CIS CMDB & CSDM

Certification Exam Masterclass



Learn Concepts • Understand Questions • Pass the Exam

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Introduction

CIS Data Foundations Exam Domains

The exam covers concepts across these key domains.

Domain	Focus
Configuration	CMDB structure, classes, relationships
Ingest	Getting data into CMDB
Govern	Data quality & lifecycle management
Insight	Reporting, Health, Workspace, CMDB 360
CSDM Fundamentals	Common Service Data Model

Remember: Understanding these domains deeply is the key to answering scenario-based questions with confidence.

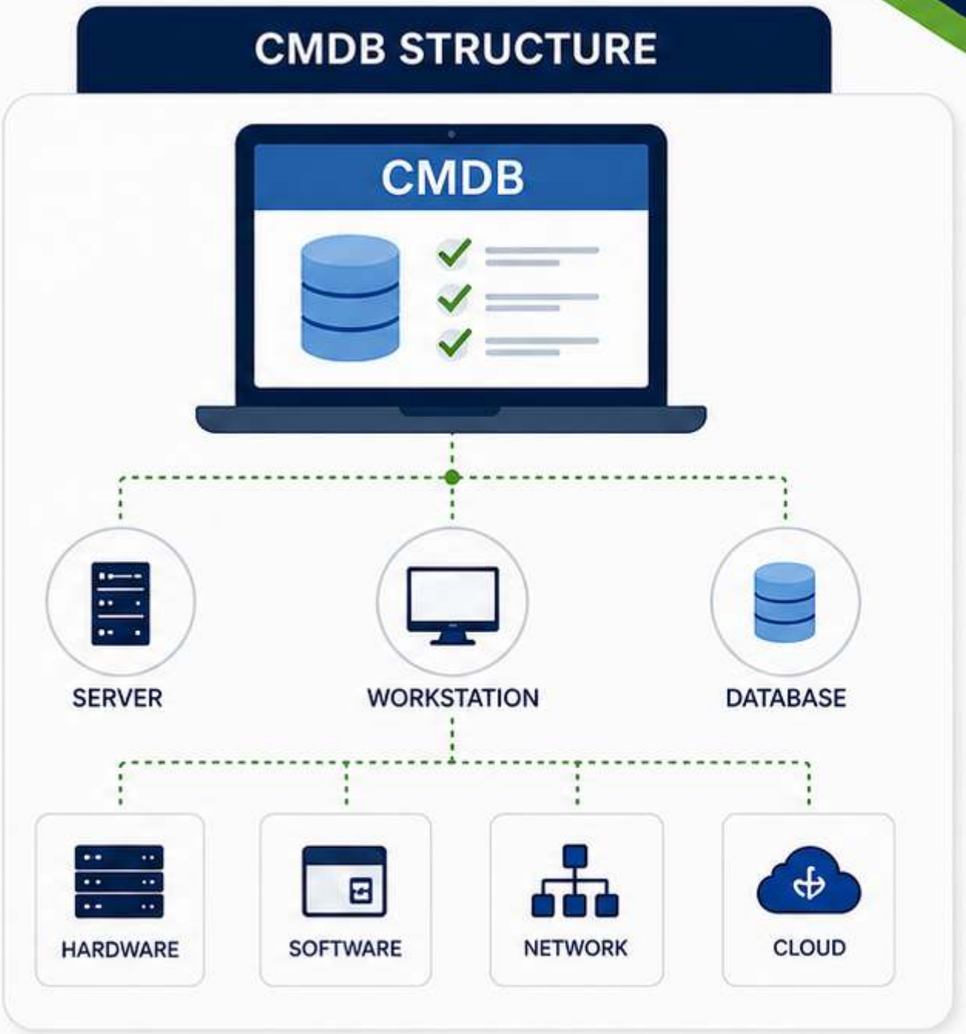
CONFIGURATION

Configuration Overview

Configuration = How CMDB is built.

Focus Areas:

- CI Classes
- Class Manager
- Relationships
- Identification Rules
- Reconciliation Rules
- Principal Classes
- CI Hierarchy



Memory Trick:
Configuration =
Structure of the CMDB

Think:
“How is CMDB organized?”

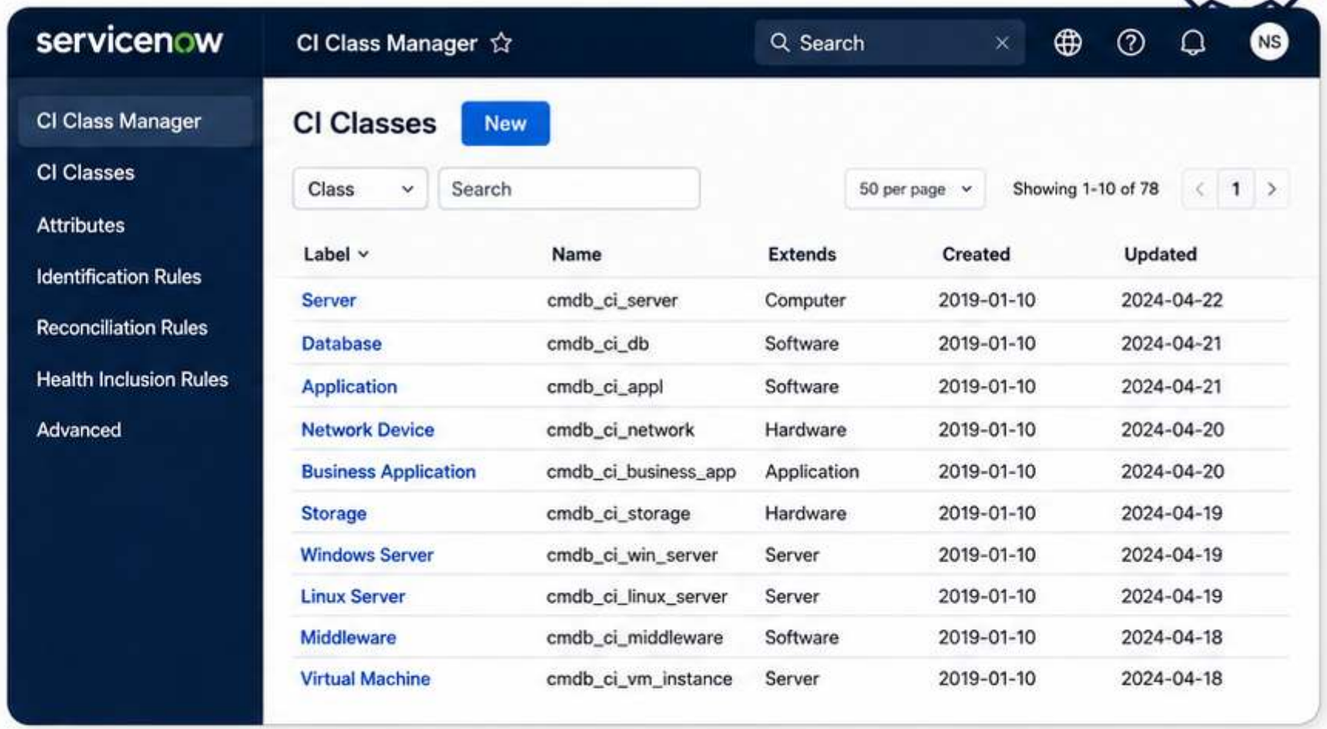
CI Class Manager

The primary tool used to manage and configure CI Classes in ServiceNow CMDB.

Questions repeatedly asked:

Used For

- Create CI Classes
- View Attributes
- Configure Identification Rules
- Configure Reconciliation Rules
- Set Principal Classes
- Configure Health Inclusion Rules



Exam Trap

Question:
"Where do you create a new CI Class?"

Answer:
CI Class Manager

Exam Tip

If the question is related to classes, attributes, identification, reconciliation, principal classes or health rules – think **CI Class Manager**.

PRINCIPAL CLASS

Frequently Asked Question

Principal Class =
The classes that are available for selection by end users.

PURPOSE

Controls what CI classes appear in:

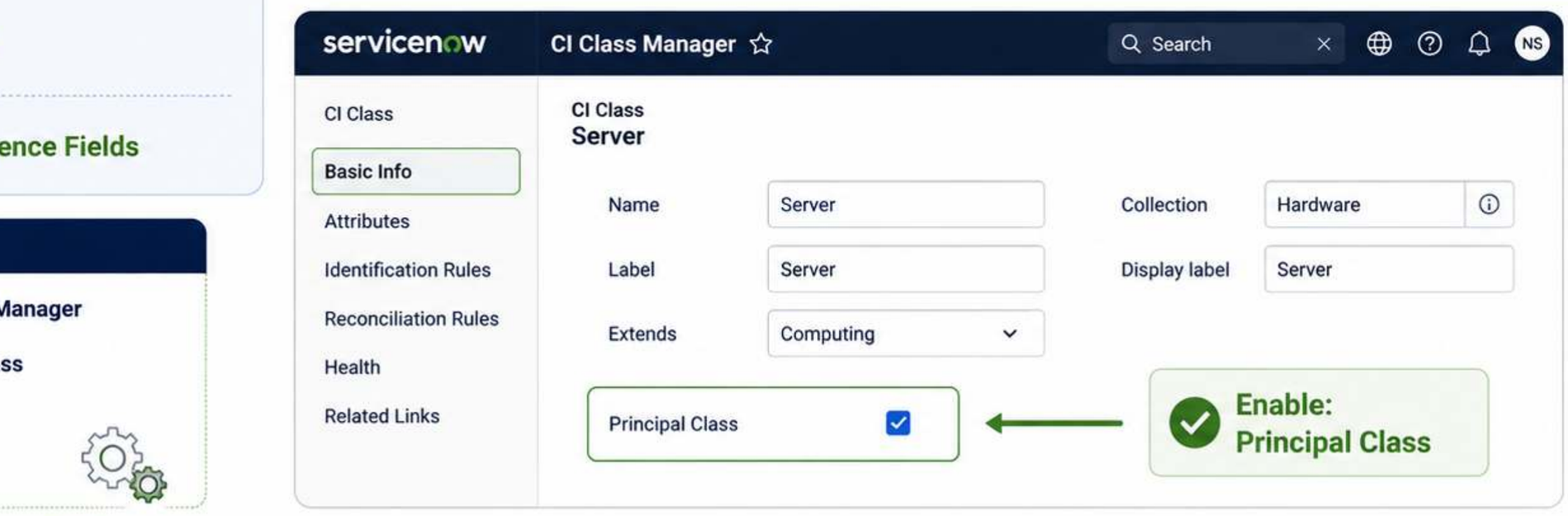
- Incident
- Problem
- Change
- CI Reference Fields

WHEN A CLASS IS SET AS PRINCIPAL CLASS

Principal Class Enabled → Visible in Incident → Visible in Problem → Visible in Change → Visible in CI Reference Fields

LOCATION

1. Go to: **CI Class Manager**
2. Select the **CI Class**
3. **Class Info**
4. **Basic Info**



EXAM TIP

If the question is about what classes are visible to users in **Incident, Problem, Change or Reference** fields – think **Principal Class.**

MEMORY TRICK: **Principal** = **Primary classes exposed to users**

RELATIONSHIP QUESTIONS

EXAM FAVORITE

WHAT ARE RELATIONSHIPS?

Relationships show how one CI relates to another CI.

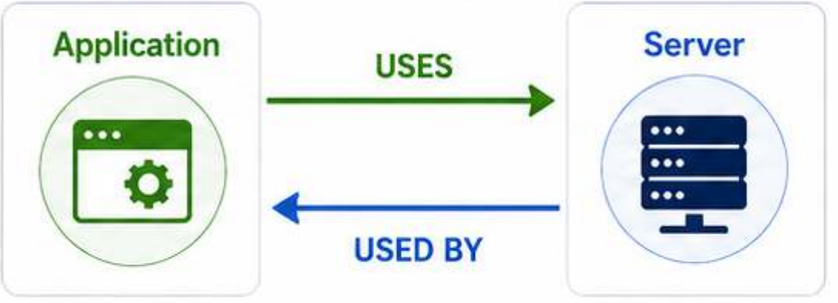
- Defines how CIs are connected.
- Used for impact analysis, service mapping and reporting.
- Two directions: Forward & Reverse

MEMORY TRICK

Forward = Action
Reverse = Reaction

EXAMPLE

Application → Server

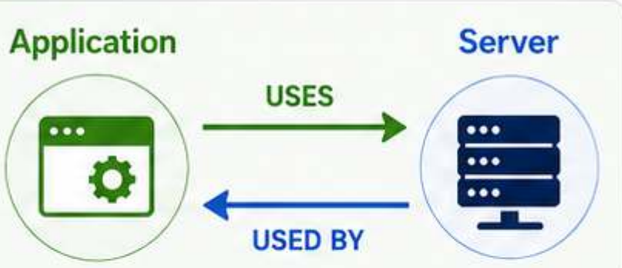


DIRECTION	NAME	REVERSE NAME
Forward	Uses	Used by
Reverse	Used by	Uses

Always read the question carefully to identify the forward and reverse relationship.

ANSWER

Correct:



Answer:

Application > Uses :: Used by > Server

This pattern is frequently asked in the exam!

KEY POINTS

- Relationships have Forward and Reverse directions.
- Forward shows the action or dependency.
- Reverse shows the reaction.
- Know common relationships: Uses / Used by, Runs on / Runs, Contains / Contained by, etc.

CUSTOM CI CLASS BEST PRACTICES

EXAM ASKS CONSTANTLY

Follow these best practices when creating custom CI Classes in ServiceNow CMDB.

DO

1. CHECK CMDB CI CLASS MODELS FIRST

Always review CMDB CI Class Models to understand the standard structure before creating anything new.

2. EXTEND EXISTING CLASS

Extend an existing class to inherit attributes, relationships and behavior.

3. CREATE UNDER PROPER PARENT

Place your custom class under the most appropriate parent class in the hierarchy.

DON'T

1. REPURPOSE OOTB CLASSES

Do not use out-of-the-box classes for custom needs. This can cause upgrade and data issues.

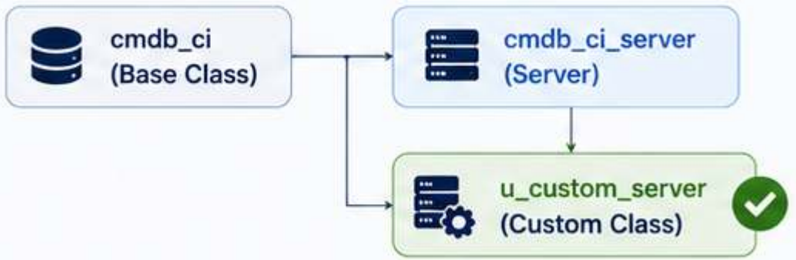
2. RENAME BASE CLASSES

Never rename base classes or out-of-the-box classes. It breaks compatibility and upgrades.

3. DELETE AND REPLACE CLASSES

Do not delete and recreate classes to make changes. This can lead to data loss and relationship breaks.

EXAMPLE HIERARCHY



Extend from the most relevant class to inherit the right behavior, attributes and relationships.

MEMORY:

EXTEND, DON'T DESTROY

Build on the platform. Don't break it.

Following these practices ensures upgrade safety, data integrity, and a healthy CMDB.

CLASS RECLASSIFICATION

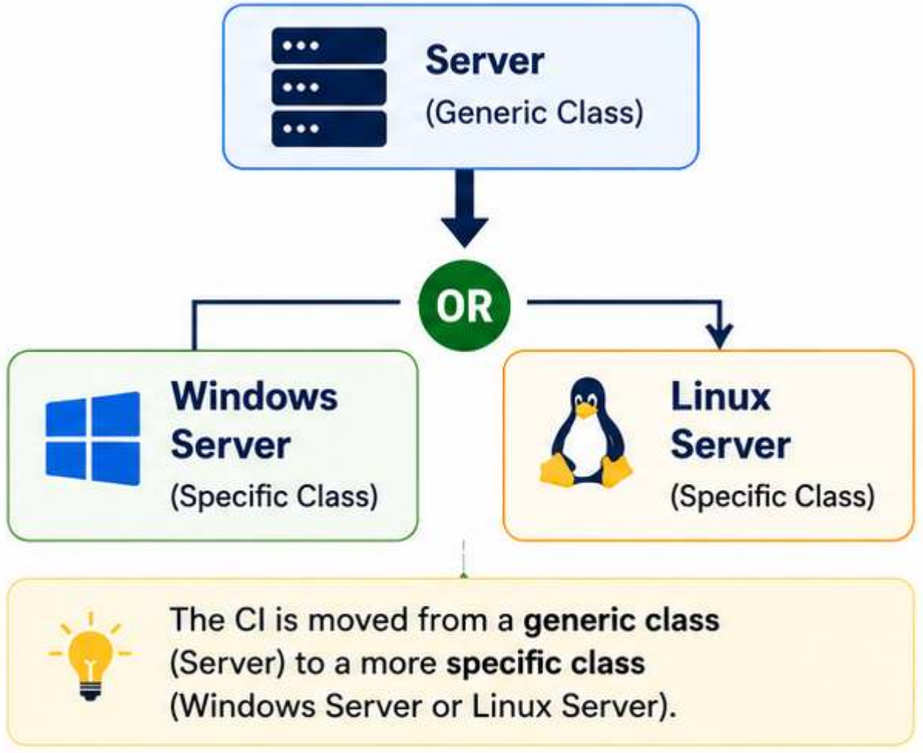
QUESTION APPEARS MANY TIMES.

WHAT IS IT?

Class Reclassification is the process of moving an existing CI from one class to another class in the CI hierarchy.

- Used to change a CI from a generic class to a more specific class.
- Keeps your CMDB accurate and properly structured.
- **Important:** Data and relationships are preserved during reclassification.

EXAMPLE



The CI is moved from a **generic class** (Server) to a more **specific class** (Windows Server or Linux Server).

ANSWER

CLASS UPGRADE

This scenario is a **Class Upgrade** because the CI is being moved from a **generic class** to a more **specific class**.

MEMORY: GENERIC → SPECIFIC = UPGRADE

BEST PRACTICE

Always reclassify to the most accurate class that represents the CI.

EXAM TIP

If moving from a higher-level class to a lower-level class → Always think **UPGRADE**.

INGEST

Ingest Overview

Data entering CMDB

MEMORY:
Ingest = How data gets into CMDB

SOURCES

DISCOVERY
Discovers CI data automatically from your environment.

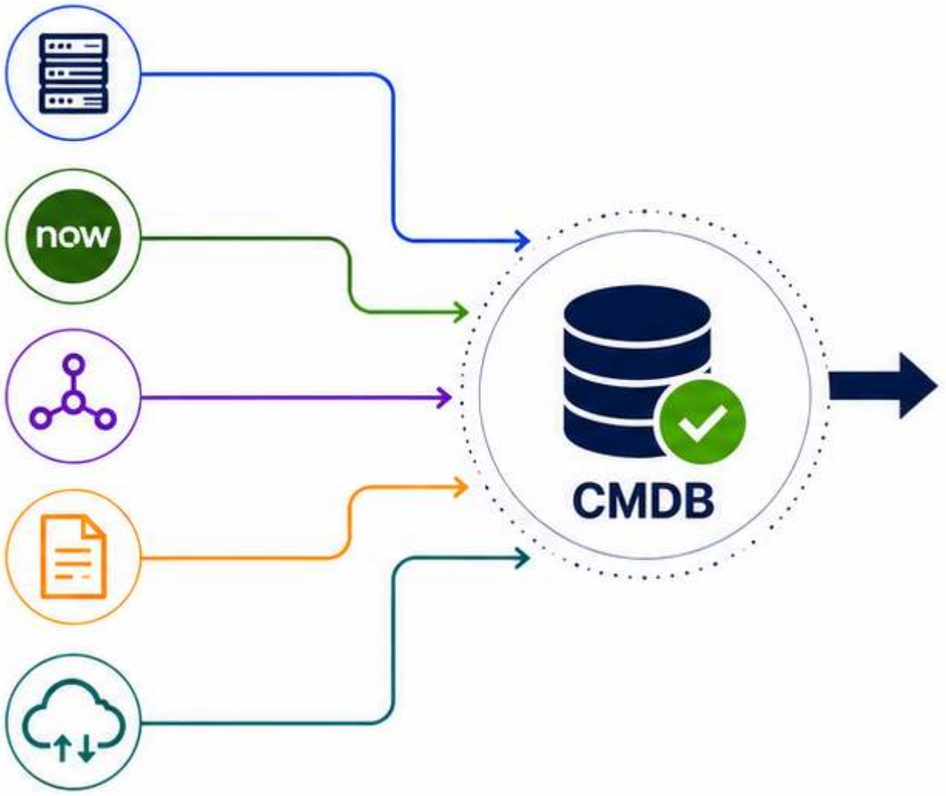
ACC
Application Composition components and telemetry data.

SERVICE GRAPH CONNECTORS
Collect data from cloud and SaaS services.

IMPORT SETS
Bulk import data using import sets and transforms.

INTEGRATIONHUB ETL
Extract, Transform and Load data from external sources.

HOW DATA IS INGESTED INTO CMDB



INGEST DELIVERS

ACCURATE DATA
Brings in accurate and relevant CI data.

UP-TO-DATE CMDB
Keeps CMDB current with continuous or scheduled ingestion.

COMPLETE VISIBILITY
Provides end-to-end visibility across infrastructure and applications.

BETTER DECISIONS
Supports impact analysis, automation and reporting.

KEY TAKEAWAY

Ingest is the process of bringing data from various sources into the CMDB to build a single source of truth.

DISCOVERY vs ACC

Two Powerful Data Ingestion Methods in CMDB

DISCOVERY

TYPE
Agentless

HOW IT WORKS
Uses Patterns to identify Configuration Items (CIs)

FINDS
- Servers
- Network Devices
- Infrastructure Components

BEST FOR
Broad infrastructure discovery across the environment

VS

ACC (AGENT CLIENT COLLECTOR)

TYPE
Agent Based

HOW IT WORKS
An agent is installed on the device to collect detailed data.

BEST FOR
- Secure environments
- Intermittently connected devices

KEY ADVANTAGES
- Collects more detailed information
- Works in secure networks
- Stores data and syncs when connected

MEMORY:
ACC = Always Connected Client

Use **Discovery** for finding what's out there.
Use **ACC** for deeper insights and secure environments.

SERVICE GRAPH CONNECTOR

Connect external tools and bring their data into ServiceNow CMDB

EXAM FAVORITE

WHAT IS IT?

Service Graph Connector (SGC) is a pre-built, out-of-the-box integration framework that connects external tools and applications to ServiceNow.

HOW IT WORKS

Connectors use APIs or adapters to securely pull data from external tools and map it to CMDB CI classes.

WHAT IT DOES

- Discovers and imports data
- Maintains relationships
- Keeps data up-to-date
- Provides a single source of truth

USED FOR

- **SCCM** (Microsoft Configuration Manager)
- **Intune** (Microsoft Intune)
- **Tanium** (Tanium)
- **JAMF** (Jamf Pro)
- **Third Party Tools** and many more...

BIG BENEFIT

FASTEST TIME TO VALUE

Pre-built • Tested • Reliable • Secure

EXAM QUESTION

Best method to bring data from SCCM into CMDB?



ANSWER

SERVICE GRAPH CONNECTOR

Use the Service Graph Connector for SCCM to integrate and import data into CMDB quickly and securely.

MEMORY

Service Graph Connector = Pre-built connection to external tools

KEY TAKEAWAY

When the question asks for the best or fastest method to bring data from tools like SCCM, Intune, Tanium, JAMF, or other third-party tools → **The answer is Service Graph Connector.**

IMPORT SETS

Bringing Custom Data into ServiceNow CMDB

EXAM TOPIC
High Frequency

USED WHEN

Import Sets are used when a company builds **custom integrations** to bring data from external sources into ServiceNow.

- Custom or proprietary data sources
- No pre-built connector available
- More control over data transformation and logic

KEY POINTS

- Import Set = staging table
- Transform Map = mapping & logic
- IRE = identifies & reconciles CIs
- Result = accurate data in CMDB

IMPORT SET FLOW

SOURCE
External system / File / API / Database

↓

IMPORT SET
Staging table that receives raw data.

↓

TRANSFORM MAP
Defines how data is mapped to target tables.

↓

IRE (IDENTIFICATION & RECONCILIATION ENGINE)
Identifies existing CIs and reconciles duplicates.

↓

CMDB
Clean, accurate and de-duplicated data in CMDB tables.

EXAM QUESTION

Which Transform Script ensures Identification and Reconciliation Engine (IRE) to work correctly?



ANSWER

onBefore Script

The onBefore Script runs before the IRE process and properly prepares the data (e.g., sets keys, normalizes values), ensuring IRE can correctly identify and reconcile existing CIs.

REMEMBER THIS

IMPORT SETS ARE USED FOR CUSTOM INTEGRATIONS

SOURCE → IMPORT SET → TRANSFORM MAP → IRE → CMDB

EXAM MEMORY : Which Transform Script ensures IRE? → onBefore Script

IDENTIFICATION RULES

Find Existing CIs • Prevent Duplicates • Keep CMDB Clean

MEMORY:
Identification = **Find Existing**

PURPOSE

Prevent duplicates

Identification Rules help the system find existing CIs in the CMDB before creating new ones.

EXAM EXAMPLE – HARDWARE

PRIORITY	IDENTIFICATION METHOD	IDENTIFIER
100	Highest Priority	Serial Number
200	Serial Number Only	Serial Number Only
300	Name	Name

EXAM QUESTION

If Name matches an existing CI?



ANSWER

Existing record updated

Because Name is defined in an Identification Rule (Priority 300).

The system finds the existing CI and updates it instead of creating a new one.

HOW IDENTIFICATION WORKS

1. New CI data is submitted into the CMDB.
2. Identification Rules are checked in priority order (100 → 200 → 300).
3. If a match is found using any identifier, that existing CI is identified.
4. The existing CI is updated with the new data. No duplicate is created.

KEY POINTS

- Identification Rules contain one or more identifiers.
- They are evaluated in priority order.
- The first match wins.
- Used by the **Identification and Reconciliation Engine (IRE)** to find and match existing CIs.

REMEMBER THIS FLOW

New CI Submitted → Check Identification Rules (by priority) → Match Found (Existing CI) → Existing CI Updated

EXAM TIP

When any identifier (like Name, Serial Number, etc.) matches an existing CI, the existing record is updated. No new record is inserted.

RECONCILIATION RULES

Determine Who Owns the Data in the CMDB

MEMORY:
Lower Priority Number
Higher Authority

PURPOSE

Who owns the data?

Reconciliation Rules determine which data source is authoritative when multiple sources provide data for the same CI.

HOW IT WORKS

1. Multiple sources send data for the same CI.
2. Reconciliation Rules are checked by priority.
3. The source with the lowest priority number wins.
4. The authoritative source data is used in the CMDB.

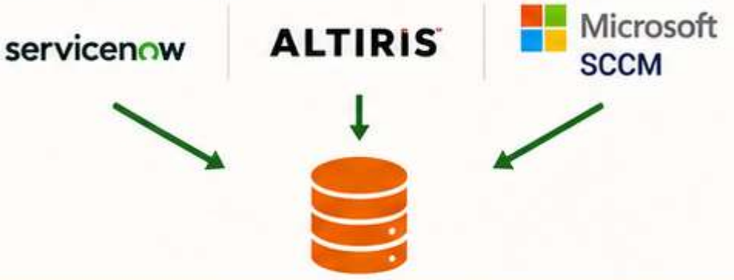
EXAMPLE: HARDWARE CI

SOURCE	PRIORITY	AUTHORITY
servicenow	100	HIGHEST AUTHORITY
ALTIRIS	200	MEDIUM AUTHORITY
Microsoft SCCM	300	LOWEST AUTHORITY

Lower number wins.
100 < 200 < 300

EXAM QUESTION

If ServiceNow, Altiris and SCCM all send data for the same CI, who is authoritative?



ANSWER

ServiceNow is authoritative

Because ServiceNow has the lowest priority number (100).

MEMORY TRICK

Lower Priority Number
Higher Authority

KEY TAKEAWAYS

- Reconciliation Rules decide which source is the system of record.
- Lower priority number = higher authority.
- Only the authoritative source data is written to the CMDB.

IMPORTANT!
Reconciliation Rules do NOT prevent duplicates. They decide which source wins when data conflicts.

DATA REFRESH RULES

Backup Plan When Primary Source Stops Updating

FREQUENTLY ASKED
HIGH EXAM WEIGHTAGE

PURPOSE

Data Refresh Rules ensure that the CMDB data remains current even if the authoritative (high priority) data source stops updating.

HOW IT WORKS

High Priority Source (Authoritative) → Stops Updating → After X Days (Stale Data) → Lower Priority Source Allowed to Update

If the high priority source does not update the CI within the defined days, a lower priority source can update it.

SCENARIO

High priority source stopped updating.
Allow lower source after X days.

1 ServiceNow
Priority: 100 (High)
→ Stopped Updating
→ X Days (Stale Data)

2 Altiris
Priority: 200 (Lower)

3 SCCM
Priority: 300 (Lower)

Lower source allowed to update after X days

EXAMPLE: HARDWARE CI

Source	Priority	Status	Can Update After X Days?
ServiceNow	100	Stopped Updating	✗ Not allowed (High priority)
Altiris	200	Active	✓ Allowed after X days
SCCM	300	Active	✓ Allowed after X days

Initially, only ServiceNow (Priority 100) can update.
If it does not update within X days, Altiris or SCCM can update.

EXAM QUESTION

If multiple sources provide data for the same CI and the high priority source has stopped updating, which rule allows a lower priority source to update after a defined number of days?

A. Identification Rule
B. Reconciliation Rule
C. **Data Refresh Rule**
D. Transform Map

ANSWER

Data Refresh Rule

Because it allows a lower priority source to update the CI after the high priority source stops updating for the defined days.

MEMORY
Refresh Rule = Backup Plan

KEY DIFFERENCE

Identification Rules
Do we already have this CI? (Prevent Duplicates)

Reconciliation Rules
Which source owns the data? (Lowest number wins)

KEY TAKEAWAY

- High priority source updates the CI.
- If it stops updating for X days, lower source can update.
- Keeps CMDB data fresh and reliable.

EXAM TIP

Data Refresh Rules are frequently asked in exams.
Remember: Refresh Rule = Backup Plan

REMEMBER THIS FLOW

High Priority Source Active → Stops Updating → After X Days (Stale) → Lower Priority Source Takes Over → CMDB Data Stays Fresh

GOVERNANCE OVERVIEW

Govern = Keep CMDB Healthy

Governance ensures the CMDB data is accurate, reliable, trusted and fit for purpose.

PURPOSE

Governance is the set of processes and tools used to keep the CMDB data **accurate**, **complete**, **consistent** and **up-to-date** throughout its lifecycle.

WHAT DOES GOVERN MEAN?

Govern = Keep CMDB Healthy

- Trusted Data
- High Quality
- Complete
- Up-to-date
- Fit for Purpose

GOVERNANCE TOOLS

1. CMDB HEALTH

Monitors the overall health and quality of CMDB data.

Key Metrics:

- Completeness
- Correctness
- Consistency
- Timeliness
- Health Score

2. CMDB DATA MANAGER

Manages and controls CMDB data through policies, workflows and processes.

Helps to:

- Define Policies
- Set Workflows
- Enforce Rules
- Ensure Quality

3. DE-DUPLICATION

Identifies and merges duplicate CIs to ensure one CI = one record.

Benefits:

- Prevents Duplicates
- Improves Accuracy
- Reduces Noise

4. CERTIFICATION

Periodic review of CMDB data by data stewards to confirm accuracy and relevance.

Outcomes:

- Data is Reviewed
- Data is Validated
- Trust is Increased

5. ATTESTATION

Data stewards attest that the data they own is accurate and up-to-date.

Outcomes:

- Ownership Confirmed
- Accountability Ensured
- Confidence Built

CMDB LIFECYCLE PERSPECTIVE

BUILD → Design & Model the CMDB

INGEST → Populate CMDB with Data

MAINTAIN → Keep Data Up-to-date

GOVERN → Ensure Data Quality, Trust & Compliance

MEMORY

Build → Ingest

↓

Maintain → Govern

Remember:
Governance is not a one-time activity, it is an ongoing commitment to keep the CMDB healthy.

THE GOAL

Trusted CMDB Data → Better Decisions → Improved Services → Business Value

Healthy CMDB = Successful IT

CMDB HEALTH DASHBOARD

★ MOST TESTED TOPIC

CMDB Health measures the **quality** of your CMDB data

Healthy CMDB = Trusted CMDB
Trusted CMDB = **Better Decisions**

THREE SCORECARDS

1 COMPLETENESS

Missing Data
Measures how much data is missing.

Required Fields
Fields that must be populated.

Recommended Fields
Fields that should be populated for better quality.

FOCUS
Do we have all the data we need?

2 CORRECTNESS

Bad Data
Measures how much data is incorrect.

Duplicates
Duplicate CIs in the CMDB.

Orphans
CIs without a parent or relationship.

Staleness
Outdated data not updated on time.

FOCUS
Is the data accurate and up to date?

3 COMPLIANCE

Audit
Measures how well CMDB data complies with policies.

Expected vs Actual
Compares what should be in the CMDB vs what is actually in the CMDB.

FOCUS
Are we following policies and standards?

MEMORY

Completeness = Missing
Are we missing data?

Correctness = Wrong
Is the data incorrect?

Compliance = Policy
Are we following the rules?

QUICK MEMORY
Completeness = Missing
Correctness = Wrong
Compliance = Policy

KEY TAKEAWAY CMDB Health Dashboard provides visibility into data quality through three scorecards: Completeness, Correctness and Compliance.

GOAL Improve data quality
Improve decisions →

CORRECTNESS METRICS

KNOW THIS EXACTLY

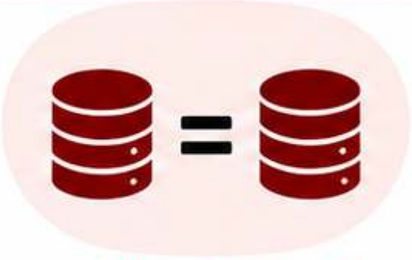
HUGE EXAM FAVORITE

Correctness metrics identify bad or inaccurate data in the CMDB.
These metrics help keep the CMDB clean, accurate and trustworthy.

MEMORY TRICK

Correctness = Wrong Data

1 DUPLICATE



Same CI multiple times

WHAT IT MEANS

The same Configuration Item exists multiple times in the CMDB.

EXAMPLE

Two CIs with the same name, same serial number and same attributes.

2 ORPHAN



No relationships

WHAT IT MEANS

The CI has no parent or child relationships in the CMDB.

EXAMPLE

A server CI not related to any application, service or business service.

3 STALE



Not updated recently

WHAT IT MEANS

The CI data has not been updated within the defined time.

DEFAULT

30 Days

REMEMBER



Find it.
Fix it.
Trust it.
Use it.

EXAM TIP

You must know the 3 correctness metrics and the default value for stale data.

GOAL: Accurate CMDB Data
Better Decisions
Trusted Information

Focus on these 3 –
High scoring topic in exam!

CMDB DATA MANAGER

USED FOR LIFECYCLE GOVERNANCE

Helps govern the entire lifecycle of Configuration Items in the CMDB

MOST TESTED TOPIC

WHAT IS CMDB DATA MANAGER?

CMDB Data Manager is used for lifecycle governance of CIs. It ensures that only **relevant, accurate and trusted** data is kept in the CMDB.

KEY CAPABILITIES

CERTIFICATION
Review and validate CI data for accuracy by data stewards.

ATTESTATION
Formal confirmation that CI data is accurate and trusted.

ARCHIVE
Move CIs to archive when they are no longer in use.

DELETE
Permanently remove CIs based on retention policies.

MEMORY TRICK

Data Manager Manages the **LIFE** of CIs

Review → Confirm → Archive → Remove

QUESTION

Which policy types are used in CMDB Data Manager?

ANSWER

- Archive Policy
- Delete Policy

POLICY TYPES (EXAM ANSWER)

1. ARCHIVE POLICY

Moves CIs to archive table based on criteria.

CIs are not visible in active CMDB.

2. DELETE POLICY

Permanently deletes CIs based on criteria.

CIs are removed from the system.

WHEN IS IT USED?

- To keep CMDB clean and relevant
- To reduce storage and improve performance
- To comply with data retention policies

If the question is about lifecycle governance or CMDB cleanup – think **CMDB Data Manager!**

KEY TAKEAWAY: CMDB Data Manager ensures the right CIs are kept, updated, archived or deleted based on policies to maintain a healthy and trusted CMDB.

KNOW THIS. SCORE HIGH!

CERTIFICATION vs ATTESTATION

★ MASSIVELY TESTED

Both are governance processes, but they validate different things.

HIGH EXAM PRIORITY ★★★★★

CERTIFICATION

Validate Attributes (Is the data correct?)



EXAMPLE

Check and validate CI attributes to ensure the data is correct.

- Location
- Owner
- Support Group
- Cost Center
- Install Date
- Business Service

The CI exists.
We validate that its information is correct.

VS

ATTESTATION

Validate Existence (Does the CI still exist?)



EXAMPLE

Confirm that the CI still exists in the real world.

> "Does this CI still exist?"

The data may be correct.
We validate that the CI still exists.

MEMORY TRICK

Certification = Correct Data
Attestation = Still Exists

QUICK TIP

Certification checks the quality of the data.

Attestation checks the existence of the CI.

EXAM FOCUS

- ★ Frequently asked in exams
- ★ Understand the core difference
- ★ Use the memory trick to identify the correct answer quickly

ARCHIVE POLICIES

CMDB LIFECYCLE GOVERNANCE

Archive Policies move inactive CIs out of the active CMDB to reduce clutter while **keeping historical data**.

MEMORY
Archive first
Delete later

WHAT IS AN ARCHIVE POLICY?

An Archive Policy identifies CIs that are no longer active or in use and moves them to the Archive table.

BENEFITS

- Reduces the size of the active CMDB
- Improves performance
- Keeps historical data for reporting and audit
- Supports compliance and retention policies

EXAM QUESTIONS

1 QUESTION:
How to reduce CMDB size?

ANSWER:
Archive Policy

2 QUESTION:
Remove Linux Servers not updated 6 months.
What policy should be used?

ANSWER:
Archive Policy

HOW IT WORKS

1. **IDENTIFY**
CI matches archive criteria

2. **ARCHIVE**
CI moved to archive table

3. **RETAIN**
Historical data is preserved

4. **DELETE (Optional)**
Delete later if needed

EXAMPLE SCENARIO

Policy: Archive Linux Servers not updated in 6 months

- CI not updated in 180 days (6 months)
- CI is inactive
- CI is retired or out of use
- CI type = Linux Server

6 MONTHS

KEY TAKEAWAY

Use Archive Policy to reduce CMDB size by moving inactive or unused CIs to the archive table.

ARCHIVE
Move inactive CIs to archive table (Not visible in active CMDB)

DELETE (LATER)
Permanently remove CIs (Use carefully)

REMEMBER

Archive first → Delete later
Archive for history, delete when you are sure.

DE-DUPLICATION

KEEP CMDB ACCURATE & TRUSTED

De-Duplication helps remove duplicate CIs and maintain one source of truth.

DEFINITION

De-Duplication identifies duplicate CIs and helps merge them to keep CMDB clean.

DE-DUPLICATION TOOLS

1 CORRECTNESS DASHBOARD



Shows duplicates

- Part of CMDB Health
- Shows Duplicate score
- Drill down to see duplicate CIs

CMDB Health Overview

Correctness Score

72%

Duplicate score 55%

Top 5 Duplicate Classes

1.	Server	125
2.	IP Address	98
3.	Database	45
4.	Application	32
5.	Storage Device	21

2 DE-DUPLICATION TASKS



Assign work

- Review duplicate groups
- Assign to reviewers
- Track progress
- Merge or reject duplicates

De-Duplication Tasks

Task	Status
Server Duplicates	In Progress
IP Address Duplicates	Open
Database Duplicates	Open
Application Duplicates	In Progress
Storage Device Duplicates	Closed

3 DE-DUPLICATION TEMPLATE



Bulk fix

- Define matching rules
- Define merge rules
- Apply on multiple duplicate groups
- Fix duplicates in bulk

Template Example

Name
Server De-Dup Template

Matching Rules

- Name
- Serial Number
- IP Address

Merge Rules

- Keep Most Recent
- Keep Related CIs
- Merge Attributes

4 DUPLICATE CI REMEDIATOR



Single record wizard

- Open a duplicate CI
- Find duplicates
- Compare records
- Merge into the best record

Duplicate CI Remediator

Source CI
Server: APP-SRV-01

Potential Duplicates

- ○ APP-SERVER-01
- ◉ AppSrv01
- ○ APP-SRV-1

Merge into Selected

MEMORY

SEE → TASK → FIX → TEMPLATE

See duplicates → Create/Assign Task → Fix (Merge) → Use Template for Bulk

KEY BENEFITS

- ☑ Improves data quality and correctness score
- ☑ Removes duplicate CIs from CMDB
- ☑ Improves reporting accuracy
- ☑ Reduces storage and improves performance
- ☑ Ensures one source of truth



ASSET & CI SYNCHRONIZATION

KEEP ASSETS AND CIs IN SYNC

Keeps data accurate between ServiceNow Asset and CMDB.

FREQUENTLY TESTED
High weightage in ServiceNow exams!

WHAT IS ASSET-CI SYNCHRONIZATION?



Ensures that data between Asset records and CMDB CI records is **consistent** and **up to date**.

BENEFITS

- Accurate and consistent data
- Improved reporting
- Better decision making
- Reduces manual work
- Supports audit and compliance

HOW IT WORKS (OOTB)

1. MAP FIELDS
Define which Asset fields map to CI fields using **Asset-CI Field Mapping**.

2. SYNCHRONIZE
Run synchronization jobs to keep Assets and CIs aligned.

3. VALIDATE
Verify the data is accurate and both records are in sync.

EXAMPLE MAPPING

Asset Field		CI Field
Serial Number	← →	Serial number
Model	← →	Model
Manufacturer	← →	Manufacturer
Asset Tag	← →	Asset tag
Location	← →	Location

EXAM QUESTION EXAMPLE

QUESTION:
How do you configure synchronization between Asset and CI records?

CORRECT ANSWER:
Asset-CI Field Mapping

NOT BUSINESS RULES
Business Rules are not used for Asset-CI synchronization.

NOT CUSTOM SCRIPTING
Custom scripting is not required.

MEMORY

SEE → **TASK** → **FIX** → **TEMPLATE**

Find duplicates → Create task → Resolve → Use templates for bulk

MEMORY: OOTB > CUSTOM

Always choose **OOTB feature** first in an exam and in real scenarios.

SLIDE 23

INSIGHT OVERVIEW

Turn CMDB data into actionable insights and business value.

PURPOSE
Get value from CMDB

INSIGHT TOOLS

1. WORKSPACE



Personalized insight experience.

- Role-based homepage
- Quick access to key data
- Widgets, dashboards, and reports

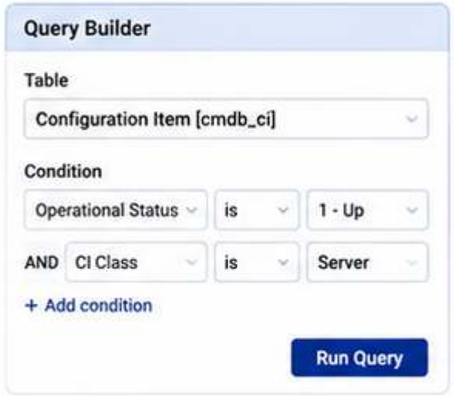
2. CMDB 360



360° view of any CI.

- See relationships and impact
- Health, alerts, and activity
- Related records in one view

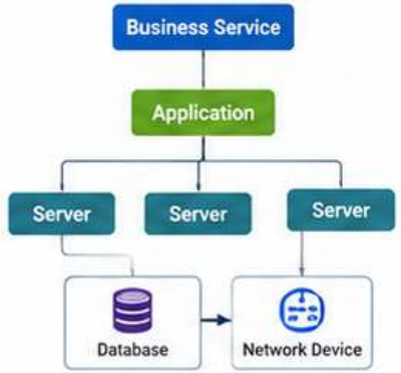
3. QUERY BUILDER



Build and run powerful queries.

- Filter CMDB data
- Save and reuse queries
- Export results for analysis

4. UNIFIED MAP



Visualize relationships.

- See how CIs are connected
- Understand dependencies
- Analyze impact and risk

5. DATA FOUNDATION DASHBOARD



Monitor CMDB health and quality.

- Data quality metrics
- Issues and trends
- Take action to improve data

KEY TAKEAWAY

INSIGHT helps you see, understand, and act on your CMDB data.

Workspace | CMDB 360 | Query Builder | Unified Map | Data Foundation Dashboard

★ INSIGHT = Better visibility, smarter decisions, greater value from CMDB.

CMDB WORKSPACE

A modern, intelligent workspace to explore, visualize, and take action on CMDB data.

PURPOSE
Get value from CMDB with a unified experience.

CAPABILITIES

NATURAL LANGUAGE QUERY (NLQ)
Ask questions in natural language and get answers instantly.

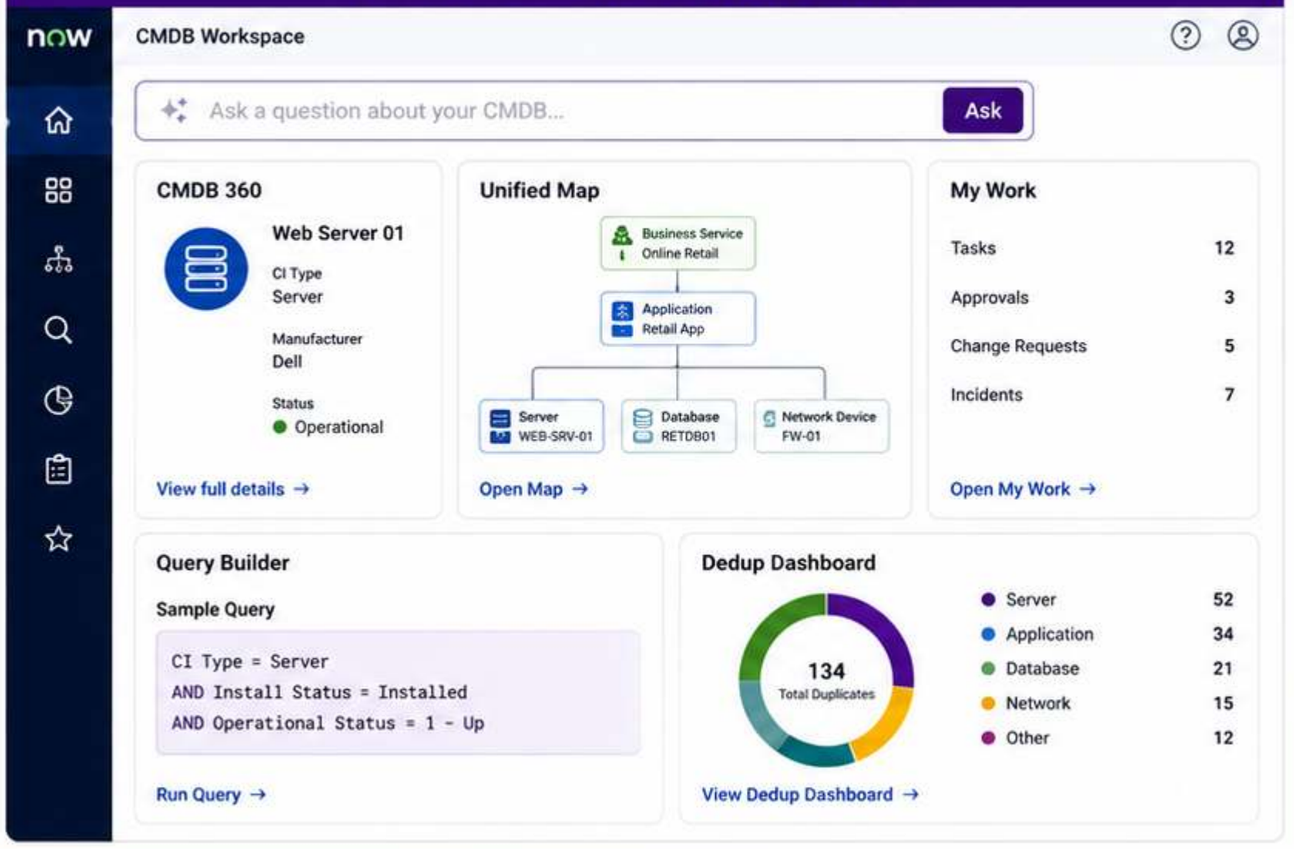
UNIFIED MAP
Visualize relationships across CIs, services, applications and more.

QUERY BUILDER
Build advanced queries easily. Save, reuse and share with your team.

DEDUP DASHBOARD
Identify and monitor duplicate CIs to improve data quality.

MY WORK
See your tasks, approvals, and activities in one place.

CMDB WORKSPACE – AT A GLANCE



EXAM QUESTION EXAMPLE

QUESTION:

Where can you use Natural Language Query (NLQ) to ask questions about CMDB data?

ANSWER:

CMDB Workspace

WHY?

NLQ

NLQ is a capability available directly within CMDB Workspace to search and get insights using natural language.

EXAM TIP

When the question asks about a feature or capability, look for the place where it is available OOTB.

KEY BENEFITS

- Single, unified experience for CMDB users
- Faster search and insights with NLQ
- Visualize and understand complex relationships
- Improve data quality with dedup visibility
- Increased productivity with My Work

MEMORY

Search. Visualize. Analyze. Act.
All in CMDB Workspace.

NLQ · Unified Map · Query Builder · Dedup Dashboard · My Work

One Workspace. Complete Visibility. Smarter Decisions.

CMDB 360

Get a complete, multi-source view of a CI.

PURPOSE
Multi-source visibility for better decisions

WHAT IS CMDB 360?

CMDB 360 provides a consolidated view of a Configuration Item (CI) from multiple data sources.

SHOWS

VALUES FROM MANY SOURCES
View CI attributes as reported by different data sources.

SOURCE COMPARISON
Compare values and identify mismatches across sources.

SAVED QUERIES
Run and reuse saved queries to analyze CI data quickly.

MEMORY TIP
360 = See everything.
Compare everything.
Trust the right data.

CMDB 360 – CI VIEW EXAMPLE

now

CMDB 360 — Refresh — Actions

Web Server 01
CI Type: Server
CI Class: cmdb_ci_server
Lifecycle Status: Operational

CI ID: SERVER000123
Manufacturer: Dell
PowerEdge R740
Production

Overview | Attributes | Relationships | History | Sources | Saved Queries | 360 Map

Multi-Source Attribute Comparison

Attribute	CMDB Value	Discovery	Service Mapping	Manual Entry	ERP	Status
Host Name	web01.company.com	web01.company.com	web01.company.com	web01.company.com	web01	Match
IP Address	10.10.10.20	10.10.10.20	10.10.10.20	10.10.10.25	10.10.10.20	Mismatch
Operating System	Windows Server 2019	Windows Server 2019	Windows Server 2016	Windows Server 2019	Windows Server 2019	Mismatch
Manufacturer	Dell	Dell	Dell Inc.	Dell	Dell	Match
Model	PowerEdge R740	PowerEdge R740	PowerEdge R740	R740	R740	Match

Saved Queries

Name	Description	Created By	Last Run	Actions
All Windows Servers	All Windows servers in Production	admin	2025-05-20 10:30	
Servers with IP Mismatch	Servers where IP is mismatched across sources	admin	2025-05-20 09:15	
Stale Servers	Servers not seen in last 30 days	it_ops	2025-05-19 16:45	

EXAM QUESTION EXAMPLE

QUESTION:
Where can you find the Saved Queries related to a CI?

ANSWER:
CMDB 360 Tab

WHY IT MATTERS

CMDB 360 helps you:
- See the full picture of a CI
- Identify data inconsistencies
- Improve data quality
- Make confident decisions

EXAM TIP
Remember the location of Saved Queries – it is a dedicated tab in CMDB 360.

KEY TAKEAWAY

Multi-source data → Compare & detect differences → Use Saved Queries for quick insights → Better visibility Better decisions

UNIFIED MAP

Visualize and explore relationships between Configuration Items (CIs) and services.

EXAM FAVORITES
High weightage in ServiceNow exams!

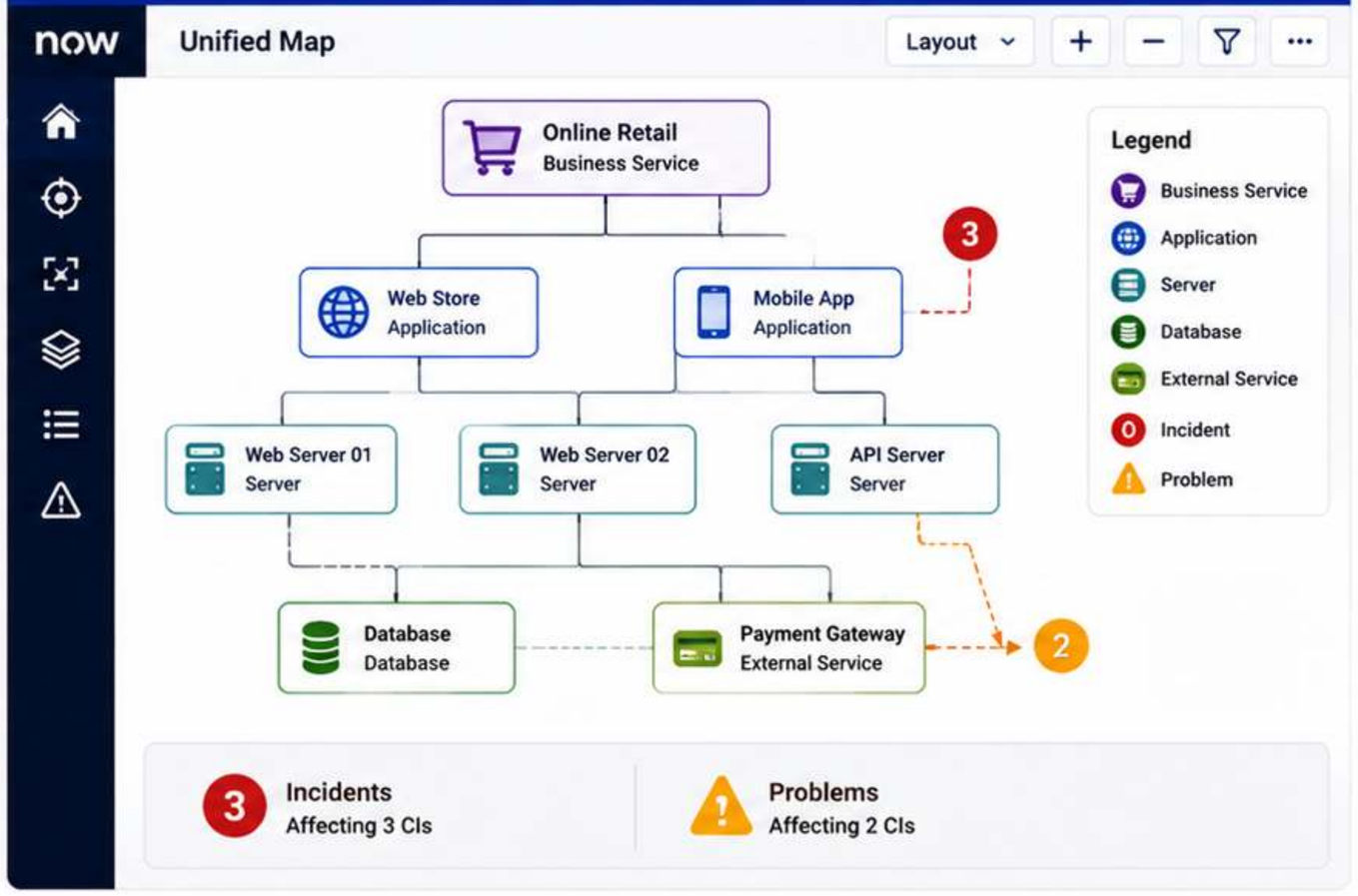
WHAT IS UNIFIED MAP?

Unified Map provides a visual, interactive view of relationships and dependencies between CIs, services, and applications.

WHAT YOU CAN DO

- **ZOOM**
  Zoom in and out to view high-level or detailed views.
- **FILTER**
  Filter the map using different criteria to focus on the right data.
- **SHOW DEPENDENCIES**
  See how CIs, services, and applications are connected.
- **SHOW INCIDENTS**
  Visualize related incidents on the map.
- **SHOW PROBLEMS**
  Visualize related problems on the map.

UNIFIED MAP – EXAMPLE VIEW



FILTER EXAMPLES

BUSINESS CRITICALITY

Filter CIs based on their criticality.

- 1 - Critical
- 2 - High
- 3 - Moderate
- 4 - Low

CI TYPE

Filter by type of Configuration Item.

- Server
- Database
- Application
- Network Device
- Storage

EXAM TIP

Unified Map is used to visualize relationships, dependencies, incidents, and problems.
Filters help you focus on what matters!

KEY TAKEAWAY

Visualize relationships | Filter what you see | Understand dependencies | Identify incidents | Identify problems | Better visibility, faster decisions!

QUERY BUILDER

Build and run advanced CMDB queries easily using a visual interface.

PURPOSE
Discover, analyze, and act on CMDB data quickly.

WHAT IS QUERY BUILDER?

Query Builder allows you to create advanced, relationship-based queries without writing complex scripts.
It helps you find connected data across multiple CMDB tables.

EXAMPLE SCENARIO

Find:

- Seattle Databases
- Connected Application Services
- Related Incidents

QUESTIONS OFTEN INCLUDE:

- Add Incident table to the query
- Add Location filter for Seattle
- Show only Active CIs
- Include relationships between CI types

QUERY BUILDER – EXAMPLE

now

Query Builder

Query: Seattle Databases with related Application Services and Incidents — Run | Save | Save As | ...

Build | Results Preview | Query Details — View: Table

Table	Type	Conditions	Relationship
cmdb_ci_database	Database	Location = Seattle	Used by Depends on
cmdb_ci_service	Application Service	Active = true	Uses
incident	Incident	Active = true	Affected by

+ Add Related Table | + Add Condition

Results Preview (Sample)

Database Name	Location	Application Service	Incident Number	Incident State
CustomerDB01	Seattle	Order Management Service	INC0012345	New
InventoryDB02	Seattle	Inventory Service	INC0012346	In Progress
SalesDB01	Seattle	Sales Reporting Service	INC0012347	Resolved

Showing 1 to 3 of 3 results — 1

EXAM QUESTION EXAMPLE

QUESTION:

Using Query Builder, you need to find active Application Services in Seattle and the related Incidents.
What should you do?

ANSWER:

- Add Incident table to the query
- Add Location filter for Seattle

EXAM TIP

- Query Builder is used to explore data and build reports.
- You can add related tables using relationships.
- Filters like Location, CI Type, State, Active, and Business Criticality are common in exams.

KEY TAKEAWAY

- Build relationship-based queries
- Add tables and relationships
- Apply filters (e.g., Location)
- Include related Incidents
- Run and analyze results

CMDB DATA FOUNDATIONS DASHBOARD

Improve CMDB data quality by identifying and resolving data issues using guided playbooks.

PURPOSE
Identify and fix data quality issues to build a trusted CMDB.

PURPOSE

The CMDB Data Foundations Dashboard helps you discover and prioritize data quality issues in your CMDB.

It highlights key issues and guides you through resolution using playbooks.

IDENTIFY KEY ISSUES

MISSING OWNERS
Identify CIs that do not have an owner assigned.

DUPLICATE LOCATIONS
Find duplicate Location records that cause inconsistencies.

MISSING PRODUCTS
Identify CIs that are missing product information.

LIFECYCLE ISSUES
Detect CIs with incorrect or inconsistent lifecycle states.

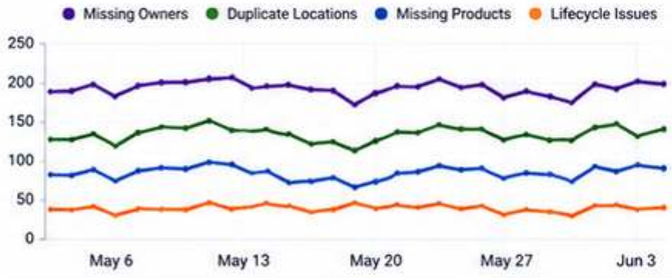
REMEMBER
Clean data = Trusted CMDB = Better decisions

CMDB DATA FOUNDATIONS DASHBOARD

Overview | Issue Categories | Playbooks | Trends | Configuration

248	132	187	165	732
Missing Owners	Duplicate Locations	Missing Products	Lifecycle Issues	Total Issues
CIs without an owner	Duplicate location records	CIs without product	Incorrect lifecycle states	Across all categories

ISSUES OVER TIME



ISSUES BY CATEGORY



TOP ISSUES

Issue Category	Issue Count	Trend	Last Run	Playbook
Missing Owners	248	↑ 12%	Jun 3, 2025 10:00 AM	View Playbook
Duplicate Locations	132	↓ 5%	Jun 3, 2025 10:00 AM	View Playbook
Missing Products	187	↑ 8%	Jun 3, 2025 10:00 AM	View Playbook
Lifecycle Issues	165	↓ 3%	Jun 3, 2025 10:00 AM	View Playbook

Data Foundations helps you improve data quality by identifying issues and guiding you with playbooks. It does not automatically fix data.

PLAYBOOKS PROVIDE GUIDANCE

ROOT CAUSE
Understand why the issue exists.

PROBLEM ANALYSIS
Analyze the impact and affected data.

REMEDIATION STEPS
Follow step-by-step instructions to resolve the issue.

IMPORTANT

Playbooks provide guidance, **not automatic fixes.**

Users must review and take action to resolve issues.

KEY TAKEAWAY

Identify data issues → Use playbooks for guidance → Analyze root cause and impact → Take remediation actions → Improve data quality and trust in CMDB

CSDM FUNDAMENTALS – CSDM JOURNEY

A maturity journey to build a valuable, trusted, and connected CMDB

EXAM FAVORITE
Very important in ServiceNow exams!

1. FOUNDATION

Establish the Basics

Build a strong data foundation with accurate, consistent, and governed data.

Focus Areas

- Data Quality
- Governance
- Standardization
- Core CIs

Build it Right

2. CRAWL

Capture and Organize

Start bringing in data, discover CIs, and organize relationships across teams.

Focus Areas

- Discovery
- Integrations
- Basic Relationships
- Data Enrichment

Get it in

3. WALK

Optimize and Connect

Improve data quality, expand relationships, and deliver meaningful services.

Focus Areas

- Data Quality Improvement
- Advanced Relationships
- Service Mapping
- Process Integration

Make it Useful

4. RUN

Automate and Scale

Automate processes, scale across the enterprise, and drive operational efficiency.

Focus Areas

- Automation
- Orchestration
- Policy & Compliance
- Performance & Scale

Make it Efficient

5. FLY

Innovate and Transform

Leverage data for innovation, insights, and business transformation.

Focus Areas

- Advanced Analytics
- AI / ML Insights
- Business Value
- Continuous Innovation

Make it Transformational

EXAM FAVORITE
CSDM Journey is a highly tested topic. Know the stages and their focus!

MNEMONIC

FCWRF

"First Crawl Walk Run Fly"

Easy to remember, easy to score!

KEY TAKEAWAY
CSDM is a maturity journey. Move step by step and create a trusted, valuable CMDB.

BENEFITS OF FOLLOWING THE CSDM JOURNEY

- Trusted Data
- Better Decision Making
- Operational Efficiency
- Business Insights
- Higher Business Value

CSDM DOMAINS

A common data model for the entire enterprise.

EXAM FAVORITE
Very important in ServiceNow exams!

1. FOUNDATION

Core shared data

Provides the core data that is shared across all other domains.

Includes:

- CIs and Relationships
- Locations
- Organizations
- People and Teams
- Agreements
- Contracts
- Financials
- Projects

The foundation used by all other domains.

2. DESIGN

Business Capabilities

The things an organization must be able to do to achieve its objectives.

Business Applications

Applications that are used to deliver business capabilities.

Design how the business delivers value.

3. BUILD

Application Components

The building blocks that make up an application (e.g., modules, libraries, APIs, microservices).

Build and assemble applications.

4. MANAGE TECHNICAL

Technical Services

Technical capabilities delivered by IT to support business services (e.g., hosting, database, network, security).

Technical Service Offerings

Packaged technical services that are offered to consumers.

Manage and operate technical capabilities.

5. SELL / CONSUME

Business Services

Services that deliver business capabilities to end users (combines people, process, and technology).

Business Offerings

The way business services are packaged and offered to customers or users.

Deliver value to consumers and customers.

KEY TAKEAWAY

CSDM domains represent the lifecycle of technology and services from data foundation to business value delivery.

Foundation → Design → Build → Manage Technical → Sell / Consume

SERVICE TYPES

Different services serve different consumers and purposes.

EXAM FAVORITE
Very important in ServiceNow exams!

1. BUSINESS SERVICE

Consumed by business users

Represents a capability or service that delivers value to the business and supports business functions.

PURPOSE
Align IT services to business outcomes and measure business value.

EXAMPLES
- Order Management Service
- Employee Onboarding Service
- Payroll Service
- Customer Support Service

CONSUMERS
Business users, employees, customers, or external users

2. TECHNICAL SERVICE

Consumed by technical teams

Represents technical capabilities delivered by IT to support the delivery of business services.

PURPOSE
Provide reusable technical capabilities that support multiple applications and services.

EXAMPLES
- Database Service
- Network Service
- Backup Service
- Email Service

CONSUMERS
IT teams, developers, administrators, operations

3. APPLICATION SERVICE

Logical representation of application stack

Represents an application and its components as a logical service for business and IT alignment.

PURPOSE
Provide visibility into applications and their dependencies.

EXAMPLES
- ERP Application Service
- CRM Application Service
- HR Management Application Service
- E-commerce Application Service

CONSUMERS
Business users, IT teams, application owners

KEY TAKEAWAY
Know the consumer, purpose, and examples for each service type.

QUICK COMPARISON

BUSINESS SERVICE	TECHNICAL SERVICE	APPLICATION SERVICE
Business-focused	Technology-focused	Application-focused
Consumed by business users	Consumed by technical teams	Logical view of application stack

EXAM TIP
Questions often ask:
What type of service is being described? Focus on the consumer and purpose!

INFORMATION OBJECT

Represents sensitive or critical information that needs to be identified, tracked, and protected.

VERY IMPORTANT
High probability in ServiceNow certification exams!

WHAT IS AN INFORMATION OBJECT?

An Information Object is a group or category of information that is important to the organization and requires protection and governance.

KEY POINTS

- Helps identify and classify sensitive information
- Used for risk assessment and compliance
- Can be linked to records like Business Services, Applications, and CIs
- Helps in data protection and access control

EXAMPLES

- Customer Information
- Employee Information
- Patient Information
- Payment Card Information

USED FOR

PII (Personally Identifiable Information)
Information that can identify an individual (e.g., name, address, SSN, email).

PCI (Payment Card Information)
Cardholder data used for payment processing (e.g., card number, expiry date).

HIPAA (Protected Health Information)
Patient health information protected under HIPAA regulations.

REGULATED DATA
Any other information regulated by laws and compliance standards.

EXAM QUESTION EXAMPLE

QUESTION:
How would you track and protect patient information in ServiceNow?

ANSWER:
Use an Information Object.

WHY THIS IS IMPORTANT

- Supports data classification and governance
- Helps meet compliance requirements
- Enables better risk and impact analysis
- Ensures sensitive data is handled appropriately

MEMORY

INFORMATION OBJECT = SENSITIVE DATA

Whenever the question talks about sensitive, critical, regulated, or protected data – think Information Object.

EXAM TIP
If the question involves tracking, protecting, or classifying sensitive data, the answer is almost always Information Object.

SERVICE MAPPING TYPES

Different approaches to discover and map your environment.

EXAM FAVORITE
High probability in ServiceNow certification exams!

1. TOP DOWN



- Mission critical
- Most accurate
- Starts from a known point and discovers downstream dependencies

BEST FOR

Mission critical services where accuracy is most important. Requires agents or credentials.

ACCURACY: HIGHEST

2. CONNECTION SUGGESTION



- Custom built apps
- Uses fingerprinting and heuristics
- Suggests connections between CIs based on patterns

BEST FOR

Custom applications and environments where agents are not available. Provides suggested relationships for review.

ACCURACY: MEDIUM

3. TAG-BASED



- Cloud / Kubernetes environments
- Uses tags/labels to group resources
- Discovers relationships based on tags and metadata

BEST FOR

Cloud and Kubernetes environments where tagging is consistent. Great for containers and microservices.

ACCURACY: MEDIUM–HIGH

4. DYNAMIC CI GROUP



- Small services or simple environments
- Uses queries to build dynamic CI groups
- Relationships based on CI group membership

BEST FOR

Small environments or specific use cases. Quick to set up using query-based groups.

ACCURACY: LOWER

KEY TAKEAWAY

Choose the right service mapping type based on your environment, accuracy needs, and available data.

Top Down
Most Accurate
→
Connection Suggestion
Pattern Based
→
Tag-Based
Tag & Metadata Driven
→
Dynamic CI Group
Query Based

CRAWL WALK RUN FLY MAPPING

CSDM Maturity Journey – From Foundation to Business Transformation

EXAM FAVORITE
Very important for CSDM Journey and Mapping questions!

1. CRAWL

Build the Foundation

Business Apps
Identify and model business applications used across the organization.

Application Services
Discover and map application services and their relationships.

GOAL
Establish visibility into applications and their supporting services.

2. WALK

Gain Business Insights

Business Services
Model and connect business services to the applications that support them.

Impact Analysis
Understand how changes impact services, applications, and infrastructure.

Change Management
Use insights to plan, assess, and implement changes with confidence.

GOAL
Understand the impact and improve change success.

3. RUN

Deliver and Optimize Services

Service Offerings
Package and publish services as offerings for internal and external consumers.

Consumer Visibility
Provide consumers with transparency into service status, performance, and availability.

GOAL
Deliver reliable services and improve consumer experience.

4. FLY

Transform and Innovate

Advanced Governance
Implement policies, controls, and governance across the enterprise.

Information Objects
Classify and protect sensitive and regulated information.

Risk
Identify, assess, and mitigate risks across services and operations.

SecOps
Integrate security operations with service and risk management.

GOAL
Drive business transformation with governance, risk management, and security at the core.

KEY TAKEAWAY
Move step by step from discovery to optimization and transformation. Each stage builds on the previous one to create business value.

CRAWL → Discover & Model Applications — Foundation

WALK → Business Insights & Impact Understanding — Visibility

RUN → Deliver & Optimize Services — Optimization

FLY → Transform & Innovate with Governance, Risk & Security — Transformation

TOP 20 EXAM FLASHCARDS

ServiceNow – CSDM | Most Important Q&A for Certification Success

STUDY SMART, PASS FAST!
Quick answers to high probability exam questions.

1. Q: Create CI class?
   A: CI Class Manager
2. Q: SCCM ingestion?
   A: Service Graph Connector
3. Q: Duplicate prevention?
   A: Identification Rule
4. Q: Source authority?
   A: Reconciliation Rule
5. Q: Lower priority number?
   A: Higher authority
6. Q: Staleness default?
   A: 30 days
7. Q: Validate CI exists?
   A: Attestation
8. Q: Validate attributes?
   A: Certification
9. Q: Bulk duplicate fix?
   A: De-Duplication Template
10. Q: Single duplicate fix?
    A: Duplicate CI Remediator
11. Q: Manage lifecycle?
    A: CMDB Data Manager
12. Q: NLQ?
    A: CMDB Workspace
13. Q: Principal Class?
    A: CI Class Manager
14. Q: Multi-source attributes?
    A: CMDB 360
15. Q: Sensitive data?
    A: Information Object
16. Q: Generic Server → Windows Server?
    A: Class Upgrade
17. Q: Service consumed by business?
    A: Business Service
18. Q: Service consumed by IT?
    A: Technical Service
19. Q: Application stack?
    A: Application Service
20. Q: CSDM rollout?
    A: Foundation → Crawl → Walk → Run → Fly

MEMORY TRICK
Use these flashcards to revise faster and remember longer!

FOUNDATION — Establish the core CMDB & governance. →
CRAWL — Discover & model applications. →
WALK — Connect to business services & impact. →
RUN — Deliver services & improve visibility. →
FLY — Optimize, govern, secure & innovate.

FINAL SLIDE

CIS DATA FOUNDATIONS EXAM SUCCESS FORMULA

now CERTIFIED CIS-DF

Master the Concepts. Understand the Flow. Pass the Exam.

1. CONFIGURATION

👉 Structure

Build the foundation by defining classes, attributes, and relationships.

2. INGEST

👉 Populate

Bring data into CMDB from multiple sources using connectors and tools.

3. GOVERN

👉 Maintain

Ensure data quality, accuracy, reliability, and compliance.

4. INSIGHT

👉 Analyze

Use reports, dashboards, and AI to gain meaningful insights.

5. CSDM

👉 Business Alignment

Align IT with business outcomes through services and capabilities.

GOLDEN RULE

If you understand:

- CI Class Manager
- IRE (Identification & Reconciliation Engine)
- Discovery vs ACC
- Data Manager (CMDB Data Manager)
- CMDB Health
- CMDB 360
- Unified Map
- CSDM Journey (Foundation → Crawl → Walk → Run → Fly)

You can answer nearly **80%+** of the CIS-DF exam questions confidently!

Remember:

It's not about memorizing.
It's about understanding how ServiceNow manages data across the enterprise.

YOU'VE GOT THIS!

Stay consistent, trust the process, and success will follow.

Good Luck!

EXAM SUCCESS TIPS

- Understand the concepts first, then practice.
- Focus on process, roles, and purpose.
- Read questions carefully.
- Eliminate wrong options smartly.
- Manage time & review answers.