

On daro

Service Mapping

CMDB MasterClass Part 7

Agenda >

Welcome & Introduction

1. Service Mapping Overview
2. Personas & Roles
3. Architecture
4. Mapping Approaches and Related Processes
5. Service Mapping Practical Applications
6. 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

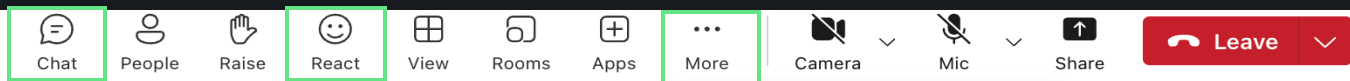
Let's get interactive and enjoy ourselves!

Unmute – Click the microphone icon to unmute and participate

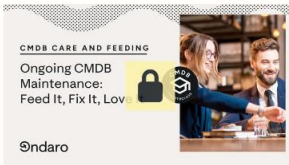
Chat – Message everyone or just one person

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!



Service Mapping Overview

AUDIENCE POLL

How well is your
organization managing
services today?

- A High confidence - we're confident and in control.
- B Medium confidence - we're doing okay, but there's room to grow.
- C Low confidence - we're struggling to manage effectively.
- D Wait... what are services?

What is Service Mapping in ServiceNow?

Maps all application services in your organization and builds a comprehensive map of all devices, applications, and configuration profiles used in these application services.

Service Mapping – Use Cases

Reduced MTTR

- Outage reduction
- Improve change/incident routing
- Reduce risk and impact analysis of change
- Prioritize high impact and critical business provided services

Automation

- Enable automation
- Reduce manual processes

Visibility

- End to End visibility
- Empower Agents

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Personas & Roles



Configuration Management Organization



Service Mapping Admin

- Sets up the Service Mapping application.
- Maps, fixes, and maintains application services.
- All Access to Service Mapping



Discovery Admin

- Expected to configure and execute Discovery in your network.
- All Access to Discovery



IT Application Owner

- Ensures accurate mapping of application services
- Reviews mapped services, approving or suggesting changes
- Assigned to users who own application services and understand the infrastructure
- View/approve individual services
- May be multiple IT application owners



Service Map User

- Views maps for operational application services to plan change or migration, as well as analyze the continuity and availability of services.
- Assign this role to application users.
- Limited role – View only
- May be multiple IT application owners, agents or process owners

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Architecture



CSDM Tables Managed by ITOM Visibility

1. Configuration Item table [cmdb_ci_*] =

CMDB tables where the configuration items are stored

- Application table [cmdb_ci_appl]
- Server table [cmdb_ci_server]
- Virtual machines table [cmdb_ci_vm_instance]
- Load balancer table [cmdb_ci_lb]
- Network gear table [cmdb_ci_netgear]
- Computer [cmdb_ci_computer]

2. Application Service table

[cmdb_ci_service_discovered] =

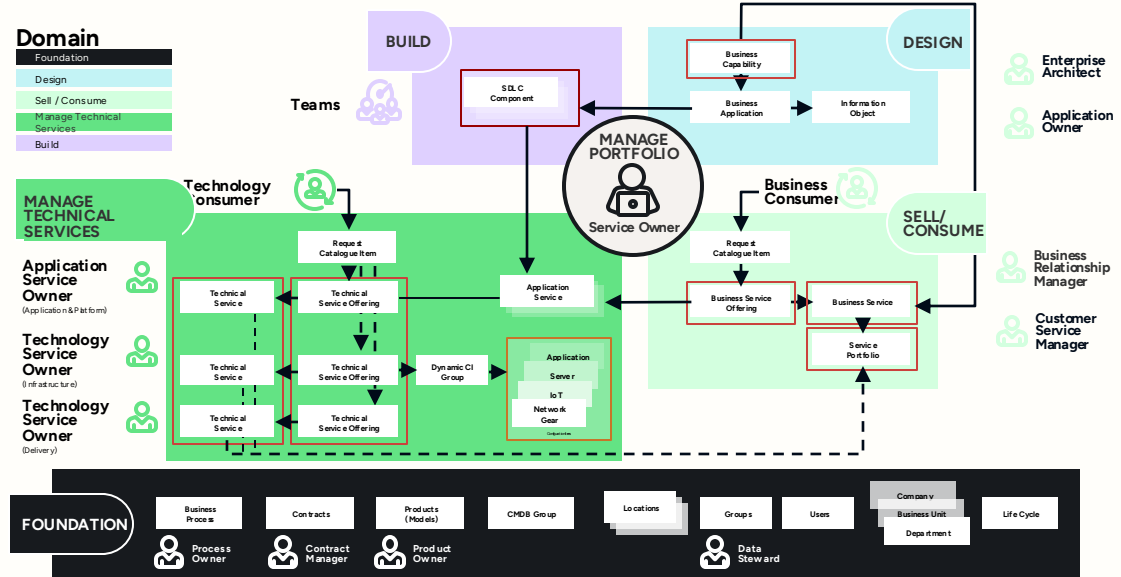
Service Mapping provides details about the application instance service in the [cmdb_ci_service_discovered] table, relating infrastructure and application [cmdb_ci_appl] CIs by grouping supporting CIs into a Dynamic CI group

3. Used by ITOM Visibility

Dynamic CI Group table

[cmdb_ci_query_based_service] =

Dynamic CI Group service is used in Event Management as a logical grouping of CIs. It is also used in manually grouping CIs to Services for manual Service Mapping. Dynamic CI Group service provides the health status of the group to the technology or service owner



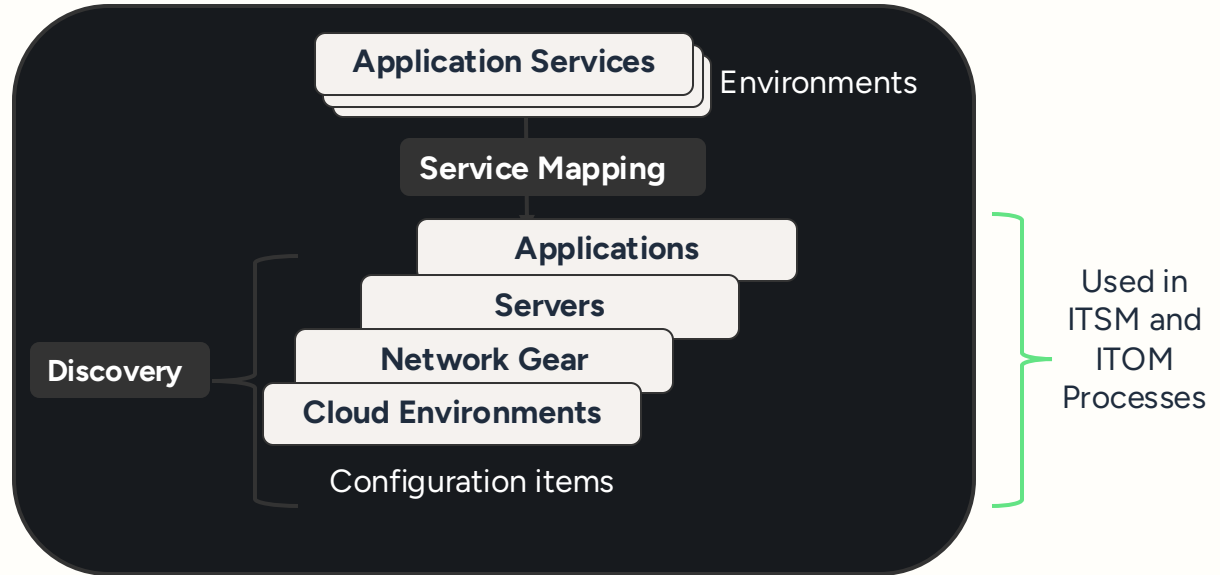
Data Architecture – Common Service Data Model

Application Service data is stored in the [cmdb_ci_service_auto] table till population method is selected.

Once mapping approach is done, the data may be viewed on one of these tables:

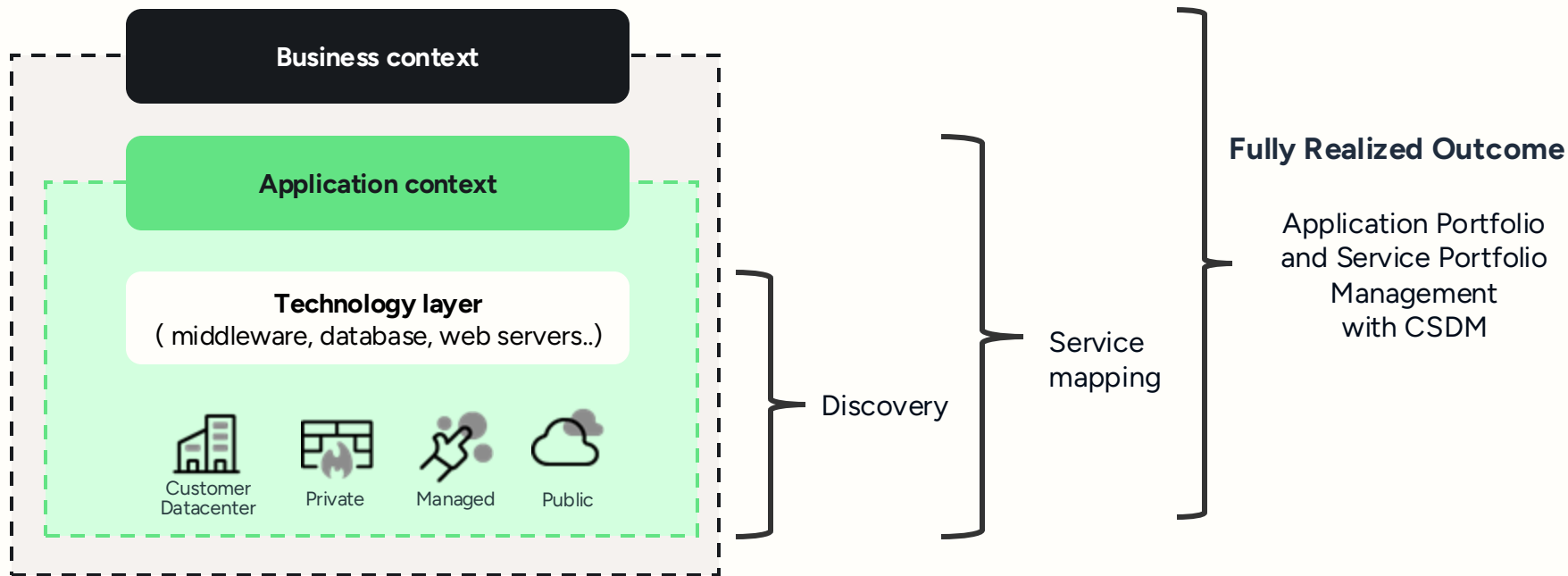
- For Manual & Service Mapping: cmdb_ci_service_discovered
- Query Based: cmdb_ci_query_based_service
- Tag Based: cmdb_ci_service_by_tags

"Service Classification" = Application Service

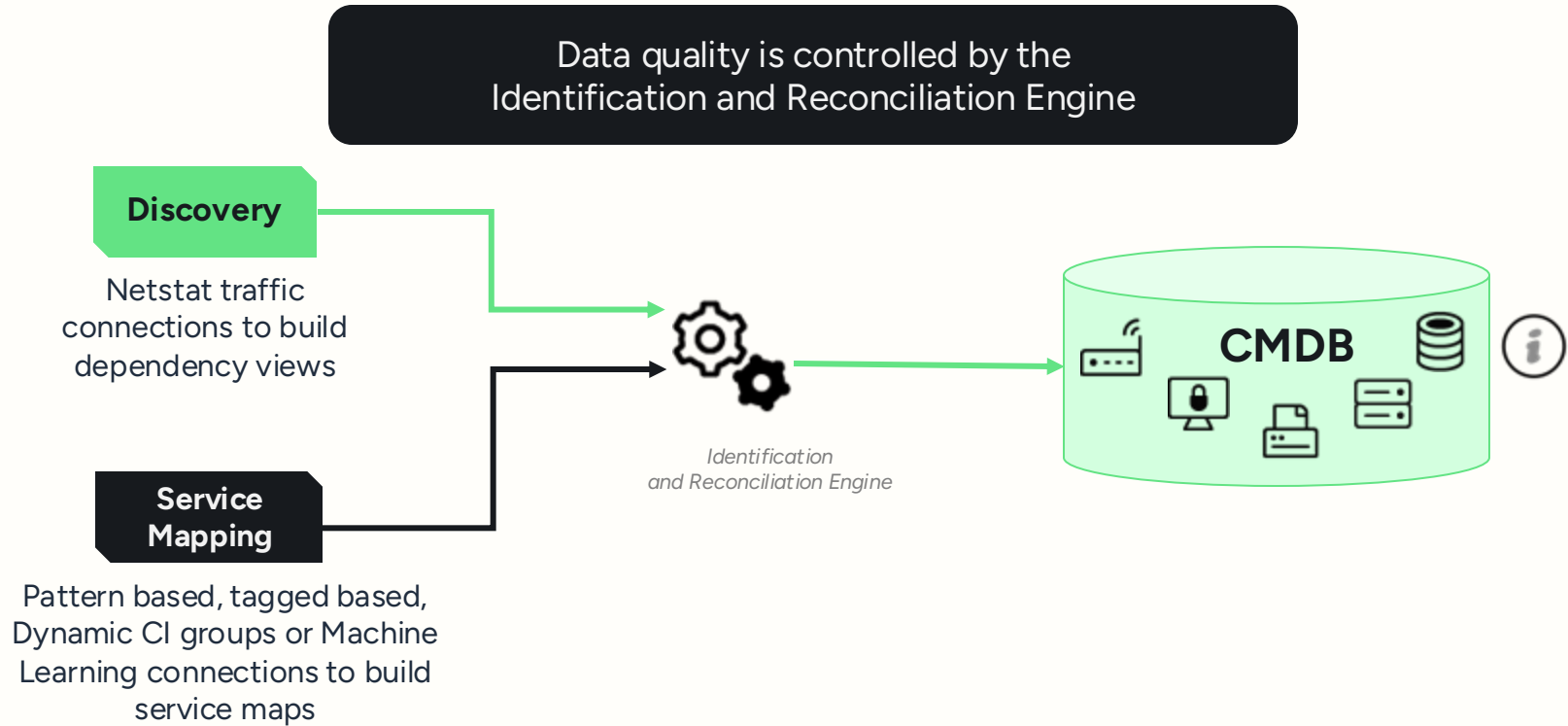


Service Context Awareness to Infrastructure

CSDM – Industry recommended data model



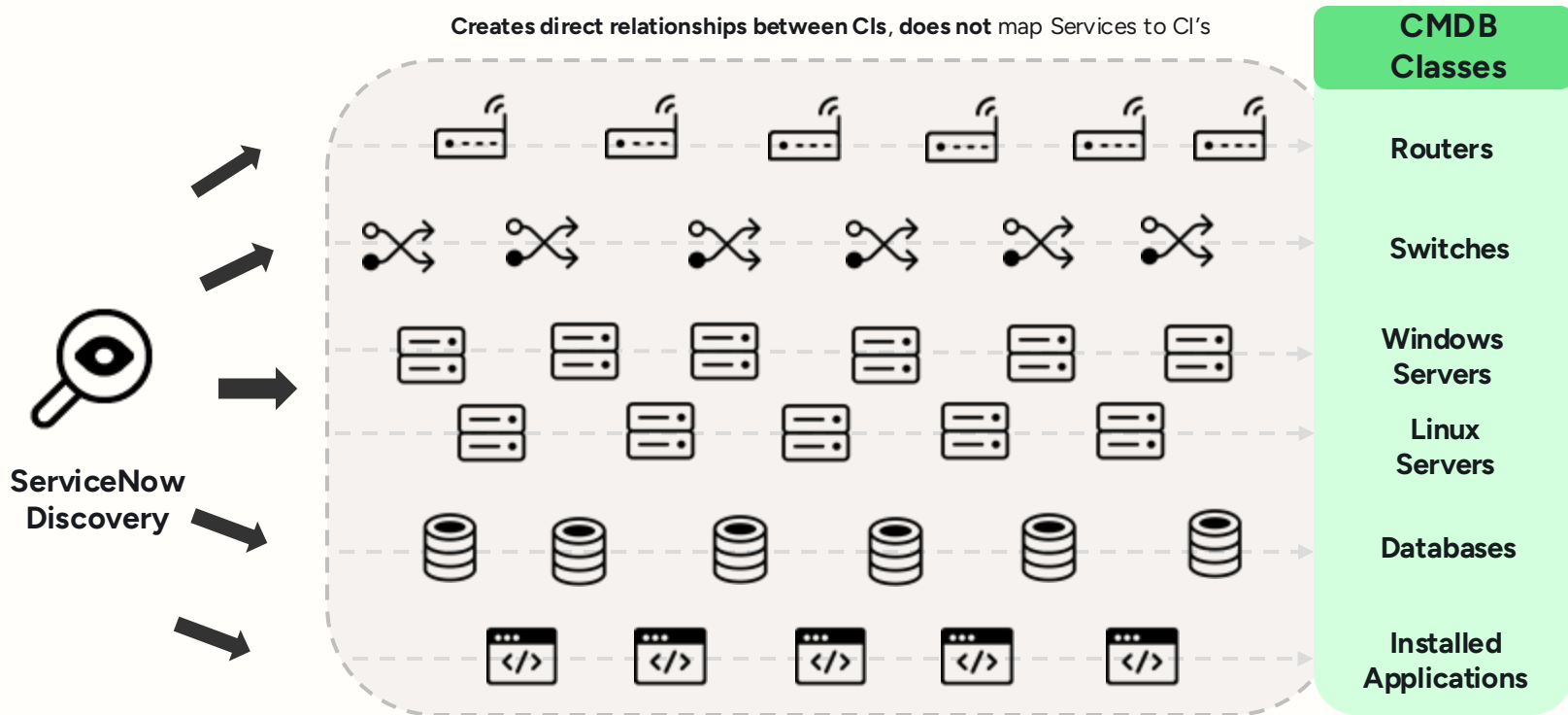
Architecture: Population of CMDB



Discovery | Agentless Data Collection

Horizontal Discovery

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



Top-Down Mapping

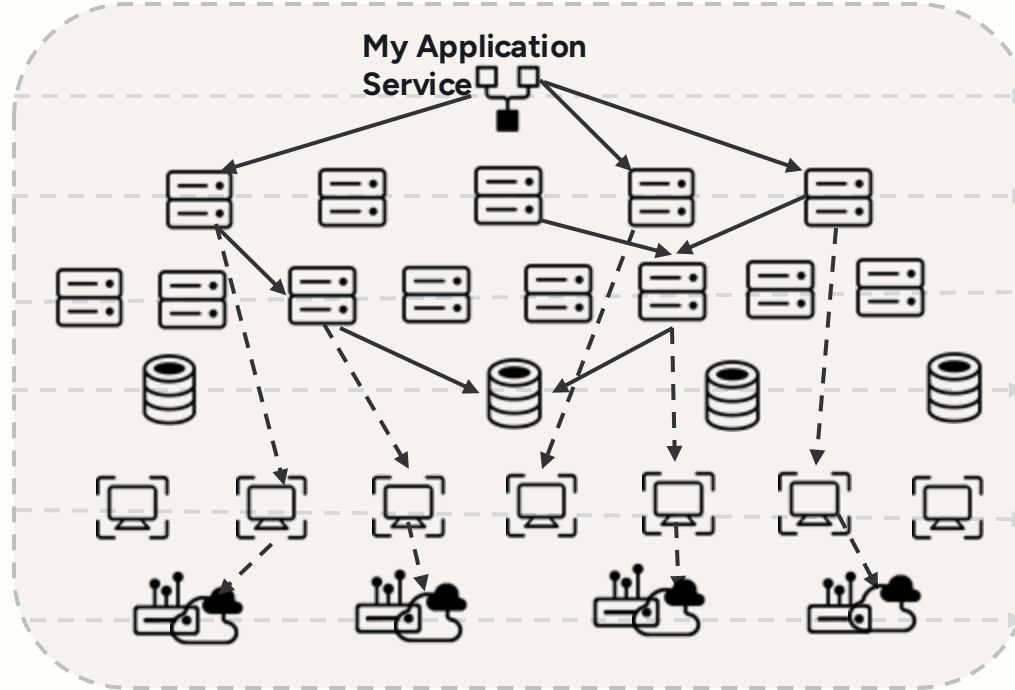
Mapping of Application Services to the underpinning devices.

Service Mapping

Tags

Pattern/
Connection
Suggestions

Top Down



**CMDB
Classes**

Load
Balancer

Web
Servers

App
Servers

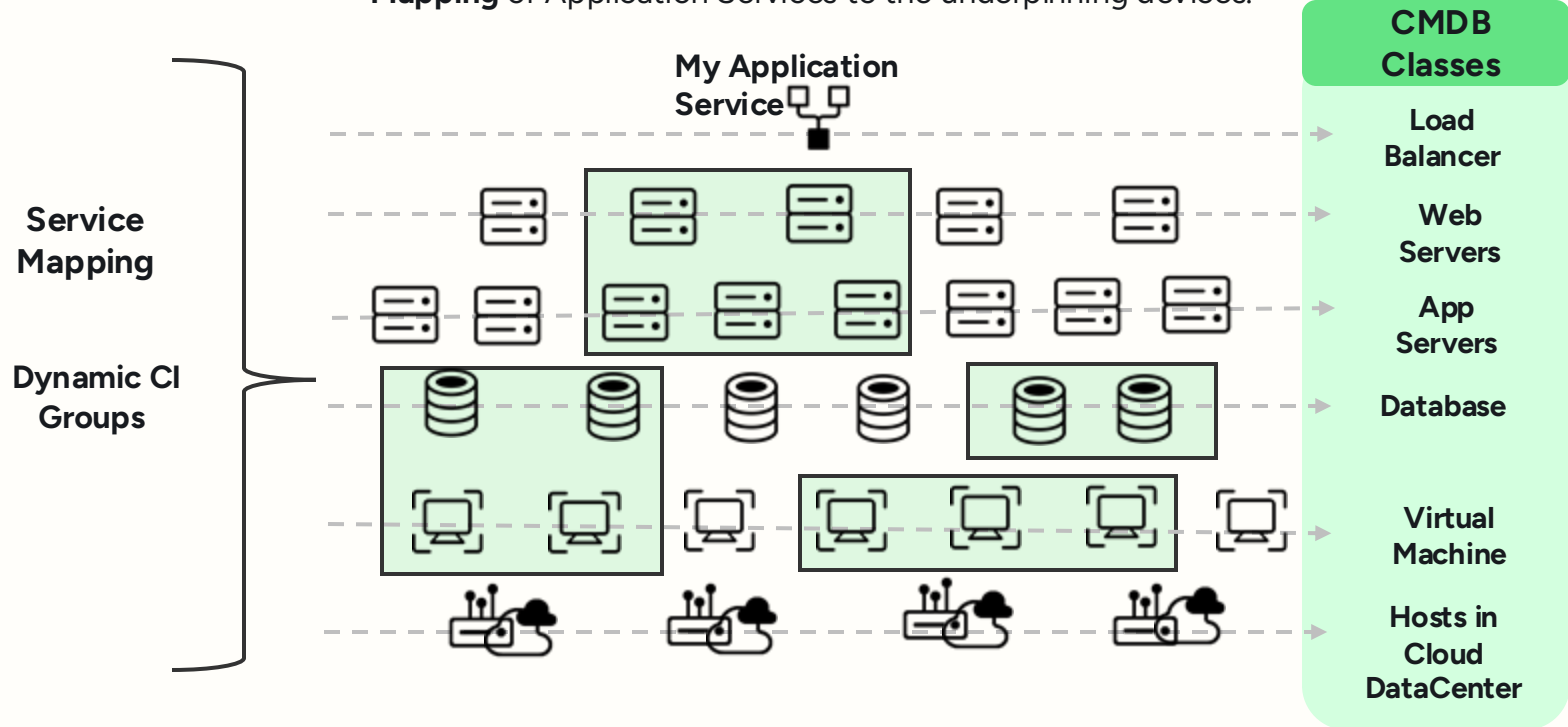
Database

Virtual
Machine

Hosts in
Cloud
DataCenter

Dynamic CI Mapping

Mapping of Application Services to the underpinning devices.





Mapping Approaches and Related Processes



AUDIENCE POLL

What are your
main IT focus
areas today?

A Business applications

B Infrastructure

C IT Services

D Whatever management says...

Service Mapping Approaches

Top-Down uses both Connection Suggestions and Pattern Based – they can be used individually or together

Top-Down

Dynamic CI Group	Manual	Tag Based	Automated Service Suggestions	Pattern Based & Traffic Based
Best fit for small application services that are easily grouped using created list filters or CMDB queries	Best fit for small application services or mainframes that do not change much and have high availability.	Best fit for cloud native/ Containers laden and virtual machine environments	Application Fingerprinting + Process to Process Best fit for Homegrown apps	Recommended for mission critical application services for on-premise and legacy applications
• Quick Visualization • High Touch • No License Required	• Quick Visualization • High touch – Manual updates • No License Required	• Uses tag categories • Cloud and containers in maps • Map multiple app services	• Machine Learning • Time to Value • Needs training	• Precise Mapping • Able to use traffic-based discovery • More Granular • Traffic based may create redundant CIs

Approach Considerations

Service Mapping Approaches							
Type of Mapping Approach	Quick Visualization	Less Detailed Maps	Human Updates	Higher Effort for Visualization	More Detailed Maps	Automated Updates	Time to Value
Dynamic CI	★	★	★				★
Manual	★	★	★				
Tag Based	★	★	★			★	★
Automated Service Suggestions	★				★	★	★
Top Down – Pattern and Traffic Based				★	★	★	

Dynamic CI Group Mapping Considerations

Best fit for small application services that are easily grouped using created list filters or CMDB queries

- Quick Visualization
- High Touch
- No License Required

Well-suited for

- Mapping CIs to services that requires no component/topological relationship
- Mapping CIs to services belonging to technology stack or share specific attributes

Built using CMDB Groups and CMDB Query Builder

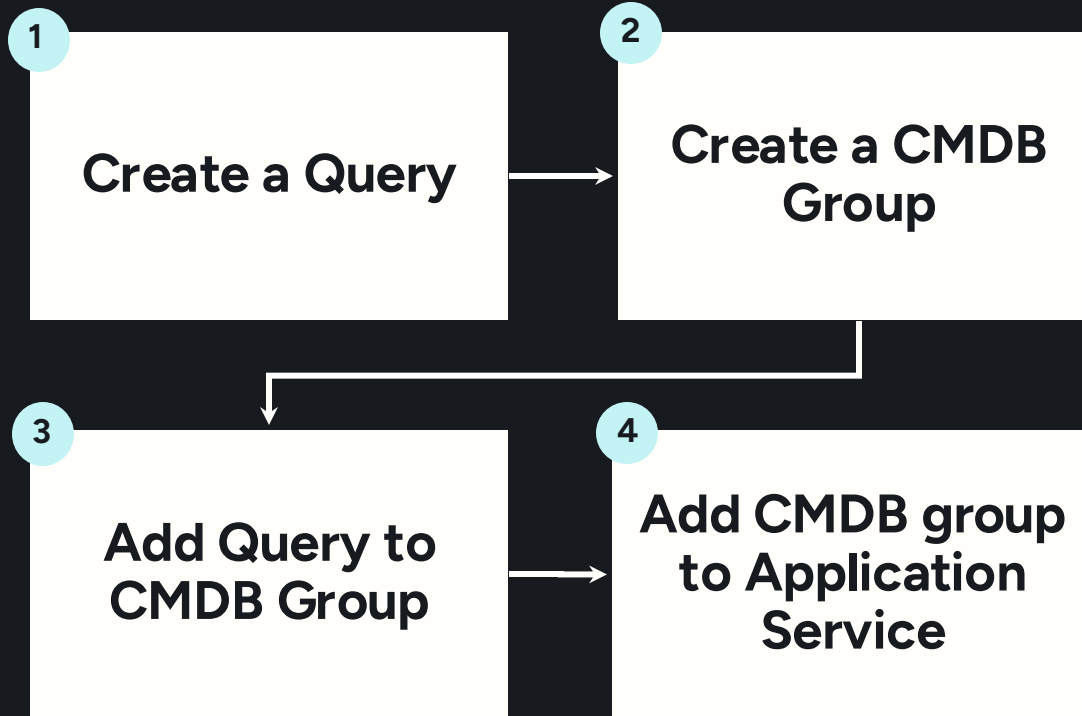
- Manually Selected CIs
- CI Encoded Query using attributes
- CMDB Query using relationships and attributes

Considerations

- Only list of matching CIs, i.e., no visual map nor impact tree
- Leverage Operational Status when using queries

Create a Dynamic CI Group Process – Saved Query

Multiple Ways
to create
Dynamic CI
Groups

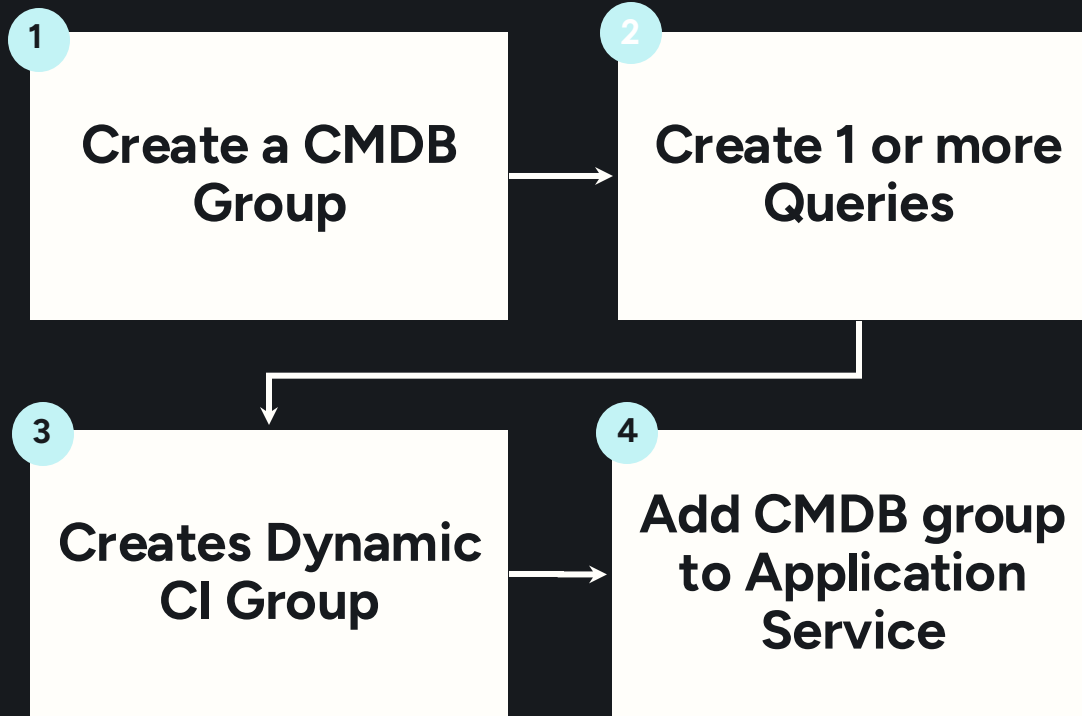


This procedure complements the generic procedure to Create an application service using the CSDM Application Wizard.



Create a Dynamic CI Group Process – Encoded Query

**Multiple Ways
to create
Dynamic CI
Groups**



This procedure complements the generic procedure to Create an application service using the CSDM Application Wizard.

Tag-Based Mapping Considerations

Best fit for cloud native/containers laden and virtual machine environments

- Uses tag categories
- Cloud and containers in maps
- Map multiple app services

Well-suited for

- Mapping CIs to services utilize discovered tags on cloud native environment

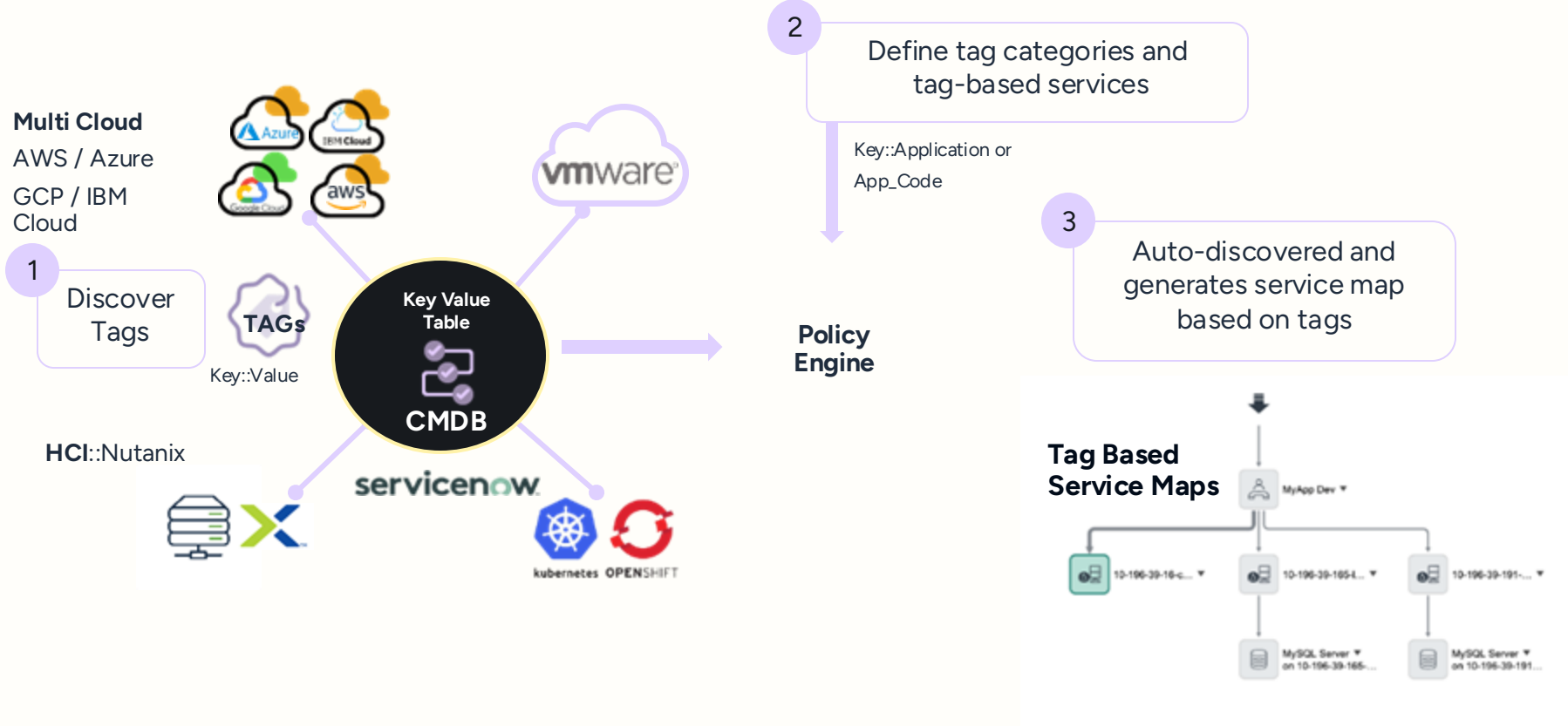
Use discovered Tags

- Tag Normalization - Create tag categories that contains tag values that represent same thing
- Create tag-based service families
- Select service candidates to map
- Create services
- Operationalize services - Populate and Monitor

Considerations

- Leverage when components are cloud native and virtualized
- Newly created Tag-Based services contain only the application service CIs as their entry point
- Requires Service Mapping plugin
- Consider using Tag Governance
- Tag-based mapping does not require configuring credentials or providing users with elevated rights.

Tag-Based Mapping Process



Automated Application Service Candidates

Process fingerprinting

+ Application fingerprinting

Best fit for
Homegrown apps

- Based on Connection rules
- Longer time to value
- Needs training
- Requires license

Well-suited for

- Any application that have a known running process
- Homegrown applications
- Any COTS application that deviates from standard ports
- Any server not showing an expected outbound connection

Built using Machine Learning and Patterns

- Traffic Based (machine learning) – IP/Port network connections
 - Via netstat, grabs all open connections
 - Connections are ML identified using ADM Probe, Running Processes, TCP Connections
- Connection suggestion rules

Considerations

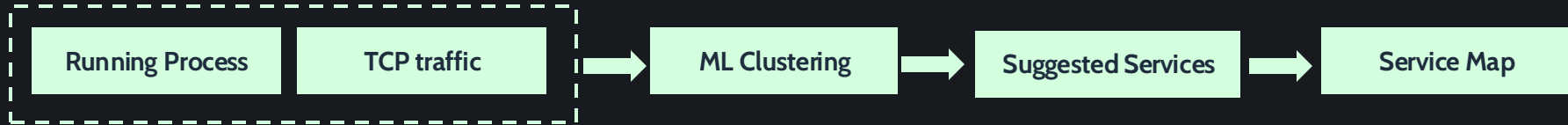
- Use instead of building a new connection section in a pattern
- Turn on the Service Mapping plus plugin

Application Service Candidates

Map services in minutes

No Entry Points Needed

ML Cluster Analysis automate the service map clusters



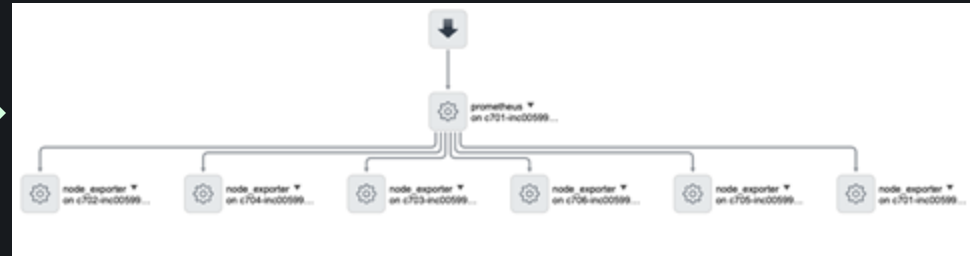
Application service candidates

Our machine learning (ML) algorithm uses discovered traffic data to suggest service candidates. It detects traffic between resources and assigns resources to candidates.

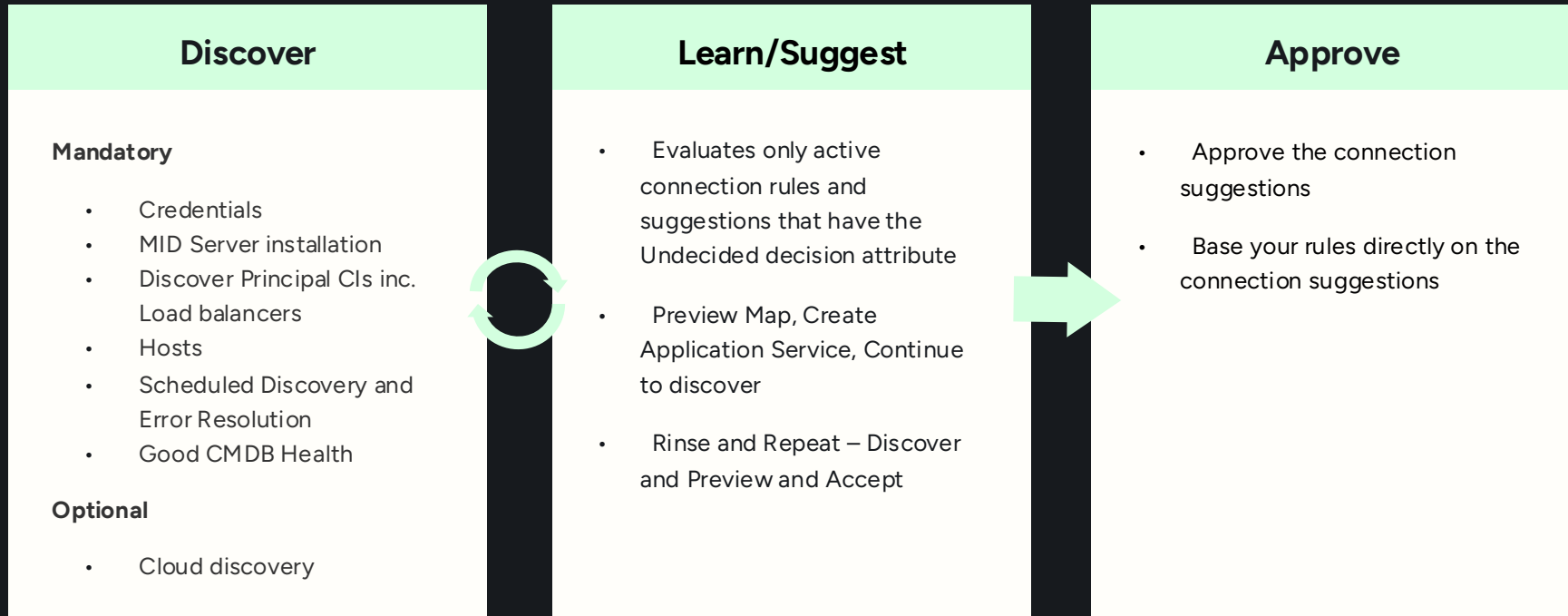
Application service candidates 18

Buttons: Review map, Preview map, Create application service

Number	AFP-based suggestions	Candidate Name Suggestion	Resource Count = 1
☐ ASC000000002	system squid	157.15 Windows Server	83
☐ ASC000000001	hass webhost dns		80
☐ ASC000000037	indexer prometheus projector		14
☐ ASC000000010	ons tralux_mgmlbtr tralux_listenscan		12
☐ ASC000000014	kube_apiserver etcd kubelet		10
☐ ASC000000031	ons tralux_listenscan tralux_mgmlbtr		8
☐ ASC000000018	indexer prometheus projector		7
☒ ASC000000034	nodeexporter prometheus	Prometheus Time Series Collection and Processing Server	7



Process for Automated Machine Learning Suggestions



Pattern-Based (Top Down) Mapping Considerations

Recommended for mission critical application services for on-premise and legacy applications

- Precise Mapping
- Able to use traffic-based discovery
- Time and Effort required
- Traffic based may create redundant CIs

Well-suited for

- Complete service membership that requires component relationship

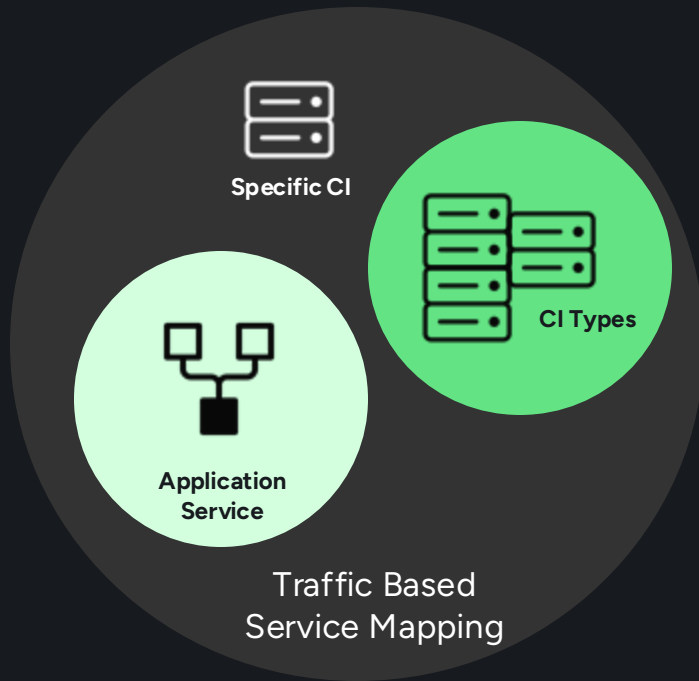
Built “automatically”

- Entry Points – URL, TCP, DB Connection string
- Pattern-based – Application discovery patterns in Service Mapping mode
 - Identification
 - Extension
 - Connections

Traffic-Based Discovery with Pattern-Based Mapping

You can enable traffic-based discovery at different levels, from the most global to the most specific

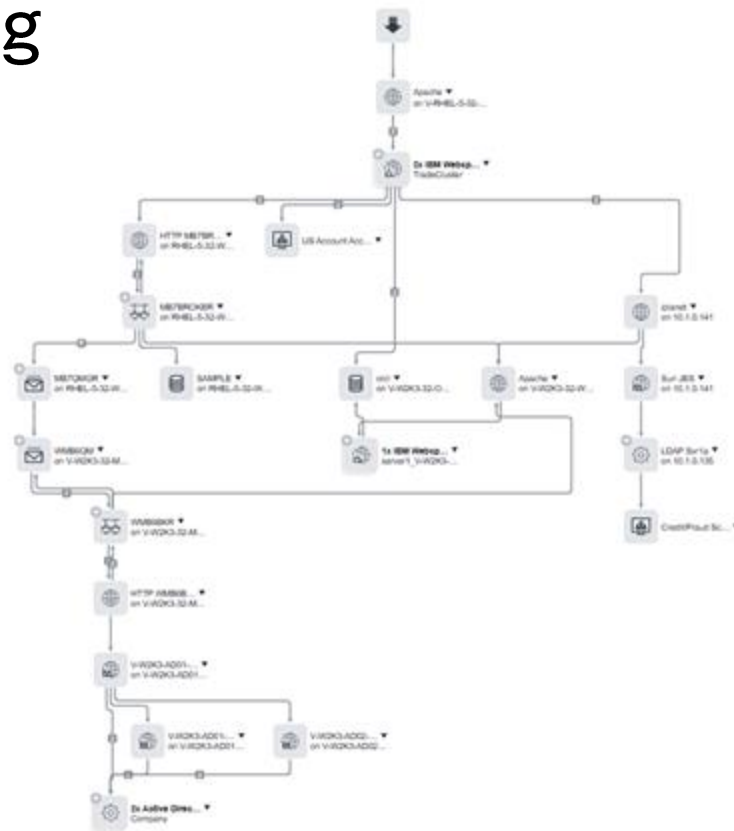
- Service Mapping can discover and map configuration items (CIs) following their traffic-based connections. This method is referred to as traffic-based mapping and it complements the pattern-based mapping
- Casts a finer net, allowing Service Mapping to find even those CIs that it failed to discover using patterns
- Best Practice: Use traffic-based discovery at the initial stages of discovering an application service and disable it once you have completed discovery and fine-tuned the application service



Top-Down Service Mapping

Many considerations

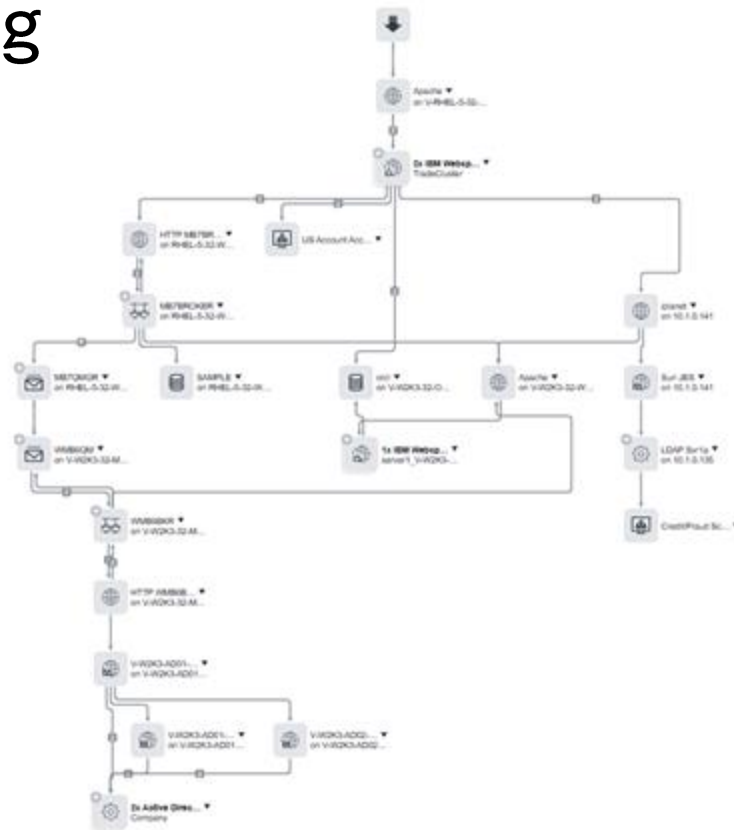
- Perhaps use one of other methods first for quick win and POV (ITSM and ITOM Health)
- Requires credentials and sudo privileges for accessing configuration data/files
- Requires operational Horizontal Discovery
- Requires IP Ranges
- Pattern library for COTS and conventional industry components (Store updates)
- Bulk map with candidates identified from Load Balancer services ports 80 and 443



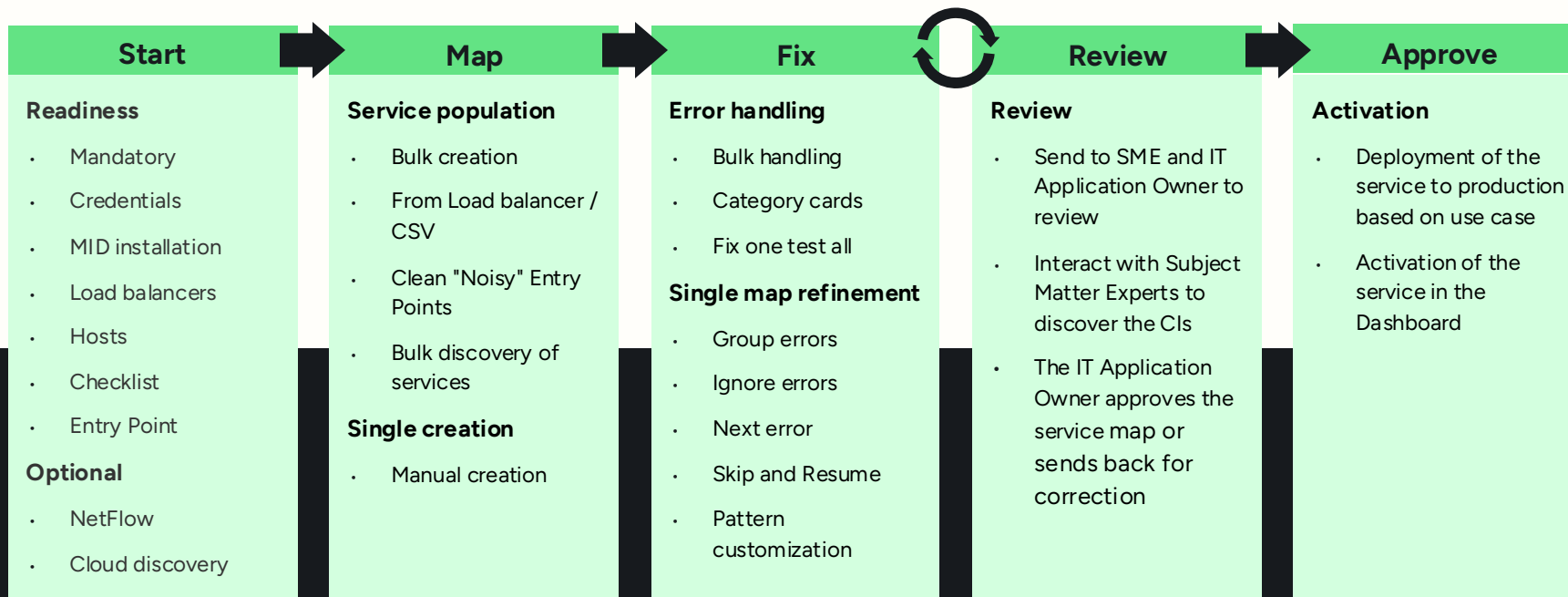
Top-Down Service Mapping

Many considerations

- May require pattern updates or new ones and end points for custom applications
- Leverage Pattern Creation with Application Finger Printing (AFP) for generic apps
 - Immediate stub for horizontal discovery
 - Add connections sections for service mapping
- Enable ML Based to Add/Remove connection suggestions instead of connecting every traffic-based seen by netstat



Process Steps for Top-Down Pattern-Based Mapping



- Select Application Service
- Bulk mapping
- Bulk error handling

Recommendation:
Use OCM to communicate to the IT Application and Product Owners to work with and provide the level of effort needed for review and approvals



Service Mapping Practical Applications



AUDIENCE POLL

Where are you at in
your CSDM journey?

A Crawling

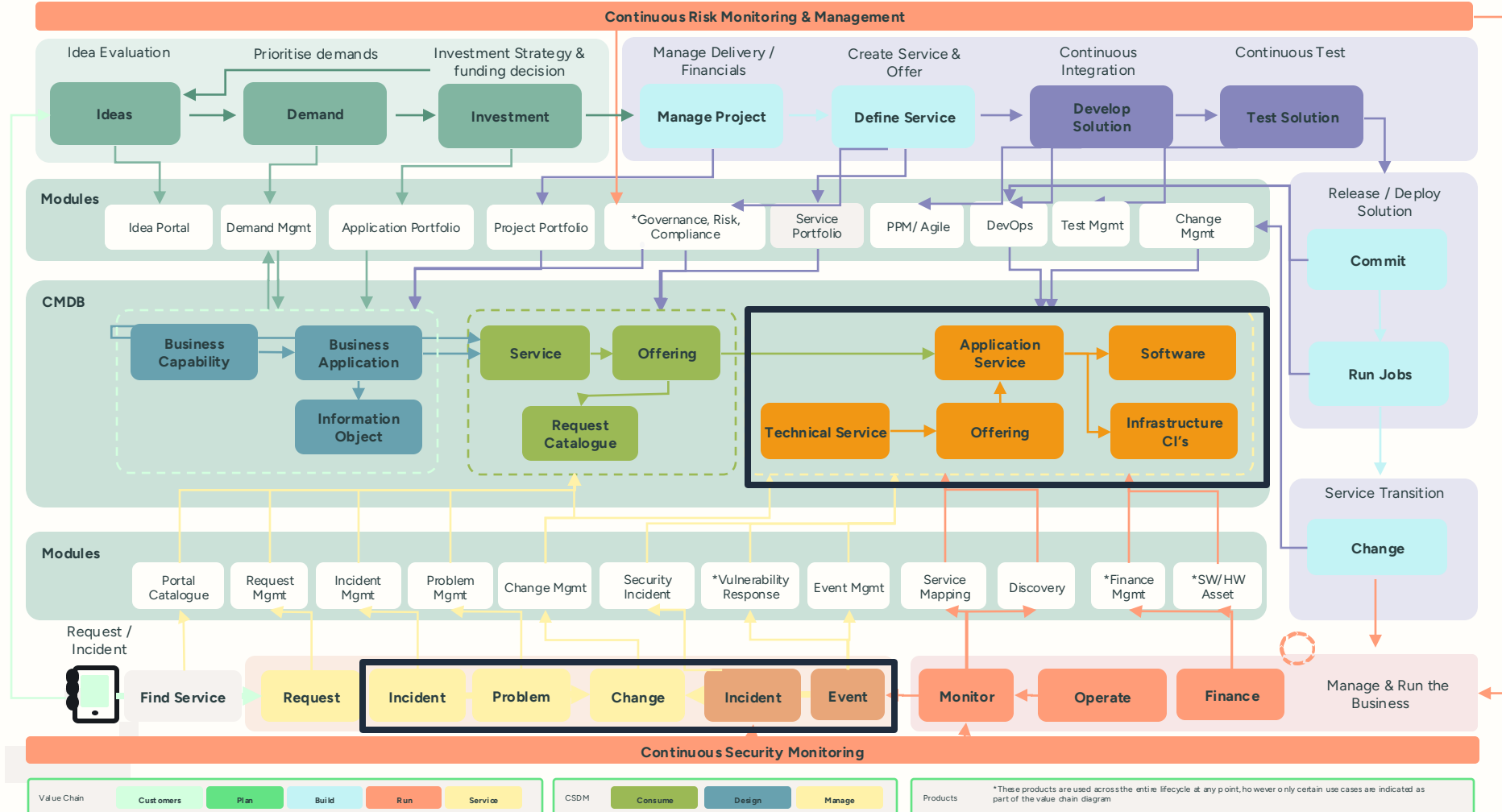
B Walking

C Running

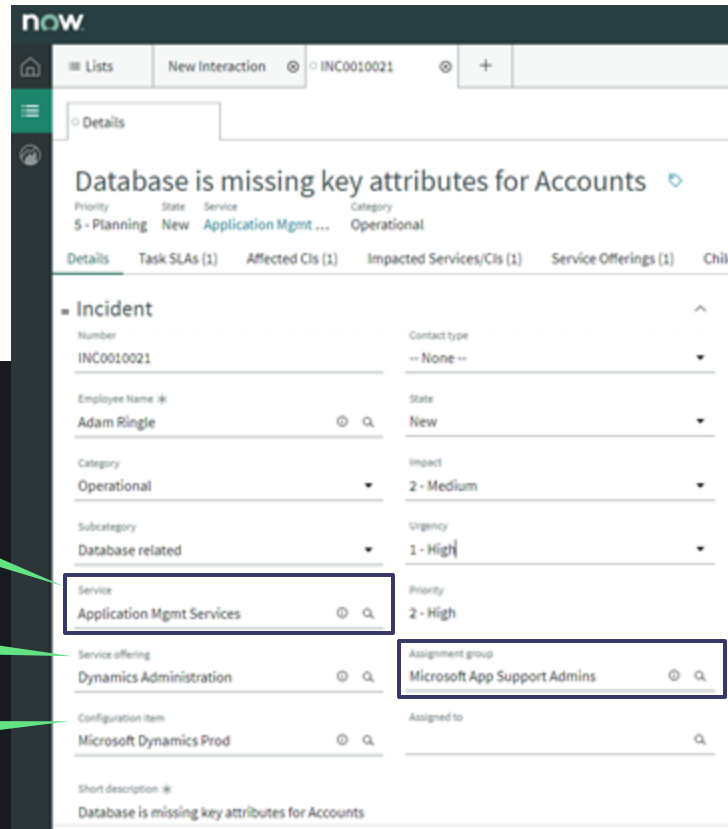
D Flying

E Stumbling

CSDM use cases across the value chain



Incident Record Population



now

Lists New Interaction INC0010021 +

Details

Database is missing key attributes for Accounts

Priority: 5 - Planning State: New Service: Application Mgmt ... Category: Operational

Details Task SLAs (1) Affected CIs (1) Impacted Services/CIs (1) Service Offerings (1) Child

Incident

Number	INC0010021	Contact type	-- None --
Employee Name	Adam Ringle	State	New
Category	Operational	Impact	2 - Medium
Subcategory	Database related	Urgency	1 - High
Service	Application Mgmt Services	Priority	2 - High
Service offering	Dynamics Administration	Assignment group	Microsoft App Support Admins
Configuration item	Microsoft Dynamics Prod	Assigned to	

Short description: Database is missing key attributes for Accounts

The Parent Service of
the Service Offering

The Offering to
"administrate" the
Application Service

Often the Application
Service is the CI

Change Record Population

Change Request
New record

Navigation: New | Assess | Authorize | Scheduled | Implement | Review | Closed | Canceled

Number: CHG0030002

Requested by: Allyson Gillispie

Category: Applications Software

Service: Application Mgmt Services

Service offering: Dynamics Administration

Configuration item: Microsoft Dynamics Prod

Priority: 2 - High

Severity: Moderate

Short description: 3 - Low

Short description: Replace missing field attributes

Some key attributes is missing on the CRM Field. Replace the location and phone number fields.

Model: Normal

Type: Normal

State: Assess

Conflict status: Not Run

Conflict last run:

* Assignment group: Microsoft App Support Admins

Assigned to: Mike Smith

Impacted Services/CI's (3)

Configuration Item
☐ Microsoft Dynamics Prod
☐ Sales and Marketing Services
☐ Application Mgmt Services

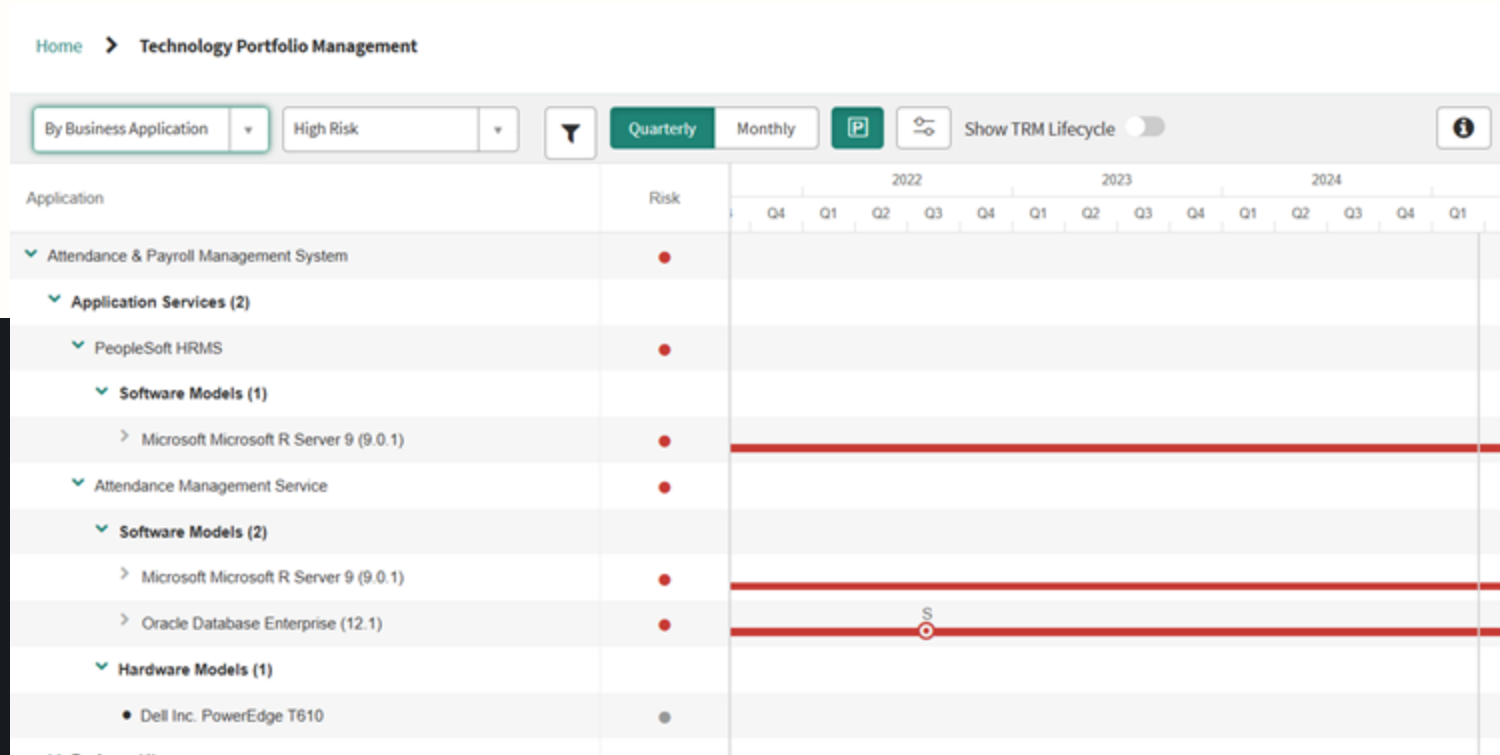
Often the Application Service that is being changed/updated

All the "Services" impacted by the selected CI

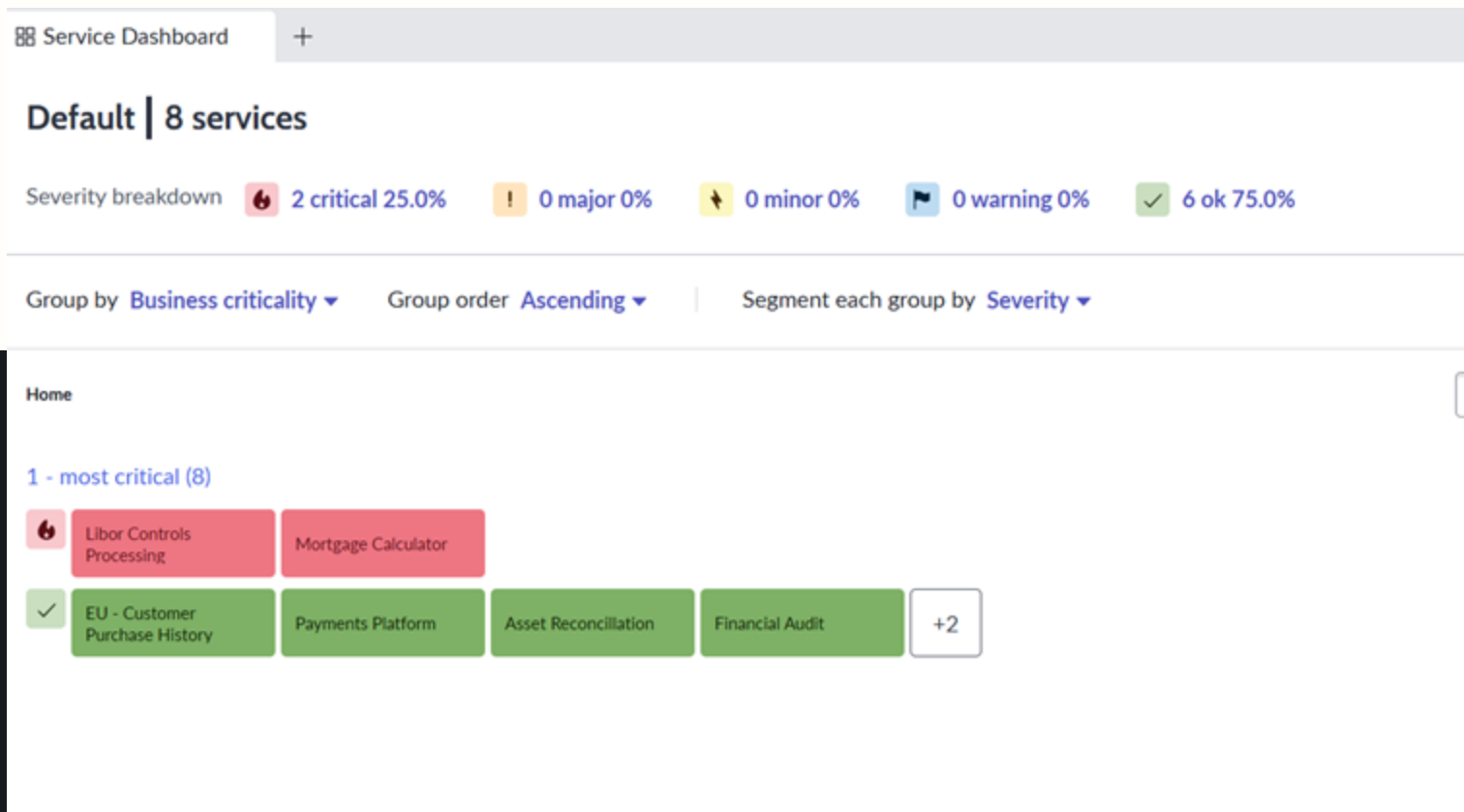
Endaro

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Technology Lifecycle Management



Event Management



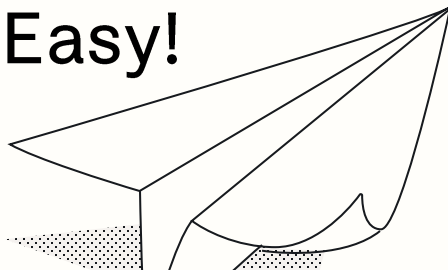
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Summary



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!

