Maximize Your IT Potential

Discovery Meets CMDB

Christine Morris, Chris Padmore, Madan Raja | October 23, 2024

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Agenda

Welcome & Introduction

1. Why Use Discovery
2. How Discovery Works
3. Key Features
4. Use Cases and Benefits
5. Discovery Patterns
6. Common Discovery Errors
7. Best Practices
8. Q&A

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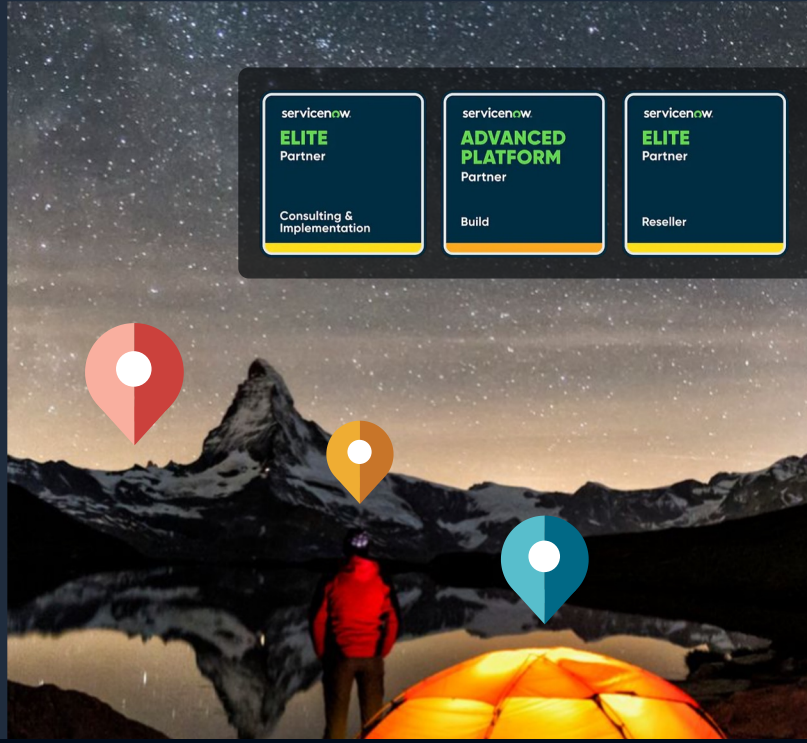
Cask is with clients for what comes next – on the platform and in their business.

13+ Years ServiceNow Partner

5.4K+ Certifications & Accreditations



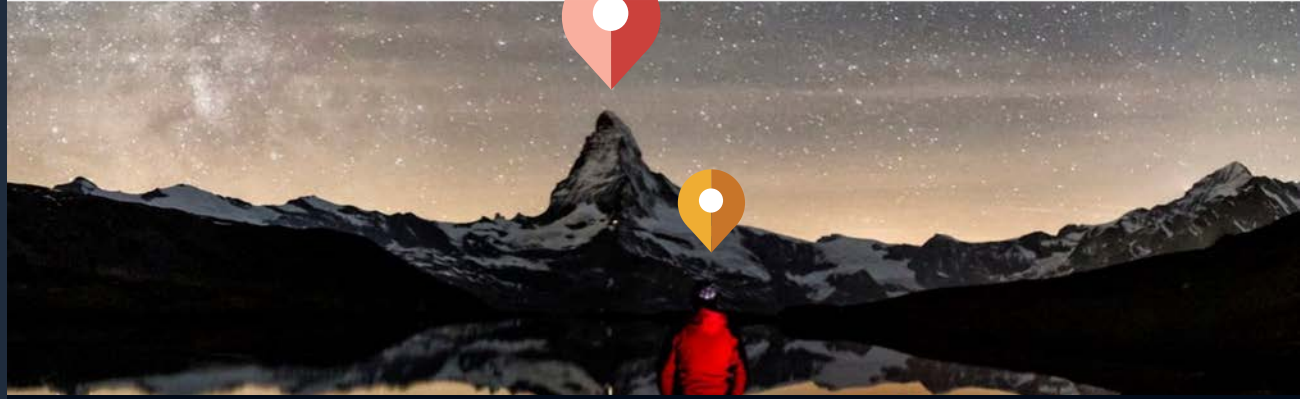
11 / 11 PLAs (Product Line Achievements)

- ServiceNow — Product Line Achievement — Application Portfolio Management AMS
- ServiceNow — Product Line Achievement — Hybrid Project Management AMS
- ServiceNow — Product Line Achievement — App Engine AMS
- ServiceNow — Product Line Achievement — Human Resources AMS
- servicenow — Validated Practice — IT Service Management AMS
- servicenow — Validated Practice — Customer Service Mgmt AMS
- servicenow — Validated Practice — Hardware Asset Mgmt AMS
- servicenow — Validated Practice — Software Asset Mgmt AMS
- servicenow — Validated Practice — ITOM Visibility AMS
- servicenow — Validated Practice — Vulnerability Response AMS
- servicenow — Validated Practice — Integrated Risk Management AMS

7 VALIDATED PRACTICES (Most of any Pure-Play Partner in AMS)

Cask is the only pure play ServiceNow partner with dedicated, fully certified practices across the platform.

- IT SERVICE MANAGEMENT
- IT OPERATIONS MANAGEMENT
- IT ASSET MANAGEMENT
- STRATEGIC PORTFOLIO MANAGEMENT
- EMPLOYEE WORKFLOW
- CUSTOMER WORKFLOW
- SECURITY & RISK
- APP ENGINE



STRATEGY

- Strategic Roadmapping
- Advisory Consulting
- Platform Strategy & Governance
- Demand Management

TRANSFORMATION

- App Modernization
- UX & UI Design
- Product Management
- Org Change Management
- Testing & Quality Engineering
- Program & Project Management
- Agile Transformation w/SAFe

IMPLEMENTATION & APP DEVELOPMENT

- Product Implementation
- Platform Engineering
- Data Management & Integrations
- App Development

OPERATIONS & ENHANCEMENT

- Continuous Cloud Innovation
- Platform Architecture & Engineering
- Functional Process Execution
- Cask Reserve

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Introductions

Madan Raja
Director, Delivery
Cask

Christine Morris
Director, Platform & Service Management,
Cask

Chris Padmore
Solutions Architect, ITOM Practice Lead,
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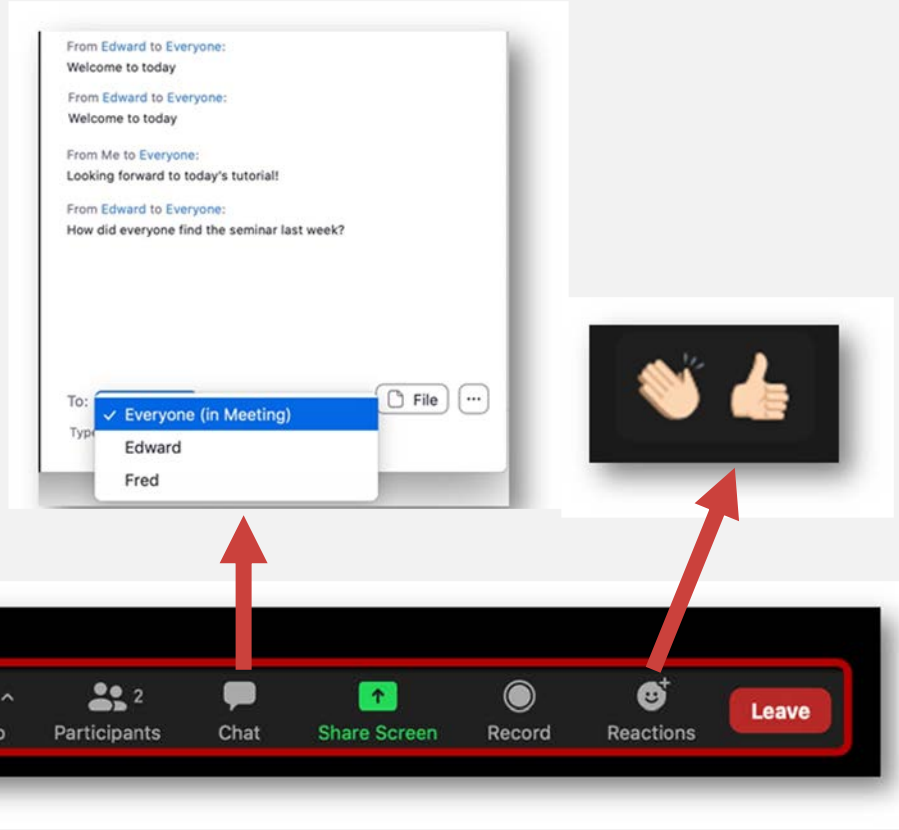
Join the Conversation: Using Zoom

Turn on Video – Let's get interactive and enjoy ourselves

Unmute – Click the microphone icon to unmute and participate
Chat – Message everyone or just one person
Get Help – Use Chat



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1. Why Use Discovery

What is Discovery?

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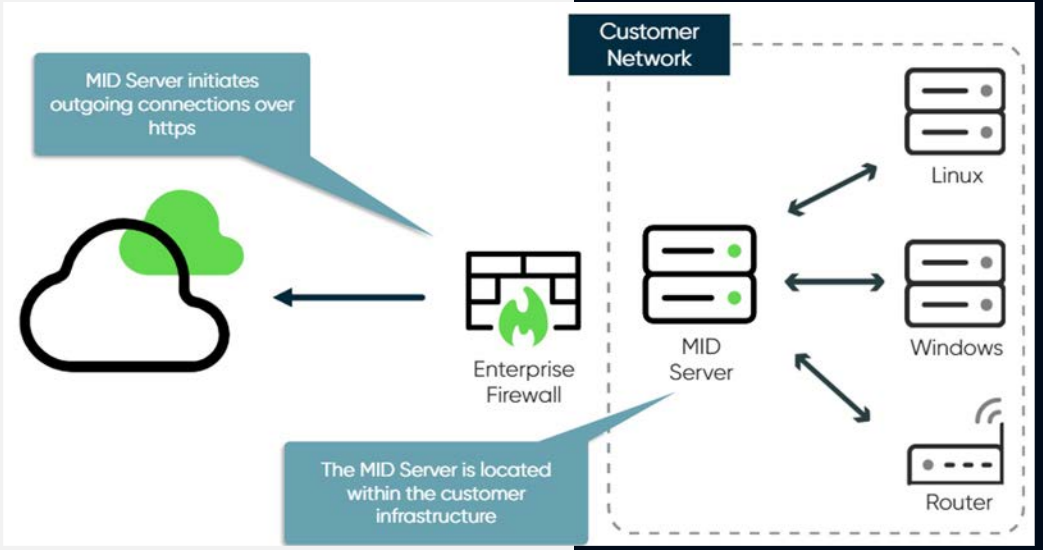
ServiceNow Discovery is a feature within the ServiceNow platform that automatically identifies IT assets, infrastructure, and resources within an organization's network.



Why Use Discovery?

01

IT INVENTORY

Provide up-to-date
and **accurate IT inventory.**

Software Asset Management

Provide almost **real-time insight into licenses** and model management.

Incident Resolution

Automation of dependency maps to reduce MTTR for impacted services.

Change Management

Improve IT Service management process visibility and effectiveness.

Data Quality

Reduces human error due to manual entry.

Reduce Unplanned Outages

Consistent data helps to identify trends which help **predict / prevent outages** for services.

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2. How Discovery Works

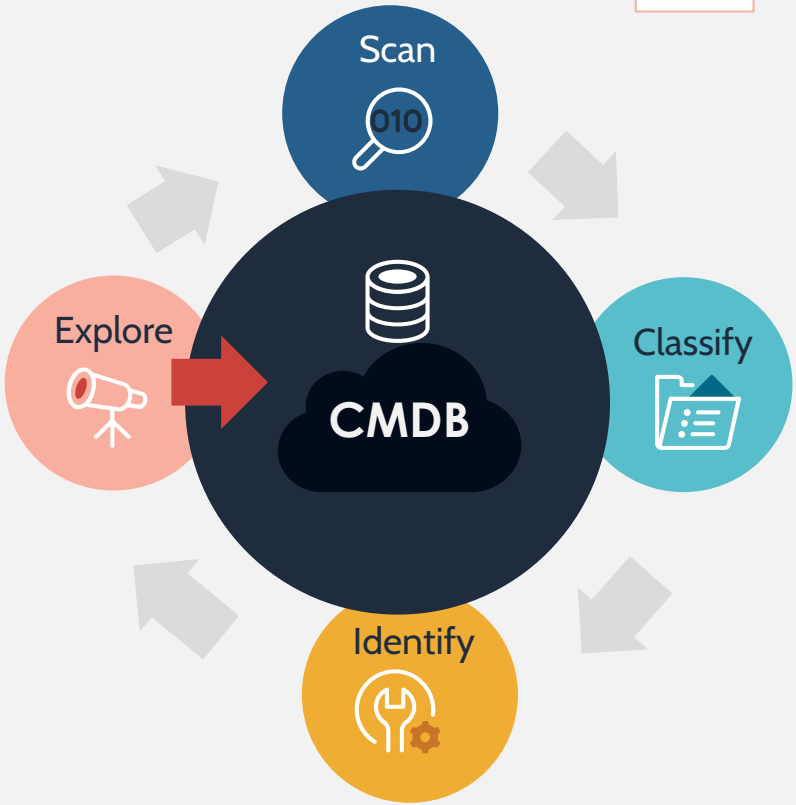
Discovery Phases

Scan your IT environment for discoverable configuration items

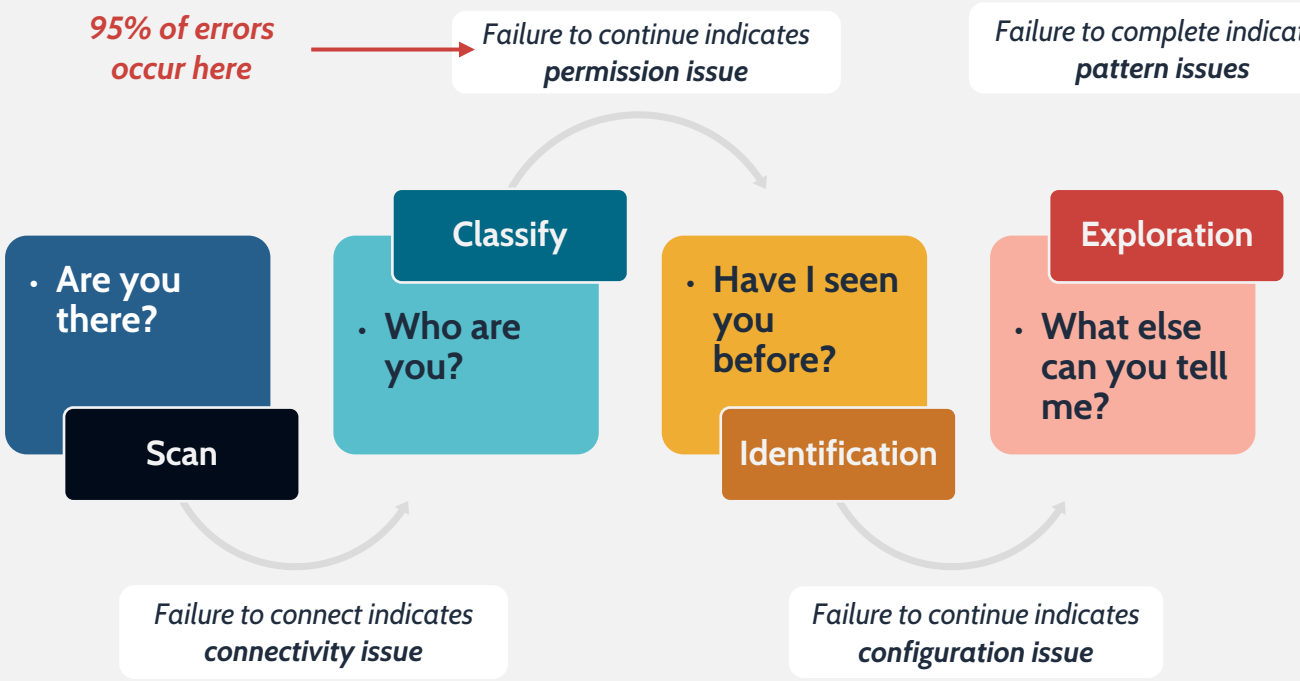
Classifies devices by operating systems

Identifies if the device needs updated or created accordingly

Explores the device for running processes, relationships to other devices, software installed network gear



Discovery Phases



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3. Discovery Use Cases

Discovery Use Cases

03

SERVICE MANAGEMENT

ASSET MANAGEMENT

CONFIGURATION MANAGEMENT COMPLIANCE

CLOUD RESOURCE MANAGEMENT

IT Automation

Product Use Case

APPLICATION MANAGEMENT

APPLICATION DEPENDENCY MAPPING

IP DISCOVERY

NETWORK DISCOVERY

Scenario Enabling Use Case

OUTAGE IMPACTS

IMPACT ANALYSIS & ROOT CAUSE ANALYSIS

CLOSED-LOOP CHANGE

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Use Case: Service Management

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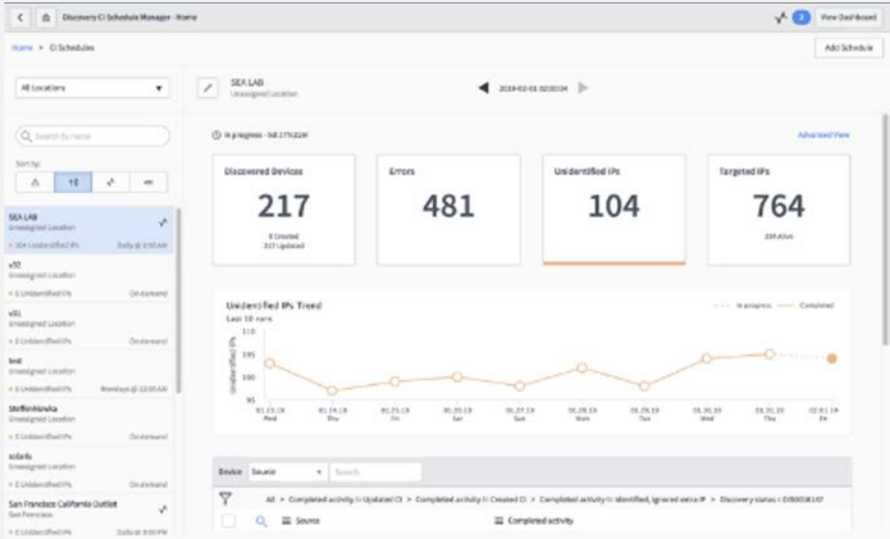
Service Management needs reliable CMDB to deliver results

SOLUTION: Automated Discovery creates and keeps accurate CMDB records

- Gain granular control over how often to discover CIs
- Discovery Dashboard highlights new and updated CIs



OUTCOME: Trustworthy, accurate CMDB

- Decisions can be made based on confidence in the CMDB data
- Change Management can be verified before and after by Discovery

Use Case: Asset Management

03

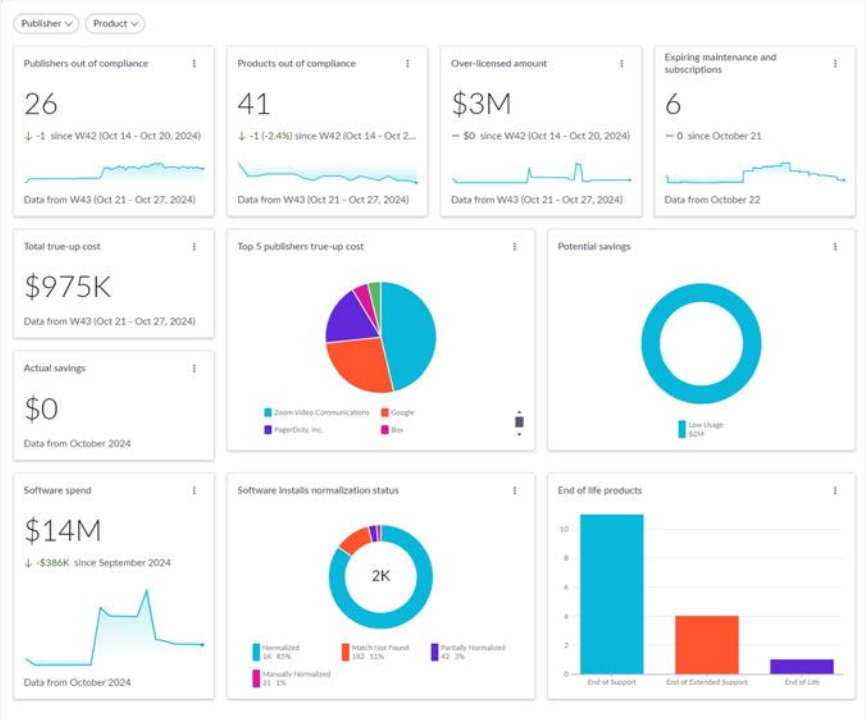
Asset Management needs accurate records of IT hardware and software assets

SOLUTION: Automated Discovery creates and keeps accurate asset records

- When Software Asset Management Pro is turned on, asset records are updated
- Discovered details like serial numbers tie assets to CI's

OUTCOME: Full asset visibility

- Assets can be validated as in production
- Discovery data provides insight into license usage



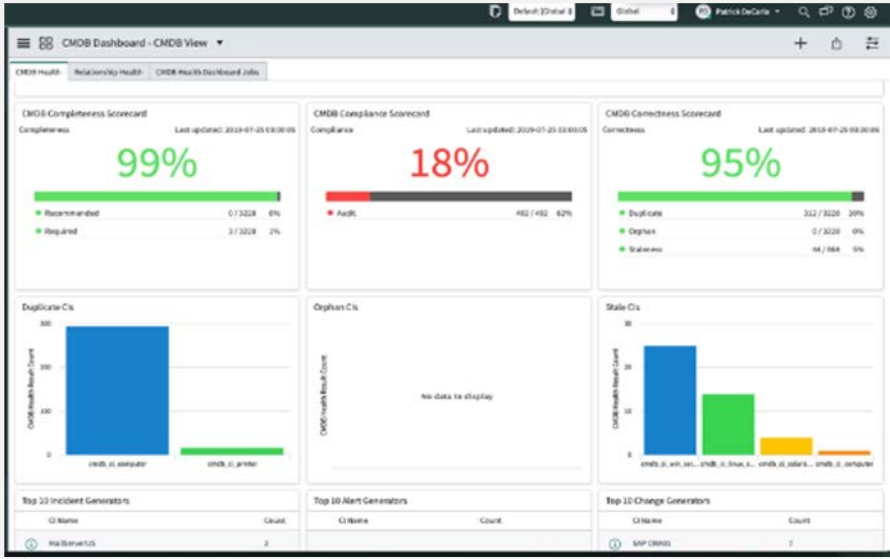
Use Case: Configuration Management Compliance

03

Discovery maintains accurate CMDB records to drive compliance results

SOLUTION: Compliance and Audit results driven by Discovery

- Discovery creates and makes updates to CI records
- Compliance is measured per CI and scored in CMDB



OUTCOME: Overall CMDB Health visibility

- Policy based compliance scoring to drive results
- Drill down capability to focus remediation efforts

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Use Case: Cloud Resource Management

03

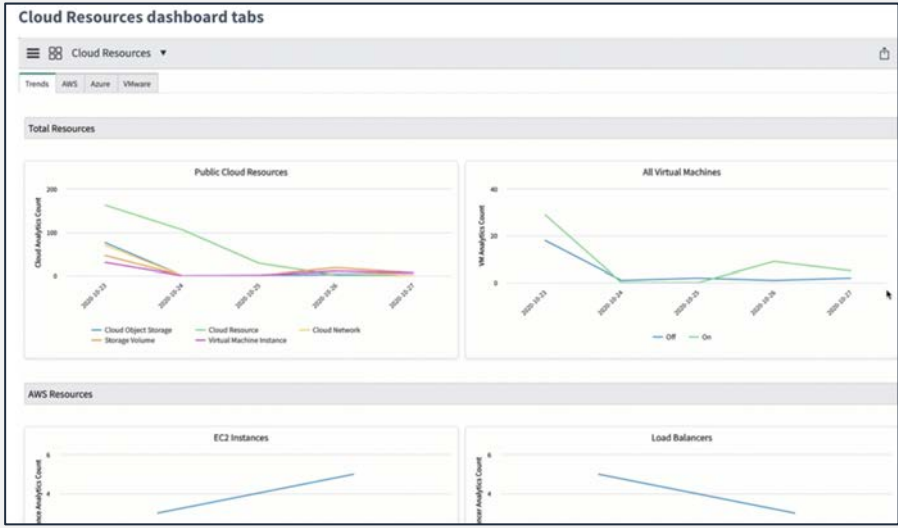
Gain visibility into cloud resources

SOLUTION: Cloud Discovery

- Find resources in Amazon Web Services (AWS) and Azure clouds
- Populates the CMDB with the relevant CIs and relationships.
- Supports changes to CIs based on AWS and Azure events.

OUTCOME: Complete picture of on-prem and cloud

- Leverage the same CMDB benefits for cloud configuration items as you do for on-prem
- Wide array of views on the Cloud Resources Dashboard supports multiple personas and use cases



IT Automation: Use Cases

Product Use Case

Application Management

By identifying running processes of the servers, applications can be found through Discovery and be managed and reported on. Discovery provides a set of application classifiers (process classification) out of the box. Additional ones can be easily added through configuration.

Application Dependency Mapping

In addition to the applications classified, Discovery also gather the active TCP connections information (if available) to automatically create relationships between applications that are communicating with one another.

IP Discovery

IP Discovery is also known as credential-less Discovery. It leverages the open port information to determine the type of device. It does not actually update any CIs in the CMDB; instead, it creates a status report based on the given IP addresses.

This feature is great for acquisitions and mergers where there's not even a clue of how many and what kind of devices are out there.

Network Discovery

Network Discovery can be used to gather the list of IP ranges within an organization and complement the CMDB with IP Ranges when these are unknown.

IT Automation: Use Cases

Scenario Enabling Use Case

Outage Impacts

With our advanced mapping technology, not only are you provided the ability to understand what physical assets are under your control, but also, what applications they are running. We provide the insight of application dependencies so you can quickly identify the impact a server, or related services, have on your environment when they go down for maintenance or suffer an unexpected outage.

Impact Analysis & Root Cause Analysis

With application management and auto application dependency mapping, it is possible to see the relationships between applications and servers (including virtualized CIs and its hypervisors), thus making impact analysis and RCA possible.

Closed-Loop Change

With the incident/problem/change management process, the CMDB is a critical piece of the process. Discovery enables the CMDB population and can assist in making the closed-loop change possible by detecting the change to enable the scenario.

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4. Features of Discovery

Discovery Standard Ports (Agentless)

TCP

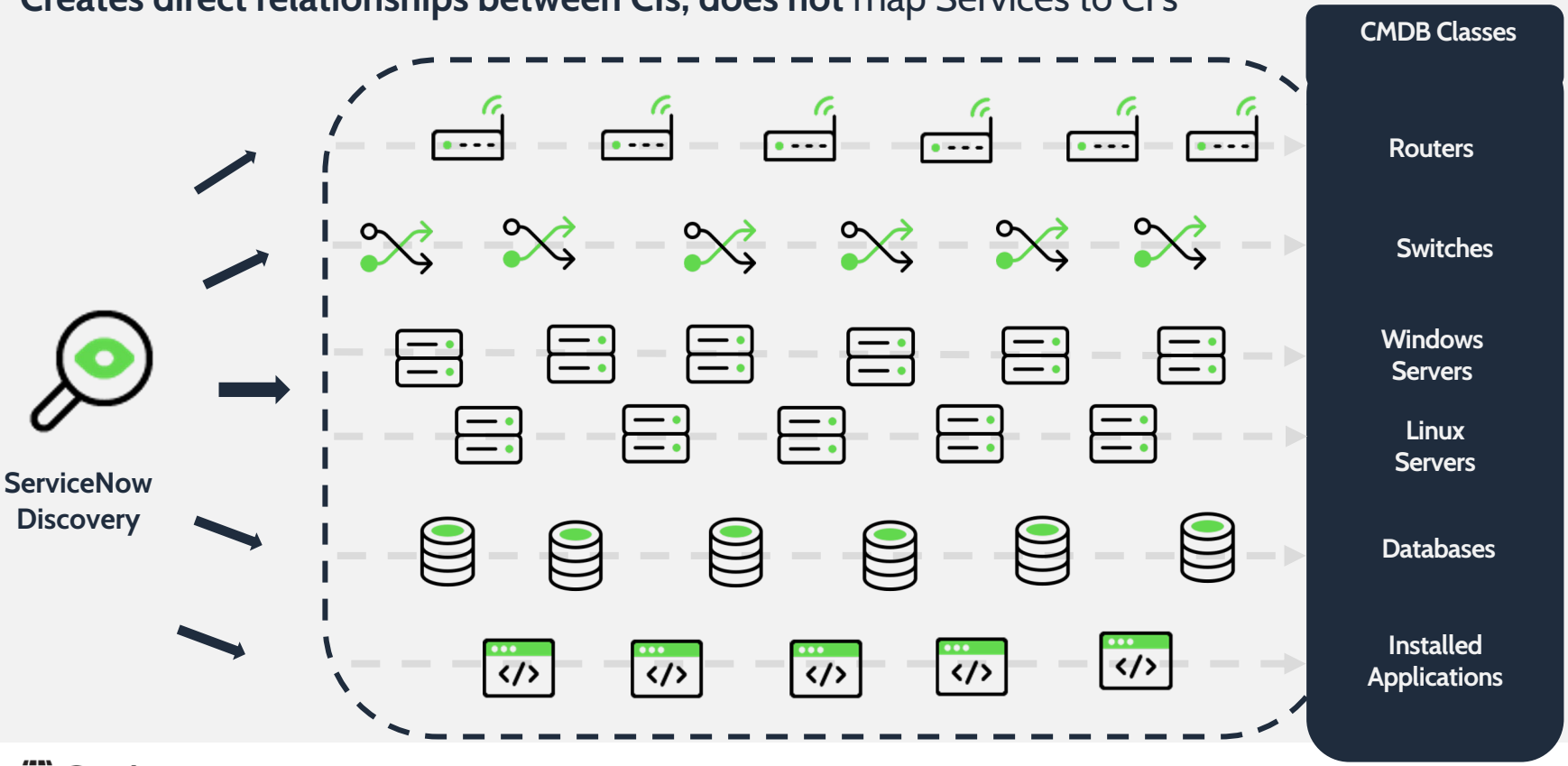
- 135: **WMI** for Windows Systems including PowerShell discovery (ephemeral ports)
- 22: **SSH** for potential Unix Systems
- 80/443: **HTTP/s** for potential Web servers
- 427/5989: **SLP** and **WBEM** for storage via **CIM** (SMI-S)
- 5480: **VMAPP** for vCenter appliance

UDP

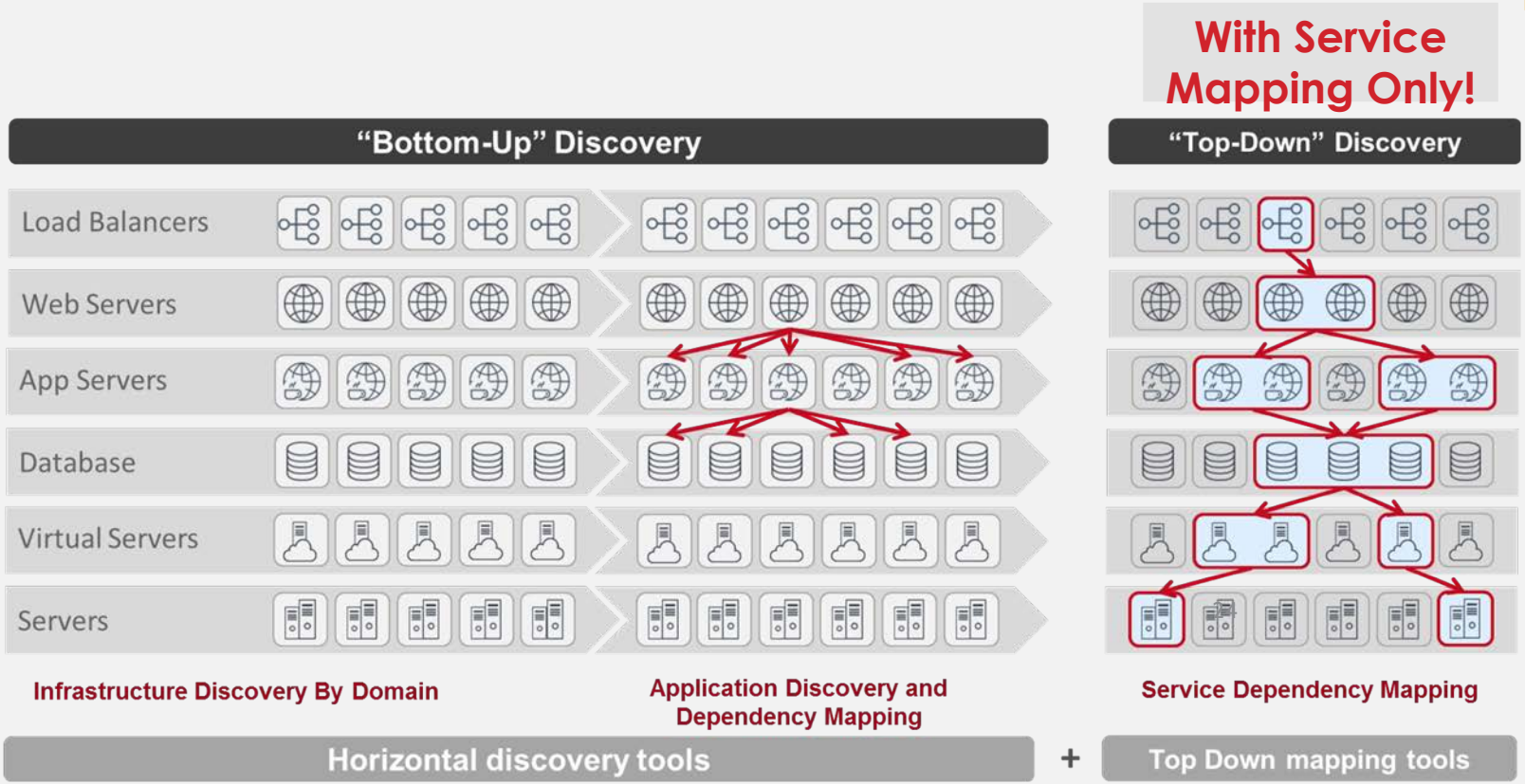
- 161: **SNMP**. Discovery sends a single OID query (sysdescr) searching for a response from potential network devices.
- 53: **DNS**. Discovery queries the locally configured DNS server to resolve the name of each IP address.
- 137: **NetBIOS**. Discovery queries the local domain to resolve the name of an IP address.

Agentless Discovery

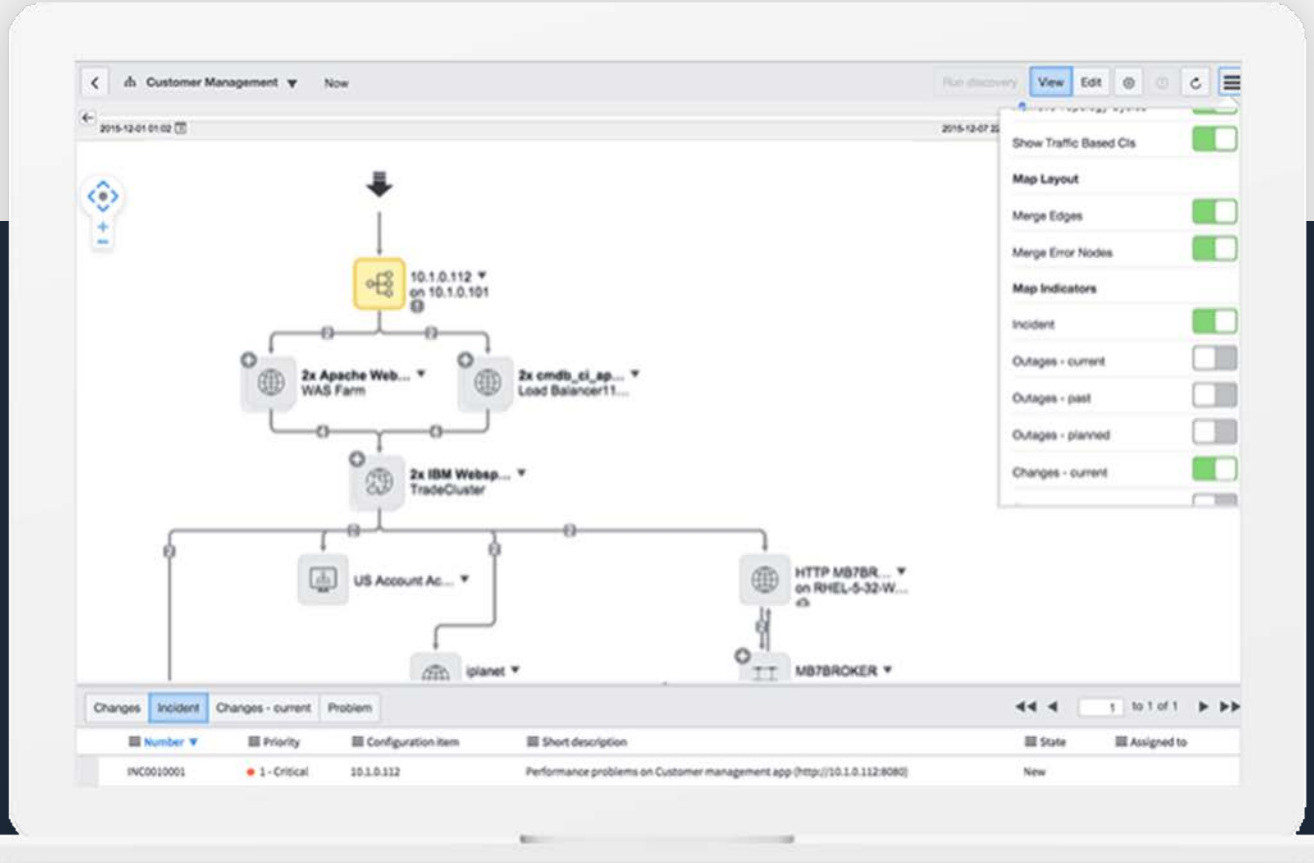
Creates direct relationships between CIs, does not map Services to CI's



Discovery and Service Mapping



Sample Service Map



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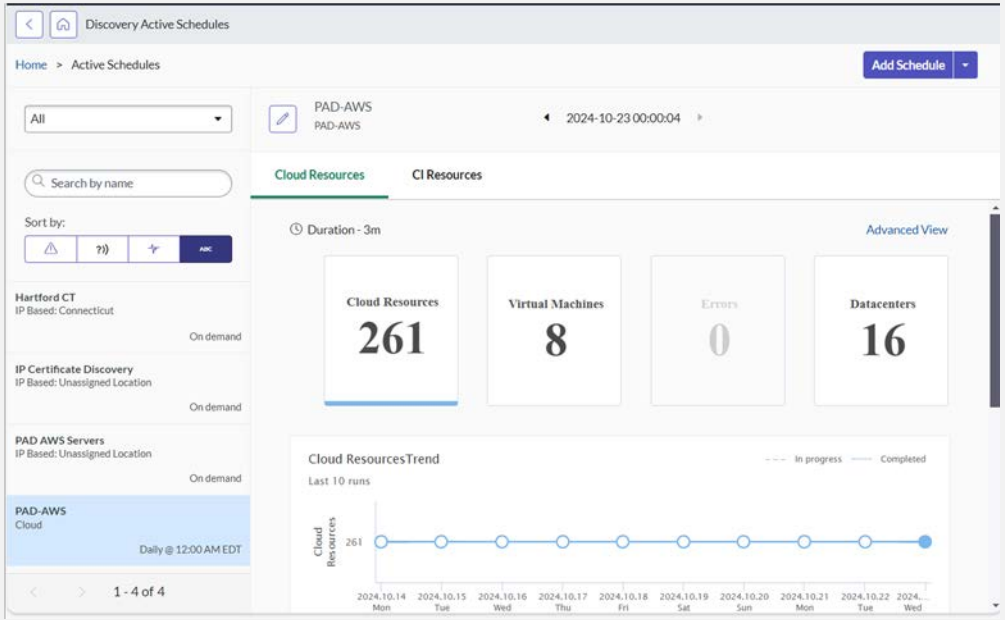
5. Discovery Schedules

Discovery Schedules

- Schedules are use to define and control when Discovery executes and what it should look for.
- Schedules also handle the frequency and timing of when Discovery should trigger in your environment.
- A good Discovery strategy should ensure Discovery executes and completes successfully within a given window of time

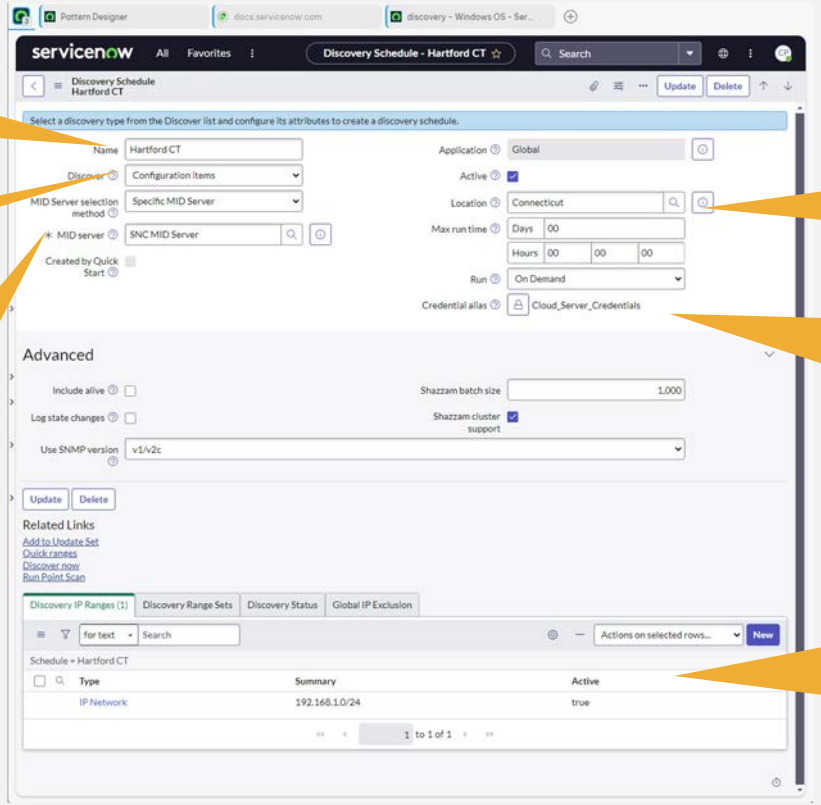


What Makes up a Discovery Schedule

The Name of the schedule should describe what's being discovered, where and at what frequency

You can set what should be discovered in the schedule. Configuration item is the default but there are other options such and Network and Cloud Resources

Your MID server selection should ensure the schedule uses the appropriate MID servers for the resources and IP ranges being discovered. You have the option to auto-select the MIDs, use a specific MID, or use a cluster of MIDs that work together.



If possible, have Discovery set the physical location for configurations items as they are discovered

Use credential aliases to control which credentials should be used for specific schedules, which helps prevent discovery from trying all available credentials.

As a best practice, break-up your IP ranges into smaller subsets. We want a single schedule to complete within an hour. Create multiple schedule to handle the different subnets

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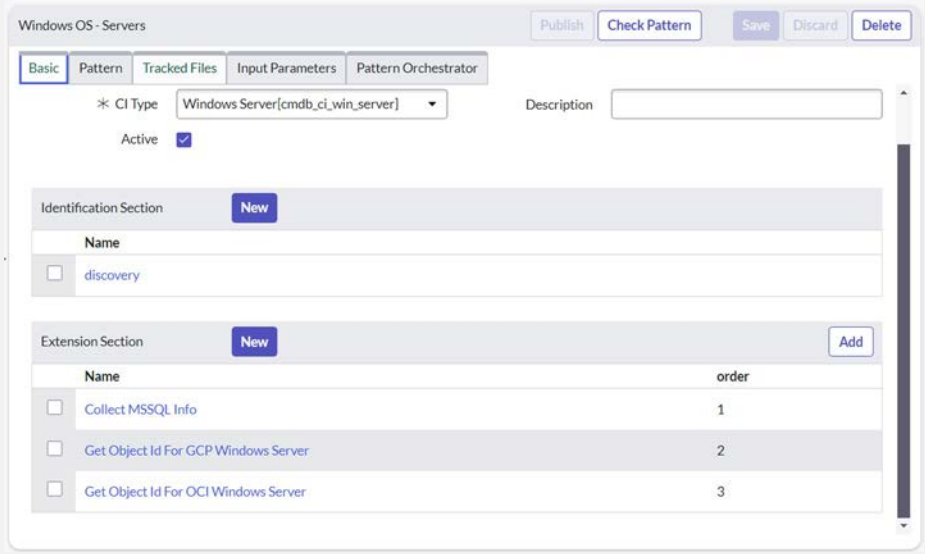
6. Discovery Patterns

Discovery Patterns

06

- Patterns are a sequence of commands that gather details about infrastructure and generate the payload of data to be sent to the CMDB.
- ServiceNow maintains an extensive library of patterns which it keeps up to date via the ServiceNow Store
- You can update patterns to fit your organization needs by modifying the Identification section, or capture additional attributes by adding to the Extension Sections



What Can be Discovered?

06

As a rule of thumb, if you can...

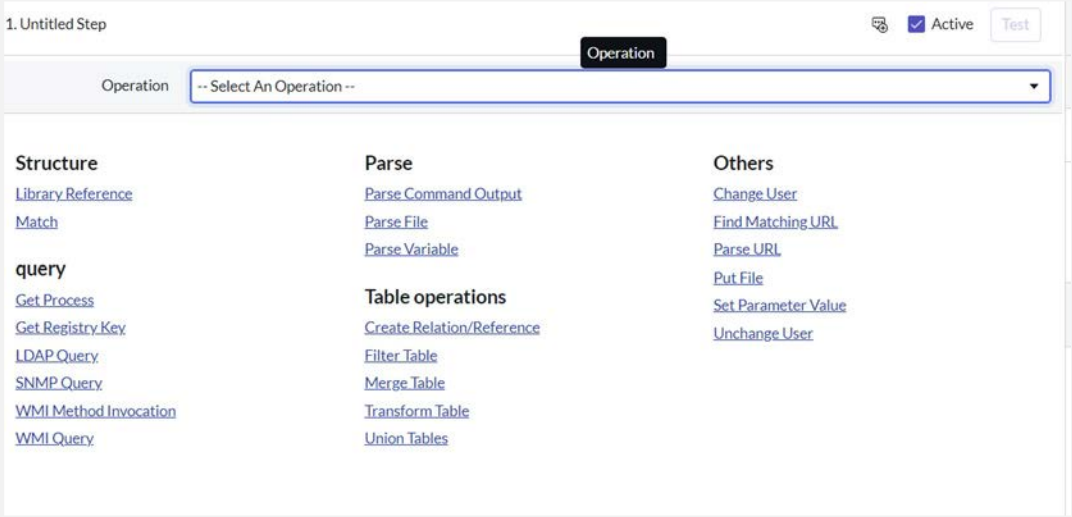
- Log into something
- Issue a command
- And receive a response

Then that technology can be Discovered

How Do Patterns Work?

06

- Patterns work by gathering outputs from commands, and then manipulating the data to store on the configuration item attribute.
- As data is collected in one step and processes in subsequent steps, the pattern uses the data to determine how the next step should be performed until all relevant information is collected



The Discovery Payload

06


```
"className": "cmdb_ci_win_server",
"values": {
    "os_address_width": "64",
    "short_description": "",
    "default_gateway": "172.31.80.1",
    "chassis_type": "Other",
    "virtual": "true",
    "os_domain": "WORKGROUP",
    "cpu_core_thread": "1.0",
    "sys_class_name": "cmdb_ci_win_server",
    "cpu_count": "1",
    "manufacturer": "Xen",
    "cpu_type": "GenuineIntel",
    "classifier": "5f48e47d1b59051023011f81bb4bcb0f",
    "ram": "2048.0",
    "cpu_name": "Intel(R) Xeon(R) CPU E5-2686 v4 @ 2.30GHz",
    "os": "Windows 2022 Datacenter",
    "fqdn": "ip-172-31-81-172.ec2.internal",
    "os_version": "10.0.20348",
    "cpu_speed": "2300",
    "serial_number": "ec20fcf8-bfb5-593b-5c6a-1371099d7f3c",
    "model_id": "HVM domU",
    "ip_address": "172.31.81.172",
    "disk_space": "30.0",
    "object_id": "i-0e3f9bf11ed743942",
    "name": "ip-172-31-81-172",
    "dns_domain": "ec2.internal",
    "cpu_core_count": "1",
    "host name": "ec2amaz-drpcf9d"
```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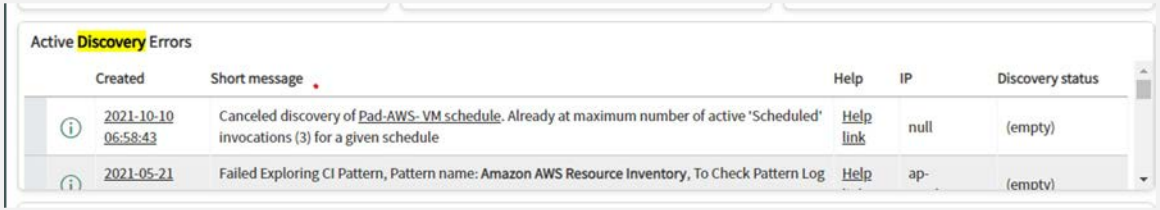
7. Common Discovery Errors

Discovery Errors

- By its nature, Discovery tries multiple protocols and patterns to best identity how to access and interrogate the devices in your environment.
- As a results errors will results when it is unsuccessfully for one of many reason.
- Not every discovery error may be resolved, but the focus should be on resolving errors for what you expect in your environment and having an understanding of the remaining error.
- The goal should be to keep those expected errors to a minimum and look out for upward trends. This is usually an indication that something has changed in the environment, and Discovery will have to adjusted accordingly.



Common Discovery Errors and Remediations

07

Category	Message	Resolution
Configuration	Pattern Failed	Debug the pattern and walkthrough each step to determine the error. The pattern may need to be updated based on your environment
Configuration	Session Timeout	Based on your environment, the timeout for the specific protocol to wait for a response may need to be increased. You will need to increase the timeout until you receive consistent results and the error message goes away.
Network	Failed to establish connection	The MID server may not be able to communicate to the target host on the specific port. Verify the port is open on the target host and the MID server can successfully ping that host.
Credentials	Authentication failed	No credential could be used to connect to this specific device. Verify that the specific devices accepts the credentials store in ServiceNow or create a new one that does. If this this a device discovery should not try accessing, consider creating an exclusion list with the IP address and adding it to the discovery schedule
Internal	Unexpected error	These errors need to be reviewed on a case by case basis. They are usually caused by a permission issues with the Discovery Credentials not having the right level of access to execute a command or read a file.

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8. Discovery Best Practices

Keys to Discovery Success

Follow Leading Practices

- Understand that Discovery is an iterative process, and it never ends
- Limit CMDB clutter and avoid a stale CMDB, a rule of thumb is if your organization does not support it, report on it, or has no governance requiring it, it shouldn't be collected
- Set intelligent discovery schedules
- Getting credentials early is critical to success
- Update patterns only when necessary, use extension section to gather additional data
- Not every Discovery error needs to be solved, focus on errors that prevent discovery from completing

How to Get Started

Preparing for a Discovery Implementation

Identify ServiceNow Discovery Subject Matter Experts

- Assess in house expertise; and/or partner
- Assign roles & complete training
- Ensure CMDB teams and Discovery teams are working together to ensure consistency in collected data

Ensure Resource Availability & Support

- Identify supporting team roles & responsibilities
- Ensure Security teams are engaged as early as possible to ensure credentials can be provisioned
- Engage Networking teams to ensure correct subnets are identified
- Engage Infrastructure teams to ensure scope of devices to be Discovered

Confirm Current Inventory Numbers

- Always validate Discovery against existing reports
- Work with Asset teams and Infrastructure teams to validate number of devices and accuracy of Discovered data
- Identify gaps as soon as possible and adjust schedule or access as needed

Getting Started Is Easy!

Cask meets you where your CMDB is today

Need a quick CMDB assessment and rapid remediation?

CMDB LAUNCHPAD

Need help managing your CMDB on an ongoing basis?

CMDB EXPERT ASSIST

Need to implement or overhaul ITOM including your CMDB?

CMDB ESSENTIALS

LOOK FOR INSTALLMENT FIVE COMING IN NOV

Tell us what CMDB topics you want to learn more about!

Look for a survey following this session!

Questions?

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Thank you!

Questions?

Email: Madan Raja, madan.raja@caskinc.com