

# Dynamic Network Manager User Guide - Private IP

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## 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 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 (VERIZON ENTERPRISE CENTER) 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.



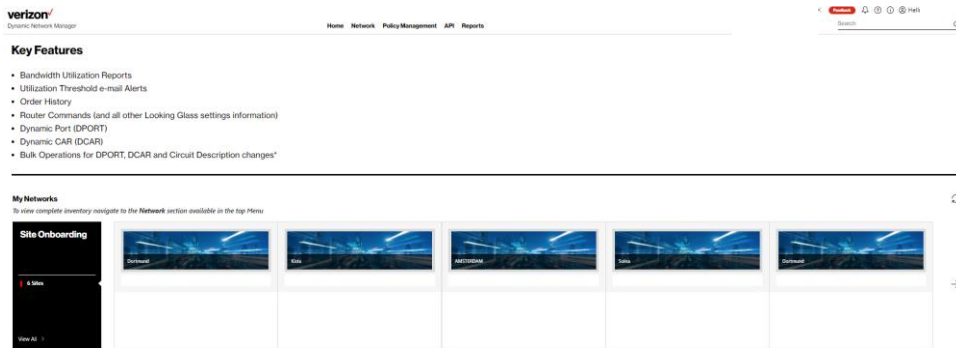
## Accessing Dynamic Network Manager

Click Dynamic Network Manager on the Verizon Enterprise Center (VEC) home page to go to the DNM Dashboard page. It can be found under “Managed Accounts / Product Tools” or when you scroll down under product tools.

1. Go to <http://sso.verizonenterprise.com>. The sign in page appears.
2. Enter your user name and password and Click Sign In.
3. Verizon Enterprise Center home page appears.
4. Click on Dynamic Network Manager, found under Product Tools.

## 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.



Select **Network** to see your Verizon Private IP, Internet Dedicated, Ethernet Switched E-Line or Secure Cloud Interconnect (SCI) Services.

| Private IP   | Public IP                      | SCI  | Ethernet               | Service Management               |
|--|--------------------------------|--|------------------------|----------------------------------|
| View All<br>High Speed Sites<br>Pending Activation | View All<br>Pending Activation | View All<br>Microsoft<br>AWS<br>Oracle<br>Google | Access<br>ELAN<br>ELNE | Application Delivery Management? |

- Router Commands (and all other Looking Glass settings information)
- Dynamic Port (DPORT)
- Dynamic CAR (DCAR)
- Bulk Operations for DPORT, DCAR and Circuit Description changes\*

The Dashboard displays a menu of your Verizon Enterprise Center 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

Private IP

Inventory

All VPNs

Bulk Operations Export

| Circuit ID   | Port Speed                        | Encapsulation  | Service Type   | Actions       |
|--|-----------------------------------|--|--|---------------|
| C0108468<br>Service ID 140124672<br>PVC 5820282<br>VRF Name V795957:ACMEFabrication<br>VPN Address<br>180 ALLEN RD ATLANTA, GA<br>30328-4682 USA | 9 Mbps<br>Realtime CAR<br>10 Kbps | ETHERNET<br>Traffic Rule<br>G1<br>Network IPv4 Address<br>68139174.05  | Not Managed<br>Description<br>Storv-44<br>Entitlements | Active        |
| C0103900<br>Service ID 196707131<br>PVC 5928656<br>VRF Name Vb10857:ACMEFabrication<br>VPN Address   | 10 Mbps<br>Realtime CAR<br>0 Kbps | ETHERNET<br>Traffic Rule<br>G1<br>Network IPv4 Address<br>152181179.42 | Not Managed<br>Description<br>test4<br>Entitlements    | Not Available |

Birth Certificate Health Test Progress

**Birth certificate:** This option is for information only and allows users to download the initial details for the circuit. This includes the RFC 1564 test, if it exists, the initial activation of a circuit. It will provide the Activation date, user that activated the circuit, RFC 1564 test results if they exist. Current PVC / EVC Configuration and Traffic Utilization.

**Health test program:** This option is for users to verify the health of the logical systems to ensure all systems are accurate. Users can use this option, if they are seeing order failures to run through to verify DNM that interact with DNM.

verizon  
Dynamic Network Manager

Home Network VNS Operations API Reports Administration

Private IP

Bulk Operations Export

| Circuit ID  | Port Speed                          | Encapsulation   | Service Type  | Actions  |
|---|-------------------------------------|---|---|--|
| XXXXXXXXXX<br>Service ID XXXXXXXXX<br>PVC XXXXXXXXX<br>VPN XXXXXXXXX<br>XXXX XXXXXXXXX<br>RD CA 91350 USA | 1536 Kbps<br>Realtime CAR<br>0 Kbps | FR<br>Traffic Rule<br>G1<br>Equipment IP<br>XXXXXXXXXX          | Not Managed<br>Description<br>backupCASA<br>Entitlements<br>LEG | <ul style="list-style-type: none"> <li>Utilization Notifications</li> <li>Change Notifications</li> </ul> Activation Status<br>Pending<br>Start Schedule |
| XXXXXXXXXX<br>Service ID XXXXXXXXX<br>PVC XXXXXXXXX<br>VPN XXXXXXXXX<br>XXXX XXXXXXXXX<br>XXXXXXXXXX      | 8 Mbps<br>Realtime CAR<br>5000 Kbps | ETHERNET<br>Traffic Rule<br>R2<br>Equipment IP<br>68.139.174.85 | Not Managed<br>Description<br>Entitlements<br>LEG               | <ul style="list-style-type: none"> <li>Utilization Notifications</li> <li>Change Notifications</li> </ul> Activation Status<br>Pending<br>Start Schedule |

Select circuit list views with different levels of detail

### Search, notification alert, documentation & help, interactive tour

The Dashboard offers Search commands, notification alerts as well as documentation and help options. See the Icon list for each below.

verizon  
Dynamic Network Manager

Home Network Policy Management API Reports

Private IP Public IP SCI Ethernet

Global Search Notification Alert Documentation & Help

Take the interactive tour  
Show me



## Documentation & help, interactive tour

The documentation help screen provides links to user guides, help desk for each product.

### Documentation & Help

|  |  |  |
|--|--|--|
| <b>Private IP</b> <ul style="list-style-type: none"><li>Help Desk</li><li>User Guide</li><li>Welcome Kit</li></ul>   | <b>Internet Dedicated</b> <ul style="list-style-type: none"><li>Help Desk</li><li>User Guide</li><li>Welcome Kit</li></ul> | <b>Secure Cloud Interconnect</b> <ul style="list-style-type: none"><li>Help Desk</li><li>Welcome Kit</li></ul> |
| <b>DNM Activation</b> <ul style="list-style-type: none"><li>User Guide</li></ul>   | <b>E-Line</b> <ul style="list-style-type: none"><li>Help Desk</li><li>User Guide</li></ul>                                 |  |
| <b>VEC Support</b> <p>Verizon Enterprise Center Help Desk<br/>US and Canada Customers<br/>Live Chat (Sun 8 PM - Sat 8 PM ET)<br/>800.569.8799 (Mon - Fri 9 AM - 6 PM ET)</p> <p>EMEA, APAC, LATAM Customers<br/>Live Chat (Mon 1 AM - Sun 1 AM GMT)<br/>00.800.4321.5432 (Mon - Fri 9 AM - 5 PM GMT)</p> |  |  |

## 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](#)

|                         |                            |                                 |                    |                      |
|-------------------------|----------------------------|---------------------------------|--------------------|----------------------|
| <b>PVC ID</b> XXXXXXXX  | <b>Circuit ID</b> XXXXXXXX | <b>VPN Name</b> XXXXXXX-XXXXXXX | <b>Address</b>     | <a href="#">View</a> |
| <b>Site ID</b> XXXXXXXX | <b>Description</b> Data    |                                 | 400                | ♥                    |
| <b>VPN ID</b> XXXXXXXX  | <b>Description Data</b>    |                                 | INTERNATIONAL PKWY |                      |
|                         | Update May 3rd             |                                 | RICHARDSON         |                      |
|                         | second time                |                                 | TX USA 75081-6606  |                      |

---

**IDA** 1 record(s) found [show more](#)

|                         |                            |                          |                    |                      |
|-------------------------|----------------------------|--------------------------|--------------------|----------------------|
| <b>PVC ID</b> XXXXXXXX  | <b>Circuit ID</b> XXXXXXXX | <b>VPN Name</b> Internet | <b>Address</b>     | <a href="#">View</a> |
| <b>Site ID</b> XXXXXXXX | <b>Description</b>         |                          | 400                | ♥                    |
| <b>VPN ID</b> XXXXXXXX  |                            |                          | INTERNATIONAL PKWY |                      |
|                         |                            |                          | RICHARDSON         |                      |
|                         |                            |                          | TX USA 75081-6606  |                      |

## Search Filter Options

**VPN Search**

Home Network API Reports

Private IP

|                         |                             |                             |
|-------------------------|-----------------------------|-----------------------------|
| Circuit ID: 101010101   | First Speed: 100 Mbps       | Encapsulation: P1           |
| Service ID: P1C-1010101 | Business CDR: 10 Mbps       | Traffic Rule: 01            |
| VPN CDR: P1C            | Equipment ID: 01-101-101-01 | Equipment IP: 01-101-101-01 |

|                         |                             |                             |
|-------------------------|-----------------------------|-----------------------------|
| Circuit ID: 101010101   | First Speed: 10 Mbps        | Encapsulation: P1           |
| Service ID: P1C-1010101 | Business CDR: 1 Mbps        | Traffic Rule: 01            |
| VPN CDR: P1C            | Equipment ID: 01-101-101-01 | Equipment IP: 01-101-101-01 |

|                         |                             |                             |
|-------------------------|-----------------------------|-----------------------------|
| Circuit ID: 101010101   | First Speed: 10 Mbps        | Encapsulation: P1           |
| Service ID: P1C-1010101 | Business CDR: 1 Mbps        | Traffic Rule: 01            |
| VPN CDR: P1C            | Equipment ID: 01-101-101-01 | Equipment IP: 01-101-101-01 |

**Refine Search**

**Filter**

VPN  Country

Description

State  City

Street Address  Zip Code

Encapsulation

**Sort**

First  Order By

Second  Order By



## Export

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

The screenshot shows the Verizon Dynamic Network Manager interface. At the top, there is a navigation bar with 'Home', 'Network', 'Policy Management', 'API', and 'Reports'. Below this is a search bar and a 'Private IP' section. The main content is a table with columns for 'All VPNs', 'Bulk Operations', and 'Export'. The table contains two rows of data, each representing a Private IP configuration. The first row has a 'Circuit ID' of C0108468, 'Port Speed' of 9 Mbps, 'Encapsulation' of ETH/NET, and 'Service Type' of Nat Managed. The second row has a 'Circuit ID' of C0131900, 'Port Speed' of 10 Mbps, 'Encapsulation' of ETH/NET, and 'Service Type' of Nat Managed. A green arrow points to the 'Export' button in the top right corner of the table.

## Site activations

Users can activate their network circuits and EVC's using DNM. Site Activation User guide was developed specific for that function. Refer to the "?" on the top right section of the home page to pull open the documentation and step by step guide.

### Documentation & Help

The screenshot shows the 'Documentation & Help' section. It is organized into three main categories: 'Private IP', 'Internet Dedicated', and 'Secure Cloud Interconnect'. Under 'Private IP', there are links for 'Help Desk', 'User Guide', 'Welcome Kit', and 'DNM Activation'. A green arrow points to the 'DNM Activation' link. Under 'Internet Dedicated', there are links for 'Help Desk', 'User Guide', 'Welcome Kit', and 'E-Line'. Under 'Secure Cloud Interconnect', there is a link for 'Help Desk'. At the bottom, there is a 'VEC Support' section with contact information for Verizon Enterprise Center and EMEA ADAC LATAM Customers.




## View circuit details

You can view the details of the circuit by clicking on the + or open the drop-down box and click on View details.

The screenshot shows a table of circuits under the 'Private IP' section. The table has columns for Circuit ID, Service ID, PVC, VPN Name, VPN Address, Port Speed, Realtime CAR, Encapsulation, Traffic Rule, Equipment IP, and Service Type. A dropdown menu is open for the first circuit, showing options like View Details, Modify Bandwidth, Network Settings, View Orders, Router Commands, View Utilization, and VPN Details. Green arrows point to the '+' icon and the dropdown menu.

| Circuit ID | Service ID | PVC     | VPN Name         | VPN Address                             | Port Speed | Realtime CAR | Encapsulation | Traffic Rule | Equipment IP  | Service Type |
|------------|------------|---------|------------------|---|------------|--------------|---------------|--------------|---------------|--------------|
| CD102468   | 14524672   | 5820282 | ACME-Fabrication | 180 ALLEN RD ATLANTA, GA 30328-4862 USA | 9 Mbps     | 512 Kbps     | ETHERNET      | G4           | 68.139.174.85 | Not Managed  |
| CD101900   | 15070701   | 5828656 |                  |   | 10 Mbps    |              | ETHERNET      |              |               | Not Managed  |

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 / threshold alerting options

Utilization notifications allow customers to set up Utilization Bandwidth alerts. Customers can choose which circuit to enable threshold alerting as well as the percentage of utilization from 30% up to 90%. They can decide to alert daily, weekly or monthly based on their preferences. Follow these steps to activate threshold alerting on your specific sites. Utilization Alerting is a user selected option. The tool will notify the user who has subscribed to the alert only. The alert will come via email to the specific user.

There are two types of Utilization Alerting to choose from

- 1) Busy Hours. This allows each circuit to be set up to alert when the circuit utilization exceeds the selected percentage. The user is provided the option to select the following options:
  - a) Alerting time period average: Day, Week, or Month. The Utilization statistics are summed together and averaged over this time period.
  - b) Busy Hours: User chooses the busy hours for the given circuit
  - c) Days to monitor: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday
  - d) Time Zone: User is allowed to select the time zone for that circuit
  - e) Alerting Percentage: User selected the percentage, 60, 70, 80% when the average exceeds this percentage an alert is provided

Users will select the specific criteria. Based on the selections, the Utilization Statistics will be averaged and alert if the value exceeds the given alert percentage value.

Example: Circuit C123456 is in New York. User selects these options:

- a) Alert Average of weekly
- b) Busy hours of 7 am to 6 pm
- c) Days to monitor: Monday through Friday
- d) Time Zone of EST
- e) Alerting Percentage of 80%

Tool will average the Utilization Statistics weekly for this circuit. The utilization data will be pulled for all 5 minutes increments within the 7 am to 6 pm EST for Monday through Friday. If the average for the week exceeds 80% an email alert will be sent to the user who subscribed to the alerts.

- 2) 30 Days or Daily Average. This is the daily average of the sum of the utilization statistics captured for the 30 days for each 5-minute increment within a 24-hour day.

Example: All Utilization data is summed together for the full month, for every 5-minute increment and averaged for the number of days. If the average exceeds the percentage selected the tool will alert the user who subscribes to the alert.

### How to set up utilization notifications

From the Circuit listing page

|  |                                 |  |   |   |   |
|--|---------------------------------|--|---|---|---|
| <b>Circuit ID</b> C1000573<br><b>Service ID</b> 30985914   | <b>Port Speed</b><br>1536 Kbps  | <b>Encapsulation</b><br>ETHERNET         | <b>Routing Protocol</b><br>BGP                                    | <b>Entitlements</b><br>Pencil icon              | <b>Actions</b><br>Open +  |
| <b>PVC</b> 5418246<br><b>Service Address</b><br>906 N BOWSER RD<br>RICHARDSON, TX 75081-<br>2822 USA | <b>Network Type</b><br>Internet | <b>IPv4 Address</b><br>152.179.253.32/30 | <b>Global Region</b><br>Richardson TX-1<br><b>ADD ON Security</b> | <b>Preferences</b><br>Utilization Notifications | <b>Description</b><br>Circuit with DNS<br><b>Activation Status</b><br>PENDING |

Next to the preferences, Click on pencil.

## Preferences for Circuit C0232107



Utilization Notifications

Alert Mode:

Select ▼  
Busy Hours  
30 Days

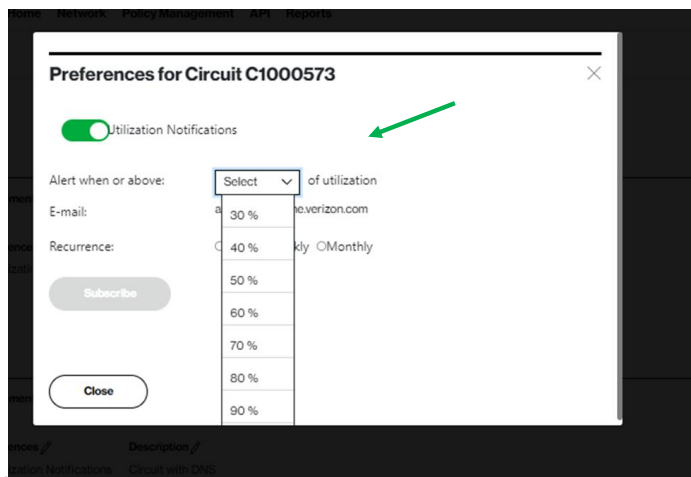


Click the Utilization Notifications toggle to change it from Red to Green.

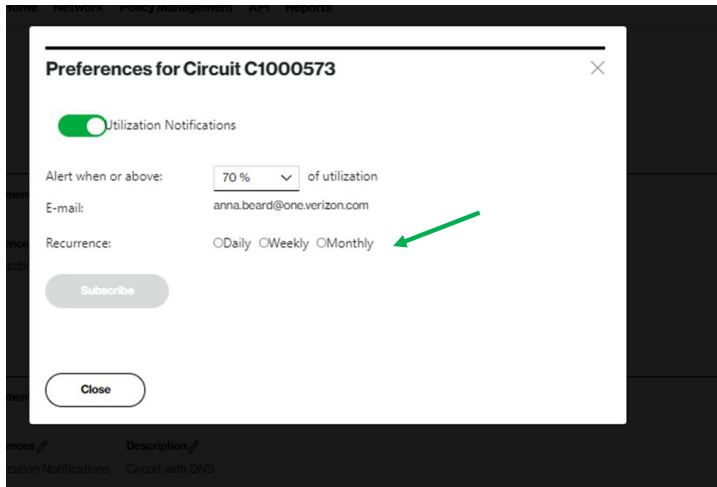
Choose from the drop down the type of utilization alerting preferred.

- 1) Busy Hours.
- 2) 30 Days (30 Daily Average).

### How to set up 30 day daily average alerting



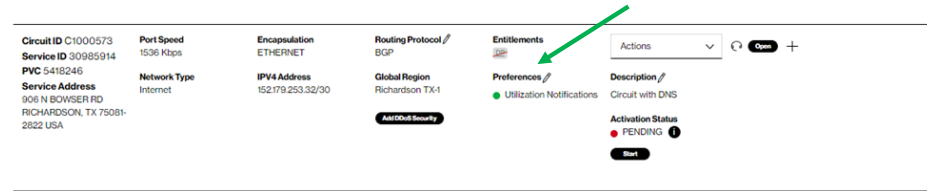
Select Alert Percentage from drop down box.



Select how often you want to be alerted; Daily, Weekly or Monthly.

Click on Subscribe.

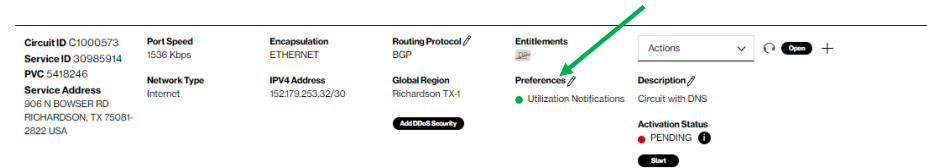
Click Close.

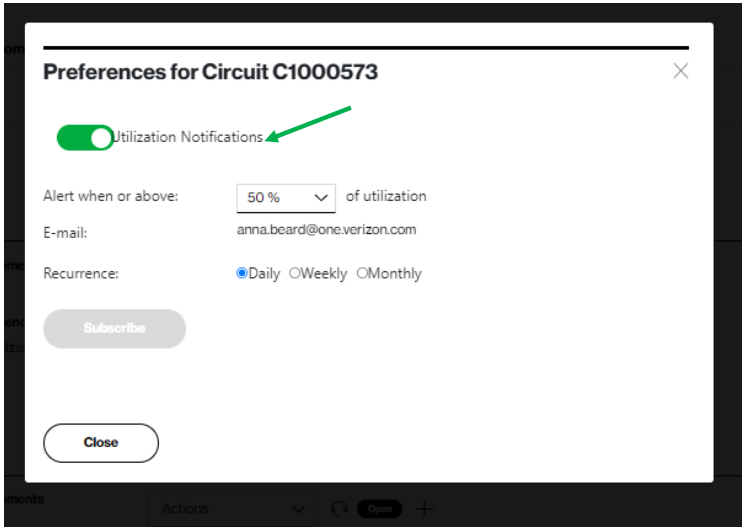


Utilization Notification will display Green as active.

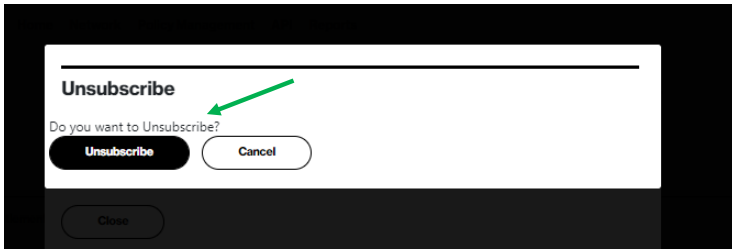
## How to turn off utilization alerting

To turn the notifications off, just start from the beginning, click on the Pencil next to Preferences.

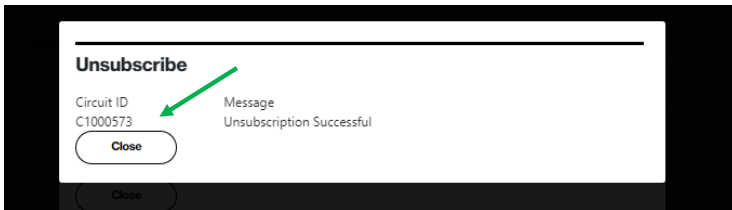




Click on Green Button next to Utilization Notifications.



Click on Unsubscribe.



It will confirm Unsubscribe is successful, Click close.



## How to set up busy hours alerting

### Preferences for Circuit C0232107 ✕

Utilization Notifications

Alert Mode:

Select ▼  
Busy Hours  
30 Days

Users will select Busy Hours from the drop down.

### Preferences for Circuit C0232107 ✕

Utilization Notifications

Alert Mode:

Busy Hours ▼

Busy Hours:

Start Time: 9:00 AM Stop Time: 5:00 PM

Busy Days:

Monday ✕ Tuesday ✕ Wednesday ✕ Thursday ✕ Friday ✕ ✕ ▼

Time Zone:

Select ▼

Threshold:

Select ▼

Alert Calculation Window:

Daily  Weekly  Monthly

E-mail:

anna.beard@one.verizon.com

Subscribe

The system has default most common values.

Click the Utilization Notifications toggle to change it from Red to Green.

Users should select actual values for each selection option as needed for their circuit.

Once all selections are complete the "Subscribe" button will appear. Click on the Subscribe button.





Tool will return a “Subscription Successful” when active.

If one of the options needs to be changed.

**Preferences for Circuit C0232107** ✕

Utilization Notifications

Alert Mode: Busy Hours ▾

Busy Hours: Start Time:  Stop Time:

Busy Days: Monday x Tuesday x Wednesday x Thursday x Friday x x ▾

Time Zone: CAT-Central African Time ▾

Threshold: 30 ▾

Alert Calculation Window:  Daily  Weekly  Monthly

E-mail: anna.beard@one.verizon.com

Update Unsubscribe

Change the specific option(s) that requires to be changed.

Click on “Update”.



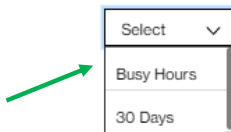
Tool will return the green bar with the “Subscription Successful”.

## Unsubscribe from busy hours

### Preferences for Circuit C0232107

Utilization Notifications

Alert Mode:



Users will select “Busy Hours” from the drop-down menu.

### Preferences for Circuit C0232107

Utilization Notifications

Alert Mode:

Busy Hours ▾

Busy Hours:

Start Time: 9:00 AM Stop Time: 5:00 PM

Busy Days:

Monday x Tuesday x Wednesday x Thursday x Friday x ▾

Time Zone:

CAT-Central African Time ▾

Threshold:

30 ▾

Alert Calculation Window:

Daily  Weekly  Monthly

E-mail:

anna.beard@one.verizon.com

Update

Unsubscribe

Users will select the “Unsubscribe” button.



Tool will respond with “Subscription Successful”.

## 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.

All VPNs Bulk Operations Export

|   |  |   |  |  |
|---|--|---|--|--|
| <b>Circuit ID</b> C0108468<br><b>Service ID</b> 146124672<br><b>PVC</b> 5820282<br><b>VPN</b> ACME-Fabrication<br><b>VRF Name</b> V795957:ACMEFabrication | <b>Port Speed</b><br>8 Mbps<br><b>Realtime CAR</b><br>256 Kbps | <b>Encapsulation</b><br>ETHERNET<br><b>Traffic Rule</b><br>R2<br><b>Equipment IP</b><br>68.139.174.86 | <b>Service Type</b><br>Not Managed<br><b>Description</b><br>Description for C0108468<br><b>Entitlements</b><br>✔ ✔ ✔ | <b>View Details</b> <span>Open</span><br><b>Preferences</b><br>● Utilization Notifications<br>● Change Notifications<br><b>Activation Status</b><br>● Active |
|---|--|---|--|--|

VPN Address  
180 ALLEN RD ATLANTA, GA  
30329-4882 USA

Details **Network Settings** Orders Diagnostics Utilization Virtual Services Cloud Services Other VRF

---

### General Interface Configuration

|                         |                    |                                      |   |
|-------------------------|--------------------|--------------------------------------|---|
| <b>Router Name</b>      | ATL29E01           | <b>Encapsulation</b>                 | ETHERNETVLAN : 495 VLAN : 495   |
| <b>Router Type</b>      | ASR9K              | <b>IPv4 Address / Prefix</b>         | 68.139.174.85 / 30  |
| <b>Access Type</b>      | ETH10Gig           | <b>IPv4 MTU</b>                      | —   |
| <b>Interface Name</b>   | TenGigE0/7/0/3.427 | <b>Shape Adjustment for Ethernet</b> | 85% <span style="display: inline-block; width: 85%; height: 10px; background-color: green; vertical-align: middle;"></span> |
| <b>Routing Protocol</b> | 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                    |                           |                           |

**IP4 eBGP Routing Information**

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

**IP6 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<br>ATLANTA, GA<br>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 your specific requirements. Use at your own risk! If you are not sure about the proper use of a command please seek appropriate advice.

```

1---- Sample Interface configuration WITHOUT VLAN tagging enabled-----
interface FastEthernet0/0 for GigabitEthernet0/0
description Verizon MPLS VPN: ACME-Fabrication; Site-Circuit: atlanta-ga_c0188468-146124672-5829282
ip address 68.139.174.86 255.255.255.252
no shutdown
speed 100 for speed 10000 for Gige
full-duplex
!

```

## STD QoS DPORT, and ETM to STD\*

The Customer Edge (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 the 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** C0136517  
**Service ID** 1170150988  
**PVC** 5955965  
**VPN EZE-MAR17-USA-NVDQ143**  
**VRF Name** Vb66044:E2EMAR17USANVDQ143  
**VPN Address**  
 1600 W 7TH ST FORT WORTH, TX 76102-2504 USA

**Port Speed**  
10 Kbps

**Realtime CAR**  
0 Kbps

**Encapsulation**  
ETHERNET

**Traffic Rule**  
G1

**Network IPv4 Address**  
68.130.243.210

**Service Type**  
Not Managed

**Description**  
Test - yahzaodjd

**Entitlements**

View Orders ⌵ Open

**Preferences**

- Utilization Notifications
- Change Notifications

**Activation Status**

LiveTop

↓ Birth Certificate

Health Test Progress

Details
Network Settings
Orders
Diagnostics
Utilization
Virtual Services
Cloud Services
Other VRF

Details
Network Settings
Orders
Diagnostics
Utilization
Virtual Services
Cloud Services
Other VRF

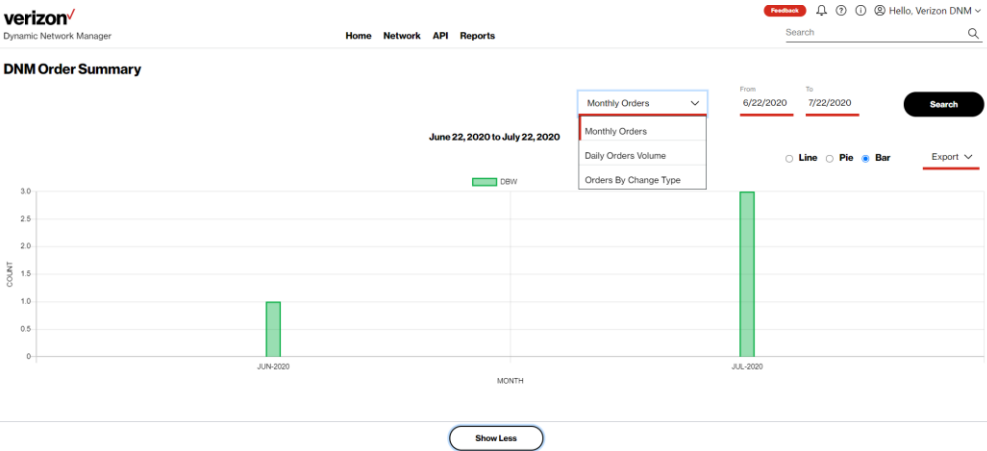
**Orders** ⓘ Search

| Order Number | CircuitId | Status        | Created Date                  | Scheduled Date                | BillingId | Order Type | Previous Port Speed | Current Port Speed | User Id                              | Status Date                   | Change Type       | Audit Logs |
|--------------|-----------|---------------|-------------------------------|-------------------------------|-----------|------------|---------------------|--------------------|--------------------------------------|-------------------------------|-------------------|------------|
| 2822568      | C0136517  | COMPLETE<br>0 | 2019/10/11<br>11:15:14<br>GMT | 2022/01/07<br>16:00:15<br>GMT |           | LG         | 0 Kbps              | 0 Kbps             | testa_amer                           | 2019/10/11<br>11:16:16<br>GMT | Shaping<br>Adjust | +          |
| 2822567      | C0136517  | COMPLETE<br>0 | 2019/10/11<br>11:14:49<br>GMT | 2022/01/07<br>16:00:15<br>GMT |           | LG         | 0 Kbps              | 0 Kbps             | testa_amer                           | 2019/10/11<br>11:15:52<br>GMT | Shaping<br>Adjust | +          |
| 2792028      | C0136517  | COMPLETE<br>0 | 2019/01/30<br>07:32:39<br>GMT | 2022/01/07<br>16:00:15<br>GMT | U0137262  | DRW        | 0 Kbps              | 400 Mbps           | 393hwarya.narasimhan@one.verizon.com | 2019/05/29<br>02:57:42<br>GMT |                   | +          |

### 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  Order Pending  Order Failed  Order Completed

Enter Search Criteria

|  |  |  |   |  |
|--|--|--|---|--|
| <b>Order ID</b> 3074967<br><b>Circuit ID</b> WOV32760<br><b>User ID</b> verizondnm@gmail.com | <b>Status</b> COMPLETED<br><b>Order Type</b> DBW | <b>Port Speed</b> 512 Kbps<br><b>Change Type</b> | <b>Billing ID</b> 00209854<br><b>Scheduled Date [GMT]</b> 2020/07/18 18:30:06 GMT | <b>Billing Status</b><br><b>Status Date [GMT]</b> 2020/07/18 18:30:06 GMT                  |
| <b>Order ID</b> 3073934<br><b>Circuit ID</b> WOV32760<br><b>User ID</b> verizondnm@gmail.com | <b>Status</b> COMPLETED<br><b>Order Type</b> DBW | <b>Port Speed</b> 768 Kbps<br><b>Change Type</b> | <b>Billing ID</b> 00209854<br><b>Scheduled Date [GMT]</b> 2020/07/19 22:30:05 GMT | <b>Billing Status</b><br><b>Status Date [GMT]</b> 2020/07/19 22:30:05 GMT                  |
| <b>Order ID</b> 3073549<br><b>Circuit ID</b> C0108468<br><b>User ID</b> verizondnm@gmail.com | <b>Status</b> COMPLETED<br><b>Order Type</b> DBW | <b>Port Speed</b> 8 Mbps<br><b>Change Type</b>   | <b>Billing ID</b><br><b>Scheduled Date [GMT]</b> 2020/07/08 21:30:15 GMT          | <b>Billing Status</b> BILLING NOTIFIED<br><b>Status Date [GMT]</b> 2020/07/08 21:30:15 GMT |
| <b>Order ID</b> 3071966<br><b>Circuit ID</b> WOV32760<br><b>User ID</b> verizondnm@gmail.com | <b>Status</b> COMPLETED<br><b>Order Type</b> DBW | <b>Port Speed</b> 512 Kbps<br><b>Change Type</b> | <b>Billing ID</b> 00209854<br><b>Scheduled Date [GMT]</b> 2020/06/29 18:30:09 GMT | <b>Billing Status</b><br><b>Status Date [GMT]</b> 2020/06/29 18:30:09 GMT                  |

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 displays the Verizon Network Manager interface for a specific circuit. At the top, key details are listed: Circuit ID W0V32760, Service ID, PVC 1795192, VPN LemonAPA, JAPAN N/A JPN, Port Speed 1536 Kbps, Encapsulation FR, Service Type Not Managed, Realtime CAR 112 Kbps, Traffic Rule G1, Equipment IP 206.155.31.17, and Activation Status Not Available. Below this is a navigation bar with tabs for Details, Equipment, PE Settings, Orders, Diagnostics (selected), Utilization, Hosted Services, Cloud Services, and Other VRF. The Router Commands section is active, showing a dropdown menu with the following options: 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 [Serial3/0/4/12:1.675], show ip vrf interfaces [V80575:LemonAPA], show ip bgp vpnv4 vrf [V80575:LemonAPA] summary, and show ip bgp vpnv4 vrf [V80575:LemonAPA] neighbors [206.155.31.18] advertised-routes. A feedback icon is visible on the right side of the interface.

## Ethernet Access pre activation test (US only)

Users can issue an Ethernet Access test prior to activating the circuit.

If all the below conditions are satisfied DNM allows the Ethernet Access Test and will display the Ethernet Access Test Results tab.

### Conditions:

- Encapsulation must be Ethernet
- Region must be US domestic Circuit
- Port Speed must be less than or equal to 1GB
- Circuit Activation Status cannot be active

### Submission of the Test Steps:

1. Click Router Commands under Site Details. The Router Commands section appears above Site Details.
2. Select the Ethernet Test from the Router Command drop-down list.
3. Initiate the Test.



## Ethernet test tab

Circuit ID C0138656  
Service ID 136265597  
PVC 5971707  
VPN EZE-MAR17-USA-NVDO143  
VRF Name V668944-EZEMAR17USANVDO1-43-etc  
VPN Address  
750 WASHINGTON BLVD  
STAMFORD, CT USA

Port Speed  
10 Mbps  
Realtime CAR  
0 Kbps

Encapsulation  
ETHERNET  
Traffic Rule  
GT  
Equipment IP  
68.100.242.78

Service Type  
Not Managed  
Description  
description1-test-252hNov test  
Entitlements  
[Green Bar]

Router Commands [Dropdown] [Open]

Preferences  
[ ] Utilization Notifications  
[ ] Change Notifications

Activation Status  
● PENDING [1]

[Retry Activation]

Details Network Settings Orders **Diagnostics** Utilization Virtual Services Cloud Services Other VRF

Router Commands

**Ethernet Test**

Ethernet Test [Start Test]

Ethernet Test Result

Click Start Test.

Circuit ID C0138656  
Service ID 136265597  
PVC 5971707  
VPN EZE-MAR17-USA-NVDO143  
VRF Name V668944-EZEMAR17USANVDO1-43-etc  
VPN Address  
750 WASHINGTON BLVD  
STAMFORD, CT USA

Port Speed  
10 Mbps  
Realtime CAR  
0 Kbps

Encapsulation  
ETHERNET  
Traffic Rule  
GT  
Equipment IP  
68.100.242.78

Service Type  
Not Managed  
Description  
description1-test-252hNov test  
Entitlements  
[Green Bar]

Router Commands [Dropdown] [Open]

Preferences  
[ ] Utilization Notifications  
[ ] Change Notifications

Activation Status  
● PENDING [1]

[Retry Activation]

Details Network Settings Orders **Diagnostics** Utilization Virtual Services Cloud Services Other VRF

Router Commands

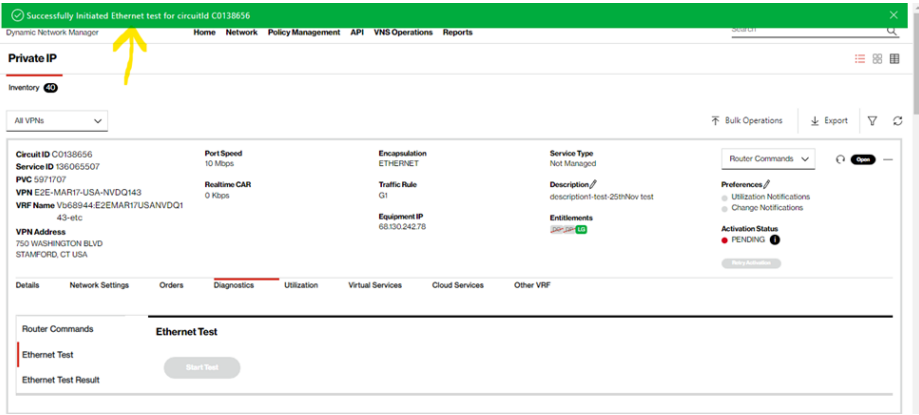
**Ethernet Test**

Ethernet Test [Start Test]

Ethernet Test Result

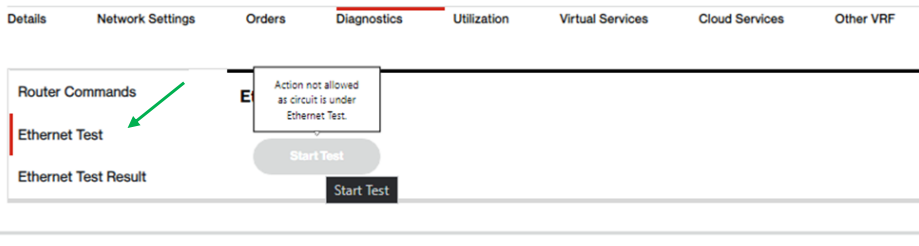
Click Continue, after Confirmation.

Green Bar will appear which states the Ethernet Access Test was successfully submitted.



After Ethernet test is completed

1. Ethernet test results option will appear.
2. Click Ethernet Test Result.



Response from Test

Ethernet Access Test Results



Details Network Settings Orders **Diagnostics** Utilization Virtual Services Cloud Services Other VRF

---

Router Commands

**Ethernet Test Result**

| Event      | Sum Cd | History Key | Date                      |
|------------|--------|-------------|---------------------------|
| Activation | TOK    | 053551764   | 21-JUN-21 07:22:05.681000 |

```

-----
Y1564 Service Configuration Results : OK
-----
FAIL/PASS          pass  pass  pass  pass
-----
Duration (secs)    62    62    62    62
Frame Size         128   512   1518  8192
Test Phase         cir   cir   cir   cir
  
```

[Download PDF](#)

| Event       | Sum Cd | History Key | Date                      |
|-------------|--------|-------------|---------------------------|
| Maintenance | TOK    | 053551898   | 21-JUL-21 07:22:05.681000 |

## Bandwidth utilization

Utilization report will be displayed for the last 30 days. In addition, users have an option to view bandwidth utilization reports with specific date ranges for the last 12 months. This new feature is available as of January 2022.

Click on the Utilization tab.

Details Network Settings Orders **Utilization** Virtual Services Cloud Services Other VRF

---

**Bandwidth Utilization**

Circuit ID: WOV30609

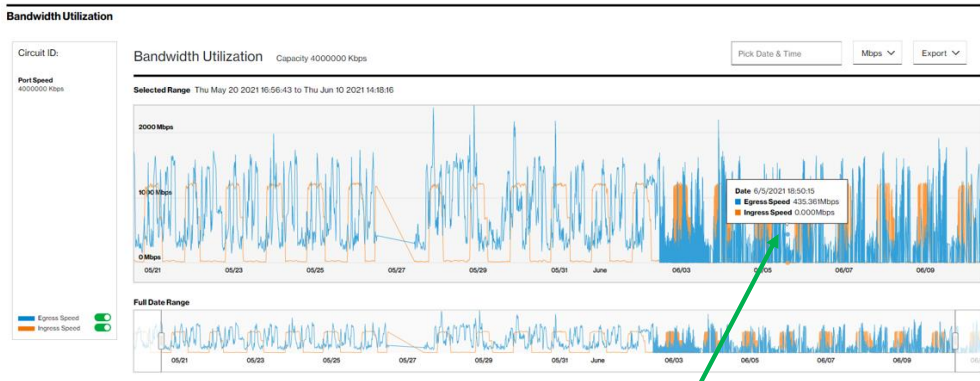
Port Speed: 10Gbps

Capacity: 1984 Kbps

Selected Range: Sun Jan 01 2023 02:09:39 to Tue Jan 03 2023 21:50:24

Current Month | Daily Average | Pick Date & Time | Mbps | Export

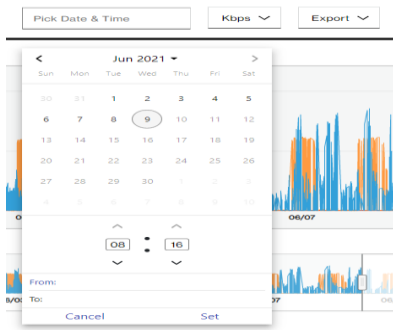
The example below shows received and transmitted results for the Verizon Provider Edge (PE) port. Ingress/Received is what Verizon receives from a customer, and Egress/Transmitted is what Verizon sends to a customer. If you were to view the Customer Equipment (CE) port then you would see the opposite measurements. Verizon PE port measurements and CE port Measurements should closely match.



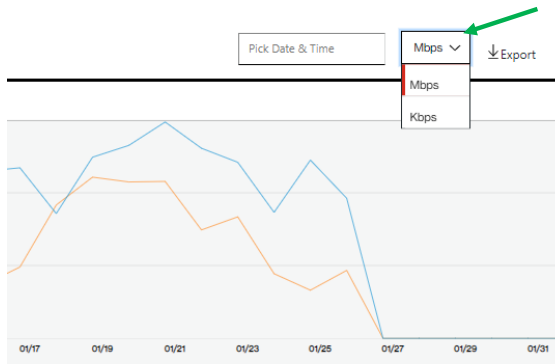
1. Click on the utilization tab to view the utilization details.
2. By default, the daily summary utilization details will be shown.
3. To view 15 min interval usage, select and drag to specific duration so that 15 mins interval usage duration can be viewed.
4. Use the toggle buttons next to egress and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

There are different options you can change on the utilization reports page.

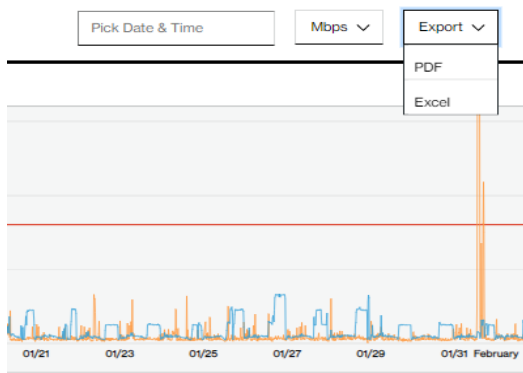
You can change the date range for the utilization reports by selecting the "Pick Date & Time" option, then select your date range from 1 day to 30 days.



You can change the display of stats from Kbps to Mbps.



You can export the report to PDF or excel spreadsheet by selecting the option in the drop down.




## 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 - Replace 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 affected -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 VERIZON ENTERPRISE CENTER 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:** After you submit a port speed change, check the order to ensure it was successful and did not fail. Refer to the Order failure section on how to resolve order failures.

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.

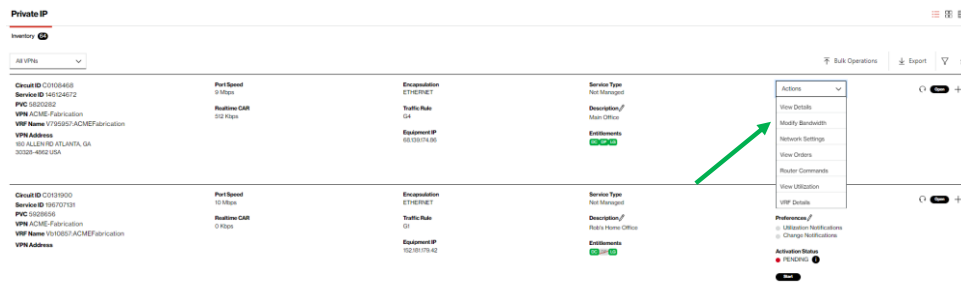
- Enhanced Traffic Management (ETM) - You can expand port speed EF Real-Time (Gold) CAR up to 90% of the port speed. Moving from Standard to ETM enables you to use DCAR online to change the Gold CAR rate. You can upgrade or downgrade the Gold CAR (EF Real Time) value within the limitation of Gold CAR. 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 0K 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 Queuing (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 the 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).



**NOTE:** Please ensure you verify that the Bandwidth change order was successful. Refer to the failure section on how to resolve order failures.

Dynamic Port Speed Menu example:

The screenshot shows the 'Modify Bandwidth' interface. On the left, a speed gauge is set to 1 Mbps. On the right, a speed gauge is set to 112 Kbps. A dropdown menu for 'Port Speed' is open, showing options: 64 Kbps, 128 Kbps, 256 Kbps, 384 Kbps, 512 Kbps, 768 Kbps, 1 Mbps, and 1.5 Mbps. Below the gauges, there is a 'Scheduling' section with a toggle for 'Schedule change to happen later' (which is turned on) and two buttons: 'Submit Order' and 'Cancel'. A 'Feedback' button is visible on the right side of the interface.

Scheduler: Users may optionally schedule Port/CAR changes out to a year in advance for Unmanaged circuits only. **Managed circuits cannot** use the scheduling option at this time. Multiple changes can be scheduled for the future as shown below: below.

To schedule future changes, either:

- Click on the Schedule change to happen later toggle for one transaction
- Or
- Click on Multiple changes toggle to Add 2 to many changes up to 12 months in advance

This is a close-up of the 'Scheduling' section. It features two toggle switches: 'Schedule change to happen later' (which is currently turned on) and 'Multiple changes' (which is currently turned off). Below the toggles are two buttons: 'Submit Order' and 'Cancel'.

## ← Schedule Changes

Create **Scheduled**

Circuit ID C0136517  
Current Bandwidth 10 Kbps  
Max Bandwidth 10 Kbps

### Schedule Changes ⓘ

Total Orders: 1

1. Schedule Change 10 Kbps 9/16/2022, 6:22 AM [GMT 0:0 ]Africa/Accra **Delete** **Add**

**Validate** **Start Over**

DNM will allow the user to "Add" one to many changes. Once the changes are added, click on the Validate button. DNM will ensure the changes will pass change rules. The dates must be entered in chronological order otherwise we will be raised with error while validating.

Jobs created will be reflected in scheduled tab

The screenshot shows the Verizon DNM interface. At the top, there are tabs for 'Schedule Changes' and 'Scheduled'. Below this is a table of scheduled changes. The table has columns for Order Number, Circuit ID, Status, Created Date, Sched. End Date, Bill Id, Order Type, Port Speed, User M, Status Date, and Change Type. One entry is visible with Order Number 29P0341 and Circuit ID C0140292. Below the table is a 'View Order' button. Underneath is another table with columns for Port Speed, EVC ID, VWF, Service, Peak Speed, EF Real Time CAR, Connection Car, and Egress Profile. The 'Order Milestones' section shows a progress bar with stages: PENDING, SCHEDULED, SUBMITTED, VALIDATED, PROVISIONING, PREPROVISIONED, APPROVING, and COMPLETED. The 'SCHEDULED' stage is currently active.

| Order Number | Circuit ID | Status    | Created Date            | Sched. End Date         | Bill Id   | Order Type | Port Speed | User M              | Status Date             | Change Type |
|--------------|------------|-----------|-------------------------|-------------------------|-----------|------------|------------|---------------------|-------------------------|-------------|
| 29P0341      | C0140292   | SCHEDULED | 2022/09/20 12:59:17 GMT | 2022/09/22 18:28:22 GMT | UC0257731 | DBW        | 4 Mbps     | skm@gen@verizon.com | 2022/09/20 12:59:18 GMT |             |

| Port Speed | EVC ID   | VWF                  | Service | Peak Speed | EF Real Time CAR | Connection Car | Egress Profile |
|------------|----------|----------------------|---------|------------|------------------|----------------|----------------|
| 4 Mbps     | C0140292 | EZE-MAR10-USA-NIDQ43 | ETM     |            | 0 Kbps           |                | G1             |

**Order Milestones**

PENDING (09/20/2022 14:29:17) **SCHEDULED** (09/20/2022 14:29:18) SUBMITTED VALIDATED PROVISIONING PREPROVISIONED APPROVING COMPLETED



## Order confirmation pop-up

### Confirm Your Order

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.

Note that these changes may impact your network performance if they are not in accordance with the technical and business rules.

NOTE - You are limited to one successful bandwidth change per 24 hours per site.

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

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

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

### Confirm Your Order

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.

Note that these changes may impact your network performance if they are not in accordance with the technical and business rules.

NOTE - You are limited to one successful bandwidth change per 24 hours per site.

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

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

#### Confirm Settings

| Service | Egress Profile | Port Speed | EF Real Time CAR |
|---------|----------------|------------|------------------|
| ETM     | G1             | 1024 Kbps  | 0 Kbps           |
| ↓       | ↓              | ↓          | ↓                |
|         |                | 1 Mbps     |                  |



### 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.

### Order failures

DPort orders can fail due to different issues within the customers network provisioning. Once an order is submitted, return back to DNM and verify that the order was successful. This can be done by viewing the order summary or the order history. The steps below will provide the option to gain support with an order failure.

Expand the Bandwidth change order by clicking on the "+"



|         |          |         |                            |                            |          |     |         |        |                            |   |
|---------|----------|---------|----------------------------|----------------------------|----------|-----|---------|--------|----------------------------|---|
| 2908837 | C0139204 | INVALID | 2022/06/23<br>22:46:46 GMT | 2022/06/23<br>22:55:00 GMT | UG257731 | DBW | 10 Mbps | seguma | 2022/06/23<br>22:55:03 GMT | + |
|---------|----------|---------|----------------------------|----------------------------|----------|-----|---------|--------|----------------------------|---|

The tool will display the order milestones and provide each step as it is implemented and passed.



Details Network Settings **Orders** Diagnostics Utilization Virtual Services Cloud Services Other VRF

Orders Search

| Order Number | CircuitId | Status    | Created Date            | Scheduled Date          | BillingId | Order Type | Port Speed | User Id                  | Status Date             | Change Type |
|--------------|-----------|-----------|-------------------------|-------------------------|-----------|------------|------------|--------------------------|-------------------------|-------------|
| 3358461      | CO108468  | COMPLETED | 2022/12/10 04:51:44 GMT | 2022/12/10 04:54:00 GMT |           | DEW        | 8 Mbps     | rabia.tarver@verizon.com | 2022/12/10 05:30:13 GMT |             |

| Port Speed | EVCId    | VRF              | Service | Peak Speed | EF Real Time CAR | Connection Car | Egress Profile |
|------------|----------|------------------|---------|------------|------------------|----------------|----------------|
| 8 Mbps     | CO108468 | ACME-Fabrication | ETM     |            | 15 Kbps          |                | G4             |

Order Milestones

PENDING 12/09/2022 22:51:44 SCHEDULED 12/09/2022 22:51:46 SUBMITTED 12/09/2022 22:54:02 VALIDATED 12/09/2022 22:54:07 PROVISIONING 12/09/2022 22:54:07 PEPROVISIONED 12/09/2022 22:56:42 APPROVING 12/09/2022 23:30:07 COMPLETED 12/09/2022 23:30:13

If the order fails, the tool will display the "failed" next to the step and provide you with an Order Support button

Order Milestones

PENDING 07/01/2022 12:06:26 SUBMITTED 07/01/2022 12:06:27 VALIDATED 07/01/2022 12:06:27 PROVISIONING 07/01/2022 12:06:27 PEFAILED 07/01/2022 12:12:21 PEPROVISIONED APPROVING COMPLETED

When you click on Order support button, tool will display:

**Order Support**

Submit Results Success. Please submit the below details. A Verizon Technician is targeted to reach out to you within 30 minutes from 05:00 CST.

**Contact Information**

Contact Name\*  Contact Number\*

Email Address\*

**Audio Conference Information**

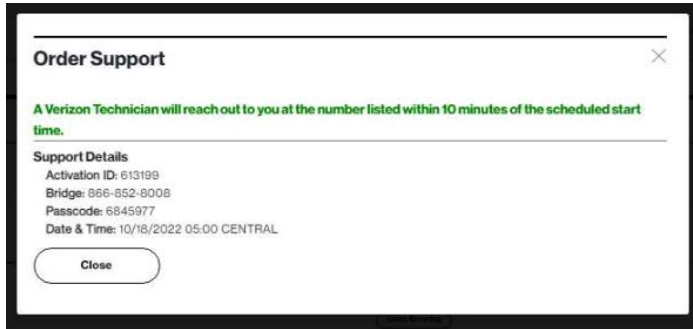
Bridge

Verizons Bridge  Use My Audio Bridge  Direct Call Back

Complete the fields so the DNM technical support person can contact you to resolve the issues.

Click submit.





DNM technical support will contact you back within 10 minutes of the scheduled start time.

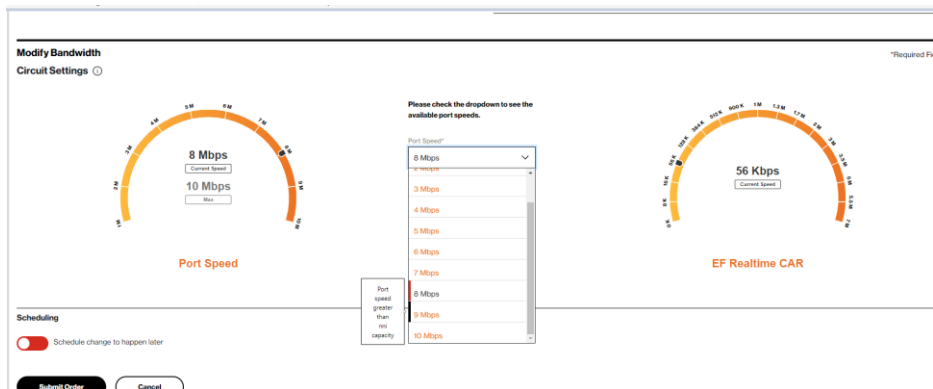
### Network to Network Interface (NNI) Toggling for DPORT Change

NNI Toggling allows customers the ability to change the bandwidth on a circuit and if the NNI does not contain enough bandwidth for the change, it will automatically move to an alternate NNI, if one is available. This allows the customer to submit the Dynamic Port (DPort) transaction instead of requiring a standard order via Account Team. If there is no alternate NNI, then the change will have to be made with a standard change order via your account / support team.

**NOTE:** This is only available to US Domestic Commercial customers at this time making changes to US domestic sites only. International site changes are not supported yet.

When NNI Toggling is enabled (see the screenshot below), the new message will display next to bandwidths and will highlight the specific bandwidths that exceed the current NNI bandwidth. The "red" bar (next to the speed) represents the current NNI speed, while the "black" bar represents the speeds that exceed the NNI bandwidth.

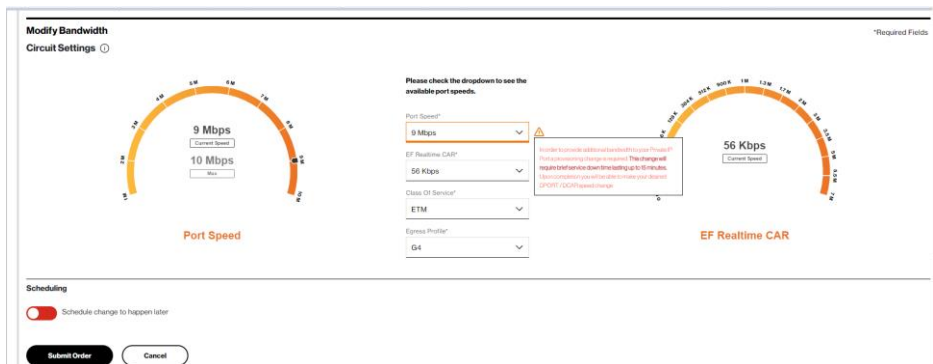
In the screenshot below, you can see that the Current Bandwidth is at 8Mbps. If a Port change was made to 9Mbps, it would trigger the NNI move, if there is an alternative available with 9Mbps of capacity.



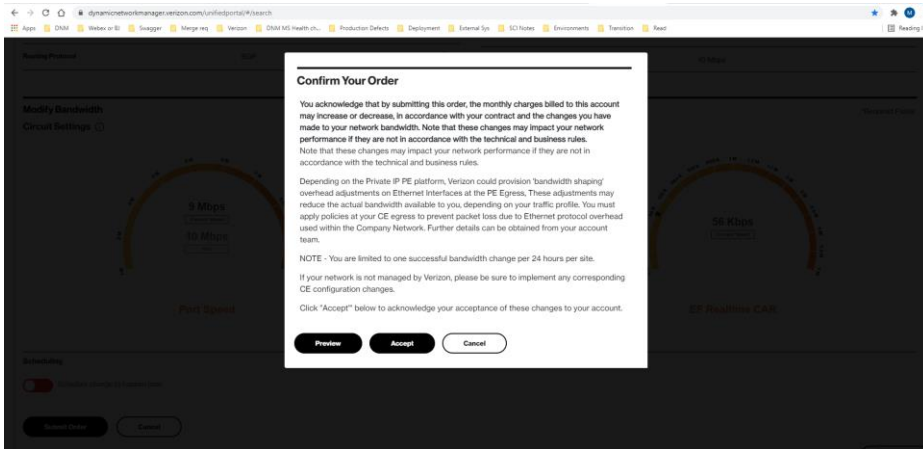
When a User selects a speed that is greater than NNI Capacity + Current Port Speed then a (see screenshot below) message will appear next to the bandwidth selected. This notifies the user that the selected bandwidth change will place a “hot cut” order which will bring down the network for an approximate 15 minutes. During this down time, the system is automatically moving the circuit from one NNI to another NNI that has enough bandwidth for the DPort change.

If there is no alternative NNI with enough bandwidth then the transaction will fail, (back out the bandwidth change) and the user will need to contact their Account Team / Support Team to submit a standard order.

In the example below, the user selected a bandwidth of 9 Mbps, which exceeds the NNI capacity. You can see the message that is displayed to notify the user of NNI toggle change, if they continue to submit the order, the NNI change will trigger a move from one NNI to another that has enough bandwidth. At this point they can continue with the change or change the port speed to a lower value.



Confirmation window of the transaction will be provided. You will need to accept the terms to submit the order. Ensure you come back and verify that the order successfully completed.

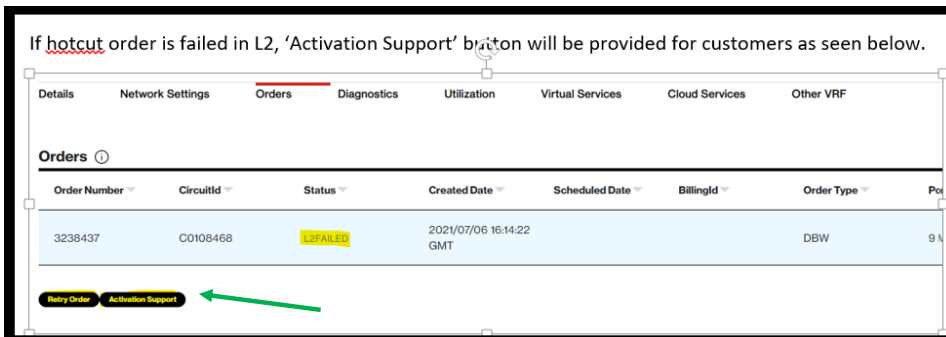


### If the Bandwidth order fails

Users will need to go in and review the order status for the specific change. That change order will display on the order status field:

“Layer 2 provisioning failed.”

Click on that “Activation Support” button. This will trigger the Support team to begin work to resolve the issue as quickly as possible. They will at a minimum roll the bandwidth change back to bring the network back up.



Complete the Contact Information and **“Submit”** the request.

The Support Team for US Commercial customers, are available 7 days a week 24 hours a day to support the requests.

**Activation Support** X

**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

Verizons Bridge  Use My Audio Bridge

## 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.

## ← 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.

The screenshot shows the Verizon Dynamic Network Manager interface. At the top, there is a navigation bar with the Verizon logo, 'Dynamic Network Manager', and menu items: Home, Network, API, Reports. Below this is a breadcrumb trail: Bulk Operations. Under Bulk Operations, there are three tabs: Create New Job, Jobs in Progress, and Completed Jobs. The 'Settings' section is active, showing a dropdown menu for 'Select an Operation\*' with 'Circuit Description' selected. Below the settings, there is a 'Circuits' section with two input options: 'Upload a list of Circuit IDs' (with a file upload icon and 'Drop file here, or click to select from your computer.' text) and 'Enter a list of Circuit IDs, profile description per line. Eg: C12345,P12345,description' (with a text input field and a '0/500' character count). A green arrow points to the 'Circuit Description' dropdown menu. The interface also includes a 'Download Template' button and a 'Feedback' link on the right side.

CircuitDescriptionTemplate 1595246260341 - Excel

| circuitid | pvcld | description   | D | E | F | G | H | I | J | K | L | M |
|-----------|-------|---------------|---|---|---|---|---|---|---|---|---|---|
| 1         | 1     | description1  |   |   |   |   |   |   |   |   |   |   |
| 2         | 2     | description2  |   |   |   |   |   |   |   |   |   |   |
| 3         | 3     | description3  |   |   |   |   |   |   |   |   |   |   |
| 4         | 4     | description4  |   |   |   |   |   |   |   |   |   |   |
| 5         | 5     | description5  |   |   |   |   |   |   |   |   |   |   |
| 6         | 6     | description6  |   |   |   |   |   |   |   |   |   |   |
| 7         | 7     | description7  |   |   |   |   |   |   |   |   |   |   |
| 8         | 8     | description8  |   |   |   |   |   |   |   |   |   |   |
| 9         | 9     | description9  |   |   |   |   |   |   |   |   |   |   |
| 10        | 10    | description10 |   |   |   |   |   |   |   |   |   |   |
| 11        | 11    | description11 |   |   |   |   |   |   |   |   |   |   |
| 12        | 12    | description12 |   |   |   |   |   |   |   |   |   |   |
| 13        | 13    | description13 |   |   |   |   |   |   |   |   |   |   |
| 14        | 14    | description14 |   |   |   |   |   |   |   |   |   |   |
| 15        | 15    | description15 |   |   |   |   |   |   |   |   |   |   |
| 16        | 16    | description16 |   |   |   |   |   |   |   |   |   |   |

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.

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Dynamic Network Manager

Home Network Policy Management API Reports

Feedback Hello, Fajrev

← Bulk Operations

Create New Job Jobs in Progress Completed Jobs

Settings

Select an Operation\*

Circuit Description

Circuits

Upload a list of Circuit IDs

Drop file here, or click to select from your computer.

OR

Enter a list of Circuit IDs,pvcld,description per line. Eg:10246,P12345,description

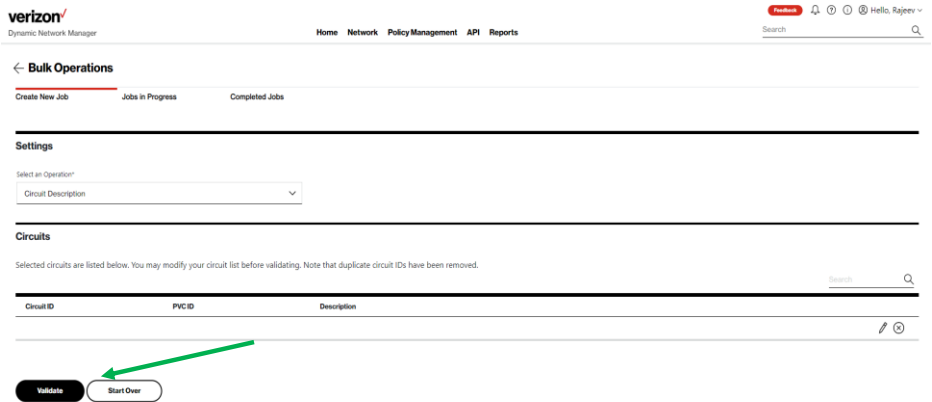
0500

Upload

Download Template

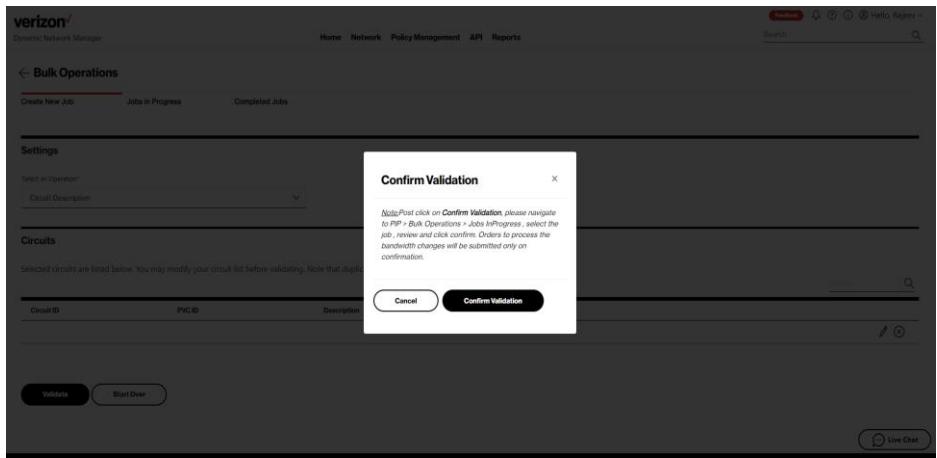
Live Chat

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



Click  Live Chat

### Validate



Click Confirm Validation.





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Home Network Policy Management API Reports

Feedback Hello, Rajeev

Search

← Bulk Operations

Create New Job Jobs In Progress **Completed Jobs**

| Job ID | Date Created        | Username      | Total Orders | Operation                  |
|--------|---------------------|---------------|--------------|----------------------------|
| 1771   | 03/04/2020 23:55:58 | ecom_gst_dev5 | 2            | Circuit Description Change |

| Circuit ID | Order ID | Order Status |
|------------|----------|--------------|
| C0193732   |          | Success      |
| C8024471   |          | Success      |

Live Chat

Completed Tab displays the jobs that have been processed.

## Bandwidth, CAR, profile – change with preset speeds

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Feedback Hello, Rajeev

Search

← Bulk Operations

Create New Job Jobs In Progress Completed Jobs

Settings \*Bulk functionality supports single VRF change only\*

Select an Operation\*

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

Bandwidth: Select

EF Realtime CAR: Select

Egress Profile: Select

Please Select Either Bandwidth or EF Realtime Car and Egress Profile

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

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Feedback Hello, Rajeev

Search

**Bulk Operations**

Create New Job Jobs in Progress Completed Jobs

**Settings** \*Bulk functionality supports single VNF change only\*

Select an Operation\*  
Bandwidth, CAR, Profile - Change with pre-set speeds

Bandwidth  
2000 Kbps

EF Realtime CAR  
32 Kbps

Egress Profile  
G1

Please Select Either Bandwidth or EF Realtime Car and Egress Profile

**Circuits**

Select the Circuit IDs and PVC IDs

Search by Circuit ID/PVC ID/VPN Name/Bandwidth/EF Realtime CAR/Egress profile/Location

Upload

Click the Circuits bar to search & select circuits for Bulk changes.

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Home Network Policy Management API Reports

Feedback Hello, Rajeev

Search

**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 |
|---|-----------------------|--------------------------------|-----------|-----------------|----------------|
| Circuit ID C036752<br>Location TX,USA     | PVC ID 9557706        | VPN Name ESE-MAR17-USA-NVDQ143 | Bandwidth | EF RealTime CAR | Egress Profile |
| Circuit ID C036305<br>Location TX,USA     | PVC ID 9555970        | VPN Name ESE-MAR17-USA-NVDQ143 | Bandwidth | EF RealTime CAR | Egress Profile |
| Circuit ID ENR1DAL0001<br>Location UN,USA | PVC ID VCP_01951049_2 | VPN Name ESE-MAR17-USA-NVDQ143 | Bandwidth | EF RealTime CAR | Egress Profile |
| Circuit ID 9228504<br>Location SO,USA     | PVC ID 9228504        | VPN Name Hst_Lat402D1ch        | 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 Operator\*  
 Bandwidth, CAR, Profile - Change with pre-set speeds

Bandwidth: 2000 Kbps

EF Realtime CAR: 16 Kbps

Egress Profile: G1

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.

| 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 |
|---------------|-----------------|--------------------|----------------|-------------------------|---------------------|------------------------|--------------------|--------|
| CD19K385      | 5959170         |                    | 2000 Kbps      |                         | 16 Kbps             |                        | G1                 | Valid  |
| ENR1ALDAL0001 | VCF_121951049_2 |                    | 2000 Kbps      |                         | 16 Kbps             |                        | G1                 | Valid  |
| C307152       | 5974019         |                    | 2000 Kbps      |                         | 16 Kbps             |                        | G1                 | Valid  |
| CD607286      | 5956692         |                    | 2000 Kbps      |                         | 16 Kbps             |                        | G1                 | Valid  |
| CD208052      | 5967334         |                    | 2000 Kbps      |                         | 16 Kbps             |                        | G1                 | Valid  |

Show: 5 / Go to: 1 / 5

Validate | Start Over | Live Chat

Click Validate.

**Confirm Validation**

Note: Post click on Confirm Validation, please navigate to PIP - Bulk Operations - Jobs InProgress, select the job, review and click confirm. Orders to process the bandwidth changes will be submitted only on confirmation.

Cancel | Confirm Validation

Click Confirm Validation.

Dynamic Network Manager

Home Network Policy Management API Reports

### Bulk Operations

Create New Job Jobs in Progress Completed Jobs

| JobId | 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 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                  |                     | Gt                     |                    | No data not found |

Revalidate

|      |                     |               |   |   |                                  |
|------|---------------------|---------------|---|---|----------------------------------|
| 2463 | 07/20/2020 15:40:35 | ecom_qat_dev5 | 2 | 0 | Bulk Modify Bandwidth Validation |
| 2462 | 07/20/2020 15:32:12 | ecom_qat_dev5 | 3 | 1 | Bulk Modify Bandwidth Validation |
| 2461 | 07/20/2020 08:21:48 | ecom_qat_dev5 | 1 | 0 | Bulk Modify Bandwidth Validation |

Live Chat

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).

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### Bulk Operations

Create New Job Jobs in Progress Completed Jobs

| JobId | 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.

Failed (11) Success (4)

Bulk Modify Bandwidth Validation succeeded for the following circuits

| CircuitId | PVC ID  | Current Port Speed | New Port Speed | Current EF Realtime CAR | New EF Realtime CAR | Current Egress Profile | New Egress Profile |
|-----------|---------|--------------------|----------------|-------------------------|---------------------|------------------------|--------------------|
| C5952791  | 5954290 | 6 Mbps             | 8 Mbps         | 8 Kbps                  | 8 Kbps              | G1                     | G1                 |
| C1068540  | 5980967 | 10 Mbps            | 16 Mbps        | 16 Kbps                 | 16 Kbps             | R1                     | R1                 |
| C0136752  | 5957706 | 200 Mbps           | 1300 Mbps      | 1300 Kbps               | 1300 Kbps           | G1                     | G1                 |
| C19024471 | 4052249 | 1536 Kbps          | 384 Kbps       | 384 Kbps                | 384 Kbps            | G1                     | G1                 |

Please Order

Live Chat

Click Place Order once Revalidation is complete.

This is the final step to entering the bulk change request.

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### Bulk Operations

Create New Job Jobs in Progress Completed Jobs

| JobId | 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.

Failed (0) Success (4)

Bulk Modify Bandwidth Validation succeeded for the following circuits

| CircuitId | PVC ID  | Current Port Speed | New Port Speed | Current EF Realtime CAR | New EF Realtime CAR | Current Egress Profile | New Egress Profile |
|-----------|---------|--------------------|----------------|-------------------------|---------------------|------------------------|--------------------|
| C5952791  | 5954290 | 6 Mbps             | 8 Mbps         | 8 Kbps                  | 8 Kbps              | G1                     | G1                 |
| C1068540  | 5980967 | 10 Mbps            | 16 Mbps        | 16 Kbps                 | 16 Kbps             | R1                     | R1                 |
| C0136752  | 5957706 | 200 Mbps           | 1300 Mbps      | 1300 Kbps               | 1300 Kbps           | G1                     | G1                 |
| C19024471 | 4052249 | 1536 Kbps          | 384 Kbps       | 384 Kbps                | 384 Kbps            | G1                     | G1                 |

Please Order

Live Chat

Success tab shows 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.

The screenshot shows the Verizon Dynamic Network Manager (DNM) interface. At the top, there's a navigation bar with 'Home', 'Network', 'Policy Management', 'API', and 'Reports'. Below that, the 'Bulk Operations' section is active, showing 'Create New Job', 'Jobs In Progress', and 'Completed Jobs'. The 'Settings' section has a dropdown menu set to 'Bandwidth, CAR, Profile - Upload excel with custom speeds'. The 'Circuits' section features a large empty box for uploading a file, with a 'Download Template' button to its right. A green arrow points to the 'Upload' button, and another green arrow points to the 'Download Template' button.

Click Upload after dropping the Excel file into DNM.

The screenshot shows an Excel spreadsheet template for circuit data. The spreadsheet has columns for Circuit ID, PVC ID, Bandwidth, Bandwidth Unit, EF Realtime CAR, EF Realtime CAR Unit, and Egress Profile. The header row is highlighted in yellow and contains the text 'DO NOT CHANGE THE HEADER INFORMATION - SPECIFY ONLY INVENTORY'. The data rows contain placeholder text like '<<Enter Circuit ID>>' and '10 Select'.

| 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

Commented [BAM1]: Need a new picture

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### Bulk Operations

Create New Job Jobs In Progress Completed Jobs

Settings \*Bulk functionality supports single VRF change only\*

Select an Operation:  
Bandwidth, CAR, Profile - Upload excel with custom speeds

### Circuits

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

| 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 |
|------------|---------|--------------------|----------------|-------------------------|---------------------|------------------------|--------------------|--------|
| C036752    | 5957706 | 200 Mbps           | 200 Mbps       |                         | 1300 Kbps           | G1                     |                    | Valid  |
| 9228504    | 9228504 | 10 Mbps            | 10 Mbps        |                         | 0 Kbps              | G1                     |                    | Valid  |
| C1068540   | 5980967 | 10 Mbps            | 10 Mbps        |                         | 16 Kbps             | F11                    |                    | Valid  |
| C9024471   | 4052249 | 1536 Kbps          | 1536 Kbps      |                         | 384 Kbps            | G1                     |                    | Valid  |
| C5952791   | 5954290 | 8 Mbps             | 8 Mbps         |                         | 8 Kbps              | G1                     |                    | Valid  |

Go to: 1 / 2

Validate Start Over

When finished editing, click Validate.

### Confirm Validation

After click on **Confirm Validation**, please navigate to PIP > Bulk Operations > Jobs InProgress, select the job, review and click confirm. Orders to process the bandwidth changes will be submitted only on confirmation.

Cancel Confirm Validation

Click Confirm Validate.

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**Bulk Operations**

Create New Job Jobs in Progress Completed Jobs

| JobId | Date Created        | Username      | Total Orders | Orders Completed | Operation                        |   |
|-------|---------------------|---------------|--------------|------------------|----------------------------------|---|
| 2470  | 07/29/2020 07:48:51 | ecom_qst_dev5 | 9            | 1                | Bulk Modify Bandwidth Validation | — |

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 | 07/29/2020 15:40:35 | ecom_qst_dev5 | 2 | 0 | Bulk Modify Bandwidth Validation | + |
| 2462 | 07/29/2020 15:32:12 | ecom_qst_dev5 | 3 | 1 | Bulk Modify Bandwidth Validation | + |
| 2461 | 07/29/2020 08:21:48 | ecom_qst_dev5 | 1 | 0 | Bulk Modify Bandwidth Validation | + |
| 2460 | 07/29/2020 08:02:21 | ecom_qst_dev5 | 3 | 2 | Bulk Modify Bandwidth Validation | + |

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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 Home Network Policy Management API Reports Hello, Rajeev

**Bulk Operations**

Create New Job Jobs in Progress Completed Jobs

| JobId | Date Created        | Username      | Total Orders | Orders Completed | Operation                        |   |
|-------|---------------------|---------------|--------------|------------------|----------------------------------|---|
| 2470  | 07/29/2020 07:49:51 | ecom_qst_dev5 | 9            | 3                | Bulk Modify Bandwidth Validation | — |

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 |
|------------|---------|--------------------|----------------|-------------------------|---------------------|------------------------|--------------------|
| C036752    | 5957706 |                    | 200 Mbps       |                         | 1300 Kbps           | G1                     |                    |
| C1068540   | 5980967 |                    | 10 Mbps        |                         | 16 Kbps             | R1                     |                    |
| C9024471   | 4052249 |                    | 1536 Kbps      |                         | 384 Kbps            | G1                     |                    |

Please 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.

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Feedback Hello, Rajeev

### Bulk Subscription

Utilization Notifications Circuit Change Notifications

Select VPN to Subscribe

Select

Current Subscriptions

| Circuit ID                        | VPN                   | Service ID | Recurrence | High Alert | Status |
|-----------------------------------|-----------------------|------------|------------|------------|--------|
| <input type="checkbox"/> CO136752 | ves-vms-orch-infra    | 123555363  | DAILY      | 30%        | ●      |
| <input type="checkbox"/> CO136752 | E2E-MAR17-USA-NVDQ143 | 123555363  | DAILY      | 30%        | ●      |

Unsubscribe

● Subscribed ○ Not Subscribed

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Home

### Bulk Subscription

Utilization Notifications Circuit Change Notifications

Select VPN to Subscribe

Select

- E2E-MAR17-USA-NVDQ143 VPN
- EchsMNC ves-vms-orch-infra
- RadLabG2Orch E2E-MAR17-USA-NVDQ14
- TwsdhrK
- VPN-JUL16-SIT-01
- VPN-Jun16M-163

## ← Bulk Subscription

Utilization Notifications    Circuit Change Notifications

Select VPN to Subscribe

Twschrnk

Search

### Circuit List

| <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   | VSTAKXR-KIYL, VV  | USA     | ⊖      |
| <input type="checkbox"/> | C5553193     | 8011434         | 85206452   | 1536 Kbps   |            | 1848 VQUDJYTC DF FA     | FSPZUR, OZ        | USA     | ⊖      |
| <input type="checkbox"/> | C0136385     | 5955170         | 11778343   | 1000 Kbps   |            | 400 INTERNATIONAL PKWY? | RICHARDSON, TX    | USA     | ⊖      |
| <input type="checkbox"/> | C0136517     | 5955965         | 117015098  | 10 Kbps     |            | 1600 W 7TH ST           | FORT WORTH, TX    | USA     | ⊖      |
| <input type="checkbox"/> | C0136752     | 5957706         | 123555363  | 200 Mbps    | 30%        | 1600 W 7TH ST           | FORT WORTH, TX    | USA     | ●      |
| <input type="checkbox"/> | C1067115     | 5967622         | 133448095  | 4 Mbps      |            | 400 INTERNATIONAL PKWY  | RICHARDSON, TX    | USA     | ⊖      |
| <input type="checkbox"/> | ENRALDAL0001 | VCP_121951049_2 | 121951049  | 1 Gbps      |            | 5959 N BTDXD CVY        | TFGTY-WMHBH, UV   | USA     | ⊖      |
| <input type="checkbox"/> | W4N56795     | 5960011         | 991336827  | 34.386 Mbps |            | 123 MISSION ST          | SAN FRANCISCO, CA | USA     | ⊖      |

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Alert when or above:  of utilization

● Subscribed    ⊖ Not Subscribed

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

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## ← Bulk Subscription

Utilization Notifications    Circuit Change Notifications

Select VPN to Subscribe

Twschrnk

Search

### Circuit List

| <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 | VSTAKXR-KIYL, VV | USA     | ⊖      |
| <input checked="" type="checkbox"/> | C5553193   | 8011434  | 85206452   | 1536 Kbps  |            | 1848 VQUDJYTC DF FA   | FSPZUR, OZ       | USA     | ⊖      |

● Subscribed    ⊖ Not Subscribed

Start Date / Time Zone

Pick Date    Select Timezone

Recurrence Pattern

Daily    Weekly    Monthly

Weekly Options

Sunday     Monday     Tuesday     Wednesday     Thursday     Friday     Saturday

End Date

No End Date    End After    End By

Subscribe

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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, and Start Frame Delimiter (SFD). When dealing with small frames, this overhead could be considerable. The marketed 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, and data).

The screenshot displays the 'Circuit Details' page. At the top, there are two progress bars: 'EF Real Time Cur' and 'Port Speed'. Below these are various configuration fields:

|                             |               |                  |                |
|-----------------------------|---------------|------------------|----------------|
| Utilization Alert Threshold | 0 %           | Class of Service | ETM            |
| Topology                    | H             | Egress Profile   | G1             |
| CE IP Address               | 152.177.14.66 | Shaping Profile  | 92%            |
| Access Type                 | ETH10Gig      | Interface Name   | TenGigE0/1/0/3 |
| Routing Protocol            | BGP           | Access Speed     | 20 Mbps        |

Below the configuration fields is a 'Modify Bandwidth' button. Further down is the 'Edit Shaping Profile' section, which includes a 'Shaping Profile' dropdown menu set to '93', a 'Scheduling' section with a 'Schedule change to happen later' checkbox, and 'Submit' and 'Cancel' buttons. A green arrow points to the 'Shaping Profile' dropdown menu.

Click on  shaping profile in the details tab. The Modify Shaping Adjustment for Ethernet Overhead section appears above the Site Details.

Select 76, 85, or 94 from the Shape PE departure data transmission to drop-down rundown.

Enter a Process Date/Time to plan this activity, if relevant.

Select a period zone starting from the drop list.

Click Schedule Order on the off chance that you are booking this for a future date.

Click Process Order to present your request. The Process Order Confirmation spring up shows up.

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.

Click Print to print a duplicate of your solicitation.

## Modify Admin Status

Click  next to Interface Name in the *Site Details*. The *Modify Admin Status* section appears above the *Site Details*.

Enter a *Process Date/Time* to schedule this job, if applicable.


Select a time zone from the drop-down list.

Click Schedule Order if you are scheduling this for a future date.

Select no-shutdown or shutdown from the *New Admin Status* drop-down list.

Click Process Order to submit your order. The *Process Order Confirmation* pop-up appears.

Click Accept.

|                             |   |                  |  |
|-----------------------------|---|------------------|--|
| Utilization Alert Threshold | 0 %   | Class of Service | ETM  |
| Topology                    | H   | Egress Profile   | G1   |
| CE IP Address               | 68.138.222.58   | Interface Name   | Serial0/0/2/0/1/1/1/21  |
| Access Type                 | E1  | Access Speed     | 0 Kbps   |
| Routing Protocol            | BGP  |                  |  |

[Modify Bandwidth](#)

---

**Edit Admin Status**

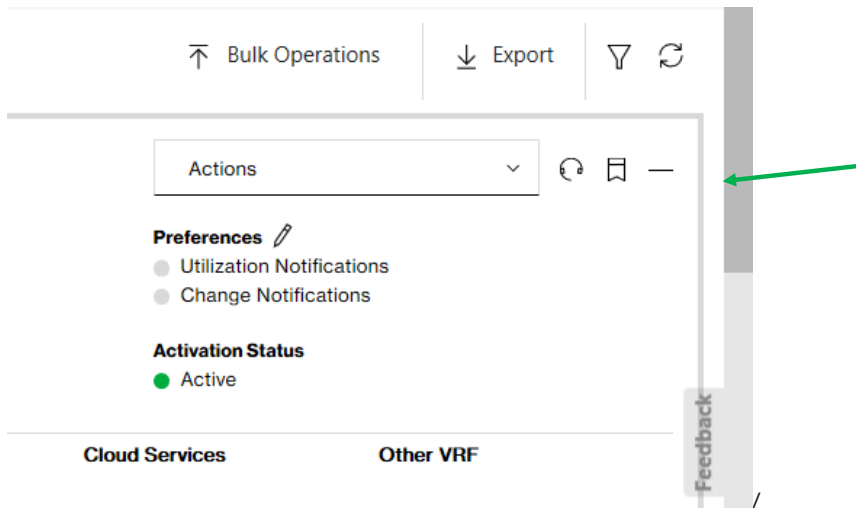
Admin Status\*

Scheduling  
 Schedule change to happen later

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

Open Quick (Trouble) Ticket

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

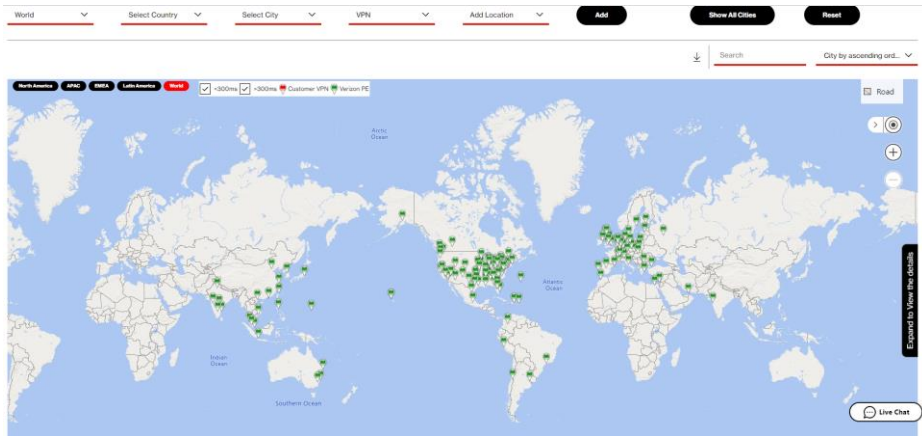


When you open a ticket, the circuit ID for which you are viewing in the *Site Details* automatically populates. Enter a different circuit ID, if applicable.

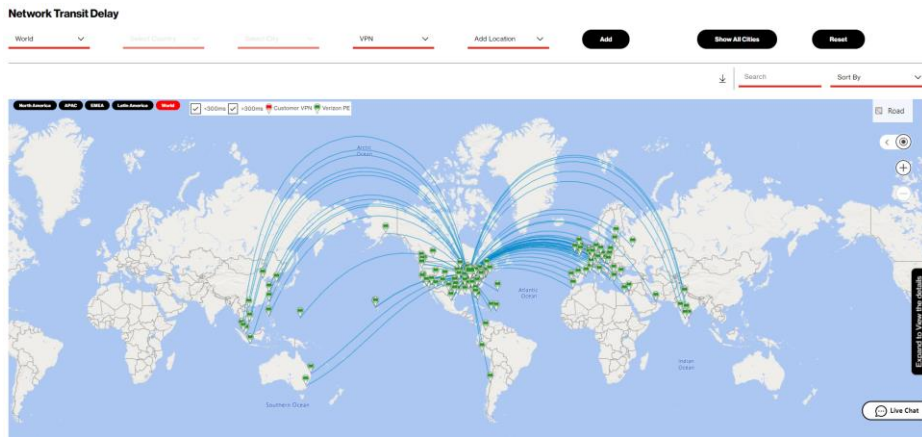
Click Next to verify service and enter the ticket information.

## Network Transit Delay

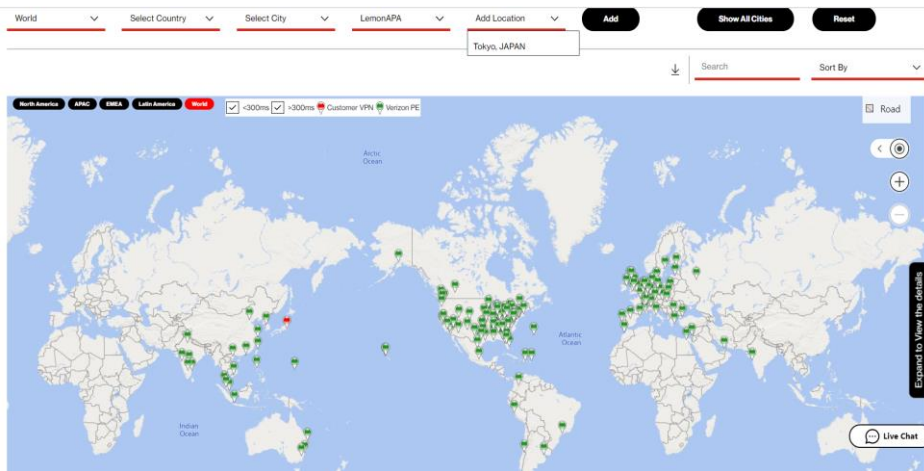
This section displays Verizon metrics for Network Transit Delay (Latency) between Private IP PE (provider edge) devices. This is not a report but rather a listing of those metrics. You can see what Verizon's Service Level Agreements (SLA) Latency metrics are between the selected sites.



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.



# 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        | 4   | 39  | 1   | 1   | 4  | Default profile – balanced allocation                                   |
| 2         | _G2                | 50        | 4   | 20  | 1   | 1   | 4  | Video-centric #1  |
| 3         | _G3                | 50        | 6   | 12% | 1   | 8   | 2  | Video-centric #2  |
| 4         | _G4                | 50        | 1   | 20  | 2   | 1   | 4  | Data-centric with emphasis on bulk-transfer applications                |
| 5         | _G5                | 50        | 1   | 60  | 6   | 1   | 4  | Data-centric with emphasis on transactional applications                |
| 6         | _G6                | 50        | 1   | 40  | 4   | 1   | 4  | Data-centric with balanced bulk-transfer and transactional applications |



| Profile # | Profile Identifier | EF Egress | AF4 | AF3 | AF2 | AF1 | BE | Comments   |
|-----------|--------------------|-----------|-----|-----|-----|-----|----|--|
| 7         | _G7                | 50        | 1   | 30  | 1   | 5   | 3  | Data-centric with large percentage of unmarked (BE-marked) applications and bulk-transfer applications |
| 8         | _G8                | 50        | 3   | 10% | 1   | 5   | 2  | Balanced QoS w/ ample video for a 384K video on a T1   |
| 9         | _G9                | 50        | 2   | 30  | 3   | 1   | 5  | Data-centric w/ balanced applications (matches HSBC policy)  |
| 10        | _G10               | 50        | 1   | 20  | 2   | 5   | 4  | Data-centric with large percentage of unmarked (BE-marked) applications and transactional applications |
| 11        | _G11               | 50        | 3   | 20  | 2   | 1   | 2  | Data centric with balanced allocation  |
| 12        | _G12               | 50        | 6   | 5%  | 1   | 5   | 2  | Video centric/minimum control traffic  |
| 13        | _G13               | 50        | 1   | 40  | 3   | 5   | 1  | Data balanced apps #2  |
| 14        | _G14               | 50        | 2   | 25  | 2   | 1   | 2  | Data balanced AF3/AF2 centric  |
| 15        | _G15               | 50        | 2   | 10% | 2   | 4   | 1  | Data centric with emphasis on Scavenger/Standard data apps   |

## PIP ETM 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 (CE) 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 x 85% = 51,000,000
<adjusted DPORT-in-bps x 0.004> : 51,000,000 x 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 x 85% = 51,000,000
<adjusted DPORT-in-bps x 0.004> : 51,000,000 x 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 to 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 Verizon Enterprise Center.

Click on your name in the top right corner of the screen. Click Contact Us & Send Feedback.

- U.S. Call 1.800.569-8799 (M-F 9 AM – 6 PM ET).
- Live Chat: Icon located in VERIZON ENTERPRISE CENTER, Networx and Calnet Portals.
- EMEA Customers: 00 800 4321 5432.
- APAC Customers: [apac.Verizon Enterprise Center.support@intl.verizon.com](mailto:apac.Verizon Enterprise Center.support@intl.verizon.com).

### Training

Go to <https://customertraining.verizon.com> to enroll in training or to download user and other reference guides. Log in with an existing login or create a new one.

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