



ServiceNow

Integration Guide

Notices

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Overview

Digital transformation across healthcare, manufacturing, retail, transportation, and logistics is accelerating the hyper-connectedness of enterprise systems powered by IoT and connected OT devices. The enterprise IT network is now the melting pot for a highly eclectic mix of devices that businesses must manage and protect or face immediate security risk, bad-actors are constantly attacking the long-held belief and sovereignty of application data, critical to the running of most Healthcare and Enterprise businesses.

The Ordr Systems Control Engine (SCE) allows organizations to rapidly inventory every wired or wireless connected device in your network, classify it based on the type and business function, and assess it for risk. Furthermore, SCE provides for endpoint security monitoring and enforcement without the need for running agents on end devices. SCE learns behaviors and creates device flow genomes, so you'll know what each device or group of devices should be talking to, and often more importantly what they should not be talking to.

Ordr SCE can be integrated with many widely used Enterprise software products for a better and complete user experience. This guide describes in detail how to configure Ordr Systems Control Engine (SCE) with ServiceNow CMDB to provide advanced Endpoint device discovery, classification, and ultimately building the foundation for the automation of secure network access control and micro-segmentation policy to all networked users and devices.

ServiceNow is a service management platform that offers advanced automation and process workflow for the enterprise. You will be able to leverage ServiceNow's workflow and ticketing capabilities with this integration.

In some cases, customers might already be using ServiceNow for Asset management and Ticketing system. Ordr provides a way to integrate with ServiceNow for customers to see all their assets in one place and automate the ticketing process for any vulnerabilities found by the Ordr SCE platform.

Through automated alerts, ticketing, problem-solving, and validation, the integration of Ordr SCE and ServiceNow enables closed-loop incident management. Ordr SCE can push inventory and incident information to ServiceNow.

When Ordr SCE finds threats or risks within the network, it sends an alert in the form of incidents/events to ServiceNow. ServiceNow creates a ticket and provides the user the option to fix the problem automatically/manually. ServiceNow validates the resolution is successful and closes the ticket.

Integration Workflow

This section provides step-by-step instructions on how to integrate ServiceNow with the Ordr SCE application:

Step 1. Import XML Schema into ServiceNow

Step 2. Preview update set and resolve any conflicts

Step 3. Create a new user at ServiceNow

Step 4. Ordr ServiceNow Configuration

Step 5. Ordr Discovered Equipments Verification

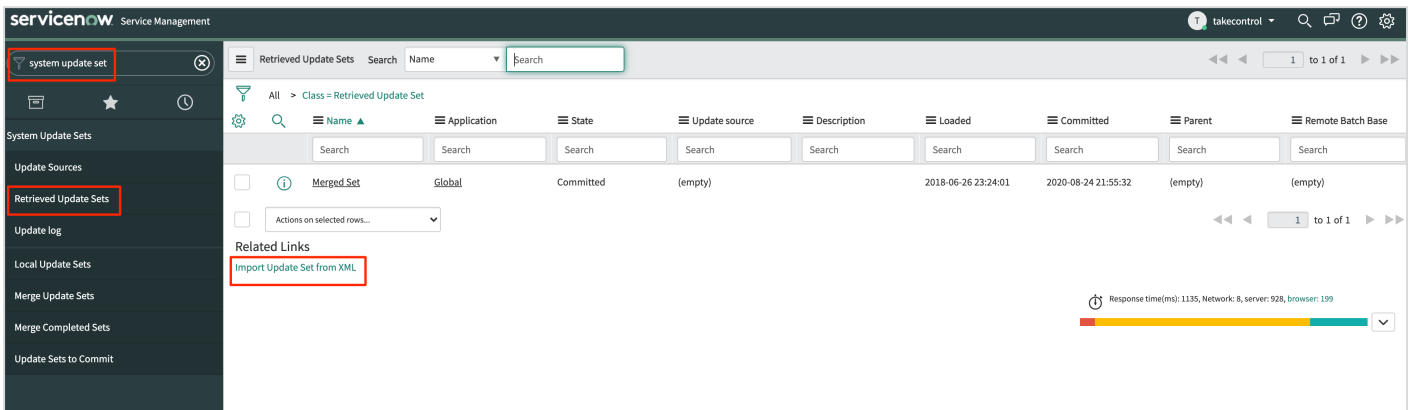
Step 1. Import XML Schema into ServiceNow

As part of the integration between Ordr SCE and SNOW CMDB, Ordr has developed an XML file that is used to ensure data sent from the SCE platform can be ingested and parsed correctly. It is important that before you begin to configure the integration between the two platforms, this file is imported as described below to ensure data consistency.

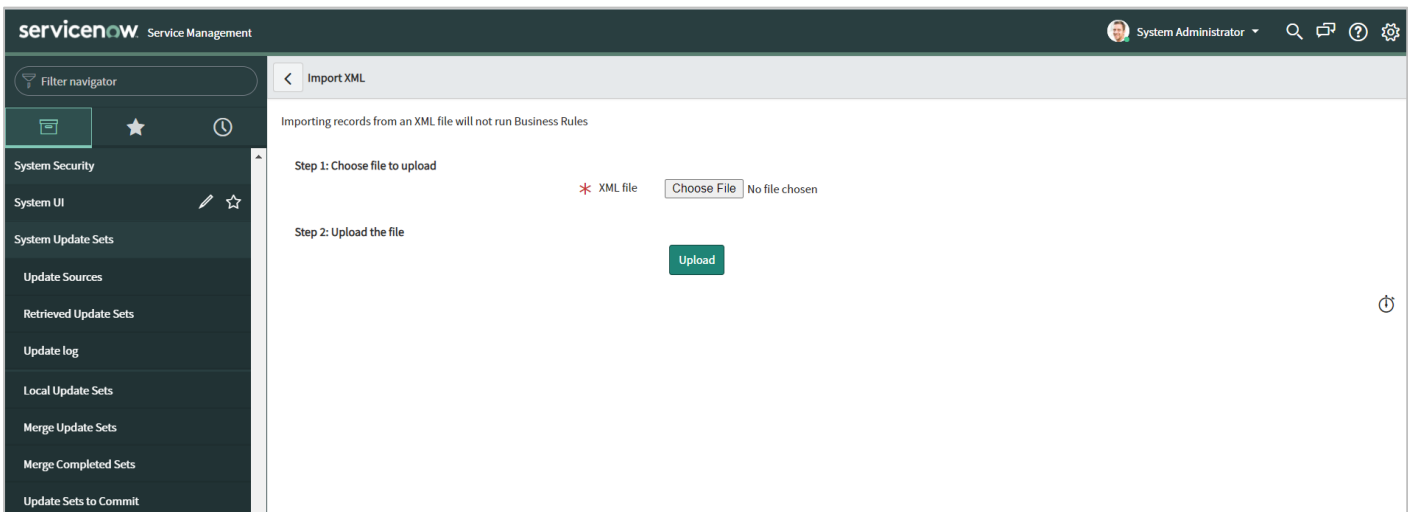
To get started with the ServiceNow integration, contact the Ordr support team to obtain the XML file for importing into ServiceNow, else the latest file should be available in the following location on our resources website. Use this link to download the XML file. <Click here for XML Import Schema file>

Ensure to save the XML file to a local location and computer you will use to log in to ServiceNow.

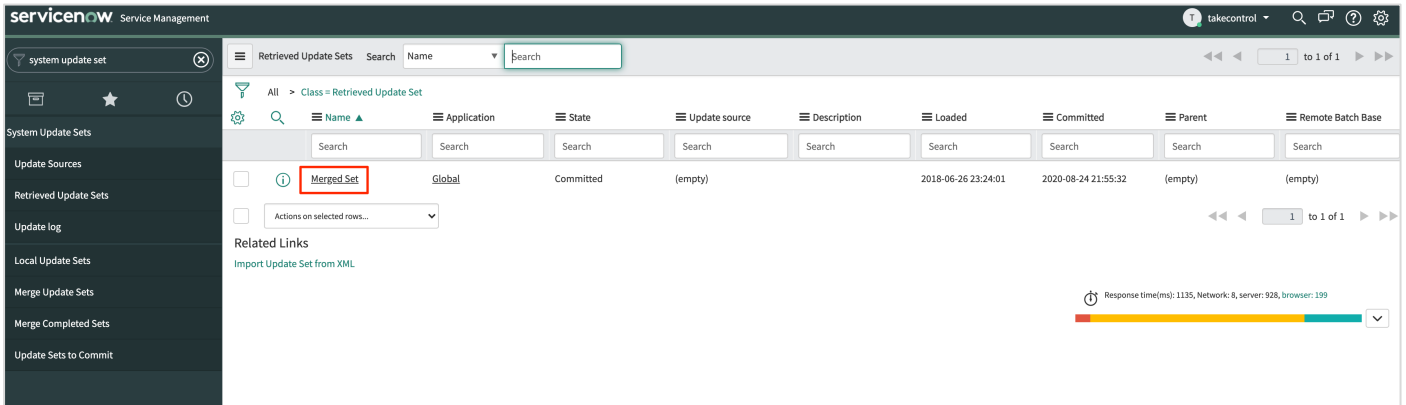
1. Log in to ServiceNow with your user credentials.
2. Within the ServiceNow homepage search for **System Update Sets**, click on **Retrieved Update Sets**, and then click **Import Update Set from XML**.



3. Click **Choose File** to upload the XML file that was saved in the initial step or received from the Ordr support team member.
4. Click **Upload** as shown below.

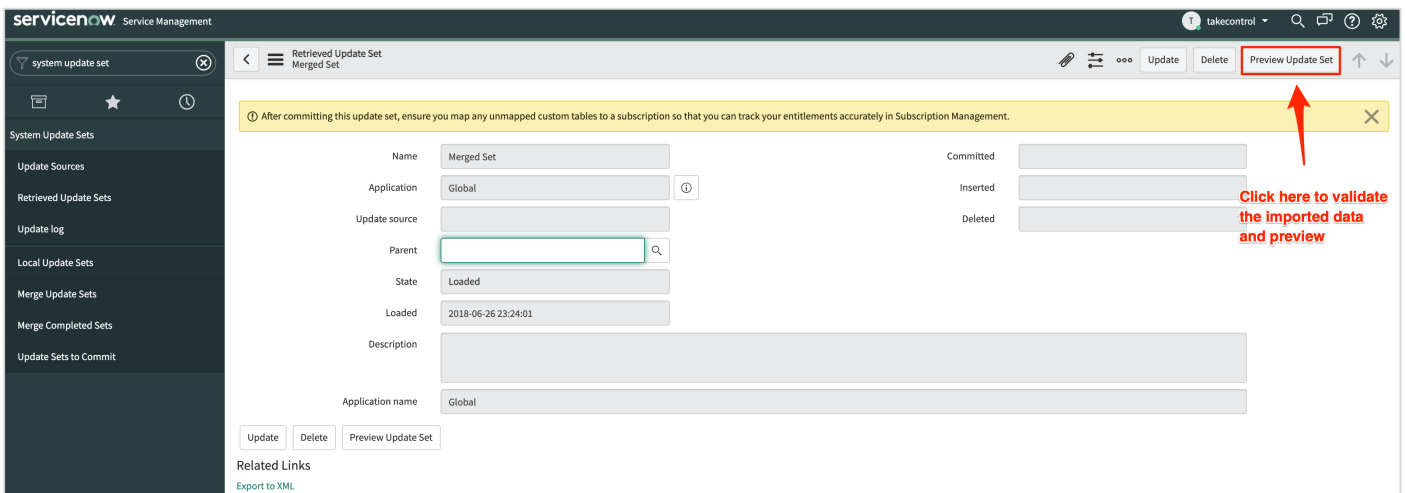


When the upload is complete, the Retrieved Update Sets screen displays a new entry '**Merged Set**'. Notice the state is set currently as **Loaded**, after the merge is completed it will show as **Committed**.



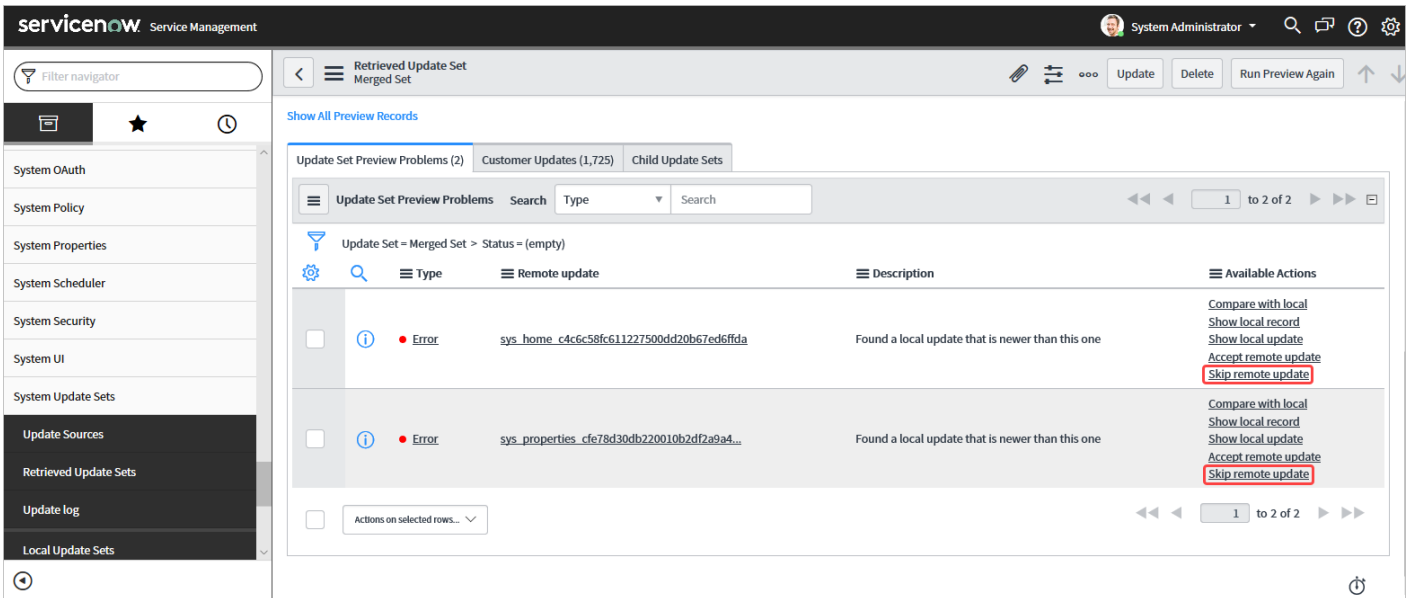
Step 2. Preview update set and resolve any conflicts

1. Click the **Merged Set** entry.
2. To validate and preview the imported data, click **Preview Update Set**.

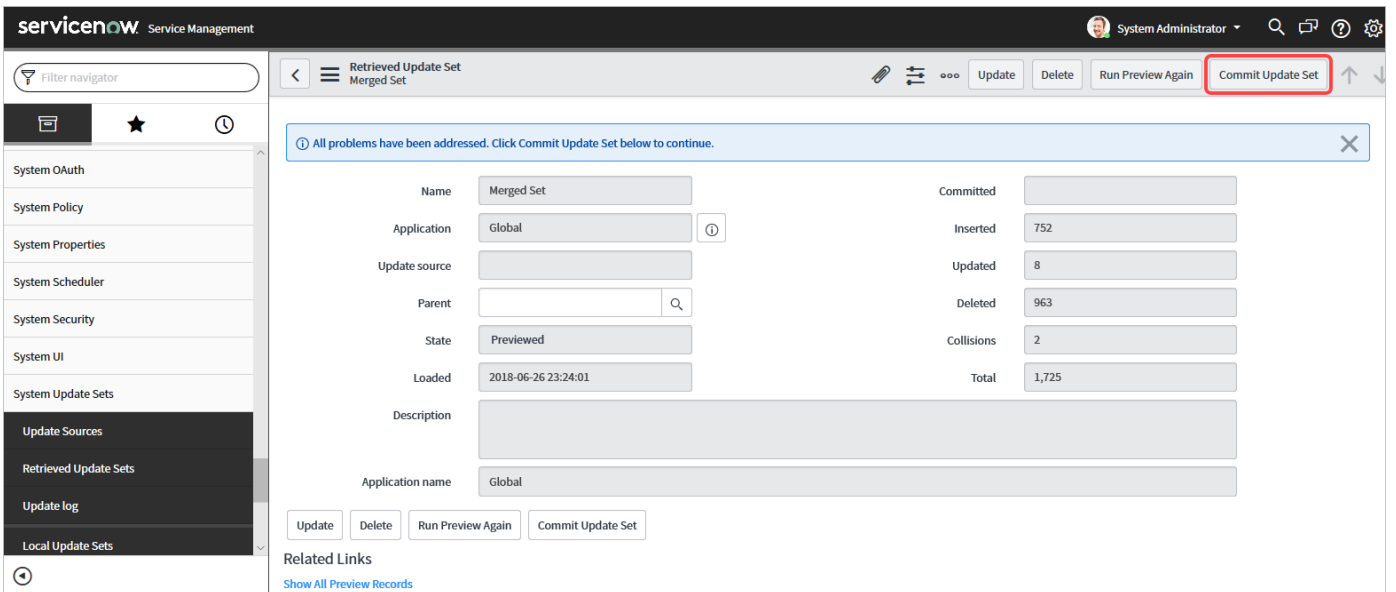


Once the analysis is complete, it may present you with a list of errors to validate, ignore, etc. Similar to the example below.

- While validating the merged set, if the preview displays error messages, click **Skip remote update**. There will likely be two warnings as shown below.



- Once the warnings have been skipped, update the changes by clicking **Commit Update Set**.



5. In the ServiceNow homepage, search 'Ordr' and verify the following Configuration Items {CI's} entries are created:

- Ordr Discovered Equipments
- Ordr Facility Devices
- Ordr Media Devices
- Ordr Medical Devices
- Ordr Mobiles
- Ordr Physical Security Devices
- Ordr Retails Devices



NOTE: 'Ordr Discovered Equipments' is the parent table and tables below its child.

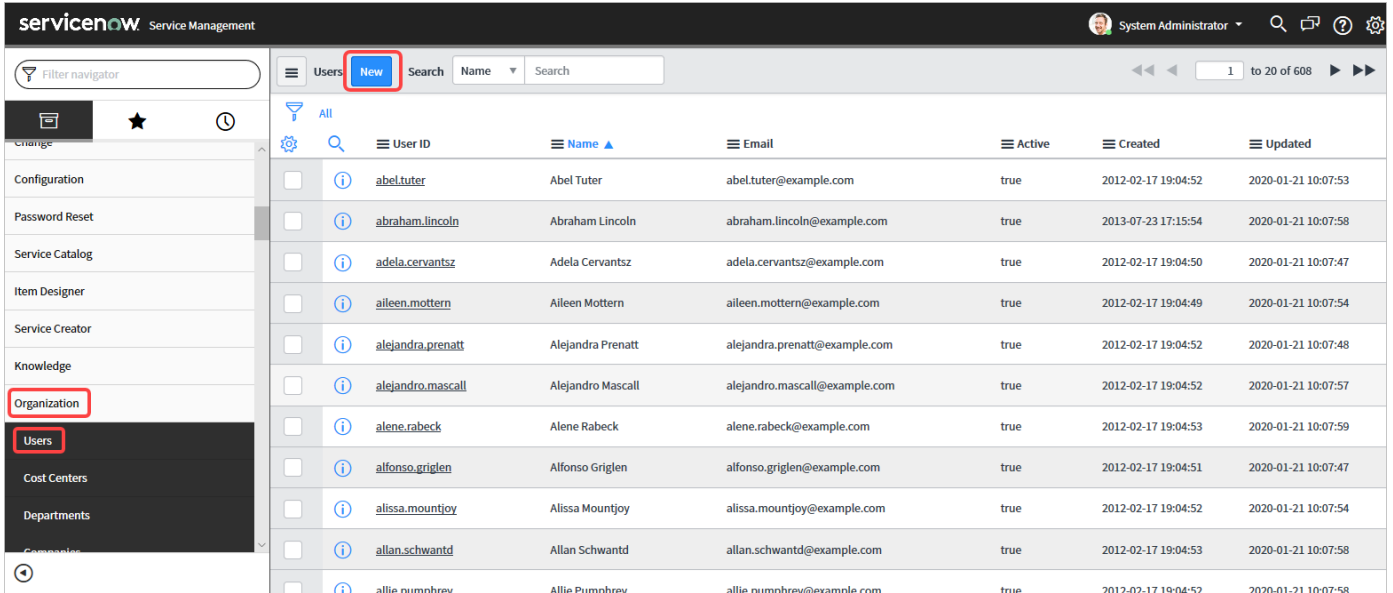
Name	Merged Set	Committed	2020-01-27 01:45:57
Application	Global	Inserted	16
Update source		Updated	745
Parent		Deleted	964
State	Committed	Collisions	0
Loaded	2018-06-26 23:24:01	Total	1,725
Description			
Application name	Global		

6. Click individual entries and make sure that there are no data sets.

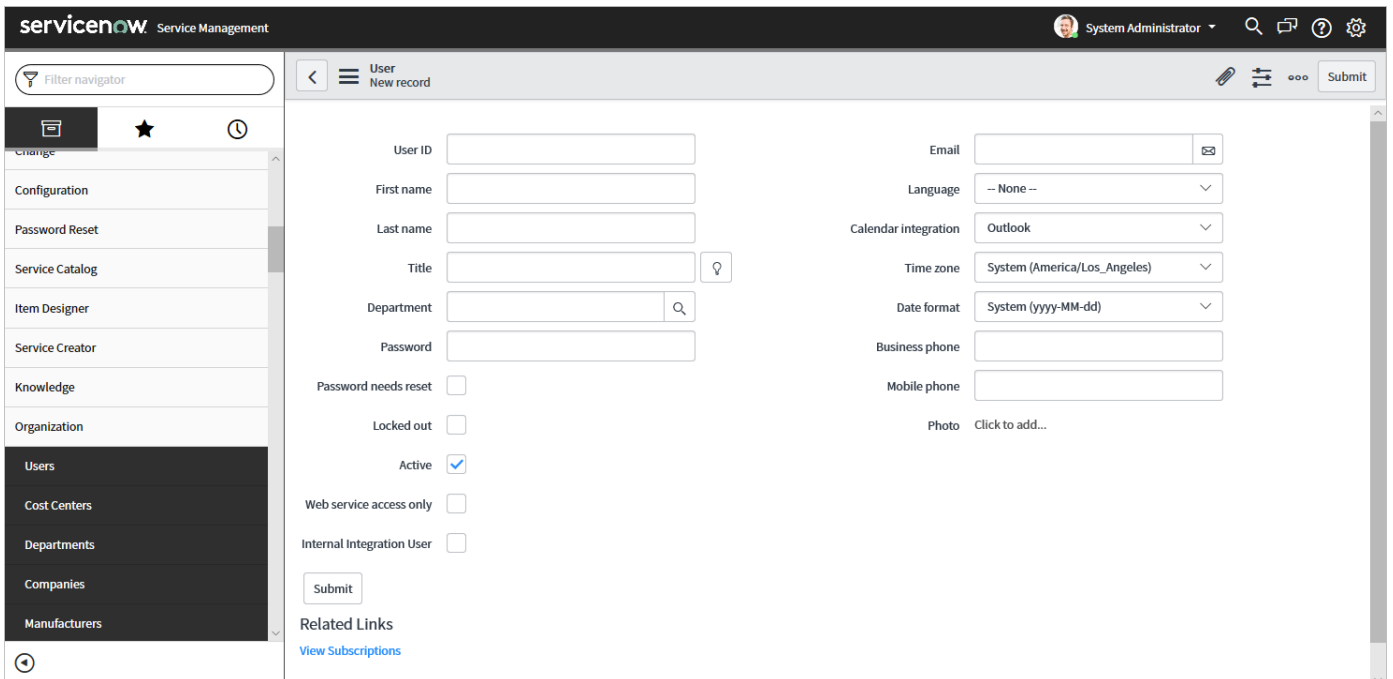
Step 3. Create a new user at ServiceNow

Create a user in the Ordr SCE platform to communicate with the ServiceNow platform. The user is used to call the ServiceNow REST APIs to push data from the Ordr SCE platform.

1. On the ServiceNow home page, go to **Organization > Users** and then click **New**.

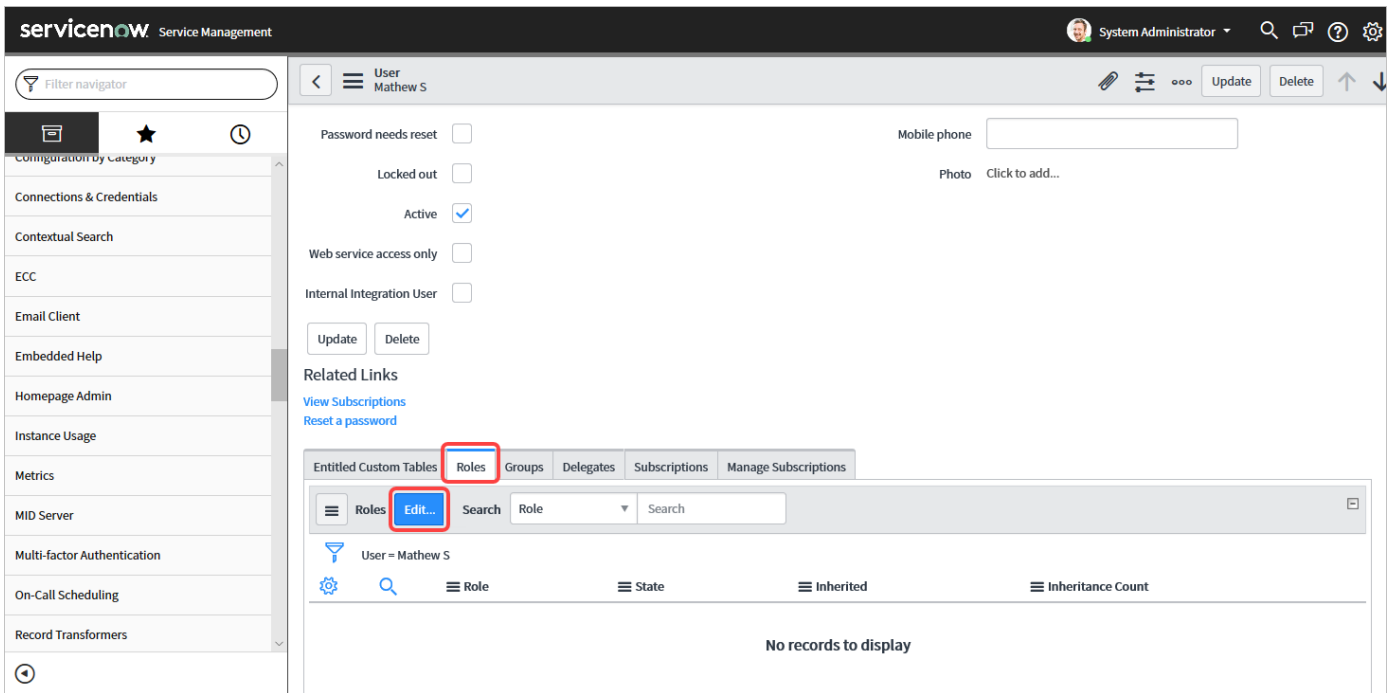


2. Type a unique user id and other relevant information and click **Submit**. Make sure to record the Username/Password combination.

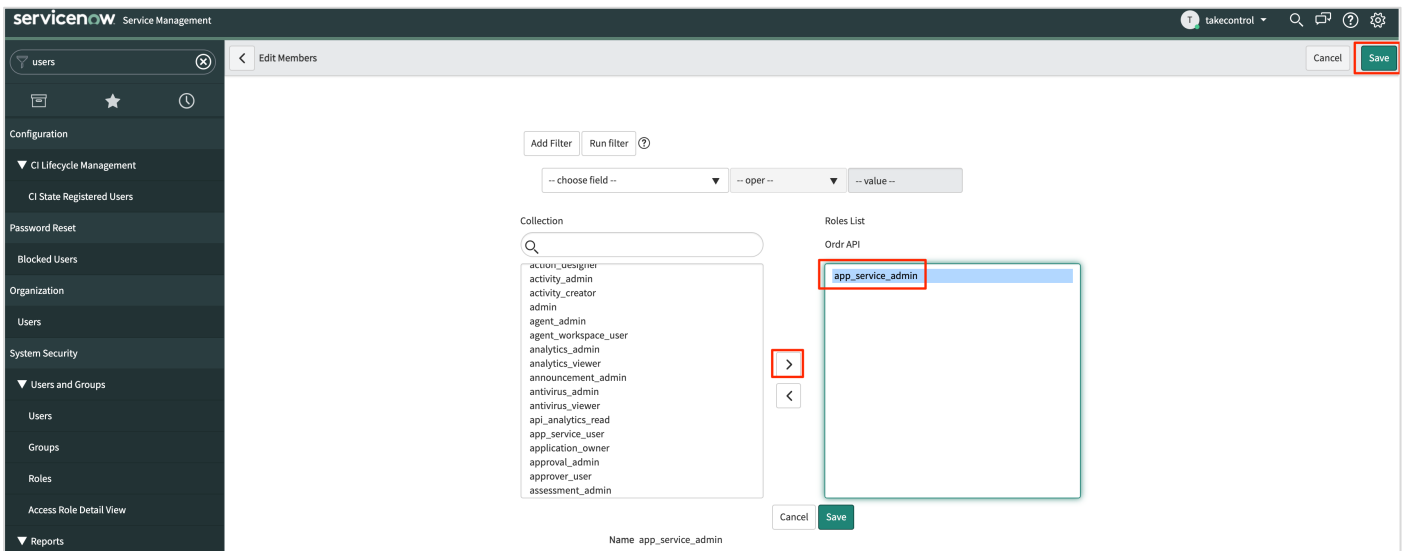


ORDR ServiceNow Integration Guide

3. Search for the newly created account and then click the newly created user account to begin editing.
4. Click **Roles > Edit**.



5. Assign 'app_service_admin' privileges to the user account, and then click **Save**.

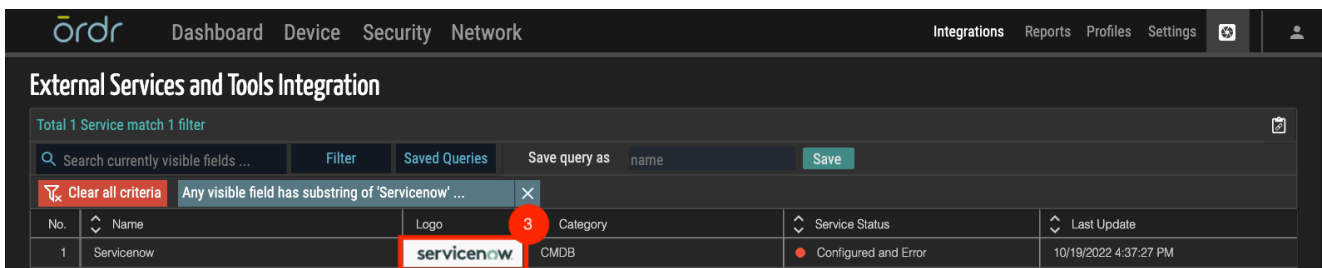
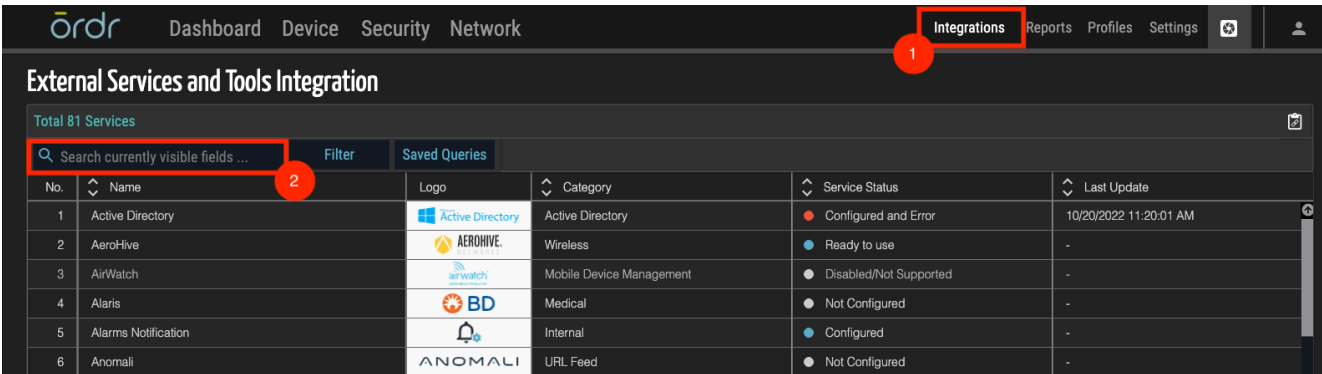


Step 4. Ordr ServiceNow Configuration

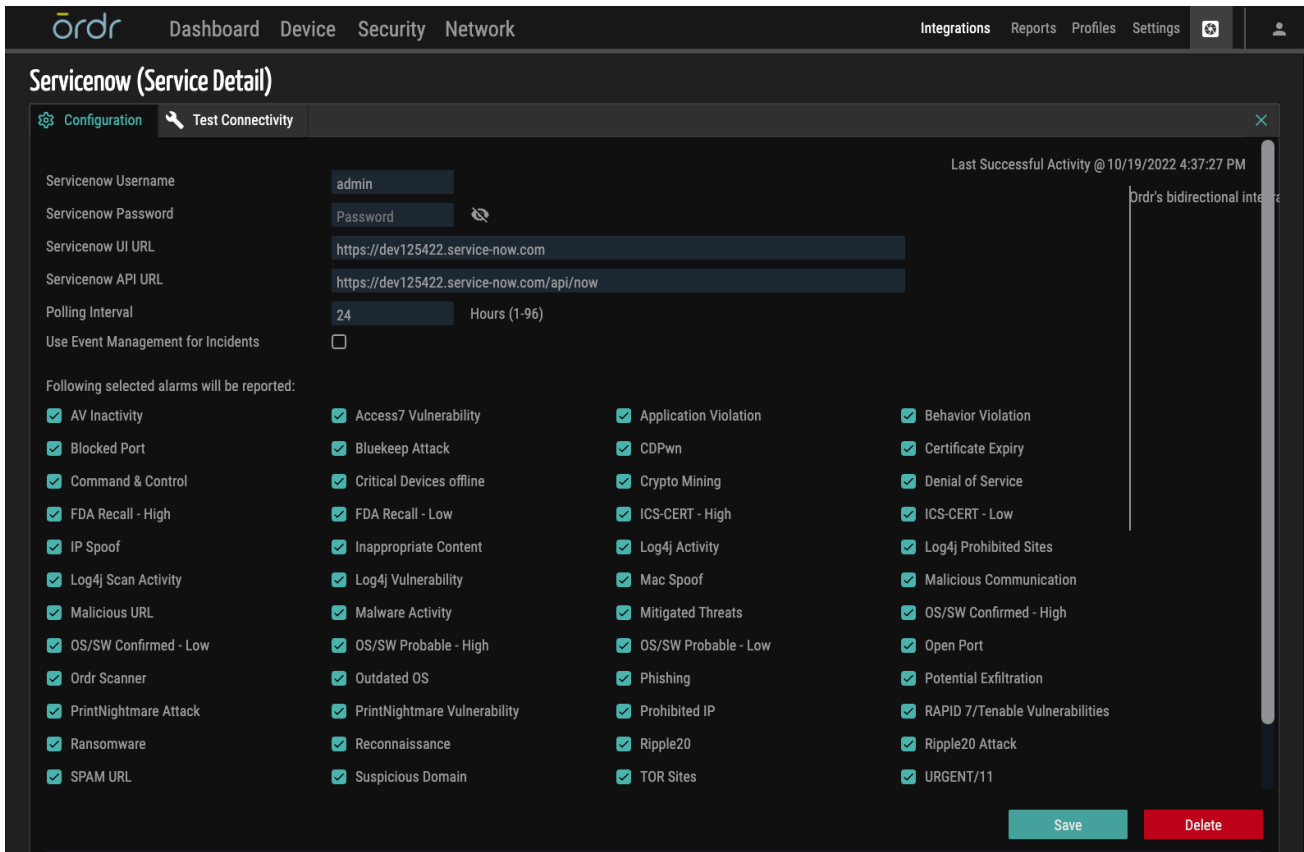


NOTE: Before creating a new configuration setting, delete any existing settings.

1. On the main menu bar of the Ordr SCE application, click **Integrations**.
2. Under **External Services and Tools Integration** search for **ServiceNow**.
3. Click on **ServiceNow**.



4. Enter the ServiceNow username and password in the corresponding fields previously created in ServiceNow.
5. Enter the **ServiceNow UI URL** and **API URL** in the corresponding fields, examples of the UI & API URL's are below
 - a. **UI URL example** for your ServiceNow system would be <https://dev123456.service-now.com>
 - b. **API URL example** for your ServiceNow system would be <https://dev123456.service-now.com/api/now>
6. Enter the polling interval in minutes (30– 360) in the **Polling Interval** field. By default, it is configured for 30 minutes, please see the note below for changes made in the SCE platform related to polling interval frequency.
7. (Optional) To create alerts as events, select the Use Event Management for Incidents check box.
8. Choose any of the alarms to be reported to ServiceNow. All alarms are selected by default.
9. To save the configuration settings, click **Save**.



Once connectivity is established, the 'Service Status' shows 'Successful' and the tile banner turns green.



NOTE: Connectivity to ServiceNow is via the sensor that is running as a service-node. If you have more than one sensor deployed, you can find the sensor defined with service-node capability enabled. Note that there is only one per deployment.

To locate the sensor running in this mode, go to **Network > SCE Sensors**, and within the sensor configuration located '*service node*', the sensor set as **YES** is the relevant sensor. For clarity, this sensor is sometimes referred to as the proxy-sensor, or thick-sensor.


Datacenter Santa Clara

Details

SENSOR INFORMATION		OPERATIONAL STATE	
Label :	Datacenter Santa Clara	Connection State :	CONNECTED
Model :	A1000	Last State Change :	5/3/2021 9:34:01 PM
Serial Number :	XXXXXXXXXXXX	BASIC VISIBILITY STATS	
SW Version :	Hydrangea-7.4.2(R2)(7422028)	DHCP (VLAN Tagged) Req/Resp :	0 / -
Mac Address :	00:0C:29:41:D1:53	DHCP (Untagged) Req/Resp :	- / -
IP Address :	XXXXXXXXXX	DHCP (Relay) Req/Resp :	- / -
Equipment GUID :	XXXXXXXXXX	ARP (VLAN Tagged) Req/Resp :	0 / 0 ppm
Services Node :	YES	ARP (Untagged) Req/Resp :	- / -
NTP Status :		DNS :	0 ppm
Gateway IP :	XXXXXXXXXX	Netflow (Passive) :	-
Location :	Datacenter, Santa Clara	Unidirectional TCP Flows :	

Test Connectivity

This option allows you to validate the credentials and access rights before establishing the integration.

1. The username, UI URL, and API URL fields are carried over from the configuration tab prepopulated by default.
2. Enter the Servicenow password in the corresponding field.
3. Click **Test**. The test results appear on the screen.
4. (Optional) To copy the connectivity test results to the clipboard, click .

ServiceNow (Service Detail)

Configuration | **Test Connectivity**

ServiceNow Username: [Prepopulated]

ServiceNow Password: [Masked]

ServiceNow UI URL: [Prepopulated]

ServiceNow API URL: [Prepopulated]

[Test] [Cancel]

```

--- Test in Progress ---
Connection status: Connection test successful!
DNS status: DNS resolved to IP
PING status: PING test successful, configured URL is reachable
TCP status: TCP connection test successful on port 443
--- Test is Complete ---
    
```

Device Inventory Push

Ordr pushes discovered inventory into various target tables at ServiceNow based on device category. For some device categories, Ordr pushes inventory to existing tables in ServiceNow (Network Gear, Printer, Personal Computer, Server) and custom Ordr related tables for other categories. The below table captures these table mappings.

Ordr Category	ServiceNow Table
Facility Devices	CPN Facility Devices
Media Devices	CPN Media Devices
Medical Devices	CPN Medical Devices
Misc Devices	CPN Discovered Equipments
Mobile Phones and Tablets	CPN Mobiles
Network Devices	Network Gear
Physical Security Devices	CPN Physical Security Devices
Printers and Copiers	Printers
Retail Devices	CPN Retail Devices
Servers	Servers
Storage Devices	Storage Server
Workstations	Personal Computer
Others	CPN Discovered Equipments

Attributes that Ordr uses to push also depend on ServiceNow Table and the below table captures these attributes.

Ordr Attribute	Ordr Tables	Server	Storage Server	Network Gear	Personal Computer
Mac Address	MAC Address	MAC Address	MAC Address	MAC Address	MAC Address
IP Address	IP Address	IP Address	IP Address	IP Address	IP Address
Manufacturer	Manufacturer	Manufacturer	Manufacturer	Manufacturer	Manufacturer
DHCP Hostname	Hostname	Hostname	Hostname	Name	Name
Model Name/No	Model number	Model number	Model number	Model number	Model number
Serial No	Serial number	Serial number	Serial number	Serial number	Serial number
Device Description	Description	Description	Description	Description	Description
OS Type	Operating System	OS Domain	OS Domain		OS Domain
OS Version	Software Version	OS Version	OS Version		OS Version
SW Version	Software Version				
Can switch IP				Can switch IP	
Port Count				Port	

Device Inventory Pull

Ordr also pulls and consolidates inventory from ServiceNow Tables. By default inventory details are pulled from the following tables:

- Server
- Facility Hardware
- Virtual Machine Instance
- Network Gear
- Imaging Hardware
- IP Phone
- Monitoring Equipment
- Personal Computer
- Printer


Ordr has the flexibility to customize pull functionality to specify ServiceNow Tables and their attributes. A YAML file has to be prepared and loaded into the Ordr system to achieve this, use and loading of this YAML file requires support from the ORDR customer support team. Please refer to the appendix for the sample YAML file used for customized inventory pull.

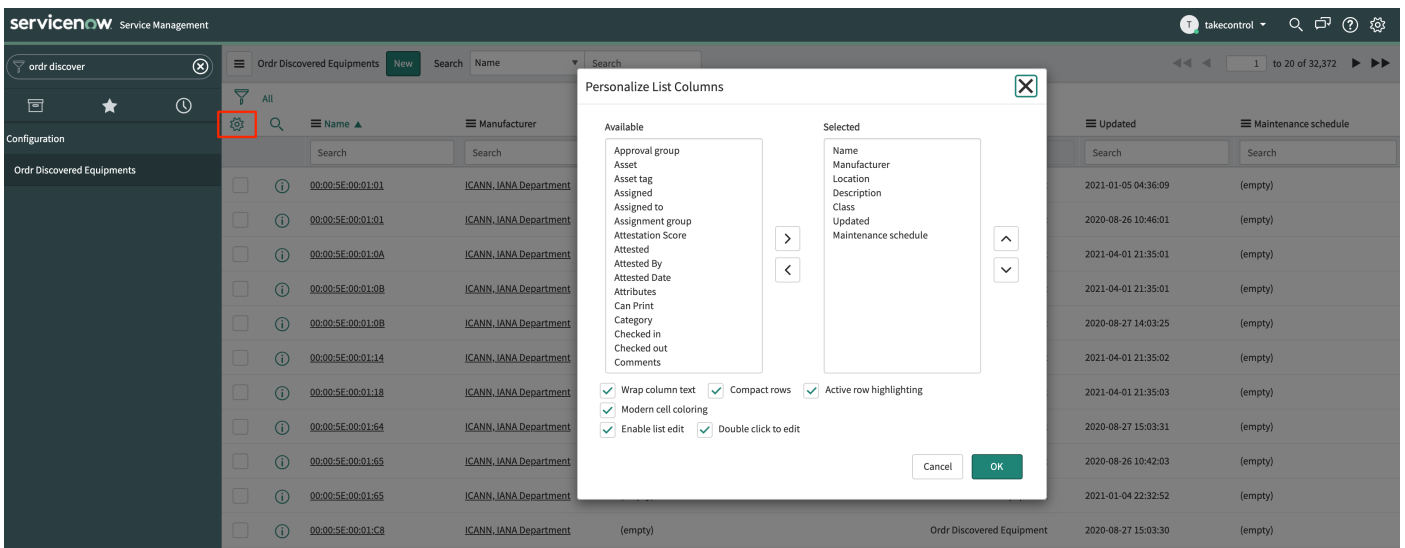


NOTE: If you want to leverage the YAML file for advanced inventory pull configuration, see '[Appendix A – Schema for SCE’s Event Field Names](#)'.

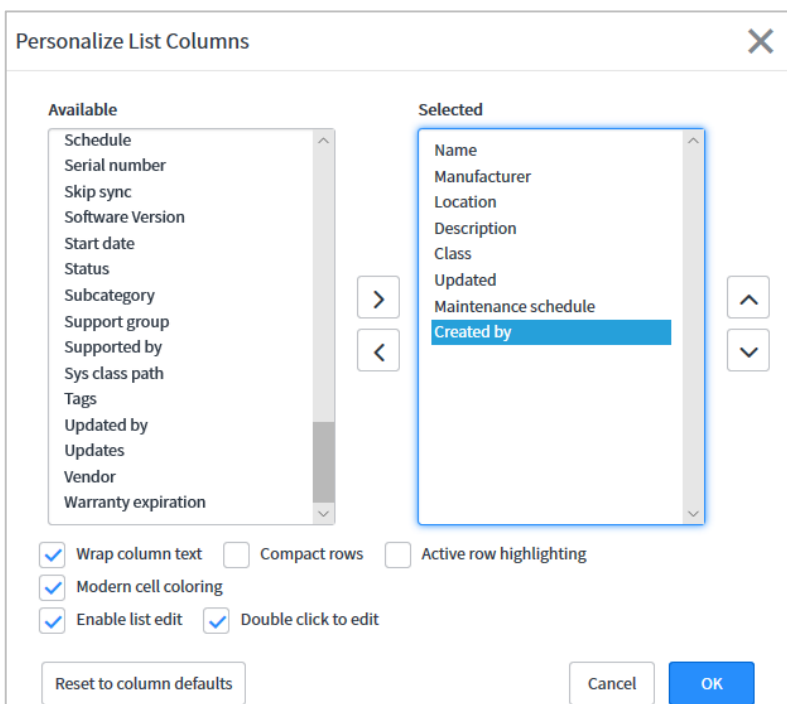
Step 5. Ordr Discovered Equipments Verification

You can view the Ordr discovered devices that have been pushed into the ServiceNow CMDB system from the entries created in the custom tables (Ordr Discovered Equipments) as well as from the default tables (Personal Computers, Printers, Network Gear & Servers) based on the classification.

1. On the ServiceNow homepage, search 'Ordr'.
2. To view, the Ordr discovered devices, click **Ordr Discovered Equipments**.
3. (Optional) To filter Ordr discovered devices from generic assets such as personal (laptops and desktops), printers, and so on, use the **Created By** field in ServiceNow, and click the gear  as highlighted below.

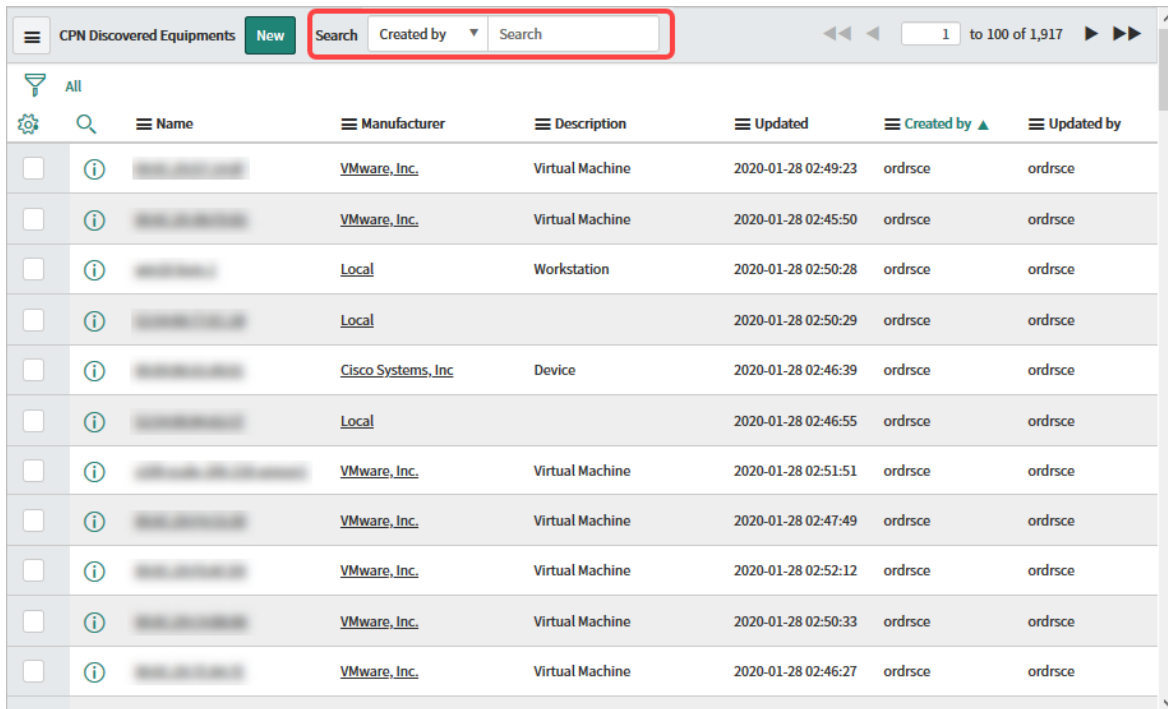


4. Select the 'Created by' column name from the **Available** list and then click '>'. The 'Created by' column name is moved to the **Selected** list. Click **OK**.



- 5. (Optional) From the **Search** drop-down list, select **Created by** and type a unique user id in the **Search** field. In this example, 'ordsce' is the user id.

The list of devices discovered by Ordr SCE is displayed.



The screenshot shows the 'CPN Discovered Equipments' table in ServiceNow. The search bar at the top is highlighted with a red box, showing 'Created by' selected in the dropdown and 'ordsce' entered in the search field. The table lists various discovered devices with columns for Name, Manufacturer, Description, Updated, Created by, and Updated by.

	Name	Manufacturer	Description	Updated	Created by	Updated by
<input type="checkbox"/>	VMware, Inc.	VMware, Inc.	Virtual Machine	2020-01-28 02:49:23	ordsce	ordsce
<input type="checkbox"/>	VMware, Inc.	VMware, Inc.	Virtual Machine	2020-01-28 02:45:50	ordsce	ordsce
<input type="checkbox"/>	Local	Local	Workstation	2020-01-28 02:50:28	ordsce	ordsce
<input type="checkbox"/>	Local	Local		2020-01-28 02:50:29	ordsce	ordsce
<input type="checkbox"/>	Cisco Systems, Inc	Cisco Systems, Inc	Device	2020-01-28 02:46:39	ordsce	ordsce
<input type="checkbox"/>	Local	Local		2020-01-28 02:46:55	ordsce	ordsce
<input type="checkbox"/>	VMware, Inc.	VMware, Inc.	Virtual Machine	2020-01-28 02:51:51	ordsce	ordsce
<input type="checkbox"/>	VMware, Inc.	VMware, Inc.	Virtual Machine	2020-01-28 02:47:49	ordsce	ordsce
<input type="checkbox"/>	VMware, Inc.	VMware, Inc.	Virtual Machine	2020-01-28 02:52:12	ordsce	ordsce
<input type="checkbox"/>	VMware, Inc.	VMware, Inc.	Virtual Machine	2020-01-28 02:50:33	ordsce	ordsce
<input type="checkbox"/>	VMware, Inc.	VMware, Inc.	Virtual Machine	2020-01-28 02:46:27	ordsce	ordsce

Incidents

ORDR SCE can turn SCE events, alerts into ServiceNow Incident tickets. An extensive list of incidents can be created. As a review process, when configuring the ServiceNow tile, the optional ability to enable 'Use Event Management for Incidents' exists. This provides the ability to enable/disable an extensive list of different incident-based alerts.

This is the list of events supports under 7.4.2R2

Use Event Management for Incidents

Following selected alarms will be reported:

<input checked="" type="checkbox"/> Potential Exfiltration	<input checked="" type="checkbox"/> Command & Control	<input checked="" type="checkbox"/> Suspicious Domain	<input checked="" type="checkbox"/> Prohibited IP
<input checked="" type="checkbox"/> Phishing	<input checked="" type="checkbox"/> SPAM URL	<input checked="" type="checkbox"/> Inappropriate Content	<input checked="" type="checkbox"/> TOR Sites
<input checked="" type="checkbox"/> Crypto Mining	<input checked="" type="checkbox"/> Malicious URL	<input type="checkbox"/> Ransomware	<input checked="" type="checkbox"/> Webservice Attack
<input checked="" type="checkbox"/> Behavior Violation	<input checked="" type="checkbox"/> Denial of Service	<input checked="" type="checkbox"/> Reconnaissance	<input checked="" type="checkbox"/> Malware Activity
<input checked="" type="checkbox"/> IP Spoof	<input checked="" type="checkbox"/> Mac Spoof	<input checked="" type="checkbox"/> Malicious Communication	<input type="checkbox"/> Blocked Port
<input checked="" type="checkbox"/> Weak Cipher	<input checked="" type="checkbox"/> Software Vulnerability	<input checked="" type="checkbox"/> Weak Password	<input checked="" type="checkbox"/> Open Port
<input checked="" type="checkbox"/> Certificate Expiry	<input type="checkbox"/> AV Inactivity	<input checked="" type="checkbox"/> Outdated OS	<input checked="" type="checkbox"/> Bluetooth Vulnerability
<input checked="" type="checkbox"/> ICS-CERT Advisory(High)	<input checked="" type="checkbox"/> ICS-CERT Advisory(Low)	<input checked="" type="checkbox"/> FDA Recall(High)	<input checked="" type="checkbox"/> FDA Recall(Low)
<input checked="" type="checkbox"/> OS/SW Advisory(High)	<input checked="" type="checkbox"/> OS/SW Advisory(Low)	<input type="checkbox"/> UK NHS CareCERT	<input checked="" type="checkbox"/> URGENT/1.1 Attack
<input checked="" type="checkbox"/> URGENT/1.1 Vulnerability	<input checked="" type="checkbox"/> Bluekeep Attack	<input checked="" type="checkbox"/> Bluekeep Vulnerability	<input checked="" type="checkbox"/> Ripple20 Attack
<input checked="" type="checkbox"/> Ripple20 Vulnerability	<input checked="" type="checkbox"/> CDPwn Vulnerability		

Enabling this option will allow SCE to automatically create an incident for the above-selected events. The events can be located in ServiceNow by searching the navigation bar for 'Incidents'. Notice they appear under **Service Desk** and not **Self Service**.

The screenshot shows the ServiceNow interface with the 'Incidents' list view. The left-hand navigation pane shows 'Service Desk' selected, with 'Incidents' highlighted under it. The main table displays several incident tickets with the following details:

Number	Opened	Short description	Caller	Priority	State	Category	Assignment group	Assigned to	Updated	Updated by
INC1627273	2021-06-12 19:45:59	smc23@ordr.net (IP: 10.10.10.10), has seen incident: Ordr incident alert: "RIPPLE20:ICSA-20-168-01:Vulnerabilities:Improper Handling of Length Parameter Inc	(empty)	2 - High	New	Network	(empty)	(empty)	2021-06-12 19:45:59	takecontrol
INC1627272	2021-06-12 19:45:58	hpc23@ordr.net (IP: 10.10.10.10) - Z2), has seen incident: Ordr incident alert: "RIPPLE20:ICSA-20-168-01:Vulnerabilities:Improper Handling of Length Parameter Inc	(empty)	2 - High	New	Network	(empty)	(empty)	2021-06-12 19:45:58	takecontrol
INC1627271	2021-06-12 19:45:57	ap@ordr.net (IP: 10.10.10.10) - AP9631), has seen incident: Ordr incident alert: "RIPPLE20:ICSA-20-168-01:Vulnerabilities:Improper Handling of Length Param	(empty)	2 - High	New	Network	(empty)	(empty)	2021-06-12 19:45:57	takecontrol
INC1627270	2021-06-12 19:45:57	hpc23@ordr.net (IP: 10.10.10.10) - Z2), has seen incident: Ordr incident alert: "RIPPLE20:ICSA-20-168-01:Vulnerabilities:Improper Handling of Length	(empty)	2 - High	New	Network	(empty)	(empty)	2021-06-12 19:45:57	takecontrol
INC1627269	2021-06-12 19:45:56	OJP87107 (IP: 10.10.10.10) - OfficeJet Pro 8710), has seen incident: Ordr incident alert: "RIPPLE20:ICSA-20-168-01:Vulnerabilities:Improper Handling of Length Parame	(empty)	2 - High	New	Network	(empty)	(empty)	2021-06-12 19:45:56	takecontrol

Appendix A – Schema for SCE’s Event Field Names

The table describes the field names available under **Event Management > All Events**.

An event is a notification from one or more monitoring tools that indicate such as a log message, warning, or error has occurred.

Field	Description
Time of Event	The time that the event occurred in the network node time zone.
Source	Event monitoring software that generated the event.
Description	Reason for event generation.
Node	Node name, fully qualified domain name (FQDN), IP address, or MAC address that is associated with the event.
Type	A pre-defined event type, such as high CPU, is used to identify an event record.
Resource	Node resource that is relevant to the event.
Message key	Unique event identifier to identify multiple events that relate to the same alert.
State	<p>The status of the event.</p> <ul style="list-style-type: none"> • Ready: Event received and waiting to be processed. • Queued: Event queued by the event processor job. • Processed: Event successfully processed. • Error: Failure occurred while processing the event. • Ignored: Value not in use.
Severity	<p>The severity level of the event.</p> <ul style="list-style-type: none"> • Critical: Immediate action is required. The resource is either not functional or critical problems are imminent. • Major: Major functionality is severely impaired, or performance has degraded. • Minor: Partial, non-critical loss of functionality or performance degradation occurred. • Warning: Attention is required, even though the resource is still functional. • Info: An alert is created. The resource is still functional. • Clear: No action is required. An alert is not created from this event. Existing alerts are closed.
Alert	If an alert was created because of the event, this field contains the unique ID that Event Management generates to identify the alert.

Appendix B - Sample YAML for Customized Inventory Pull

Sample YAML file for customized inventory pull is as below:

```
---
# List of Tables
Tables:
Video Equipment: u_cmdb_ci_video_equipment
# List of columns for each table
Video Equipment:
MAC Address: mac_address
Serial number: serial_number
Location Notes: u_location_notes_str
Model Id: model_id
Description: short_description
Operating System Version: u_op_sys_version
Firmware Version: u_firmware_version
Name: name
Class: sys_class_name
Vendor: vendor
Device Type: u_device_type
Default Support Group: u_default_support_group
Secondary Support Group: u_secondary_support_group
Level 3 Support Group: u_level_3_support_group
Execution Environment: u_execution_env
NAC Whitelisted: u_nac_white_listed
...
```

Summary

Without Ordr Systems Control Engine, customers can struggle for months or years to achieve comprehensive inventory and device visibility. Coupled with the existing asset detail that ServiceNow offers, the coverage and upkeep of asset detail inside of ServiceNow will be up-to-date and require little maintenance and burden to ensure the latest information is populating the CMDB.

With the ability to automate the creation of ServiceNow incidents for specific chosen events the end-to-end process of inventory, incidents are significantly simplified under an ORDR SCE deployment.



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