



ServiceNow Administration Fundamentals

bonus content

© COPYRIGHT 2022 SERVICENOW, INC. ALL RIGHTS RESERVED.

ServiceNow provides this document and the information therein "as is" and ServiceNow assumes no responsibility for any inaccuracies. ServiceNow hereby disclaims all warranties, whether written or oral, express or implied by law or otherwise, including without limitation, any warranties of merchantability, accuracy, title, non-infringement or fitness for any particular purpose.

In no event will ServiceNow be liable for lost profits (whether direct or indirect), for incidental, consequential, punitive, special or exemplary damages (including damage to business, reputation or goodwill), or indirect damages of any type however caused even if ServiceNow has been advised of such damages in advance or if such damages were foreseeable.

TRADEMARKS

ServiceNow and the ServiceNow logo are registered trademarks of ServiceNow, Inc. in the United States and certain other jurisdictions. ServiceNow also uses numerous other trademarks to identify its goods and services worldwide. All other marks used herein are the trademarks of their respective owners and no ownership in such marks is claimed by ServiceNow.

ServiceNow Administration Fundamentals

Bonus Content

Table of Contents

Configure Self-Service: Knowledge Management	7
Bonus Lab 4.1: Manage Knowledge Base and Create Article.....	18
Enable Productivity: Form Templates and Quick Messages	31
Bonus Lab 5.2: Create Form Templates	37
Bonus Lab 5.3: Enable Quick Messages	47
Manage an Instance.....	57
Bonus Lab 6.2: Monitor and Troubleshoot Instance.....	68
Bonus Lab 6.3: Locate Release and Upgrade Resources.....	104
Best Practice: Instance Performance Maintenance.....	111
Tips for Working with Update Sets	130

Module 4.1 Knowledge Management



Bonus Content

Knowledge Management allows users to create, categorize, review, approve, and browse important information in a centralized location that is shared by the entire organization.

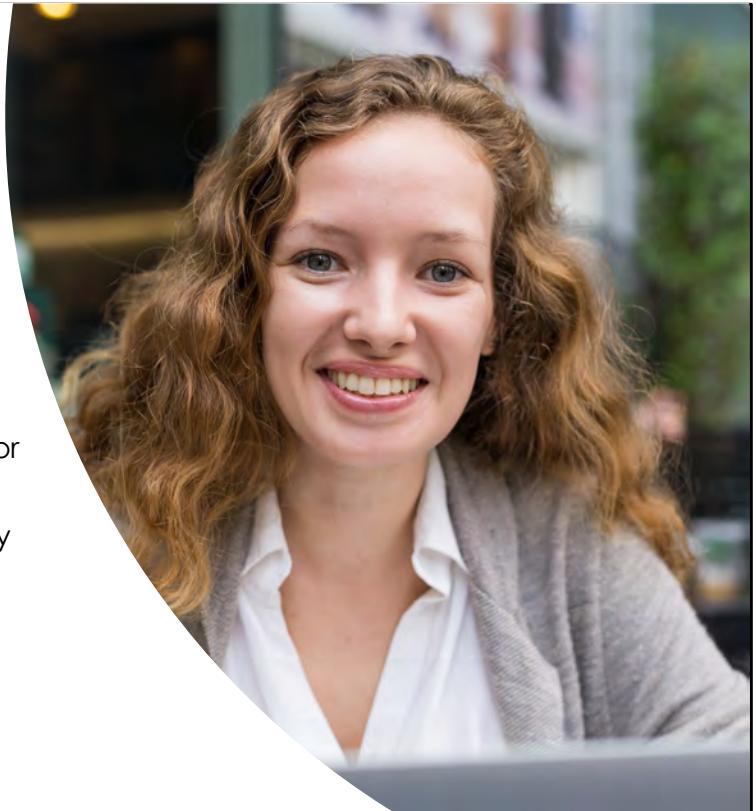
- **Review** the bonus content
- **Create** a knowledge base article by importing a Word document
- **Approve** the article for publishing
- **Define, apply, and test** user criteria on the knowledge base

This is a **self-study** activity but highly recommended to prepare for your CSA exam.

Section 4.1: Knowledge Management

User Story

As the **Infinity HHD Testing Coordinator**, I need to work with the Human Resources group to provide **knowledge management guidelines** for Infinity HHD testing articles. HR group members will be granted appropriate permissions so they may **create, review, and publish articles**. In addition, I need to ensure the articles created on Infinity HHD testing are **secure and only accessible to Cloud Dimensions employees**.



What is Knowledge Management?

Knowledge Management allows users to create, categorize, review, approve, and browse important information in a centralized location that is shared by the entire organization.

Knowledge content exists within a knowledge base managed by one or more Knowledge Managers.

Administrators and those with the **knowledge_admin** role can manage multiple knowledge bases.

Real World Use Cases

- HR administrators can limit access to Knowledge articles with User Criteria, for example Benefits for EMEA employees are only visible to employees who reside in EMEA
- Include HR policies, calendars, and detailed instructions for reporting violations to reduce security cases
- In conjunction with Event Management, Knowledge Base articles containing resolution instructions can be generated from Events to fix an issue with a CI

With Knowledge Management, each organization can have their own Knowledge Base (KB) with flexible controls over who can see the information and who can help develop its content.

To view knowledge content, navigate to **All > Self-Service > Knowledge** to display knowledge articles organized by Knowledge Base and Category, as well as Featured Content, and popular articles (Most Useful and Most Viewed).

From the Knowledge homepage you can browse or search for articles then sort by relevancy, most recently updated, and the number of views.

Once an article has a category and is accessible in the knowledge base, there are several features that allow the organization's users to provide their feedback, whether adding comments to the article or flagging it, which will bring the article to the attention of the KB administrator(s).

Some ServiceNow applications, such as Incident, allow contextual searching of Knowledge Base content. This gives users the ability to troubleshoot their issue before submitting an incident by displaying potentially relevant articles.

Knowledge Management Guided Setup

- Create knowledge bases
- Assign knowledge roles
- Create and assign knowledge workflows
- Configure knowledge properties
- Configure knowledge templates
- Activate support for other languages besides English
- Create ownership groups for articles and feedback

The screenshot shows the 'Welcome to Knowledge Management Guided Setup' page. At the top left, there's a progress bar showing '0% Complete'. To the right, the title 'Welcome to Knowledge Management Guided Setup' is displayed, followed by a 'Get Started' button. Below the title, there's a section titled 'Getting started' with a brief description of Knowledge Management. Further down, there are three cards: 'Get going' (with a gear icon), 'Learn' (with a double arrow icon), and 'Be empowered' (with a lightbulb icon). At the bottom, there's a 'Pre-Setup Guide' section with a table comparing 'Knowledge base' and 'Knowledge articles' requirements.

Knowledge base	Knowledge articles
Who are the consumers of knowledge base content?	Which article templates do you want to setup?
Which type of consumer should have access to which knowledge base?	Who should be responsible for authoring knowledge articles?
Which roles are required?	Which article categories are required?
Who are the admins, owners, and managers for the knowledge bases?	Do you want to create articles from a case or an incident?
What are the required workflows to publish and retire articles?	Do knowledge articles need to be translated into other languages?
What should or should not appear in the search results?	What should the default notifications that users receive be?
Are there any external sources that need to be integrated?	

Before users in your organization can start creating and using knowledge articles, you must set up Knowledge Management. Use the technical requirements gained from stakeholder meetings and workshops to configure Knowledge Management accordingly.

The Knowledge Management guided setup provides a sequence of tasks that help Administrators configure Knowledge Management for your instance. To open Knowledge Management guided setup, navigate to **All > Knowledge > Administration > Guided Setup**.

The homepage for Guided Setup modules contains an overview and descriptions of the associated tasks. Most tasks include a description as well, and information about the required plugins. Admins can also use the Assign Task feature to assign specific tasks to themselves or other users (with appropriate permissions).

Some tasks or modules may be “locked” due to the required plugins not being activated in the system. In these instances, a note appears in the description with a link to the list of required plugins.

Create a Knowledge Base without Guided Setup

- ✓ Navigate to **All > Knowledge > Administration > Knowledge Bases**
- ✓ Click **New**
- ✓ Populate the form as appropriate
- ✓ Right-click the form header and select **Save**
- ✓ View or configure items in the related list section
- ✓ Click **Update**

The screenshot shows the Oracle Database application interface. At the top, there are tabs for Favorites, History, Workspaces, and Admin. The main title is "Knowledge Base - New Record". Below the title, there is a form with fields for Title, Article Validity, Application (set to Global), Owner, Managers, Publish workflow (Knowledge - Instant Publish), Retire workflow (Knowledge - Instant Retire), Active status, and a Description text area. There is also a "Set default knowledge field values" section with dropdown menus for choose field and value. A "Related Links" section includes links for Add to Update Set, View Knowledge Base, and Run User Criteria Diagnostics. Below the main form, there is another smaller window titled "Adding Role knowledge_manager to System Administrator" with fields for Title (New Knowledge Base), Application (Global), Owner (System Administrator), and Managers. The "Knowledge" tab in the navigation bar is highlighted with a red box, and the "Update" button in the bottom right corner of the main window is also highlighted with a red box.

Knowledge Base Architecture

The screenshot shows the ServiceNow Knowledge Management homepage. At the top, there are tabs for Favorites, History, Workspaces, Admin, and a dropdown for Knowledge Homepage. A search bar is at the top right. Below the header, there's a section for 'Knowledge Bases' with cards for Human Resources General Kn., Human Resources Knowledge ..., IT, and Knowledge. A 'Featured Content' section displays a message about a recent update. To the right, there are sections for 'Most Useful' and 'Most Viewed' articles, with a note that no articles are currently displayed. Below these is a detailed view of the 'IT Knowledge Base'. This view includes a sidebar for 'Categories' (with 'Applications' selected) and a main pane for 'Applications' with several items listed, each with a thumbnail, title, author, date, and rating. One item is highlighted: 'Mobile Event App for Attendee_Error 500'. A green button at the bottom of this pane says 'IT Knowledge Base'.

The Knowledge homepage displays knowledge articles organized by **Knowledge Base** and **Category**

- ✓ An article can only be associated with **one** knowledge base.
- ✓ You can change the knowledge base, but only if the selected article template is available in the knowledge base.

From the homepage, users with the correct permissions can import a Word document to a Knowledge Base using the **Import Articles** button and create a new article by clicking **Create an Article**.

Administrators can create multiple Knowledge Bases and assign them to individual managers responsible for controlling the behavior and organizational schema of each Knowledge Base. Every Knowledge Base can have unique lifecycle workflows, user criteria, category structures, and management assignments.

Category Hierarchy:

- Knowledge articles within a Knowledge Base are grouped by category.
- Category groups can help you define the Knowledge Base taxonomy and can help users find articles within a Knowledge Base.
- Knowledge Managers can define knowledge categories to pre-populate the list of available categories, and knowledge contributors can select categories, and add or edit categories, if enabled, for a Knowledge Base.

To see a list of roles required to use Knowledge Management functionality, visit ServiceNow Product documentation: **Knowledge Management roles**.

Note: Social Q&A has not been in releases after Orlando. If you need to migrate existing Social Q&A content to Communities, you can use a script to migrate the data. For more information, visit ServiceNow Product Documentation: **Migrate Social Q&A data to Communities**.

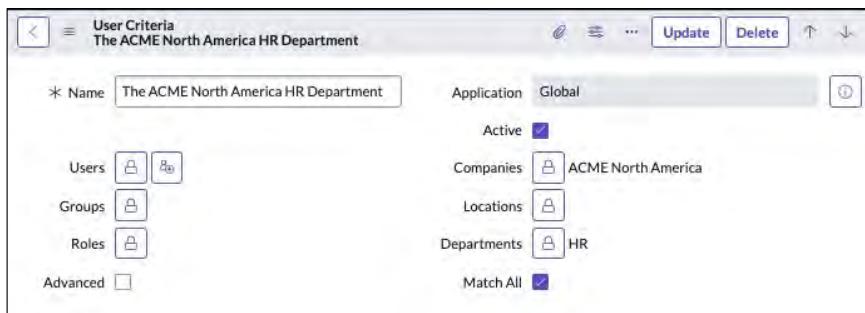
<https://docs.servicenow.com/csh?topicname=migrate-socialqa.html&version=latest>

Knowledge Security and Visibility: User Criteria

User Criteria

User Criteria defines conditions that are evaluated against users to determine which users can create, read, write, and retire knowledge articles.

- ✓ You can apply several user criteria records to knowledge content.
- ✓ User Criteria is applied at the Knowledge Base level.



Localization: Knowledge articles may be published in multiple languages and set to show only articles in the user's selected language.

Knowledge bases use user criteria records to determine which sets of users can read or contribute knowledge within that Knowledge Base. If a Knowledge Base has no user criteria selected, articles within that Knowledge Base are available to all users.

User Criteria outcomes include:

- **canRead:** users who can read all Knowledge Base articles
- **can't Read:** users who cannot read, create, or modify articles in the Knowledge Base
- **canContribute:** users who can read, create, and modify articles in the Knowledge Base
- **can't Contribute:** users who cannot create or modify articles in the Knowledge Base

To implement user criteria, navigate to **All > Knowledge > Knowledge Bases** and select a knowledge base. User Criteria records are accessed from the **Can read** or **Can contribute** related lists.

When creating user criteria, the **Match All** check box is used to determine whether all elements from each populated criteria field must match. If selected, only users who match all criteria are given access. If cleared, the user must meet one or more of the set criteria to be given access. By default, this check box is cleared so that any condition met provides a match.

For more information, visit ServiceNow Product Documentation:

Knowledge Management:

https://docs.servicenow.com/csh?topicname=p_KnowledgeManagement.html&version=latest

Mobile external users: <https://docs.servicenow.com/csh?topicname=external-user-mobile.html&version=latest>

Translation management: <https://docs.servicenow.com/csh?topicname=translation-management.html&version=latest>

Managing Access

Access to a knowledge base is managed through **User Criteria** records.

Knowledge base through User

The screenshot shows the 'User Criteria' page in ServiceNow. The top navigation bar includes tabs for 'Knowledge (34)', 'Can Read (3)' (which is highlighted with a red box), 'Can Contribute (1)', 'Featured Content (2)', and 'Knowledge Categories (8)'. Below the navigation is a search bar with filters for 'for text' and 'Search'. The main title is 'Knowledge Base = IT'. A sub-section titled 'Can Read' is shown, with a checkbox checked. At the top right of this section are 'Update' and 'Delete' buttons. The main content area displays the details of a selected user criteria record:

Name	Value
Name	ACME Japan Incident Mgrs
Application	Global
Active	<input checked="" type="checkbox"/>
Users	<input type="button" value="Edit"/> <input type="button" value="New"/>
Companies	<input type="button" value="Edit"/> ACME
Groups	<input type="button" value="Edit"/> <input type="button" value="New"/>
Locations	<input type="button" value="Edit"/> <input type="button" value="New"/>
Roles	<input type="button" value="Edit"/> <input type="button" value="New"/>
incident_manager	Japan
Departments	<input type="button" value="Edit"/> <input type="button" value="New"/>

Below the table are 'Advanced' and 'Match All' checkboxes.

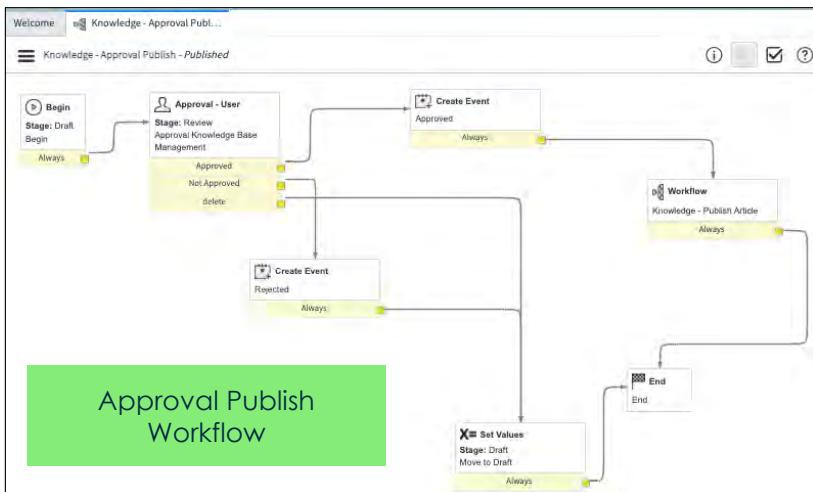
The Can Read and Can Contribute Related Lists use User Criteria to select which users can read and can contribute to the knowledge base. If there is no user criteria on the Can Read related list, then the knowledge base becomes open to the public. To control access to logged in users only, administrators should leverage the **glide.knowman.block_access_with_no_user_criteria** property.

There are several roles associated with knowledge management. For more information, visit ServiceNow Product Documentation: **[Knowledge Management Roles](#)**.

https://docs.servicenow.com/csh?topicname=r_KnowledgeRoles.html&version=latest

Knowledge Base: Workflows

The publishing and retirement processes for a knowledge article are controlled by workflows defined for the Knowledge Base that the article belongs to.



Workflows

You can assign different workflows to each Knowledge Base.

You can use one of the default workflows or create your own workflow to define custom publishing and retirement processes for different types of knowledge.

The Knowledge Base workflows available in the ServiceNow baseline instance include:

- **Knowledge – Approval Publish:** Requests approval from a manager of the Knowledge Base before moving the article to the published state. The workflow is canceled, and the article remains in the draft state if any manager rejects the request.
- **Knowledge – Approval Retire:** Requests approval from a manager of the Knowledge Base before moving the article to the retired state. The workflow is canceled, and the article remains in the published state if any manager rejects the request.
- **Knowledge – Instant Publish:** Immediately publishes a draft article without requiring an approval.
- **Knowledge – Instant Retire:** Immediately retires a published article without requiring an approval.
- **Knowledge – Publish Knowledge:** A subflow that moves the knowledge article to the published state. You can use this subflow when defining your own workflow.
- **Knowledge – Retire Knowledge:** Moves a knowledge article to the retired state.

NOTE: This is only a selection of the base instance workflows to choose from, as designed for Knowledge Base management.

Knowledge Base: Import a Word Document

To import a Word document into the Knowledge base:

1. Navigate to **All > Knowledge > Articles > Import Articles**
2. Select the **Knowledge Base**
3. Select the **Category***
4. Add the Word file (drag and drop or browse for the file)
5. Click **Import**
6. Click **Continue**

The screenshot shows the 'Import Articles' interface. At the top, there's a dropdown menu labeled 'Knowledge Base' with 'Select an option...' and a 'Category' field. Below that is a section for importing Word documents, with a dashed box for dragging files and a 'Browse Files' button. At the bottom right is a large green 'Import' button.

The **Import a Word Document** feature allows you to upload more than one document at a time. When uploading multiple documents, one article is created for each uploaded item.

When importing a Word document, the following styles and elements are preserved:

- Titles
- Headings
- Images (Images might not be aligned exactly as in the Word document you import)
- Links
- Bold text
- Italic text
- Underlined text
- Ordered and unordered lists
- Tables

*Optional steps. Check the **Publish** check box to initiate the publishing workflow after the import completes.

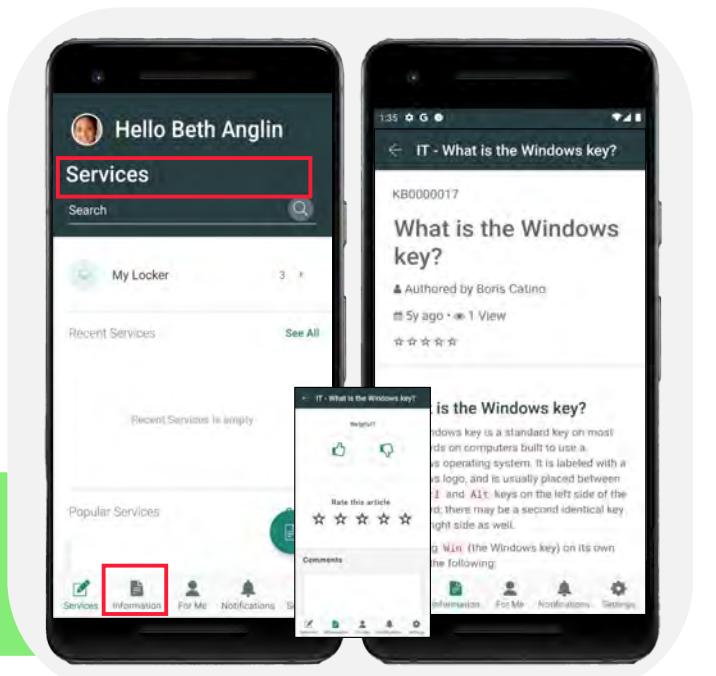
NOTE: If the publish checkbox is not visible, the system administrator will need to modify a system property. To show the **Publish** check box, navigate to **All > Knowledge > Administration > Properties** and activate the **Show publish checkbox on the knowledge import pop-up** property.

Knowledge on Now Mobile

- ✓ Browse Knowledge bases
- ✓ Search for Articles
- ✓ View Knowledge Articles
- ✓ View only articles relevant for your roles and groups
- ✓ Accessible for internal and external users
- ✓ Provide Feedback on Articles

Plugin Required:

ServiceNow Mobile Request - Knowledge Management Screens and Applet Launcher



Now Mobile users can search for people, **knowledge articles**, and catalog items from a global search bar. Users are also able to search through categories by using the Information icon in the footer. Matching search results appear, and users click on an article to view it. The knowledge article number, author, published date and number of views are visible directly from the app. Just like the portal and platform views, knowledge viewers can leave feedback and comments.

System Administrators determine which knowledge bases are visible through the Now Mobile app by adding them to the Mobile Employee Service Portal. This can be found by navigating to **All > Now Mobile App > Knowledge Bases**.

For more information, visit ServiceNow Product Documentation: **Now Mobile for Knowledge Management**.

<https://docs.servicenow.com/csh?topicname=mobile-experience-for-km.html&version=latest>

Lab 4.1 (Bonus): Manage Knowledge Base and Create Articles



Lab Activities

- **Create** a knowledge base article by importing a Word document
- **Approve** the article for publishing
- **Define, apply, and test** user criteria on the knowledge base



Time:
20-25m



Files needed:
[Infinity_Open_Enrollment.docx](#)

Lab Takeaways:

- ✓ Roles can be assigned to specific individuals to manage knowledge bases.
- ✓ User criteria can be established to determine who can read and contribute to a knowledge base.
- ✓ There are workflows associated with knowledge management that can be used to approve publishing and retirement of articles.

Manage Knowledge Base and Create Articles (Bonus)

Lab 4.1

20 - 25 Minutes

Lab Objectives

You will achieve the following objectives:

- Install the Human Resources Scoped App: Core plugin
- Create a group and assign specific roles to users to manage access
- Create a knowledge base article by importing a Word document
- Approve the article for publishing
- Define, apply, and test user criteria on the knowledge base

Lab Dependency: You will need the *Infinity_Open_Enrollment.docx* file which was downloaded from the knowledge base in Lab 1.1. If you cannot locate this file, feel free to use any doc file. Screen images reflect the stated class lab file.

Scenario

The Infinity HHD testing coordinator needs to publish an article that explains how to enroll in the pilot program in the Human Resources General Knowledge Base.

Appropriate members of the Human Resources department will be granted the appropriate authoring permissions by the System Administrator so that they may create, review, publish and approve articles.

The System Administrator will ensure the article remains secure and accessible only to Cloud Dimensions employees.

Section 1: Instance Preparation

Define primary company as Cloud Dimensions

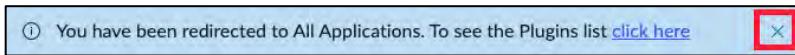
1. As **System Administrator**, navigate to **All > User Administration > Companies**.
2. Add the **Primary** column to the list view.
3. Filter on **Primary is true**.
4. Use inline editing (double-click the cell) to change **Your name here** to **Cloud Dimensions**.
5. Click the **green check** to save.

Assign user to Cloud Dimensions

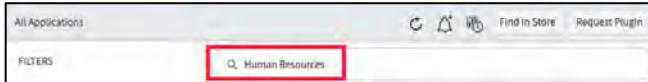
1. Navigate to **All > System Security > Users and Groups > Users**.
2. Add the **Company** column to the list view.
3. Locate the user **Megan Burke**, then use inline editing to change her company name to **Cloud Dimensions**.
4. Click the **green check** to save.
5. Verify Megan Burke's company is **Cloud Dimensions**.

Section 2: Install Human Resources Plugin

1. Ensure you are logged into the instance as **System Administrator**.
2. Navigate to **All > Plugins**.
3. Close the redirection message.

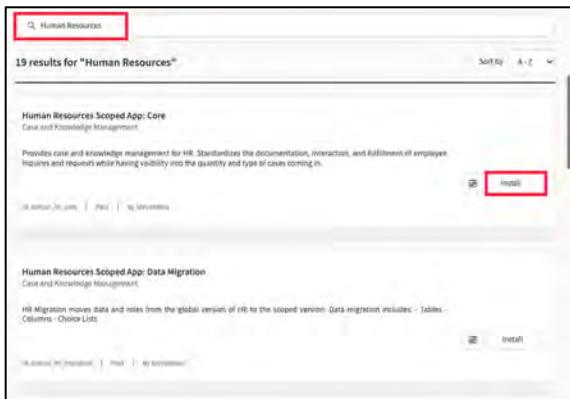


4. Type **Human Resources** in the All Applications search bar.

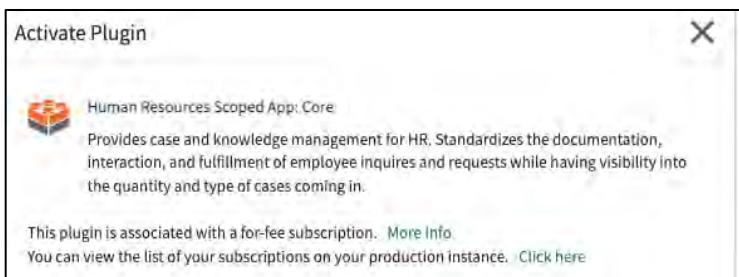


5. Locate the **Human Resources Scoped App: Core** in the search results list, then click **Install**.

Note: This plugin may take 25+ minutes to install.



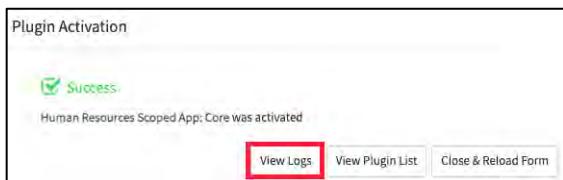
The Activate Plugin window will appear.



6. Scroll to the bottom of the window to select the check box to **Load demo data**, then click **Activate**.



7. When the install is complete, click **View Logs**.



8. Navigate to **All > Knowledge > Administration > Knowledge Bases**.

Verify that **Human Resources General Knowledge** appears in the list of Knowledge Bases.

Knowledge Bases	
Title	Description
Human Resources Knowledge - UK	Human Resources Knowledge base for the UK
Human Resources Knowledge - US	Human Resources Knowledge Documents. ...
Human Resources General Knowledge	Human Resources articles, policies, and ...
IT	The ACME North America IT Service Desk K...
Knowledge	All existing knowledge articles prior to...

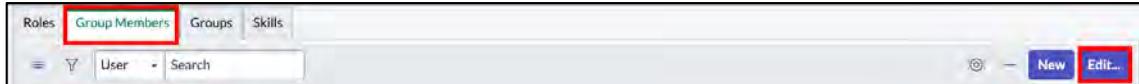
Section 3: Create the HR Knowledge Managers Group

1. Navigate to **All > User Administration > Groups**.
2. Click **New** to create a new group.
3. Populate the form as follows:
 - Name: **HR Knowledge Managers**
 - Manager: **Gracie Ehn**
 - Description: **This group contains the individuals with the Knowledge Manager [knowledge_manager] role.**

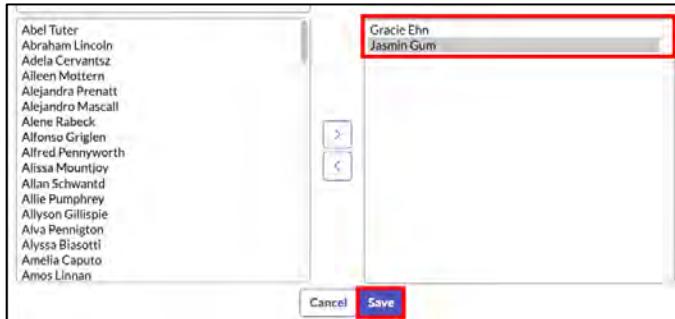
Name	HR Knowledge Managers	Group email
Manager	Gracie Ehn	Parent
Description	This group contains the individuals with the Knowledge Manager [knowledge_manager] role.	

4. Right-click on the form header, then select **Save**.

- Select the **Group Members** tab.
- Click **Edit**.



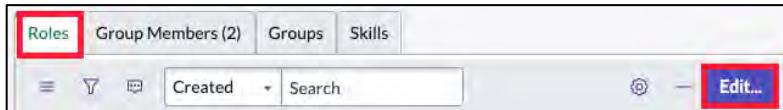
- Add **Gracie Ehn** and **Jasmin Gum** to the Group Members List by double-clicking on the name in the Collection list (or select the name and click the **Add** icon).



- Click **Save**.

Section 4: Assign a New Role to the HR Knowledge Managers Group

- Select the **Roles** tab, then click **Edit...**



- Add the **knowledge_manager** role to the Roles List.
- Add **approver_user** role to list.



- Click **Save** to return to the HR Knowledge Managers Group record.
- Click **Update**.

Section 5: Modify the Human Resources General Knowledge Base

1. Navigate to **All > Knowledge > Administration > Knowledge Bases**.
2. Select **Human Resources General Knowledge**.
3. Change the Owner to **Gracie Ehn**.
4. Change the Publish workflow to **Knowledge – Approval Publish**.
5. Change the Retire Workflow to **Knowledge – Approval Retire**.



6. Right-click on the form header, then select **Save**.

As the Owner of the Human Resources General Knowledge Base, Gracie Ehn will be responsible for approving articles that are submitted for publishing.

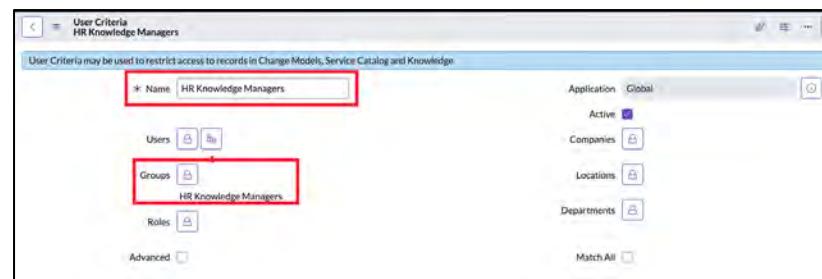
7. Select the **Can Contribute** tab and click **New**.



8. Populate the form as follows:

- Name: **HR Knowledge Managers**
- Groups: **HR Knowledge Managers**

9. Click **Submit**.



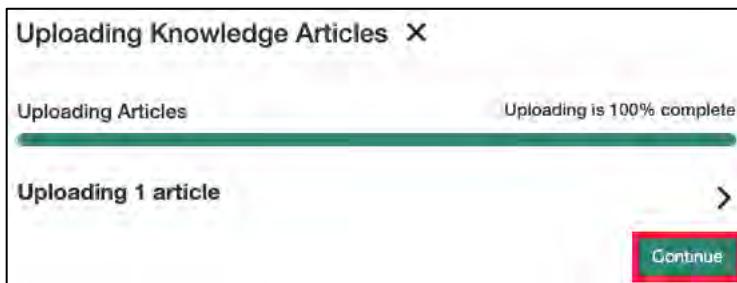
The HR Knowledge Managers group members, (Jasmin and Gracie) are now able to contribute articles to the knowledge base. However, the owner of the Knowledge Base (Gracie) must approve the articles before they are visible to audiences specified on the Can Read tab.

Section 6: Create a New HR General Knowledge Base Article

1. Impersonate **Jasmin Gum**.
2. Navigate to **All > Knowledge > Articles > Import Articles**.
3. From the Knowledge Base dropdown, select **Human Resources General Knowledge**.



4. Click **Browse Files** to locate the **Infinity_Open_Enrollment.docx** file you downloaded with your class resources.
5. Double-click the file name or select the file and click Open.
6. Click **Import**.
7. Click **Continue** on the Uploading Knowledge Articles window.



Multiple files can be imported when you drag and drop multiple files into the Import a Word File box.

The Short Description is the same as the file name of the imported Word document. If you do not wish to have special characters in the article description, you can remove them here.

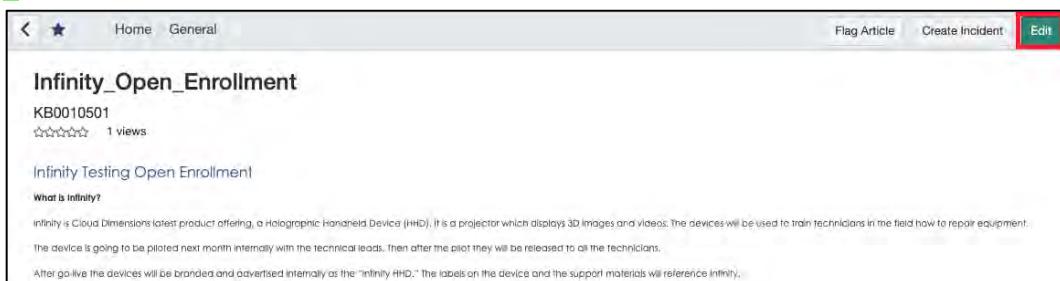
8. On the Import Completed dialog box, click the knowledge article **Record Number** link to open the **Infinity_Open_Enrollment** article.

Note: The record number may be different than shown.

Import Completed		
#	Record Number	Short Description
1	KB0010001	Infinity_Open_Enrollment

9. On the article header, click **Edit**.

Note: When selecting the knowledge base article, it opens in a new tab. If the correct article does not open, navigate to the article via **All > Knowledge > Articles > All**.



The screenshot shows a web browser window with a knowledge base article titled "Infinity_Open_Enrollment". The article number is KB0010501 and it has 1 view. The content discusses the "Infinity" product, which is a Holographic Handheld Device (HHD). It mentions that the devices will be used to train technicians in the field. The status is noted as "After go-live the devices will be branded and advertised internally as the 'Infinity HHD.' The labels on the device and the support materials will reference infinity." At the top right of the article page, there is a red box around the "Edit" button.

10. Click **Publish**.



The screenshot shows the "Knowledge" screen for article KB0010001. The "Publish" button is highlighted with a red box. Other buttons visible include "Retire", "Update", and "Search for Duplicates". The article details shown are: Number KB0010001, Article type HTML, Workflow Draft, Valid to 2100-01-01, and Source Task.

You have changed the publish workflow for the Human Resources Knowledge Base to **Knowledge – Approval Publish**. This means after an author selects the Publish button on their article, it goes into a Review state. Other users with the correct permissions can view the article and determine if any changes are needed before approving and publishing the article.

11. Verify the information message is displayed stating **This knowledge item is in review**.



The screenshot shows the knowledge base article screen again. A message "This knowledge item is in review" is displayed in a blue bar at the top of the page, with a red box highlighting the text.

12. **Close** the current browser tab.
13. **Close** the Import Completed pop-up window.

Section 7: Approve the Article for Publishing

1. Impersonate **Gracie Ehn**.

Gracie Ehn is the Knowledge Base owner for the Human Resources General Knowledge Base. She is also a member of the HR Knowledge Managers group and acts as the approver for new content submitted to be published.

2. Navigate to **All > Self-Service > My Approvals**.

3. Locate and open the **Requested** approval record.

Approvals		State	Search
All > Sys ID = NULL .or. Approver = Gracie Ehn			
	State	Approver	
	Requested	Gracie Ehn	

- Scroll down to see a summary of the item being approved.
- Scroll up and locate the Knowledge article number.

4. Click the **information icon**, then click **Open Record** to view the full knowledge article record.

Approval		Knowledge: KB0010001	Update	Approve	Reject	Delete
Approver	Gracie Ehn	Approving	Knowledge: KB0010001			
State	Requested					

5. Click **View Article** to see how the article will display for users.

Related Links

[View Article](#)

[Run User Criteria Diagnostics](#)

6. Click the back button to return to the Knowledge form view.



7. Scroll to the bottom of the Knowledge form, then select the **Approvals** tab.

8. Right-click on **Requested** for the article you are approving.

Note: Your number of approvals may be different.

Affected Products	Feedback	Feedback Tasks	Approvals (2)	Related Articles	Related Catalog Items
≡ Y State Search					
Approvals					
	State	Approver	Comments	Approval for	
	Req	Show Matching		(empty)	
	Req	Filter Out	Administrator	(empty)	
		Copy URL to Clipboard			
		Assign Tag			
		Approve			
		Reject			

9. Click **Approve**.

10. Navigate to **All > Self-Service > Knowledge**.

11. Click **Human Resources General Knowledge** to confirm the article appears.

The screenshot shows a list of articles under 'Human Resources General Knowledge'. The first article is titled 'Infinity_Open_Enrollment'. It includes details such as 'Authored by Jasmin Gum • 2 Views • Last updated 2m ago • Rating ★★★★☆' and a brief description: 'Infinity Testing Open Enrollment What is Infinity? Infinity is Cloud Dimensions latest product offering, a Holographic Handheld Device (HHD). It is a projector which displays 3D images and videos. The devices will be used to train technicians in the field..'. Below the article, there is a note: 'Knowledge Base: Human Resources General Knowledge'.

Note: If you do not see the article right away, wait a minute and refresh by going back to **All > Self-Service > Knowledge**.

12. End impersonation.

Section 8: Create and Apply User Criteria

Now that the Human Resources General Knowledge Base has been implemented, based on the stated requirements, you must now establish user criteria that will allow access only to Cloud Dimensions employees.

As System Administrator, you will create user criteria and apply it to the Knowledge Base to appropriately control who can view the content.

1. Ensure you are logged into the instance as **System Administrator**.
2. Navigate to **All > Knowledge > Administration > User Criteria**.
3. Click **New**.
4. Populate the form as follows:
 - Name: **Cloud Dimensions Employees**
 - Companies: **Cloud Dimensions**

Note: To select Cloud Dimensions, click on the **Unlock Companies** (padlock) icon, type cloud, select **Cloud Dimensions**, then click on the **Lock Companies** (open padlock) icon.

The screenshot shows the 'User Criteria' creation form. The 'Name' field is populated with 'Cloud Dimensions Employees'. The 'Application' dropdown is set to 'Global'. The 'Active' checkbox is checked. Under 'Companies', the 'Cloud Dimensions' entry is selected. The 'Submit' button is highlighted with a red box.

5. Click **Submit**.

You have created the Cloud Dimensions Employees User Criteria record.

6. Navigate to **All > Knowledge > Administration > Knowledge Bases**.
7. Locate and open the **Human Resources General Knowledge** record.
8. Scroll down, then select the **Can Read** tab.

The screenshot shows a software interface for managing knowledge bases. At the top, there are tabs: 'Knowledge (53)', 'Can Read (2)' (which is highlighted with a red box), 'Can Contribute (3)', 'Featured Content (13)', and 'Knowledge Categories (6)'. Below the tabs is a search bar with 'for text' and 'Search' buttons. To the right of the search bar are 'Actions on selected rows...' and 'New' buttons. The main area displays a list titled 'Knowledge Base = Human Resources General Knowledge'. The 'Can Read' section contains two items: 'Cloud Dimensions Employees' and 'HRSM clients without alumni'. A red box highlights the 'Edit...' button in the top right corner of the list area.

9. Click **Edit** to add an existing User Criteria record to the Can Read list.
10. Add **Cloud Dimensions Employees** to the **Can Read List**.

The screenshot shows a 'Can Read List' dialog box. On the left, under 'Collection', there is a list of user criteria: 'Problem Analyzers' and 'Problem Solving' Group M, All ACME Corporation employees, All ACME North America employees, All content taxonomy contributors, All content taxonomy managers, All Non-US Users (HR Criteria), All Users (HR Criteria), All Users who can access "Instance Security Center", Any User, Any user for KB, Canadian Users (HR Criteria), Guest User, HRSP client roles without alumni, HRSP employee, contractor, contingent roles, HRSP employees, Human Resources, and Imperial Beach CA Employees. On the right, under 'Can Read List', there is a list titled 'Human Resources General Knowledge' containing 'Cloud Dimensions Employees', 'HRSM clients without alumni', and 'Users with 'sn_hr_sp.esc_admin' role'. The 'Cloud Dimensions Employees' item is highlighted with a red box. At the bottom of the dialog box are 'Cancel' and 'Save' buttons, with 'Save' being highlighted with a red box.

11. Click **Save**.

Next, we will test access with a user account that is associated with Cloud Dimensions.

12. Navigate to **All > System Security > Users**.
13. If necessary, **personalize** the list (gear icon) to show the **Company** column.
14. Right-click on the **Company column header**, then select **Group by Company**.
15. Verify that Megan Burke is associated with Cloud Dimensions.

LAB VERIFICATION

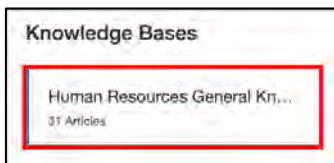
1. Impersonate **Aileen Mottern**.

Aileen Mottern does not work for Cloud Dimensions. We will use her user account to verify the Human Resources General Knowledge Base is unavailable. Aileen should not be able to see the Knowledge Base because of the user criteria you established.

2. Navigate to **All > Self-Service > Knowledge**.

Note: If the menus are not visible at first, stretch your browser window to re-render the menu labels.

3. Verify **Human Resources General Knowledge** is not visible.
4. Impersonate **Megan Burke**, an employee of Cloud Dimensions.
5. Repeat step #2 to verify **Human Resources General Knowledge** is visible.
6. Click **Human Resources General Knowledge**.



7. Open the **Infinity_Open_Enrollment** knowledge article to view its content.

A screenshot of a knowledge article titled "Infinity_Open_Enrollment". The article has a unique identifier "KB0010501" and a rating of 3 stars from 3 views. The main content is titled "Infinity Testing Open Enrollment" and includes a section titled "What is Infinity?". The text describes the device as a Holographic Handheld Device (HHD) used for training technicians. It mentions a pilot phase and future branding as "Infinity HHD".

Infinity_Open_Enrollment
KB0010501
☆☆☆☆☆ 3 views

Infinity Testing Open Enrollment

What is Infinity?

Infinity is Cloud Dimensions latest product offering, a Holographic Handheld Device (HHD). It is a projector which displays 3D images and videos. The devices will be used to train technicians in the field how to repair equipment.

The device is going to be piloted next month internally with the technical leads. Then after the pilot they will be released to all the technicians.

After go-live the devices will be branded and advertised internally as the "Infinity HHD." The labels on the device and the support materials will reference Infinity.

8. **End impersonation.**

For more information on Knowledge Management, explore **Knowledge Management (KM) Fundamentals on Now Learning**.

https://nowlearning.servicenow.com/lxp?id=learning_course_prev&course_id=ff6af78587c049105c1832ed3fbb3584

Knowledge Check

What is the module used to import Word documents as articles?

- ✓ All > Knowledge > Articles > Import Articles

What access does a user need to import articles to a knowledge base?

- ✓ Can contribute

Which module can be used by all users to view knowledge content by category?

- ✓ All > Self-Service > Knowledge



Which role can manage multiple knowledge bases?

- ✓ knowledge_admin

What tool controls the publishing and retiring process for knowledge articles?

- ✓ Workflows

What is used to determine user access to knowledge bases or a knowledge article?

- ✓ User Criteria

NOTE: These are not practice questions for the Certified System Administrator exam.

Module 5.2 and 5.3 Form Templates and Quick Messages



Bonus Content

Templates allow form fields to be **populated automatically**, simplifying the process of generating new records.

Quick messages allow you to create predefined content to add into the email client so your users can compose emails consistently and efficiently

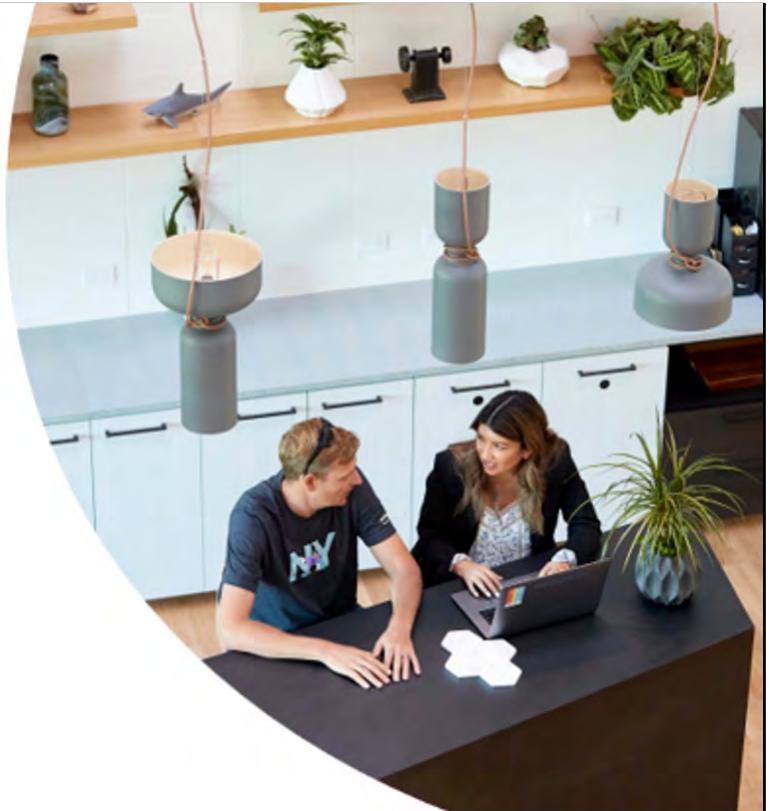
- **Review** the bonus content
- **Show Agents** how to create templates
- **Grant Access** to team member to share templates
- **Show Managers** how to share templates
- **Explain** how the email client adds value to task work
- **Create** an email template using Quick Messages
- **Grant** access to others, for managing email templates

This is a **self-study** activity but highly recommended to prepare for your CSA exam.

Section 5.2: Form Templates

User Story

Service Desk agents are starting to take calls for how to sign up for the IT Big Idea contest. They want to explore a **faster way** to create these repetitive inquiry records.



Templates: Classic Form

Templates allow form fields to be **populated automatically**, simplifying the process of generating new records



Click the **More options** icon (...) from the form header, then **Toggle Template Bar** to work with templates

A screenshot of the 'Edit Template' dialog box. It shows fields for Name (Major Incident), Application (Eishai), Active (checked), Short description (Major Incident), and Template (with a sub-section for Short description, Caller, Impact, Urgency, and choose field). Buttons for Clear, Cancel, Delete, and Update are at the bottom.A screenshot of a classic form showing the 'Templates' bar at the bottom. The bar includes tabs for Notes, Related Records, Resolution Information, and a 'Templates' section which displays 'Incident Call Type - Major incident'. There are also buttons for More options, Add, and Remove.

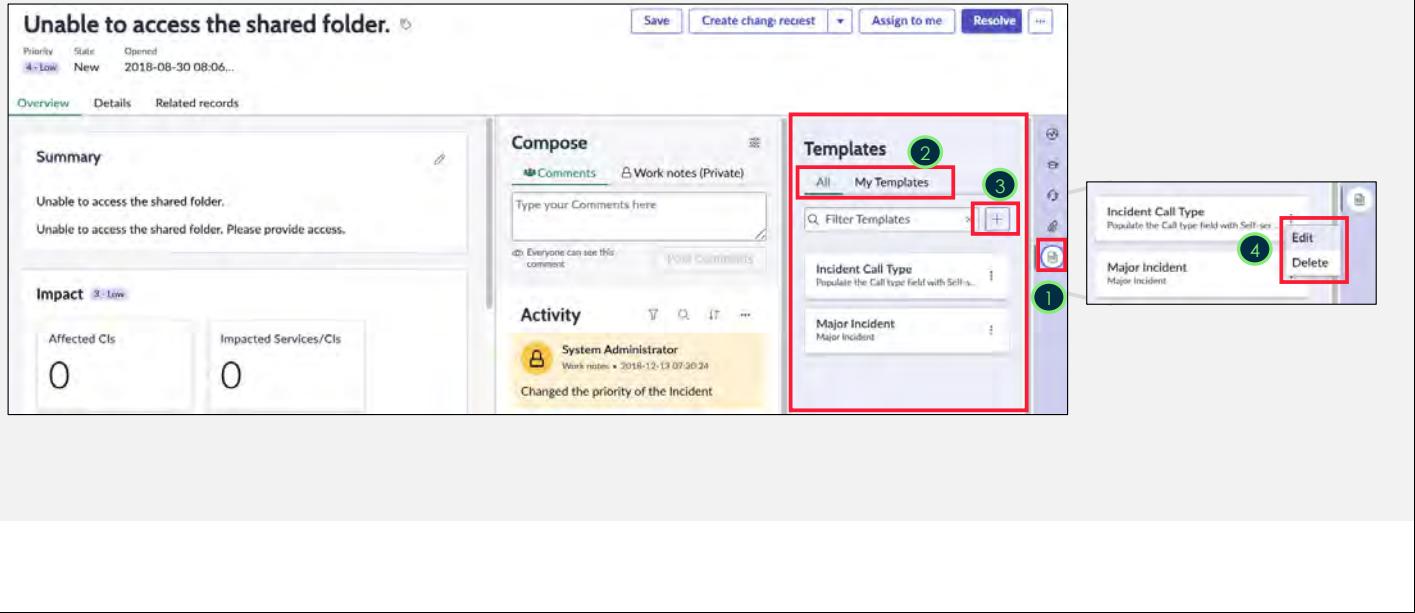
Use the template bar at the bottom of the form to manually apply, create, or edit templates

To use a template, populate the most-used fields for a specific table, save it as a template, and then make the template accessible to users. Users can manually apply a template when creating records, or an administrator can define scripts to apply templates automatically. Fields updated by the application of a template will have a checkmark icon next to the field label.

Create templates for the forms that are used frequently, such as incident, problem, and change. There is no limit to the number of templates that a user can create or access, however, having many templates for each form makes the templates more complex to manage.

NOTE: Template creation should be restricted to select groups as it can be used to bypass process, like mandatory fields, UI policies, etc. This is especially important for any record using condition-based flows (or workflows if applicable).

Templates: Workspace Form

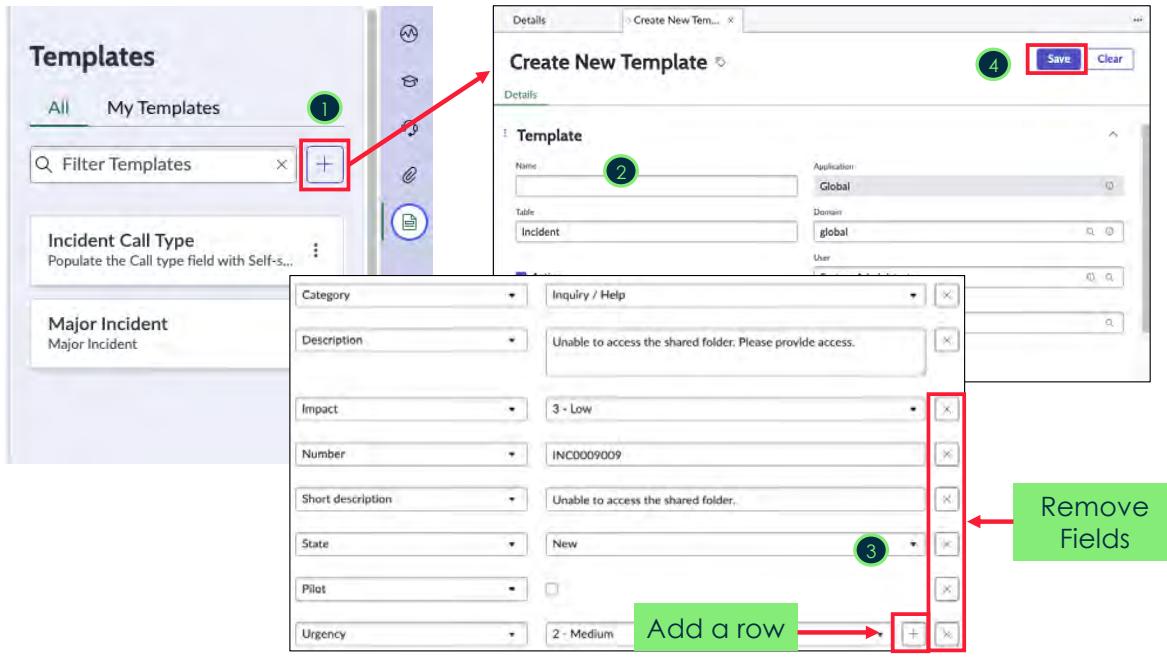


In the workspace, select and open a record.

1. When the record opens, click the **Template icon** in the contextual side panel.
2. Two list types display in the contextual side panel.
All displays all available templates, and **My Templates** displays personal custom form templates.
3. Use the (+) plus icon to create a new template.
4. For existing templates, you can select **Edit** or **Delete**.

NOTE: Templates that are deleted can't be retrieved.

Create a New Workspace Form Template



Create a custom form template:

1. On the Templates pane in the contextual side panel, click the plus icon.
2. Enter a name for the custom form template.
3. Select the fields you want for your template and delete the ones you don't want.
4. Click Save.

Make Workspace Template Available to Groups

The screenshot shows the 'Create New Template' dialog box. In the 'Groups' section, there is a 'Search for Record' button with a magnifying glass icon. A red arrow points from a green callout box labeled 'Select the groups you want to make the template available to' to this search button. Below the search button is a list of group names, with 'Help Desk' and 'Service Desk' highlighted with a red rectangle.

Select the groups you want to make the template available to

To make the form template available to others, click the magnifying glass on the Group record. Select the group(s) you want to make the form template available to. Save the template.

Lab 5.2: Create Form Templates (Optional)



Lab Activities

- **Show Agents** how to create templates
- **Grant Access** to team member to share templates
- **Show Managers** how to share templates



Time:
25-30m



Files needed:

Create Form Templates (Bonus)

Lab 5.2

25 – 30 Minutes

Lab Objective

You will achieve the following objectives:

- Show agents how to create templates
- Grant access to a team member to share templates
- Show managers how to share templates

 **Lab Dependency:** none

Scenario

The Service Desk is starting to take calls for how to sign up for the IT Big Idea contest. They want to see if there is a faster way to create these repetitive inquiry records.

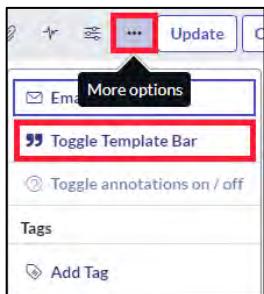
After meeting with the agents, you have a good understanding of how a typical Big Idea inquiry is being handled. You have agreed to show the agents how to create a form template to allow them to quickly process these inquiries.

Section 1: Demo How to Make a Form Template on Classic Form

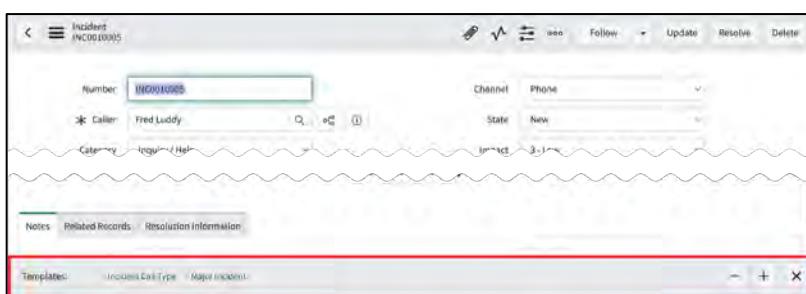
1. Ensure you are logged into your instance as **System Administrator**.
2. Navigate to **All > Incident > Create New**.
3. Complete the form as follows:
 - Caller: **Fred Luddy**
 - Category: **Inquiry/Help**
 - Subcategory: leave empty
 - Configuration item: leave empty
 - Short Description: **How do I participate in the Big Idea contest?**
 - Channel: **Phone**
 - State: leave new
 - Impact: **Low**
 - Urgency: **Low**
 - Assignment group: **Service Desk**
4. Right-click on the form header, then select **Save**.

5. Complete the information in the specified Related lists as follows:
 - Notes:

Additional comments: **Go to the Employee Center Portal, and search for Big Idea.**
Select the Big Idea catalog item.
Fill out the form and submit.
You are allowed to submit as many ideas as you would like.
The contest will be open until the first of next month.
At that time, IT will prioritize the submissions and announce the top 5 winners.
Each of the top 5 winners will receive a \$100 gift card.
Good luck!
 - Resolution Information:
 - Resolution code: Select **Solution provided**
 - Resolution notes: **Please see contest rules and instructions provided.**
6. Right-click on the form header, then select **Save**.
7. Go to the **Activity Stream** (Notes tab) and copy the text you typed in the Additional comments field to your clipboard.
8. On the **form header**, click the **More options** (3 dot) icon.



9. Select **Toggle Template Bar**.
- The template bar displays at the bottom of the form.



10. Click the **Create New Template (+)** icon on the right side of the template bar.



A form launches with the fields and values that are saved on the incident you created.

11. For **Name**, type **Big Idea Inquiry**.

Any agent will be able to create a template for their own use, provided they have the template_editor role.

Users with the template_editor_group role can create templates and share them with groups and users.

12. Click the **lock** icon on the **Groups** field to open the selection window.

- In **Select target record**, type **Service Desk**, then press Enter
- Click the **lock** icon to close the selection window

By adding this group to the templates, you have made the template available to each member of that group!

Next, you need to review the fields on the template form and remove any of the fields and values you do not want included in the template.

13. Click **X** to remove **Caller** and **Knowledge** from the template.

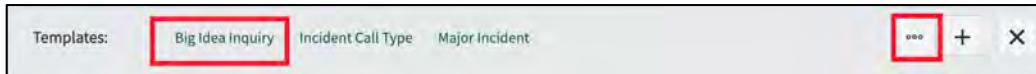
A screenshot of a software interface titled "Template". The main area shows various fields and their current values. Two specific fields, "Caller" and "Knowledge", are highlighted with red boxes and have a red "X" icon to their right, indicating they are being removed. A red arrow points from the bottom left towards the "Knowledge" field. At the bottom of the template editor, there are three buttons: "Delete", "Cancel", and "Save". The "Save" button is highlighted with a red box.

Next, you will add a field to the template.

14. At the bottom of the template, select **Additional comments** from the --choose field-- dropdown to **add the field** to your template.
15. Paste the text you copied into your clipboard from the incident you created earlier.

16. Click **Submit**.

The new template is visible on the template bar.



17. Click on the **All templates** (3 dot) icon on the right side of the template bar to see all the templates, then close the dialog box.

This exposes the list of all templates. This is especially useful when the list of templates is longer than what can be displayed in the template bar. It also enables editing for the template owner.

Section 2: Verify the Template Behavior in Classic Form

1. Impersonate **Beth Anglin**.
2. Navigate to **All > Incident > Create New**.
3. Caller Name: **James Vittolo**.
4. Toggle the **Template Bar**.
5. Select **Big Idea Inquiry** from the template bar.

A message displays to let you know what template has been applied. You will have the ability to confirm which fields were added to the Incident record by clicking the See Details link.

6. Click **See Details**.



7. Click **X** to close the window.
8. Click **Resolve**.

Section 3: Grant Ability to Manage Templates for Groups

Beth Anglin's manager wants her to be responsible for building and sharing templates for their team.

1. Grant Beth Anglin the role, **template_editor_group**.
2. Impersonate **Beth Anglin**.
3. Verify that Beth can create and share a new template.
 - Navigate to **All > Incident > Open**
 - Open any Incident record
 - Click the **Create New Template (+)** icon to add a new template

- Give the template a name of your choice
- Make the template visible to the Service Desk
- Remove the **Caller** and **Knowledge** fields
- Click **Submit**

4. **End impersonation.**

5. Verify that other members of the Service Desk group can see the new template.

Note: You will have to locate the Service Desk group and review the group membership to find other users you can impersonate. Remember to toggle the template bar so you can test that the impersonated user can see the template.

Challenge: If you have Service Operations Workspace enabled in your instance, test the ability to use the template from the Workspace.

Congratulations! You have completed this lab.

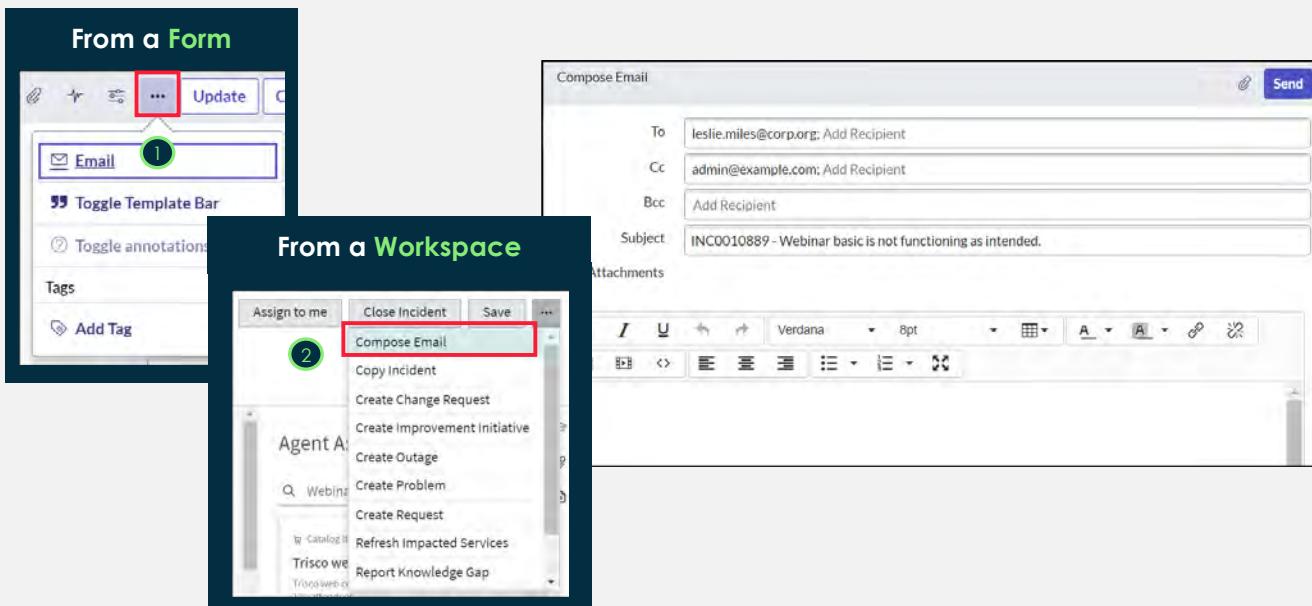
Section 5.3: Quick Messages

User Story

As an **IT Support Agent**, I need a **faster way to communicate** with my customers. I've heard about something called quick messages, but I'm not sure what they are or how to take advantage of them.



Communication via Email Client



Manually send email directly from any record in the ServiceNow platform.

1. To open the email client **from a form**:
 - Open a record
 - Navigate to **More options > Email**
2. To open the email client in a workspace:
 - Open a record
 - Navigate to **More options > Compose Email**

The email client is activated with the Email Client plugin (com.glide.email_client), which is active by default on the Now Platform. The email client is enabled by default on the incident and change tables. To enable the email client for another table, add the **email_client** dictionary attribute on the table's collection record.

Create and manage email client templates via **Email Client > Email Client Templates**.

Quick Messages



You can **create predefined content** to add in the email client so that users can write emails consistently and efficiently.

1. Navigate to **Email Client > Quick Messages**
2. Click **New**
3. Populate the fields accordingly
4. Click **Submit**

Field	Description
Title	Name that appears in the Quick Message selector.
Active	Option for activating the quick message. When selected, the quick message is available for selection in the Quick Message selector.
Application	Type of scoped application.
User	User who has access to this quick message. Selecting a user restricts access to that user only. Leave the field blank to have no user-based restrictions.
Group	Group whose members have access to this quick message. Selecting a group restricts access to members of that group only. Leave the field blank to have no group-based restrictions.
Table	Table to which the quick message applies. To make the quick message available for all tables, leave blank.
Conditions	Target record that must match the conditions before the quick message appears for selection in the email client.
Body	Content to insert in the Message Text field in the email client. By default, the field supports HTML format.

Business managers and admins can set up quick messages and predefine the content for replying to cases. For example, you can predefine personal greetings, disclaimers, different types of additional information, and signatures. You can also incorporate icons, business logos, pictures, HTML layout, and rich text format.

Creating quick message content:

Define quick messages by creating records in the Email Client Canned Messages [sys_email_canned_message] table.

When you define a quick message, you can add any of the following types of content into the message body:Icons

- Logos
- Pictures
- Rich-text HTML
- Hyperlinks
- Variables
- Any other HTML constructs

NOTE: If you add attachments to the quick message, the attachments are not sent as part of the email distribution.

Assign the email_client_quick_message_author role to business managers so that they can create quick messages for users in their group.

Composing Emails with Quick Messages



Once predefined content has been created, it can be used by others to insert predefined content into the message body of emails.

1. Within the email client, use the Quick Message selector.
2. Select the content to insert

By default, the content is inserted at the place of the cursor.

To replace message content with a quick message, highlight the text to replace and then select a quick message.

Note: To have quick message content replace all existing content in an email draft, set the `glide.email_client.quick_message.insert` property to **false**.

Setting quick message conditions:

When you define a quick message, you can limit the availability of the quick message according to:

- The user who launches the email client
- The group of the user who launches the email client
- The table of the record from which you launch the email client
- The target record from which you launch the email client

For example, if you designate Beth Anglin as the user for a certain quick message, the quick message is available in the email client only for Beth Anglin.

If you associate a quick message to the Incident [incident] table, the quick message is available in the email client only after you launch from an incident record. If you specify a target record from the Incident table for the quick message, the quick message becomes available in the email client only for matching incident records.

To reference field values, select variables from the variables list or manually type variable references using the syntax `${table_name.variable_name}`. To reference the user who launches the email client, enter the variable `${current_user}`.

You can use these values to include a predefined signature in email responses from agents to customers.

NOTE: Line breaks don't appear for multi-line fields such as `${description}` and `${comments}` in the email client template.

Lab 5.3: Enable Quick Messages (Bonus)



Lab Activities

- **Explain** how the email client adds value to task work
- **Create** an email template using Quick Messages
- **Grant** access to others, for managing email templates



Time:
15-20m



Files needed:

Enable Quick Messages (Bonus)

Lab 5.3

15 – 20 Minutes

Lab Objectives

You will achieve the following objectives:

- Explain how the email client adds value to task work
- Create an email template using Quick Messages
- Grant access to others, for managing email templates

 **Lab Dependency:** none

Scenario

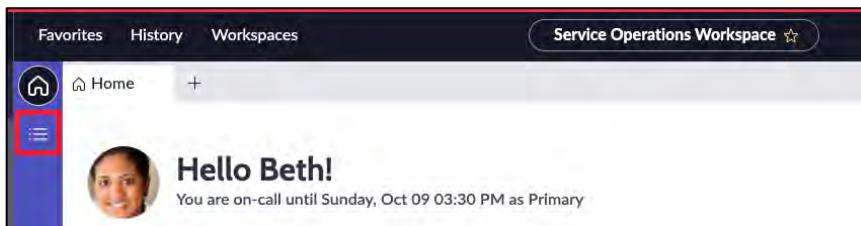
IT Support Agents have expressed a need for a faster way to communicate with customers. They have heard about something called quick messages but are not quite sure what they are or how to take advantage of them.

You will show Beth Anglin how to create Quick Message templates, which all members of her team will be able to use.

Section 1: Explore Email Client in a Workspace

1. Impersonate **Beth Anglin**.
2. Navigate to **Workspaces > Service Operations Workspace**.

 **Note:** You will initially be taken to the Workspace Landing Page. You can open an incident from the landing page. However, you can also interact in the workspace list view. Choose what works for you!

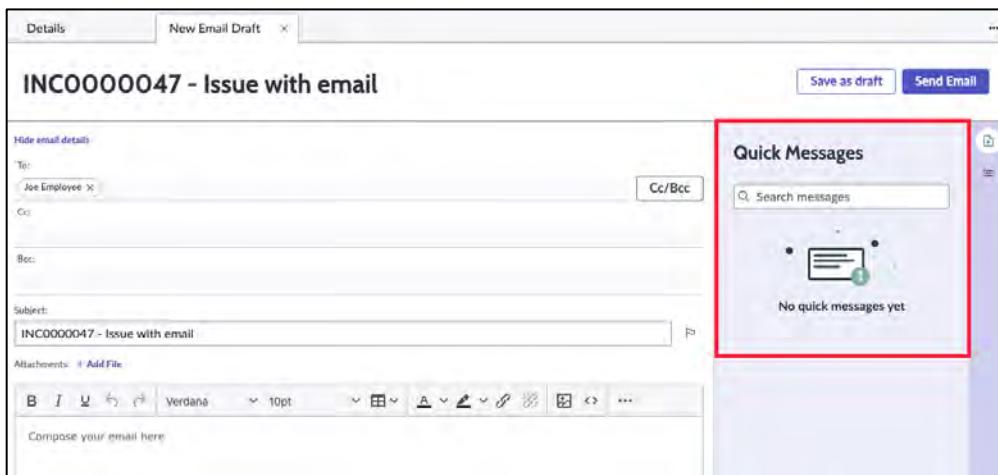


3. Open any **Incident**.

- On the top right of the Incident **Details** tab, click the **more (...)** icon and select **Compose Email**.



The Email Client form displays with the **Quick Messages** panel on the right.



Quick messages are templates for the Email Client.

- End impersonation.

Note: It is OK to leave the form without saving.

Section 2: Grant Access and Create Quick Message Template

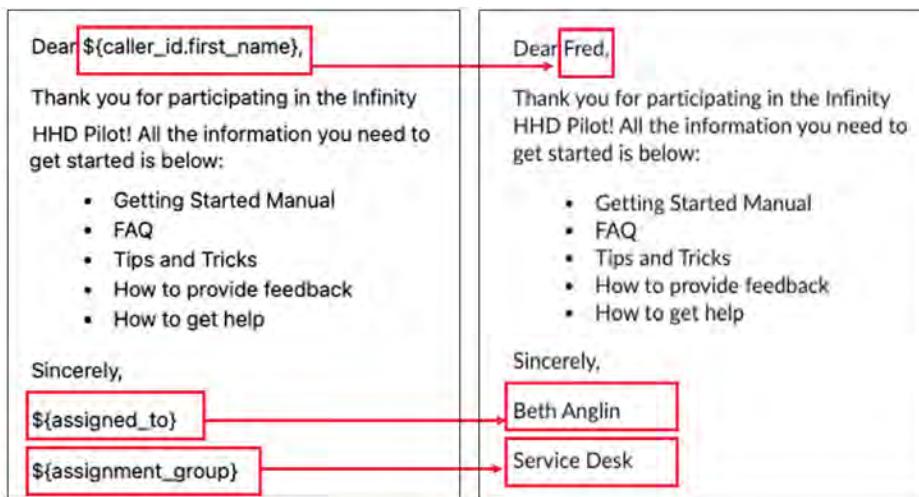
To create templates, Beth needs the `email_client_quick_message_author` role.

- As **System Administrator**, go to Beth Anglin's user record and add the role, `email_client_quick_message_author`.
- Click **Update**.
- Impersonate **Beth Anglin**.
- Navigate to **All > Email Client > Quick Messages**.
- Click **New**.

6. Complete the form as follows:

- Title: **HHD Pilot Welcome Message**
- Select the **Active** check box
- User: **leave empty**
- Group: **Service Desk**
- Table: **Incident**

Next, you will build the body of the message as shown below. We'll take this one step at a time.



Note: To personalize the message, you will embed variable names into the Body of the message. This allows you to pull in information from the Incident record, to include in the message.

7. In the **Body** field, type in the text as shown below:

Dear

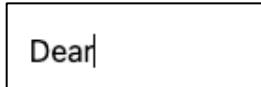
Thank you for participating in the Infinity HHD Pilot! All the information you need to get started is below:

- **Getting Started Manual**
- **FAQ**
- **Tips and Tricks**
- **How to provide feedback**
- **How to get help**

Sincerely,

Now that the body of the text has been added, you can begin to add the variables.

8. First, you will add the Caller's first name to the salutation. Click your cursor next to **Dear**.



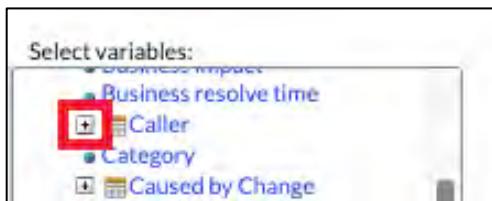
Dear

9. On the **Select variables** pane, click **+ Fields**.



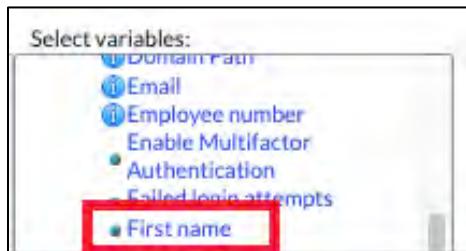
Select variables:
 Fields

10. Click **+** on **Caller** to expand the list of variables associated with Caller.



Select variables:
+ Business resolve time
+ Caller
+ Category
+ Caused by Change

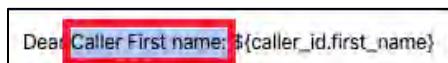
11. Scroll down and click on **First name**.



Select variables:
+ Domain Path
+ Email
+ Employee number
+ Enable Multifactor Authentication
+ Failed login attempts
+ First name

Note: By clicking on First name, both a label and the variable were inserted into the Body.

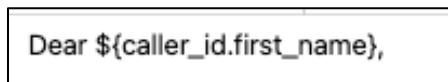
12. Remove the label, **Caller First name**:



Dear **Caller First name:** \${caller_id.first_name}

13. Add a **comma** after the variable name.

14. Validate your salutation looks like this.



Dear \${caller_id.first_name},

15. Repeat the steps to add the **Assigned to name** and the **Assignment group name** at the bottom of the message.

Remember to remove the labels so that only the variables appear.

16. Verify your **Quick Message** matches these settings.

Note: Make sure Active is checked.

The screenshot shows the 'Quick Message' configuration page. At the top, there's a title field containing 'HHD Pilot Welcome Message'. Below it is a checkbox labeled 'Active' which is checked. There are sections for 'User' and 'Group' selection, both currently set to 'Service Desk'. A condition section allows filtering by 'Incident [Incident]' table and an 'OR' clause. The main body area contains rich text with variables like \${caller_id.first_name} and \${assigned_to}. A 'Submit' button at the bottom is highlighted with a red box.

17. Click **Submit**.

Section 3: Verify the Quick Message in the Workspace

Since the quick message you just created is related to inquiries about the Infinity HHD Pilot, let's create a new incident related to this topic so you can verify the quick message in the workspace.

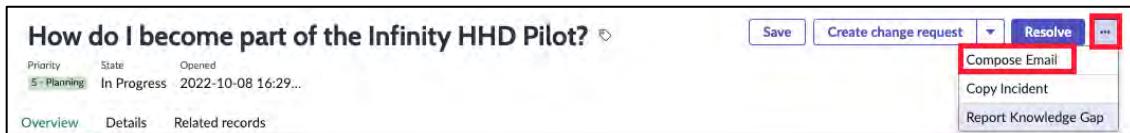
1. Navigate to **Workspaces > Service Operations Workspace**.
2. From the workspace list, navigate to **Incidents > All**, then click **New**.

The screenshot shows the 'Service Operations Workspace' interface. On the left, a sidebar lists 'Interactions', 'Requests', 'Catalog Tasks', and 'Incidents'. 'Incidents' is selected and highlighted with a red box. Below it are filters for 'Assigned to me', 'Unassigned', 'Open', and 'Resolved', with 'All' selected. The main area displays a table of incidents with columns: Number, Short description, Caller, Priority, State, Service, Assignment group, and Assigned to. The first incident listed is 'INC0009009' with a short description of 'Unable to access the shared folder.' and a caller of 'David Miller'. The 'New' button in the top right corner is highlighted with a red box.

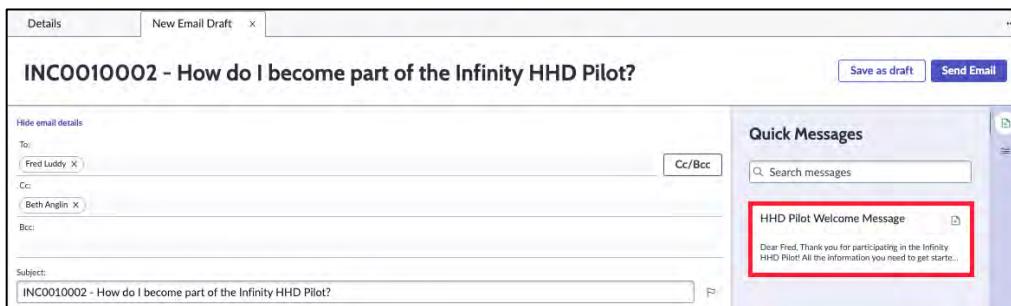
3. Complete the form as follows:

- Short description: **How do I become part of the Infinity HHD Pilot?**
- Caller: **Fred Luddy**
- Assignment group: **Service Desk**
- Assigned to: **Beth Anglin**

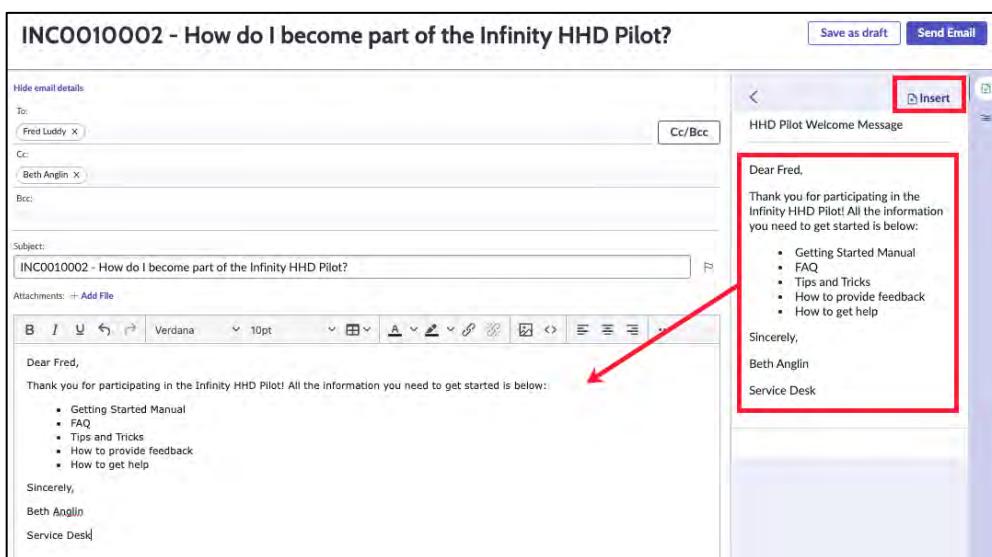
- Click **Save** to return to the new incident record you just created in the workspace.
- Record the incident number. You will use it later.
- Click the **more (...)** icon and select **Compose Email**.



A new message opens. Notice you now have a Quick Message you can utilize to quickly respond to the caller.



- Click the **Quick Message** card to preview the message.
- Click **Insert**.

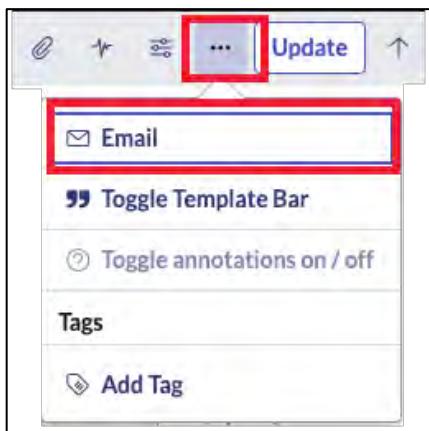


- Click **Send Email**.

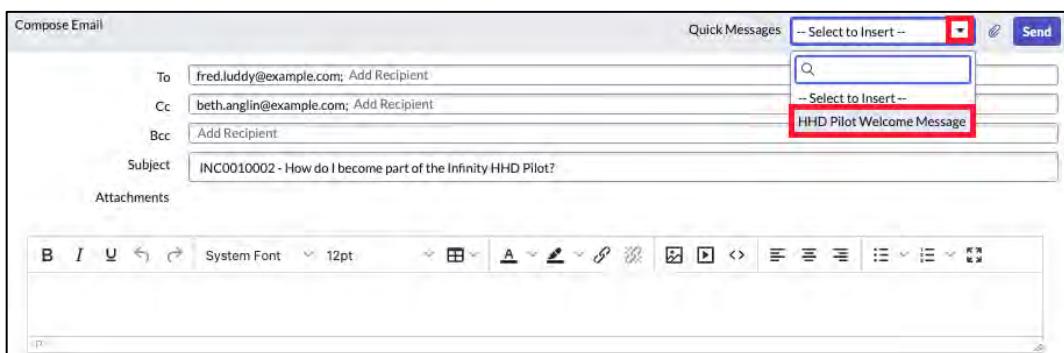
Section 4: Verify the Quick Message on Classic Form

Now that you have verified the quick message appears in the workspace, you need to test that it works in the **Classic Environment** too.

1. As **Beth Anglin**, navigate to **All > Incident > Open**.
2. Select the incident you created earlier (How do I become part of the Infinity HHD Pilot?).
3. On the top right, click the **More options (...)** icon.
4. Select **Email**.



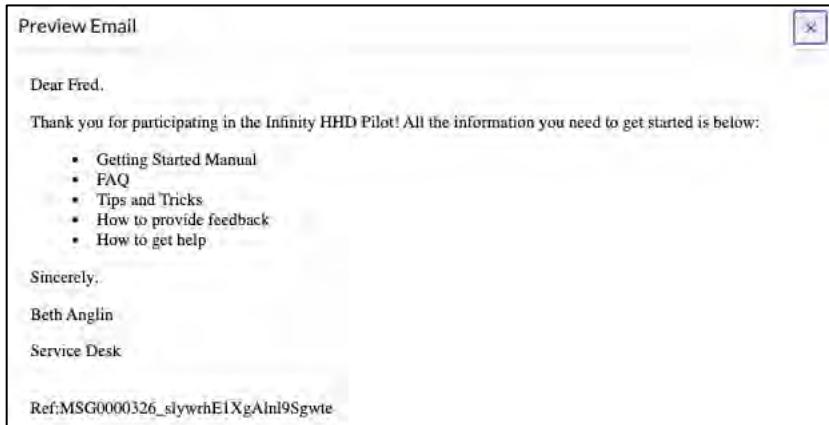
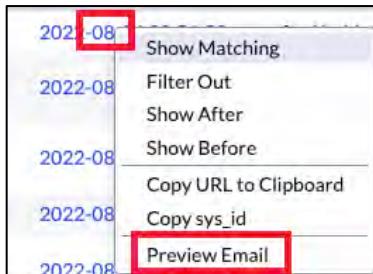
5. From the Quick Messages dropdown menu, select **HHD Pilot Welcome Message**.



6. **End impersonation.**

Section 5: Verify Email Was Sent

1. As **System Administrator**, navigate to **All > System Mailboxes > Outbound > Outbox**.
2. Right-click on the **Created** column, then select **Sort (z to a)**.
3. Right-click on the **Created date** of the message you are testing, then select **Preview Email**.



Congratulations! You have completed this lab.

Knowledge Check

What can you use to auto-populate the most-used fields on a form?

- ✓ Form template



What can you use to create predefined content for email messages?

- ✓ Quick Messages

NOTE: These are not practice questions for the Certified System Administrator exam.

Module 6.2

Monitor an Instance



Bonus Content

There are several ServiceNow tools that may aid you in **monitoring performance**.

- **Review** Bonus Content
- **Run** an Instance Scan
- **Review** the Scores on the items that were checked
- **Review** the Findings
- **Identify** the remediation steps
- **Investigate** Instance Scan Results Dashboard
- **Investigate** Health Scan via YouTube and Community
- **Investigate** Instance Troubleshooter via Community and Store

This is a **self-study** activity but highly recommended to prepare for your CSA exam.

Section 6.2: Monitor an Instance

User Story

As **System Administrator**, I need to establish a strategy for maintaining and upgrading my company's instance.



Instance Scan

The screenshot shows the ServiceNow Instance Scan interface. On the left, a navigation bar lists 'Checks', 'Suites', 'Results', 'Findings', 'Dashboard', and 'Table Cleanup'. A red box highlights the 'Instance Scan' section, and a red arrow points from it to the 'Instance Scan Results' card on the right. The main area displays several cards:

- ServiceNow Performance**: Other, Owned by System Administrator, Editor, Viewed about an hour ago.
- Admin Console**: Other, Owned by System Administrator, Editor, Viewed 2h ago.
- Instance Scan Results**: Platform, Owned by System Administrator, Editor, Viewed 5d ago. This card is highlighted with a red box.
- CMDB Dashboard - CMDB View**: CMDB Dashboard, Owned by System Administrator, Editor, Viewed 14d ago.

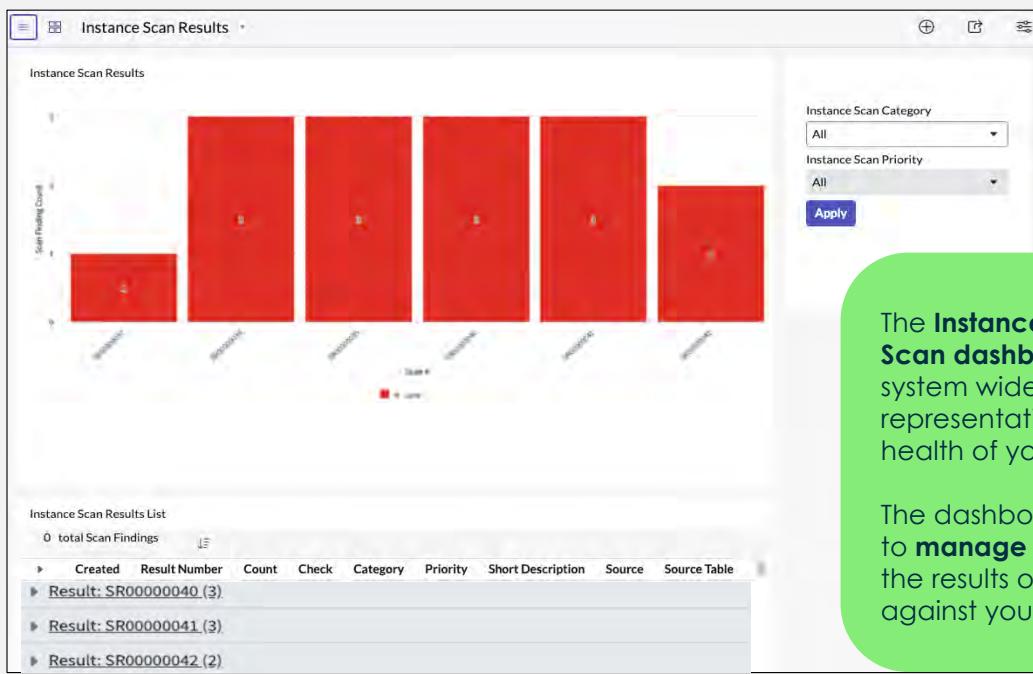
Below the cards, a green box contains the following text:

Instance Scan checks your existing configurations and helps you avoid creating future configuration issues. You can review the results in the **Instance Scan Results dashboard**.

In this section, we will briefly cover high-level features associated with Instance Scan, HealthScan, and the Performance Dashboard to increase awareness about what these applications can offer when seeking to monitor instance performance.

Let's take a quick look at Instance Scan. Instance Scan is a tool that can be used as a part of your development operations, release management, and pre- and post-upgrade activities.

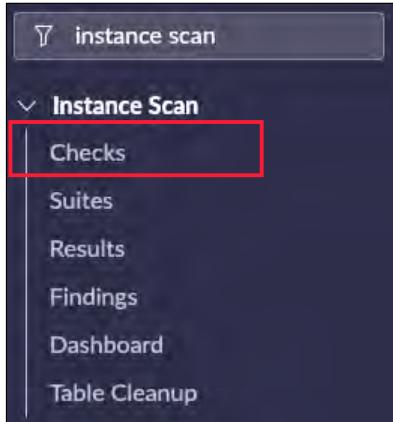
Instance Scan Results



The **Instance Scan dashboard** is a system wide visual representation of the health of your instance.

The dashboard helps you to **manage** and **analyze** the results of full scan against your instance.

Instance Scan Checks



Checks are singular focused rules that detect anomalies or opportunities in an instance. These checks can run against tables, records, or metadata.

Check Types:

- ✓ Table Check
- ✓ Column Type Check
- ✓ Script Only Check
- ✓ Linter Check

Checks are defined to identify security, upgrade best practices, manageability, user experience and performance vulnerabilities.

Checks are created to examine one issue.

Specific rules recognize problems or deviations in an instance. Checks execute against tables, records, or metadata. Checks are defined to identify security, upgrade best practices, manageability, user experience, and performance vulnerabilities.

There are four types of Checks:

Table Check

- Applied on only one table at a time
- Test table with conditions, scripts, or both
- Will not create a finding for out-of-the-box records that match the condition.

Column Type Check

- Identify records with a specific column field type from all tables in an instance.

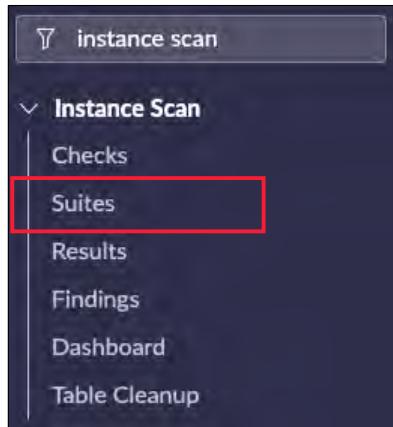
Script Only Check

- Write a script to check metadata, configurations, and execute complex checks.

Linter Check

- Identify any problem with code
- An abstract syntax tree for code being analyzed is created. The abstract syntax tree can be used to analyze issues.

Instance Scan Suites



A screenshot of the 'Check Suite' configuration screen. At the top, there's a search icon and a definition of what a suite is: 'A suite is a collection of individual checks and suites associated together.' Below this is a form with fields for 'Name' (set to 'Instance Security Center Definition'), 'Active' (checkbox checked), and 'Description'. There are three buttons at the bottom: 'Update', 'Execute Suite Scan' (which is highlighted with a red box), and 'Delete'. A sub-table below shows 'Checks (69)' with columns for 'Check', 'Class', 'Short Description', and 'Category'. One row is visible: 'Change calendar - Protect date fields with ACLs' (Table Check, Change calendar - Protect date fields with ACLs, Security).

All child suites are executed when a parent suite is used in a scan.

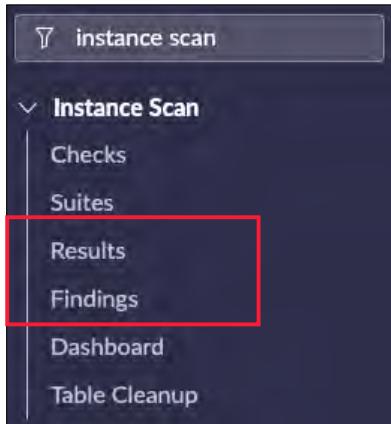
Suites

A suite is a group of individual checks and suites associated together.

- Certain types of Checks can be grouped into a Suite to investigate a particular problem.
- When a parent suite is used in a scan, child suites of the parent suite are executed.

Note: Some ServiceNow provided suites are protected suites and the checks in the suite are not modifiable. For example, if you have a suite from the app store, the suite is unmodifiable.

Instance Scan Results and Findings



 A **finding** is a reference to a record that has violated a rule from a check on the instance. You can find the source record and the number of times the record triggered rules of a given check.

Check	Check Version	Count	Product Family	Result	Mute Rule	Source	Source Table	Domain
There is a dedicated integration user th...	B	1	Other	SR00000005 (empty)	Audit: Server services statistics	Audit [cert_audit]	global	
There is a dedicated integration user th...	B	1	Other	SR00000005 (empty)	Internal Timers:Flush Code Signing Logs	Internal Timers [sysauto_internal_timer]	global	
There is a dedicated integration user th...	B	1	MID Server	SR00000005 (empty)	Scheduled Script Execution Err Queue Usage Analytics - Aggregate all topics from ecc_queue to ecc_usage_usage_analytics	Scheduled Script Execution [sysauto_script]	global	
There is a dedicated integration user th...	B	1	Instance Security Center	SR00000005 (empty)	Scheduled Script Execution:[AppSec] Daily Data Management	Scheduled Script Execution [sysauto_script]	global	

Each finding is specific to a result and each result is specific to a scan that has been executed.

Note: When you run a scan, you get a result of the scan but might not get any findings. There might be no findings encountered during the execution of the checks.

Note: If a record is inactive, the checks don't generate any findings for that record.

The Scan Finding gives information about the check that has been violated by a record.

The **Source Table** and **Source** fields point to the record that has violated a rule from a check during the execution. You can find more information about the record by clicking the information icon.

The **Count** field shows the number of times the record has violated the check rules. The finding also shows the version of the check that generated the finding.

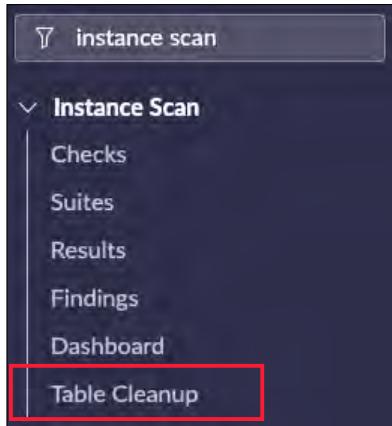
The **Product Family** field shows you the product family for each check.

The **Task** field helps you to assign a task to an individual or a group.

If you want to avoid a finding from being generated from any future scans, use the **Mute Rule**.

Note: If you use the **Mute Rule**, you must also select a reason for muting the finding.

Instance Scan Table Cleanup



Instance Scan offers **table cleanup** policies to erase previous scan results.

The screenshot shows a table titled 'All > Tablename > scan_result'. The table has columns: Tablename, Matchfield, Age in seconds, and Active. There are two rows:

Tablename	Matchfield	Age in seconds	Active
scan_result	sys_created_on	7,776,000	false
scan_result	sys_created_on	1,209,600	false

You can also modify table cleanup policies by entering any customized time period.

With scans utilizing Checks, Suites, and Child Suites, the Scan Results table can be congested quickly with active testing and rescanning. Records in Table Cleanup have rules that are executed to clear records. These rules can be the age of the record or a condition that has been satisfied.

Procedure

1. Navigate to **All > Instance Scan > Table Cleanup**.
2. Select one of the cleanup policies from the Auto Flushes list.
3. Customize the **Age in seconds** field as required.
4. To save the customized table cleanup policy, click **Update**.

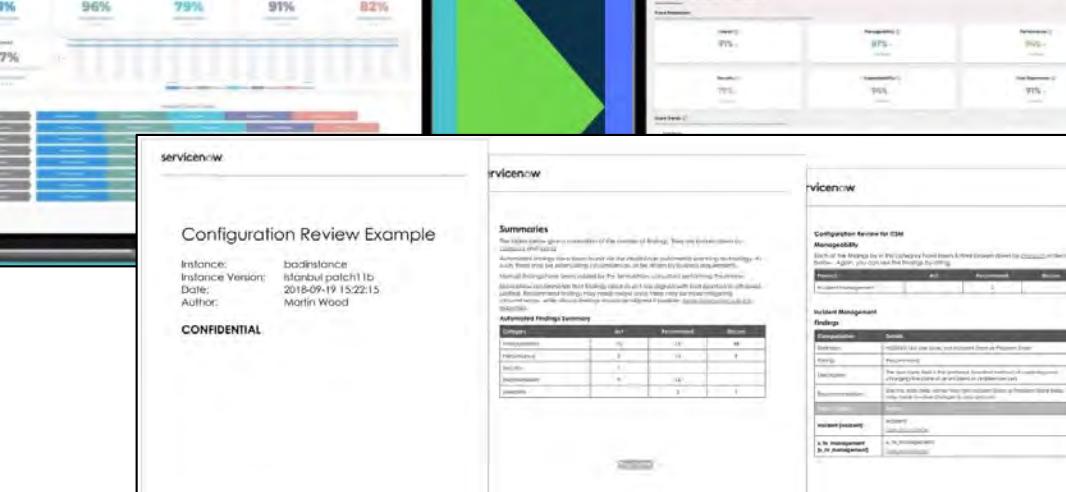
HealthScan



Health Scan is an external application that connects to an instance. Instance Scan operates inside a customer's instance to interrogate the instance locally.

There are two reports available to use while addressing issues in an instance:

1. HealthScan Scorecard (v2)
 2. HealthScan Configuration Review



The image shows two side-by-side screenshots of software interfaces, labeled "Scorecard v1" and "Scorecard v2".

Scorecard v1 (Left):

- A top navigation bar with tabs: Home, Overview, Configuration, Monitoring, and Help.
- A large central dashboard area showing various performance metrics with progress bars and percentages (e.g., 81%, 96%, 79%, 91%, 82%).
- A sidebar on the left labeled "servicenow" containing a "Configuration Review Example".
- The configuration review example details:
 - Instance: badinstance
 - Instance Version: Istanbul patch1 lb
 - Date: 2018-09-19 15:22:15
 - Author: Martin Wood
- A "CONFIDENTIAL" label at the bottom of the sidebar.

Scorecard v2 (Right):

- A top navigation bar with tabs: Home, Overview, Configuration, Monitoring, and Help.
- A large central dashboard area showing various performance metrics with progress bars and percentages (e.g., 87%, 87%, 87%, 87%, 91%).
- A sidebar on the left labeled "servicenow" containing a "Configuration Review Example".
- The configuration review example details:
 - Summaries:
 - The update service gives a summary of the instance of Badline. This can be done from the Badline instance.
 - Automatic storage rule is broken because the relationship rule is not active.
 - Badline instance has a broken rule that relationships are not active.
 - Badline instance has a broken rule that relationships are not active.
 - Configuration Review for ITSM Monitored by: Each of the changes in this category have been filtered down by Configuration Review. Status: All rule violations have been flagged.
 - Monitored by:

Monitored by	All	Recommended	Bonus
Automated Monitoring	0	0	0
 - Incident Management:
 - Badline: The issue has not been resolved yet.
 - Priority: None
 - Status: Open
 - Last Update: 2018-09-19 15:22:15
 - Comments: The issue has not been resolved yet.
 - Recommendations: None
 - Impact: Low
 - Severity: Critical
 - Incident history:
 - Badline (Management) - 2018-09-19 15:22:15

Instance Scan Reactive Scan



Where do I find Reactive Scan?

Since **Reactive Scan** isn't in the All Menu, start with finding the Scan Trigger table and then creating a record.

Reactive Scan begins with a record of the table name in the Scan Triggers [scan_triggers] table.

How do I get Started?

Identify the table you want to watch. You may have update sets that are failing or upgrade issues. Locate the table name and the conditions that define what would be an issue. You may want to look for Execution Failure in the Events [sysevent] table for examples.

How do I recognize an Execution Failure?

In the Event (sysevent) table, look for a record labeled **execution_tracker.failure**. The following example is an Update Set failure. Select the image to see Table, Instance, Processed, UserID, and User name fields. This record and the fields are valuable information for further researching the issue.

Checks, Suites, and Scan Triggers

Like a normal Instance scan, after identifying the table and conditions to use in a scan, create a Check. You add that Check or multiple Checks to a suite. The difference for a Reactive Scan is the Scan Triggers. The suite form will need to be configured to include the Triggers field.

Again, for more details and hands-on activities, visit Now Learning: **Introduction to ServiceNow HealthScan and Instance Scan**.

Platform Performance

Ensure system optimization through performance monitoring and diagnostics

Term	Description
Application server response	Time for the application server to process a request and render the resultant page.
Network latency and throughput	Time for the network to pass your request to the server and the response back.
Browser rendering and parsing	Time for your browser to render the HTML and parse/execute Javascript.
Instance Cache	Amount of system resources available for processing.

For more information on platform performance, visit ServiceNow Product Documentation:
Platform performance.

https://docs.servicenow.com/csh?topicname=p_PlatformPerformance.html&version=latest

Lab 6.2: Monitor and Troubleshoot an Instance



Lab Activities

- **Run** an Instance Scan
- **Review** the Scores on the items that were checked
- **Review** the Findings
- **Identify** the remediation steps
- **Investigate** Instance Scan Results Dashboard
- **Investigate** Health Scan via YouTube and Community
- **Investigate** Instance Troubleshooter via Community and Store



Time:
25-30m



Files needed:

Lab Takeaways:

- ✓ Monitoring instances(s) helps you to proactively identify and address issues before they become serious concerns.
- ✓ The ServiceNow Platform has many tools and applications that allow you to keep your instance running at peak performance.
- ✓ Diagnostic tools can help you to troubleshoot issues.

Monitor and Troubleshoot Instance

Lab 6.2

25 -30 Minutes

Lab Objectives

You will achieve the following objectives:

- Run an Instance Scan
- Review the Scores on the items that were checked
- Review the Findings
- Identify the remediation steps
- Investigate Instance Scan Results Dashboard
- Investigate Health Scan via YouTube and Community
- Investigate Instance Troubleshooter via Community and Store

 **Lab Dependency:** none

Scenario

As the HR project gets started, the implementation team wants to see if there are any issues with the way they are securing the HR data. One way to identify security issues and remediation steps is to use the Instance Scan application.

Section 1: Run an Instance Scan

Instance Scans will run a series of Checks, which are defined in Scan Suites. First, you will verify the installed Scan Suites, which will help assess HR concerns.

1. Log into your instance as **System Administrator**.
2. Navigate to **All > Instance Scan > Suites**.



3. Select **Instance Security Center Definitions**.
4. Scroll down and select the **Checks** tab.

5. Filter on **Check contains HR**.

The screenshot shows a search interface for 'Checks (7)'. At the top, there are tabs for 'Child Suites', 'Parent Suites', and 'Schedule'. Below the tabs is a search bar with a dropdown menu set to 'Check' and a filter input field containing '*HR'. A note below the search bar states 'Suite = Instance Security Center Definitions > Check Name contains HR'.

Note: The number of records may be different than shown.

6. Verify there are checks for HR.
7. Navigate to **All > Instance Scans > Checks**.
8. On the top right, click **Execute Full Scan**.

The Execute Full Scan window shows progress.

The screenshot shows the 'Execute Full Scan' window. It displays a progress bar for a 'Full Scan' that has 'Succeeded 100%'. Below the progress bar, a message states 'Scan completed with 0 warning(s), 0 error(s), and 230 finding(s) - Succeeded in 27 Seconds'. A red box highlights the 'Go to Result' button at the bottom right.

9. When complete, review the **Scan completed** message, then click **Go to Result**.

Section 2: Review the Scores on the Checked Items

The Scan Result record appears after you have clicked **Go to Result**. We will now review the results.

The screenshot shows a 'Scan Result' record with the identifier 'SR00000001'. It displays the 'Result Number' as 'SR00000001' and the 'Scan Type' as 'Full Scan'.

1. Scroll down and select the **Checks** tab.
2. On the **Check** column, filter on ***HR**.

The screenshot shows the 'Scan Findings (200)' interface. The 'Checks (6)' tab is selected. A red box highlights the 'Check' column filter, which is set to '*HR'. Other tabs visible include 'Suites', 'Failures', 'Scan Log', 'Scan Statistics', and 'Targets'.

3. Use the **Personalize List** (gear icon) to add the **Score** column to the list. Sort on **Score**.

A score of 100 indicates the check passed.

---There will be no associated record on the findings list.

A score less than 100 indicates there are exceptions.

---There will be an associated record on the findings list

Check	Class	Short Description	Category	Priority	Score	Error Message
Grant HR Administrator with Delegated D...	Script Only Check	Grant HR Administrator with Delegated D...	Security	3 - Moderate	0	
HR Tables not excluded on clones from Prod	Script Only Check	HR Tables not excluded on clones from Prod	Security	3 - Moderate	0	
Remove HR role from IT System Administrator	Script Only Check	Remove HR role from IT System Administrator	Security	2 - High	0	
Users that are marked as Alumni in their...	Table Check	Users that are marked as Alumni in their...	Security	3 - Moderate	99	
Do not deactivate or delete the "Assign ...	Script Only Check	Do not deactivate or delete the "Assign ...	Security	2 - High	100	
Altering the "Assignable By" for HR Scop...	Table Check	Altering the "Assignable By" for HR Scop...	Security	3 - Moderate	100	

4. Locate and select the Check for **HR Tables not excluded on clones from Prod** to view the details.

The Script Only **Check** record defines the description of the best practice, the recommended way to resolve any issues, and a link to the documentation.

Script Only Check
HR Tables not excluded on clones from Prod

Name	HR Tables not excluded on clon	Application	Global
Category	Security	Version	5
Priority	3 - Moderate		
Active			
Short Description	HR Tables not excluded on clones from Prod		
Description	Generally data from the production instance may contain sensitive information that you do not want in your sub-production instances. It is recommended that data from HR Profiles, HR Cases, HR tasks be excluded when cloning your production instance down to your sub production instance to help protect sensitive information. Login to the production instance and check to see if the HR tables are excluded in the exclude tables module under System Clones.		
Resolution Details	1. Check to see if there are integrations directly to subproduction instances to populate user information from a test data source. 2. Check Production to see if Hr Profiles and other Hr specific tables are excluded. 3. Set up exclusions.		
Documentation URL	/api/now/v1/context_doc_url/CSHelp:exclude-table		

5. Click the **back button** to return to the **Scan Result** record.

Section 3: Review the Findings

1. Click on the **Scan Findings** tab.
2. Filter on **Check contains HR**.

The screenshot shows the 'Scan Findings' tab selected. A search bar is set to 'Check' and contains the filter '*HR'. Below the search bar, a message says 'Result = SR00000001 > Check Name contains HR'.

For those checks having a specific record violating the condition, there will be additional information under Source Table and Source columns.

3. Locate and select the check, **Remove HR role from IT System Administrator** to view the details.
4. Scroll to the bottom of the Script Only Check record, then select the **Scan Findings** tab to see details.

For this check, it is recommended that the users with admin privileges over the entire instance should not have the HR Admin role. Rather there should be a separate HR admin due to the privacy of the data contained in the HR application.

The screenshot shows the 'Script Only Check' record for 'Remove HR role from IT System Administrator'. It includes the check script, a 'Test Check' button, related links, and a 'Scan Findings' tab. The 'Scan Findings' tab displays one finding:

Source	Source Table	Domain	User
Contained Role: sn_hr_core.admin.admin	Contained Role [sys_user_role_contains]	global	admin

The finding shows that the User: admin, in the Global domain, has the sn_hr_core.admin.admin role.

Section 4: Identify the Remediation Steps

1. While on the **Script Only Check** record, scroll up to the **Description** and **Resolution** section to see how to resolve this issue.

Note: The Description and Resolution section can also be found on the Check Record.

Short Description	Remove HR role from IT System Administrator
Description	After system configuration, ensure that only the HR Administrator [sn_hr_core.admin] role has access to sensitive information. Remove the HR Admin role from System Admin [admin] role to prevent the System Administrator from viewing sensitive HR information. http://docs.servicenow.com/csh?topicname=t_HRRemoveAdminRole.html
Resolution Details	HR Administrator (sn_hr_core.admin) must be removed from IT System Administrator (admin) or Security Administrator (security_admin).
Documentation URL	/api/now/v1/context_doc_url/CSHelp:remove-hr-admin-role

In our personal dev instances, this set of roles for the admin is ok. No additional action required.

Optional

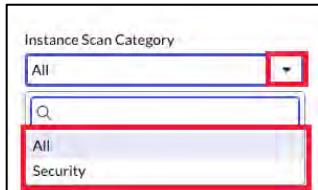
- To see a full list of **Findings**, across all scans, use **All > Instance Scan > Findings**.
- To see a full list of **Scan results**, use **All > Instance Scan > Results**.

Section 5: Investigate Instance Scan Results Dashboard

Scan results and findings are summarized over time, on the Scan Results Dashboard.

1. Navigate to **All > Instance Scan > Dashboard**.
2. On the top right, click on the **Instance Scan Category** choice list.

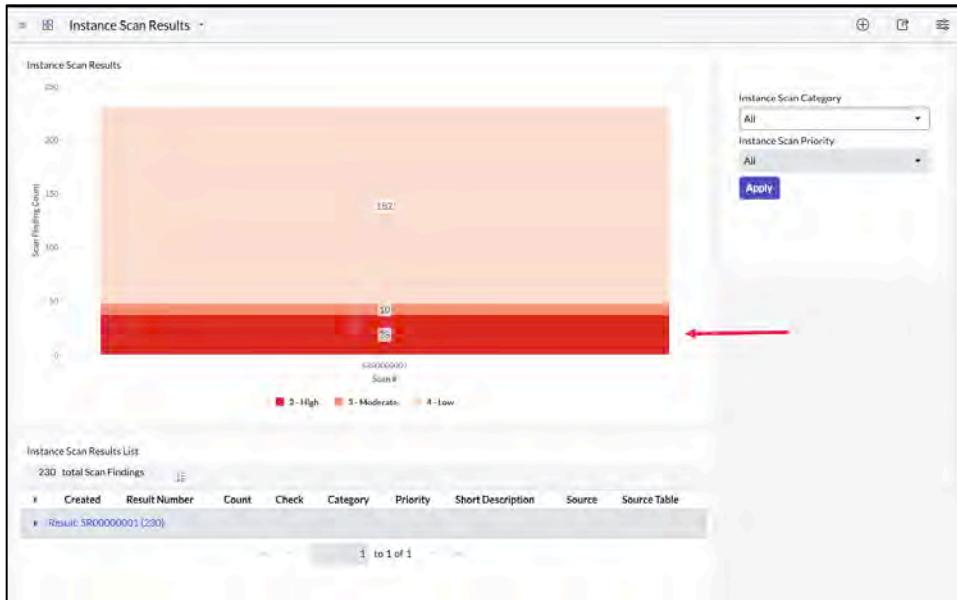
Note: Your list of choices may appear different than shown.



This allows you to filter by the scan category (which is the same as the Scan Suite).

Note: In your instance, there is only one scan suite installed.

The stacked bar displays the findings by priority.



3. Click on the **2 – High** priority bar, to see the filtered list.

Optional

Repeat the process of running the scan. Then go back to the dashboard.

In this lab, we did not make any changes, so the stacked bars stay the same. If you had made changes, improvement would be reflected in the charts over time.



Section 6: Investigate HealthScan

What is HealthScan?

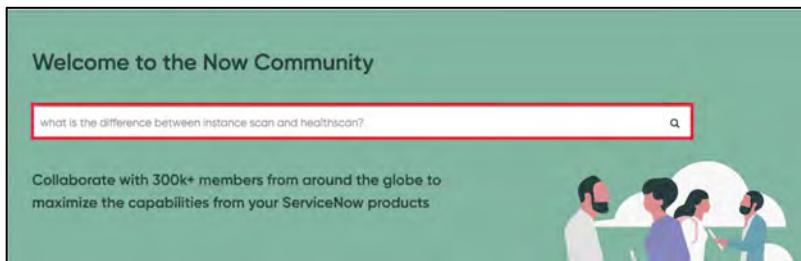
Health Scan is another resource which similar and different from Instance Scan. To learn more about it and the differences, you will use YouTube and Community to get more information.

1. Open a new browser tab.
2. Click here to watch the Optimizing Your Instance with ServiceNow HealthScan video.

<https://www.youtube.com/watch?v=7vynSK59mAI>

What is the Difference between HealthScan and Instance Scan?

1. Open a new browser tab and go to **community.servicenow.com**.
2. Below the **Welcome to the Now Community** banner, locate the **search** box.
3. Type, **What is the difference between instance scan and health scan?**



4. Press **Enter**.
- The search results display.
5. Locate and read the article, **Instance Troubleshooter v/s Instance Scan v/s HealthScan**.

Note: You may find other useful articles. Feel free to explore. You may have to sign up, if you have not already done so.

Direct link:

https://community.servicenow.com/community?id=community_article&sys_id=9e1bf1bd1b189510c552c8031d4bcb11

what is the difference between instance scan and healthscan?

Matches for "what is the difference between instance scan and healthscan?"

Sort by: 1. Relevance 2. Newest

Showing All Results

Now Community Knowledge and Documentation Ideas

Content Forums Topics People

Re: Learn Javascript UK (Posted in Developers Community)
Hi Andrew In addition to oracle I have some Material Please Check This Too. First Let me tell you one thing we are Using the Vanilla Java Script for the which is the First Version. Second If you have a
Author: [Learn Javascript](#) - 1,735 Views [1 Reply](#) (14) - Last updated 2y ago
Employed Only:
2 Attachments

Instance Troubleshooter v/s Instance Scan v/s HealthScan
What is an instance troubleshooter? Instance troubleshooter is a self-service tool to diagnose and resolve your ServiceNow platform issues. It is an OOB and free plugin for ServiceNow admins and a few.
Author: [Kunal Gang](#) - 750 Views [4 Replies](#) (11) - 2 Comments - Last updated 2y ago

Ideas on embedding Instance Scan into your way of working
Instance Scan Community
Hi there, So you've touched on Instance Scan, maybe read my previous blogs and articles on instance Scan, or see [use Plugins](#) to embed instance of Instance Scan into your way of working. And now you're looking to embedd instanc...

6. Inside the article, locate the **table** that summarizes the uses and differences between the different scan tools.

	Instance Troubleshooter	Instance Scan	Instance Health Scan
Provider	ServiceNow	ServiceNow	ServiceNow + Third-Party Tools
OOB	Yes	Yes	No
Free	Yes	Yes	Contact your ServiceNow Representative
Type	Built on top of Instance Scan	OOB Application available on all ServiceNow instances	Services by ServiceNow to check the instance ways of improvement.
Instance Strategy	Can be executed on all instances but makes more sense for production	Can be executed on all instances but makes more sense for dev and test	Production
Installation	'sn_troubleshooter' plugins	'com.glide.instance_scan' installed plugin	On-Demand services and refer Instance Health Scan Get in touch with your customer support to know more

7. Read the article **comments**, as other ServiceNow architects have perspectives to offer.

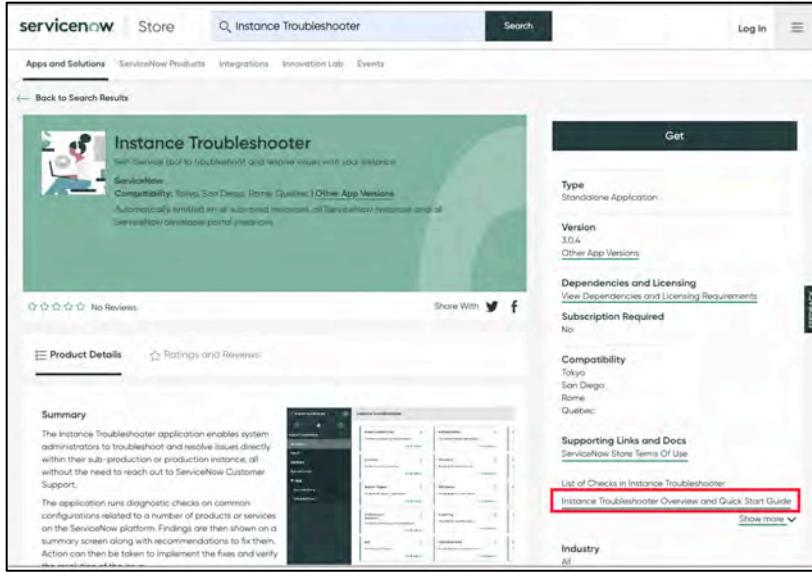
Note: There are some debates in the community about some features being free or not free. When in doubt, ask your sales representative. Fees could vary depending on your particular contract.

Section 7: Investigate Instance Troubleshooter

From the Community article, you have discovered there is an Instance Troubleshooter.

1. In a new browser tab, go to docs.servicenow.com and search on **Instance Troubleshooter**.

Note: If you are not able to find it, don't worry, we didn't either!
2. Go to the **ServiceNow Store** (store.servicenow.com) and search for **Instance Troubleshooter**.
3. Select the **Instance Troubleshooter** card.
4. Review the **Apps and Solutions** page.



5. Click on the **Instance Troubleshooter Overview and Quick Start Guide** link.

The article will open in a new browser tab.

Note: You may need to click the **Show more** down arrow (v) to see the article and other available resources. Feel free to review and bookmark accordingly.

Supporting Links and Docs

[ServiceNow Store Terms Of Use](#)

[List of Checks in Instance Troubleshooter](#)

[Instance Troubleshooter Overview and Quick Start Guide](#)

[Show more v](#)

6. If you want to bookmark the article, you can click **Copy Permalink**.

KB1112531

Instance Troubleshooter Overview and Quick Start Guide

419 Views Last updated : May 25, 2022 Public

[Copy Permalink](#)

7. Return to your previous browser tab.



Congratulations! You have completed this lab.

Knowledge Check

What dashboards help you monitor your instance performance and health?

- ✓ Instance Scan Results
- ✓ ServiceNow Performance Dashboard



Which tool uses definitions to compare an instance with ServiceNow's best practices?

- ✓ HealthScan

Which tool can help you identify days and times when transaction volumes are high or low?

- ✓ Performance Dashboard

NOTE: These are not practice questions for the Certified System Administrator exam.

Module 6.3

Release and Upgrade Resources



Bonus Content

Upgrading your instance involves planning, testing, and validation.

The ServiceNow platform includes tools to help you during and after an upgrade.

- **Review** the bonus content
- **Locate** release notes for the most current release
- **Build** your own release notes
- **Locate** upgrade planning resources

This is a **self-study** activity but highly recommended to prepare for your CSA exam.

Section 6.3: Extending Value

User Story

As the **System Administrator**, I need to align with the overall implementation plan for the ServiceNow Platform within my organization. Any new initiatives need to be coordinated with ServiceNow upgrades and releases.



Getting Started with Upgrades and Releases

The screenshot shows the ServiceNow Product documentation homepage. At the top, there's a banner with an astronaut icon and text about the Next Experience UI. Below the banner, there's a green callout box containing two paragraphs of text: "Upgrading your instance involves planning, testing, and validation. Release notes guide you through completing the phases and tasks for a successful upgrade." To the right of the callout, there's a sidebar titled "Release notes and upgrades" which is highlighted with a red border. The sidebar lists several release notes for different locations and times:

Location	Date
San Diego	February 2022
Rome	July 2021
Quebec	January 2021
Paris	July 2020
Store	Monthly
Mobile	As needed
Other	Monthly



For a video tutorial on using release notes, visit: <https://youtu.be/VJAFW6djQgU>

The ServiceNow platform includes tools to help you during and after an upgrade. To get started, go to ServiceNow Product Documentation (docs.servicenow.com) and review the Release notes and upgrades section.

Start Your Upgrade Journey



Before each upgrade, refresh your memory on general upgrade information, learn which important pre- and post- upgrade tasks apply to your upgrade, and learn how to use ServiceNow® products and tools to make your experience easier.

Learn about Tokyo



Find out what's new and changed in Tokyo

Prepare your upgrade



Choose the target version and prepare for your upgrade

Upgrade to Tokyo



Review the process and upgrade your instance

Prepare Your Upgrade

To help you get ready for a safe and effective upgrade, all the most important upgrade resources are compiled in one place.

For more information, visit ServiceNow Product Documentation: **Prepare your upgrade**.

ServiceNow upgrades  Learn high-level information about upgrades, such as duration, rollback options, and testing.	Pre- and post-upgrade tasks  Identify any tasks to complete before and after the upgrade for your applications and features.	Upgrade planning checklist  Use the end to end checklist to plan and track the activities for your upgrade.
Upgrade tools and resources  Learn about ServiceNow products, tools, and resources that can improve your upgrade experience.	Upgrades and the ServiceNow® Store  Learn about how upgrades are applied to ServiceNow® Store applications.	

For more information, visit ServiceNow Product Documentation: **Prepare your upgrade**.

<https://docs.servicenow.com/csh?topicname=rn-prepare-landing-page.html&version=latest>

ServiceNow Upgrades

The upgrade process moves your instance to a new ServiceNow release version.



Here you will learn:

- ✓ the difference between upgrading and patching
- ✓ release definitions
- ✓ rollback and backup options
- ✓ how to test your non-production and production instance upgrades

<p>ServiceNow upgrades</p>  <p>Learn high-level information about upgrades, such as duration, rollback options, and testing.</p>	<p>Pre- and post-upgrade tasks</p>  <p>Identify any tasks to complete before and after the upgrade for your applications and features.</p>	<p>Upgrade planning checklist</p>  <p>Use the end to end checklist to plan and track the activities for your upgrade.</p>
<p>Upgrade tools and resources</p>  <p>Learn about ServiceNow products, tools, and resources that can improve your upgrade experience.</p>	<p>Upgrades and the ServiceNow® Store</p>  <p>Learn about how upgrades are applied to ServiceNow® Store applications.</p>	

Pre- and Post-Upgrade Tasks

In preparation for your upgrade, review the upgrade and migration tasks for various applications and features.



Plan to complete these tasks, when applicable, before or after the upgrade is complete.

ServiceNow upgrades  Learn high-level information about upgrades, such as duration, rollback options, and testing.	Pre- and post-upgrade tasks  Identify any tasks to complete before and after the upgrade for your applications and features.	Upgrade planning checklist  Use the end to end checklist to plan and track the activities for your upgrade.
Upgrade tools and resources  Learn about ServiceNow products, tools, and resources that can improve your upgrade experience.	Upgrades and the ServiceNow® Store  Learn about how upgrades are applied to ServiceNow® Store applications.	

Upgrade Planning Checklist

Plan and track the activities related to your ServiceNow instance upgrade.

Follow the step-by-step instructions in the upgrade planning checklist to track and plan the upgrade.

Description	Yes	No	N/A
Phase 1 - Read the release notes and plan your upgrade			
1 Review the San Diego release notes for the target ServiceNow feature release and patch, in addition to product and release documentation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For San Diego-specific upgrade considerations, see Pre- and post-upgrade tasks for various products.			
Phase 2 - Complete these planning tasks.			
2 Confirm which ServiceNow instances are in-scope for upgrade.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Confirm the instance hosting model. For example, ServiceNow cloud, on-premise, or off-premise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Based on the San Diego release notes and other release materials, determine new functionality or notable changes that need to be validated after the upgrade.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ServiceNow upgrades  Learn high-level information about upgrades, such as duration, rollback options, and testing.	Pre- and post-upgrade tasks  Identify any tasks to complete before and after the upgrade for your applications and features.	Upgrade planning checklist  Use the end-to-end checklist to plan and track the activities for your upgrade.
Upgrade tools and resources  Learn about ServiceNow products, tools, and resources that can improve your upgrade experience.	Upgrades and the ServiceNow® Store  Learn about how upgrades are applied to ServiceNow® Store applications.	

Some optional steps may not be appropriate depending on the number of instances, customizations, and so forth. Mark the ones you do not need in the **N/A** column.

Tip: You can download a PDF version of this checklist.

The process for completing steps for self-hosted customers may vary (for example, requesting an instance clone or upgrades). These differences must be considered during planning.

Upgrade Tools and Resources

Use these ServiceNow products to automate parts of your upgrade testing and manage your upgrades from one central place.

- ✓ Automated Test Framework
- ✓ Upgrade Center

In addition to upgrade-related products, you can also use ServiceNow's upgrade tools.



ServiceNow upgrades  Learn high-level information about upgrades, such as duration, rollback options, and testing.	Pre- and post-upgrade tasks  Identify any tasks to complete before and after the upgrade for your applications and features.	Upgrade planning checklist  Use the end to end checklist to plan and track the activities for your upgrade.
Upgrade tools and resources  Learn about ServiceNow products, tools, and resources that can improve your upgrade experience.	Upgrades and the ServiceNow® Store  Learn about how upgrades are applied to ServiceNow® Store applications.	



For a video tutorial on **Upgrade Center**, visit:
<https://www.youtube.com/watch?v=Wi-RALgEbik>

Automated Test Framework: The Automated Test Framework (ATF) enables you to create and run automated tests to confirm that your instance works after making a change. For example, after an upgrade, during application development, or when deploying instance configurations with update sets. Review failed test results to identify the changes that caused the failure and the changes that you should review.

Note: By default, the system property to run automated tests is disabled to prevent you from accidentally running them on a production system. Run tests only on development, test, and other non-production instances to avoid data corruption and outage.

Upgrade Center: Use the ServiceNow® Upgrade Center to plan and manage your upgrades.

For more information on Upgrade Center, visit ServiceNow Product Documentation:

Upgrade Monitor module

<https://docs.servicenow.com/csh?topicname=uc-monitor-module.html&version=latest>

Other Upgrade tools:

In addition to upgrade-related products, you can also use ServiceNow's upgrade tools.

- **Now Support upgrade assist:** Stay current by automating your ServiceNow upgrades. Use an automated service to offload upgrade scheduling tasks.
- **Known Error portal:** Review a list of known issues in selected patch release versions.
- **Sample upgrade project plans:** The Upgrade planning checklist provides a quick look at the steps in an upgrade. If you'd like to track your upgrade progress in Excel, PDF, or Microsoft Project, you can download sample project plans to get started.

Upgrades and the ServiceNow Store

Store application versions can be upgraded when you upgrade your instance to a new release version.



If your instance has an installed app version below the defined minimum version, the app will be upgraded to the minimum required version. Similarly, if your instance has an installed app below the defined hotfix version, your app will be upgraded to the hotfix version.

ServiceNow upgrades 	Pre- and post-upgrade tasks 	Upgrade planning checklist
Learn high-level information about upgrades, such as duration, rollback options, and testing.	Identify any tasks to complete before and after the upgrade for your applications and features.	Use the end to end checklist to plan and track the activities for your upgrade.

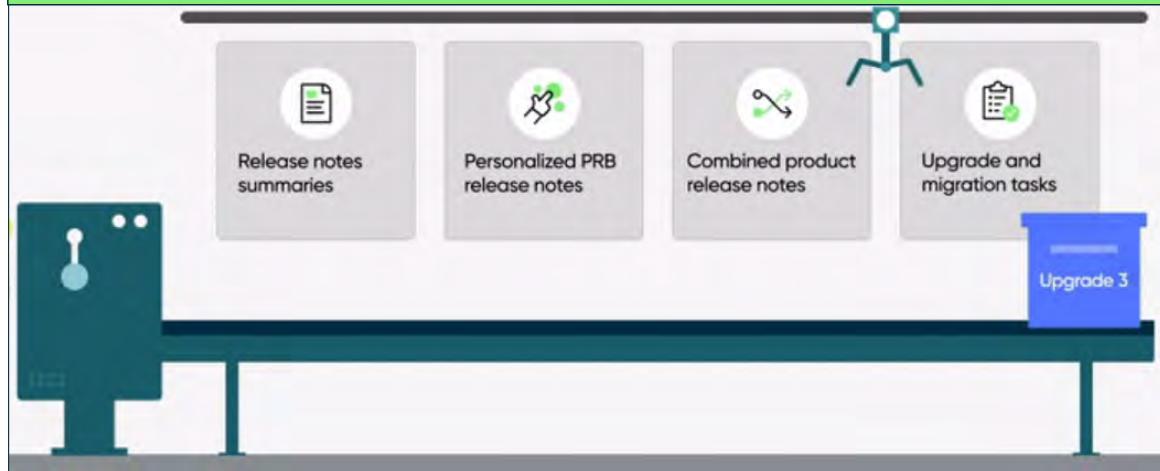
Upgrade tools and resources 	Upgrades and the ServiceNow® Store
Learn about ServiceNow products, tools, and resources that can improve your upgrade experience.	Learn about how upgrades are applied to ServiceNow® Store applications.

The ServiceNow Store includes official applications that are developed and released by ServiceNow.

New versions for a ServiceNow Store app can be defined in patch and family releases. This includes the ability to define a minimum version and/or a hotfix for a version you already have installed. If your instance has an installed app version below the defined minimum version, the app will be upgraded to the minimum required version. Similarly, if your instance has an installed app below the defined hotfix version, your app will be upgraded to the hotfix version.

Build Your Own Release Notes

Enhance your upgrade experience with **configurable release notes** that fit your unique upgrade scenario.



You can assemble:

- ✓ Product information
- ✓ Fixes included in your targeted release version
- ✓ Upgrade tasks to streamline your upgrade preparation, even when you skip a family release

Release notes summaries: Release notes summaries enable you to select the information category you're looking for and specify which products you have. Then, your release notes are compiled into a single, easy-to-read summary. Browse product highlights, new and changed features, important upgrade information, and more for N-1 to N upgrades.

Personalized PRB release notes: With personalized PRB release notes, collect a list of fixes to fit your specific upgrade scenario. Choosing your current release version and your targeted release version generates a list of all the fixes included in your upgrade. View this list in a table or download a spreadsheet to sort and review PRBs as needed.

Combined product release notes: If your upgrade involves skipping one or more family releases, combined product release notes ensure you have all the information you need to prepare for your upgrade. From a list of available products, you can filter changes and features for your specific applications across the relevant releases and view the information all on one page.

Upgrade and migration tasks: Once you're equipped with the product and PRB information you need, compile a list of upgrade and migration tasks required to complete your journey. View the necessary pre- and post-upgrade and migration tasks for your products and build a to-do list to help guide your upgrade process.

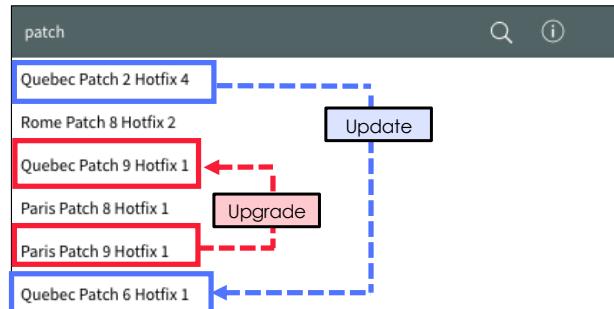
Upgrades vs. Updates

ServiceNow organizes its releases into families.

A **family** is a set of releases that are named after a major city, such as San Diego or Tokyo.

Upgrading is the act of moving to a **release that is in a different family** than your current release.

Updating is the act of moving from one patch or hotfix to **another within the same release family**.



Families also contain **patches and hot fixes**. For example, the following releases are part of the Quebec family:

- Quebec Patch 2 Hotfix 4
- Quebec Patch 9 Hotfix 1
- Quebec Patch 6 Hotfix 1

The upgrade process moves your instance to a new ServiceNow release version. Understand the difference between upgrading and patching, release definitions, rollback and backup options, and how to test your non-production and production instance upgrades.

Feature	<ul style="list-style-type: none">• Introduces new features• Includes all available fixes to existing functionality• Is production-oriented; quality and stability are of the highest priority throughout the lifecycle
Patch	<ul style="list-style-type: none">• Supports existing functionality with a collection of problem fixes• Generally, does not include new features
Hot Fix	<ul style="list-style-type: none">• Supports existing functionality with a specific problem fix for a feature release• May or may not include any previous fixes for a given release• Does not include new features

Before you Begin an Upgrade

Before starting, understand that testing is an integral step that occurs after **each** instance is upgraded.

After you upgrade an instance, **test and validate it**.

If you have three instances, upgrade your instances in this order*:

1. Development
2. Test
3. Production

In general, upgrade your instances furthest from production towards your production instance.

* Your instance labels may be different.

Instance	Type of Testing Required
Development	Conduct smoke tests.
Test	<p>Use the ServiceNow Automated Test Framework to assist you in testing your non-production instances.</p> <p>You can use Automated Test Framework quick start tests and product testing suites to help you jump start your testing before and after upgrades.</p> <p>For extra testing coverage, you can also conduct user acceptance testing (UAT) on your non-production instances.</p>
Production	Conduct UAT.

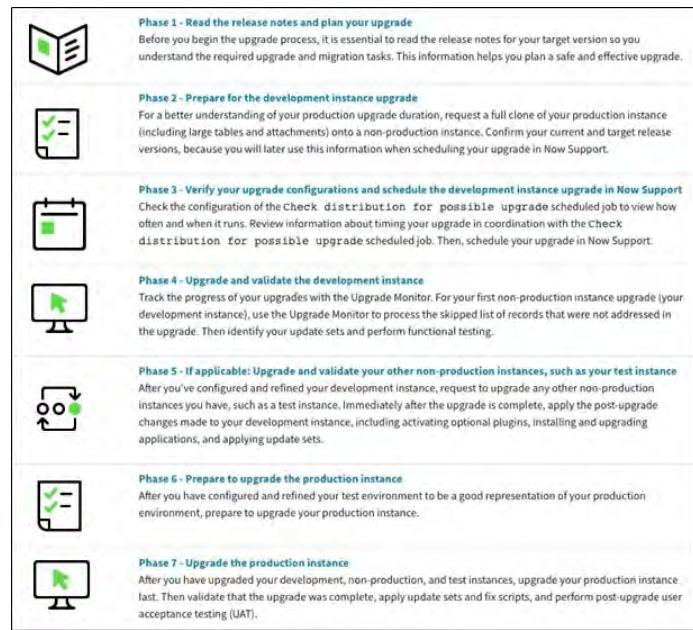
Note: If you have more or less than three instances, or if you are using Team Development, these instance labels will be different.

Upgrade Phases

Upgrading and patching your instance requires **planning**, **testing**, and **validation**.

To ensure a safe and effective upgrade:

- ✓ Read the release notes
- ✓ Create upgrade plans
- ✓ Test your upgrade on non-production instances before upgrading your production instance



In contrast to the upgrade planning checklist, these topics contain **in-depth explanations** in docs.servicenow.com about upgrades.

Upgrade Phase 1 and 2

Phase 1

- ✓ Read the release notes for your target version.
- ✓ Review upgrade and migration tasks that you will need to complete before or after your upgrade.

Phase 2

- ✓ For a better understanding of your production upgrade duration, request a full clone of your production instance (including large tables and attachments) onto a non-production instance.
- ✓ Set expectations for performance during upgrades.

Complexity score	Customization examples
Low	<ul style="list-style-type: none">• Modification to form layout/design• Add fields and/or UI policies to forms• Build simple custom integration• Extend an existing table (such as incident) in scope with new fields only
Low-medium	<ul style="list-style-type: none">• Extend an existing table (such as incident) in scope with some scripting• Extend an existing table (such as incident) as the basis for a different application, such as HR
Medium	<ul style="list-style-type: none">• Build a new scoped application
Medium-high	<ul style="list-style-type: none">• Build a new global application
High	<ul style="list-style-type: none">• Change baseline business rules (such as modifying the SLA process)• Build a complex custom integration

Upgrade Phase 3

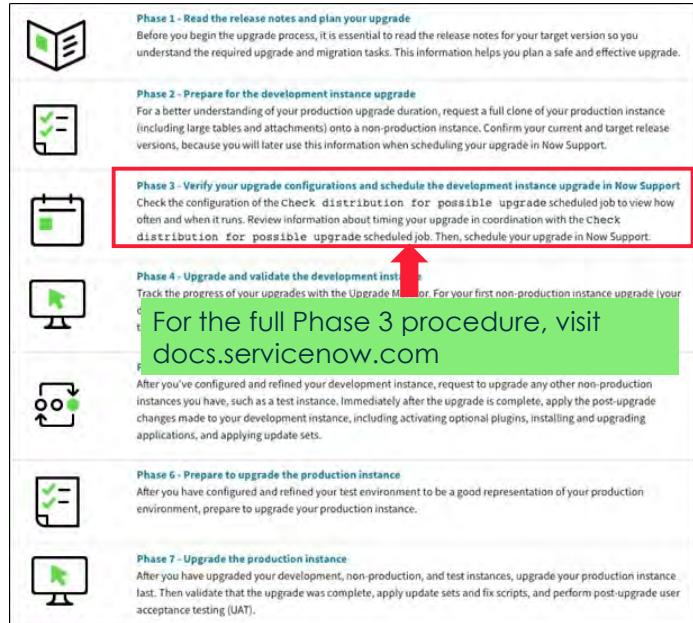
Verify upgrade configurations and schedule the **development** instance upgrade in Now Support

Phase 3

- ✓ Check the configuration of the **Check distribution for possible upgrade** scheduled job to view how often and when it runs.

Navigate to **System Scheduler > Scheduled Jobs > Scheduled Jobs**

- ✓ Review information about timing your upgrade.
- ✓ Schedule your upgrade in Now Support.
- ✓ Get acquainted with the **Upgrade Monitor** for use in future phases.



Important: Your upgrades are orchestrated out of your instance, not Now Support.

Now Support keeps records of what version you should be running, and your instance periodically queries Now Support to check its assigned version. When you designate a time for your upgrade, your instance begins the upgrade at that time.

How the Upgrade Monitor fits into this stage of the upgrade process:

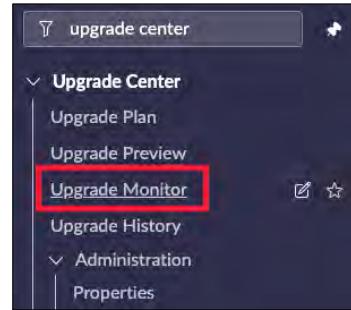
- The Upgrade Monitor helps you upgrade individual instances.
- During the upgrade, it shows where in the process the system is.
- After the upgrade, it reports what the upgrade did and for how long.
- As you upgrade the first non-production instance, it helps you resolve conflicts between customizations and changes that are part of the upgrade.
- On non-production instances, it provides information that can help you estimate how long the upgrade might take on the production instance.

Upgrade Phase 4

Upgrade and validate the **development** instance

Phase 4

- ✓ Track the progress of your upgrades with the Upgrade Monitor.
Navigate to **All > Upgrade Center > Upgrade Monitor**.
- ✓ For your first non-production instance upgrade (your development instance), use the Upgrade Monitor to **process the skipped list** of records that were not addressed in the upgrade.
- ✓ Evaluate how to resolve the conflict(s) and take action.
- ✓ Identify your update sets and perform functional testing.



If you have customized or altered a record affected by this upgrade, such as a business rule or script, the upgrade generates a skip log record.

Using the Upgrade Monitor, monitor the upgrade to your instance and validate that the upgrade to your development instance is complete.

After the upgrade for your development instance is complete, process the skipped records list. As you are processing the skipped list, you may merge and revert records, resolve conflicts for an individual record, and make additional customizations. These changes go into the latest version, which goes into your current update set.

Identify your update sets:

You need these update sets for your subsequent non-production instances. If there are issues that must be addressed after the upgrade, make the appropriate changes and they will go into your current update set.

Collect the update sets that:

- Were created while reviewing the skipped updates list
- Were created while changing customizations to work with the latest release
- Must go live immediately after your next upgrade

Gathering these update sets before your upgrade expedites the process of exporting, importing, and committing them onto your other instances. After the correct update sets are identified, follow the standard process for moving and applying those update sets.

Before and after upgrading, conduct smoke tests on your development instance. Use your comprehensive test plan to perform functional testing.

After upgrading, track any defects or deviations from the pre-upgrade testing results. Defect tracking can help identify root causes and create fixes. When a fix is identified, capture the fix in a single update set. The resulting update sets hold the cumulative fixes that should be applied to the production instance.

Upgrade Monitor Example

Completed upgrade summary report

Upgraded version

✓ glide-tokyo-07-08-2022_07-11-2022_1900.zip

Previous version

glide-05-24-2022_1800.zip

Upgrade duration

20 Minutes

Skipped records from upgrade to glide-tokyo-07-08-2022_07-11-2022_1900.zip

Upgrade monitor examples

Total record changes

13,867 changes

Skipped records

87

Skipped records by priority



Review changes

Skipped records by product

Skipped records code changed/code unchanged



Upgrade Phase 5

Upgrade and validate your other non-production instances, such as your **test instance**

Phase 5

- ✓ Create a system clone down from your production instance.
- ✓ Schedule the non-production upgrade in Now Support and verify your upgrade configurations.
- ✓ Validate that the upgrade to your non-production instance is complete.
- ✓ Install any optional plugins that were installed on your development instance.
- ✓ Install any custom applications and post-upgrade fix scripts that you need.
- ✓ Install update sets.
- ✓ Use these update sets to move your initial changes into your subsequent non-production instances.
- ✓ Perform functional testing and monitor the performance of your instance.

After you've configured and refined your development instance, request to upgrade any other non-production instances you have.

Immediately after the upgrade is complete, apply the post-upgrade changes made to your development instance, including activating optional plugins, installing and upgrading applications, and applying update sets.



For a video tutorial on **Quick Start Tests**, visit:
<https://www.youtube.com/watch?v=wV0SjY5gq8M>

Reproduce the typical user activities that occur on your production instance.

The Automated Test Framework can greatly assist you in testing your non-production instances. You can use Automated Test Framework quick start tests and product testing suites to help you jump start your testing before and after upgrades.

For information about available tests and activation, visit ServiceNow Product Documentation: **Quick start tests**.

<https://docs.servicenow.com/csh?topicname=quick-start-tests.html&version=latest>

Upgrade Phase 6

Prepare to upgrade the **production** instance

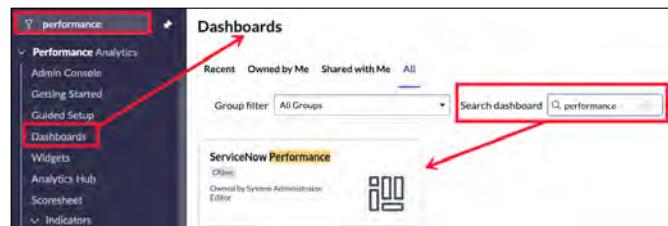
Phase 6

When upgrading a production instance:

- ✓ Profile the performance of the instance.
- ✓ On the clone, perform functional testing and monitor performance.
- ✓ Assign power users and key stakeholders to validate important functionality before and after the upgrade
- ✓ Use an established change management process.
- ✓ Communicate effectively with your user community.
- ✓ Negotiate a suitable upgrade time for all users.

After you have configured and refined your test environment to be a good representation of your production environment, prepare to upgrade your production instance.

Navigate to **Performance Analytics > Dashboards**. From the Dashboards list, select **ServiceNow Performance**.



Pre-upgrade instance validation can provide a reliable benchmark of the current operating environment and alert you to any issues that may appear after the upgrade. For example, it sometimes appears that specific functionality is broken by an upgrade. Analysis might show that the functionality did not work properly in the production instance, even before the upgrade.

Before performing the upgrade, analyze the current operating environment. Specifically, review:

- Key functionality
- Integrations
- Instance performance

Use the ServiceNow Performance dashboard to document the performance of your instance before the upgrade.

You will later compare and contrast this information during your post-upgrade validation and testing. Benchmarks will be different for each of your instances.

On your clone, replicate typical user behaviors that occur on your production instance. Assign a consistent core team of power users and key stakeholders to validate important functionality in the ServiceNow instance before and after upgrades.

Upgrade Phase 7

Upgrade your production instance

Phase 7

After you have upgraded your development, non-production, and test instances, upgrade your production instance last.

- ✓ Validate that the upgrade was complete
- ✓ Apply update sets
- ✓ Fix scripts
- ✓ Perform post-upgrade user acceptance testing (UAT).

Verifying your upgrade is complete

Navigate to:

- System Diagnostics > Upgrade Monitor
- System Diagnostics > Upgrade Log
- System Definition > System Upgrades
- System Diagnostics > Upgrade History
- System Logs > System Log > Errors

Not all errors in the error log are results of your upgrade.

- Schedule the upgrade in Now Support.
- Log in to Now Support.
- Click **Instances** in the left navigation menu.
- Select **Manage Instances**.

Partners only: From the user menu, use the **Switch Company** feature to select a company.

- Select the instance that you want to upgrade or patch.
- In the **Actions** menu, click **Upgrade Instance**.

The **Upgrade an Instance** Service Catalog item opens up. It is prepopulated with the instance name and available versions to which you can upgrade or patch the instance.

- To specify a date and time for the upgrade or patch, click the calendar icon next to the **Start Date and Time** field.
- Click the clock icon to select the time for the upgrade or patch.
- Click **Submit**.

A confirmation message appears. If you do not need an entitlement, a change request is created.

- If applicable, request a version entitlement.
- In the **Actions** column, click **Schedule**.

If the version does require an entitlement, a screen will appear

- Click the calendar icon and specify a date and time at least three days in the future. ServiceNow entitlement managers respond to your entitlement request within three days.
- Click **Schedule**.

A confirmation message appears. If you need an entitlement, the entitlement request number is included. Click the entitlement request number to view the request.

Upgrade Center

The screenshot shows the ServiceNow Upgrade Center interface. On the left, a sidebar menu includes 'Upgrade Center' (selected), 'Upgrade Plan', 'Upgrade Preview', 'Upgrade Monitor', 'Upgrade History', and 'Administration' (with 'Properties'). Below these are 'Upgrade Center VTB Labels' and 'Upgrade Plan Notification'. The main area displays several reports:

- Upgrade Preview Summary Report**: Shows the current version (glide-tokyo-07-08-2022_07-25-2022_1900.zip) and scheduled upgrade status.
- Completed upgrade summary report**: Shows the completed upgrade (glide-tokyo-07-08-2022_07-25-2022_1900.zip) took 16 Minutes.
- Upgrade Monitor Summary Report**: Shows 13,763 changes.
- Upgrade Preview Summary Report (Skipped Records)**: Shows skipped records from the upgrade.
- Upgrade History Report**: A table listing upgrade history with columns: From, To, Upgrade started, Upgrade finished, Changes skipped, Charges applied, and Charges processed. Examples include:

From	To	Upgrade started	Upgrade finished	Changes skipped	Charges applied	Charges processed
glide-tokyo-07-08-2022_09-19-2022_0911.zip	glide-tokyo-07-08-2022_07-25-2022_1900.zip	2022-07-26 11:21:31	2022-07-26 11:37:31	11	13,782	13,792
glide-tokyo-07-08-2022_07-13-2022_3W03.zip	glide-tokyo-07-08-2022_07-15-2022_0911.zip	2022-07-26 10:34:34	2022-07-20 10:34:34	22	12,544	12,566
glide-05-24-2022_1900.zip	glide-tokyo-07-08-2022_07-25-2022_1900.zip	2022-07-24 20:00:00	2022-07-25 00:43:43	53	13,824	13,867
glide-tokyo-12-22-2021_0911.zip	glide-tokyo-07-08-2022_07-25-2022_1900.zip	2022-04-29 10:27:20	2022-04-29 10:39:20	1	6,533	6,534
glide-tokyo-12-22-2021_0911.zip	glide-tokyo-12-22-2021_0911.zip	2022-03-28 06:31:54	2022-03-28 06:31:54	1	6,590	6,591
glide-tokyo-12-22-2021_09-09-2022_1900.zip	glide-tokyo-12-22-2021_09-14-2022_1900.zip	2022-03-22 10:24:33	2022-03-22 10:39:09	1	6,544	6,547
glide-tokyo-12-22-2021_09-09-2022_1900.zip	glide-tokyo-12-22-2021_09-14-2022_1900.zip	2022-03-15 23:26:33	2022-03-15 23:38:59	1	6,650	6,651
glide-tokyo-12-22-2021_09-27-2022_1900.zip	glide-tokyo-12-22-2021_09-06-2022_1900.zip	2022-03-08 11:23:08	2022-03-08 11:35:53	21	7,780	7,801

Upgrade Center helps you plan and manage your upgrades. The Upgrade Center consists of modules targeted to help predict, evaluate, track, and administer upgrades.

Upgrade Plans help you define applications and target versions to be installed on your instance. It automates the the installation of these applications during upgrades. Upgrade plans can trigger Instance Scans to ensure applications and data are healthy.

For more information on building an upgrade plan, visit ServiceNow Product Documentation: [Upgrade plan overview](#).

<https://docs.servicenow.com/csh?topicname=uc-upgrade-plan.html&version=latest>

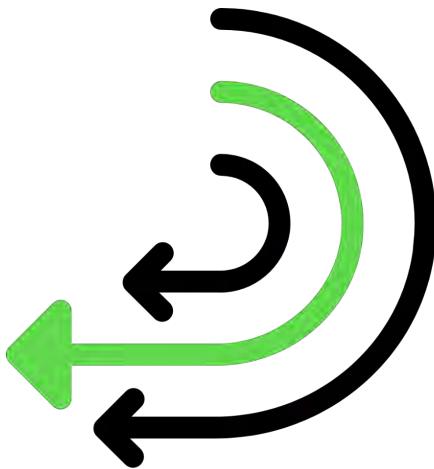
Upgrade Preview enables you to have an unprecedented insight to an instance prior to an actual upgrade. You can explore and preview upgrades to different ServiceNow release versions and see how your instance might be impacted with your current configurations. The Upgrade Preview utility helps you to plan, schedule, and prepare for an upgrade.

Upgrade Monitor allows you to schedule an upgrade and monitor the status of an ongoing upgrade using the Upgrade Monitor module. You can also view the upgrade summary and the list of records causing conflicts in your instance once the upgrade is complete.

Upgrade History tracks every upgrade made to an instance. You can also view the complete report of an old upgrade or a recently completed upgrade version using this module.

For more information on Upgrade Center, visit Now Learning: [Upgrade Center Overview](#).

Rollbacks and Backups



When you plan an upgrade, remember that ServiceNow **does not provide** a universal rollback option.

- ✓ The rollback window is 10 days by default.
- ✓ You can customize this window by modifying the `glide.rollback.expiration_days` property.
- ✓ To request a rollback, contact Customer Service and Support.

Note: ServiceNow does not perform on-demand backups. Instances are automatically backed up daily during non-peak business hours on schedules defined by ServiceNow. The timing of existing backup schedules is not adjusted.

Rollbacks are available for updates (for example, San Diego patch-to-patch and San Diego patch-to-hotfix).

Avoid restoring a production instance from backup, when possible, due to downtime and data loss. When a problem cannot be solved using other methods, restoring a production instance from backup is a final option. ServiceNow can restore an instance to any point in time, regardless of when a backup is completed. Customer Service and Support provides support 24 hours a day, 7 days a week for assistance with critical post-upgrade issues.

Considerations

- System upgrades can be significant projects that include major additions-- consider the impact of new functionality.
- Careful preparation and knowledge of the available software, tools, and resources can contribute to a successful upgrade.
- Understand how your instance is currently operating and the performance level of key business functionality.
- Set the expectation with IT and business users that time must be dedicated to preparing for, implementing, and testing upgrades

- Allow time in your change window to run all test cases and validate that all integrations, key business functionality, and system performance are acceptable.
- Add a time buffer for responding to errors without breaching the change window.
- Upgrading implements enhancements to all features that are part of the base system or are already active, unless the feature is customized on your instance.

Upgrades and Patching Community

The screenshot shows the ServiceNow Upgrades and Patching Community forum. At the top, there's a banner for the 'Now Platform San Diego release' featuring a surfer. Below the banner, a call-to-action button says 'Schedule your upgrade today' and 'Log in to Now Support'. There are three main sections: 'Patching' (describing the patching program), 'Upgrade Easily' (with a link to the Upgrade Kit), and 'Now Create' (providing step-by-step guidance). On the right side, there's a 'Leaderboard' for 'Upgrades and Patching' under the 'Monthly' tab, showing four users: Mark Manders (60 Points), Malik Skodrow (20 Points), Ankur Bawiskar (10 Points), and Elhan Davies (10 Points). A 'Search Forum' bar is at the top right, and a 'Subscribe' button is in the top right corner.

Community forum dedicated to supporting customers with patches and upgrades

- 1** Ask questions, get tips, and share knowledge
- 2** Plug into the latest community events and virtual webinars hosted by upgrade experts

Be sure to subscribe!

Visit: community.servicenow.com

Lab 6.3: Locate Release and Upgrade Resources



Lab Activities

- **Locate** release notes for the most current release
- **Build** your own release notes
- **Locate** upgrade planning resources



Time:
10-15m



Files needed:

Lab Takeaways:

- ✓ ServiceNow has many useful resources to assist you with managing your releases and upgrading your instance(s).
- ✓ Upgrade Center and Release Notes are a great place to start.
- ✓ The ServiceNow Community has a forum that helps with patches and upgrades. Search for the forum named Upgrades and Patching.

Locate Release and Upgrade Resources

Lab 6.3

10 -15 Minutes

Lab Objectives

You will achieve the following objectives:

- Locate release notes for the most current release
- Build your own release notes
- Locate upgrade planning resources

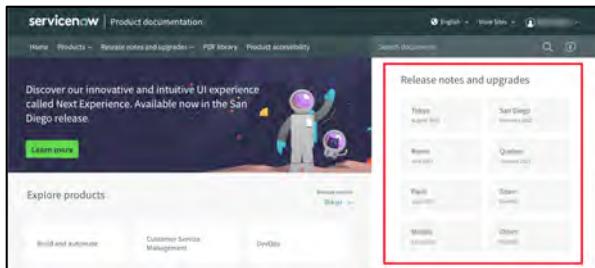
 **Lab Dependency:** none

Scenario

As System Administrator, you have heard there is a new release of ServiceNow coming out in a few months. You want to be aware of the new features that are being released related to HR and to ITSM. You also want to start learning about the upgrade process.

Section 1: Locate Release Notes

1. Open a **new browser tab**.
2. Go to **docs.servicenow.com**.
3. Locate the **Release notes and upgrades** panel.



4. Click on the most **current release**.

 **Note:** Your release list may look different.

5. Locate the **Learn about** section and click to review the content.

Tokyo release notes

The ServiceNow® Tokyo release includes new products and applications, as well as additional features and fixes for existing products. Read the release notes to learn about the release, prepare for your upgrade, and upgrade your instance.

Path to successful upgrades

Upgrading your instance involves planning, testing, and validation. The release notes guide you through completing all of the phases and tasks for a successful upgrade.

Choose your upgrade path to Tokyo

- Release notes for upgrading from San Diego →
- Release notes for upgrading from Rome →
- Release notes for upgrading from Quebec →
- Tokyo patch and hotfix release notes →

Start your upgrade journey

To use the release notes in your upgrade process, choose the upgrade phase that you're ready to start with. It's recommended you complete the phases in the order listed. For a guide to the redesigned release notes experience, see [Using the release notes](#).

Learn about Tokyo

Find out what's new and changed in Tokyo

Prepare your upgrade

Choose the target version and prepare for your upgrade

Upgrade to Tokyo

Review the process and upgrade your instance

This is a great resource for getting yourself acquainted with information on a new release.

Release version

Tokyo

Tokyo release notes

Using the release notes

Build your own release notes

Learn about the Tokyo release

Tokyo Early Availability release highlights

Release notes for upgrading from San Diego

Release notes for upgrading from Rome

Release notes for upgrading from Quebec

Personalized PRB release notes for upgrades to Tokyo

Available patches and hotfixes

Browser support

Home > Tokyo release notes > Learn about the Tokyo release

Learn about the Tokyo release

The Tokyo release includes new features and improvements built on the Now Platform®.

Release dates

- Early availability: August 4, 2022
- General availability: Targeted for Q3 2022

Release notes for upgrades

Before you upgrade, review release notes from your current version to the Tokyo release. The release notes offer valuable information about new functionality, notable changes, and available fixes. They help you determine whether the upgrade contains functionality you need and fixes that resolve any issues affecting your instance. The release notes can also help you determine whether items you previously customized are being upgraded.

Upgrade from San Diego

Release notes for

Upgrade from Rome

Release notes for

Upgrade from Quebec

Release notes for

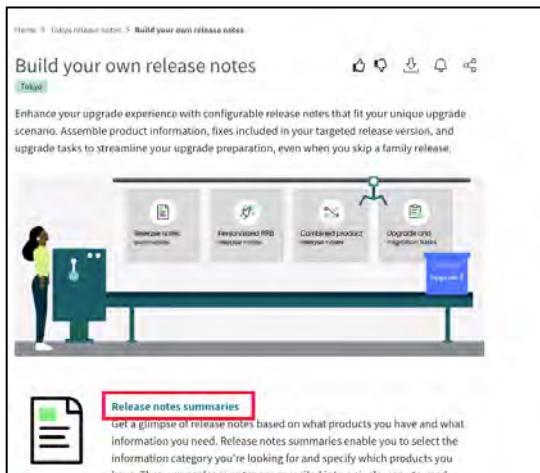
Section 2: Build HR Specific Release Notes

1. On the left topic menu, click on **Build your own release notes**.



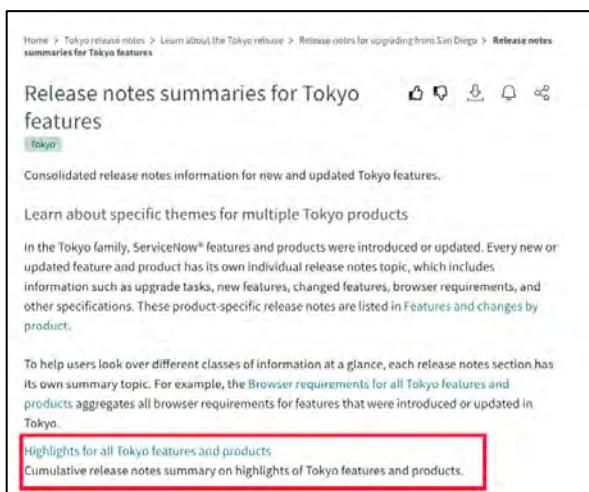
The screenshot shows a sidebar menu with several options: 'Release version Tokyo', 'Tokyo release notes', 'Using the release notes', 'Build your own release notes' (which is highlighted with a red box), 'Learn about the Tokyo release', and 'Tokyo Early Availability release highlights'. The main content area is titled 'Learn about the Tokyo release' and contains information about the release including release dates (Early availability: August 4, 2022; General availability: Targeted for Q3 2022) and a link to 'Release notes for upgrades'.

2. Locate and click on **Release notes summaries**.



The screenshot shows the 'Build your own release notes' page. It features a section titled 'Release notes summaries' which includes a brief description and a callout box. The callout box contains text: 'Get a glimpse of release notes based on what products you have and what information you need. Release notes summaries enable you to select the information category you're looking for and specify which products you want. Then our system generates a customized release note for you.'

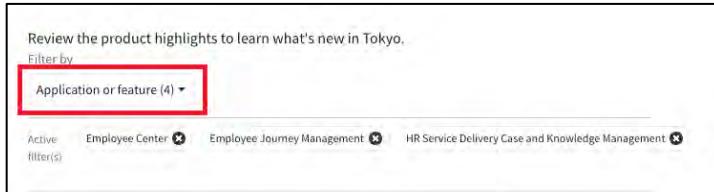
3. Select **Highlights for all Tokyo features and products**.



The screenshot shows the 'Release notes summaries for Tokyo features' page. It includes sections for 'Consolidated release notes information for new and updated Tokyo features' and 'Learn about specific themes for multiple Tokyo products'. At the bottom, there is a red box highlighting the 'Highlights for all Tokyo features and products' section, which contains the text: 'Cumulative release notes summary on highlights of Tokyo features and products.'

- On the **Application or Feature** drop-down list, select the following:

- Employee Center
- Employee Journey Management
- HR Service Delivery Case and Knowledge Management
- Workspace



Review the product highlights to learn what's new in Tokyo.

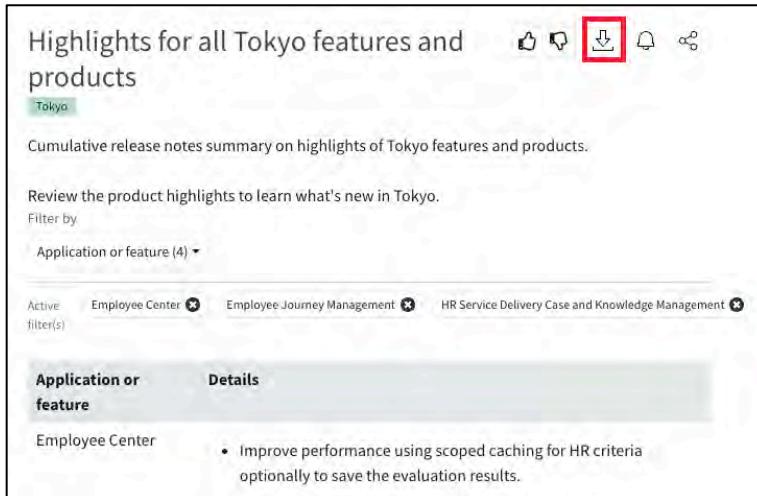
Filter by

Application or feature (4) ▾

Active Employee Center Employee Journey Management HR Service Delivery Case and Knowledge Management

filter(s)

- Review the filtered highlights.



Highlights for all Tokyo features and products

Tokyo

Cumulative release notes summary on highlights of Tokyo features and products.

Review the product highlights to learn what's new in Tokyo.

Filter by

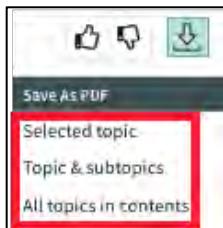
Application or feature (4) ▾

Active Employee Center Employee Journey Management HR Service Delivery Case and Knowledge Management

filter(s)

Application or feature	Details
Employee Center	<ul style="list-style-type: none">Improve performance using scoped caching for HR criteria optionally to save the evaluation results.

- Click the **download** icon and select one of the options below **Save as PDF**.



Save As PDF

Selected topic

Topic & subtopics

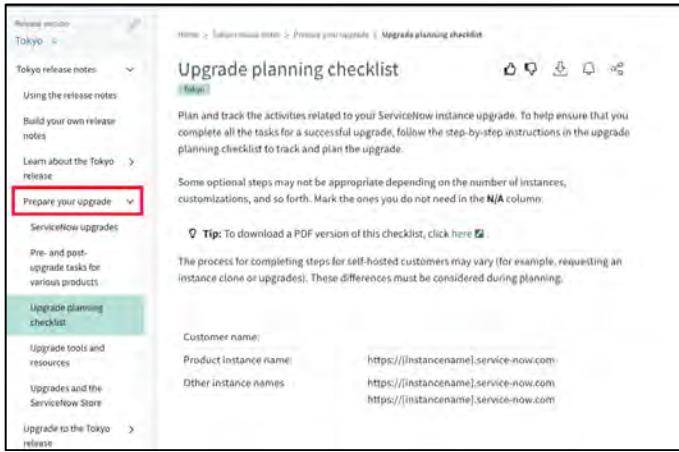
All topics in contents

Section 3: Locate Upgrade Planning Resources

- Go to docs.servicenow.com.
- Search on **Upgrade Checklist**.

Note: You may not always find exactly what you're looking for but start with a search term that seems relevant. Often you will find your way to section or specific topic by exploring the search results list or the topic pane shown below.

3. Select **Upgrade planning checklist**.
4. Notice the topic path has a **Prepare your upgrade** section. You were able to find what you were looking for even though you used completely different search terms.



The screenshot shows the ServiceNow Tokyo release notes page. On the left, there is a sidebar with various links: 'Release notes - Tokyo', 'Using the release notes', 'Build your own release notes', 'Learn about the Tokyo release', 'Prepare your upgrade' (which is highlighted with a red box), 'ServiceNow upgrades', 'Pre- and post-upgrade tasks for various products', 'Upgrade planning checklist' (which is highlighted with a green box), 'Upgrade tools and resources', 'Upgrades and the ServiceNow Store', and 'Upgrade to the Tokyo release'. The main content area is titled 'Upgrade planning checklist' and contains instructions for planning an upgrade, a tip about PDF downloads, and a table with columns for Customer name, Product instance name, and Other instance names, each with a corresponding URL.

5. Click on **Prepare your upgrade**.
6. Make a **bookmark** for this page.



Congratulations! You have completed this lab.

Knowledge Check

In what order should you upgrade your instances?

- ✓ Development
- ✓ Test
- ✓ Production

What is the act of moving from one patch or hotfix to **another within the same release family**?

- ✓ Updating



Where can you find information on upgrading your instance(s)?

- ✓ community.servicenow.com
- ✓ Docs.servicenow.com

NOTE: These are not practice questions for the Certified System Administrator exam.

Module Recap:

Fine tune your ServiceNow platform with regular performance administration

Developed by the ServiceNow Best Practice
Center of Excellence

March 2022

What is ServiceNow maintenance and performance tuning?

While we monitor your instance hardware in our data centers, every organization makes configurations to their environments that can affect them individually. If left completely unattended, small issues can build up over time and can cause performance problems, difficulty upgrading to new releases, or issues when deploying additional applications. This workbook will provide guidance on how to keep your instances fine tuned. Steps included are:

- Check for configuration that is not best practice
- Review your log data for errors and warnings
- Maintain your tables for peak performance

Why should I invest in topic?

With effective maintenance, you can improve both the upgradeability and scalability of your ServiceNow instance as well as ensure that you don't have performance issues related to your configurations.

What will this workbook help me do?

ServiceNow instances can be like cars—two people can own the same model, year, and make of a vehicle, but depending on how they use, maintain, and customize it, they could have two entirely different experiences with the car.

Perform the tasks in all five of the following steps as they are explained in the workbook in order to keep your instance running optimally.

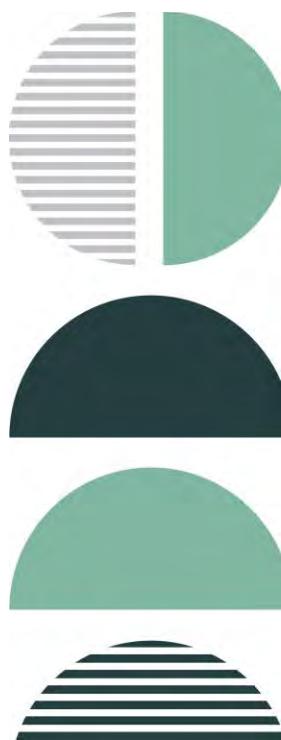
- Step 1 – Daily instance maintenance
- Step 2 – Weekly instance performance
- Step 3 – Monthly instance performance
- Step 4 – Quarterly instance performance
- Step 5 – Keep your instance continually improving

How to use this Success Workbook

This workbook will guide you through the steps to get started with ServiceNow governance.

Start by reading through the [Workbook Checklist](#) and review the steps and tasks to get started with ServiceNow governance. From the checklist page, you can either proceed through the workbook page by page or navigate only to the sections that you need using the hyperlinks.

Each section includes “check your progress” questions that you can answer to test whether you need to complete the tasks listed on that page or if you’ve already done so and should move forward. Hyperlinks are included throughout the workbook so you can navigate back and forth between the checklist page and different sections.



Workbook Checklist: Fine tune your ServiceNow platform with regular performance administration

Step 1: Daily instance maintenance

- Review the System Diagnostics homepage
- Review the previous day's slow transactions
- Consider your use cases

Step 2: Weekly instance maintenance

- Review your scheduled jobs
- Check for repeated errors in the error log
- Look for excessive logging
- Find log files over 1 GB
- Find slow-running running jobs
- Find long-running jobs
- Trend your top 20 transactions

Step 3: Monthly instance maintenance

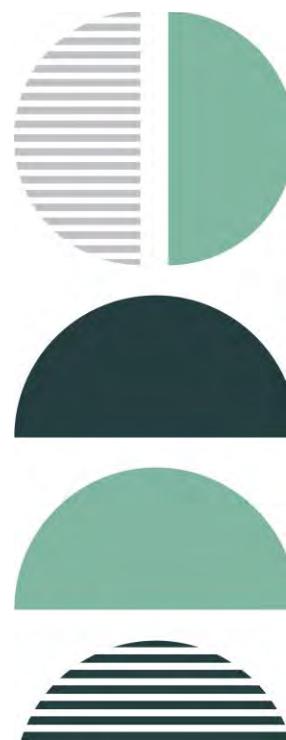
- Monitor your table growth rates
- Clean your tables
- Optimize your tables

Step 4: Quarterly Instance performance

- Check for coding that could impact your ability to upgrade

Step 5: Keep your instance continually improving

- Find and fix issues with your end to end response time



Step 1: Daily Instance Maintenance

What's slowing you down might be simple to find. Check the three following areas to see if your transactions or data pulls are issues.

Check your progress:

- Do you have a daily routine for monitoring your instances' health?
- Do you check for errors in your systems diagnostics?
- Do you receive total response times for transactions?
- Do you monitor users who are pulling large data sets and review their business need?

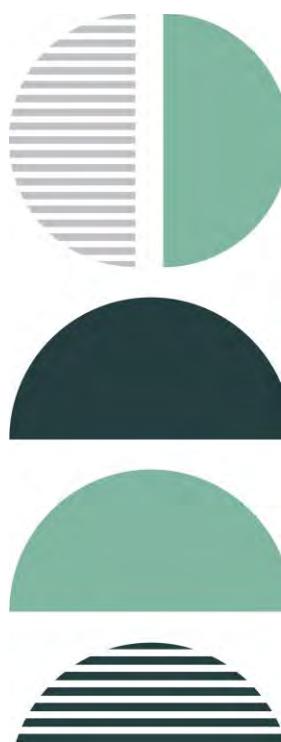
If you answered "yes" to the questions above, proceed to the [next step](#). If not, complete these action steps to complete this step:

1. Review the System Diagnostics homepage

The System Diagnostics page tracks some high-level statistics for each of the nodes (JVMs) in your instance. (See Figure 1.)

When you review this information, don't worry if the total number of JVM Classes differs between nodes. This metric is showing the number of classes that have been loaded and subsequently unloaded on each JVM. Depending on the activities users performed on each node, you might notice a legitimate disparity in what has been called since that JVM was last started.

- a) Go to the System Diagnostics homepage.
- b) Review the values on this page. You'll see values either in real time at the point the page is rendered or as cumulative counts (such as the transactions and error values) since the node was last started (see the JVM UP time).
- c) Track this information in a spreadsheet or a table in your instance. Include the uptime, number of errors since the last restart, the number of transactions performed, and the number of logged-in users for each node. While the Now Platform® does have built-in performance graphs that show this information, they're rendered on a per-node basis. If you spot an uncharacteristic jump in these numbers, it can be a good indicator there is an underlying performance issue you need to identify and address.



The screenshot shows the ServiceNow System Diagnostics homepage. At the top, there's a navigation bar with tabs like 'System Diagnostics' and 'Change Layout'. Below the header, there are several sections:

- Cluster Nodes Status:** Compares two nodes: app128167.iad103.service-now.com:iclemie002 and app128168.iad103.service-now.com:iclemie001. It includes metrics like Status, Logged in users, Last reported, JVM UP time, JVM CPU time, Scheduler running, Scheduler queue length, Memory (MB), JVM Classes, Transactions, Errors, GC metrics, and ConcurrentMarkSweep metrics.
- System overview:** Displays counts for Emails (recv) last 60 minutes (0), Emails (sent) last 60 minutes (0), Events pending (0), Log entries last 60 minutes (85). It also shows POP3 and SMTP status, both indicating "Email receiving is disabled, messages will not be processed".
- Database overview:** Shows database details: Type (mysql), Version (5.6.16-log), Driver (mariadb-jdbc), and JDBC (1.1).
- Database connections:** A table showing connection details for 0, 1, 2, 3, and 4 connections. The first three rows show 'free' status with specific SQL queries. The fourth row shows 'free' status with a query involving sys_amb_message0040 and sys_amb_message0040. The fifth row is a summary: Default thread 1 n //home/dnl-SEFT SUM(count(*) AS count FROM //SEFT count(*) AS count FROM sys_amb_message0040 sys_amb_message0040 WHERE sys_amb_message0040.number > 0 /* iclemie002 */ Default thread 1 n //home/dnl-SEFT SUM(count(*) AS count FROM //SEFT count(*) AS count FROM sys_amb_message0040 sys_amb_message0040 WHERE sys_amb_message0040.number > 0 /* iclemie002 */ /SELECT

Figure 1: System Diagnostics homepage

2. Review the previous day's slow transactions

The ServiceNow [system logs](#) module provides a variety of logs that you can use to troubleshoot and debug transactions and events that take place within the instance. The [transaction logs](#) in the system logs table records all browser activity for an instance. See image below:

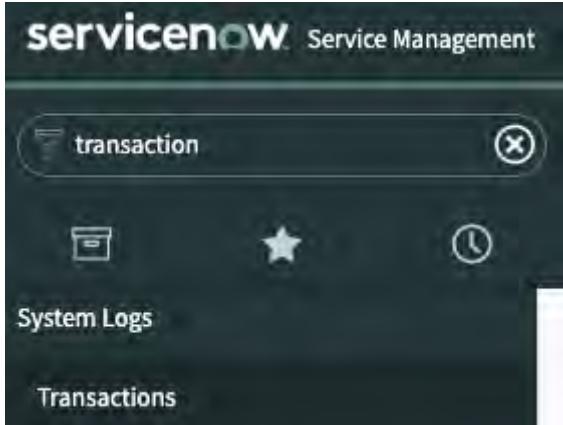


Figure 2: Access transaction logs through system logs table

By reviewing all users' transaction information, you can see which transactions are taking more than a reasonable amount of time. Before you start, ensure you have the [Client Transaction Timings plugin](#) enabled to capture all the data. Also note, depending on the size of your instance, this table can be huge and may time out before the results load, so ensure you load it with '`sysparm_filter_only=true`' then specify a filter to start looking at results.

In the list of transactions, you can view the total response times along with:

- A breakdown of the composite parts – This includes the time spent rendering in the browser, time spent on the server processing the transaction, and calculated time spent in the network.
- The details of which node processed the request
- The IP address of the host making the request
- The user making the request
- When the transaction occurred
- The session ID – Since this is also captured, it's possible to review the application logs to dissect every action a user has performed in their session.

Look for:

- If there is a particular time of day when transactions execute slowly
- If these transactions are all being processed by the same node – This suggests one or more transactions or background jobs are consuming large quantities of memory.
- If the transaction response times are poor across all nodes – This typically signifies the database was working harder than usual, impacting all transactions.

You might notice that the top 10 slowest transactions were all issued by a single user and are incident lists. If that's the case, you can review the user's settings or impersonate that user and try to recreate the issue.

You may also want to filter transactions by URL to analyze the slow transactions. Additionally, reporting on aggregate response times can be a powerful way to track how overall instance performance is changing with time.

For more detailed instructions on how to work with the transaction logs, see our [product documentation site](#).

3. Consider your use cases

How much data do your users truly need to review in a single screen? If you identify that your list transactions are slow, find out how much data your users are requesting. When a user selects "Show 100 rows per page" on a list, this sets a user preference. From that point forward, every time that user runs a list view, it will include 100 rows. This includes related and embedded lists on forms as well as the list views where the user set the preference.

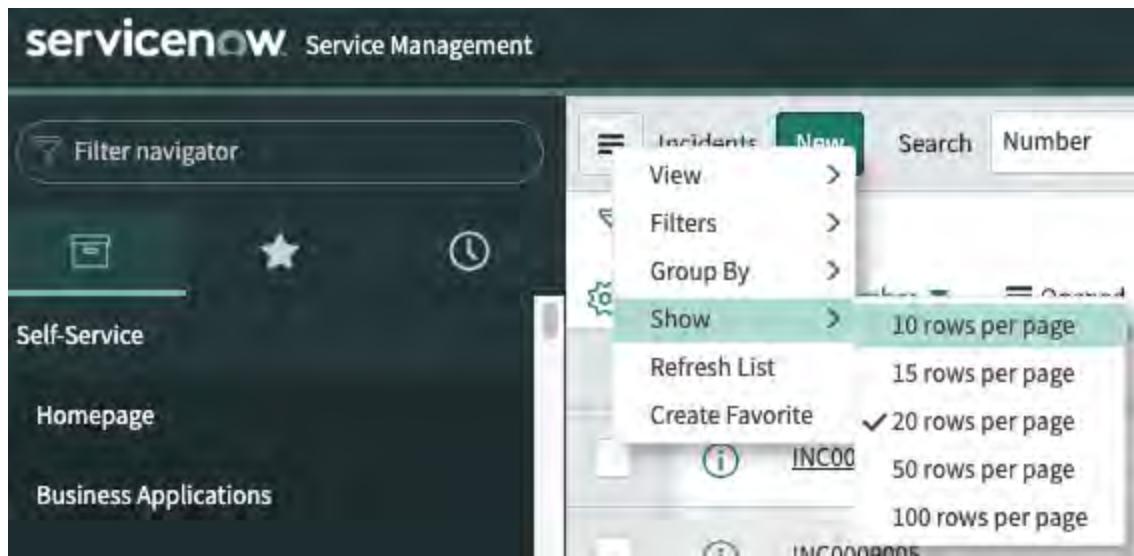


Figure 3: User chooses to show 100 rows per page

If you have a sufficient number of users who are requesting high numbers of rows, you could experience a platform wide performance degradation because those row counts are making high demands on the JVM memory required to render the lists.

This becomes problematic when a table with many reference fields must render a list. The platform has to build the relationships for all the reference fields for all the rows displayed on screen.

For most service environments, agents can't practically use more than 20–30 rows at a time. If the page load is fast, you can make a good case for "paging" to the next chunk of results rather than scrolling down. Consider to use the 'Glide.ui.per_page' property to define the items per page drop down options that are visible for users.

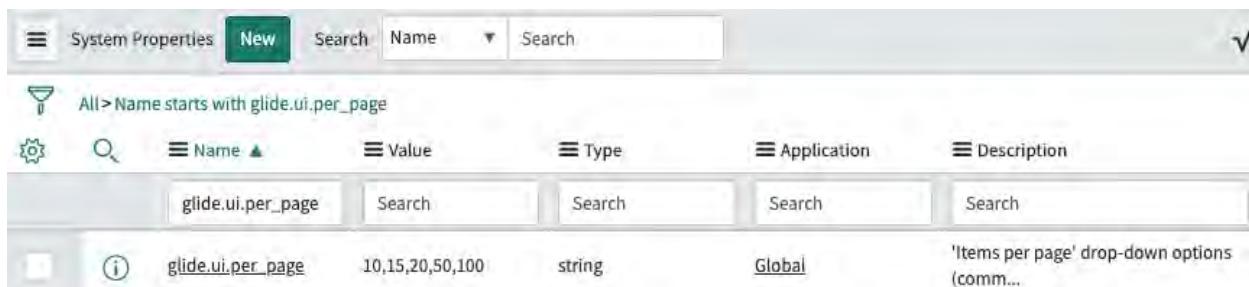


Figure 4 Glide.ui.per_page property

Consider removing any options for more than 50 rows at a time from the Now Platform. For further details, visit our knowledge base for an article called "[Good practices to improve instance performance through Rowcount, Related Lists and Dashboards](#)".

Step 2: Weekly Instance performance

If routine tasks have become a problem, finding errors, warnings, large log files, and slow jobs will help you get those tasks running smoothly.

Check your progress:

- Do your scheduled jobs run smoothly?
- Do you regularly investigate repeated errors and warning in your logs?
- Do you have a process to monitor users logging excessively and large log files?
- Do you regularly check for slow running jobs?

If you answered "yes" to each question above, proceed to the [next step](#). If not, complete these action tasks:

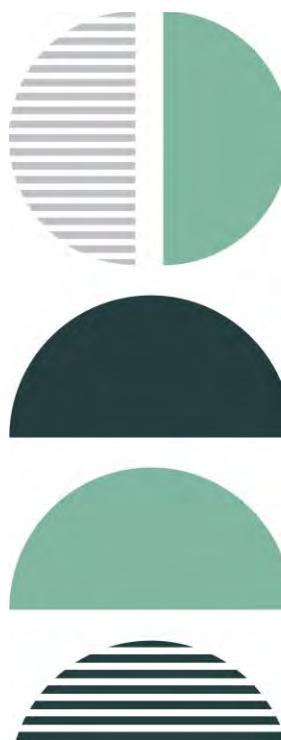
1. Review your scheduled jobs

By reviewing your scheduled job activity, you can help ensure that background activities, such as scheduled reports, discovery sensors, and other routine tasks, run smoothly. Check for anything that's running for more than an hour (3,60,000 ms)

- a) Navigate to **System Logs > Transactions** (Background)
- b) Apply a filter with the following conditions (see Figure 3):
 - i. Created > on > This week
 - ii. URL > starts with > JOB
 - iii. Response time > Greater than > 360000

NOTE: The response may take several minutes to return. If you don't return any results for an hour, try the same steps again with a more stringent value such as a half hour (18000 ms). Of course, some scheduled jobs are going to take a long time because they have a lot of work to process. Due to how the transaction log tables are stored and rotated in the database, it is not possible to use the "group by" function in the list view. Because of this, you may find it easier to do your trend analysis by exporting the result set to Excel.

- c) If you see a job that has executed multiple times for a long duration, drill down into what the problem is. The most common culprits are glide record queries, which request information from large tables with un-indexed "where" clauses or sorts/groups. These are often found inside of scripted transform maps and sometimes inside of script includes or business rules.



All of these conditions must be met

Created on Today AND URL starts with JOB AND Response time greater than 3600000

Figure 5: Filter showing all job transactions created in the current week that took more than 360,000 ms to complete

2. Configure scheduled jobs to use “Burst” scheduler workers

To insulate against backed up scheduler worker queues, set the Priority field on the sys_trigger entry for the scheduled job to 25. This ensures that the core jobs—event processors, SMTP sender, POP reader, and SMS sender—get triggered in a timely fashion. Should all the scheduler workers be busy with other jobs, an “important” job, which is more than 60 seconds past due, will spawn a “Burst” scheduler worker and execute in parallel to the core eight schedulers on the node.



Practitioner insight: Using “Burst” scheduler worker is good insulation, but don’t use it as an excuse to avoid addressing the root causes of the other long-running or high-volume scheduled jobs.

3. Check for repeated errors in the error log

- Navigate to the System Log.
- Select Errors.
- Look for actionable errors as well as frequency within the warning messages.
- Look for an increased volume in the number of errors by checking the total number in the top right corner of the screen.
- If you see a message like `org.mozilla.javascript.gen.sys_script_include_5daa9bf593233100fa71b33e867ffb9b_script_2555.call(sys_script_include_5daa9bf593233100fa71b33e867ffb9b.script)`, you can discover more about the error by examining the script_include record with that sys_id.
- Look for repeated errors in the warnings log
 - Navigate to the **System Log**.
 - Select **Warnings**.
 - Look for actionable warnings as well as frequency.
 - Based on the warnings you see, you may be able to search through a **sys_script** for the text output.

4. Look for excessive logging

Next, look for unusually large log files. This is a relatively crude—but surprisingly accurate—way to spot potential problems that warrant closer attention.

- Navigate to **Utilities > Node Log File Download**.
- Apply a **Name starts with local** filter. This will show you all the application logs for the node your session is active on.
- Note that the most recent five days of log files are unzipped, and the remaining files are zipped. The size value is measured in KBs. If you notice that one day is significantly larger than the others, or that there is a progressive increase in file size, you may need to investigate further.



Practitioner insight: The application logs all transactions and associated parameters, so if the number of users has ramped up or a new piece of functionality has gone live, the log files will naturally increase.

5. Find log files over 1GB

Log files over 1 GB may suggest possible frequent errors or logging issues that you need to fix.

- First, look for a significant spike in log file size.
- Note: This may indicate that the `gs.log` or `gs.print` statements, which were used in sub production testing, have not been removed. Unnecessary logging makes the tables bulky, which slows maintenance activates, like backups, and makes searching the syslog table slow and cumbersome. If that's the case, try to remove the `gs.log` and/or `gs.print` statements (unless you need them) and complete steps 1-4 again.
- Find the log files that are over 1 GB.

	Name	Size
<input type="checkbox"/>	localhost_log.2018-09-11.txt	27075984
<input type="checkbox"/>	localhost_log.2018-09-02.txt.gz	4274534
<input type="checkbox"/>	localhost_log.2018-09-01.txt.gz	4043307
<input type="checkbox"/>	localhost_log.2018-08-24.txt.gz	3974738

Figure 6: A log file over 1 GB

6. Find slow running jobs

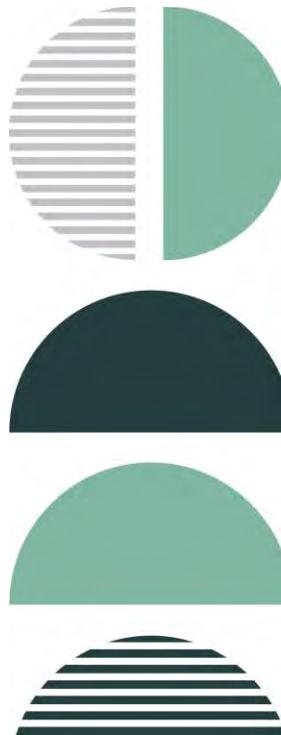
- Apply a Navigate to the **System Scheduler**.
- Select **Slow Job Log**.
- View the job details in the **URL and Response time** columns.
- Check the **SQL time column** for the time the job has been in the database.
- Check the **Business rule time** column for the amount of time the job has been in logic (execution).
- Right-click the **Response time** column heading and select Sort (z to a).
- Review the **Response time**, **SQL time**, and **Business rule time** to look for suspiciously long run times.

	All > Created on Today > URL starts with JOB:	Created	URL	Response time ▾	sql_count	Business rule count	Business rule time	System ID
	JOB:	Search	JOB:	Search	Search	Search	Search	Search
<input type="checkbox"/>	2018-09-11 02:00:44	JOB: Calculate Availability		43,830	12,405	3,011	43,808	app128167.iad103.service-now.com:iciemie002
<input type="checkbox"/>	2018-09-11 00:05:44	JOB: Update Data Certification Aging Levels		36,080	14,131	289	36,052	app128168.iad103.service-now.com:iciemie001
<input type="checkbox"/>	2018-09-11 03:33:11	JOB: Collect Table Stats		24,421	11,384	0	0	app128168.iad103.service-now.com:iciemie001
<input type="checkbox"/>	2018-09-11 09:06:31	JOB: UsageAnalytics Upload		16,121	306	0	0	app128167.iad103.service-now.com:iciemie002
<input type="checkbox"/>	2018-09-11 01:00:24	JOB: UsageAnalytics Count Persistor		15,980	3,352	44	7	app128168.iad103.service-now.com:iciemie001
<input type="checkbox"/>	2018-09-11 02:36:48	JOB: UA License Download		9,978	2,368	0	0	app128167.iad103.service-now.com:iciemie002
<input type="checkbox"/>	2018-09-11 00:05:39	JOB: text index events process		9,317	656	1	2,921	app128167.iad103.service-now.com:iciemie002
<input type="checkbox"/>	2018-09-11 10:46:24	JOB: Collect Table Per Hierarchy Stats		6,169	5,489	0	0	app128167.iad103.service-now.com:iciemie002

Figure 7: Example of a Slow Job log

7. Find long running jobs

- Navigate to **User Administration**.
- Select **Active Transactions**.
- If there is a background job running, it will show in the User column. Check the Age column to see how long it's been running.
- To kill a job that's been running for too long or seems to be completely stuck, right-click the **User name** and select **Kill**. **Only kill a job if you are ABSOLUTELY sure it is a stuck or illegitimate long running job.**
- A confirmation message will appear at the top of the list.



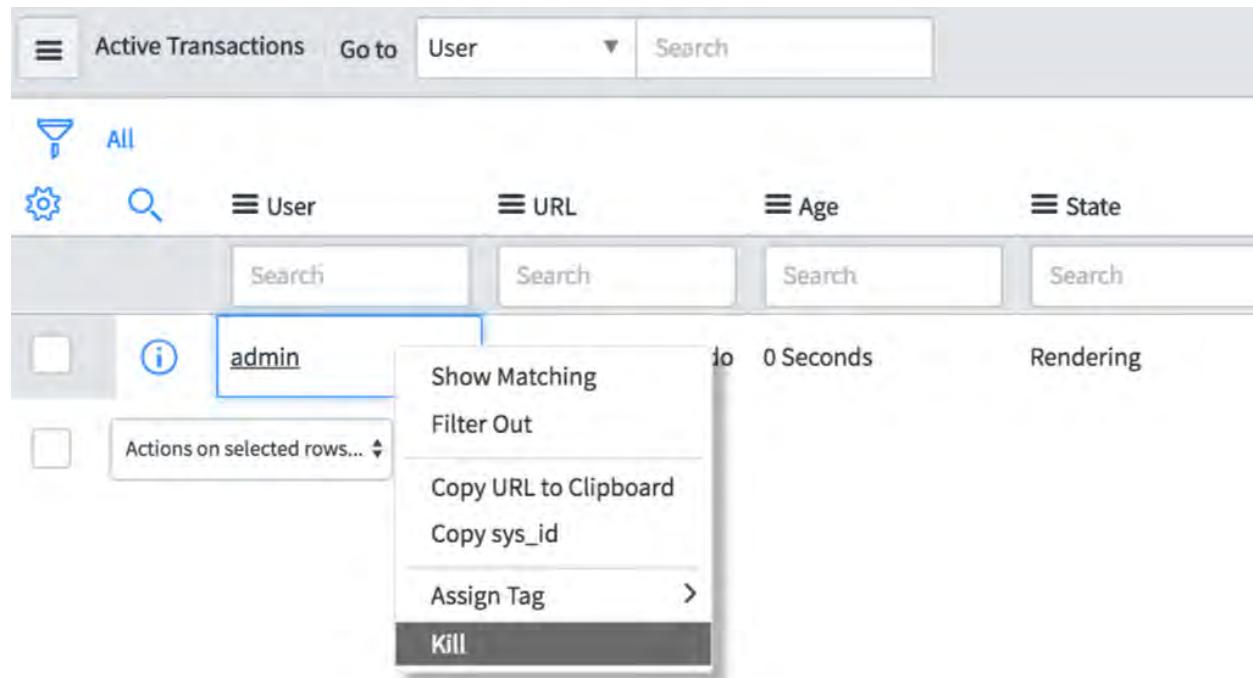


Figure 8: Right-click menu for killing a stuck job

8. Trend your top 20 transactions

Create a spreadsheet to trend your top 20 transactions. These may constitute the 20 most executed transactions in a given week. Or you may choose to track the most business-critical transactions (like incident or catalog transactions). Or it may be helpful to trend a mixture of these. Keep tracking data week after week .

Refer to this [knowledge base article](#) on the Now Support Portal for advice on how to investigate the performance of individual transactions.

Step 3: Monthly Instance performance

Don't let slow queries or transient data bog down your performance. Practice these monthly reviews to avoid those issues.

There are broadly two types of data stored in your ServiceNow instance:

- Persistent data that you want to retain, such as a task or user info
- Transient data that needs to be cleared after a given time frame, such as log information or staging data for imports or integrations

It's normal to see persistent data growth over time. But when you see increased table sizes along with a decreased response time, you may have list definitions or glide record queries that need to be refactored or indexed so you can accommodate the data growth.

If there's an increase in response times for end users and an increase in execution time for maintenance tasks such as cloning, backup, and restore, it probably means your data sets are growing. If that's the case, it's important to monitor your table growth on a monthly basis. If you created a spreadsheet to track your top 20 request response times, you can extend it to track the number of rows rendering in your tables, as well as your slow queries, so you can track their improvement over time.

Check your progress:

- Do you regularly track table growth?
- Do you purge or archive data that is no longer needed in the active system?
- Do you review slow queries that might indicate a table that needs to be indexed?

If you answered "yes" to each question above, proceed to the [next step](#). If not, complete these action tasks:

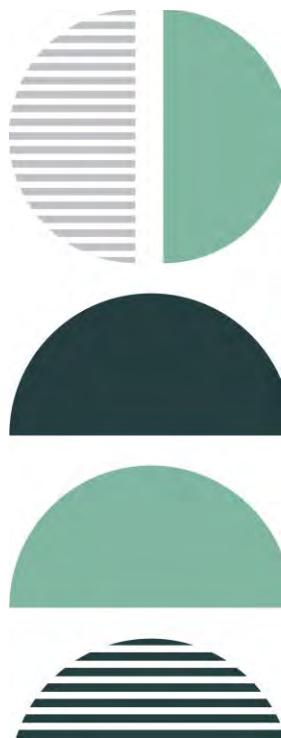
1. Monitor your table growth rates

When you check your table growth, you'll look for two things:

- a) Dramatic changes in size from month to month
- b) The total number of records in your tables

Follow these steps:

- a) Navigate to **System Definition**.
- b) Select **Tables**.
- c) Your list of tables appears on the screen.
- d) Filter the table information typing u_ in the box. This will show you all the user-created tables .
- e) To see the total number of records in a table, type <name of table>.list in the navigation field at the top left of the screen.



All > Table starts with u_ > Type = Collection	Table	Type	Reference	Default value	Display	Text index	Audit	Updated
u_	Search	=Collection	Search	Search	Search	Search	Search	Search
u_family_fuel	Collection			false	false	false	2017-04-16 17:12:35	
u_game	Collection			false	false	false	2017-05-01 17:57:14	
u_question	Collection			false	false	false	2017-05-01 17:58:57	
u_score	Collection			false	false	false	2017-05-01 18:11:31	

Figure 9: A table list showing a total of four tables

- f) Look for a dramatic change between the previous month and this month. If you see an increase, you may need to investigate why the spike occurred.
- g) Check the total records.

If the total number of records in your tables is over 50K, you may need to complete one of these tasks or a combination of them:

- **Index the fields used in filters or other queries** – To determine if you need to index fields, review the Slow Queries log. If you find slow queries, contact [ServiceNow for support about indexing](#).
- **Set up table rotation with from ServiceNow technical support** – For more information, read the next section and our product page on [table rotation](#).
- **Extend large tables to store more data or as a part of a table rotation process** – For more information, read our [product page explaining table extension](#) for data retention.
- **Clean tables by purging rows** – For more information, read the next section.



Practitioner insight: To see the total size of your database and the 10 biggest tables, use the [Database Footprint service catalog item](#) on the Now Support portal.

2. Clean your tables

To list the data you may want to purge (such as incidents older than one year):

- a) Type incident.list in the left navigation field, or type https://<instancename>.service-now.com/incident_list.do into your browser's address bar.
- b) A count of the records will display.
- c) You may want to amend your show x records preference to 10 or 20 to speed up the list rendering time.



Practitioner insight: If you discover that you need to purge more than one million records, submit a ticket on the Now Support portal to handle the purge. Purging them yourself could cause an outage or other issues.

3. Review the slow queries log

The Slow Queries log aggregates the data for similar queries. The platform records any SQL statement where the total execution time exceeds five seconds.

Not every slow query is a concern—you can expect to have a few. The slow queries on user created tables, those that begin with “u_,” are the ones that are cause for concern. Dramatic changes in size from month to month could indicate an issue.

- a) Navigate to System Diagnostics > **Stats > Slow Queries** to see your Slow Queries log. The platform records any SQL statement that takes more than 100ms to complete. The Slow Queries log groups these transactions into similar patterns, providing you with an example set of parameters

The screenshot shows the 'Slow Queries' interface with the following elements:

- Header: 'Slow Queries' (highlighted in blue), 'New', 'Go to', 'Average execution time (ms) ▾', 'Search'.
- Filter bar: 'All > Window End is empty > Window Start is empty'.
- Action buttons: 'Run', 'Save...', 'AND', 'OR', 'Add Sort', '✖'.
- Text: 'All of these conditions must be met'.
- Condition 1: 'Window End ▾ is empty ▾ AND OR ✖'.
- Condition 2: 'Window Start ▾ is empty ▾ AND OR ✖'.

Figure 10: A Slow Queries log

- b) Type **u_** in the **Example** text box

Search	Search	Search	*u_	Search	Search	
	Average execution time (ms)	Execution count	Total execution time	Example	First sighting	Example Java stack trace
<input type="checkbox"/>	1.34	3,884	5 Seconds	INSERT INTO sh\$sys_upgrade_state (`sys_i...`	2018-09-01 11:33:56	glide.lazy.writer[glide] com.glide.db.s...
<input type="checkbox"/>	3	1,846	5 Seconds	SELECT sys_metadata0.`sys_replace_on_upg...	2018-08-14 03:45:22	glide.scheduler.worker.4 com.glide.db.s...
<input type="checkbox"/>	1.7	4,729	8 Seconds	SELECT `COLUMN_NAME` FROM 'information_s...	2018-08-09 14:08:27	glide.scheduler.worker.2 com.glide.db.s...

Figure 11: A Slow Query log showing the Example text box.

The slow query log records the queries' patterns since the beginning of time (or since the last time **sys_query_pattern** was truncated). You may find the results more meaningful by applying a filter to show only patterns that were first sighted in the last month and that occurred more than 100 times.

If you click through to an individual query pattern record, you'll see an example URL where the query was generated, the first and last sighting, the number of executions, and the average execution time.

The stacktrace of the thread executing the query also displays. From here:

- Cross-reference which element on the screen requested the information.
- Once you know this, you can review the gauge or list that made the call and verify whether it would benefit from refactoring or supporting with an index. Many times, you can significantly reduce the execution time by simply adding **active=1** to a query. This will only query and return active records, thus reducing the number of records included in the query.

Step 4: Quarterly Instance performance

Running a quarterly review of your upgrade history can tell you a lot about your instance performance as you can see issues/performance trending over time.

Check your progress:

- Have you checked your skipped, inserted, updated, and deleted records for unusual behavior such as odd growth patterns, mass deletes, etc.?
- Do you monitor changes or customizations to ServiceNow out of the box object?

If you answered "yes" to each question above, proceed to the [next step](#). If not, complete these action steps:

1. **Check your instance for any configurations that could impact your upgrades**
 - a) Navigate to **System Diagnostics**.
 - b) Select **Upgrade History**.
 - c) A table showing your upgrade history appears. Under the **Upgrade started** column, look for the last upgrade and select it.
 - d) Within the upgrade record, check the **Skipped Changes to Review** tab to see what was skipped, updated, inserted, or deleted.

The screenshot shows the 'System Upgrades' screen for an upgrade named 'glide-istanbul-09-23-2018_patch7-06-12-2018_06-21-2018_1724.zip'. The 'Upgrade History Details' section displays statistics: Changes skipped (14), Changes applied (18,783), and Changes processed (18,797). A tooltip provides definitions for these terms. Below the details, a navigation bar includes tabs for 'Skipped Changes to Review' (selected), 'Skipped Changes Reviewed', 'Customizations Unchanged', 'Changes Applied', and 'Upgrade Details'. The bottom part of the screen shows a list of skipped changes with columns for Disposition, Priority, Resolution, Comment, Target name, Plugin, Type, and Table. A search bar and pagination controls are also visible.

Figure 12: An upgrade record showing the **Skipped Changes to Review** tab

- e) Review the name of the table and the sys_id of the record to see exactly what was skipped and where it was skipped from.
- f) Check the type of object that was skipped. If the upgrade skipped an out-of-the-box object, consider reverting that object so it is updated with every upgrade.

[Return to workbook checklist](#)

Step 5: Continually improve your instance

So far, all the activities mentioned in this workbook contribute to continuous improvement. Check out the tasks in this stage if you're experiencing:

- Poor list response times
- Poor form load and submit response times
- Poor module response times

Check your progress:

- Have you checked form load response time?
- Have you checked form submit time?
- Have you monitored modules response times?

If you answered "yes" to the questions above, you have completed the steps outlined in the workbook. If not, complete these actions:

1. Find out if low-response, form load, form submit, and module response times are keeping your instance down.
 - a) Navigate to your used forms and select **Incident**.
 - b) Select **Create New**.

Figure 13: A new incident record with the end-to-end response time bar (bottom right corner)

[Return to workbook checklist](#)

- c) When the form opens, at the bottom right you will see the details of the end-to-end response time displayed by a colorful bar (see Figure 11), including:
- **Response time (ms)** – The total time between clicking **Create New** and seeing the form load
 - **Network** – The total time spent over the wire
 - **Server** – The total time spent processing the request on the server
 - **Browser** – The total time the browser spent rendering the form, including running the client-side script
- d) Click any of the elements of the end-to-end response time to see its details. (See Figure 14.)

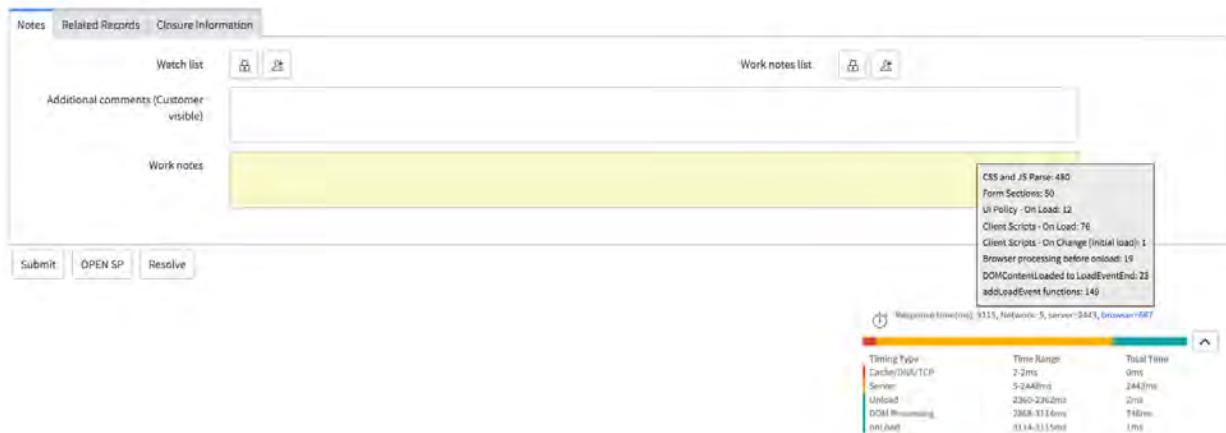


Figure 14: An incident record showing end-to-end response time details

In the pop-up box, review how much time each section, script, field, etc., took to load. This information helps you identify any potential bad scripts or bottlenecks in your load times so you can address them.

When you have slow form load times, the most common causes are:

- **Related/embedded lists** – To fix this, either look for a bad query or filter or the number of rows you're requesting.
- **A high number of AJAX calls** – You may want to consolidate these into fewer round trips.
- **An inefficient client-side script** – Avoid synchronous AJAX calls or DOM manipulation.

For additional assistance, check out:

[Troubleshooting performance](#)

[Client transaction timings](#)

[Performance and performance debugging](#)

[Return to workbook checklist](#)

Plan the Update Process

Before working with update sets, **create a standard process** for moving customizations from instance to instance

1. Check that both instances are on the same version
2. Complete your update sets as you finish small to medium-sized tasks.
3. Ensure that all base system records have matching sys_id fields.
4. Identify a common path for update sets to move from instance to instance.
5. Plan for when to commit the update sets to production.
6. Consider a standard naming convention to ensure update set names are clear.

1. Check that both instances are on the same version. Customizations may not work if they rely on code that has changed between versions.
2. Determine the changes to make in a single update set. Complete your update sets as you finish small to medium-sized tasks. As update sets get larger, it becomes harder to review them, takes longer to identify specific changes within them, increases the risk of conflicts with other update sets, and takes more time to preview and commit them. This is especially true if the update sets contain schema changes or revisions to large workflows or if the set has to be backed out.
3. Ensure that all base system records have matching sys_id fields. Some base system records are created on an instance after provisioning and do not match between different instances, leading to problems with update sets. The best way to avoid this issue is to:
 - Provision production and non-production instances.
 - Clone the production instance onto the non-production instance.
4. Identify a common path for update sets to move from instance to instance and maintain that model. Never migrate the same update set from multiple sources. Move update sets from dev to test and then from test to production.
5. Plan for when to commit the update sets to production. Avoid committing an update sets to a production instance during business hours. The instance may perform slower temporarily as the update sets applies.
6. Make sure update set names are clear. Create a naming convention to coordinate changes from multiple developers and to reference when committing the changes to another instance.
 - If update sets are being generated as fixes for problems, consider including the problem ticket in the name (for example, **PR10005 - Duplicate Email Issues Fix**).
 - If you need more than one update set to address a problem, include a sequence number in the naming convention so that update sets are applied in the order that they were created (for example, **PR10005 - Duplicate Email Issues Fix** and **PR10005.2 - Duplicate Email Issues Fix**).

Plan the Update Process (continued)

Before working with update sets, **create a standard process** for moving customizations from instance to instance

7. Understand what records are generated, which customizations are tracked, which dictionary changes are valid, and which customizations can be backed out once applied.
8. Double-check that the correct update set is selected.

7. Understand the following about update sets:
 - What records are generated.
 - Which customizations are tracked.
 - Which dictionary changes are valid .
 - Which customizations can be backed out (reversed) once applied.
8. Before making any customizations, double-check that the correct update set is selected.

Working with Update Sets

Recommendations to **Avoid Errors** and **Performance Issues**



- Do not delete update sets.
- Do not include the **system_id** field from the `ldap_server_config` record in an update set.
- Do not back out the Default update set.
- Never change the Update Set field value in a Customer Update record.
- Do not mark an update set as complete until it is ready to migrate.
- Do not manually merge updates into an update set.
- If a committed update set has a problem in the test instance, build the fix in another update set in the development instance.

- Do not delete update sets. If an update set is deleted, any updated records may be overwritten in the next update.
- Do not include the **system_id** field from the `ldap_server_config` record in an update set. An update set from a working configuration points to the wrong `system_id` node for the target instance and does not work.
- Do not back out the Default update set. This action causes damage to the system.
- Never change the **Update Set** field value (`update_set`) in a Customer Update record (`sys_update_xml`). If a customization is made in the wrong update set, take the following action:
 - Switch to the desired update set.
 - Modify the object (record) that was originally changed. You can make a trivial change, such as adding a field.
 - Save the record.
 - Back out the change just performed, and then save the record again. This action ensures that the latest version of the object is included in the desired update set and prevents duplicate updates for the same object in a single update set.
- Do not mark an update set as **Complete** until it is ready to migrate. Once an update set is complete, do not change it back to **In progress**. Instead, create another update set for the rest of the changes, and make sure to commit them together in the order that they were created. Naming conventions may help in this case (for example, Performance Enhancements and Performance Enhancements 2).
- Do not manually merge updates into an update set. Always use the Merge Update Sets module. This tool compares duplicate files between update set and selects the newest version.
- If a committed update set has a problem in the test instance, build the fix in another update set in the development instance. Commit this set to the test instance, and then make sure both sets are migrated to the production instance and committed in the order they were made.

Working with Update Sets

Recommendations to **Avoid Errors** and **Performance Issues**



- Always preview an update set before committing it.
- Set completed update set on the production instance to **Ignore**.
- Keep a to-do list of manual changes and data loads that need to be completed after an update set is applied.
- Do not make too many changes at one time.
- You cannot change a single update to update across multiple domains.

- Always preview an update set before committing it.
- Set completed update set on the production instance to **Ignore**. This state ensures the update set is not reapplied when cloning the instance.
- Keep a to-do list of manual changes and data loads that need to be completed after an update set is applied.
- Do not make too many changes at one time. Verify that the correct changes have been made incrementally.
- You cannot change a single update to update across multiple domains (that is, global and TOP domains). This function is not supported in the ServiceNow Platform.

Warning: Update sets allow moving changes between instances that may be running different family release versions and different features. You can always load an update set created on an older family release on an instance running a newer family release. Loading an update set created on a newer family release on an instance running an older family release requires additional testing to determine compatibility. Updates from newer family releases may not produce the same functionality when moved to older family releases. In extreme cases, newer family release updates may cause outages or data loss on an older family release instance. Where possible, avoid moving updates from newer family releases to older family releases. Similar constraints apply to moving updates between instances running different versions of ServiceNow Store apps.

www.servicenow.com/services/training-and-certification.html



2225 Lawson Ln, Santa Clara, CA 95054, USA • (858) 720-0477 • (858) 720-0479 • www.servicenow.com

©2022 ServiceNow, Inc. All rights reserved.

ServiceNow believes information in this publication is accurate as of its publication date. This publication could include technical inaccuracies or typographical errors. The information is subject to change without notice. Changes are periodically added to the information herein; these changes will be incorporated in new additions of the publication. ServiceNow may make improvements and/or changes in the products(s) and/or the program(s) described in this publication at any time. Reproduction of this publication without prior written permission is forbidden. The information in this publication is provided "as is". ServiceNow makes no representations or warranties of any kind, with respect to the information in this publication, and specifically disclaims implied warranties of merchantability or fitness for a particular purpose. ServiceNow is a trademark of ServiceNow, Inc. All other brands, products, service names, trademarks or registered trademarks are used to identify the products or services of their respective owners.