



The bridge to possible

Using Splunk and OpenTelemetry for Centralized Insights To Achieve Your Sustainability Goals

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BRKGRN-1022

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Agenda

- Why sustainability matters
- OpenTelemetry
- Sustainability outcomes with Splunk and Cisco Intersight
- Demo
- How Cisco can help

Obtain actionable sustainability insights for your infrastructure in under an hour

Cisco Webex App

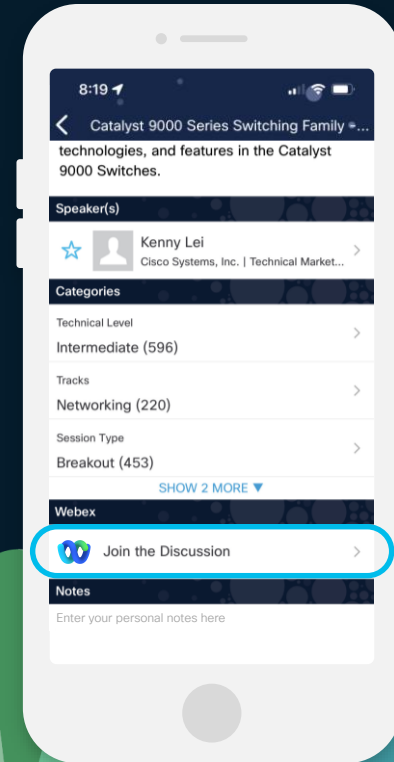
Questions?

Use Cisco Webex App to chat with the speaker after the session

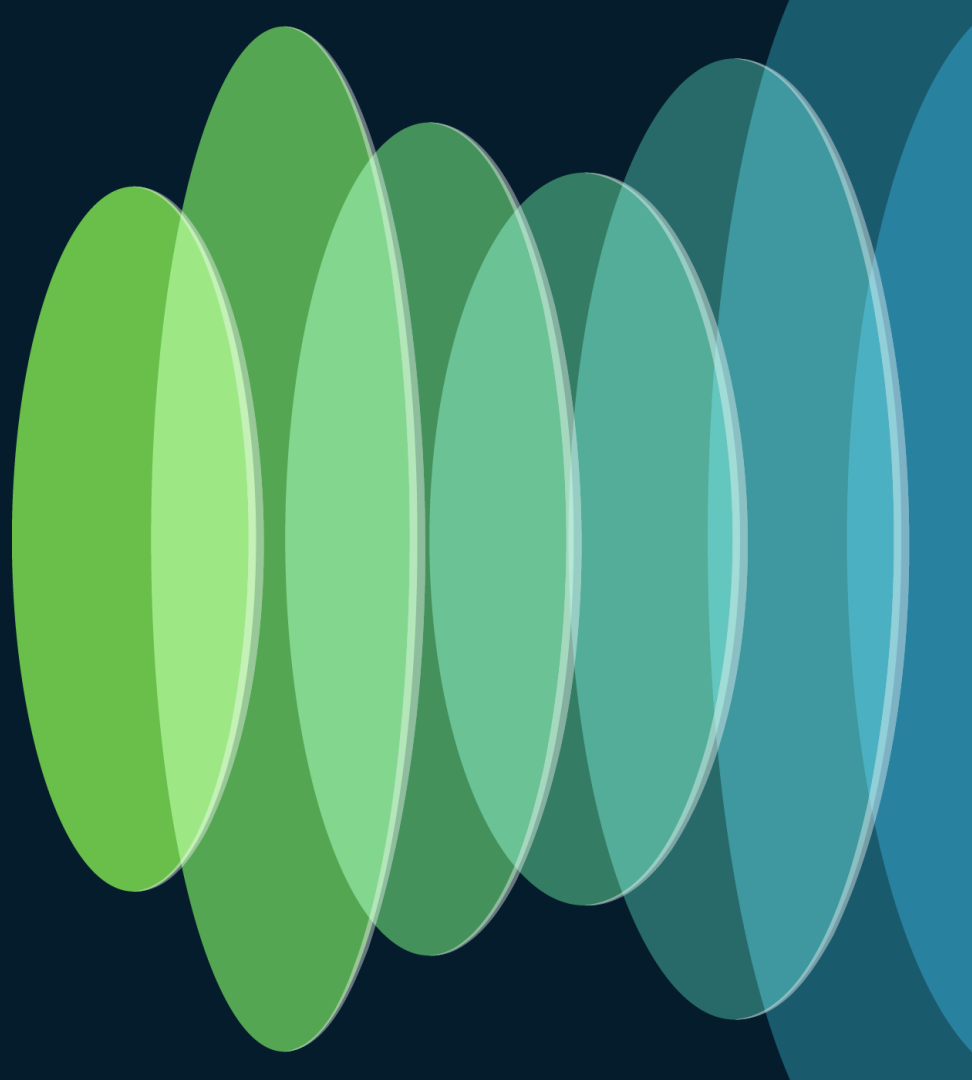
How

- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
- 3 Install the Webex App or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until June 7, 2024.



Why sustainability matters



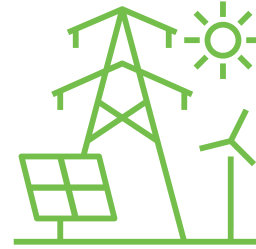
Sustainability in IT matters

4%

Estimated contribution of IT's direct impact on global greenhouse gas emissions¹

20%

Estimated influence IT can have on reducing impact in other areas outside of IT²



Make sustainability a part of your management lifecycle

Sources: 1. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4424264
2. SMARTer2030 – ICT Solutions for 21st Century Challenges, GeSI 2015

Calculating CO₂ equivalent emissions

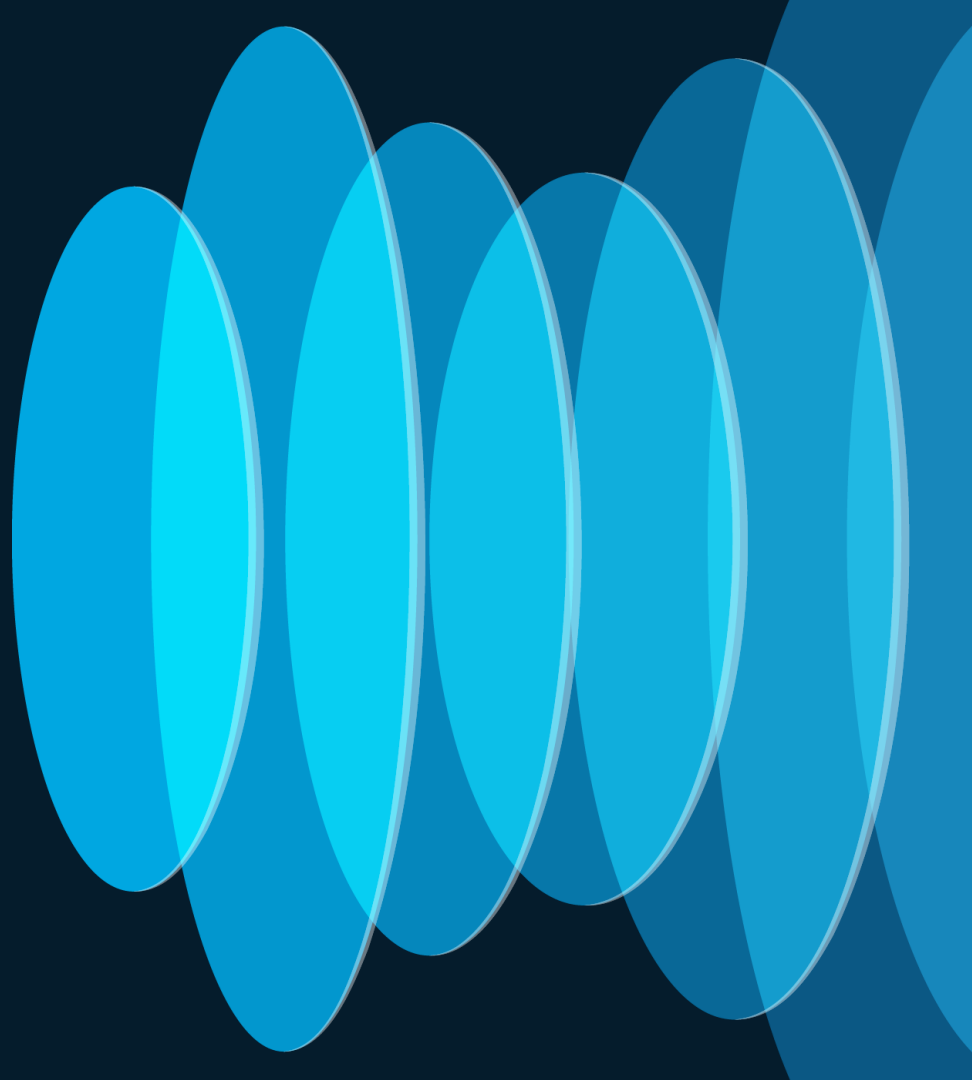
$$\text{Power (kW)} \times \text{Time duration (hours)} = \text{kWh}$$

Energy

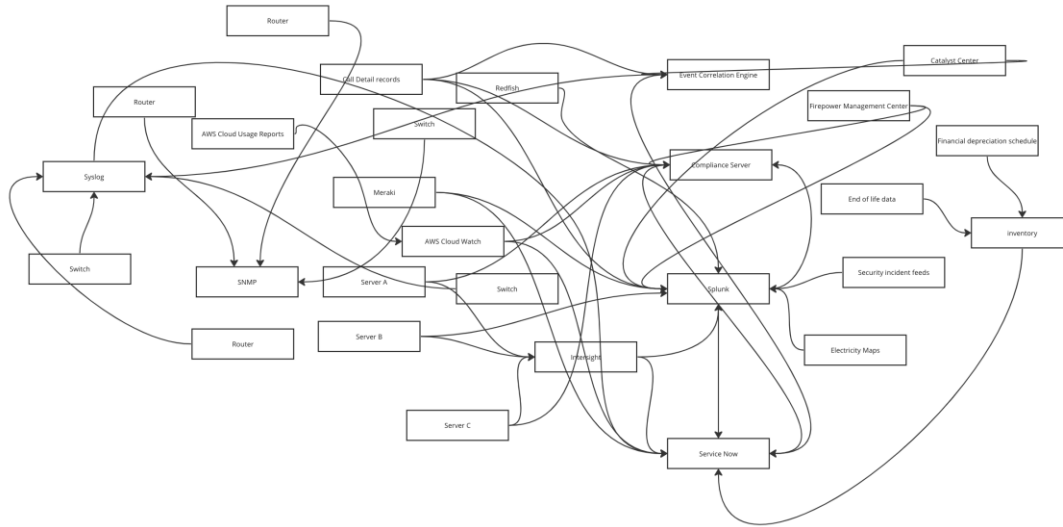
$$\text{kWh} \times \frac{\text{CO}_2\text{E (grams)}}{\text{kWh}} = \text{CO}_2\text{E}$$

Energy Carbon intensity CO₂ Equivalent Emissions

OpenTelemetry and how it can help



Current telemetry pipeline



Many different...

Device types

Transport protocols

Data formats

Units

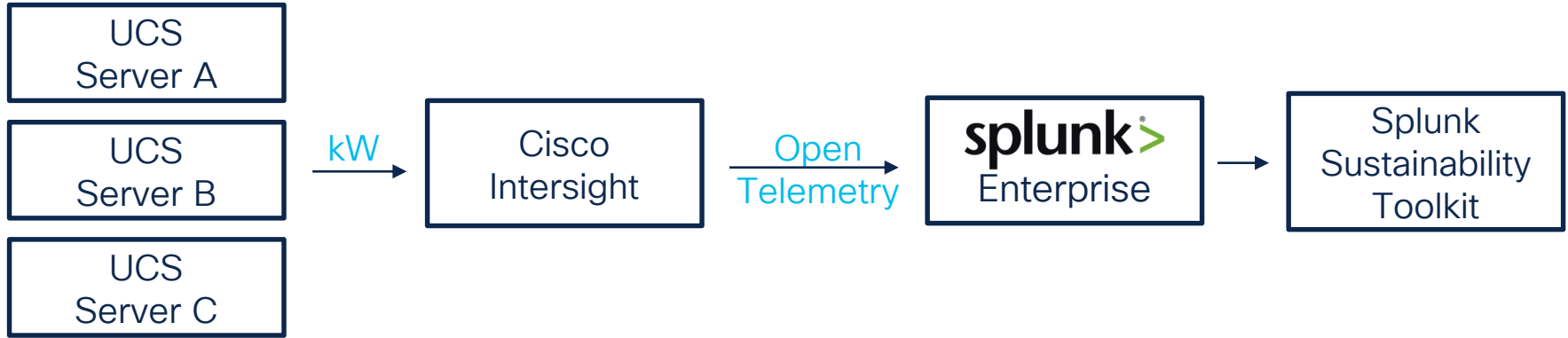
What if it was this?

Your devices



OpenTelemetry allows you to
focus on actionable insights by standardizing
data export, import, and normalization.

What we will demonstrate



OTLP – OpenTelemetry Protocol
(gRPC over HTTPS)

Splunk Sustainability Toolkit for actionable insights

Summary

Total CO₂e Emissions

Potential CO₂e Savings

Potential Saving %

2,743kg CO₂e

2,011kg CO₂e

73%

Potential CO₂e Savings

Locations Considered

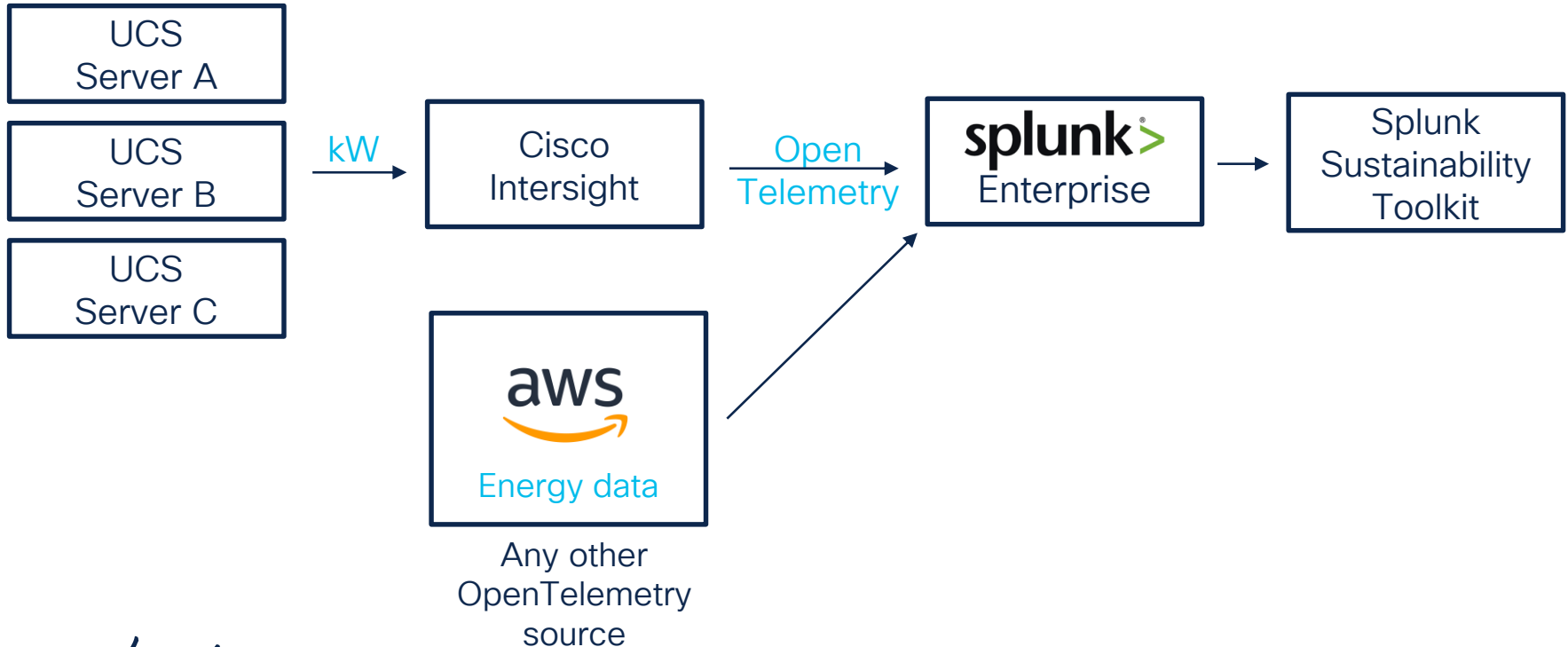
Site	kg CO ₂ e Emissions	Best Location	kg CO ₂ e Saving	CO ₂ e Saving %	Location Name	Mean CO ₂ e per kWh
Berlin Office	53.9	Zone/NO-N01	50.6	93.8	GB/London/E14	191.6
Birmingham Factory	116.8	Zone/NO-N01	99.7	85.4	GB/North West England/N1	79.4
Frankfurt Factory	249.1	Zone/NO-N01	233.2	93.6	GB/West Midlands/B1	210.6
London DC	1424.7	Zone/NO-N01	1235.9	86.7	Zone/CH	86.6
London Office	55.8	Zone/NO-N01	48.4	86.7	Zone/DE	444.9
Manchester Factory	60.6	Zone/NO-N01	36.7	60.5	Zone/NO-N01	24.6
Oslo Office	7.2	Zone/NO-N01	0.0	0.0		
Zürich DC	693.2	Zone/NO-N01	248.8	35.9		
Zürich Factory	81.4	Zone/NO-N01	57.4	70.5		

Detailed Analysis

Detailed Analysis of Potential CO₂e Savings

Site	kWh Used	Mean kg CO ₂ e per kWh	Mean kg CO ₂ e per kWh at Time Used	kg CO ₂ e Emissions	Best Location	kg CO ₂ e Saving	CO ₂ e Saving %
Berlin Office	135.2	0.445	0.399	53.9	Zone/NO-N01	50.6	93.8
Birmingham Factory	693.9	0.211	0.168	116.8	Zone/NO-N01	99.7	85.4
Frankfurt Factory	642.6	0.445	0.388	249.1	Zone/NO-N01	233.2	93.6
London DC	7659.9	0.192	0.186	1424.7	Zone/NO-N01	1235.9	86.7
London Office	300.2	0.192	0.186	55.8	Zone/NO-N01	48.4	86.7
Manchester Factory	970.0	0.079	0.062	60.6	Zone/NO-N01	36.7	60.5
Oslo Office	290.5	0.025	0.025	7.2	Zone/NO-N01	0.0	0.0
Zürich DC	18832.0	0.087	0.038	693.2	Zone/NO-N01	248.8	35.9
Zürich Factory	975.5	0.087	0.083	81.4	Zone/NO-N01	57.4	70.5

Don't have Intersight yet?

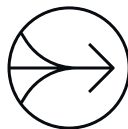


OpenTelemetry (OTel)

A common format for...



Metrics



Traces



Logs

OTLP – OpenTelemetry Protocol
(gRPC over HTTPS)

OTel support

Vendors



Analytics and network management



Cloud platforms



Google Cloud Platform

Observability tools



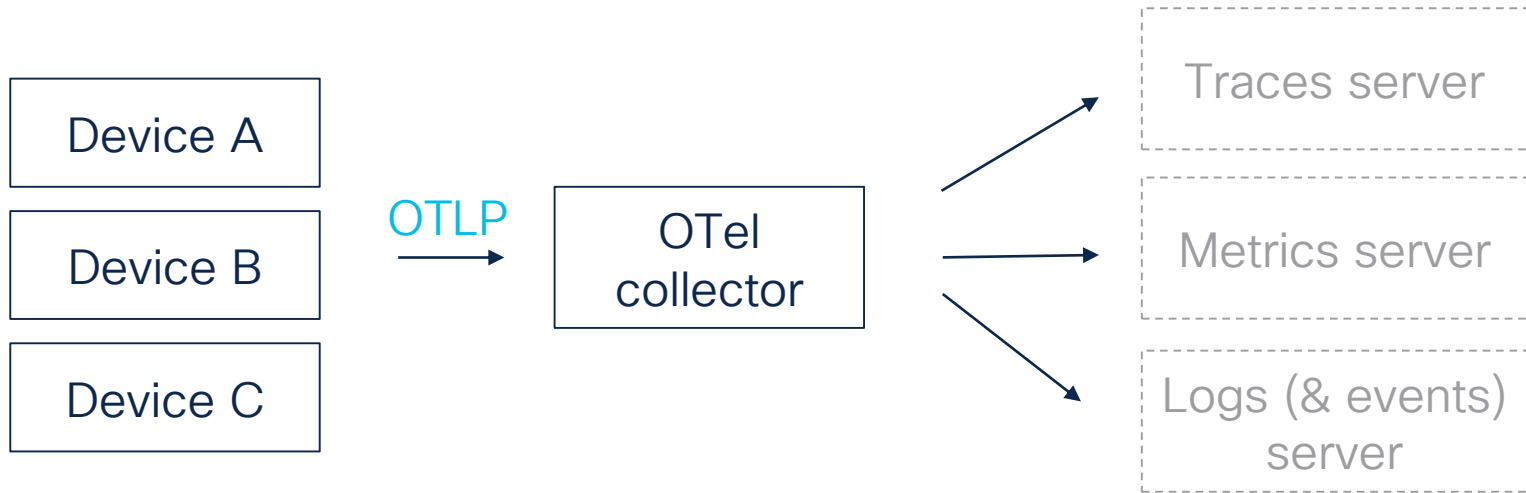
See more at <https://opentelemetry.io/ecosystem/vendors/>

OpenTelemetry architecture

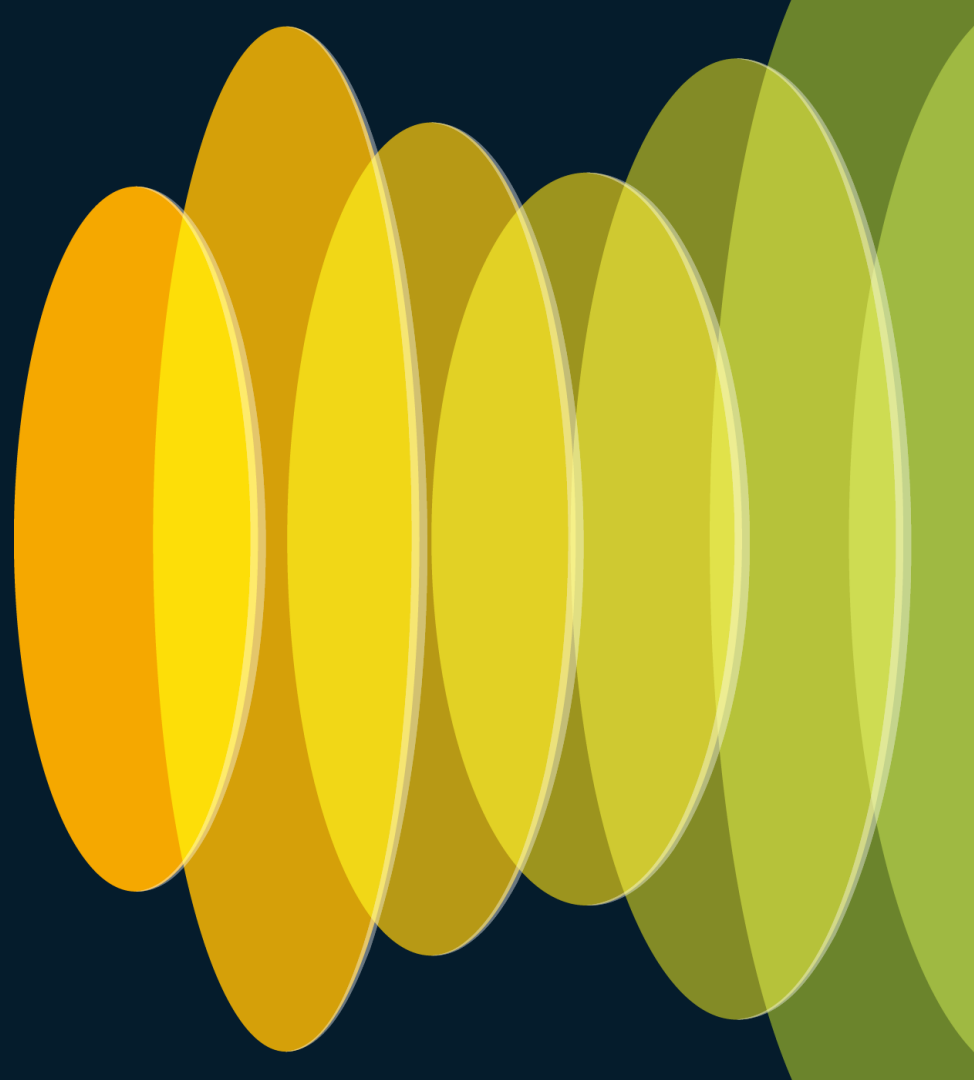


OTLP – OpenTelemetry Protocol
(gRPC over HTTPS)

OpenTelemetry architecture



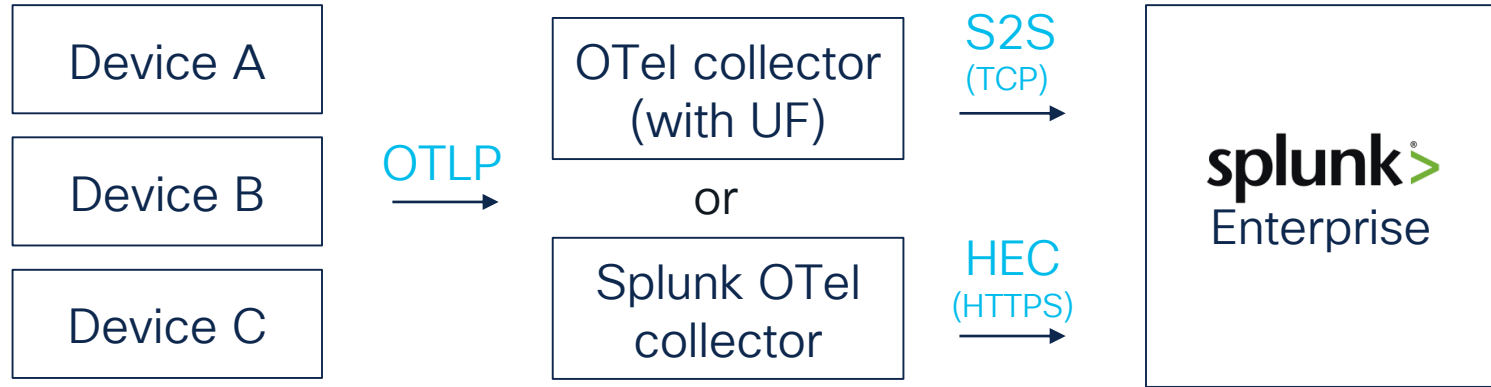
Sustainability outcomes with Splunk and Cisco Intersight



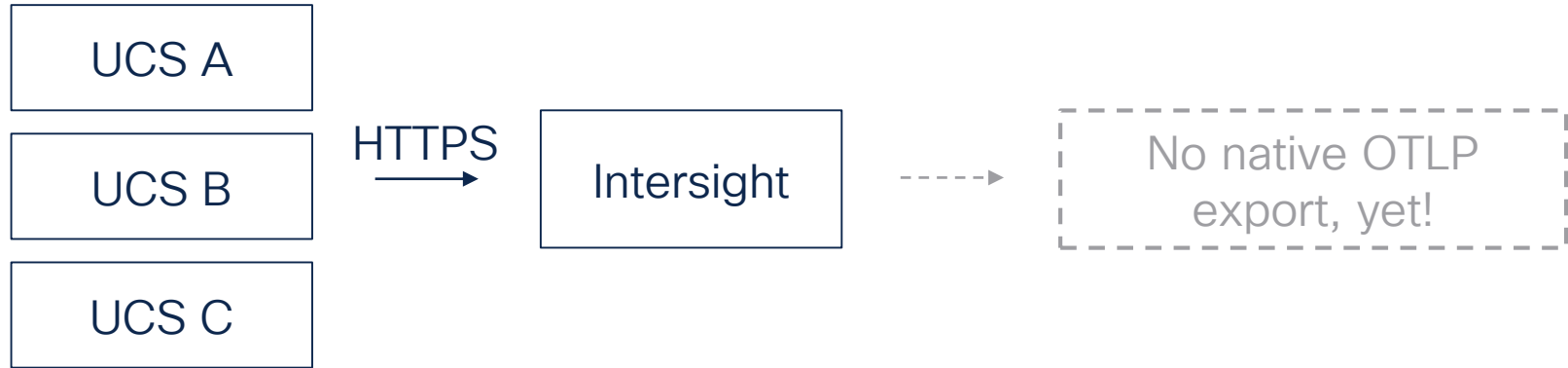
Splunk OTEL support



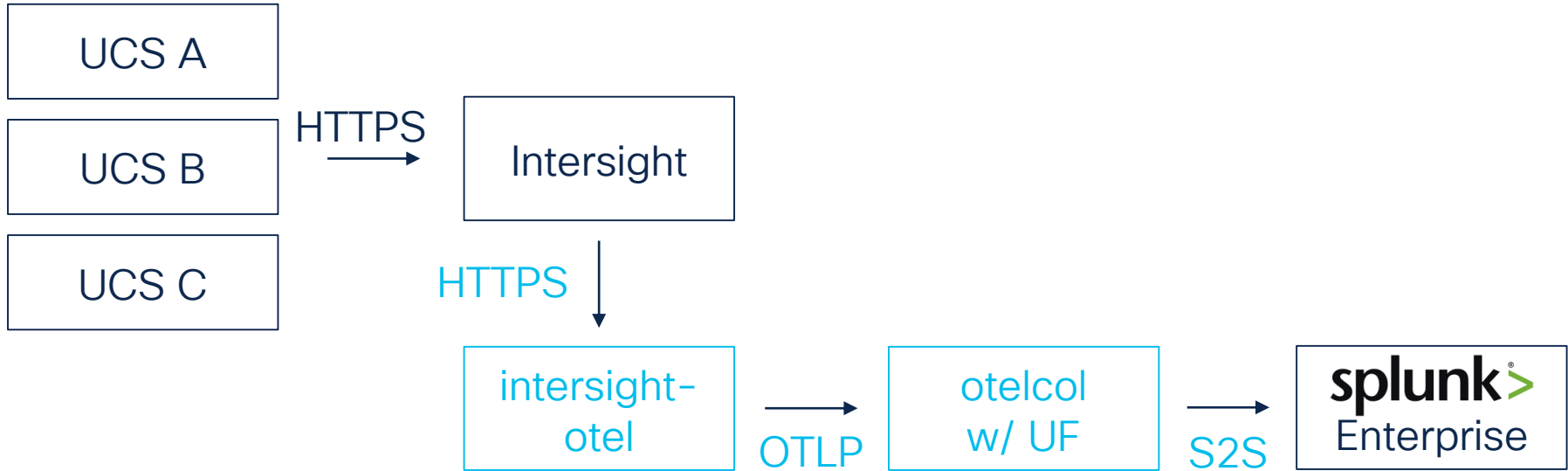
Splunk OTel support



Exporting Intersight with OTLP

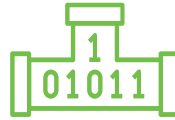


Exporting Intersight with OTLP

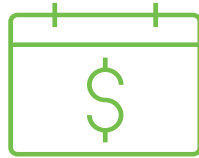


The **Splunk Sustainability Toolkit**
accelerates your ability to manage
from sustainability insights.

Begin your sustainability journey



Build your data pipeline

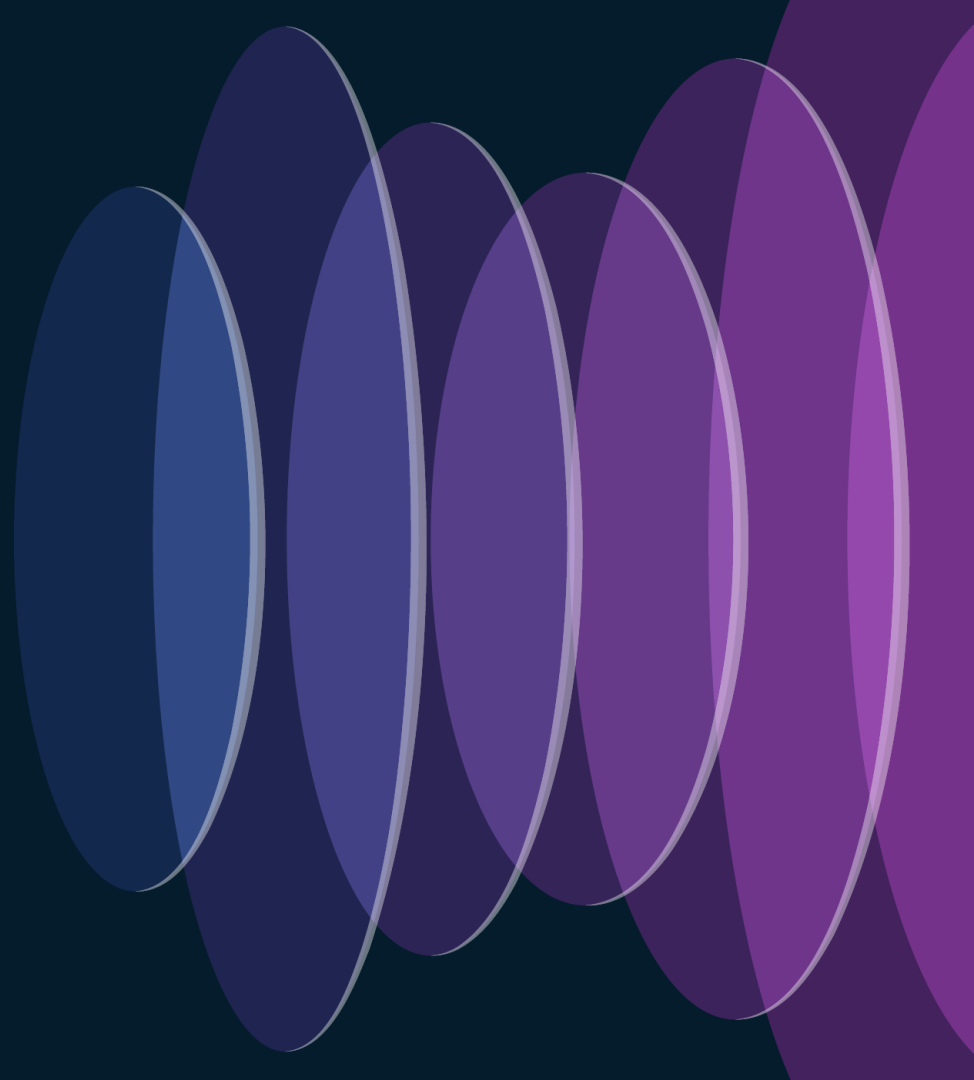


Workload Activity
Scheduler



Change Workload
Location

Building your OTel pipeline



Yay, a demo!



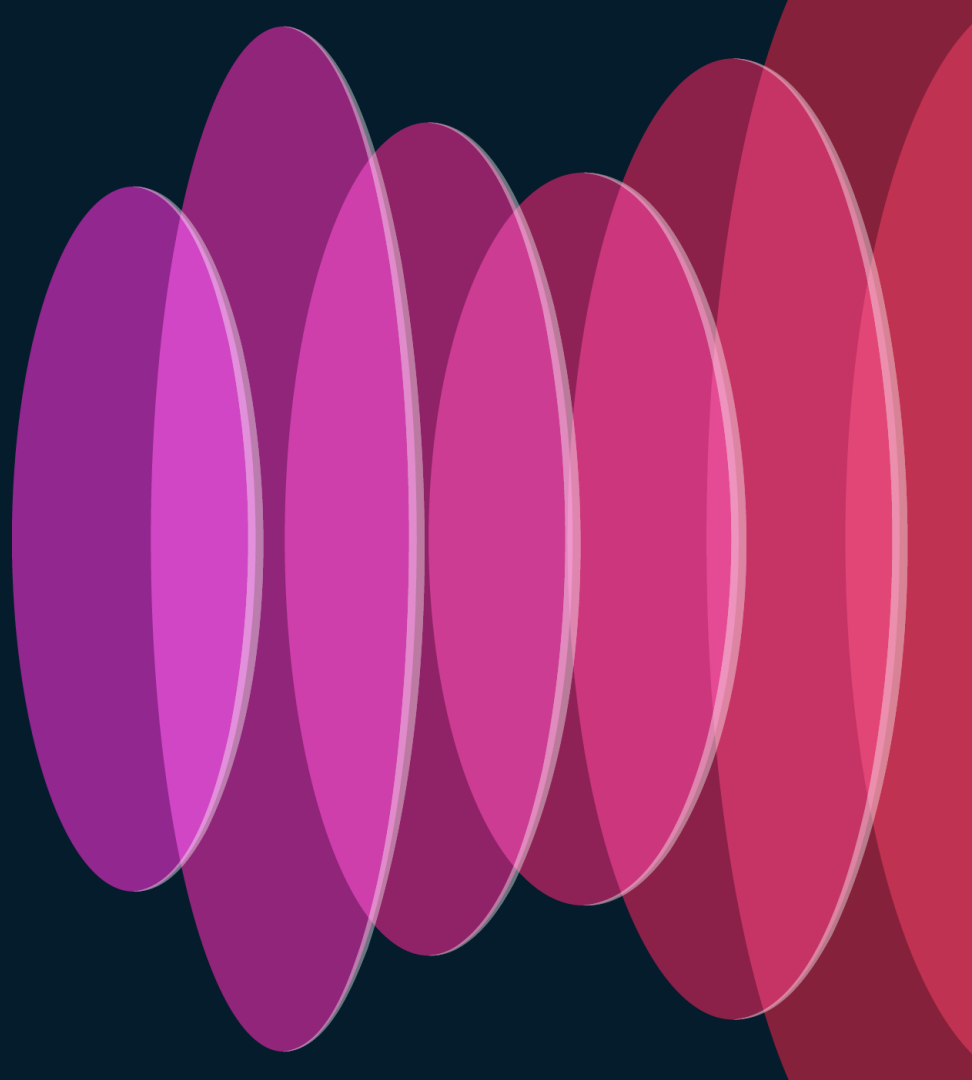
View session content on GitHub:
<http://cs.co/cl-splunk-sustainability>



What you will see and learn

1. Setting up otel-intersight to forward Intersight data via OTLP
2. Setting up otelcol as a collector and exporter for OTLP traffic
3. Deploying Splunk Sustainability Toolkit
4. Using Workload activity scheduler
5. Using Change workload location

Hands on with the Splunk Sustainability Toolkit



Yay, a demo!



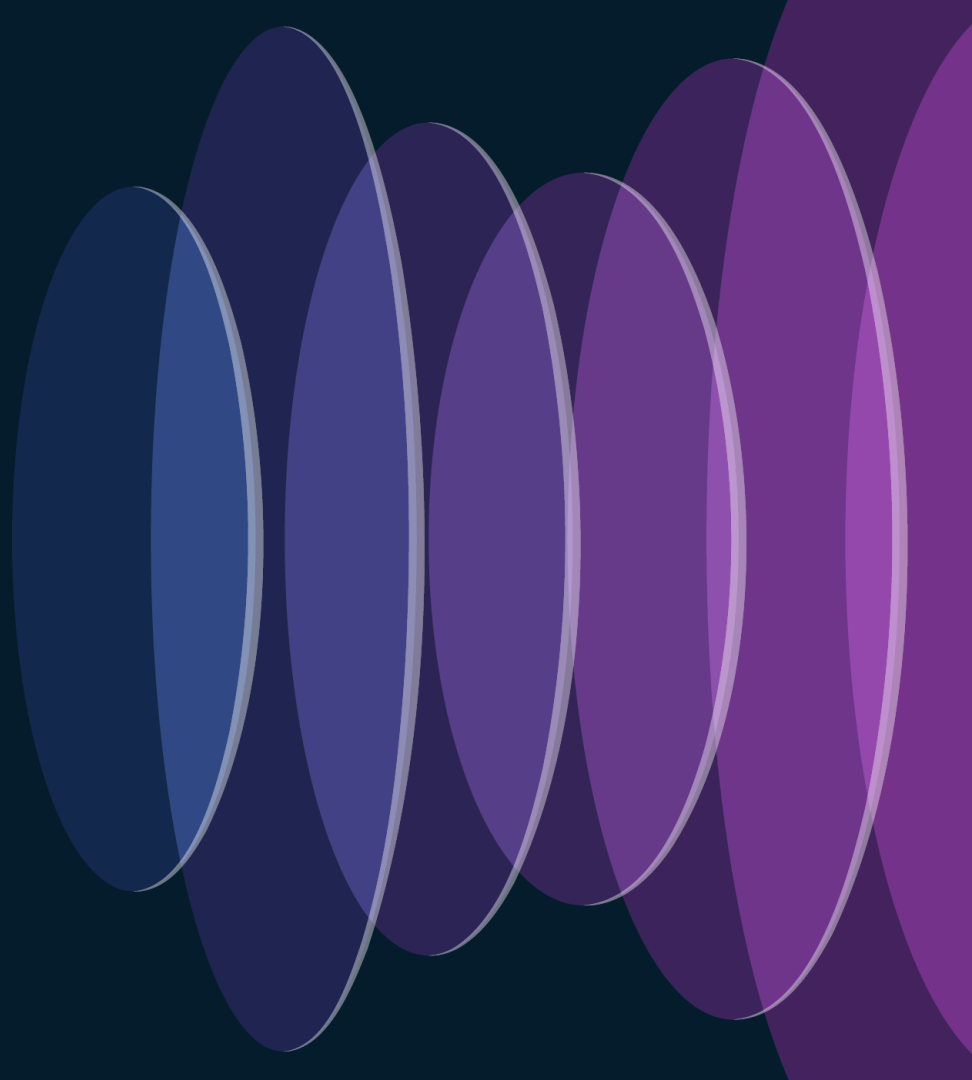
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Cisco sustainability outcomes



Refreshing hardware?



[Cisco Product Takeback and Reuse Program](#)

Simple, secure, and sustainable way to return end-of-use gear to Cisco. Equipment pickup is no cost.



[Genuine Cisco Certified Remanufactured Products](#)

Extend your budget and get speedy delivery!

Accelerate your sustainability journey with Cisco CX

How we can help

Act on your sustainability goals with advice guided by data, aimed at business outcomes, and led by world-class IT experts

Cisco® Services for Sustainability

Plan

Assess your journey, define roadmaps, and plan your goals

Visualize

Monitor your metrics and KPIs with outcomes

Improve

Continuously improve with Insights and Recommendations powered by GenAI

Evolve

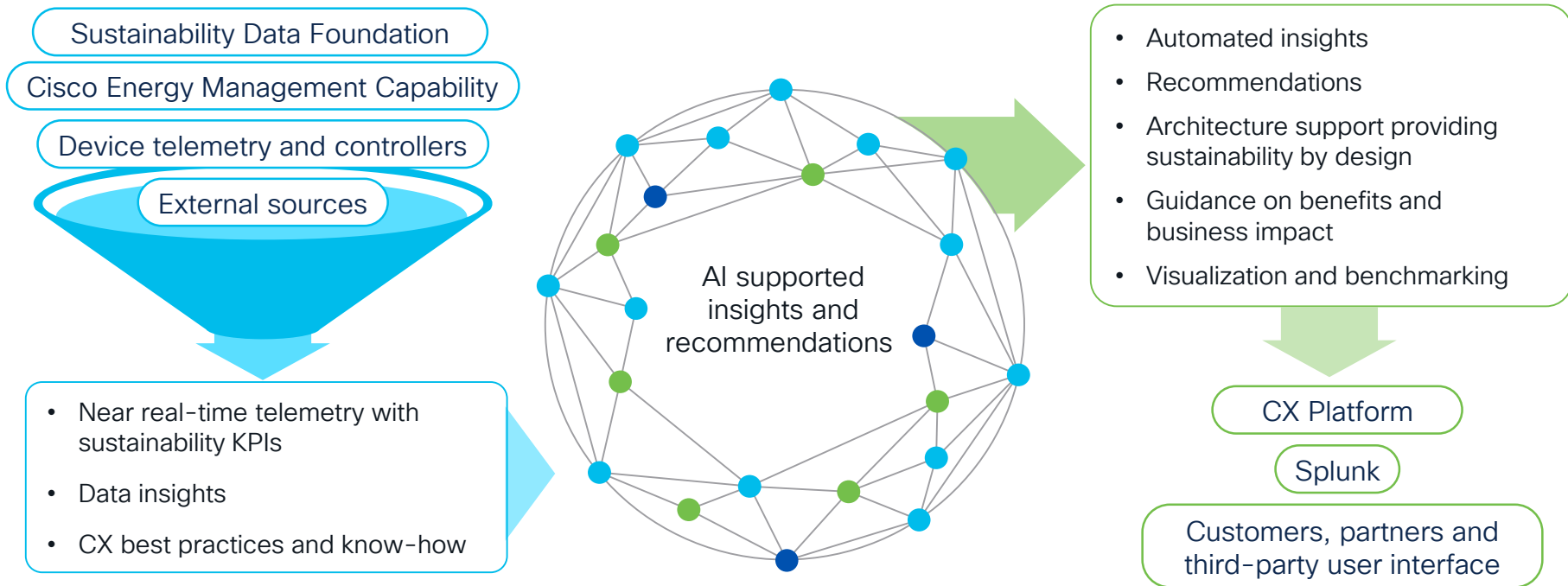
Explore sustainability and new network design practices with experts

Powered by: Expertise AI/ML Insights Automation Digital Experiences Together with our Partners

Available through Cisco Lifecycle Services

CX Sustainability Insights

Turning data into knowledge



What's next?



Interact with experts on Webex:

<https://ciscolive.ciscoevents.com/ciscolivebot/#BRKGRN-1022>



Visit the Sustainability Services demo station in the CX Booth at the World of Solutions



View session content on GitHub:

<http://cs.co/cl-splunk-sustainability>

Complete Your Session Evaluations



Complete a minimum of 4 session surveys and the Overall Event Survey to be entered in a drawing to **win 1 of 5 full conference passes** to Cisco Live 2025.



Earn 100 points per survey completed and compete on the Cisco Live Challenge leaderboard.



Level up and earn **exclusive prizes!**



Complete your surveys in the **Cisco Live mobile app**.

Continue your education

- Visit the Cisco Showcase for related demos
- Book your one-on-one Meet the Engineer meeting
- Attend the interactive education with DevNet, Capture the Flag, and Walk-in Labs
- Visit the On-Demand Library for more sessions at www.CiscoLive.com/on-demand



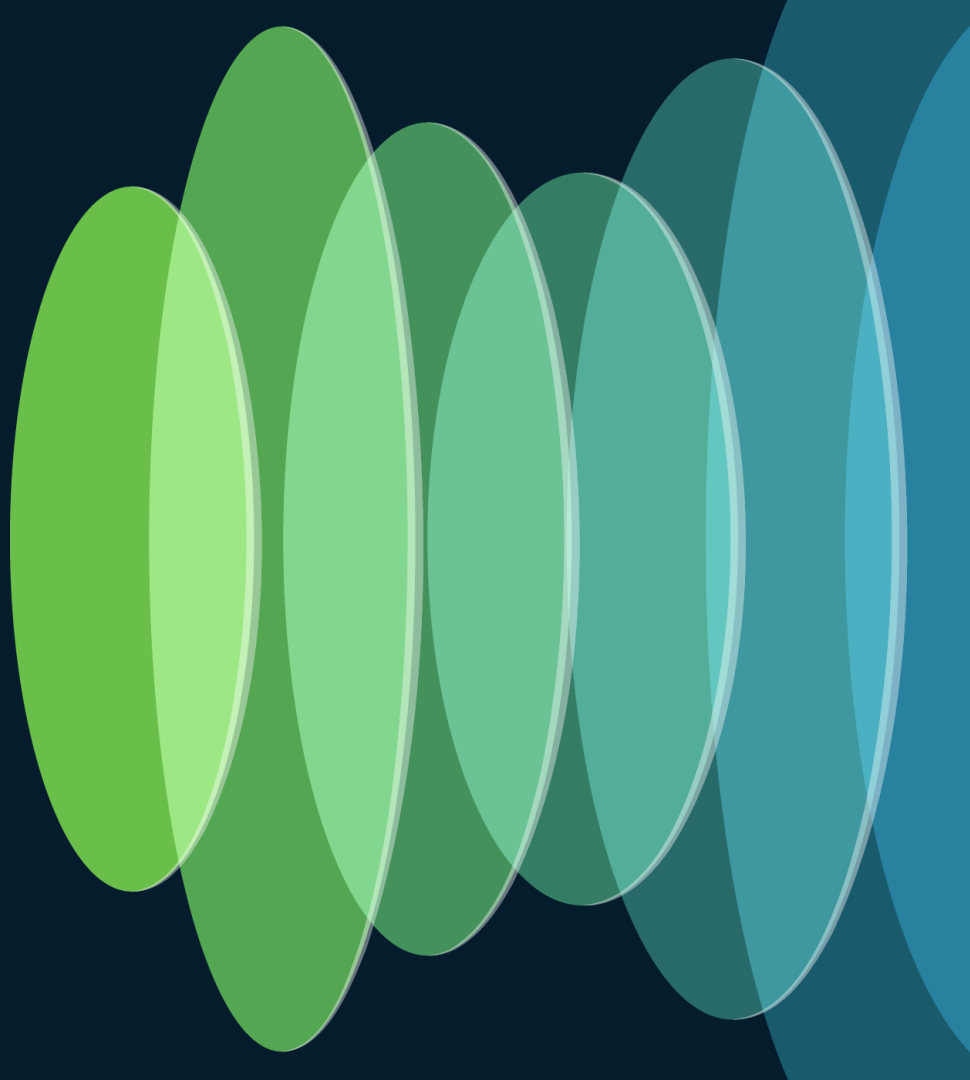
The bridge to possible

Thank you

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Offline Demo



Starting OpenTelemetry collector (otelcol)

```
(base) sholl@SHOLL-M-T0L6-CLU524-otel-sustainability % ./otelcol --config=cfg/otelcol.yaml
2024-06-01T12:58:25.763-0400 info service@v0.98.0/telemetry.go:55 Setting up own telemetry...
2024-06-01T12:58:25.764-0400 info service@v0.98.0/telemetry.go:97 Serving metrics {"address": ":8888", "level": "Basic"}
2024-06-01T12:58:25.767-0400 info service@v0.98.0/service.go:143 Starting otelcol... {"Version": "0.98.0", "NumCPU": 12}
2024-06-01T12:58:25.767-0400 info extensions/extensions.go:34 Starting extensions...
2024-06-01T12:58:25.767-0400 info extensions/extensions.go:37 Extension is starting... {"kind": "extension", "name": "zpages"}
2024-06-01T12:58:25.767-0400 info zpagesextension@v0.98.0/zpagesextension.go:53 Registered zPages span processor on tracer provider {"kind": "extension", "name": "zpages"}
2024-06-01T12:58:25.767-0400 info zpagesextension@v0.98.0/zpagesextension.go:63 Registered Host's zPages {"kind": "extension", "name": "zpages"}
2024-06-01T12:58:25.768-0400 info zpagesextension@v0.98.0/zpagesextension.go:75 Starting zPages extension {"kind": "extension", "name": "zpages", "config": {"TCPAddr": {"Endpoint": "localhost:55679", "DialerConfig": {"Timeout": 0}}}}
2024-06-01T12:58:25.768-0400 info extensions/extensions.go:52 Extension started. {"kind": "extension", "name": "zpages"}
2024-06-01T12:58:25.768-0400 info extensions/extensions.go:37 Extension is starting... {"kind": "extension", "name": "pprof"}
2024-06-01T12:58:25.769-0400 info pprofextension@v0.98.0/pprofextension.go:60 Starting net/http/pprof server {"kind": "extension", "name": "pprof", "config": {"TCPAddr": {"Endpoint": "localhost:1777", "DialerConfig": {"Timeout": 0}}, "BlockProfileFraction": 0, "MutexProfileFraction": 0, "SaveToFile": ""}}
2024-06-01T12:58:25.769-0400 info extensions/extensions.go:52 Extension started. {"kind": "extension", "name": "pprof"}
2024-06-01T12:58:25.769-0400 info extensions/extensions.go:37 Extension is starting... {"kind": "extension", "name": "health_check"}
2024-06-01T12:58:25.769-0400 info healthcheckextension@v0.98.0/healthcheckextension.go:35 Starting health check extension {"kind": "extension", "name": "health_check", "config": {"Endpoint": "0.0.0.0:13133", "TLSSetting": null, "CORS": null, "Auth": null, "MaxRequestBodySize": 0, "IncludeMetadata": false, "ResponseHeaders": null, "Path": "/"}, "ResponseBody": null, "CheckCollectorPipeline": {"Enabled": false, "Interval": "5m", "ExporterFailureThreshold": 5}}}
2024-06-01T12:58:25.769-0400 warn internal@v0.98.0/warning.go:42 Using the 0.0.0.0 address exposes this server to every network interface, which may facilitate denial of service attacks. Enable the feature gate to change the default and remove this warning. {"kind": "extension", "name": "health_check", "documentation": "https://github.com/open-telemetry/opentelemetry-collector/blob/main/docs/security-best-practices.md#safeguards-against-denial-of-service-attacks", "feature gate ID": "component.UseLocalHostAsDefaultHost"}
2024-06-01T12:58:25.769-0400 info extensions/extensions.go:52 Extension started. {"kind": "extension", "name": "health_check"}
2024-06-01T12:58:25.772-0400 warn internal@v0.98.0/warning.go:42 Using the 0.0.0.0 address exposes this server to every network interface, which may facilitate denial of service attacks. Enable the feature gate to change the default and remove this warning. {"kind": "receiver", "name": "otlp", "data_type": "traces", "documentation": "https://github.com/open-telemetry/opentelemetry-collector/blob/main/docs/security-best-practices.md#safeguards-against-denial-of-service-attacks", "feature gate ID": "component.UseLocalHostAsDefaultHost"}
2024-06-01T12:58:25.773-0400 info otlpreceiver@v0.98.0/otlp.go:102 Starting gRPC server {"kind": "receiver", "name": "otlp", "data_type": "traces", "endpoint": "0.0.0.0:4317"}
2024-06-01T12:58:25.773-0400 warn internal@v0.98.0/warning.go:42 Using the 0.0.0.0 address exposes this server to every network interface, which may facilitate denial of service attacks. Enable the feature gate to change the default and remove this warning. {"kind": "receiver", "name": "otlp", "data_type": "traces", "documentation": "https://github.com/open-telemetry/opentelemetry-collector/blob/main/docs/security-best-practices.md#safeguards-against-denial-of-service-attacks", "feature gate ID": "component.UseLocalHostAsDefaultHost"}
2024-06-01T12:58:25.773-0400 info otlpreceiver@v0.98.0/otlp.go:152 Starting HTTP server {"kind": "receiver", "name": "otlp", "data_type": "traces", "endpoint": "0.0.0.0:4318"}
2024-06-01T12:58:25.774-0400 info healthcheck/handler.go:132 Health Check state change {"kind": "extension", "name": "health_check", "status": "ready"}
2024-06-01T12:58:25.774-0400 info service@v0.98.0/service.go:169 Everything is ready. Begin running and processing data.
2024-06-01T12:58:25.774-0400 warn localhostgate/featuregate.go:63 The default endpoints for all servers in components will change to use localhost instead of 0.0.0.0 in a future version. Use the feature gate to preview the new default. {"feature gate ID": "component.UseLocalHostAsDefaultHost"}
```

Config writes to file data/otel-export.jsonl, which can be modified as desired.

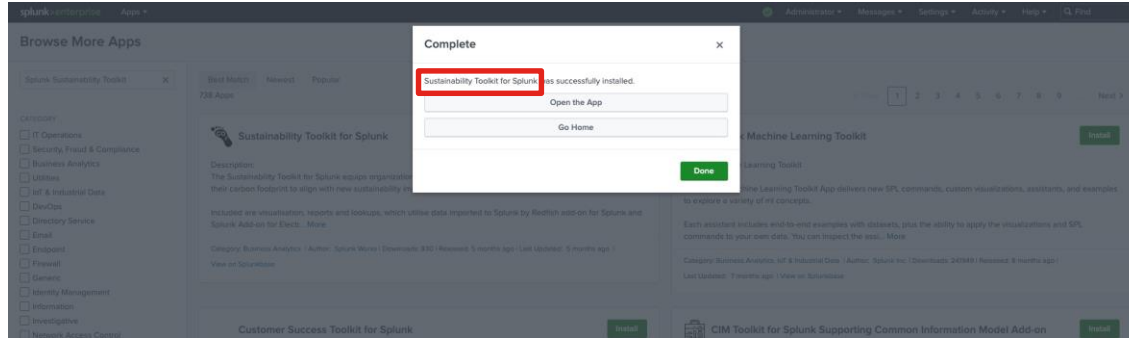
Starting intersight_otel

```
base$ shell$SHELL_W T018 CLU524-otel-sustainability % ./intersight-otel -c ./cfg/intersight_otel.toml
2024-06-02T01:49:53Z INFO intersight_otel] intersight_otel starting up
2024-06-02T01:49:53Z INFO intersight_otel] Using Intersight key_id 5e878d3e7564612d304bbaaf/6616d9c67564613101559a1b/6616d9c67564613101559ebc and key_file ./secrets/intersight.pem
2024-06-02T01:49:53Z INFO intersight_otel:metric_merger] Starting metric merger task
2024-06-02T01:49:53Z INFO intersight_otel:intersight_poller:timeseries_poller] processing timeseries response: [{"event":{"count":5,"host.name":"A1_labuser2 FI-A","hw.host.power-Sum":1546.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2 FI-B","hw.host.power-Sum":1498.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2-1-1","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2-1-2","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2-1-3","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01 FI-A","hw.host.power-Sum":736.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01 FI-B","hw.host.power-Sum":711.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01-1-1","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01-1-2","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2 FI-A","hw.host.power-Sum":1542.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2 FI-B","hw.host.power-Sum":1498.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2-1-1","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2-1-2","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2-1-3","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01 FI-A","hw.host.power-Sum":728.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01 FI-B","hw.host.power-Sum":705.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01-1-1","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01-1-2","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}]
2024-06-02T01:49:53Z INFO intersight_otel:intersight_poller:timeseries_poller] processing timeseries result: [{"event":{"count":5,"host.name":"A1_labuser2 FI-A","hw.host.power-Sum":1546.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2 FI-B","hw.host.power-Sum":1498.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2-1-1","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2-1-2","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2-1-3","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01 FI-A","hw.host.power-Sum":736.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01 FI-B","hw.host.power-Sum":711.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01-1-1","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01-1-2","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:20:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2 FI-A","hw.host.power-Sum":1542.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2 FI-B","hw.host.power-Sum":1498.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2-1-1","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2-1-2","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"A1_labuser2-1-3","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01 FI-A","hw.host.power-Sum":728.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01 FI-B","hw.host.power-Sum":705.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01-1-1","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}, {"event":{"count":5,"host.name":"laboalhasan01-1-2","hw.host.power-Sum":55.0},"timestamp":"2024-06-01T18:30:00.000-07:00","version":"v1"}]
2024-06-02T01:49:53Z INFO intersight_otel:metric_merger] Received resource metrics [KeyValue { key: "host.name", value: Some(AnyValue { value: Some(StringValue{"A1_labuser2 FI-B"}) }) })] = [IntersightMetric { name: "hw.host.power-Sum", attributes: { value: 1498.0, timestamp.offset: 900 }}]
2024-06-02T01:49:53Z INFO intersight_otel:metric_merger] Received resource metrics [KeyValue { key: "host.name", value: Some(AnyValue { value: Some(StringValue{"A1_labuser2-1-1"}) }) })] = [IntersightMetric { name: "hw.host.power-Sum", attributes: { value: 55.0, timestamp.offset: 900 }}]
2024-06-02T01:49:53Z INFO intersight_otel:metric_merger] Received resource metrics [KeyValue { key: "host.name", value: Some(AnyValue { value: Some(StringValue{"A1_labuser2-1-2"}) }) })] = [IntersightMetric { name: "hw.host.power-Sum", attributes: { value: 55.0, timestamp.offset: 900 }}]
2024-06-02T01:49:53Z INFO intersight_otel:metric_merger] Received resource metrics [KeyValue { key: "host.name", value: Some(AnyValue { value: Some(StringValue{"A1_labuser2-1-3"}) }) })] = [IntersightMetric { name: "hw.host.power-Sum", attributes: { value: 55.0, timestamp.offset: 900 }}]
```

You will need to edit the config:

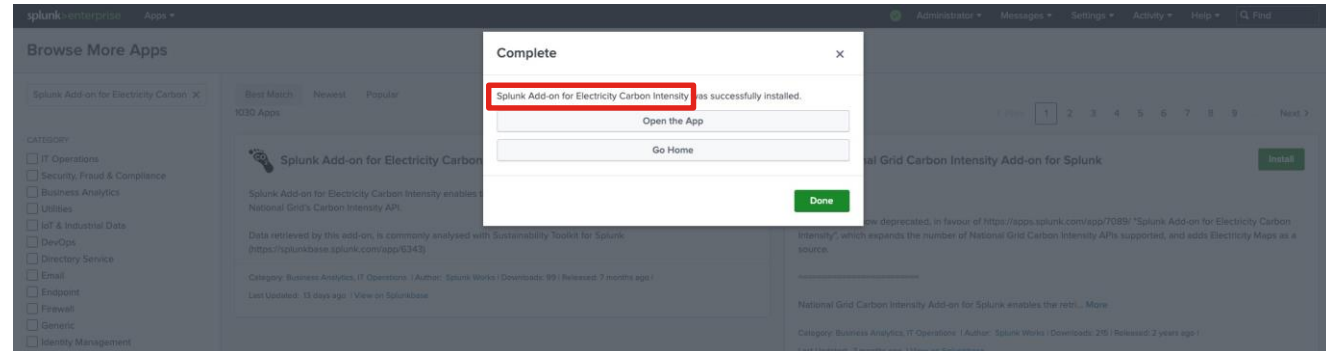
- To have your Intersight API information
- To edit the destination for OTLP data to send to. Sample config assumes otelcol is running on the same box and default port.

Install Splunk Apps



Sustainability Toolkit ships with canned dashboards to visually represent sustainability metrics & outcomes

Splunk Add-on for Electricity Carbon Intensity will bring in electricitymaps.com data into Splunk



Create Lookups for CMDB & Sites

Lookups

Lookups New lookup Health Search

Lookups

27 lookups

Create a new lookup

Name	Type	App	Owner	Backups	Actions
sample_cmdb.csv	CSV lookup	Sustainability Toolkit for Splunk	nobody	0	Add Edit Delete
sample_data_status_Asset_CO2e_and_kW_Backfill.csv	CSV lookup	Sustainability Toolkit for Splunk	nobody	0	Add Edit Delete
sample_data_status_Asset_CO2e_and_kW_Forward_Fill.csv	CSV lookup	Sustainability Toolkit for Splunk	nobody	0	Add Edit Delete
sample_data_status_Defaults.csv	CSV lookup	Sustainability Toolkit for Splunk	nobody	0	Add Edit Delete
sample_data_status_Electricity_CO2e_per_kWh_Backfill.csv	CSV lookup	Sustainability Toolkit for Splunk	nobody	0	Add Edit Delete
sample_data_status_Electricity_CO2e_per_kWh_Forward_Fill.csv	CSV lookup	Sustainability Toolkit for Splunk	nobody	0	Add Edit Delete
sample_sites.csv	CSV lookup	Sustainability Toolkit for Splunk	nobody	0	Add Edit Delete

Showing 1 to 27 out of 27 entries

Create asset & site inventory within Splunk to cross-reference with OpenTelemetry data

Import File

Import the contents of a CSV file into this lookup file.

Note: The CSV file needs to have all of the columns that are defined in this lookup. Extra columns are allowed and will be ignored.

Drop your file here or [upload file](#)

Supports csv file types

sample_cmdb.csv

Tip: You can drag and drop a CSV file onto the editor

Cancel Import

Lookups/sample_cmdb.csv

Backup limit: none Edit limit Manage Backups Revert to previous version

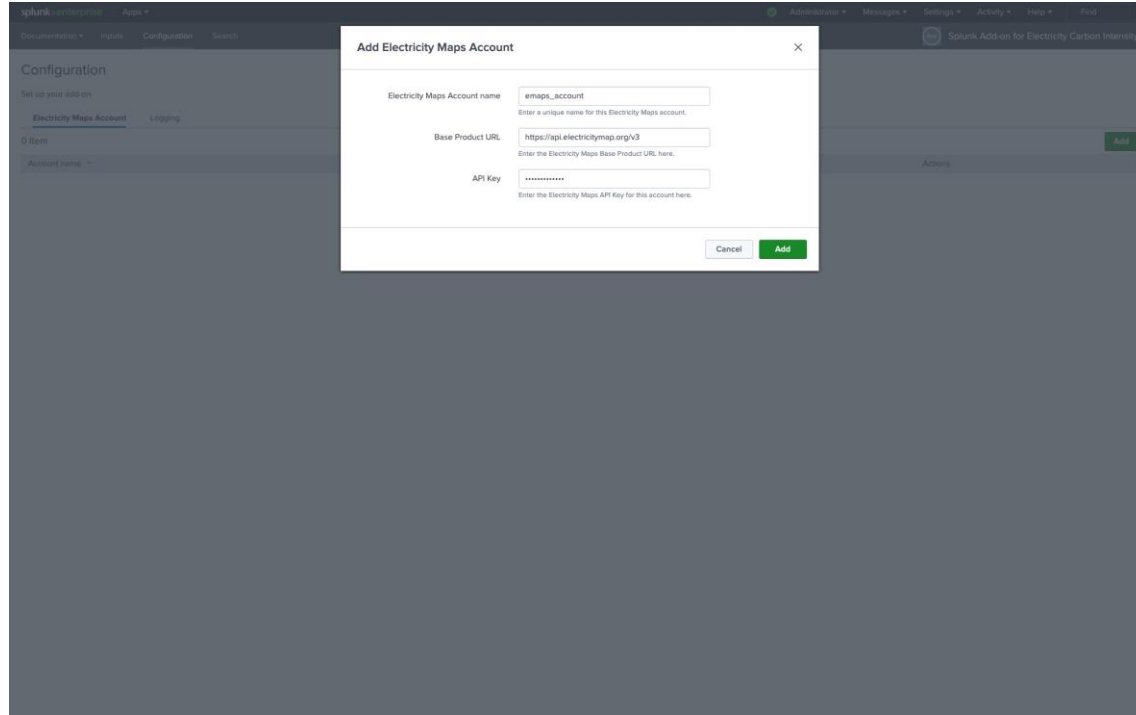
Select the table to see editing options. To add a new column, select tab.

Asset IP	Site	Country	Location	Application	Embodied CO2e	Years Lifetime
1 AT_labuser1-Fri-A	Zurich DC	Switzerland		UCSX-210C-M6		
2 AT_labuser1-Fri-B	Zurich DC	Switzerland		UCSX-210C-M6		
3 AT_labuser1-Fri	Zurich DC	Switzerland		UCSX-210C-M6		
4 AT_labuser1-S2	Zurich DC	Switzerland		UCSX-210C-M6		
5 AT_labuser2-Fri-A	Zurich DC	Switzerland		UCSX-210C-M6		
6 AT_labuser2-Fri-B	Zurich DC	Switzerland		UCSX-210C-M6		
7 AT_labuser2-S1	Zurich DC	Switzerland		UCSX-210C-M6		
8 AT_labuser2-S2	Zurich DC	Switzerland		UCSX-210C-M6		
9 AT_labuser2-S3	Frankfurt Factory	Germany		UCSX-210C-M6		
10 192.168.0.1	Zurich Factory	Switzerland		Mixer		
11 192.168.0.2	Zurich Factory	Switzerland		Mixer		
12 192.168.0.3	Zurich Factory	Switzerland		Oven		
13 192.168.1.1	Zurich DC	Switzerland		Microsoft Exchange	6255.6	4
14 192.168.1.2	Zurich DC	Switzerland		Microsoft Exchange	6255.6	4
15 192.168.1.3	Zurich DC	Switzerland		Microsoft Exchange	6255.6	4
16 192.168.1.4	Zurich DC	Switzerland		Microsoft Active Directory	6255.6	4
17 192.168.1.5	Zurich DC	Switzerland		Microsoft Active Directory	6255.6	4
18 192.168.1.6	Zurich DC	Switzerland		Estremer	6255.6	4
19 192.168.1.7	Zurich DC	Switzerland		Estremer	6255.6	4
20 192.168.1.8	Zurich DC	Switzerland		File Server	6255.6	4

Showing page 1 of 11 entries

Save lookup

Configure Electricity Maps API Account



The screenshot displays the Splunk configuration interface with a modal dialog box titled "Add Electricity Maps Account". The dialog box contains three input fields: "Electricity Maps Account name" with the value "emaps_account", "Base Product URL" with the value "https://api.electricitymap.org/v3", and "API Key" with a masked value "*****". Each field has a small instruction below it: "Enter a unique name for this Electricity Maps account.", "Enter the Electricity Maps Base Product URL here.", and "Enter the Electricity Maps API Key for this account here." respectively. At the bottom of the dialog are "Cancel" and "Add" buttons. The background shows the Splunk configuration page with the "Electricity Maps Account" section selected under the "Configuration" tab.

Add Electricity Maps Account

Electricity Maps Account name:
Enter a unique name for this Electricity Maps account.

Base Product URL:
Enter the Electricity Maps Base Product URL here.

API Key:
Enter the Electricity Maps API Key for this account here.

Create new index for OpenTelemetry Data

Indexes

A repository for data in Splunk Enterprise. Indexes reside in flat files on the Splunk Enterprise.

10 indexes

Name *	Actions	Type *	App *
_audit	Edit Delete Disable	Events	system
_configtrack	Edit Delete Disable	Events	system
_disappearevent	Edit Delete Disable	Events	system
_event	Edit Delete Disable	Events	Splunk
_indexname	Edit Delete Disable	Events	Splunk
_internal	Edit Delete Disable	Events	system
_introspection	Edit Delete Disable	Events	system
_metrics	Edit Delete Disable	Metrics	system
_metrics_rollup	Edit Delete Disable	Metrics	system
_summary	Edit Delete Disable	Events	system
_trunkbucket	Edit Delete Disable	Events	system
security_carbon_integrity	Edit Delete Disable	Events	OK
history	Edit Delete Disable	Events	system
main	Edit Delete Disable	Events	system
opendblogger	Edit Delete Disable	Events	system
summary	Edit Delete Disable	Events	system

New Index

General Settings

Index Name:
Set index name (e.g., INDEX_NAME). Search using index=INDEX_NAME.

Index Data Type: ☒ Events ☐ Metrics
The type of data to store (event-based or metric).

Home Path:
Hot/warm db path. Leave blank for default (\$SPLUNK_DB/INDEX_NAME/db).

Cold Path:
Cold db path. Leave blank for default (\$SPLUNK_DB/INDEX_NAME/colddb).

Thawed Path:
Thawed/recovered db path. Leave blank for default (\$SPLUNK_DB/INDEX_NAME/thaweddb).

Data Integrity Check: ☒ Enable ☐ Disable
Enable this if you want Splunk to compute hashes on every slice of your data for the purpose of data integrity.

Max Size of Entire Index: GB
Maximum target size of entire index.

Max Size of Hot/Warm/Cold Bucket: GB
Maximum target size of buckets. Enter 'auto', 'high_volume' for high-volume indexes.

Frozen Path:
Frozen bucket archive path. Set this if you want Splunk to automatically archive frozen buckets.

App:

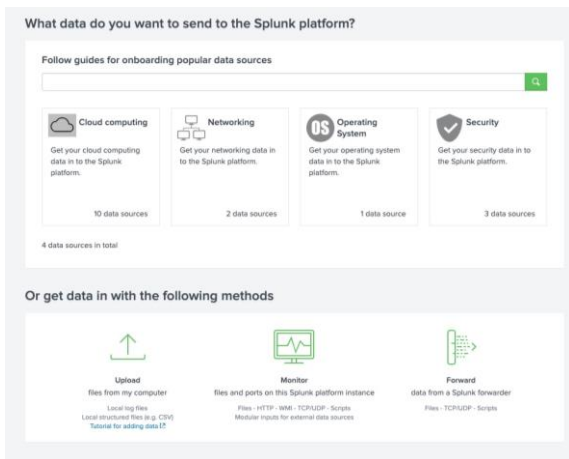
Storage Optimization

Tuck Retention Policy: ☒ Enable Reduction ☐ Disable Reduction
Warning: Do not enable reduction without understanding the full implications. It is extremely difficult to rebuild reduced buckets. [Learn More >](#)

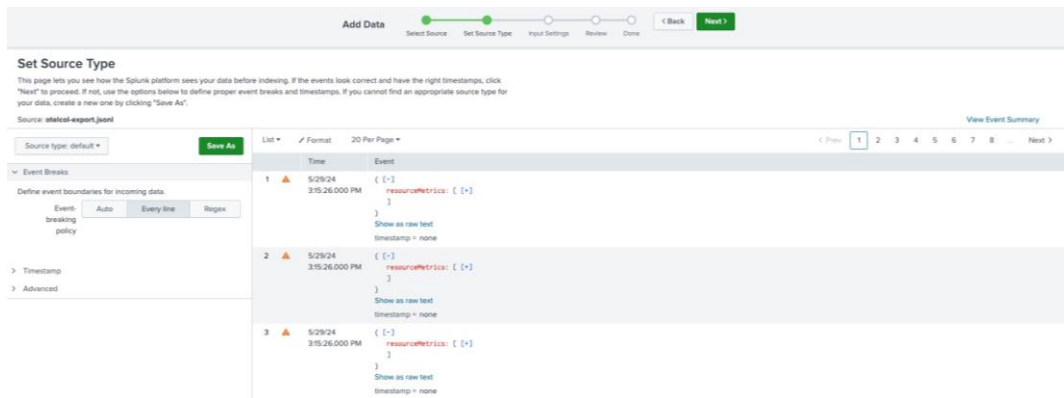
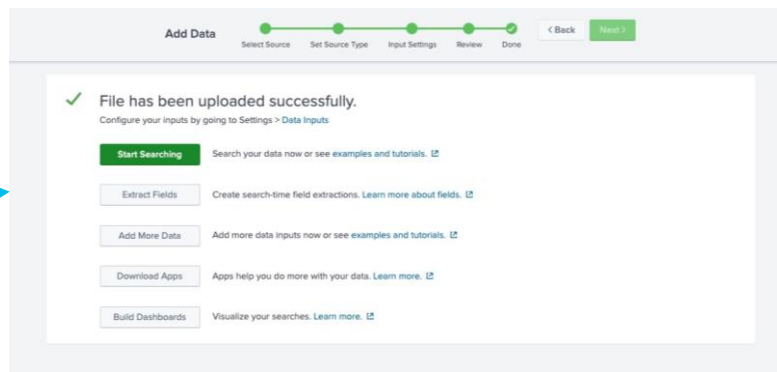
Reduce logs files older than: Days
Age is determined by the latest event in a bucket.

Save **Cancel**

Upload Data to index (demo only)



Example shows manually uploading a file with lab data. In production, you may want to setup “Monitor” or “Forward” to ingest data.



Run otel-sst-quickstart.py

```
python3 otel-sst-quickstart.py
Enter your splunk IP or hostname: 10.122.139.24
Enter your Splunk management port (usually 8089): 8089
Enter your Splunk username: admin
Enter your Splunk password:
Info: Authenticated successfully to Splunk.
App 'Sustainability_Toolkit' is installed.
App 'TA-electricity-carbon-intensity' is installed.
Info: Authenticated successfully to Splunk.
The index 'otel' already exists.
The index 'electricity_carbon_intensity' already exists.
The index 'sustainability_toolkit_summary_asset_metrics' already exists.
The index 'sustainability_toolkit_summary_electricity_metrics' already exists.
Switching to the carbon intensity app context.
Info: Authenticated successfully to Splunk.

***ACTION REQUIRED***
Please navigate to this URL, click Add, and provision your electricitymaps API account, then return back here:
http(s)://10.122.139.24:8000/en-US/app/TA-electricity-carbon-intensity/configuration

Use the following information:
Electricity Maps Account name: electricitymaps
Base Product URL: https://api.electricitymap.org/v3
API Key: [your API key]

Once you complete this step return to this window and hit enter to proceed with the automation:
Do you already know the name of your electricitymaps zones? If not, we can show you the options here by saying no (y/n):y
Enter the electricitymaps zones you want to collect data from, in a comma separated format. See above for the full list of zones (e.g. CH,DE,US-CAR-DUK,US-CAL-LDWP): CH,DE,US-CAR-DUK,US-CAL-LDWP
Configuration parameters updated successfully for inputs.
Switching back to the Sustainability Toolkit app context
Info: Authenticated successfully to Splunk.
Search macro power-otel has been created.
Search macro power-asset-location-old has been created.
Search macro power-asset-location has been created.
Search macro electricity-carbon-intensity-for-assets-old has been created.
Search macro electricity-carbon-intensity-for-assets has been created.
Saved search 'Summarize Asset CO2e & kW V1.0' updated successfully.
Saved search 'Summarize Electricity CO2e/kWh V1.0' updated successfully.
```

Script adjusts Sustainability Toolkit Search Macros & Saved Searches to work with OpenTelemetry Data.

Sustainability Toolkit with OpenTelemetry data

