Networking Solutions for the Cloud Builder

Networking for Cloud Deployments:

- Application Defined Networking – Dynamically optimize traffic to meet the needs of individual data and application workloads

- Converged Network Infrastructure – Single tier, scale-out networking solution

- Open Integration Platform – Orchestration and workflow integration delivering policy and configuration automation

Plexxi is Building a Simply Better Network for Cloud Builders

In the ever-evolving world of IT, the next wave of industry transition and growth will be the rapid movement from third-party applications to Cloud IT delivery models. Emerging Cloud environments include highly converged storage and compute (virtualized compute and software-defined storage), and dynamic run-time defined workloads. Emerging IT architectures will evolve, as well, as they become more agile and dynamic with integrated storage, compute and network that operate as one with simple configuration, automation and programmability.

A New Consumption Model:

Cloud enables rapid scaling; both up and down, of compute and storage capacity and facilitates speedy introduction of new services and applications. Early adopters have leveraged Public Cloud to achieve increased agility and scalability. In times when internal IT teams are challenged to respond quickly to requests, business department heads often turn to Public Cloud providers to implement new services quickly. This offers competitive advantage from a time-to-market perspective, however it can also lead to an environment with data fragmentation, security concerns and rapidly growing expenses (as data volumes explode in the Public Cloud). Public Cloud will continue to be a viable solution for many applications; however there are a number of applications that organization will choose to deliver in house. Internal IT teams are increasingly being tasked with delivering the speed and agility of the Public Cloud within their Private Cloud environments.

The Emerging Role of the Cloud Builder:

As the industry transitions into the next era of IT, the flood of data and application growth is forcing Cloud-based network architectures to change radically. This shift is causing an increased emphasis on tools and service integration rather than a focus on individual components. The emerging role of Cloud Architect is tasked with delivering agility and cost savings through automation, resource elasticity, data and application mobility and workflow integration. Traditional static

networking approaches are an impediment to achieving these desired results. Plexxi Control software, in combination with Plexxi Connect and Plexxi Switch, are tools to enable Cloud Builders to be successful.

Plexxi Solutions for the Cloud Builder:

- Plexxi Switches enable Cloud Builders to build clouds in a new way with greater agility, cost-efficiency, ease-of-use, and security
- Plexxi Control delivers powerful new capabilities to enable Cloud Builders to build both public and private clouds
- Plexxi Connect creates an open integration platform for cloud deployments, providing processes and tools that are critical to the success of the IT infrastructure, including managing workflow integration, workload integration and infrastructure integration.

Plexxi Offers Simply a Better Network for Cloud Builders

The next era of IT has new kinds of applications and requirements, and there are new IT architectures needed to meet requirements for agility, integration, and simplicity. There are new IT consumption models emerging, such as IT as a service in the Public Cloud and IT as a converged offering in the Private Cloud.

The Cloud Builder generation needs to make the Private Cloud as easy to consume as the Public Cloud. Cloud Builders need a better network solution. Plexxi Switches are scalable, dynamic and responsive, Plexxi Control software is intelligent, automated and application-driven, and Plexxi Control, provides processes and tools Cloud Builders can leverage to efficiently transition to the next era of IT. For more information, visit our products section.

Application Defined Networking

Automation, Orchestration, Visualization, Management and Control for Cloud deployments

Cloud Builder Need	Conventional Approach	Consequences	Plexxi Approach	Plexxi Advantage
Flow Policies	OpenFlow, ACLs	Hand crafted per device policies need to be carefully documented	Flow Fitting Affinities	• Manually override for specific flow-by-flow needs or automate finer grain policies • Drive workload experience by algorithmically matching network resources to critical workload needs
Workload SLAs	None	No way to easily treat workloads differently	Workload Fitting Affinities	• Create workload knowledge in the network. Easily create workload classes that associate to different workload capabilities (low latency links, bandwidth availability, isolated paths)
Traffic Distribution	ECMP – Random Hashing	Hot-spots & Congestion in non-homogeneous environments	Traffic Fitting Affinities	• Dynamically match changing workload traffic needs to network fabric capacity • Leverage agile L1 switching capabilities to change fabric as needed

Plexxi Switches
Converged Network Infrastructure
Single tier, scale-out networking solution for
Cloud deployments

Cloud Builder Need	Conventional Approach	Consequences	Plexxi Approach	Plexxi Advantage
Simple Converged Connectivity	Discrete ToR, Spine and DCI boxes	Lots of boxes, lots of cables, lots of protocols, lots of touch points, lots of arbitrary network boundaries	Converged/Scale-out ToR + Spine + DCI	• Simple, cost-effective rack-and-stack • Buy only what you need, when you need • Simple to add racks (1 cable) or extend across multiple data centers • Stretched and/or replicated Layer 1 paths for ultra-low latency content distribution

Plexxi Connect
Open Integration Platform
for Cloud deployments

Cloud Builder Need	Conventional Approach	Consequences	Plexxi Approach	Plexxi Advantage
Policy Automation	None	Heavily manual labor-intensive deployment	Workload Meta-data integration + SDK	• Automate the deployment of workloads onto the network – give preferential treatment or prescribed paths based on workload policies. • Streamline "systems engineering" and deployment labor
Configuration Automation	Custom scripts	Errors, hard to debug scripts, elongated time-to-repair	Workload Configuration data integration + SDK	• Learn and use everything needed to configure network ports automatically • Reduce error rates caused by misconfiguration • Create self-documenting infrastructure that is easy to debug and to correlate into cloud operational systems • SDK allows for fully customizable integrations for both configuration and policy

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