

PLNOG

where ipeople meet

SDN i Cloud Computing

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Popołudnie w Sieci.pl

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CCNP, AWS-ASA, AWS-ADEV, AWS-ASOA

 *@mrdoro*

Jarosław Zieliński

VCP, VCP-NV, vExpert 2016

 *@vJZielinski*

SDN

Czyli co?

Data center



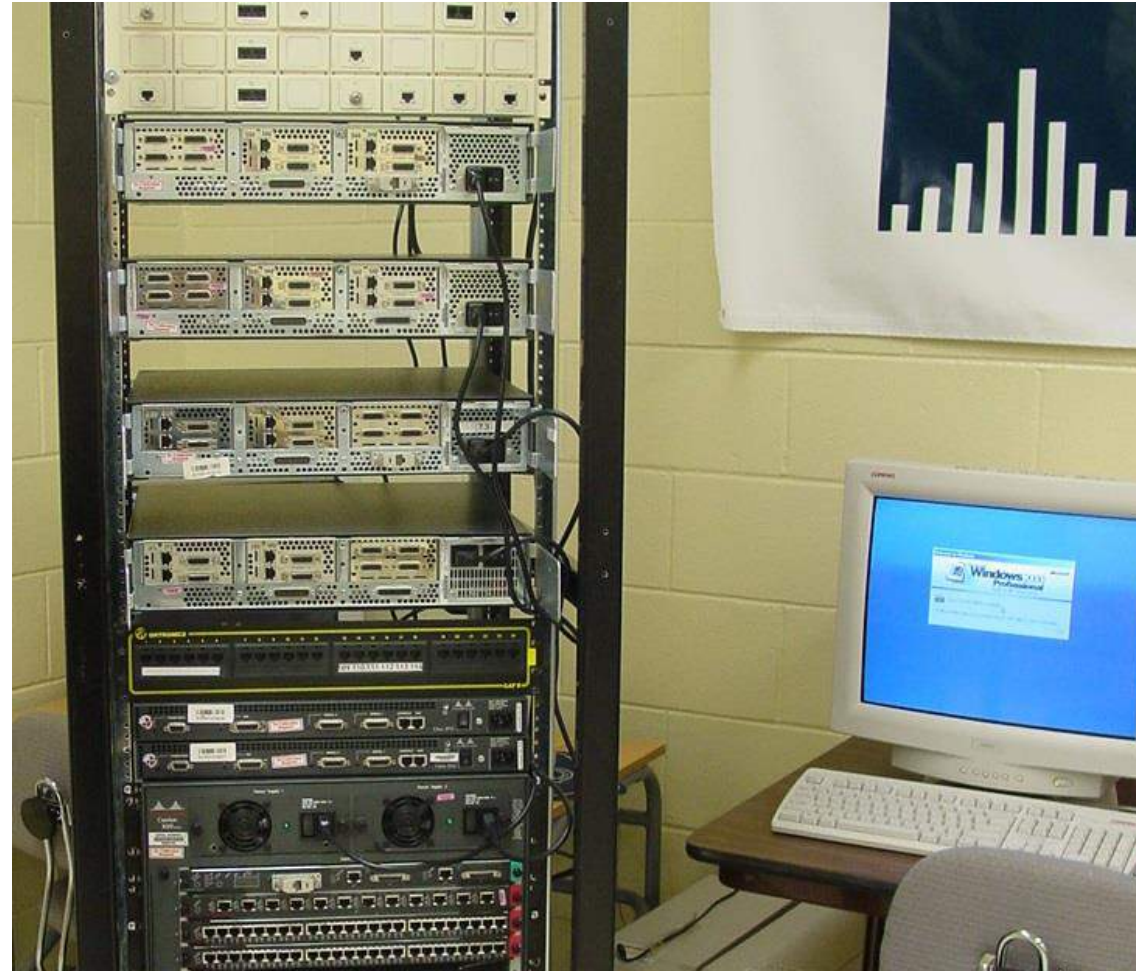
Data center

90's



Data center

SPOF



Data center



Data center

GOOGLE



Data center

UCS

Create Service Profile (expert)

Unified Computing System Manager

Create Service Profile (expert)

1. ✓ Identify Service Profile
2. ✓ **Storage**
3. Networking
4. vNIC/vHBA Placement
5. Server Boot Order
6. Maintenance Policy
7. Server Assignment
8. Operational Policies

Storage

Optionally specify disk policies and SAN configuration information.

Local Storage: **Mirrored** Mode: **RAID 1 Mirrored**

Create Local Disk Configuration Policy

Protect Configuration: **yes**
If **Protect Configuration** is set, the Local Disk Configuration is preserved on disassociation. On reassociation of the same Server, a configuration error will be raised if the new Local Disk Configuration is different.

How would you like to configure SAN connectivity? Simple Expert No vHBAs Hardware Inherited

A server is identified on a SAN by its World Wide Node Name (WWNN). Specify how the system should assign a WWNN to the server associated with this profile.

World Wide Node Name

WWNN Assignment: **Select (pool default used by default)**

Select WWNN assignment option.
If nothing is selected, the WWNN will be assigned from the default pool.
WARNING: The selected pool does not contain any available entities. You can select it, but it is recommended that you add entities to it.

Specify the virtual host bus adapters (vHBAs) that the server should use to connect to a SAN. To specify more than two vHBAs, select the Expert configuration mode.

vHBA 0 (Fabric A)	vHBA 1 (Fabric B)
Name: fc0	Name: fc1
Select VSAN: default	Select VSAN: default
<input type="checkbox"/> Create VSAN	<input type="checkbox"/> Create VSAN
WARNING: there are not enough WWN addresses available in the default pool. This vHBA will be created with an invalid WWN address.	WARNING: there are not enough WWN addresses available in the default pool. This vHBA will be created with an invalid WWN address.

< Prev Next > Finish Cancel

www.sysadmintutorials.com

Data center

OpenManage

DELL OPENMANAGE ESSENTIALS Dell Tech

Home Manage Reports Preferences Logs Tutorials Extensions

Dashboard Schedule View

Home Portal Filter by: All Devices

Devices by Status Filter by: All Devices

Status	Count
Unknown	1
Normal	8
Critical	3

Alerts by Severity Filter by: All Alerts

Severity	Count
Unknown	1.3 k
Info	51
Normal	19
Warning	8
Critical	56

Alerts Filter by: All Alerts

Viewing 1429 Filtered Alerts

Severity	Acknowledged	Time
?		2/2/2013 5:27:29 PM
?		2/2/2013 5:27:23 PM
?		2/2/2013 5:27:13 PM
?		2/2/2013 5:26:58 PM
?		2/2/2013 5:26:18 PM
?		2/2/2013 5:24:44 PM

Discovered vs. Inventoried Devices Filter by: All

Devices in Range: 12

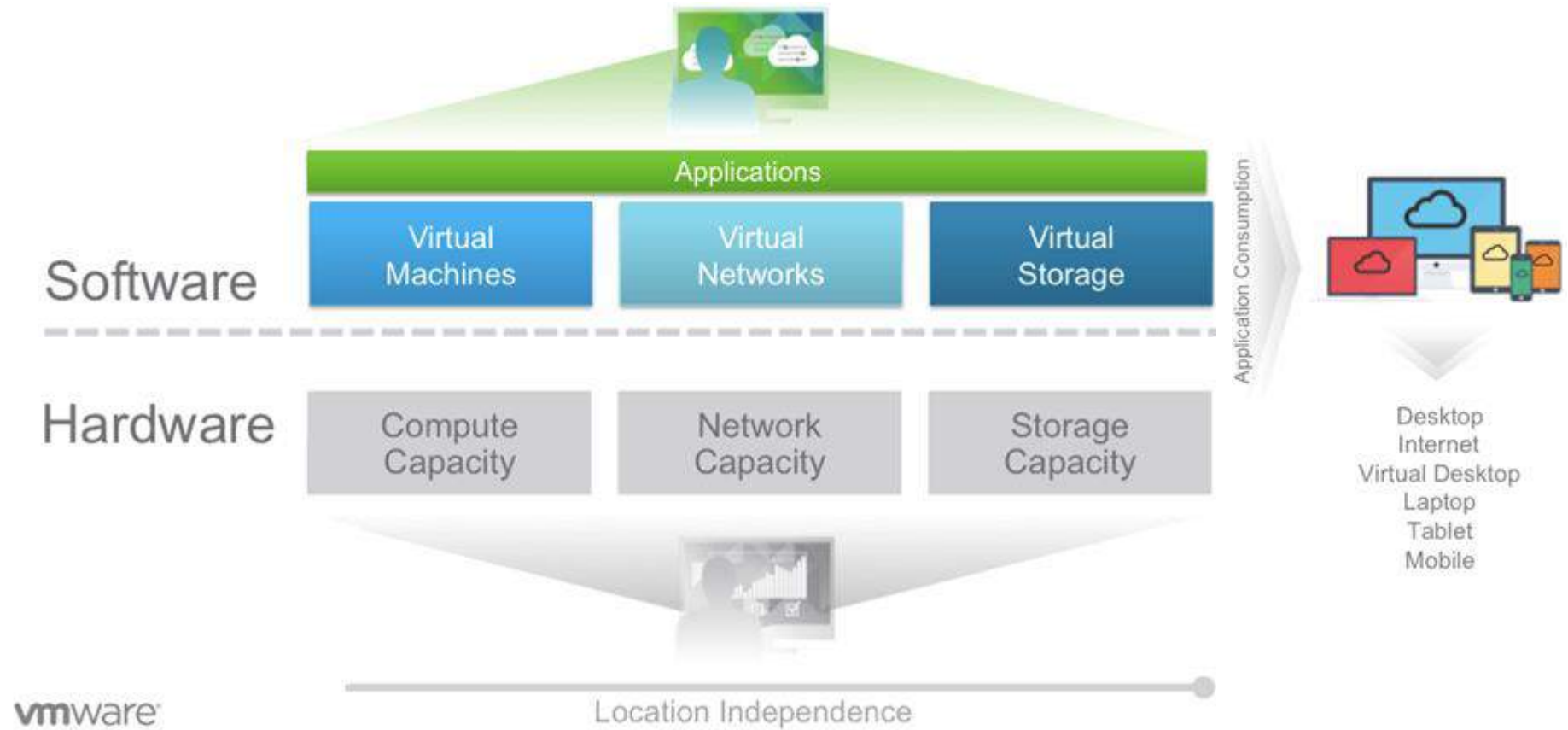
Category	Discovered	Inventoried
Group 1	7	7
Group 2	5	5

Task Status

Task Name
Scheduled Status Poll
Discovery of [redacted] (Scheduled)
Discovery of [redacted] 4 (Scheduled)
Discovery of vm3.[redacted] (Scheduled)
Discovery of [redacted] (Scheduled)
Discovery of vm2.[redacted] (Scheduled)
Discovery of [redacted] (Scheduled)

Data center

SDDC



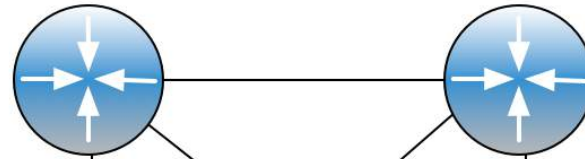
Hoplites



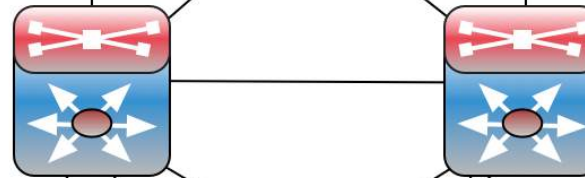
Routing

Trzy poziomy

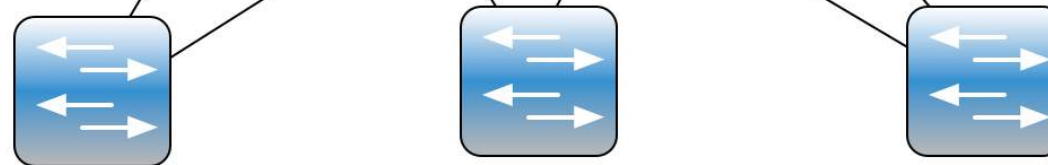
Core



Distribution



Access



Routing



Trzy poziomy



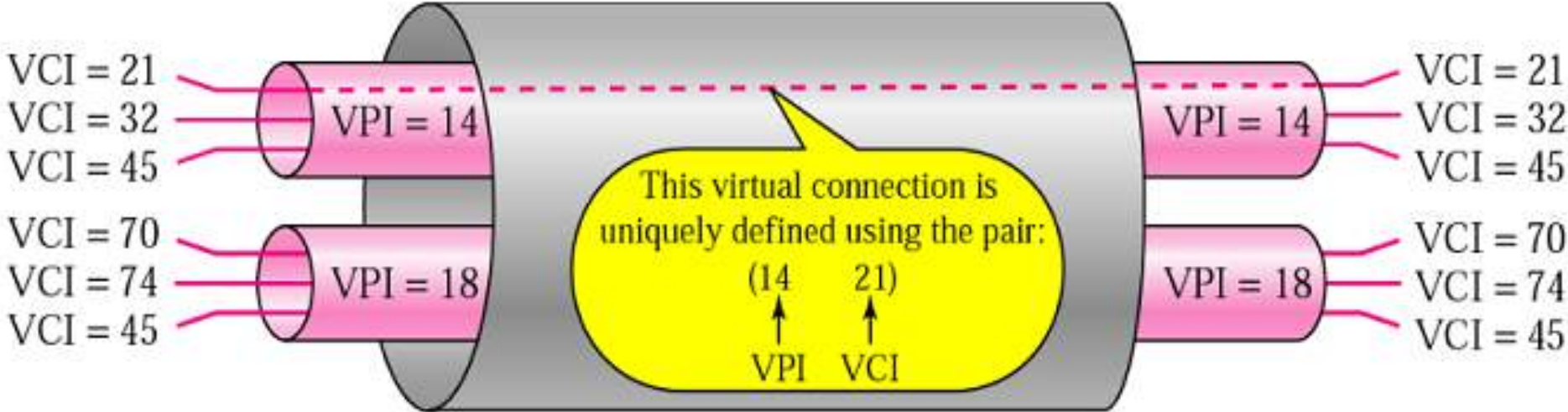
Routing



Routing



ATM



Routing



Arista



Routing



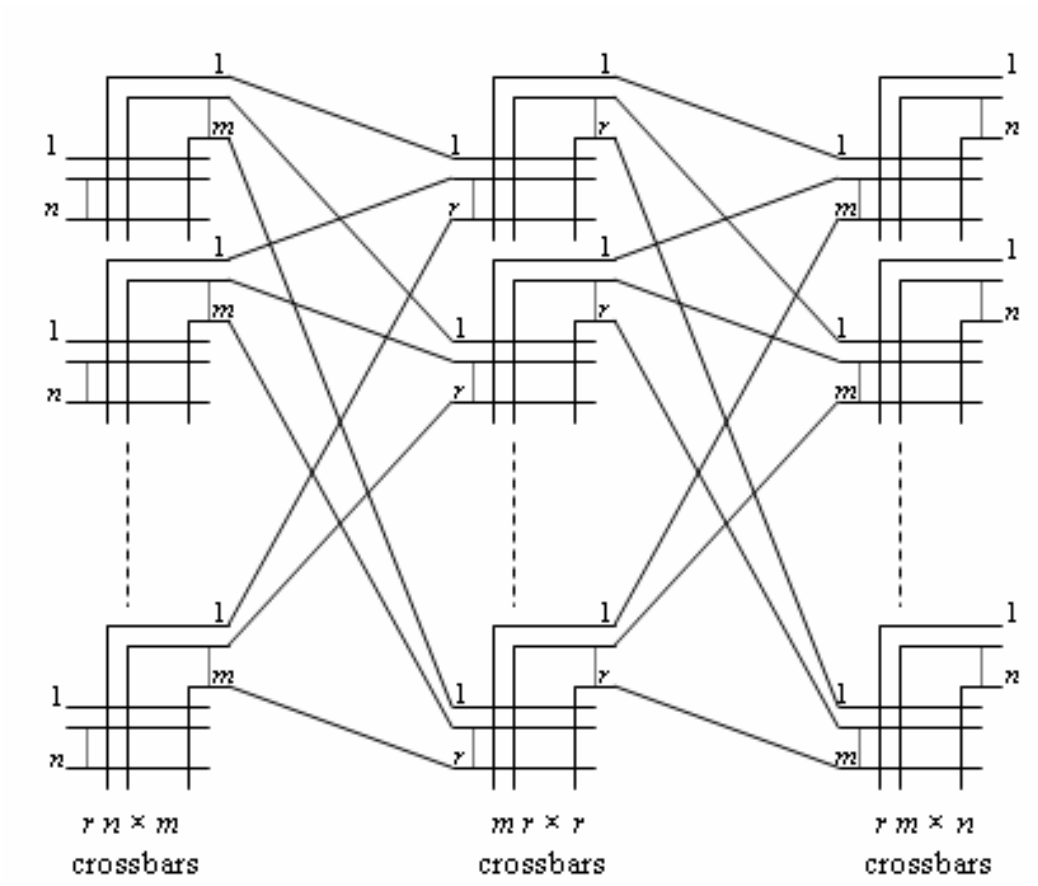
Lodówka



Routing



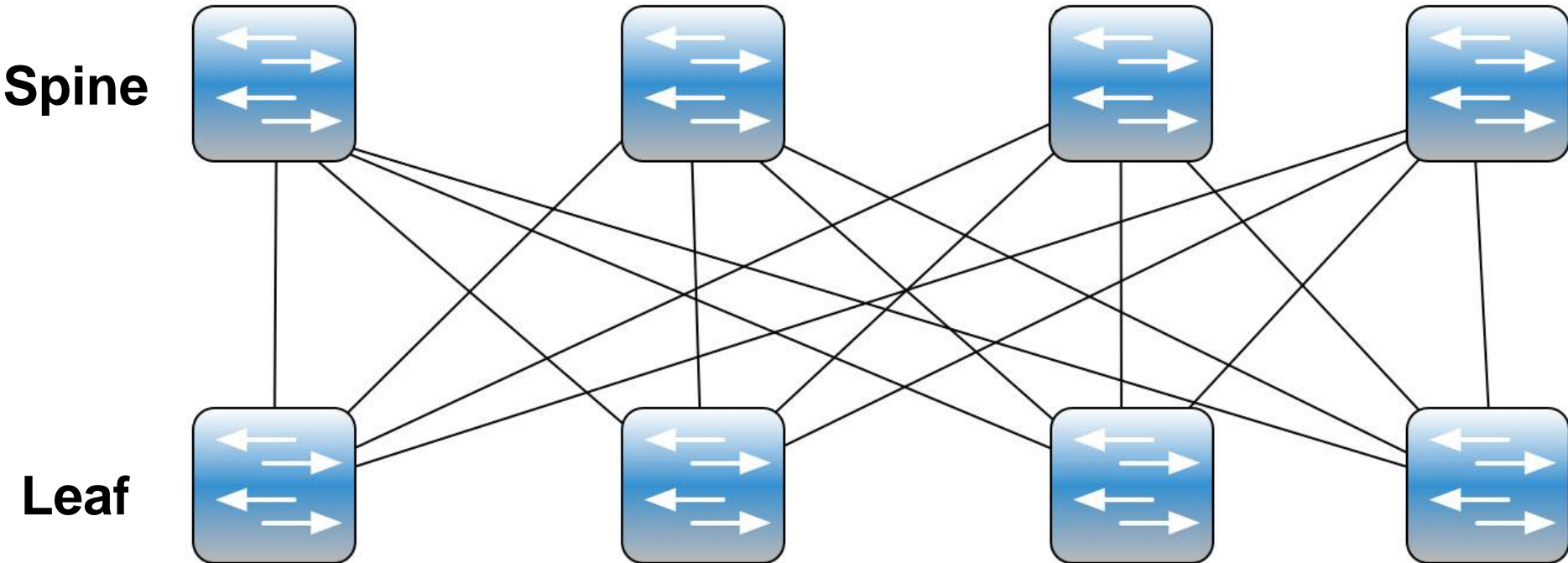
Charles “Clos network”



Routing



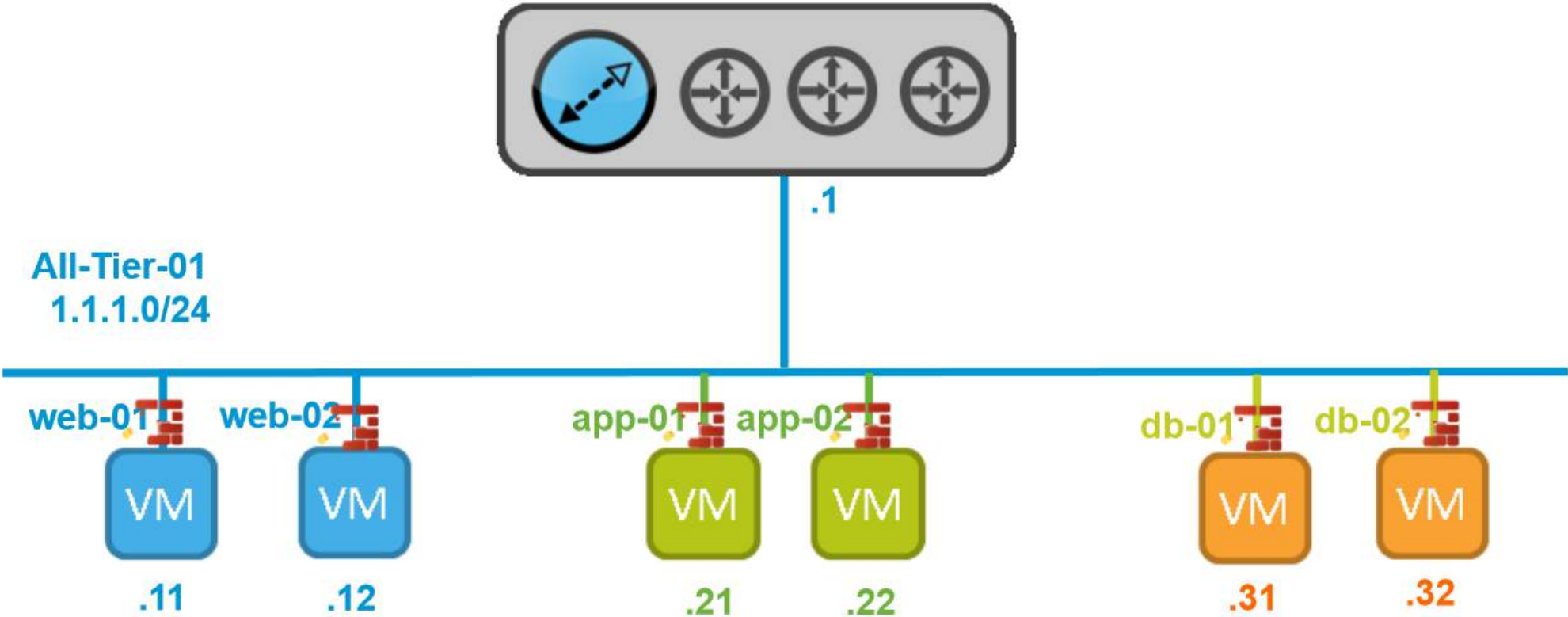
Charles "Clos network"



Routing



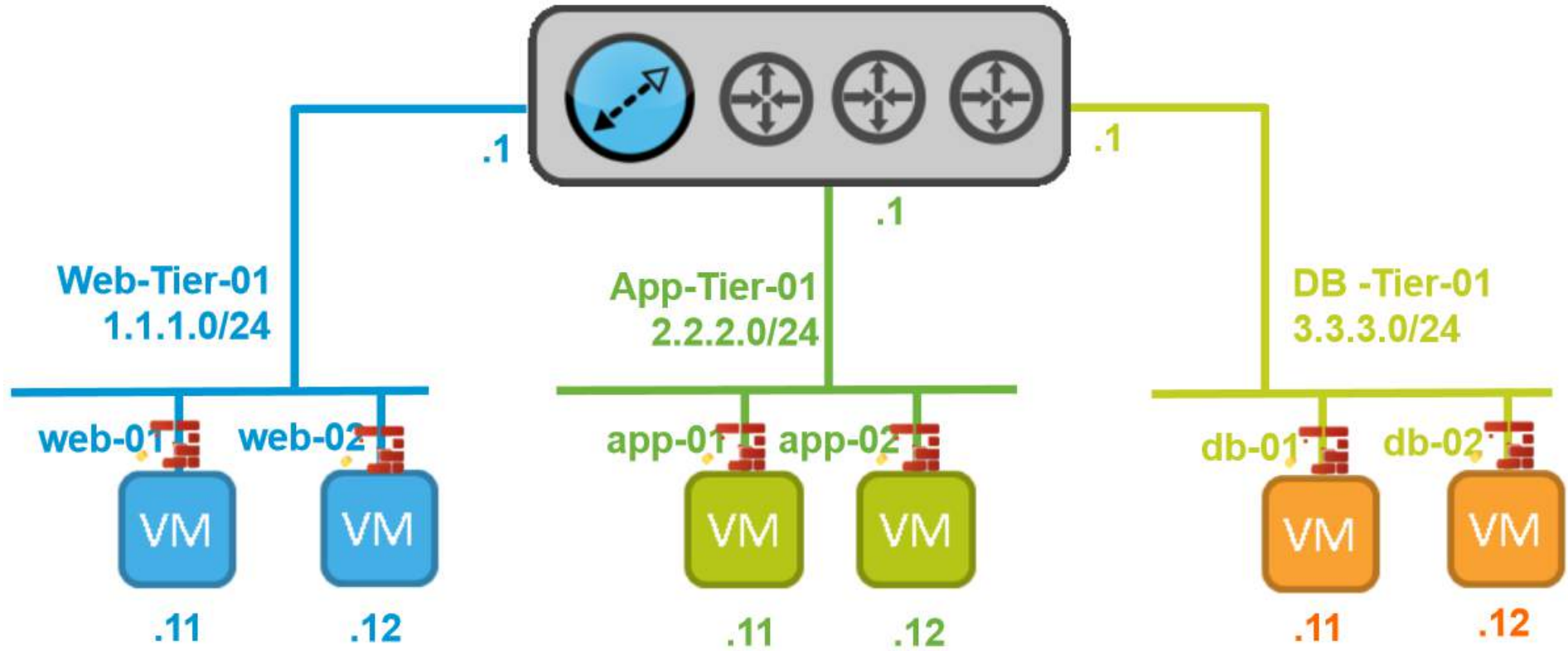
SDN



Routing



Mikrosegmentacja

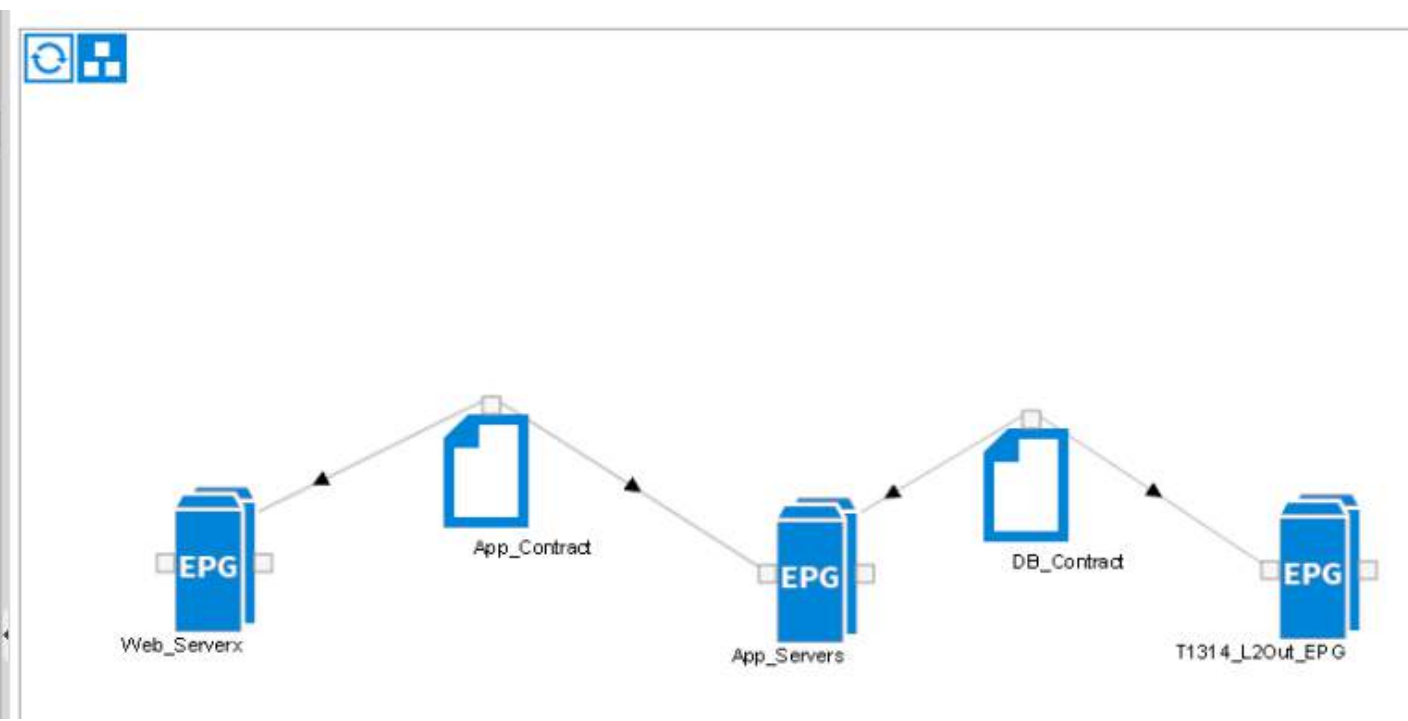


Routing

Mikrosegmentacija



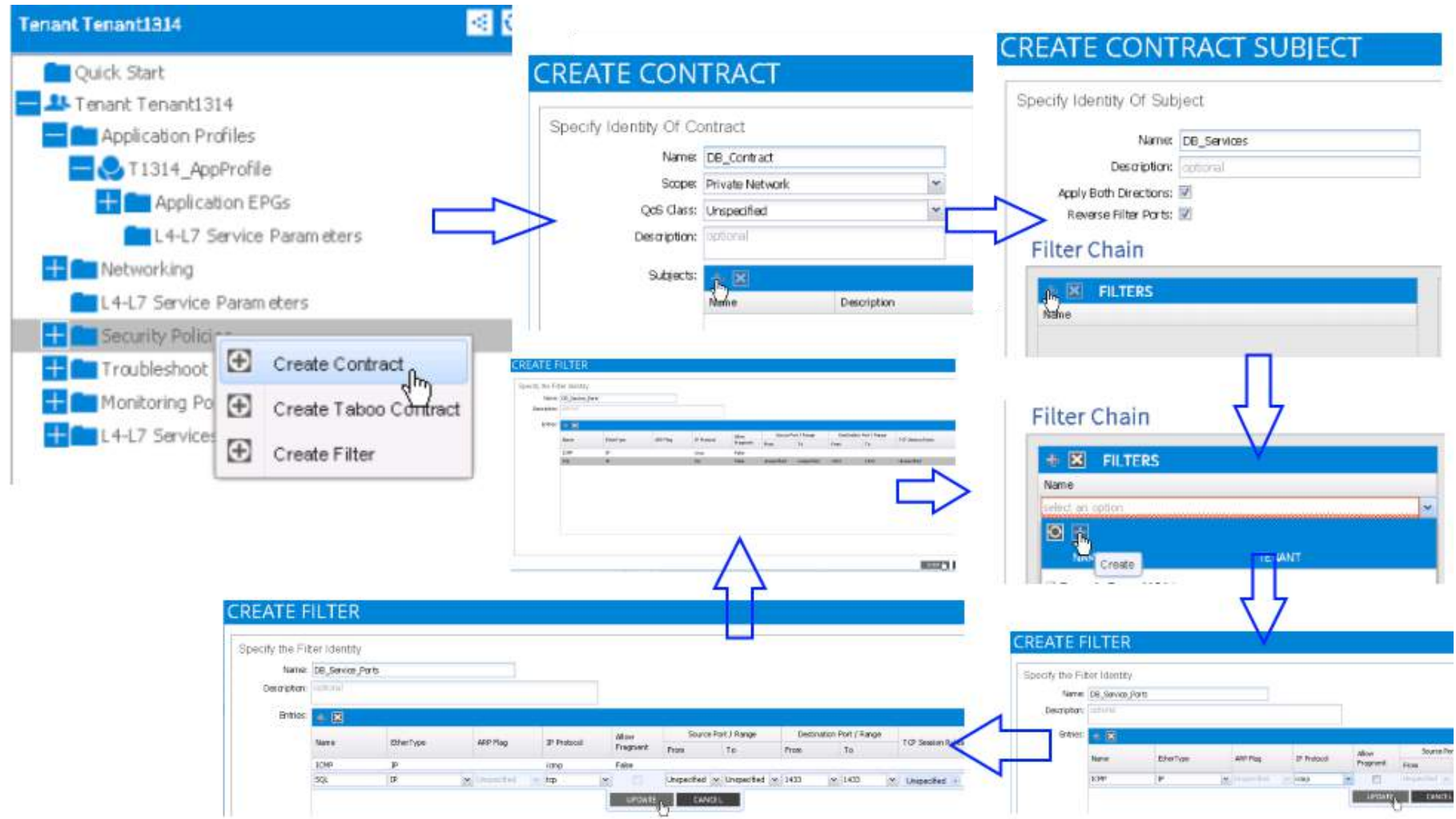
- Tenant Tenant1314
 - Application Profiles
 - T1314_AppProfile
 - Application EPGs
 - EPG App_Servers
 - EPG Web_Serverx
 - L4-L7 Service Parameters
 - Networking
 - L4-L7 Service Parameters
 - Security Policies
 - Contracts
 - App_Contract
 - DB_Contract
 - DB_Services
 - Taboo Contracts
 - Imported Contracts
 - Filters
 - Troubleshoot Policies
 - Monitoring Policies
 - L4-L7 Services



Routing

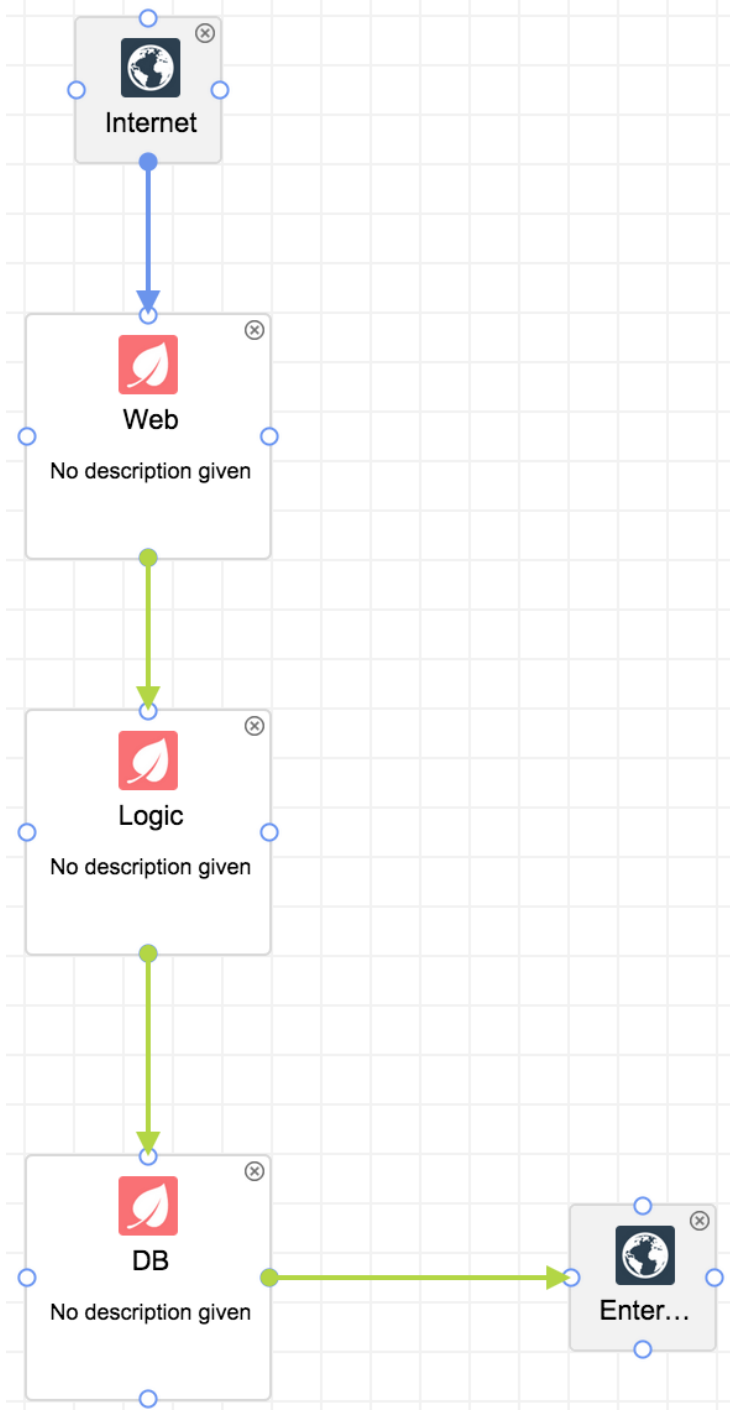


Mikrosegmentacja



Routing

ENERGY



Mikrosegmentacja

Applications

3 objects

- DNS
No description given
- Puppet
No description given
- WebApp**
No description given

+

Library

- Application Tier
Standard Tier
- Network Macro
Represents a random network
- Current Application
Macro for current application
- Application's Domain**
Macro for deployment target

Wireless



Wireless

1971 - ALOHAnet - Hawaii



Wireless

1991 - IEEE 802.11



Wireless



Kontroler sieci

Wireless

Access Points

- All APs
- Radios
 - 802.11a/n/ac
 - 802.11b/g/n
 - Dual-Band Radios
 - Global Configuration
- Advanced
- Mesh
- RF Profiles
- FlexConnect Groups
 - FlexConnect ACLs
- OEAP ACLs
- Network Lists
 - 802.11a/n/ac
 - 802.11b/g/n
 - Media Stream
 - Application
 - Visibility And Control
 - Country
 - Timers
 - Netflow
 - QoS

All APs

Current Filter: *None* [\[Change Filter\]](#) [\[Clear Filter\]](#)

Number of APs: 7

AP Name	IP Address(Ipv4/Ipv6)	AP Model	AP MAC
MAC-AP1	10.10.10.57	AIR-CAP1602E-E-K9	cc:46:cc:81:60
MAC-AP5	10.10.10.59	AIR-CAP1602E-E-K9	cc:46:cc:1a:69
MAC-AP2	10.10.10.64	AIR-CAP1602E-E-K9	cc:46:cc:81:60
MAC-AP7	10.10.10.235	AIR-CAP2702I-E-K9	00:fe:00:70:1b
MAC-AP4	10.10.10.234	AIR-AP2702I-UXX9	00:fe:00:6f:e7
MAC-AP6	10.10.10.69	AIR-CAP1602E-E-K9	cc:46:cc:81:60
MAC-AP3	10.10.10.233	AIR-AP2702I-UXX9	cc:46:cc:e6:e5

Kontroler sieci

Dashboard Login

Email


Password

[Log in](#) Stay logged in

[I forgot my password](#) | [Create an account](#)

Security, Management, & 802.11ac

Introducing the MX64 & MX64W

The image shows two Cisco MX64 and MX64W wireless routers. One is a smaller, white, rectangular unit (MX64) in the foreground, and the other is a larger, white, rectangular unit with two black antennas (MX64W) in the background. Both units have the Cisco logo on the front.

Wireless

Kontroler sieci

jzielinski@outlook.com

CISCO Meraki Network:

Mapa Satelita

Network-wide

Wireless

Organization

Help

The map displays a network of wireless access points (APs) in the Poznań region. The APs are represented by orange lines, with different colors indicating different network types: red for S11, orange for 92, green for E30, and blue for A2. The map shows a dense network of APs covering the area around Poznań, extending to nearby towns like Wronki, Szamotuły, and Nowy Tomyśl. The map also includes labels for various towns and cities, as well as major roads and rivers.

Wireless

Kontroler sieci



MyHive Login

Admin Name

Password

Log In

[Forgot Password](#)

Wireless

Kontroler sieci

The screenshot displays the Aerohive network management interface. The top navigation bar includes Home, Dashboard, Monitor, Reports, Maps, Configuration (selected), and Tools. The left sidebar shows a tree view under 'Policy Configuration' with options like All Devices, Aerohive APs (selected), Routers, Switches, VPN Gateways, Device Update Results, Hives, Network Policies, SSIDs, Port Types, and User Profiles. The main content area is titled 'Aerohive APs' and includes a 'View Device Monitoring >' link and an 'Auto Refresh Every 30 seconds' dropdown. Below this are buttons for 'New', 'Modify', 'Remove', 'Import', 'Update...', and 'Utilities...'. A table lists APs with columns for 'Audit', 'Host Name', 'Node ID', and 'Network Policy'. Two APs are listed: AP320 (Node ID: 001977241D00, Policy: Wireless Only) and AP-330 (Node ID: 08EA4477F280, Policy: Wireless Only). A context menu is open over the 'Update...' button, listing actions such as 'Upload and Activate Configuration', 'Upload and Activate HiveOS Software', 'Upload and activate application signature', 'Remove Captive Web Page Director', 'Update Bootstrap', 'Update Country Code', 'Update PoE Max Power', and 'Update Netdump Settings'.

Audit	Host Name	Node ID	Network Policy
<input checked="" type="checkbox"/>	AP320	001977241D00	Wireless Only
<input checked="" type="checkbox"/>	AP-330	08EA4477F280	Wireless Only

Security



Security

PIX



Security



OMEGA
N° 102 Repechage Round 2
EGY RUS
HAMED S.A.S. ISHMAELGANDOV
GR 60 KG
0 0:11 0
London 2012

Security

NG - Application firewall

The screenshot displays the Palo Alto Networks NG Application Firewall interface. The top navigation bar includes tabs for Dashboard, ACC, Monitor (selected), Policies, Objects, Network, and Device. The left sidebar contains a navigation menu with categories like Logs, App Scope, and PDF Reports. The main content area shows a table of session logs filtered by '(destination eq 172.16.1.3)'. The table has columns for Start Time, From Zone, To Zone, Source, Destination, From Port, To Port, Protocol, Application, Rule, and Ingress. Two sessions are listed: one at 10:28:49 from the 'vpn-s2s' zone and another at 05:43:17 from the 'untrust' zone. The 'Application' column for the second session is highlighted in yellow.

Start Time	From Zone	To Zone	Source	Destination	From Port	To Port	Protocol	Application	Rule	Ingress
01/24 10:28:49	vpn-s2s	untrust	172.16.1.2	172.16.1.3	1826	54617	50	ipsec-esp		ethernet
01/24 05:43:17	untrust	untrust	172.16.1.2	172.16.1.3	500	500	17	ike	rule23	ethernet



Security

NG - Application firewall

Zdjęcie Cisco FirePower

SDN

Czyli co?

Woda



Cloud

Cloud Computing

Czyli co?

Cloud

Cloud Computing

Cost

Performance

Agility

Productivity

Scalability

Security

Reliability

Multitenancy

Cloud

Cloud Computing

Cost

Performance

Agility

Productivity

Scalability

Security

Reliability

Multitenancy

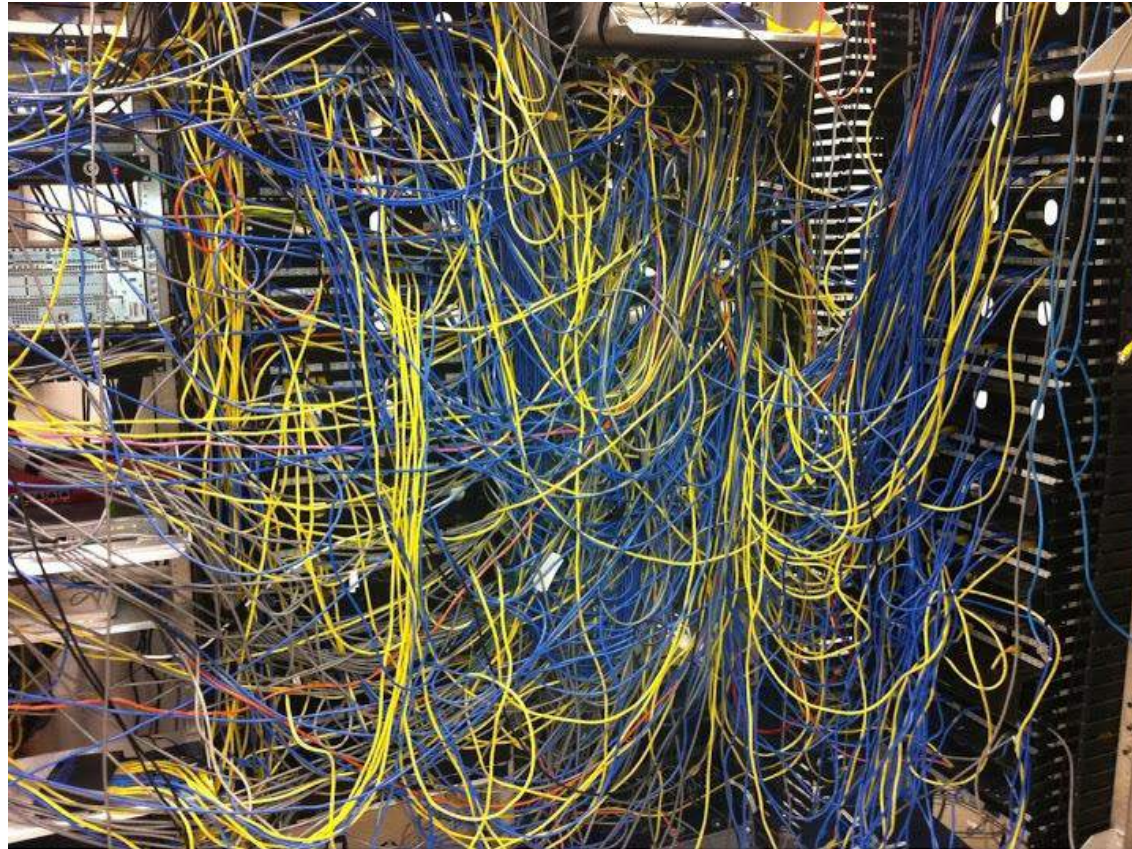


CLOWN COMPUTING

clown computing = def. **makijaż chmurowy**; sprzedaż starych rozwiązań po lekkim faceliftingu GUI i nazywanie tego chmurą obliczeniową...

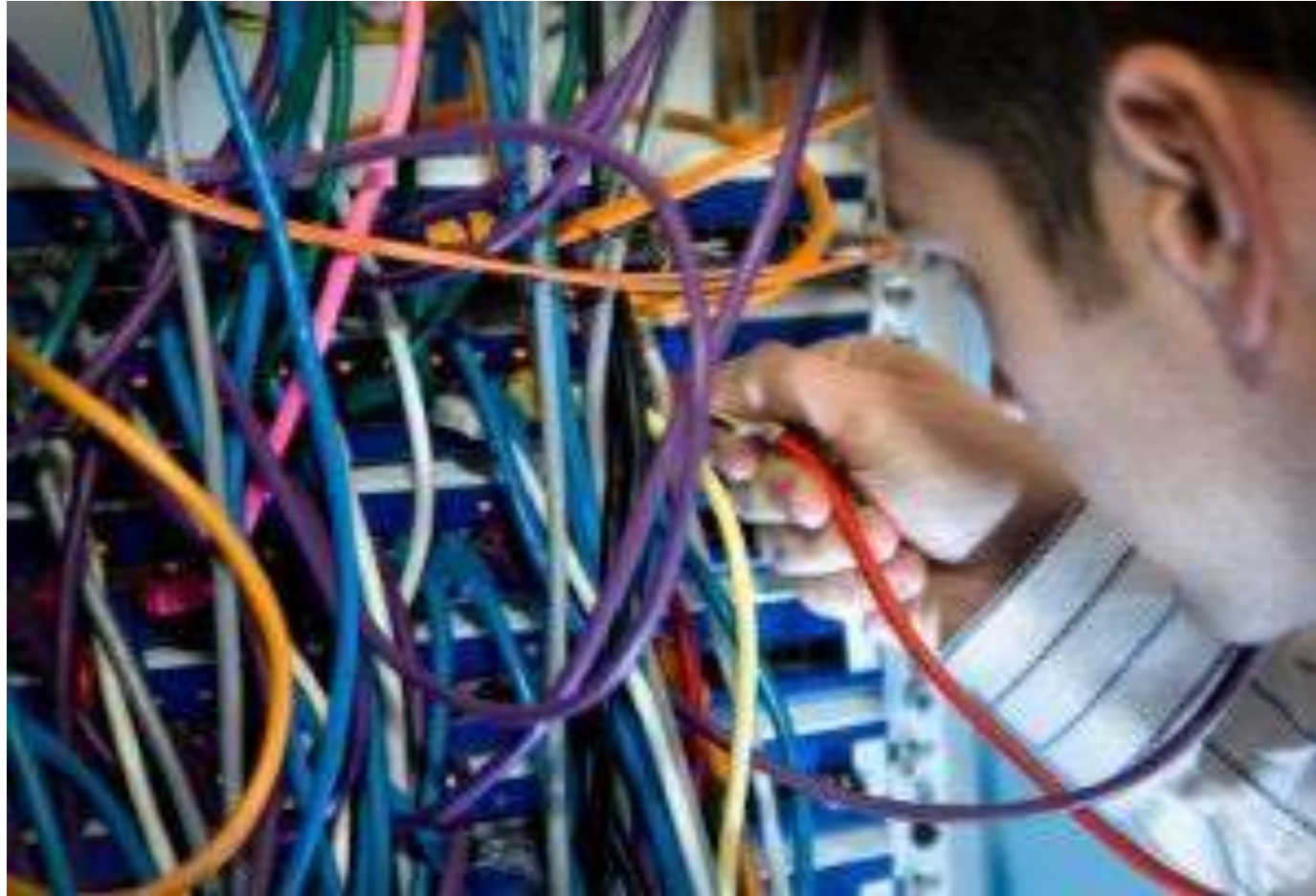
Cloud

Co z nami będzie gdy firma zmigruje się do chmury?



Cloud

Zapomnijmy o:



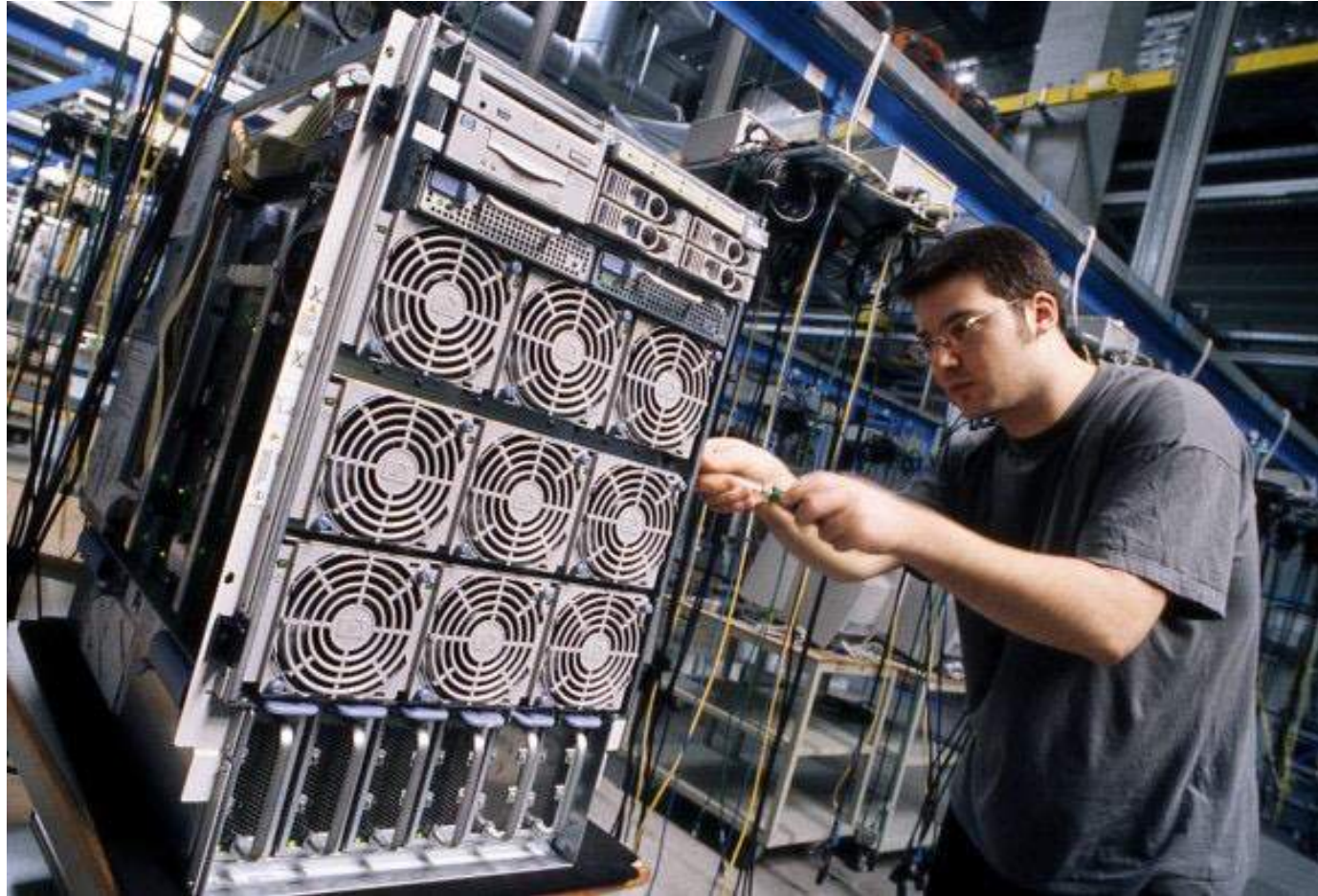
Cloud

Zapomnijmy o:



Cloud

Zapomnijmy o:



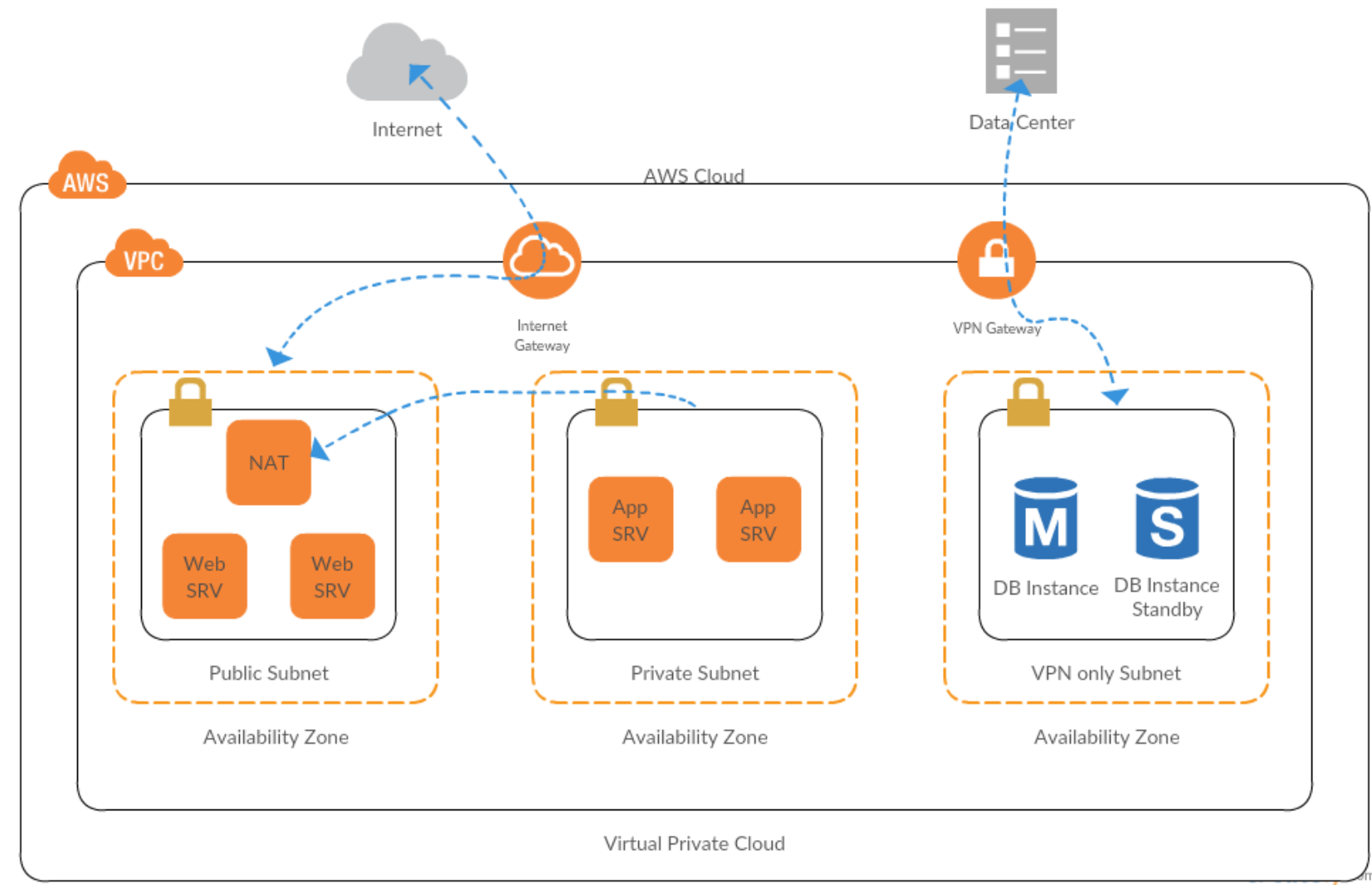
Cloud

Zapomnijmy o:



Cloud

Co dostajemy w zamian?



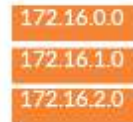
Komponenty



Virtual Private Cloud (VPC)



AWS Direct
Connect



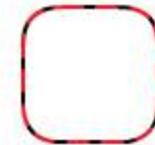
Route Table



Availability Zone



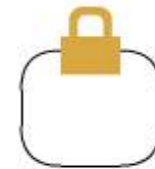
Internet Gateway



Security Group



NAT Gateway



Subnet Group



VPN Gateway



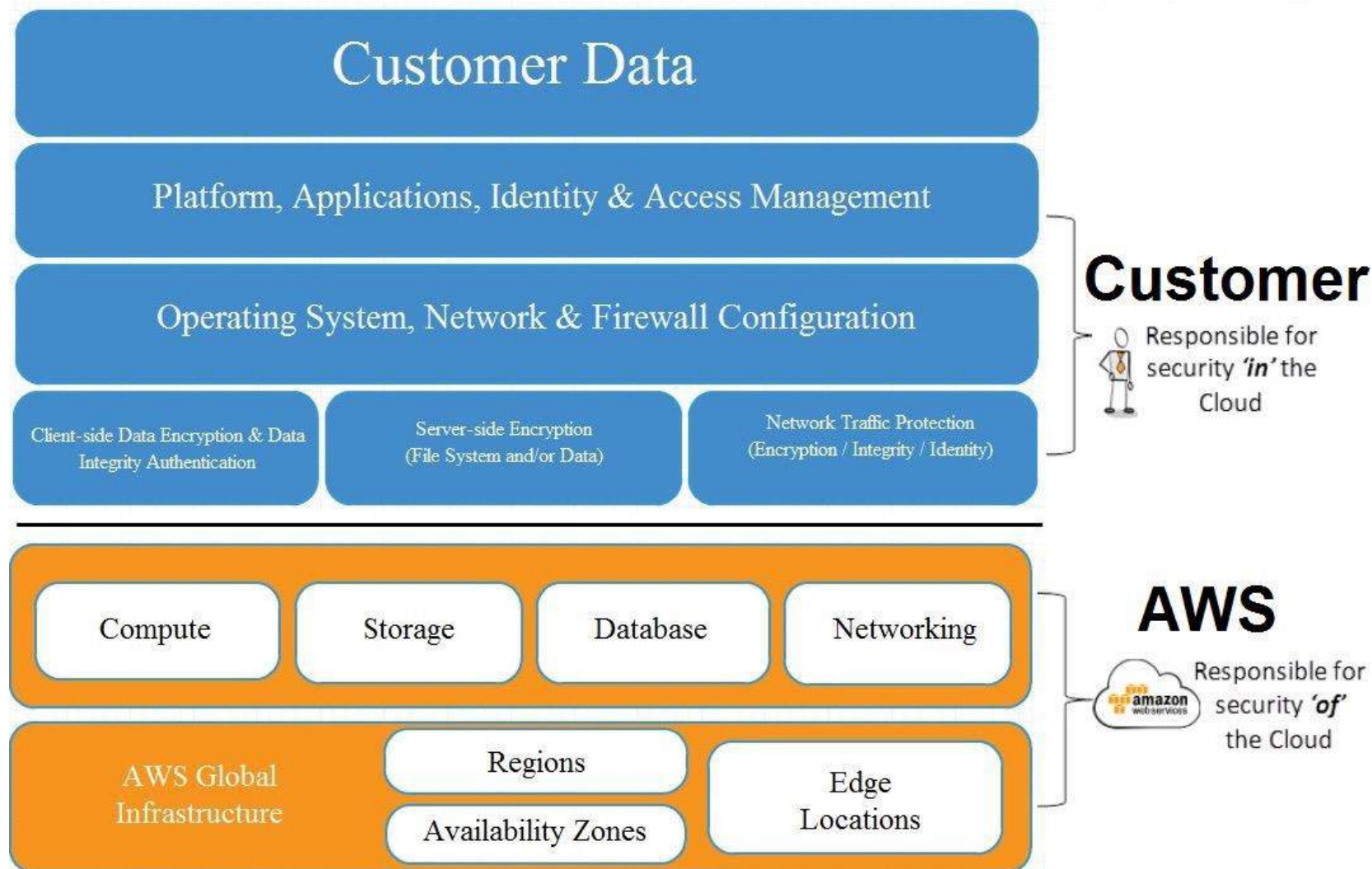
Elastic Loadbalancer



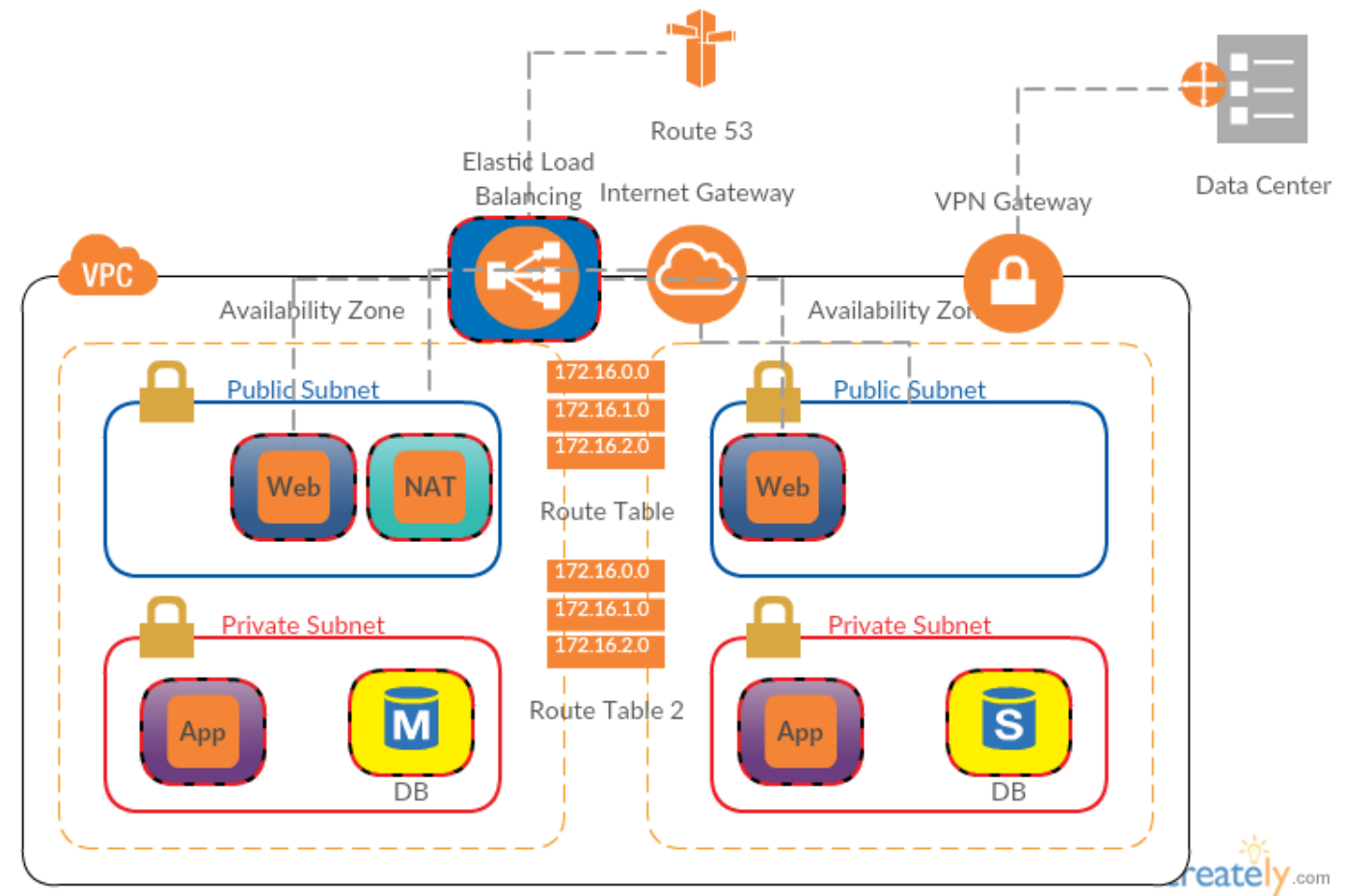
VPN Connection

Cloud

To już nie moja działka...



Co mogą od nas chcieć?



Warto obejrzeć!

AWS re:Invent 2014 | (ARC205) Creating Your Vir... ⌚ ➔

AWS re:Invent

ARC205

Creating Your Virtual Data Center: VPC Fundamentals and Connectivity Options

Brett Hollman, Amazon Web Services
November 12, 2014 | Las Vegas, Nevada



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AWS re:Invent 2014 | (SDD422) Amazon VPC De... ⌚ ➔

AWS re:Invent

SDD422

Amazon Virtual Private Cloud Deep Dive



Kevin Miller, Sr. Manager, AWS EC2 Networking
November 14, 2014 | Las Vegas, NV



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<http://popoludnewsieci.pl/plnog16/>

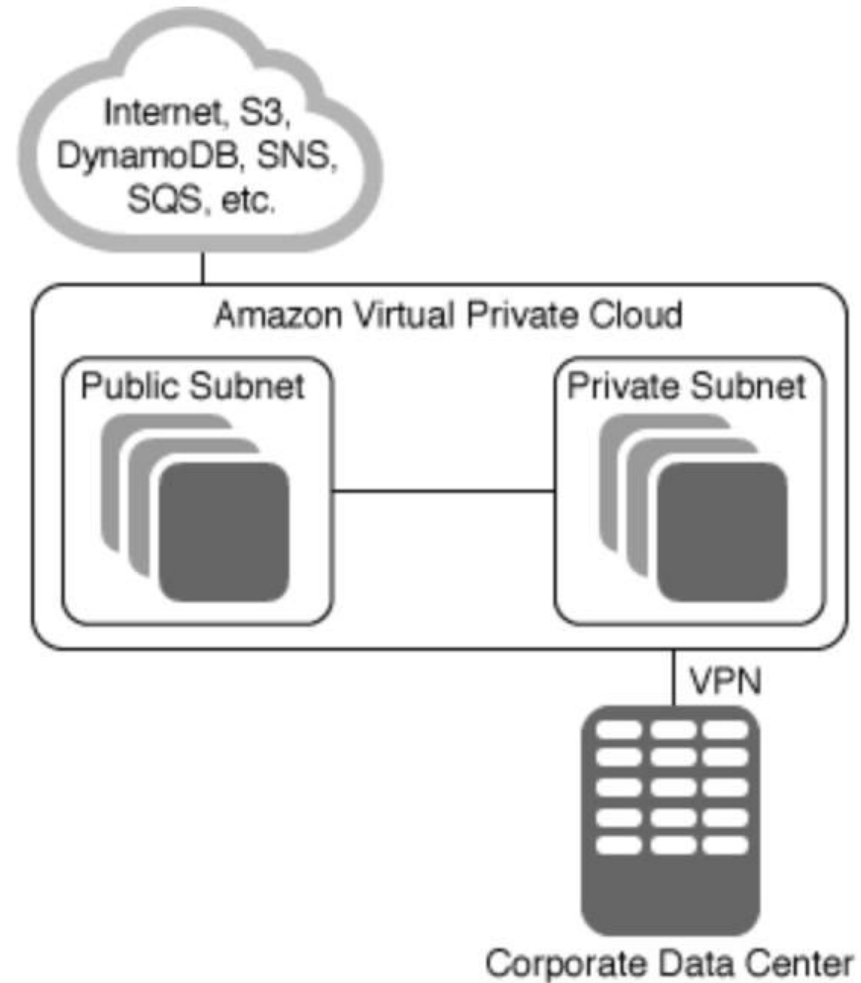
Jak sobie z tym radzić? Wizard VPC.

VPC with a Single Public Subnet

VPC with Public and Private Subnets

VPC with Public and Private Subnets and Hardware VPN Access

VPC with a Private Subnet Only and Hardware VPN Access



Jak sobie z tym radzić? AWS Cli, Skrypty.

```
#!/bin/bash
```

```
NOW=$(date +%F)
```

```
LOGFILE="vpc-$NOW.log"
```

```
echo Creating VPC...
```

```
aws ec2 create-vpc --cidr-block 10.0.0.0/16 >> $LOGFILE
```

```
vpc=`grep VpcId $LOGFILE | cut -d : -f2 | cut -c3-14`
```

```
echo VPC $vpc is Created!
```

```
echo Creating Subnet 10.0.1.0/24
```

```
aws ec2 create-subnet --vpc-id $vpc --cidr-block 10.0.1.0/24 \  
--availability-zone eu-west-1a >> $LOGFILE
```

```
sub1=`grep SubnetId $LOGFILE | cut -d : -f2 | cut -c3-17`
```

Jak sobie z tym radzić? CloudFormation.

```
{
  "AWSTemplateFormatVersion" : "2015-02-05",

  "Description" : "This template creates VPC and
  "Resources": {
    "VPC": {
      "Type": "AWS::EC2::VPC",
      "Properties": {
        "CidrBlock": "10.0.0.0/16",
        "Tags": [{
          "Key": "Application",
          "Value": {
            "Ref": "AWS::StackId"
          }
        }
      ]
    }
  },
}
```

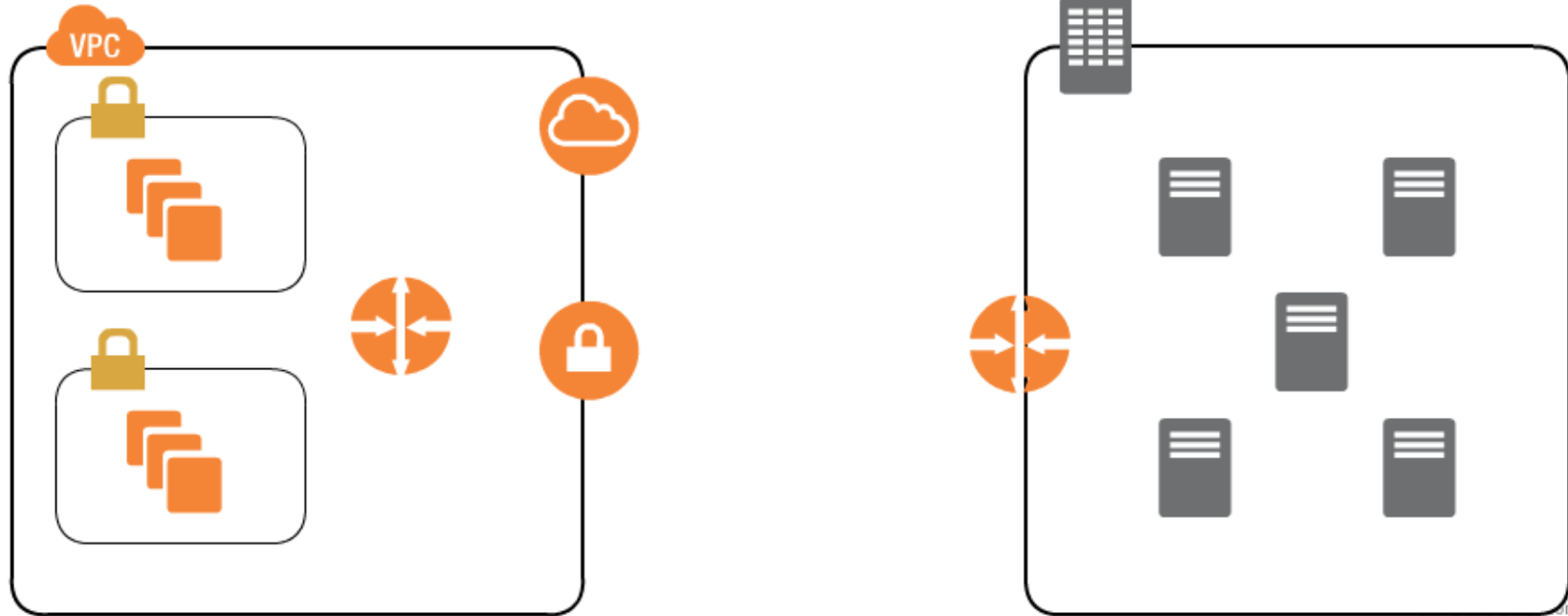

Co jeszcze mogą od nas chcieć?

Ile czasu zajmie przekopiowanie 250TB danych przez Internet?

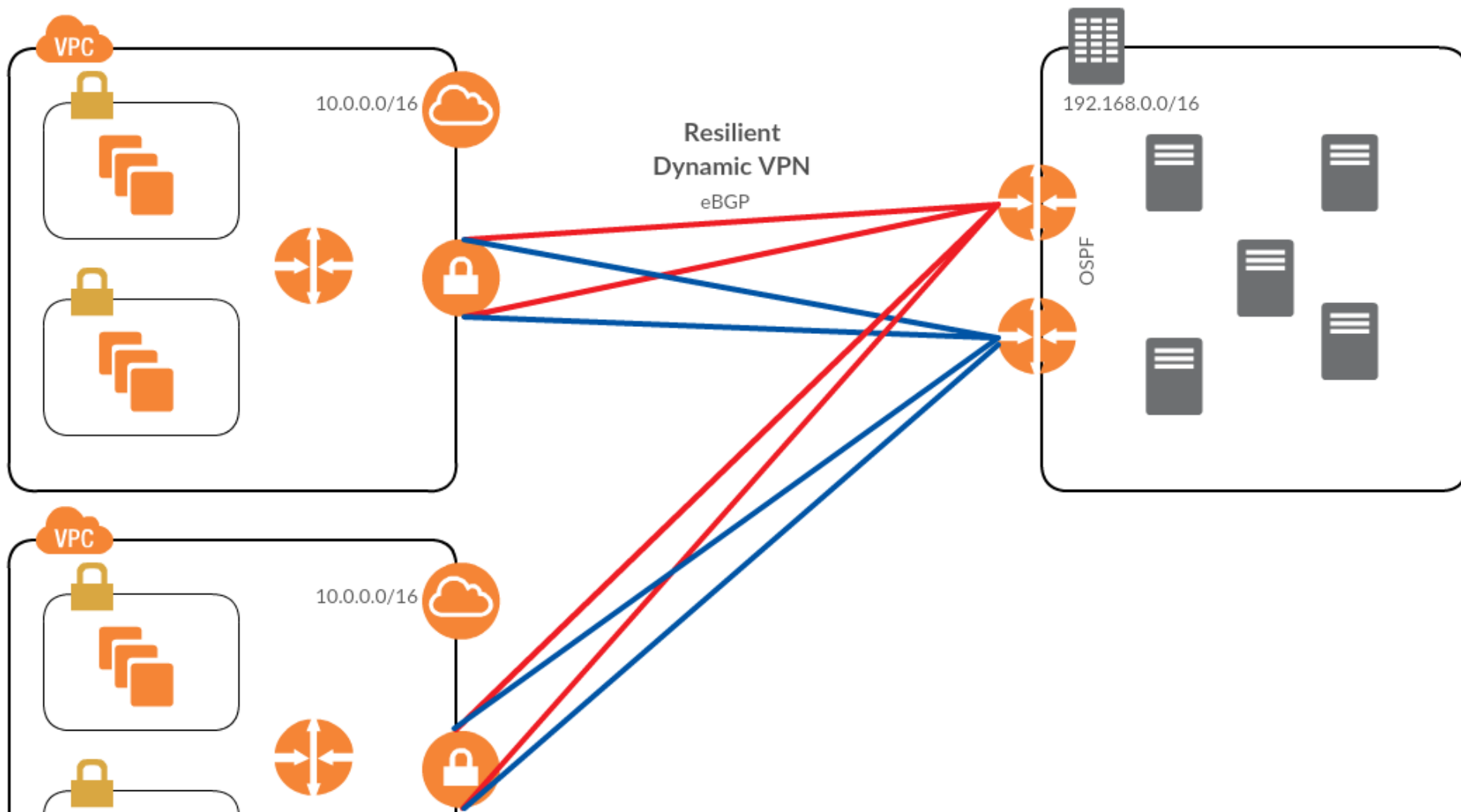
	Internet Connection Speed			
Utilization	1Gbps	500Mbps	300Mbps	150Mbps
25%	95	190	316	632
50%	47	95	158	316
75%	32	63	105	211

<http://aws.amazon.com/cloud-data-migration/>

Model hybrydowy.



Model hybrydowy - VPN.



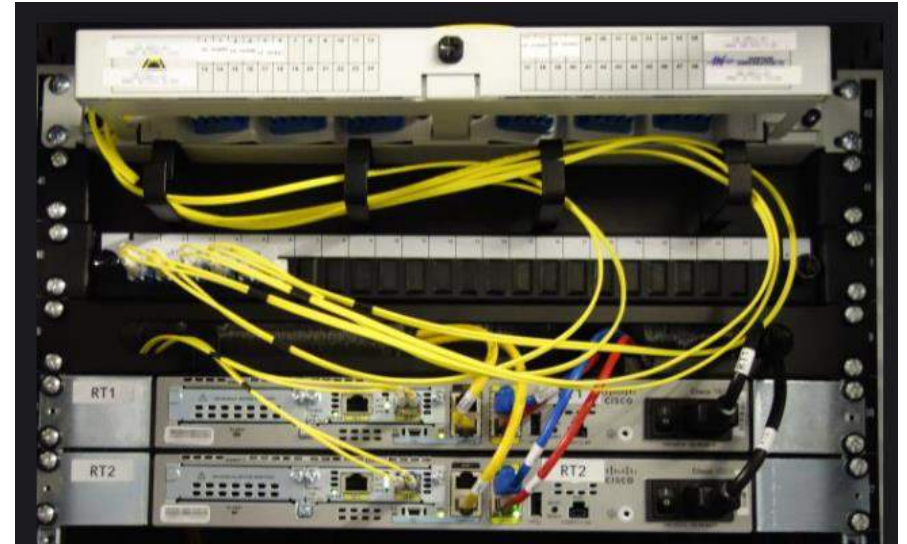
Model hybrydowy - Direct Connect.

Dedicated, private pipes into AWS,

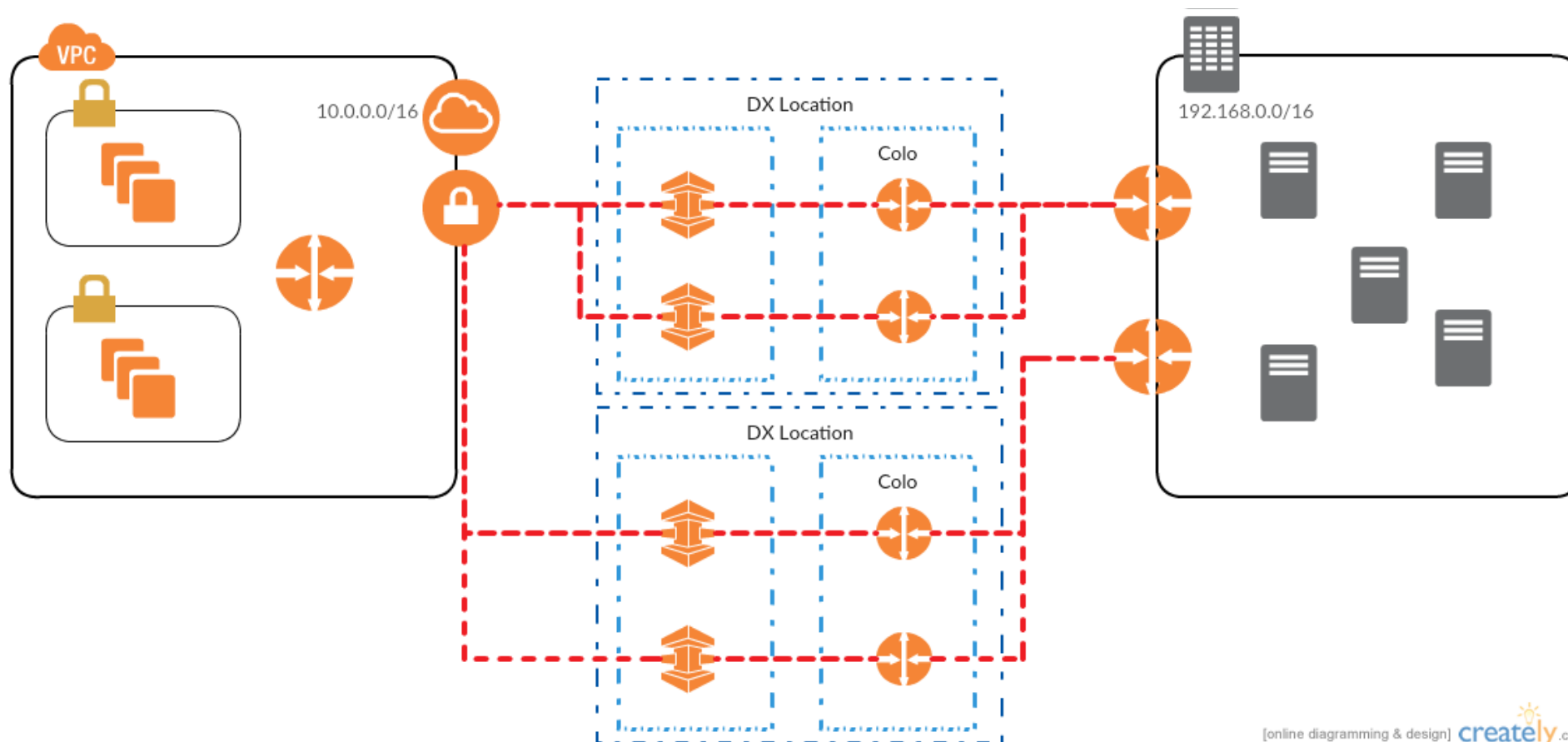
Consistent network performance,

Multiply **AWS accounts can share** a connection.

1Gbps or 10Gbps speed.



Model hybrydowy - Direct Connect.



Warto obejrzeć!

AWS re:Invent 2015 | (NET406) Deep Dive: AWS ...  

Deep Dive: AWS Direct Connect and VPNs

NET406

Steve Seymour, Solutions Architect

October 2015

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<http://popoludnewsieci.pl/plnog16/>

Cloud

Od czego zacząć?

You**Tube**

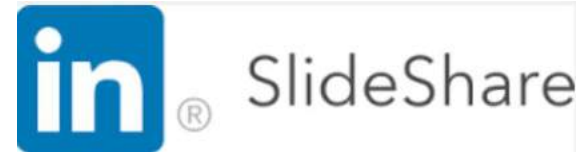
AWS
re:Invent



Free Usage Tier

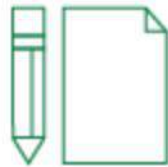
For New AWS Customer

*Free for one year since AWS sign up



<http://popoludnewsieci.pl/plnog16/>

Certyfikacja.



Solutions Architect

AWS Certified Solutions Architect – Associate

AWS Certified Solutions Architect – Professional



Developer

AWS Certified Developer – Associate

AWS Certified DevOps Engineer – Professional



SysOps Administrator

AWS Certified SysOps Administrator – Associate

<http://popoludniewsieci.pl/aws-certified-solutions-architect-jak-sie-przygotowac/>

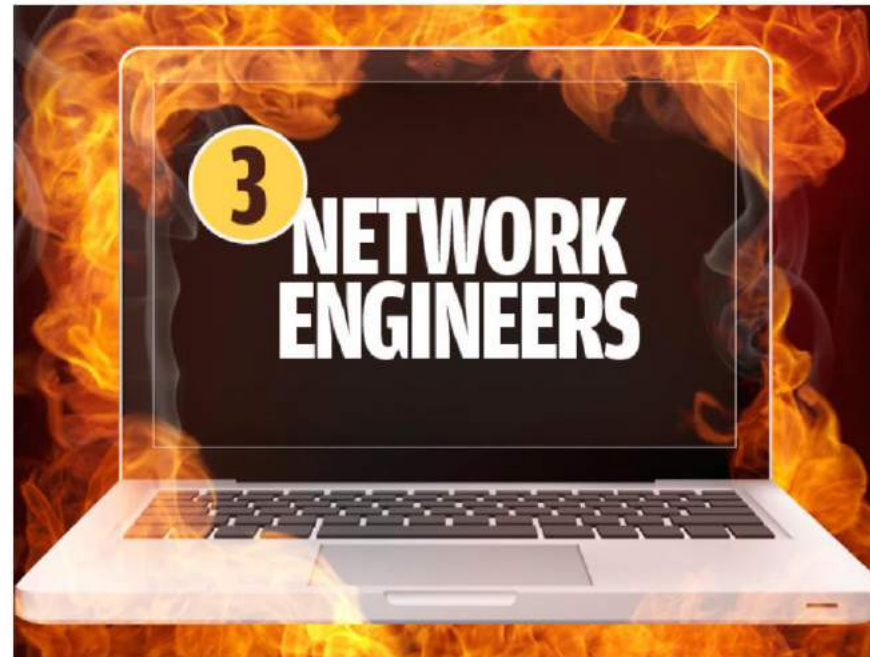
Dobrze wiedzieć!

10 hot IT job skills for 2016



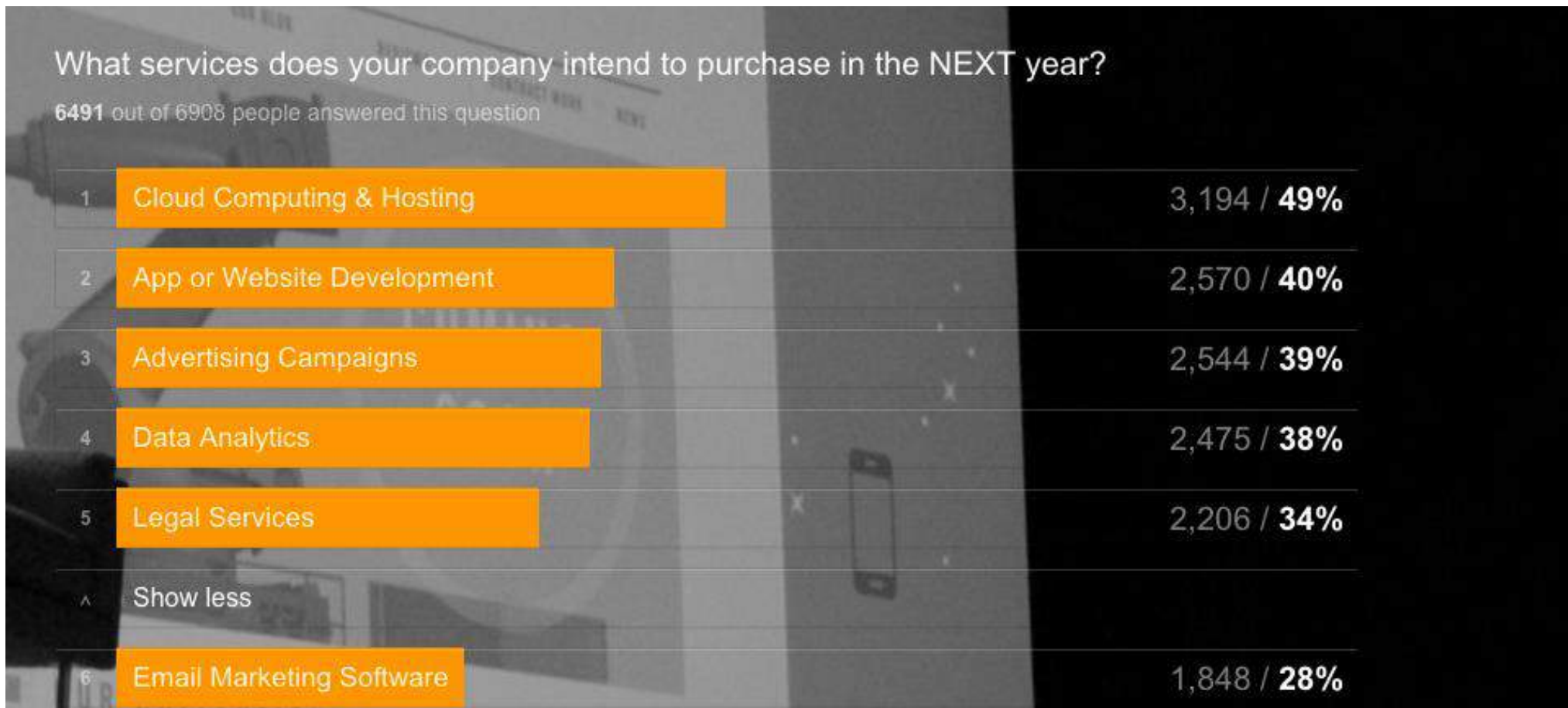
By Sharon Florentine, CIO | Dec 10, 2015 7:00 AM PT

It's a great time to be in IT. Unemployment rates in the industry are hovering around historic lows, and around 1 percent. Opportunities abound for IT pros. Here are the top 10 IT skills that will be in high dem



<http://www.cio.com/article/3014161/careers-staffing/10-hot-it-job-skills-for-2016.html>

Dobrze wiedzieć!



<http://calacanis.com/2016/01/13/we-asked-6491-founders-what-theyre-buying-next-year-heres-what-they-told-us/>

Cloud

Dobrze wiedzieć!



EtherealMind @etherealmind · 21.01

Cloud is like beer, you never own it, you are only renting it #beero'clock #nfd11

Zobacz tłumaczenie



Dziękujemy