

How Ordr Maps To The Data Security And Protection Toolkit (DSPT)

This document outlines components of the Data Security and Protection Toolkit (DSPT) published by NHS Digital and how the Ordr solution assists with meeting these criteria.

Each question is numbered as per the DSPT documentation, to assist in cross-referencing.

The Ordr system has the following key functionality:



Real-time Asset Inventory

Ordr brings together a unique combination of traffic analysis and AI to automatically discover and classify every device on the network. This includes high-fidelity information such as make, classification, location, and application/port usage. This visibility is continuous, real-time, and provides a single source of truth for network asset inventory.



Vulnerability Management

Ordr delivers a variety of unique capabilities in the area of vulnerability management. The platform includes a built-in vulnerability scanner to identify devices affected by a variety of industry-specific security alerts or recalls. Ordr also complements traditional scanning tools with bi-directional integrations that allow staff to identify devices that may have been missed by previous scans. The solution can also be used to create customised scans that specifically include or exclude devices of a certain type - which can be critical to maintaining business operations.



Behavior and Risk Profiling

Ordr includes a built-in IDS engine to detect threats and devices that are under active attack. Ordr also automatically learns every device's unique communication patterns, known as its Ordr Flow Genome. This provides a baseline that can be used to find suspicious and anomalous behaviours that could be the sign of an unknown threat.



Automated Response

Ordr can automate controls both to proactively reduce the risks of a device as well as to isolate devices with detected risks or threats. By baselining device behaviour, Ordr can dynamically create segmentation policies such as firewall rules that provide devices with necessary access while limiting unnecessary exposure. Policies can be dynamically generated and enforced on a variety of infrastructure including switches, firewalls, wireless LAN controllers, and more. Ordr also integrates with incident response and asset management workflows and can be used to quarantine compromised or high-risk devices.

Data Security Guide 1: Personal Confidential Data

1.4.2 When did your organisation last review both the list of all systems/information assets holding or sharing personal information and data flows?

Ordr passively discovers all connected devices such as traditional servers, workstations, and PCs as well as unmanaged devices including IoT, IoMT, and OT devices. Each device is automatically identified and classified with detailed characteristics such as make, model, serial number, software version.

Ordr also analyses and documents the traffic behaviour of all devices by VLAN, subnet, destination, port, protocol, device group, and more. This provides a full overview of how traffic is flowing within the network, allowing teams to validate that network policies and device configurations are having the intended effect including identifying devices and communication flows that involve regulated data such as PCI, PII, and PHI, enabling an organisation to assure the systems are managed and data controls are enforced.

Ordr can then automatically generate security policies based on these findings and enforce them directly on the existing infrastructure. The system can continuously enforce newly added like-devices to ensure that these devices always have the access they need without any unnecessary exposure.

Data Security Guide 4: Managing Data Access

4.1.2 Does the organisation understand who has access to personal and confidential data through your systems, including any systems which do not support individual logins?

Ordr will map all Active Directory (AD) user access to AD registered devices and, depending on the protocol, Ordr captures user details from medical devices that do not require a login such as the attending clinicians name plus time and date of the study.

4.2.3 Explain how access logs are retained for a sufficient period, reviewed regularly, and can be searched to identify malicious activity?

Ordr's Data Lake aggregates information about devices, threats, and network behaviours from multiple sources, including external threat intelligence feeds such as NHS Cyber Alert (formerly NHS CareCERT), allowing analysis and reporting on suspicious or unusual activity. Ordr maintains these records for 90 days before archiving. Information can also be exported in real-time to SIEMs or other reporting tools for further analysis.

4.3.2 Are users, systems and (where appropriate) devices always identified and authenticated prior to being permitted access to information or systems?

While many organisations want to restrict access based on the need to know, it is often difficult for teams to identify and anticipate the various needs of a device. Ordr provides an automated way to identify and review the essential services required by each device or type of device, and translate those needs into actively enforced policies.

Data Security Guide 6: Responding to Incidents

6.1.1 A data security and protection breach reporting system is in place.

Ordr provides a variety of features to detect the effects of malicious code on a device without the need for any software agents. The solution automatically, and passively, monitors the behaviours of each device based on threat intelligence feeds and real-time behavioural analysis and can alert on anomalous or known bad traffic flows that can indicate that a device is compromised, the details of which can be viewed with the platform, exported as a report, or sent to a SIEM solution.

6.2.3 Has antivirus/anti-malware software been installed on all computers that are connected to or capable of connecting to the Internet?

Many unmanaged and medical devices that require or have internet access will not be able to run traditional antivirus software or security agents, this creates a significant security risk for a healthcare organisation. Ordr monitors all device communications for anomalous and known bad behaviour such as command-and-control traffic and malicious destinations.

For agent-based devices, Ordr can monitor that those devices are communicating to the antivirus/antimalware software update server, to ensure that these devices are in compliance and have the latest software patches.

6.2.6 Connections to malicious websites on the internet are prevented.

Ordr automatically learns the behaviours of each device and can alert on anomalous zero-day activity that can indicate that the device is compromised, including known bad behaviour such as command-and-control traffic and communications to malicious destinations. Ordr can then prevent malicious traffic whilst not interrupting valid communication flows by enforcing device specific policy on network switches, wlan controllers and security tools such as Network Access Control (NAC) and firewalls.

6.3 Known vulnerabilities are acted on based on advice from CareCERT, and lessons are learned from previous incidents and near misses.

The Ordr solution is integrated with various cyber threat intelligence (CTI) feeds including NHS Cyber Alert (formerly CareCERT), this enables the immediate identification and risk classification of all individual devices impacted by each Cyber Alert vulnerability. Devices and vulnerabilities are automatically prioritised based on their overall risk determined both by the role of the device as well as threat-based risk factors allowing the IT team to immediately identify all affected devices and structure remediation based on priority.

Once a device or group of devices impacted by a particular vulnerability have been resolved the IT team can clear the event from the Ordr dashboard to register it's completion or implement micro-segmentation to secure the device(s).

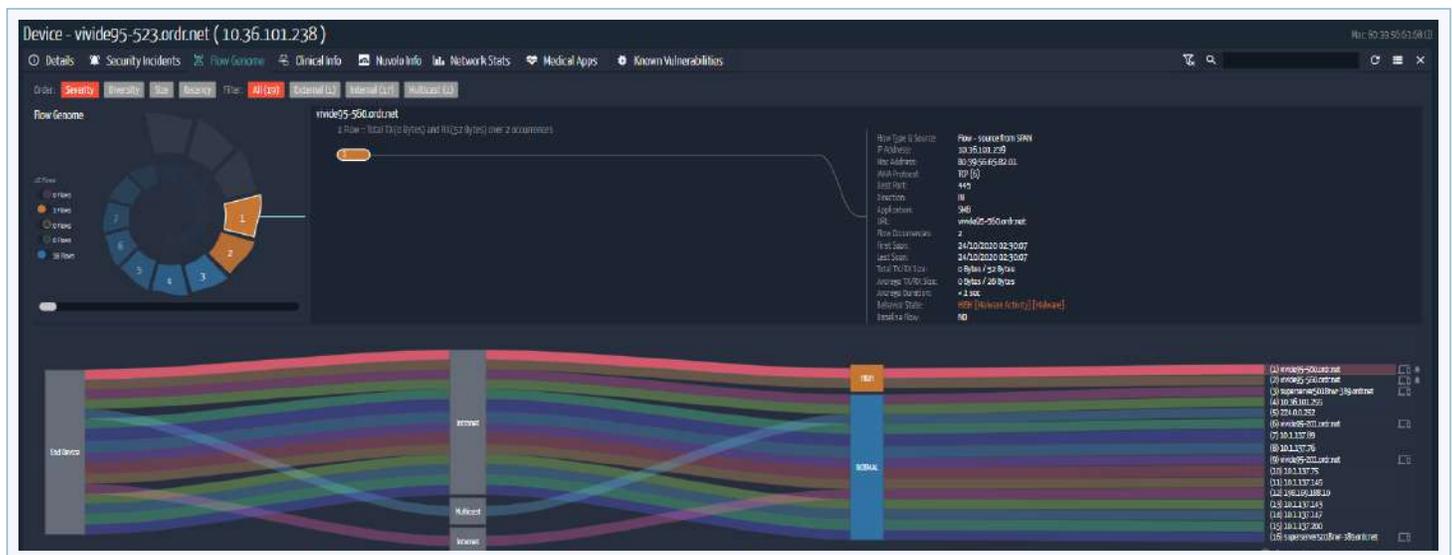
Security Incidents of Category : UK NHS CareCERT								
Total 8 incidents								
No.	Risk	Score	Incident Category	Incident Type	Last Occurrence	Devices	Cleared	
1	high	8	UK NHS CareCERT	CC-3745:Critical vulnerabilities in the Windows TCP/IP implementation	09/02/2021 21:03	5	0	
2	low	2	UK NHS CareCERT	CC-3997:BD (Becton, Dickinson and Company) has released details of two vulnerabilities in their Alaris Gateway Workstation product.	14/06/2019 00:00	2	0	
3	low	2	UK NHS CareCERT	CC-2633:A remote attacker could exploit this vulnerability to impact the functionality of affected devices when they are connected to a terminal server using the serial	24/08/2018 00:00	2	0	
4	low	2	UK NHS CareCERT	CC-3795:Two vulnerabilities in BD's infusion pump systems	18/03/2021 12:17	2	0	
5	low	2	UK NHS CareCERT	CC-3670:A session authentication vulnerability in BD's infusion management system	17/11/2020 00:00	2	0	
6	low	2	UK NHS CareCERT	CC-3728:A backdoor implant that takes advantage of a popular remote admin tool	21/01/2021 00:00	5	0	
7	low	2	UK NHS CareCERT	CC-1911:Apple has released security updates to address vulnerabilities in multiple products. An attacker could exploit these vulnerabilities to obtain access to sensitive	09/01/2018 00:00	2	0	
8	low	2	UK NHS CareCERT	CC-2924:Apple has released security updates to address vulnerabilities in multiple products, including the recently discovered FaceTime vulnerability.	08/02/2019 00:00	2	0	

6.3.3 The Organisation has a proportionate monitoring solution to detect cyber events on systems and services.

Ordr continually monitors and logs the communication patterns for all devices, building a ‘flow genome’ of traffic to and from every device, and will automatically detect and identify known traffic flow violations and zero-days attacks. The built-in Ordr IDS detects and logs active threats and provides a consolidated view of incidents based on criticality and MITRE kill-chain steps. The platform also ingests STIX and TAXII threat feeds as well as NHS Cyber Alert which can be used to generate threat-based alerts.

Scheduled and ad-hoc reports may be generated, and the incident information can be sent to a SIEM or IT workflow tool for further consolidation. Additionally, by internally correlating event data within the Ordr SCE, the solution can provide SIEMs with pre-correlated, enriched events that reduce the need to manually correlate events within the SIEM.

Ordr can also then take steps to secure compromised devices via micro-segmentation or via 3rd party security products.



Data Security Guide 7: Continuity Planning

7.1.4 You use your security awareness, e.g. threat intelligence sources, to make temporary security changes in response to new threats, e.g. a widespread outbreak of very damaging malware.

The continuous mapping of the interconnectivity of all devices in the network (flow genome) coupled with the cyber threat intelligence (CTI) feeds means Ordr detects and alerts to known incidents or zero-day anomalies in real-time providing an invaluable tool to incident responders and being a critical component in an organisation’s security assessment. Ordr can then be used to secure the affected devices to reduce the mean time to response (MTTR).

The Ordr Incident Summary dashboard gives a real-time view of the risks of all the devices on a network, including their vulnerabilities and behavioural anomalies.

No.	Type	Scope	Host IP / Domain	Host IP Mask	DOT	Protocol	Out Port	Action
1	Configured	Device	10.1.137.148	255.255.255.255		UDP(T)	138	ALLOW
2	Configured	Device	10.1.137.148	255.255.255.255		TCP(S)	445	ALLOW
3	Configured	Device	10.50.101.237	255.255.255.255		TCP(S)	445	ALLOW
4	Configured	Device	10.1.137.143	255.255.255.255		TCP(S)	445	ALLOW
5	Configured	Device	10.1.137.143	255.255.255.255		UDP(T)	161	ALLOW
6	Configured	Device	10.1.137.143	255.255.255.255		UDP(T)	1900	ALLOW
7	Configured	Device	10.1.137.143	255.255.255.255		UDP(T)	6003	ALLOW
8	Configured	Device	10.50.101.235	255.255.255.255		UDP(T)	136	ALLOW
9	Configured	Device	10.50.101.235	255.255.255.255		UDP(T)	137	ALLOW
10	Configured	Device	10.50.101.238	255.255.255.255		TCP(S)	445	ALLOW
11	Configured	Device	224.0.0.202	255.255.255.255		UDP(T)	6105	ALLOW
12	Configured	Device	192.168.10.10	255.255.255.255		TCP(S)	442	ALLOW

8.1.3/4 Devices that are running out-of-date unsupported software and no longer receive security updates (patches) are removed from the network, or the software in question is uninstalled. Where this is not possible, the device should be isolated and have limited connectivity to the network, and the risk assessed, documented, accepted, and signed off by the SIRO.

Medical, IoT, OT or other unmanaged devices that do not fall under the remit of the IT team often have bespoke or out of date of operating systems that are not regularly patched or updated by their suppliers. This significantly increases the attack surface of a healthcare organisation.

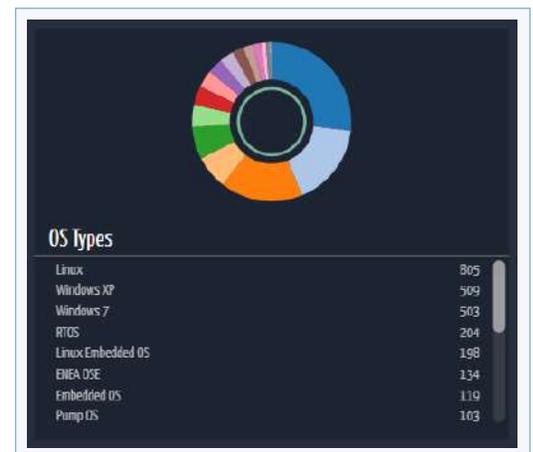
Ordr automates the creation of network segmentation/micro-segmentation policies, based on device specific communication flows and known vulnerabilities, then automatically enforces them across wired switches, wireless controllers, access points, firewalls, and network access control (NAC) solutions from all leading vendors.

Segmentation and micro-segmentation policies ensure devices only connect to other devices, locations, VLANs, and protocols that have a valid and verified business reason therefore safeguarding the network from devices that can be easily compromised and mitigating the threat these devices pose to the organisation.

This process provides a mechanism for healthcare organisations to shield business critical but vulnerable and easily exploited devices whilst simultaneously maintaining and ensuring their operational effectiveness.

8.2.1 List any unsupported software prioritised according to business risk, with remediation plan against each item.

Ordr risk scores all devices and their vulnerabilities based on multiple factors such as various cyber threat intelligence (CTI) feeds and the real-time analysis of device traffic flows. Ordr then dynamically creates a prioritised list for remediation across operating systems, patch levels and known vulnerabilities. Ordr can then dynamically generate network segmentation policies to continuously isolate mission-critical devices. This can help develop a prioritised remediation plan which incorporates compensating controls for systems that cannot be patched or updated.

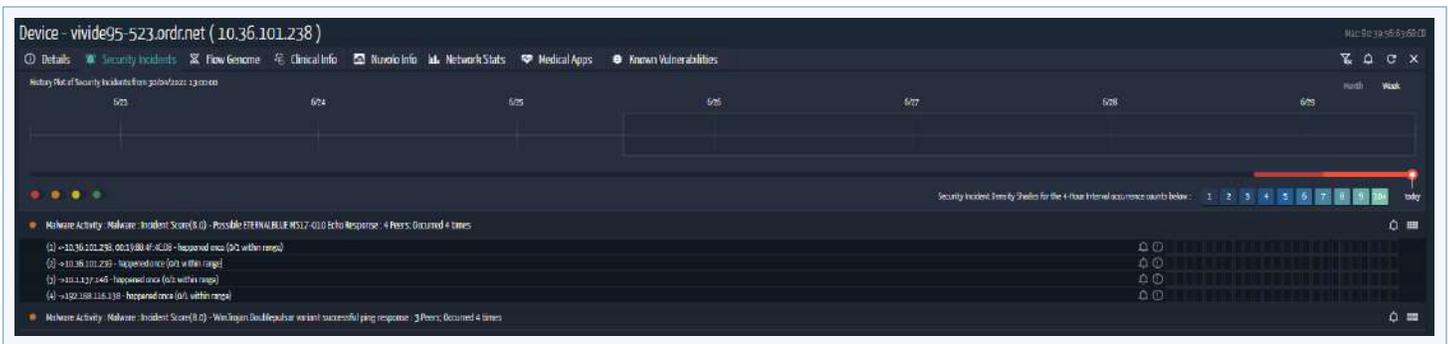


8.3.1 How do your systems receive updates and how often?

Ordr can assist as part of a complete solution. Ordr provides detailed insight into the operating system and patch level of all devices connected to a network, it is also Integrated into various manufacturers, the FDA, NHS Cyber Alert and shortly the MHRA feeds whereby it can dynamically alert about device and medical device updates, vulnerabilities and recalls enabling IT and EBME teams to prioritise any remediation action or service scheduling.

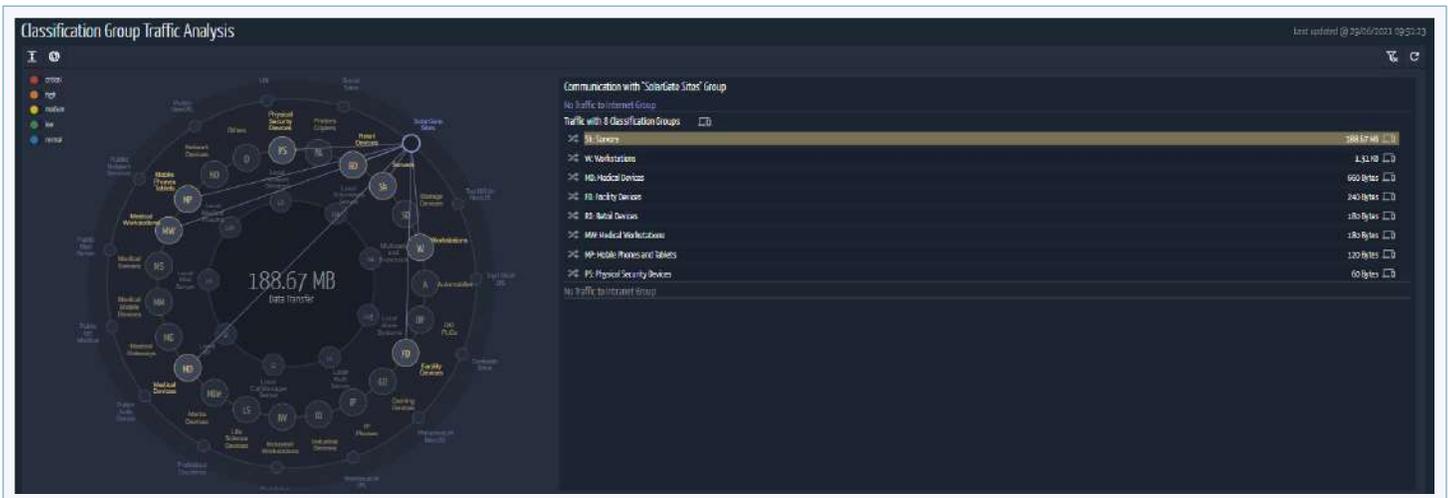
8.3.3 What is your approach to ensuring patches for critical or high-risk vulnerabilities are applied within 14 days of release?

Ordr can assist as part of a complete solution. Ordr automatically alerts and provides details of all devices with known vulnerabilities and prioritises them according to threat severity. IT and Security teams can clear these events as device vulnerabilities are patched.



8.4.1 Is all your infrastructure protected from common cyber-attacks through secure configuration and patching?

Ordr analyses and documents the traffic characteristics of all devices by VLAN, subnet, destination, port, protocol, device group, and more. The platform can further identify risky devices that have unexpected open ports. Based on the observed needs and risks of each device, Ordr can automatically generate and enforce policies on a per device or group basis. These micro-segmentation policies ensure that lateral East-West spread of a cyber-attack does not impact critical devices as they are shielded from attack. The Ordr SCE can also integrate with traditional 3rd party security products such as firewalls and NAC solutions to enforce contextually aware zero-day policies.



8.4.2 All infrastructure is running operating systems and software packages that are patched regularly, and as a minimum in vendor support.

Many unmanaged devices, including medical equipment such as CT Scanners will not be able to be patched or updated by the IT team and often run operating systems that are either end-of-life or end-of-support and do not receive regular updates from their respective vendors. Ordr mitigates the threat posed by these devices through the enforcement of micro-segmentation policies on firewalls, switches, wireless LAN controllers or via network access control (NAC).

8.4.3 You maintain a current understanding of the exposure of your hardware and software to publicly-known vulnerabilities.

The Ordr solution utilises various industry standard threat feeds including NHS Cyber Alert and CVE additionally devices with publicly known vulnerabilities are automatically detected in real-time and categorised to allow IT and security teams to see all devices quickly and easily with a specific vulnerability or criticality level and the recommended remediation steps.

Details

Threat Severity Medium

Description BD (Becton, Dickinson and Company) has released details of two vulnerabilities in their Alaris Gateway Workstation product.

Reference <http://digital.nhs.uk/cyber-alerts/2019/cc-3097/cc-3097>

Remediation BD have released firmware versions 1.3.2 and 1.6.1 to address CVE-2019-10962 and are assessing software updates to address CVE-2019-10959. Organisations are encouraged to immediately apply these updates as they become available. They have also recommended several mitigations that organisations may apply: Apply suitable VLAN isolation to ensure Gateway Workstation devices are properly segregated. Disable the SMB protocol if it is not used. For further remediation guidance, organisations are encouraged to review the following BD notifications and contact their relevant suppliers: Alaris Gateway Workstation Unauthorized Firmware notification Alaris Gateway Workstation Web Browser User Interface Lack of Authentication notification



Data Security Guide 9: IT Protection

9.1.1 The Head of IT, or equivalent role, confirms all networking components have had their default passwords changed to a high strength password.

As part of its analysis of each device, Ordr can identify devices with weak or default passwords.

9.1.2 The Head of IT, or equivalent role, confirms all organisational devices have had their default passwords changed.

As part of its analysis of each device, Ordr can identify devices with weak or default passwords.

9.3.5 The organisation understands and records all IP ranges in use across the organisation.

Ordr delivers passive and continuous monitoring that details all network vlan and subnets to provide a real-time record plus also show inter-subnet and subnet to internet communications to quickly and easily identify and alert on erroneous traffic flows both internally and internet based.

9.3.6 The organisation is protecting its data in transit (including email) using well-configured TLS v1.2 or better.

ID	Mac Address	IP Address	Device Name	Group	Profile	Risk	Vlan
1	00:0C:29:48:93:0F	10.38.104.48	stanimp-300.ordr.net	Medical Devices	NovoBiosMedical-SatBmp-Glucose Monitor	normal	high
2	00:40:80:63:67:68	10.38.104.22	357000ev-062.ordr.net	Medical Devices	Baxter-S5700SAV-Spectrum Infusion Pump	normal	high
3	00:00:73:04:23:9C	10.38.104.13	stan1-015.ordr.net	Medical Devices	BD-Alaris-H-LabKit Pump	normal	low
4	00:40:80:64:82:07	10.38.104.23	357000ev-271.ordr.net	Medical Devices	Baxter-S5700SAV-Spectrum Infusion Pump	normal	high
5	00:00:09:61:57:70	10.38.104.48	stanimp-602.ordr.net	Medical Devices	NovoBiosMedical-SatBmp-Glucose Monitor	normal	high
6	00:00:06:67:50:78	10.38.104.67	stanimp-473.ordr.net	Medical Devices	NovoBiosMedical-SatBmp-Glucose Monitor	normal	high
7	00:00:73:05:03:7E	10.38.104.30	stan1-012.ordr.net	Medical Devices	BD-Alaris-H-LabKit Pump	normal	low

Ordr can assist as part of a complete solution. Ordr can identify devices and communications that involve regulated data including PCI, PII, and PHI, and the VLAN the devices reside in. This enables an organisation to ensure that devices, such as some medical equipment, that transmit unencrypted and sensitive data are appropriately secured and in the correct vln i.e. have not been connected to a 'Guest' or insecure VLAN.

9.6.3 You closely and effectively manage changes in your environment, ensuring that network and system configurations are secure and documented.

Ordr delivers passive and continuous monitoring that details all network VLAN and subnets to provide a real-time record, and also show inter-subnet and subnet to internet communications. Any network infrastructure or device that is added, moved or changed is dynamically updated in real-time.

9.6.10 You have a plan for protecting devices that are natively unable to connect to the Internet, and the risk has been assessed, documented, accepted, and signed off by the SIRO.

Ordr can assist as part of a complete solution. Ordr includes an integrated Threat Detection Engine/IDS, uses machine learning to detect anomalous behaviour, and ingests multiple sources containing threat intelligence, advisories, vulnerability databases, FDA

recalls, NHS Cyber Alert, banned devices, to identify devices with risks and have been compromised. Utilising this Ordr automatically creates a risk score and can generate reports.

9.7 The organisation is protected by a well-managed firewall.

Ordr can assist as part of a complete solution. Ordr can dynamically create rules on leading 3rd party security systems such as firewalls and NAC to contain a threat based on Ordr’s real-time detection of behavioural or signature-based threats, for example, if a compromised medical device attempts to communicate to a command and control server in Russia, Ordr can initiate control measures to the relevant system such as blocking traffic through NGFW policies, ACL blocks, quarantine VLAN assignment, port shutdown, or session termination.

Conclusion

DSPT compliance will force many organisations to take a fresh look at their cybersecurity program and make changes to align with NHS Digital requirements. Core security functions such as inventory, risk management, and threat detection will be essential to maintaining compliance, and organisations should look for efficient, automated systems that can help provide coverage for all connected devices – from traditional servers, workstations, and PCs to IoT, IoMT and OT devices. Ordr SCE can arm organisations with a powerful tool to gain visibility into their network-connected devices, automatically expose potential risk, and automatically enforce policies to either isolate high-risk devices, or to segment systems based on their unique needs, passively and without agents.

To learn more about Ordr and how the solution can help meet your DSPT goals, contact the Ordr team at info@ordr.net

To schedule a demo or free security checkup with Check Point please contact: IoT_Security_Sales@checkpoint.com



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