

# Enterprise Asset Management (EAM)

SERVICENOW – (EAM) THE KNOW HOW  
(VISUAL JOURNEY)

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# Management Information Systems (MIS)

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# The DIKW Pyramid



# What is Data?

A Set of Records

“A discrete facts of observation, unorganised with no specific context, meaning, value or interpretation to us”

# What is Information?

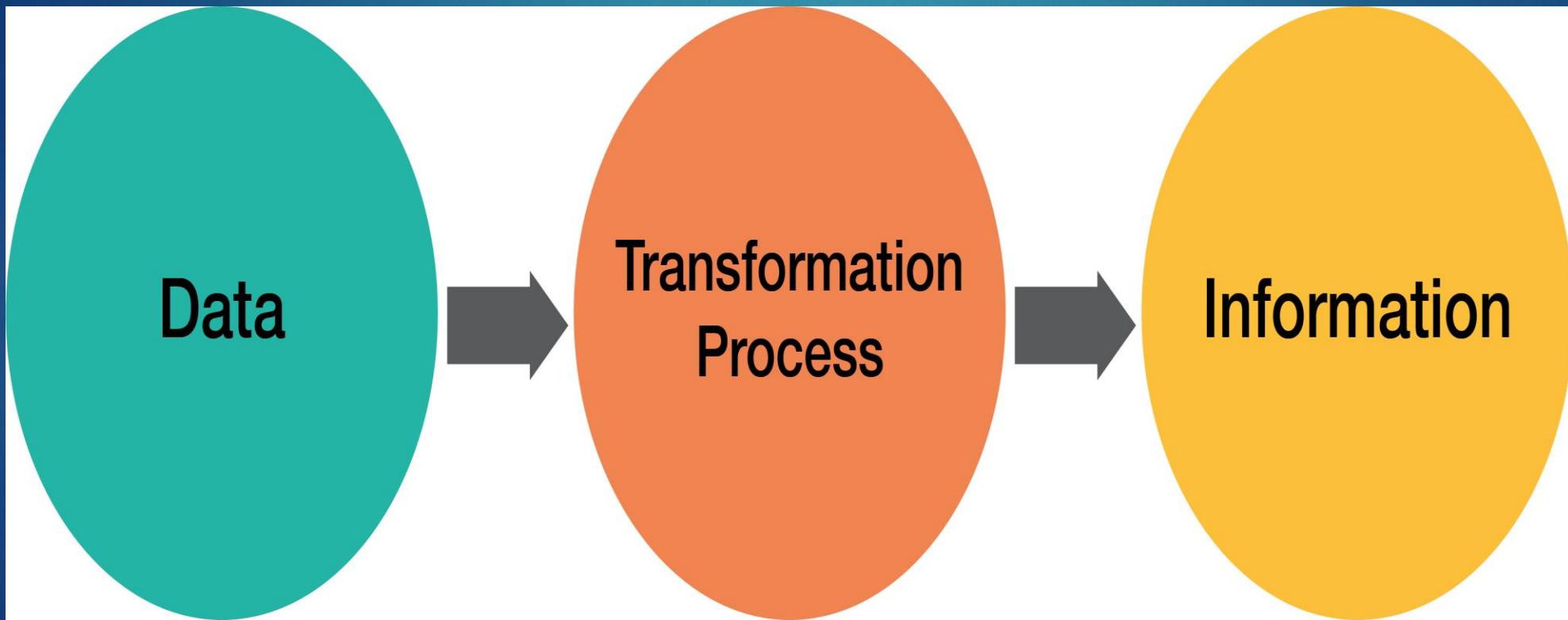
5

## Formatted Data

“Data processed for context and understanding, meaningful, valuable, useful and relevant”

# What is Data Transformation Process?

(Classification, Rearranging, Aggregating, Calculating, Selecting)



# Data Classification (Tagging/Labeling)

- ▶ The process of organising data by relevant categories.
- ▶ Tagging the data makes it easier to search, locate and retrieve.
- ▶ Important when it comes to data Governance, Risk management, compliance and data security.
- ▶ Prevents data duplication.
- ▶ Data types → (Confidential, Internal, and Public data).
- ▶ Classification types → (Content and Context and User based).
- ▶ Data Sensitivity → (High, Medium and Low).

# What is Data Aggregation?

Numerical or non-numerical information that is:

- ▶ Collected from multiple sources and/or on multiple measures, variables, or individuals.
- ▶ Compiled into data summaries or summary reports, typically for the purposes of public reporting or statistical analysis.

# What is Knowledge?

Explicit, Tacit and Embedded knowledge

Explicit (Codified)

Easy to identify, store, retrieve and can be easily transferred.

Tacit (Non-Codified)

It resides in the mind of a person. It is not formalised, as it is rooted in context, experience, practice and values of a person which makes it hard to communicate. It can be transferred if it is somehow externalised, for example, through socialisation, mentoring or teaching.

Embedded Knowledge (Cultural/Social)

This kind of knowledge is integrated in processes, products, culture, routines or structures and is more related to an organisation than the knowledge of a person.

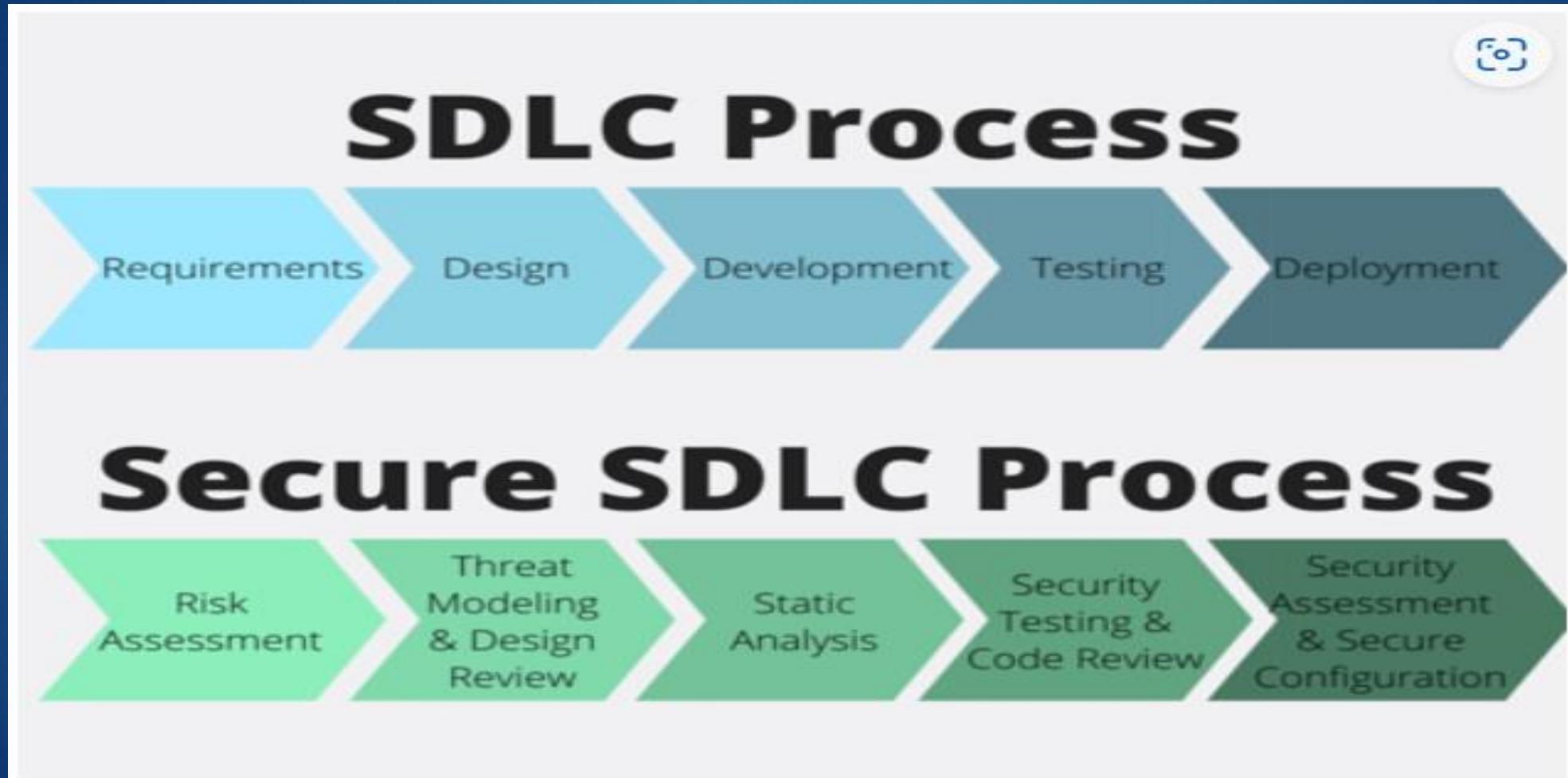
# What is Wisdom?

10

“The ability to act and make decisions (good judgment)  
based on knowledge that has been gained. It is the  
application of knowledge to a specific situation”

## 6 Phases of the Software Development Life Cycle

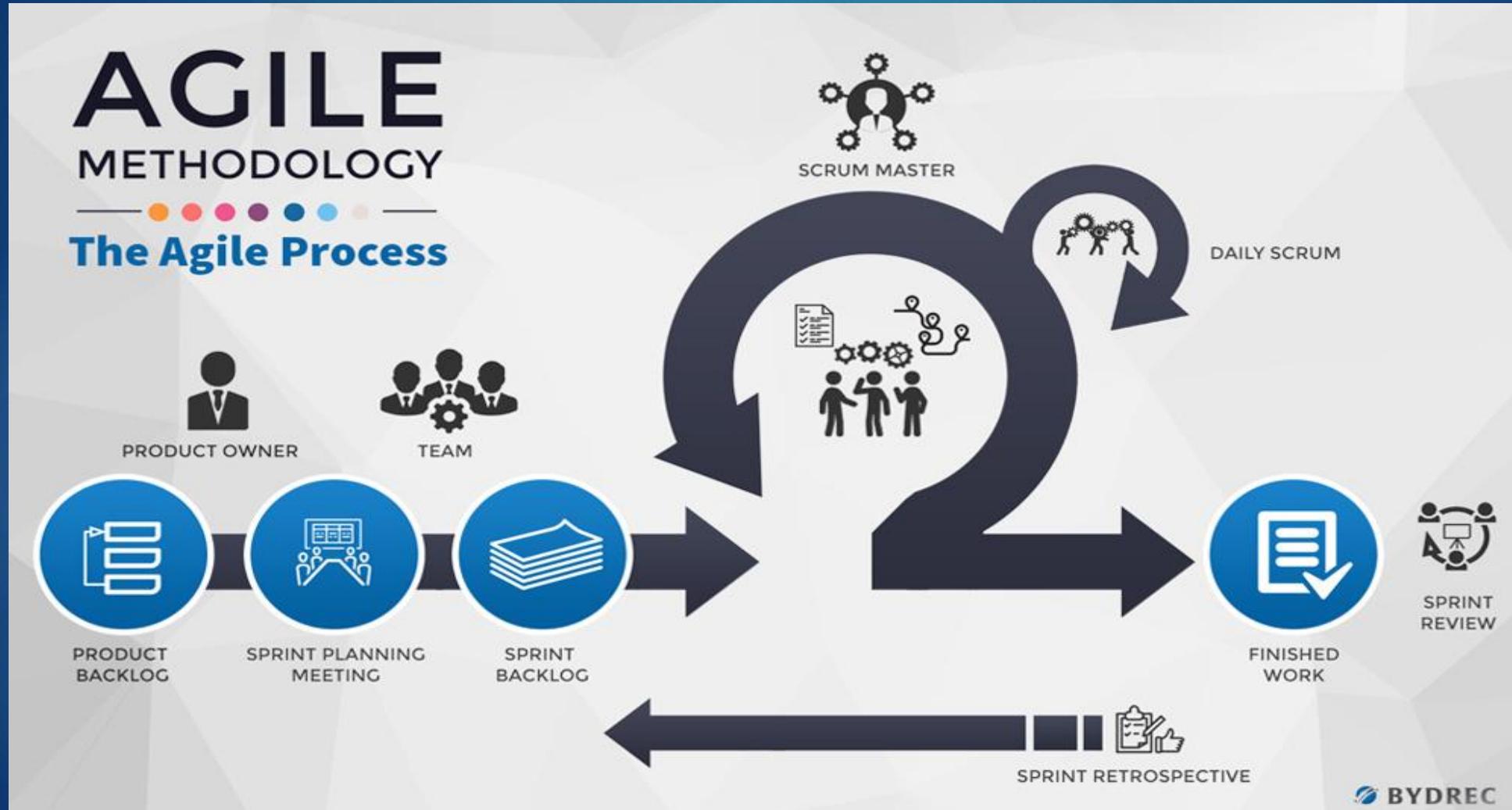




# Agile Methodology / The Agile Process

(an SDLC Model)

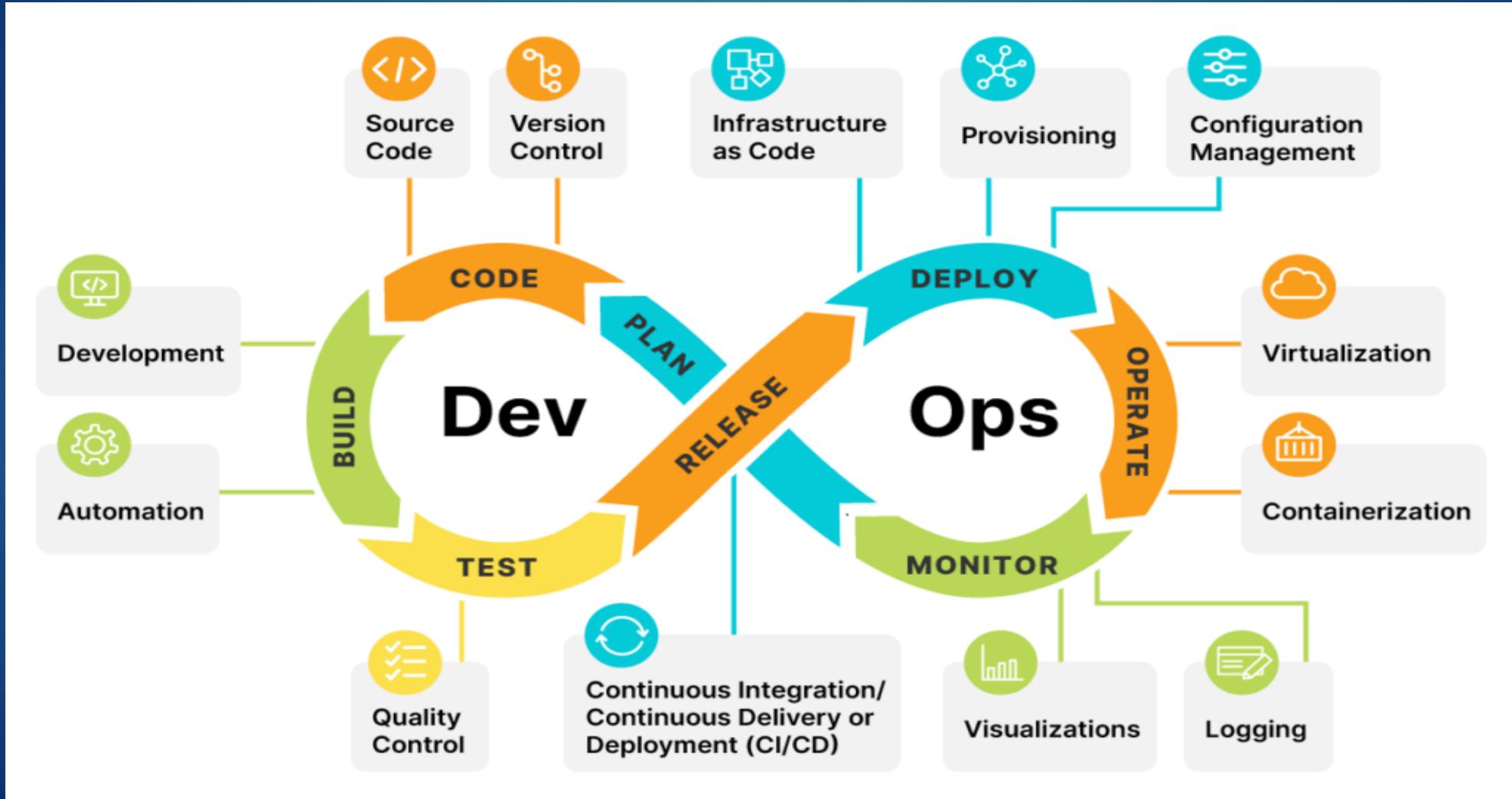
13



# DevOps

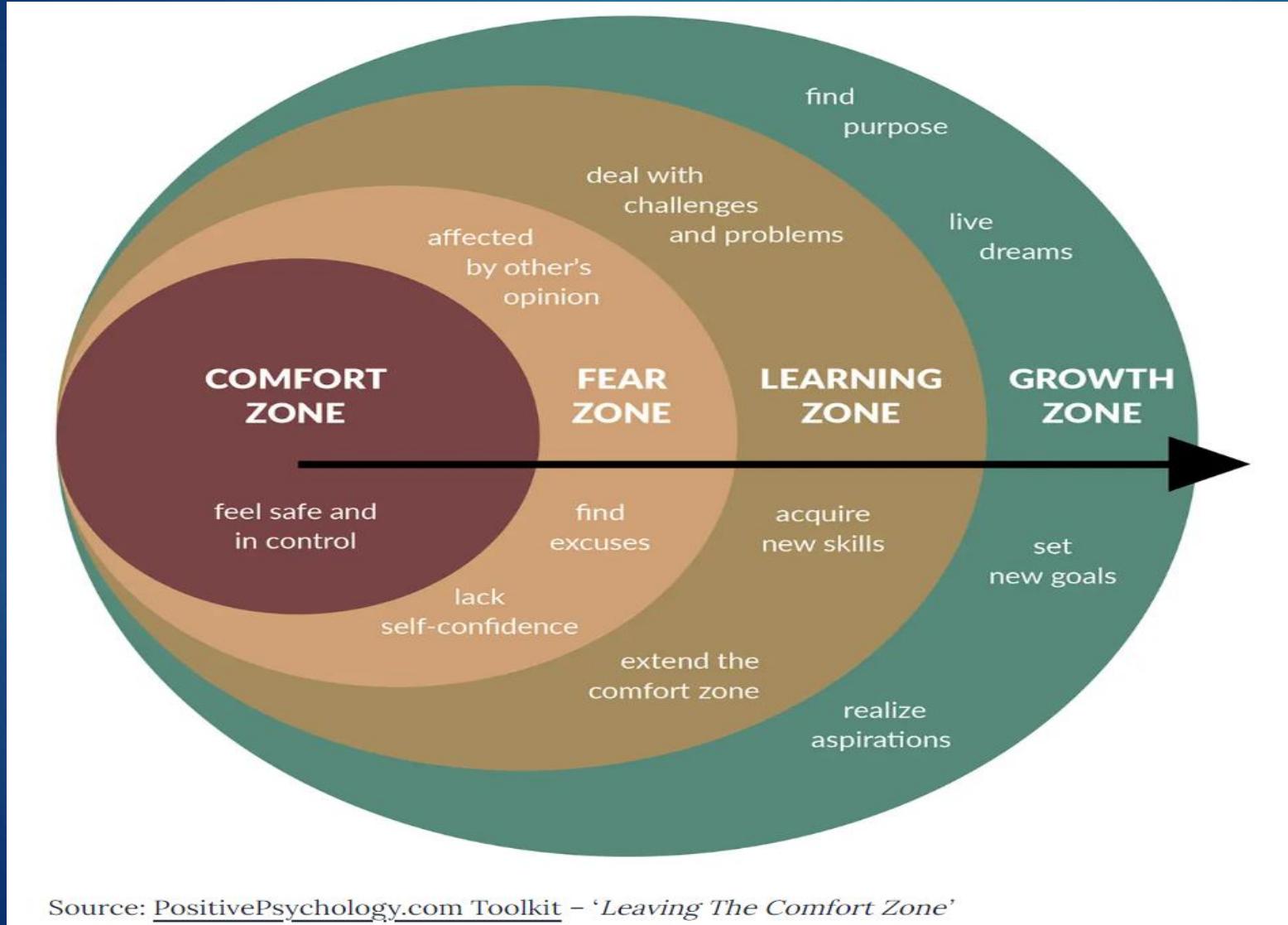
14

Bridge the gap between development (Dev) and operations (Ops) teams.



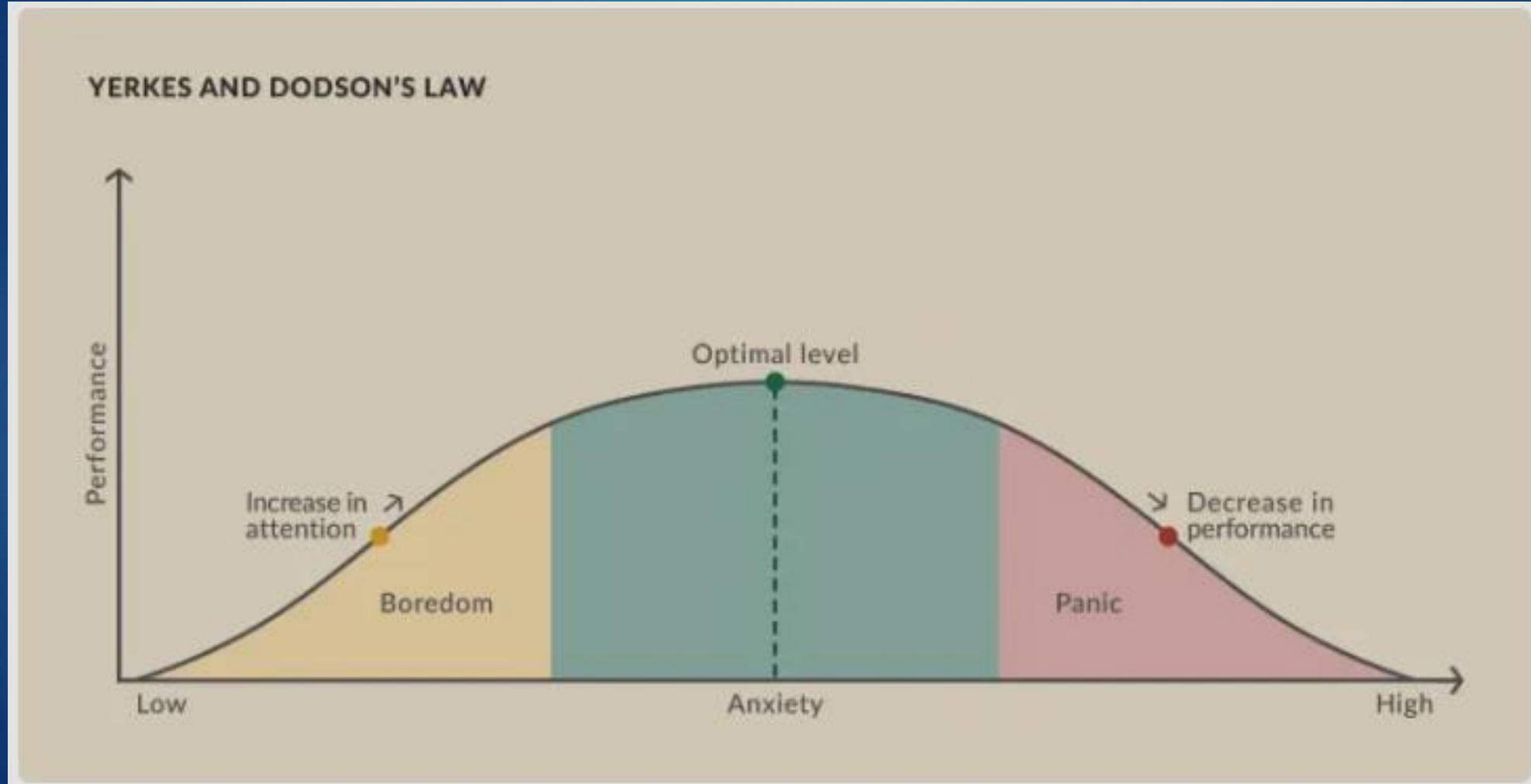
# Leaving The Comfort Zone - Stretching Towards Greatness

15



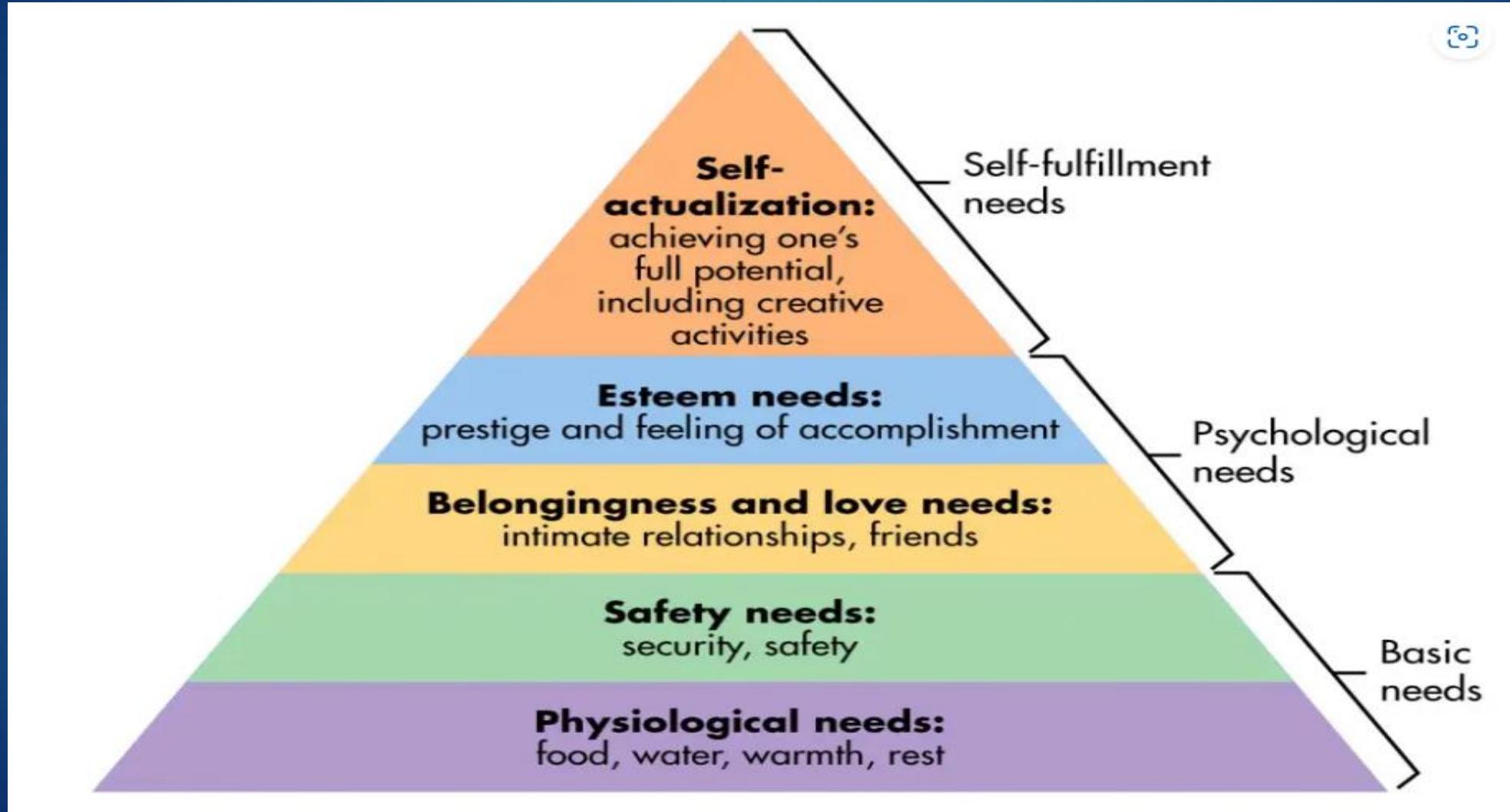
# The Path to Success

16



# Maslow's – Hierarchy of Needs

17



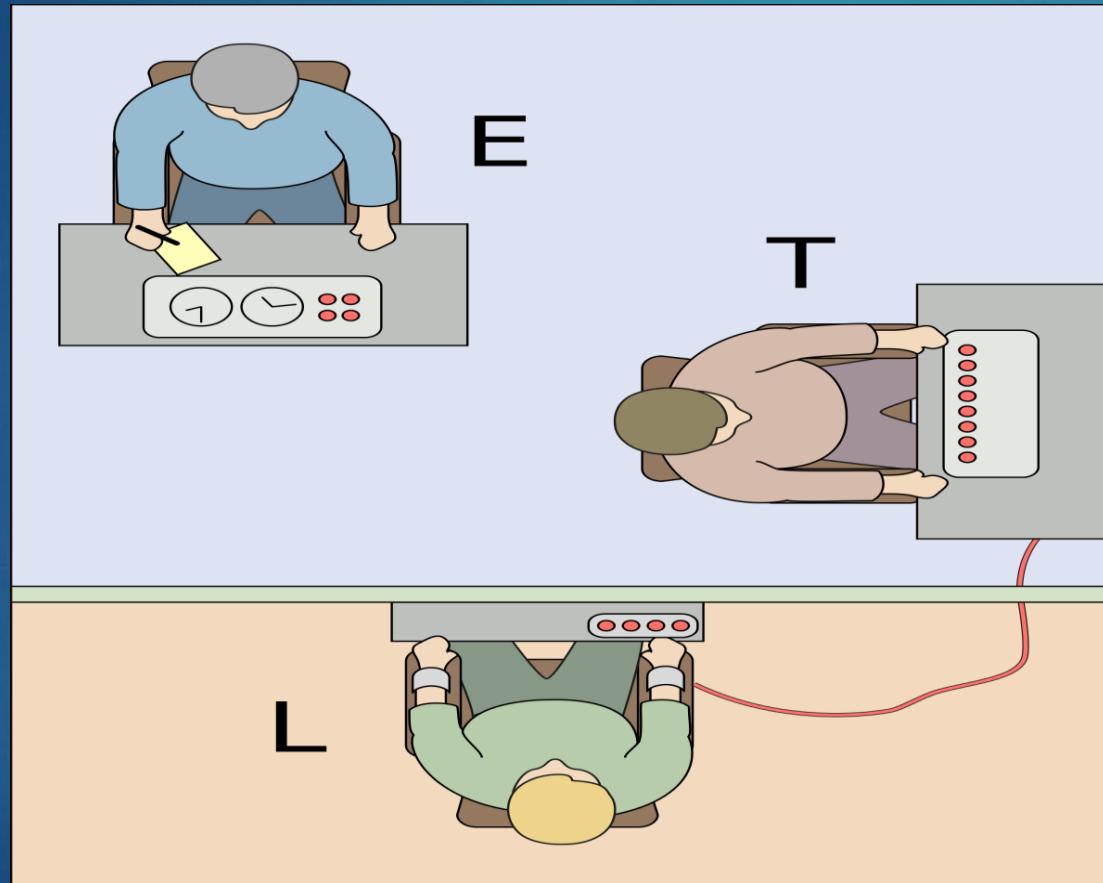
## Johari Window Model



# Milgram Experiment - The Problem of Obedience

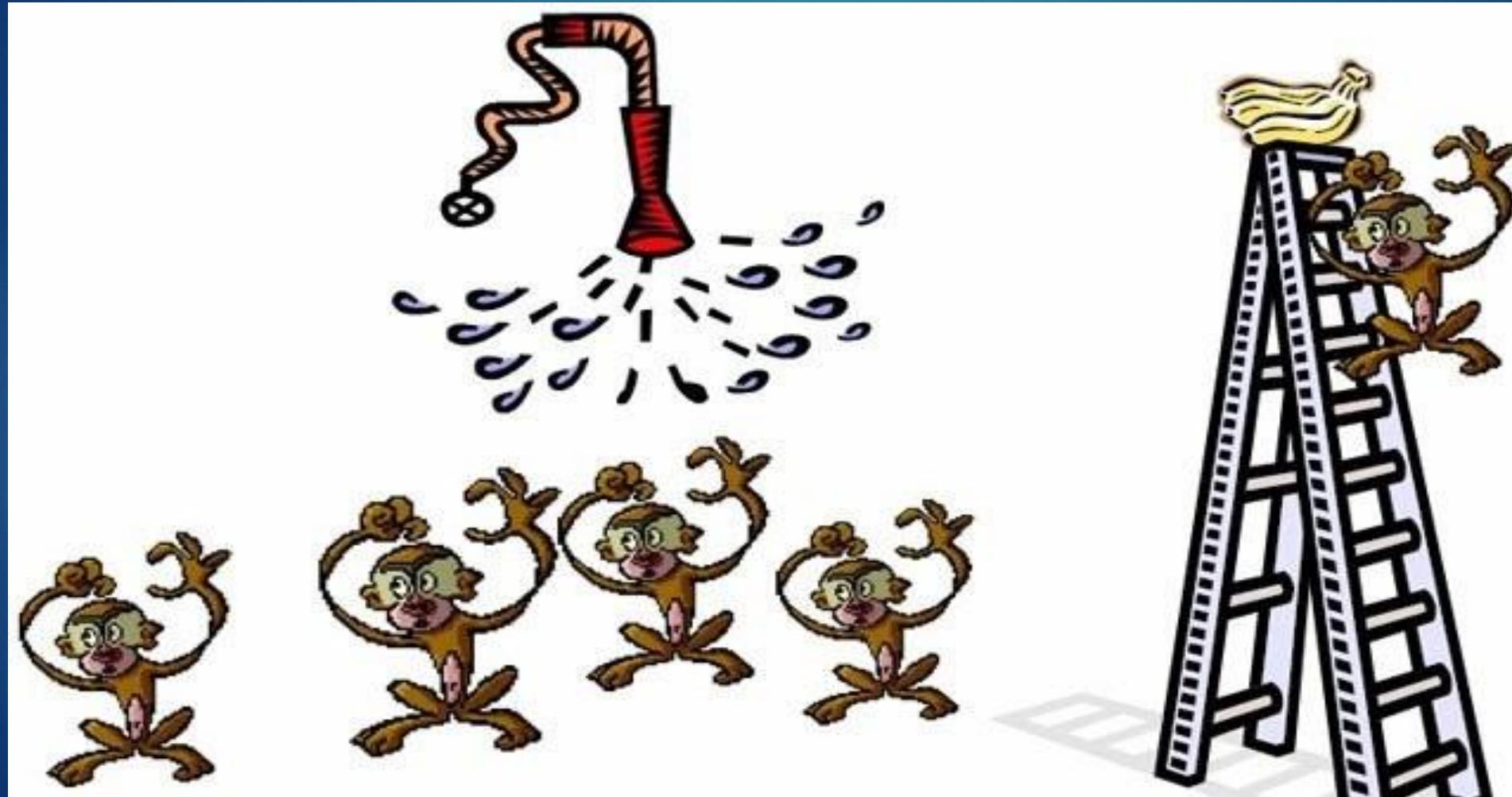
Ethical Decision Making – I am Just Following Orders!

19



# Corporate Culture

## The 5 Monkeys & the Bananas Experiment



# The Shock Doctrine

(Naomi Klein)

21

Shock and Awe & the Aftermath

(The Rapid Dominance)

(Milton Friedman)

“If your competitor is drowning, get a hose

and put it in their mouth”

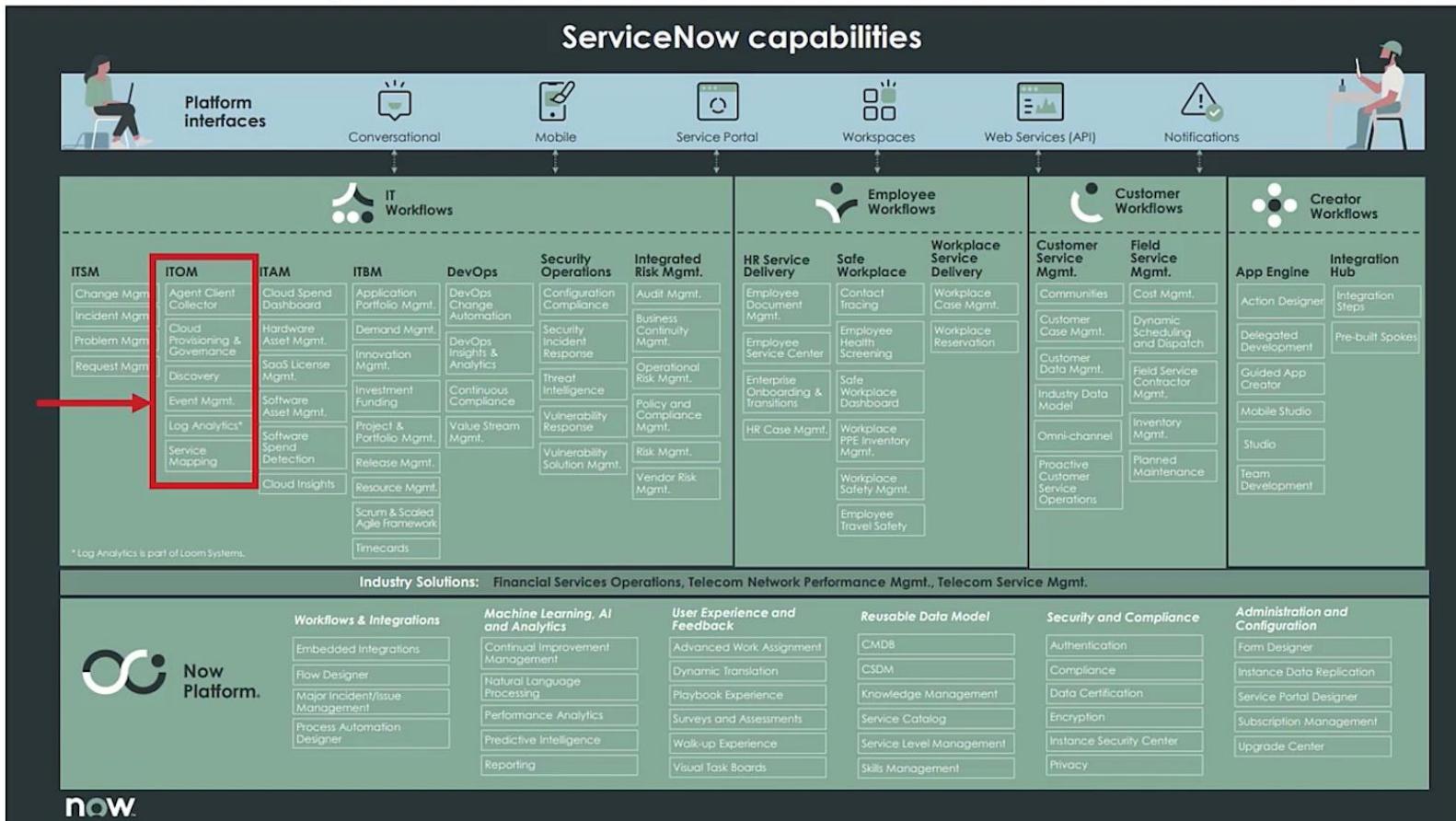
LBS Professor, EMBA Program

# ServiceNow™ & NowPlatform™



# ServiceNow (SN) Capabilities

## ServiceNow Capabilities



# ServiceNow Knowledge Sources

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## Sources of information and insight

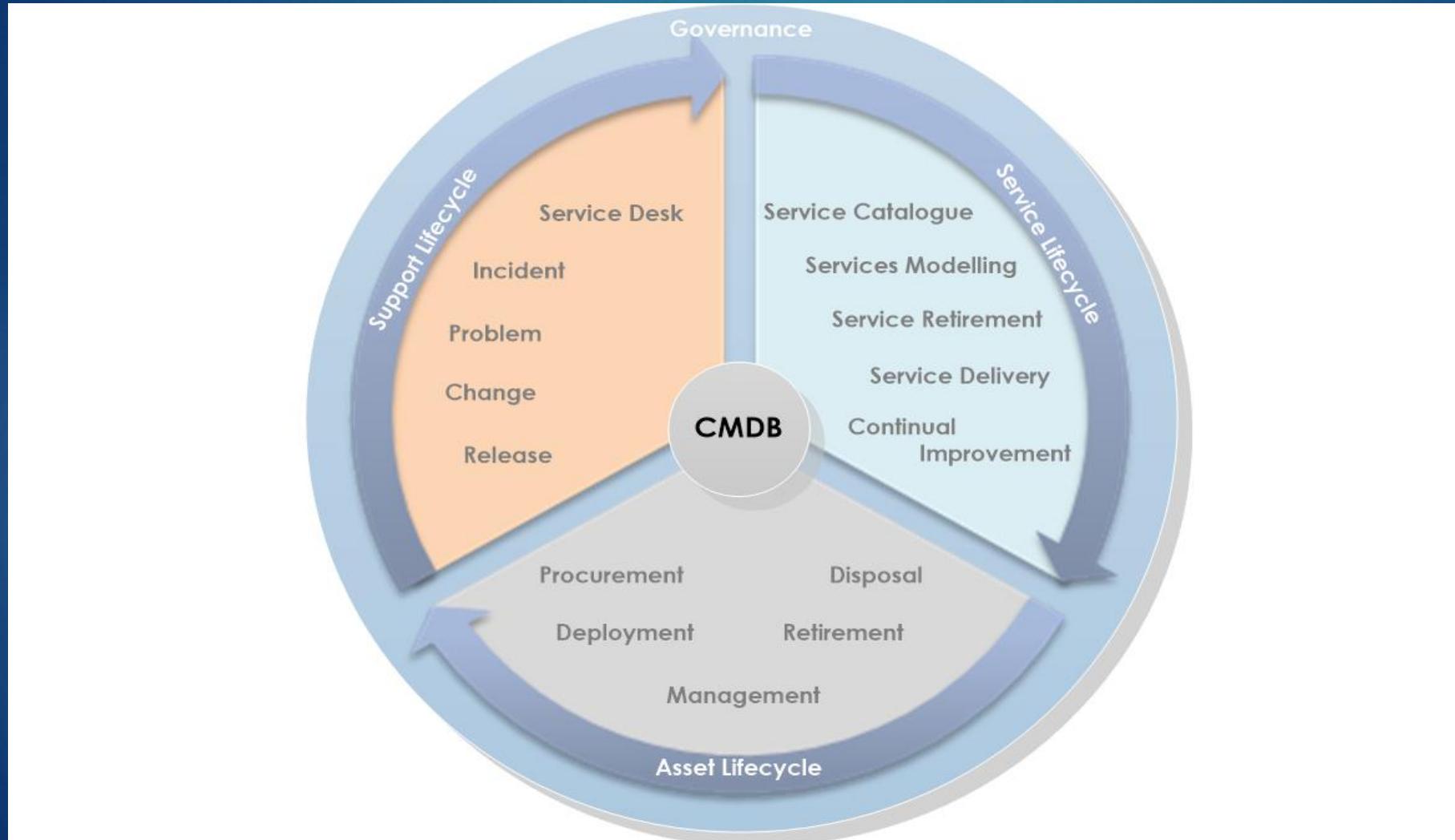
The collage illustrates various ServiceNow knowledge sources:

- servicenow.com**: Home page featuring a man sitting at a desk.
- docs.servicenow.com**: Product documentation page showing release notes and upgrades.
- community.servicenow.com**: Welcome to the Community page with forums for different ServiceNow products.
- developer.servicenow.com**: Developer instance page for building business applications.
- nowlearning.servicenow.com**: Page for becoming a certified ServiceNow expert.
- Partner Portal**: partnerportal.service-now.com
- YouTube Channels**: Various YouTube channel icons.
- ServiceNow Store**: store.servicenow.com
- Customer Success**: servicenow.com/success.html

Bottom navigation bar: Back, Forward, Home, 8:58 / 21:33, 1.5x, CC, HD, etc.

# Common Management Database (CMDB)

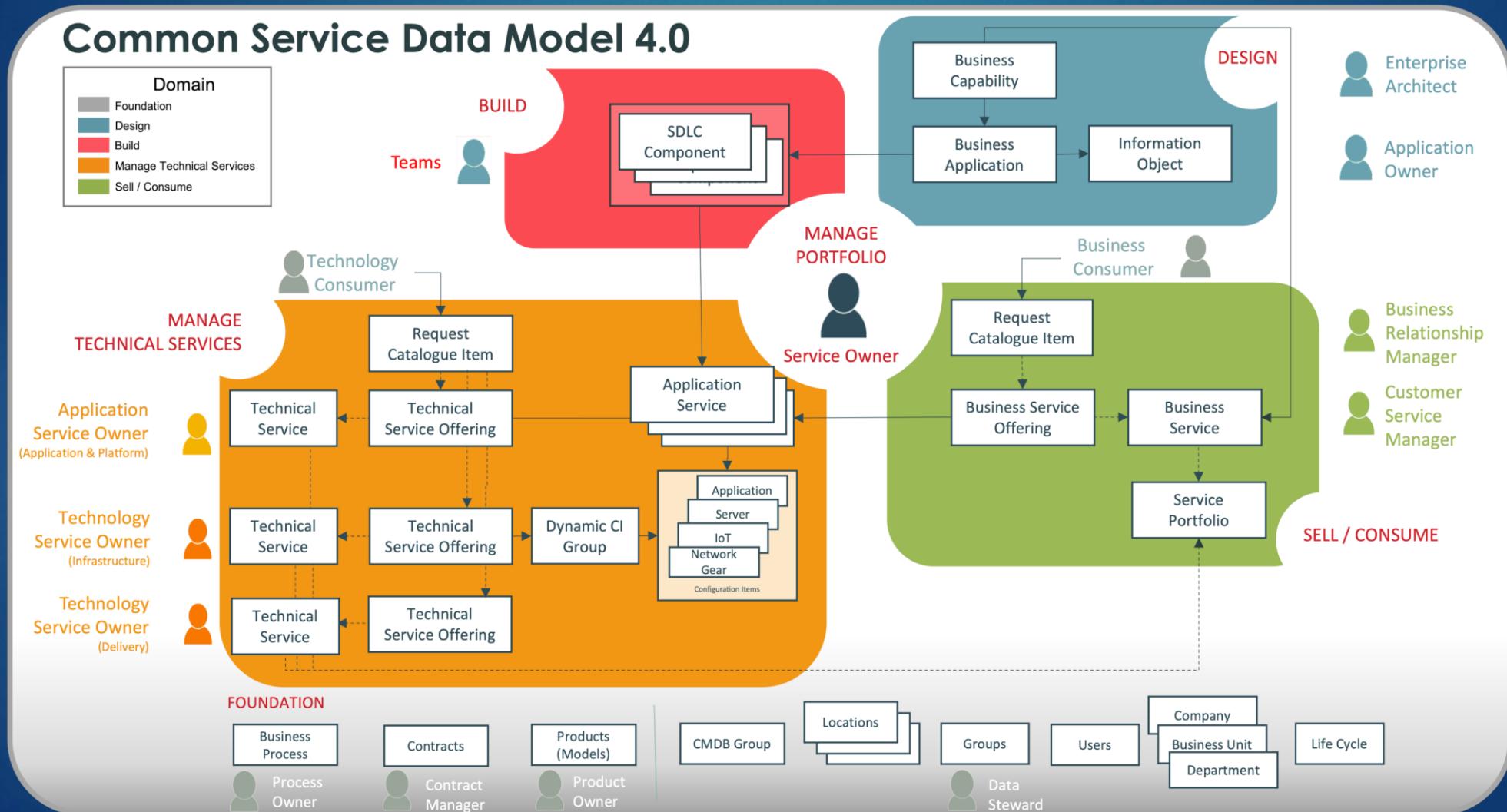
A single system of record for the entire digital lifecycle



# CSDM 4.0 Draft-v2 (CMDB Logical Structure)

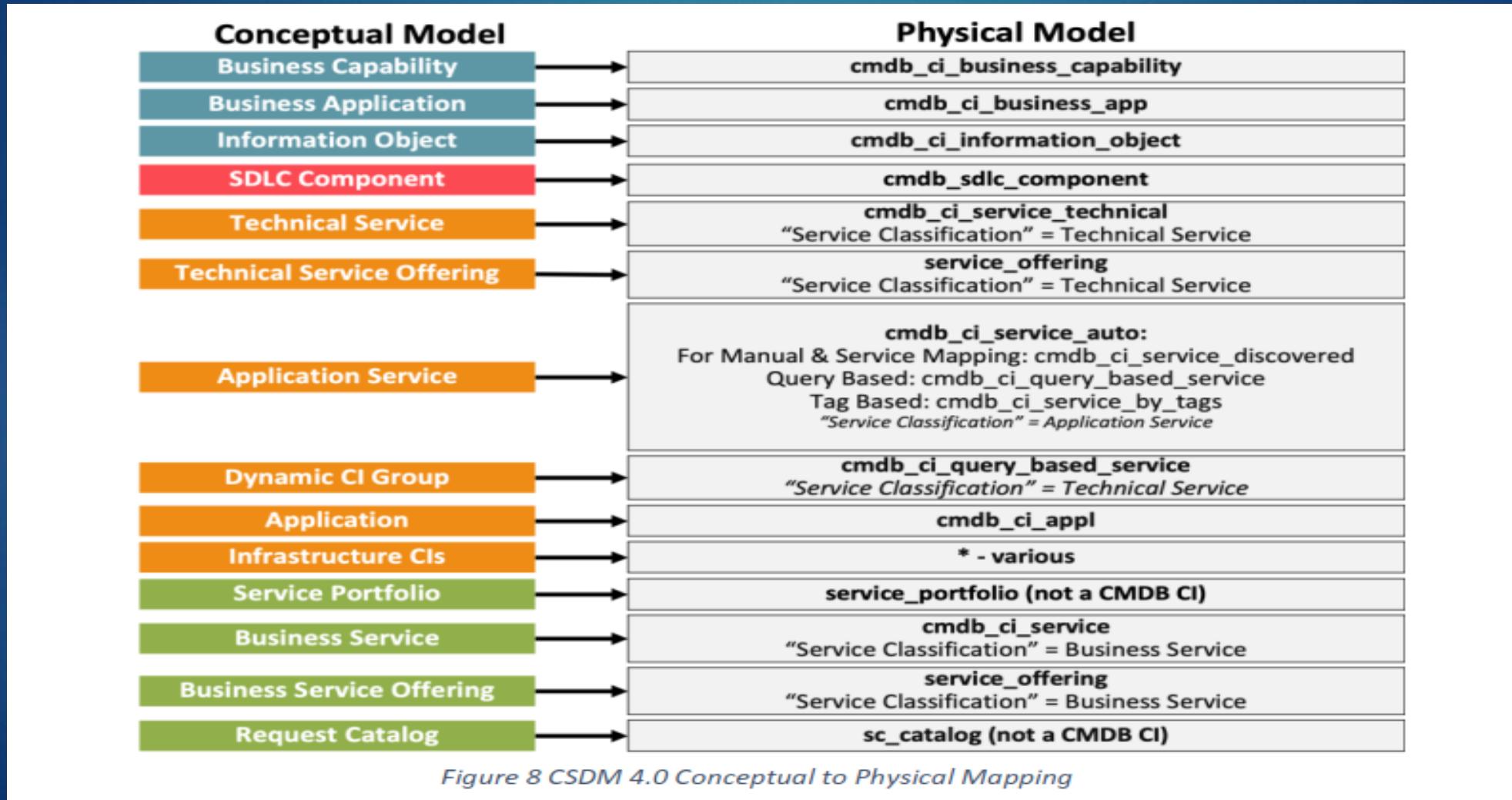
## (The 5 Domains)

26



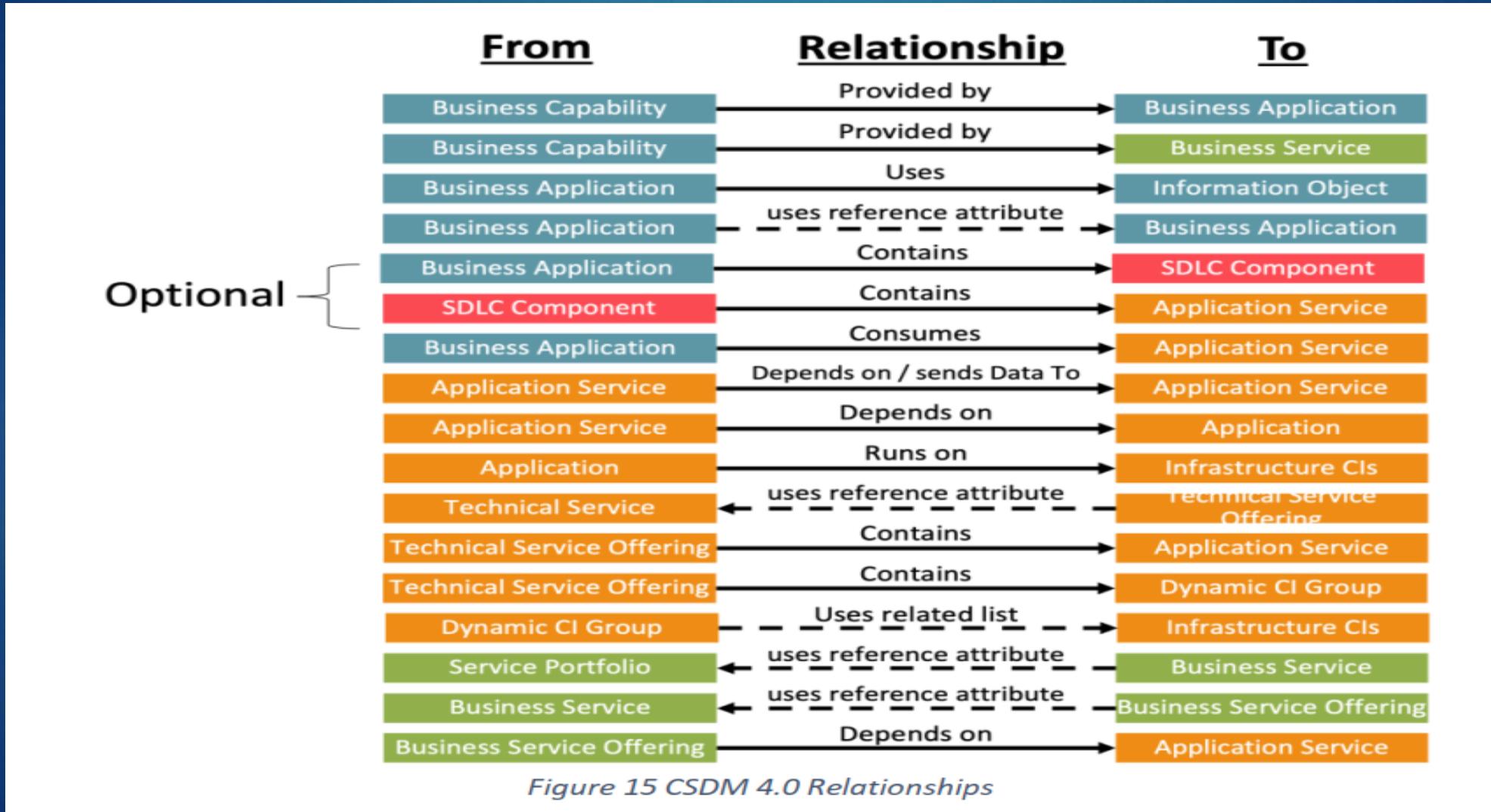
# CSDM – Conceptual to Physical Mapping

Service Graph implements the (CSDM) on the Now Platform® to extent the CMDB capabilities beyond ITSM towards a Global Business Services (GBS) platform.



# CIs Relationships in CSDM 4.0

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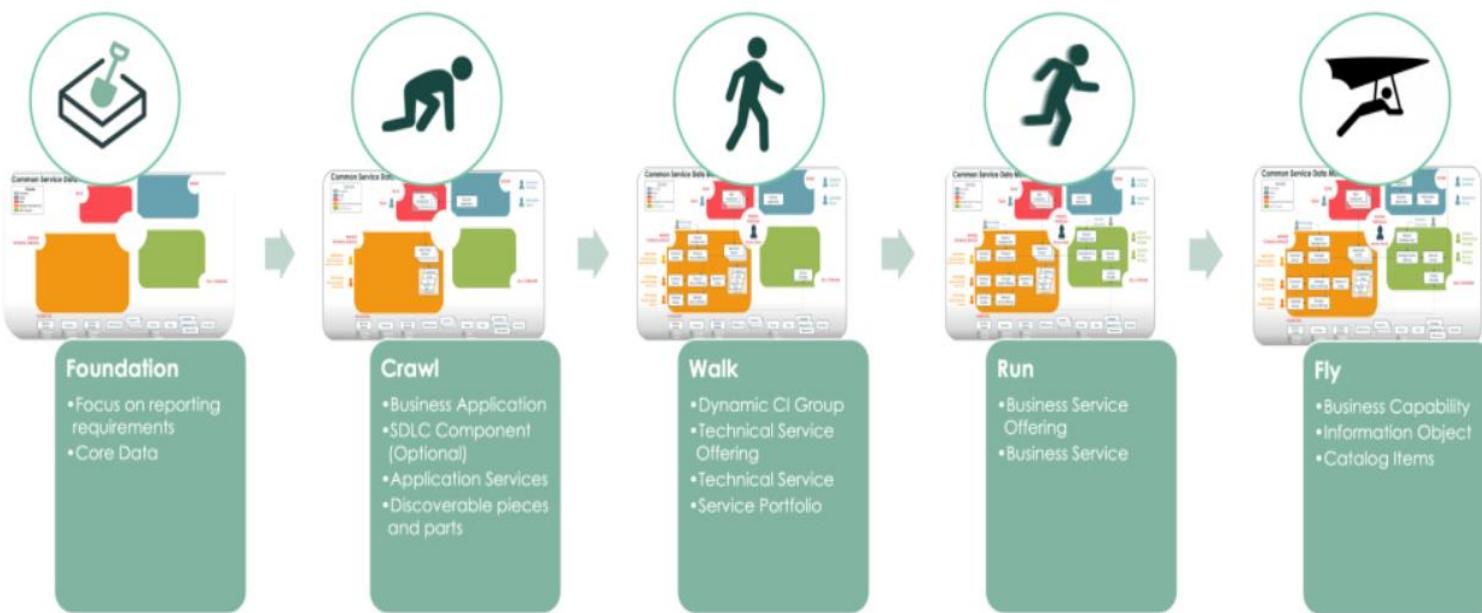


# CSDM Implementation Roadmap

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## How to follow CSDM standard

**How do I get started with the CSDM?** ServiceNow does not recommend trying to implement all elements of the CSDM data model at once. Based on decades of experience it is not only acceptable but highly recommended to approach the CSDM in a staged manner: foundation, crawl, walk, run, fly.



# What is a Service?

(The three types of services)

## What is a Service?

An **Application service** is a service type that is a logical representation of a deployed system or application stack.

(cmdb\_ci\_service\_auto)

### Key Details

- An Operational CI
- Focus in Incident, Problem, Change (IPC)
- Unique Instance of an Application
- May be created per “Environment” ex. Dev, QA, Prod
- May be created per region
- Creation Methods: Manual Mapping, Service Mapping with Entry Point, Tags, Dynamic Query

A **Business Service** is a service type that is published to *business users* and it typically underpins one or more business capabilities.

(cmdb\_ci\_service\_business)

### Key Details

- One level, not a hierarchy of Business Services
- An Operational CI
- Used for impact in Incident, Problem, Change (IPC)
- Used for Approvals for Change
- Should be Consumer or Sell focused

A **Technical Service** is a service type that is published to *service owners* and typically underpins a business or application service.

(cmdb\_ci\_service\_technical)

### Key Details

- One level, not a hierarchy of Technical Services
- An Operational CI
- Used for impact in Incident, Problem, Change (IPC)
- Should be Provider focused: the technology **provided** for the business to **consume** or **Sell**

# What is Application? & Which Application?

(The three NOT)

## Which Application?

An **Application** is any deployed program, module or group of programs, that is designed to provide specific functionality on a compute infrastructure. The installed bits & bytes.

(cmdb\_ci\_appl)

### Key Details

- An Operational CI
- Used in Incident, Problem, Change (IPC)
- Discoverable installation of code communicating over a particular port
- Unique deployment of an Application on a particular host
- Ex: Database Instances, Java, Websphere, Tomcat

A **Business application** represents all software and infrastructure environments (Dev, Test, Prod) configured to provide business functionality

(cmdb\_ci\_business\_app)

### Key Details

- Inventory of Application (Portfolio)
- **NOT** an Operational CI
- **NOT** used in Incident, Problem, Change (IPC)
- **NOT** Version specific
- Contains Meta data about the Business Application

An **Application service** is a service type that is a logical representation of a deployed system or application stack.

(cmdb\_ci\_service\_auto)

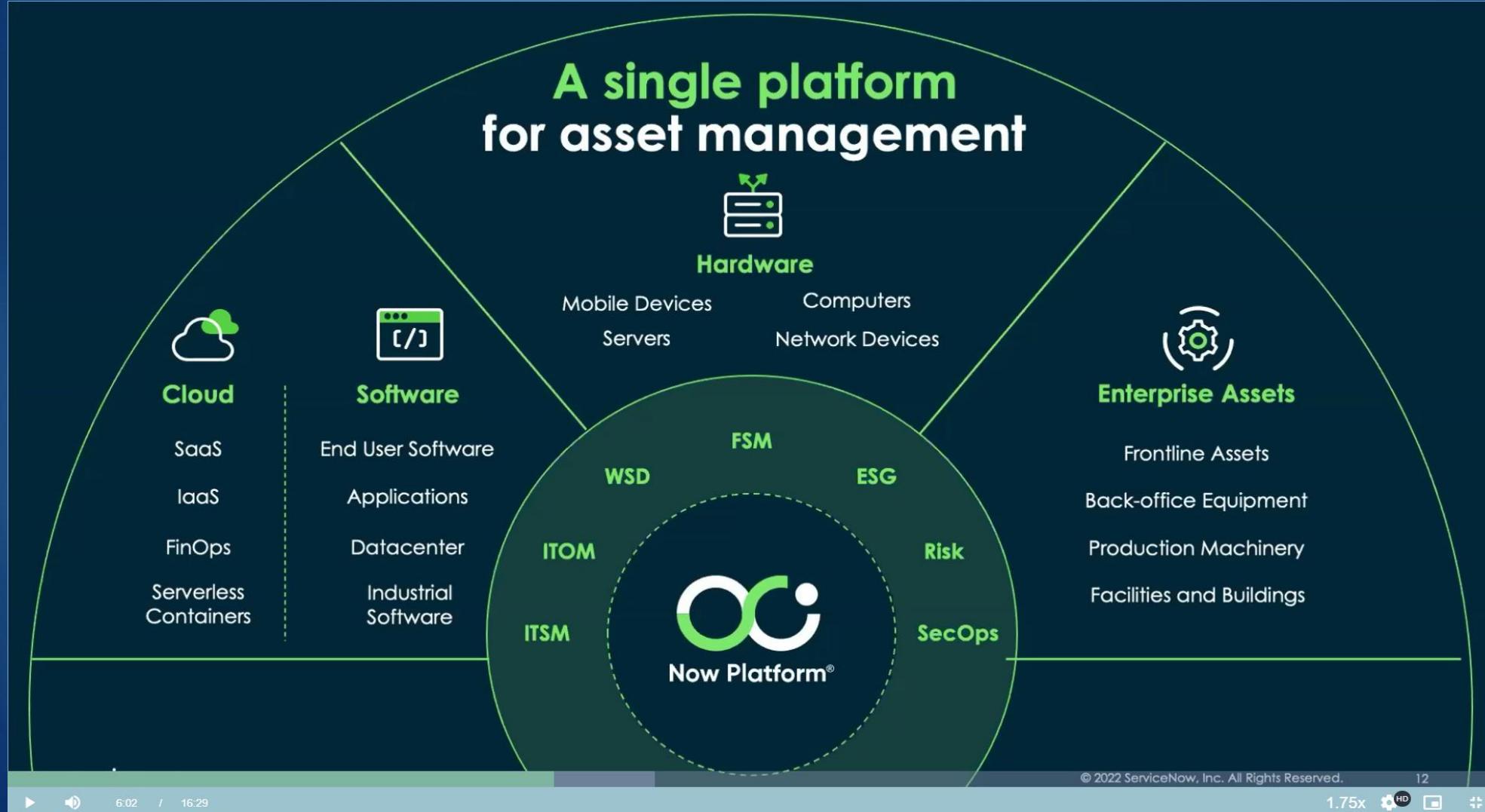
### Key Details

- An Operational CI
- Focus in Incident, Problem, Change (IPC)
- Unique Instance of an Application
- May be created per “Environment” ex. Dev, QA, Prod
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- Creation Methods: Manual Mapping, Service Mapping with Entry Point, Tags, Dynamic Query

Figure 10 CSDM 4.0 Which Application?

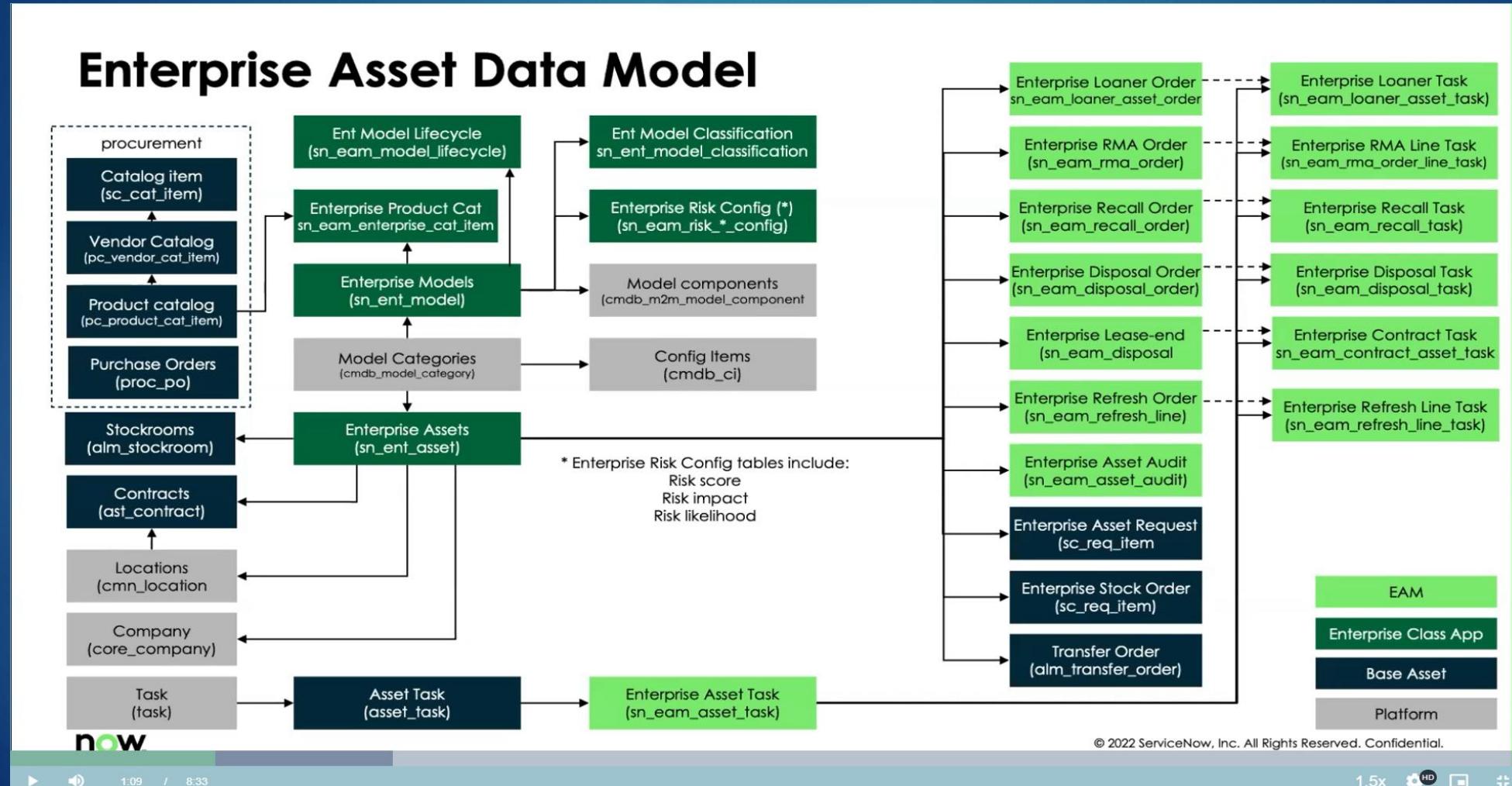
# Now Platform- A Single Platform for Asset Mgmt.

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# Enterprise Asset Data Model

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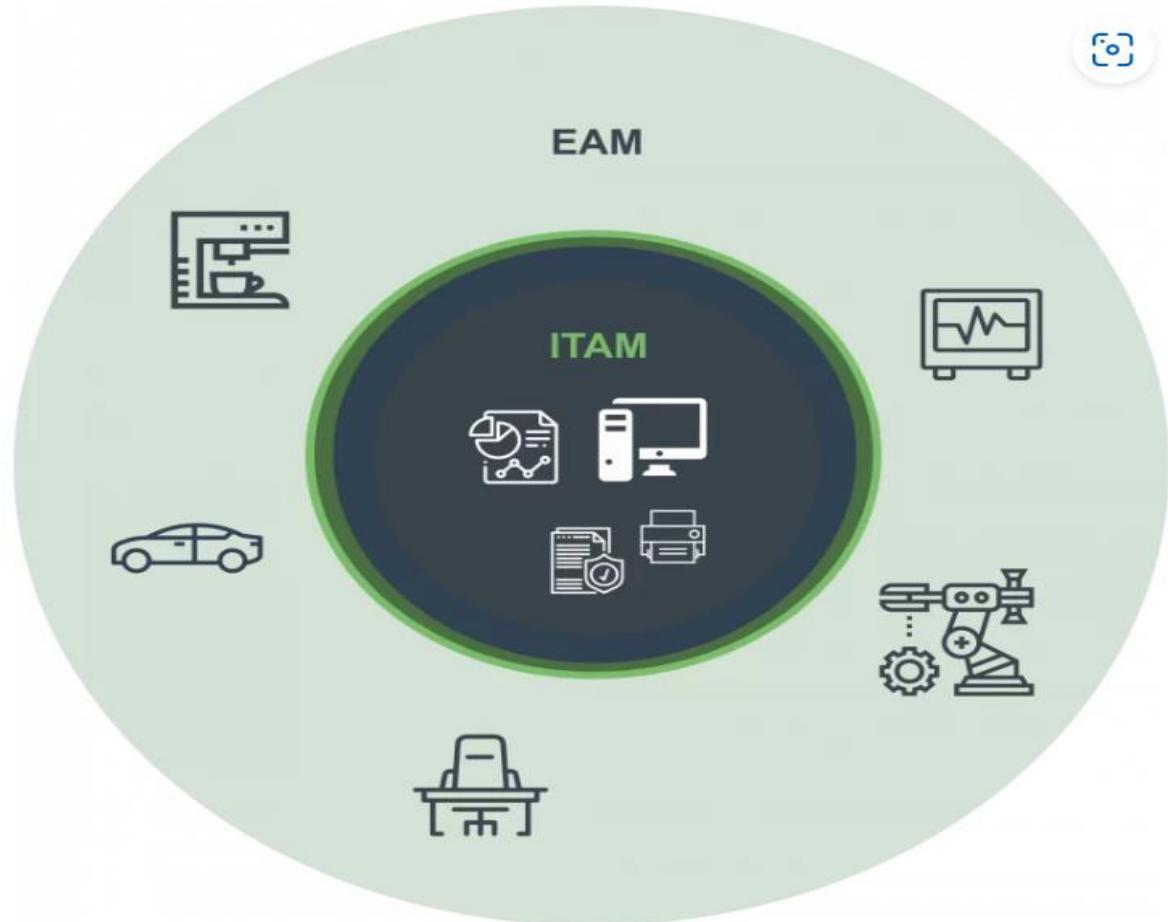


# EAM - Key Functions

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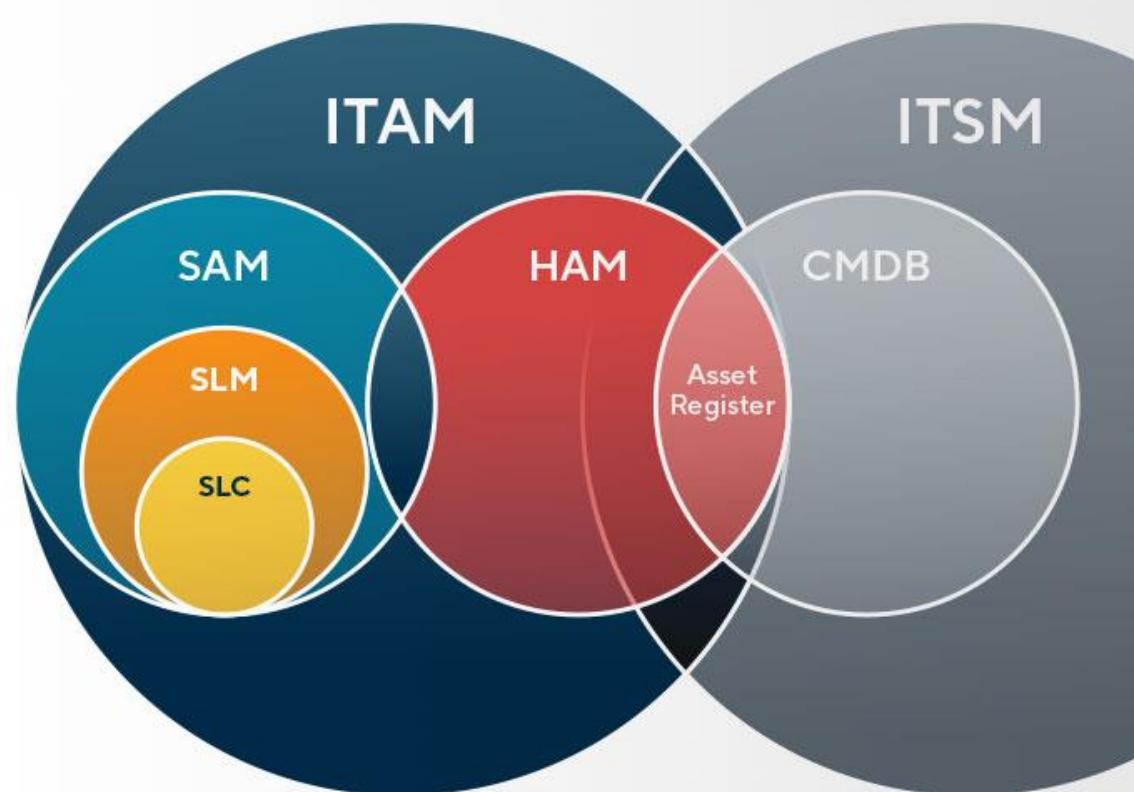
# EAM vs ITAM



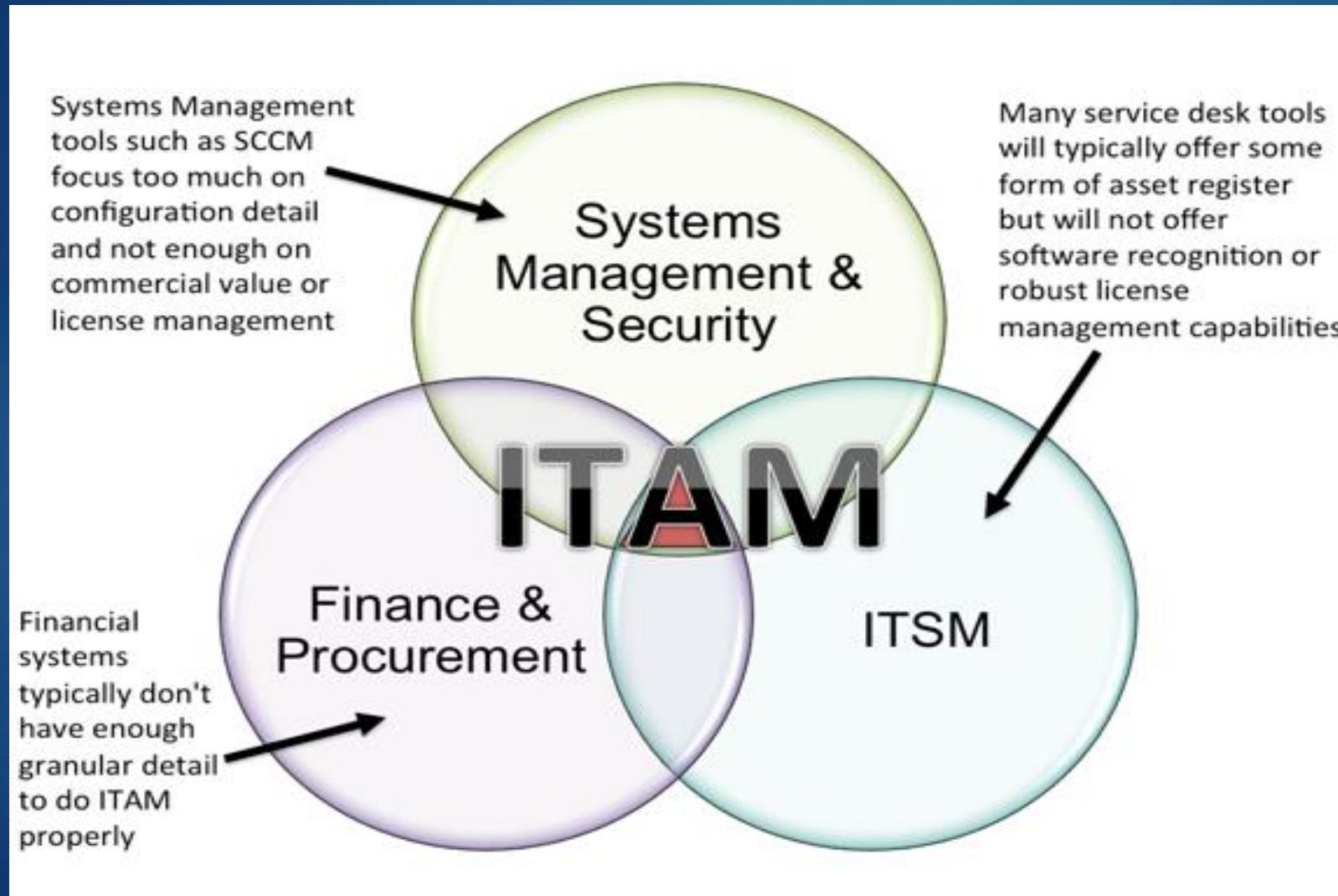
# ITAM vs ITSM Colliding Zone

## What is **ITAM**?

- IT Asset Management
- Software Asset Management
- Hardware Asset Management
- Software License Management
- Software License Compliance
- IT Service Management
- Config. Management Database



# ITAM Core Integrations

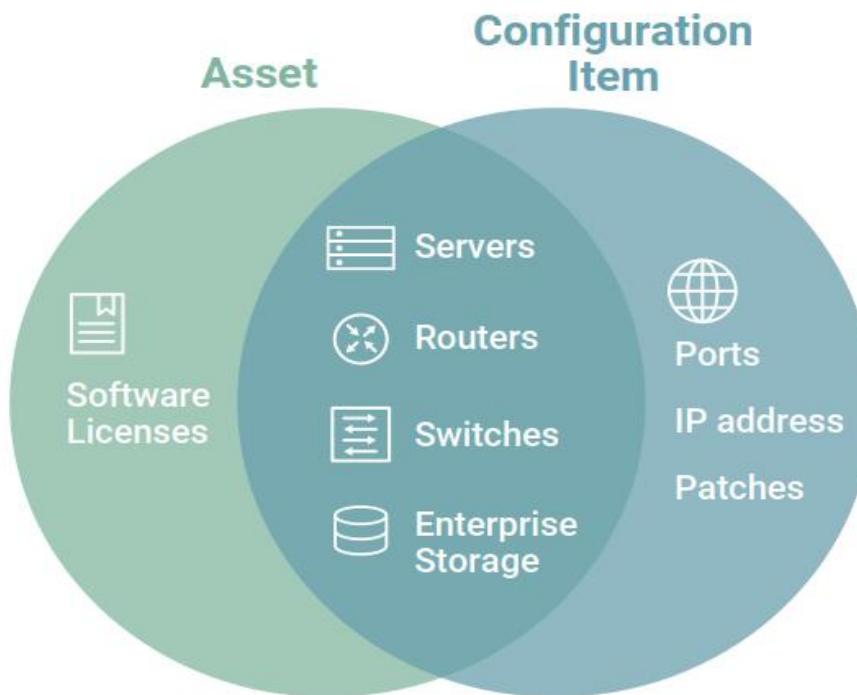


# Asset (Internal) vs Inventory (External)

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# Asset vs CI (cmdb\_ci\_\*\*\*)



**Figure 19:** The differences and similarities between configuration items and assets—all tracked in a CMDB

# CI vs Service Catalog Item (SCI) (sc\_cat\_item)

“SCI is a form used to submit Information (Article), Request (SCR, REQ#) or creates task(s) (SCTASK#) and introduce Item(s) (RITM#, Asset or Inventory) as new CI(s). It contain question(s) that gathers information to create a record in a table. Custom Catalog Item can be created using the App Engine Studio”

## Change Request (CHG#):

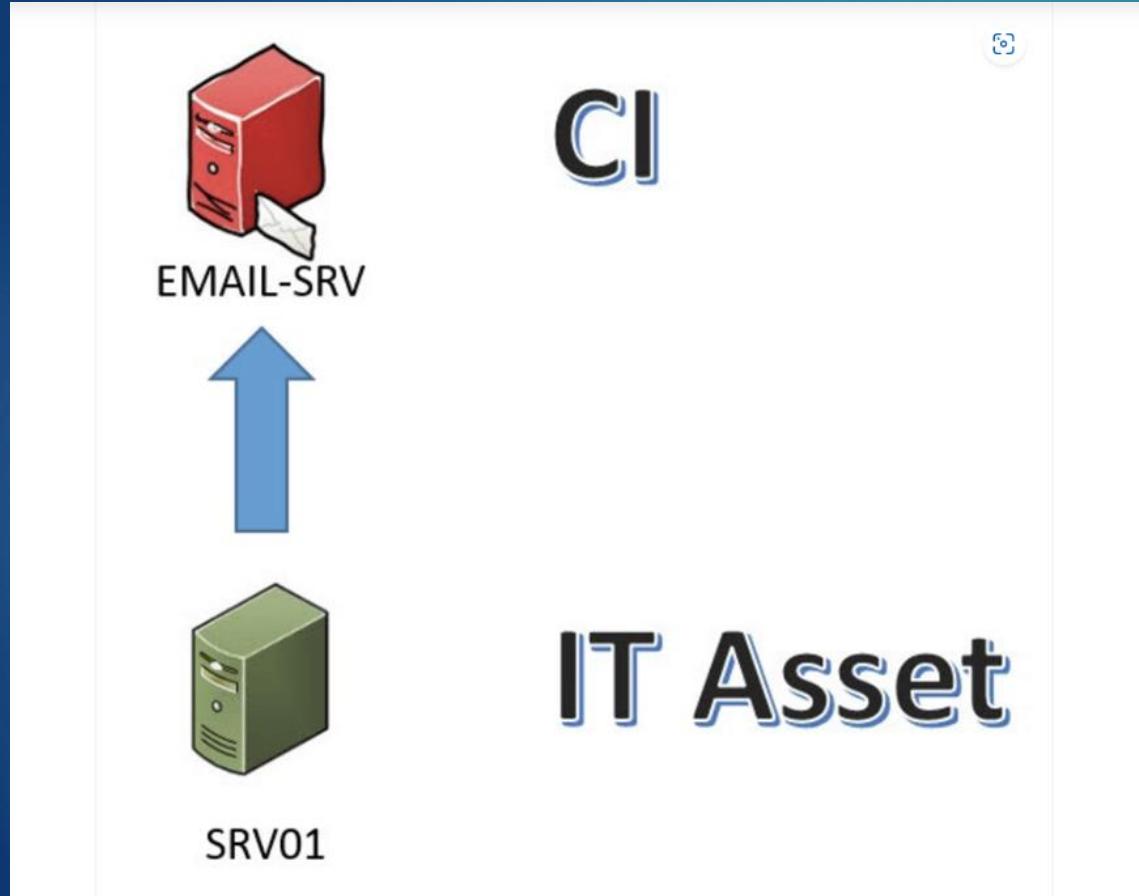
- ▶ User originated (IT/non-IT)
- ▶ Internal request.
- ▶ Fulfilled by IT.
- ▶ Technical task.
- ▶ Impact existing CI(s) and may contain a separate SCR(s).
- ▶ Task-based (CTASK#).
- ▶ Direct-relation to (CTASK#)
- ▶ Picks from In-Stock otherwise, a **separate** procurement request is initiated.

## Service Catalog Request (REQ#):

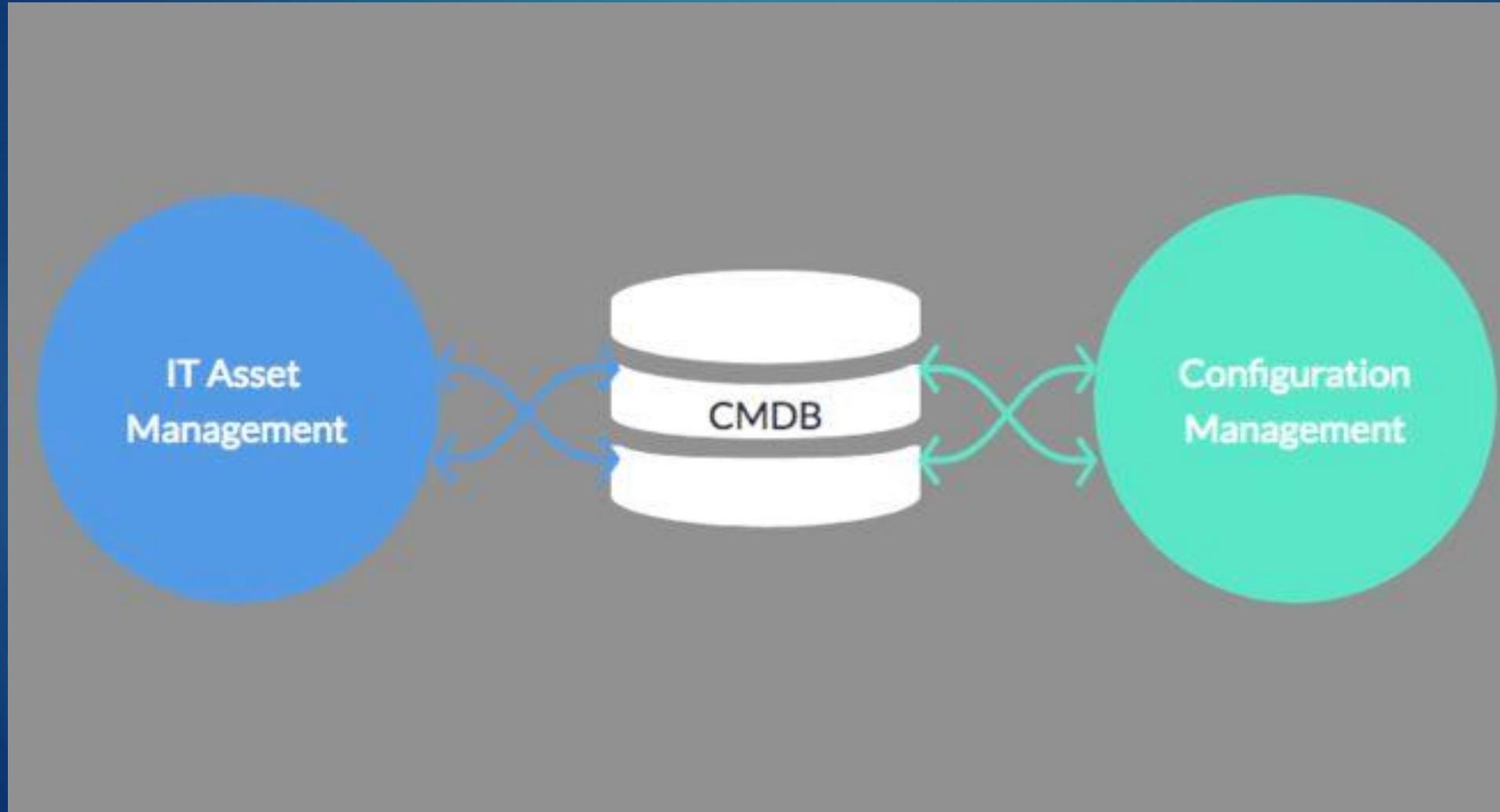
- ▶ User or Customer originated.
- ▶ Internal or External request.
- ▶ Fulfilled by IT or non-IT.
- ▶ Technical or non-Technical.
- ▶ Introduces Item(s) (RITM#, Asset(s) or Inventory) as New CI(s).
- ▶ Task-based (SCTASK#).
- ▶ Indirect-relation to (SCTASK#).
- ▶ Picks from In-Stock otherwise, a procurement **task** (TASK#) is assigned to the procurement team.

# Relating the Asset to the CI & Service

Change Request or Service Catalog Request  
(svc\_traversal\_rules)



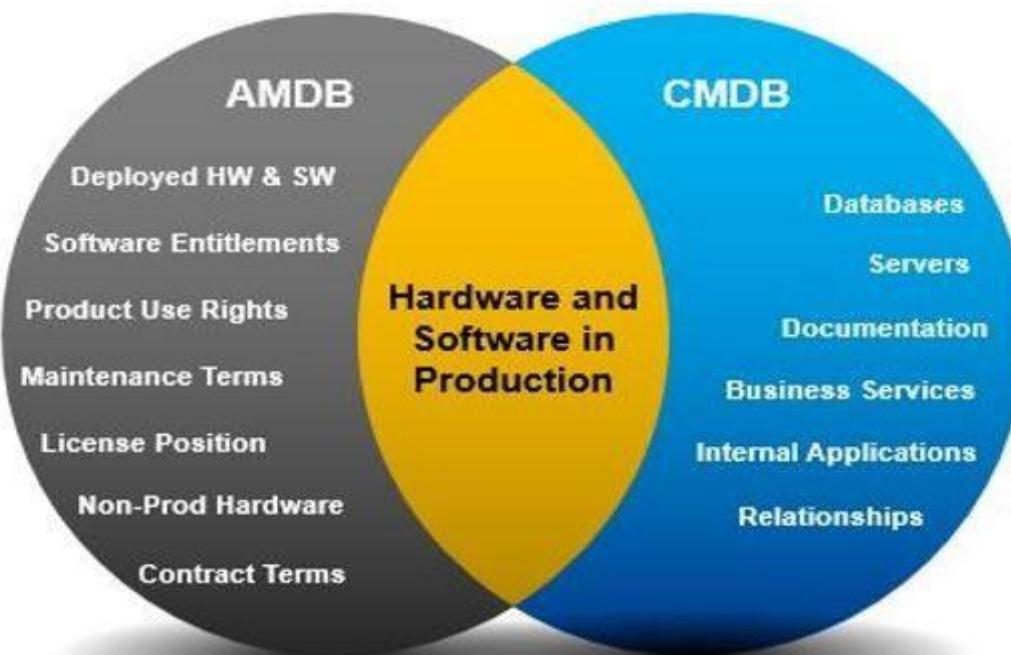
# AM vs CM



# AMDB vs CMDB Key Concept

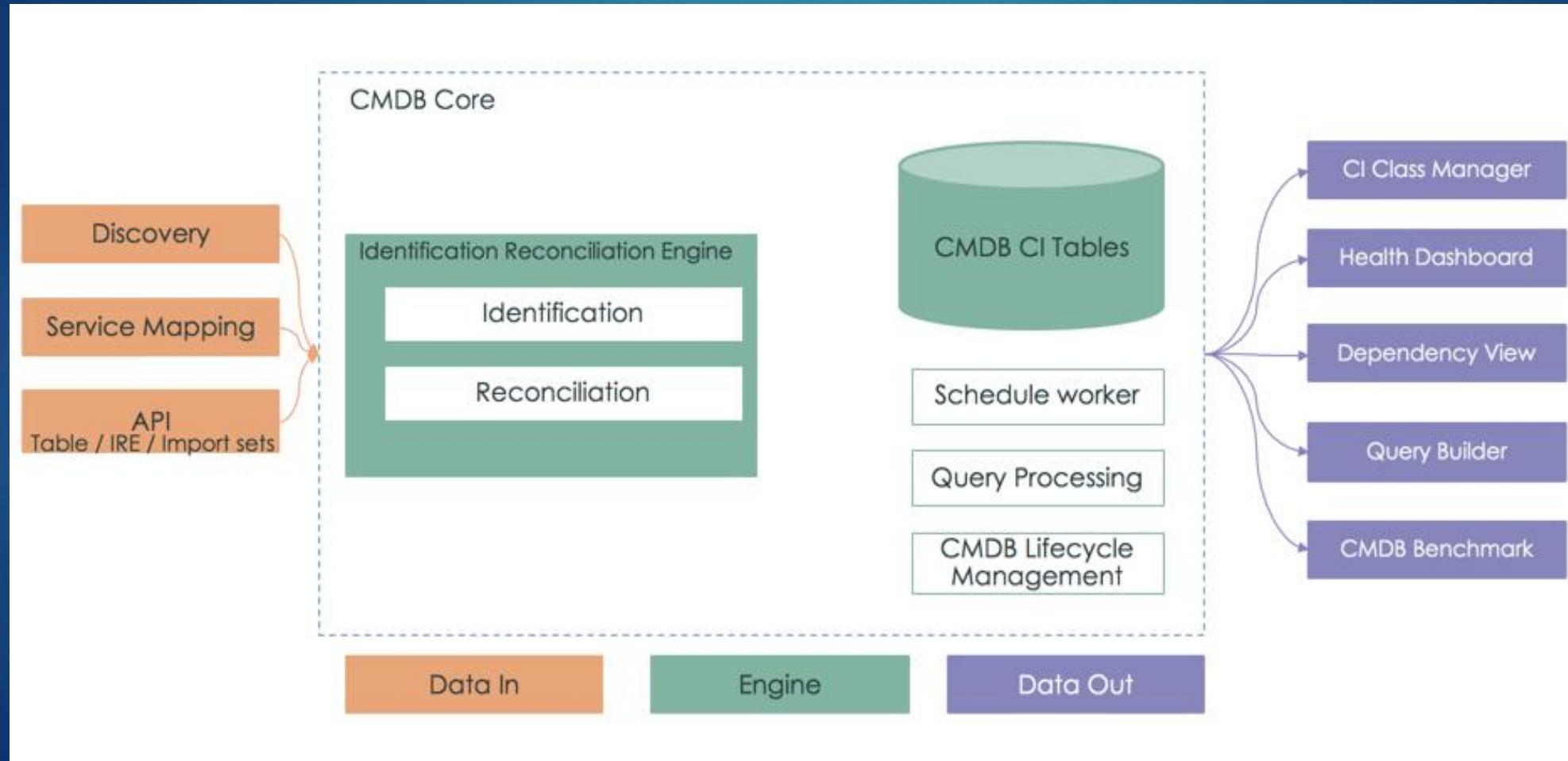
## Key Concept: Asset Management Database vs. CMDB

**CMDBs and ITSM tools are not designed to track the attributes required to determine license position and rarely cover the entire software environment**

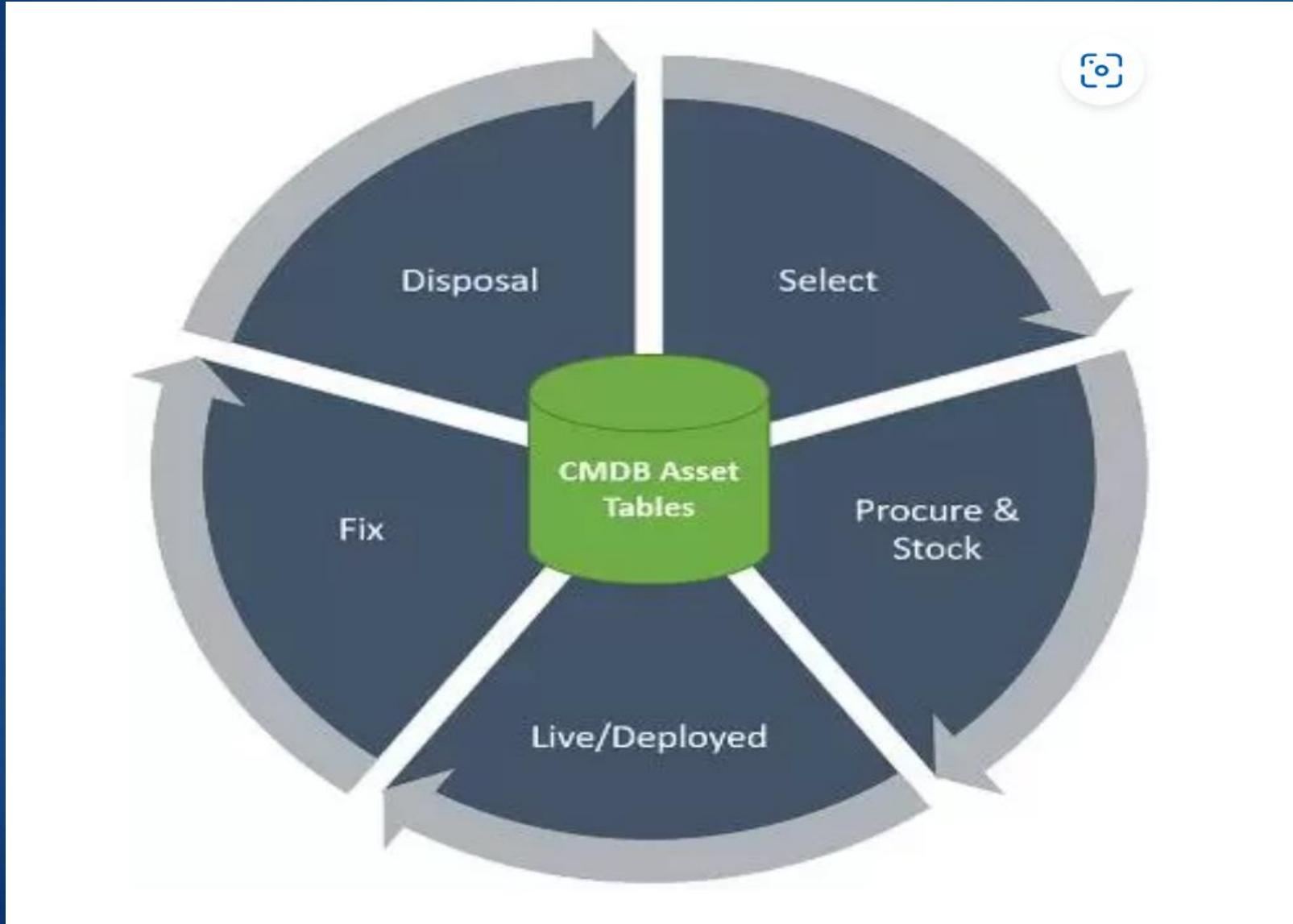


# AMDB & CMDB Relationship

45

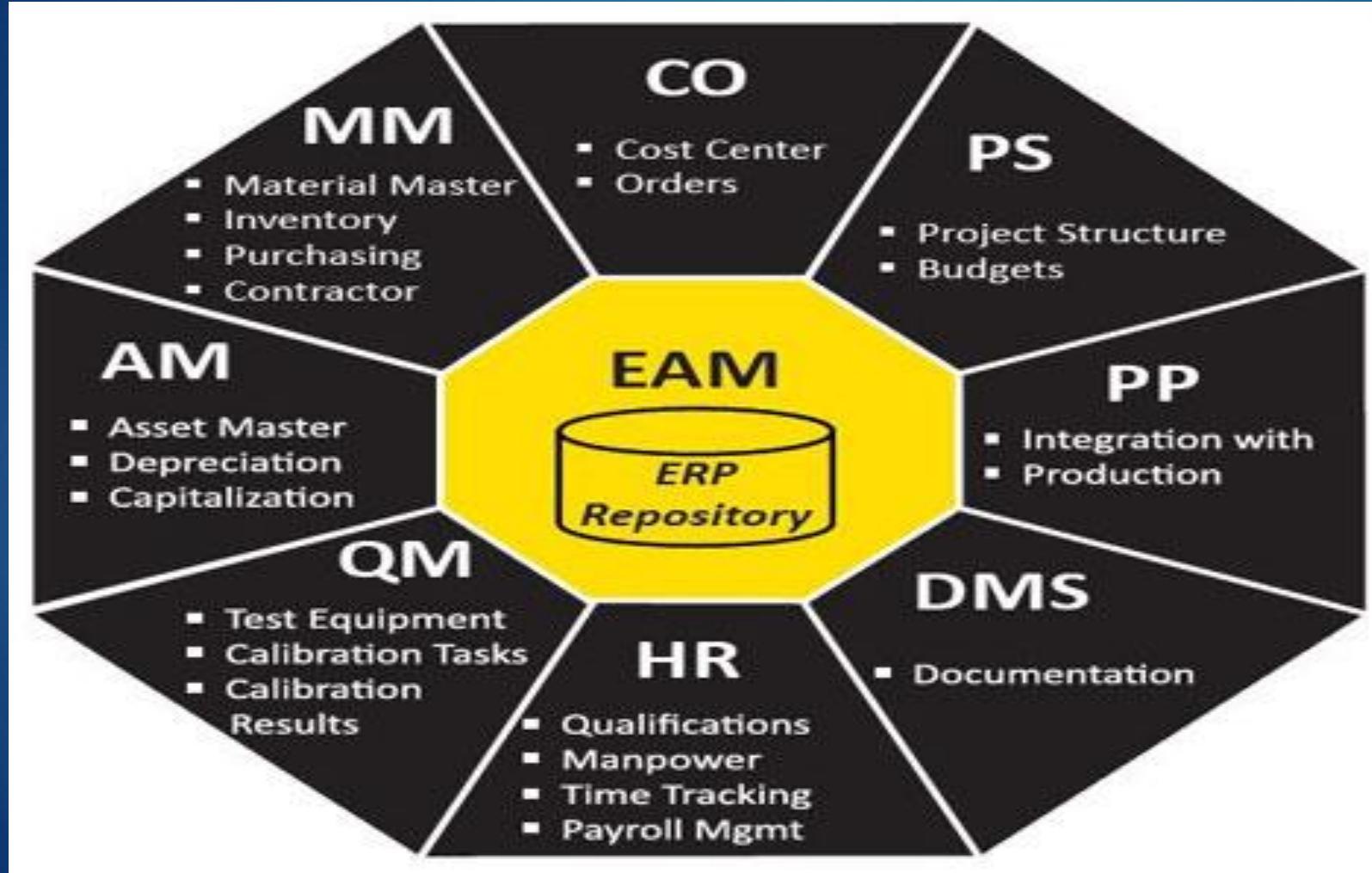


# CMDB Asset Tables



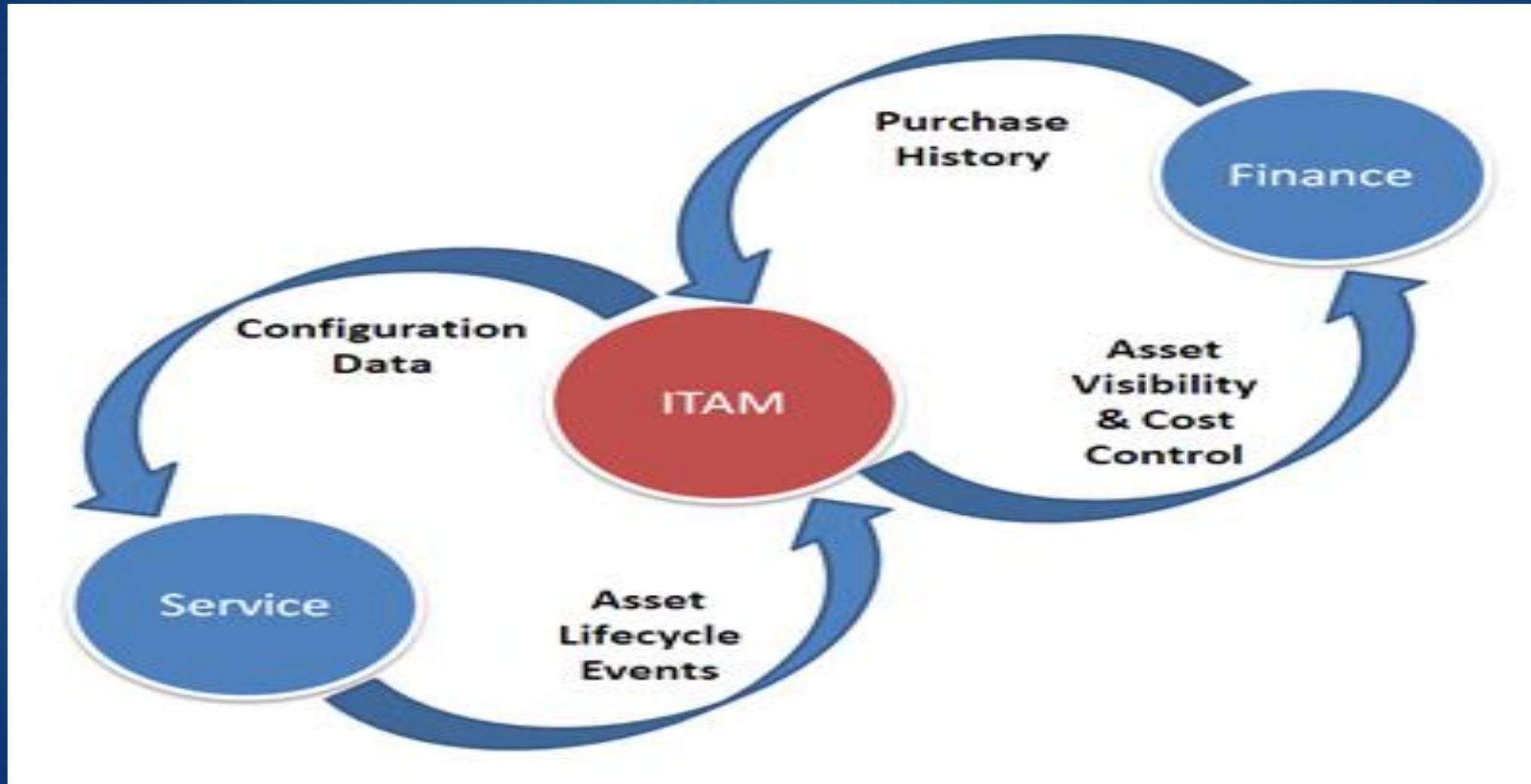
# EAM & ERP Relationship

47



# ITAM & ERP – Service Delivery Chain

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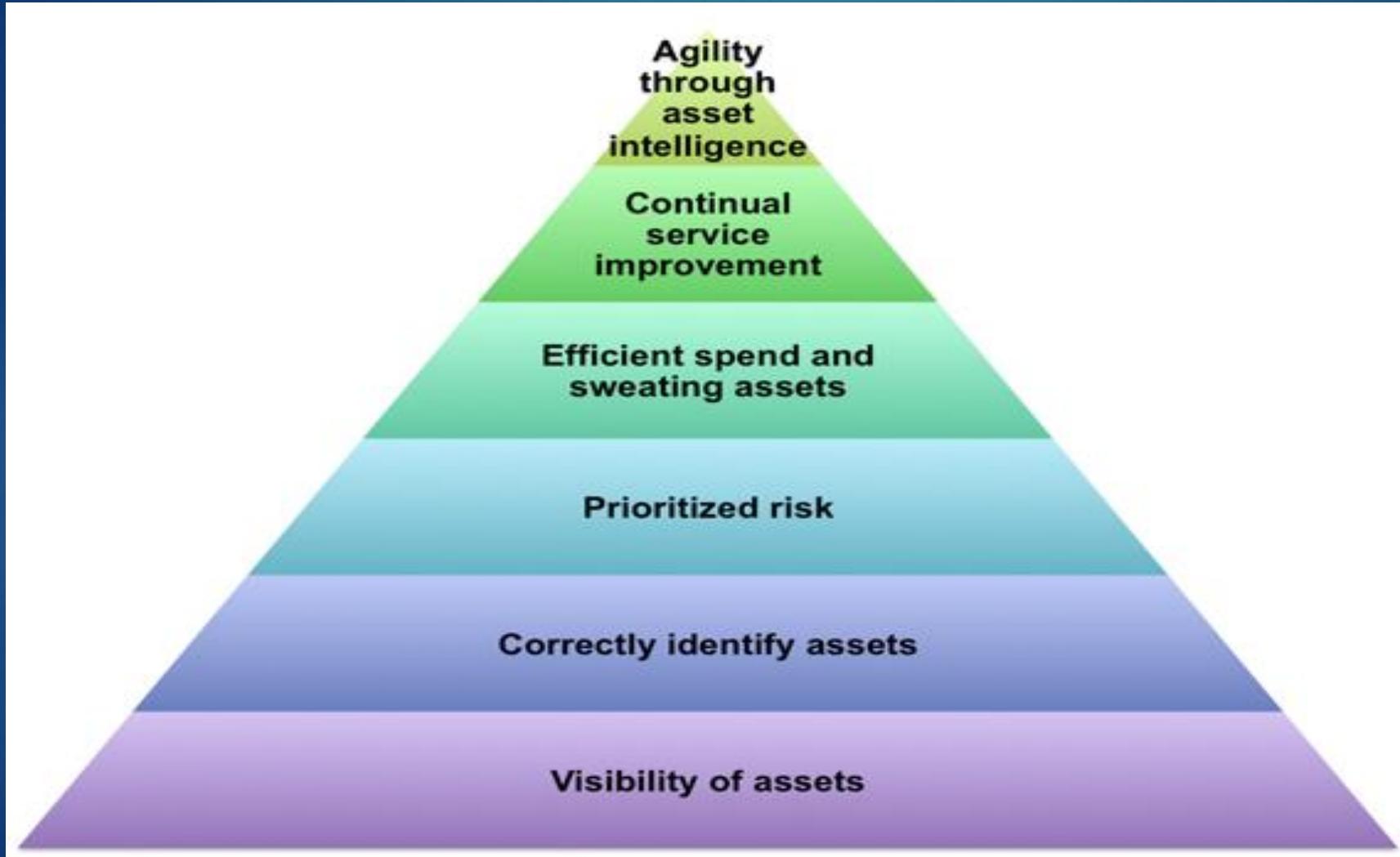
# ITAM Components & Life Cycle

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# ITAM Added Values

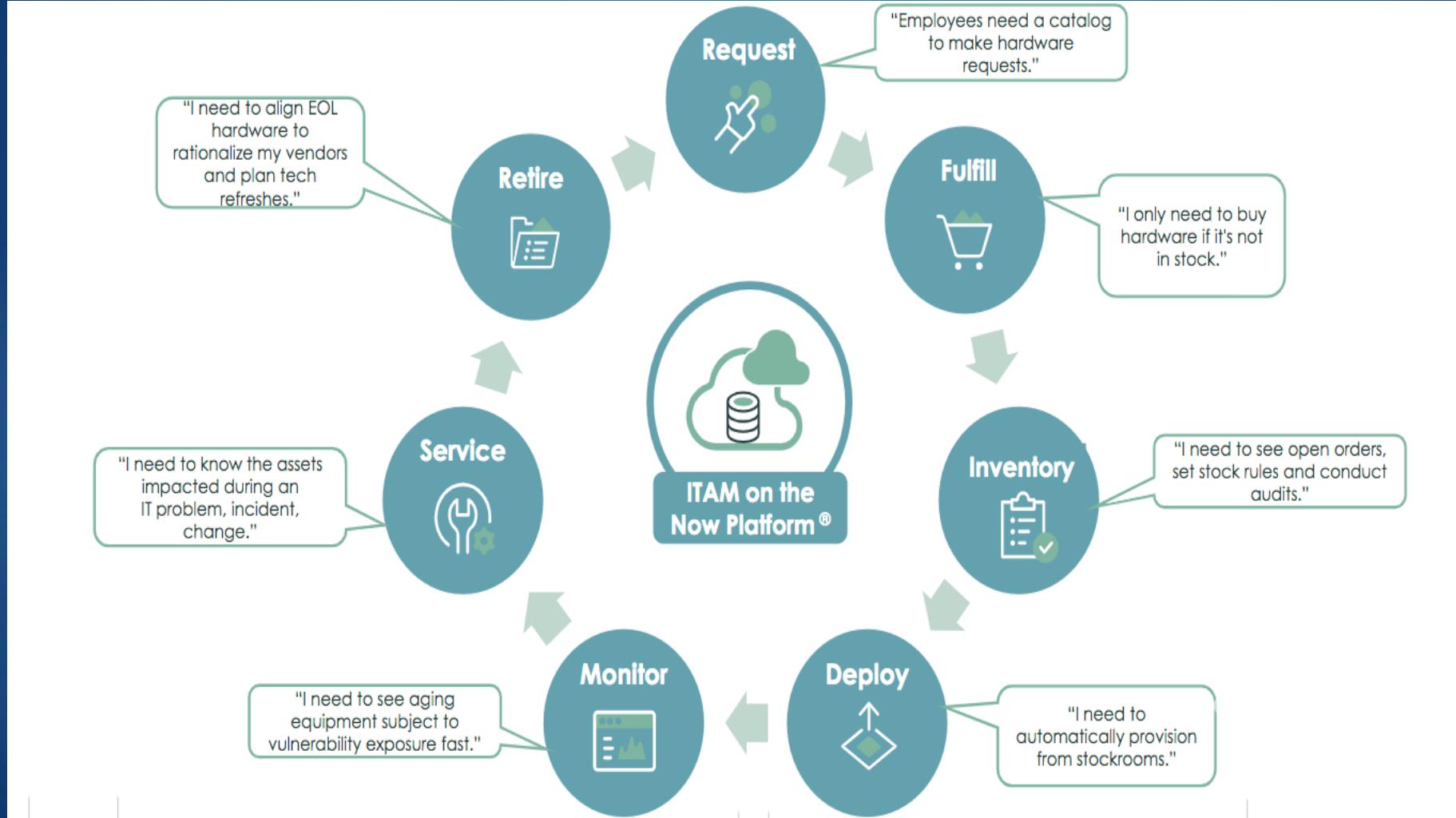
50



# ITAM from GRC Perspective

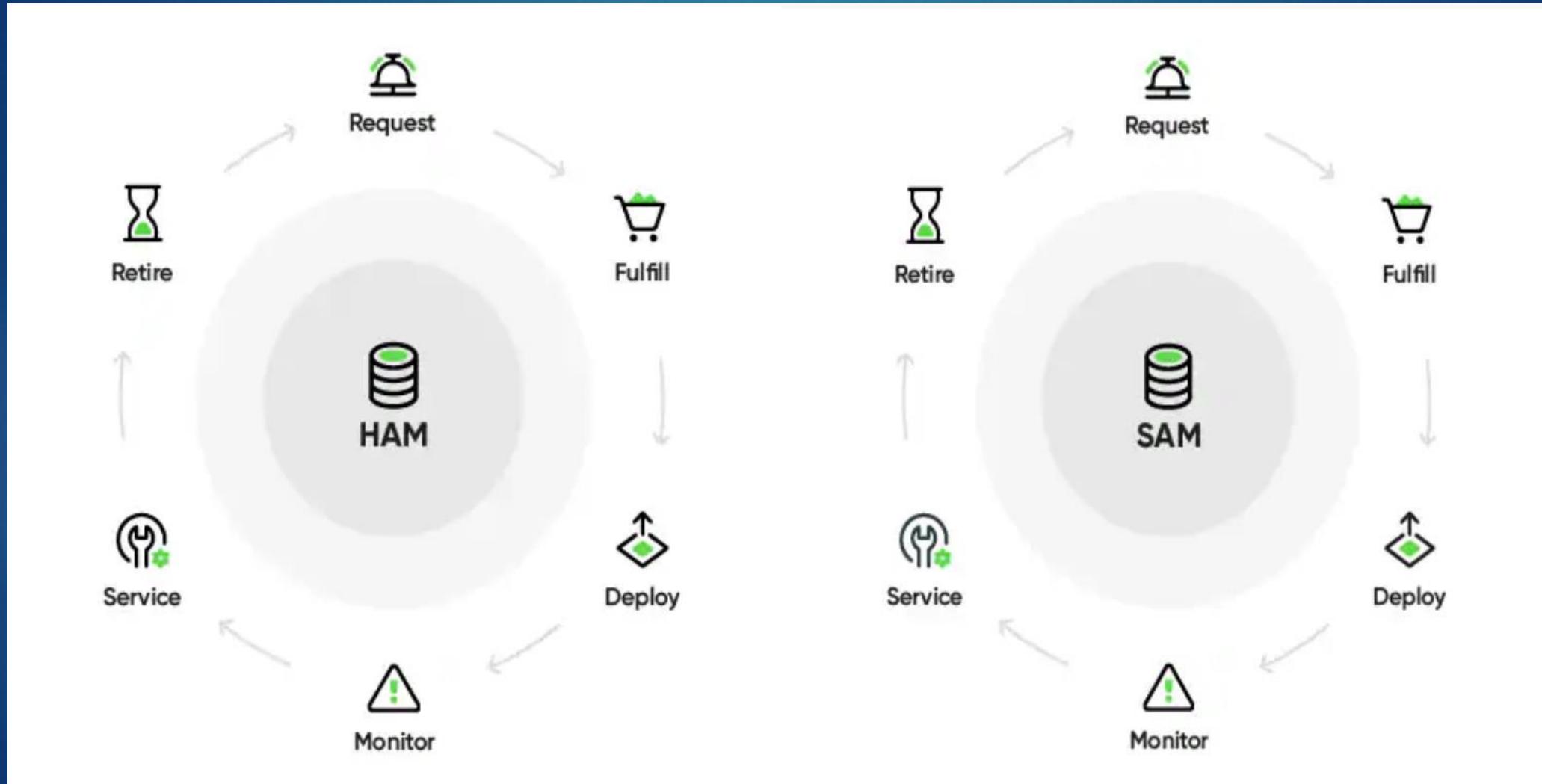


# ITAM in ServiceNow



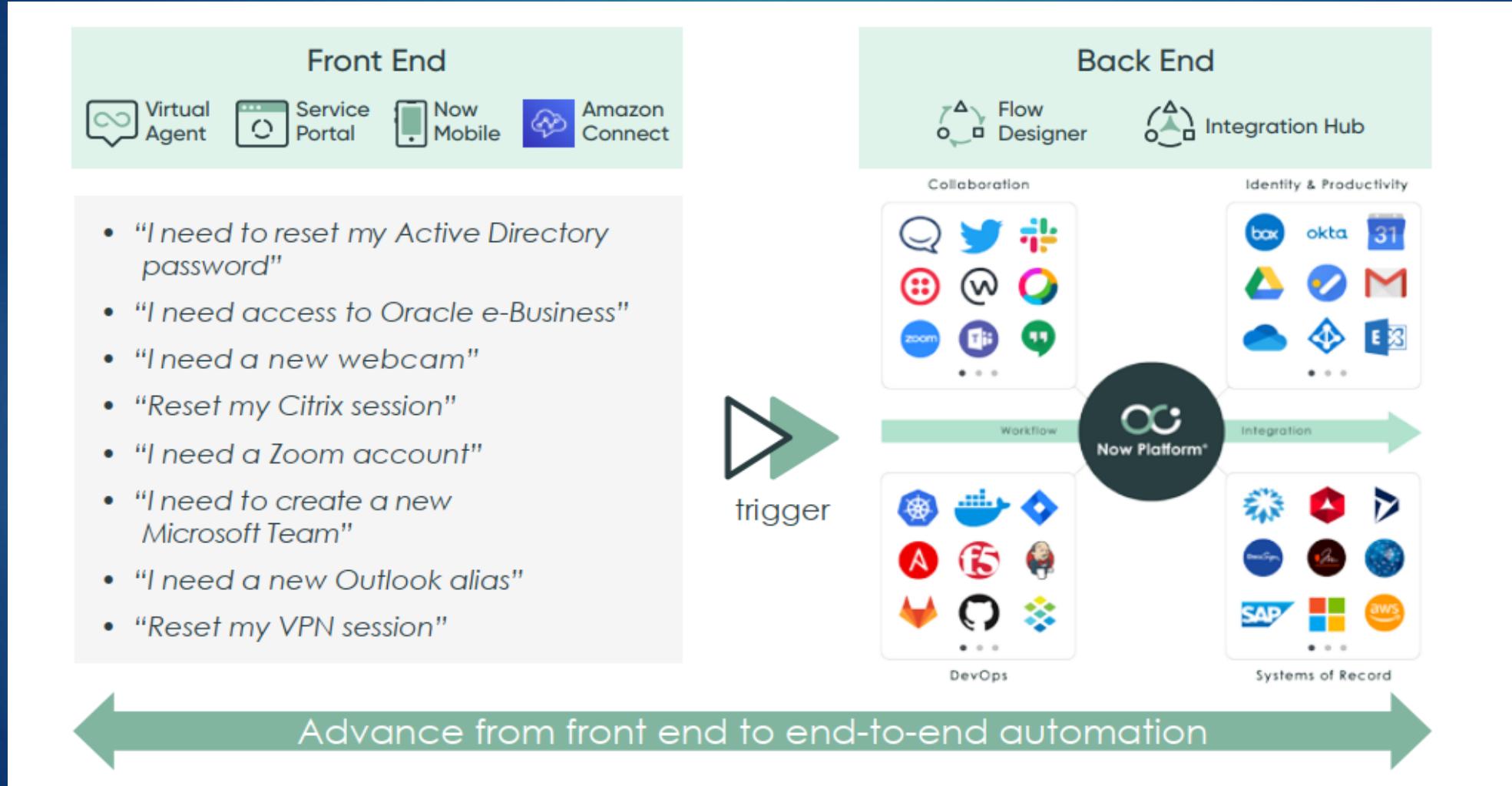
# HAM & SAM Assets Life Cycle

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# Integration Hub (IH) – Data Sources (Spokes)

54



# Service Graph Connectors

- ▶ Certified, reliable third-party data integrations Out-Of-The-Box (OOB).
- ▶ Built by accredited ServiceNow technology partners.
- ▶ The Identification and Reconciliation Engine (IRE), correctly identify and classify data before it is loaded into Service Graph, to prevents duplicate Cis in the CMDB and ensures that attribute values are consistent across multiple data sources. It is all about Data Quality and trusted CMDB.
- ▶ Uses ServiceNow Integration Hub ETL functionality so that data is transformed and loaded in the fastest and most efficient manner.
- ▶ There are different Integration Hub license options that determined its capabilities.

# Automation Centre

ServiceNow Administration Fundamentals: Notifications Wrap Up and Knowledge Check

## Automation Center

The **Automation Center** application allows you to discover, prioritize, and manage automation requests in your instance, all in one place.

### Benefits of using Automation Center



**Govern** end-to-end automation lifecycles from multiple vendors



**Integrates with** ServiceNow® **Robotic Process Automation** Hub



**Monitor** and **manage** health to prevent automation failures in your instance

# Predictive Intelligence

(use ML algorithms to set “field values” during record creation)

ServiceNow Administration Fundamentals: Notifications Wrap Up and Knowledge Check

## Predictive Intelligence

The diagram illustrates the Predictive Intelligence process flow. It starts with a **Requester** (represented by a computer icon) making 100,000+ requests using the Short Description. These requests are processed by **Predictive Intelligence** (represented by a brain icon), which then leads to **Intelligent Action**. Intelligent Action includes Categorizes requests, Assigns requests, and Prioritizes requests. This results in Decreases time to resolution and Reduces error rates and cost.

**Requester**

Makes 100,000+ requests using the Short Description

**Predictive Intelligence**

resolves requests faster

**Intelligent Action**

Categorizes requests

Assigns requests

Prioritizes requests

Decreases time to resolution

Reduces error rates and cost

Learn more about Predictive Intelligence in **Now Learning**

**Predictive Intelligence** uses machine-learning algorithms to set field values during record creation

Improve efficiency and quality, and reduce cost by:

- Reducing task resolution times
- Reducing the number of interactions required to resolve tasks
- Reducing the error rates of categorizing and assigning work

3:43 / 8:08

1.5x CC

# Predictive Intelligence (Continue)

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ServiceNow Administration Fundamentals: Notifications Wrap Up and Knowledge Check

## Predictive Intelligence

Predictive Intelligence is a ServiceNow® platform capability that operationalizes machine learning solutions within your existing processes without the need for an army of data scientists to build custom solutions.

 End Users	 Frontline Workers	 Service Owners
Understand end users' intent and route their tickets to the right agent or connect them with the right knowledge article.	Provide tactical relief for agents by auto-populating fields, linking similar tickets and addressing knowledge gaps efficiently.	Prioritize knowledge article creation and be alerted to major incidents before they have a chance to impact end users and the business.

Predictive Intelligence is not a standalone product—it's a layer of artificial intelligence features and capabilities that can be applied across ServiceNow applications.

▶ 🔍 4:28 / 8:08 1x CC

# ServiceNow – Interactive Modules

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MID Server | Overview

Share

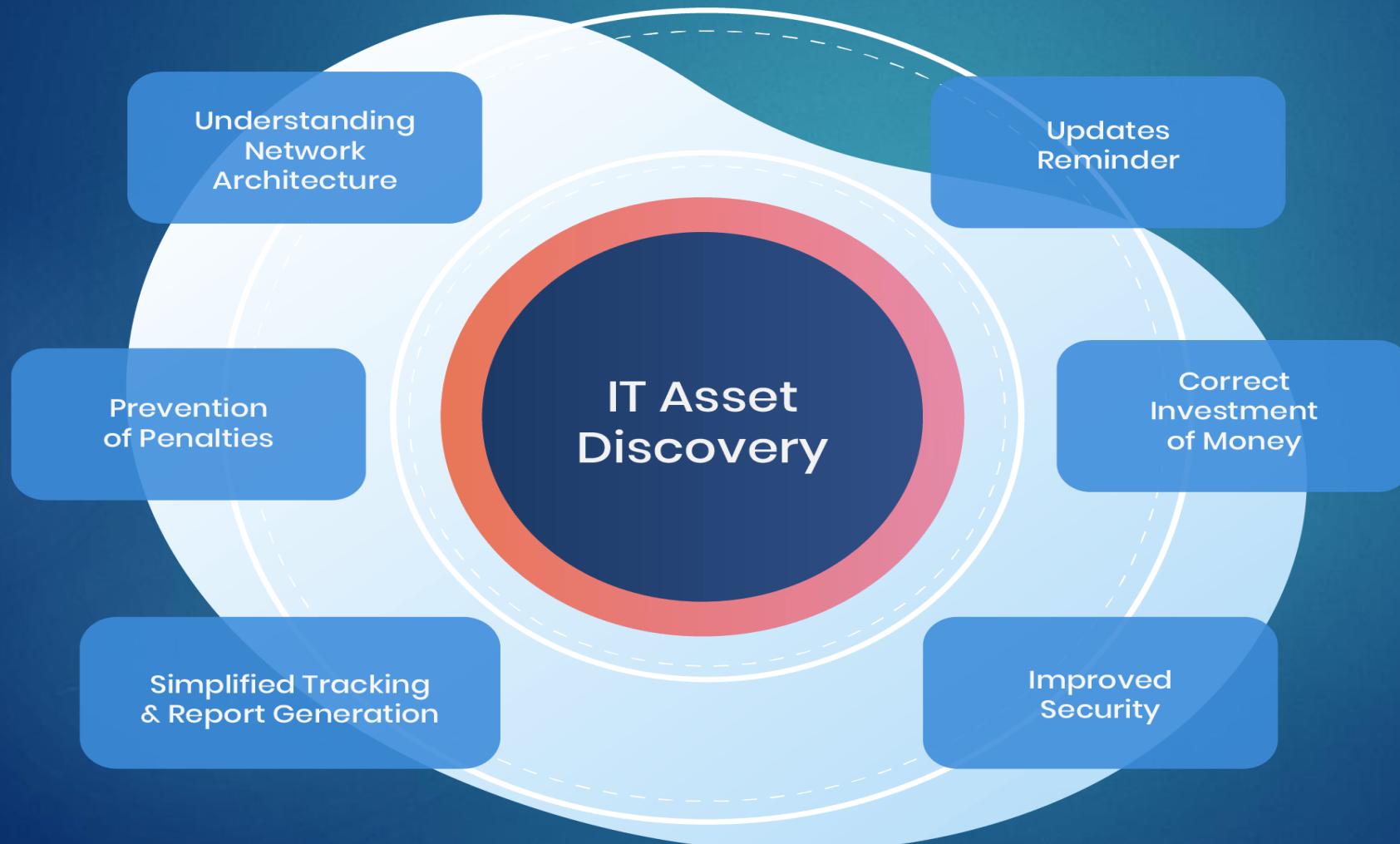
The diagram illustrates the ServiceNow MID Server Overview, featuring seven interconnected modules arranged within a cloud-like shape:

- Service Mapping**: Represented by a blue circle containing a network icon.
- Operational Intelligence**: Represented by a grey circle containing a head with gears icon.
- Import Sets**: Represented by a blue circle containing a database icon.
- Orchestration**: Represented by a red circle containing a server icon.
- Cloud Management**: Represented by an orange circle containing a cloud with gear and arrows icon.
- Event Management**: Represented by a green circle containing a gear with an exclamation mark icon.
- Discovery**: Represented by a green circle containing a database with question marks icon.

Below the diagram, a progress bar shows 0:34 / 2:40, and the bottom right corner includes standard video controls for CC, HD, YouTube, and volume.

# Asset Discovery – (AM + CM)

60

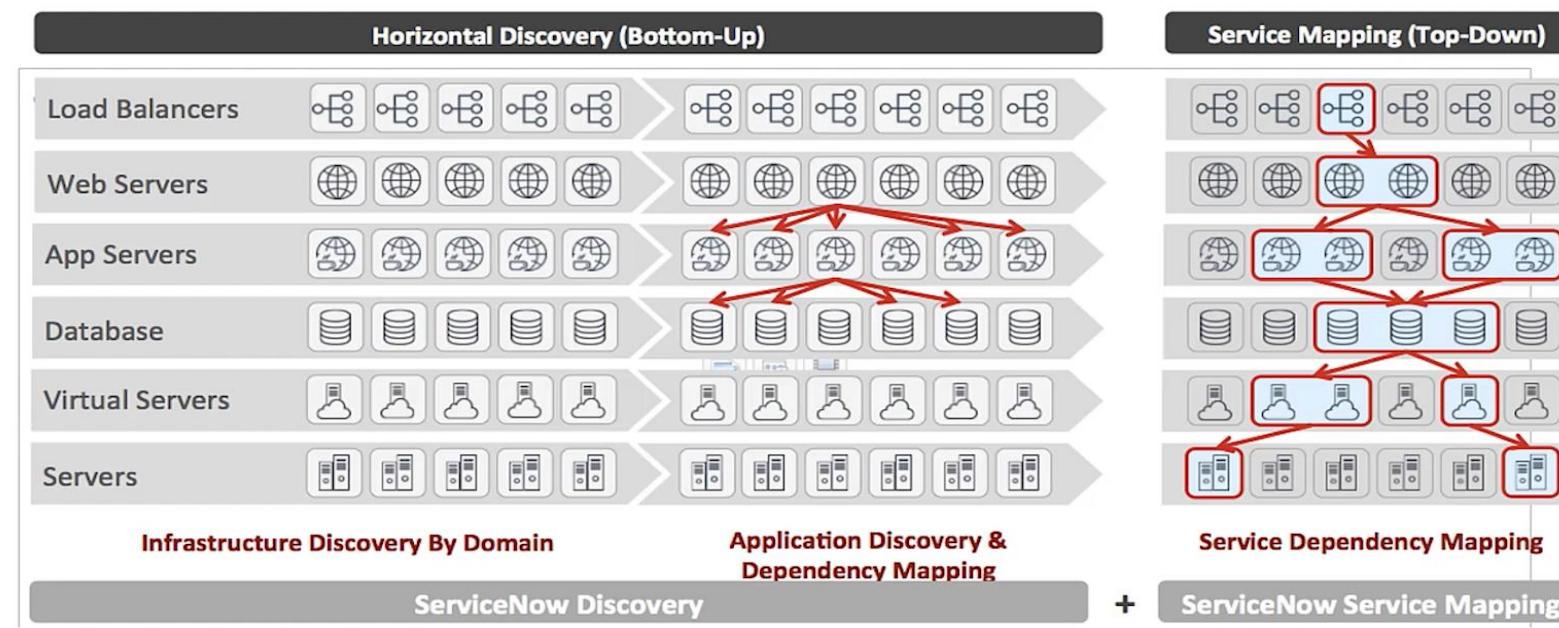


# Discovery vs Service Mapping (SM)

Credentials & Credential-less (Nmap)

## Horizontal Discovery vs. Service Mapping

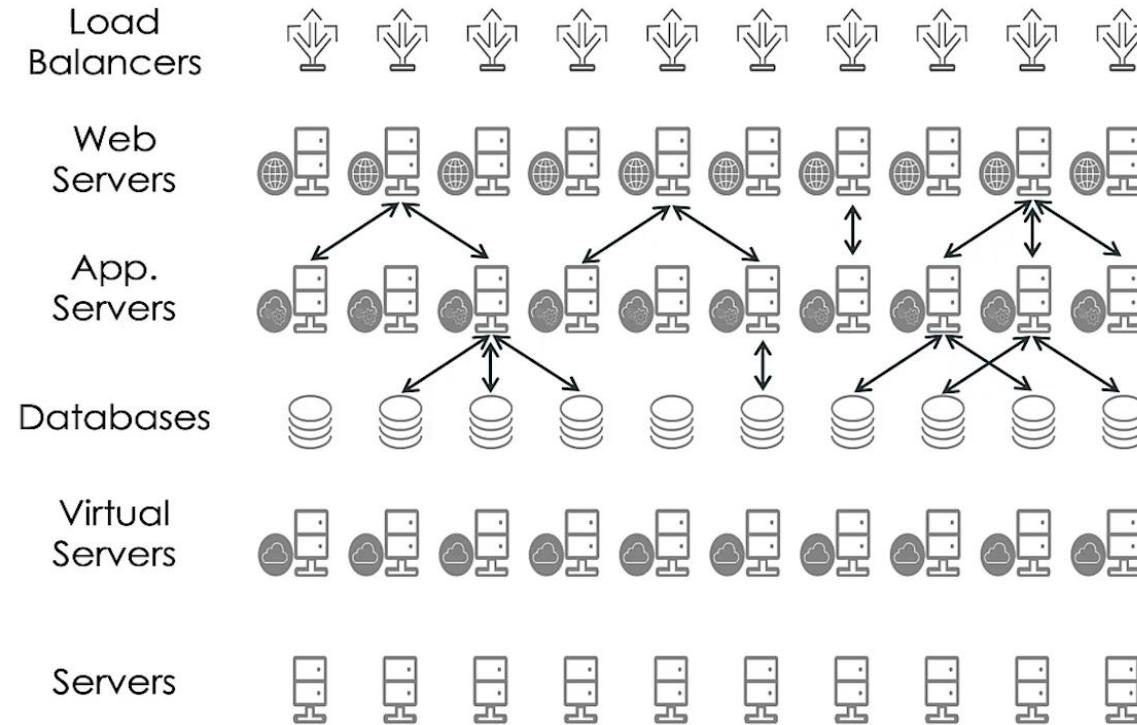
How does ServiceNow Discovery and Service Mapping differ?



# App Dependency Mapping (ADM) - Discovery (Dynamic CI Grouping)

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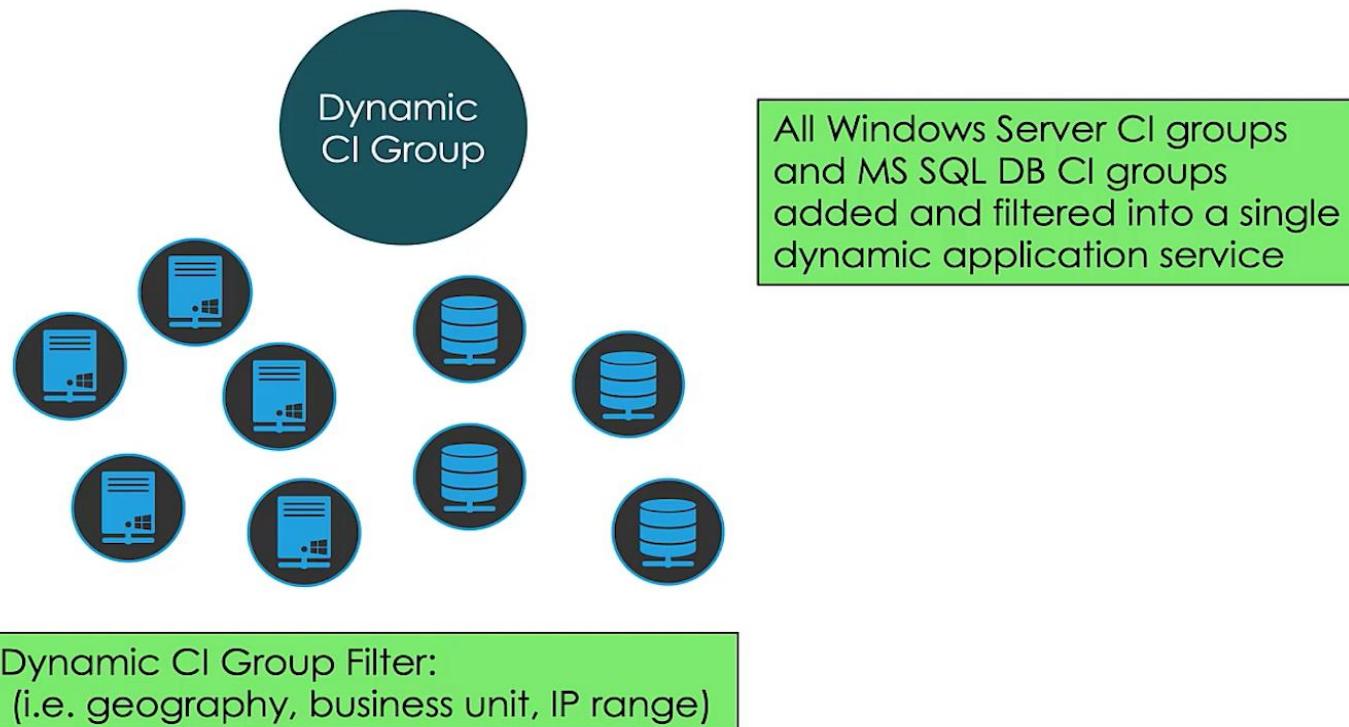
## Application Dependency Mapping



# Dynamic CI Groups

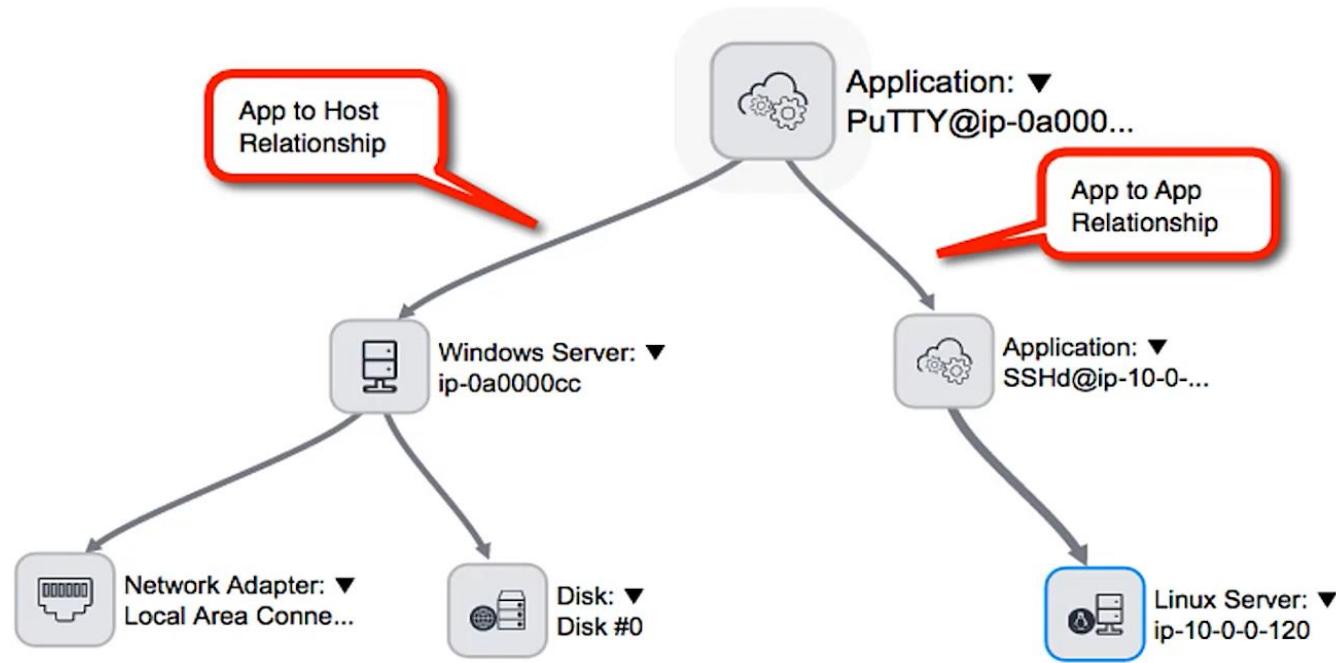
## Dynamic CI Groups

A type of application service where member CIs are a group of configuration items based on common criteria



## Application Dependency Mapping Overview

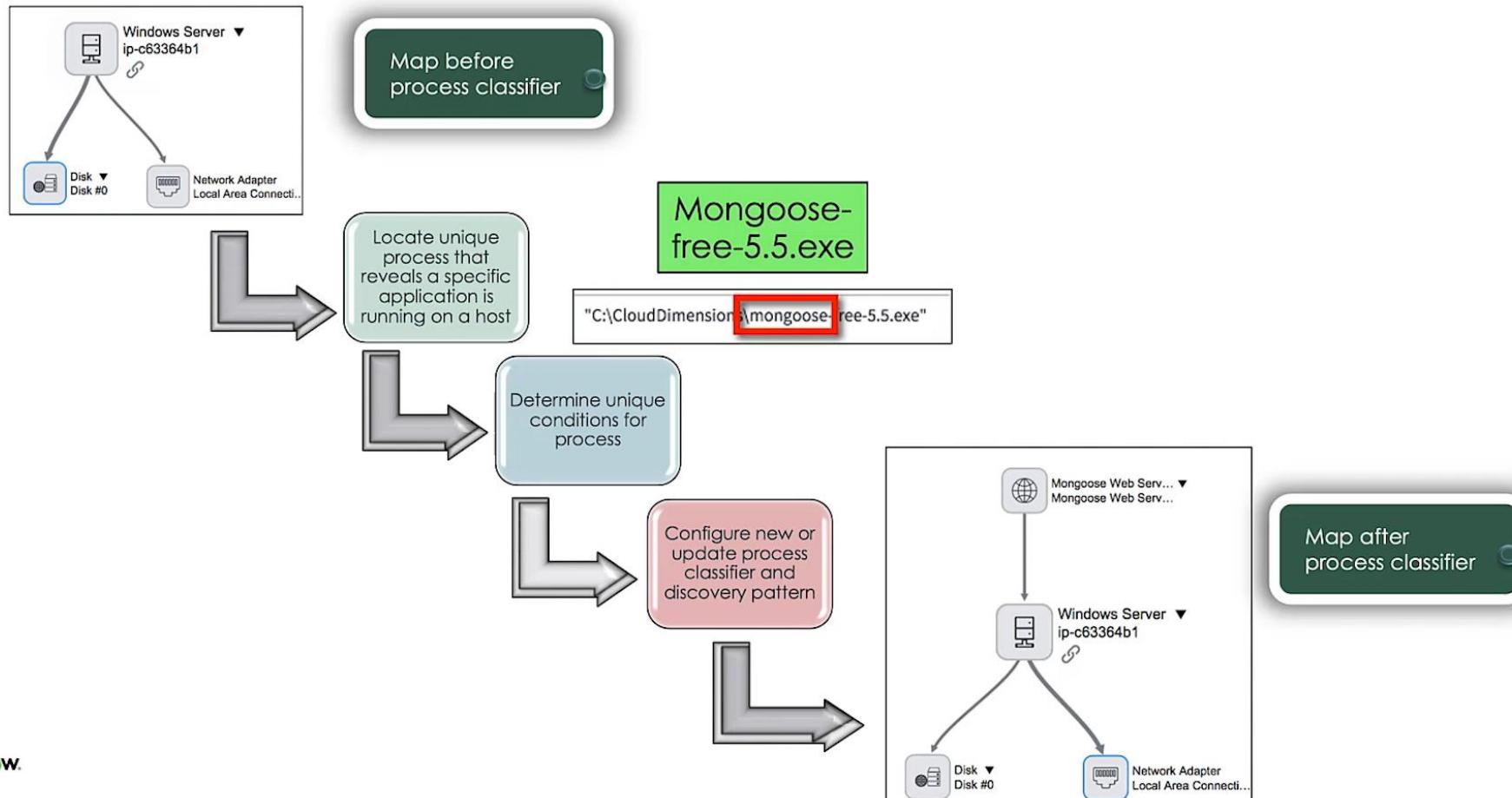
Dependency View map displays App to Host and App to App dependency relationships



# ADM - Discovery Process Classifier

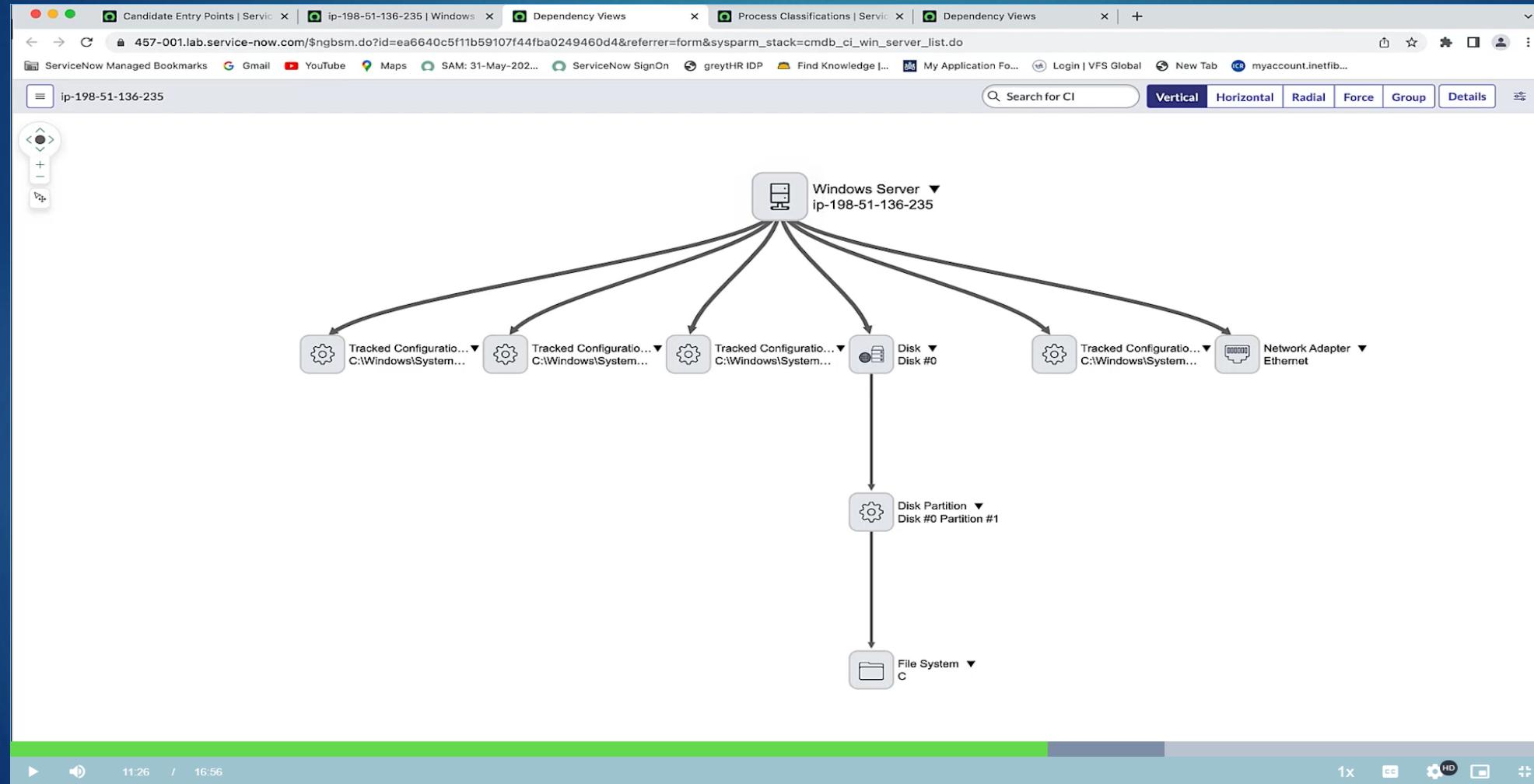
65

## Discovery Process Classifier Configuration Overview



# Dependency View in ServiceNow

66



# Service Mapping Discovery (SMD) & Workflow (Top-Down)

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## Service Mapping Discovery (Top-Down)

Load  
Balancers

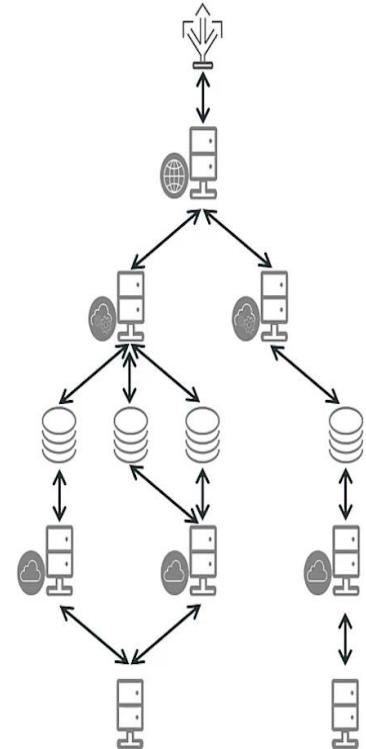
Web  
Servers

Applicatio  
n Servers

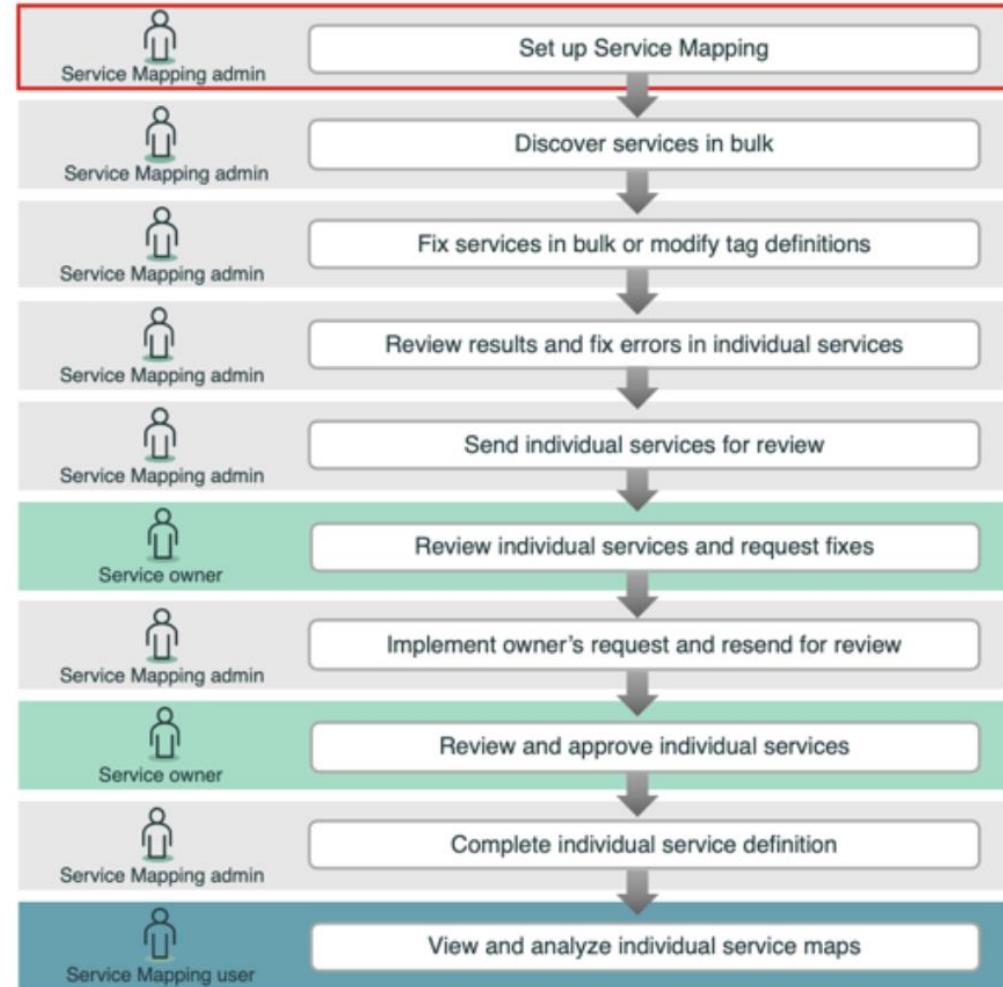
Databases

Virtual  
Servers

Servers



servicenow.



# ML Powered Mapping

Application Fingerprints (AFP) & Entry Points (EP)

## Machine Learning (ML) Powered Mapping



Now With Rules-based Automatic Connections



### Application Fingerprinting



Process groups and clustering group

### ML Connection Suggestions



cmdb\_tcp | cmdb\_running\_process

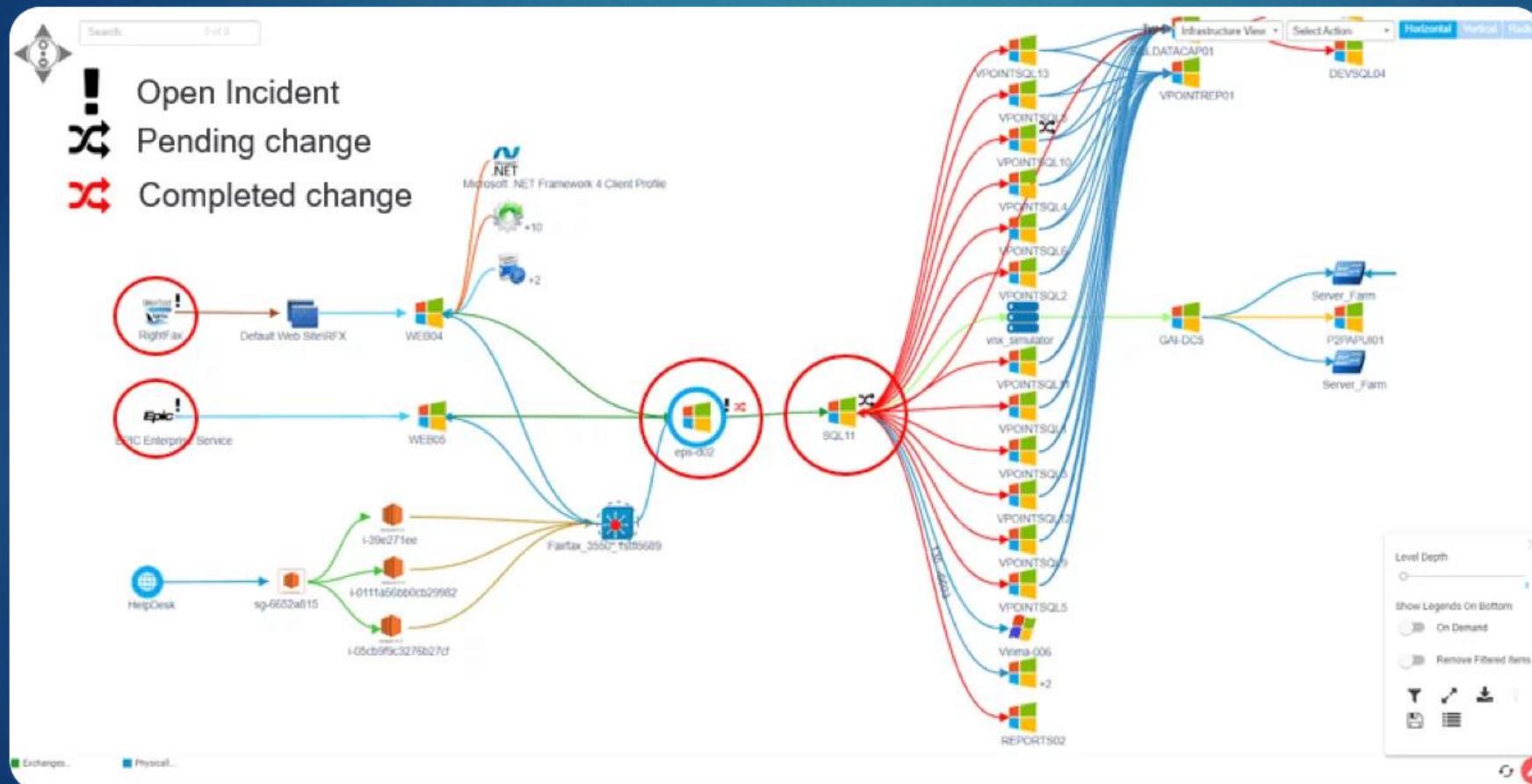
### Auto-connection Rules



Condition filters

# Service Dashboard

## Change Assess (SME) & Authorise (ECAB, CAB)



# Command Centre (NOC & SOC)

GBS → (ITSM + ITAM + ITOM + ITBM)

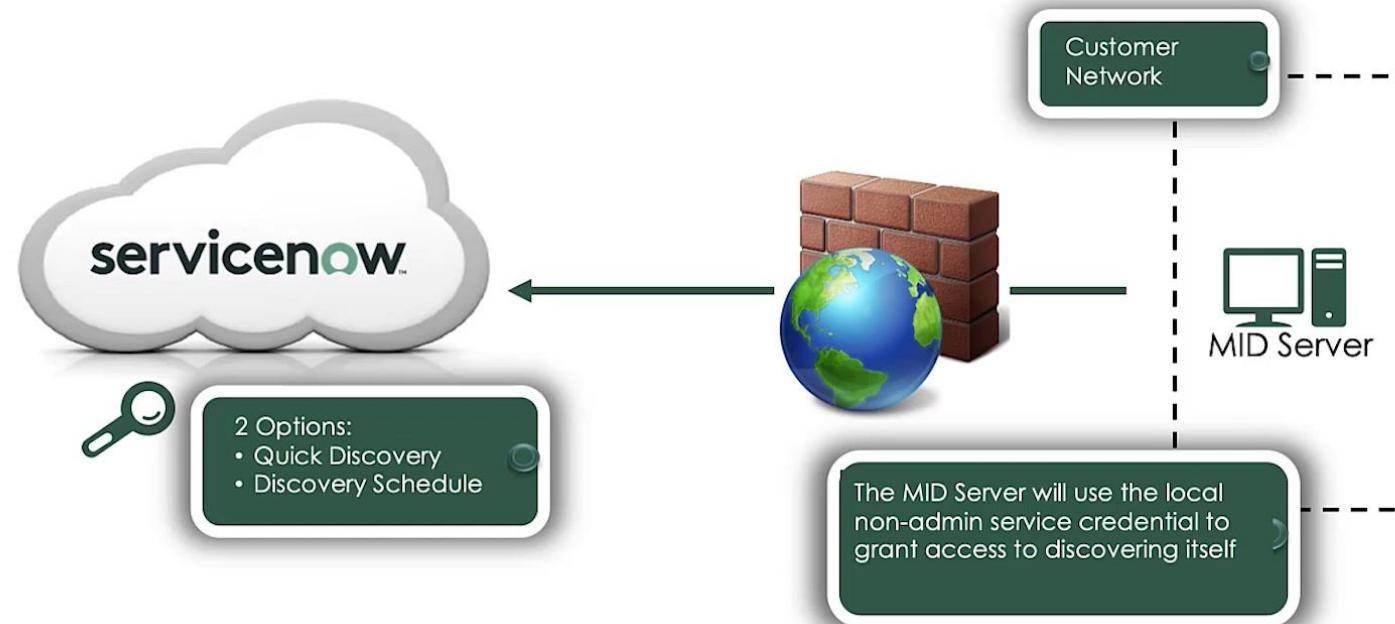
Maintaining the 99.999% Availability



# Horizontal Discovery

## Launching Horizontal Discovery

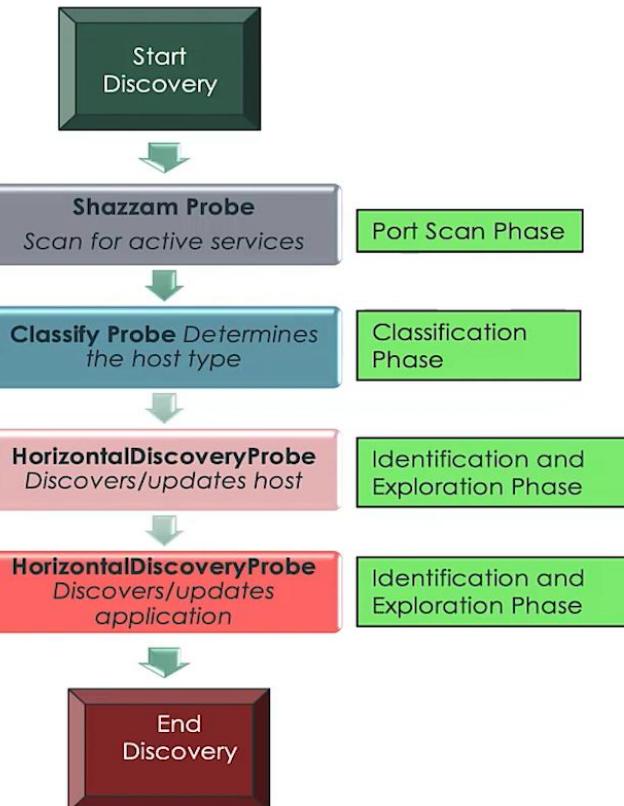
Both Quick Discovery and Discovery Schedules can be used to launch Discovery



# Launching Horizontal Discovery (Bottom - Up)

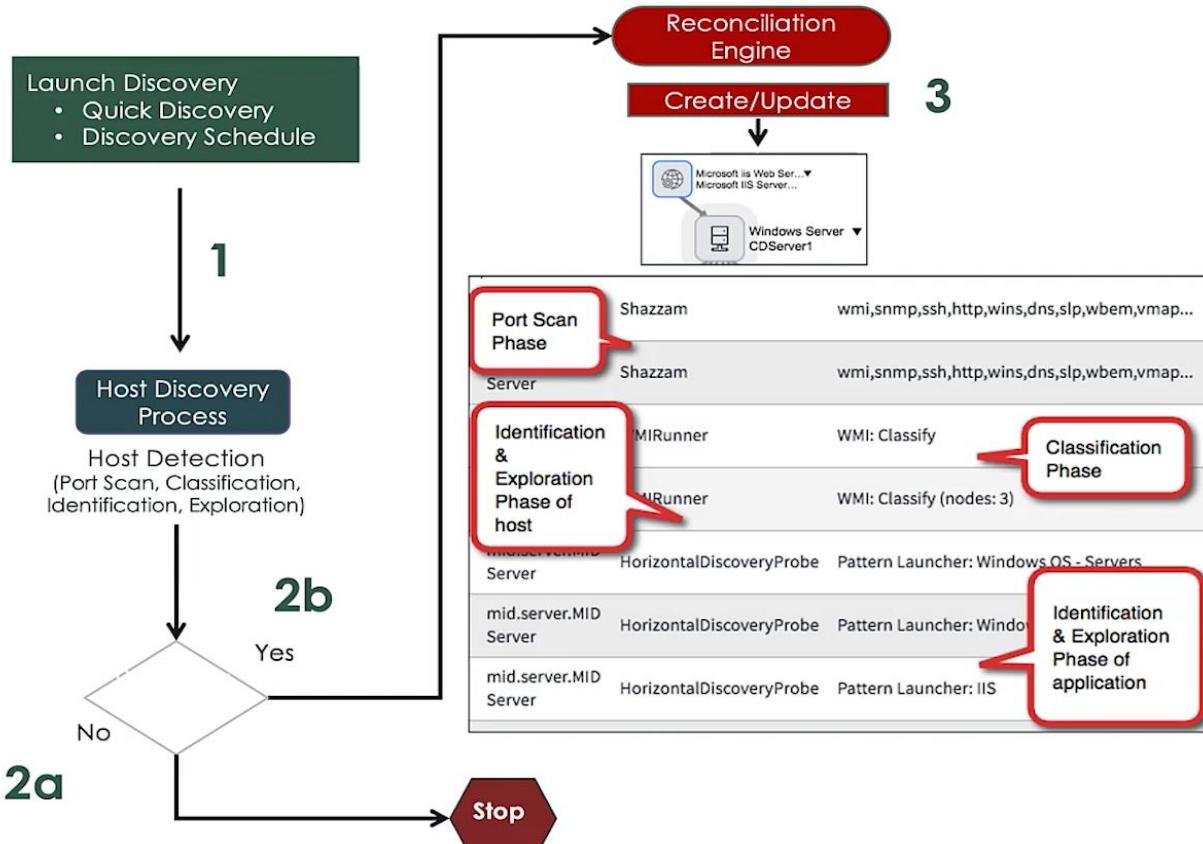
## Launching Horizontal Discovery

- **Port Scan Phase**
  - Scan for active devices (are you there and how will I classify you?)
- **Classification Phase**
  - Classify type of host (how should I classify you specifically?)
- **Identification & Exploration Phase**
  - Identify and explore a particular host (have I seen you before and tell me more about yourself?)
  - Identify and explore a particular application (have I seen you before and tell me more about yourself?)



# Discovery Process Flow

## Discovery Process Flow



# Discovery - Credentials

74

## Credentials

### SSH

- Used to discover Unix devices
- Support for SSH password and Private Key



### SNMP

- Used to discover network and print devices
- Support for SNMP v2 and 3



### Windows

- Used to discover Windows devices



### VMware vCenter

- Used to discover VMware vCenter running on a Windows machine



### CIM

- Used to explore CIM servers based on the Common Information Model (CIM) and obtain the serial numbers on ESX server



### Applicative Credential

- Used for some applications that require separate credentials that are used by the host on which they run

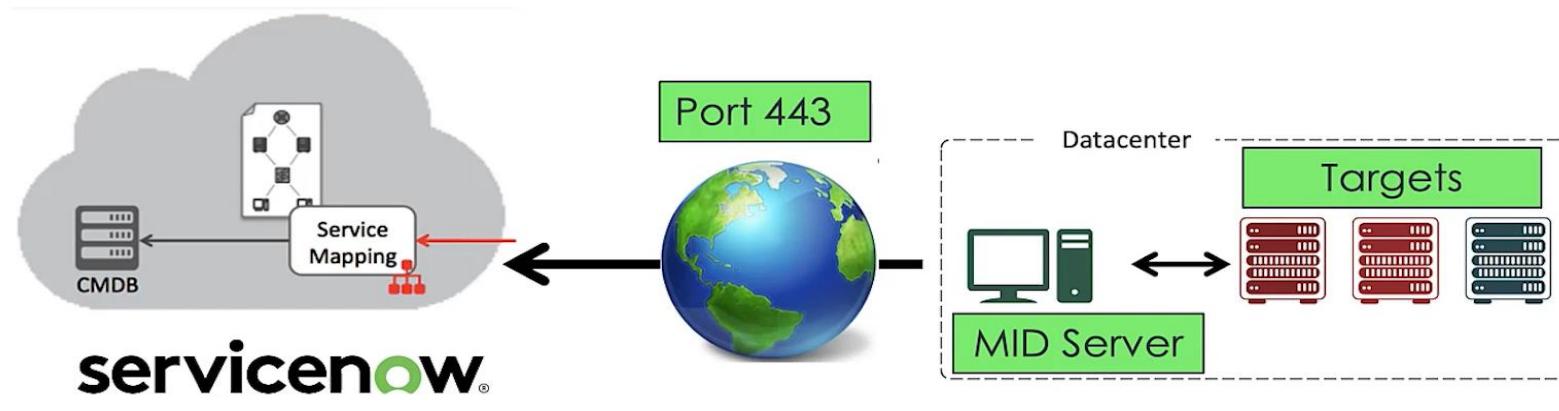


# SM – Architecture

Service Mapping run a scheduled job named “Generate Candidates for Service by Tags” once a day.

## Service Mapping Architecture

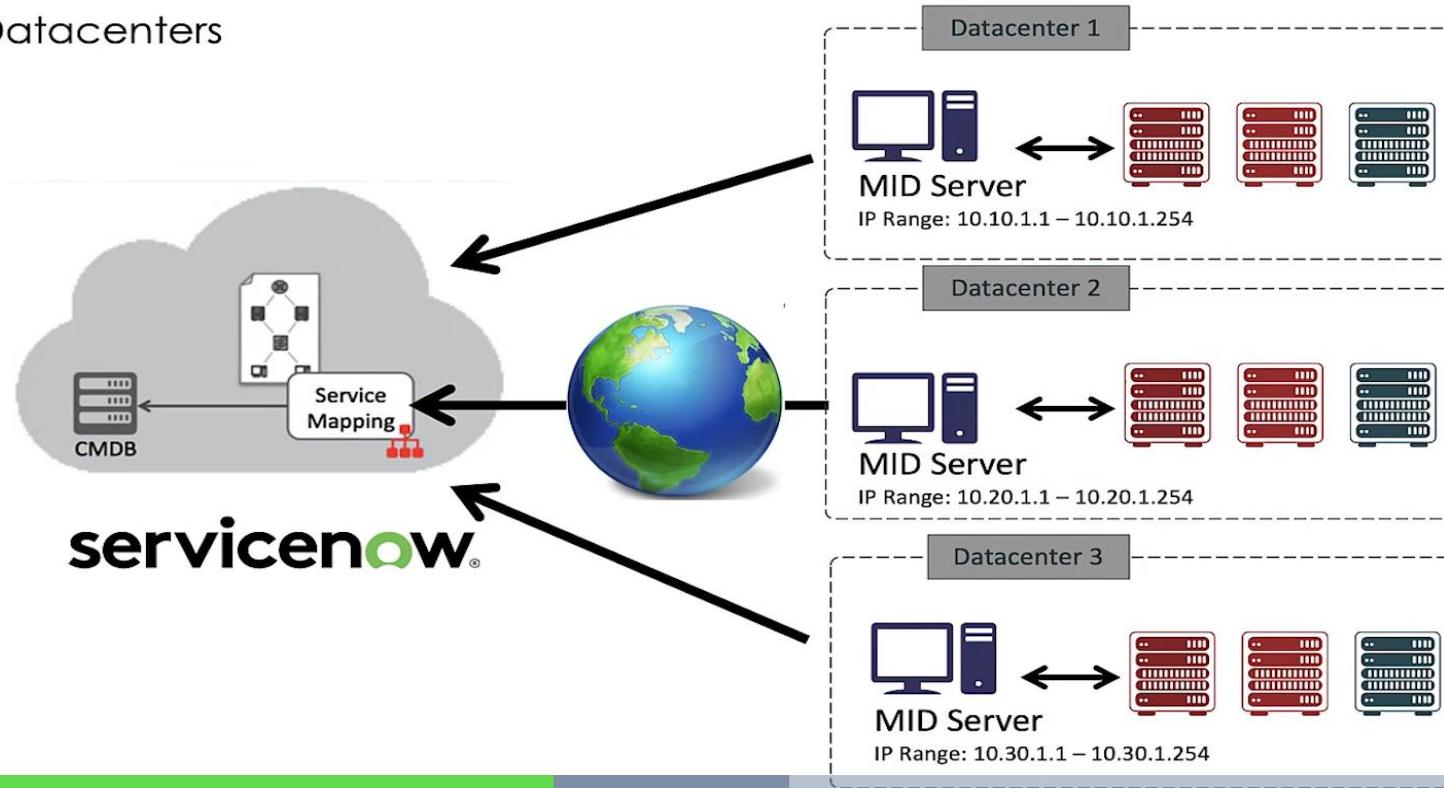
Single Datacenter (minimum requirements)



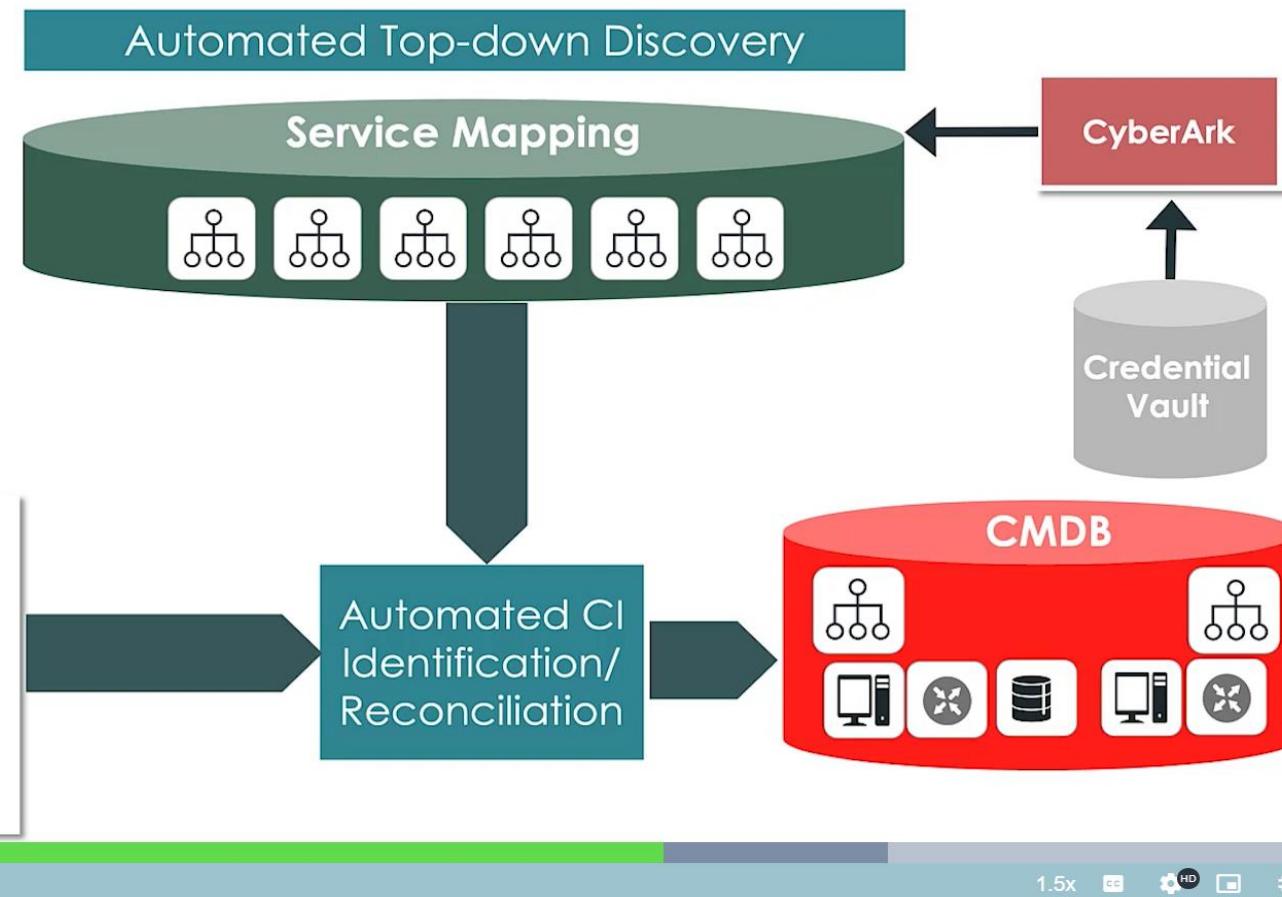
# SM – Architecture (Multiple Datacenters)

## Service Mapping Architecture

Multiple Datacenters

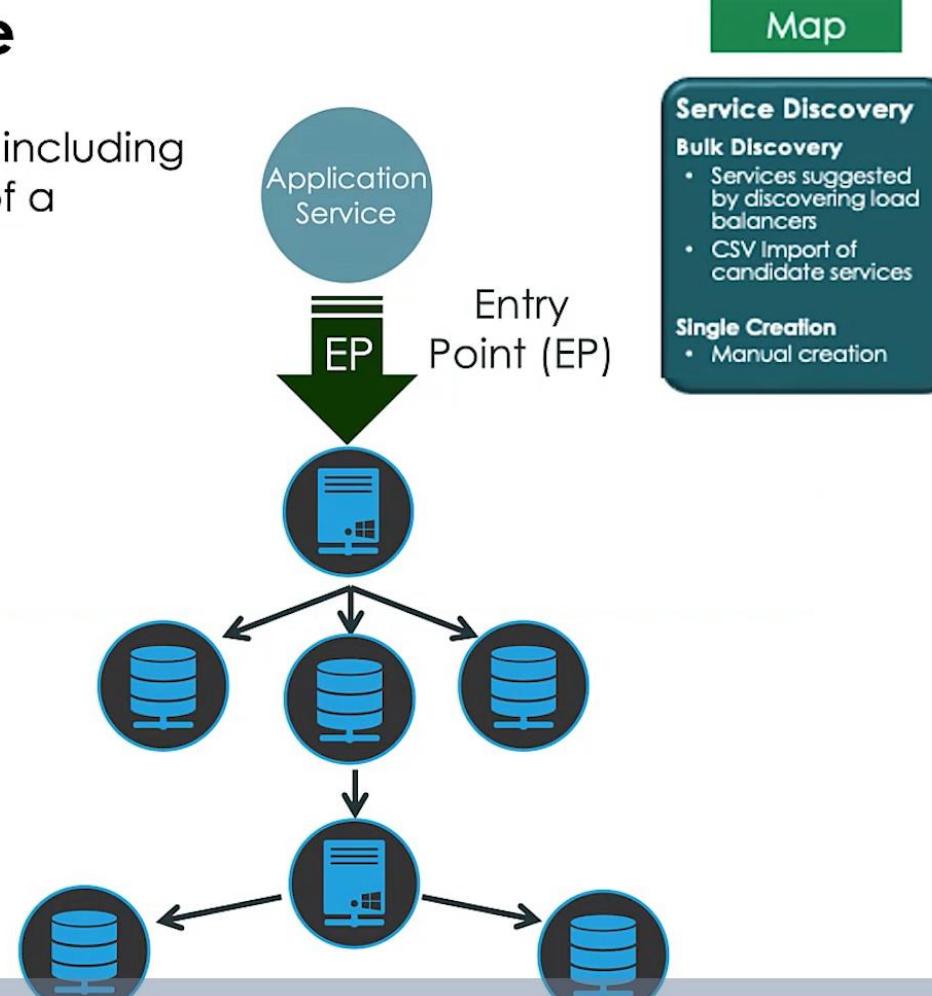


## Service Mapping Architecture and Integrations

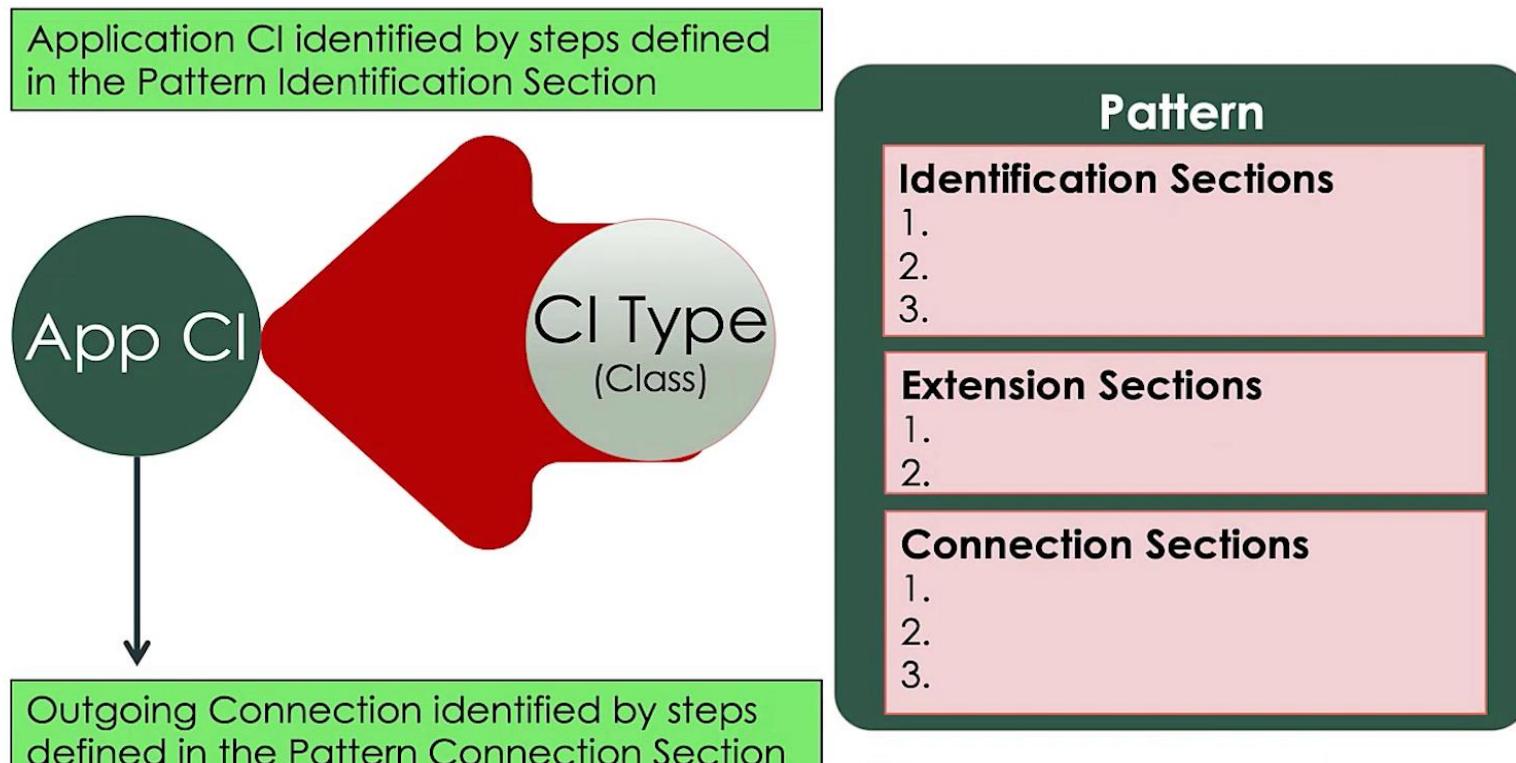


## Service Mapping Data Structure

Host and Application Configuration Items (CIs) including Connections comprise the core components of a service discovered by Service Mapping



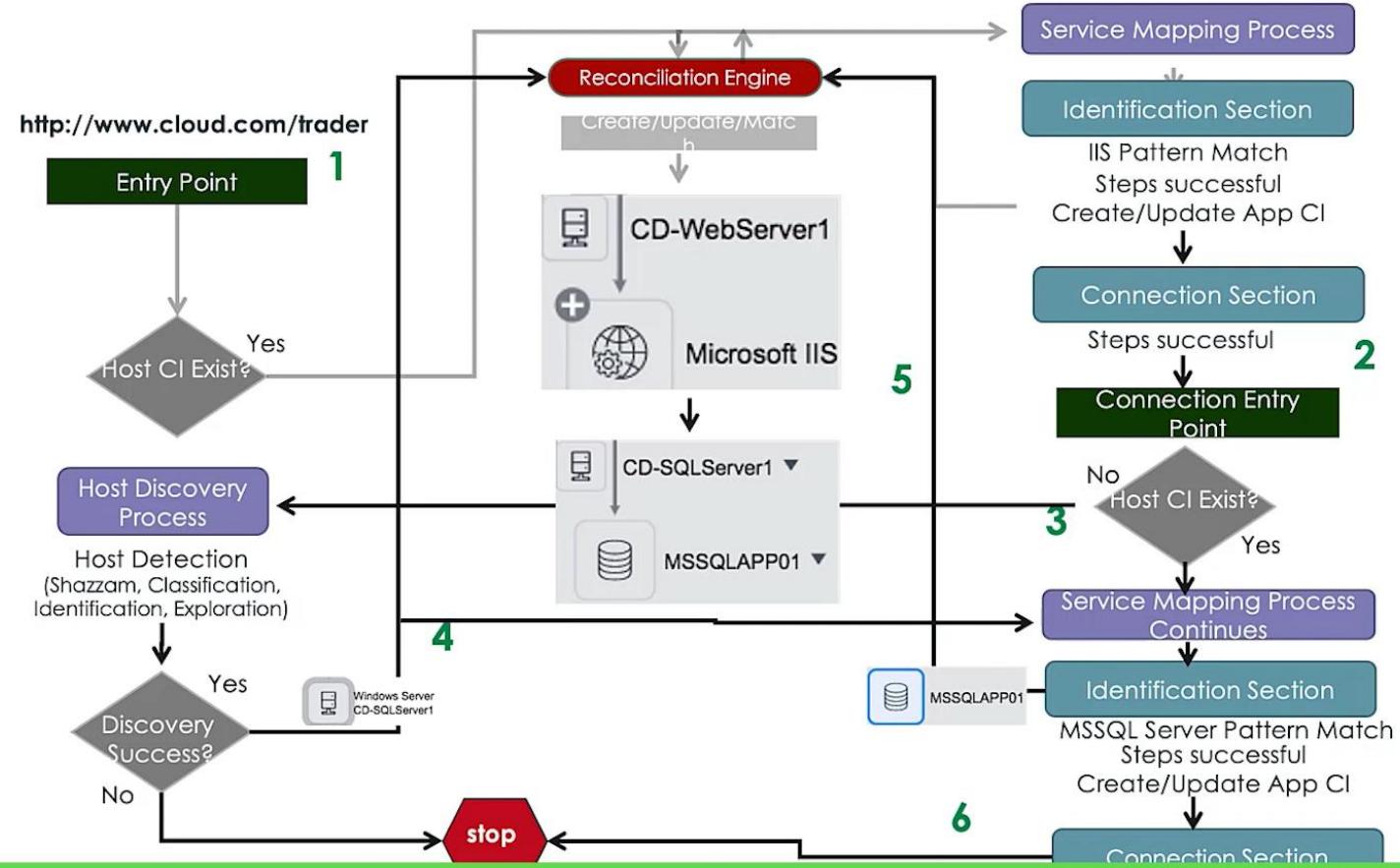
## Service Mapping Data Types



# CMDB Group – CI Relations

The screenshot shows a ServiceNow interface for managing CMDB Groups. The left sidebar has a tree view with 'Event Management' expanded, showing 'Administration', 'CMDB Group CI Relations' (which is selected), and 'CMDB Groups'. The main content area is titled 'CMDB Group - windows SAP server' and shows a 'View: Health Group\*' record. The group name is 'windows SAP server' and the type is 'Health'. There is a large empty text area for 'Description'. Below the form are 'Update', 'Show All CI', and 'Delete' buttons. A sub-section titled 'CMDB Group Contains Encoded Queries' is present, showing a table with columns 'Class', 'Condition', 'Simple Condition', and 'Domain'. The table header says 'Group = windows SAP server' and contains a 'Search' field. The table body displays the message 'No records to display'. The bottom of the screen shows a green progress bar and a standard operating system taskbar with icons for volume, battery, and system status.

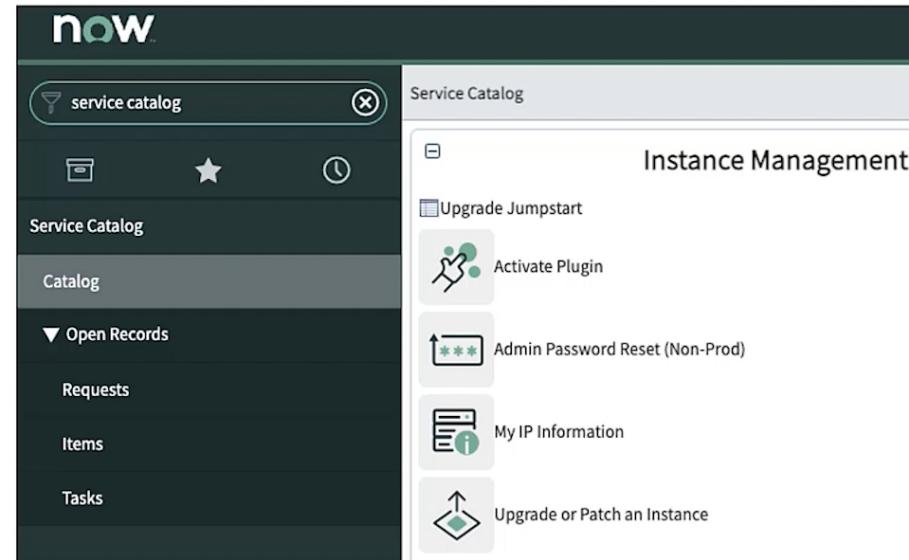
## Service Mapping Process Flow: With Connections



# SM- Plugin

## Service Mapping Plugin

- Should be enabled automatically when purchased
- Can also be requested through Now Support
  - Service Catalog > Activate Plugin
- Leverages Discovery functionality based on the IP-based Discovery plugin



## Service Mapping Roles

sm\_admin or  
admin

- Maps, fixes, and maintains services
- Performs advanced configuration



sm\_user

- Views service maps to plan change or migration
- Analyzes maps for continuity and availability



sm\_app\_owner

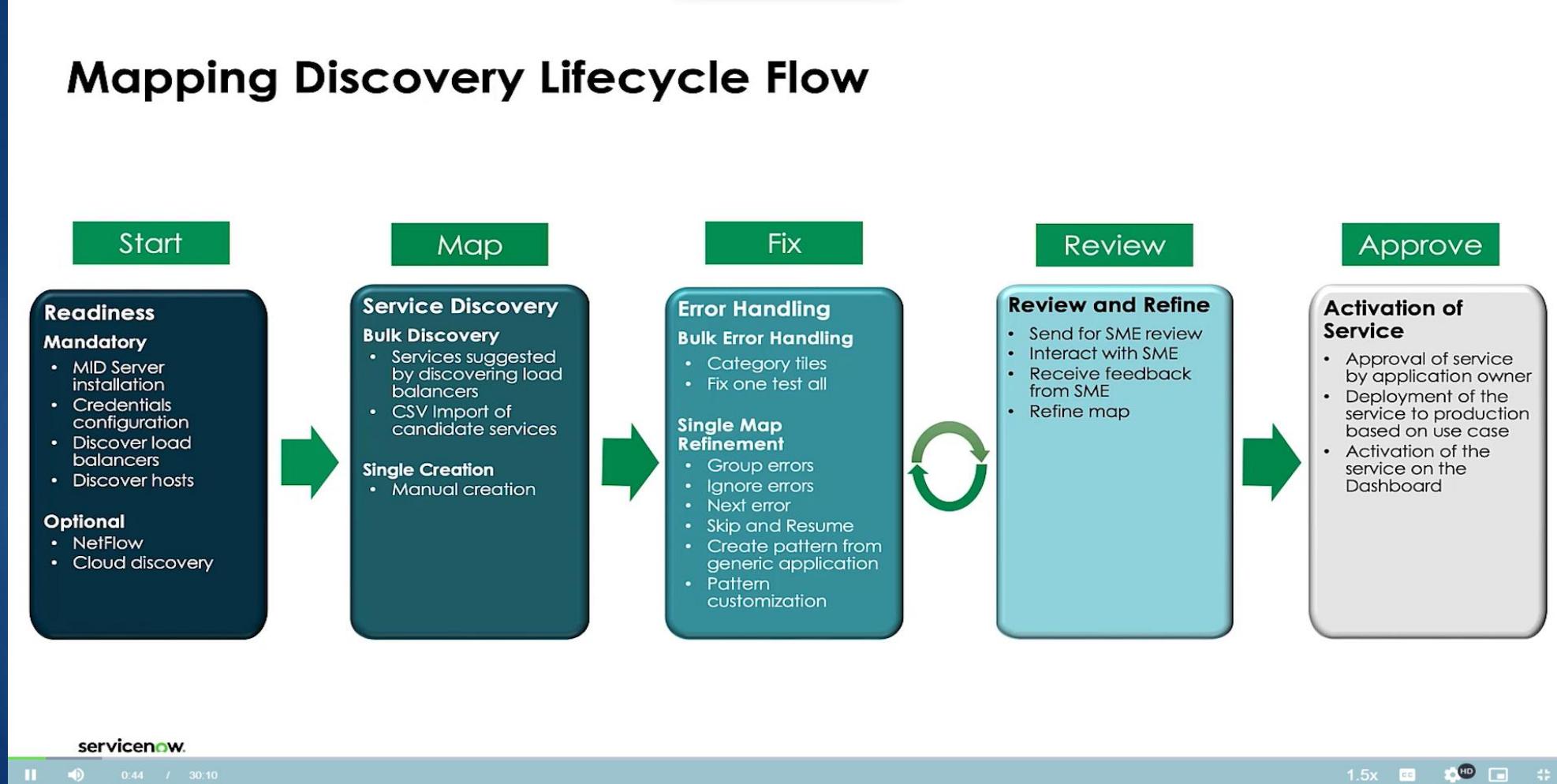
- Reviews, approves, and owns service



# SMD - lifecycle Flow

84

## Mapping Discovery Lifecycle Flow



# Readiness Checklist

85

## Readiness Checklist

- Before attempting to map services, view the Readiness Checklist to verify suggested tasks are complete such as:
  - Credentials are configured
  - MID Servers are installed and validated

Readiness Checklist

ⓘ Load Balancers - During last 14 days, Discovery found 0 load balancers out of 3 required. Click to review.
ⓘ Hosts - During last 14 days, Discovery found 3 hosts out of 100 required. Click to review.
ⓘ Netflow - Not configured (optional).
ⓘ Cloud Discovery - Not configured (optional).
ⓘ MID Servers - 1 MID Servers are running.
ⓘ Credentials - 8 SSH, Windows, SNMP credentials are found.
ⓘ Horizontal Discovery Errors - There are no errors in Discovery that may impact Service Mapping



# SM - Home

Entry Point (Individual or in Bulk) = URL (protocol + port)

The screenshot shows the ServiceNow Candidate Entry Points dashboard. At the top, there are four cards:

- Map:** 18 Candidates. Buttons: [Map Your Services](#), [View Candidate List](#), [Import Service Map List](#), [Additional Options](#) (dropdown menu: [Define A Single Service Map](#), [Services Gathering Data](#), [Services Finished Questionnaire](#)), [Your Services](#).
- Fix:** 3 Service maps. Button: [View Your Services](#).
- Approve:** 12 Service maps. Button: [Approve Your Services](#).
- Completed:** 5 Service maps. Button: [View Your Services](#).

# Define a Single Business Service

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The screenshot shows the ServiceNow CMDB Dashboard - Service Mapping interface. The left sidebar contains a navigation menu with categories like Conversational Interfaces, Predictive Intelligence, Service Mapping, Knowledge, Admin Center, Service Portal, and System Classic Mobile UI. The main content area is titled "Define a Single Business Service" under "Service Mapping Home". The "BASIC INFO" section includes fields for "Name" (Business service name), "Owned By" (Select an owner), and "Process Status" (In Progress). The "ENTRY POINTS" section has a button to "Add Entry Point". Below this, a grid displays nine entry point types: Web Application, Microsoft Exchange, Citrix XenApp, SAP application, Microsoft SharePoint, IBM WebSphere MQ, Tibco EMS, Microsoft Biztalk, and Generic Application. The "Discoverable by Service Mapping" option is selected. The bottom right corner of the slide has a green bar with the number "2x" and other icons.

# Adding a Candidate Entry Point (EP)

Through SMD or Manually Created

The screenshot shows the ServiceNow CMDB Dashboard with the 'Candidate Entry Points' page open. The left sidebar contains a navigation menu with categories like Conversational Interfaces, Predictive Intelligence, Service Mapping, Discovery, Knowledge, Admin Center, Service Portal, and System Classic Mobile UI. The main content area displays a form titled 'Add Entry Point' under the 'SAP application' section. The 'URL' field is populated with 'http://198.51.7.20/orch'. Other fields include 'Host Name' and 'Comments', and a button labeled 'Select a different application type'.

# Mapped Application Services

The screenshot shows the ServiceNow interface for managing application services. The left sidebar navigation bar is visible, showing categories like Event Management, Service Mapping, Configuration, and CSDM. The main content area displays a table titled "Mapped Application Services [service\_mapping\_view view]". The table has columns for Name, View map, Business criticality, Discovery status, Operational status, Traffic based discovery, and Service Type. A single row is present in the table, labeled "Dispatch service", with values: Name (Dispatch service), View map (View map), Business criticality (4 - not critical), Discovery status (Done), Operational status (Non-Operational), Traffic based discovery (true), and Service Type (Discovered). The top navigation bar shows tabs for "Mapped Application Services", "New Record", and "CMDB Dashboard". The browser address bar shows the URL: 457-001-instructor.lab.service-now.com/now/nav/ui/classic/params/target/sa\_discovered\_services\_list.do%3Fsysparm\_query%3Dtype%253D0%5EOrtype%253D2%26sysparm\_view%3Dservice\_mapping\_v... . The bottom of the screen shows a green progress bar and standard browser control buttons.

Name	View map	Business criticality	Discovery status	Operational status	Traffic based discovery	Service Type
Dispatch service	View map	4 - not critical	Done	Non-Operational	true	Discovered

# Application Service Map

The screenshot shows the ServiceNow Application Service Map interface for the 'Dispatch service' application. The left sidebar navigation includes 'Event Management', 'Services' (with 'Application Services' selected), 'Service Mapping', 'Configuration' (with 'Application Services' selected), and 'CSDM'. The main content area displays a network diagram with nodes like 'Apache server@ip-198-51-147-201' and 'Apache server@ip-198-51-147-201'. A context menu is open over one of the nodes, showing options such as 'Show discovery log', 'Manually add a connection', and 'Show connection suggestions'. The properties panel on the right provides details for the selected node, including its TCP port (80), running process (httpd.exe), and command (C:\Apache24\bin\httpd.exe). The bottom section shows a table for 'Discovery Messages' with no records displayed.

Properties

- Apache server@ip-198-51-147-201  
on ip-198-51-147-201

Application

- TCP port(s)  
80
- Running process  
httpd.exe
- Running process command  
C:\Apache24\bin\httpd.exe
- Classifier  
Apache Server
- PID  
2796
- Updated  
2022-11-17 12:24:57

Discovery Messages

Message	Error Handling	IP Address	Updated	Error Status	ignored
No records to display					

# Review Suggested Connections

The screenshot shows a ServiceNow application interface for the 'Dispatch service'. The left sidebar navigation includes 'Event Management', 'Service Mapping', 'Configuration', and 'CSDM'. The main content area displays the 'Application Service Map - Dispatch service' with a modal dialog titled 'Review suggested connections'. The modal contains instructions about mapping applications using fingerprint-based discovery and a table with one record:

All > Source CI = Apache server@ip-198-51-147-201 > Netstat connection is not empty > Netstat connection Absent = false
No records to display

At the bottom of the modal, there are buttons for 'Add', 'Exclude', 'Reset', '20 rows per page', '0 records', and 'Close'.

# Connection Suggestions View

The screenshot shows the ServiceNow web interface for the 'Connection Suggestions View' under the 'Global Suggestions' tab. The left sidebar includes 'Connections', 'Service Mapping', and 'Administration' sections, with 'Connection Suggestions' currently selected. The main content area displays a table header for connection suggestions, including columns for 'From - To', 'From', 'Source CI', 'To', 'Target Host', 'IP', 'Port', 'Confidence', 'Decision', 'Rule', 'VIP', 'Decision changed by', and 'Updated'. A message box at the top provides instructions for mapping applications based on fingerprints. The status bar at the bottom shows the time as 19:32 and a progress bar indicating 2x zoom.

# Discovery Schedule

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PowerPoint Slide Show – [04.00-SMF-T010-Review\_Approve-Final]

## Discovery Schedules

- After service is approved, schedules:
- Provide a method to rediscover components of a service on a scheduled basis
- Rediscover service CIs based on:
  - **CI Type**: all CIs belonging to this type are rediscovered
  - **Specific CI**: only the specified CI in the schedule is rediscovered
- Use the All Applications default schedule to discover all applications for all services on a scheduled basis

Operational status  
Operational

Select a discovery type from the Discover list and configure its attributes to create a discovery schedule.

Name  Active

Discover  Service  Discover by  CI Type  Specific CI

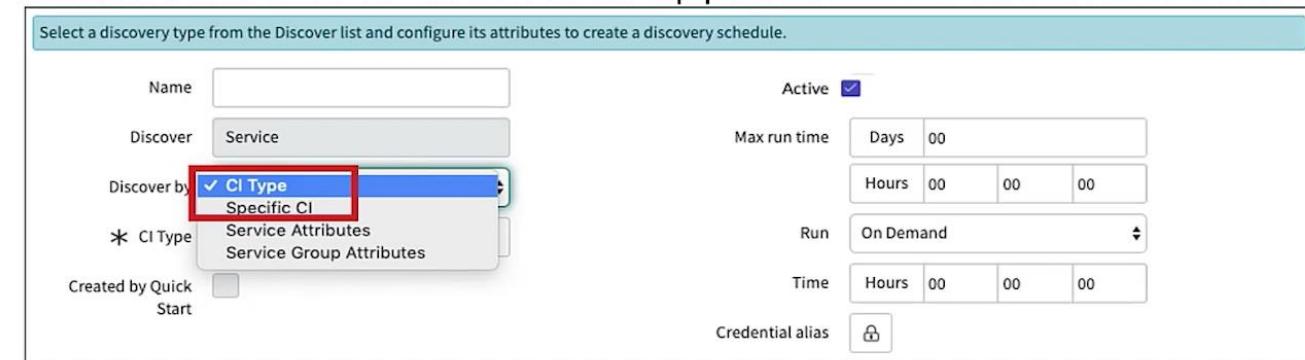
\* CI Type  Service Attributes  Service Group Attributes

Created by Quick Start

Max run time  Days 00  
 Hours 00 00 00

Run  On Demand  Time  Hours 00 00 00

Credential alias



servicenow.

27:12 / 33:27 2x CC HD

# Discovery Schedules (Continued)

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## Discovery Schedules (continued)

- Before or after a service is approved, schedules:
- Can rediscover service or service group by attributes using filters:
  - **Service Attributes:** all services with matching attributes are rediscovered
  - **Service Group Attributes:** all service groups with matching attributes are rediscovered
- Allows a preview of the discovery schedule by using [View Selected Services](#)

The screenshot illustrates the process of creating a discovery schedule. On the left, a smaller window shows the 'Discover by' dropdown menu, with 'Service Attributes' selected and highlighted in red. An arrow points to a larger, detailed configuration window on the right.

**Configuration Window Details:**

- Name:** [Empty input field]
- Discover:** Service
- Discover by:** Service Attributes (selected)
- Created by Quick Start:** [checkbox]
- Filter Services to Discover:** All of these conditions must be met (highlighted with a red border).
  - choose field --
  - OR
  - AND
- Active:**
- Max run time:** Days 00, Hours 00, Minutes 00, Seconds 00
- Run:** On Demand
- Time:** Hours 00, Minutes 00, Seconds 00
- Credential alias:** [Link icon]

**Page Navigation:**

31:11 / 33:27      2x      CC      HD      Fullscreen

# Discovery Schedule View

The screenshot shows a ServiceNow web interface titled "Discovery Schedules View: service\_mapping". The left sidebar contains a navigation menu with categories like Service Mapping, Change, Configuration, Discovery, Reports, and Performance Analytics. Under the "Discovery" category, "Discovery Schedules" is selected. The main content area displays a table of discovery schedules:

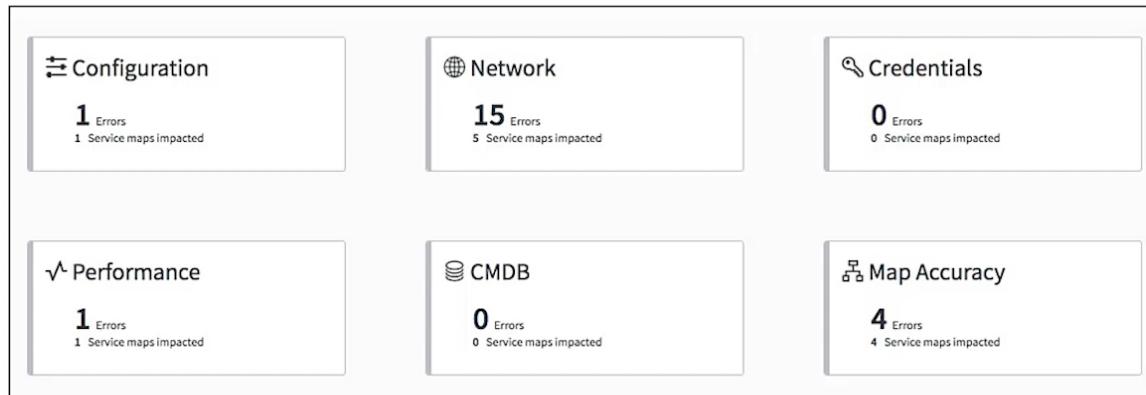
Name	Run	Location	Active
All Applications	Daily	(empty)	true
Load Balancer Services	Daily	(empty)	true

At the bottom of the screen, there are standard browser controls for volume, brightness, and zoom (2x), along with a progress bar showing 27.56 / 33.27.

# Discovery - Error Handling

## Error Handling

- Errors are categorized and presented in a prioritized set of tiles, indicating the number of services they impact
  - Each group of errors may be assigned to an owner for resolution
  - Assignment may be done based on platform task
  - Information is provided on suggested actions for common errors



servicenow.

Fix

### Error Handling

#### Bulk Error Handling

- Category tiles
- Fix one test all

#### Single Map Refinement

- Group errors
- Ignore errors
- Next error
- Skip and Resume
- Create pattern from generic application
- Pattern customization

## Error Handling Process

- Focus on the first 5 categories
  - Resolve errors in order of the categories from top left to bottom right
  - Resolving an error in a category may yield errors in subsequent categories
  - Work by selecting a sample error in each group and diagnose the problem
  - User can drill down into specific category and error group and try to resolve multiple errors at once
  - User task to delegate work to other teams (e.g. network, Unix)
  - Define SLAs on tasks if needed

App might be down Medium

6 Errors  
16 Service maps impacted

Low impacted group errors (4)

SSH connection reset <span style="background-color: #4f81bd; border: 1px solid black; padding: 2px;">Low</span>	Host detection failed <span style="background-color: #4f81bd; border: 1px solid black; padding: 2px;">Low</span>	Failed to establish SSH connection <span style="background-color: #4f81bd; border: 1px solid black; padding: 2px;">Low</span>	DNS lookup failed <span style="background-color: #4f81bd; border: 1px solid black; padding: 2px;">Low</span>
1 Errors 2 Service maps impacted	11 Errors 12 Service maps impacted	10 Errors 10 Service maps impacted	1 Errors 1 Service maps impacted Assigned

## Error Handling Process

- Specific suggestions to resolve common issues are provided
  - Displays a troubleshooting procedure in a pop-up window
  - Follow the steps to try to resolve the error

The screenshot shows a ServiceNow interface with the following details:

**Automation Error Messages** list:

- No active MID Server found for IP 198.51.255.41 and Host 08342597880d001107443d18508e19b0 (highlighted with a red box)
- No active MID Server found for IP 198.51.100.11 and Host 86b25128b4c9c1107446193ad9723a6
- No active MID Server found for IP 198.51.255.41 and Host 08342597880d001107443d18508e19b0
- No active MID Server found for IP 198.51.255.41 and Host 08342597880d001107443d18508e19b0
- No active MID Server found for IP 198.51.100.66 and Host 05786f61b4c5c9107446193ad9723bc
- No active MID Server found for IP 198.51.100.241 and Host 327adaa5d6501107447e72988475c0
- No active MID Server found for IP 198.51.100.11 and Host 86b25128b4c9c1107446193ad9723a6
- No active MID Server found for IP 198.51.100.167 and Host 36cf5bedb445c9107446193ad9723c

**Recommended Actions** sidebar:

- Edit MID Servers
- Retry Discovery
- View affected services

**Instructions** pop-up window:

There is no MID Server suitable the discovery job with the correct IP range or capability, or application settings.

Check your MID Server settings. Verify that there is an active and validated MID Server with the IP range that covers the relevant IP address, and with the correct capability and application settings.

Learn about configuring MID Servers for Service Mapping  
Configure MID Servers for Service Mapping

**View instructions** button (highlighted with a red box)

# SM- Review Stage (Approved by Owner)

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PowerPoint Slide Show – [04.00-SMF-T010-Review\_Approve-Final]

## Review Stage

- After service is approved:
  - Its Process Status is changed to Approved
  - It appears under the Completed tile on Home page
  - Its Operational status changes to Operational
  - It appears on the Event Management Dashboard
  - A Discovery Schedule can be created to rediscover the supporting application on an ongoing basis

**Approve**

**Activation of Service**

- Approval of service by application owner
- Deployment of the service to production based on use case
- Activation of the service on the Dashboard

The diagram illustrates the process flow for service approval. It starts with a 'Business service owner' represented by a photo of a man. An arrow points down to a box labeled 'Review and approve the business service'. This leads to the word 'Approved'. Below this, five green arrows point down to five different service status indicators: 'Process Status' (Approved), 'Completed' (with the number '3'), 'Operational status' (Operational), a screenshot of the 'servicenow' Event Management Dashboard, and 'Service Mapping' (Administration, Discovery Schedules). The entire diagram is set against a light gray background with a green footer bar.

Business service owner

Review and approve the business service

Approved

Process Status  
Approved

Completed  
3

Operational status  
Operational

servicenow.

Event Management

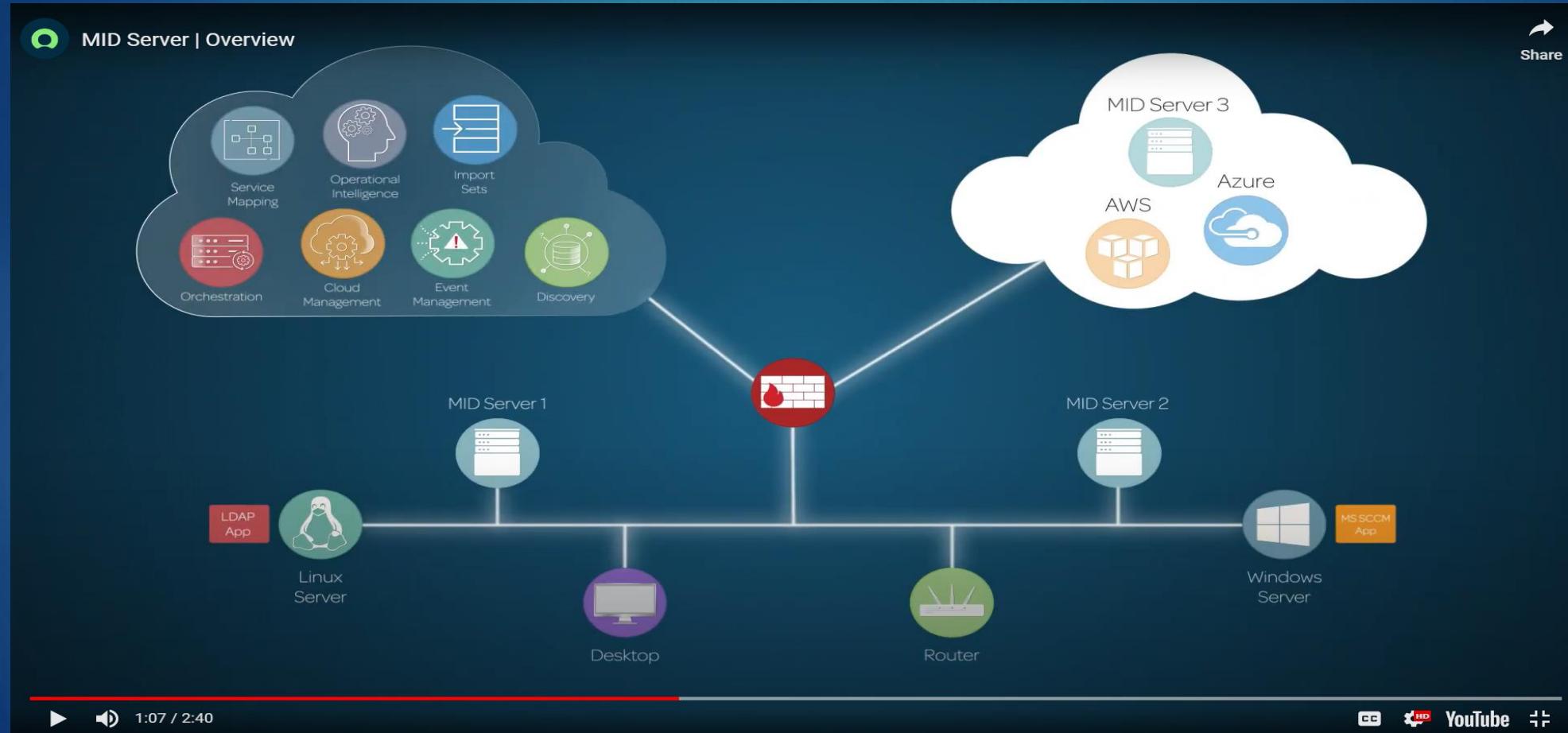
Service Mapping  
Administration  
Discovery Schedules

2x CC HD

23:57 / 33:27

# MID Server - Overview

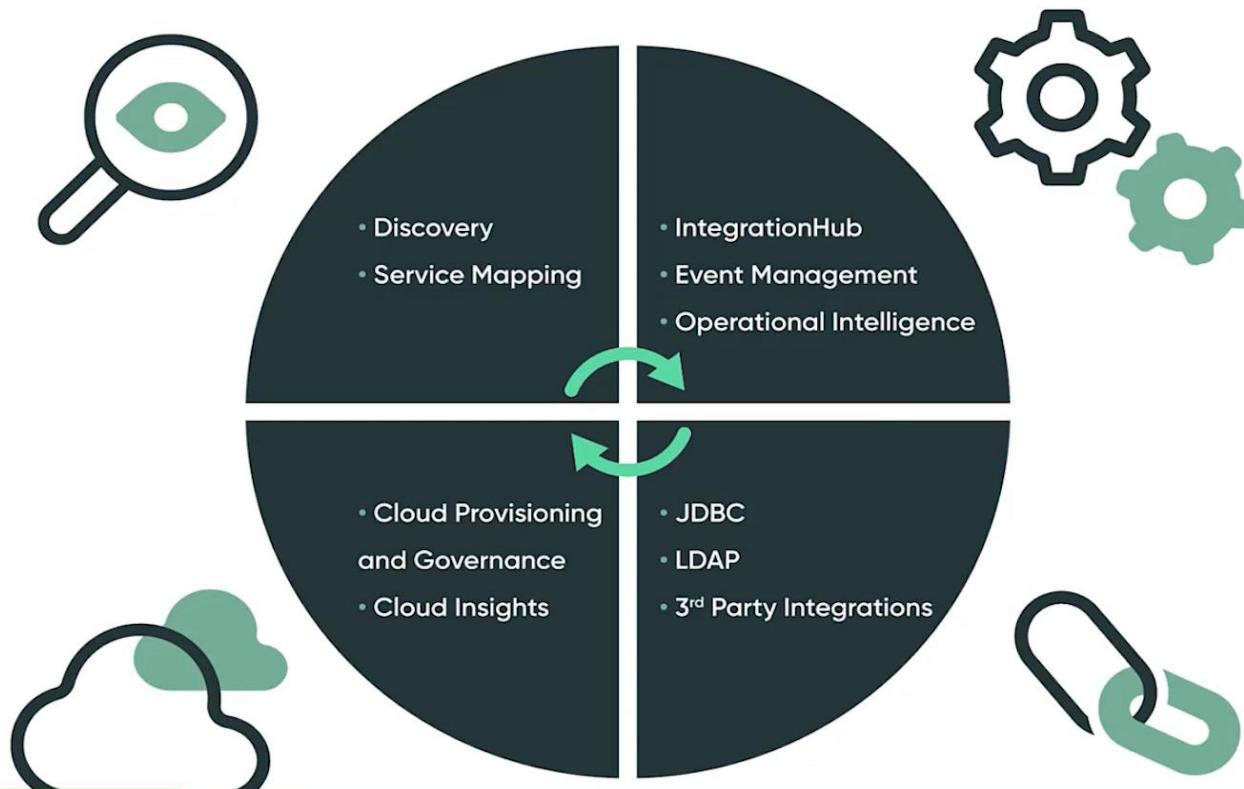
100



# MID Server – Utilised by (Management, Instrumentation & Discovery Server)

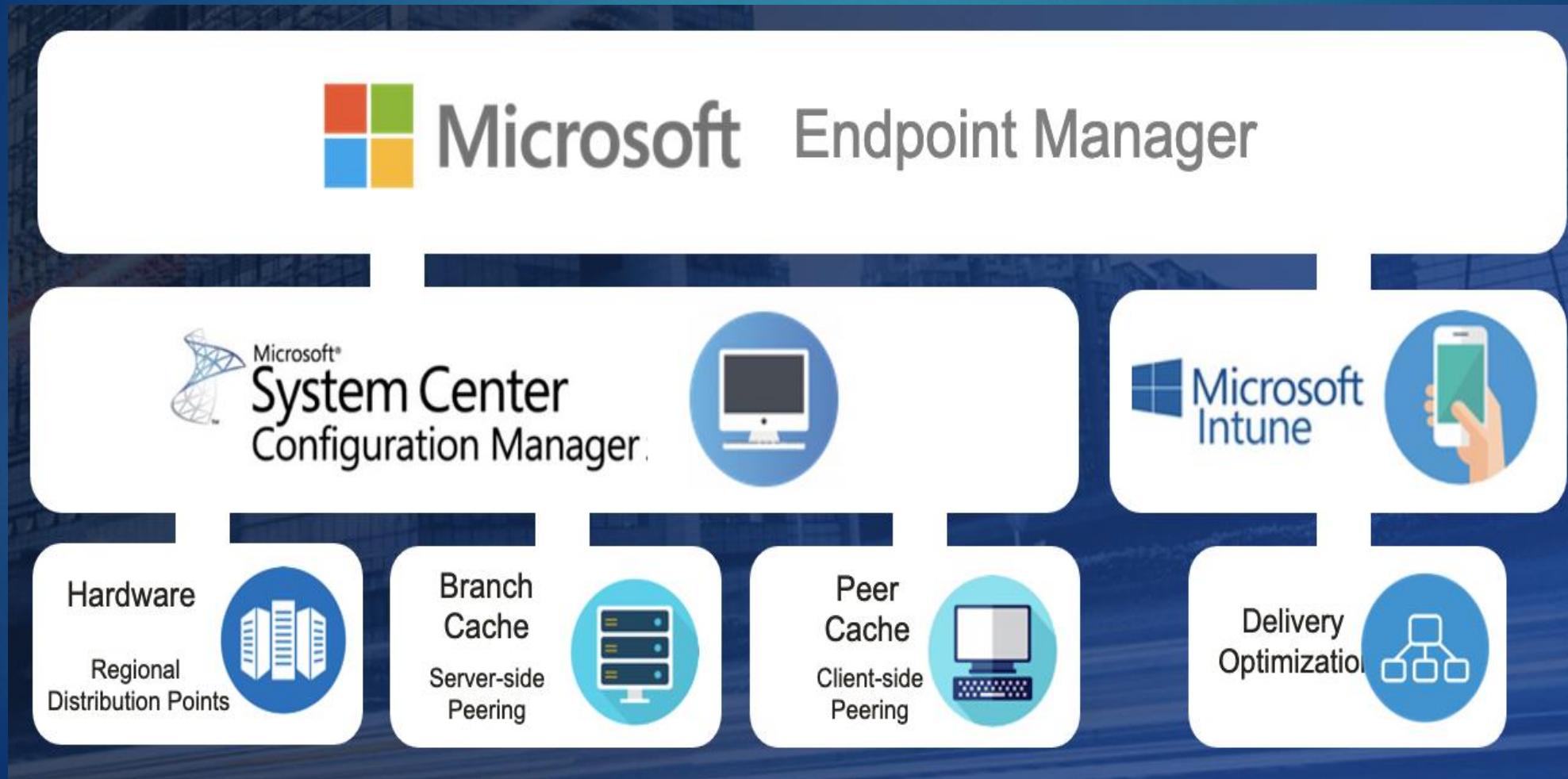
101

## Which Applications use a MID Server?

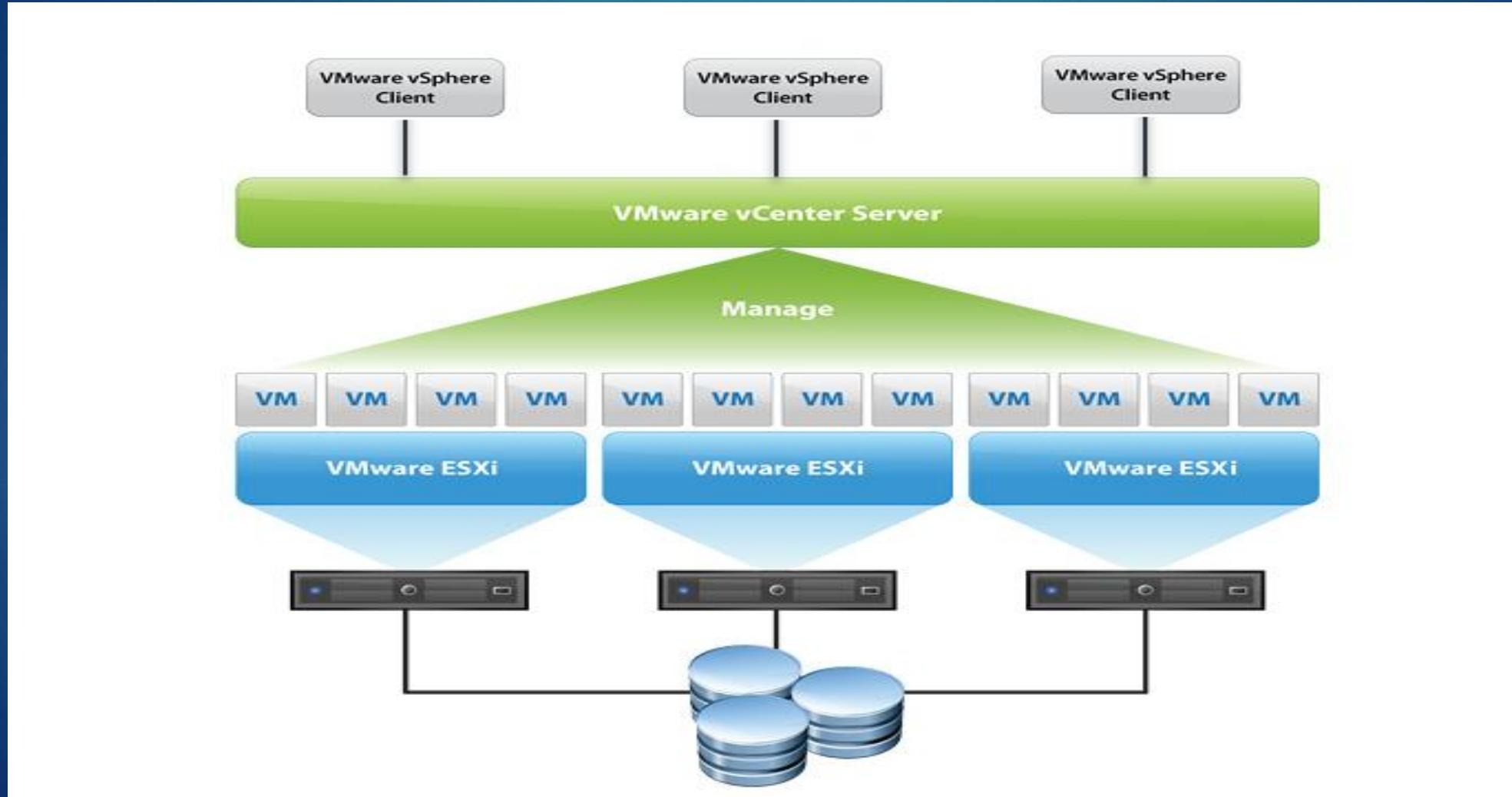


# Microsoft – Endpoint Manager - SCCM (Orchestration)

102

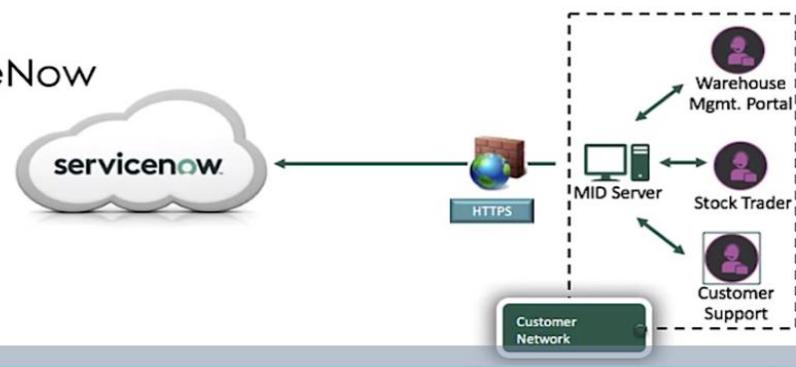


# VMWare-vSphere-vCenter (Orchestration)



## MID Server Installation Prerequisites

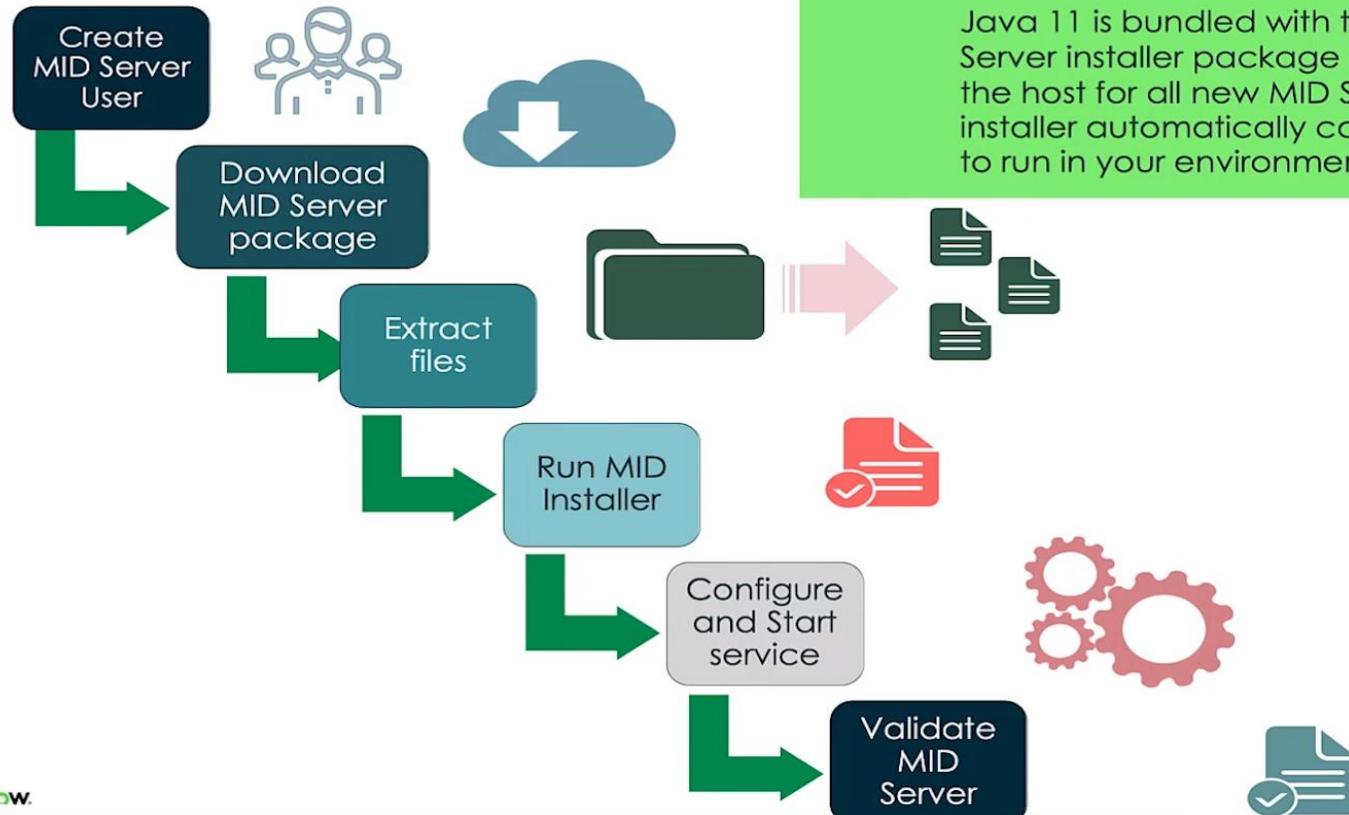
- Linux Red Hat 6 and above, Ubuntu 14 and above, CentOS 6 and above
- Windows Server 2012, 2016, and 2019\*\*
- .NET Framework 3.5, 4.0, 4.5, 4.6, or 4.7 is required for Service Mapping support and Windows pattern-based discovery
- OpenJDK version JRE 11.0.12 is bundled with the MID Server installer package.
- Minimum 2GHz CPU (quad core), 8GB RAM & 4GB disk space (per MID server instance)\*\*\*
- 64-bit operating systems only on new installs
- Access to target devices
- Outbound https port 443 internet access to ServiceNow



# MID Server Installation Process

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## MID Server Installation Process



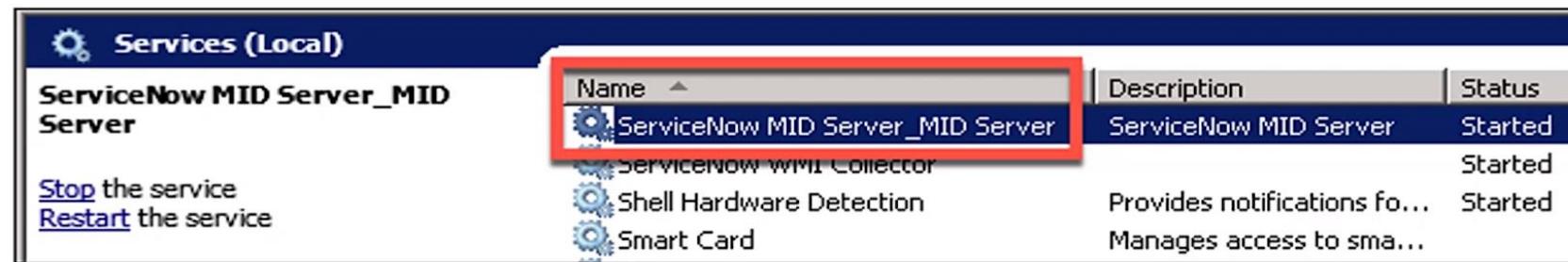
servicenow.

# What is MID Server?

ServiceNow Discovery (GW/Edge/Prob/Reverse Proxy)

## What is a MID Server?

- Stands for Management, Instrumentation, and Discovery and is a Java server that runs as a Windows service or UNIX daemon
- Facilitates communication and movement of data between the ServiceNow platform and external applications, data sources, and services behind a customer firewall
- Interacts with ServiceNow by way of the External Communication Channel (ECC) queue



# MID Server & ECC queue

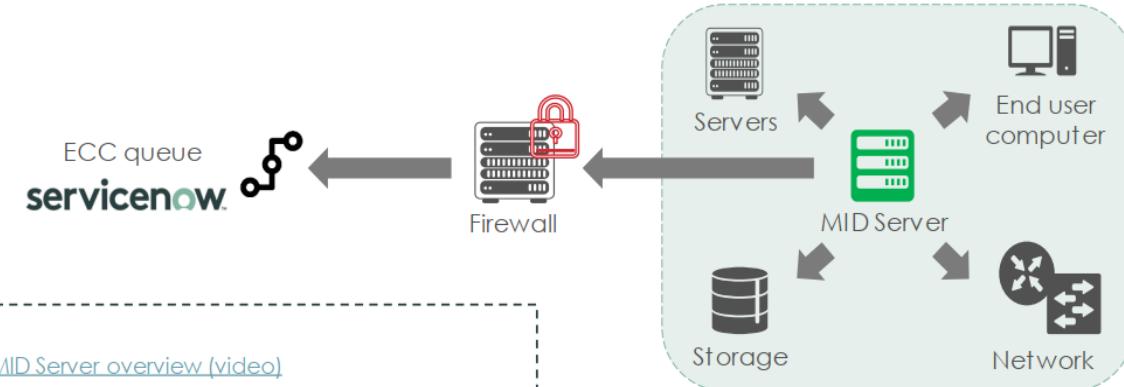
## How does a MID Server work with ServiceNow?

The MID Server runs as a Windows service or UNIX daemon within your organization's network (behind the firewall) and is completely controlled by your organization with local configuration files. It initiates communications with the ServiceNow instance via the [MID Server External Communication Channel \(ECC\) Queue](#):

1 The MID Server subscribes to the Asynchronous Message Bus (AMB) which notifies the MID Server if there are jobs in the ECC queue.  
The MID Server also polls the ECC queue on a regular interval defined in the mid.poll.time.\* The default is every 40 seconds (this is configurable). The ServiceNow instance never initiates communications with the MID Server.

\*This is in place in case the AMB connection gets disconnected.

- 2 If a job exists in the ECC Queue for that MID Server, it sets the status to "I'm working on it."
- 3 The MID Server does the work that's requested.
- 4 The MID Server reports the findings of the job back to the ECC queue.



### Related resources

- [Product Docs – MID Server](#)
- [Product Docs – Install a MID Server on Windows](#)
- [Product Docs – Install a MID Server on Linux](#)
- [Product Docs – MID Server configuration](#)
- [Product Docs - MID Server properties](#)
- [MID Server overview \(video\)](#)
- [How a MID Server can help you \(video\)](#)
- [Now Community – Best practices for MID Server setup and tuning](#)
- [ServiceNow security best practice guide: Key elements to consider when securing your instance](#)

# MID Server – Types (for Asset with No Tags)

The slide is titled "MID Server" in large white font. In the top left corner is a green circular icon with a white question mark and the text "MID Server | Overview". In the top right corner is a "Share" button with a share icon. On the left side, there is descriptive text: "Windows service or UNIX daemon". In the center, there is a diagram of a server rack with three horizontal server units. A white rectangular box is positioned in front of the bottom unit. This box has a small "JAVA" logo at the bottom right. To the left of the server rack, there is a green rounded rectangle containing a book icon and the text "VPC = Virtual Private Cloud". At the bottom left is a red progress bar indicating the video is at 1:03 / 2:40. At the bottom right are standard video player controls for volume, full screen, and YouTube.

MID Server

Windows service  
or  
UNIX daemon

VPC = Virtual Private Cloud

1:03 / 2:40

CC YouTube

# MID Server - Capabilities

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MID Server | Overview

Share

## MID Server Capabilities



- SSH
- SNMP
- VMware
- PowerShell
- WMI
- SOAP
- REST
- JDBC
- Resolve DNS
- AWS
- Azure
- Cloud Management

2:05 / 2:40

CC YouTube

# ServiceNow - MID Server (Video)

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- ▶ It is not a complete GBS platform yet!
- ▶ A CMDB Not a UCMDB
- ▶ ITSM, ITOM & ITBM modules.
- ▶ EAM, ITAM & CM modules.
- ▶ PPS, APM & SPM modules.
- ▶ CSM module & CRM integration.
- ▶ Procurement module ERP & FSM integration.
- ▶ LMS & VLE integration.
- ▶ Field & Financial Service Mgmt. (FSM & FFSM) phased out ??
- ▶ Content Management System (CMS) for ITIL service configuration management - formerly service asset configuration management (SACM)

# Answering the What?

- ▶ Asset (Resource).
- ▶ Asset vs Inventory.
- ▶ Asset vs CI → ( cmdb\_ci\_< type of CI > ).
- ▶ AM vs CM.
- ▶ AMDB vs CMDB.
- ▶ Tag → Digital Key Value (cmdb\_key\_value).
- ▶ Label → Physical Tag (Active & Passive RFID and simple sticker).

# Answering the What?

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- ▶ EAM (IT & non-IT)
- ▶ ITAM (HAM & SAM).
- ▶ HAM [HW, physical and Lease (DaaS)]
- ▶ SAM [SW, digital, subscriptions (PaaS, aPaaS, SaaS, DaaS) & SLC]
- ▶ Non-IT [DAM, FAM, physical, lease, Subscriptions, Fixed & non-Fixed (Consumables)].

# Answering the Why?

- ▶ EAM (Benefits and added values)
- ▶ a GRC & ESG requirement.
- ▶ It is all about GBS “When IT Works Business Works”
- ▶ ITAM first (ITAM Ascendancy).
- ▶ The MID Server as a separate server and not part of the SN instance.

# Answering the How?

- ▶ Implement EAM/ITAM in Now Platform.
- ▶ Populate the AMDB in the CMDB and Extended CI attributes.
- ▶ Integration Hub: 2-ways data integration.
- ▶ Discovery with MID Server and tags.
- ▶ IAM (AAAA, SSO, ACL, roles, groups & users).
- ▶ Maintain the assets lifecycle [ ITAM→ ITSM→ ITOM].  
[ EAM→ ITBM→ BOM].

# EAM Components

- ▶ ServiceNow EAM (sn\_eam) main module.
- ▶ Other additional & optional modules.
- ▶ Implementation Prerequisites & dependencies.
- ▶ 3<sup>rd</sup> party data sources (Integration Hub).
- ▶ Agentless Horizontal Discovery by domain (Bottom – Up).
- ▶ Credentials & Credential-less Discovery (Nmap).
- ▶ SM (Top – Down) → (ADM, ML, AFP and EP).
- ▶ MID server & outbound pull from the ECC queue.

# Capabilities & Compatibilities

- ▶ Manual or scheduled data import [XML or CSV (max 2MB & 25 Column)].
- ▶ Protocols [Nmap, LDAP, SSH, SNMP, WMI, CIM, JDBC, REST, SOAP].
- ▶ Scripting [XML, HTML, JS, JSON, YAML, Pwsh, and .bat]
- ▶ MID Server HTTPS (443) connection.
- ▶ Integration Hub API using 128bit TLS v1.3 cryptography protocol & OAuth v2 Authorisation Framework and protocol.
- ▶ Orchestration (MS-SCCM & VMWare-vSphere-vCenter).
- ▶ Windows Server & .NET, Unix & Linux.
- ▶ Cloud (Azure, AWS) & On-premises.

CMDB and CSDM Data Foundations Dashboard - as of August 2020, the CMDB and CSDM Data Foundations Dashboard is available at no cost in the App Store. This app installs two modules:

one for CMDB and one for CSDM. Each dashboard provides key indicators that evaluate configurations and customizations within the CMDB. The indicators provide visible results of evaluation, Green / Red, with weighted Priority to help with planning. Each indicator has a URL link to a remediation playbook to provide background and offer plays for remediation.

The CSDM dashboard focuses on key data elements to support of the stages in CSDM adoption.

# Always Remember

“Application Scoping: protects applications by restricting access to files and data”.

**“Update Set: Captures and migrates the application configurations, Not the operations (Data)”.**

UI policies: are client-side configurations, which means changes are reflected in real-time.

**Business Rules: are server-side configurations, which means you will not know if it is updated until you submit/save the record.**

Update Set status → (In-progress) + (Submit & Make Current) = Recording.

Update Set status → (Complete) + Submit??? = End Recording.

# Update Set – What is Captured

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## What is Captured in an Update Set?



### Process Records

- Business Rules
- Client Scripts
- Fields
- Forms and Form Sections
- Report Definitions
- Tables
- Views
- Roles
- Published Workflows

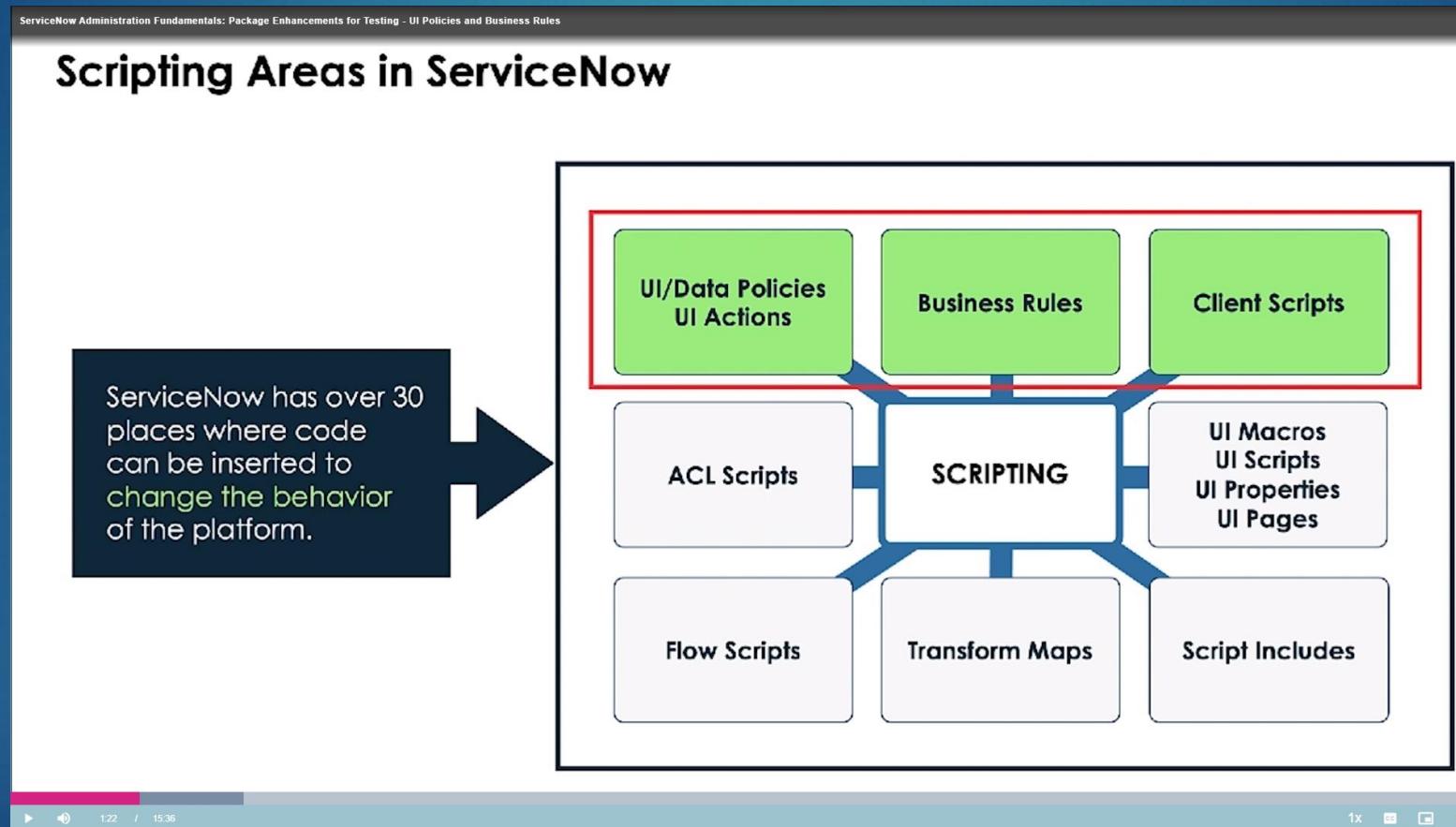


### Data

- New Data Records
- Modified Data Records
- Tasks
- Modified Cls
- New Users and Groups
- Schedules
- Scheduled Jobs
- Dashboards\*

# Scripting in SN

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- ▶ UI Policies → (Field related), (Client-side), (Browser Only).
- ▶ UI Policies → Attributes that can be changed (Mandatory, Hidden & Read only).
- ▶ Catalog UI Policy →
- ▶ Data policies → (Field related), (Client/Server side) (Browser, Import Set & Web Services).
- ▶ Business Rules → (Record related), (Server-side), table query (Before, After, Async & Display).
- ▶ UI Actions → Adds a Button, link or Context Menu Item.
- ▶ Security Rules →
- ▶ Scripts (Java Script) → 30 different input places on the SN platform.
- ▶ Client Scripts → perform Real-Time changes to the UI.
- ▶ UI Scripts → client side (Browser).
- ▶ ACL Scripts →
- ▶ Flow Scripts → Server side (system).
- ▶ Update Sets → (Export to XML file).
- ▶ Import Sets → (Import from XML file, Retrieve from a remote instance), (Retrieve, Preview, Commit).
- ▶ Export Sets → (Export to XML file).

“Ethics refers to the principles of right and wrong that individuals, acting as free moral agents, use to make choices to guide their behaviour. Information systems raise new ethical questions for both individuals and societies because they create opportunities for intense social change and threaten existing distributions of power, money, rights and obligations. Information technology can be used to achieve social progress, but it can also be used to commit crimes and threaten social values. The development of information technology will produce benefits for many and costs for others.”

“Manage Your Environment or be Managed by it”

Thanks for Taking the  
Journey