

### Your Apps and Infrastructure: Faster. More Secure. Higher Performing.

Apcela's AppHUB is a next-generation, cloud-ready architecture and suite of solutions that improves the performance and security of on-premises, cloud and hybrid enterprise applications.

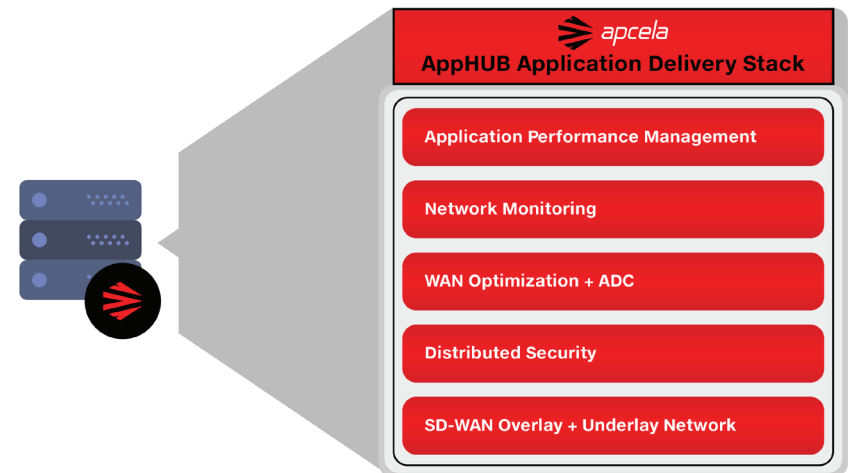
Built on Apcela's global, low-latency application delivery platform, AppHUBs are easily integrated with the enterprise WAN to create secure, high-speed express lanes between enterprise data centers and applications, remote users and the cloud. SD-WAN overlays enhance, or even replace, existing MPLS or hybrid WAN networks. AppHUB's distributed security platform improves performance by extending your existing security environment and policies closer to users and cloud applications, ensuring your apps are available to any user, on any device, anywhere in the world.

### AppHUB Hybrid WAN Architecture and Application Delivery Platform



### The Anatomy of AppHUB

Apcela's application hubs, or AppHUBs, are virtual datacenters deployed at network and cloud service provider-dense, carrier-neutral colocation facilities and key industry vertical datacenters such as financial exchanges. This highly distributed network of AppHUBs provides an on-ramp to Apcela's global low-latency network and application delivery platform. Apcela's fully meshed high-performance core is built on 1-100G+ optical wavelengths on the straightest and shortest fiber routes available between markets to provide lowest latency, site-to-site, global WAN performance.



Each AppHUB is a vertically integrated application delivery stack; built from colocation, network connectivity, hardware-optimized virtualized network functions (VNFs) and hyper-converged compute and storage; equipped with integrated security and a complete network telemetry solution.

As an extension node for SD-WAN, enterprises can leverage AppHUBs to eliminate network bottlenecks, shorten the distance between edge locations and application hosting hubs, distribute security and improve overall performance of their WAN and application delivery platform. Apcela deploys SD-router instances at each one of its AppHUBs to ingress- and egress-encrypted traffic to and from the AppHUB and network backbone. These instances are internet-connected, allowing enterprises to utilize Ethernet, DIA, broadband or local access to securely connect to the WAN in the local AppHUB market. With application and user level QoS, you'll see improved application performance and simple integration with existing security platforms.

## Fully Integrated SD-WAN Overlay

Connect enterprise endpoints to any AppHUB over your choice of access medium including MPLS, Ethernet Private or Virtual Private Lines, DIA, Local Broadband Internet or Cellular data connections. With dynamic path selection, Apcela's SD-WAN Edge arbitrates across multiple access links based on policies you define around latency, jitter and packet loss. Our SD-WAN Edge offers zero-touch provisioning on x86 terminating devices and simplifies provisioning of endpoint VPNs.

## Simplified, Distributed Security Extending the Perimeter

AppHUB enables the simple extension of your existing security policies, closer to cloud apps and remote users, without the need to deploy and manage additional security software or appliances. Benefits you'll see include:

- **Distributed Endpoint and Cloud Security:** Firewall, URL and file filtering, IDS/IPS, user and application-based policies, malware detection, SWGs and advanced enterprise grade security services.
- **Improved Performance:** By distributing firewalls closer to the edge, latency can be reduced by more than 50%. VPNs terminate closer to users and harness the low-latency backbone to move data across the WAN.
- **Latency Optimized Internet Routing:** AppHUBs include a network-based firewall with performance IP Internet. Performance IP leverages peering agreements with 6-12 ISPs and intelligently routes traffic to the ISP providing the best latency.

## Fast, Secure Global Network Connectivity

Apcela's global network of distributed AppHUBs are securely interconnected with a high performance, low-latency backbone to accelerate and secure application performance across hybrid IT environments. Edge locations are within 50 milliseconds of 185 markets, to ensure the most secure and fastest possible application performance and end-user QoS. High bandwidth and options to scale capacity ensure optimal performance.

## AppMon™ End-to-End Network Telemetry and Performance Monitoring

With applications, data and users deployed across hybrid IT environments, monitoring and managing application performance takes on a whole new level of complexity. AppMon, Apcela's distributed network telemetry and monitoring solution, constantly scans and reports network and application performance. Actively monitor user connectivity to mission and business critical applications so you can course-correct before users notice any issues and before the IT help desk can escalate.

## The AppHUB Advantage

**SD-WAN Integration:** Apcela operates large SD-WAN overlays over the AppHUB network with built-in bandwidth utilization, management economy and improved cloud connectivity.

**Cloud and Internet Gateways:** Secure, high performance direct access to industry leading cloud service providers. Proprietary telemetry tool AppMon insures traffic is routed through the best available path.

**Deterministic Routing and Protected Bandwidth:** Clients are configured to ride a stable, never oversubscribed primary path of known latency, which allows planning for specific data flows. The results: no jitter, packet loss or throughput variance.

**Integrated and Extensible Network and XaaS Telemetry:** Apcela provides "eyes in the sky" with AppMon monitoring sensors.

**Apcela Infrastructure Anywhere (Metal, VM, Container):** Compute and storage along with data and application management features (e.g., distributed log captures for IoT sensors) are available at each AppHUB.

**Best Price, Best Performance:** Carrier neutrality in AppHUB facilities ensures WAN connectivity balances best performance and best price. Carrier diversity ensures competition, driving carrier and path diversity while optimizing OpEx for underlay networks.

## Cloud Gateways for Secure and Dedicated Connectivity

AppHUB Cloud Gateways provide a single point of high performance, dedicated connectivity to Apcela's low-latency core network with direct access to cloud services; along with Apcela's powerful telemetry solution that routes traffic destined to CSPs through the closest AppHUB location, lowering round-trip times and improving application performance. Our gateways are powered by 1-10 Gbps of direct connectivity into IaaS providers, and direct peering with most major SaaS platforms. Cloud Gateways bypass the public Internet and its inherent obstacles like congestion, DDoS attacks, and network attacks, to speed up cloud applications between 10-40x.

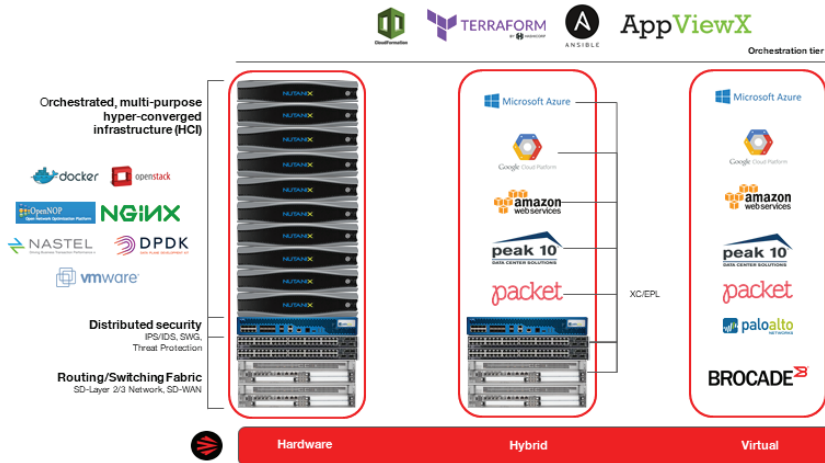
## Integrated Edge Computing

AppHUBs have edge computing and storage built in, as a distributed platform, highly complimentary to core enterprise cloud computing platforms. Distribute applications and/or data across a globally distributed local IT environment for low-latency access to corporate resources from every point on the network.

### Deployment of AppHUB

Enterprises are changing their networks to address their evolving business needs. Maintaining a highly available network, while supporting new business initiatives and migrating to the cloud requires a fundamental shift in how enterprises approach network design and architecture.

Apcela understands this. Depending on a client's current needs and the state of their network during transformation, Apcela offers three deployment scenarios: hardware-only, hybrid and, as we get closer to the edge, a fully virtualized deployment. Within the AppHUB Platform, enterprises can deploy network equipment and connect to the cloud and application providers they need. This approach enables enterprises to build future hybrid cloud deployments.



### AppHUB Use Cases

AppHUB is widely deployed across key industries and verticals, including Fortune 500 companies in the financial services, healthcare and engineering sectors. These firms have adopted Apcela's AppHUB to dematerialize their CPE servers, reduce their network costs and improve performance for mission-critical, VOIP and apps.

<p><b>SaaS and IaaS Acceleration</b> (\$35B Pharma Company)</p> <ul style="list-style-type: none"> <li>Improve on-demand mission-critical video conferencing services</li> <li>Accelerate speed and performance of AWS access</li> <li>Provide visibility to user performance</li> </ul>	<p><b>Mobile User Acceleration</b> (\$170M In-flight Wireless Provider)</p> <ul style="list-style-type: none"> <li>Create a VPN for mobile executives to access secure files/apps</li> <li>Improve speed and performance of Wi-Fi for customers when traveling</li> </ul>
<p><b>Branch Infrastructure</b> (\$1.3B Global Engineering &amp; Construction Company)</p> <ul style="list-style-type: none"> <li>Simplify SD-WAN to accelerate branch office deployment</li> <li>Enable AR/VR, IoT, Big Data, predictive analytics and real-time algo processing with a high-performance infrastructure</li> <li>Deliver bandwidth for HPC without additional investment</li> </ul>	<p><b>Cloud App Assembly</b> (\$1.5B Call Center Giant)</p> <ul style="list-style-type: none"> <li>Simplify the deployment and performance for data and apps across on-prem and cloud environments</li> <li>Significantly improve voice and video quality to globally distributed users</li> </ul>