE ARCHITECTURE

Deploy new functionality through software to meet changing user requirements without CAPEX investment

STATELESS SOFTWARE ROUTER (SSR)

Stateless Software Router [SSR] is the new software for software-defined network interconnectivity, giving users the ability to create, deliver and control interconnect points.

This gives providers and users the ability to extend connectivity seamlessly to reach hyperscale cloud, cloud-based applications and other IT resources. SSR delivers Layer 3+ network services like routing, NAT, and packet filtering through an API-first consolidated
scale-out cluster deployed in multi-tenant, multi-tiered and high throughput environments.

Using principles from micro-services, monolithic network appliances are broken
down into composable software elements that can be combined together into custom networking chains for each interconnection. The SSR's revolutionary architecture solves
the problem of high availability and seamless upgrades by separating network state from the underlying processing. State is placed in a highly available distributed data store allowing the platform to operate at a level that is merely impossible with traditional physical or virtual appliances.
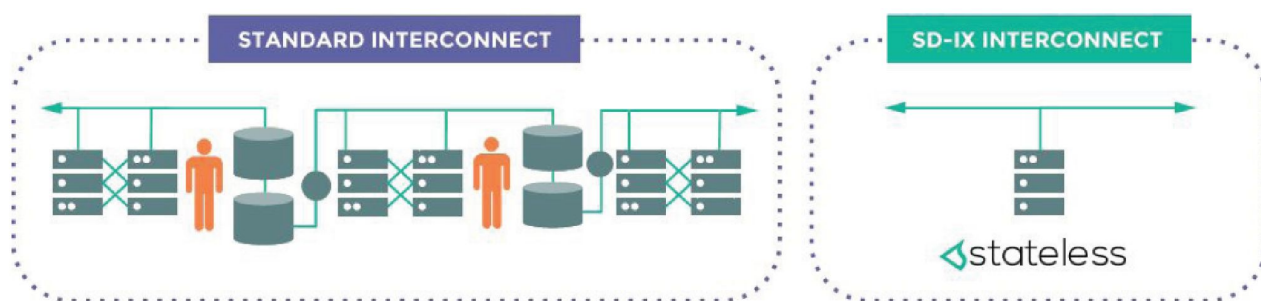
FEATURE	BENEFIT
Multitenancy	Reduce infrastructure sprawl by consolidating appliances into a single platform accommodating thousands of networks.
API-Driven Visibility	Fast, quality configuration and maintenance decisions through granular network visibility and diagnostics.
Evolvable Architecture	Future-proof investments through a platform with expanding feature set that evolves with application needs.
Disruptionless Updates	Deploy new capabilities without waiting for full upgrade cycles. Updates occur without breaking a single tenant connection.
Scale-Out Cluster	Reduce CAPEX outlays. Our four server starter cluster enables 72G of bandwidth. Add additional servers for a total of ten servers when more capacity is needed. However, our bandwidth capacity continues to increase as we release ongoing updates.
Efficient Resourcing	Eliminate inefficient virtual machine server utilization through dynamic resource scaling.
Innate High Availability	Reduce downtime risk and meet SLA guarantees without costly 2x CAPEX expenditure. Should an end-user's traffic be tied to a host that goes down, traffic is shifted to another host minimizing impacts to their network.
Intuitive User Interface	Reduce tenant network setup and configuration time to minutes through a simple-to-use GUI.
Network Function Library	Routing, Packet Filtering, etc. easily and quickly enable multi-hybrid cloud connect and data center interconnect use cases.

STATELESS SOFTWARE ROUTER (SSR)

PLATFORM SPECIFICATIONS	
Feature	**Specificiation**
Minimum Cluster Size	4 x 1U Hosts + 2 x SDN Switches
Maximum Cluster Size	12 x 1U Hosts + 2 x SDN Switches
Encapsulation Support	VLAN
Role-Based Access	Operator and Tenant Role-based access options, including: • Administrator • Read/Write • Write
Password Protection	Salted Password Hashing
Supported Micro Network Functions	• NAT: Static, Static Port, Source Overload, Destination NAT • Packet Filter (Firewall) • Routing: Dynamic & Static
Resiliency (4x Host Cluster)	Single Host fault HA
Resiliency (5+ Host Cluster)	Dual Host fault HA
Front-End	Componentized UI
Change Management Logs	Syslog support of all API calls

OPEN SOURCE	
Feature	**Specification**
API	JSON REST API using OpenAPI spec

HARDWARE SPECIFICATIONS	
Feature	**Specification**
2x SDN switches	See manufacturer specs at: https://docs.mellanox.com/display/sn3000um/specifications
2x Dual 100Gbps ConnectX-5 cards per Host	See manufacturer specs at: https://www.nvidia.com/en-us/networking/ethernet/connectx-5/
4 - 12 x 1U Hosts	See manufacturer specs at: https://www.supermicro.com/en/products/system/1U/6019/SYS-6019P-WTR.cfm

Stateless puts data back in motion. Our Cloud-Native Networking mindset embodies simplicity, scalability, performance, and because it is software, can evolve over time to take on any use case. We see a future where self-service shared platforms between networking and developers will be critical for future business agility.