



Verizon Enterprise Center

Dynamic Network Manager User Guide - Private IP

Version 6.0

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Table of Contents

Private IP Dynamic Network Manager Overview	3
Business Rules for Private IP Virtual Private Networks (VPNs)	4
Sign In to Verizon Enterprise Center	6
Accessing Dynamic Network Manager	7
Dashboard	11
Search	15
Export	16
View Circuit Details	17
Network Settings	19
Order History	22
DNM Order Summary	23
Diagnostics (Router Commands)	24
Bandwidth Utilization	25
View Pending Tickets, Orders and Associated Virtual Route Forwarding (VRF)	26
Configure eBGP Routing Parameters	27
Configure Static Routes	28
Port Speed Changes	29
Class of Service: Committed Access Rate (CAR) Speeds and Egress Policies	30
How to Modify Port Bandwidth and EF CAR	32
Network to Network Interface (NNI) Toggling for DPORT	37
Bulk Operations	40
Modify Shaping Adjustment	53
Modify Admin Status	54
Open Quick (Trouble) Ticket	54
Network Transit Delay	56
Quality of Service (QoS) Egress Traffic Profiles	59
Customer Edge Configuration Settings	63
Glossary	69
Customer Support & Training	71

Private IP Dynamic Network Manager Overview

Private IP Dynamic Network Manager (DNM) enables you to make changes to your Private IP Ports, Committed Access Rates (CARs), and customer egress profiles.

Features & Benefits

Following are the features and benefits of Private IP Dynamic Network Manager:

- Schedule a Port or CAR change order up to one year in advance
- Make bandwidth changes in minutes through the Verizon Enterprise Center
- Subscribe to electronically delivered activity reports
- Download a site detail report in Microsoft® Excel®
- Access a Customer Edge (CE) sample configuration
- Issue a specific set of Ping and Show commands on the Provider Edge (PE) Router
- Make real-time application aware network adjustments

Components

Private IP Dynamic Network Manager consists of three components:

- **Looking Glass:** Allows Users to view the configuration information of their Multiprotocol Label Switching (MPLS) networks. It is a mainly a "view only" interface, but there are Looking Glass orders that allow Users to make certain non-billable Layer 3 configuration changes to their Private IP sites. Looking Glass sample configurations can be downloaded for your CE router. Looking Glass also allows specific PING and Show commands to be issued. Private IP customers can use Looking Glass to see and make settings changes to network service attributes. They can also determine how their sites are configured at the Provider Edge (PE) devices on the network.
- **Dynamic Port (DPORT):** Allows Users to make PIP transport circuit up/down speed changes.
- **Dynamic CAR (DCAR):** Allows Users to make up/down speed changes to their Expedited Forwarding Committed Access Rate (EF-CAR) speeds including Quality of Service (QOS) egress profiles.

Note: Since DPORT and DCAR enable price impacting changes, they both require specialized Verizon Enterprise Center (VEC) entitlements or permissions. Contact your Account Team for assistance with setting up these permissions.

Business Rules for Private IP Virtual Private Networks (VPNs)

The following business rules apply with Private IP (PIP) Dynamic Network Manager:

- Available to existing and new customers, both customer-managed and those using Verizon Managed Services.
- Available for sites located globally. **Note:** There are countries where Dynamic Port cannot be supported due to contractual obligations with our partners. Your account team can provide details on availability.
- Available on direct connections
 - For Private IP ports with a **W** prefix: Dynamic Port is available on direct connections using Time Divisional Multiplexing (TDM) in all regions. Direct Ethernet Access is supported in select countries in Europe.
 - For Private IP ports with a **B** prefix: Dynamic Port is available on both direct connections using TDM access or Ethernet Access in the United States.
 - For Private IP ports with a **C** prefix: Dynamic Port is available on both direct connections using TDM access or Ethernet Access in all regions
- For Private IP ports with a **W** prefix: Dynamic Port requires an initial full port speed of T1, E1, E3, DS3, OC3, STM1, OC12, STM4, and 1 Gigabyte Ethernet (Europe Only)
- For Private IP ports with a **B** prefix: You can order a lower initial Private IP TDM and Ethernet Port speed and then use Dynamic Port to raise or lower the speed to the level you want in the United States.
- For Private IP ports with a **C** prefix: You can order a lower initial Private IP TDM and Ethernet Port speed and use Dynamic Port to raise or lower the speed to the level you want in all regions.
- Some restrictions apply:
 - Dynamic Bandwidth (DCAR and DPORT) is not supported on customer sites using the MPLS VPN Inter-provider Connection (MVIC).
 - DPORT is not available with direct connections using NxT1/NxE1 with MLPPP or MLFR.
 - "DCAR only" (i.e., when not sold with DPORT) is available on the following access types: NxT1 with MLPPP, and MLFR for U.S. sold sites only.
 - Because of contractual agreements, there are countries where Dynamic Port cannot be supported. Contact your Verizon Account Team for more details.
- **Below are detailed rules for DPORT changes per day on Private IP ports with a “C” prefix.**
 - **Unlimited Speed Change Requests:** you can make more than one speed change request during a 24-hour period. Greenwich Mean Time (GMT) is used as the start/stop reference for a DNM 24 hour time period. DPORT/DCAR speed changes can be made up until (but not after) 11:00 p.m. GMT.
 - **Ability to Reverse Speed Change Requests:** Within 60 minutes of making a speed upgrade (or downgrade) request, you can “correct” the request (as needed) by reversing the speed change request back to the original speed. After 60 minutes the speed change will be completed from a billing perspective. One speed correction is allowed during a 24-hour period.

- **Billing:** Verizon will continue to bill in 24 hour minimum daily increments. The highest speed change request made during a 24 hour period will be the speed that is passed to billing for that day.
- **Carry Over Speed:** The last speed entered for the day will be the one that gets carried over to the next day and be in effect.

For Your Information:

The Dynamic Network Manager feature does not support Open Shortest Path First (OSPF) or IP Multicasting access at this time. It is important to modify your router configuration for Dynamic CAR and Dynamic PORT in order to keep your router in sync.

If you select Gold CAR (Expedite Forwarding) for Voice over IP calls, a reduction of the CAR value (e.g., 40.456 reduce to 8K) can directly affect the quality of all Voice over IP calls on this link.

Sign In to Verizon Enterprise Center

1. Go to <http://sso.verizonenterprise.com>. The sign in page appears.
2. Enter your user name and password and Click **Sign In**.
3. The Verizon Enterprise Center home page appears.

The screenshot shows the Verizon Enterprise Center sign-in page and dashboard. At the top, the Verizon logo is on the left, and navigation links for 'Wireless', 'In Home', 'Business', 'Solutions', 'Products', 'Resources', and 'Why Verizon' are on the right. The main content area is divided into several sections:

- Sign in to business.** A form with fields for 'userID' and 'Password', a 'Remember Me' checkbox, and a 'Forgot username or password?' link. A 'Sign In' button is prominent.
- Quick tasks.** A section with 'All Products' (Request a consultation, Get product support) and 'Internet & Wired Communications' (Add more of a service, Change a service, Create a billing inquiry, Create a repair ticket, Disconnect a service, Move a service, Check billing inquiry status, Check repair ticket status).
- Additional management portals.** Links to Enterprise Service Activation Platform, Unified Security Portal/DDoS Shield Portal, Network Enterprise, Verizon Cloud, Network Universal, and Verizon NetworkFleet.
- Training tools and resources.** Links to Explore Internet & Wired training and Explore Wireless & Mobility training.

Below the sign-in area is a banner for 'My Verizon for Enterprise Account management anytime, anywhere' with a background image of a person on a couch. A dark navigation bar contains the text 'Attention WAN Analysis Reporting - CA Performance Management Users View Details' and a page indicator '1/3'. Below this is a secondary navigation bar with 'Manage Account' and 'Support' links, and a search bar. A 'Welcome, Maria!' message is followed by a 'Take the tour' link. The 'My workspace' section features three main panels:

- Billing:** Includes links for 'Make a payment', 'Manage payment methods', 'Setup recurring payments', and 'Schedule a payment'. A 'Go to billing' link is at the bottom.
- Recent invoices:** Lists three invoices with 'Pay now' buttons: USD 564.64 (due Dec 8, 2019), USD 52.00 (due Dec 8, 2019), and INR 145769.00 (due Dec 5, 2019). A 'View all' link is at the bottom.
- Download center:** Lists two 'Consolidated Bill Summary' documents with 'Download' icons and 'View all' link at the bottom.

At the bottom, there is an 'Orders' section with a 'View all' link and a sub-section for 'Orders by type'.

Accessing Dynamic Network Manager

Click *Dynamic Network Manager* on the *Verizon Enterprise Center (VEC) home page* to go to *DNM Dashboard* page

The screenshot shows the Verizon Enterprise Center dashboard. At the top, there is a navigation bar with the Verizon logo, 'Manage Account', 'Support', and a search bar. Below the navigation bar is a welcome message: 'Welcome, Robert!' with a link to 'Take the tour >'. The main content area is titled 'My workspace' and is divided into three sections: 'Orders', 'Product tools', and 'User admin'. The 'Orders' section contains a list of actions and a 'Go to orders >' link. The 'Product tools' section contains a 'Dynamic network manager' link and a 'View all >' link. The 'User admin' section contains a list of actions and a 'View all >' link. The 'Orders by type' chart shows a total of 23 orders, with 2 Install, 1 Change, and 20 Disconnect. The 'Dynamic network manager' section shows 1 site with utilization between 70%-80% and an 'Upgrade bandwidth' button. The 'Total users' section shows a total of 6 users. The 'Structures & Groups' section shows 0 total structures and 0 reporting structures. A red circle highlights the 'Orders by type' chart, and a blue arrow points to it from the right.

Orders by type

Type	Count
Install	2
Change	1
Disconnect	20
Total	23

Dynamic network manager

1 Sites with utilization between (70%-80%)

[Upgrade bandwidth](#)

Total users

Total
6

Structures & Groups

Total structures: 0

0 Reporting structures

Alternative VEC Menu Access to DNM

Attention Dynamic Network Manager Users [View Details](#) 1/3 →

Portal Updates Mobile App Notifications

verizon Manage Account Support Search

Internet & Wired Communications

- My Workspace**
- Billing**
 - View Invoices
 - View Inquiry
 - Reports
 - Make a Payment
 - Manage Payment Methods
 - Create Inquiry
 - Change Billing Address
 - Update Paperless Billing
- Service**
 - View Inventory
 - Manage Requests
 - View Alarms
 - My Contract Summary
 - Create Service/Change Request
 - My Price Book
 - Service Management Reporting
 - Submit Move/Add/Change Order
 - Disconnect Services
- Orders**
 - Create Order
 - View Order Status
- Repairs & Troubleshooting**
 - Create Repair Ticket
 - View Repair Ticket
 - Original Repairs & Troubleshooting
- Product Tools**
 - Inbound Network Manager
 - Dynamic Network Manager**
 - IP Performance Reporting
 - View All**

Billing

Make a payment
Manage payment methods
Setup recurring payments
Schedule a payment

Go to billing >

Due date: Dec 8, 2019

U0197695
USD 52.00
Due date: Dec 8, 2019

Pay now

Consolidated Bill Summary
Requested date: Oct 15, 2019

View all >

Due date: Dec 5, 2019

IN00240446
INR 145769.00
Due date: Dec 5, 2019

Pay now

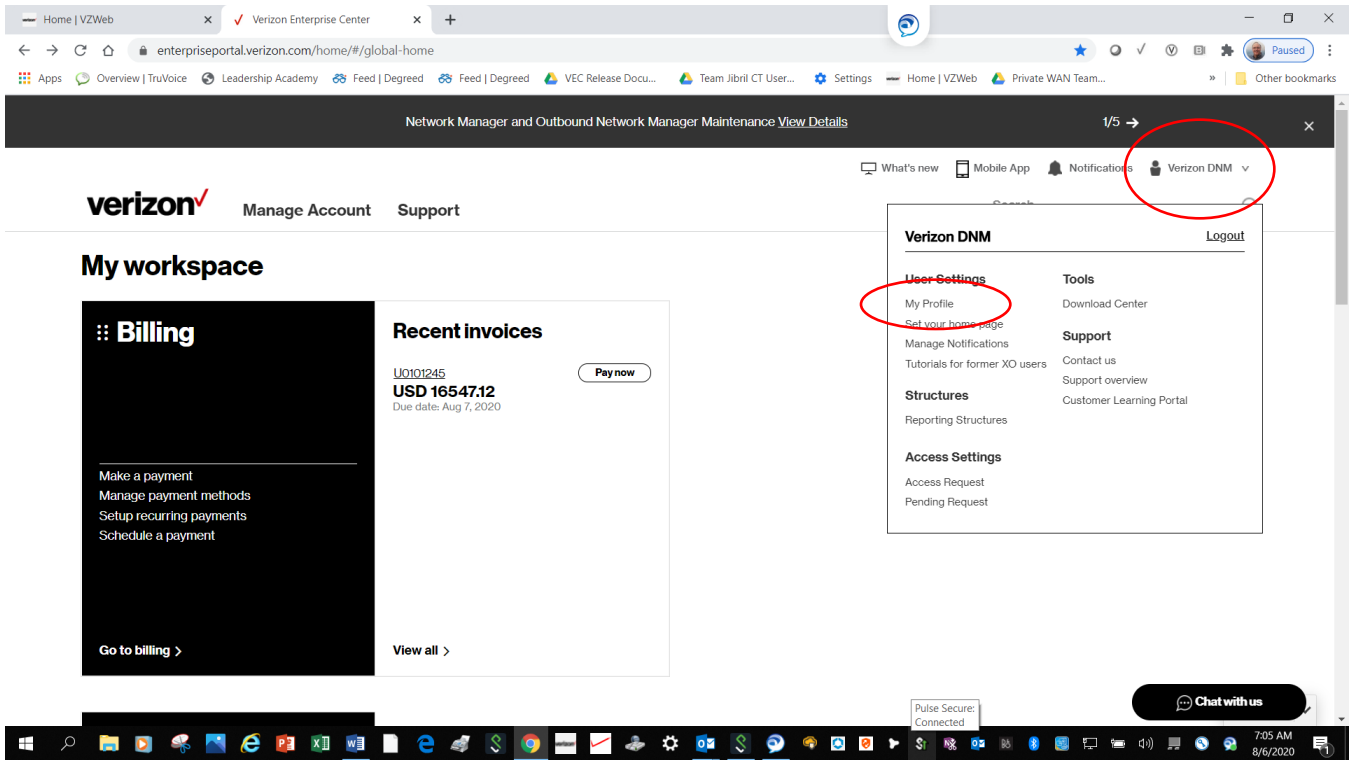
View all >

Orders

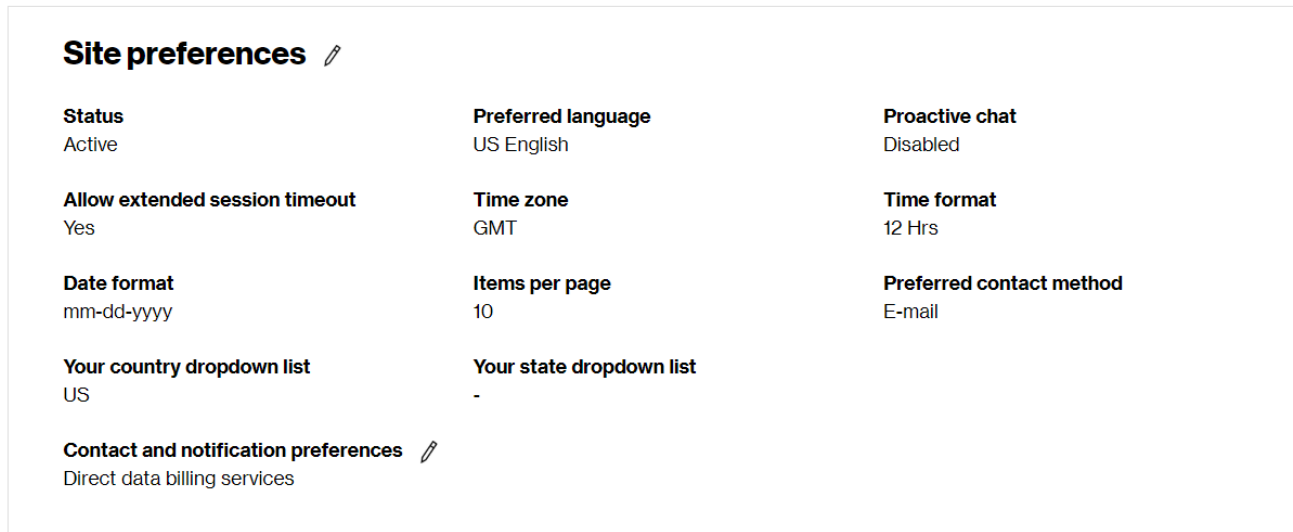
Orders by type

Action required
Total actions: 4

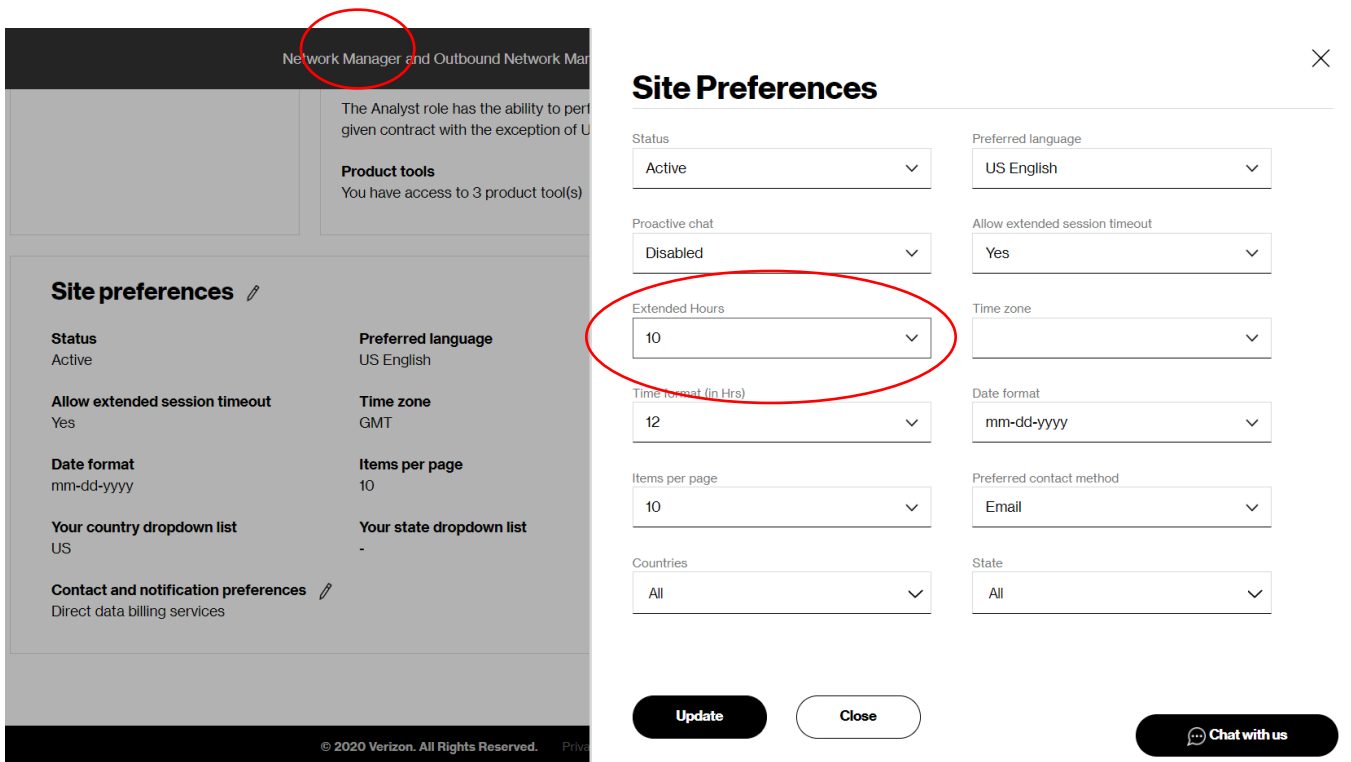
Tip: To avoid having VEC/DNM sessions “time out”, you can edit your VEC User Profile to alter the amount of time before sessions will end. See instructions below for making session duration changes.



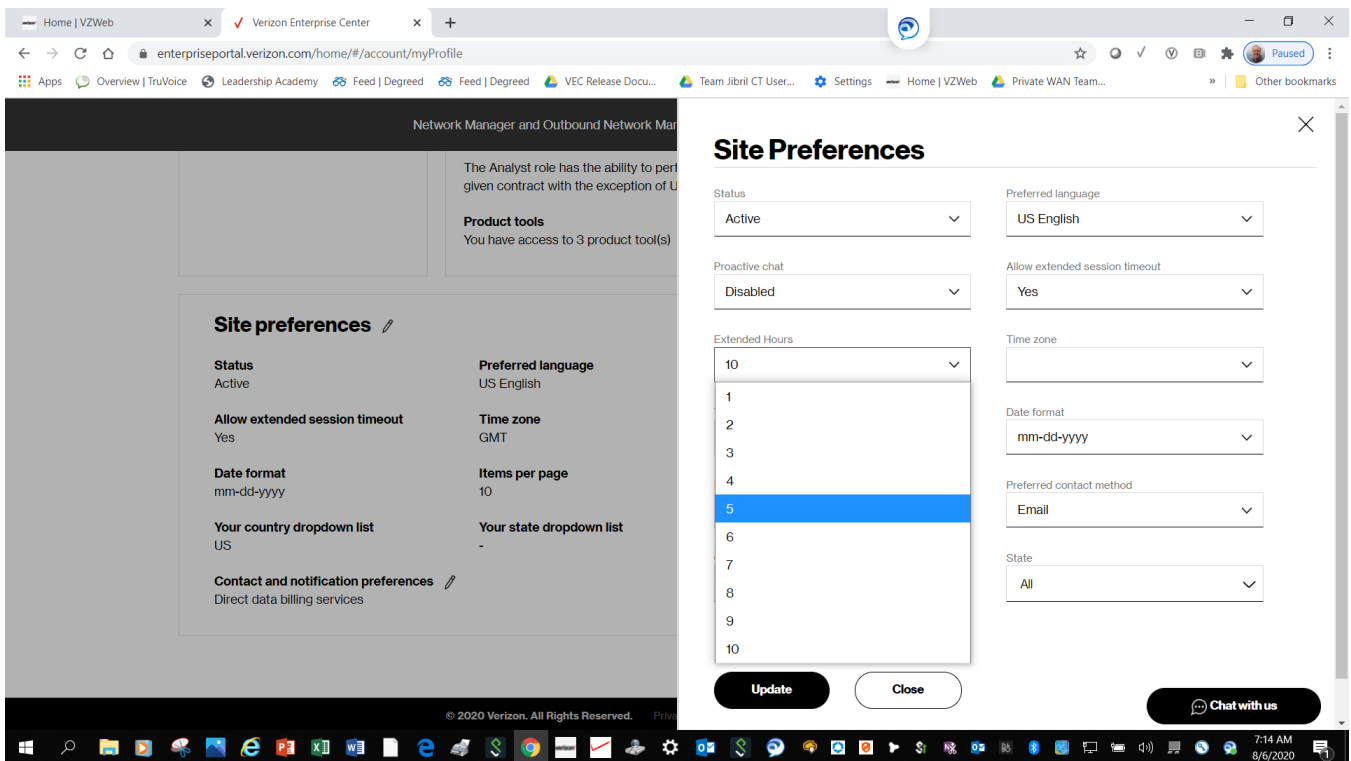
Click **User Name** and then **My Profile**



Click **Site Preferences** Pencil Icon to Edit



Click **Extended Hours** to edit/increase VEC session timeout duration



Choose extended session hours duration and click **Update**

Dashboard

The DNM Dashboard presents Users with circuits that might require immediate attention. The circuits are arranged by category in horizontal rows. These categories include circuits exhibiting high utilization (thus at risk for packet loss), New Activations, and so on. DNM includes artificial intelligence capability to allow it to learn over time which issues/circuits are of most interest to a User and adjust screen presentation around those preferences.

verizon Dashboard Network Diagnostics Policy Management Operations Hello Jenny

Welcome back, Jenny.

Verizon is launching Palo Alto virtual firewall.
Increased scalability | More savings | Ease of management. [Learn More](#)

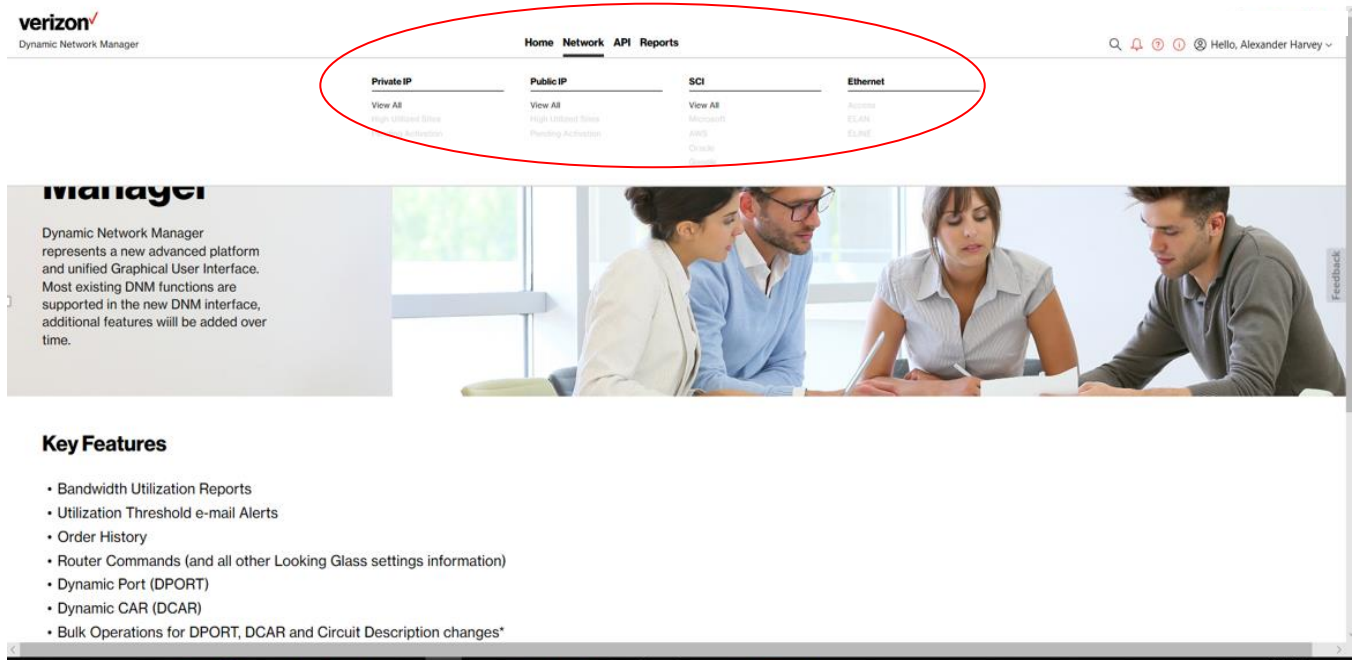
My Network

Bandwidth	Johannesburg	Edinburgh	Munich	Lagos	Houston
22 Highly Utilized Sites 9 Moderately Utilized Sites					
View All	10000 Churchspire Street New York, NY, US 10002 Northeast Region	10000 Churchspire Street New York, NY, US 10002 Northeast Region	10000 Churchspire Street New York, NY, US 10002 Northeast Region	10000 Churchspire Street New York, NY, US 10002 Northeast Region	10000 Churchspire Street New York, NY, US 10002 Northeast Region
	CID: 3932383843 VPN: Northwest_COR Upgrade Bandwidth	CID: 3932383843 VPN: VPN: Southwest_COR Upgrade Bandwidth	CID: 3932383843 VPN: Northwest_COR Upgrade Bandwidth	CID: 3932383843 VPN: Northwest_COR Upgrade Bandwidth	CID: 3932383843 VPN: VPN: Northeast_COR Upgrade Bandwidth

Cloud Activation

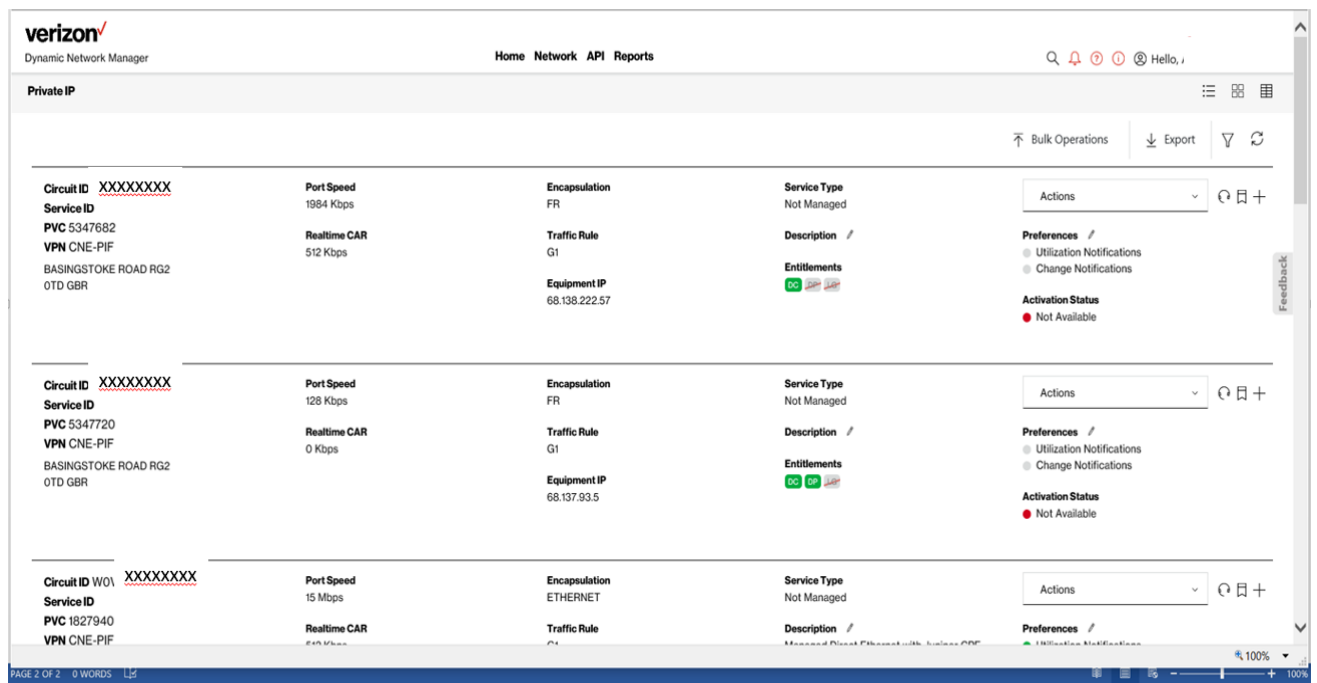
Cloud Activation	Kathmandu	Ibadan	Osaka	Chicago	Gothenburg
5 Google Connections 5 Microsoft Connections 10 Amazon Connections					
	10000 Churchspire Street New York, NY, US 10002 Northeast Region	10000 Churchspire Street New York, NY, US 10002 Northeast Region	10000 Churchspire Street New York, NY, US 10002 Northeast Region	10000 Churchspire Street New York, NY, US 10002 Northeast Region	10000 Churchspire Street New York, NY, US 10002 Northeast Region

Select **Network** to see your Verizon IP Services



The **Dashboard** displays a menu of your VEC-entitled IP services choices. Choose **Network** to list the circuits in inventory that you have permission to review.

Private IP circuit list after selection under Network Menu



Alternate Circuit List Views

verizon
Dynamic Network Manager

Home Network VNS Operations API Reports Administration

Private IP

Bulk Operations Export Filter Refresh

Circuit ID	Port Speed	Encapsulation	Service Type	Actions
XXXXXXXXXX Service ID XXXXXXXXX PVC XXXXXXXXX VPN XXXXXXXXX XXXXXXXXXX RD CA 91350 USA	1536 Kbps	FR	Not Managed	Actions [lock] [share] [plus]
XXXXXXXXXX Service ID XXXXXXXXX PVC XXXXXXXXX VPN XXXXXXXXX XXXXXXXXXX XXXXXXXXXX	8 Mbps	ETHERNET	Not Managed	Actions [lock] [share] [plus]

Preferences: Utilization Notifications, Change Notifications

Activation Status: Pending

Start Schedule

Feedback

Select circuit list views with different levels of detail

Search, Notification Alert, Documentation & Help, Interactive Tour

verizon
Dynamic Network Manager

Home Network API Reports

Private IP Public IP SCI Ethernet

View All High Utilized Sites Pending Activation

View All High Utilized Sites Pending Activation

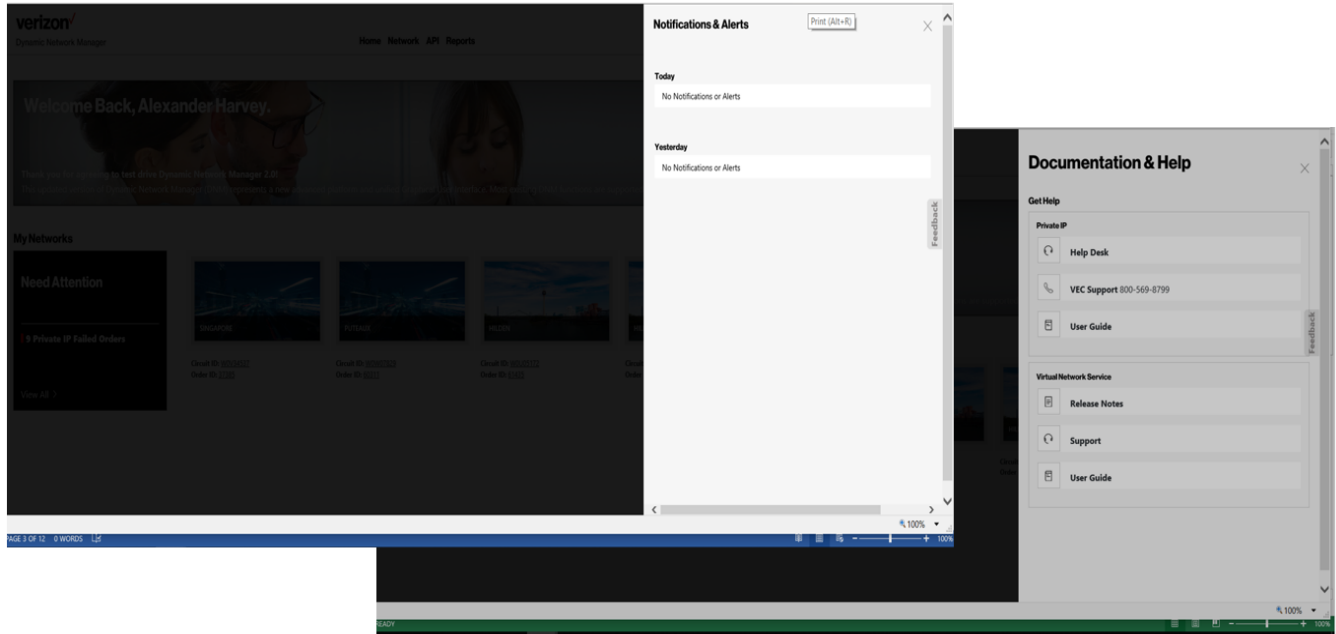
View All Microsoft AWS Oracle

Global Search Notification Alert Documentation & Help

Take the interactive tour Show me

Search Notification Alert Help Interactive Tour

Notification Alerts, Documentation & Help



Search

Search allows Users to look up circuits by circuit ID, service ID, VPN, or location. You can also display search results by Location for multiple service types i.e. Private IP, Public IP, Secure Cloud Interconnect (SCI) and SDWAN Co Management (Versa). You can refine your search further by accessing the “Filter” menu.

Search

Search results for Richardson 2 record(s) found

PIP 1 record(s) found show more

PVC ID XXXXXXXX Site ID XXXXXXXX VPN ID XXXXXXXX	Circuit ID XXXXXXXX Description Data Update May 3rd second time	VPN Name XXXXX XXXXXXXX - XXXXXXXX	Address 400 INTERNATIONAL PKWY RICHARDSON TX USA 75081-6606	♥	View
---	--	---	--	-------------------------------------	---

IDA 1 record(s) found show more

PVC ID XXXXXXXX Site ID XXXXXXXX VPN ID XXXXXXXX	Circuit ID XXXXXXXX Description	VPN Name Internet	Address 400 INTERNATIONAL PKWY RICHARDSON TX USA 75081-6606	♥	View
---	--	--------------------------	--	-------------------------------------	---

Search Filter Options

verizon
Dynamic Network Manager

Home Network API Reports

Private IP

Circuit ID W0V30609	Port Speed 100 Mbps	Encapsulation FR
Service ID	Realtime CAR	Traffic Rule GI
PVC 5347682	0 Mbps	Equipment IP 68.128.232.57
VPN CNE-PIF		
BASINGSTOKE ROAD RD2		
OTD GBR		

Circuit ID W0V30616	Port Speed 100 Mbps	Encapsulation FR
Service ID	Realtime CAR	Traffic Rule GI
PVC 5347720	0 Mbps	Equipment IP 68.127.93.5
VPN CNE-PIF		
BASINGSTOKE ROAD RD2		
OTD GBR		

Circuit ID W0V93727	Port Speed 10 Mbps	Encapsulation ETHERNET
Service ID	Realtime CAR	Traffic Rule
PVC 1827940		
VPN CNE-PIF		

Refine Search

Filter

VPN

Description

State

Street Address

Encapsulation

Country

City

Zip Code

Sort

First

Second

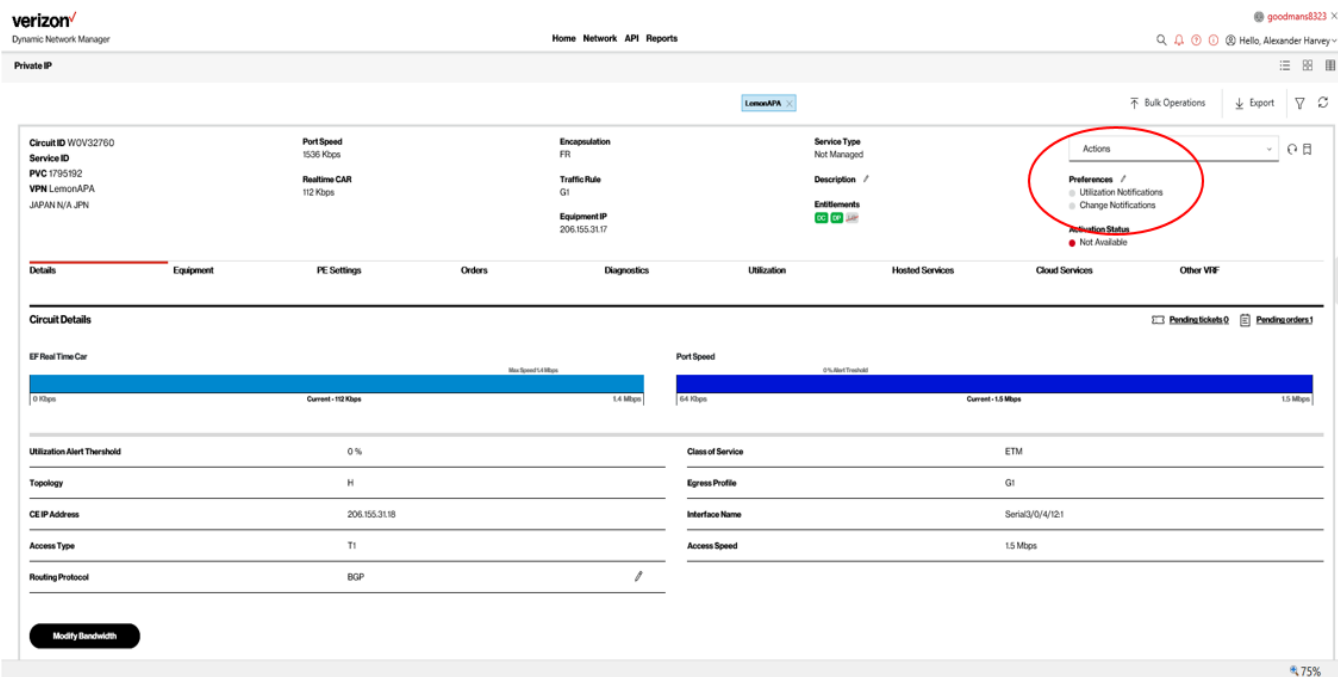
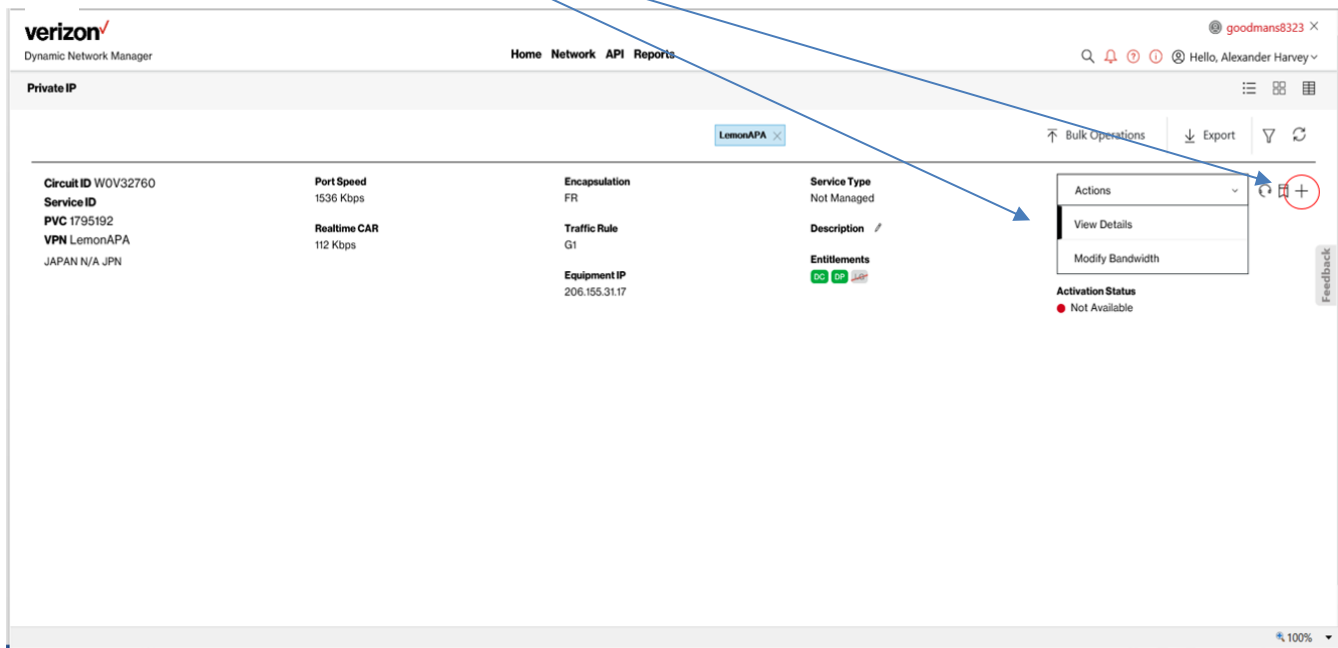
Export


Export allows a User to export the current screen data to a CSV file.

The screenshot displays the Verizon Enterprise Center interface for the 'Private IP' section. The page title is 'Dynamic Network Manager' and the navigation path is 'Home Network API Reports'. The user is logged in as 'XXXXXXXXX'. The main content area shows a table of network configurations with columns for 'Circuit ID', 'Service ID', 'PVC', 'VPN CNE-PIF', 'Port Speed', 'Realtime CAR', 'Encapsulation', 'Traffic Rule', 'Equipment IP', 'Service Type', 'Description', 'Entitlements', and 'Actions'. The 'Export' button in the top right corner is circled in red. A blue arrow points from the 'Export' button to the 'Actions' column of the table. At the bottom of the screen, a yellow dialog box asks: 'Do you want to save Private_IP_-_9__25__2019__8__11__01__AM.csv (27.1 KB) from sbhempa7.vzbi.com?'. The dialog box has 'Save' and 'Cancel' buttons.

Circuit ID	Service ID	PVC	VPN CNE-PIF	Port Speed	Realtime CAR	Encapsulation	Traffic Rule	Equipment IP	Service Type	Description	Entitlements	Actions
XXXXXXXXXX	XXXXXXXXXX	5347682	CNE-PIF	1984 Kbps	512 Kbps	FR	G1	68.138.222.57	Not Managed		Entitlements: [Icons]	Actions: [Dropdown]
XXXXXXXXXX	XXXXXXXXXX	5347720	CNE-PIF	128 Kbps	0 Kbps	FR	G1	68.137.93.5	Not Managed		Entitlements: [Icons]	Actions: [Dropdown]
XXXXXXXXXX	XXXXXXXXXX	1827940	CNE-PIF	15 Mbps		ETHERNET			Not Managed		Entitlements: [Icons]	Actions: [Dropdown]

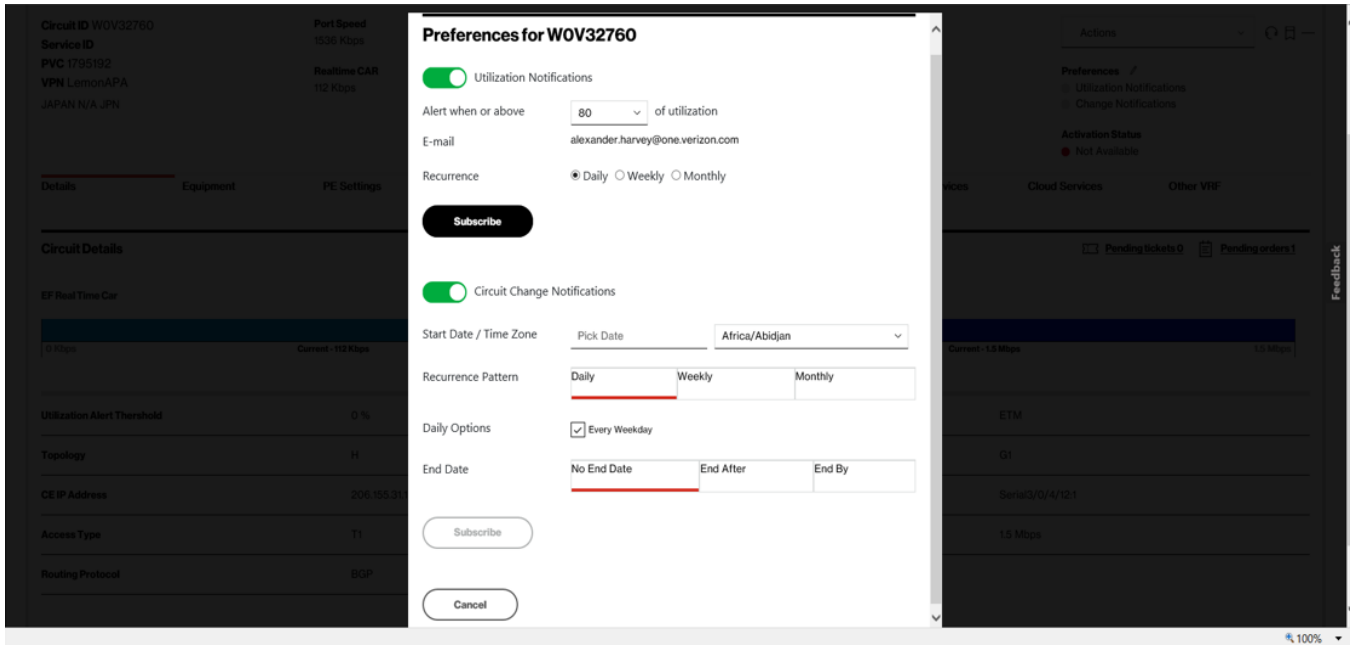
View Circuit Details



Note: You can change the **description** for each circuit. Click on the “pencil” symbol  near the description. View the pop up. Enter the description that needs to be changed. Click on “save changes.”

Utilization Notifications allows Users to select when (and how often) DNM proactively alerts them about circuits reaching bandwidth utilization thresholds. This helps Users avoid packet loss if/when a circuit “runs too hot”.

Circuit Change Notifications is another subscription option available to all users who are entitled to see/edit particular circuits; all Users who subscribe to this option are notified of changes made by any of the other Users.



Network Settings

This section contains both Customer Edge (CE) settings and Provider Edge (PE) settings information. You can view the General Interface Configuration, Virtual Route (VRF) Information, Quality of Service Information, and IPv4 eBGP Routing Information. You can also produce an **example CE design** for your router (for a Customer Managed circuit) from the PIP Looking Glass Site Detail screen.

1. Click on the “add symbol” to view the details of the circuit ID
2. Click on equipment tab to view the customer edge settings details

Virtual Routing and Forwarding (VRF) allows multiple instances of a routing table to exist within the same router at the same time. Because the routing instances are independent, the same or overlapping IP addresses can be used without conflicting with each other. A VRF may be implemented in a network device by having distinct routing tables, also known as forwarding information bases (FIBs), one per VRF.

The screenshot displays the 'Network Settings' page for a circuit with ID C0108468. The interface includes a top navigation bar with 'All VPNs', 'Bulk Operations', 'Export', and a search icon. The main content area is divided into several sections:

- Summary:** Circuit ID C0108468, Service ID 146124672, PVC 5820282, VRF Name V795957:ACMEFabrication, and VPN Address 180 ALLEN RD ATLANTA, GA 30328-4862 USA.
- Performance:** Port Speed 8 Mbps, Realtime CAR 256 Kbps.
- Configuration:** Encapsulation ETHERNET, Traffic Rule R2, Equipment IP 68.139.174.86.
- Service:** Service Type Not Managed, Description Description for C0108468.
- Entitlements:** DC, DP, LG.
- Preferences:** Utilization Notifications, Change Notifications.
- Activation Status:** Active.

Below the summary is a horizontal menu with tabs: Details, Network Settings (selected), Orders, Diagnostics, Utilization, Virtual Services, Cloud Services, and Other VRF.

The **General Interface Configuration** section is expanded, showing the following details:

Router Name	ATL29E01	Encapsulation	ETHERNETVLAN : 495 VLAN : 495
Router Type	ASR9K	IPv4 Address / Prefix	68.139.174.85 / 30
Access Type	ETH10Gig	IPv4 MTU	
Interface Name	TenGigE0/7/0/3.427	Shape Adjustment for Ethernet	85%
Routing Protocol	BGP		

Virtual Route Forwarding (VRF)

VRF Name	V795957:ACMEFabrication	WAN Analysis Reporting	No
Topology	HUB	MAX Paths	0
Max Routes	1250	Max Paths Routes Load Sharing	No

Quality of Services

PIP Class of Service	Enhanced Traffic Management	EF Real Time (Gold) CAR	256 Kbps
Port Speed	8 Mbps	Egress Profile	R2-Voice/Video centric #1
Policed on Router	YES	MVRF Multicasting Enabled	No
Peak Speed	0 Kbps	Multicasting RP Address	
Queuing Level	Default	Multicasting MDT Address	
FRF 12 Fragmentation	Disabled		

IPv4 eBGP Routing Information

Multihop IP		Hops Away	
Redistribute Static	Yes	Redistribute Connected	Yes
AS Override	No	Send Community	Yes
		Remote AS	1

IPv6 eBGP Routing Information

Redistribute Static	Yes	Hops Away	0
AS Override	Yes	Redistribute Connected	No
		Remote AS	0

Customer Edge Settings

IPv4 Address / Prefix	68.139.174.86 / 30	Layer 2 Encapsulation	ETHERNET VLAN : 3
Server Level	Not Managed		

Layer 1/2 Information

CONNECTOR TYPE	RJ45	CE WAN Interface / Handoff Type	100BASE-TX INTERFACE 100M
VLAN set to	3		

Services(s) Ordered

Service Order	193608690.0	Work Order	23455498.0
Managed Service	Not Managed		

Demarcation Information	Site Type	Address	LD1: APT	LD2: BSMT	LD3: BAY
1249583C	CUST	180 ALLEN RD ATLANTA GA 30328-4862 USA	LV1: 1	LV2: 2	LV3: 3

Sample Router Configuration

Notice: The router configuration shown below is intended as an example only. You will likely need to add,remove or change certain elements of this configuration to meet you specific requirements. Use at your own risk!If you are not sure about the proper use of a command please seek appropriate advice.

```
!-----Sample interface configuration WITHOUT VLAN tagging enabled-----  
interface FastEthernet0/0 or GigabitEthernet0/0  
description Verizon MPLS VPN: ACME-Fabrication; Site-Circuit: atlanta-ga_c0108468-146124672-5820282  
ip address 68.139.174.86 255.255.255.252  
no shutdown  
speed 100 for speed 1000 for GigE  
full-duplex  
!  
!-----Sample interface configuration WITH VLAN tagging enabled-----
```

STD QoS DPORT, and ETM to STD*

The CE configuration steps are explicit to Cisco switch stages (for customer managed circuits). For other vendor CE, consult the client manual with respect to changing the interface bandwidth speed. We recommend setting up an egress traffic forming rate on your CE router's WAN interface as per your changes in QOS settings. Follow these guidelines to set up your router for Dynamic Port changes.

ETM QoS DPORT, DCAR, Custom Egress, STD to ETM*

The configuration steps are also explicit to Cisco switch stages (for customer managed circuits). For other merchant CPE, consult the client manual with respect to changing the lining parameters. CBWFQ is typical for Silver CAR and LLQ/Priority Queuing is typical for Gold CAR. We prescribe setting up a settled QOS arrangement on your CE switch's WAN interface as per your changed QOS settings. The external (or parent) strategy should shape all traffic as per your selected DPORT speed. The internal (or kid) strategy ought to contain data transfer capacity assignments as indicated by your selected DCAR speed and Custom Egress profile. Adhere to these directions to set up your switch for Dynamic CAR changes.

* For more technical details, refer to **Customer Edge Configuration Settings** section in **Appendix**

Order History

DNM coordinates all order updates going to downstream IT systems. Every hour it picks up new orders that have been provisioned and processes them. It then picks up any rejected orders waiting for a retry and computes a time when the next retry should occur: once every 24 hours through the sixth retry, then once every 72 hours. After a certain number of retries, DNM stops retrying and sends an email informing a User the update could not be completed. Each order is processed in its own transaction to avoid time-outs when there are a lot of orders in the back log. Retries are processed via the regular work flow. The outcome is reflected in the order history so the original error message, as well as the latest error message can be viewed.

Circuit ID WOV32760
Service ID
PVC 1795192
VPN LemonAPA
JAPAN N/A JPN

Port Speed
1536 Kbps

Realtime CAR
112 Kbps

Encapsulation
FR

Traffic Rule
G1

Equipment IP
206.155.31.17

Service Type
Not Managed

Description

Entitlements
ON AS L

Actions 🔍 🗄️

Preferences

- Utilization Notifications
- Change Notifications

Activation Status

- Not Available

Details Equipment PE Settings **Orders** Diagnostics Utilization Hosted Services Cloud Services Other VRF

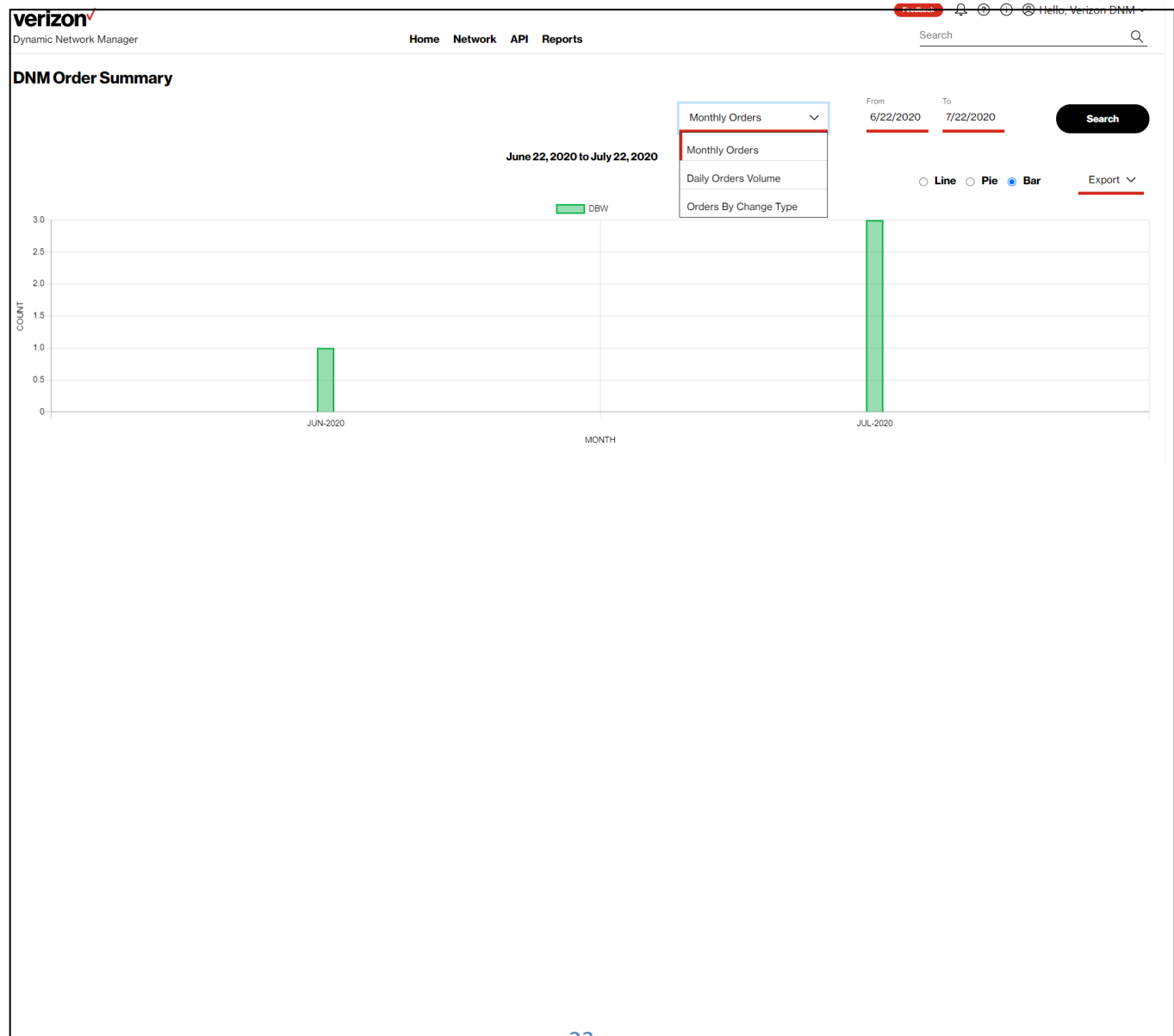
Orders 🔔 Search

Order Number	Circuitid	Status	Requested Date	Expected Date	BillingId	Order Type	Port Speed	User Id	Status Date	Change Type
2944149	WOV32760	COMPLETED	2019/09/23 04:30:05 GMT	2019/09/23 04:30:05 GMT	00209854	DBW	1536 Kbps	manikanta.segu@one.verizon.com	2019/09/23 04:30:05 GMT	+
2937065	WOV32760	COMPLETED	2019/09/09 04:30:05 GMT	2019/09/09 04:30:05 GMT	00209854	DBW	1024 Kbps	anil.kumar.pabbisetty@one.verizon.com	2019/09/09 04:30:05 GMT	+
2924719	WOV32760	COMPLETED	2019/08/11 03:30:07 GMT	2019/08/11 03:30:07 GMT	00209854	DBW	1536 Kbps	anil.kumar.pabbisetty@one.verizon.com	2019/08/11 03:30:07 GMT	+
2917444	WOV32760	COMPLETED	2019/07/29 06:30:05 GMT	2019/07/29 06:30:05 GMT	00209854	DBW	1024 Kbps	anil.kumar.pabbisetty@one.verizon.com	2019/07/29 06:30:05 GMT	+
2907036	WOV32760	COMPLETED	2019/07/20 17:30:03 GMT	2019/07/20 17:30:03 GMT	00209854	DBW	1536 Kbps	anil.kumar.pabbisetty@one.verizon.com	2019/07/20 17:30:03 GMT	+

100%

DNM Order Summary

This report allows Users to see multiple circuit change activity versus single circuit events (shown in Order History). You can tailor the report to show a defined range of time and frequency of change orders. Results can be exported to PDF and Excel.



Show Less

Show Order Pending Order Failed Order Completed

Enter Search Criteria

Order ID 3074967	Status COMPLETED	Port Speed 512 Kbps	Billing ID 00209854	Billing Status
Circuit ID WOV32760	Order Type DBW	Change Type	Scheduled Date [GMT] 2020/07/18 18:30:06 GMT	Status Date [GMT] 2020/07/18 18:30:06 GMT
User ID verizondnm@gmail.com				
Order ID 3073934	Status COMPLETED	Port Speed 768 Kbps	Billing ID 00209854	Billing Status
Circuit ID WOV32760	Order Type DBW	Change Type	Scheduled Date [GMT] 2020/07/10 22:30:05 GMT	Status Date [GMT] 2020/07/10 22:30:05 GMT
User ID verizondnm@gmail.com				
Order ID 3073549	Status COMPLETED	Port Speed 8 Mbps	Billing ID 00209854	Billing Status BILLING NOTIFIED
Circuit ID C0108468	Order Type DBW	Change Type	Scheduled Date [GMT] 2020/07/08 21:30:15 GMT	Status Date [GMT] 2020/07/08 21:30:15 GMT
User ID verizondnm@gmail.com				
Order ID 3071966	Status COMPLETED	Port Speed 512 Kbps	Billing ID 00209854	Billing Status
Circuit ID WOV32760	Order Type DBW	Change Type	Scheduled Date [GMT] 2020/06/29 18:30:09 GMT	Status Date [GMT] 2020/06/29 18:30:09 GMT
User ID verizondnm@gmail.com				

Live Chat

Diagnostics (Router Commands)

Users can issue router commands to verify specifics in their network.

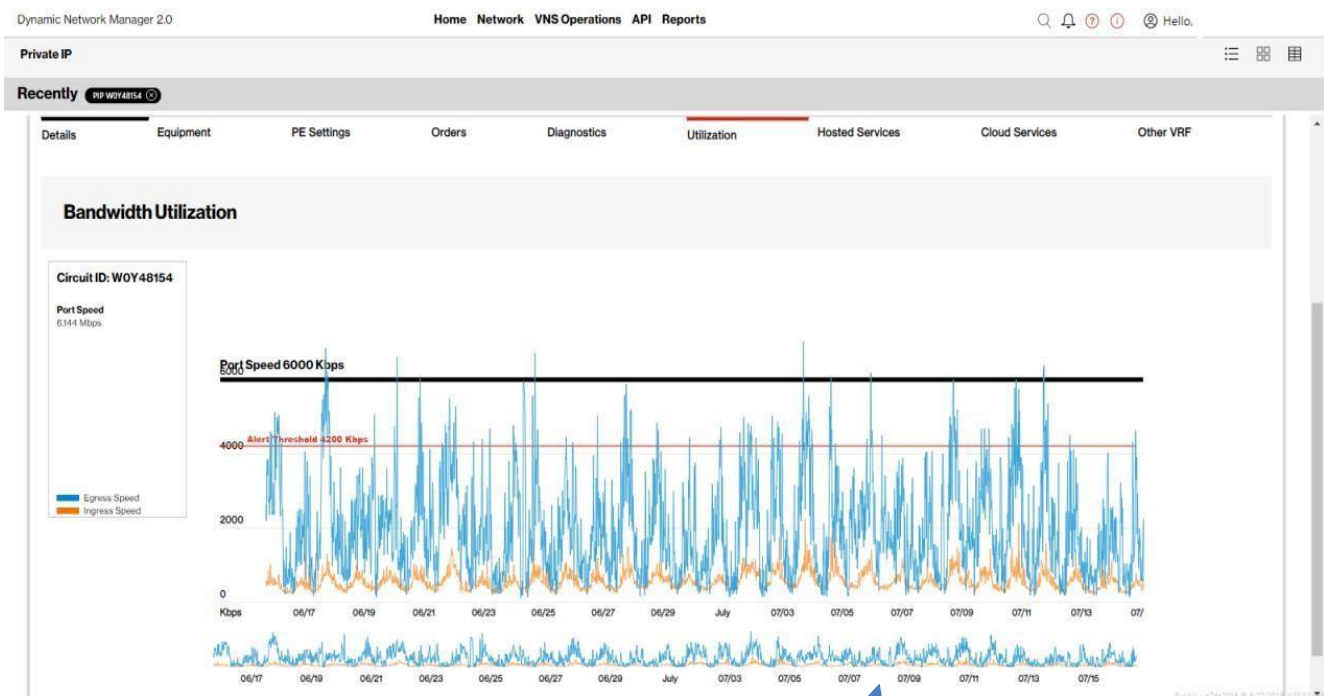
1. Click **Router Commands** under *Site Details*. The *Router Commands* section appears above *Site Details*.
2. Select a command from the *Select Router Command* drop-down list.
3. Click **Submit**. The system displays the response from the router.

The screenshot shows the 'Diagnostics' tab selected in the interface. The 'Router Commands' section is expanded, showing a list of commands to select from. The commands listed are:

- show ip route vrf [V80575:LemonAPA]
- show ip route vrf [V80575:LemonAPA] [ip-prefix]
- ping vrf [V80575:LemonAPA] ip [target_ip_address] repeat 5
- show interface [Serial3/0/4/12:1.676]
- show ip vrf interfaces [V80575:LemonAPA]
- show ip bgp vpv4 vrf [V80575:LemonAPA] summary
- show ip bgp vpv4 vrf [V80575:LemonAPA] neighbors [206.155.31.18] advertised-routes
- show ip bgp vpv4 vrf [V80575:LemonAPA] neighbors [206.155.31.18] routes

Bandwidth Utilization

Users can view a chart displaying circuit utilization over a time period of 1 day through 30 days. The example below shows received and transmitted results for the Verizon Provider Edge (PE) port. Ingress/Received is what Verizon receives from a customer, and Egress/Transmitted is what Verizon sends to a customer. If you were to view the Customer Equipment (CE) port then you would see the opposite measurements. Verizon PE port measurements and CE port Measurements should closely match.

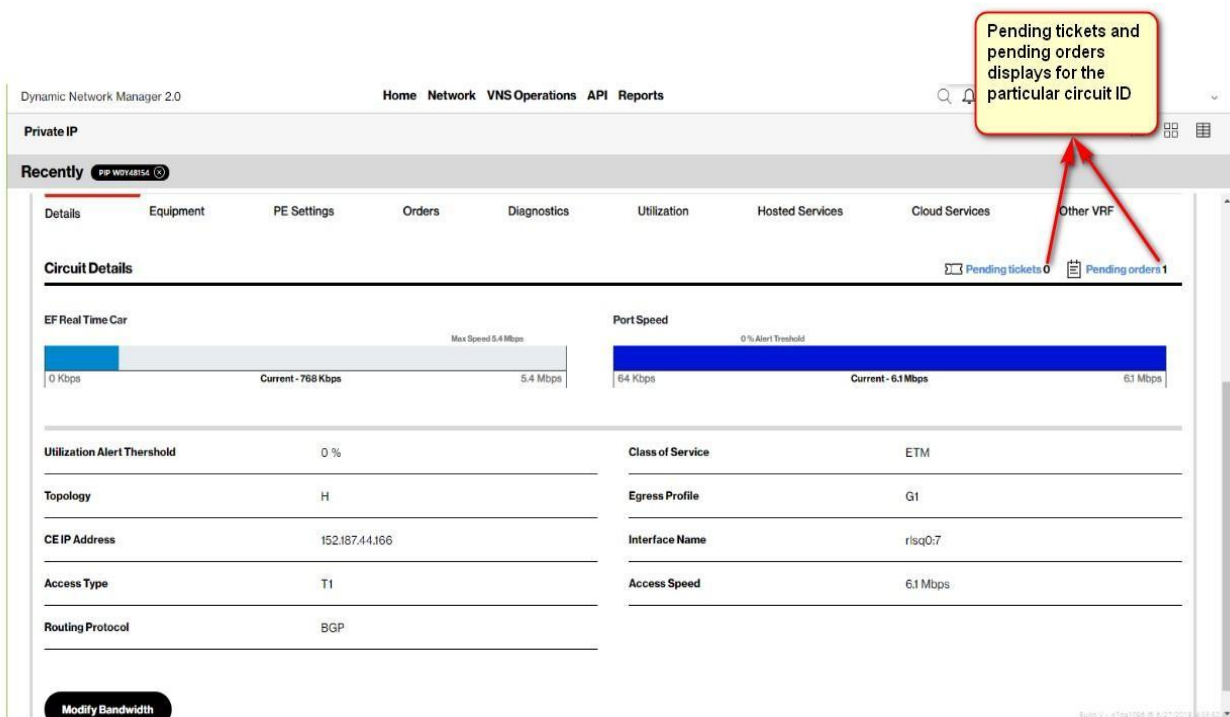


1. Click on the utilization tab to view the utilization details.
2. By default the daily summary utilization details will be shown.
3. To view 15 min interval usage, select and drag to specific duration so that 15 mins interval usage duration can be viewed.
4. Use the toggle buttons next to Egress and Ingress speed to view specific usage details (i.e. Only Egress or Ingress traffic).

View Pending Tickets, Orders and Associated Virtual Route Forwarding (VRF)


Click on the “add symbol” to view the details of the circuit ID. You can view the pending tickets and orders in the right end corner of the details tab.

1. Click on “pending tickets” to see the status of the ticket on the separate page.
2. Click on “pending orders” to see the status of the ticket on the separate page.



Configure eBGP Routing Parameters

Click on the “add symbol” to view the details of the circuit ID.

1. Click on  near the routing protocol in details tab. The Configure eBGP Routing Parameters section appears below the Circuit ID details.
2. Enter the incentive for each eBGP Routing variable. If you are utilizing eBGP or changing to eBGP, you can change the accompanying parameters:
 - a. **AS Number** - BGP autonomous system number for the current network.
 - b. **AS Override** - Replaces your AS Number with our AS number if the source and destination AS numbers are the same.
 - c. **Send Community** - Allows you to send standard communities to us that we will send across the Cloud.
 - d. **Advertisement Interval** - Changes default BGP advertisement timers from 30 seconds to 0 seconds.
 - e. **Distribute List** - Site will see a default route only.
 - f. **Remove Private AS**
Note: AS override, send community, Advertisement Interval, Distribute List, Remove Private AS are toggles.
3. Click on schedule toggle to select date and time zone.
4. Select the values from the drop down menus for date time zone.
5. Click on Submit so that the changes will be effected -or- Click on Cancel so that the changes will not take effect.

Configure Static Routes

Static routing is a form of routing that occurs when a router uses a manually-configured routing entry, rather than information from a dynamic routing protocol to forward traffic.

1. Click on the Static tab under circuit ID. The Configure Static Routes section appears above Site Details.
2. Select CE IP Address for the following bounce. The IP address is populated in the Next Hop field.

OR

Select Sub Interface for the next hop. The sub-interface is populated in the Next Hop field.

3. Select CE IP Address for the Sending IP. The IP address is populated in the Forwarding IP field.

OR

Select Destination IP Address and enter the IP address in the Forwarding IP field.

4. Click Add. Include or expel what should be in the switch or should be expelled from the switch.
5. If relevant, enter a Process Date/Time to plan this activity.
6. Select a period zone starting from the drop list.
7. Click Schedule Order if you are planning for a future date.
8. Snap Process Order to present your request. The Process Order Confirmation spring up shows your request number.
9. Click Submit.

OR

Click Cancel.

Port Speed Changes

Dynamic Port (DPORT) is a feature of DNM. It allows Users to submit a change order online to raise/lower Private IP transport speeds. After a Private IP port is ordered and provisioned, you can use Dynamic Port to adjust the port to a desired speed size. After VEC entitlements for Dynamic Port (and Dynamic CAR) are confirmed, you must initially wait 24 hours before the first change order can be issued. This is due to the IT processing time for the submitted entitlements/permissions.

Note: 1 Private IP Port (or EF CAR) change is permitted per day for circuits with prefixes “W” and “B”. For circuits with a “C” prefix, the following multi-change-per-day rules apply:

- **Unlimited Port Speed Change and Dynamic CAR Requests:** Users may make more than one port speed change and/or EF CAR change request during a 24 hour period. Greenwich Mean Time (GMT) is used as the start/stop reference for a DNM 24 hour time period. These speed changes can be made prior to) 11:00 PM GMT.
- **Ability to Reverse Speed Change Requests:** Within 60 minutes of making a speed upgrade (or downgrade) request, a User can "correct" the request (as needed) by reversing the speed change request back to the original speed. After 60 minutes the speed change will be established as the new highest speed for the day. That speed is what will be sent to Billing for that day. One speed correction is allowed during a 24 hour period. Alternatively a User can submit a new change order (within 60 minutes) to reverse the mistake.
- **Billing:** Verizon will continue to bill in 24 hour minimum daily increments. The highest speed change request made during a 24 hour period will be the speed sent to Billing for that day.
- **Carry-Over Speed:** The last speed change request entered for the day is the one that is carried over to the next day. This speed will be billed daily going forward unless another speed change is requested.

If you are using Enhanced Traffic Management (ETM) Class of Service and a circuit's EF CAR value is set to 90% of your current port speed, then a Dynamic CAR change order should be issued first to lower the EF CAR value before attempting to lower the circuit port speed via Dynamic PORT.

Class of Service: Committed Access Rate Speeds and Egress Policies

Dynamic CAR (DCAR) allows Users to submit a change order online to raise/lower Private IP port speeds.

However, Users have two options for defining how to set up CAR speeds for use with Private IP circuits:

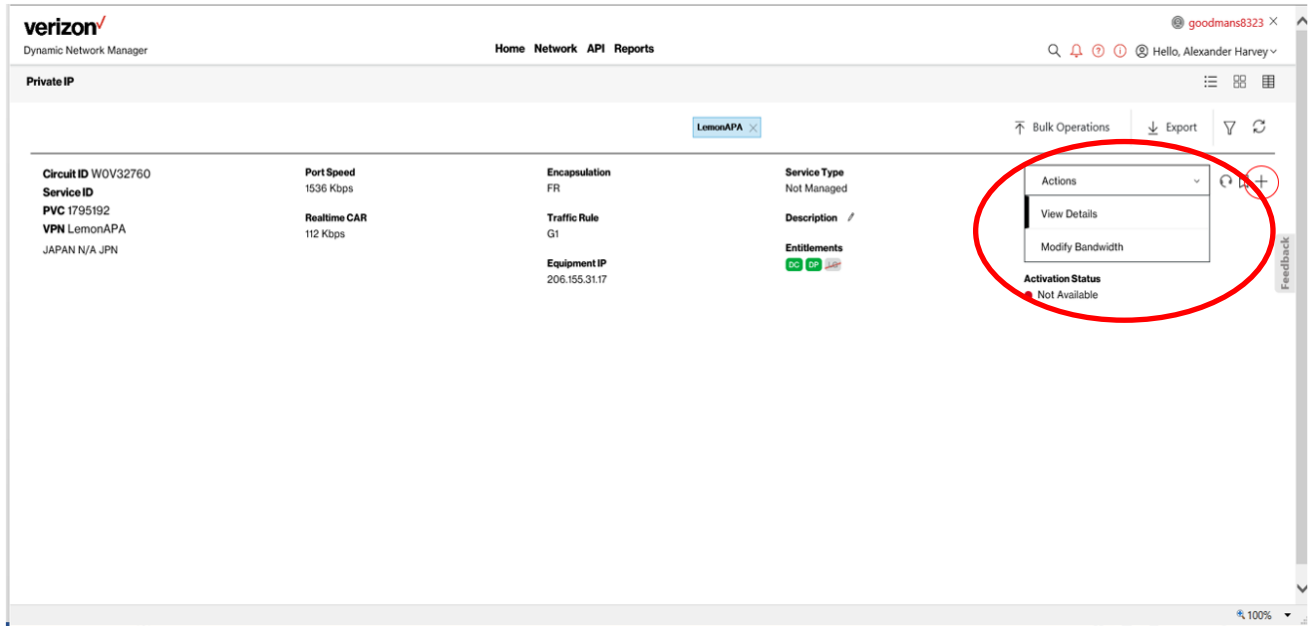
- **Standard (STD)** – Standard option supports Best Effort (BE) CAR speeds only. It does not support Expedited Forwarding (EF Real-Time aka Gold) CAR speeds. Moving from ETM to Standard may influence the voice traffic present on this connection. Dynamic CAR is not applicable to standard CAR speeds.
- **Enhanced Traffic Management (ETM)** - You can expand port speed EF Real-Time (Gold) CAR up to 90% of the port speed. Moving from Standard to ETM enables you to use DCAR online to change the Gold CAR rate. You can upgrade or downgrade the Gold CAR (EF Real Time) value within the limitation of Gold CAR. Minimum Gold CAR value is 0K, and the maximum Gold CAR value can be set up to 90% of the port speed. Increasing Gold CAR has a CPE performance impact. If you have questions, contact your account team before submitting this change. The Gold CAR is policed on Ingress into the Private IP network. Any traffic marked with EF Real Time that exceeds the subscribed Gold CAR value is discarded. If you select Gold CAR (Expedited Forwarding) and are using this for Voice over IP calls, a reduction of the CAR value (e.g. 40.456 reduce to 8K) can directly affect the quality of Voice over IP calls on this link. Ensure that you make a corresponding reduction on the device that determines the call admission control policy for this link as well as making a reduction on the CE router's QoS queuing policies.
- The maximum configurable CAR value is governed by the port speed as well as the **Egress profile** of the Private IP port in service.
- Users may change their "G" or "R" Egress profiles via DCAR. When the Gold CAR value is equal to or greater than 50% of the port speed DCAR will only display "R" level policies.
- **Ingress** refers to traffic which enters the Private IP Provider Edge (PE) device from the User's CE router.

- Private IP Standard: All traffic coming into the PE device on ingress is marked AF3 (DSCP=24).
- Private IP Enhanced Traffic Management (ETM): Customers subscribe to the EF Class of Service and can use 100% of the port for the five additional data classes: AF4, AF3, AF2, AF1, and BE. The EF Class of Service can range from OK up to 90% of the port.
- **Egress** refers to the traffic which is exiting on the Private IP PE device and being delivered to the User's CE router with a percentage of bandwidth dedicated to each class of service. Egress policies are based on Low Latency Queuing (LLQ) and Class-Based Weighted Fair Queuing (CBWFQ). LLQ is used exclusively for the EF Class of Service and uses strict priority queuing to allow delay-sensitive data (such as Voice over IP) to be sent first, giving delay-sensitive data preferential treatment over other traffic.
- **Class-Based Weighted Fair Queueing (CBWFQ)** is used for the five data classes of service: AF4, AF3, AF2, AF1, and BE. It allows Verizon to specify a percentage allocation of bandwidth to be allocated for each class of traffic.
- The default egress policy for all Private IP customers is: EF: 50%, AF4: 40%, AF3: 39%, AF2: 16%, AF1: 1%, BE: 4%. This means on egress, up to 50% of the port will be dedicated to the EF class of service. Anything which exceeds 50% on egress is discarded. While a User can still use the port for other traffic classes on egress, the EF traffic is given the highest priority. If you are receiving nothing but AF3 traffic on egress, 100% of the port is used for AF3. If you are receiving both EF and AF3, up to 50% of the port bandwidth is dedicated to the EF traffic.
- Customers with IP Telephony (also referred to as Voice over IP, or VoIP) requirements also have the option to set the EF Class of service up to 90% of the port speed. EF: 90%, AF4: 40%, AF3: 39%, AF2: 16%, AF1: 1%, BE: 4%

Note: More information about EF CAR & Egress settings is available in **Appendix** section

How to Modify Port Bandwidth and EF CAR

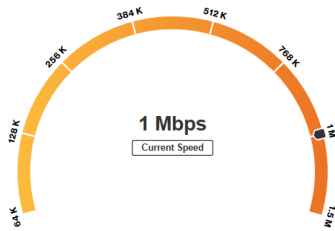
Click **Modify Bandwidth** in the Actions Menu (or in the Expanded Details view, bottom left of screen)



Modify Bandwidth

*Required Fields

Circuit Settings



Port Speed

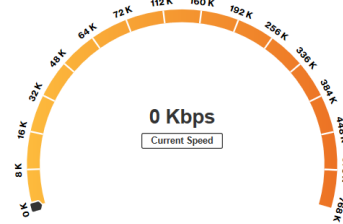
The port Speed on the Speed Gauge is not the exact port speed of the user. Please check the dropdown to see the available port speeds.

Port Speed*
1024 Kbps

EF Realtime CAR*
0 Kbps

Class Of Service*
ETM

Egress Profile*
G1



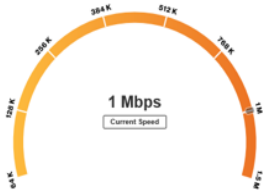
EF Realtime CAR

Scheduling

Schedule change to happen later

Dynamic Port Speed Menu example:

Modify Bandwidth *Required Fields



1 Mbps
Current Speed

Port Speed

The port Speed on the Speed Gauge is not the exact port speed of the user. Please check the dropdown to see the available port speeds.

Port Speed*

1 Mbps

64 Kbps

128 Kbps

256 Kbps


384 Kbps

512 Kbps

768 Kbps

1 Mbps

1.5 Mbps



112 Kbps
Current Speed

EF Realtime CAR

Scheduling

Schedule change to happen later

Scheduler: User may optionally schedule Port/CAR changes out to a year in advance

Port Speed

ETM

Egress Profile*

G1

EF Realtime CAR

Scheduling

Schedule change to happen later

Nov 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
1	2	3	4	5	6	7

Circuit ID W0V32760

Service ID

PVC 1795192

VPN LemonAPA

JAPAN TOKYO, N/A JPN

Encapsulation FR

Traffic Rule G1

Equipment IP 206.155.31.17

Service Type Not Managed

Description Testing the bulk update test process

Entitlements DC DP

Actions

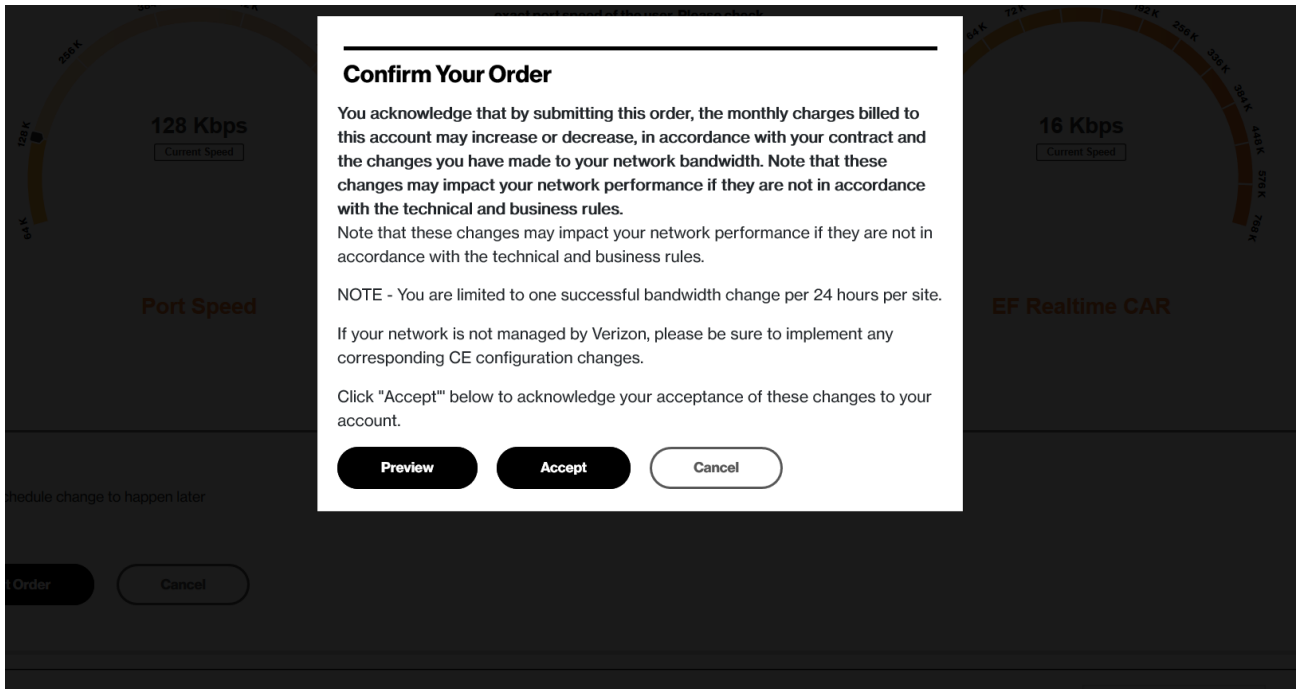
Preferences

- Utilization Notifications
- Change Notifications

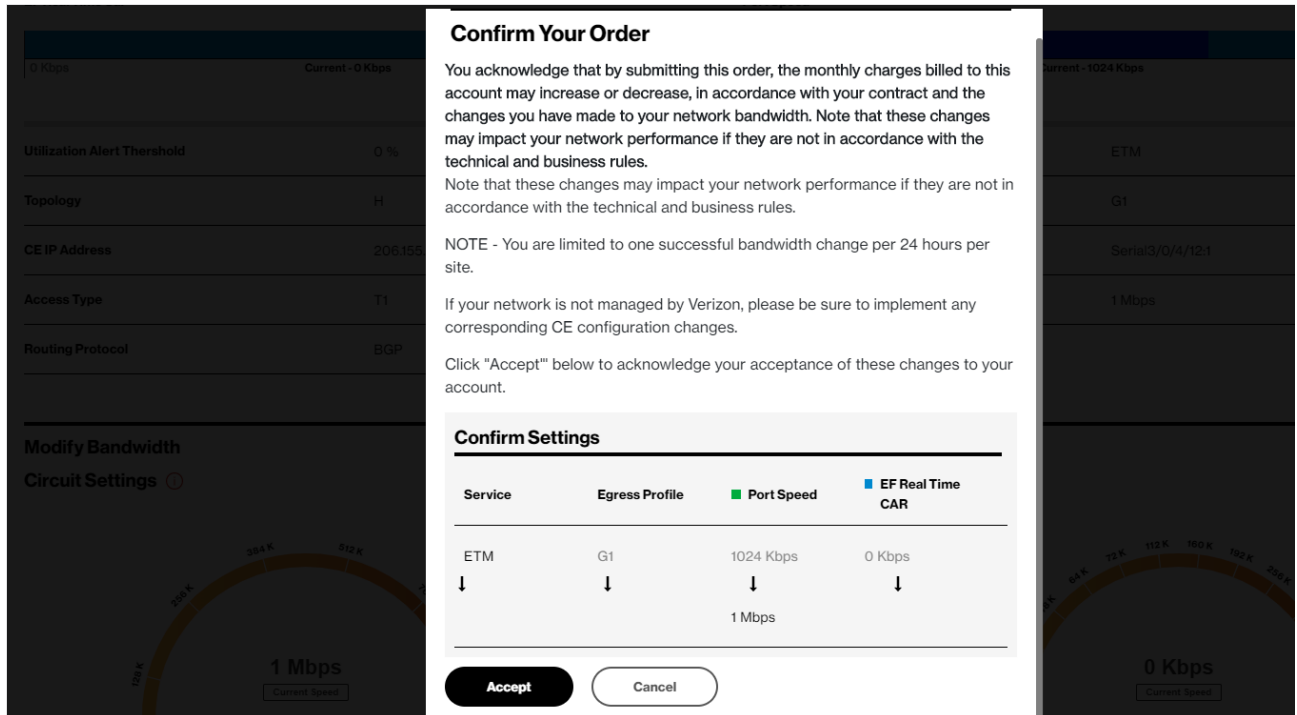
Activation Status

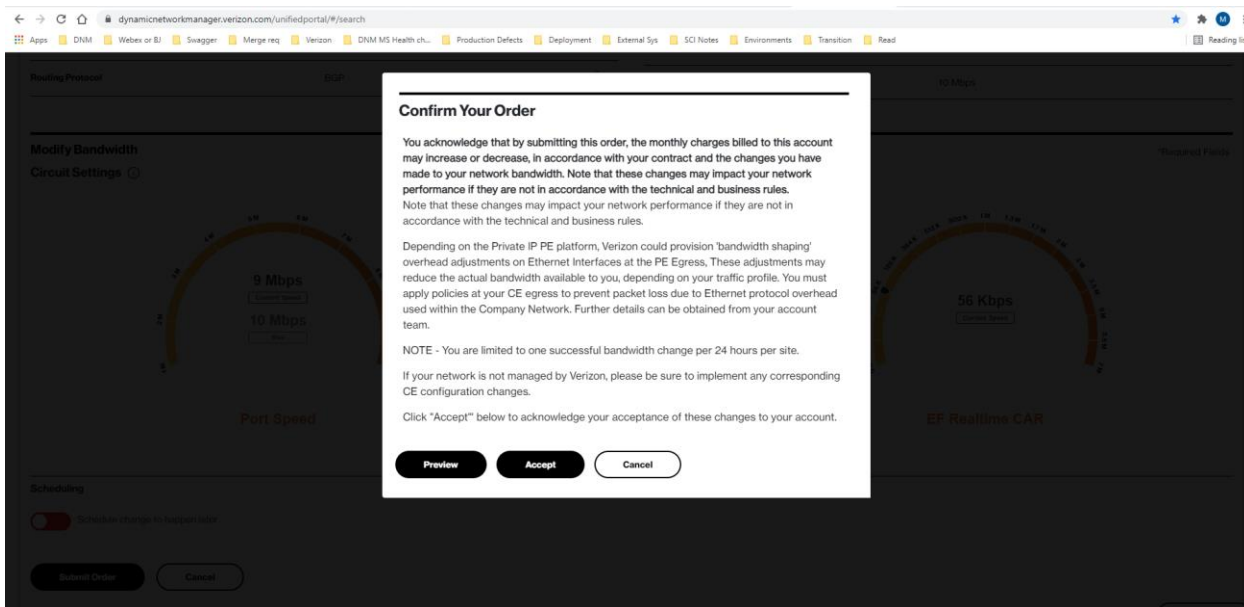
- Active

Order Confirmation Pop-Up



Select "Preview" button to see Before/After Speed Changes before Accepting





Change Order Acceptance (Full Text):

Please ensure that the Port speeds you request are set above the existing CAR for each site. If not, your orders will not be processed.

If your network is not managed by Verizon, please be sure to implement any corresponding CE configuration changes.

Depending on the Private IP PE platform, Verizon could provision 'bandwidth shaping' overhead adjustments on Ethernet Interfaces at the PE Egress, These adjustments may reduce the actual bandwidth available to you, depending on your traffic profile. You must apply policies at your CE egress to prevent packet loss due to Ethernet protocol overhead used within the Company Network. Further details can be obtained from your account team.

You acknowledge that by submitting this order, the monthly charges billed to this account may increase or decrease, in accordance with your contract and the changes you have made to your network bandwidth. Note that these changes may impact your network performance if they are not in accordance with the technical and business rules.

The changes to your network will normally be completed within approximately 15 minutes for customer-managed and DNM Full Automation Managed circuits. If you request simultaneous multiple changes, the changes may take longer. For requests submitted on circuits terminating on Verizon Managed Services Customer Edge (CE) routers without support for Dynamic Network Manager (DNM) Full Automation, your requested changes may take up to 72 hours before the CE routers are manually updated by Verizon. Contact your account team for information about how to upgrade your CE device configuration to allow Full Automation. If your site is not managed by Verizon Business, please be sure to implement any corresponding CE configuration changes.

Depending on the Private IP PE platform, Verizon could provision 'bandwidth shaping' overhead adjustments on Ethernet Interfaces at the PE Egress, These adjustments may reduce the

actual bandwidth available to you, depending on your traffic profile. You must apply policies at your CE egress to prevent packet loss due to Ethernet protocol overhead used within the Company Network. Further details can be obtained from your account team.

NOTE - You are limited to one successful bandwidth change per 24 hours per site (except for "C" prefixed circuits).

Please print a copy of this request for your records.

Click "Accept" below to acknowledge your acceptance of these changes to your account.

Note for Private IP Ethernet Ports with a prefix of B or C

Ethernet Access goes from the customer premise to the nearest Layer 2 device. A Network to Network Interface (NNI) connects the Layer 2 device to the nearest Private IP Provider Edge over a shared interface. The bandwidth on the NNI is not reserved. In the event the NNI or Provider Edge device has reached capacity it will not be possible to increase your Ethernet Port speed. You will however be able to lower the speed. The dropdown menu on Dynamic Port will reflect the port speeds available based on the amount of bandwidth on the NNI. If the NNI or Provider Edge has been capped you will need to engage your Verizon account team (or the Verizon Enterprise Help Desk) to enable submission of an order to increase bandwidth. As part of the ordering process your Ethernet Port will be migrated to an NNI with sufficient bandwidth to support the higher port speed. There will be no change in the Circuit ID; it will remain the same.

Network to Network Interface (NNI) Toggling for DPORT

NNI Toggling allows users to increase the bandwidth speed of a Private IP (PIP) circuit even when the NNI connecting the circuit to a PIP provider edge router (PE) is blocked. NNI Toggling is designed to automatically move a PIP circuit to an adjacent NNI if one is available with sufficient capacity. Blocking can occur for many reasons, most notably when max routes have been reached or there is insufficient bandwidth on an NNI. Such blocking restricts the addition of new circuits to a PE and/or bandwidth upgrades on circuits connected to the PE. Bandwidth downgrades are not impacted by PE/NNI blocking.

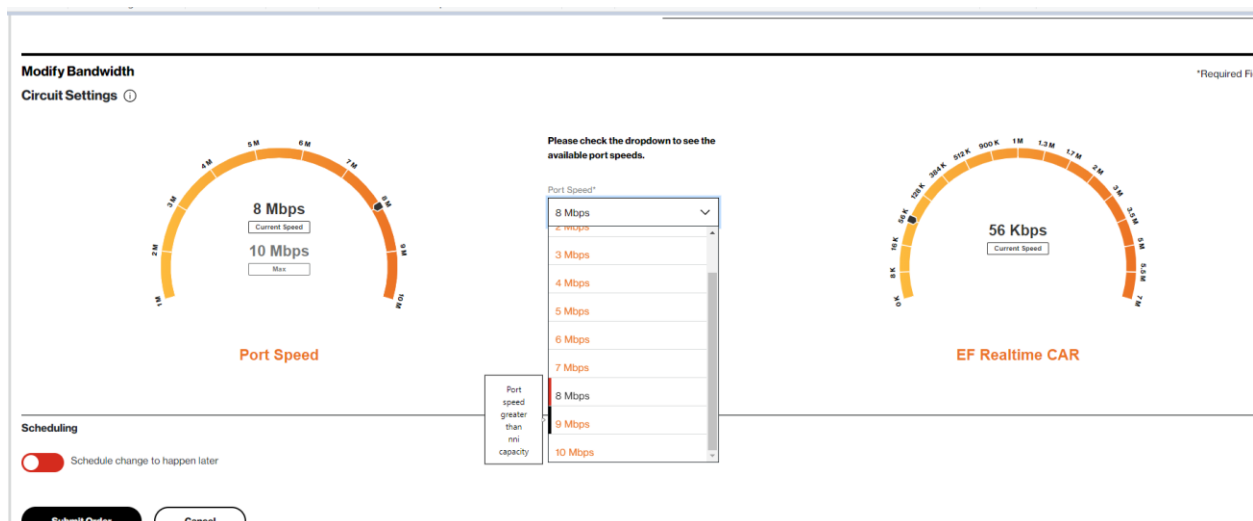
NOTE: This feature is available only to US Domestic Commercial customers at this time.

If you are outside of the domestic U.S and experience a similar DPORT issue, please contact your Account Team and have them submit a standard (manual) speed change order. You can also try to submit a DPORT change later since NNI blockages are often temporary.

How It Works

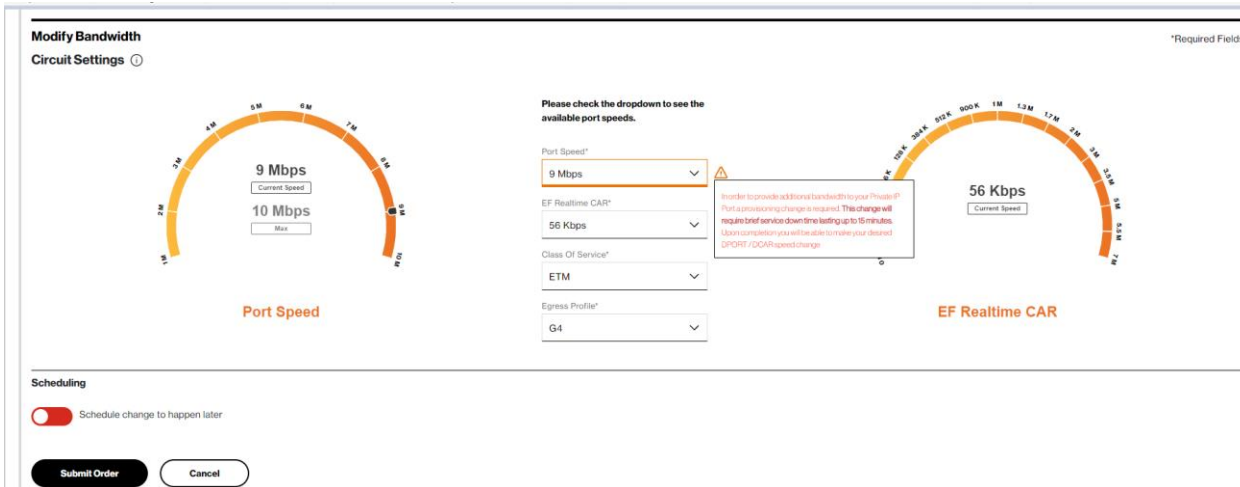
DPORT with NNI Toggling is an automated process that requires your permission to proceed. When the Toggling feature is enabled a new message will display next to bandwidths and will highlight the specific speeds that exceed the current NNI bandwidth (see the screenshot below). The “red” bar (next to the speed) represents the current NNI speed, while the “black” bar represents the speeds that exceed the NNI bandwidth.

In the screenshot below, you can see that the Current Bandwidth is at 8Mbps. If a Port change was made to 9Mbps, it would trigger the NNI Toggling process, assuming there is an alternative NNI available locally with 9Mbps of capacity.

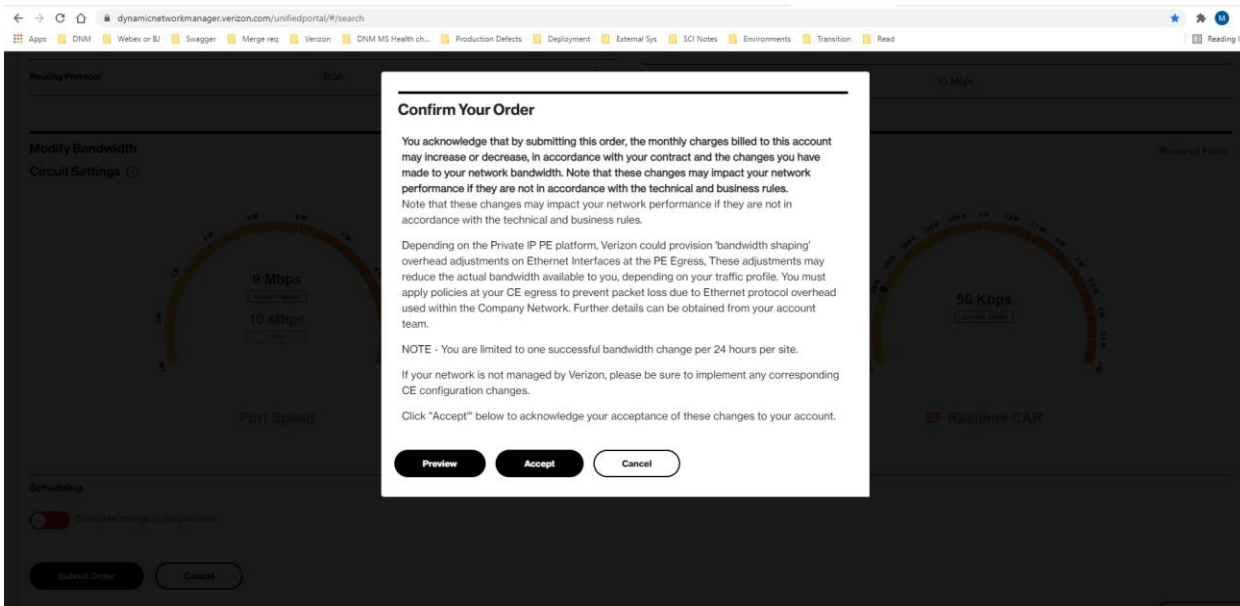


When a User selects a speed that is greater than NNI Capacity + Current Port Speed then a message will appear next to the bandwidth selected (see below). The message notifies the user that the selected bandwidth increase will require a “hot cut” (re-provisioning) order which will

bring down the network for approximately 15 minutes. During this down time, the system will automatically attempt to move the circuit from the blocked NNI to an adjacent NNI with capacity.



A confirmation window of the DPORT transaction will be provided. You will need to accept the terms to submit the order.

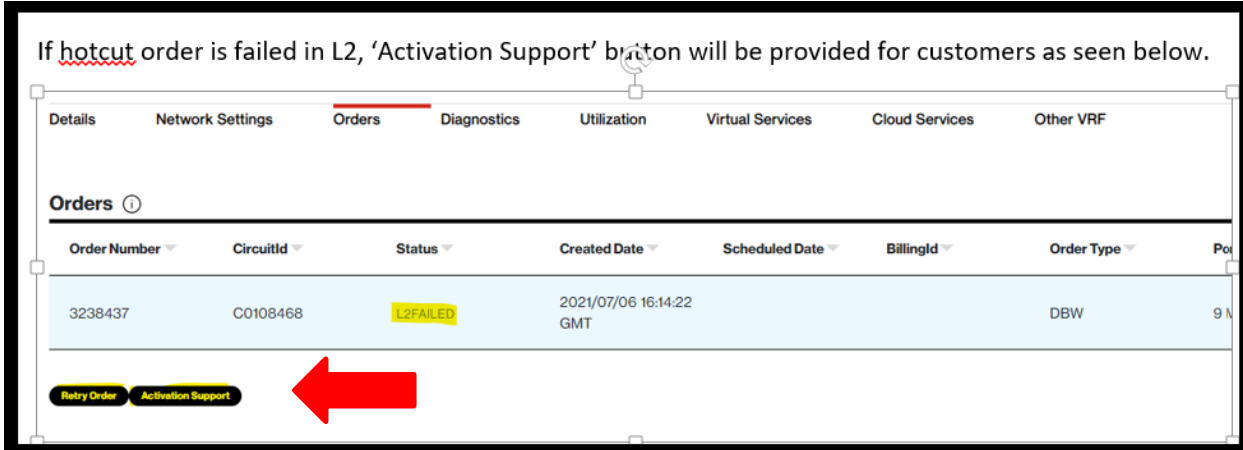


How to know the status of your DPORT order including NNI Toggling

Users can track the progress of their DPORT change order (and associated NNI Toggling) in the **Order Status** section. Go there to review order status for the specific PIP circuit change request. If the NNI Toggling automation did not complete for the change order then the following message will display within the Order Status field: **“Layer 2 provisioning failed”**

For assistance at this point the user can click the **“Activation Support”** button. This will trigger

the Verizon Support team to begin work resolving the technical issue as quickly as possible. Verizon's Support Team for US Commercial customers is available 7 days a week 24 hours a day. They will at a minimum roll the bandwidth change back to bring the network back up. Most often they will resolve the issue and then assist Users with completing the original DPORT speed upgrade request.



Activation Support

Time slot is available within 30 minutes. Please submit the below details. A Verizon Technician will reach out to you within 30 minutes from 22:30 CST.

Contact Information

Contact Name* Contact Number*

Email Address*

Audio Conference Information

Bridge


Complete the above Contact Information and "Submit" the request.

Bulk Operations

This Dynamic Network Manager (DNM) feature allows Users to submit multiple circuit changes at one time. There are three categories of DNM bulk changes: 1) **Circuit Descriptions**, 2) **Bandwidth** (Dynamic PORT), **CAR** (Dynamic CAR), **Profile** (Egress) and 3) **Bulk Subscription** (Utilization Threshold Alerts and Circuit Change Activity). Bulk change requests can be manually entered directly into the tool or via a DNM spreadsheet template (where applicable).

Please note that only Private IP Single VRF (virtual route forwarding) and PORT Multi-VRF circuits are supported for Bulk speed changes currently. PVC Multi-VRF circuit support is targeted for 4Q20.

Tip: If you elect to use the DNM spreadsheet template to enter your circuits, you can first use DNM's Export function to download the VPN/circuit list you wish to modify and then copy/paste the appropriate values into the Bulk spreadsheet template fields.



Dynamic Network Manager

[Home](#) [Network](#) [Policy Management](#) [API](#) [Reports](#)

← **Bulk Operations**

[Create New Job](#) [Jobs in Progress](#) [Completed Jobs](#)

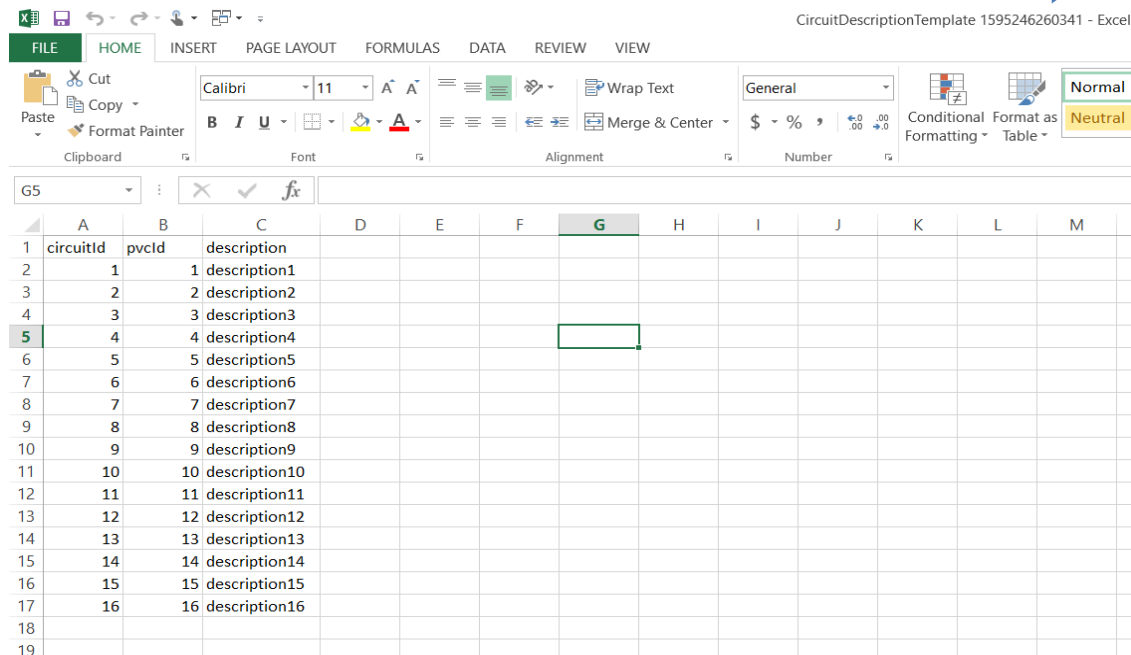
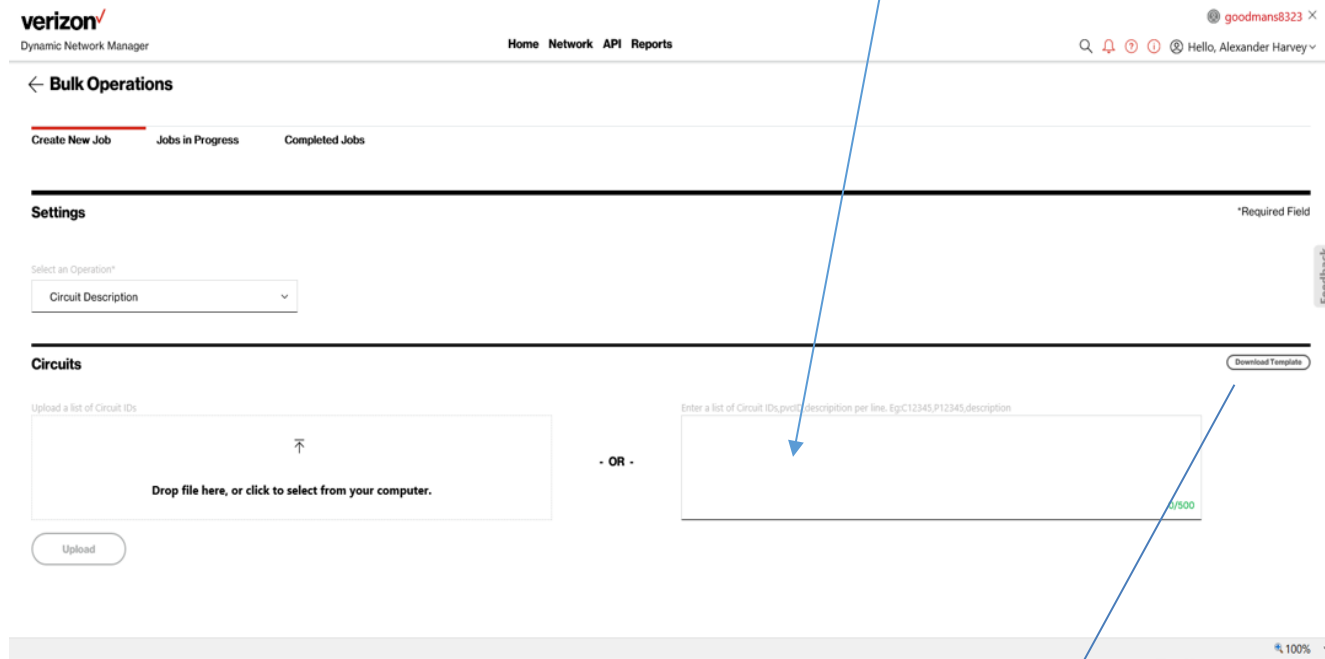
Settings

Select an Operation*

Select	▼
Circuit Description	
Bandwidth, CAR, Profile - Change with pre-set speeds	
Bandwidth, CAR, Profile - Upload excel with custom speeds	
Bulk Subscription	

Circuit Description

This option allows changes to Circuit descriptions (only). You can manually enter circuit information or enter it into a DNM spreadsheet template.



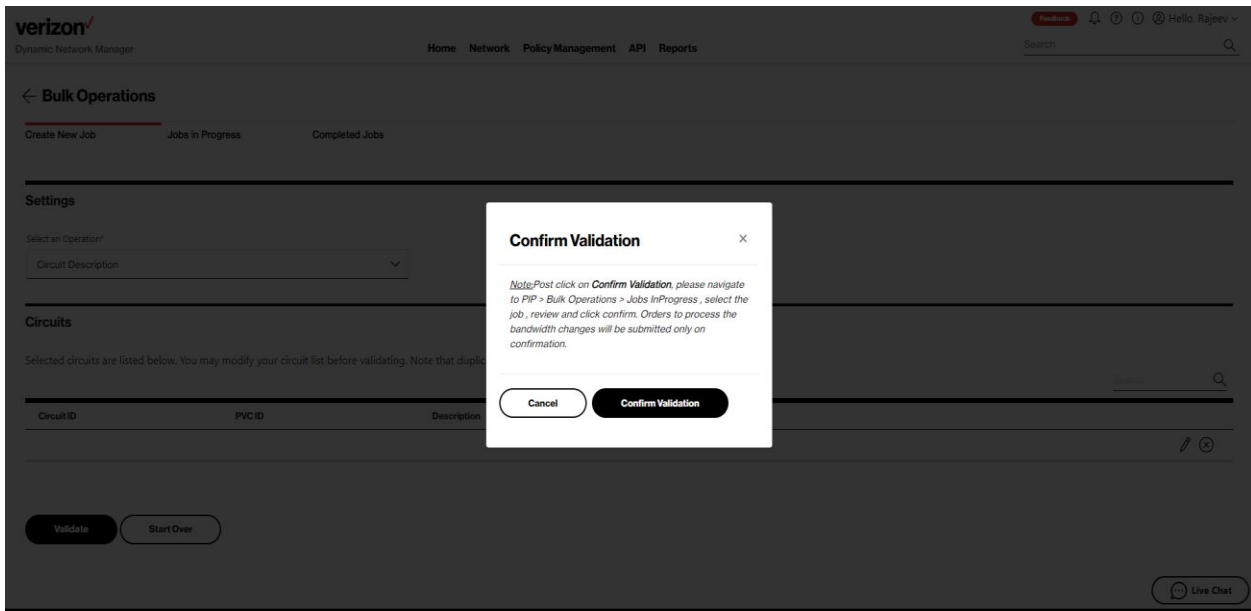
Note: Circuit information submitted via spreadsheet for any DNM Bulk change request must be entered in a DNM spreadsheet template format. If data does not match the Template format provided, the sheet will not be uploaded.

The screenshot shows the 'Bulk Operations' page in the Verizon Enterprise Center. The page has a navigation bar with 'Home', 'Network', 'Policy Management', 'API', and 'Reports'. Below the navigation bar, there are tabs for 'Create New Job', 'Jobs in Progress', and 'Completed Jobs'. The 'Settings' section includes a dropdown menu for 'Select an Operation*' with 'Circuit Description' selected. The 'Circuits' section has two input areas: a file upload area with a red circle around the 'Upload' button and a text input area for entering circuit IDs and descriptions. A 'Download Template' button is visible in the top right of the 'Circuits' section. A 'Live Chat' button is in the bottom right.

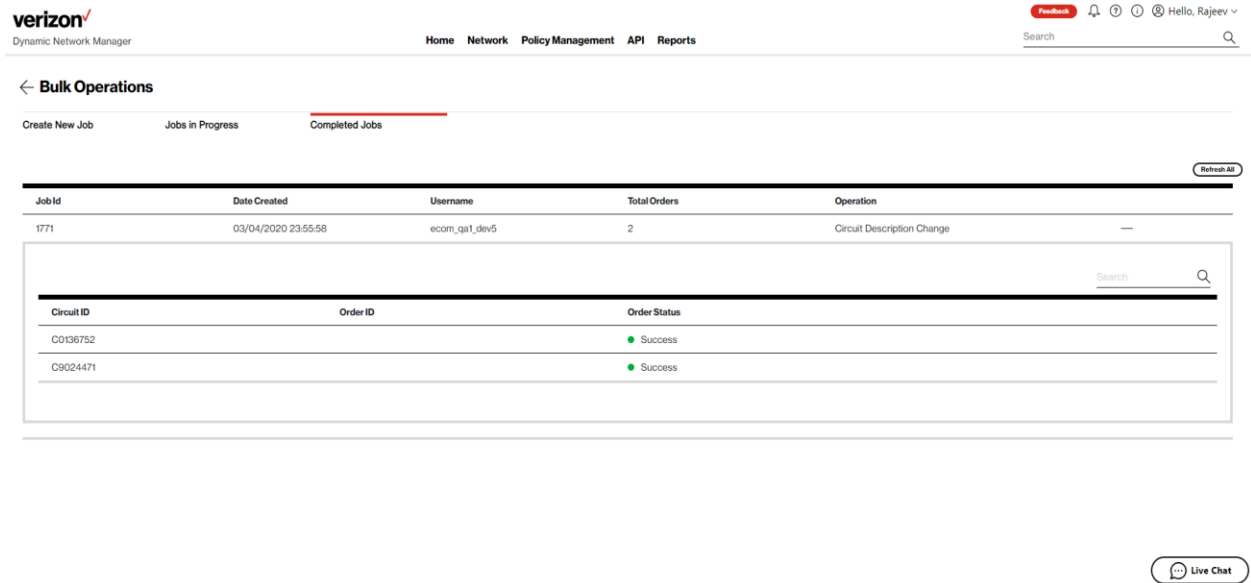
After the Excel file (or your manually entered list) has been entered, Click **Upload**

The screenshot shows the 'Bulk Operations' page after the circuit data has been entered. The 'Circuits' section now displays a table with the following columns: 'Circuit ID', 'PVC ID', and 'Description'. Below the table, there are two buttons: 'Validate' and 'Start Over', with the 'Validate' button circled in red. A 'Live Chat' button is in the bottom right.

Click **Validate**

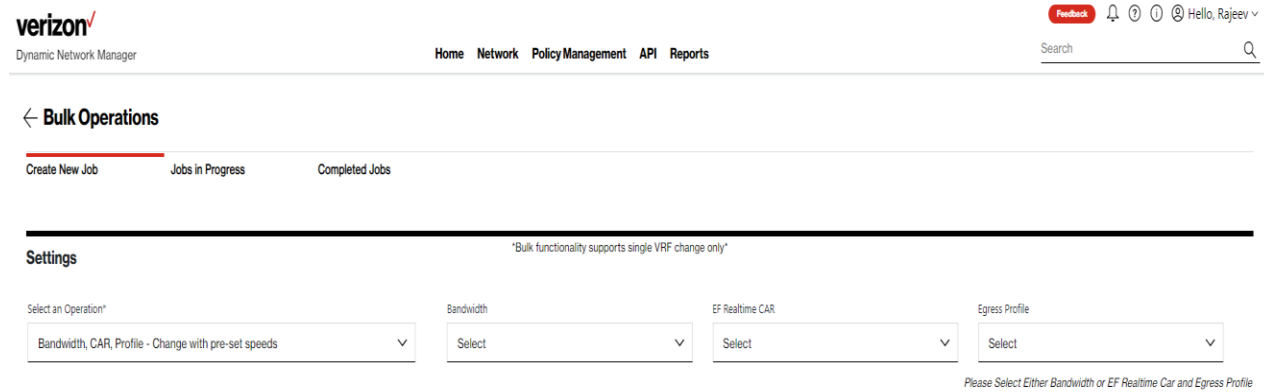


Click **Confirm Validation**

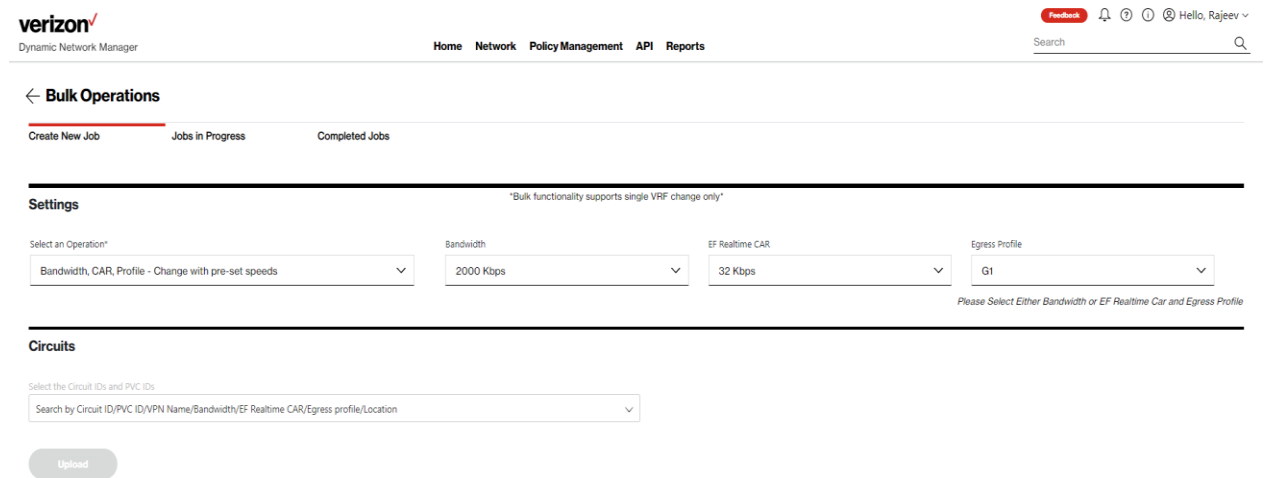


Completed Tab displays the jobs that have been processed

Bandwidth, CAR, Profile – Change with pre-set speeds



Enter **Bandwidth, CAR and Profile** selections in drop down menus



Click **Circuits bar** to search & select circuits for Bulk changes

← Bulk Operations

Create New Job Jobs in Progress Completed Jobs

UnSelect All

Search

Circuit ID	PVC ID	VPN Name	Bandwidth	EF RealTime CAR	Egress Profile
<input checked="" type="checkbox"/> C0136752 Location TX,USA	5955706	E2E-MARIT-USA-NVDQ143	Bandwidth	EF RealTime CAR	Egress Profile
<input checked="" type="checkbox"/> C0136385 Location TX,USA	5955170	E2E-MARIT-USA-NVDQ143	Bandwidth	EF RealTime CAR	Egress Profile
<input checked="" type="checkbox"/> CENRALDAL0001 Location TX,USA	VCP_121951049_2	E2E-MARIT-USA-NVDQ143	Bandwidth	EF RealTime CAR	Egress Profile
<input checked="" type="checkbox"/> C9228504 Location DO,USA	9228504	RadLabG2Orch	Bandwidth	EF RealTime CAR	Egress Profile

Upload

Live Chat

Click **Upload** to submit circuits for Bulk Changes

← Bulk Operations

Create New Job Jobs in Progress Completed Jobs

Settings

"Bulk functionality supports single VRF change only"

Select an Operation* Bandwidth EF Realtime CAR Egress Profile

Please Select Either Bandwidth or EF Realtime Car and Egress Profile

Circuits

Selected circuits are listed below. You may modify your circuit list before validating. Note that duplicate circuit IDs have been removed.

Search

Circuit ID	PVC ID	Current Port Speed	New Port Speed	Current EF Realtime CAR	New EF Realtime CAR	Current Egress Profile	New Egress Profile	Status
C0136385	5955170		2000 Kbps		16 Kbps		G1	Valid
ENRALDAL0001	VCP_121951049_2		2000 Kbps		16 Kbps		G1	Valid
C3017152	5974019		2000 Kbps		16 Kbps		G1	Valid
C9607286	5956692		2000 Kbps		16 Kbps		G1	Valid
C9208052	5967334		2000 Kbps		16 Kbps		G1	Valid

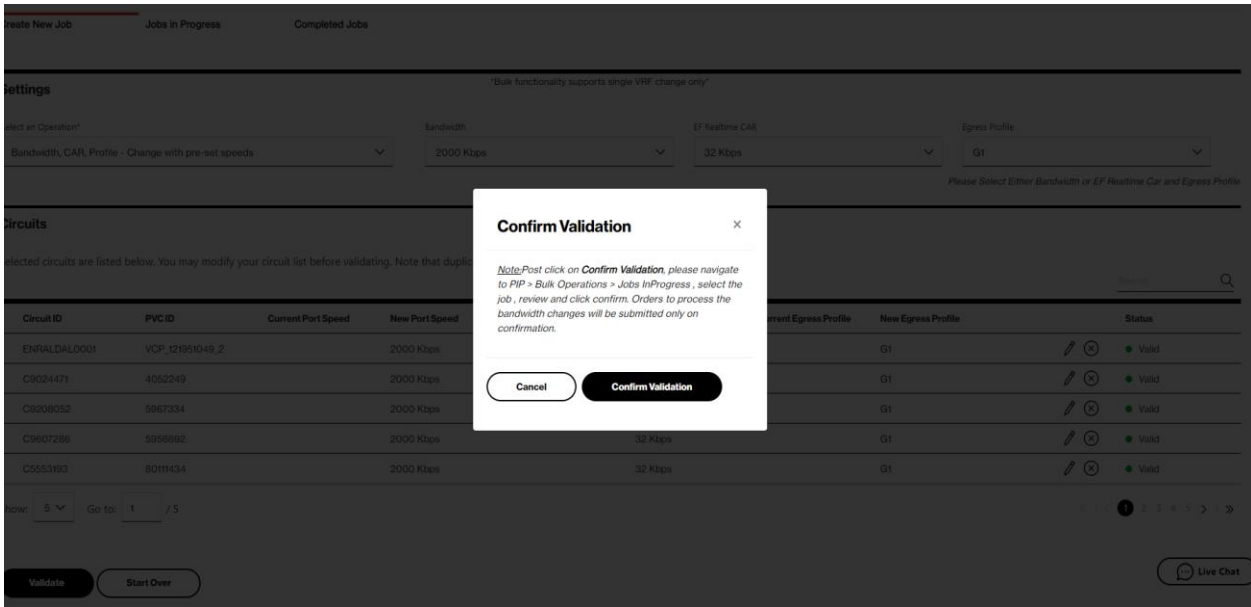
Show: Go to: / 5

« | 1 2 3 4 5 »

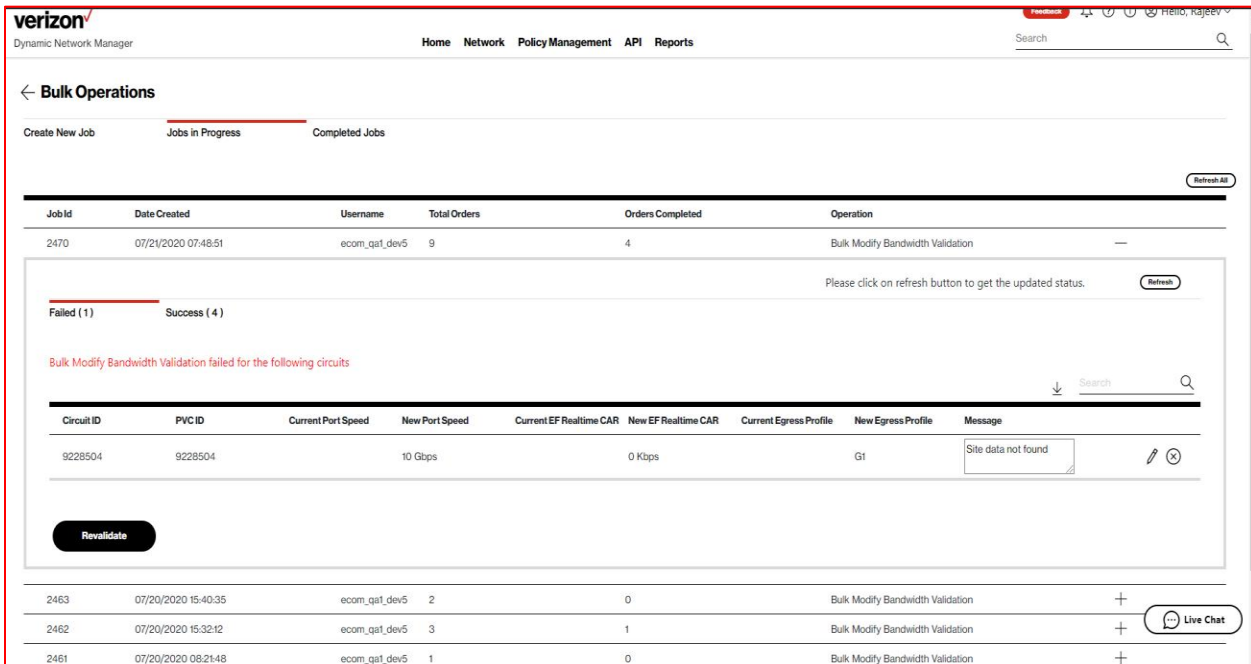
Validate **Start Over**

Live Chat

Click **Validate**



Click **Confirm Validation**



Important Note: DNM will send you an email confirmation when all submitted circuits are processed after the **Confirm Validation** step. If however, you go to the **Jobs in Progress** tab to review status before receiving the DNM email, then hit **Refresh** to see the most current list of validated circuits (or hit **Refresh All** for in-progress status of all active requests). DNM processes circuit validations in batches so you may need to hit

Refresh/Refresh All several times. Click **Revalidate** after making corrections (or deletions).

Dynamic Network Manager

Home Network Policy Management API Reports

Search

← Bulk Operations

Create New Job Jobs in Progress Completed Jobs

Refresh All

Job Id	Date Created	Username	Total Orders	Orders Completed	Operation
2470	07/21/2020 07:48:51	ecom_qat_dev5	9	4	Bulk Modify Bandwidth Validation

Please click on refresh button to get the updated status. Refresh

Failed (1) Success (4)

Bulk Modify Bandwidth Validation succeeded for the following circuits

Circuit Id	PVC ID	Current Port Speed	New Port Speed	Current EF Realtime CAR	New EF Realtime CAR	Current Egress Profile	New Egress Profile
C9952791	5954290		6 Mbps		8 Kbps		G1
C1068540	5980967		10 Mbps		16 Kbps		R1
C0136752	5957706		200 Mbps		1300 Kbps		G1
C9024471	4052249		1536 Kbps		384 Kbps		G1

Place Order

Live Chat

Click **Place Order** once Revalidation is complete.
This is the final step to entering the Bulk change request.

Dynamic Network Manager

Home Network Policy Management API Reports

Search

← Bulk Operations

Create New Job Jobs in Progress Completed Jobs

Refresh All

Job Id	Date Created	Username	Total Orders	Orders Completed	Operation
2470	07/21/2020 07:48:51	ecom_qat_dev5	9	4	Bulk Modify Bandwidth Validation

Please click on refresh button to get the updated status. Refresh

Failed (0) Success (4)

Bulk Modify Bandwidth Validation succeeded for the following circuits

Circuit Id	PVC ID	Current Port Speed	New Port Speed	Current EF Realtime CAR	New EF Realtime CAR	Current Egress Profile	New Egress Profile
C9952791	5954290		6 Mbps		8 Kbps		G1
C1068540	5980967		10 Mbps		16 Kbps		R1
C0136752	5957706		200 Mbps		1300 Kbps		G1
C9024471	4052249		1536 Kbps		384 Kbps		G1

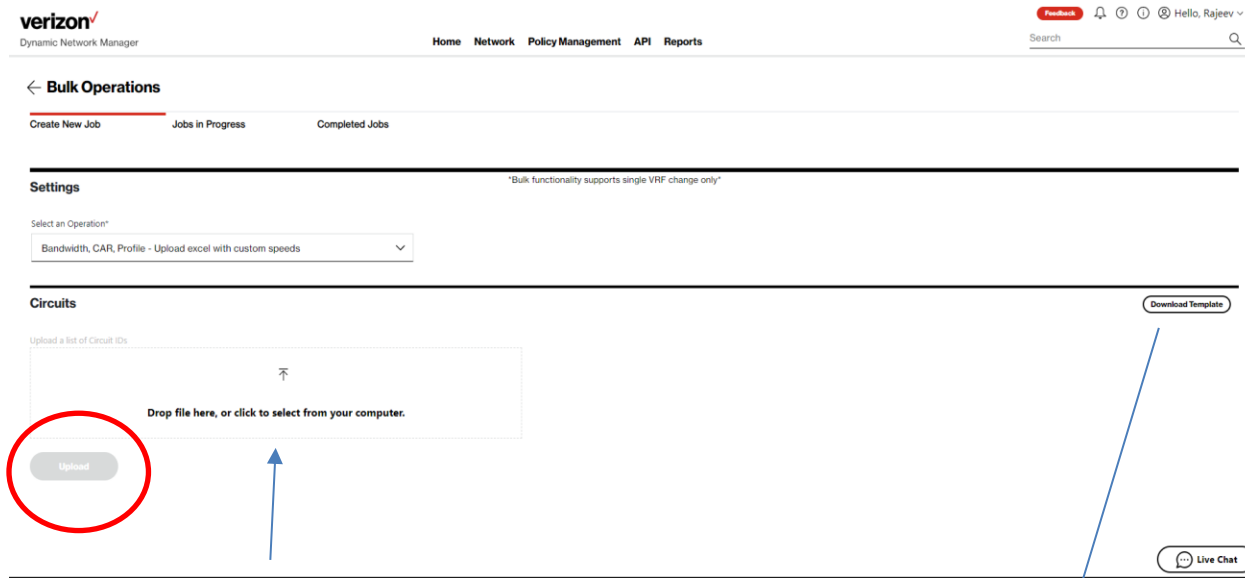
Place Order

Live Chat

Success Tab show circuits that have been successfully submitted

Bandwidth, CAR, Profile – Upload Excel with custom speeds

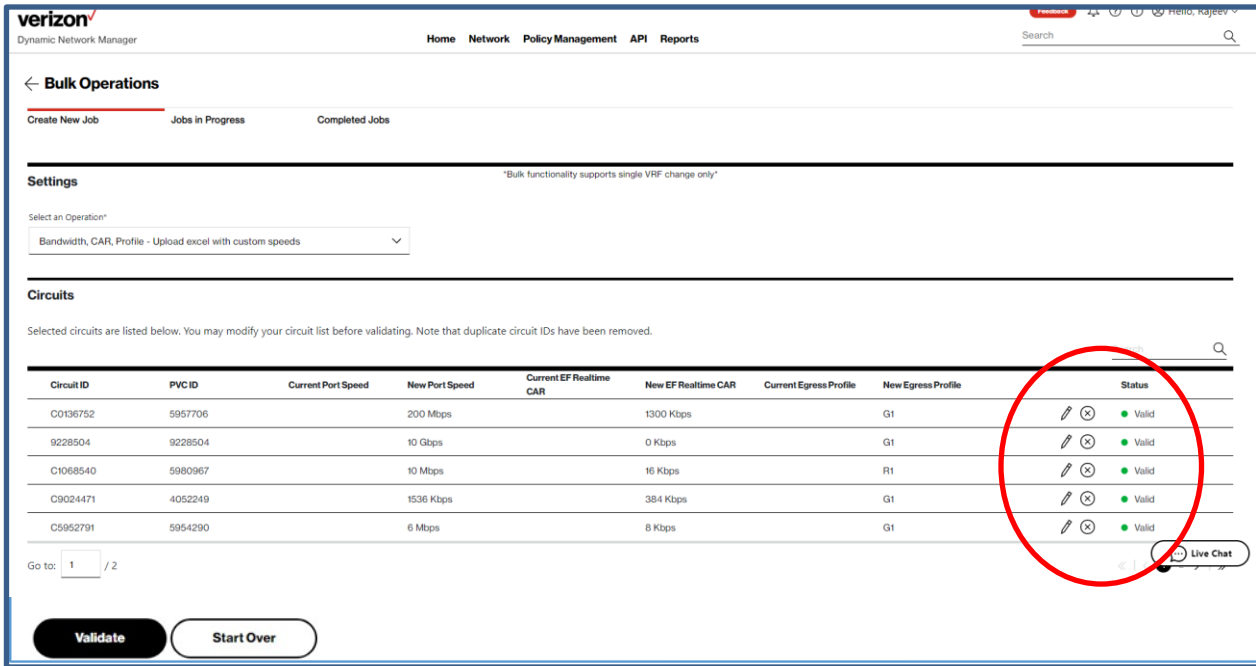
DNM allows you to drag & drop an Excel spreadsheet into DNM with your defined circuit changes. This spreadsheet must be in the same format as the accessible DNM Excel template.



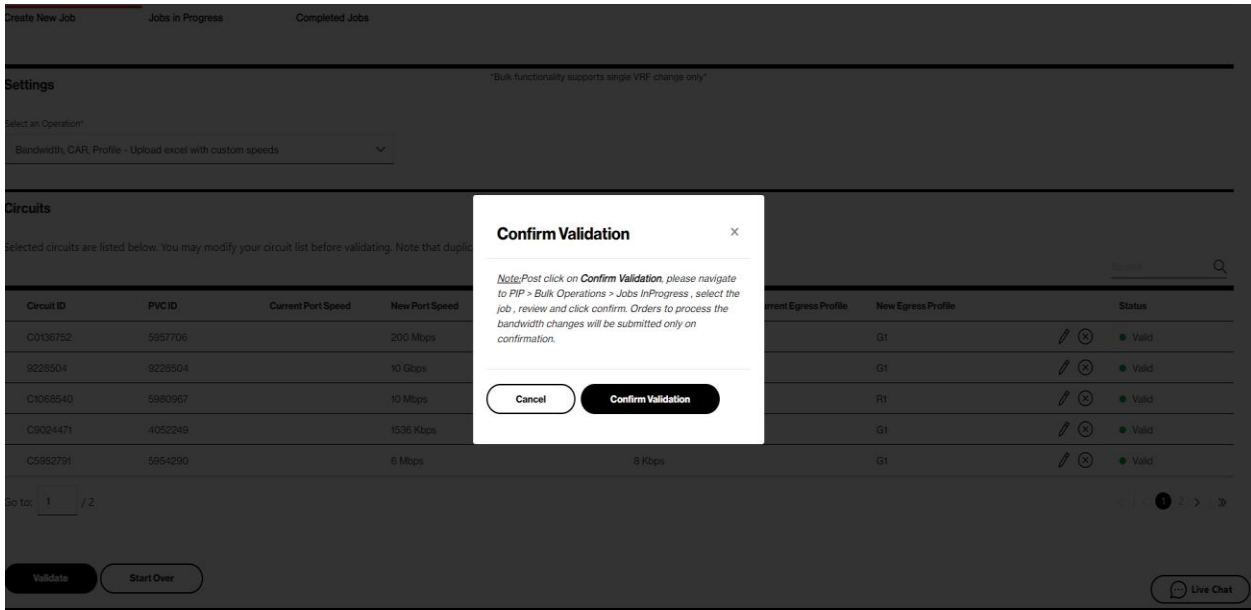
Click **Upload** after dropping Excel file into DNM

DO NOT CHANGE THE HEADER INFORMATION - SPECIFY ONLY INVENTORY						
Circuit ID	PVC ID	Bandwidth	Bandwidth Unit	EF Realtime CAR	EF Realtime CAR Unit	Egress Profile
<<Enter Circuit ID>>	<<Enter PVC ID>>	10	Select	10	Select	Select

DNM Speed Change Template



When finished editing, click **Validate**



Click **Confirm Validate**

Dynamic Network Manager Home Network Policy Management API Reports Search

← Bulk Operations

Create New Job Jobs in Progress Completed Jobs

Job Id	Date Created	Username	Total Orders	Orders Completed	Operation
2470	07/21/2020 07:48:51	ecom_qa1_dev5	9	1	Bulk Modify Bandwidth Validation

[Refresh All](#)

Please click on refresh button to get the updated status. [Refresh](#)

Failed (1) **Success (1)**

Bulk Modify Bandwidth Validation failed for the following circuits

Circuit ID	PVC ID	Current Port Speed	New Port Speed	Current EF Realtime CAR	New EF Realtime CAR	Current Egress Profile	New Egress Profile	Message
9228504	9228504	10 Gbps	0 Kbps			G1		Site data not found

[Revalidate](#)

2463	07/20/2020 15:40:35	ecom_qa1_dev5	2	0	Bulk Modify Bandwidth Validation	+
2462	07/20/2020 15:32:12	ecom_qa1_dev5	3	1	Bulk Modify Bandwidth Validation	+
2461	07/20/2020 08:21:48	ecom_qa1_dev5	1	0	Bulk Modify Bandwidth Validation	+ Live Chat
2460	07/20/2020 08:02:21	ecom_qa1_dev5	3	2	Bulk Modify Bandwidth Validation	+

Important Note: DNM will send you an email confirmation when all submitted circuits are processed after the **Confirm Validation** step. If however, you go to the **Jobs in Progress** tab to review status before receiving the DNM email, then hit **Refresh** to see the most current list of validated circuits (or hit **Refresh All** for in-progress status of all active requests). DNM processes circuit validations in batches so you may need to hit **Refresh/Refresh All** several times. Click **Revalidate** after making corrections (or deletions).

verizon Dynamic Network Manager Feedback Hello, Rajeev Search

Home Network Policy Management API Reports

← Bulk Operations

Create New Job Jobs in Progress Completed Jobs

Job Id	Date Created	Username	Total Orders	Orders Completed	Operation
2470	07/21/2020 07:48:51	ecom_qa1_dev5	9	3	Bulk Modify Bandwidth Validation

[Refresh All](#)

Please click on refresh button to get the updated status. [Refresh](#)

Failed (1) **Success (3)**

Bulk Modify Bandwidth Validation succeeded for the following circuits

Circuit Id	PVC ID	Current Port Speed	New Port Speed	Current EF Realtime CAR	New EF Realtime CAR	Current Egress Profile	New Egress Profile
C0196752	5957706		200 Mbps		1300 Kbps		G1
C1068540	5980967		10 Mbps		16 Kbps		R1
C9024471	4052249		1536 Kbps		384 Kbps		G1

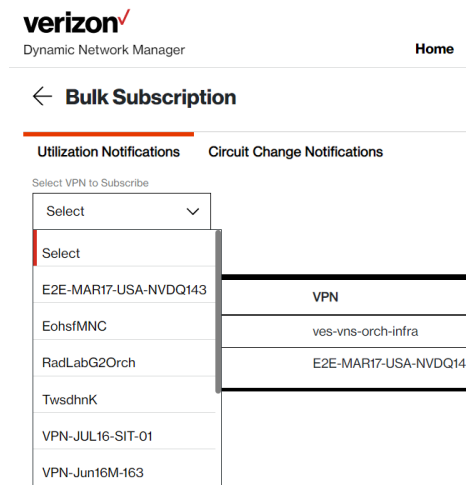
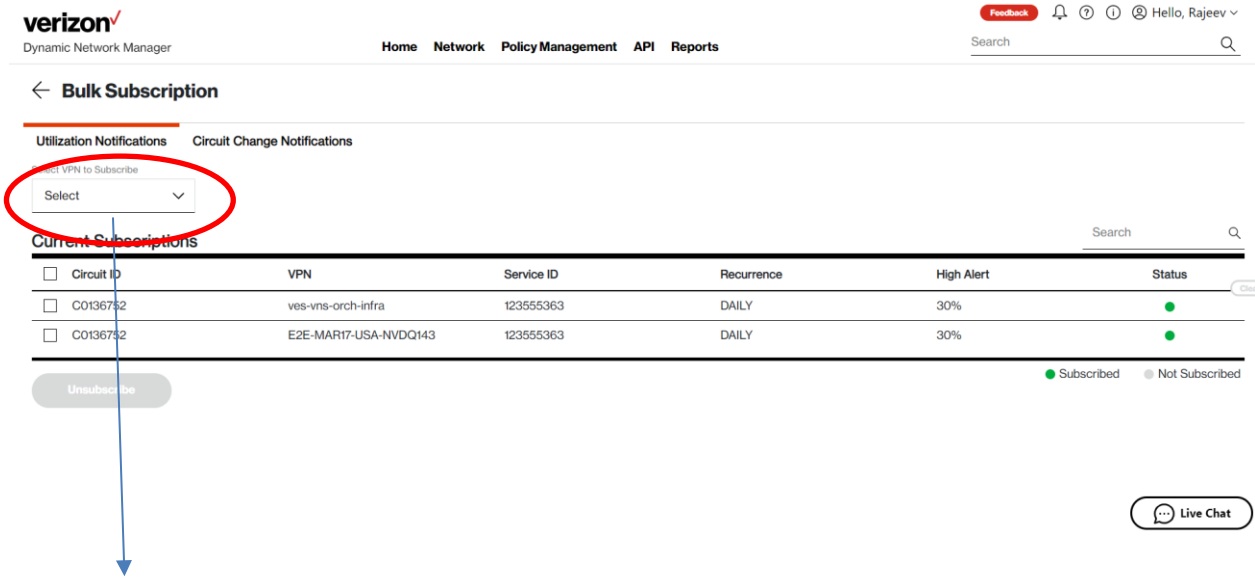
[Place Order](#)

[Live Chat](#)

Click **Place Order** once Revalidation is complete. This is the final step to entering the Bulk change request.

Bulk Subscriptions

Bulk subscription changes work very similarly to single changes that are made in the “Preferences” section displayed for individual circuits. Alternatively here you can apply changes to multiple circuits/VPNs.



← Bulk Subscription

Utilization Notifications Circuit Change Notifications

Select VPN to Subscribe
TwsdhK

Circuit List Search

<input type="checkbox"/>	Circuit ID	PVC	Service ID	Port Speed	High Alert	Street Address	City, State	Country	Status
<input type="checkbox"/>	C5008383	16341251	82423582	1536 Kbps		8239 WQQAWHM VLFJY SP	VSTAKXRHXIYL, VV	USA	<input type="radio"/>
<input type="checkbox"/>	C5553193	80111434	85206452	1536 Kbps		1848 VQUDJYTC DF FA	FSPZIJR, OZ	USA	<input type="radio"/>
<input type="checkbox"/>	C0136385	5955170	117718343	1000 Kbps		400 INTERNATIONAL PKWY?	RICHARDSON, TX	USA	<input type="radio"/>
<input type="checkbox"/>	C0136517	5955965	117015098	10 Kbps		1600 W 7TH ST	FORT WORTH, TX	USA	<input type="radio"/>
<input type="checkbox"/>	C0136752	5957706	123555363	200 Mbps	30%	1600 W 7TH ST	FORT WORTH, TX	USA	<input checked="" type="radio"/>
<input type="checkbox"/>	C1067115	5967622	133448095	4 Mbps		400 INTERNATIONAL PKWY	RICHARDSON, TX	USA	<input type="radio"/>
<input type="checkbox"/>	ENRALDAL0001	VCP_121951049_2	121951049	1 Gbps		5959 N BTDXD CVY	TFGTIY VMHBH, UV	USA	<input type="radio"/>
<input type="checkbox"/>	W4N58795	5960011	991336827	34.386 Mbps		123 MISSION ST	SAN FRANCISCO, CA	USA	<input type="radio"/>

Alert when or above: of utilization ● Subscribed ● Not Subscribed

[Live Chat](#)

Select one or all listed circuits to submit for Alerts/Notifications subscription

Dynamic Network Manager Home Network Policy Management API Reports Search

← Bulk Subscription

Utilization Notifications **Circuit Change Notifications**

Select VPN to Subscribe
TwsdhK

Circuit List Search

<input checked="" type="checkbox"/>	Circuit ID	PVC	Service ID	Port Speed	High Alert	Street Address	City, State	Country	Status
<input checked="" type="checkbox"/>	C5008383	16341251	82423582	1536 Kbps		8239 WQQAWHM VLFJY SP	VSTAKXRHXIYL, VV	USA	<input type="radio"/>
<input checked="" type="checkbox"/>	C5553193	80111434	85206452	1536 Kbps		1848 VQUDJYTC DF FA	FSPZIJR, OZ	USA	<input type="radio"/>

Start Date / Time Zone ● Subscribed ● Not Subscribed

Pick Date

Recurrence Pattern Daily Weekly Monthly

Weekly Options
 Sunday Monday Tuesday Wednesday Thursday Friday Saturday

End Date No End Date End After End By

[Live Chat](#)


Schedule the desired frequency of Emailed Alerts

Modify Shaping Adjustment

The Ethernet cards handle shaping and policing based on L2 overhead. In the case of Ethernet encapsulation when shaping, the router does not include Inter-Frame Gap (IFG), Preamble, Start Frame Delimiter (SFD). When dealing with small frames, this overhead could be considerable. The marketed sold Ethernet speeds and the transmission equipment assumes L1 payload. To adjust for this discrepancy, the shaping rate on the PEs can be adjusted to compensate for the Ethernet overhead depending on the type of service that the customer is buying (voice, voice/data combined, data).

The screenshot shows the 'Circuit Details' page. At the top right, there are two status indicators: 'Pending tickets 0' and 'Pending orders 0'. Below this, there are two progress bars: 'EF Real Time Car' and 'Port Speed'. The 'EF Real Time Car' bar shows a 'Max Speed 12.3 Mbps' and a 'Current - 512 Kbps'. The 'Port Speed' bar shows a '0% Alert Threshold' and a 'Current - 10 Mbps'. Below the progress bars, there are two columns of key-value pairs. The left column includes: 'Utilization Alert Threshold' (0%), 'Topology' (H), 'CE IP Address' (152.177.14.66), 'Access Type' (ETH10Gig), and 'Routing Protocol' (BGP). The right column includes: 'Class of Service' (ETM), 'Egress Profile' (G1), 'Shaping Profile' (93%), 'Interface Name' (TenGigE0/1/0/3), and 'Access Speed' (20 Mbps). A red circle highlights the 'Shaping Profile' value '93%' and its edit icon. Another red circle highlights a 'Modify Bandwidth' button located below the 'Routing Protocol' field.


The screenshot shows the 'Edit Shaping Profile' dialog box. It has a title bar 'Edit Shaping Profile' and a 'Shaping Profile*' dropdown menu with '93' selected. Below this is a 'Scheduling' section with a toggle switch that is currently turned on, labeled 'Schedule change to happen later'. At the bottom of the dialog are 'Submit' and 'Cancel' buttons. A red circle highlights the entire dialog box.



1. Click on  shaping profile in the details tab. The Modify Shaping Adjustment for Ethernet Overhead section appears above the Site Details.
2. Select 76, 85, or 94 from the Shape PE departure data transmission to drop-down rundown.
3. Enter a Process Date/Time to plan this activity, if relevant.
4. Select a period zone starting from the drop list.
5. Click Schedule Order on the off chance that you are booking this for a future date.
6. Click Process Order to present your request. The Process Order Confirmation spring up shows up.
7. Click Accept to recognize that the solicitation may affect your system and that you oversee rolling out any related improvements required on your client edge (CE) switch. You will get an email when the solicitation is finished. There is no restriction to the quantity of non-billable design changes that can be mentioned, yet please permit 24 hours for changes submitted Monday through Friday to be finished. On the off chance

that a solicitation is made on an end of the week or US occasion, it will be handled on the following industry day.

8. Click Print to print a duplicate of your solicitation.

Modify Admin Status


1. Click  next to **Interface Name** in the *Site Details*. The *Modify Admin Status* section appears above the *Site Details*.
2. Enter a *Process Date/Time* to schedule this job, if applicable.
3. Select a time zone from the drop-down list.
4. Click **Schedule Order** if you are scheduling this for a future date.
5. Select **no-shutdown** or **shutdown** from the *New Admin Status* drop-down list.
1. Click **Process Order** to submit your order. The *Process Order Confirmation* pop-up appears.
2. Click **Accept**.

Utilization Alert Threshold	0 %	Class of Service	ETM
Topology	H	Egress Profile	G1
CEIP Address	68.138.222.58	Interface Name	Serial0/9/2/0/1/1/1/2:1 
Access Type	E1	Access Speed	0 Kbps
Routing Protocol	BGP 		

[Modify Bandwidth](#)

Edit Admin Status

Admin Status*

Select 

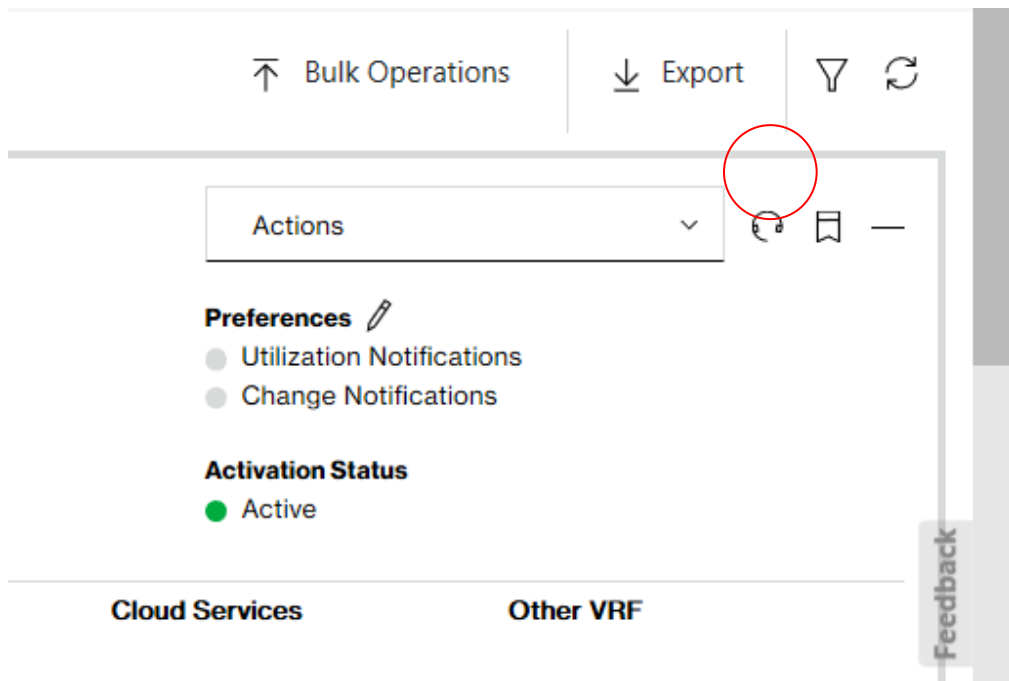
Scheduling

Schedule change to happen later

[Submit](#) [Cancel](#)

Open Quick (Trouble) Ticket

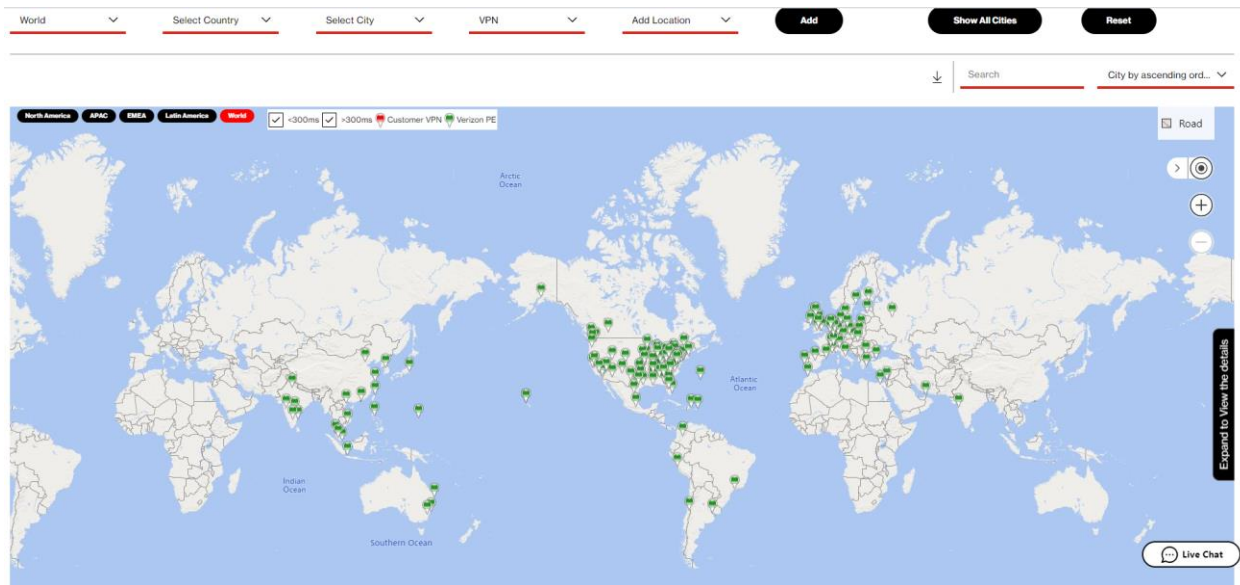
1. Click **Headphone** icon under *Site Details*. The *Create Quick Ticket* pop-up appears.



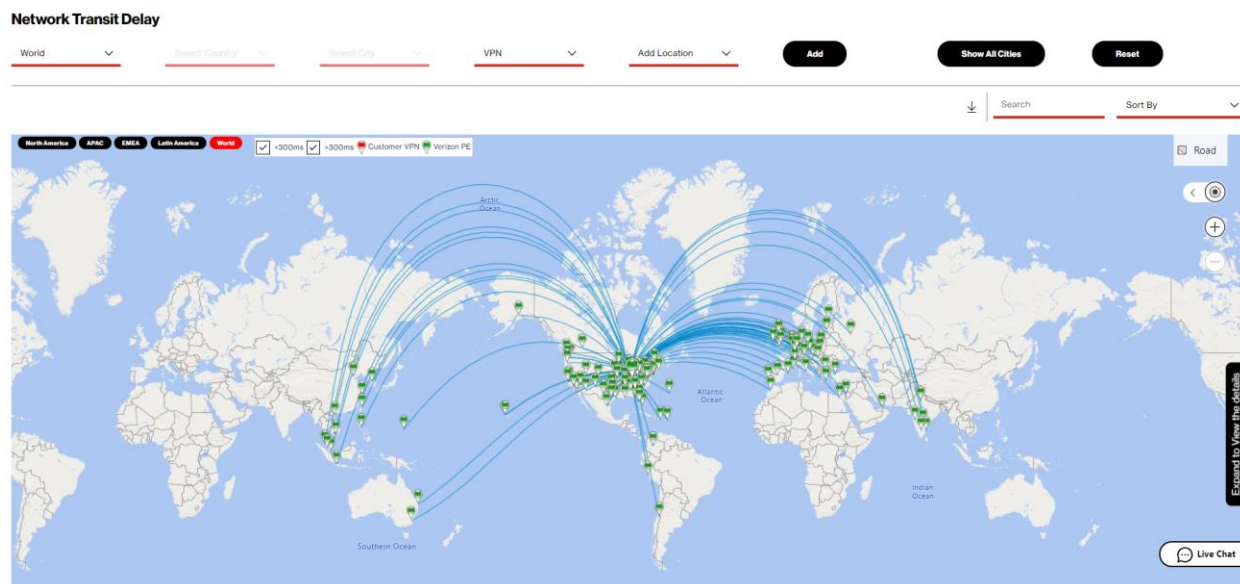
2. When you open a ticket, the circuit ID for which you are viewing in the *Site Details* automatically populates. Enter a different circuit ID, if applicable.
3. Click **Next** to verify service and enter the ticket information.

Network Transit Delay

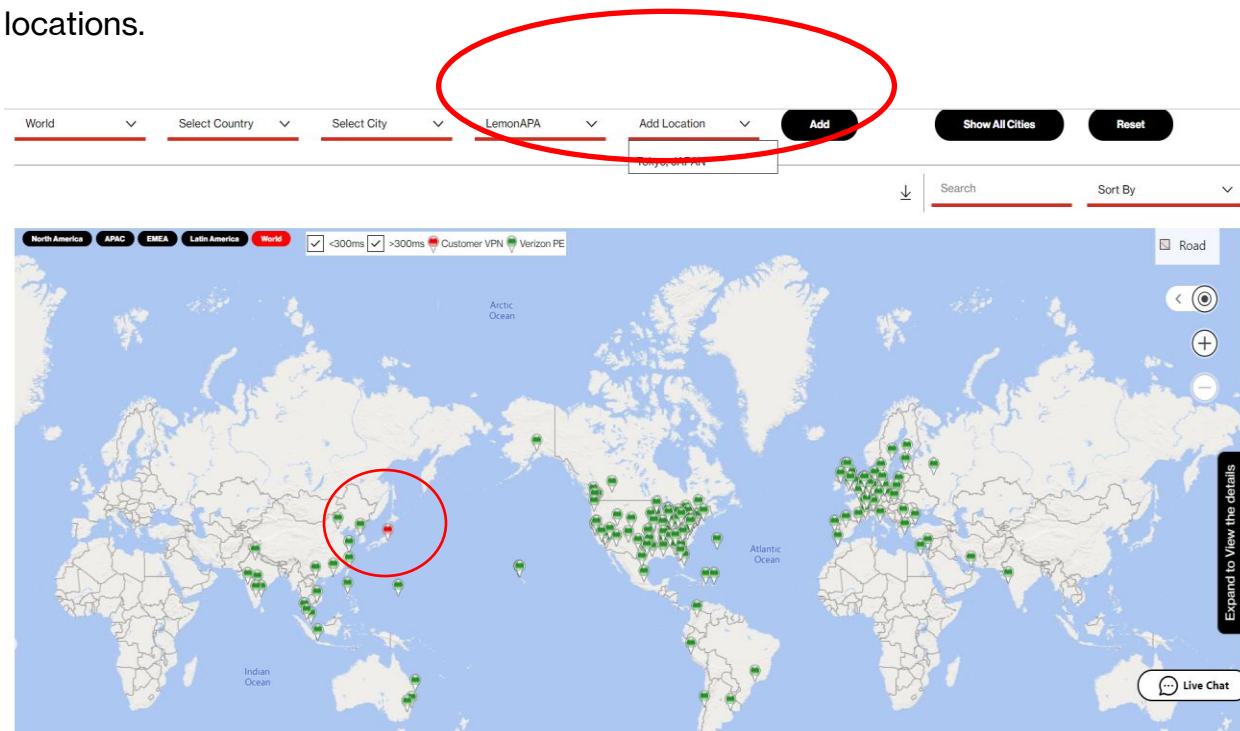
This section displays Verizon metrics for Network Transit Delay (Latency) between Private IP PE (provider edge) devices. This is not a report but rather a listing of those metrics. You can see what Verizon's Service Level Agreements (SLA) Latency metrics are between the selected sites.



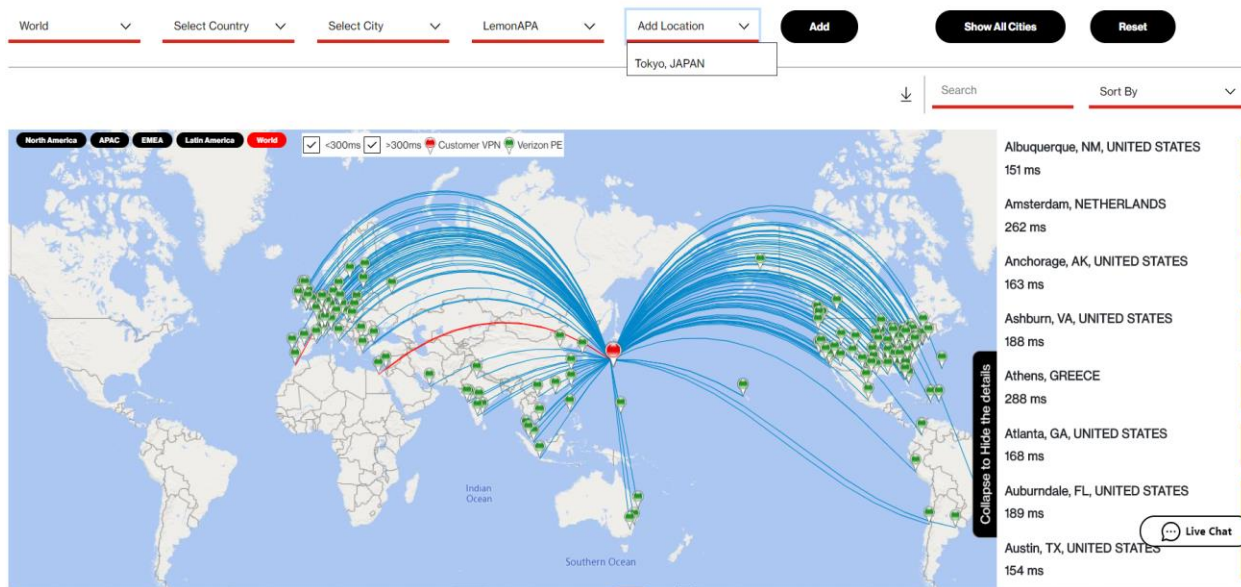
Select the region you want, if applicable. Then use the filters to view the region, country, or city that you want to view on the map. By clicking on any Verizon PE location/city we can display the latency measurements between that location and all other Verizon PE locations.



You can also view Network Transit Delay for User VPN sites by adding a VPN site(s) and clicking to see the relative transit delay metrics. In the below graph we added a user VPN site (Tokyo, Japan). By clicking now on Tokyo we can show its relative Network Transit Delay measurements between that location and all other Provider Edge router locations.



Network Transit Delay



APPENDIX

Quality of Service (QoS) Egress Traffic Profiles

PIP ETM General Configuration, PIP STD, PIP Data Centric and PIP Data/Voice Combined

The egress QoS policies referenced in the table below are for customers using 50% or less of the EF/Voice over IP CoS and are allocating more bandwidth for other applications, such as data and video.

Profile #	Profile Identifier	EF Egress	AF4	AF3	AF2	AF1	BE	Comments
1	_G1	50%	40%	39%	16%	1%	4%	Default profile – balanced allocation
2	_G2	50%	48%	20%	16%	12%	4%	Video-centric #1
3	_G3	50%	68%	12%	10%	8%	2%	Video-centric #2
4	_G4	50%	15%	20%	20%	1%	4%	Data-centric with emphasis on bulk-transfer applications
5	_G5	50%	15%	60%	60%	1%	4%	Data-centric with emphasis on transactional applications
6	_G6	50%	15%	40%	40%	1%	4%	Data-centric with balanced bulk-transfer and transactional applications
7	_G7	50%	15%	10%	10%	5%	30%	Data-centric with large percentage of unmarked (BE-marked) applications and bulk-transfer applications
8	_G8	50%	30%	10%	10%	5%	25%	Balanced QoS w/ ample video for a 384K video on a T1
9	_G9	50%	20%	30%	30%	10%	5%	Data-centric w/ balanced applications (matches HSBC policy)

Profile #	Profile Identifier	EF Egress	AF4	AF3	AF2	AF1	BE	Comments
10	_G10	50%	15%	20%	20%	5%	40%	Data-centric with large percentage of unmarked (BE-marked) applications and transactional applications
11	_G11	50%	30%	20%	20%	10%	20%	Data centric with balanced allocation
12	_G12	50%	60%	5%	10%	5%	20%	Video centric/minimum control traffic
13	_G13	50%	10%	40%	30%	5%	15%	Data balanced apps #2
14	_G14	50%	20%	25%	25%	10%	20%	Data balanced AF3/AF2 centric
15	_G15	50%	20%	10%	20%	40%	10%	Data centric with emphasis on Scavenger/Standard data apps

PIPETM Voice Centric Configuration

The egress QoS policies referenced in the table below are for customers using 90% of the EF/Voice over IP (VoIP) CoS for VoIP and are allocating more bandwidth for other applications, such as data and video.

Profile #	Profile Identifier	EF Egress	AF4	AF3	AF2	AF1	BE	Comments
1	_RT	90%	40%	39%	16%	1%	4%	Voice default-centric
2	_R2	90%	48%	20%	16%	12%	4%	Voice-centric and video-centric #1
3	_R3	90%	68%	12%	10%	8%	2%	Voice-centric and video-centric #2

4	_R4	90%	15%	60%	20%	1%	4%	Voice-centric and data-centric with emphasis on bulk-transfer applications
5	_R5	90%	15%	20%	60%	1%	4%	Voice-centric and data-centric with emphasis on transactional applications
6	_R6	90%	15%	40%	40%	1%	4%	Voice-centric and data-centric with balanced bulk-transfer and transactional applications
7	_R7	90%	15%	30%	10%	5%	30%	Voice-centric and data-centric with large percentage of unmarked (BE-marked) applications and bulk-transfer applications
8	_R8	90%	30%	20%	10%	5%	25%	Balanced QoS w/ ample video for a 384K video on a T1
Profile #	Profile Identifier	EF Egress	AF4	AF3	AF2	AF1	BE	Comments
9	_R9	90%	20%	35%	30%	10%	5%	Voice-centric w/ balanced applications (matches HSBC policy)
10	_R10	90%	15%	10%	20%	5%	40%	Voice-centric w/ large percentage of unmarked (BE-marked) applications and

								transactional applications
11	_R11	90%	30%	20%	20%	10%	20%	Voice centric with balanced allocation
12	_R12	90%	60%	5%	10%	5%	20%	Video centric/minimum control traffic
13	_R13	90%	10%	40%	30%	5%	15%	Voice/Data Balanced apps #2
14	_R14	90%	20%	25%	25%	10%	20%	Data Balanced AF3/AF2 Centric
15	_R15	90%	20%	10%	20%	40%	10%	Data-centric with emphasis on Scavenger/Standard Data Apps

Customer Edge Configuration Settings

STD QoS DPORT, and ETM to STD (Customer Managed)

The following configuration steps are specific to Cisco router platforms. For other vendor CPE, consult the user manual with regards to changing the interface bandwidth speed.

We recommend setting up an egress traffic shaping rate on your CE router's WAN interface according to your changed QOS settings. Follow these instructions to prepare your router for Dynamic Port changes.

!

```
policy-map parent
  class class-default
    shape average <DPORT-in-bps>
```

!

The policy map needs to be applied to the WAN interface in the outgoing direction.

!

```
interface <WAN Interface>
  service-policy output parent
```

!

For smaller and mid-size Cisco routers, the shape command uses a Tc default value of 25 milliseconds if no Bc, and Be values are specified with the shape command. For Ethernet WAN circuits, we recommend lowering the shape Tc value to 4 milliseconds and setting the Be to 0 to avoid buffering issues in the transmission path.

If your router does not shape to layer 1 speeds (most Cisco routers will not), be aware that the layer 2 encapsulation overhead is added AFTER the router shaped the traffic to the configured rate.

We recommend lowering the shape rates accordingly, especially for Ethernet WAN circuits. For Ethernet WAN circuits, our generic recommendation is to adjust the shaping speed to:

76% of your DPORT speed in case of pure VoIP traffic (avg. packet size of 78 bytes)

85% of your DPORT speed in case of mixed data and VoIP traffic (avg. packet size of 140 bytes)

94% of your DPORT speed in case of pure data traffic (avg. packet size of 404 bytes)

The recommended configuration is:

!

```
policy-map parent
```

```
    class class-default
```

```
        shape average <adjusted DPORT-in-bps> <adjusted DPORT-in-bps x 0.004> 0
```

!

EXAMPLE:

For a Fast Ethernet WAN circuit with a selected DPORT speed of 60 Mbit/s on a Cisco 7200, and a mixed VoIP and data traffic pattern, the recommended values and configuration are:

<adjusted DPORT-in-bps> : $60,000,000 \times 85\% = 51,000,000$

<adjusted DPORT-in-bps x 0.004> : $51,000,000 \times 0.004 = 204,000$

!

```
policy-map parent
```

```
    class class-default
```

```
        shape average 51000000 204000 0
```

!

```
interface FastEthernet0/0
```

```
    service-policy output parent
```

!

ETM QoS DPORT, DCAR, Custom Egress, and STD to ETM

The following configuration steps are specific to Cisco router platforms. For other vendor CPE, consult the user manual with regards to changing the queuing parameters. CBWFQ is typical for Silver CAR and LLQ/Priority Queuing is typical for Gold CAR.

We recommend setting up a nested QOS policy on your CE router's WAN interface according to your changed QOS settings. The outer (or parent) policy should shape all traffic according to your selected DPORT speed. The inner (or child) policy should contain bandwidth allocations according to your selected DCAR speed and Custom Egress profile. Follow these instructions to prepare your router for Dynamic CAR changes.

!

```
policy-map child
```

```
    class realtime
```

```
        priority <DCAR-in-kbps>
```

```
        police <DCAR-in-bps> conform-action transmit exceed-action drop
```

!

```
class priority
```

```
    bandwidth remaining percent <% for AF4 according to selected custom Egress profile #>
```

```
    random-detect dscp-based
```

```
class missioncritical
```

```
    bandwidth remaining percent <% for AF3 according to selected custom Egress profile #>
```

```
    random-detect dscp-based
```

```
class transactional
```

```
    bandwidth remaining percent <% for AF2 according to selected custom Egress profile #>
```

```
    random-detect dscp-based
```

```
class general
```

```
    bandwidth remaining percent <% for AF1 according to selected custom Egress profile #>
```

```
    random-detect dscp-based
```

```
class class-default
```

```
    bandwidth remaining percent <% for BE according to selected custom Egress profile #>
```

```
    random-detect dscp-based
```

```
!  
!  
policy-map parent  
    class class-default  
        shape average <DPORT-in-bps>  
        service-policy child  
!
```

The parent policy map needs to be applied to the WAN interface in the outgoing direction.

```
!  
interface <WAN Interface>  
    service-policy output parent  
!
```

For smaller and mid-size Cisco routers, the shape command uses a Tc default value of 25 milliseconds if no Bc, and Be values are specified with the shape command. For Ethernet WAN circuits, we recommend lowering the shape Tc value to 4 milliseconds and setting the Be to 0 to avoid buffering issues in the transmission path.

If your router does not shape to layer 1 speeds (most Cisco routers will not), be aware that the layer 2 encapsulation overhead is added AFTER the router shaped the traffic to the configured rate.

We recommend lowering the shape rates accordingly, especially for Ethernet WAN circuits. For Ethernet WAN circuits, our generic recommendation is to adjust the shaping speed to:

76% of your DPORT speed in case of pure VoIP traffic (avg. packet size of 78 bytes)

85% of your DPORT speed in case of mixed data and VoIP traffic (avg. packet size of 140 bytes)

94% of your DPORT speed in case of pure data traffic (avg. packet size of 404 bytes)

The recommended configuration for the parent policy is:

```
!  
policy-map parent  
    class class-default  
        shape average <adjusted DPORT-in-bps> <adjusted DPORT-in-bps x 0.004> 0
```

service-policy child

!

EXAMPLE:

For a Fast Ethernet WAN circuit with a selected DPORT speed of 60 Mbit/s, DCAR speed of 10 Mbit/s, a G1 Custom Egress profile on a Cisco 7200, and a mixed VoIP and data traffic pattern, the recommended configuration is:

<**DCAR**-in-kbps> : 10,000

<**DCAR**-in-bps> : 10,000,000

<% for **AF4** > : 40

<% for **AF3** > : 39

<% for **AF2** > : 16

<% for **AF1** > : 1

<% for **BE** > : 4

<**adjusted DPORT**-in-bps> : $60,000,000 \times 85\% = 51,000,000$

<**adjusted DPORT**-in-bps x 0.004> : $51,000,000 \times 0.004 = 204,000$

!

policy-map child

class realtime

priority 10000

police 10000000 conform-action transmit exceed-action drop

!

class priority

bandwidth remaining percent 40

random-detect dscp-based

class missioncritical

bandwidth remaining percent 39

random-detect dscp-based

class transactional

```
    bandwidth remaining percent 16
    random-detect dscp-based
class general
    bandwidth remaining percent 1
    random-detect dscp-based
class class-default
    bandwidth remaining percent 4
    random-detect dscp-based
!
policy-map parent
    class class-default
        shape average 51000000 204000 0
        service-policy child
!
interface FastEthernet0/0
    service-policy output parent
!
```

Glossary

Looking Glass is a no cost network statistics reporting functionality that is available to all Private IP customers globally. It provides the ability for view only 'Looking Glass' into your Private IP Network parameter settings. The following Network Attributes are available for viewing:

- VPN Level Information
- VPN Defaults
- Site Information
- PE Interface Info
- CE Interface info
- Class of Service Info
- VRF Parameters
- BGP Routing Info
- RIP Routing Info
- PIP Static Routes
- Site of Origin information

Configuration Parameter	Description
Multicasting RP Address	Multicasting Rendezvous Point Address
Multicasting MDT	Multicast distribution tree IP address
Apply Static RP ACL	Removes access list 20, only used by ICB for multiple static rendezvous points
Multicasting VPN	Turn up new sites with multicasting
Multicasting Number of Routes	Multicasting number of routes
Multicasting Routes Threshold	Multicasting routes threshold at which to generate warning message
Change Admin Status	Do a shutdown or no shutdown to set the admin status on the interface
MTU	Mean transmission unit
IP Verify Unicast	An anti-spoofing command, also needed on host sites with hub and spoke topologies
VPN Topology	Type of VPN topology

Redistribute	Redistribute routes learned from
Maximum Routes	Maximum routes for the VFR
Concord Enabled	Concord reporting enabled
Maximum Paths	Number of expected sites that will be sending out the same routes to load share amongst
EIBGP Load Sharing	Allows for external and internal BGP load sharing
BGP Import Optimization	Make the PE import the paths learned via all the route reflectors
Default Info Originate	A method of sending out a default route across our network
OSPF Default Info Originate	Redistributes the default route from BGP to OSPF
Routing Protocol	Routing protocol between the CE and PE
BGP Remote AS	BGP autonomous system number for the customer network
OSPF Cost	OSPF costing for the interface
Timers Keepalive	Changes the default BGP keepalive from 60 seconds
Timers Hold time	Changes the default BGP hold time from 180 seconds
BGP Send Community	Allows customers to send standard communities to us and we will send across the cloud
Allow AS In	Allows our own AS number to be seen by our PE routers x number of times
Default AS Override	Replaces the customer's AS number with our AS number if source and destination AS numbers are the same
Replace AS	Replace our private AS number 65000 with our registered AS number 1684 or a private one in range 64512-65535

Customer Support & Training

Customer Support

Contact customer support for product and general platform questions or errors.

Contact your account team with any account specific questions on equipment or service, pricing information, or adding additional users to the Verizon Enterprise Center.

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- EMEA Customers: 00.800.4321.5432
- APAC Customers: vec-support@verizon.com

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