Localize Data Capture & Response

Problem

Centralized analytic processing of disparate, real-time data sources has inherent delays that stall the delivery of key decisions to consumer populations. Centralized analytics create network choke points that compound delays in the real-time analysis of data required to meet today's business demands.

Solution

Deploy a secure digital edge node near dense clusters of users that represent data collection points. This edge consolidates all communicating traffic for that area. Safely interconnect to digital ecosystems for greater choice and lower network costs. Directly connect the edge node to the nearest cloud that can run the analytics to significantly improve performance and local response time while alleviating network congestion caused by the aggregation of large, continuous, real-time data streams backhauled to the central data center. Use cloud resources to meet the fluctuating demands of data analysis. Deploy local caches at the edge node to store trend data that will feed decision-making for systems of insight. Use interconnected network channels at the edge to send insight decisions to user devices, generating revenue opportunity and strategic mindshare.

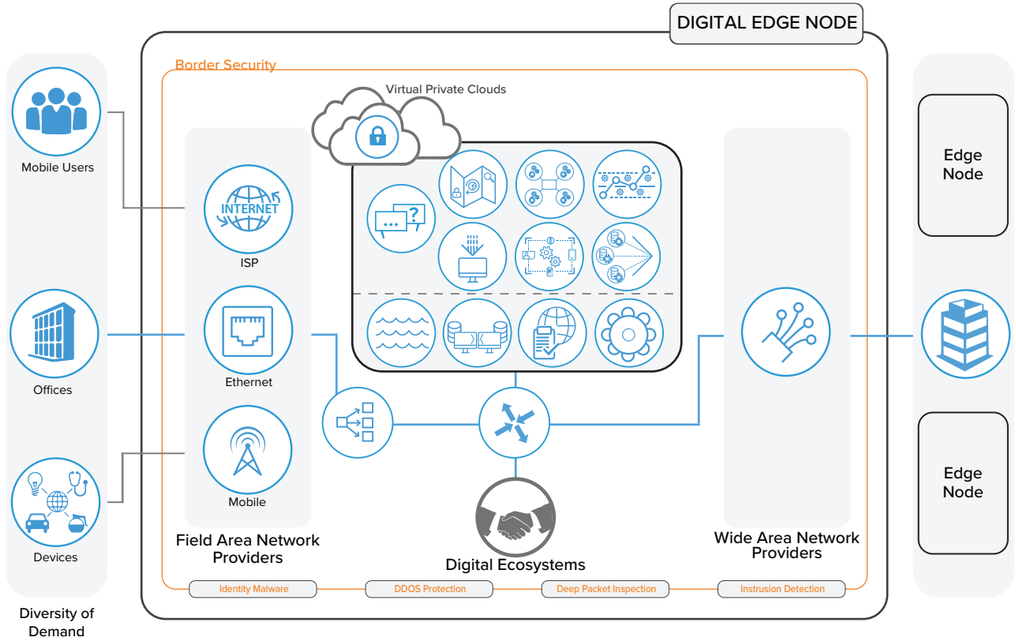
Constraints

1. Real-time systems of engagement performance is gated by traditional centralized network and IT infrastructure.
2. The massive data sets collected locally cannot be backhauled to a centralized data center due to network congestion and poor response times.
3. Real-time insights that feed systems of engagement can't be responsive if the data is not physically proximate to the analytic processing.
4. While bandwidth is cost-prohibitive, latency causes the biggest problem, as there is a point where adding more bandwidth only marginally helps response time.

Steps

1. Establish a digital edge node at a geographic hub based on population and business intersection advantages in a region with a cloud that runs the preferred analytics platform.
2. Consolidate endpoint management for all traffic sources and types, including the internet.
3. Use intra-colocation (cross connect) networking to enable local connectivity for all traffic at the edge.
4. Install a file system in the cloud and port key analytics to support systems of engagement.
5. Install data ingestion engines to accept myriad streaming data and file types.
6. Place a data cache in the edge node to collect incoming data before processing.
7. Install messaging gateways, APIs and event processing hubs to integrate data services.

Reference View



Forces

- Results and updates must be delivered quickly to users to make insights useful and decisions timely.
- Analytics are driving new business and partner models, as they shift the focus to real-time systems of engagement and/or interact with multiple analytic services to solve complex modeling problems.
- Data is becoming more valuable to businesses, customers and competitors. Businesses that were product-driven are becoming data-driven.
- The amount of data collected to support real-time engagement is growing exponentially from GBs to ZBs as reactions to engagement become a critical part of the feedback loop for business models.
- Analytic processing needs to be located near aggregated data to meet response time goals.

Results

Technical

- Optimized data placement significantly reduces latency and response time.
- Analytic processing performance and response time are significantly improved.

Business

- New revenue opportunities are enabled by real-time analytics at the point of workload origination.
- Analytics become relevant to real-time decision-making.
- Reduced network ingress and egress costs and expanded networks.

Potential New Challenges

- Most analytic services will either run in multiple clouds or need data from multiple clouds.