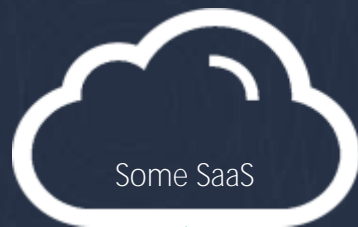


Cloud Generation Firewalls

your journey, secured



Where will your applications be in 2 years?



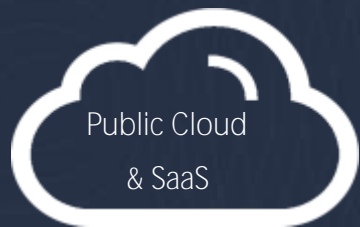
HQ



Apps

On Premises

Data Center



HQ



Apps

Hybrid



HQ



Public Cloud

"all in"

Challenges of Cloud and Dispersion

How do I get to the cloud from all my locations?

How do I safely move workloads to public cloud platforms?

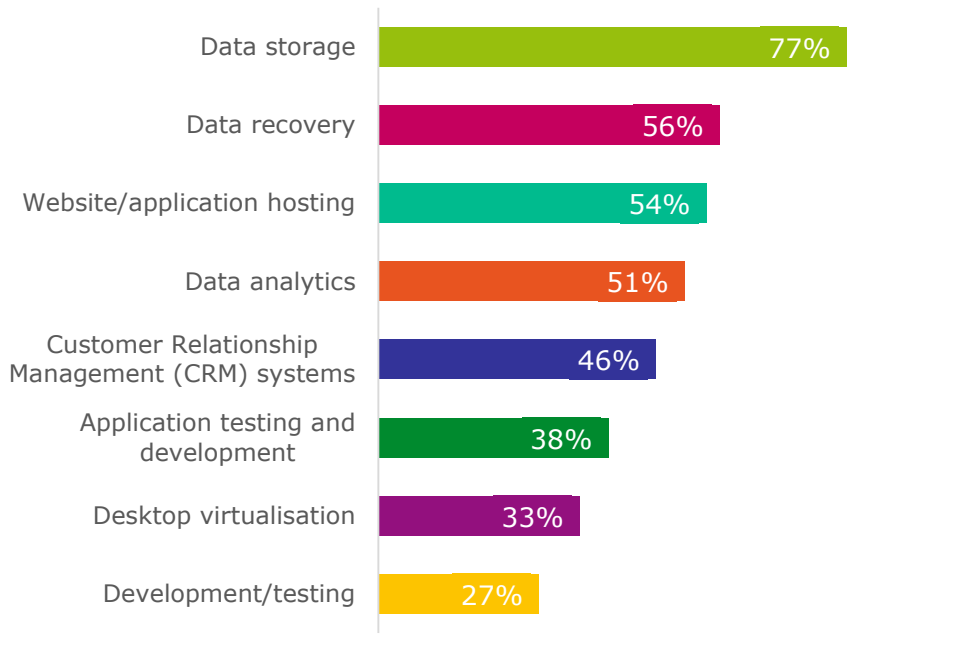
How do I manage security across multiple locations?

How do I control costs?



Understanding Public Cloud usage

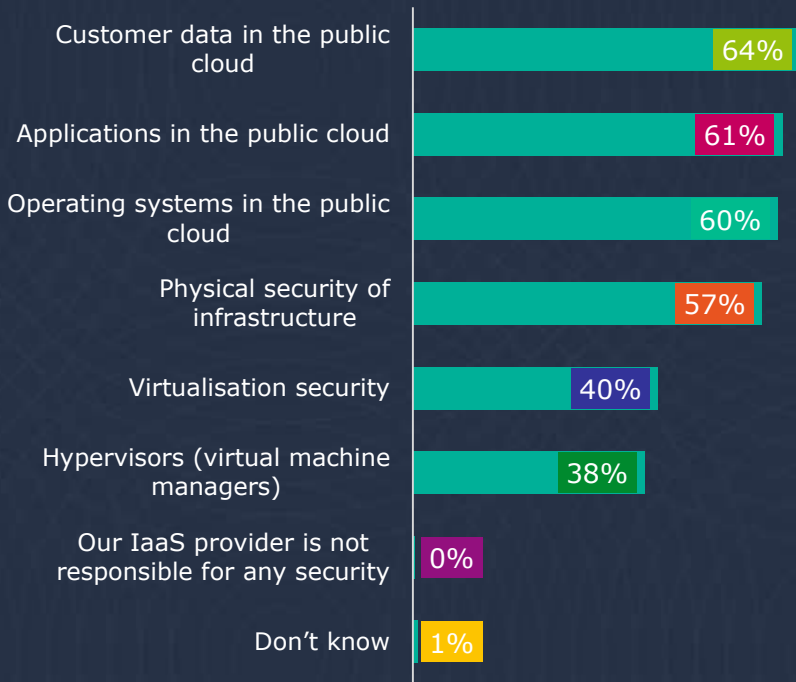
Includes Sensitive Data



- 48% Employees' personal data
- 42% Business Intellectual Property
- 40% Bank details



What's less clear – do they understand responsibility?



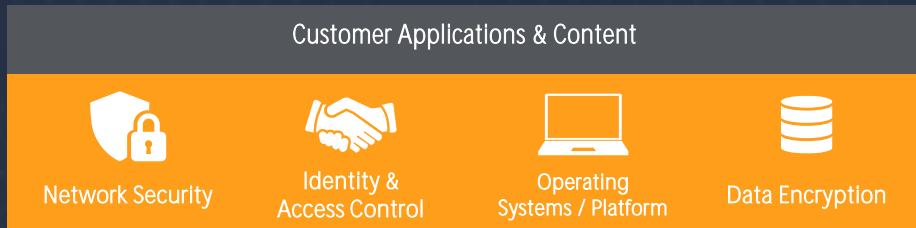
There's confusion

- 61% across EMEA claimed to fully understand their responsibilities
- Less than 45% believes cloud provider offers strong protection

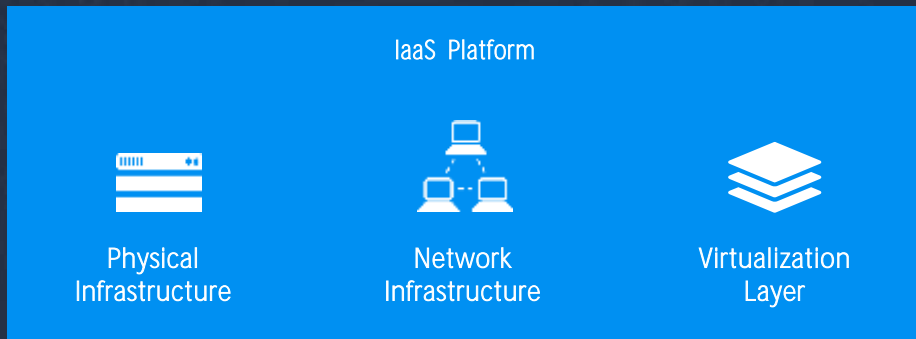


Shared Responsibility

Your organisation



You define controls
and security
IN the Cloud



Cloud Provider takes care of the
Security
OF the Cloud



Scale Through Partner Channel

We are looking for partners who are interested in increasing their revenue in the cloud.

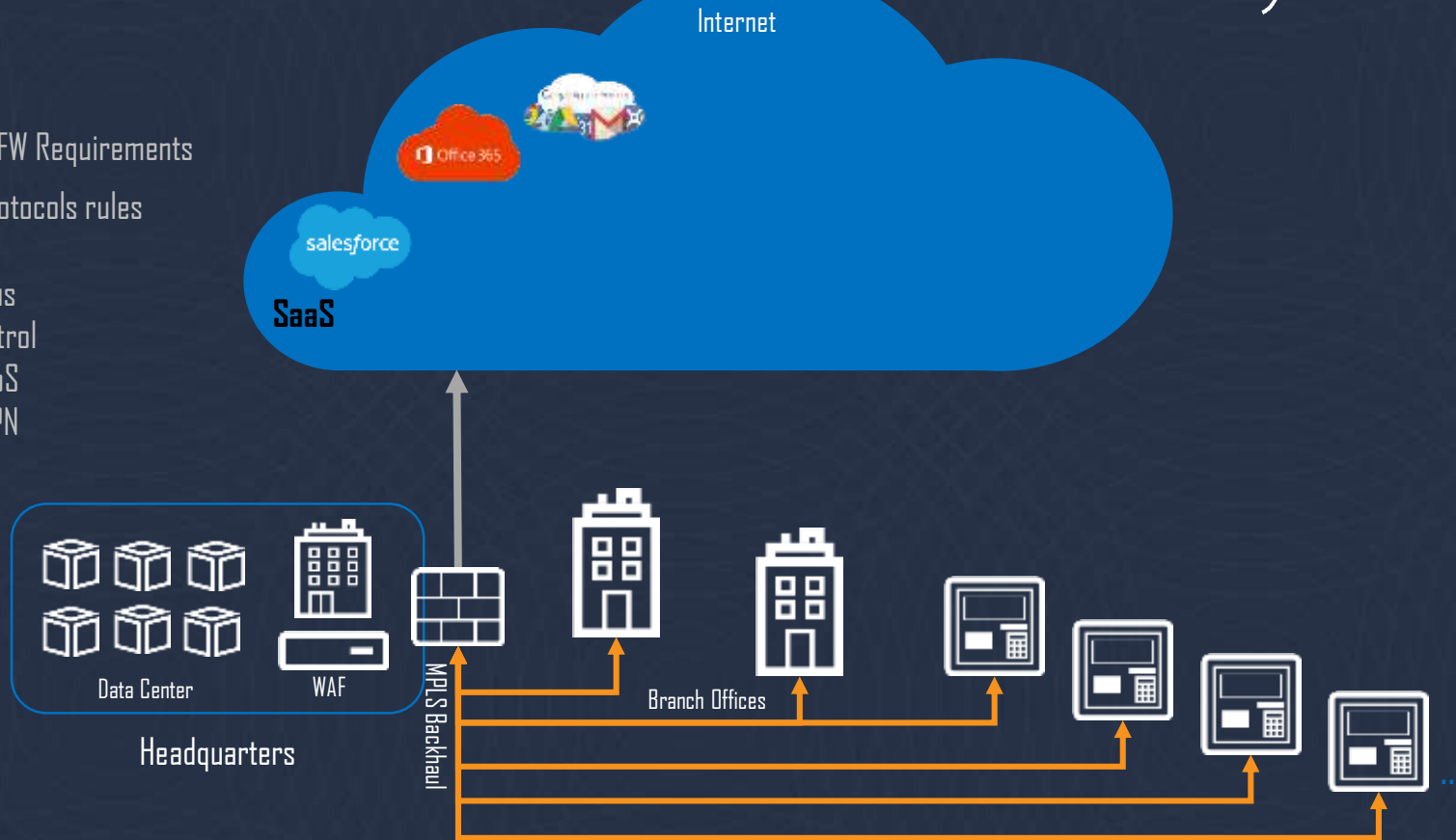
- Security, privacy, and compliance concerns
- Managing mission-critical or development workloads
- Complexities of migrating your physical data center to Microsoft Azure
- Vulnerabilities to mobile and Bring-Your-Own-Devices, web 2.0 applications, and remote network users



Traditional Firewalls are not 'Cloud Ready'

Traditional FW Requirements

- Port/Protocols rules
- IDS/IPS
- Anti-virus
- App Control
- Some QoS
- Some VPN



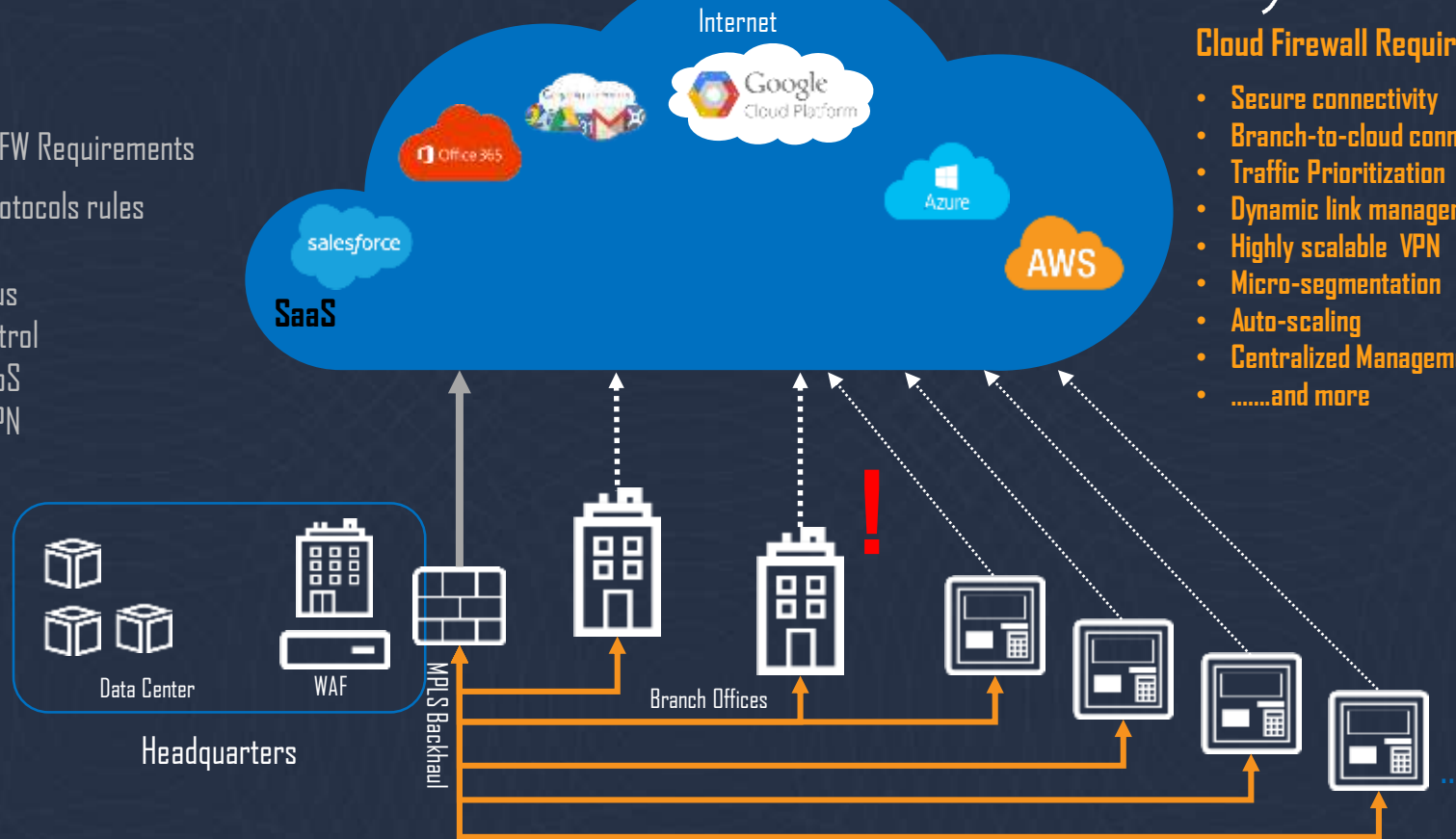
Traditional Firewalls are not 'Cloud Ready'

Traditional FW Requirements

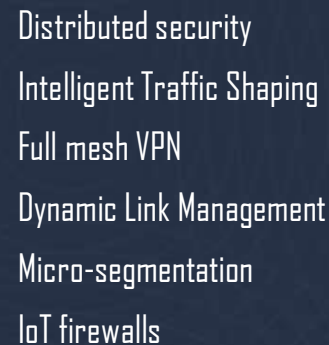
- Port/Protocols rules
- IDS/IPS
- Anti-virus
- App Control
- Some QoS
- Some VPN

Cloud Firewall Requirements

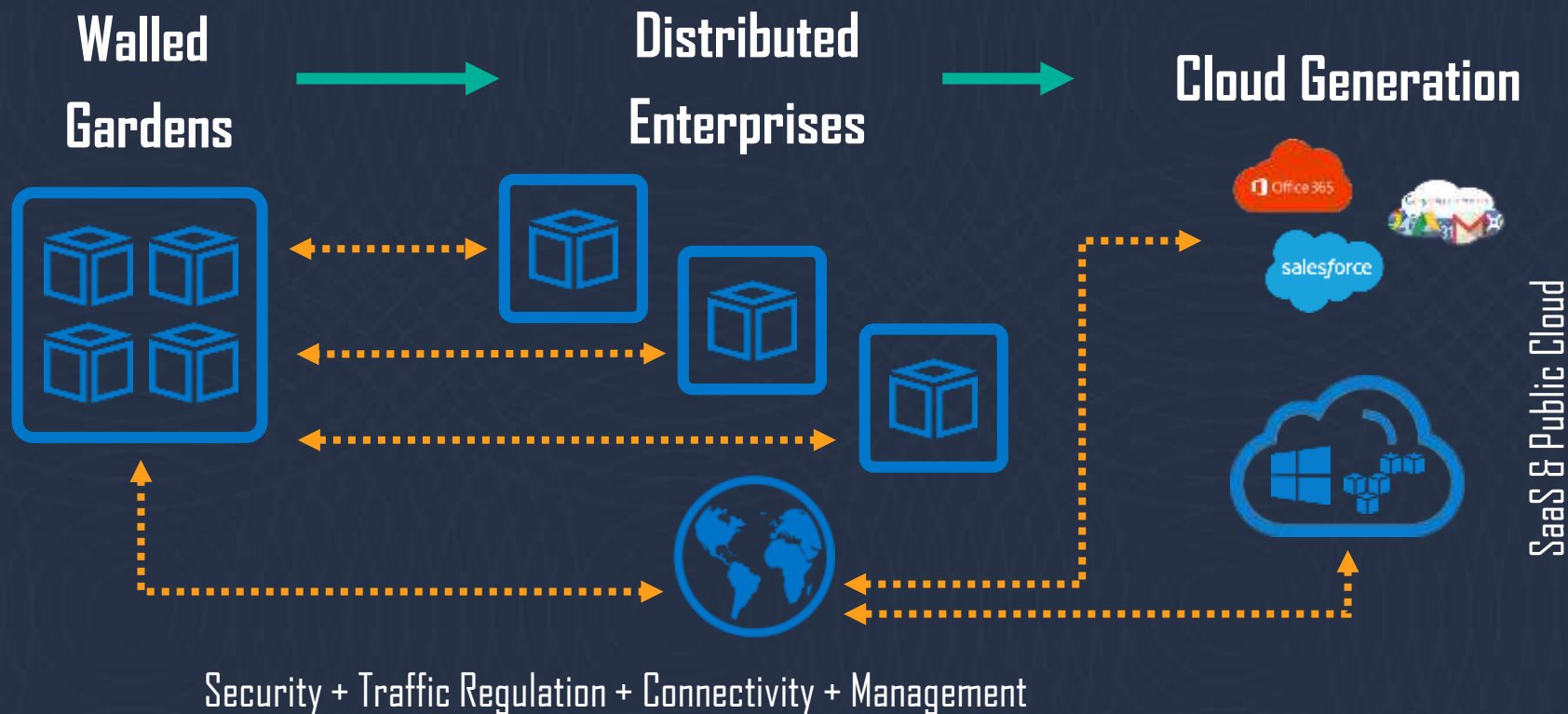
- Secure connectivity
- Branch-to-cloud connectivity
- Traffic Prioritization
- Dynamic link management
- Highly scalable VPN
- Micro-segmentation
- Auto-scaling
- Centralized Management
-and more



Internet



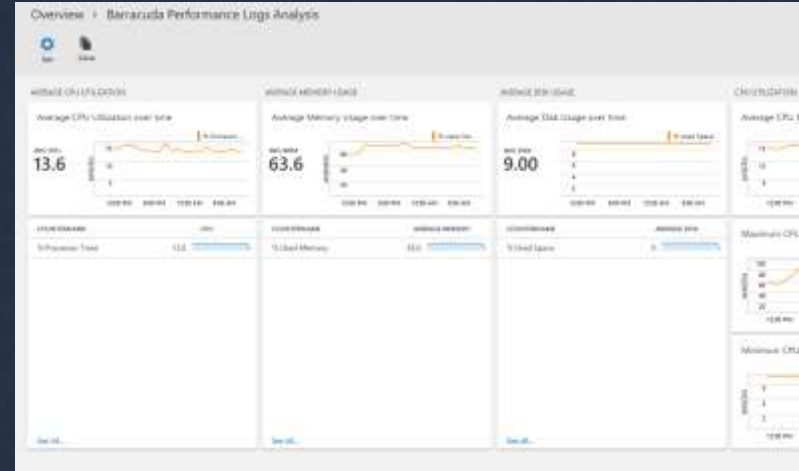
Cloud Networking is different!



Monitoring is changing

Work with your data, enhance your security!

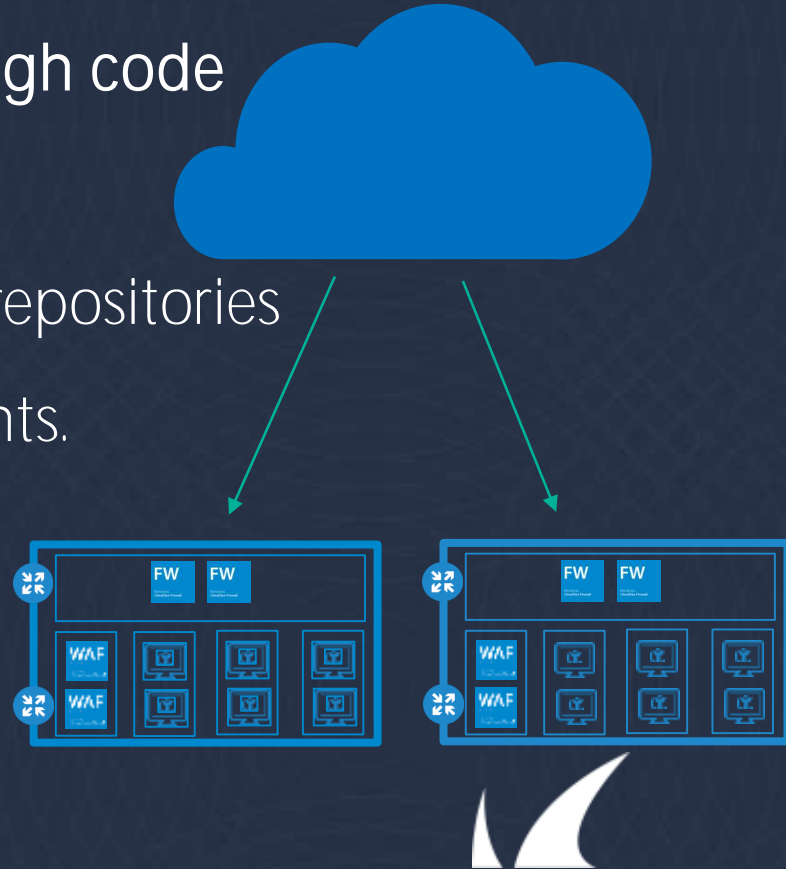
- View protective actions taken
- Monitor performance
- Audit changes
- Review usage patterns
- Azure OMS, Securitycenter
- AWS Cloudwatch
- Splunk, Qradar, Arcsight, Custom Syslog



or Dev/Sec/Ops?

Deployment and management through code

- Management through API
- Store security configuration in code repositories
- Quick, Simple, repeatable deployments.
- Make changes programmatically.
- Puppet, Ansible



Barracuda Networks · GitHub

GitHub, Inc. [US] | <https://github.com/barracudanetworks/>

Grow your team on GitHub

GitHub is home to over 28 million developers working together. Join them to grow your own development teams, manage permissions, and collaborate on projects.

[Sign up](#)

Dismiss

Pinned repositories

waf-aws-templates

CloudFormation Template deploys the Barracuda WAF in an AWS autoscaling cluster

★ 1 🍴 3

waf-azure-templates

Deploying the Barracuda Web Application Firewall on Azure with ARM template

PowerShell ★ 1 🍴 4

ngf-aws-templates

CloudFormation Template deploys the Barracuda NGF in an AWS autoscaling cluster

Shell ★ 1 🍴 7

ngf-azure-templates

Deploying the Barracuda Next-Gen Firewall on Azure with ARM template

PowerShell ★ 3 🍴 8

waf-automation

DevOps with Barracuda Web Application Firewall

Ruby ★ 7 🍴 3

ngf-automation

DevOps with Barracuda NextGen Firewall

PowerShell ★ 4 🍴 9

<https://github.com/barracudanetworks/>

Cloud Security Guardian

<https://www.barracuda.com/products/cloudsecurityguardian>

Within minutes of deploying it, the service will discover and analyze your entire cloud deployment and lay it out graphically - even if your deployment straddles multiple cloud infrastructures.



Barracuda Cloud Generation Firewalls



Microsoft Azure and Barracuda Partnership

1st

Microsoft Azure Certified
security solution provider

4M

Hours of Barracuda VM
consumption per month

2,000+

Customers deployed in
production in Azure

Microsoft Partner of the Year
2016 Winner
Microsoft Azure Certified ISV
Solution Award

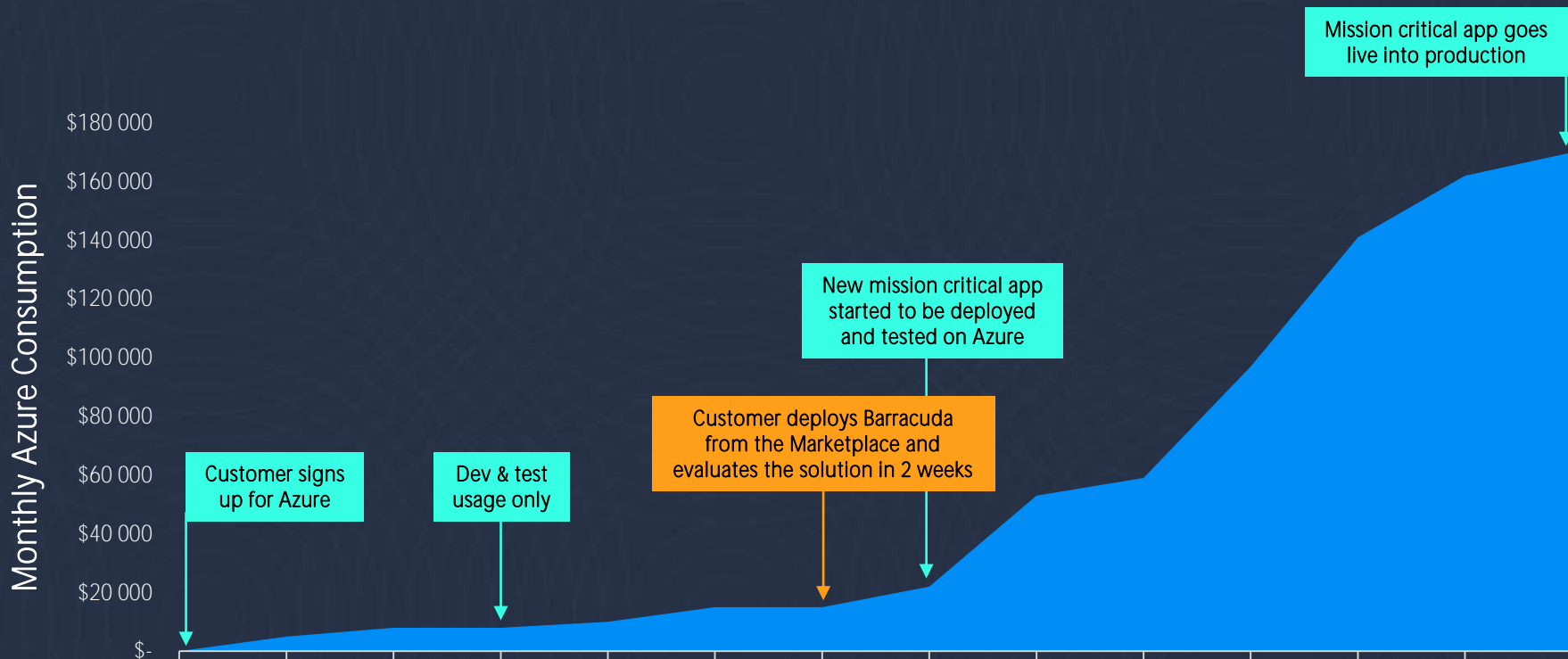
Buy and Deploy Using Azure Marketplace

- Top performing ISV in Azure Marketplace
- First security appliance in Azure Marketplace
- Flexible pricing models:
 - Bring-Your-Own-License (BYOL) and Pay-As-You-Go (PAYG)
- Customer self-service tool for configuration and deployment

Recent Customer Successes



Customer example of Azure Consumption



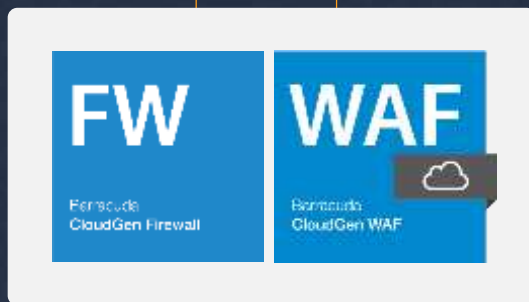
Fully integrated with Public Cloud Platforms

Automation/Orchestration

APIs
DevOps Tools

Deployment

Loosely Coupled Architectures
Elastic Auto-Scaling
Templates



Integrations

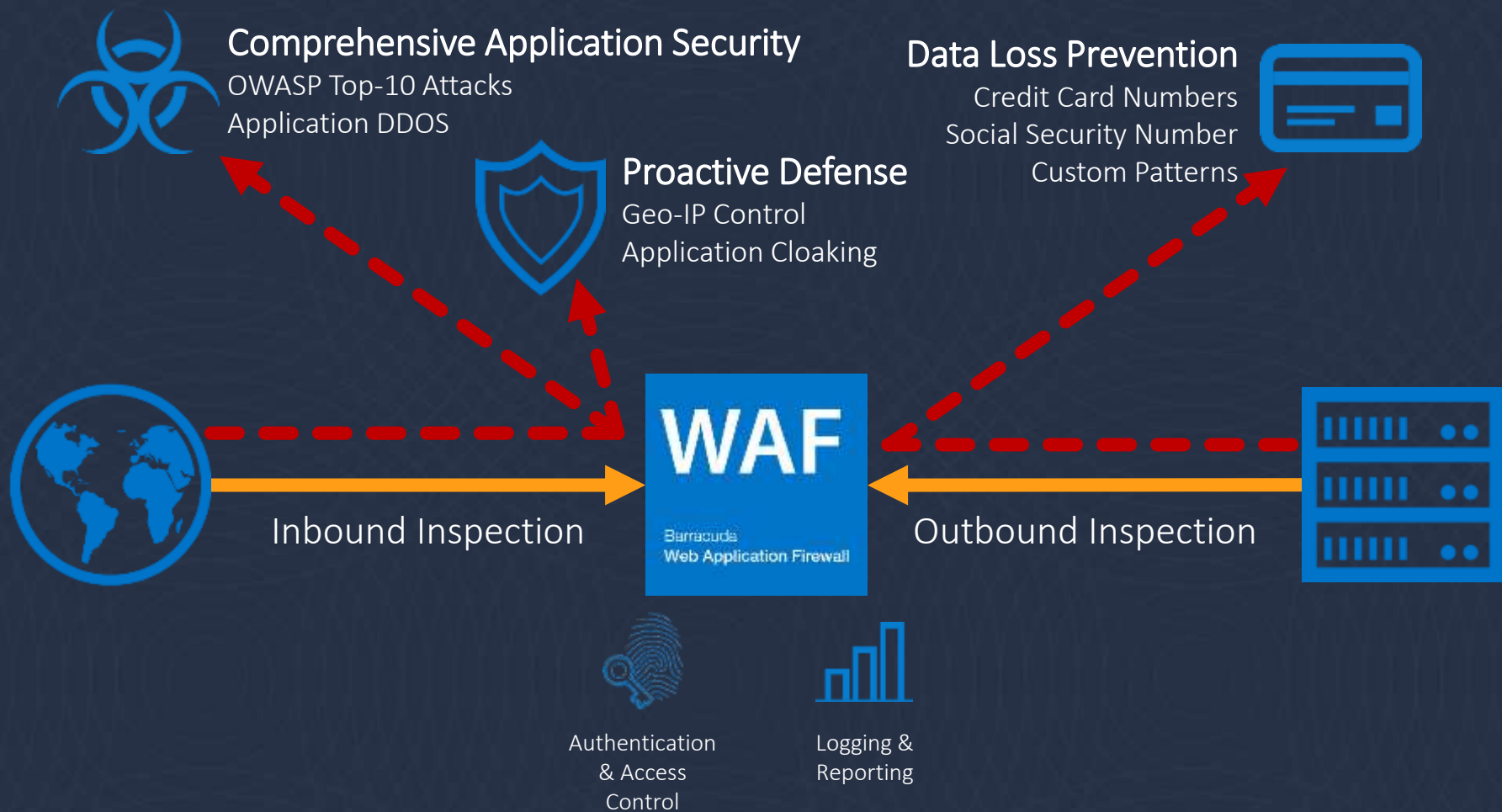
Cloud Monitoring
Azure OMS
AWS Cloud Watch
Azure Security Center

Connectivity

Transport Independent VPN
Cross Cloud VPN
Express Routes/Direct Connect

Cloud Generation Application Security



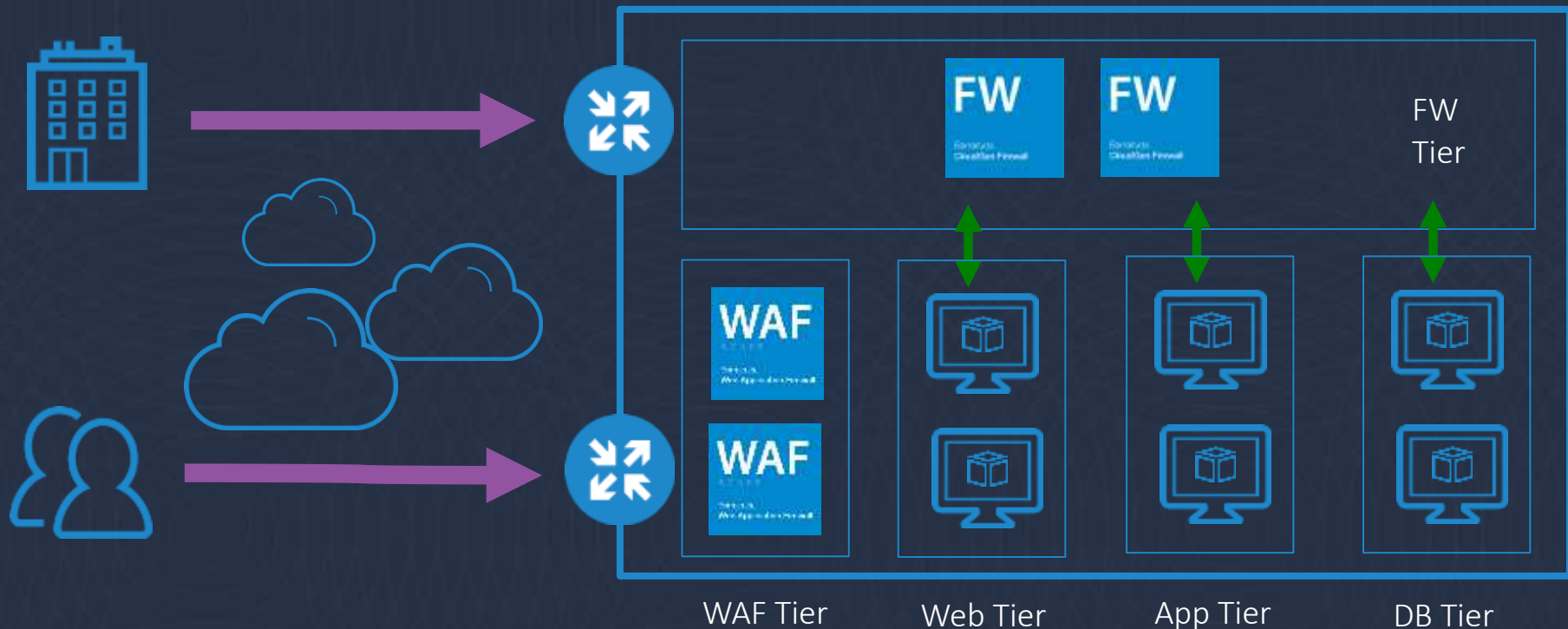


Cloud Architectures



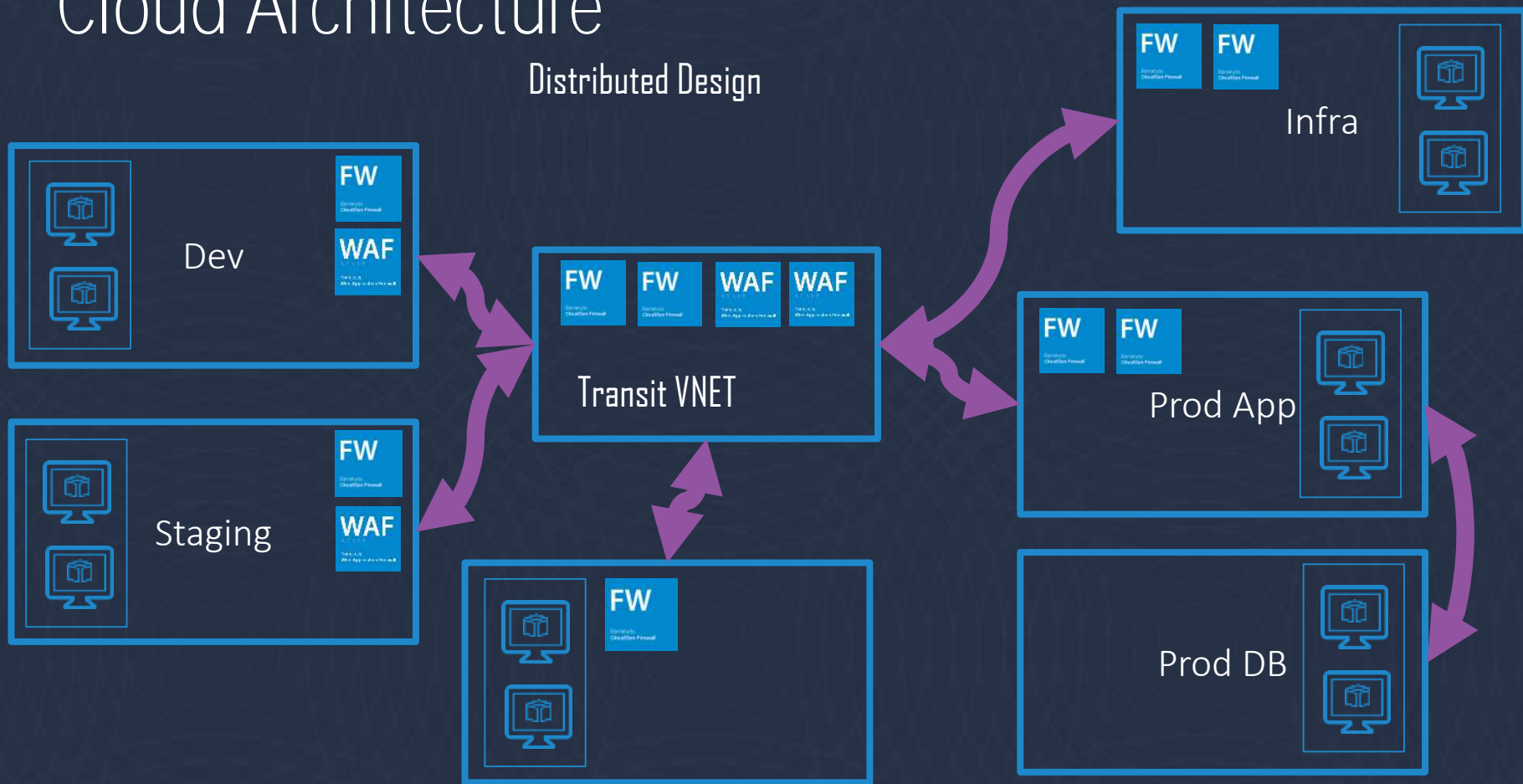
Cloud Architecture

Single VNET – Reference Architecture

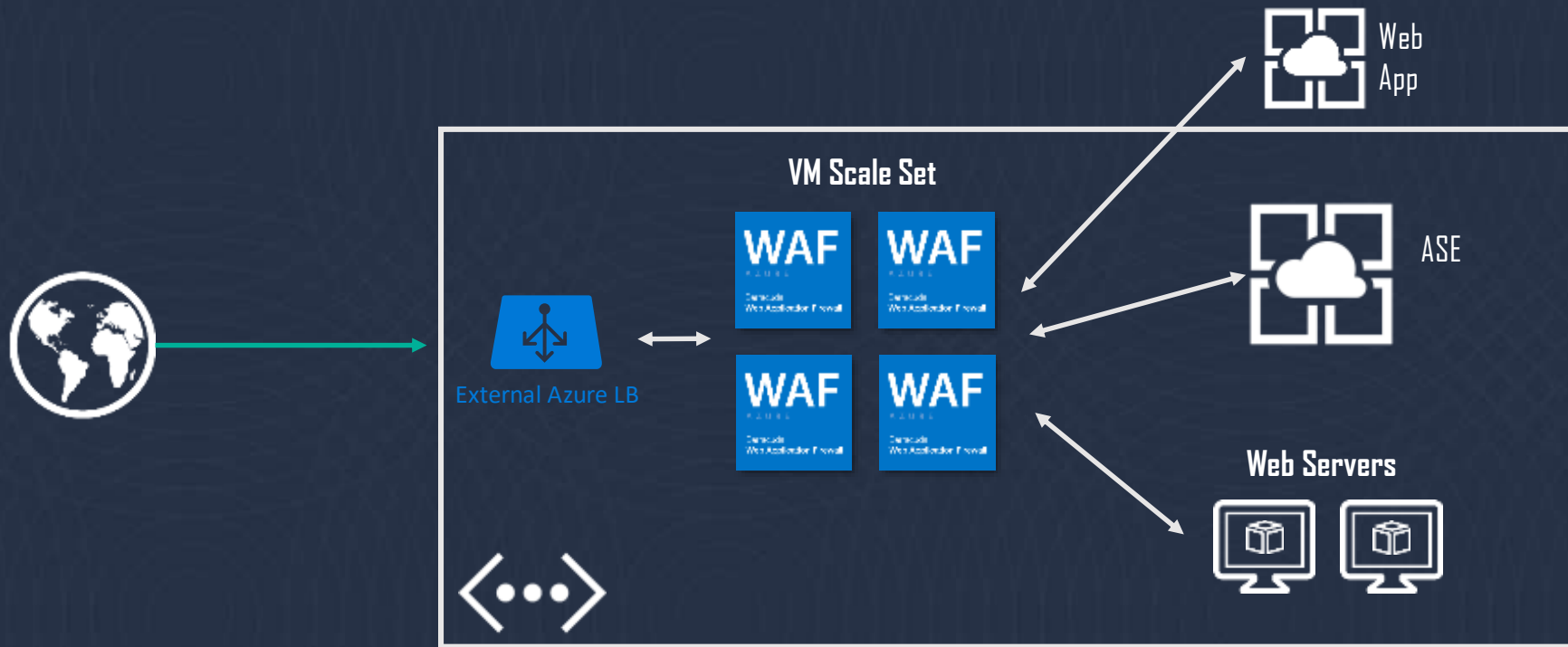


Cloud Architecture

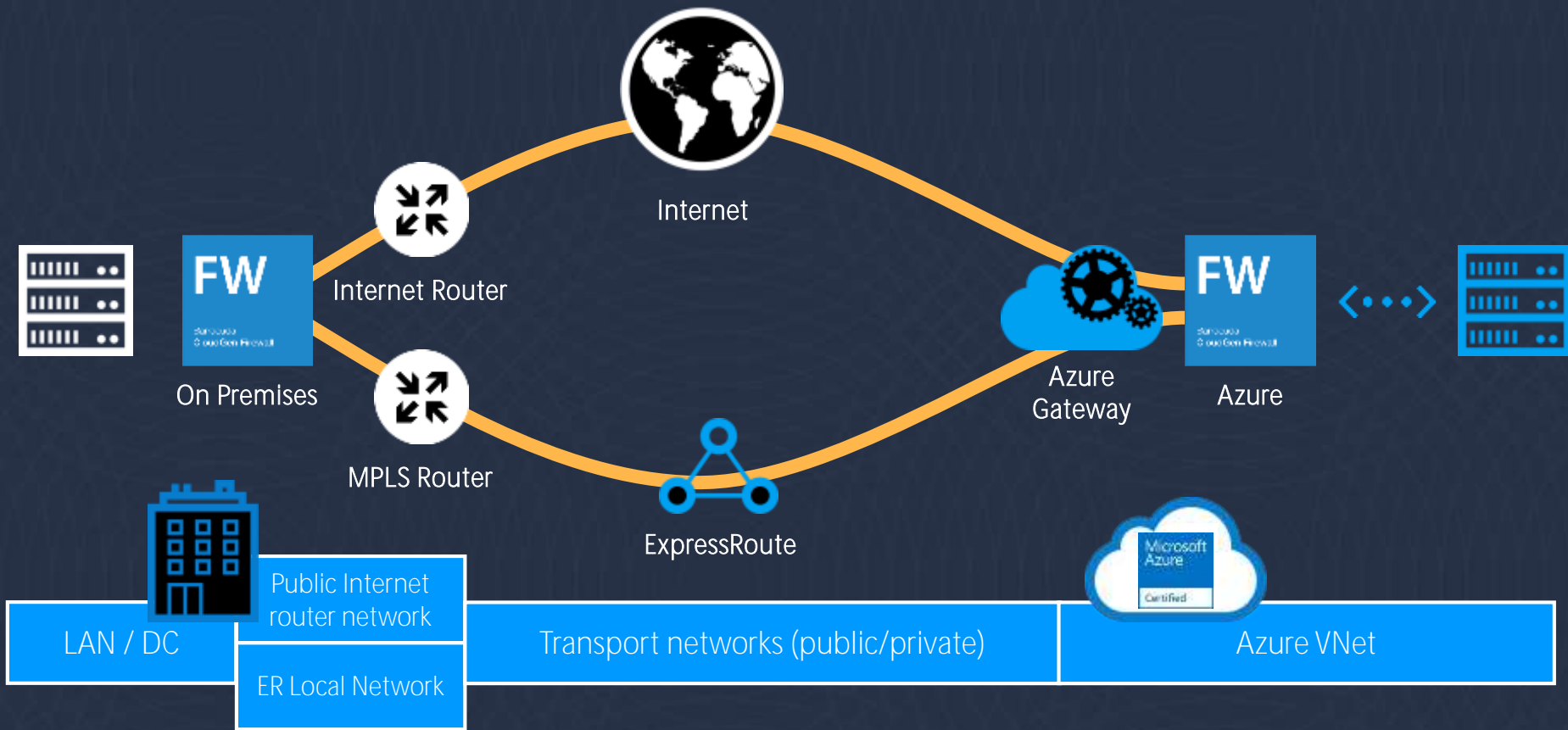
Distributed Design



Scalable Public Cloud Application Security



ExpressRoute Architecture

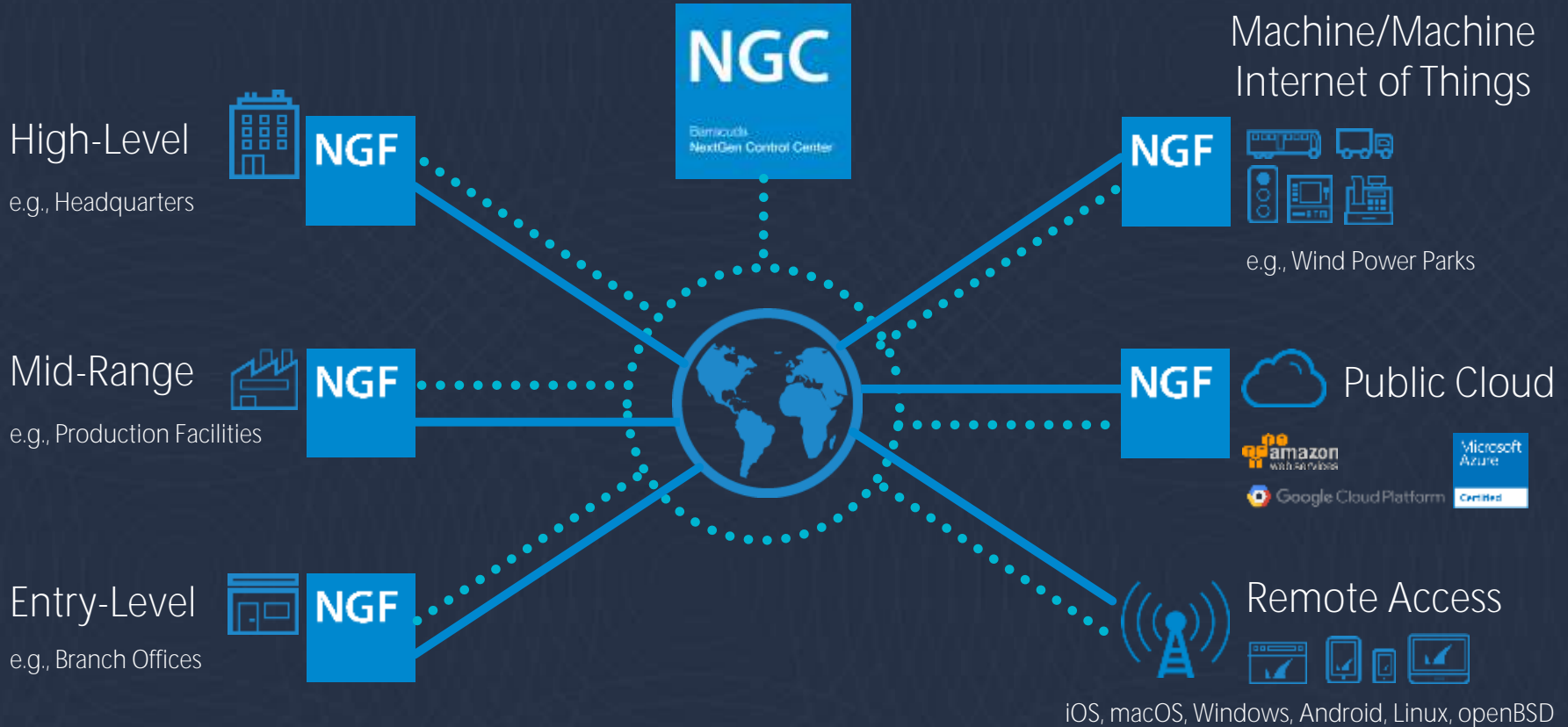


Barracuda Benefits



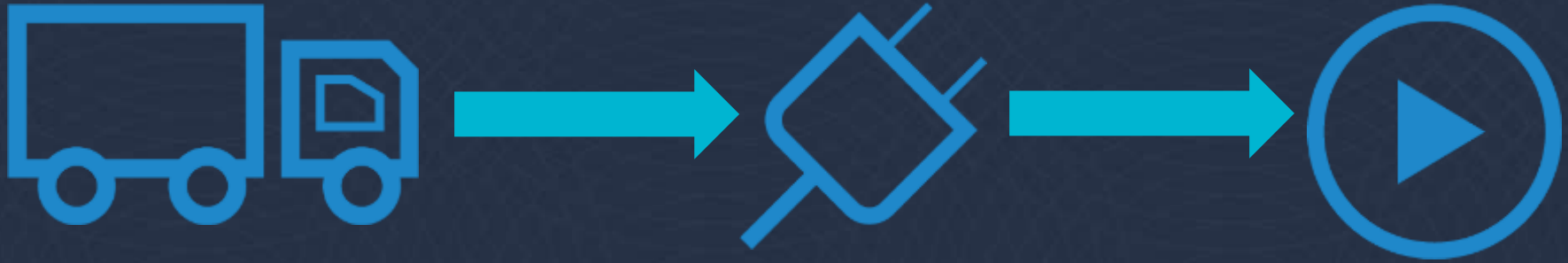


Barracuda NextGen Control Center



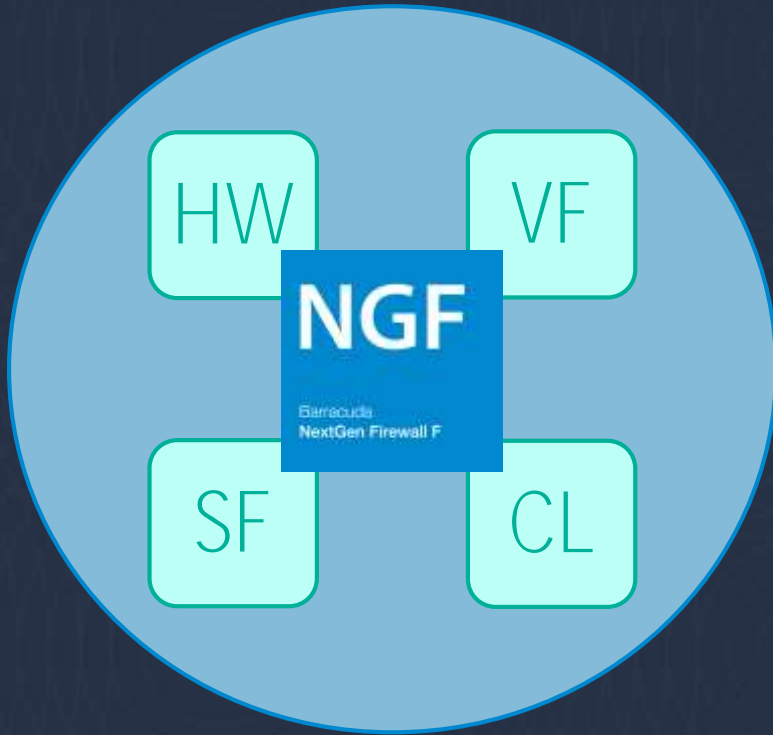
Zero Touch Deployment

Deliver – Plug in – Play (manage)





Lifecycle Management



Regardless which deployment

- 1 Installation Image...
- 1 Major Release Update...
- 1 Minor Release Update...
- 1 Hotfix...

... for everything!

Centralized and Schedulable

- Distribution
- Installation



Revision Control System

RCS

Discard
Im/Export

Lock

Send Changes

X

Main Rules

Action	Name	Source	Service	Destination	Application Policy	User	Features	Sche...
0 Deny	ATD-Deny	ATD Quarantine	ALL ALLIP, ECHO, TCP *, TCP...	Internet 0.0.0.0/0, NOT 10.0.0.0/8, ...	N.A.	Any		Always
1 Pass Dynamic Src NAT [Proxydyn]	DNS	Any 0.0.0.0/0	DNS UDP 53	Any 0.0.0.0/0	No AppControl	Any		Always
2 Pass Dynamic Src NAT [Proxydyn]	F301	172.16.20.68	Ref: HTTP+S, Ref: DNS ECHO, TCP 443, TCP 80,...	Internet 0.0.0.0/0, NOT 10.0.0.0/8, ...	AppControl: SSL Int. URL Fi	Any		Always
3 Block	BLOCKALL	Any 0.0.0.0/0	ALL ALLIP, ECHO, TCP *, TCP...	Any 0.0.0.0/0	N.A.	Any		Always

RCS Versions

Version	Date	Time	Admin	Peer	Operation	Release
1.30	2015/03/31	13:26:43	aholzer	172.31.0.1	CHANGE	6.0
1.29	2015/03/17	09:43:13	aholzer	172.31.0.2	CHANGE	6.0
1.28	2015/03/17	09:41:40	aholzer	172.31.0.2	CHANGE	6.0
1.27	2015/02/24	16:26:46	aholzer	172.31.0.1	CHANGE	6.0
1.26	2015/02/24	16:26:24	aholzer	172.31.0.1	CHANGE	6.0
1.25	2015/02/24	16:25:08	aholzer	172.31.0.1	CHANGE	6.0
1.24	2015/01/29	13:03:35	aholzer	172.31.0.1	CHANGE	6.0
1.23	2015/01/20	10:05:48	aholzer	172.31.0.1	CHANGE	6.0
1.22	2015/01/20	09:04:38	aholzer	172.31.0.1	CHANGE	6.0
1.21	2015/01/20	09:03:38	aholzer	172.31.0.1	CHANGE	6.0
1.20	2014/12/22	10:49:59	aholzer	172.31.0.1	CHANGE	6.0
1.19	2014/10/31	11:49:27	aholzer	172.31.0.2	CHANGE	6.0
1.18	2014/10/31	09:28:57	aholzer	172.31.0.2	CHANGE	6.0
1.17	2014/10/13	09:17:48	aholzer	172.31.0.2	CHANGE	6.0
1.16	2014/10/13	09:12:57	aholzer	172.31.0.2	CHANGE	6.0

Choose Cancel

Malware Protection

All Threat Vectors



Network



Email



Web



Mobile Users



Application

Honey Pots

Crawlers

240,000
Deployments

Customer
Submissions

Barracuda Labs

Threat
Intelligence

All Advanced Threats



CPU Emulation Sandboxing

Static Analysis

Behavioral Analysis

Signature Analysis

Machine Learning

Queries

Barracuda Security Solutions

ESS

Email Security Service

ESG

Email Security Gateway

WSG

Web Security Gateway

FW

CloudGen Firewall

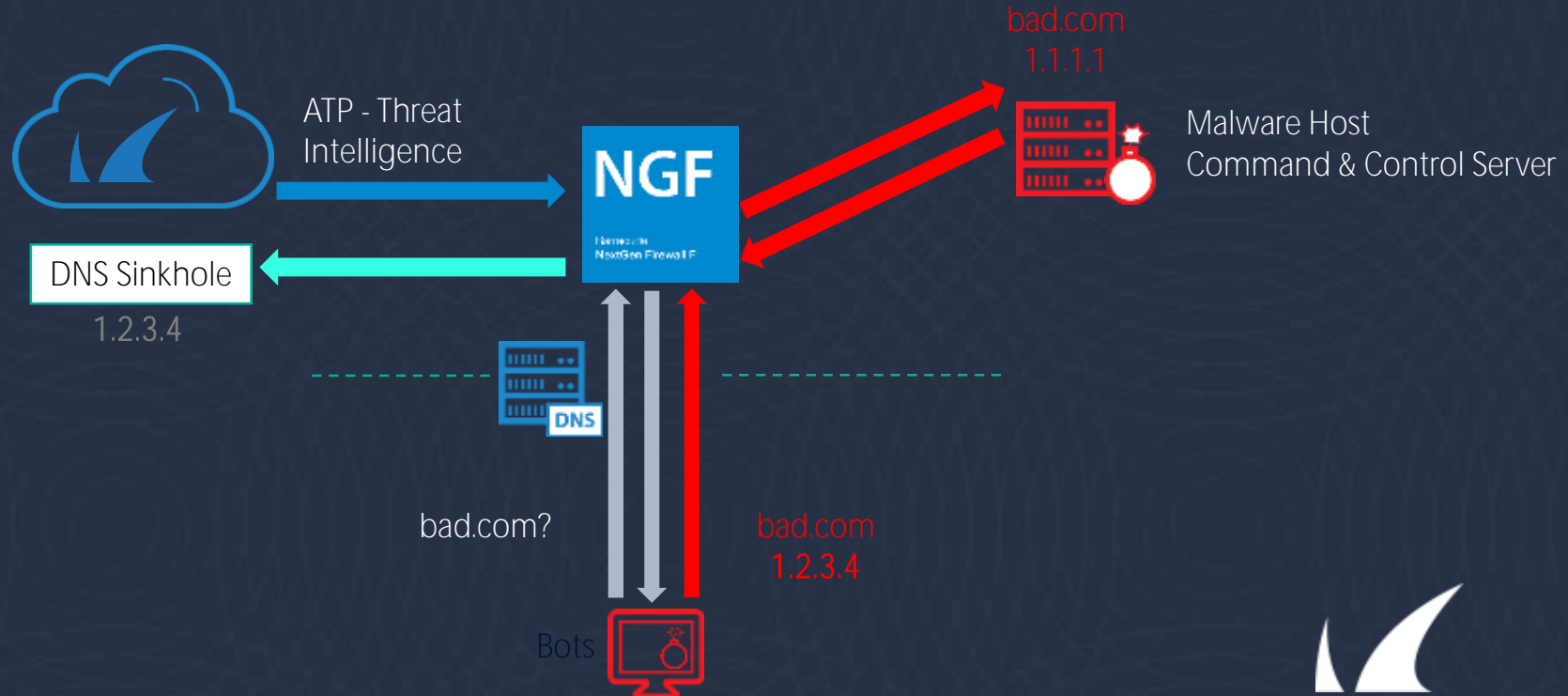
WAF

Web Application Firewall



ATP: Botnet & Spyware Protection

DNS Sinkhole using hostname reputation DB (needs ATP)



NSS Labs – Continuous Security Validation (CAWS) 30 days score

BARRACUDA NETWORKS

CloudGen Firewall F800.CCE v7.2.0

NEXT GENERATION FIREWALL

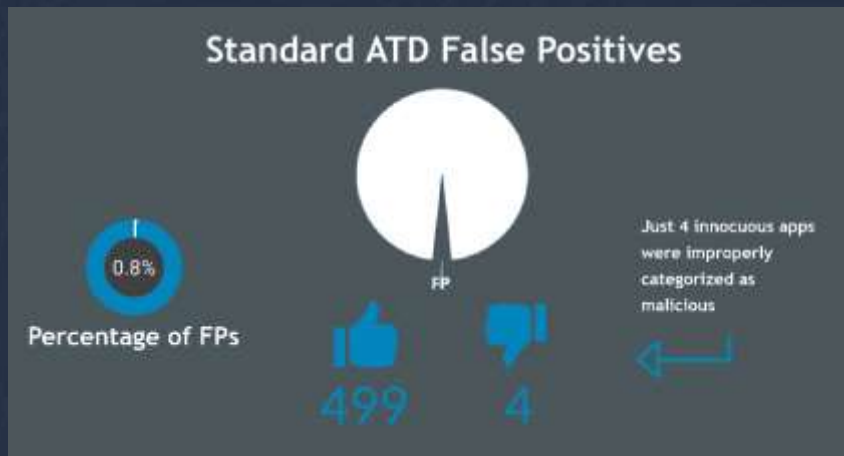


RECOMMENDED

JUL
2018



ICSA Labs – ATP Test Result (as of July 1, 2018)

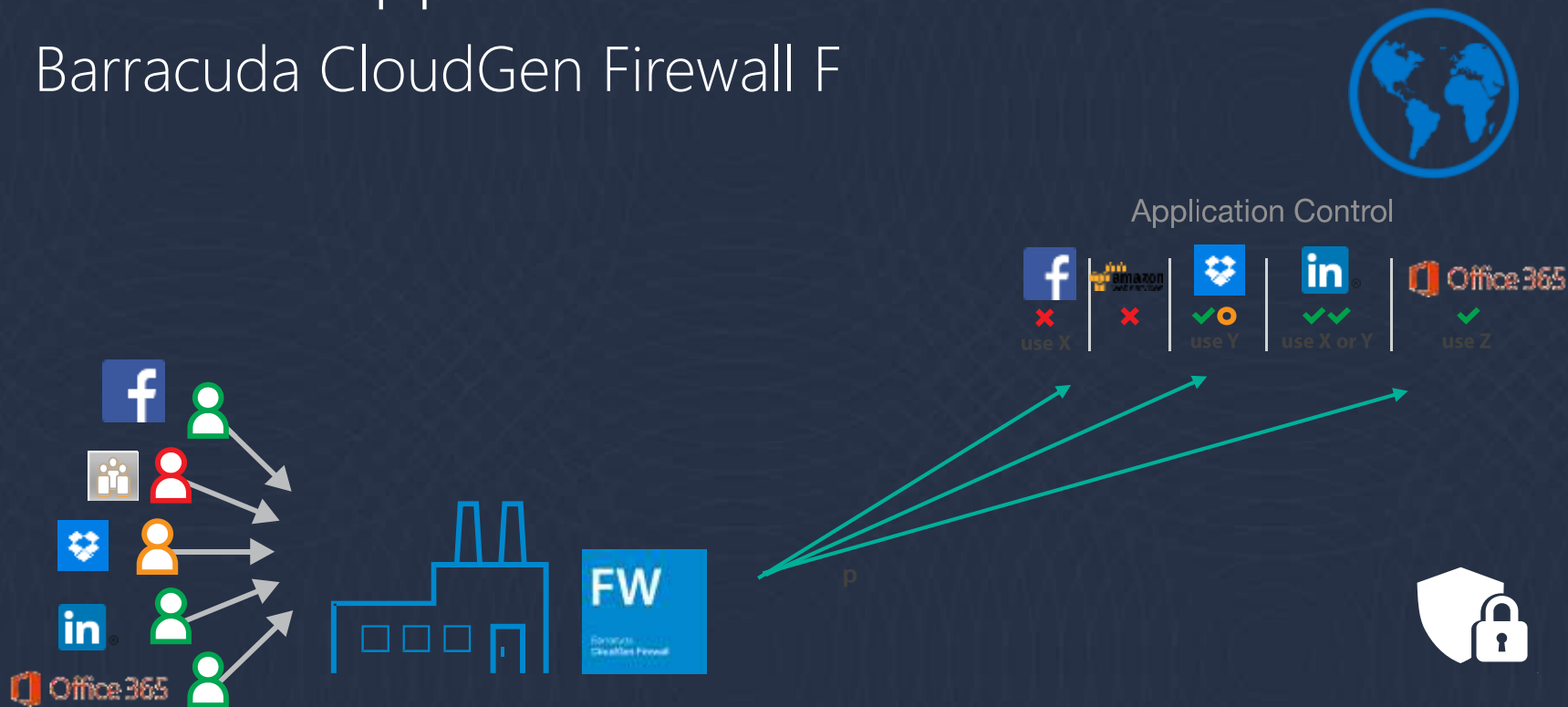


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User and Application Awareness

Barracuda CloudGen Firewall F



Named Network configuration

Named Networks Tree	Scope	References	Description
 Corporate	Used for Rule Evaluation only	0	172.0.0.0/255.0.0.0 StaticBits=1-8
 Location	No Groups	0	DynBits=9-16
 London		0	172.16-17.0.0/255.255.0.0 offset=16 num=2
 Berlin		0	172.18-19.0.0/255.255.0.0 offset=18 num=2
 Vienna		0	172.20-23.0.0/255.255.0.0 offset=20 num=4
 Paris		0	172.24-27.0.0/255.255.0.0 offset=24 num=4
 Unit	No Groups	0	DynBits=17-24
 Sales		0	172.0.0.0/255.0.255.0 offset=0
 Internal IT		0	172.0.1.0/255.0.255.0 offset=1
 Support		0	172.0.2.0/255.0.255.0 offset=2
 Development		0	172.0.10.0/255.0.255.0 offset=10
 Management		0	172.0.11.0/255.0.255.0 offset=11
 Finance		0	172.0.12.0/255.0.255.0 offset=12
 Device	No Groups	0	DynBits=25-32
 Gateway		0	172.0.0.1/255.0.0.255 offset=1
 Fax		0	172.0.0.5/255.0.0.255 offset=5
 Printer		0	172.0.0.10/255.0.0.255 offset=10
 Switch		0	172.0.0.254/255.0.0.255 offset=254

All you need to know with just 1-click

Realtime information & manipulation

ID	State	IP Protocol	Rule	Source	Interface	Destination	Output-IF	Port	Application	Application Context	URL Category	User	SNAT	DNAT	Idle
205		TCP	F301/(App)>Google	172.16.20.68	eth1	173.194.78.139	eth0	443	Google Services Base	clients7.google.com	Search Engines/Portals		10.0.10.65:47585		On
88		TCP	F301/(App)>Google	172.16.20.68	eth1	173.194.113.76	eth0	443	Google Play Base	yt3.ggpht.com	Content Server		10.0.10.65:52795		1m 51s
193		TCP	F301/(App)>Google	172.16.20.68	eth1	173.194.78.154	eth0	443	Google Services Base	www.googletagmanager.com	Online Services		10.0.10.65:23854		40s
169		TCP	F301/(App)>Media-Streaming	172.16.20.68	eth1	173.194.78.91	eth0	443	Youtube Watch Video	VIDEOIO nM_xL43FM	Streaming Media		10.0.10.65:17508		1m 51s
131		TCP	F301/(App)>Google	172.16.20.68	eth1	74.125.133.94	eth0		Terminate Session		Search Engines/Portals		10.0.10.65:15305		1m 48s
150		TCP	F301/(App)>Google	172.16.20.68	eth1	74.125.133.94	eth0		About Session (No TCP RST)		Search Engines/Portals		10.0.10.65:46525		1m 48s
139		TCP	F301/(App)>Google	172.16.20.68	eth1	74.125.133.94	eth0		Change QoS		Search Engines/Portals		10.0.10.65:8781		1m 48s
7462		TCP	F301/(App)>Media-Streaming	172.16.20.68	eth1	74.125.206.102	eth0		Change Reverse QoS		Content Server		10.0.10.65:24844		42s
155		TCP	F301/(App)>Media-Streaming	172.16.20.68	eth1	74.125.71.100	eth0		Toggle Trace		Online Services		10.0.10.65:58864		1m 51s
222		TCP	F301/(App)>Google	172.16.20.68	eth1	173.194.65.95	eth0		Change T1 Settings...		Search Engines/Portals		10.0.10.65:32425		1m 48s
223		TCP	F301/(App)>Google	172.16.20.68	eth1	173.194.65.95	eth0		Show Session Details...		Search Engines/Portals		10.0.10.65:3829		1m 47s
234		TCP	F301/(App)>Google	172.16.20.68	eth1	74.125.71.132	eth0		Find		Content Server		10.0.10.65:24163		1m 48s
215		TCP	F301/(App)>Google	172.16.20.68	eth1	74.125.133.132	eth0		Select All		Content Server		10.0.10.65:39534		1m 49s
115		TCP	F301/(App)>Media-Streaming	172.16.20.68	eth1	74.125.195.102	eth0		Deselect All		Content Server		10.0.10.65:1633		1m 51s
40		TCP	F301/(App)>Media-Streaming	172.16.20.68	eth1	74.125.195.102	eth0				Content Server		10.0.10.65:30596		1m 51s
206		TCP	F301/(App)>Media-Streaming	172.16.20.68	eth1	74.125.195.102	eth0				Content Server		10.0.10.65:8213		1m 51s
59		TCP	F301/(App)>Media-Streaming	172.16.20.68	eth1	74.125.195.102	eth0	443	Youtube Base	ytimg.com	Content Server		10.0.10.65:17190		1m 51s
188		TCP	F301/(App)>Media-Streaming	172.16.20.68	eth1	74.125.195.102	eth0	443	Youtube Base	ytimg.com	Content Server		10.0.10.65:37179		1m 51s
8043		TCP	F301/(App)>Media-Streaming	172.16.20.68	eth1	74.125.195.102	eth0	443	Youtube Base	ytimg.com	Content Server		10.0.10.65:59560		1m 51s



All you need to know with just 1-click

Historic information

AVD	Op	IP Proto	Rule	Source	Interface	Destination	Output	Port	User	Application	Application Content	URL Category	Info	Src NAT	Dest NAT	Last	Count
✓ 40	FWD	ICMP	F-001	10.0.10.10	eth1	64.230.217.102	eth0	443					Normal operation	10.0.10.10		10.0.10.10	24
✓ 189	IPFIX	TCP	App: Web-Surfing	172.16.20.68	eth1	63.249.217.162		443		Web browsing	westerncheck.adobe.com	Software/Hardware	Application Detect	10.0.10.65		10.0.10.65	2
✓ 65	IPFIX	TCP	App: Web-Surfing	172.16.20.68	eth1	63.249.216.134		443		Web browsing	services.adobe.com	Software/Hardware	Application Detect	10.0.10.65		10.0.10.65	2
✓ 278	IPFIX	TCP	App: Web-Surfing	172.16.20.68	eth1	88.198.16.242		443		Web browsing	esetdl.downloads.eset.com	Computing/Technology	Application Detect	10.0.10.65		10.0.10.65	1
✓ 22	IPFIX	TCP	App: Web-Surfing	172.16.20.68	eth1	64.235.144.105		443		Web browsing	www.barnesandnoble.com	Computing/Technology	Application Detect	10.0.10.65		10.0.10.65	1
✓ 465	IPFIX	TCP	App: Google	172.16.20.68	eth1	74.125.71.105		443		Google Services Base		Search Engines/Portal	Application Detect	10.0.10.65		10.0.10.65	1
✓ 144	FWD	TCP	App: Google	172.16.20.68	eth1	173.194.78.94		80		Google Services Base		Content Server	Application Detect	10.0.10.65		10.0.10.65	3
✓ 67	FWD	TCP	App: Web-Surfing	172.16.20.68	eth1	188.31.16.185		80		Web browsing		Social Networking	Application Detect	10.0.10.65		10.0.10.65	2
✓ 104	FWD	TCP	App: Google	172.16.20.68	eth1	74.125.136.91		80		Google Services Base		Content Server	Application Detect	10.0.10.65		10.0.10.65	4
✗ 8-125	FWD	TCP	App: Advertisement-BLOCK	172.16.20.68	eth1	74.125.195.139		80		Google Analytics		Computing/Technology	Block by Rule	10.0.10.65		10.0.10.65	18
✗ 8-175	FWD	TCP	App: Advertisement-BLOCK	172.16.20.68	eth1	74.125.195.100		80		Google Analytics		Computing/Technology	Block by Rule	10.0.10.65		10.0.10.65	7
✗ 8-214	FWD	TCP	App: Advertisement-BLOCK	172.16.20.68	eth1	64.233.167.100		80		Google Analytics		Computing/Technology	Block by Rule	10.0.10.65		10.0.10.65	3
✗ 8-289	FWD	TCP	F-301	172.16.20.68	eth1	68.195.141.179	eth0	443					Port Unreachable	10.0.10.65		10.0.10.65	6
✗ 8-222	FWD	UDP	BLOCKALL	10.0.10.10	eth0	10.0.10.255		138	user21				Block by Rule	10.0.10.65		10.0.10.65	2
✗ 8-268	FWD	TCP	F-301	172.16.20.68	eth1	68.195.141.179	eth0	443					Connect Timeout	10.0.10.65		10.0.10.65	2
✗ 8-221	FWD	UDP	BLOCKALL	10.0.10.10	eth0	10.0.10.255		137	administrator				Block by Rule	10.0.10.65		10.0.10.65	20
✗ 8-219	FWD	UDP	BLOCKALL	10.0.10.10	eth0	10.0.10.255		138	pham				Block by Rule	10.0.10.65		10.0.10.65	21
✗ 8-171	FWD	TCP	App: Web-Surfing	172.16.20.68	eth1	188.31.16.185		80		Web browsing	www.winbox.at	Gaming	URL Category Blocked by Policy	10.0.10.65		10.0.10.65	1
✗ 8-137	FWD	TCP	App: Advertisement-BLOCK	172.16.20.68	eth1	74.125.195.101		80		Google Analytics		Computing/Technology	Block by Rule	10.0.10.65		10.0.10.65	10
✗ 8-1	FWD	UDP	DNS	10.40.130.50	eth0	10.0.10.65	eth0	53					Port Unreachable	10.0.10.65	10.0.10.200	10.0.10.200	7
✗ 8-2	FWD	UDP	DNS	10.40.130.50	eth0	10.0.10.65	eth0	53					Port Unreachable	10.0.10.65	10.0.10.200	10.0.10.200	6
✗ 8-252	FWD	UDP	DNS	10.40.130.50	eth0	10.0.10.65	eth0	53					Host Unreachable	10.0.10.65	10.0.10.200	10.0.10.200	5
✗ 8-253	FWD	UDP	DNS	10.40.130.50	eth0	10.0.10.65	eth0	53					Host Unreachable	10.0.10.65	10.0.10.200	10.0.10.200	5
✗ 8-167	FWD	TCP	App: Advertisement-BLOCK	172.16.20.68	eth1	173.194.67.102		80		Google Analytics		Computing/Technology	Block by Rule	10.0.10.65		10.0.10.65	4
✗ 8-166	IPFIX	TCP	App: Advertisement-BLOCK	172.16.20.68	eth1	74.125.230.254		443		Google Analytics		Computing/Technology	Block by Rule	10.0.10.65		10.0.10.65	2
✗ 8-165	FWD	TCP	App: Advertisement-BLOCK	172.16.20.68	eth1	64.233.168.101		80		Google Analytics		Computing/Technology	Block by Rule	10.0.10.65		10.0.10.65	6



Microsoft Azure virtualWAN



Fully automated WAN
creation using Azure
vWAN VPN units

Only combined SD-WAN & Security vendor on
preferred partner list

<https://docs.microsoft.com/en-us/azure/virtual-wan/virtual-wan-locations-partners>

Demo Video: <https://www.barracuda.com/AzurevWAN>



SD-WAN

Security + Optimisation + Connectivity

- Central Management to automate connections
- Maximise potential of existing connectivity
- Prioritise critical traffic for best experience.
- Roll out to new locations easily with Zero-Touch deploy



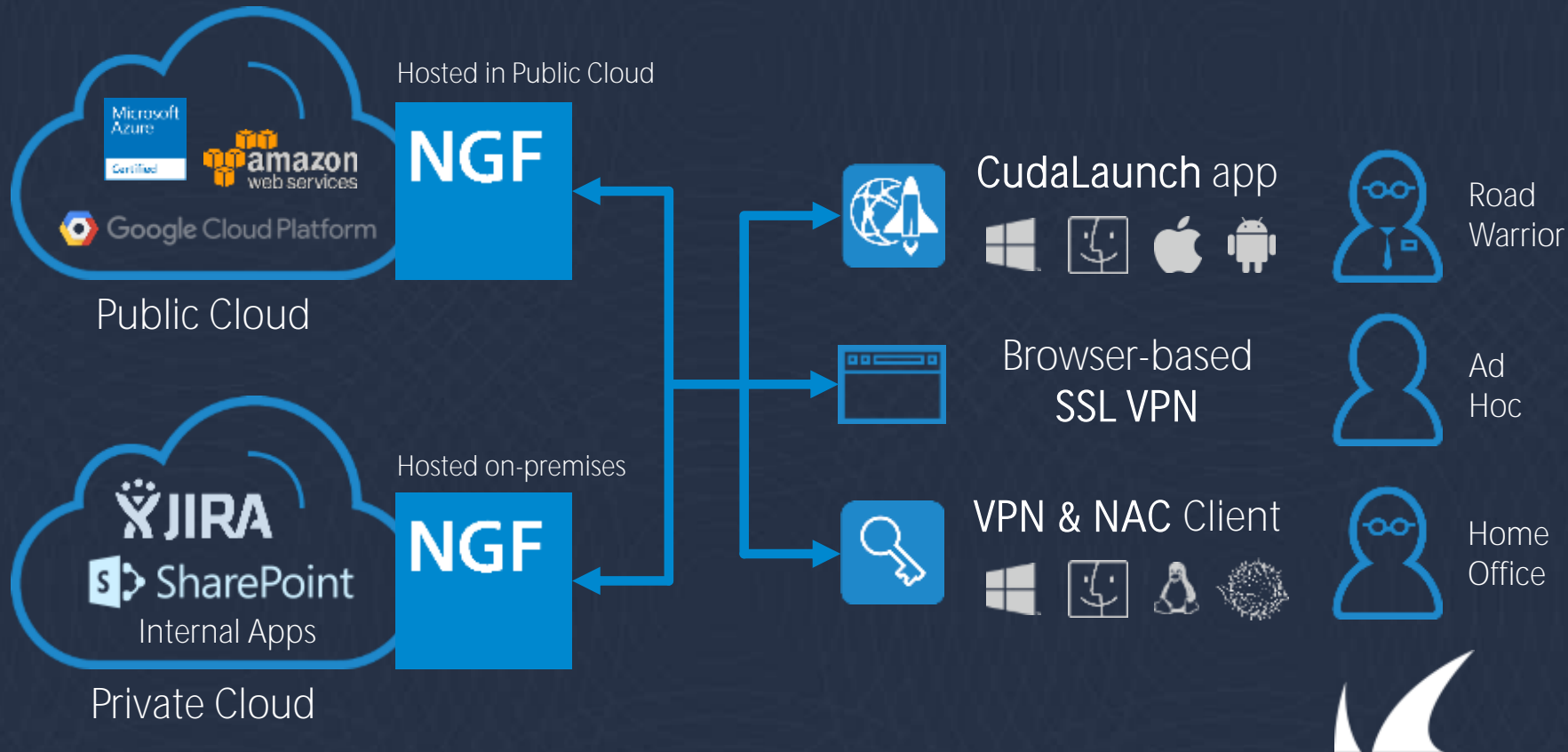
Effective Operations

VPN is hard to setup, to maintain, to troubleshoot?

Graphical Tunnel Interface (GTI) provides you with a graphical interface to create and manage VPN tunnels

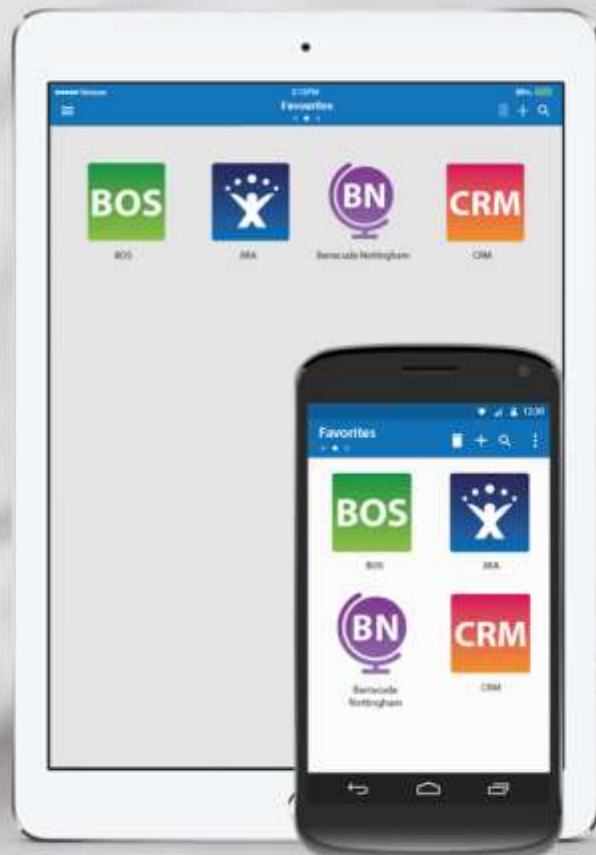


User VPN access





Connect to your
organization's
private cloud
from anywhere.



Internet of Things

- Highest level of scalability to connect and protect thousands of devices
- Enforcement for SCADA protocols
- Permanent and on-demand connectivity for IT and OT
- Secure Remote Access to manufacturing assets



Cloud Billing Models



Cloud Billing

- Traditional – BYOL (1, 3 or 5 year terms)
 - Pair with reserved instances for cost effective long term security
- Cloud – PAYG (pay hourly for what you use)
 - Scale up and down as you need more capacity.
- Consumption – Metered (pay for what you use)
 - Integrate security throughout the CI cycle.



Wrap-up



Cloud Generation Firewalls

- Adoption of the cloud is accelerating and will likely impact your business
 - We must embrace and adapt IaaS and PaaS
- Cloud redefines the role of the Firewall
 - Its not just about perimeter security anymore
- Premises-centric technologies cannot be force-fit to the cloud
 - Requires cloud native integrations

***Barracuda Cloud Generation Firewalls
ensure you are Cloud Ready***



Next Steps and Resources

Learn

Contact

Try

Ask

1. Learn more

For a rich library of resources, visit the Barracuda cloud Microsites:

<https://www.barracuda.com/public-cloud>

www.barracuda.com/azure

www.barracuda.com/aws

www.barracuda.com/googlecloud

2. Contact Barracuda's cloud experts



Thank You

