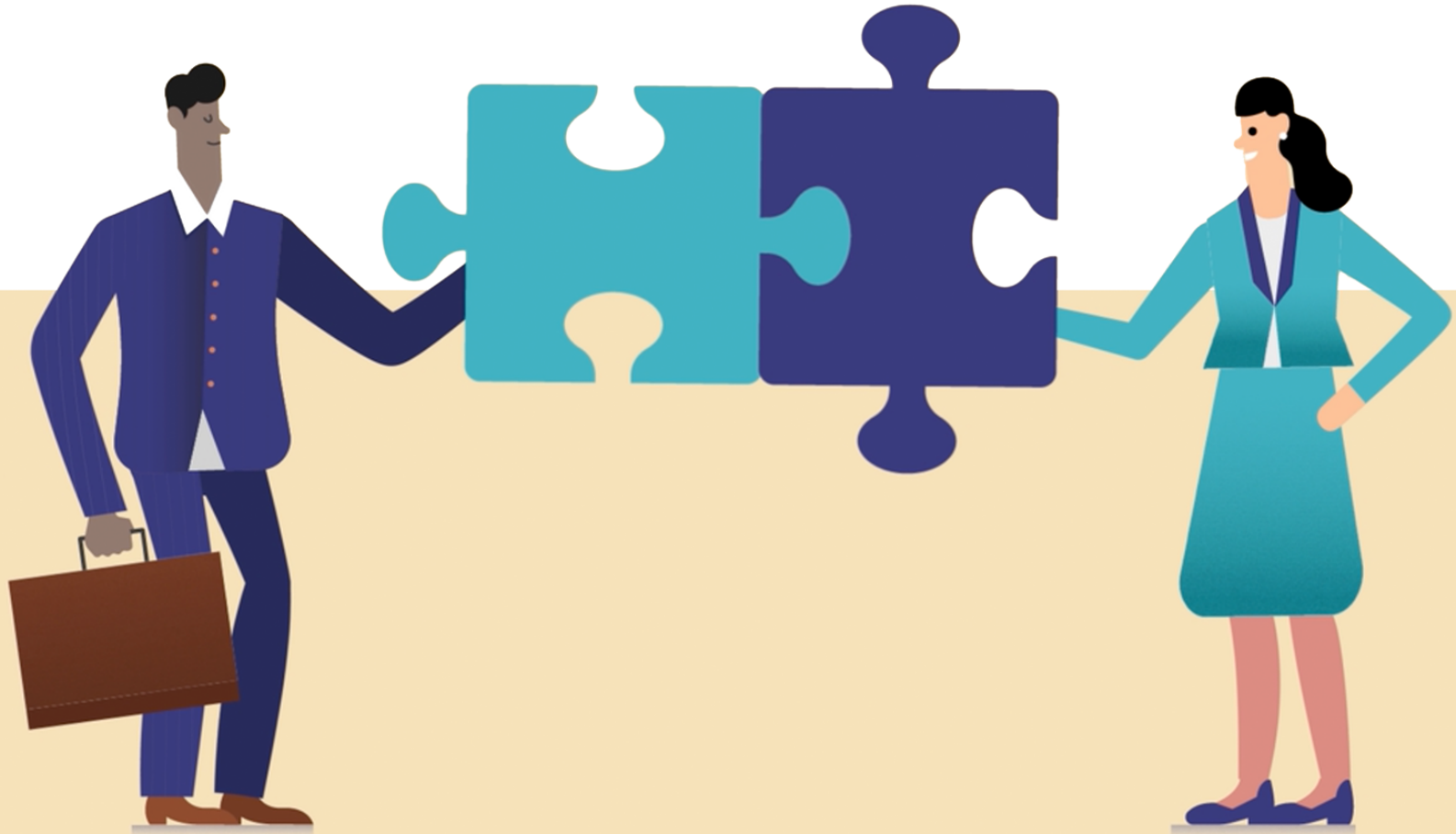# Plan your successful CMDB deployment

Achieve high-performing business services using a healthy CMDB

# Introduction

Behind every successful CMDB deployment is a detailed configuration management plan for implementing, designing, and sustaining a configuration management capability. And when you take the time to develop a configuration management plan, the result is greater business service performance.

**THIS BEST PRACTICE GUIDE WILL HELP YOU PLAN FOR A SUCCESSFUL CMDB DEPLOYMENT BY TEACHING YOU TO:**

✓ Articulate your goals

✓ Form a configuration management team

✓ Establish a governance structure

✓ Understand configuration item design

✓ Integrate with key business processes

**Minimize outages, maximize savings**

Unplanned outages in a data center can cost millions in just hours. With a robust configuration management capability, IT can reduce unplanned outage costs and directly enhance business outcomes. To do all that, you need a strategic plan that establishes your maturity and trust with the business owners.

A well-configured CMDB can save you 40% on your ongoing IT efforts[1]. Yet some organizations struggle to implement, sustain, and derive value from their CMDB. To avoid this, you should follow the four stages toward a healthy CMDB.

**1** *In July 2017, the Institute has rebranded itself as the Institute for Process Excellence.*

**BEFORE YOU START, YOU NEED:**

- General knowledge of ITIL
- Knowledge of configuration management methodology
- Knowledge of the features and functions supported by the CMDB

# The four stages toward a healthy CMDB

**STAGE 1**

Set your direction

**STAGE 2**

Build a team and a governance model

**STAGE 3**

Design your configuration plan

**STAGE 4**

Show your CMDB's value to other organizations

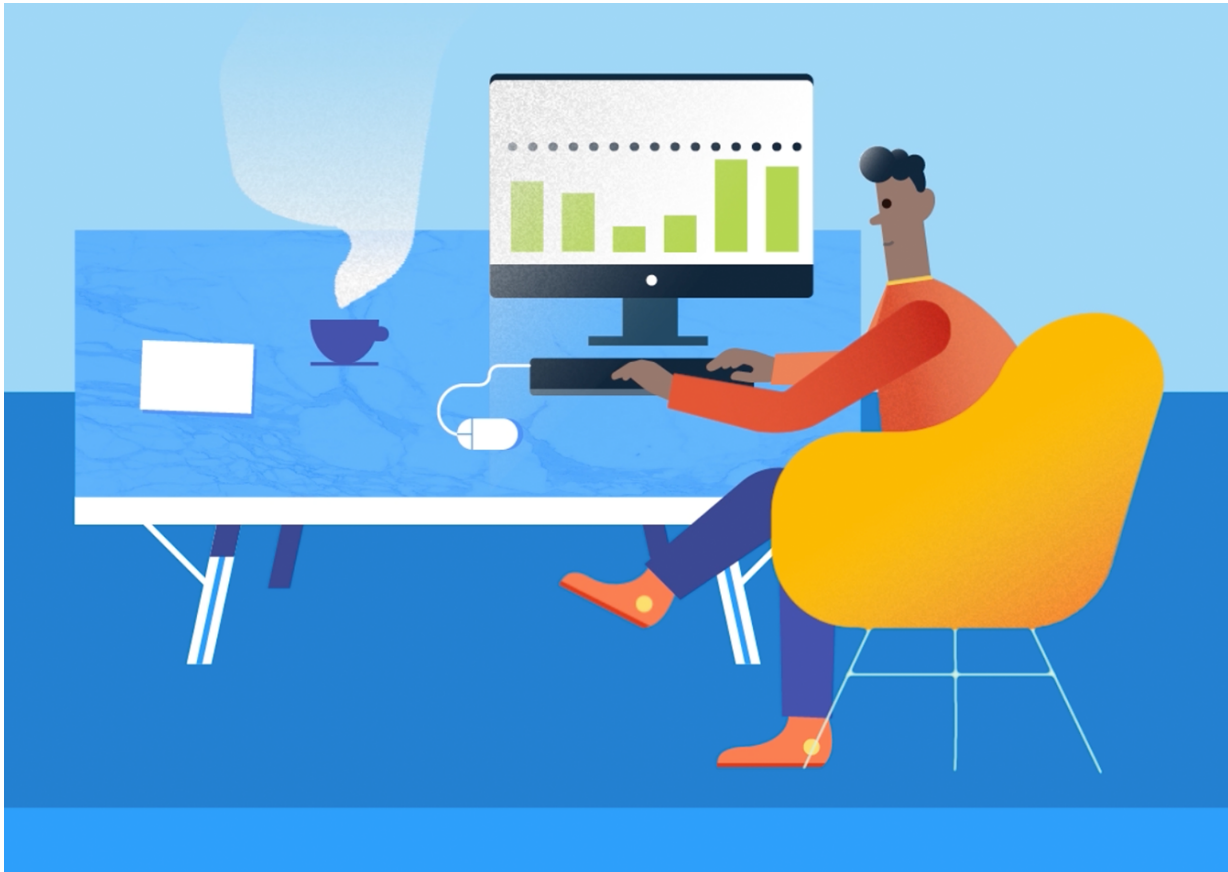**TAKEAWAY**

Manage service health

At the end of these stages, you'll see that the takeaway is your ability to manage service health better than ever. You will also be able to understand:

- Which business services represent unique requirements that offer a competitive advantage (where strategic investments should be targeted) versus those that might offer an opportunity to reduce costs by standardization and simplification

- What technologies underpin such services to understand technical debt/support risk profiles

- How customers (internal and external) are consuming the services you provide and predict future consumption

- The underpinning networking, compute, and data infrastructures used to deliver your services (both on premises and cloud based)

- The cost of each service and how to measure your ability to deliver services based on published service levels

# Set your direction

Clear configuration management goals, objectives, and outcomes are the keys to designing a great configuration management capability that leads to a rock-solid CMDB.

Designing a great configuration management capability starts with clear configuration management goals, objectives, and outcomes. Make sure your configuration management efforts are aligned to your business objectives.

### Write well-stated goals and objectives

Companies with successful CMDB deployments always articulate what to accomplish, their approach, intended business outcomes, and their ongoing measurements of those outcomes.

| | |
|---|---|
| **What** | What do you want to accomplish? |
| **How** | Define your approach, constraints, and assumptions. |
| **Why** | What are the business outcomes that CMDB will support? |
| **Measure** | How do you know you're doing it right? |

*Table 1: A quick way to set goals and objectives*

Start by writing a list of use cases to focus your goals. These use cases should directly tie to the strategic initiatives of your company. ServiceNow® customers often start with these:

| QUESTIONS YOU'RE ADDRESSING | MAPPED USE CASE | HOW DOES THIS TIE BACK TO CMDB? |
|---|---|---|
| An infrastructure component broke in the middle of data center migration. How would this impact services? | Data center migration | Accurate infrastructure configuration and its impact on business services |
| We need to change something in our data center. How will this affect our business? | Change management | Accurate infrastructure configuration and its impact on business services |
| Our monitoring tool notified us that a metric has exceeded a threshold that happens to be in the cloud. How urgent is this to our business? | Cloud-first strategy | Mapping of cloud services along with on-premises infrastructure |
| We're spending lots of money on our IT infrastructure. Where are these components deployed and for what business applications? | Asset management | Accurate tracking of infrastructure and applications |

*Table 2: Questions that customers ask when setting up key use cases tailored to support business initiatives to accelerate goals and objective definitions*

**Customer example**

Table 3 shows you how one customer outlined goals and focused on key business priorities using the Why section.

| | |
|---|---|
| **What** | • Implement configuration management |
| **How** | • Executed completely and accurately<br>• Done with automation<br>• Satisfies audit and compliance requirements<br>• Reduces technological complexity<br>• Improves planning, coordination, and communication of changes<br>• Moves us from application-centric to business-centric |
| **Why** | • Understand the impact of changes proactively<br>• Support data center migration<br>• Enabler to digital transformation<br>• Support cloud first strategy |
| **Measure** | • Improved perception of trusted system of record<br>• Incident reduction |

*Table 3: A customer example of setting goals and objectives*

This document shows more examples of how to effectively set goals and objectives.
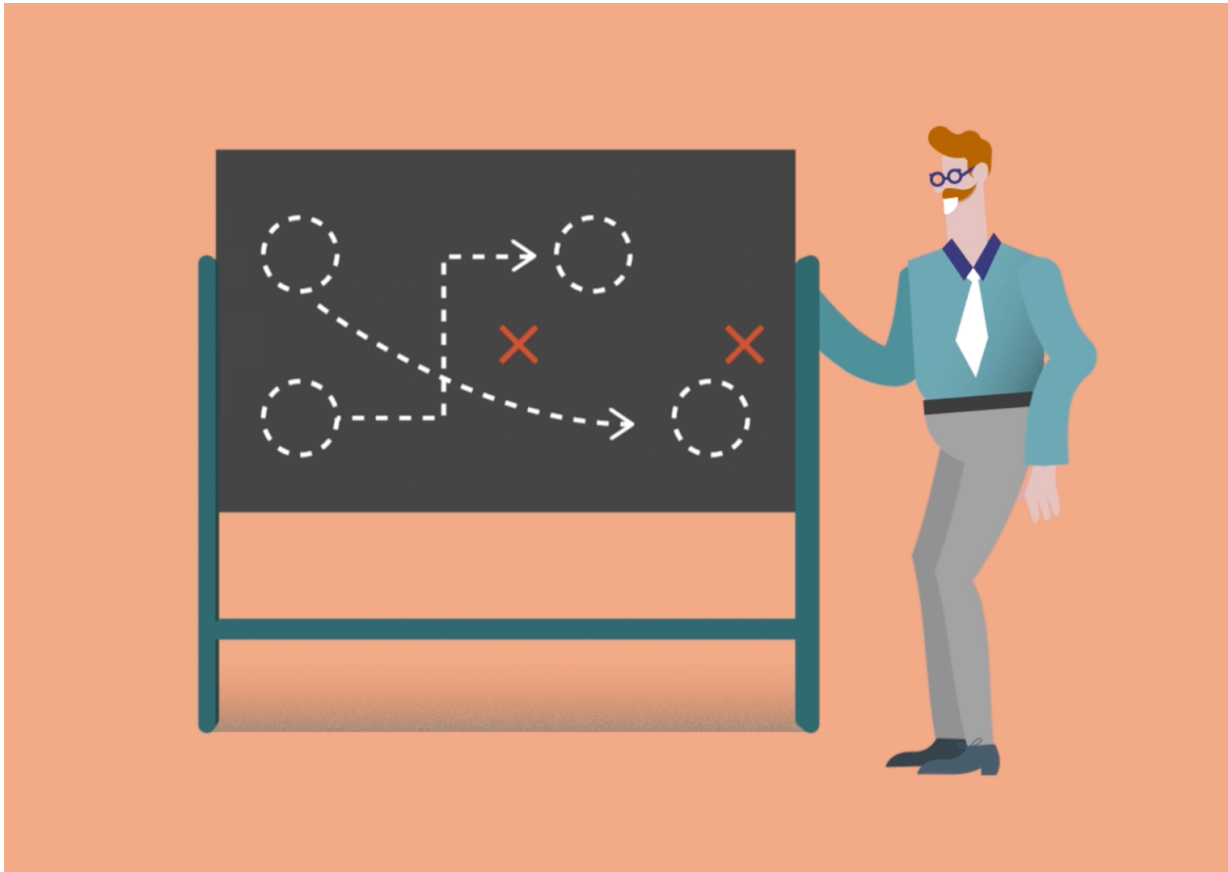
**EXPERT TIP**
Write your goals so they help your organization achieve its strategic initiatives.

# Build a team and a governance model

When you build your configuration management team and governance structure and get early buy-in from executives, it helps create credibility and trust in your configuration management process over the long term.

The team should have autonomy to carry out configuration management responsibilities without being bogged down by daily support functions. This team should operate independently from the day-to-day "keep the lights on" support functions.

With your team in place, define each member's role, responsibilities, and authority. Then document these things to ensure they have the ownership and support to make the changes required.

| ROLE | RESPONSIBILITY | TITLE |
|---|---|---|
| CM executive sponsor CCB process owner | Oversees configuration management plan implementation in all departments within the company | Senior executive |
| CM process owner CCB chair | Has ownership and is accountable for its strategic development; Ensures CM plan is rolled out | Senior manager |
| Configuration manager Full CCB member/guest member | Manages delivery of CM services and documentation of operating procedures | IT manager |
| CM system analyst Full CCB member/guest member | Performs daily configuration management tasks with minimal direction | IT analyst |
| CM specialist Full CCB member/guest member | Performs daily configuration management tasks with direction from CM system analyst | IT admin |

*Table 4: Typical assignments for a configuration management team*

Table 4 shows how one ServiceNow customer outlined its team's roles and responsibilities before deploying the CMDB.

To learn more about identifying and assigning roles, read this detailed guide.

**Implement governance**

As part of this team, ServiceNow customers form a configuration control board (CCB). The CCB serves as a steering committee to make sure there is always a good value proposition for configuration management efforts. The CCB is essential and is there to ensure your configuration management project stays on track, from a value proposition perspective, and remains effective for the company. Voting members of your CCB should be leadership team members who are directly accountable for the strategic initiatives of the IT department and close enough to the day-to-day infrastructure support team efforts to understand the use cases.

For an example of how our customers implement governance through a CCB, take a look at this CCB Charter document.

We've found that the titles and roles of the CM team vary in each company. For instance, the ServiceNow IT infrastructure and operations team uses the RACI matrix (Responsible, Accountable, Consulted, Informed) to manage configuration management tasks. For example, when they publish a new configuration item (CI), each of the four members of the team ensures that updates are made successfully. Both the configuration manager and analyst are accountable and responsible for publishing the new CI; while the CI owner and process owners are informed of this change to ensure all systems are updated and communicated to stakeholders.

| USER | CL OWNER | CONFIGURATION ANALYST | CONFIGURATION MANAGER | PROCESS OWNER |
|---|---|---|---|---|
| **Process planning and design** | | | | |
| Produce configuration management plan | | C | R | R/A |
| Define CMDB structure | | C | R | R/A |
| Determine CI selection guidelines | | C | R | R/A |
| Populate CMDB | | C | R/A | |
| Perform initial audit | | R | R/A | C |
| Baseline CMDB | | I | R/A | I |
| **Configuration identification** | | | | |
| Validate update request | C | R | R/A | |
| Validate CI attributes | | R | R/A | |
| Review invalid attributes | C | R | R/A | |
| Update CMDB | C | R | R/A | |
| Publish new CI type | I | R | R/A | I |
| **Configuration control** | | | | |
| Validate update request | C | | R/A | |
| Validate CI attributes | I | R/A | | |
| Review invalid attributes | R/A | C | | |
| Update CMDB | I | R/A | | |
| **Status accounting and reporting** | | | | |
| Authorize or reject report request | I | R | R/A | |
| Create or update configuration management report | | R | R/A | |
| Generate configuration management report | | R | R/A | |
| Distribute configuration management report | I | R | R/A | |
| **Verification and audit** | | | | |
| Approve verification and audit request | | | | |
| Execute audit | | R/A | | |
| Reconcile with CMDB | | R/A | | |
| Determine corrective action | R/A | I | | |
| Initiate corrective CMDB action | | R/A | | |
| Execute corrective action | 1 | R/A | | |

**R**: Responsible, **A**: Accountable, **C**: Consulted, **I**: Informed

*Table 5: ServiceNow IT infrastructure and operations team RACI matrix that is used to assign configuration management team tasks*

One of our customers clearly documents tasks that require approval from their governance board and those that can be accomplished by the application support team. For instance, application support can modify version, lifecycle, business owner, and relationships. While fields like business criticality, SLA, and operational status (live, retired, etc.) have to go through the board for formal approval. We like this approach since it clearly identifies the responsibilities of the stakeholders.

**EXPERT TIP**

Create a structured team and a steering committee to keep everyone focused on the goals of keeping a business-driven configuration management plan.

# Design your configuration plan

Start small and grow gradually as you design your CMDB with configuration items.

Take the time to familiarize yourself with the CMDB and its features and functions. Develop an understanding of the design options for the CMDB and the broader ecosystem of federated systems and data feeds.

Your CMDB is populated with configuration items (CIs), which must be classified for you to have a properly managed CMBD. When you start this process, start small and grow gradually. Also make sure that there are no duplicate CIs.

### WHAT IS A CI?

A CI is one of the most important components of your CMDB. It's simply an application, infrastructure, or service component you're managing. It can be a physical server, an app running on a virtual server, or a business service.

Decide which CI classes and attributes you need to support the use cases you identified in Stage 1. Most organizations start simple and make incremental improvements as they gain experience. From this, you should be able to identify the types of CI classes you will need to manage. You will need to make sure these CI classes are at the appropriate level—as in what level of definition is meaningful to the use cases you identified earlier. As a general recommendation, start with using the CI classes defined out of the box for CIs that can be

discovered with the Now Platform™. These CI classes have been vetted by thousands of our customers and should contain all of the attributes your efforts will need.

For example, you might start with a hardware CI class, so you assign some simple attributes: CPU, memory, etc. As you build your CMDB, you'll map computers, servers, routers, switches, and so on. Each of these CIs will have attributes and each one of them will have relationships and dependencies.

> **Heads up!**
>
> Your CI tables can get out of control quickly if you don't simplify them! Keep their names intuitive so they are easy to identify and remember.

### OUR CUSTOMERS START BY CLASSIFYING THESE CIS:

- Windows server
- Linux server
- Firewall

- Load balancer
- Database
- Network router

- Network switch
- Storage
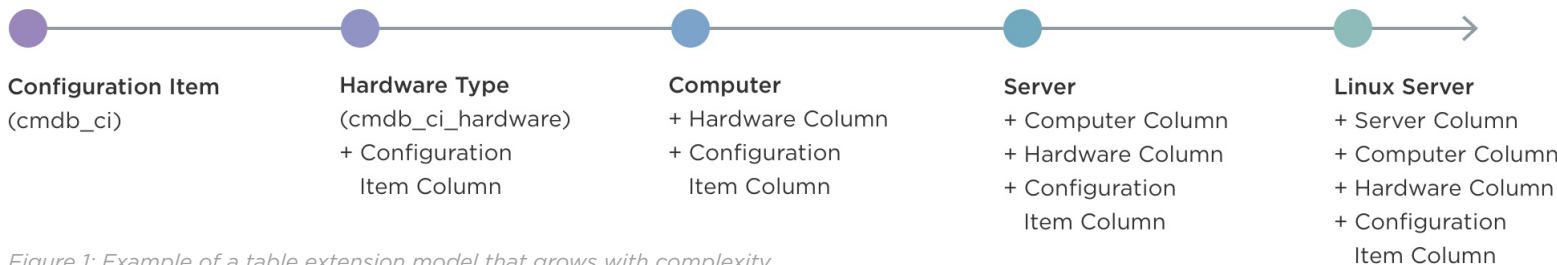- Application server

**START SIMPLE**                                     **ADD DETAIL**

**Configuration Item**
(cmdb_ci)

**Hardware Type**
(cmdb_ci_hardware)
+ Configuration
   Item Column

**Computer**
+ Hardware Column
+ Configuration
   Item Column

**Server**
+ Computer Column
+ Hardware Column
+ Configuration
   Item Column

**Linux Server**
+ Server Column
+ Computer Column
+ Hardware Column
+ Configuration
   Item Column

*Figure 1: Example of a table extension model that grows with complexity*

One large insurance customer warns that it's easy to add data to the CMDB but harder to maintain the model.

For CI classes that are not discoverable, you might need to extend an out-of-the-box class. Figure 1 depicts how the CMDB uses object-oriented inheritance in the creation of all CI classes.

If you are using ServiceNow Discovery, it will find all the network infrastructure, applications, and services and populate them into the CMDB.

Dependency maps let you see where your CIs support a critical service. For example, the loss of disk drives may take a database instance down, which affects the requisition service the HR department uses to order equipment for new employees. If you are using ServiceNow Discovery or Service Mapping products, the dependencies between discoverable CIs will be built for you automatically as the CMDB is updated by discovery updates. See Figure 2.
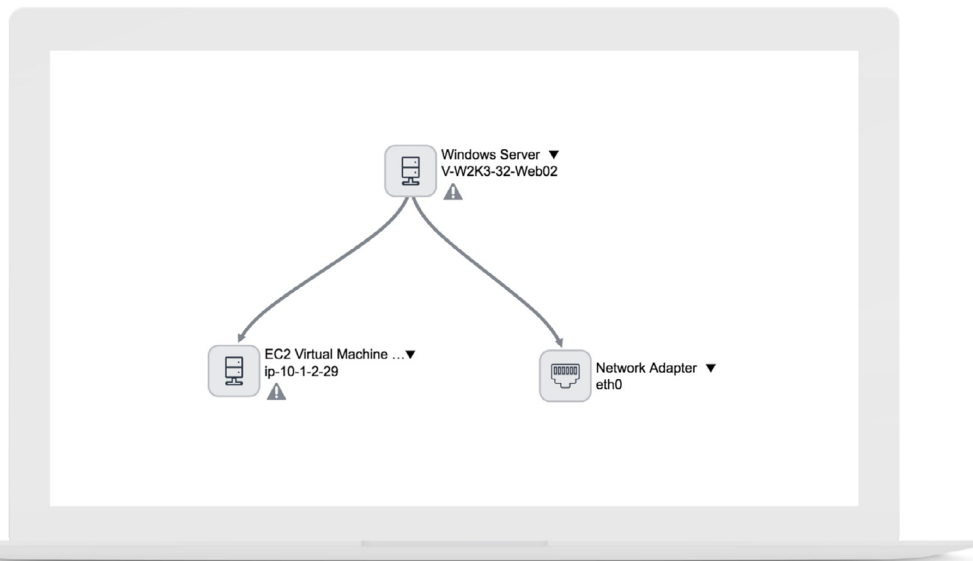


*Figure 2: ServiceNow CMDB dependency map*

For the logical "business layers" that are not discoverable, you will have to define the relationships between discoverable and non-discoverable CIs comprising your business model.

For each CI class, you will need to make sure the CMDB is configured properly. Use CI Class Manager to configure the rules for each CI class to ensure you have all the necessary information about your CIs in one place. The CMDB stores all the information you want to capture and manage on an ongoing basis and can record relationships between attributes in the CMDB.

In order to manage changes to the CMDB, we recommend setting up configuration control that eliminates the risks of unnecessary tweaks to the CIs. Based on customer implementations, we suggest that you proactively manage CIs and their dependencies when they're added, deleted, and modified. When a business process like incident management requests a change to the CIs, you should:

1.  Allow change requests via Change Management; you can easily do this using the **Propose Change** feature if have ServiceNow Change Management enabled.

2.  Assign proper privileges to the authorized users to make changes; normally it's a member of your team such as a CM analyst.

3.  Validate CI attributes against agreed criteria in your configuration management plan.

4.  Update the CMDB with the necessary changes and communicate them to stakeholders.

**EXPERT TIP**

Start by populating your CMDB with a solid inventory of CIs focused on specific use cases. If you find yourself populating with items that do not tie back to your goal or use case, you are off track.
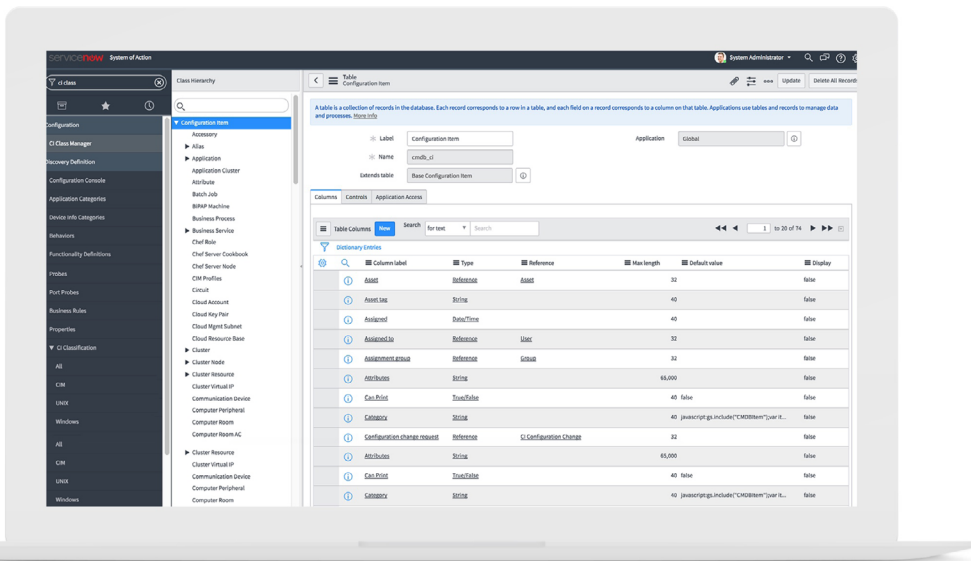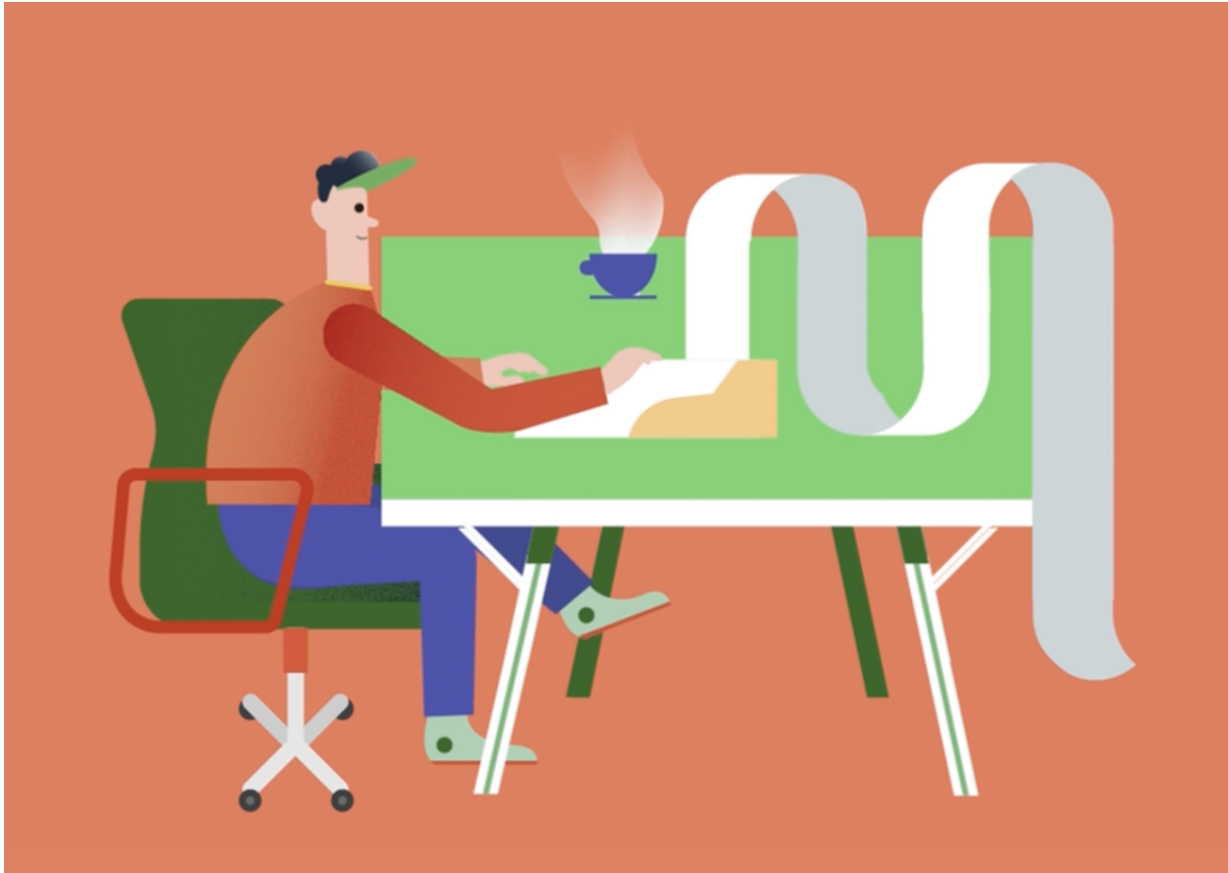


*Figure 3: ServiceNow CI Class Manager*

# Show your CMDB's value to other organizations

When you integrate business processes, tie them back to your goals, and communicate proactively about changes to the CMDB, you make the CMDB a valuable asset to the organization.

You can show value to other organizations by tying back to the goals and objectives you set earlier. The value to others is if you can provide a line of sight from strategic business drivers to the services offered to your customers to the technologies used to deliver your services to the actual operational infrastructure used to the total cost of your services.

Start by integrating with key business processes such as asset management, incident management, etc.

Set clear relationships with the various governance boards and align with business processes from the beginning. You can save $110,000 per hour or more on service outages when you document your relationship with other governance mechanisms.

Start by mapping the four business processes listed in Table 6 to your configuration management plan.

Remember to practice configuration control that was set up in Stage 3 to ensure you take care of change requests from these business processes.

| BUSINESS PROCESS (GOVERNING BOARDS) | WHAT THEY CARE ABOUT | HOW CAN YOU SHOW INSTANT VALUE |
|---|---|---|
| Asset management (asset management board) | Complete and up to date financial information about an asset's request, approval, order, and receipt. IT has to track its status, location, and ongoing management. | Get a clear separation of configuraton management versus asset management within your organization.<br><br>Track an asset status, location, and ongoing management and report to asset management board when asked. |
| Project management (project/program management board) | An accurate count of IT infrastructure items when obtaining funding for projects. | Provide with clear visibility of the IT infrastructure, applications, and services. |
| Information security (security operations board) | Managing data breaches, vulnerabilities, and remediation after security incidents. | Infrastructure dependencies that you provide help pinpoint critical business processes that should be brought back first. |
| Incident management (change approval board) | Incident management mapping directly improves the service desk readiness to solve issues faster. This is a crucial integration for ServiceNow customers to track issue resolution. | When this mapping is in place both IT and business partners are on the same page about tracking issues in impacted services, which saves tremendously on remediation time. |

*Table 6: Four important business process integrations*

**Communicate using the ServiceNow CMDB dashboard**

Using the ServiceNow CMDB dashboard, your stakeholders get status updates and track important changes. In this way, you're able to share the health of the CMDB.

Figure 4 is an example of the ServiceNow infrastructure and operation's CMDB dashboard. The ServiceNow team uses this dashboard to manage the health of the CMDB and communicate it to business stakeholders.
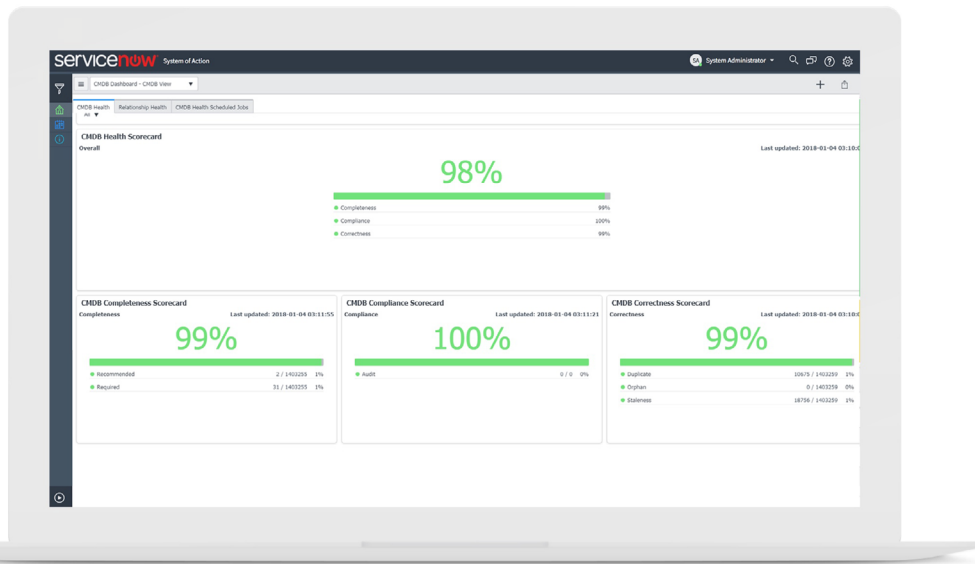


Figure 4: ServiceNow infrastructure and operations team uses CMDB dashboard to monitor health and makes it easy for stakeholders to see CMDB health

Use these major metrics to track your CMDB health:

| Completeness | Test for required and recommended fields that are not populated |
|---|---|
| Compliance | Audit the CMDB for its adherence to predefined certificates |
| Correctness | Test against predefined data integrity rules such as identification rules, orphan CI rules, and stale CI rules |

Table 6: CMDB health metrics

Some ServiceNow customers use internal social media channels to share the CMDB dashboard with hundreds of stakeholders who are then able to track changes and resolve inconsistencies or problems quickly. The CMDB dashboard is a great way to track continual improvement and data quality.

The real value in communicating clearly is that both IT and the business can save millions of dollars on unexpected outages and improve remediation when tracking CI changes among these business processes. With the CMDB dashboard, you can show other governing boards how a process has changed and what changes are needed in the configuration management plan.

**EXPERT TIP**

Clear communication about changes in the configuration management plan to business stakeholders is great for the long-term health of your CMDB.

# Managed performance and service health
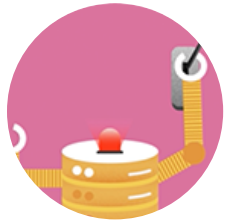
You can now manage your CMDB health and keep critical services at maximum availability. Be sure to document any critical services in the configuration management system and CMDB that will impact your configuration management plan.

Create a complete set of documents similar to what you create for a software engineering lifecycle.

Treat critical services inside the CMS as strategic applications for your business. Document the following for every critical service:

- Requirements

- Logical design

- Physical design

- Test plan and test scripts

- Requirements Traceability Matrix

- Data dictionary

**ITIL V3 CONFIGURATION MANAGEMENT SYSTEM**

The ITIL V3 Configuration Management System is a much broader system that combines many different data repositories.

**Takeaway**

ServiceNow provides a great way to manage critical business services. But maintaining business service relationships with the underlying infrastructure is a continuous effort. Our customers often use Discovery, Service Mapping, and Event Management to keep the CMDB current and healthy with critical service information.
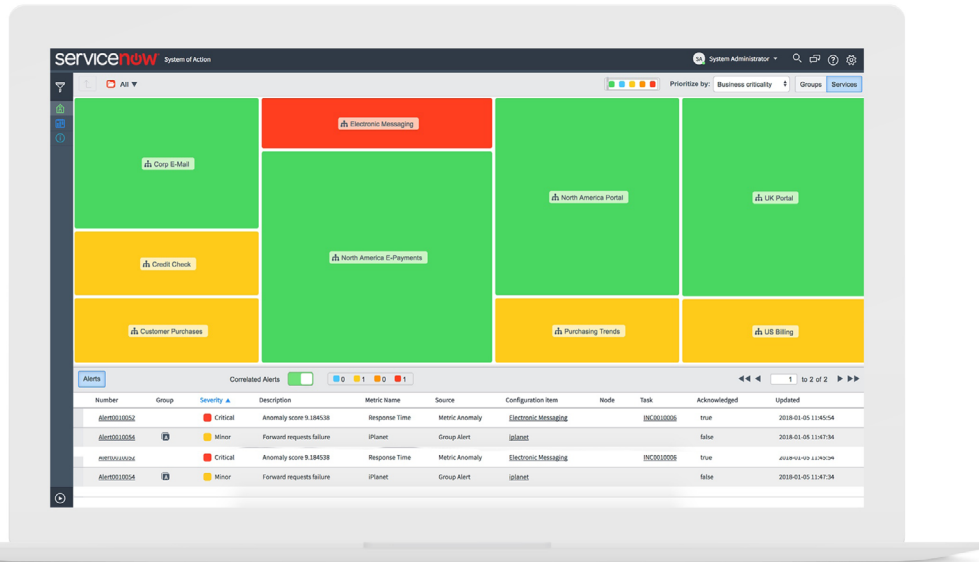


*Figure 5: Event Management dashboard: Incremental journey with Discovery, Service Mapping, and Event Management will give you complete visibility and control of critical business services in the CMDB*



**EXPERT TIP**
With a healthy CMDB, you can manage service health through properly mapped services.

**Further reading**

For further reading, consult this CMDB Design Guidance White Paper.

# Your journey doesn't end here!
# Visit the Customer Success Center to learn even more about how you can get the most from ServiceNow.

Everything you need to navigate your quest for success.

### PLAN

Know where you're going. Build a plan for the journey.

### DEPLOY

Implement your plan. Launch smoothly and effectively.
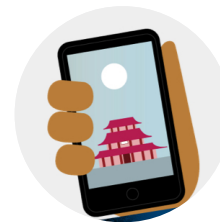
### OPTIMIZE

Follow through after launch. Improve and increase value.
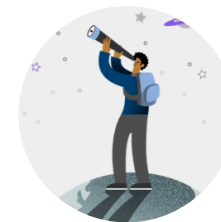
### EXTEND

Discover what's next on your ServiceNow journey.

**ServiceNow was founded on a very simple idea: that work should be easier.**

That getting simple stuff done shouldn't be so hard and complex stuff should be manageable. Today, the entire enterprise—IT, HR, customer service, security, and beyond—can tap into the power of the Now Platform™ to create a better experience for employees, users, and customers, and transform the way work is done.

www.servicenow.com/success.html