Ontario School Board Network Monitoring Dashboard

Status | Bandwidth | Map

This Dashboard Features

- Advanced metrics for network speed, uptime, and packet error analysis
- Eye-catching gauges highlighting key performance indicators
- Bi-directional visuals comparing monthly network metrics and their interplay, enabling effortless comprehension
- Data filtering by school board and individual schools for targeted insights
- Dedicated page assessing data availability for informed decision-making

About the Data

- Covers 72 Ontario school boards and 1,230 schools
- Includes network usage data such as downloads, uploads, uptime, and packet error.
- Timeframe spans from May 2022 to November 2022
- Evaluates satisfaction levels for networking metrics

About Ontario Ministry of Education and the Project

- The Ministry is committed to ensuring the efficient use of funds to maximize educational outcomes and resource allocation.
- Our dashboard offers valuable insights into network performance, allowing the Ministry to evaluate the effectiveness of funds spent on technology infrastructure.
- The project enhances the Ministry's ability to track and evaluate the success of technology-related initiatives, supporting informed adjustments to policy and funding.

DESIGNED BY

ANJANA SEBASTIAN

Kawartha Pine Ridge District School Board

Status | Bandwidth | Map

Select a **School Board:** Kawartha Pine Ridge District School Board

School/Site : All

Date (MMM/YYY) : All

Average **Packet Error**

0.00%

Avg. **Download Speed** (Mbps)

6.06

Max Download Speed (Mbps)

171.84

Avg. **Upload Speed** (Mbps)

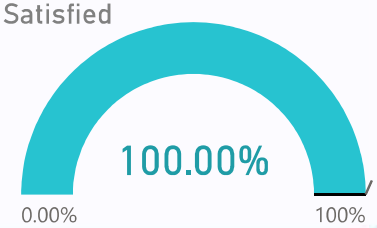
2.21

Max Upload Speed (Mbps)

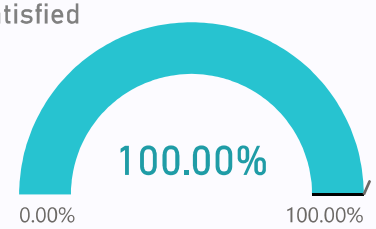
119.09

Average **Uptime**

Downloads Satisfied



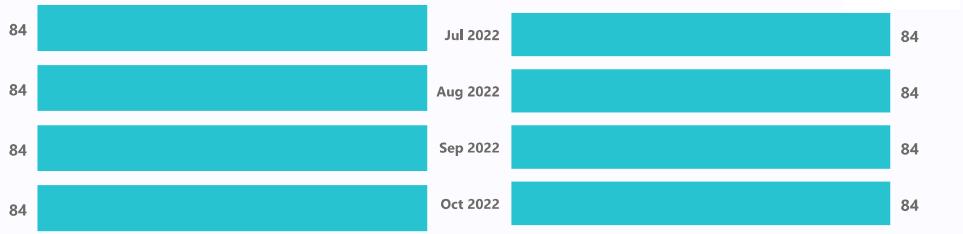
Uploads Satisfied



Monthly Average **Uptime** and **Packet Error**

Date	Avg. Uptime	Avg. Packet Error
Sep 2022	100.00%	0.00%
Aug 2022	99.93%	0.00%
Jul 2022	99.92%	0.00%
Oct 2022	99.91%	0.00%
May 2022	99.78%	0.00%
Jun 2022	99.64%	0.00%

Monthly **Downloads** Satisfied vs **Uploads** Satisfied



Kawartha Pine Ridge District School Board

Bandwidth | Map | Info

Select a **School Board:**

- [ ] Algonquin & Lakeshore Catholic District School Board
- [ ] Catholic District School Board of Eastern Ontario
- [ ] Conseil scolaire de district catholique de l'Est ontarien
- [ ] Conseil scolaire de district catholique du Nouvel-Ontario
- [ ] Conseil scolaire public du Grand Nord de l'Ontario
- [ ] Conseil scolaire public du Nord-Est de l'Ontario
- [ ] District School Board of Niagara
- [ ] Durham Catholic District School Board
- [ ] Grand Erie District School Board
- [ ] Halton Catholic District School Board
- [ ] Huron-Perth Catholic District School Board
- [x] Kawartha Pine Ridge District School Board
- [ ] Kenora Catholic District School Board
- [ ] Near North District School Board
- [ ] Northeastern Catholic District School Board
- [ ] Ottawa Catholic School Board
- [ ] Renfrew County District School Board
- [ ] Simcoe County District School Board
- [ ] Simcoe Muskoka Catholic District School Board
- [ ] Thames Valley District School Board
- [ ] Thunder Bay Catholic District School Board

School/Site : All

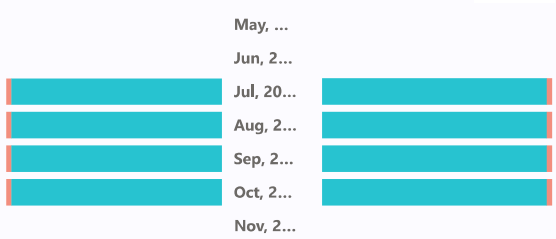
Date (MMM/YYY) : All

Monitoring Tool
Solarwinds and Fortinet

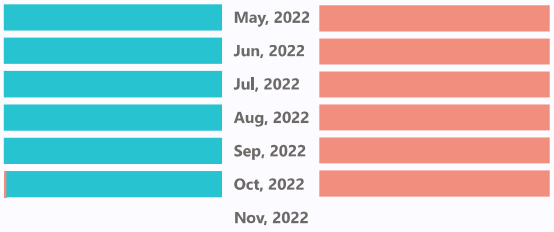
Data Availability
Acceptable

Sufficient
Yes

Downloads vs **Uploads**



Monthly **Uptime** vs **Packet Error**



Monthly **Network Usage, Packet Errors, uptime, WLAN and LAN** Data Status

Date	Network Usage	Packet Errors	Uptime	WLAN	LAN
May, 2022	Acceptable	Acceptable	Acceptable	Acceptable	Not Received
Jun, 2022	Acceptable	Acceptable	Acceptable	Acceptable	Not Received
Jul, 2022	Acceptable	Acceptable	Acceptable	Acceptable	Not Received
Aug, 2022	Acceptable	Acceptable	Acceptable	Acceptable	Not Received
Sep, 2022	Acceptable	Acceptable	Acceptable	Acceptable	Not Received
Oct, 2022	Acceptable	Acceptable	Acceptable	Acceptable	Not Received
Nov, 2022	Acceptable	Acceptable	Acceptable	Acceptable	Not Received

Kawartha Pine Ridge District School Board

Analysis | Map | Info

Select a School Board

- [x] Select all
- [ ] Algonquin & Lakeshore Catholic District School B...
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- [ ] Conseil scolaire de district catholique de l'Est ont...
- [ ] Conseil scolaire de district catholique du Nouvel-...
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- [ ] Conseil scolaire public du Nord-Est de l'Ontario
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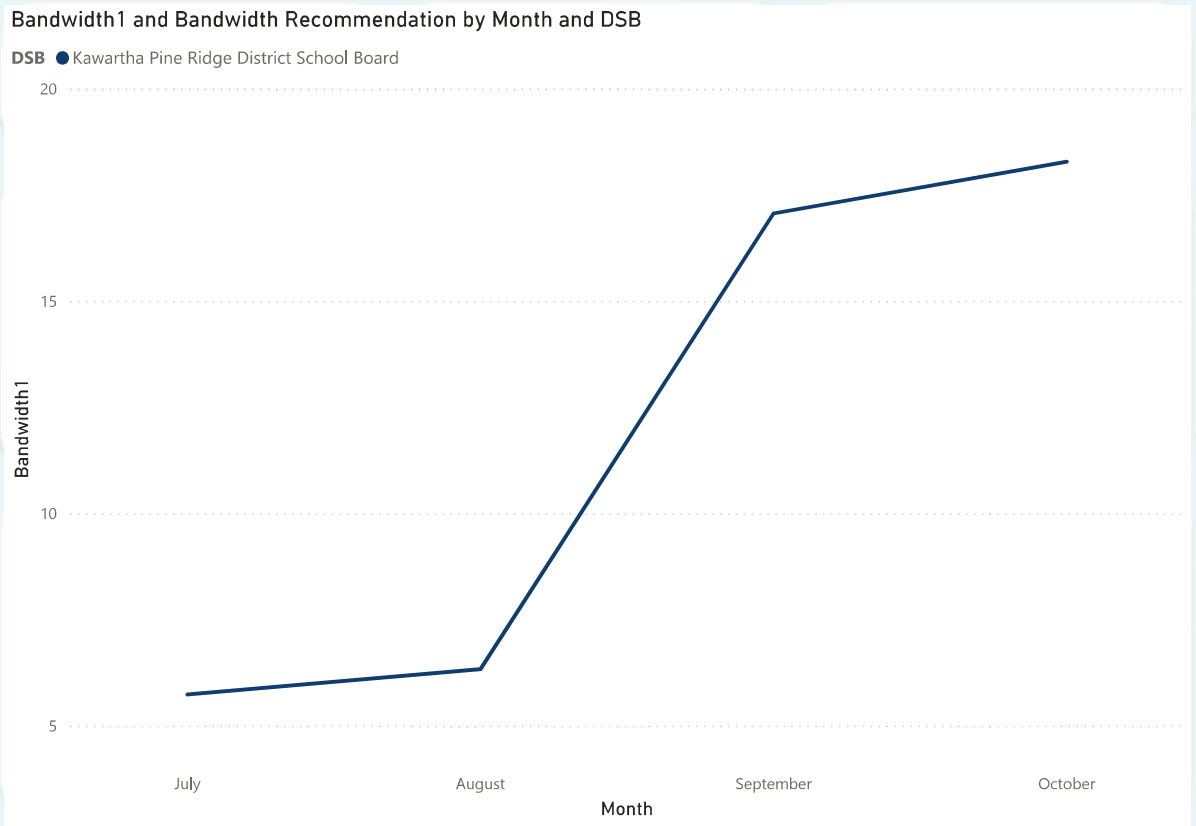
- [ ] Simcoe Muskoka Catholic District School Board
- [ ] Thames Valley District School Board
- [ ] Thunder Bay Catholic District School Board

School/Site : All

Date (MMM/YYY) : All



Kawartha Pine Ridge District School Board

Analysis | Status | Info

Select a **School Board:**

Kawartha Pine Ridge District School Board

Upload Satisfaction | Download Satisfaction | Error Status | Availability_Status | All

Date
All

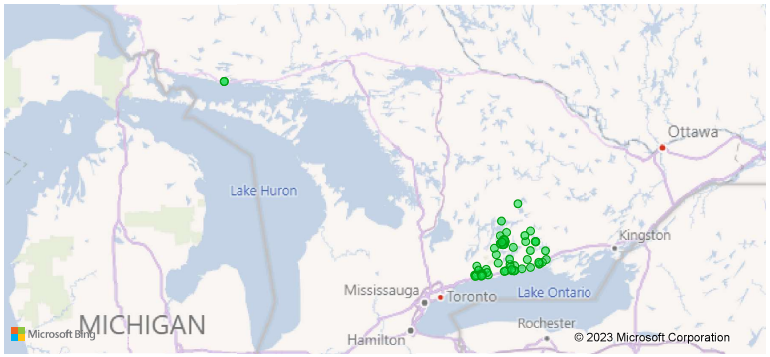
Upload Satisfy
- [ ] No
- [ ] Yes

Download Sati...
- [ ] No
- [ ] Yes

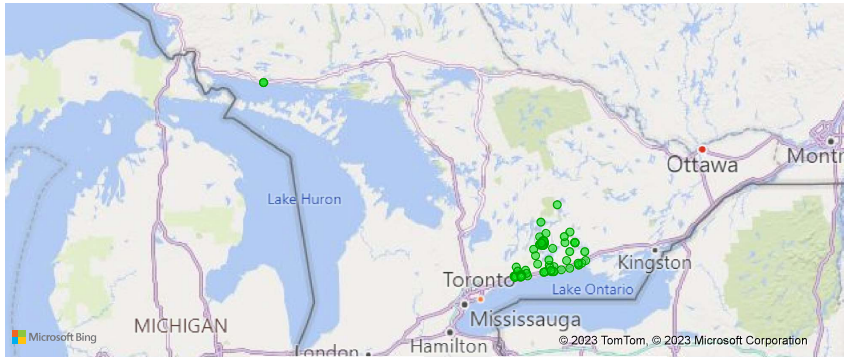
Error Status
- [ ] Yes

Availability St...
- [ ] No
- [ ] Yes

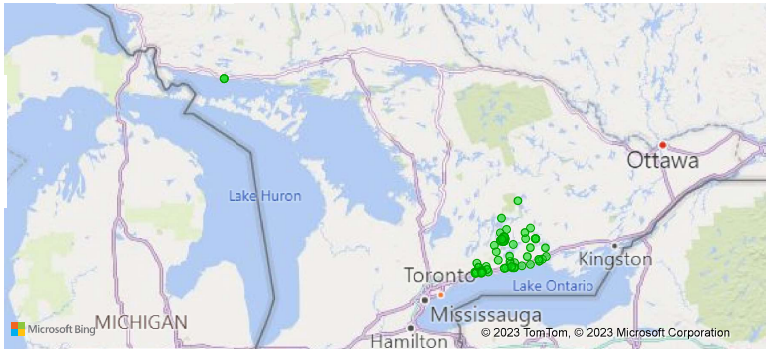
Upload Satisfaction



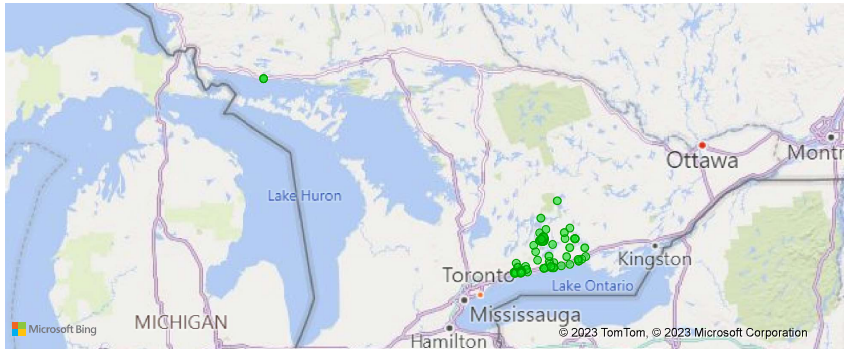
Download Satisfaction



Error_Status



Availability_Status



Area
Bandwidth
Consider bandwidth expansion: This may involve contacting the internet service provider (ISP) or upgrading your network infrastructure.
Employ caching mechanisms: Implement caching mechanisms, such as content delivery networks (CDNs), to store frequently accessed content closer to end-users. This reduces the need to repeatedly download content from the internet, saving bandwidth and improving user experience.
Implement Quality of Service (QoS): Configure QoS policies on the SD-WAN device to prioritize critical applications and traffic. Assign appropriate bandwidth guarantees and limits to different application classes, ensuring that essential services receive the necessary bandwidth while preventing non-critical traffic from overwhelming the network.
Optimize link utilization: If you have multiple WAN links, utilize link load balancing and link aggregation techniques to distribute traffic across available links.
Utilize bandwidth optimization techniques: Implement bandwidth optimization techniques such as data compression, traffic shaping, and traffic prioritization. These techniques help maximize available bandwidth, improve overall network performance, and minimize the impact of bandwidth limitations.
Latency Issues
Assess network congestion
Consider WAN optimization techniques: Implement WAN optimization techniques such as data compression, deduplication, and caching.
Evaluate link performance: Assess the performance of your WAN links. Ensure that they meet the required latency thresholds. If a specific link consistently exhibits high latency, consider replacing or upgrading it.
Implement edge caching: Deploy edge caching mechanisms, such as content delivery networks (CDNs), to store and serve frequently accessed content closer to end-users.
Leverage traffic shaping and bandwidth management: Utilize traffic shaping and bandwidth management techniques to regulate network traffic and allocate bandwidth based on application requirements.
Optimize traffic routing: Review your SD-WAN device's traffic routing policies. Ensure that they are intelligently directing traffic to the most optimal paths. Utilize path selection algorithms that consider latency metrics such as Round-Trip Time (RTT) or Network Delay to route traffic efficiently.
Prioritize real-time applications: If latency-sensitive applications like VoIP or video conferencing are experiencing issues, prioritize their traffic through QoS mechanisms. Allocate sufficient bandwidth and prioritize their packets to reduce latency and ensure smooth performance.
Network Availability
Automatic link failover: Configure your SD-WAN device to perform automatic link failover when a primary link becomes unavailable.
Network resiliency: Design your network with redundancy and failover mechanisms at various levels, including switches, routers, and SD-WAN devices.
Network security: Ensure that your network has appropriate security measures in place to prevent unauthorized access and protect against attacks
Network segmentation: Segment your network into logical zones or VLANs (Virtual Local Area Networks) to isolate critical services and reduce the impact of network failures.
Redundant SD-WAN controllers: If your SD-WAN deployment includes multiple controllers, consider deploying redundant controllers to ensure high availability.
Redundant WAN links: Implement multiple WAN links from different service providers to ensure network connectivity even if one link fails.
Regular software updates: Keep your SD-WAN device's firmware and software up to date.
Packet Errors
Check for congestion: Identify if there are any bottlenecks or network segments with high utilization. Consider implementing Quality of Service (QoS) policies to prioritize critical traffic and reduce congestion.
Consider packet loss mitigation techniques: Explore techniques like packet duplication, packet reordering, or leveraging multiple network paths (multi-path routing) to reduce the impact of packet loss. SD-WAN solutions often offer these capabilities to enhance network performance.
Implement error correction mechanisms: Enable error correction mechanisms such as Forward Error Correction (FEC) or Automatic Repeat Request (ARQ) if supported by your SD-WAN device. These mechanisms can help mitigate packet errors and improve overall network reliability.