NATIONAL CYBER SUMMIT

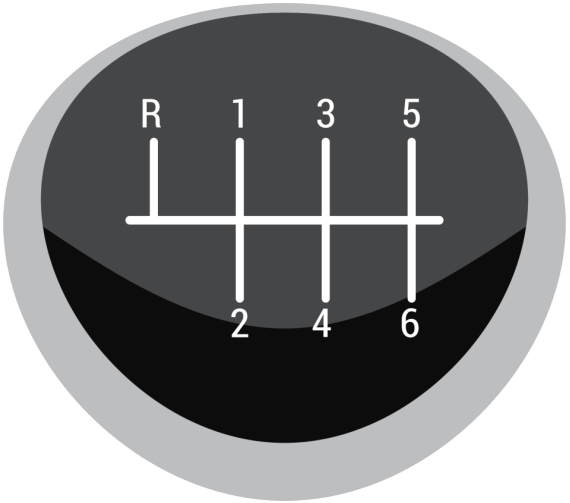
June 4-6, 2019 | Huntsville, AL

Faster than the Speed of Threat:
Edge-to-Edge Cybersecurity

HONDA
The Power of Dreams

Plant Floor Cybersecurity Challenges

HONDA
Honda Manufacturing of Alabama



SHIFTING GEARS

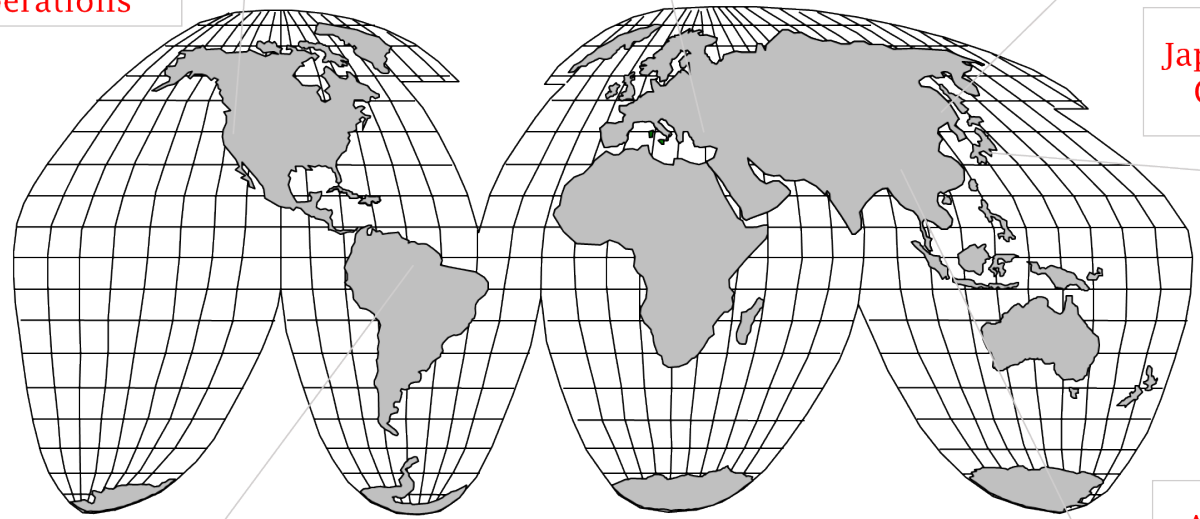
- About Honda
- The plant floor environment
- Roadmap
- Challenges

North America Regional Operations

Europe/Middle East/Africa Operations

China Operations

Japan Regional Operations

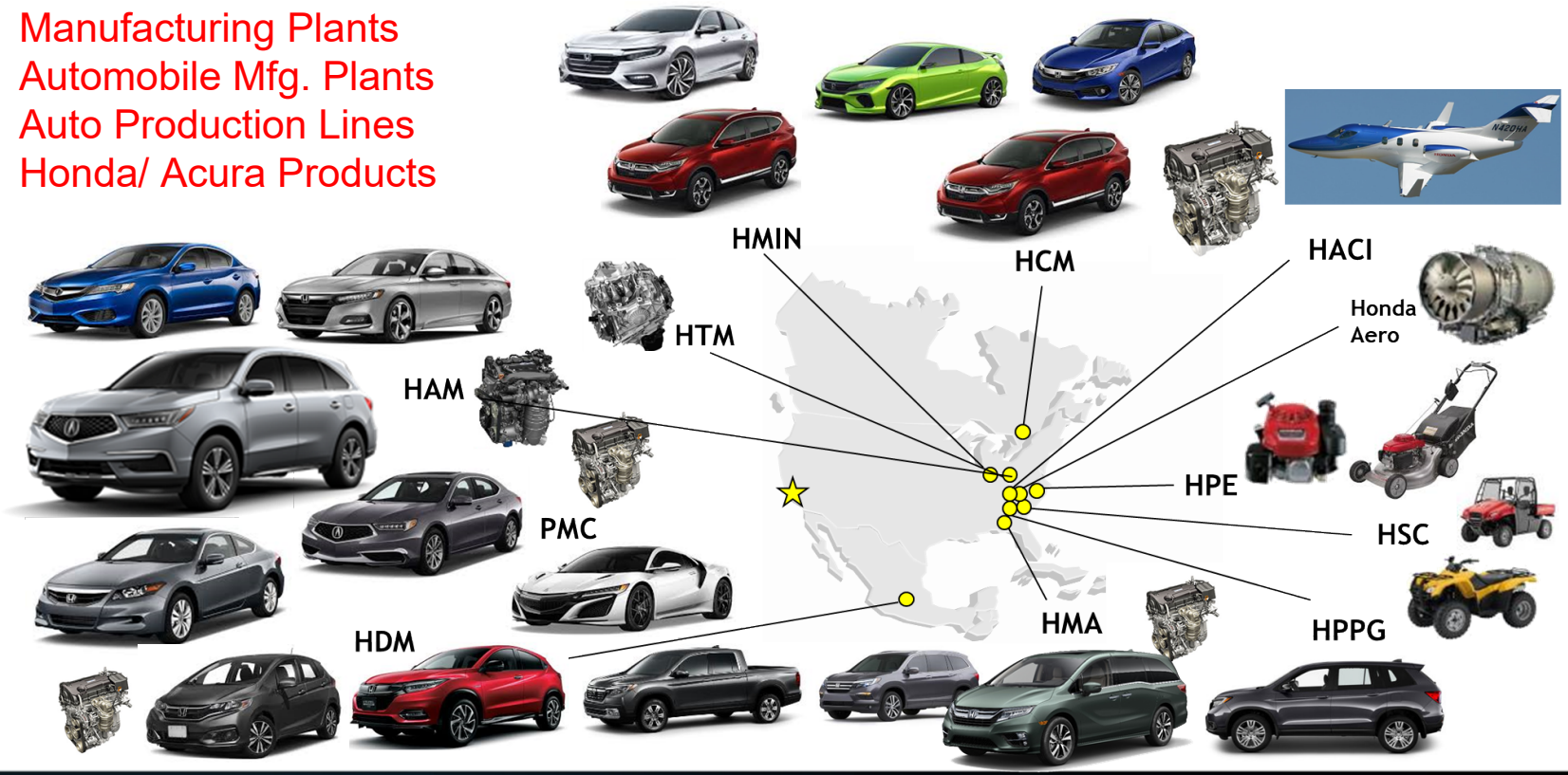


South America Regional Operations

Asia/Oceania Operations

Honda North American Operations

13 Manufacturing Plants
5 Automobile Mfg. Plants
11 Auto Production Lines
19 Honda/ Acura Products



Honda – not just an auto manufacturer

- Tillers
- Lawn mowers
- Robotic lawn mowers
- Riding mowers
- Trimmers
- Blowers
- Sprayers
- Motorcycles
- Hedge trimmers
- Snow throwers
- Generators
- Engines
- Pumps
- Outboard engines
- Inflatable boats
- Electric 4-wheel scooters
- Locks
- Robots

Honda Global is the largest manufacturer of internal combustion engines in the world!

LOCATION | Lincoln, Alabama (approximately 40 miles east of Birmingham in Talladega County)

STARTED PRODUCTION | November 14, 2001

PLANT SIZE | 4.2 million square feet

SITE SIZE | 1,350 acres **ASSOCIATES** | more than 4,500

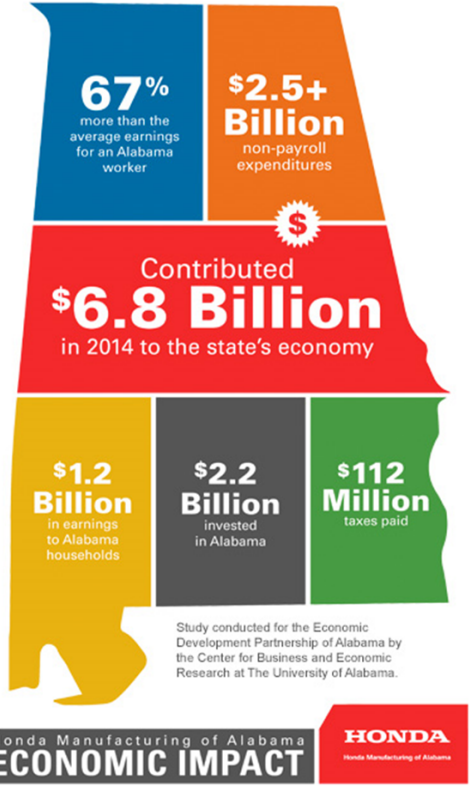
CAPITAL INVESTMENT | $2.6 billion

MODELS IN PRODUCTION | Honda Odyssey, Pilot, Ridgeline and V-6 engines

ANNUAL PRODUCTION CAPACITY | 340,000 vehicles and V-6 engines

OPERATIONS PERFORMED | Steel and aluminum blanking, stamping, welding, painting, plastic injection molding, aluminum casting, aluminum machining, ferrous machining, vehicle sub-assembly and assembly, engine assembly, vehicle testing and quality assurance

COMMUNITY PARTNERS | Honda has given more than $11 million to Alabama charities and nonprofit organizations



Challenges

- People
- Production Requirements

Honda Manufacturing of Alabama

- **HMA is a vertically integrated manufacturing plant.**
- **Operations performed on-site:**
  - Steel and aluminum blanking and stamping, welding, painting, plastic injection molding, aluminum casting, aluminum and ferrous machining, engine assembly, vehicle assembly, testing and quality assurance.

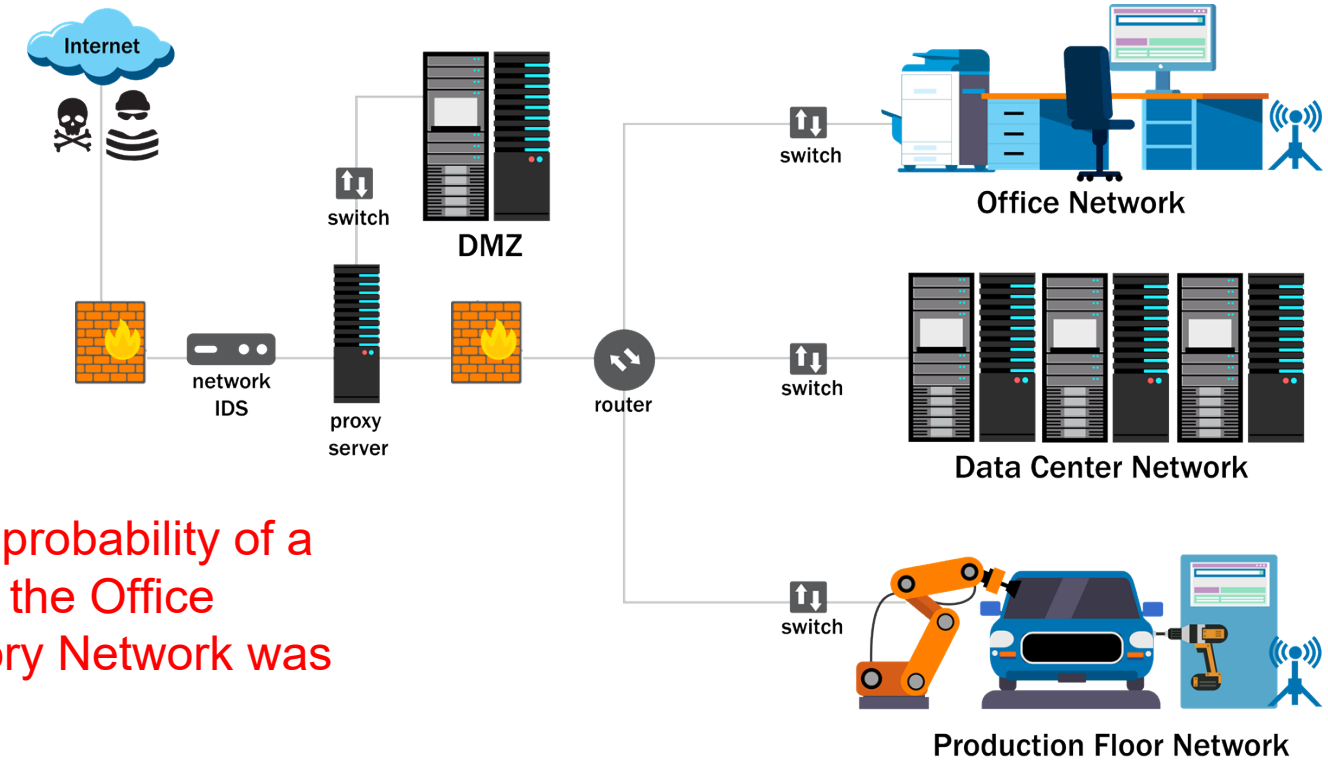
Flexible Manufacturing

Line 2

Line 1

Engine

Current Honda Alabama Network



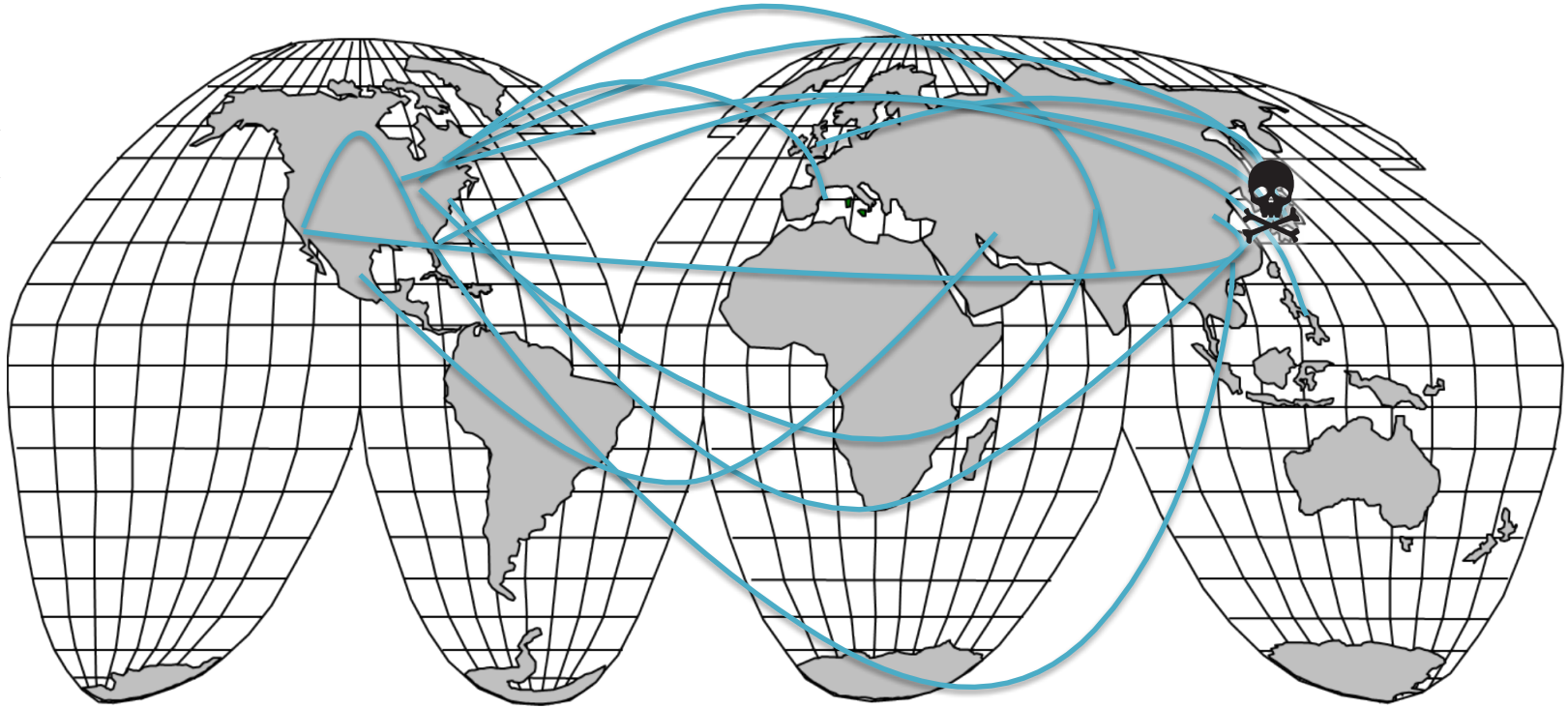
Key Point:

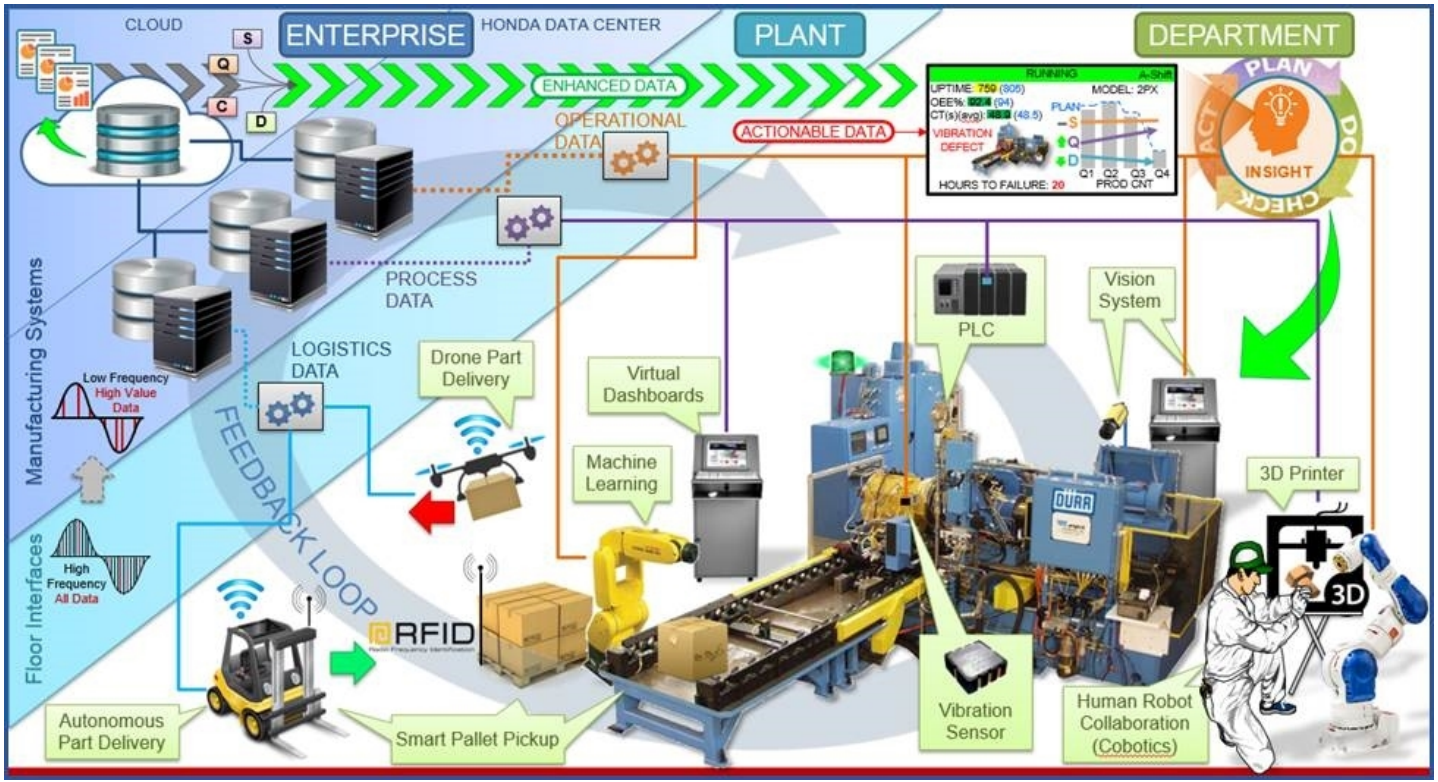
In the past….

we believed that the probability of a virus spreading from the Office Network to the Factory Network was low…

Challenges

- Flat Network
- Functionality





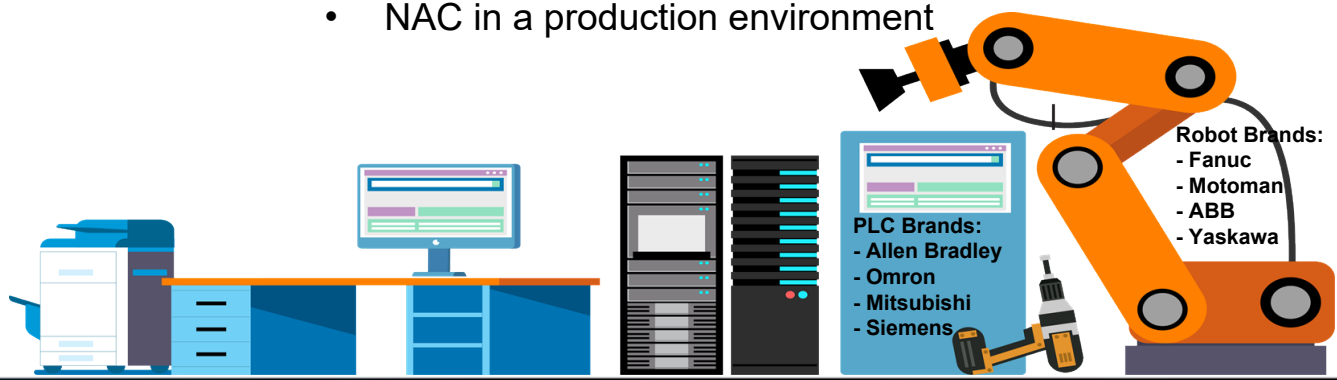
Challenges

- Operational Technology (OT)
- IoT
- Cloud
- Safety

- **Plant Floor PCs** - 273 (OS: Win XP, Win 7 and Win 10)
- **Thin Clients** - 789
- **Windows Embedded Devices** - 636
- **HMIs (Human Machine Interface)** - 547
- **Conveyor Systems** - 300+
- **Robots** - 900+
- **PLCs** - 1800+
- **IoT (Internet of Things)** – 4500+

Challenges

- Age of equipment – New to 25 years old.
- Size and Complexity of manufacturing processes
- Devices that cannot be managed by IT.
- Patch management.
- Locating devices over a 4.2 million sqft plant.
- NAC in a production environment



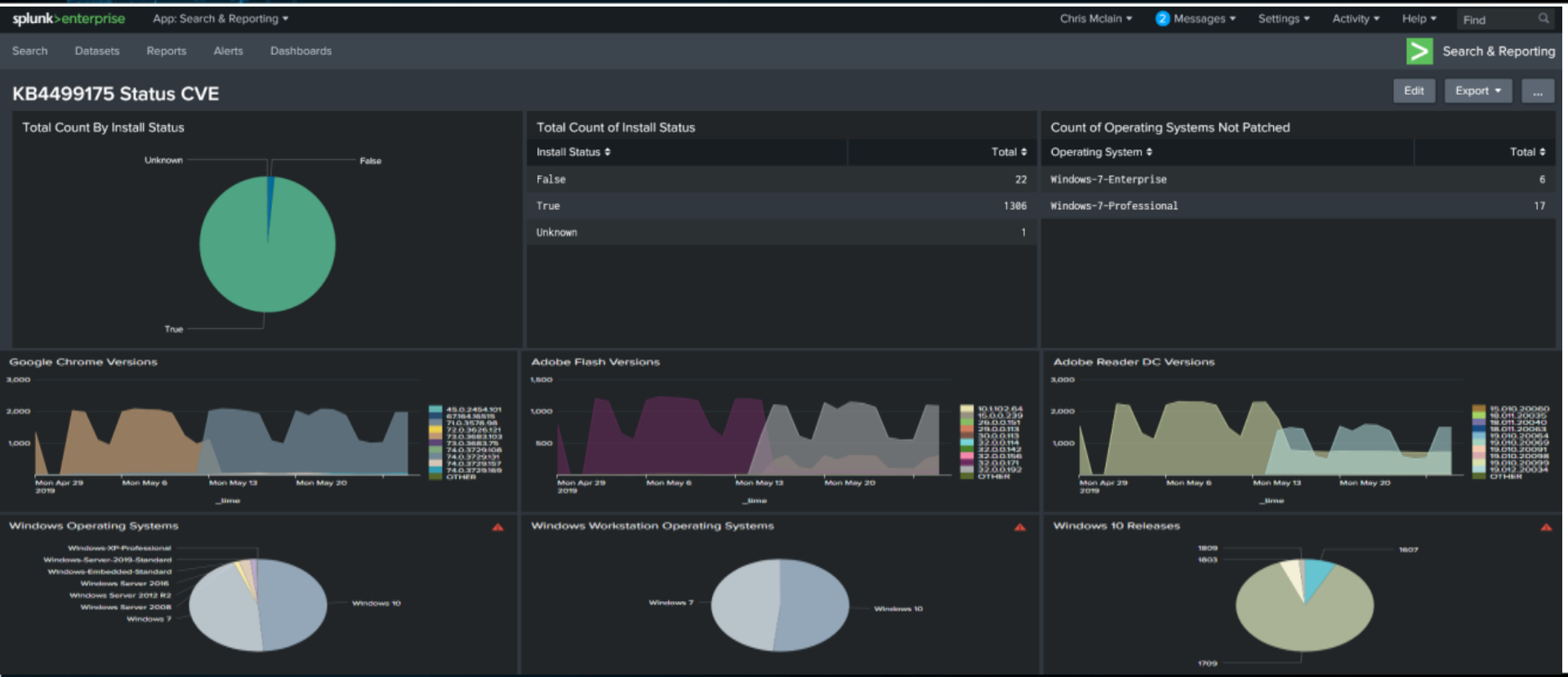
Roadmap

	Base Expectations	Next Steps	Advanced	
Enhance Detection and Minimize Impact	Manufacturing offices・Major companies/offices • Asset Discovery • Installation of AV software to all devices • Inter-company/office network communication management	• Internal company/office network communication management	All companies/offices	
Compare-hensive Security Measures	Devices managed by IT department • Establish security information collection • Establish method for application of security patches	Devices managed by user department • Application of security patches and control risk for not applying patches • Network connection restriction（pre-registration） • Implement log management/device control software		
Establish Self-standing Security Activities	Effective security measures through support of IT department • Establish security training formation • Establish support formation by IT	Security management activities by user departments • Conduct user department training • Provide planning support tools/self-checking list and support	• Start PDCA activities	• Establish PDCA activities
	2017	2018	2019	2020

HONDA
Honda Manufacturing of Alabama

Challenges

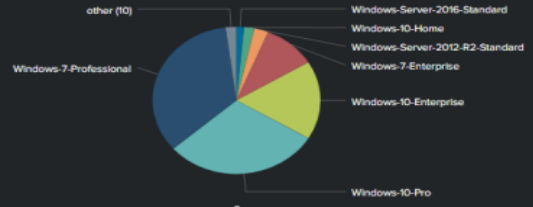
- People
- Operational Technology (OT)
- Remote Access
- IoT
- Legacy Systems
- Size and Complexity of network and manufacturing processes
- Visibility
- Production Requirements
- Protecting Intellectual Property (IP)
- Identity & access management
- Awareness
- Safety
- Cloud
- Compliance Requirements
- Functionality vs. Information Security


splunk>enterprise
App: Search & Reporting
Chris Mclain
2 Messages
Settings
Activity
Help
Find
Search
Datasets
Reports
Alerts
Dashboards
Search & Reporting
KB4499175 Status CVE
Edit
Export
...
Total Count By Install Status
Unknown
False
True
Total Count of Install Status
Install Status
Total
False 22
True 1306
Unknown 1
Count of Operating Systems Not Patched
Operating System
Total
Windows-7-Enterprise 6
Windows-7-Professional 17
Google Chrome Versions
Adobe Flash Versions
Adobe Reader DC Versions
Windows Operating Systems
Windows 10
Windows Workstation Operating Systems
Windows 7
Windows 10
Windows 10 Releases
1809
1803
1807
1709

Windows OS Count

Edit Export ...

Inventory of all Windows Operating Systems discovered.



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Operating_System	count	
Windows-Embedded-Standard	1	0.032468
Windows-Server-2008-Enterprise	1	0.032468
Windows-10-Pro-for-Workstations	2	0.064935
Windows-XP-Professional	2	0.064935
Windows-10-Enterprise-2015-LTSB	3	0.097403
Windows-7-Ultimate	8	0.259740
Windows-Server-2019-Standard	8	0.259740
Windows-Server-2008-Standard	10	0.324675
Windows-Server-2008-R2-Enterprise	12	0.389610
Windows-Server-2008-R2-Standard	17	0.551948
Windows-Server-2016-Standard	45	1.461039
Windows-10-Home	61	1.980519
Windows-Server-2012-R2-Standard	84	2.727273
Windows-7-Enterprise	315	10.227273
Windows-10-Enterprise	530	17.207792
Windows-10-Pro	923	29.967532
Windows-7-Professional	1058	34.350649