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Meetup
8th December 2023



Delivery Optimization Reporting and Troubleshooting aka ‘Welcome to the armpit of the armpit of IT’

2Pint - Phil Wilcock (not an MVP)

@phil2pint <https://2pintsoftware.com>

Agenda

Why DO Reporting?

How DO Reporting?

What Else? Troubleshooting the results

wth is 2Pint even doing these days!?



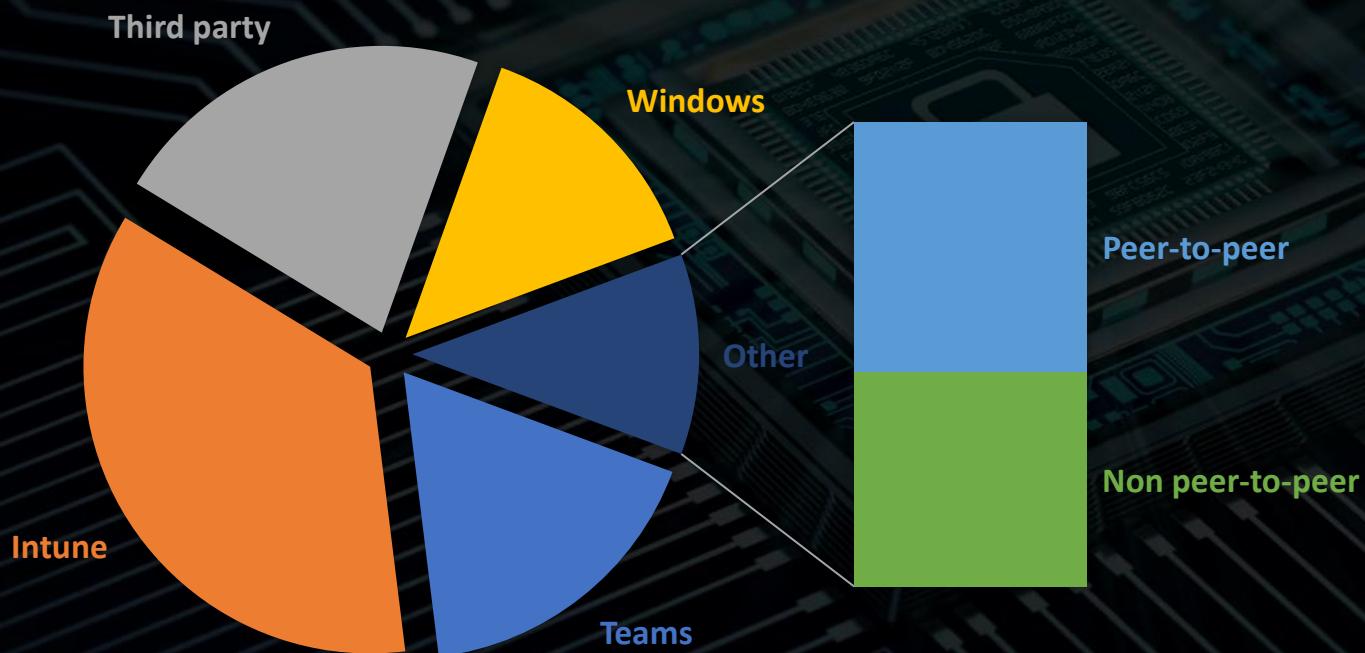
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Why DO Reporting?

- Average Enterprise customer – 900 discrete download types
- 10-20 downloads per day per endpoint



*Data from 2Pint StileR

Why DO Reporting?

- Case in point – from Sandy Zeng (Cloudway)
- Full thread here https://twitter.com/sandy_tsang/status/1714675020926959802
- Synopsis
 - IntuneWin32Apps not peering , but WU and O365 were ok
 - Required much delving into logs
 - Turned out there was an issue with a specific CDN – fix incoming! 🙌

DO Reporting Current Options

- ConfigMgr Client Data sources dashboard hmmm..
- 2Pint StifleR
 - Fab
 - Near Real-time
- Delivery Optimization Windows Update for Business report
 - Updated version of Update Compliance
 - Easier to build custom reports
 - ‘Actionable Insights’
 - Great vid from David Brooks if you want to set it up
 - <https://youtu.be/W30BT2Pk4kU?si=1tPCYt7Qw4INu3ei>



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Delivery Optimization Windows Update for Business report

- GA March '23
- Currently Update focussed
- Good for high level overview
- Customisable 🍻 (learn Kusto!) <https://github.com/rod-trent/MustLearnKQL>
- Drill down-able – also 🍻



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Main Metrics – click one!



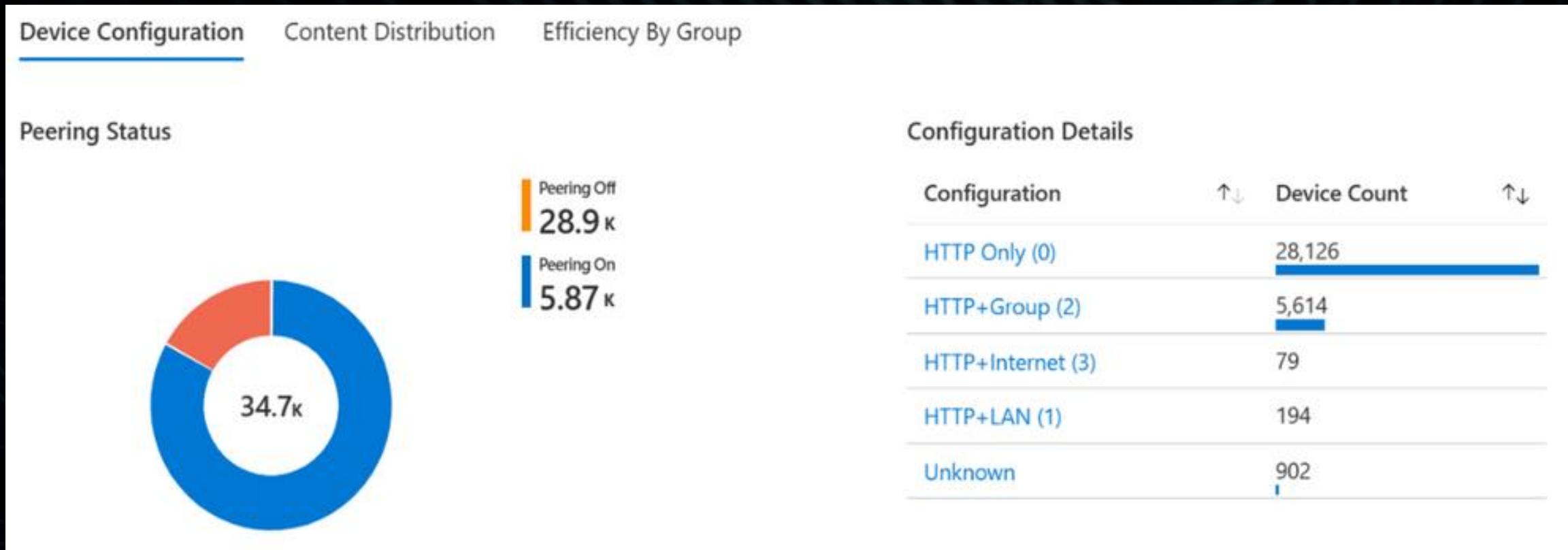
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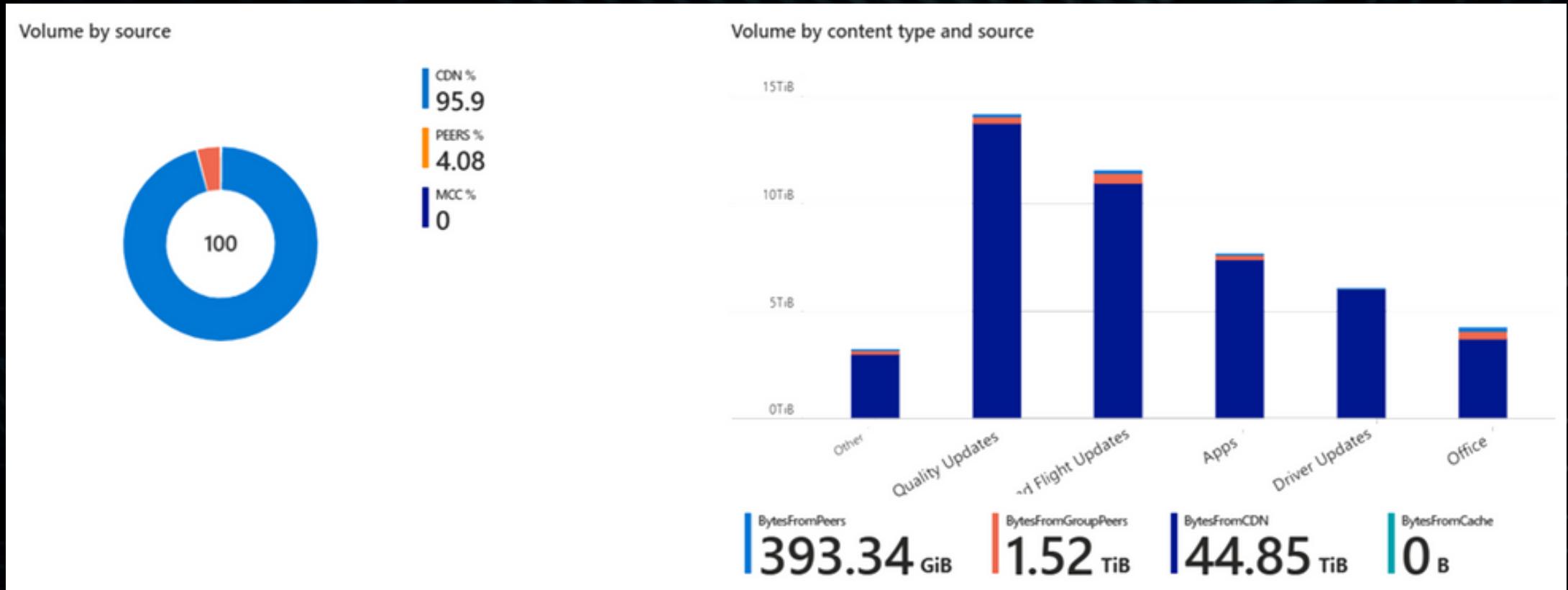
Delivery Optimization Windows Update for Business report

Device Config – v.important if you are wanting to save bandwidth



Delivery Optimization Windows Update for Business report

This org needs help! 😊



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Groups

Device Configuration Content Distribution Efficiency By Group

Top 10 groups based on number of devices

| GroupID | City | Country | ISP | P2P %↑↓ | MCC ...↑↓ | Volume by P2P↑↓ | Volume by MCC↑↓ | Volume by CDN↑↓ | Device Count |
|----------------------------------------------|------|---------|-----|---------|-----------|-----------------|-----------------|-----------------|--------------|
| 3suvw1efol0nmy8y9g8tfhtj1onwpsk9g9swpwnvfra= | | | | 0.02 | 0 | 5.3 GiB | 0 B | 30.48 TiB | 28932 |
| lsna5q2iicp8yrrt+g03xbbb5a7lditl915vjpo7gps= | | | | 4.27 | 0 | 466.37 GiB | 0 B | 10.22 TiB | 3694 |
| +iw+kd5fwxl7kshqunuhkhsarekekw6jx1nnfwizfy= | | | | 12.19 | 0 | 250.15 GiB | 0 B | 1.76 TiB | 772 |
| i3ytfeqiok6tdcybcx4jpo21cepblaat/lqlxkz78= | | | | 49.07 | 0 | 711.41 GiB | 0 B | 738.43 GiB | 685 |
| 7zmgvr563/htmgqzpxcktwbo2fv7yc4m8a2gelgiuk= | | | | 16.89 | 0 | 101.75 GiB | 0 B | 500.83 GiB | 312 |
| ayryov8w2pldzif0v4wwdpnkdko+aghm/naknrma0oi= | | | | 8.41 | 0 | 38.05 GiB | 0 B | 414.22 GiB | 228 |
| cy246qidc2fld3ovdalzbff4vpftbrrbci60uedhrzu= | | | | 1.6 | 0 | 17.88 GiB | 0 B | 1.07 TiB | 164 |
| 1+aoo+jxq//wuwbytppt5qecl6i8n26an2c0+gxutei= | | | | 64.54 | 0 | 78.71 GiB | 0 B | 43.25 GiB | 70 |
| 5mm6r1yvwnlrthctosn/ot9pv0uaujr4zal7aosfkue= | | | | 29.71 | 0 | 25.07 GiB | 0 B | 59.32 GiB | 64 |
| | | | | 52.7 | 0 | 38.99 GiB | 0 B | 35 GiB | 54 |



Delivery Optimization Windows Update for Business report

Customization – 3 main schema areas
UCDOStatus, UCDOAggregatedStatus, UCClient

The screenshot shows the Microsoft Power BI service interface. On the left, a navigation pane lists various data sources: Activity log, Alerts, Metrics, Logs (selected), Change Analysis, Service health, Workbooks, Insights, Applications, Virtual Machines, Storage accounts, Containers, Networks, SQL (preview), and Azure Cosmos DB. The 'Logs' item is highlighted. In the center, the 'Tables' view is displayed. A search bar and filter options are at the top. Below, there's a 'Favorites' section with a note about adding favorites by clicking the star icon. The 'LogManagement' section contains several tables: Operation, UCClient (highlighted with a red box), UCClientReadinessStatus, UCClientUpdateStatus, UCDeviceAlert (highlighted with a red box), UCDOAggregatedStatus (highlighted with a red box), UCDOStatus (highlighted with a red box), UCServiceUpdateStatus, and UCUpdateAlert. To the right, a detailed view of the 'UCClient' table is shown, including its description: 'Update Compliance - This event acts as an individual device's record, containing data like the current build installed, device's name, the OS Edition, active hours (quantitative), and so on.' It also includes sections for 'Tags' and 'Useful links' (with a link to 'UCClient'). A 'See preview data' button is at the bottom right.



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- UCDOStatus single device record
- UCDOAggregatedStatus summary of all UCDOStatus records
- UCClient client OS version etc
- Lots of interesting stats – if you know what to look for!

DO Reporting For Troubleshooting

Things to watch out for:

- Configuration
 - Download Mode
 - Cache size and retention
- Download
 - Download Mode used (not same as configured value!)

| | | | |
|---------------------|--------|---------|------------------------------------------------------------------------|
| DownloadMode | string | LAN (1) | Delivery Optimization Download Mode configured on the device. |
| ContentDownloadMode | int | 1 | Device's Delivery Optimization Download Mode used to download content. |



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DO Reporting For Troubleshooting

Other interesting report metrics (UCDOSTatus):

| | | | |
|-------------------------|--------|-------|------------------------------------------------------------------------------------------------------------------------------------|
| PeerEligibleTransfers | long | 5 | Total count of eligible transfers by peers. |
| PeeringStatus | string | On | Delivery Optimization peering status. |
| PeersCannotConnectCount | long | 1 | Count of peers Delivery Optimization couldn't connect to. |
| PeersSuccessCount | long | 2 | Count of peers Delivery Optimization successfully connected to. |
| PeersUnknownCount | long | 0 | Count of peers with an unknown relation. |
| BWOptPercent28Days | real | 10.61 | Bandwidth optimization (as a percentage of savings of total bandwidth otherwise incurred) for this device. A rolling 28-day basis. |
| BWOptPercent7Days | real | 10.61 | Bandwidth optimization (as a percentage of savings of total bandwidth otherwise incurred) for this device. A rolling 7-day basis. |



Tips

Do some DO testing in your lab (you have one right?)

Benchmark your own environment

Create some troubleshooting reports based on the benchmark

Massive bandwidth/resource savings are possible!

DO Troubleshooter -from the DO Devs

<https://www.powershellgallery.com/packages/DeliveryOptimizationTroubleshooter/1.1.0>



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Delivery Optimization In-depth Reporting

- Thanks to Johan Arwidmark
- See [this 2Pint blog](#)
- 25 W11 Clients – newly built

#Test1 default DO settings – 26GB of traffic, 69k TCP connections, 40% P2P efficiency, not bad

#Test2 basic [2Pint DO settings](#) - 14GB of traffic, 40k TCP connections, 66% P2P efficiency, better!

#Test3 as above + DNS-SD - 11GB of traffic, 34k TCP connections, 89% efficiency, noise!

Conclusion: With a few tweaks we saved 15GB of traffic and 35k TCP connections. Easy!



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Delivery Optimization In-depth Reporting

Test Method

- PFSense router – ntopng package for tracking connections
- VM-Adapter traffic in Hyper-V using native metrics (reset after each run!)
- PowerShell to get the DO data from each device
- Coming to GitHub soon ;-)



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2Pint! Who are they and what do they do?

10yrs old in 24!

Platform agnostic! ConfigMgr/Intune/Workspace One/Other?

Focus on Real-Time – StifleR (R = Realtime)

Built on MS SignalR (see what we did there?)

Bandwidth mgmt (throttling, settings for BranchCache/DO)

OS Deployment – HTTP(s) based PXE and hyper-automated OSD

Lots of new stuff coming in 24!



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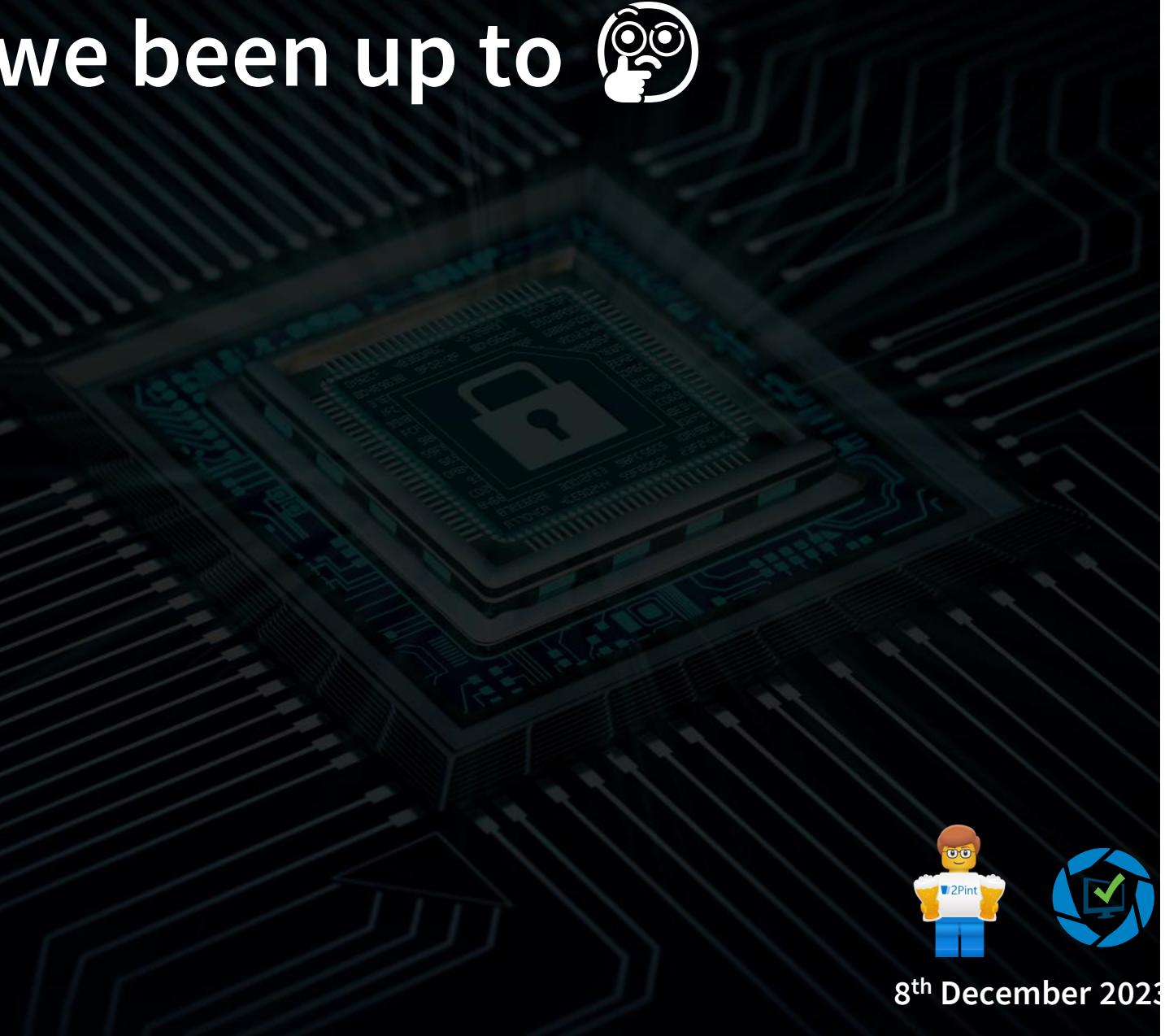
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2Pint! What have we been up to 🤐

We hired some new folks...



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2Pint! What have we been up to 🤐

iPXE Anywhere 2PXE/Web Service 3.6/7

Improved device security

Linux boot support with Secure Boot

Http/https boot support

USB/ISO boot support

USB Support

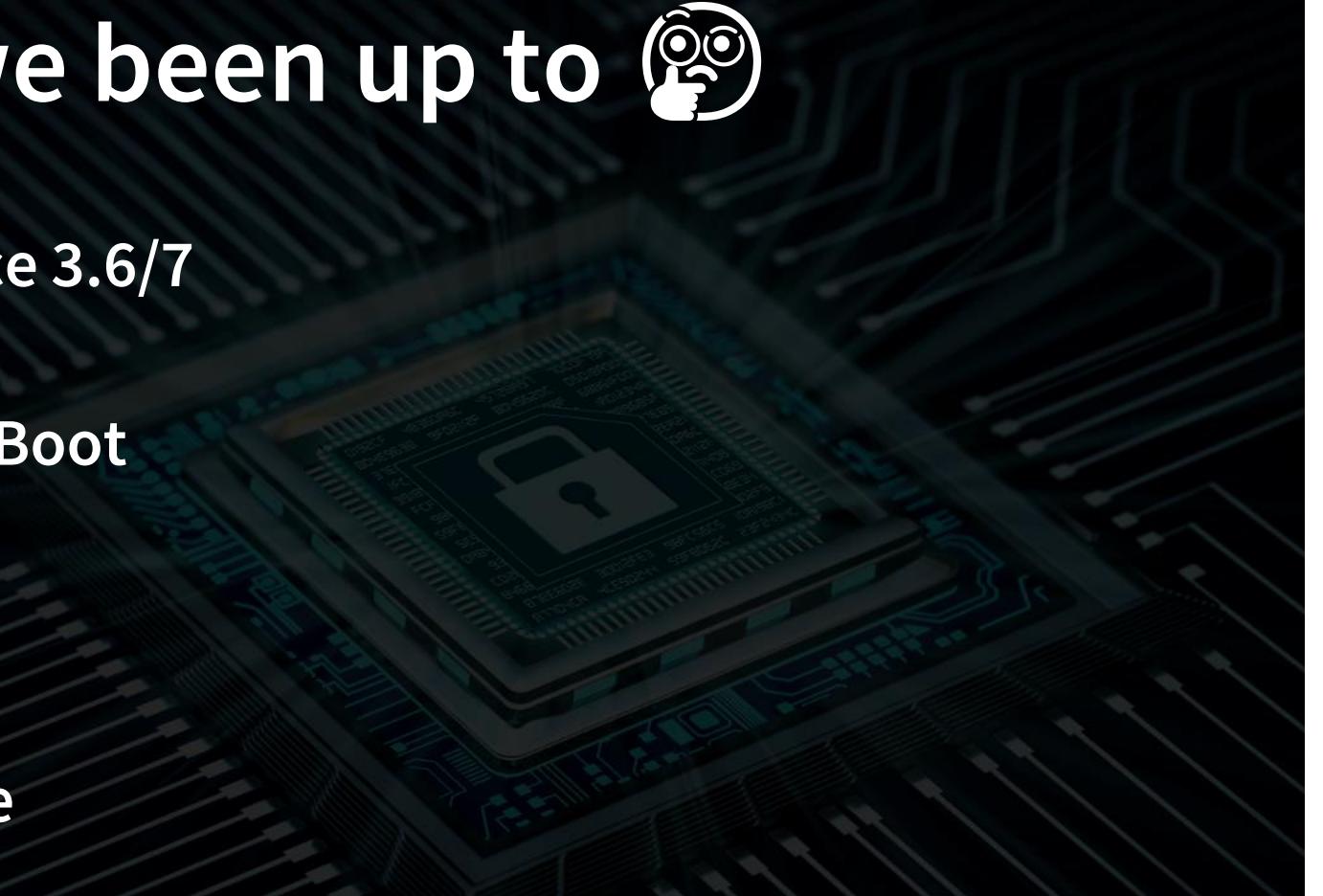
USB + iPXE + BranchCache

Web Service Automation

For complex deployment scenarios (802.1x etc)



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2Pint! What have we been up to 🤯

StileR

Release 2.10 is current, 2.12 - Winter 23, 2.13 Spring 24

2.12

UI improvements (tooltips, data drill-down, statistics)

Database performance and summarization

Remote VT100 Console 🤯

Action Hubs with SignalR Core

Separate WMI Adapter

First initial Chain Home System tests



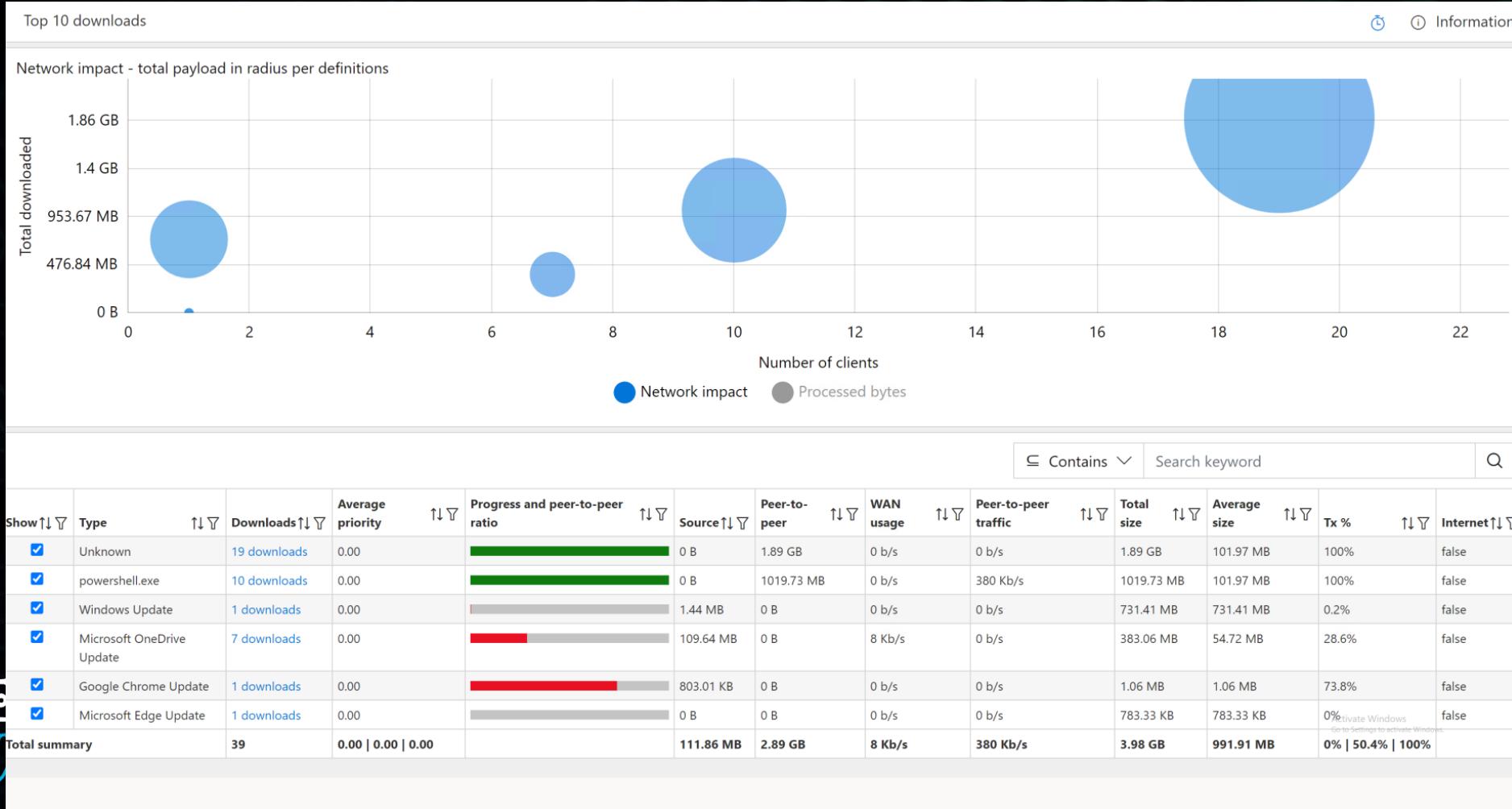
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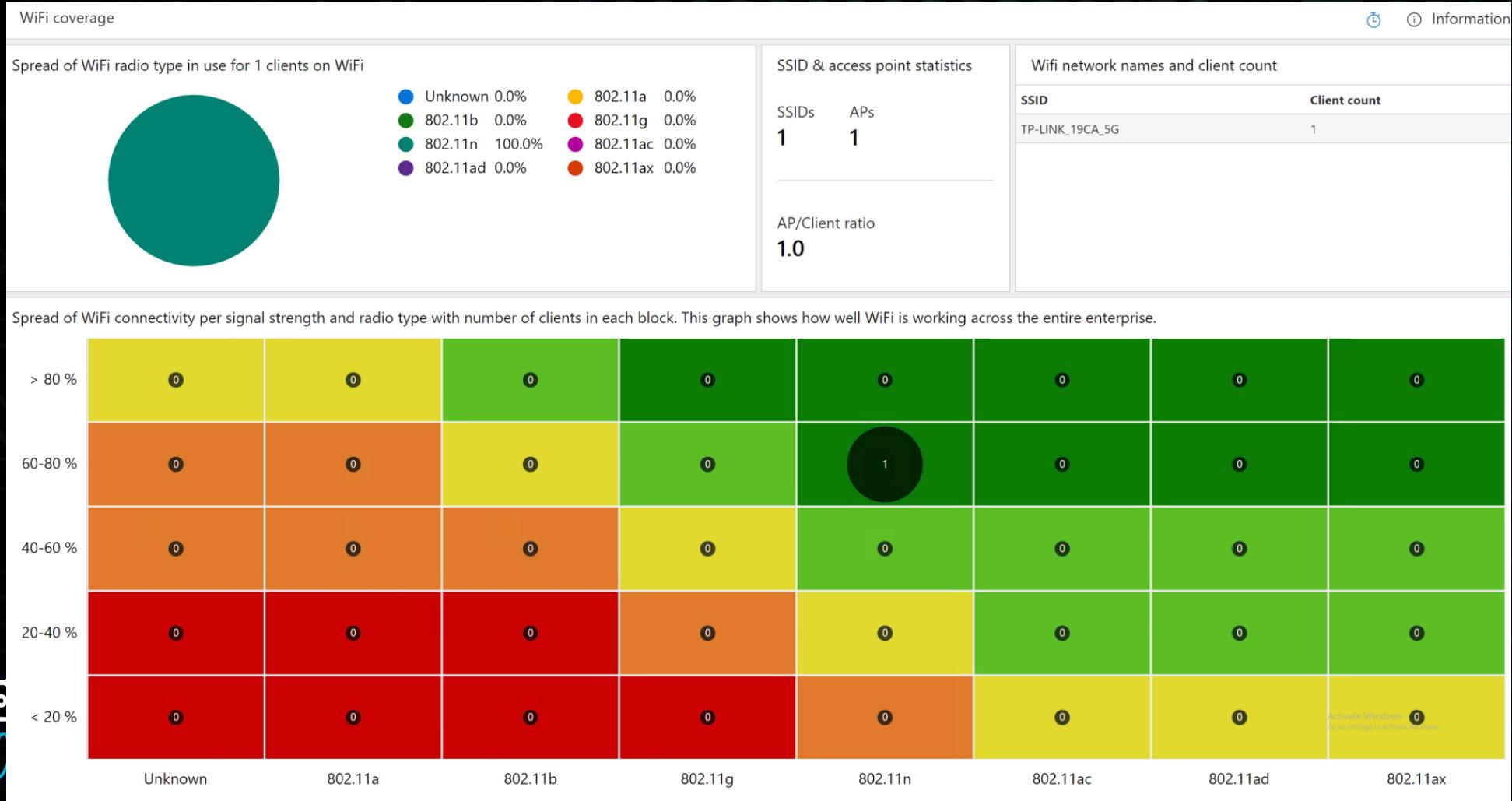
2Pint! What have we been up to 🤯

StifleR 2.12 – Real-time dashboards – Top 10 downloads



2Pint! What have we been up to 🤳

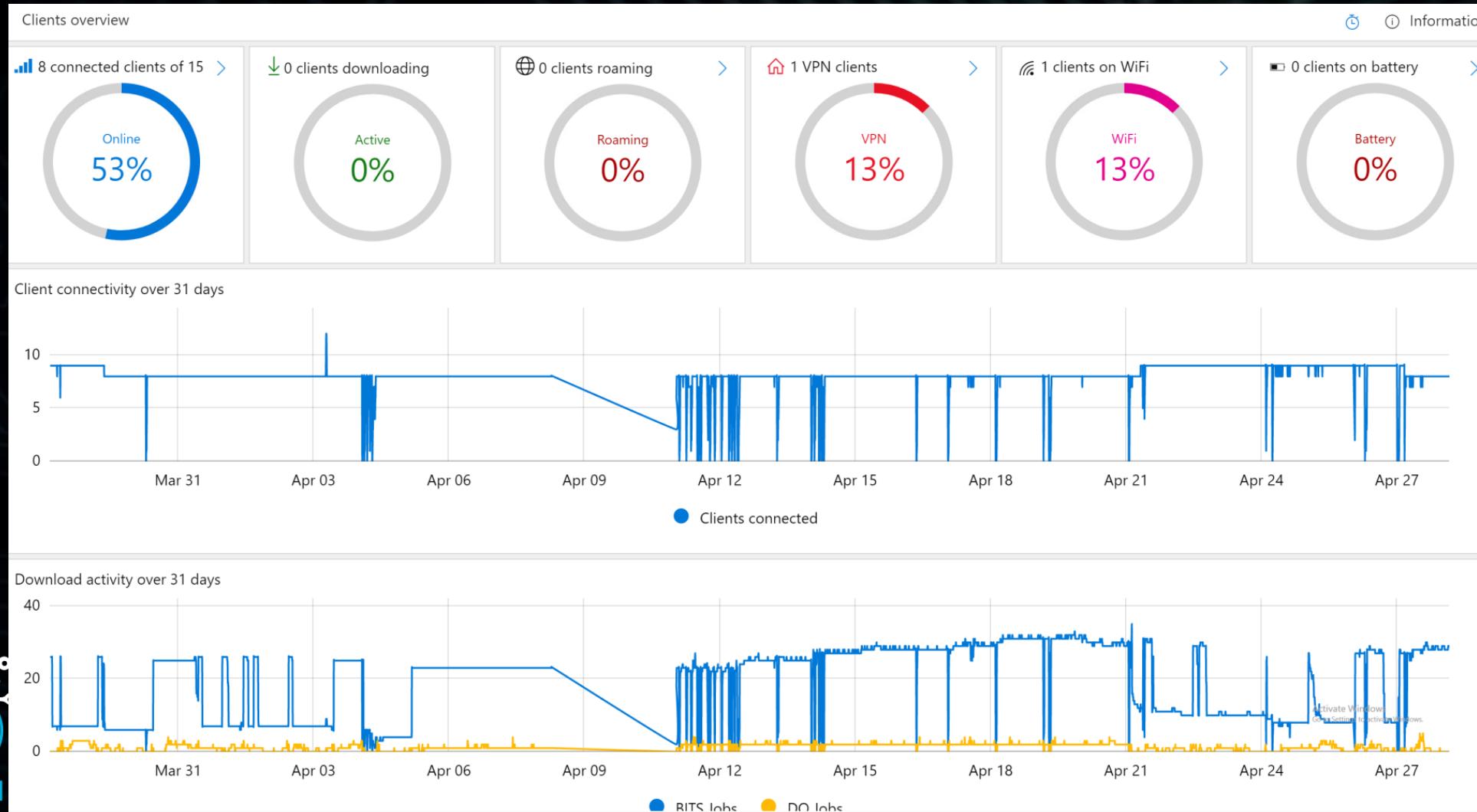
StifleR 2.12 – Real-time dashboards – Wifi Troubleshooter



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2Pint! What have we been up to 🤯

StifleR 2.12 – Real-time dashboards – Client overview



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2Pint - New & Shiny 🎉 - RemoteR

RemoteR - Client Remote Tools (R) = RealTime

Perfmon

Registry

Event Viewer

Console

TaskMgr

WMI Browser

Remote Assistance/RDP

*Currently built into StifleR but will be decoupled into a standalone product



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2Pint - New & Shiny 🎉 - RemoteR

Coming in '24

RemoteR - PowerShell

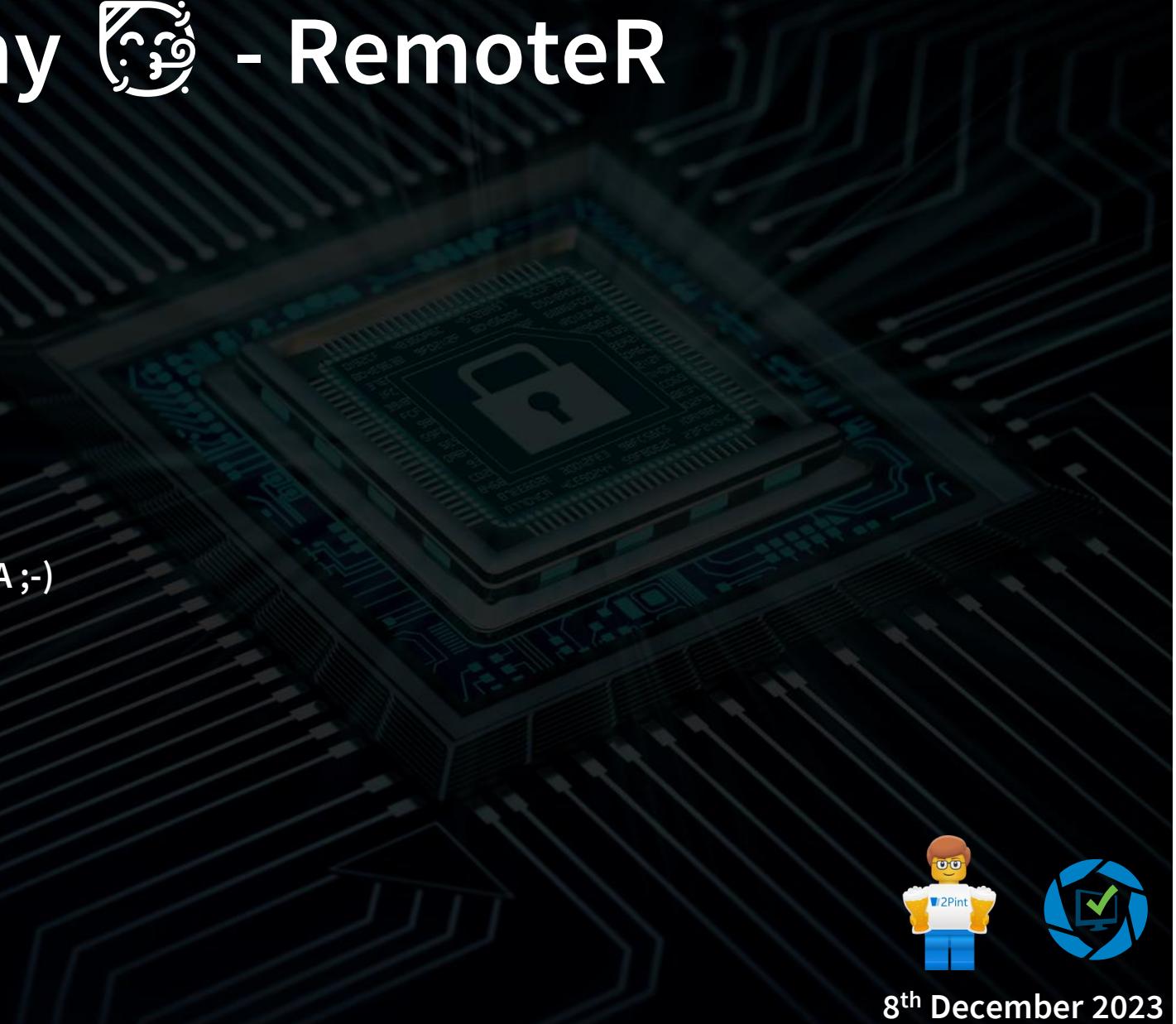
RemoteR - Task Manager

RemoteR - Event Viewer

I did have some images here but..... NDA ;-)



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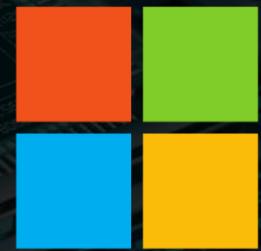
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Q&A

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