Title: UCF IT Problem Management – Problem Record Procedure	Effective: 05/11/2018
	Revised: 10/31/2018
Approved By: Michael Sink, Associate VP & COO, UCF IT	Page 1 of 28

Revision History			
Revision (Rev)	Date of Rev	Owner	Summary of Changes
Section I; Updated title & body	10/31/2018	Scott Baron	Updated title and paragraph body verbiage

I. DOCUMENT CONTROL AND APPROVALS

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II.   OBJECTIVES

This document is intended to define and describe a consistent process for creating and managing a problem record within the IT service management (ITSM) application (ServiceNow). This document will also walkthrough the root cause analysis (RCA) approval workflow as part of the problem record procedure. The sections below (starting on page four) identify all steps required.

III.   DEFINITIONS

Problem Management: Process that investigates the cause of incidents and, wherever possible, implements a permanent solution to prevent recurrence. Until a permanent resolution is applied, the process will attempt to provide a workaround to enable the service to be restored and the incident(s) to be resolved

Problem: A cause of one or more incidents. The cause is not usually known at the time a problem record is created, and the Problem Management process is responsible for further investigation

Reactive Problem Management: Resolving problems in response to one or more active (opened) incidents

Proactive Problem Management: Identifying problems based on periodic scheduled reviews and an analysis of closed incident patterns

Retro Problem Record: If for any reason an Emergency change is implemented without a related ServiceNow incident record, then the accountable UCF IT department is <u>STILL REQUIRED</u> to create a problem record after IT services are restored. The retro problem record will ensure a root cause analysis is completed for historical reference, management review and communication (that may be required)

Incident Management: The process responsible for managing the lifecycle of all incidents. Ensures that normal service operation is restored as quickly as possible (often by means of a temporary workaround)

Incident: Implies something is broken or functioning in a degraded manner. Inquiry from a user to fix something that is broken, not working or needs repair. Also known as a break/fix issue

Workaround: A workaround is a temporary solution to restore service to normal operation while the underlying issue is being investigated. The workaround does not resolve the problem, it resolves the incident

Known Error: The root cause of the problem is established and the affected configuration item (CI) is identified. <u>A temporary workaround/permanent fix may or may not exist</u>

2

Root Cause Analysis (RCA): The activity that identifies the root cause of a problem

Problem Report: An executive summary report often used when departments inside or outside of UCF IT are requesting a summary report containing the details of the problem

Request for Change (RFC): A request for change is a submitted request within the ITSM application (ServiceNow) for a proposed change to be made to fix the problem

UCF IT (as of May 2018): College of Arts and Humanities, College of Business Administration, College of Education and Human Performance, College of Health and Public Affairs, College of Sciences, Computer Services and Telecommunications, Student Development and Enrollment Services, Center for Distributed Learning, College of Undergraduate Studies, Office of Instructional Resources, Regional Campuses, University Libraries, Human Resources, Graduate Studies and Office of Research & Commercialization

Information Technology Infrastructure Library (ITIL): A set of best practice publications for IT service management. Owned by the Cabinet Office (part of HM Government), ITIL gives guidance on the provision of quality IT services and the processes, functions and other capabilities needed to support them

UCF IT Departments: Sub departments within Enterprise Application Development, Enterprise Systems & Operations, Information Security Office, Program Management and Planning, Technology Sales, Service & Support and Telecommunications

Deferred Problem: The problem record was closed without root cause and workaround determination (e.g., costs are too high to diagnose, value to remove is too low, etc.)

IT Service Management (ITSM) application: This is the application (ServiceNow) used by UCF IT to record incidents, problems, requests and changes

Problem States:
- Open – Problem record created. Workaround may or may not be identified
- Known Error – Root cause determined and problem record raised as a known error
- Pending Change – When the related change record (Normal or Emergency) is created off of the problem record to permanently fix the underlying issue
- Change Successful – The related change record to the problem record was implemented successfully
- Closed – The related change record was implemented successfully AND the related incidents are in a resolved, closed or in a canceled state
  - Or, the problem was deferred
- Canceled – At any point, the Problem Owner can cancel the problem record. The problem record cannot be canceled if the problem is already in a closed state

3

OneSearch: Provides the UCF IT Service Desk and incident assignees insight into relevant knowledge articles, open problems, open incidents, recommended services from the service catalog, changes implemented within the last seven days and changes that are currently in progress

OneSearch example image that resides on the New Call and Incident Forms

Knowledge Articles **0**	Open Problems **0**	Open Incidents **0**	Service Catalog **0**	Changes Last 7 Days **7**	Changes in progress **2**
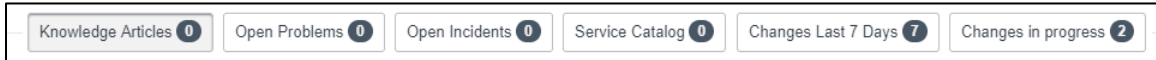
Problem Manager – UCF IT department manager accountable for the problem record resolution assigned to their department (ServiceNow "Assignment group"). The Problem Manager will be required to review and approve the completed root cause analysis within the problem record before the problem record can be closed

Problem Owner – The UCF IT resource responsible for creating a problem record within the ITSM application (ServiceNow) after determining an incident or trend of incidents requires a problem record

IV.   SCOPE OF PROBLEM RECORD PROCEDURE DOCUMENT

This procedure document is only intended for ServiceNow users that have an ITIL role (also known as a ServiceNow fulfiller license). The below sections only represent the user interface per the ITIL role.

V.   STEPS TO RECORD PROBLEM RECORD – REACTIVE W/ WORKAROUND

This example will walk a Problem Owner through the lifecycle of a problem record using the reactive Problem Management process *<u>with</u>* a workaround identified.

In this scenario, two incidents have been triaged from the UCF IT Service Desk over to the Service Management Solutions Team for a ServiceNow ODBC issue.
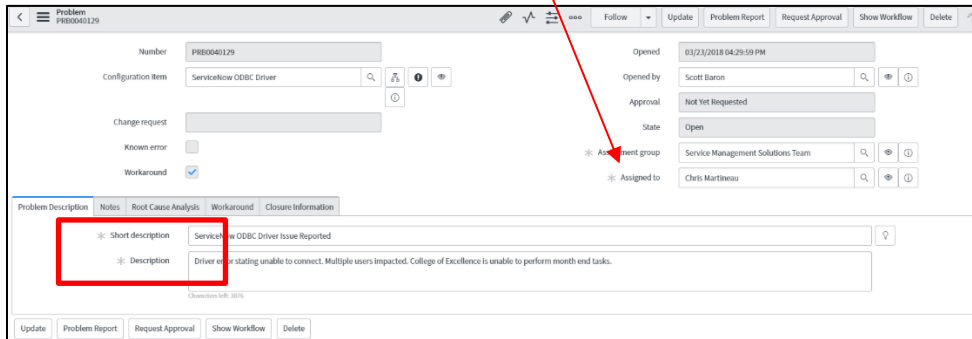
With the trend of incidents, the incident assignee determines there is an underlying issue that needs further investigation. The incident assignee creates a problem record from one of the two active (opened) incident records to start the Problem Management process.

1. From the incident record, right click on the grey Incident header bar and select Create Problem

A problem record will be created off the incident record. The Configuration item (CI), Short description, Description, Assignment group and Assigned to fields from the incident record will be carried over to the newly created problem record.

The Short description and Description fields should be modified to summarize the problem: (Short description ~ one sentence) & (Description - high-level overview). **NOTE**: The Problem Owner (Assigned to field) of the problem may be different from the incident assignee(s) and can be adjusted accordingly.

2. After the problem record is created, relate all other applicable incidents to the problem record. Reference Appendix A. Sections i. or ii. for instruction on how to relate incident(s) to problems records.

NOTE: After relating the incident(s), the state(s) on the incidents automatically change to Awaiting Problem. Per the UCF IT Incident Management Policy (located at http://it.ucf.edu/policies-and-standards/it-service-management/), if the underlying issue is outside of UCF IT's control to fix, then the incident states should be changed to Awaiting Vendor from Awaiting Problem to stop the incident SLA clock.

3. The next step of the Problem Management process is to identify a workaround (if one exists) to restore services to the customer(s) while the root cause of the problem is being investigated.

This scenario will cover identifying a workaround. Section V. of this procedure document covers the scenario of a Problem Owner being unable to identify a workaround using reactive Problem Management.

a. **Workaround Identified**

The Problem Owner is responsible to document the workaround in the problem record. This will provide the information necessary to resolve the existing incident(s) related to the problem record without relying on a change to be implemented in order to resolve the incident(s).

Within the Workaround section/tab (1.), document the details of the workaround within the Workaround Details field (2.) and click the Save button. After the problem has been saved with a workaround specified, the Workaround checkbox (3.) on the problem record will automatically be checked.

To communicate the workaround to all of the related incidents, select the Communicate Workaround link (4.) within the Related Links section. It is best practice to communicate the workaround when any of the incident assignee(s) are different from the Problem Owner.
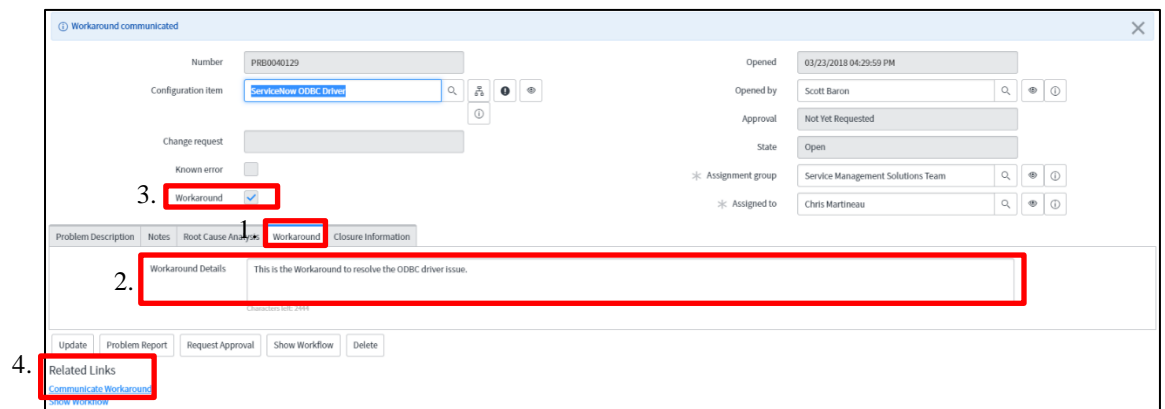
Following the Communicate Workaround link being selected, the incident assignee(s) will be notified via a ServiceNow email notification that a workaround is now available for use to resolve the incident(s). The incident record(s) are also updated within the Work Notes stating the workaround details.
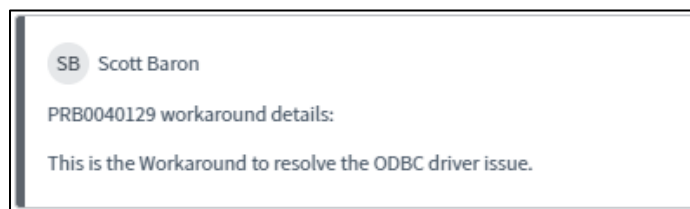
NOTE: The workaround identified will also be available to the UCF IT Service Desk members (agents) to be able to resolve any related incidents that may be reported after the fact. The UCF IT Service Desk agents are

responsible to relate the incident(s) to the problem record even though they are able to resolve the incident(s) with the provided workaround.

Since the incident(s) have a workaround identified, the incidents are able to proceed to be resolved without a change needing to be implemented and the problem record being closed.

Per the UCF IT Incident Management Policy (located at http://it.ucf.edu/policies-and-standards/it-service-management/), the incident assignee must get confirmation from the customer that their issue is resolved before moving an incident to resolved.

NOTE: The workaround does not resolve the problem; it resolves the incident(s). For the problem record to be closed, a root cause is required to be determined and a corresponding change to be implemented successfully to prevent incident recurrence.

4. After the workaround is identified, the next step for the Problem Owner is to determine the root cause of the problem.

   Within the Root Cause Analysis (RCA) section/tab of the problem record, fill out all required fields that have an asterisk in red. As a reference, the section titles are highlighted blue and defined below.

Summary: Provide the summary of the problem
Chronology of Events: Provide the timeline of the problem
Scope of Impact: Provide summary of impact/affected systems and users
Communications: Optional field. Provide how the problem was communicated
Root Cause Analysis: Provide the root cause of the problem
Lessons Learned: Optional field. Provide the lessons learned
Corrective Action Plan: Provide both short-term and long-term action items

5. After completing the RCA section/tab in its entirety, select Request Approval to send the RCA to the Problem Manager (ServiceNow "Assignment group" Manager) for approval. The UCF IT Problem Management Policy requires the Problem Manager to approve the RCA before the problem record can be raised as a known error. Email notifications will be sent to the Problem Manager and Problem Owner for RCA requests, rejections and approvals.

The Approvers section/tab located on the problem record will indicate there is an Approval Requested. The Approval field in the top section of the problem record will also indicate the Approval has been Requested/Rejected.

8

After the Problem Manager reviews and approves the RCA, the problem record will be raised as a known error. The State of the problem will change to Known Error and the Known error checkbox (1.) will be selected.

NOTE: If the Problem Manager rejects the RCA, the Problem Owner should make the necessary updates per the Problem Manager's rejection comments and resubmit for approval by selecting Request Approval again.

The known error raised will allow the UCF IT Service Desk agents to be able communicate problem status and the known error to any customer that contacts the UCF IT Service Desk with the same related issue.

6. Next, to fix the underlying issue, a change is justified to be implemented in this scenario.

Notice the problem record now has three buttons that appeared after the RCA was approved by the Problem Manager: Standard Change, Create Normal Change and Create Emergency Change. For this scenario, a Normal change is to be submitted.

NOTE: If a Standard Change is applicable to prevent the incident from recurring, then skip to step #9.

Click "Create Normal Change"

7. In its entirety, follow the UCF IT Change Management - Change Record Procedure document to submit the related change record.

  a. http://it.ucf.edu/policies-and-standards/it-service-management/

The problem record will be updated with the change record relationship and the problem record State will change to Pending Change.

8. In this scenario, there was a workaround identified, therefore the problem record is NOT dependent on the related incidents to be resolved after the change is implemented (**NOTE:** there are no change records related to the incidents after the change was created). For this particular example, the incidents were resolved well before the related change was implemented when the Problem Owner communicated the workaround to the incident records.

NOTE: The Problem Owner cannot close a problem record until all related incidents are in a resolved/closed state AND the change record is closed with one of the three Close codes.

- Successful
- Successful with issues
- Unsuccessful (with the checkbox selected "Was this change successfully implemented outside of the planned change window?")

9. After the change record is closed with the applicable Close code (Successful, Successful with issues, Unsuccessful with the checkbox selected "Was this change successfully implemented outside of the planned change window?") or a Standard Change was implemented/selected, the problem record state will change to "Change Successful".

==If a Standard Change was implemented, a Standard Change section/tab will appear on the problem record that is required to be filled out before the problem record can be closed.==

Due to the fact there are no incidents that have to be confirmed resolved (because of the workaround), the Problem Owner can move forward to close the problem record since the change was implemented successfully and the underlying issue was removed with the change.

11

10. The Problem Owner is to close out the problem record by navigating to the Closure Information section/tab, select the Close Code of Closed, fill out the Close notes and select the Close Problem button.
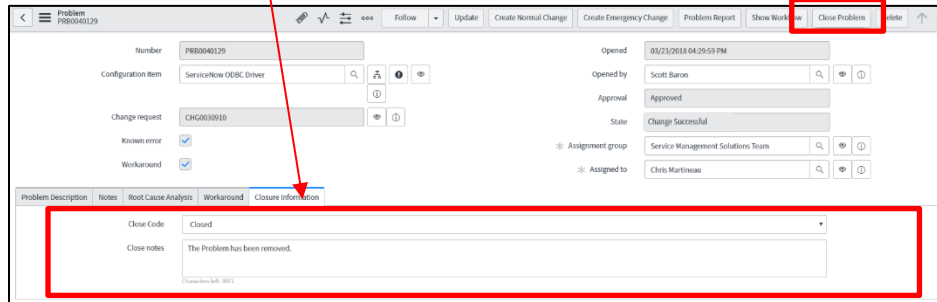
11. Once the state reflects "Closed", the UCF IT Problem Management process is complete for the reactive Problem Management process w/ a workaroud.
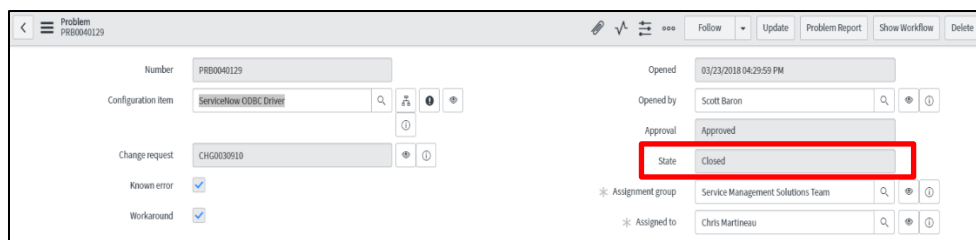
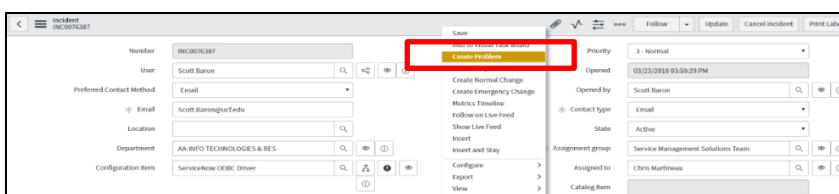VI. **STEPS TO RECORD PROBLEM RECORD – REACTIVE W/OUT WORKAROUND**

This example will walk a Problem Owner through the lifecycle of a problem record using the reactive Problem Management process ***without*** the Problem Owner being able to identify a workaround.

In this scenario, two incidents have been triaged from the UCF IT Service Desk over to the Service Management Solutions Team for a ServiceNow ODBC issue.

With the trend of incidents, the incident assignee determines there is an underlying issue that needs further investigation. The incident assignee creates a problem record from one of the two incident records to start the Problem Management process.

1. From the incident record, right click on the grey Incident header bar and select Create Problem

A problem record will be created off the incident record. The Configuration item (CI), Short description, Description, Assignment group and Assigned to fields from the incident record will be carried over to the newly created problem record.

The Short description and Description fields should be modified to summarize the problem: (Short description ~ one sentence) & (Description - high-level overview).
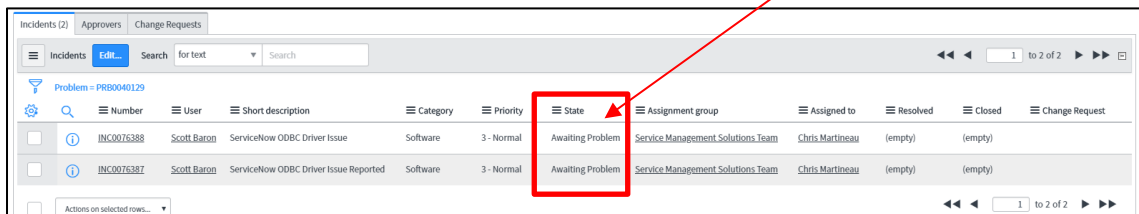
NOTE: The Problem Owner (Assigned to field) of the problem may be different from the incident assignee(s) and can be adjusted accordingly.

2. After the problem record is created, relate all other applicable incidents to the problem record. Reference Appendix A. Sections i. or ii. for instruction on how to relate incident(s) to problems records.

NOTE: After relating the incident(s), the state(s) on the incidents automatically change to Awaiting Problem. Per the UCF IT Incident Management Policy (located at http://it.ucf.edu/policies-and-standards/it-service-management/), if the underlying issue is outside of UCF IT's control to fix, then the incident states should be changed to Awaiting Vendor from Awaiting Problem to stop the incident SLA clock.

3. The next step of the Problem Management process is to identify a workaround (if one exists) to restore services to the customer(s) while the root cause of the problem is being investigated.

In this scenario, the Problem Owner is unable to identify a workaround.

4. With no workaround identified, the Problem Owner is to determine the root cause of the problem next.

13

Within the Root Cause Analysis (RCA) section/tab of the problem record, fill out all required fields that have an asterisk in red. As a reference, the section titles are highlighted blue and defined below.

Summary: Provide the summary of the problem
Chronology of Events: Provide the timeline of the problem
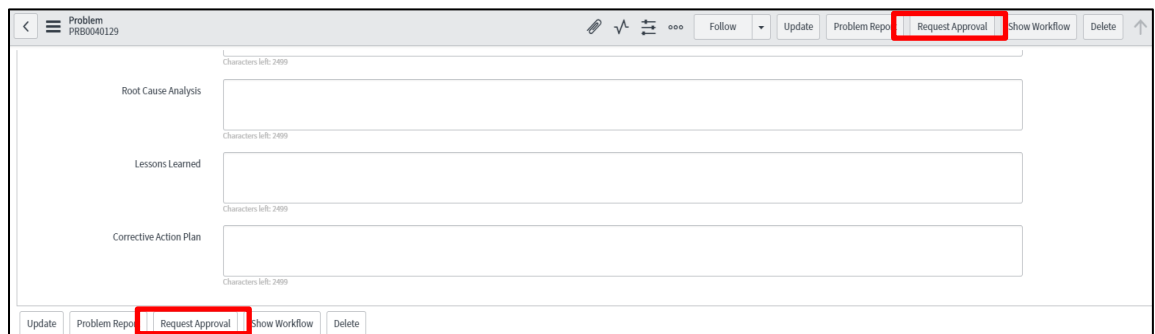**Scope of Impact:** Provide summary of impact/affected systems and users
Communications: Optional field. Provide how the problem was communicated
Root Cause Analysis: Provide the root cause of the problem
Lessons Learned: Optional field. Provide the lessons learned
Corrective Action Plan: Provide both short-term and long-term action items

5. After completing the RCA section/tab in its entirety, select Request Approval to send the RCA to the Problem Manager (ServiceNow "Assignment Group" Manager) for approval. The UCF IT Problem Management Policy requires the Problem Manager to approve the RCA before the problem record can be raised as a known error. Email notifications will be sent to the Problem Manager and Problem Owner for RCA requests, rejections and approvals.

14

The Approvers section/tab located on the problem record will indicate there is an Approval Requested. The Approval field in the top section of the problem record will also indicate the Approval has been Requested/Rejected.

After the Problem Manager reviews and approves the RCA, the problem record will be raised as a known error. The state of the problem will change to Known Error and the Known error checkbox (1.) will be selected.

NOTE: If the Problem Manager rejects the RCA, the Problem Owner should make the necessary updates per the Problem Manager's rejection comments and resubmit for approval by selecting Request Approval again.

The known error raised will allow the UCF IT Service Desk agents to be able communicate problem status and the known error to any customer that contacts the Service Desk with the same related issue.
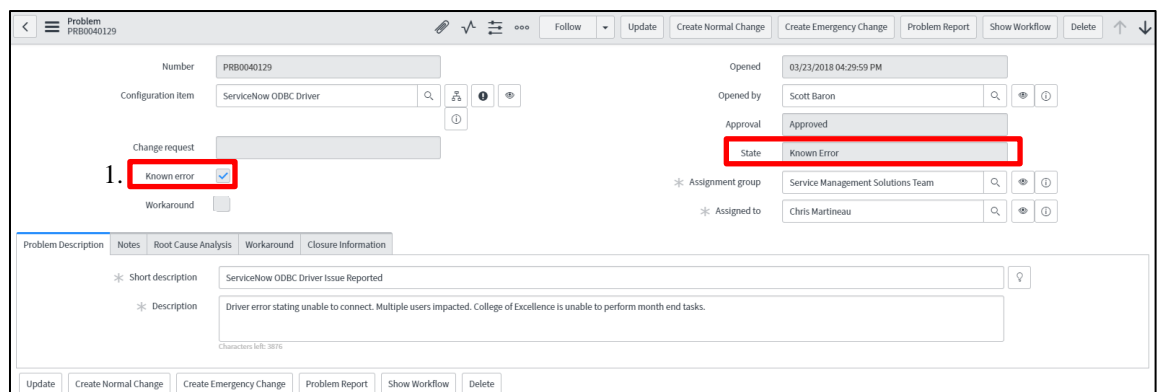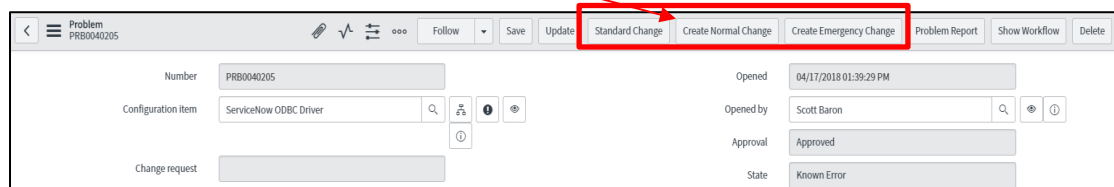
15

6. Next, to fix the underlying issue, a change is justified to be implemented in this scenario.

Notice the problem record now has three buttons that appeared after the RCA was approved by the Problem Manager: Standard Change, Create Normal Change and Create Emergency Change. For this scenario, a Normal change is to be submitted.

> **NOTE:** If a Standard Change is applicable to prevent the incident from recurring, then skip to step #8.

Click "Create Normal Change"

7. In its entirety, follow the UCF IT Change Management - Change Record Procedure document to submit the related change record.
   a. http://it.ucf.edu/policies-and-standards/it-service-management/

The problem record will be updated with the change record relationship and the problem record State will change to Pending Change.

NOTE: Due to there not being a workaround identified, when the change record is created off the problem record, the related incidents will be brought over to the change record as Incidents Pending Change. In the scenario where the workaround was identified above, the correlating change record did not have any Incidents Pending Change because the related incidents could be resolved without depending on the change to be implemented.

8. After the change record is closed with the applicable Close code (Successful, Successful with issues, Unsuccessful with the checkbox selected "Was this change successfully implemented outside of the planned change window?") or a Standard Change was implemented/selected, the problem record state will change to Change Successful. The related incidents on the problem record will be automatically updated to a state of Awaiting User Confirmation.

==If a Standard Change was implemented, a Standard Change section/tab will appear on the problem record that is required to be filled out before the problem record can be closed.==
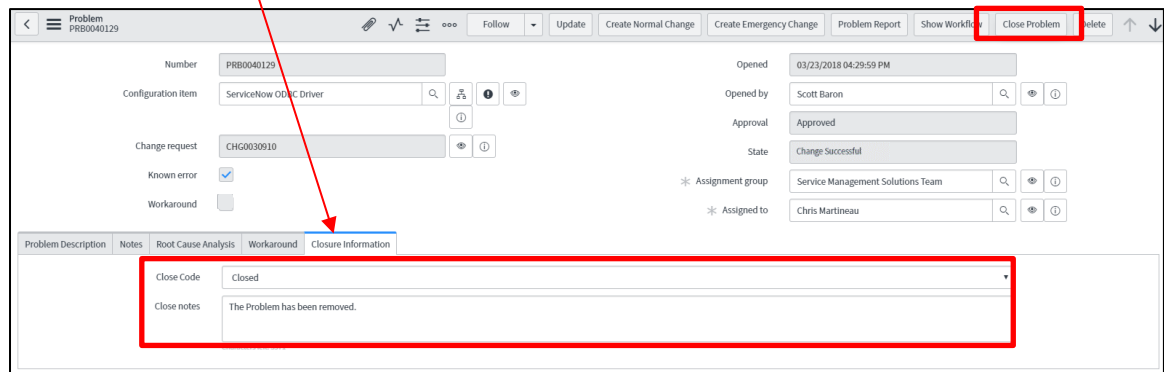

In this scenario, a workaround could not be identified, therefore to close the problem record; the related incidents **must** be verified resolved following the change being implemented.
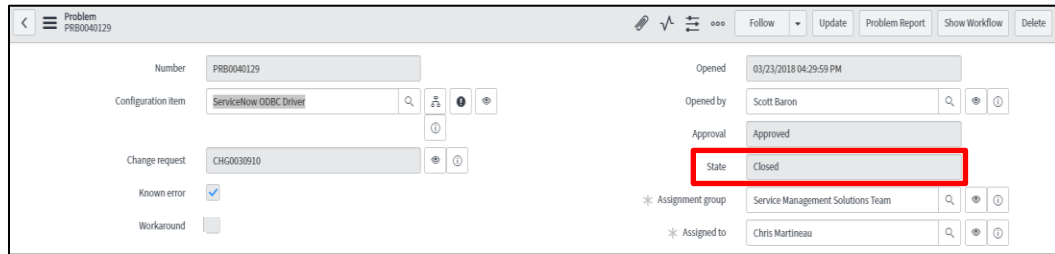
NOTE: The Problem Owner cannot close a problem record until all related incidents are in a resolved/closed state AND the change record was closed with one of the three Close codes.
- Successful
- Successful with issues
- Unsuccessful (with the checkbox selected "Was this change successfully implemented outside of the planned change window?")

9. After the incidents are confirmed by the customer(s) that their issue is resolved (and the incident states are changed to Resolved), the Problem Owner is to close out the problem record by navigating to the Closure Information section/tab, select the Close Code of Closed, fill out the Close notes and select the Close Problem button.

10. Once the state reflects "Closed", the UCF IT Problem Management process is complete for the reactive Problem Management process w/out a workaroud.

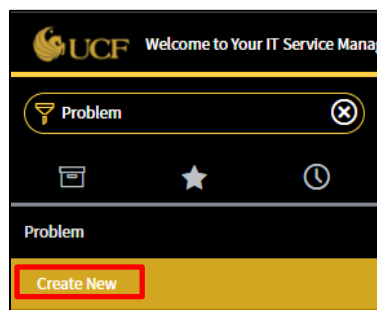## VII.   STEPS TO RECORD PROBLEM RECORD – PROACTIVE

Identifying problems based on periodic scheduled reviews and analyses of closed incident patterns is referred to as proactive Problem Management. A problem record can be created as a standalone record with or without relating incident records.

It is up to the discretion of each UCF IT department to create a problem record proactively.

NOTE: With proactive Problem Management, a problem record will <u>ALWAYS</u> be created from scratch as a new problem record. Related incident(s) to the problem record will always be in a closed state in ServiceNow. Refer to the Appendix (Section B.) for instruction on how to relate inactive (closed) incident(s) to a problem record.

There is one way to create a proactive problem record:

1. Type "Problem" in the navigator/application menu search bar within ServiceNow and select Create New

2. The newly created problem record will require an Assignment group, a Problem Owner (Assigned to), Short description (~ one sentence) & Description (high-level overview). The Configuration item is optional.

3. Submit the problem record by selecting the Submit button.

19

4. After the proactive problem record is created, follow the same steps of Section VI. or Section V. starting with Step 2. **Relating the incident(s) will be based off the direction of Section B. of the Appendix.**

**VIII.   STEPS TO RECORD PROBLEM RECORD – RETRO**

There may be occasions when the UCF IT Problem Management process cannot be followed in its entirety/order due to Emergency changes that must to be introduced as soon as possible to restore services. If an Emergency change is not implemented as soon as possible, the identified issue could create significant risk to the university.

If for any reason an Emergency change is implemented without a related ServiceNow incident record, then the accountable UCF IT department is STILL REQUIRED to create a problem record after IT services are restored. This is known as a retro problem record.

The retro problem record will ensure a root cause analysis (RCA) is completed for historical reference, management review and communication (that may be required). The Problem Owner is responsible to relate the problem record to the Emergency change record.

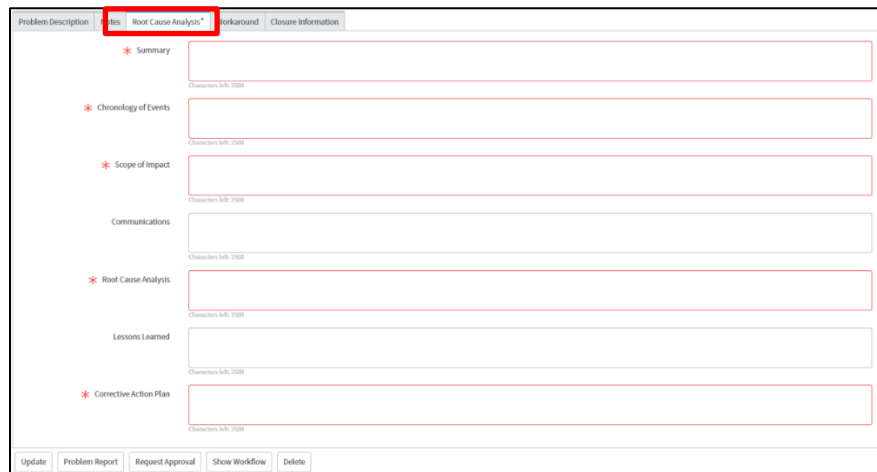There is one way to create a retro problem record:

1. Type "Problem" in the navigator/application menu search bar within ServiceNow and select Create New
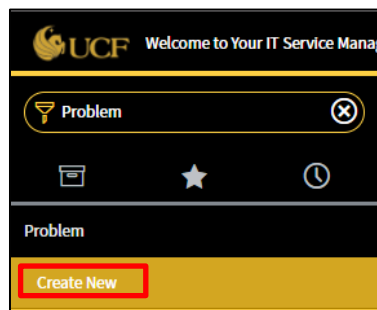
2. The newly created problem record will require an Assignment group, a Problem Owner (Assigned to), Short description (~ one sentence) & Description (high-level overview). The Configuration item is optional.

3. Submit the problem record by selecting the Submit button.

4. Next, because this is a retro problem record, identifying a workaround or relating incidents to the problem record is not applicable. However, as indicated above "The

Problem Owner is responsible to relate the problem record to the Emergency change record."

Within the Root Cause Analysis (RCA) section/tab of the problem record, fill out all required fields that have an asterisk in red. As a reference, the section titles are highlighted blue and defined below.

Summary: Provide the summary of the problem
Chronology of Events: Provide the timeline of the problem
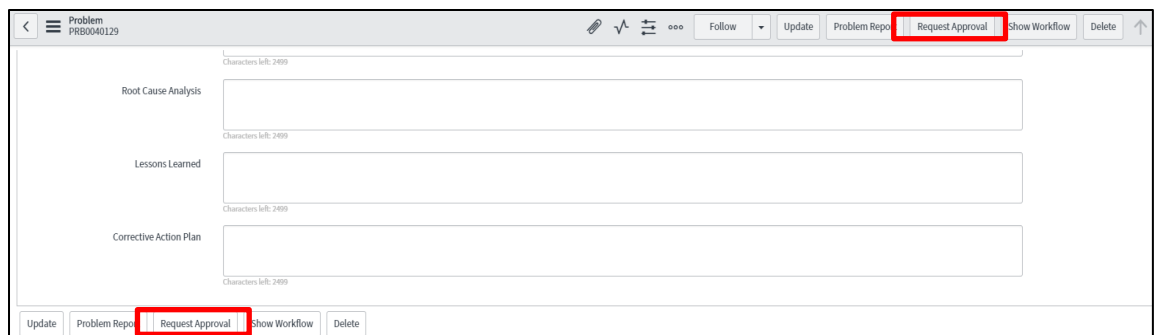**Scope of Impact:** Provide summary of impact/affected systems and users
Communications: Optional field. Provide how the problem was communicated
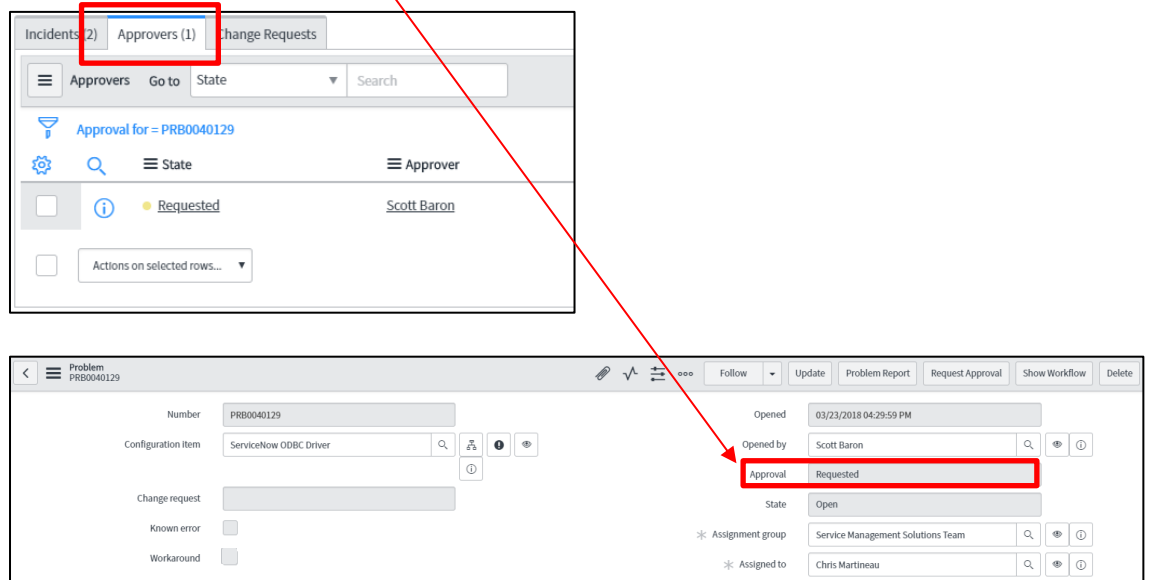**Root Cause Analysis:** Provide the root cause of the problem
Lessons Learned: Optional field. Provide the lessons learned
Corrective Action Plan: Provide both short-term and long-term action items

5. After completing the RCA section/tab in its entirety, select Request Approval to send the RCA to the Problem Manager (ServiceNow "Assignment group" Manager) for approval. The UCF IT Problem Management Policy requires the Problem Manager to approve the RCA before the problem record can be raised as a known error. Email notifications will be sent to the Problem Manager and Problem Owner for RCA requests, rejections and approvals.
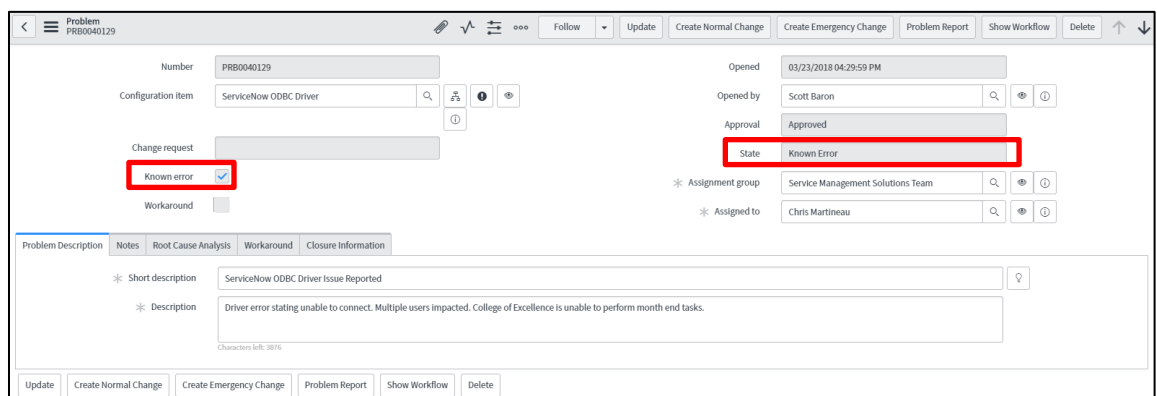

21

The Approvers section/tab located on the problem record will indicate there is an Approval Requested. The Approval field in the top section of the problem record will also indicate the Approval has been Requested/Rejected.

After the Problem Manager reviews and approves the RCA, the problem record will be raised as a known error. The state of the problem will change to known error and the Known error checkbox will be selected.

NOTE: If the Problem Manager rejects the RCA, the Problem Owner should make the necessary updates per the Problem Manager's rejection comments and resubmit for approval by selecting Request Approval again.
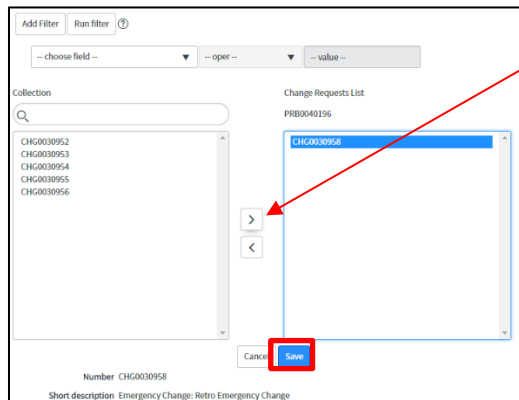

6. Following the Problem Manager approving the RCA, the Emergency change record is required to be related to the retro problem record
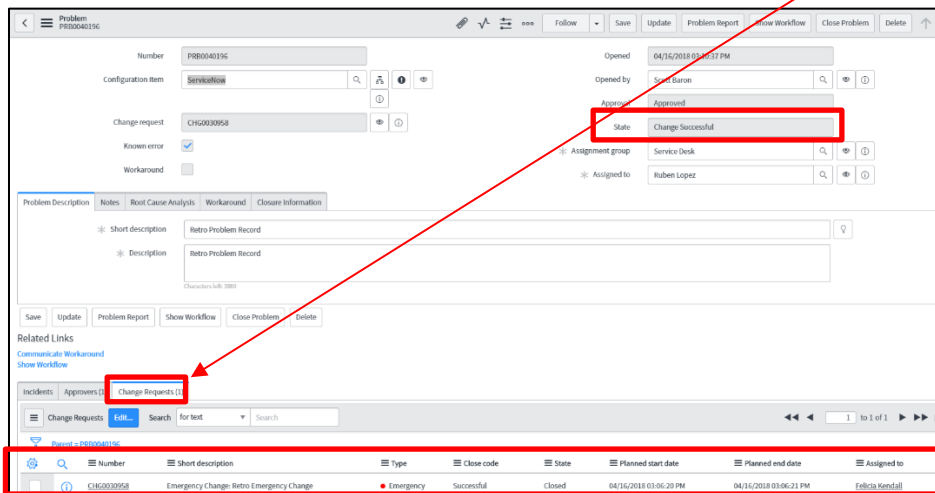
22

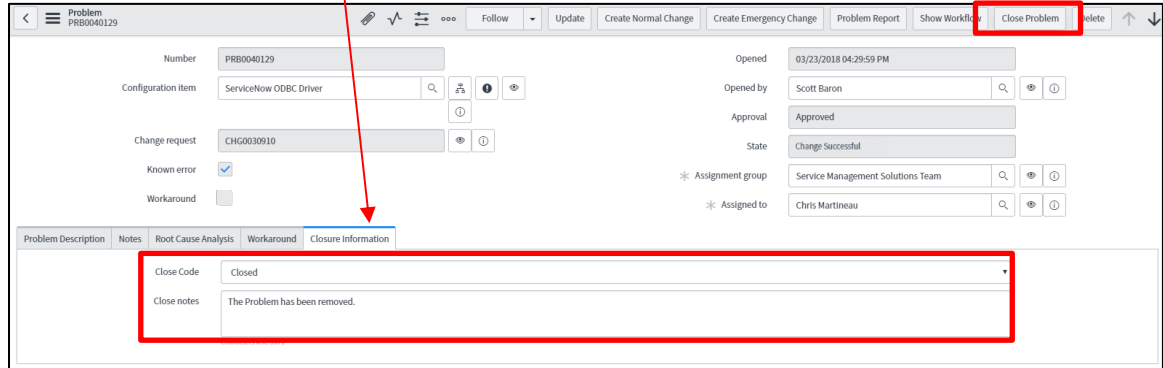Go to the Change Requests section/tab of the problem record and click Edit
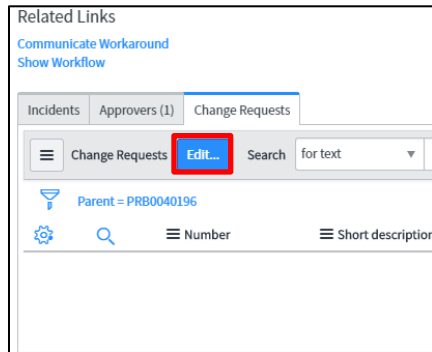
7. Find (highlight) the associated Emergency change record, select the right arrow and then select Save

8. After relating, the change record will show in the Change Requests section/tab and the State of the problem record will change to "Change Successful"

23

9. Lastly, the Problem Owner is to close out the problem record by navigating to the Closure Information section/tab, select the Close Code of Closed, fill out the Close notes and select the Close Problem button.
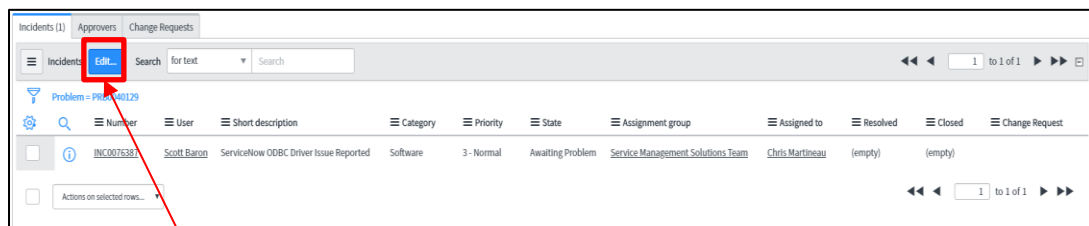

IX. APPENDIX

A. RELATING ACTIVE (OPENED) INCIDENTS TO PROBLEM RECORDS

There are two recommended ways to relate active (opened) incidents to a problem record.
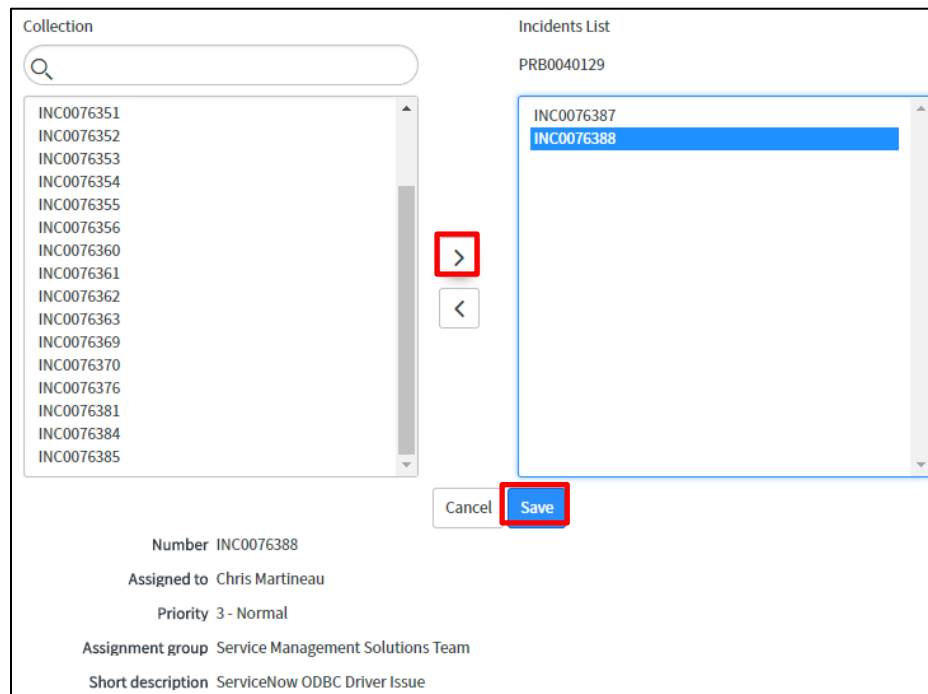
i. From the Problem Record

To relate applicable incident(s) to the problem record. Go to the Incidents section/tab

Click on Edit

Search on the incident number(s) you are relating and then select the right arrow to bring them over to the Incidents List

Click Save and the record will be added to the Incidents section/tab. To remove incidents from the relationship, just click the Edit button and select the left arrow from the incidents List.

NOTE: If an incident is removed from the problem relationship, the state of the incident will remain "Awaiting Problem". It is up to the incident assignee to update the state accordingly.
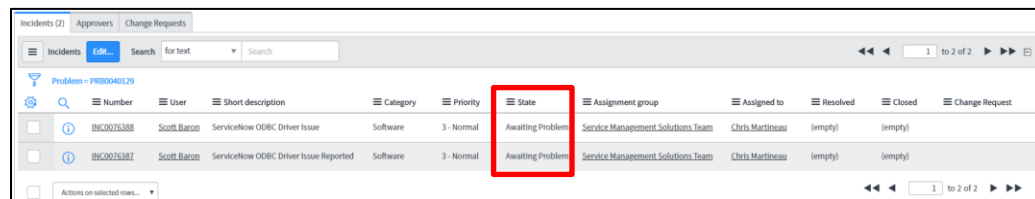

ii.   From the Incident Record – OneSearch

When an incident assignee opens up an incident record, they will see the OneSearch section that reflects all relevant knowledge articles, open problems, open incidents, service catalog suggestions, etc.

The Open Problems section reflects all relevant open problems for the incident assignee to review. If there is an incident that should be related to an open problem, the incident assignee can select the Link icon.
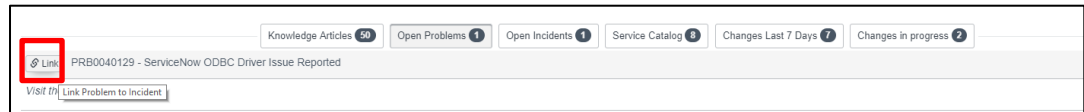
Once selecting the Link icon, the incident record will prompt to save the record to finalize. The incident assignee can either right click on the grey header bar and select Save, select the Update button or select the Save button
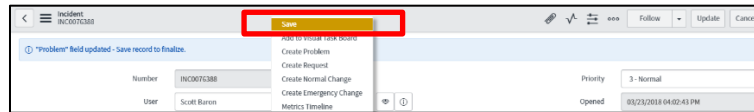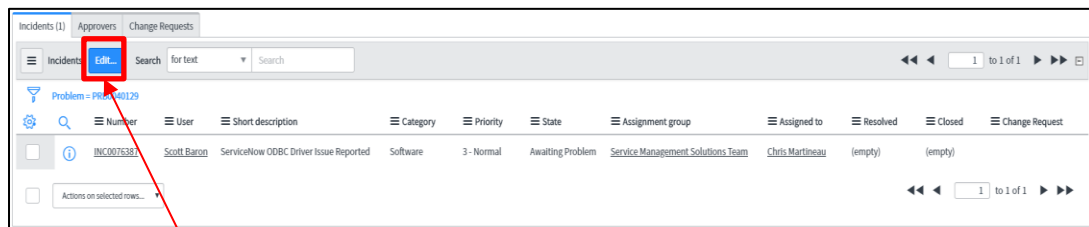

B.   RELATING INACTIVE (CLOSED) INCIDENTS TO PROBLEM RECORDS

There is one recommended way to relate inactive (closed) incident(s) to a problem record.
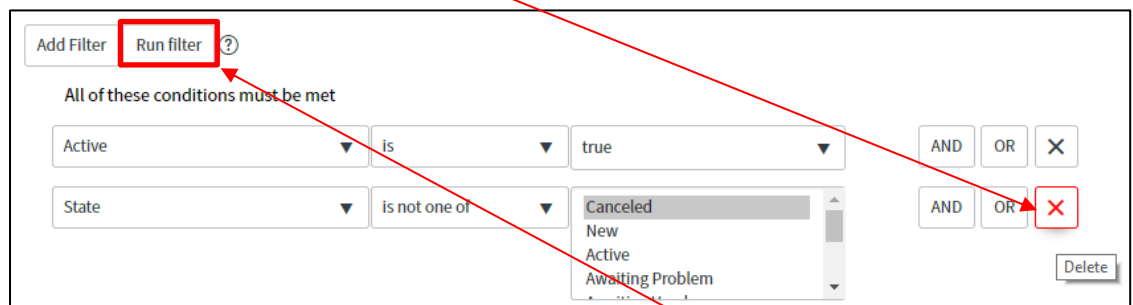
i.   From the Problem Record

To relate applicable incidents to the problem record. Go to the Incidents section/tab
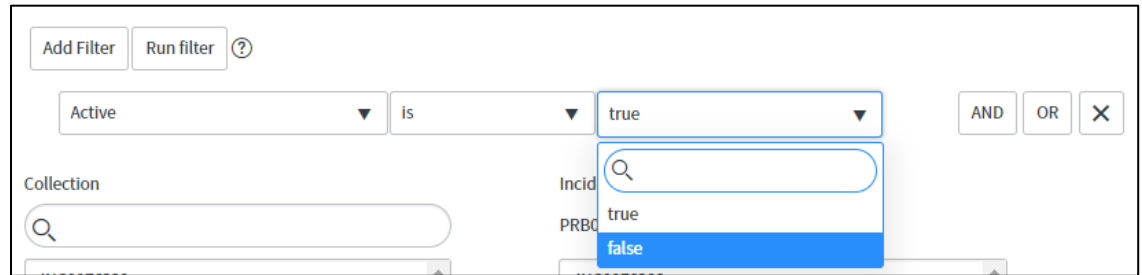

Click on Edit

The default filter needs to be modified to return inactive (closed) incidents.
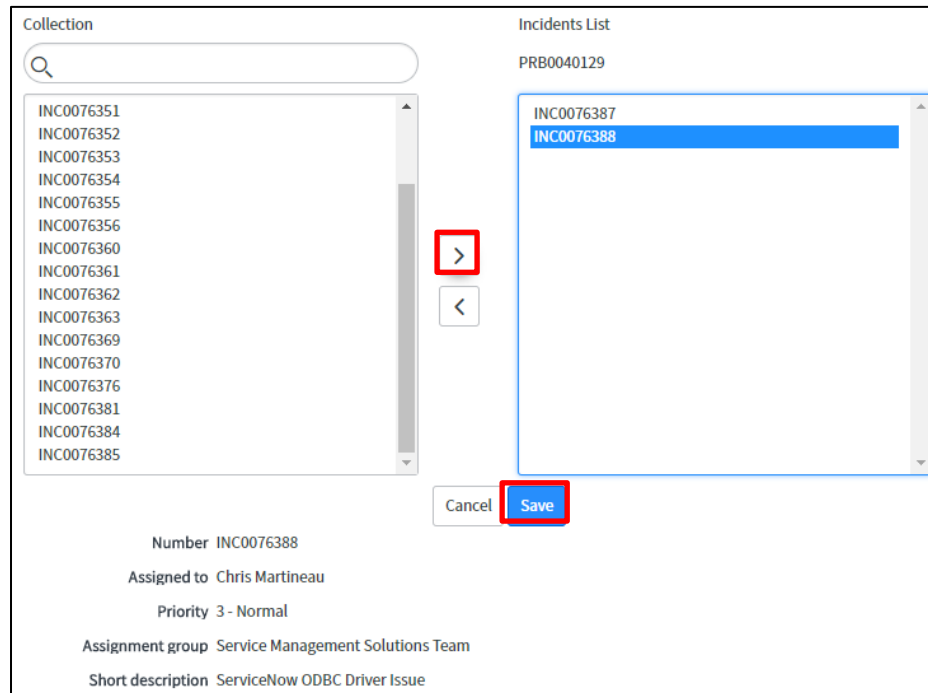
Select the "X" (Delete) from the State condition row to remove the condition.

Then modify Active is true to Active is false and select Run Filter.

Search on the incident number(s) you are relating and then select the right arrow to bring them over to the Incident List
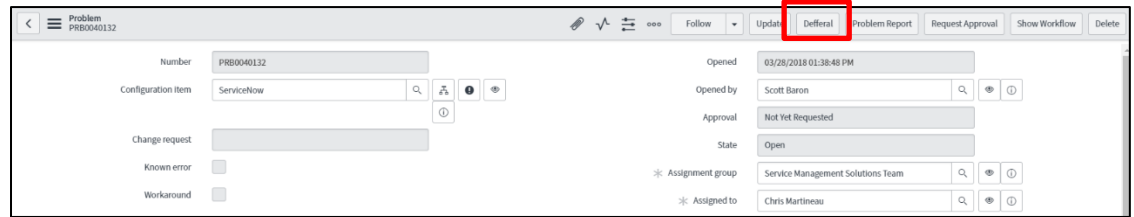

Click Save and the record will be added to the Incidents section/tab. To remove incidents from the relationship, just click the Edit button and select the left arrow from the Incidents List.

C.   DEFERRING A PROBLEM RECORD (HOW TO)

A problem record can be deferred ONLY if the Problem Owner deems there is no root cause and workaround determination (e.g. costs are too high to diagnose, value to remove is too low, etc.)". Once a problem record is raised as a known error or a workaround is identified, the Problem Owner is no longer able to defer the problem record. The Deferral button will be removed as an option on the form.

To defer a problem record, click the Deferral button and then input the Close notes (reason why the problem is being deferred).

Following the problem deferral, a ServiceNow email notification will be sent out to the related incident assignees notifying them that there is no longer a related problem to the incident.

Attention incident assignee. Problem record PRB0   was deferred without root cause and workaround determination. You are receiving this notification because you are the incident assignee of an incident that was related to this problem record. Please continue to manage this incident using the UCF IT Incident Management Policy and Procedure.

Thank you.

D.   GENERATING (RUNNING) A PROBLEM REPORT

A problem report is an executive summary report often used when departments inside or outside UCF IT are requesting a summary report of the problem.

This report can be generated at any time during the life of the problem record.

To generate a "Problem Report", click on the Problem Report button located on the problem record.

By clicking this button, ServiceNow generates a PDF, which is downloaded to the clients browsers default location.