

# InterCloud Systems

Products Overview



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# INTERCLOUD SUMMARY

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Mission Statement: **Enabling Carriers to accelerate the deployment of Virtualized Network and IT Services**



Our product differentiation factors: **NFV enablement platform, Advanced ML-based Analytics, Hyper Converged Delivery platform**



Our deployment differentiation factors: **Advanced professional services capability backed by the rapid deployment of custom engineering**



Go to Market Strategy: **Capitalize on changing channel market dynamics and need for born-in-the-cloud integrators**



Operational Model: **Consult, design, build, customize operate, transfer**

# MARKET DYNAMICS AND APPROACH

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Journey to Next Gen Service

Next Gen  
Enterprise  
Services

Analytics

Security

SDN/NVF

Reduce  
Opex

Static  
Networks

Telco Providers

Operationalize ↑ Monetize

InterCloud

VNF Validate

Customization

**Professional  
Services**

Analytics

Orchestration

**NVF Grid**

Open-stack

Unification

**DPOD**

TRANSFER

OPERATE

CUSTOMIZE

BUILD

DESIGN

CONSULT



# Advantages of virtualized network equipment vs physical

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# OUR PRODUCTS AND SOLUTIONS

# NFVGRID — NFVO MANAGEMENT & ANALYTICS PLATFORM

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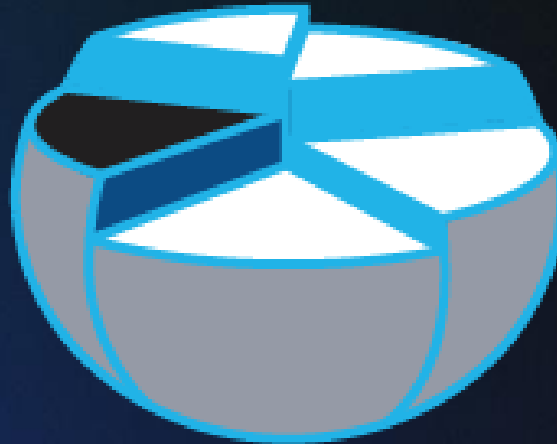
Full scale Next Generation Networking platform for Virtualized Network functions

## NFVGrid

True Multi-vendor

Converged Platform

Customizable API's



Predictive Network Analytics

Next Gen Security

Open Source

*NFVGrid is proprietary IP yet fully embraces Open Source*

# NFVGRID'S UNIFIED ORCHESTRATION DASHBOARD

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The screenshot displays the NFVGrid Unified Orchestration Dashboard. The interface includes a top navigation bar with the NFVGrid logo, a user dropdown menu (admin), and a location selector (Headquarters, New York, NY, USA). The main area is divided into three sections:

- Virtual Network Functions:** A sidebar on the left containing icons for Router, Firewall, VPN Gateway, Load Balancer, Network, Web Application, LDAP, and Docker.
- Service Chaining:** A sidebar on the left containing icons for Firewall and Hadoop.
- Network Topology:** A central grid area showing a network diagram with nodes and connections. A red trash icon is visible in the top right corner of the grid.

Overlaid on the network topology diagram are three numbered callouts:

- 1 Drag and drop provisioning
- 2 Machine learning real-time analytics
- 3 Enhanced network security

On the right side of the dashboard, there is a list of virtual network functions with their status and resource usage:

Virtual Network Function	Status	CPU	RAM	Net
Chrome	UP	0%	80%	Net
newyork-office: 192.168.1.4				
Video client	UP	1%	27%	Net
newyork-office: 192.168.1.3				
Video server	UP	1%	34%	Net
main-office: 10.1.1.3				
Work station	UP	0%	80%	Net
main-office: 10.1.1.4				
vSRX	UP	0%	70%	Net
management-network: 10.250.1.2, newyork-office: 192.168.1.2, main-office: 10.1.1.2				

At the bottom of the dashboard, there is a copyright notice: Copyright 2015 Intercloud Systems, Inc.



# NFVGRID—HIGH LEVEL ARCHITECTURE

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## THREE LAYERS OF ABSTRACTION AND INTERCONNECTION

### Customer Facing

VNF provisioning  
Life-cycle management  
Basic troubleshooting/probing  
Analytics



### Service Engineering

Product Catalog  
Service Definition  
Service Chaining  
Enhanced Troubleshooting



WEB UI



Analytics



NFVGRID NFVO platform

Manages Virtual and Physical Network Equipment

Virtual Appliances



SD networking



Packet collection



VIM/SDN Layer



VM provisioning and  
lifecycle management



Hardware nodes

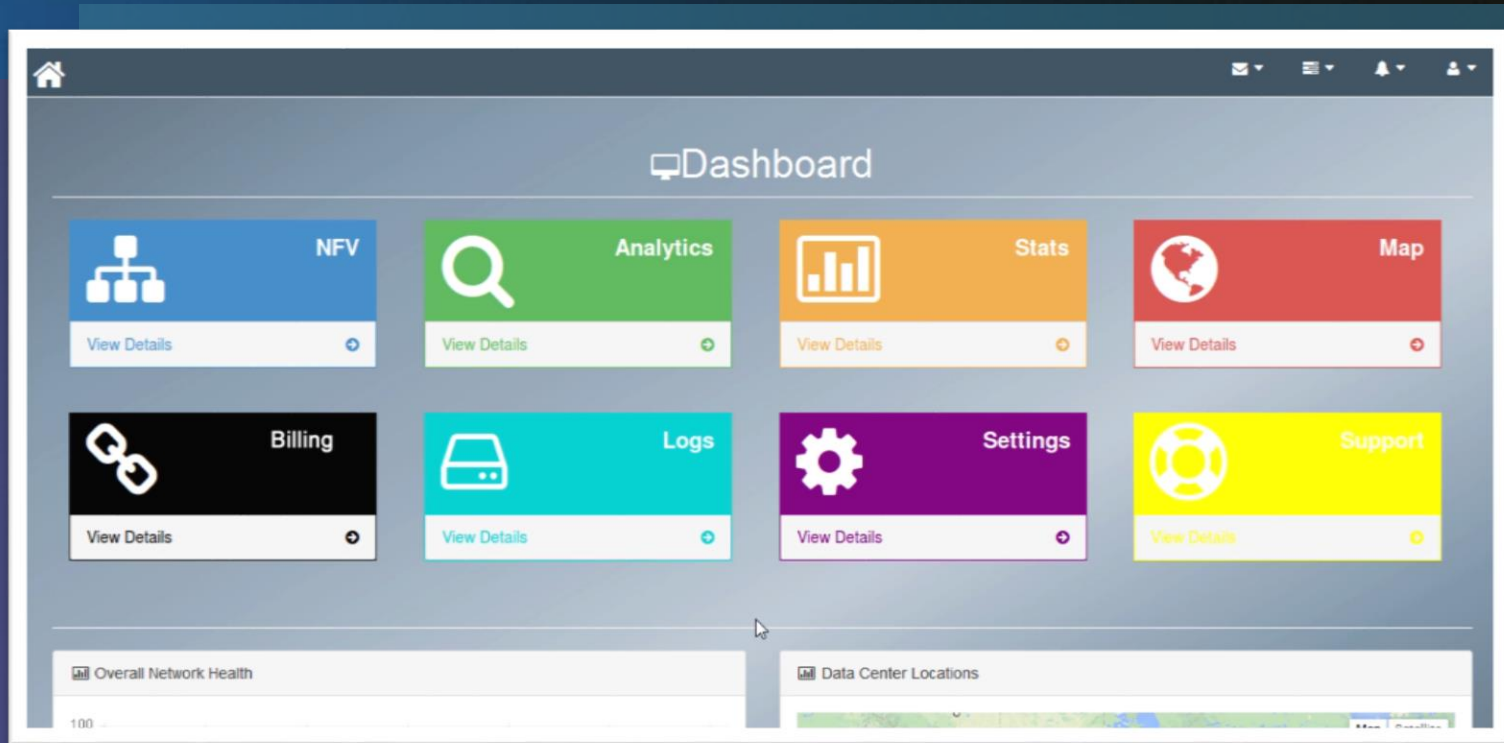


Storage

Physical Infrastructure

# NVFGRID NFVO — VIRTUAL APPLIANCE MANAGEMENT SYSTEM

NVFGRID NFVO— NETWORK FUNCTION VIRTUALIZATION ORCHESTRATION, MANAGEMENT, ANALYTICS, BILLING



## MAIN FUNCTIONALITY:

- 1 Automates virtual network appliance spawning, configuration, monitoring, recycling
- 2 Allows firewall, VPN, Internet, VoIP and other VNFs to be provisioned within minutes
- 3 Big Data-based analytical system for stats and troubleshooting
- 4 API access to all major functions to minimize integration time
- 5 System Engineering view for making templates and service chaining

**2-3%** of  
traffic captures  
hardware-based  
Network Equipment

**VS**

And it **IMPACTS**  
network performance

**100%** can be  
captured with  
SDN/NFV networking

No **AFFECT** on  
network performance

# DPOD – CONVERGED NETWORK AND IT DEPLOYMENT

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**DPOD Management  
System**

**NFV Grid  
Orchestration**

**SDN Configuration &  
Management (*Contrail*)**

**Hypervisor Layer  
(*KVM*)**



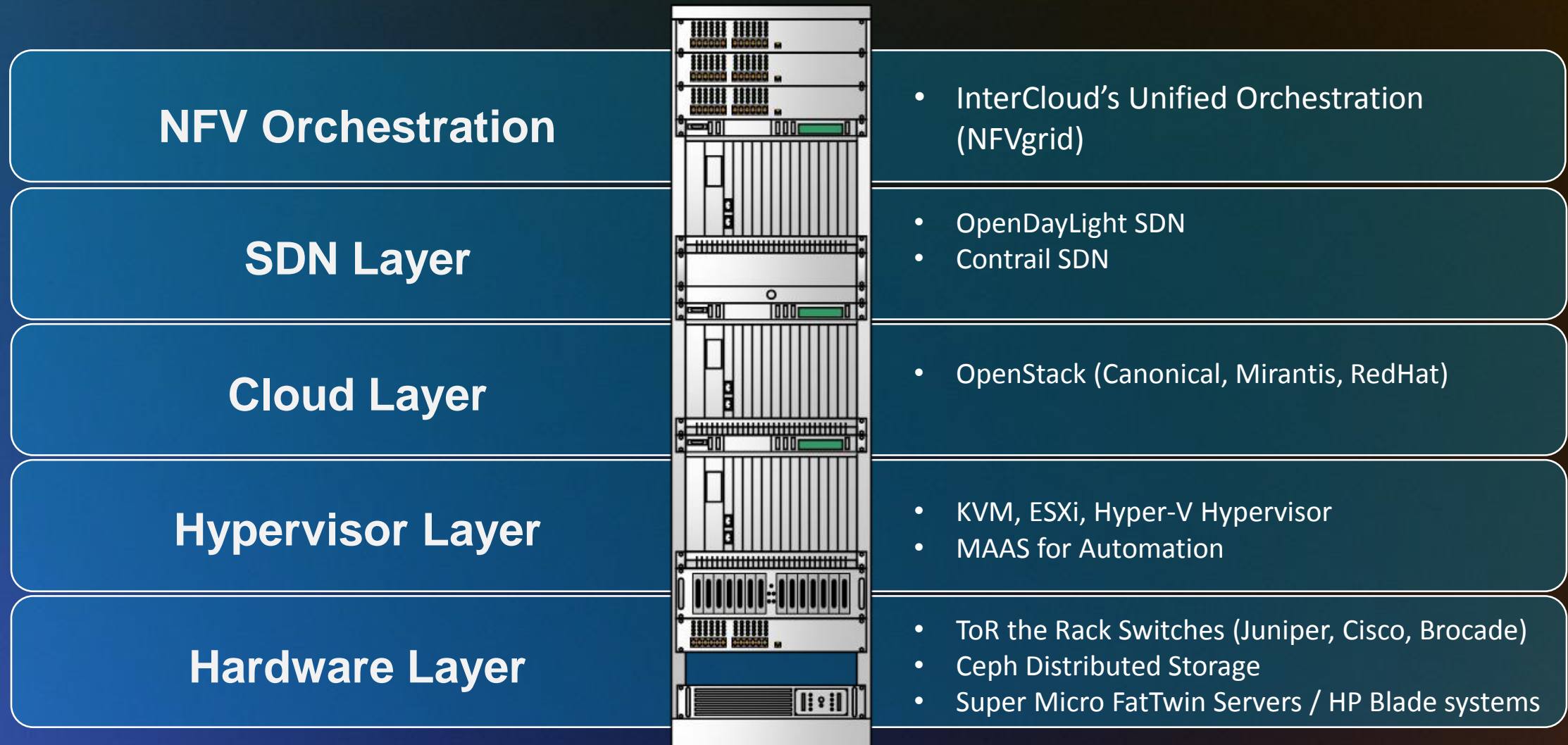
**Open-Stack Platform  
(*Canonical*)**

**Physical Hardware (*Juniper,  
Super Micro, Ceph*)**

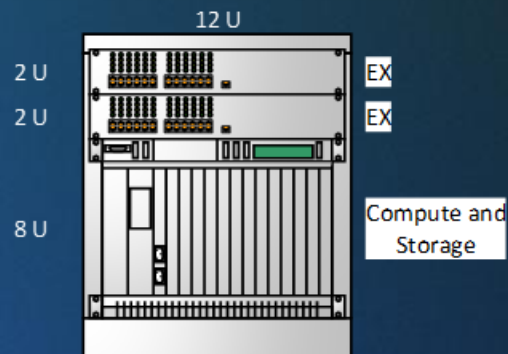


# DPOD ARCHITECTURE

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# DPOD MODELS

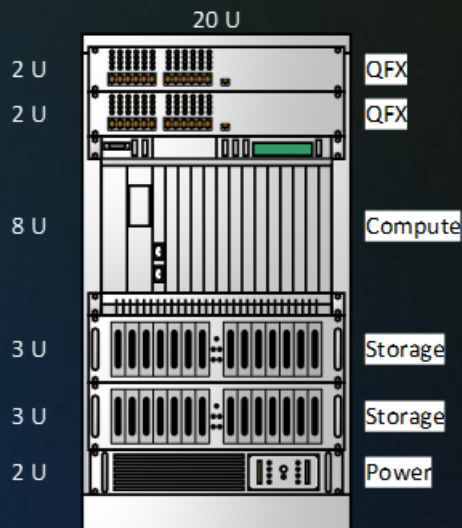


1/4 Cabinet DPOD 100

## Capacity

- Up to 1 TB RAM
- Up to 160 GHz CPU
- Up to 30TB Storage

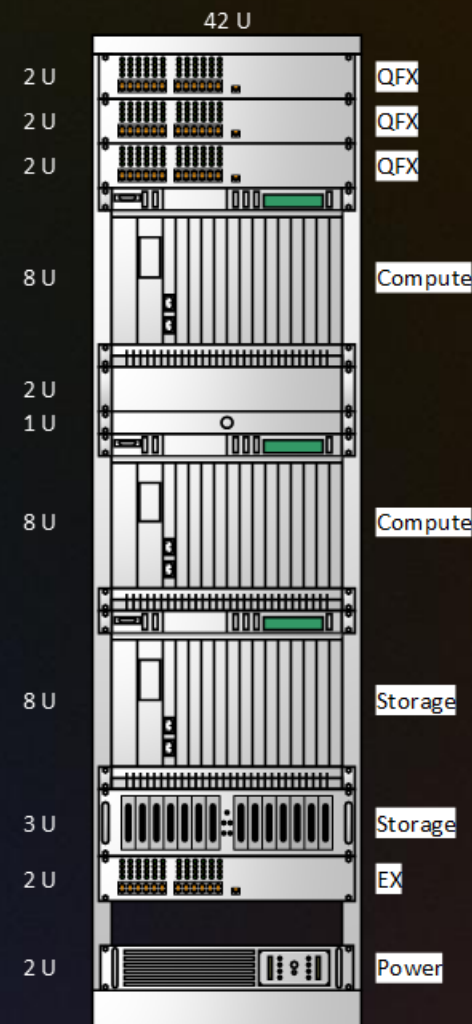
- InterCloud's automation tools included for rapid deployments
- 4 – 6 weeks deployment time frames
- BOT Model : build, operate and transfer
- 24 x 7 Managed services for hardware, software and orchestration
- 3<sup>rd</sup> party OSS/BSS integration



1/2 Cabinet DPOD 200

## Capacity

- Up to 3TB RAM
- Up to 320 GHz CPU
- Up to 200TB Ceph Storage



Full Cabinet DPOD 300

## Capacity

- Up to 8TB RAM
- Up to 500 GHz CPU
- Up to 600TB Ceph Storage

# CONTRAIL-OPENSTACK VALIDATION TESTING SERVICES

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Function	Silver	Gold	Platinum
VNF's documentation analysis and determining certification scope	✓		
Environment preparation	✓	✓	✓
VNF On-boarding to ICLD's Lab environment (OpenStack/Contrail)	✓		
Basic functional testing (according to NFVO Architecture)	✓		
VIM Level Monitoring Setup and Testing	✓		
Service Chaining		✓	
OSS Integration readiness		✓	✓
Performance and Load Testing		✓	
Software defined networking setup (SFC/NS)		✓	
Stability testing			✓
App-stream OSS adapters			✓
VNF life-cycle management efficiency testing			✓
Statistics and analytics gathering testing			✓

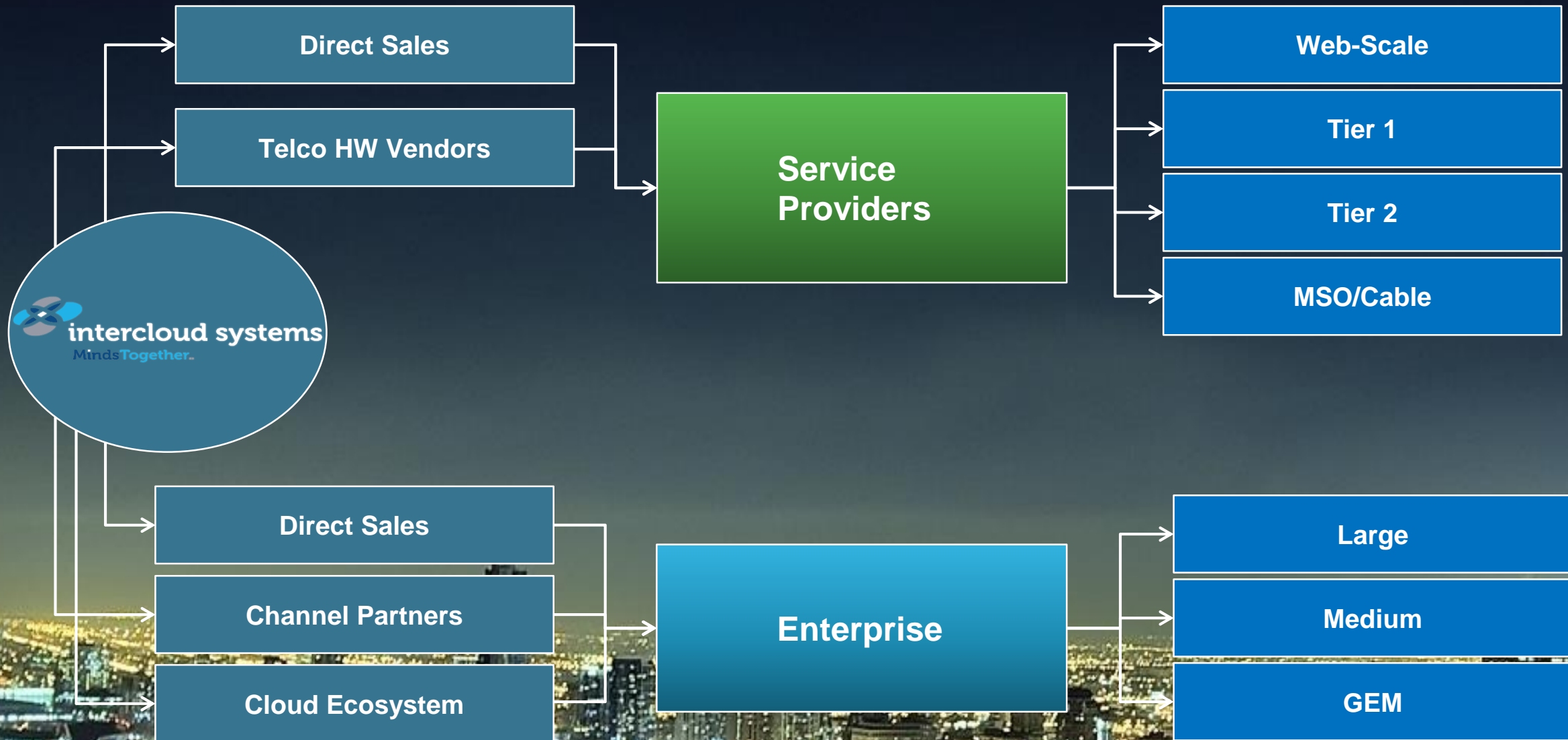
# GO TO MARKET STRATEGY





# GO-TO-MARKET STRATEGY

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# Contact Us



1030 Broad Street  
Shrewsbury, NJ 07702



[info@intercloudsys.com](mailto:info@intercloudsys.com)



(973) 630-5460



[@InterCloudSys](https://twitter.com/InterCloudSys)



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Systems