



Take Control of Your Microsoft Static Content Ingress with Connected Cache

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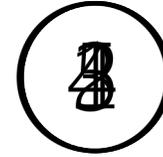
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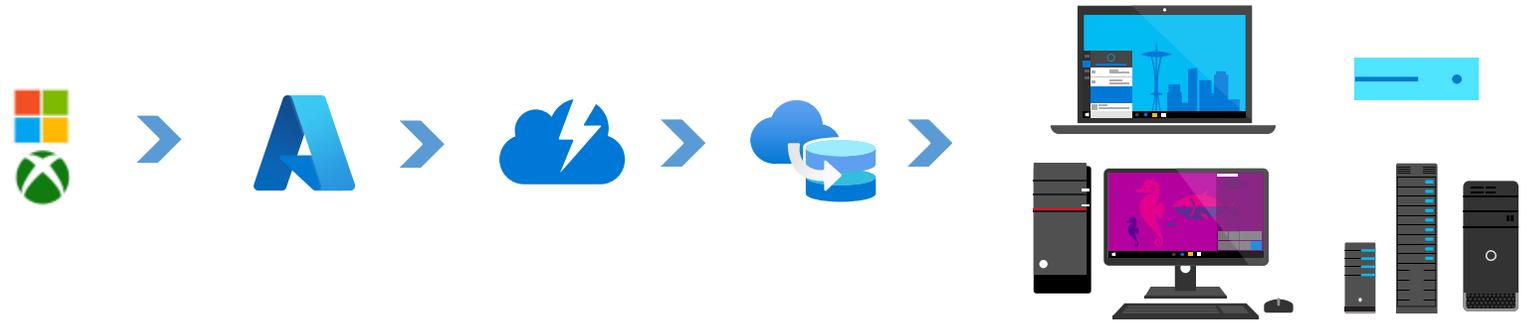
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Microsoft Trivia



Who are the cofounders of
Microsoft?
Bill Gates & Paul Allen

Microsoft Content Delivery



- Content Delivery Team optimizes delivery through on-device and cloud services
- Microsoft works with a portfolio of CDNs to optimize content delivery globally
- 2 Billion+ active Windows 10 and 11 devices
- Delivery Optimization platform – Over 1 Trillion operations / month (download and P2P sessions)



Microsoft Connected Cache

- Microsoft's ***free software-based***, cloud-managed in-network content cache solution
- Available for use by Internet Service Providers, *Internet Exchanges*, and Transit Providers
- Relies on Microsoft's Delivery Optimization Platform
- Caches static content – Windows Updates, Office, PC Xbox Games*, and more content will be added (AI models)

Benefits of Microsoft Connected Cache

- Reduces Load On Backbone/Transit Costs - 98%+ Cache hit/ratio
- Requires no content management – Transparent, intelligent cache, pull model, caches only what is consumed by devices on your network
- Offers flexible deployment to as many bare-metal servers or VMs as needed
- Improves Download Experience - Brings the source closer to the end user (Up to 1.5 X faster download speeds & higher download success rate)

Globally
90+ Countries
350+ Operators
500+ Nodes



Brazil Static Content Delivery

- Delivery Population
 - Nearly 500M monthly active devices
- Microsoft Connected Cache

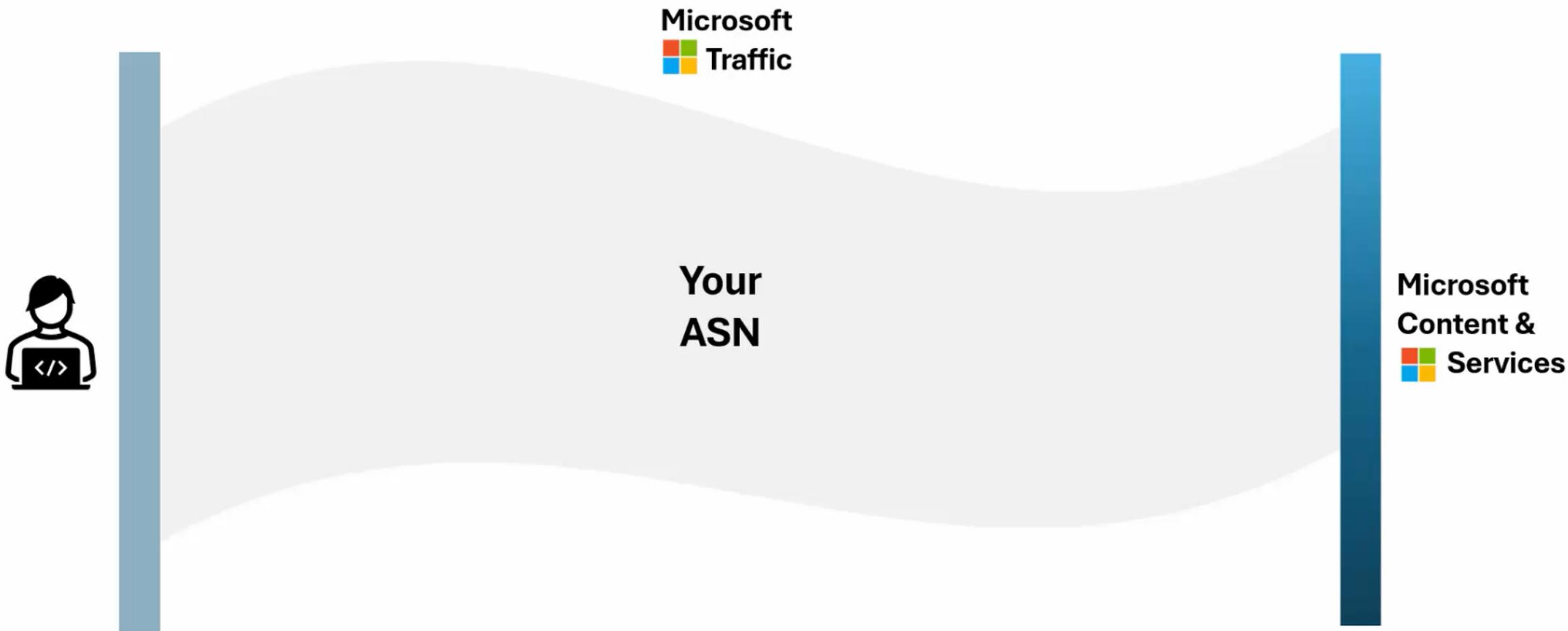


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e Nodes

razil's Download Traffic

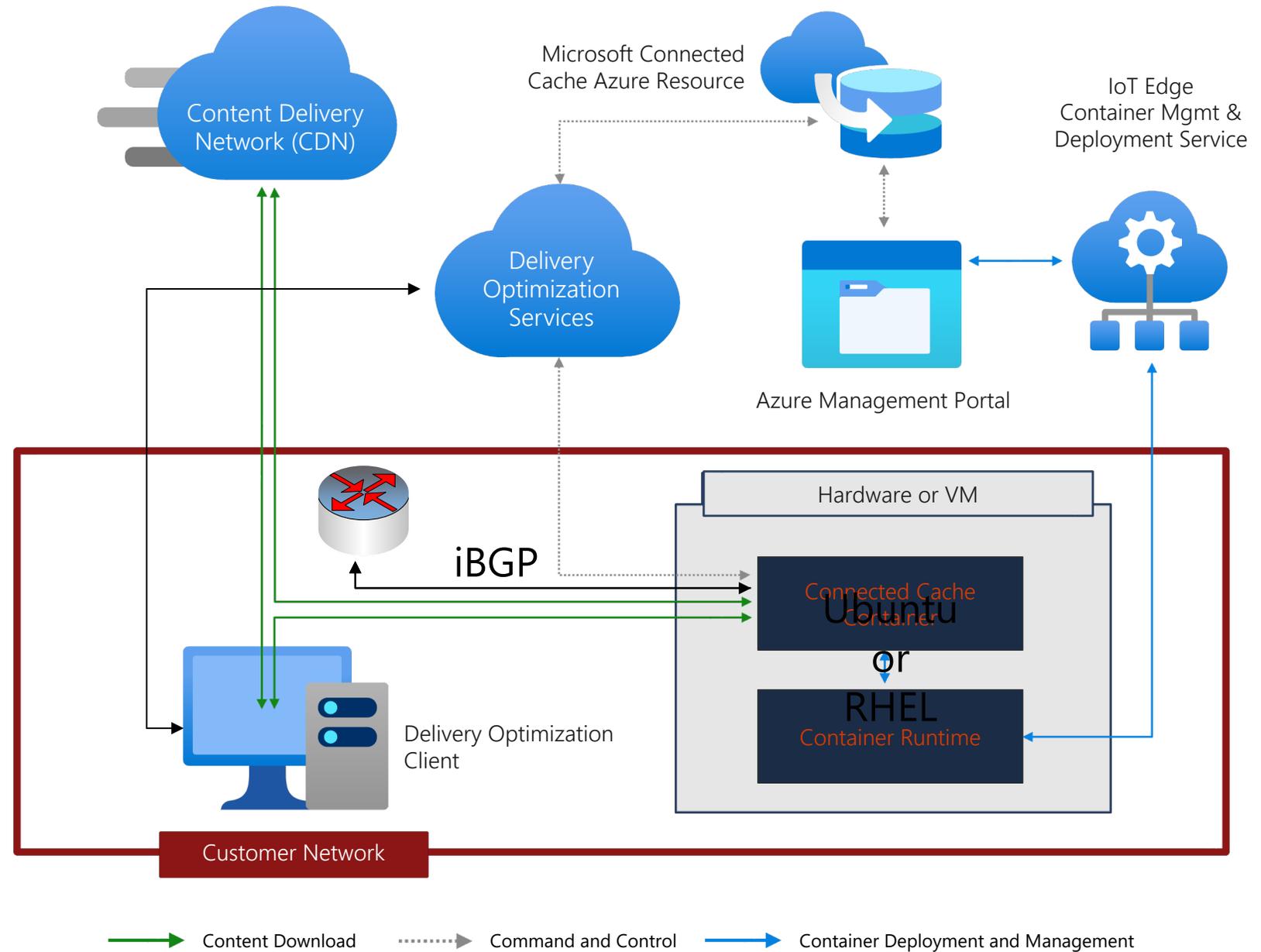
Microsoft Traffic Without Peering



Microsoft Connected Cache Technical Details



Devices automatically fallback to CDN if cache server is unavailable for some reason.



Connected Cache Node Up and Running In About 1 Hour

1. Server ready w/Ubuntu 22.04, RHEL 8/9
2. Create Cache Resource (Account) – Management Portal and Signup verification
3. Create a node in the management portal
4. Provision the server with a script
5. Configure basics for node in portal
 - Server IP
 - Cache drives and sizes
 - Max allowable Egress
6. Configure routing in portal
 - BGP
 - Manual prefixes
7. iBGP peer with cache node from router/route server
8. Content delivery begins

Management Portal

andyriv-x1 Cache Node Configuration

Microsoft Connected Cache

[Download provisioning package](#) [Save](#)

To get a cache node running you will need to:

1. Configure the basics, cache storage settings and routing information. Don't forget to save your configuration settings.
2. Run a provisioning script on your server that will connect the server to Microsoft services.

Routing information

Prefix Source ⓘ

BGP Manual prefix entry

Manually entered prefixes

Address range/CIDR blocks ⓘ

20.1.20.100/24

Ip space ⓘ

256

BGP route information

asn

IP address

64512

20.1.20.100

Enter ASN ex:12345

Enter Neighbor IpAddress

BGP routes received ⓘ

Routes never received

Last received BGP timestamp ⓘ

Download BGP Routes

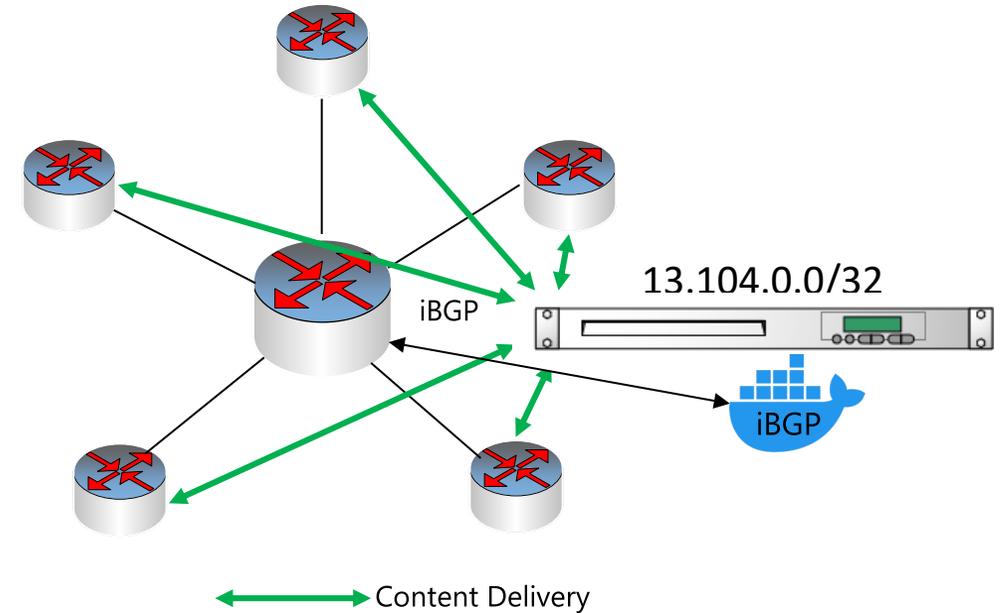
Download JSON

Ip Space ⓘ

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How Does Connected Cache Operate in Internet Exchanges?

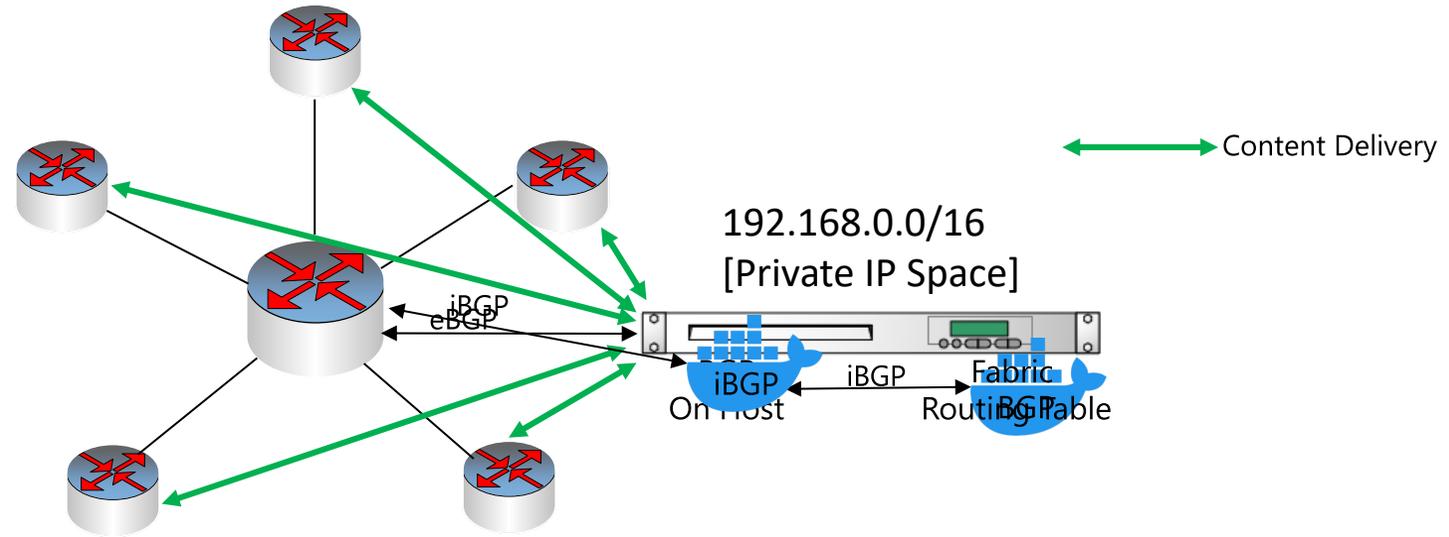
Scenario 1: Public Internet- Hosted Cache Node



- IXP members advertise prefixes to the exchange route server/collector
- iBGP session between exchange route server/collector and Connected Cache (the container is running BGP)
- Exchange hosts Connected Cache node and assigns a public IP address
- Clients pull content from exchange-host Connected Cache node

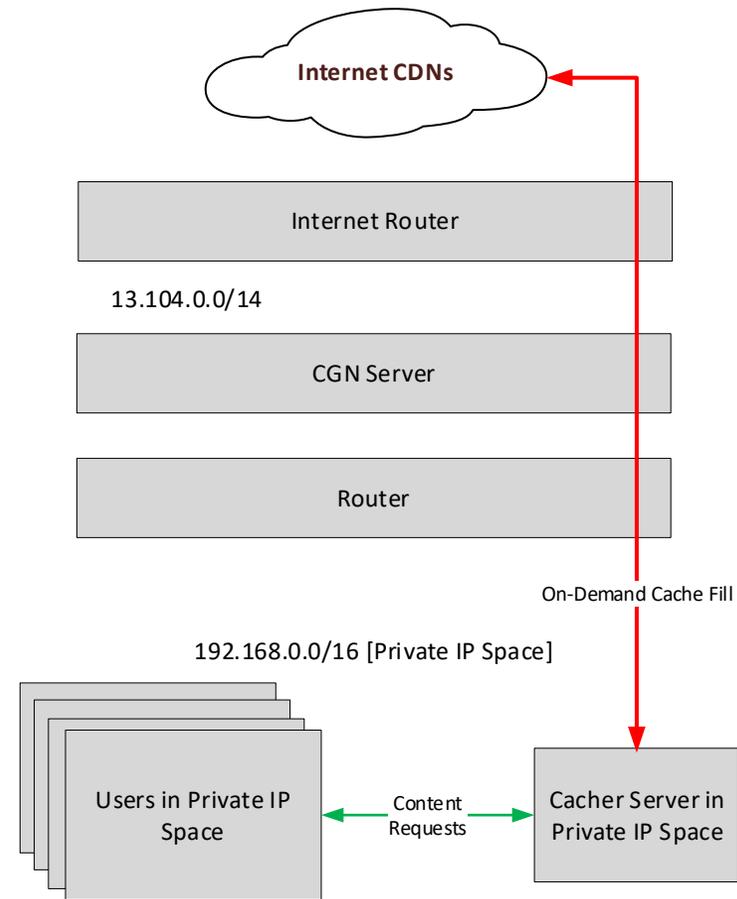
How Does Connected Cache Operate in Internet Exchanges

Scenario 2: Private Exchange Fabric-Hosted Cache Node



- The main problem to solve: How do the IX member devices route to the cache node.
- Two Options
 - The cache node host initiates an eBGP session with a router that includes the private fabric routing information and an iBGP session with the cache node BGP instance
 - The private fabric routing table can be added to the host machine and an iBGP session with route server
- Clients pull content from exchange-host Connected Cache node

Does Connected Cache Can Operate in CGN Networks?



- Connected Cache nodes can be hosted in the same private IP space as the clients that will pull content
- Use the private IP address for the cache node configuration in the portal

Cache Server Requirements

Microsoft Connect Cache Machine Class	Scenario	Traffic Range	VM/Hardware Recommendation
Edge	For smaller ISPs or remote sites part of a larger network.	< 5 Gbps Peak	VM ✓ Up to 8 Cores ✓ Up to 16 GB Memory ✓ 1 500 GB SSD
Metro POP	For ISPs, IXs, or Transit Providers serving a moderate amount of traffic in a network that may require one or more cache nodes.	5 - 20 Gbps Peak	VM or Hardware ✓ 16 Cores ¹ ✓ 32 GB Memory ✓ 2 - 3 500 GB SSDs
Data Center	For ISPs, IXs, or Transit Providers serving a large amount traffic daily and may require deployment of multiple cache nodes.	20 - 40 Gbps Peak	Hardware (see sample spec below) ✓ 32 or More Cores ¹ ✓ 64 or more GB Memory ✓ 4 - 6 500 - 1 TB SSDs ²

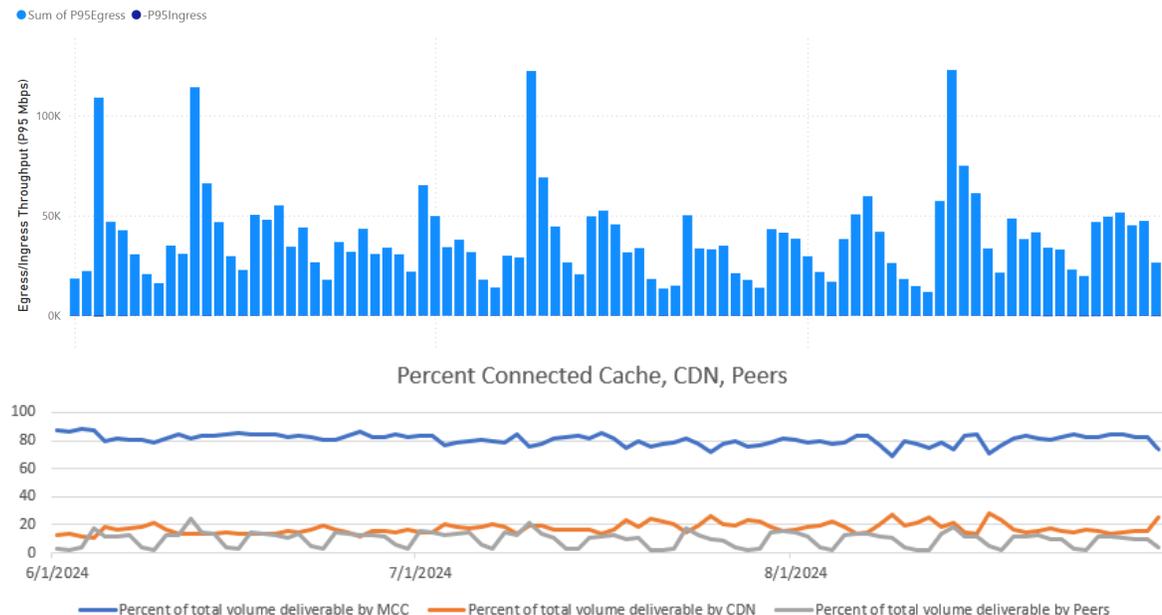
¹ Requires systems (chipset, CPU, motherboard) with PCIe version 3 or higher

² Drive speeds are important and to achieve higher egress we recommend SSD NVMe in m.2 PCIe slot (version 4 or higher)

Sample Caching Data APAC Operator

Thailand Network Service Provider

- 4 Dell PowerEdge R330
 - 2 x Intel(R) Xeon(R) CPU E5-2630 v3 @ 2.40GHz , total 32core
 - 48GB, Micron Technology 18ASF1G72PDZ-2G1A1, Speed: 2133 MT/s
 - 4 - Transcend SSD230s 1TB SATA Drives
 - 40G Intel XL710-QDA2
- ~1M IPv4 IPs
- Microsoft Connected Cache service load-balances
- Results
 - 95-99% cache hit across four nodes
 - Peak egress mid-high 30s



Sample Caching Data Brazilian Transit Provider

Brazilian Operator (Forte Telecom) with 2 Machines

- Intel Xeon 48 Cores
- Memory: 64Gb
- Hard Drive: 1 800 GB SSD
- Network: 2 x 10G
- ~1.5M IPv4 IPs, 400 ASNs
- Microsoft Connected Cache service load-balances if necessary
- Results
 - 95-99% cache hit across two nodes
 - Peak egress mid-high teens



Learn more at:
<https://aka.ms/mccisp>



Questions?

Reach out to our team at:

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