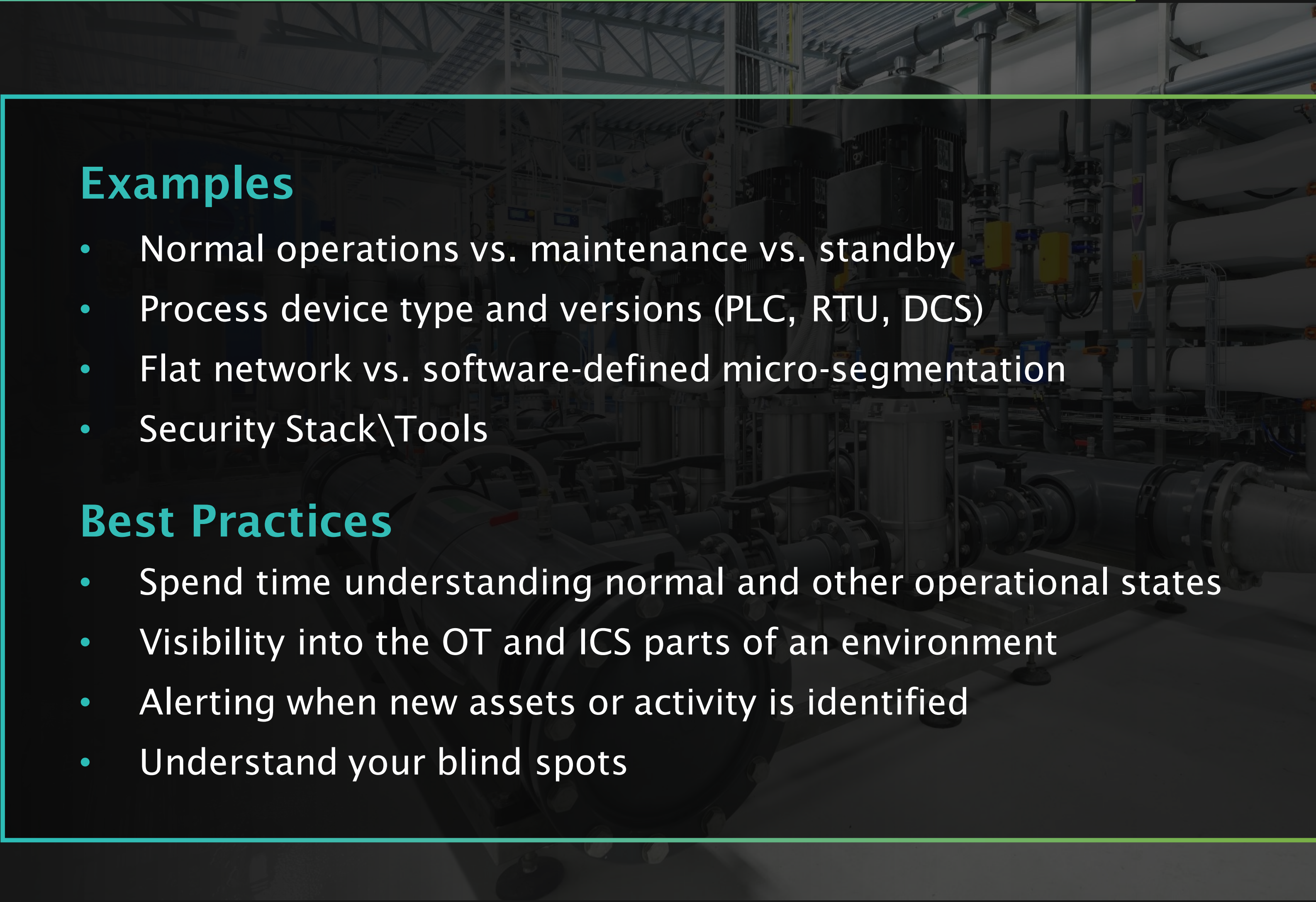
DRAGOS

10 Ways Asset Visibility Builds an Effective OT Cybersecurity Foundation

1 Understanding what “normal” looks like

NO TWO ENTITIES HAVE THE **SAME NORMAL**



Examples

- Normal operations vs. maintenance vs. standby
- Process device type and versions (PLC, RTU, DCS)
- Flat network vs. software-defined micro-segmentation
- Security Stack\Tools

Best Practices

- Spend time understanding normal and other operational states
- Visibility into the OT and ICS parts of an environment
- Alerting when new assets or activity is identified
- Understand your blind spots

2 Not just identifying, but verifying assets

TRUST BUT VERIFY

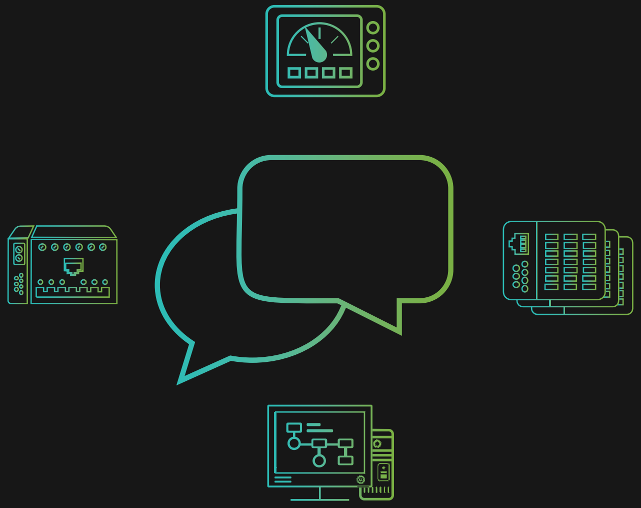
Examples

- Adding the needed context around the identified assets
- Validate that what I am seeing is supposed to be there
- Support security and operations goals

Best Practices

- Use information and sources you already have
- Validate installed software to known approved configurations
- Physical and logical verification when needed

3 Visualizing asset network communications



DEVICES **WILL TALK TO ANYONE**, THOSE SOCIAL BUTTERFLIES

Examples

- ARP and DNS requests
- ICS protocols
- Network zones and trust levels are not always well defined
- Vendors and operators will do what they need to get it working

Best Practices

- Confirm what is supposed to be communicating and how
- Ensure traffic visibility into ICS/OT North-South and East-West
- Conduct periodic reviews of the security devices that segment the environments
- Take a baseline of communications for future comparison

4 Improving change management with config detection

TRUST WHAT YOU'VE VERIFIED

Examples

- Configuration management is more common in IT-type systems
- Configuration detection can detect changes in real-time to ICS
- Automation can assist in maintaining supporting change management and compliance

Best Practices

- No news is *not* good news. Ensure tools are working or that the change took place.
- Look for outlining changes that don't fit.
- Leverage your solutions that provide configuration change tracking as part of your change processes and compliance

5 Minimizing the impact of compliance reporting

CONFIRMING THE HUMAN FACTOR

Examples

- Tools can handle year’s worth of asset information, including configurations for audit
- Daily reporting and alerting from A/V, SIEM, and asset configuration can identify issues such as services not running or out-of-date software
- Visibility tools can support other tools and gain visibility for compliance assurance where manual work would normally be required.

Best Practices

- Start with the output in mind and build or purchase a solution that fits
- Automate as much of the process as is possible
- Automation will have issues, so layer if its critical
- Periodic manual confirmation that tools are operating as required

6 Justifying security program investments

80% PAPERWORK, 20% TECHNICAL WORK

Examples

- The highest rate of security return on investment and effort
- Finding gaps in a program
- Compliance
  - 100 assets x (daily software validation + A/V check and update + Event Viewer reviews + Firewall review + IDS/IPS review) = Several employees
  - **Or** 1 report for software validation + 1 report for A/V status + Automated SIEM logging/alerting report + SIEM Firewall Report + IDS/IPS Report = 2-3 hours.

Best Practices

- Use visibility to determine the low-hanging fruit to improve security
- Use what you already have to enhance security
- Compare times between human verification and technology. Compare times for audit report retrievals as well as compile reports monthly. There's more than just running scans in an effective visibility program.
- Consider the stress and boredom of continuous report running and archiving, especially in a regulated entity.
- Automate the tasks that take the most time and that have the least value. Using the gained free time to execute higher value activities such as threat hunts.

7 Effective vulnerability mitigation

Examples

- Tools such as Microsoft WSUS\SCCM can tell you patches needed within 24hr of release
- Asset baselining tools can compare currently installed software to a list of known CVEs
- On-demand and scheduled scans can confirm patching removed vulnerable software
- Visibility tools can provide you with a list of vulnerabilities

Best Practices

- Understand the vulnerabilities in your environment
- Prior to patching, understand why you are patching
- Vulnerability management is not just patching but mitigations
- After a patching cycle, look for assets that might have been missed or failed to install software

COMBINING SUPERPOWERS

8 Threat detection in an ocean of noise

RIDE THE WAVES

Examples

- Native functionality of systems and devices
- Automated tools and collections solution
- Centralized SIEMs and storage locations
- Regular updates will provide new IoCs, vulnerability indicators, and other threat definitions/hashes for automated detections

Best Practices

- Alert fatigue is real. Make sure they add value
- Know the environment’s schedule (pigging, weather, installs)
- Focus on high-value alerts
- Trust but verify your tools
- Perform investigations based on the alerts or drive alerts based on investigations

9 Stopping rogue assets in their tracks

DEFCON 1

Examples

- Visibility baselines will show new devices which may be rogue
- Asset inventories can be used to validate visibility
- Integration into SIEM or other alerting solutions

Best Practices

- Develop a network baseline and asset inventory
- Proper switch port identification and configuration
- SIEM alerting and network visibility will help in the identification and investigations

10 Incident response when the heat is on

USING HISTORY TO SOLVE THE PROBLEM

Examples

- IR relies on knowing what should be there and what is normal
- Visibility can be used for tracking threats in the environment
- Increases the speed of IR steps

Best Practices

- IR requirements should be an input to what you collect for asset information and where you have visibility
- Practice using the solutions you have in your IR exercises

To find out more …

1 Grab a copy of *this whitepaper*

DRAGOS WHITEPAPER

HOW TO GET STARTED

Before starting, make sure a plan is established through a structured approach like Dragos's Col lay the foundation for a successful outcome that Visibility program.

Typically the planning and implementation stage Framework will be a continuous process that loo

Remove unneeded requirements, update changes, disseminate/ communicate
Update Collection Plan
Measure and understand
Test

As organizations go through the journey of esta potential stages of the maturation process.

DRAGOS, INC.

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Whitepaper

10 WAYS ASSET VISIBILITY BUILDS THE FOUNDATION FOR OT CYBERSECURITY

KNOWING THE DATA YOU NEED TO COLLECT ISN'T ENOUGH IF YOU DON'T HAVE FULL ASSET VISIBILITY

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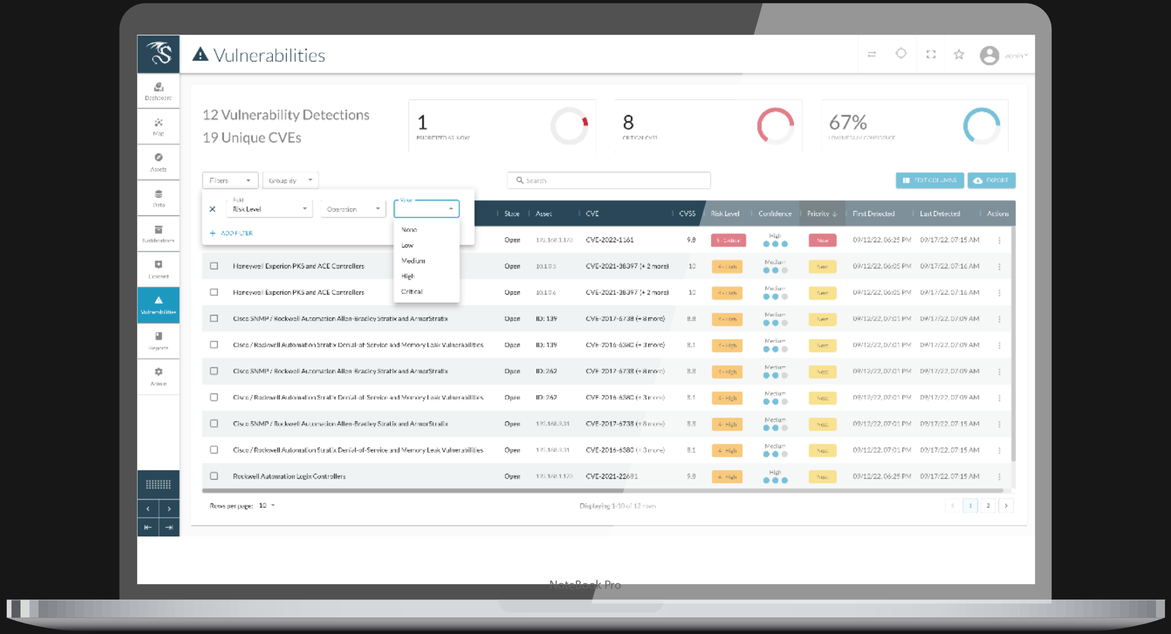
and

2 Learn how the Dragos Platform can improve your Asset Visibility



Vulnerabilities

12 Vulnerability Detections
19 Unique CVEs

1 PRIORITIZED AS NOW

8 CRITICAL CVSS

67% LOW/MEDIUM CONFIDENCE

Filters ▾ Group By ▾ Search EDIT COLUMNS EXPORT

Field: Risk Level ▾ Operation ▾ Value ▴
+ ADD FILTER

Value: None, Low, Medium, High, Critical

		State	Asset	CVE	CVSS	Risk Level	Confidence	Priority ↓	First Detected	Last Detected	Actions
		Open	192.168.1.173	CVE-2022-1161	9.8	5 - Critical	High ●●●	Now	09/12/22, 06:25 PM	09/17/22, 07:15 AM	⋮
□	Honeywell Experion PKS and ACE Controllers	Open	10.1.0.5	CVE-2021-38397 (+ 2 more)	10	4 - High	Medium ●●○	Next	09/12/22, 06:05 PM	09/17/22, 07:16 AM	⋮
□	Honeywell Experion PKS and ACE Controllers	Open	10.1.0.6	CVE-2021-38397 (+ 2 more)	10	4 - High	Medium ●●○	Next	09/12/22, 06:05 PM	09/17/22, 07:16 AM	⋮
□	Cisco SNMP / Rockwell Automation Allen-Bradley Stratix and ArmorStratix	Open	ID: 139	CVE-2017-6738 (+ 8 more)	8.8	4 - High	Medium ●●○	Next	09/12/22, 07:01 PM	09/17/22, 07:09 AM	⋮
□	Cisco / Rockwell Automation Stratix Denial-of-Service and Memory Leak Vulnerabilities	Open	ID: 139	CVE-2016-6380 (+ 3 more)	8.1	4 - High	Medium ●●○	Next	09/12/22, 07:01 PM	09/17/22, 07:09 AM	⋮
□	Cisco SNMP / Rockwell Automation Allen-Bradley Stratix and ArmorStratix	Open	ID: 262	CVE-2017-6738 (+ 8 more)	8.8	4 - High	Medium ●●○	Next	09/12/22, 07:01 PM	09/17/22, 07:09 AM	⋮
□	Cisco / Rockwell Automation Stratix Denial-of-Service and Memory Leak Vulnerabilities	Open	ID: 262	CVE-2016-6380 (+ 3 more)	8.1	4 - High	Medium ●●○	Next	09/12/22, 07:01 PM	09/17/22, 07:09 AM	⋮
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THANK YOU

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