

NORTHSTAR HEALTH CLINICS- EHR DISRUPTION SCENARIO

Lecturer:

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Part 1: Incident, Problem, Change

IT Service Management

Grup 11 - MLTI (B)

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Summary

This report documents the end-to-end handling of recurring disruptions in the Electronic Health Record (EHR) system at Northstar Health Clinics. The team completed a full ITIL-aligned workflow consisting of Incident Management, Problem Management, and Change Management to restore system stability and prevent future outages. Five incidents were analyzed and consolidated into a single problem record, leading to the identification of instability within the EHR Application and Database servers as the root cause. A Normal Change Request was then designed, approved, scheduled, and implemented to deliver a permanent fix. This structured approach ensured service restoration, minimized clinical impact, and reinforced alignment with ITIL 4 practices for effective service management.

Learning Objectives

This final project is designed to achieve the following learning objectives:

- a. Apply ITIL 4 practices, specifically Incident Management, Problem Management, and Change Enablement, to a real-world service disruption scenario.
- b. Configure and utilize ServiceNow modules, including CMDB, incident forms, problem records, and change requests to demonstrate practical ITSM workflows.
- c. Perform structured analysis, including root cause identification, impact assessment, and mapping of incidents to related CIs.

Understand the integration of ITIL concepts, such as the service value system, guiding principles, and continual improvement, within operational IT service delivery.

Background of the Scenario

Northstar Health Clinics relies heavily on its Electronic Health Record (EHR) system to support day-to-day healthcare operations, including patient documentation, clinical decision-making, appointment scheduling, and laboratory order processing. Due to the critical role of the EHR, even short periods of downtime can directly interrupt clinical workflows, delay patient care, and reduce operational efficiency. Over several days,

multiple users reported performance degradations, login failures, and brief service outages. These recurring disruptions indicated a systemic issue requiring structured investigation and coordinated response across Incident, Problem, and Change Management processes.

Approach

The approach used in this project follows the ITIL 4 Service Value System (SVS), ensuring that activities are interconnected and value-driven. The methodology consisted of:

1. Incident Management

Each user-reported issue was logged, categorized, prioritized, and linked to the appropriate Configuration Item (CI). Five incidents were documented, highlighting patterns of performance degradation and system instability.

2. Problem Management

After recognizing recurring symptoms, the team created a consolidated problem record, conducted root cause analysis, documented workarounds, and linked all related incidents and CIs for full visibility and traceability.

3. Change Management

A Normal Change Request was developed to implement a permanent fix based on the identified root cause. The change was authorized, scheduled, executed, and reviewed using a controlled, auditable process in ServiceNow.

4. CMDB Utilization

Manually created EHR-related CIs provided a consistent foundation for tracking service dependencies and ensuring accurate impact analysis.

This structured workflow ensured alignment between practices and demonstrated how ITIL 4 enables coordinated service restoration.

CI Preparation Step

PDI Link : <https://dev306806.service-now.com>

username : admin

password : l10Spkd*ZjT+

Before creating any incidents, our group first prepared the required Configuration Items (CIs) in the CMDB. Since the EHR-related CIs are not available in the default PDI, we manually created three entries:

1. **EHR Service** (Class *Business Service*)
2. **EHR Application Server** (Class *Application Server*)
3. **EHR Database Server** (Class *Database Server*)

EHR Service

Configuration Item - EHR Service

Name	EHR Service
Asset tag	
Assigned to	
Category	Business Service
Fault count	0
Installed	2025-12-01 08:33:40
Install Status	Installed

Open in CMDB Workspace | Update | Delete

Related Links
Subscribe

EHR Application Server

Configuration Item - EHR Application Server

Name	EHR Application Server
Asset tag	
Assigned to	
Category	Application Server
Fault count	0
Installed	2025-12-01 08:36:46
Install Status	Installed

Open in CMDB Workspace | Update | Delete

Related Links
Subscribe

EHR Database Server

Configuration Item
New record

Name	EHR Database Server
Asset tag	
Assigned to	
Category	Database Server
Fault count	0
Installed	2025-12-02 08:51:48
Install Status	Installed

Submit

Configuration Item List

servicenow All Favorites History Workspaces Admin Configuration Items Search Actions on selected rows... New

All > Name >= EHR

Name	Manufacturer	Location	Description	Class	Updated	Maintenance schedule
EHR Application Server	(empty)	(empty)	Search	Configuration Item	2025-12-01 17:37:19	(empty)
EHR Database Server	(empty)	(empty)	Search	Configuration Item	2025-12-01 17:52:25	(empty)
EHR Service	(empty)	(empty)	Search	Configuration Item	2025-12-01 17:35:38	(empty)

Each with install status set to **In Use**. After saving these records, we verified that all three CIs appeared in the Configuration Item lookup field on the Incident form. These CIs were then reused consistently in every Incident, in the consolidated Problem record, and in the Change Request, ensuring traceability between technical components and service disruptions.

Incident Management

The five incidents collectively indicate that the EHR system is experiencing repeated stability problems. In the first incident, users encounter sluggish page responses that slow down their work. The second incident is characterized by intermittent database connectivity issues that make users repeatedly reload the page. In the third case, several staff members are unable to log in during a particular time period, prompting escalation to the Application Support team. The fourth incident notes that the EHR becomes unresponsive in the middle of clinical activities and that this behavior occurs multiple times in a single week, directly interrupting patient services. The fifth incident records a brief system outage that generates error messages for all users before normal service is restored a few minutes later.

Incident 1 - Slow EHR Pages

Dr. Emily Carter reported experiencing significant latency where patient charts are taking over 30 seconds to load, starting from 8 AM. This performance issue hampers workflow efficiency and is linked to the **EHR Service**, classified as a **P3** priority.

Incident 2 – Database Connection Error

Sarah Lopez reported encountering a "Database not responding" error message while attempting to schedule patients, requiring multiple page refreshes to proceed. This connectivity issue points to instability in the **EHR Database Server** and is assigned a **P3** priority.

Incident 3 – Login Failures (Escalation Required)

John Miller reported that several staff members were unable to log in to the EHR system during the peak window of 8-9 AM, only gaining access after repeated attempts. This access issue involves the **EHR Application Server**, is classified as **P2**, and requires escalation to Application Support.

Incident 4 – EHR Freezes During Patient Care

Dr. Alex Nguyen reported that the EHR system froze repeatedly while entering lab orders, directly causing delays in patient care. Since this freezing has occurred multiple times throughout the week, it is associated with the **EHR Service** and designated as a **P2** priority.

Incident 5 – Five-Minute Outage

Karen Patel reported a complete system outage where the EHR was unavailable for approximately five minutes around 8:30 AM, displaying error messages to all users. This service disruption is attributed to the **EHR Application Server** and is categorized as a **P2** priority.

Incident 1 – Slow EHR Pages

The image displays two screenshots from the ServiceNow platform. The top screenshot shows the 'User' record for 'Emily Carter' (User ID: NSC-01). It includes fields for First name (Emily), Last name (Carter), Title (Dr), Department, and various contact and calendar integration details. The bottom screenshot shows the 'Incident' record for 'INC0010021'. It details the incident number, caller (Emily Carter), category (Software), and subcategory (~None~). The incident state is 'New', impact is '3 - Low', urgency is '3 - Low', and priority is '5 - Planning'. The description notes 'EHR running very slow' and 'Patient charts are taking 30 seconds or more to load this morning. Started around 8 AM.' Both screenshots show standard ServiceNow navigation and search tools.

Incident 2 - Database Connection Error

The screenshot shows the ServiceNow User Management interface. A new user account is being created with the following details:

- User ID: NSC02
- First name: Sarah
- Last name: Lopez
- Title: (empty)
- Department: (empty)
- Email: sarahlopez@gmail.com
- Identity type: Human
- Language: --None--
- Calendar integration: Outlook
- Time zone: System (America/Los_Angeles)
- Date format: System (yyyy-MM-dd)
- Business phone: (empty)
- Mobile phone: (empty)
- Active: checked
- Internal Integration User: unchecked

Buttons at the bottom include Update, Set Password, and Delete.

The screenshot shows the ServiceNow Incident Management interface. A new incident is being created with the following details:

- Number: INC0010020
- * Caller: Sarah Lopez
- Category: Software
- Subcategory: --None--
- Service: (empty)
- Configuration item: EHR Database Server
- * Short description: Database not responding
- Description: I received a 'Database not responding' message while scheduling patients. I had to refresh twice.
- Channel: --None--
- State: New
- Impact: 2 - Medium
- Urgency: 2 - Medium
- Priority: 3 - Moderate
- Assignment group: (empty)
- Assigned to: (empty)

Buttons at the bottom include Update, Resolve, and Delete.

Incident 3 - Login Failures (Escalation Required)

servicenow All Favorites History Workspaces Admin User - John Miller ⚡

User = User John Miller

User ID: NSC08 First name: John Last name: Miller Title: <input type="text"/> Department: <input type="text"/>	Email: john.miller@gmail.com <input type="button" value="Email"/> Identity type: Human Language: -- None -- Calendar integration: Outlook Time zone: System (America/Los_Angeles) Date format: System (yyyy-MM-dd) Business phone: <input type="text"/> Mobile phone: <input type="text"/>
Password needs reset: <input type="checkbox"/> Locked out: <input type="checkbox"/> Active: <input checked="" type="checkbox"/> Internal Integration User: <input type="checkbox"/>	
<input type="button" value="Update"/> <input type="button" value="Set Password"/> <input type="button" value="Delete"/>	
Related Links View linked accounts View Subscriptions Reset a password	
Entitled Custom Tables Roles (1) Groups Delegates Subscriptions User Client Certificates	
Role: user State: Active Inherited: false Inheritance Count: 1 to 1 of 1	

servicenow All Favorites History Workspaces Admin Incident - INC0010016 ⚡

Incident = Incident INC0010016

Number: INC0010016 * Caller: John Miller <input type="button" value="Search"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>	Channel: -- None -- State: In Progress Impact: 2 - Medium Urgency: 1 - High Priority: 2 - High Configuration item: EHR Application Server <input type="button" value="Search"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>
Assigned to: Andrew Och <input type="button" value="Search"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>	
Description: Staff unable to login	
<input type="button" value="Related Search Results"/>	
Notes: <input type="checkbox"/> Related Records: <input type="checkbox"/> Resolution Information: <input type="checkbox"/>	
Knowledge: <input type="checkbox"/> Resolution code: -- None -- Resolution notes: <input type="text"/>	
Resolved by: <input type="text"/> <input type="button" value="Search"/> Resolved: <input type="text"/> <input type="button" value="Edit"/>	
<input type="button" value="Update"/> <input type="button" value="Resolve"/> <input type="button" value="Delete"/>	
Related Links Show SLA Timeline Resolve SLAs	
Task SLAs (2) Affected CIs (1) Impacted Services/CIs Child Incidents	
Task SLAs (2) SLA definition Type Target Stage Business time left Business elapsed time Business elapsed percentage Start time Stop time	
Priority 2 resolution (8 hour) SLA Resolution In progress 8 Hours 0 Seconds 0% 2025-12-01 18:39:40 (empty)	
Priority 4 resolution (2 day) SLA Resolution Cancelled 2 Days 0 Seconds 0% 2025-12-01 18:39:40 2025-12-01 19:03:22	

Incident 4 - EHR Freezes During Patient Care

Favorites History Workspaces Admin User - New Record ★ Search New record

To set up the User's password, save the record and then click Set Password.

User ID	NSC-05	Email	alexnguyen@example.com ✉
First name	Alex	Identity type	Human ▼
Last name	Nguyen	Language	-- None -- ▼
Title	Dr. ♀	Calendar integration	Outlook ▼
Department	<input type="text"/> 🔍	Time zone	System (America/Los_Angeles) ▼
Password needs reset	<input type="checkbox"/>	Date format	System (yyyy-MM-dd) ▼
Locked out	<input type="checkbox"/>	Business phone	<input type="text"/>
Active	<input checked="" type="checkbox"/>	Mobile phone	<input type="text"/>
Internal Integration User <input type="checkbox"/>		Photo Click to add...	

Submit

Favorites History Workspaces Admin Incident - INC0010013 ★ Search New Discuss Follow Update Resolve

Incident INC0010013

Number	INC0010013	Channel	-- None -- ▼
* Caller	Alex Nguyen 🔍 🕒 ⓘ	State	New ▼
Category	Software ▼	Impact	2 - Medium ▼
Subcategory	-- None -- ▼	Urgency	1 - High ▼
Service	<input type="text"/> 🔍	Priority	2 - High ▼
Service offering	<input type="text"/> 🔍	Assignment group	<input type="text"/> 🔍
Configuration item	EHR Service 🔍 🕒 ⓘ	Assigned to	<input type="text"/> 🔍 💡
* Short description	EHR freezing during visit		
Description	The EHR froze when entering lab orders, delaying patient care. This has happened multiple times this week.		

Related Search Results >

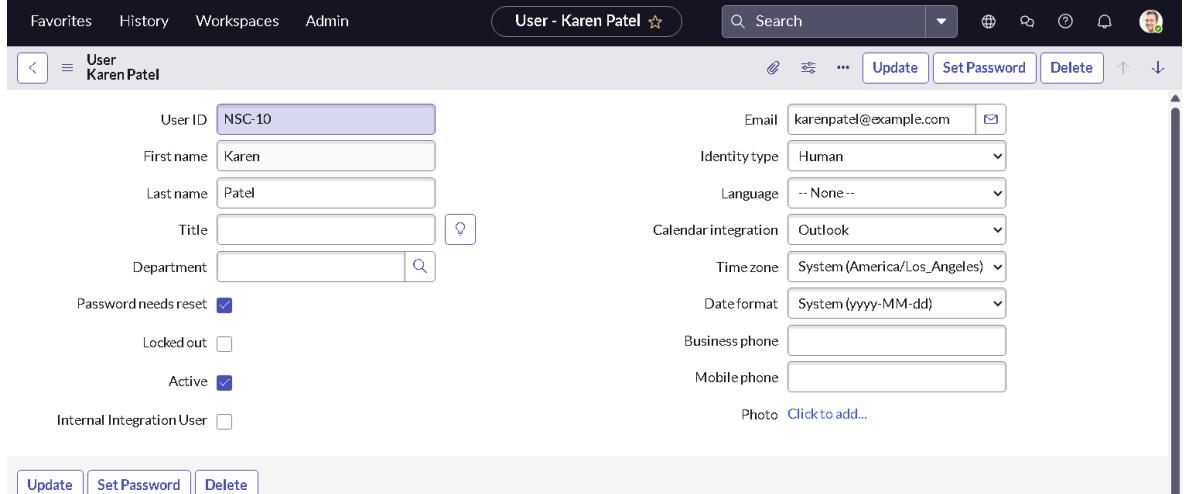
Notes Related Records Resolution Information

Watch list 🔒 🕒

Worknotes list 🔒 🕒

Worknotes 💡 Worknotes 📝

Incident 5 – Five-Minute Outage



User - Karen Patel ★

User ID: NSC-10 **Email:** karenpatel@example.com ✉️

First name: Karen **Identity type:** Human

Last name: Patel **Language:** -- None --

Title: 🔍 **Calendar integration:** Outlook

Department: 🔍 **Time zone:** System(America/Los_Angeles)

Password needs reset: **Date format:** System(yyyy-MM-dd)

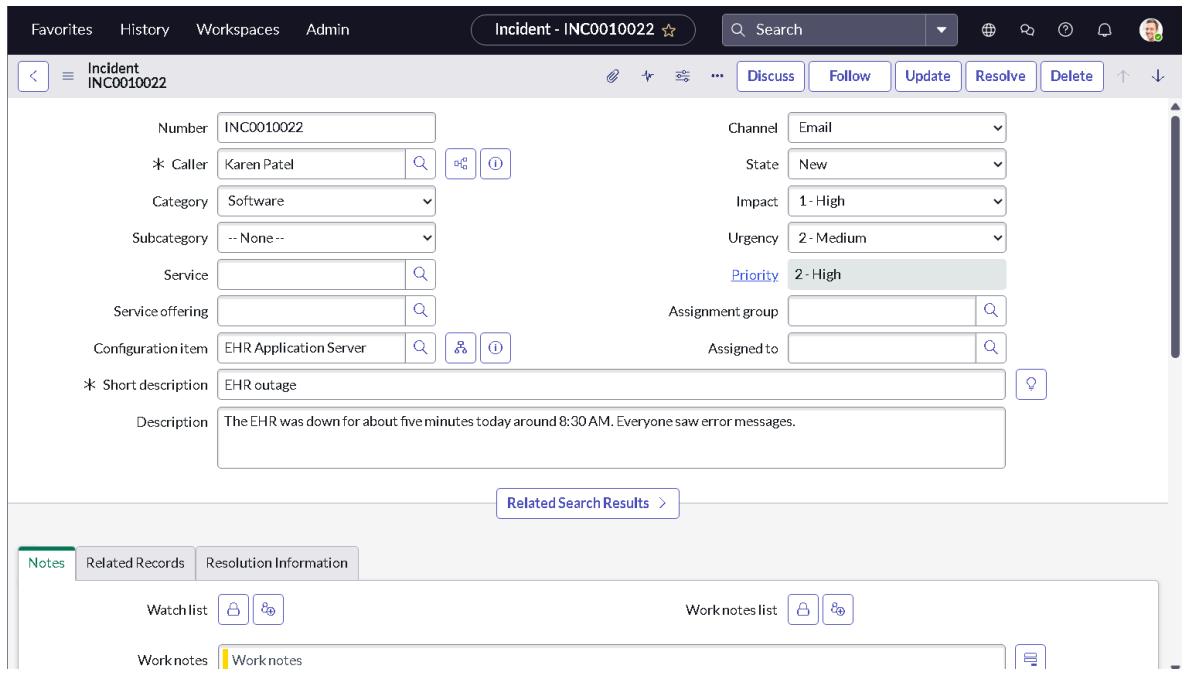
Locked out: **Business phone:**

Active: **Mobile phone:**

Internal Integration User:

Photo: [Click to add...](#)

Actions: Update Set Password Delete



Incident - INC0010022 ★

Number: INC0010022 **Channel:** Email

*** Caller:** Karen Patel **State:** New

Category: Software **Impact:** 1-High

Subcategory: -- None-- **Urgency:** 2-Medium

Service: 🔍 **Priority:** 2-High

Service offering: 🔍 **Assignment group:** 🔍

Configuration item: EHR Application Server 🔍 **Assigned to:** 🔍

*** Short description:** EHR outage

Description: The EHR was down for about five minutes today around 8:30 AM. Everyone saw error messages.

Related Search Results: >

Notes: Related Records Resolution Information

Watch list: Watch list Work notes list

Work notes: Work notes Work notes list

Problem Management

Problem Management in this case was used to step back from individual tickets and look for one common source behind the disruptions in the EHR service. Rather than treating slow screens, failed logins during peak hours, frozen sessions in the middle of clinical work, and database connection issues as separate events, the team recognized them as a single pattern that suggested a broader weakness in the system. To support this analysis, they opened one consolidated Problem record and attached all relevant incidents to it. The investigation that followed pointed to instability on the EHR Database Server as the main driver of these symptoms, resulting in response delays, sporadic failures, and brief periods when the system was unavailable.

As an immediate response, the team applied short-term measures such as controlled restarts and adjustments to load balancing to lessen the impact felt by users. For a more sustainable outcome, they designed a planned change that included database performance tuning and regular, scheduled maintenance so similar issues would be less likely to reappear. All associated incidents were linked back to the Problem record, creating a clear chain from user-facing symptoms to technical root cause and documented corrective actions. This structured approach helped restore stability to the EHR service and reinforced the alignment between the Incident Management, Problem Management, and Change Management processes.

Step 1: Create the Problem Record

Step 2: Conduct Root Cause Analysis

Step 3: Link Related Records

Step 1 - Create the Problem Record

New > Assess > Root Cause Analysis > Fix in Progress > Resolved > Closed

Number	PRB0040004	Model	General
Origin task	<input type="text"/>	State	New
Category	Software	Impact	2 - Medium
Subcategory	Operating System	Urgency	1 - High
Service	<input type="text"/>	Priority	2 - High
Service offering	<input type="text"/>	Assignment group	Application Support - EHR
Configuration item	EHR Service	Assigned to	<input type="text"/>
* Problem statement	Recurring EHR slowness and login failures		
Description	Summary of the multiple issues occurring across clinics		

Create for new change request. Set all the fields into the specified problems.

*the screenshots is PRB0040004 but in the next step is PRB0040005.

We were unable to capture a screenshot of PRB0040005, but the steps and fields are identical to those in PRB0040004.

New > Assess > Root Cause Analysis > Fix in Progress > Resolved > Closed

Number	PRB0040004	Model	General
Origin task	<input type="text"/>	State	Assess
Category	Software	Impact	2 - Medium
Subcategory	Operating System	Urgency	1 - High
Service	<input type="text"/>	Priority	2 - High
Service offering	<input type="text"/>	Assignment group	Application Support - EHR
Configuration item	EHR Service	Assigned to	<input type="text"/>
* Problem statement	Recurring EHR slowness and login failures		
Description	Summary of the multiple issues occurring across clinics		

[Related Search Results >](#)

Set the assigned to fields.

*the screenshots is PRB0040004 but in the next step is PRB0040005.

We were unable to capture a screenshot of PRB0040005, but the steps and fields are identical to those in PRB0040004.

Change State to Root Cause Analysis

The flow starts at **New**, goes to **Assess**, then to **Root Cause Analysis** (which is highlighted in black), then to **Fix in Progress**, **Resolved**, and finally **Closed**.

Number	PRB0040004	Model	General
Origin task	<input type="text"/>	State	Assess
Category	Software	Impact	2 - Medium
Subcategory	Operating System	Urgency	1 - High
Service	<input type="text"/>	Priority	2 - High
Service offering	<input type="text"/>	Assignment group	Application Support - EHR
Configuration item	EHR Service	* Assigned to	Application Support EHR
* Problem statement	Recurring EHR slowness and login failures		
Description	Summary of the multiple issues occurring across clinics		

[Related Search Results >](#)

*the screenshots is PRB0040004 but in the next step is PRB0040005.
We were unable to capture a screenshot of PRB0040005, but the steps and fields are identical to those in PRB0040004.

Step 2 - Conduct Root Cause Analysis

servicenow All Favorites : Problem - PRB0040005 ★

[Search](#) [New](#) [Edit](#) [Delete](#) [Cancel](#) [Accept Risk](#) [Update](#) [Post](#)

[Notes](#) [Analysis Information](#) [Resolution Information](#) [Other Information](#)

Work notes list [View](#) [Edit](#)

Work notes [View](#) [Edit](#) [Delete](#)

Reviewed five related incidents involving EHR slowness, login failures, and brief outages. All incidents show a consistent pattern occurring during peak hours across multiple clinics.

[Post](#)

Activities: 3

- System Administrator State Root Cause Analysis was Assess Field changes • 2025-12-04 02:03:49
- System Administrator Assigned to Application Support EHR State Assess was New Field changes • 2025-12-04 02:03:15
- System Administrator Assignment group Application Support - EHR Configuration item EHR Service Impact 1 - High Priority 2 - High State New Urgency 2 - Medium Field changes • 2025-12-04 02:02:02

Add the worknotes on the problem records.

servicenow All Favorites : Problem - PRB0040005 ☆ Search :

Problem PRB0040005 Discuss Follow Fix Mark Duplicate Cancel Accept Risk Update Delete

Notes Analysis Information Resolution Information Other Information

Primary Known Error article

Workaround

Refreshing the page may restore functionality; access stabilizes outside peak hours.

Cause notes

Root cause identified as resource exhaustion on the EHR Application Server during peak usage (08:00-09:00). The server was operating with suboptimal connection settings, causing session bottlenecks and delayed application responses. Logs indicate multiple concurrent connection spikes that exceeded the current configuration limits, resulting in slowness, intermittent login failures, and short outages. The misconfigured connection pool and insufficient server tuning contributed to overall instability.

Add the workaround and cause notes for the problem we have created.

A screenshot of the ServiceNow interface for a problem ticket. The top navigation bar shows 'servicenow' and the ticket number 'PRB0040005'. Below the navigation is a toolbar with buttons for 'Discuss', 'Follow', 'Fix', 'Mark Duplicate', 'Cancel', 'Accept Risk', 'Update', and 'Delete'. The main content area has tabs for 'Notes', 'Analysis Information', 'Resolution Information' (which is selected and highlighted in green), and 'Other Information'. Under the 'Resolution Information' tab, there is a section for 'Resolved by' and 'Resolved' status. Below this is a 'Fix notes' section containing a rich text editor. The editor's content is: "Restart and reconfigure the EHR Application Server to optimize performance." There are also standard rich text editor tools like bold, italic, and underline.

Add the proposed fix notes for the problems and set the state into Fix.

A screenshot of the ServiceNow interface for a problem ticket. The top navigation bar shows 'servicenow' and the ticket number 'PRB0040005'. Below the navigation is a toolbar with buttons for 'Discuss', 'Follow', 'Resolve' (which is selected and highlighted in blue), 'Re-Analyze', 'Accept Risk', 'Update', and 'Delete'. The main content area shows a workflow step 'Fix in Progress' highlighted in green. To the left of the step are arrows pointing right labeled 'New', 'Assess', and 'Root Cause Analysis'. To the right are arrows pointing left labeled 'Resolved' and 'Closed'. Below the workflow are various configuration fields: Number (PRB0040005), Model (General), Origin task, Category (Software), Subcategory (None), Service, Service offering, Configuration item (EHR Service), Impact (1 - High), Urgency (2 - Medium), Priority (2 - High), Assignment group (Application Support - EHR), and Description (Summary of the multiple issues occurring across clinics). The 'Problem statement' field contains the text: "Recurring EHR slowness and login failures". At the bottom of the form is a 'Related Search Results >' link.

Make sure the status has changed into Fix in Progress.

Step 3 - Link Related Records

Add Incidents

All > Problem is empty

<input type="checkbox"/>	Number	Opened	Short description	Caller	Priority	State	Category	Assignment group
<input checked="" type="checkbox"/>	INC0010021	2025-12-01 18:46:21	EHR running very slow	Emily Carter	5 - Planning	New	Software	
<input checked="" type="checkbox"/>	INC0010022	2025-12-01 18:47:07	EHR outage	Karen Patel	2 - High	New	Software	
<input checked="" type="checkbox"/>	INC0010020	2025-12-01 18:44:27	Database not responding	Sarah Lopez	3 - Moderate	New	Software	
<input checked="" type="checkbox"/>	INC0010013	2025-12-01 18:21:09	EHR freezing during visit	Alex Nguyen	2 - High	New	Software	
<input checked="" type="checkbox"/>	INC0010016	2025-12-01 18:36:16	Staff unable to log in	John Miller	2 - High	In Progress	Software	Application Development
<input type="checkbox"/>	INC0010010	2025-12-01 17:58:06	qweqwewqewqewqew	Admin	3 - Moderate	New	Inquiry / Help	
<input type="checkbox"/>	INC0000047	2025-08-01 13:53:18	Issue with email	Joe Employee	3 - Moderate	In Progress	Inquiry / Help	Software

Choose and link all related incidents.

Related Links

- [Communicate Workaround](#)
- [Communicate Fix](#)
- [Create Known Error article](#)

Incidents (5) Affected Cls (1) Problem Tasks Change Requests Outages Attached Knowledge

for text Search Actions on selected rows... Add New

Problem = PRB0040005

<input type="checkbox"/>	Number	Opened	Short description	Caller	Priority	State	Category	Assignment group	Assigned to
INC0010016	2025-12-01 18:36:16	Staff unable to log in	John Miller	2 - High	In Progress	Software	Application Development	Andrea	
INC0010013	2025-12-01 18:21:09	EHR freezing during visit	Alex Nguyen	2 - High	New	Software	(empty)	(empty)	
INC0010020	2025-12-01 18:44:27	Database not responding	Sarah Lopez	3 - Moderate	New	Software	(empty)	(empty)	
INC0010022	2025-12-01 18:47:07	EHR outage	Karen Patel	2 - High	New	Software	(empty)	(empty)	
INC0010021	2025-12-01 18:46:21	EHR running very slow	Emily Carter	5 - Planning	New	Software	(empty)	(empty)	

1 to 5 of 5

Make sure the incident is appears.

Problem
 PRB0040005 | Discuss || Follow | Resolve | Re-Analyze | Accept Risk | Update | Delete |
 [Add Affected CIs](#) |
 [Edit](#) |
 [Print](#) |
 [Email](#) |
 [RSS](#) |
 [Report](#) |
 [Help](#)

Add Affected CIs

To decrease load time, the list of Configuration Items has been configured to load without any records. Use the filter to configure and fetch the data as required.

Configuration Class	Configuration Item	Search	Add Selected	Add All (2189)		
Configuration Items	Name	Search	Actions on selected rows...			
All > Name >= EHR						
Name	Manufacturer	Location	Description	Class	Updated	Maintenance schedule
<input type="button" value="Search"/>	<input type="button" value="Search"/>	<input type="button" value="Search"/>	<input type="button" value="Search"/>	<input type="button" value="Search"/>	<input type="button" value="Search"/>	<input type="button" value="Search"/>
<input checked="" type="checkbox"/> EHR Application Server				Configuration Item	2025-12-01 17:37:19	
<input checked="" type="checkbox"/> EHR Database Server				Configuration Item	2025-12-01 17:52:25	
<input checked="" type="checkbox"/> EHR Service				Configuration Item	2025-12-01 17:35:38	
<input type="checkbox"/> Electronic Messaging				Service	2012-01-21 11:00:12	
<input type="checkbox"/> Email				Service	2012-01-21 11:00:12	

Choose and link all the affected Configuration Items.

Related Links

- [Communicate Workaround](#)
- [Communicate Fix](#)
- [Create Known Error article](#)

Incidents (5) | **Affected CIs (3)** | Problem Tasks | Change Requests | Outages | Attached Knowledge

Task = PRB0040005

Configuration Item	Class	Support group	Owned by	Applied	Applied date	Manual proposed change
EHR Application Server	Configuration Item	(empty)	(empty)	false	(empty)	false
EHR Database Server	Configuration Item	(empty)	(empty)	false	(empty)	false
EHR Service	Configuration Item	(empty)	(empty)	false	(empty)	false

1 to 3 of 3

Make sure the Configuration Items are selected.

Add Change Requests

All > Parent is empty

Number	Short description	Type	State	Planned start date	Planned end date	Requested by
CHG0000093	include name servers 8.8.8.8 & 8.8.4.4	Normal	Authorize	2025-11-15 18:30:00	2025-11-15 18:45:00	System Administrator
CHG0000094	Increase db_block_buffers from 5000 to 7500	Normal	Authorize	2025-11-16 04:30:00	2025-11-16 05:00:00	System Administrator
CHG0000095	Upgrade OWA-SD-01 to MS Windows Server 2016	Normal	Authorize	2025-11-16 06:30:00	2025-11-16 10:29:59	System Administrator
CHG0000096	Change default router on unk201	Normal	Authorize	2025-11-16 06:30:00	2025-11-16 07:00:00	System Administrator
CHG0002000	Upgrade MySQL 5.6 to 5.7	Emergency	New	(empty)	(empty)	User ITIL
CHG0002001	Upgrade Tomcat server to 4.0	Emergency	New	(empty)	(empty)	User ITIL
<input checked="" type="checkbox"/> CHG0030001	Apply configuration fix to improve EHR performance	Normal	Closed	2025-12-07 06:00:00	2025-12-07 07:00:00	System Administrator
CHG0040001	Add network switch to cabinet	Standard	New	(empty)	(empty)	System Administrator
CHG0040002	Add network switch to cabinet	Standard	New	(empty)	(empty)	System Administrator
Please reboot						

Actions on selected rows... Add Selected Add All (99)

04:02:07:19
04:02:03:49
04:02:03:15
04:02:02:02

Choose and Link the Change Request to the Problem
(Created in Change Management).

Related Links

- Communicate Workaround
- Communicate Fix
- Create Known Error article

Incidents (5) Affected CIs (3) Problem Tasks Change Requests (1) Outages Attached Knowledge

Number Search Actions on selected rows... Add New

Parent = PRB0040005

Number	Short description	Type	State	Planned start date	Planned end date	Requested by	Assigned to
CHG0030001	Apply configuration fix to improve EHR performance	Normal	Closed	2025-12-07 06:00:00	2025-12-07 07:00:00	System Administrator	(empty)

1 to 1 of 1

Make sure the Change Request is selected.

Problem PRB0040005

New Assess Root Cause Analysis Fix in Progress Resolved Resolve the Problem Closed

Number: PRB0040005	Model: General
Origin task:	State: Fix In Progress
Category: Software	Impact: 1 - High
Subcategory: -- None --	Urgency: 2 - Medium
Service:	Priority: 2 - High
Service offering:	Assignment group: Application Support - EHR
Configuration item: EHR Service	* Assigned to: Application Support EHR
* Problem statement: Recurring EHR slowness and login failures	
Description: Summary of the multiple issues occurring across clinics	

Related Search Results >

Problem PRB0040005

New ✓ Assess ✓ Root Cause Analysis ✓ Fix In Progress ✓ Resolved ✓ Closed

Number PRB0040005 Origin task [] Category Software Subcategory --None-- Service [] Service offering [] Configuration item EHR Service

Model General State Resolved Resolution code Fix Applied Impact 1 - High Urgency 2 - Medium Priority 2 - High Assignment group Application Support - EHR * Assigned to Application Support EHR

* Problem statement Recurring EHR slowness and login failures Description Summary of the multiple issues occurring across clinics

Related Search Results >

Resolve the problems.

New ✓ Assess ✓ Root Cause Analysis ✓ Fix In Progress ✓ Resolved ✓ Complete the Problem Closed

Number PRB0040005 Origin task [] Category Software Subcategory --None-- Service [] Service offering [] Configuration item EHR Service

Model General State Resolved Resolution code Fix Applied Impact 1 - High Urgency 2 - Medium Priority 2 - High Assignment group Application Support - EHR * Assigned to Application Support EHR

* Problem statement Recurring EHR slowness and login failures Description Summary of the multiple issues occurring across clinics

Related Search Results >

servicenow All Favorites History Workspaces Admin Problem - PRB0040005 Search Discuss Follow Re-Analyze Update

New ✓ Assess ✓ Root Cause Analysis ✓ Fix In Progress ✓ Resolved ✓ Closed

Number PRB0040005 Origin task [] Category Software Subcategory --None-- Service [] Service offering [] Configuration item EHR Service

Model General State Closed Resolution code Fix Applied Impact 1 - High Urgency 2 - Medium Priority 2 - High Assignment group Application Support - EHR * Assigned to Application Support EHR

* Problem statement Recurring EHR slowness and login failures Description Summary of the multiple issues occurring across clinics

Notes Analysis Information Resolution Information Other Information

Work notes list [] Work notes [] Post

Activities: 7

- System Administrator State Closed was Resolved Field changes • 2025-12-04 03:08:14
- System Administrator Resolution code Fix Applied State Resolved was Fix In Progress Field changes • 2025-12-04 03:07:19
- Custom Admin User

Complete the closed the problem.

Change Management

Change Management in this scenario is used to deliver a permanent fix for the recurring performance and login issues affecting the EHR system. After Problem Management identified instability on the EHR Application Server as a contributing factor, a Normal Change Request was raised to implement updated configuration settings that would improve stability and responsiveness.

The change follows a structured process to ensure that the actions taken are controlled, approved, and properly documented. First, the Change Request is created with all required details, including the affected Configuration Item, the description of the issue, and the proposed implementation plan. Once submitted, the request enters the authorization phase, where all approvers in the workflow must review and formally approve the change before any work can begin. This step ensures safety, compliance, and proper risk evaluation.

After approval, the change is scheduled during a Sunday maintenance window to minimize disruption to clinical operations. The implementation is then broken down into multiple tasks—backing up the existing server configuration, applying the updated connection settings, and conducting functional tests such as verifying login access and page loading times. Each task includes work notes to maintain traceability and demonstrate how the change was executed.

When all tasks are completed successfully, the change is reviewed to confirm that the update resolved the issues without introducing new problems. The Change Request is then closed with a successful status, and the final Change ID is recorded. This structured approach ensures that the EHR environment becomes more stable while maintaining alignment between Incident, Problem, and Change Management processes.

Step 1 - Create the Change Request

Step 2 - Approvals (Authorize)

Step 3 - Schedule the Change

Step 5: Review and Closure

Step 6: Record the Change ID

Step 1 - Create the Change Request

Number: CHG0030001
Requested by: System Administrator
Category: Other
Service: EHR Application Server
Configuration Item: EHR Application Server
Priority: 2 - High
Risk: Moderate
Impact: 1 - High
Model: Normal
Type: Normal
State: New
Conflict status: Not Run
Assignment group: Application Support - EHR
Assigned to:
Short description: Apply configuration fix to improve EHR performance
Description: Restart and apply updated configuration settings

Planning | Schedule | Conflicts | Notes | Closure Information

Justification: Resolve recurring slowness and login failures

Implementation plan:

Submit and reopen the Change

Step 2 - Approvals (Authorize)

State	Approver	Assignment group	Comments	Created
Approved	Luke Wilson	CAB Approval		2025-12-04 02:33:47
Approved	cab.approver	CAB Approval		2025-12-04 02:33:48
Approved	Christen Mitchell	CAB Approval		2025-12-04 02:33:48
Approved	Howard Johnson	CAB Approval		2025-12-04 02:33:47
Approved	Bernard Laby	CAB Approval		2025-12-04 02:33:48
Approved	Ron Kettering	CAB Approval		2025-12-04 02:33:47

Approve all approvers in the Approvals related list.

Step 3 - Schedule the Change

Planned start date and Planned end date are the approved change window

Planned start date: 2025-12-07 06:00:00
Planned end date: 2025-12-07 07:00:00
CAB required:
CAB datetime:
Actual start date:
Actual end date:
CAB delegate:
CAB recommendation:

Planning | Schedule | Conflicts | Notes | Closure Information

Implement | Update | Delete

Related Links
Calculate Risk

Filled the form as the study case.

Planning **Schedule** **Conflicts** **Notes** **Closure Information**

Justification	Resolve recurring slowness and login failures
Implementation plan	<ol style="list-style-type: none"> 1. Restart the EHR Application Server 2. Apply updated configuration settings 3. Test login functionality
Risk and impact analysis	dummy
Backup plan	Revert configuration file and restart the server.
Test plan	Verify login, page loading, and database connectivity.

Filled the planning notes

Step 4 - Implementing the Change

servicenow All Favorites History Workspaces Admin Change Task - CTASK0010003

Number	CTASK0010003	Type	Planning
Change request	CH00030001	State	In Progress
Configuration item		On hold	<input type="checkbox"/>
Planned start date		Assignment group	
Planned end date		Assigned to	
* Short description	Backup Application Server Configuration		
* Description	Backup Application Server Configuration		

Notes **Closure Information**

Work notes list [View](#) [Edit](#)

Work notes [View](#) [Edit](#) [Post](#)

Activities: 2 [View](#)

System Administrator Configuration backup saved to secure storage.

Impact: 3-Low Opened by: System Administrator Priority: 4-Low State: Open Field changes • 2025-12-04 02:40:25

Create new task and add worknotes Backup Application Server Configuration

servicenow All Favorites History Workspaces Admin Change Task - CTASK0010004

Number	CTASK0010004	Type	Planning
Change request	CHG0030001	State	In Progress
Configuration item		On hold	<input type="checkbox"/>
Planned start date		Assignment group	
Planned end date		Assigned to	
* Short description	Apply Updated Connection Settings		
* Description	Apply Updated Connection Settings		

Notes Closure Information

Work notes list [A](#) [B](#)

Work notes

Activities: 2

- System Administrator
Updated connection configuration file with new parameters as per change plan.
- System Administrator
Impact: 3 - Low
Opened by: System Administrator
Priority: 4 - Low
State: Open

Create new task and add worknotes Apply Updated Connection Settings

servicenow All Favorites History Workspaces Admin Change Task - CTASK0010005

Number	CTASK0010005	Type	Planning
Change request	CHG0030001	State	In Progress
Configuration item		On hold	<input type="checkbox"/>
Planned start date		Assignment group	
Planned end date		Assigned to	
* Short description	Test EHR Login and Page Loading		
* Description	Test EHR Login and Page Loading		

Notes Closure Information

Work notes list [A](#) [B](#)

Work notes

Activities: 2

- System Administrator
Verified dashboard and patient list pages load correctly with normal response time.
- System Administrator
Impact: 3 - Low
Opened by: System Administrator
Priority: 4 - Low
State: Open

Create new task and add worknotes Test EHR Login and Page Loading

Affected CIs (1) Impacted Services/CIs: Approvers (0) Change Tasks (5) Problems Incidents Fixed By Change Incidents Caused By Change Task SLAs Outages

Change request = CHG0030001

Number	Short description	Type	State	Planned start date	Planned end date	Assignment group	Assigned to
CTASK0010001	Post Implementation testing	Testing	Open (empty)	(empty)	(empty)	(empty)	(empty)
CTASK0010002	Implement	Implementation	Open (empty)	(empty)	(empty)	(empty)	(empty)
CTASK0010003	Backup Application Server Configuration	Planning	In Progress (empty)	(empty)	(empty)	(empty)	(empty)
CTASK0010004	Apply Updated Connection Settings	Planning	In Progress (empty)	(empty)	(empty)	(empty)	(empty)
CTASK0010005	Test EHR Login and Page Loading	Planning	In Progress (empty)	(empty)	(empty)	(empty)	(empty)

When the work described in each task is complete, update the State = Closed
Complete

Affected CIs (1)	Impacted Services/CIs	Approvers (6)	Change Tasks (5)	Problems	Incidents Fixed By Change	Incidents Caused By Change	Task SLAs	Outages
Change request = CHG0030001								
<input type="checkbox"/>	Number	Search						
	CTASK0010001	Post Implementation testing	Testing	Open (empty)	(empty)	(empty)	(empty)	(empty)
	CTASK0010002	Implement	Implementation	Open (empty)	(empty)	(empty)	(empty)	(empty)
	CTASK0010003	Backup Application Server Configuration	Planning	Closed (empty)	(empty)	(empty)	(empty)	(empty)
	CTASK0010004	Apply Updated Connection Settings	Planning	Closed (empty)	(empty)	(empty)	(empty)	(empty)
	CTASK0010005	Test EHR Login and Page Loading	Planning	Closed (empty)	(empty)	(empty)	(empty)	(empty)

Return to the parent Change record.

Step 5: Review and Closure

Planning Schedule Conflicts Notes **Closure Information**

Close code: Successful
 Close notes: Change completed within the maintenance window. System verified post-implementation and no further incidents reported.

Buttons: Close, Conflict Calendar, Update, Delete

Fill the Close code to successful and add the Close notes.

Step 6: Record the Change ID

servicenow All Favorites History Workspaces Admin Change Request - CHG0030001

New ✓ Assess ✓ Authorize ✓ Scheduled ✓ Implement ✓ Review ✓ Closed ✓ Canceled

Number: CHG0030001	Model: Normal
Requested by: System Administrator	Type: Normal
Category: Other	State: Closed
Service:	Conflict status: Conflict
Service offering:	Conflict last run: 2025-12-04 02:48:03
Configuration item: EHR Application Server	* Assignment group: Application Support - EHR
Priority: 2 - High	Assigned to:
Risk: Moderate	
Impact: 1 - High	
Short description: Apply configuration fix to Improve EHR performance	
Description: Restart and apply updated configuration settings:	

Planning Schedule Conflicts Notes **Closure Information**

* Close code: Successful
 * Close notes: Change completed within the maintenance window. System verified post-implementation and no further incidents reported.

Buttons: Conflict Calendar, Update, Delete

Related Links

CHG0030001

Reflection and Key Takeaways

This project illustrates how ITIL 4 practices form a cohesive framework for managing complex service disruptions. By integrating Incident, Problem, and Change Management, the team was able to move beyond temporary fixes and deliver a sustainable, system-wide improvement. The exercise also reinforced the importance of accurate CMDB data, effective cross-team collaboration, and clear documentation for visibility across all stages of the service lifecycle. Ultimately, this scenario demonstrates how ITIL 4 enables organizations to protect service quality, reduce operational risks, and enhance the reliability of critical systems such as healthcare applications.