Measuring **network I/O throughput** for **Tableau Cloud** involves assessing the speed and volume of data transferred between your **on-premises data sources / Tableau Bridge / users' browsers** and **Tableau Cloud servers**. Since Tableau Cloud is SaaS, you can’t measure throughput directly on the Tableau Cloud servers, but you can measure the network traffic on your side using multiple approaches.

**✅ Recommended Methods**

**1. Browser-Based Client Throughput (Interactive Dashboards)**

If you're measuring how much data Tableau Cloud sends to users:

* Open your Tableau Cloud dashboard in **Chrome / Edge / Firefox**.
* Press **F12 → Network tab**.
* Refresh the dashboard.
* Check for:
  + **Total transferred size** (bottom of the network tab).
  + Identify large HTTP requests (typically .json, .png, .jpg, .tsvx).
  + Measure load time in milliseconds.

This gives a per-session **data transfer volume (MB)** and **time (s)** → calculate **throughput = MB / seconds.**

**2. Data Refresh Throughput (Bridge or Live Connection)**

If you're measuring **data flow from your data source to Tableau Cloud**, install network monitoring on the system running:

* **Tableau Bridge** (for live or extract refreshes)
* **Your own firewall/router interface** (monitor outgoing connections to Tableau Cloud IP ranges)

Use tools like:

* **Wireshark / tcpdump** → capture packets to/from Tableau Cloud ranges.
* **Windows Resource Monitor (resmon.exe) → Network tab**
* **Linux ifstat / nload / iptraf**
* **Cloud network monitor (if data source is on Azure/AWS/GCP)**

Filter by:

* **Destination IPs:** Tableau Cloud publishes its IP ranges here:  
  https://trust.tableau.com/
* **Ports:** Tableau Cloud typically uses HTTPS (443).

Throughput = **Bytes transferred / time elapsed during refresh / query.**

**3. Measure from Tableau Cloud Logs (Limited Insight)**

You can check **performance of extract refreshes / queries** in Tableau Cloud's Admin views:

* **Site Admin → Status → Background Tasks for Extracts**
  + Look for **“Duration”**, but this includes query execution time and cloud-side processing, not pure network time.

**4. Synthetic Network Speed Tests**

To test **raw network throughput**, run:

* **Speedtest.net CLI**
* **iperf3** (from your on-prem server to a public server near Tableau Cloud’s region, e.g., AWS us-west-2 for the US West Tableau Cloud deployment)
* **Azure/AWS latency/throughput tests** to Tableau Cloud regions

⚠️ This measures your **internet connection to the region**, not Tableau Cloud specifically.

**🔬 Example Throughput Calculation:**

| **Scenario** | **Total Data** | **Total Time** | **Throughput** |
| --- | --- | --- | --- |
| Extract refresh via Bridge | 150 MB | 30 sec | 5 MB/s |
| Dashboard load in browser | 8 MB | 4 sec | 2 MB/s |
| Synthetic speedtest to US West 2 | 1000 MB | 10 sec | 100 MB/s |

**⚙️ What’s a “Good” Throughput?**

* Browser dashboards: **>2–5 Mbps** downstream per user is typical.
* Extract refresh via Bridge: varies widely, **>10 Mbps** preferred for fast extracts.
* End-to-end enterprise link to Tableau Cloud: **>100 Mbps** preferred for larger workloads.

if you're measuring **Tableau Bridge** network throughput, you're specifically interested in the **data flow between your on-premises environment (where Bridge runs) and Tableau Cloud** during:

* **Live query passthrough**, or
* **Extract refresh publishing.**

You’ll measure the throughput **on the Bridge machine** during these operations.

**✅ Recommended Approach for Tableau Bridge Throughput Measurement**

**1. Monitor Tableau Bridge Process Network Usage (Simple / Built-in Tools)**

**On Windows:**

* Open **Resource Monitor → Network tab**.
* Look for process **tabprotosrv.exe** and **tableau\_bridge.exe** (or newer Bridge service names).
* Record:
  + **Send (B/sec)** and **Receive (B/sec)**
  + Watch how it spikes during refreshes or live queries.

**On PowerShell:**

Example PowerShell snippet to capture throughput for Bridge processes:

Get-NetAdapterStatistics

Get-Process -Name tableau\_bridge,tabprotosrv | ForEach-Object {

$\_ | Select-Object Name, Id, @{Name='NetworkBytes';Expression={(Get-NetUDPEndpoint -OwningProcess $\_.Id | Measure-Object -Property OwningProcess -Sum).Sum}}

}

**2. Wireshark / Packet Capture (Detailed Analysis)**

Capture network traffic on the Bridge machine, filter by Tableau Cloud endpoints.

* Start **Wireshark**, filter:

nginx

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host tableau.com or host tableau.cloud

(or use Tableau's published IP ranges).

* Start a refresh.
* Stop capture when finished.
* Check **Statistics → Protocol Hierarchy** or **Conversation List** to sum total bytes exchanged.
* Divide by refresh time for throughput.

**3. Command-Line Bandwidth Monitoring**

**Example: Windows – nload equivalent using bmon (WSL) or nettop (macOS)**

If you use WSL:

bash

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sudo apt install nload

sudo nload

Otherwise, install third-party CLI like NetLimiter, or use Performance Monitor (**perfmon.exe**) with these counters:

* Network Interface > Bytes Sent/sec
* Network Interface > Bytes Received/sec

**4. Rough Estimation from Extract Size + Duration**

If the Bridge is refreshing an extract, you can estimate throughput:

| **Extract Size** | **Duration** | **Estimated Throughput** |
| --- | --- | --- |
| 1 GB | 120 sec | ~8.5 Mbps |
| 200 MB | 30 sec | ~5.3 Mbps |
| 10 GB | 3 min | ~44 Mbps |

Formula:

arduino

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Throughput (Mbps) = (Extract size in MB \* 8) / Time in seconds

But this ignores protocol overhead, retries, and processing time.

**5. Optional: Firewall / Network Appliance Monitoring**

If your org uses a firewall or proxy for outbound traffic, you can track:

* **Outbound HTTPS throughput to Tableau Cloud IPs**
* Application-layer traffic categorized as **Tableau Bridge**

**🎯 Best Metrics to Track**

| **Metric** | **Where to Find** |
| --- | --- |
| Total MB sent/received | Wireshark, Resource Monitor, firewall logs |
| Avg throughput (Mbps) | Wireshark, perfmon, nload |
| Time per extract refresh | Tableau Cloud Admin views, Bridge logs |
| Extract file size | Bridge logs, Tableau Cloud task summary |

**🔍 Tableau Cloud IP Ranges**

Use **only these destinations** when filtering traffic:  
➡️ https://trust.tableau.com/ip-ranges

here’s a **complete setup for measuring Tableau Bridge network throughput on Windows Server 2022** for **both live queries and extract refreshes**, with latest Tableau Bridge.

**✅ Setup Summary**

| **Test Type** | **Example Use** | **Recommended Measurement Tool** |
| --- | --- | --- |
| Extract Refresh | Push extract to Tableau Cloud | PowerShell / Perfmon / Wireshark |
| Live Query Passthrough | User runs dashboard hitting DB | PowerShell / Perfmon / Wireshark |

**▶️ Part 1: Prepare Environment**

**1.1. Verify Tableau Bridge Version**

On your Bridge server:

powershell

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Get-ItemProperty 'HKLM:\Software\Tableau\Tableau Bridge\CurrentVersion' | Select-Object Version

Or from the GUI → About → should be **≥ 2024.1+**.

**1.2. Identify Tableau Cloud IPs**

Get latest IP ranges:  
➡️ https://trust.tableau.com/ip-ranges  
Example region: US West (us-west-2) Tableau Cloud → find IPs like 34.212.x.x/16.

**1.3. Optional: Find Tableau Bridge Process**

During extract refresh or live query, these processes are active:

* tabprotosrv.exe
* tableau\_bridge.exe
* tableau\_bridge\_service.exe

**▶️ Part 2: Extract Refresh Test**

**2.1. Start Network Monitor**

Run PowerShell to monitor network adapter stats:

powershell

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Get-NetAdapterStatistics

This gives bytes sent/received.

Alternatively:

powershell

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Get-Counter -Counter "\Network Interface(\*)\Bytes Total/sec"

Run this before and during the refresh.

**2.2. Run an Extract Refresh**

* Go to Tableau Cloud → **Schedules** → Run extract refresh for a workbook connected through Bridge.
* Monitor the total bytes sent and received.

**2.3. Calculate Throughput**

Example:

* 500 MB extract, refresh took 40 sec.
* Throughput ≈ (500 \* 8) / 40 = 100 Mbps

But confirm actual traffic from Get-Counter or Wireshark.

**▶️ Part 3: Live Query Test**

**3.1. Start Network Monitor**

Same as extract refresh:

powershell

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Get-Counter -Counter "\Network Interface(\*)\Bytes Total/sec"

**3.2. Execute Live Query**

Have a user open a Tableau Cloud dashboard that uses **Live connection through Bridge**.

* Use a heavy dashboard to generate larger queries.
* Each user click triggers Bridge to:
  + Connect to the database.
  + Stream query results to Tableau Cloud.

**3.3. Observe Spikes in Throughput**

You’ll see bursts of:

* **Outbound HTTPS traffic** (Bridge → Tableau Cloud)
* Some inbound traffic for query parameters.

**Optional Wireshark filter:**

ini

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ip.addr == <tableau\_cloud\_ip\_range>

**▶️ Part 4: More Accurate Per-App Stats**

Run PowerShell script to monitor per-process traffic:

$processes = Get-Process tableau\_bridge,tabprotosrv

foreach ($proc in $processes) {

Write-Output "Monitoring Process ID $($proc.Id) - $($proc.ProcessName)"

Get-NetTCPConnection -OwningProcess $proc.Id | Format-Table -AutoSize

}

For full bytes transferred, you'd need netstat -e, or use 3rd-party tools like:

* Sysinternals **TCPView**
* GlassWire (free)
* NetLimiter (paid, per-process bandwidth)

**▶️ Part 5: Summary of Results**

| **Scenario** | **Example Total Data** | **Example Time** | **Throughput** |
| --- | --- | --- | --- |
| Extract Refresh | 1 GB | 30 sec | ~270 Mbps |
| Live Query (1 user) | 2 MB per query | 2 sec | ~8 Mbps |
| Live Query (5 users) | 10 MB total | 2 sec | ~40 Mbps |