



On daro

CMDB Data Loading & IRE Best Practices

CMDB MasterClass Part 2

Agenda >

Welcome & Introduction

1. Key Strategies for a Healthy CMDB
2. Best Practices for Ongoing Maintenance
3. Case Study: Success in CMDB Maintenance
4. Q&A

At Ondaro, we help organizations turn complexity into clarity — and make ServiceNow a catalyst for what's next.



You're not just implementing software.
You're simplifying systems, empowering teams, and
delivering meaningful impact.

Whether you're starting small or scaling enterprise-wide,
Ondaro is here to help you navigate the wave of what's
next — and make transformation real.



Ondaro

formerly  Cask

Where Deep Expertise Meets Consistent Results.

Driving real change takes both platform knowledge and a partner who is with you every step of the way.

8,500+

Certifications &
Accreditations

13 | 7

Product Line
Achievements and
Validated Practices

3 years

Average length of
client partnership

4.69 / 5

Customer
Satisfaction score



Ondaro is the only pure play ServiceNow partner with fully certified resources across the platform



ITSM



ITOM



ITAM



HRSD



CRM



SPM



SECOPS



IRM



APP ENGINE

ENVISION

Business Transformation

Organizational Change Management

AI-Readiness

Platform Strategy & Governance

IMPLEMENT & DEVELOP

Platform Architecture & Engineering

Product Implementation

UX & UI Design

App Development

Data Management & Integrations

MANAGE & OPTIMIZE

Platform Operations

Enhancement Services

Product Management

Turn on Video

Join the Conversation: Using Teams

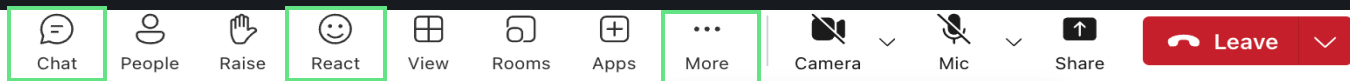
Let's get interactive and enjoy ourselves!

Unmute – Click the microphone icon to unmute and participate

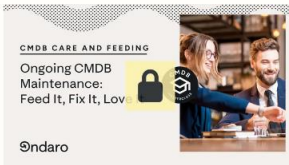
Chat – Message everyone or just one person

Get Help – Use Chat

Show Captions - Click More, Language & speech, Show live captions



Catch up with our CMDB & ITAM MasterClass Series!



CMDB MASTERCLASS

Join for our 9th CMDB MasterClass
on CMDB + Vulnerability
Management July 30th!

ITAM MASTERCLASS

Find recordings, resources & more!

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Why Are We Here?



Why CMDB Data Loading & IRE Best Practices?

CMDB Data Loading and Identification and Reconciliation Engine (IRE) best practices are crucial for maintaining the accuracy, reliability, and efficiency of your ServiceNow CMDB. Here's why:

Data Integrity and Consistency

Efficient Management of Complex Environment

Reduced Operational Risks

Enhanced Automation and Efficiency





CMDB Structure 101



Key Concepts

Class

Describes a CMDB table that **contains and represents a specific type or group of CIs** that share common attributes such as a Operating System, Function or purpose (e.g., Windows Server, Router, Application, Service Offering)

Attribute

A unit of **information stored for each CI** either consistent across all assets (core) or specific to the type of asset (class). Describes a CI such as a name, serial number, manufacturer, operating system

Product Model

A product model **is a specific version or configuration** of a product

Model Categories

Model categories **associate CI classes with asset classes**. The CMDB uses this as referential data. The model category determines if an asset is created from a CI and if so, what class of Asset

Models

Models are specific versions or various configurations of an asset (e.g., Hardware, Software, Consumable)

Hardware Model

A hardware model can be discovered and populated in the CMDB. The Model will have a manufacturer, model number to identify that version of the hardware

Logical CI

Do not take up space. They perform specific functions requiring physical components in order to operate. Service Offering, Service, Business Application. Manually entered into CMDB

Physical CI

They have a specific location, take up space, and can be seen (e.g., servers, desktops, network devices, etc.). **Can often be detected through discovery**

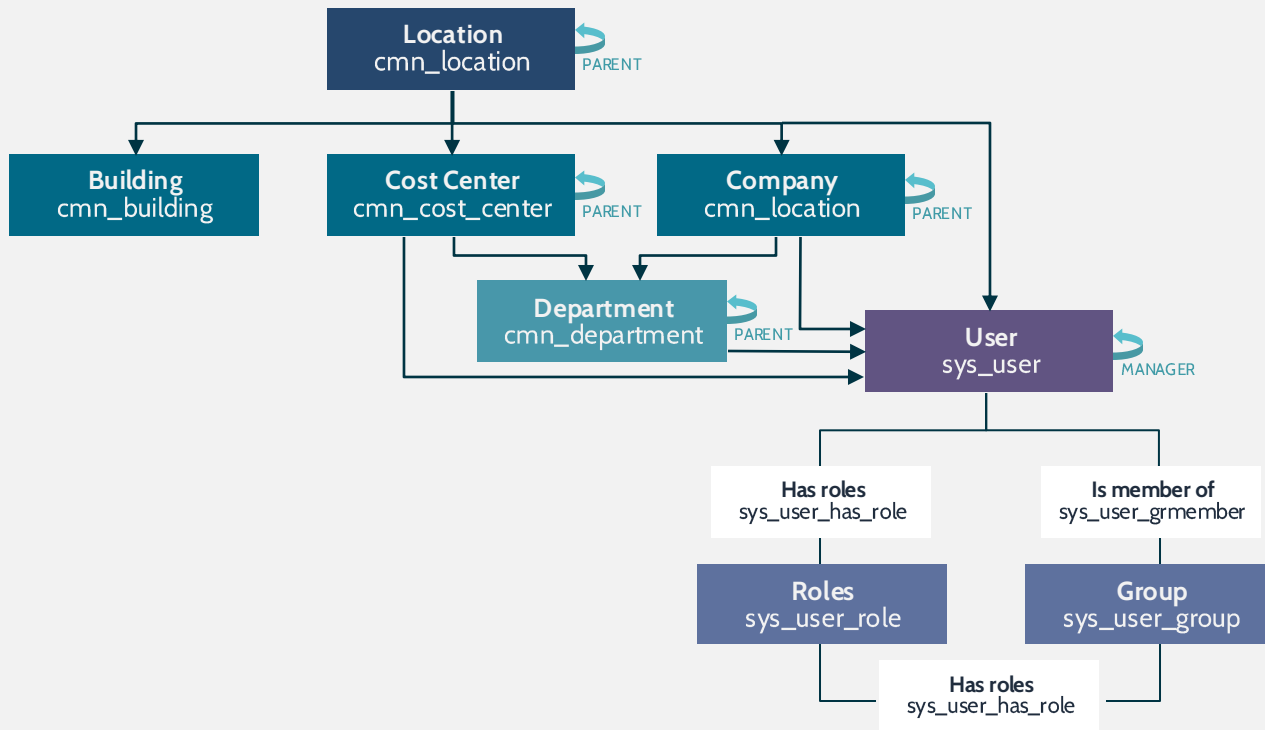
Conceptual Component

Representations of **physical and logical components that have been combined** to create a Service or System like an Application Service

Foundational Data

Common data tables which are shared across ServiceNow applications, processes or use cases

- Refers to Users, Groups, Locations, Business Units
- Not stored in CMDB
- Foundation data is often used for approvals - if this data is missing the workflow fails
- Location, Company, Cost Center, Role, Group, User, Building Department, Company

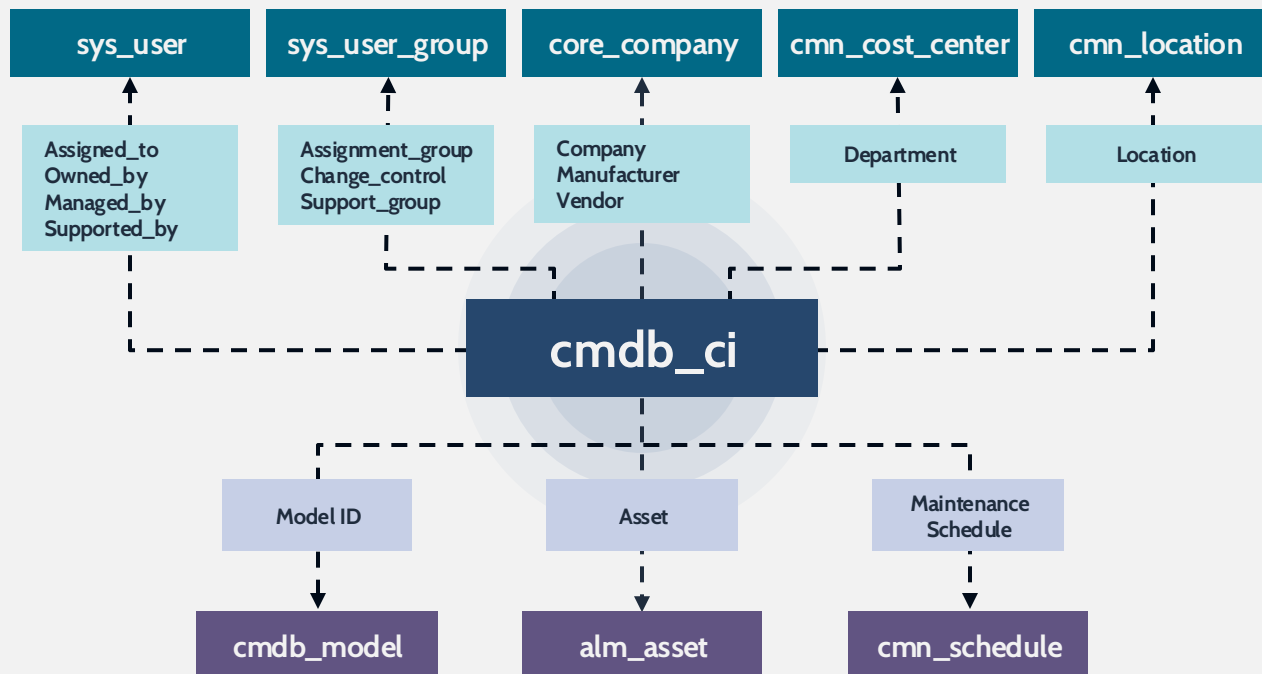


CMDB Base Table

CMDB CI schema related to common core and non-core tables

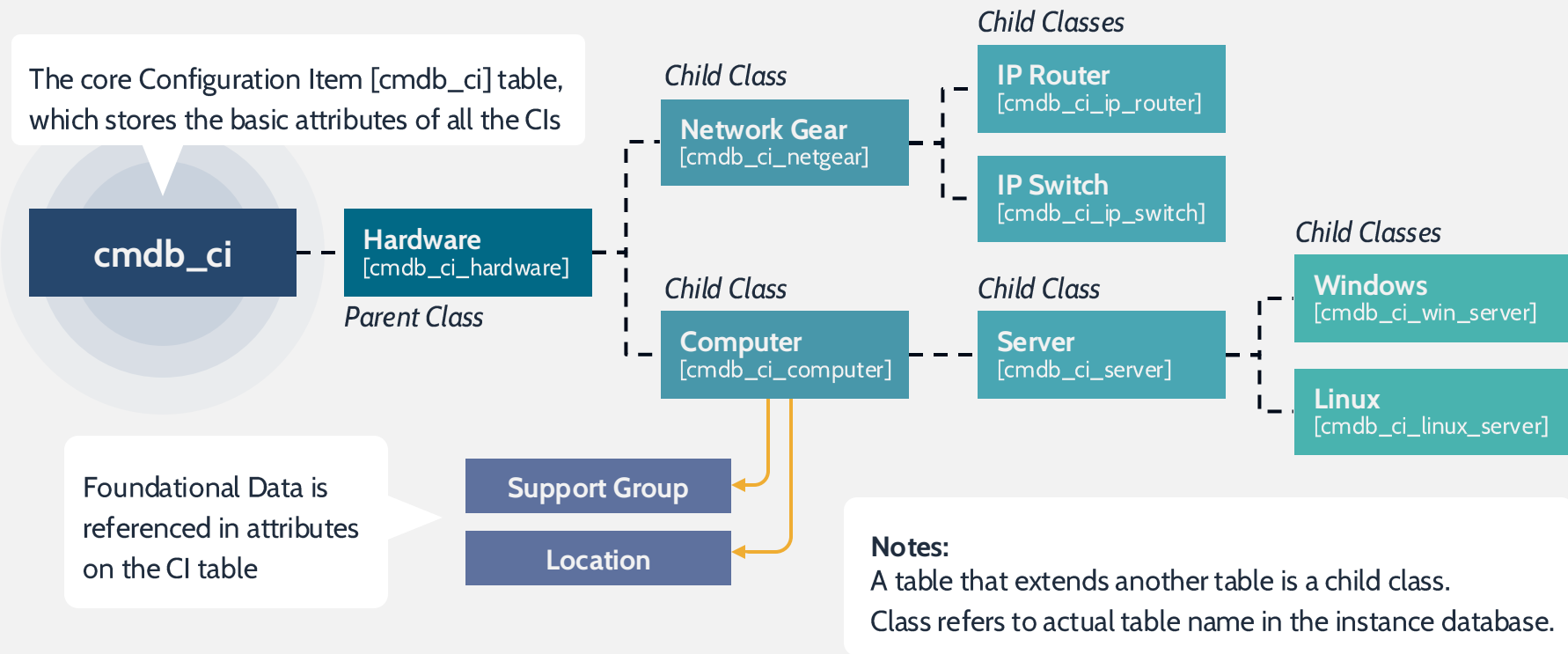
CMDB [cmdb_ci] base table
and references to foundational
or "core data"

Non-core tables are referenced
against other ServiceNow
applications



CMDB Class Structure

The core CMDB CI [cmdb_ci] table, stores the basic attributes of all the CIs

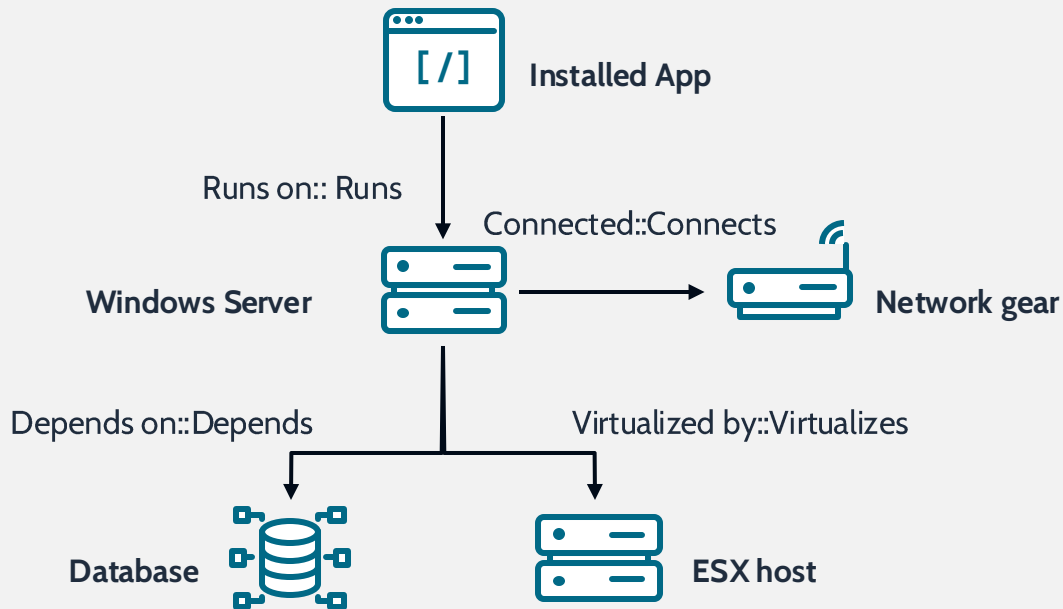
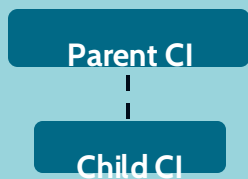


CI Relationships

CMDB helps track both the CI and their relationships to other CIs

The relationships between CIs can be automatically discovered. If you use Discovery, many relationships can be automatically loaded into the system through automated Discovery process. If you import your data from another system, you get some form of relationships.

A relationship in the CMDB consists of two CIs and a relationship type:





Identification & Reconciliation Engine (IRE)

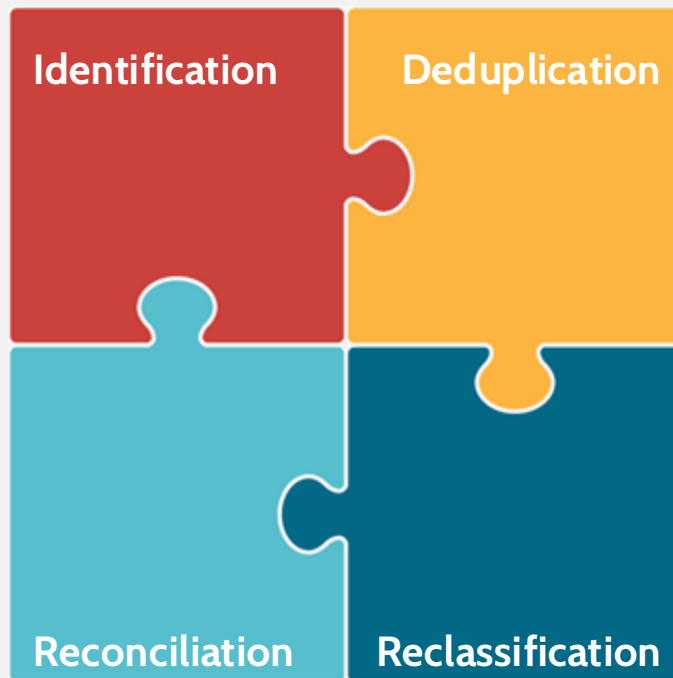
Identification & Reconciliation Engine

Identification

- Correctly identify CIs so you do not duplicate
- Does it exist or need to be created?
- Relies on identification

Reconciliation

- Only allow authoritative sources
- The CMDB is updated in real time; the process relies on reconciliation rules



Deduplication

- Duplicate CIs are grouped into de-duplication task
- Shows how it determined it was duplicate

Reclassification

A CI can be upgraded to a higher class, downgraded to a lower class, or switched to a different branch in the class hierarchy

Identification rules



- ▶ **An identification rule applies to a CI class and consists of:**
 - One or more identifier entries and related entries

- ▶ **They are hierarchical but can be overwritten at child class**
 - Parent Class = Server
 - Child Class = Windows Server

- ▶ **Most classes have an Identification IRE rules in the platform; it's an exception to have to create your own**

- ▶ **2 types of Rules –**
 - Independent (e.g., Server)
 - Dependent (e.g., Tomcat running on Server)

- ▶ **The identification process rules use the CIs attributes for identification:**
 - **Unique attributes**
Designated attribute values that can be used to uniquely identify the CI. Unique attributes can be from the same table or from derived tables
 - **Required attributes**
Designated attributes of a CI that cannot be empty

Identification rules – Independent

- Navigate to CI Class Manager
- Locate the CI Class
- Review the Out of Box Identification Rule
- Most “Discoverable” classes come with an OOB identification rule
- Identification rules support hierarchy

The screenshot displays the 'CI Class Manager' interface. On the left, a sidebar shows the 'Hierarchy' view with 'Windows Server' selected. The main panel shows the 'Identification Rule' configuration for 'Windows Server'. A callout bubble points to the 'Independent' status, stating: 'Identification rules can be independent or dependent'. The 'Identifier Entries (4)' section lists four rules, each with a 'Lookup' button and an 'Active' status. A second callout bubble at the bottom right states: 'IRE handles reclassification – ability to control class switching of instance, payload or by integration' and 'IRE controls integrations being able to update vs create a record'.

Identification rules can be independent or dependent

IRE handles reclassification – ability to control class switching of instance, payload or by integration

IRE controls integrations being able to update vs create a record

Identification rules – Dependent rule

CI Class Manager is the place to manage Identification Rules

CI Class Manager

Hierarchy Configuration Item > Application > Application Server > Tomcat

Tomcat

Class Info

- Basic Info
- Attributes
- Identification Rule
- Dependent Relationships
- Reconciliation Rules
- Suggested Relationships
- All Relationship Rules
- Health
- CI List

Identification Rule

Indicates if a CI can be identified

Name	Applies to	Description	
Tomcat	Tomcat	SW:Tomcat	Edit Delete

Identifier Entries (1)

Includes criterion attributes that uniquely identify the CI that the identification rule is associated with. An identification rule must have at least one active identifier entry.

+ Add

Search on Table

Tomcat

Priority

100

Attributes (3)

Class, Installation directory, Running proces...

Active

Related Entries (1)

Includes criterion attributes based on related CIs. Related entries are not used to directly identify CIs.

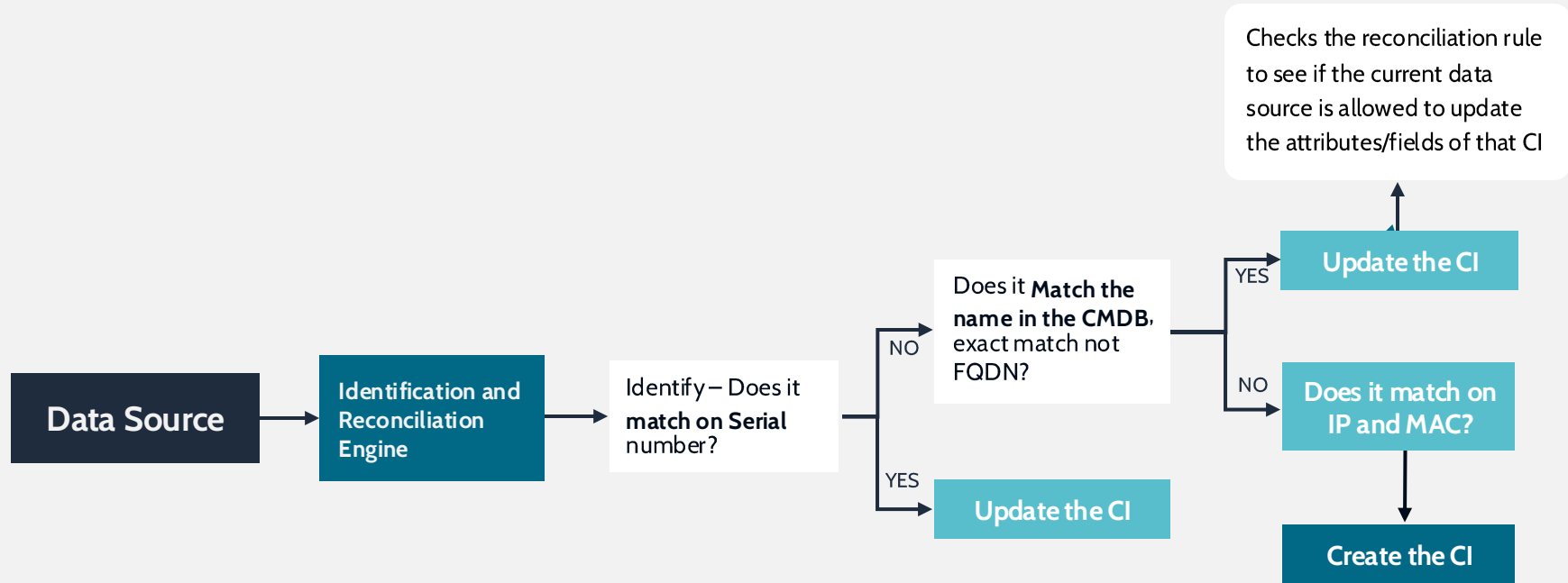
+ Add

Related Table

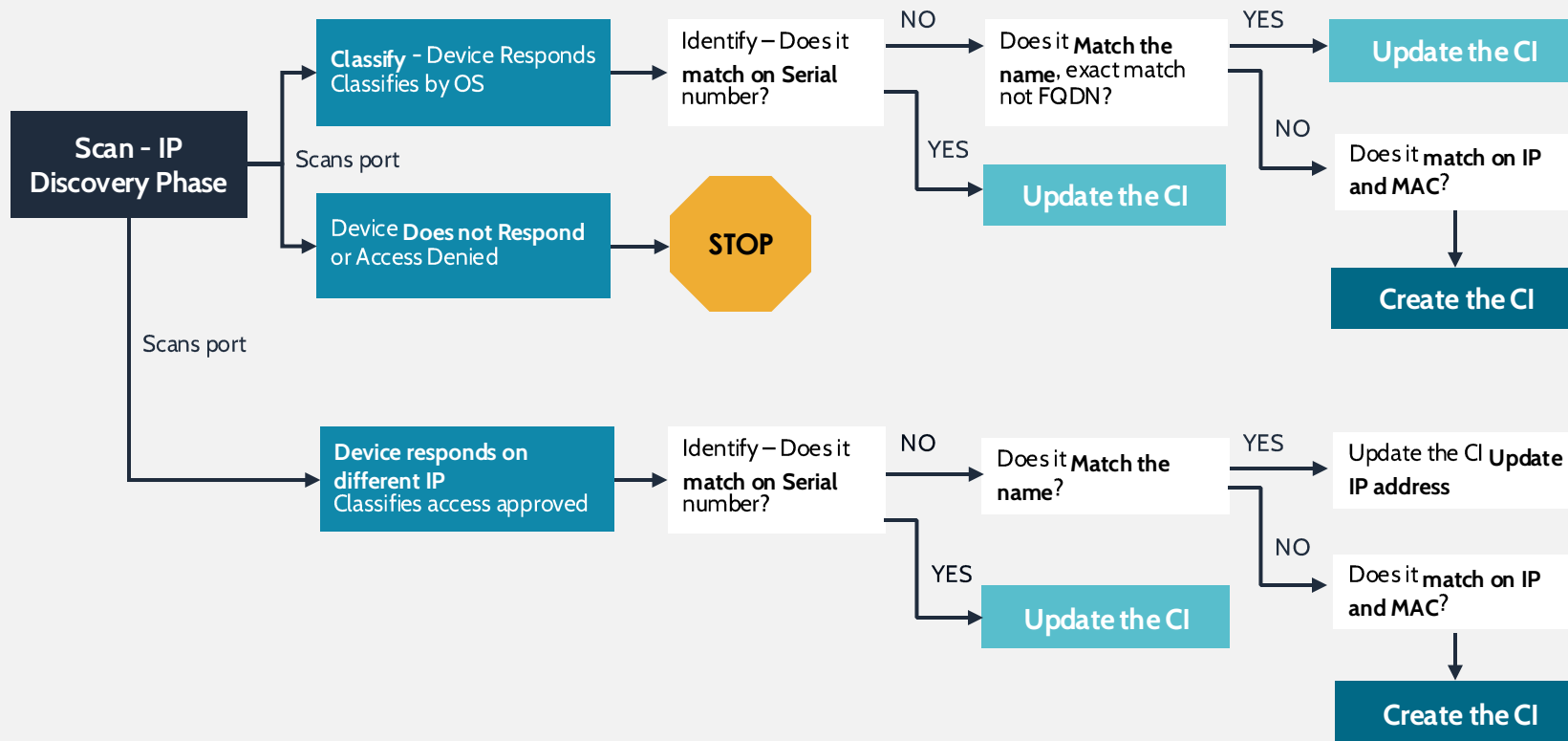
Key Value

Reference Field

Data Source and IRE Engine Process Flow

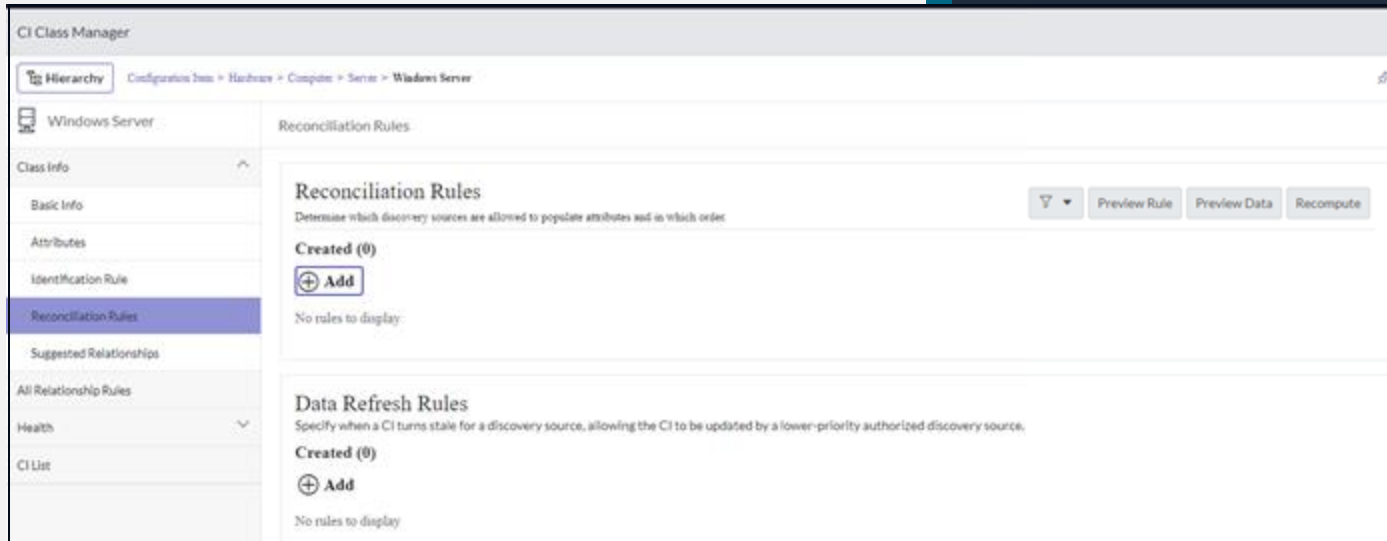


Discovery and IRE Engine Process Flow



Reconciliation rules

- Determine which data sources can update CI attributes
- Data sources with highest priority determine what an attribute value will be
- Create a static or dynamic CI reconciliation rule
- No OOB reconciliation rules



- Reconciliation can be per class, per attribute
- Child class rules have higher precedence over parent rules
- Dynamic rules requires multi-source engine

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Discovery



What is Discovery?

ServiceNow Discovery is a method of populating your CMDB with relevant hardware and software assets within your enterprise environment

- ▶ Utilizing a specific step, or phased, process Discovery remotely discovers your Windows and Unix computers/servers, network devices, powering and printing equipment
- ▶ The platform then maps specific Application to Host and Application to Application dependencies including Layer 2 Physical Hardware relationships



Key Concepts

Horizontal Discovery

The discovery of like **devices in the same CI class** creates direct relationships between CIs. Discovery is not 'service' aware and **does not create relationships based on the Business/Technical or Application service they support.**

Top Down Discovery

Used by Service Mapping, finds CIs and maps to other CIs based on the Business/Technical or Application service. **Works with Discovery together, to run horizontal discovery first to find CIs, and then Service Mapping runs top-down to establish the relationships between the services.**

Discovery Technology

ServiceNow Discovery technology uses industry established ports and protocols to identify and assess what equipment is within your environment



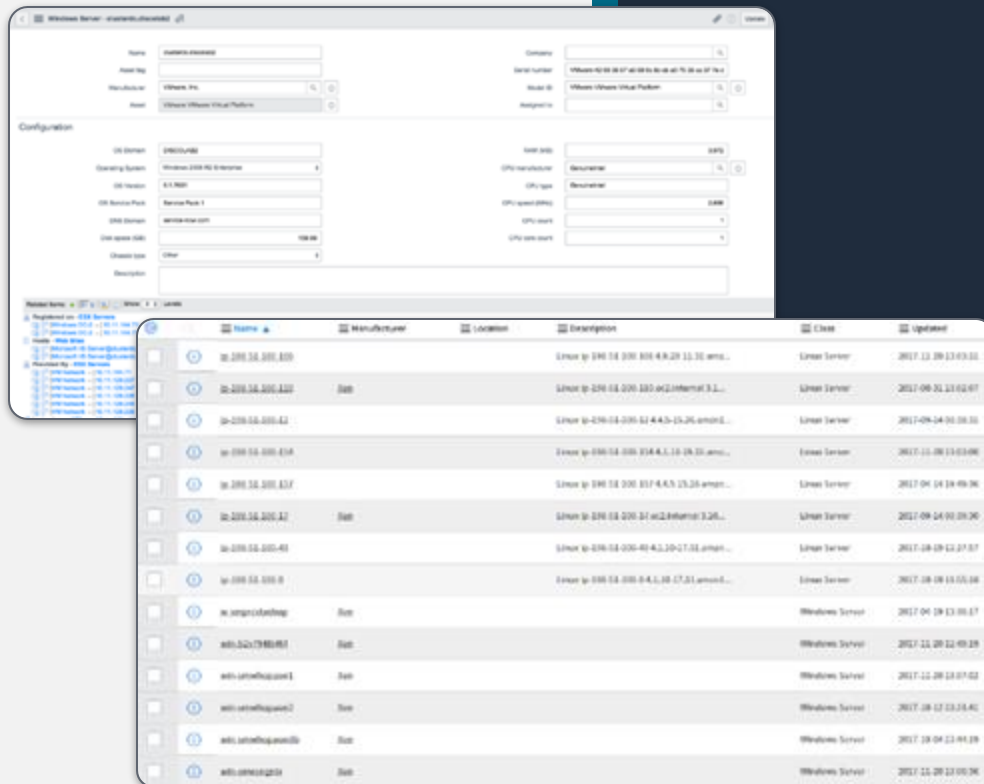
No secret protocols or agents to deploy.

Discovery Results

Discovery will populate the CMDB with all discovered devices such as

- Linux Servers
- Windows Servers
- Desktops
- Network Devices
- Printers

Each device will be represented as a record in the CMDB processed through the IRE





Service Graph Connectors



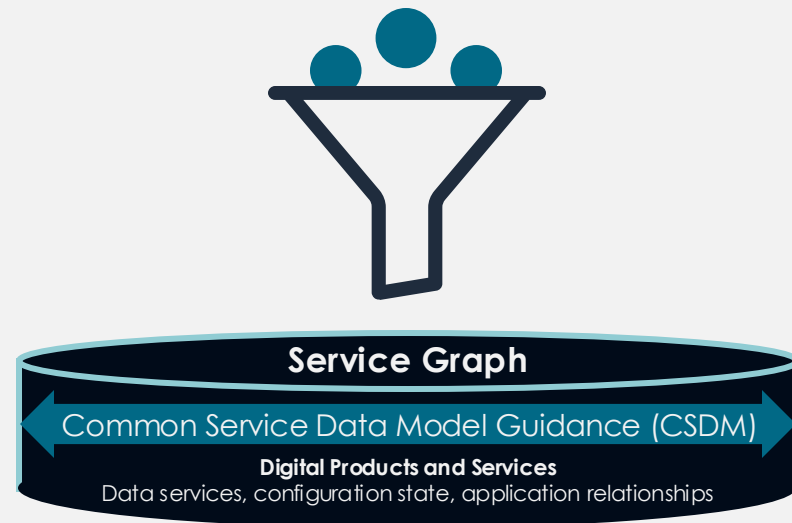
Use cases

Standard Service Graph Connector Features

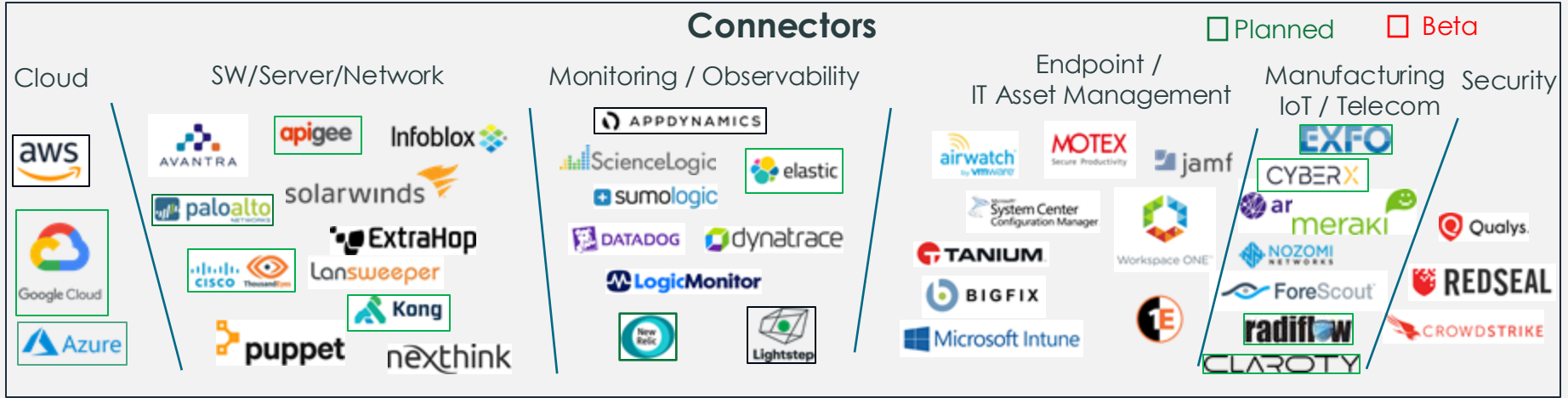
- Data sources & Registered Discovery Source
- Predefined IH-ETL Mapping out-of-box
- RTE and IRE support
- Transforms and table cleaners
- Guided Setup
- Event Management Support (NOW-developed connectors)

Use Cases supported by connector

- ITAM
- ITOM
- Security
- IT/OT
- Industry



Service Graph Connectors



Why Service Graph Connectors?

- ✓ ServiceNow tested & supported
- ✓ ServiceNow or ISV Partner built
- ✓ Multisource & reconciliation enabled

servicenow

IH-ETL

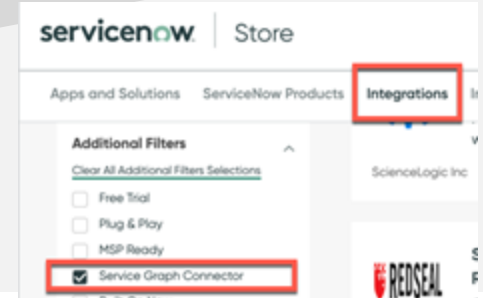
Multisource
IRE

Discovery
Service Mapping

Service Graph

CSDM & CMDB

<https://store.servicenow.com>



Service Graph Connector for Microsoft SCCM



ITOM Visibility

Detailed hardware and software inventory

ITSM

Create Incident/Problem/Changes on discovered CIs

Automatic device ownership assignment

SAM / HAM

Inventory software and track installations

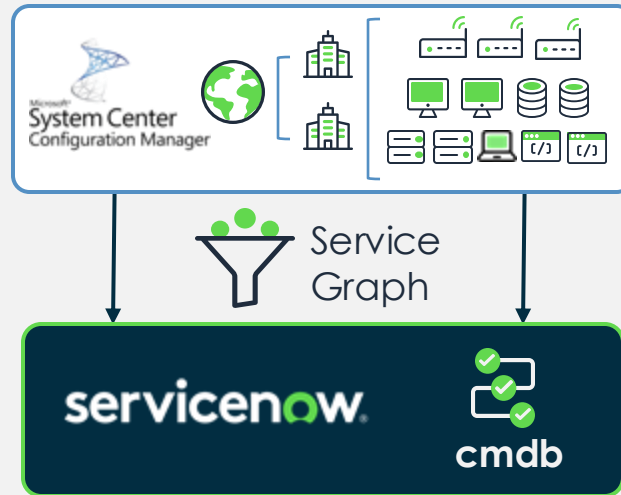
License reclamation

Supports software editions, publisher, product information, and SCCM asset intelligence

Summary:

Connector via MID Server to SCCM.

Enable software editions so that you can gather edition information for products such as Adobe Acrobat, Microsoft SQL Server, and Windows Exchange Server



Technology Workflow

Use Cases Supported:

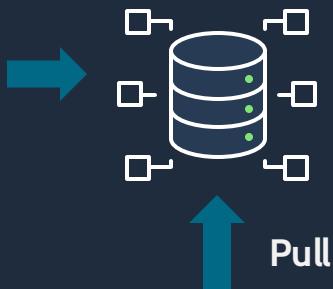
- Software Asset Management
- Hardware Asset Management
- Service Operations
- Endpoint Device monitoring

Service Graph Connector (SCCM)

On Premise

SCCM Tables:	
Computer identity	...
Operating System	...
Processor	...
Disk	...
Network	...
Software	...
	...
	...

SCCM
(SQL Database)



JDBC (Port 1433)

Password Vault
(CyberArk)

MID Server

HTTPS TLS (Request Port 443)

ECC Bus

Redact Sensitive Data

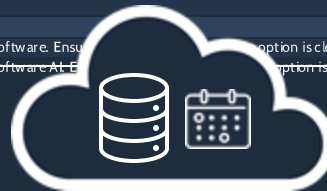
Transform

Reconsolidation

ServiceNow Cloud

SG-SCCM-Patterns:

SG-SCCM Computer Identity: You can see the following data if it is available in SCCM:
Asset Tag. If the Asset Tag data is available, the mapping can be optionally enabled via
Assigned DNS Domain
Organizational Unit. This information will be in a related table. SG-SCCM
Disk
SG-SCCM Last Discovered Update. This data source will run at the end of the import schedules to update the last_discovered date on the Computer SG-SCCM Network
SG-SCCM Operating System
SG-SCCM Network
SG-SCCM Disk
SG-SCCM Processor
SG-SCCM Removed Software. Ensure this option is cleared for every run.
SG-SCCM Removed Software At End of Life. This option is cleared for every run.
SG-SCCM Software



Password Vault

Discovery
Schedule

Service Graph Connector for AWS



ITOM Visibility

Detailed hardware and software inventory

Governance/Compliance outcome

SAM / ITAM

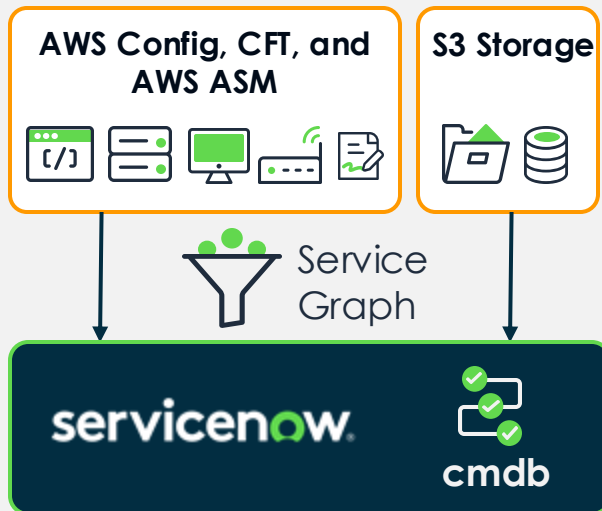
Inventory software and track installations

Deep Discovery of Applications

Correlate multiple cloud accounts for ITAM/SAM outcomes

Summary:

Connect to AWS EC2 and S3 to import the component EC2 ci and S3 storage ci from multiple accounts.

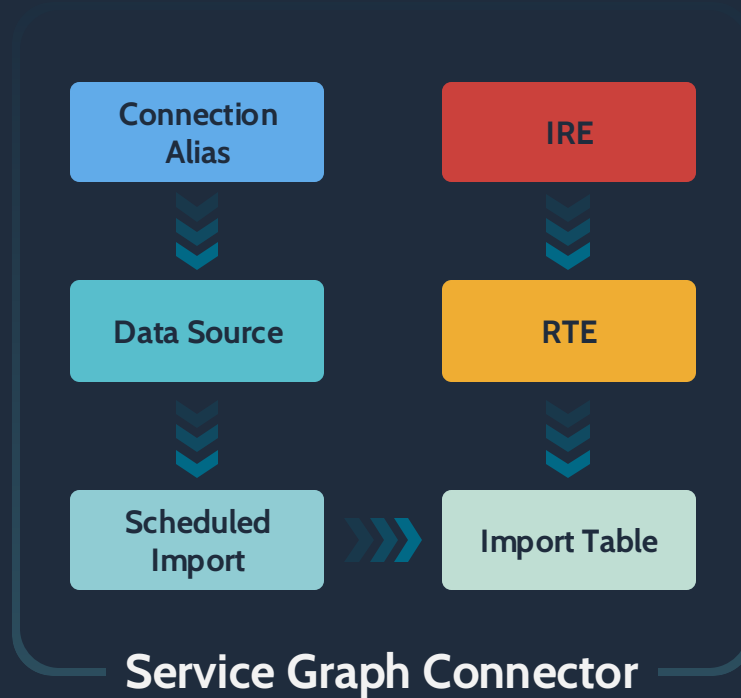


Technology Workflow

Use Cases Supported:

- Cloud Governance
- Cloud Optimization
- Predictive AI Ops
- Health Log Analytics
- Service Operations

Service Graph Connector for AWS



servicenow

Service Graph Connector for Jamf



ITOM Visibility

Detailed hardware and software inventory tracking for MacOS and iPhone/iPad

Compliance tracking for devices

ITSM

Create Incident/Problem/Changes on discovered CIs

Automatic device ownership assignment based on top user

SAM / ITAM

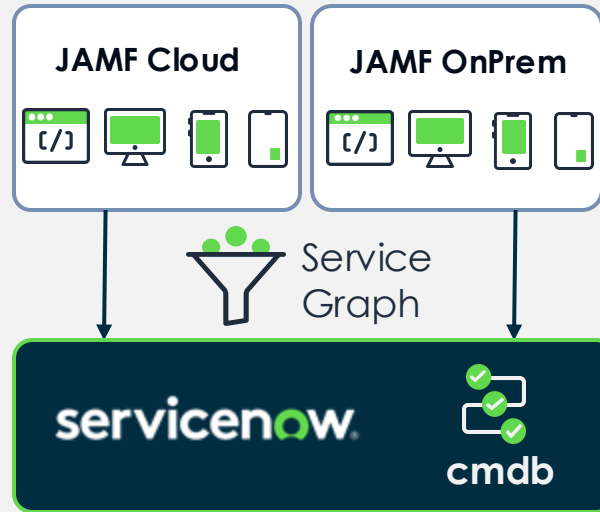
Inventory software and track installations

License reclamation

Software usage tracking

Summary:

Connect to any JAMF environment to import devices and related information into CMDB such as network, storage and software CI.



Technology Workflow

Use Cases Supported:

- Software Asset Management
- Hardware Asset Management
- Service Operations
- Mobile Device monitoring

Service Graph Connector for Meraki



ITOM Visibility

Detailed hardware and software inventory

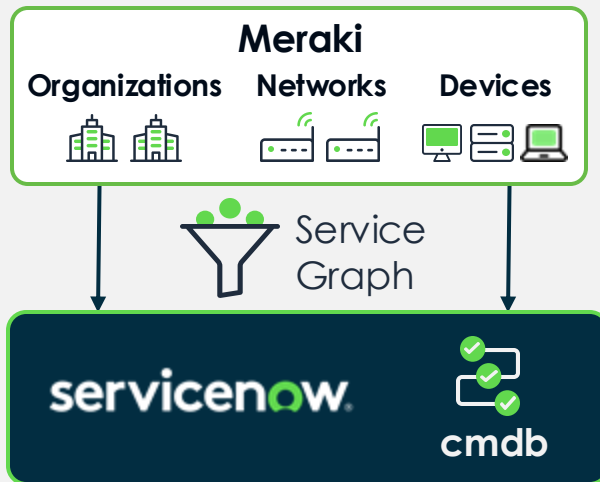
Event Management stream for alerting use cases

ITSM

Create Incidents on discovered CIs

Summary:

Connect to import Meraki Organizations which contain Networks and Devices under management, create Incidents from Meraki alerts with correlated ci and event data.



Technology Workflow

Use Cases Supported:

- Visibility into Meraki Networks and Devices
- Service Operations

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IntegrationHUB ETL



IntegrationHub ETL



Simplified user interface that guides the integration process end-to-end

2/2

Tasks

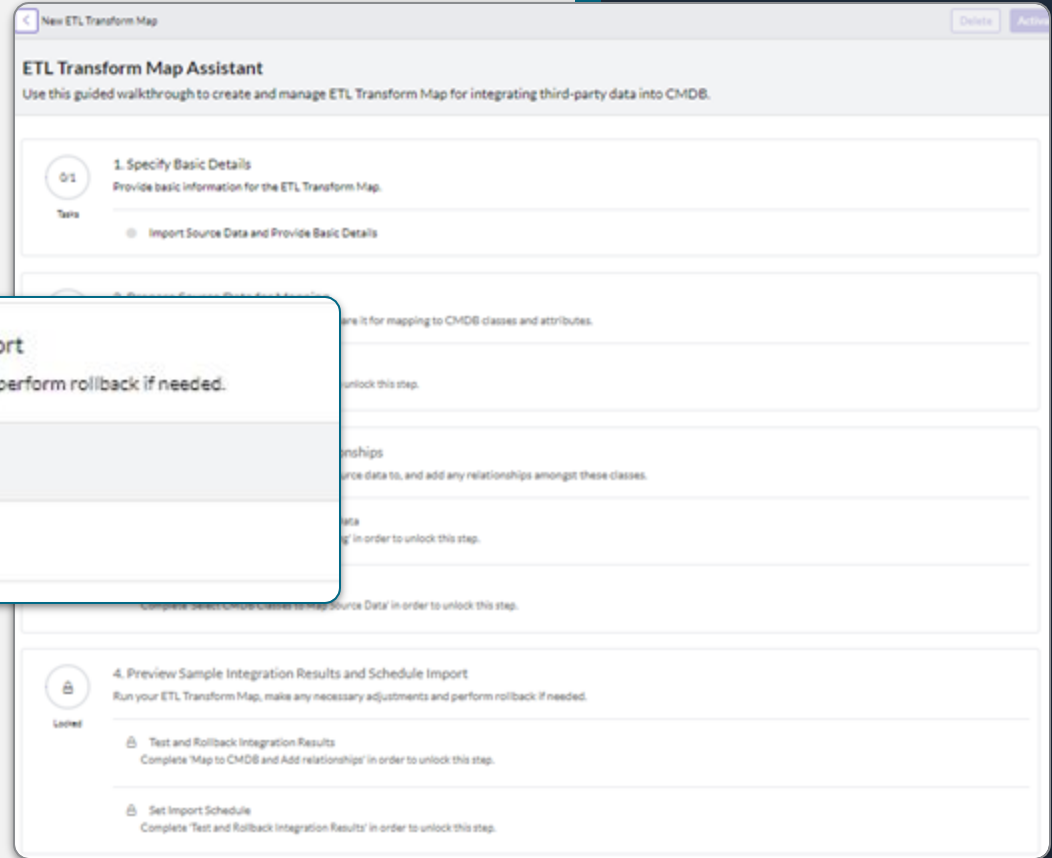
4. Preview Sample Integration Results and Schedule Import

Run your ETL Transform Map, make any necessary adjustments and perform rollback if needed.

- ✓ Test and Rollback Integration Results
- ✓ Set Import Schedule



Test and adjust configuration settings before scheduling recurring integrations

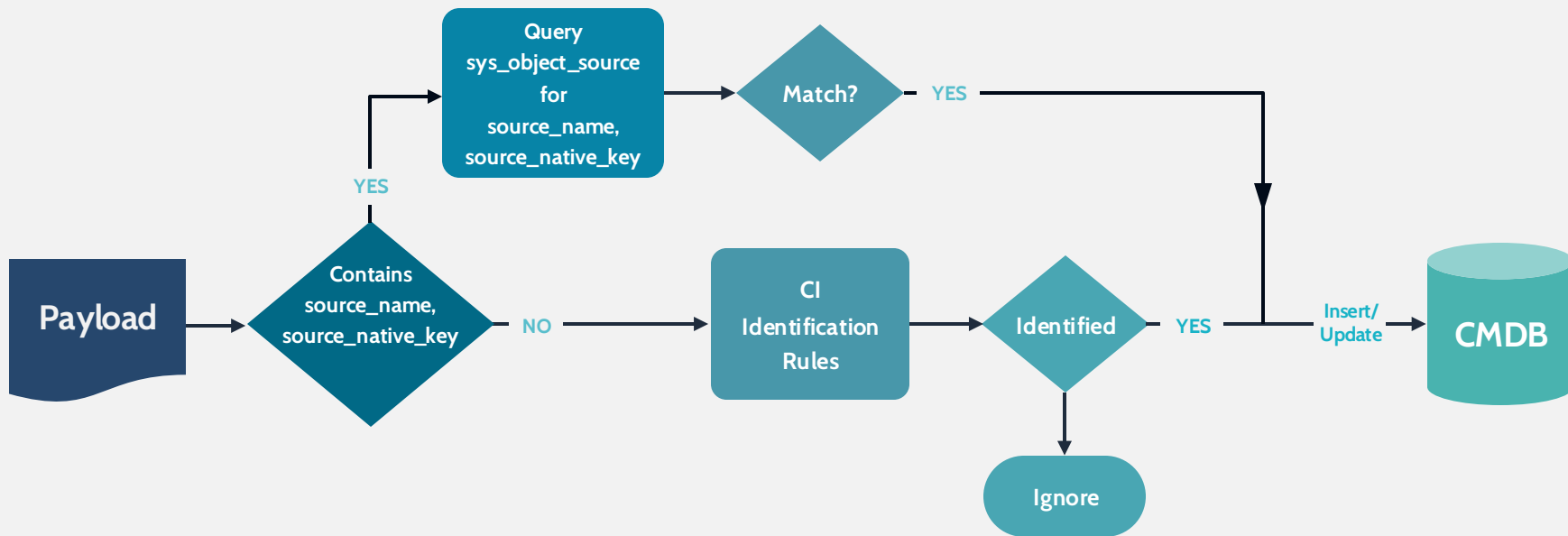


IntegrationHub ETL Identification

- 1 The CMDB identification process relies on identification rules to uniquely identify CIs
- 2 Identification Rules can be slow to process due to the number of tables and data to query
- 3 To improve performance CIs can be uniquely identified using source_name and source_native_key values provided in the payload, against the Source [sys_object_source] table
- 4 If identification is not successful using that method, then identification rules will be used

```
{
  "items": [
    {
      "className": "cmdb_ci_win_server",
      "values": {
        "name": "SAHLABVM52"
      },
      "sys_object_source_info": {
        "source_native_key": "16777219",
        "source_name": "SCCM",
        "source_feed": "SCCM Computer Identity",
        "source_recency_timestamp": "2019-08-26 13:00:00"
      }
    }
  ]
}
```


IntegrationHub ETL Identification



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Transform Maps



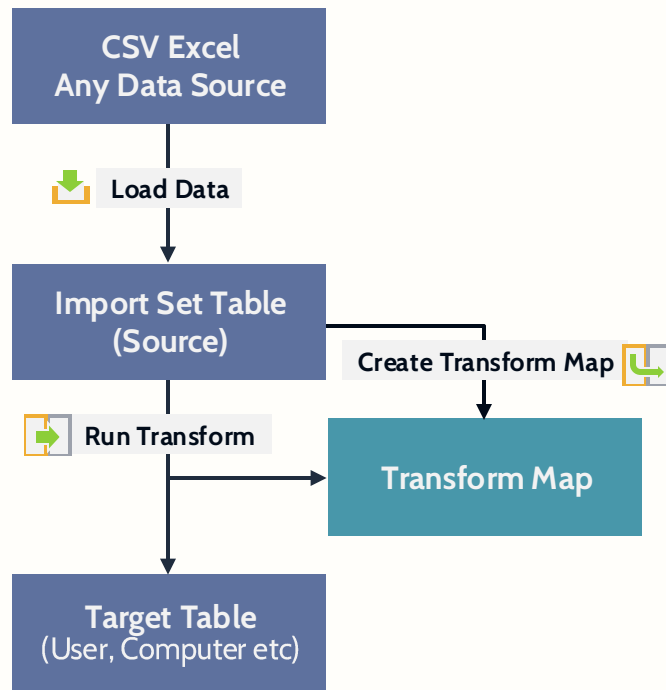
Manual Import

Import data from an import file such as CSV or Excel

Import best practices:

- Use the provided data load templates from target table
- Ensure the data is cleansed before import. Review for:
 - ✓ Completeness
 - ✓ Correctness
 - ✓ Compliance
- Need to add the following code to leverage IRE

```
(function runTransformScript(source, map, log, target) {  
  // Call CMDB API to do Identification and Reconciliation of current row  
  var cmdbUtil = new CMDBTransformUtil();  
  cmdbUtil.identifyAndReconcile(source, map, log);  
  ignore = true;  
})(source, map, log, target);
```



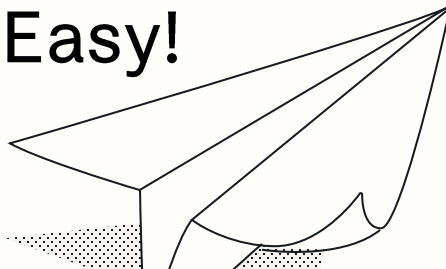
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Summary



Getting Started Is Easy!

We can meet you where you're at in your Event Management journey.



Want a quick CMDB assessment and rapid remediation?

CMDB LAUNCHPAD

Need to implement CMDB and see value fast?

CMDB ESSENTIALS

Need a dedicated team for maintaining your ServiceNow Platform?

ONDARO RESERVE



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

Look for a survey following this session!

CMDB MasterClass Part 10:
Your CMDB Foundation for AI
scheduled for November.

Look for an invite soon!



The next ITAM MasterClass:
is on October 16.

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Thank you!

