HP Service Manager

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For the supported Windows® and UNIX® operating systems

Problem Management help topics for printing

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Problem Management overview

You can use HP Service Manager Problem Management to identify the underlying reasons for one or more incidents, implement workarounds, identify known errors, and provide permanent solutions that minimize the effects of incidents caused by errors in the IT infrastructure and to prevent problem recurrence. Over the long term, this leads to a reduced volume of incidents as well as saved time and money. Problem Management enables you to achieve the following results:

- Identify errors in IT infrastructure, record them, track their history, find resolutions for them, and prevent recurrence
- Create automatic alerts and notifications that indicate when a problem, task, or known error opens or the owner or status changes
- Escalate problems automatically if not resolved in a timely manner
- Record resolutions and make them easily available to affected user groups
- Find opportunities for improvements and make the necessary tools easily accessible
- React to issues related to incidents
- Proactively resolve issues before incidents occur
- Reduce incidents against your service assets and configuration items

Problem Management implementation

You should implement Problem Management to run concurrently with incident Management because it relies heavily on data gathered through the incident management process. The quality of proactive Problem Management depends on monitoring service successfully and the quality of the data recorded. Issues and incidents must be identified, recorded, classified, investigated, and diagnosed by knowledgeable users. To be effective, Problem Management requires the following input:

- Well recorded incidents and issues
- Reactive analysis of incidents and issues
- Proactive analysis of the IT infrastructure

- Input from involved personnel, such as support staff, developers, vendors, trainers
- Discovered solutions

It often works well to begin with reactive analysis of incidents and issues, then continue with proactive analysis of the IT infrastructure after gathering data. Proactive Problem Management relies heavily on established service monitoring and data gathering.

Proactive and reactive Problem Management

HP Service Manager Problem Management provides a lifecycle approach to managing problems that is integrated with other modules of Service Manager, including Incident Management, Change Management, Release Management, and Knowledge Management. It consists of reactive and proactive approaches to managing problems:

- Reactive Problem Management, which is generally executed as part of Service Operation based on incident history.
- Proactive Problem Management, which is initiated in Service Operation, but generally driven as part of Continual Service Improvement.

Problem Management is the process responsible for managing the lifecycle of all problems. Incident Management and Problem Management are separate processes although they are closely linked. Incident Management focuses on the restoration of service to users, whereas Problem Management focuses on identifying and removing the causes of incidents.

Problem Management includes the activities required to diagnose the root cause of incidents and to determine the resolution to related problems. It is also responsible for ensuring that the resolution is implemented through the appropriate control procedures, especially Change Management and Release Management.

Problem Management also maintains information about problems and the appropriate workarounds and resolutions, which helps the organization to reduce the number and impact of incidents over time. In this respect, Problem Management has a strong interface with Knowledge Management, and tools such as the Known Error Database are used for both.

Problem Management provides improved service quality and reliability. The number of recurring incidents should decrease as you increase the number of permanent solutions. As your Problem Management system matures, the amount of elapsed time in the find-to-fix ratio should decrease.

Using mass update with record lists in Problem Management

Mass update enables you to select multiple records from a list of records and then to update the value in a field or several fields in the selected records. The system provides a template form that displays the fields for the selected records and allows a user to change the value of any of the displayed fields. The Mass Update template form does not display all fields in the records. For example, fields marked as read only in the data policy do not display. Mass update is available for problem records, problem task records, and known error list records. It is also available for problem queues, problem task queues, and known error queues.

When doing a mass update, you should remember that the value you enter for a particular field becomes the value for that field for all of the records you selected.

A system administrator can edit the appropriate datadict table so that a field does not appear in the list of fields displayed by the Mass Update template form. On the Data Policy form, change the Usage Type column for the field to System.

Incident Management relationship

Problem Management and incident Management are related. Incident Management must provide effective incident classification and tracking to provide good data for Problem Management analysis.

The Knowledge Base that Problem Management builds and maintains is a solution repository for new incidents. Matching incidents to problems and known errors is the first step in spotting trends. Subsequently, trend analysis helps you remove errors before they affect a large segment of users.

Interoperability

HP Service Manager has a built-in Interoperability feature that automatically populates related problem and incident records with updated information.

Interoperability enables two or more components to exchange information within HP Service Manager. Service Manager schedules transparent updates to a table or application to reflect changes in another table or application.

The automatic process begins when you update a record that has links to another record. For example, if a problem or known error record has associated incident and change records, an update to the change record should trigger automatic updates to the problem and incident records.

When the ioevents.schedule RAD application runs, it uses copies of the original record and the changed record, then selects the ioevents record with a matching table name. If the condition in the actions array is true, the application creates a schedule record with a list of actions to occur. When the ioevents.process RAD application runs, it processes the schedule record and the associated ioaction record with the update information.

These record updates are transparent in normal processing. Background schedulers make the changes without affecting the current client/server session performance. There is no intervention required by the user to ensure all updates post correctly.

The Interoperability feature uses these tables and applications.

Component	Description	Table field	Content
ioevents table	Contains schedule records to trigger events listed in the ioactions table.	name	Action name.
		description	A brief description.
		javascript	The name of the JavaScript that runs when the action occurs.
ioactions table	Contains action or event records processed by the ioevents.schedule RAD routine. Each action record contains a JavaScript to complete the action.	filename	The table name that the event references.
		actions	An array of structures with information about interoperability actions and conditions.
		name	A field in the actions array of structures that contains the name of the interoperability action.
		condition	A field in the actions array of structures containing the condition that triggers the action.

Component	Description	Table field	Content
ioevents.schedule RAD routine	Processes the ioevents table at regular intervals to locate records with pending actions. If the event condition is true, ioevents.process processes the actions record in the ioactions table.		
ioevents.process RAD routine	Processes the actions records in the ioactions table.		
Interoperability Helpers (ScriptLibrary record)	Contains JavaScript functions to create schedule records manually.		

Creating schedule records manually

There is a ScriptLibrary record named interoperabilityHelpers. This record contains JavaScript functions that enable you to create schedule records manually. When Service Manager calls these functions, they generate the same records that ioevents.schedule creates automatically. Administrators may find it necessary to schedule updates at another time if a record to be processed is locked and processing is delayed. You can use the scheduleAction(record,action) JavaScript function to create these schedule records manually.

Advanced Interoperability tailoring

Application developers can add scripts for new actions or tailor out-of-box scripts to run differently. In all custom applications, ensure that you refer to the ioaction table record as vars.$L_file.

Change Management relationship

Problem Management and Change Management are also related. Change Management is the tool that tracks and implements a Request for Change (RFC), which permanently changes the infrastructure and prevents future incidents.

When the RFC is complete, the Problem Management process reviews the change before the known error closes.

Priority, impact, and urgency

Priority is how an individual service desk interaction, change request, incident, or problem fits into the ongoing sequence of tasks required to close the interaction, change request, incident, or problem. It

also indicates how soon the work should begin. Determining the priority of a single service desk interaction, change request, incident, or problem depends on how many other defects need attention, the risk of delay, and the resources available to fix it.

Impact is the potential business vulnerability. There is no global value; it is subjective and each business must set and modify its own impact value list.

Urgency is a value that reflects how soon the defect must be resolved to avoid business consequences. It identifies how soon you must react to avert or reduce the impact of the defect on customers.

Assigning values to impact and urgency is subjective. Priority is a HP Service Manager calculation based on the values you specify for impact and urgency. As you can experience assigning impact and urgency values, you will refine your decision criteria. A service desk interaction, change request, incident, or problem that is isolated can have a low impact initially, but a high urgency because of the potential for damage if the defect becomes widespread. For example, a new computer virus is a problem that can escalate quickly.

Problem Management users

Each user must have an operator record that contains personal information. User information includes name, address, phone numbers, login name, and password for HP Service Manager. Service Manager operator records also store capability words for each user. Without an operator record, a user cannot log onto Service Manager.

Problem Management phases

Problem Management phases are the activities in the life cycle of a problem. The out-of-box Information Technology Infrastructure Library (ITIL) workflow category matches the best practice recommendations of ITIL. The following table shows the ITIL process and the out-of-box HP Service Manager process.

ITIL activity	ITIL workflow	Service Manager phases
Problem Control	Problem Identification	Logging
	Problem Classification	Categorization
	Problem Investigation	Investigation
	Problem Resolution	Resolution, Review

ITIL activity	ITIL workflow	Service Manager phases
Error Control	Error Identification	Logging
	Error Assessment	
	Error Resolution	
	Close Error	Closure

Problem Control overview

The Problem Control objective is to return the user to full functionality as quickly as possible. Problem Control identifies the cause of the problem and delivers a solution or a workaround back to the service desk managing the incident.

Problem Control activities

HP Service Manager has an action for each ITIL-defined problem Control activity.

ITIL activity	ITIL workflow	Service Manager phases	Possible HP Service Manager actions
Problem Control	Problem Identification	Logging	Click **Problem Management** > **Create New Problem** or Click **Problem Management** > **Search Problems**
	Problem Classification	Categorization	Click **Problem Management** > **Search Problems**
	Problem Investigation	Investigation	Click **Problem Management** > **Search Problems** You can: Select a problem record that is in the Investigation phase. Open the **Tasks** tab and click **Link New Task** to create a problem task record.
	Problem Resolution	Resolution, Review	Click **Problem Management** > **Search Problems**

Tracking and monitoring problems

HP Service Manager can track individual problems and their associated activities. A complex problem can generate several tasks, potential workarounds, and can require updates to existing incidents. Problem Management tracks every aspect of a problem during these problem Control activities and can produce charts and dashboards that visually describe the status of the problem.

Service Manager applications also have an integrated alert and notification system that keeps the primary reporting resources informed about the problem. You can specify when Service Manager should send these notifications and who should receive them.

Phase 1: Logging

Input to the problem identification activity comes from two sources, incident Management and proactive Problem Management. When an incident does not match existing problems or known errors, incident Management passes the information to problem Control. Opening a new problem record stores the relevant details in the rootcause table.

Creating a problem

An administrator or user creates a problem record when one or more conditions occur:

- When you analyze incident Management data, there are recurring incidents caused by a single error.
- A problem or known error record does not exist for the identified error.
- There are incidents that do not have problem or known error record matches.
- Independent infrastructure analysis identifies a potential problem that is not yet related to a reported incident.
- A critical incident requires an immediate solution.

The problem record captures all critical data to ensure that you can track the error to a final resolution.

Identify the problem

If you analyze incident data, you may find more than one incident that describes the same error, or incidents that do not match identified problems or known errors. For example, three separate service desk interactions in a single day report a network outage. The circumstances are similar and the

affected Configuration Items are the same. The three incidents generate a problem record that describes the outage.

Ongoing analysis of the infrastructure might also identify a problem that is likely to cause errors in the future. For example, a technician finds a computer virus on the mail server, or the network administrator learns that there is a powerful new virus propagated by e-mail attachments.

When you identify the problem, there is a permanent record that contains information about the affected Configuration Item (CI) and related CIs, as well as the primary and secondary assignment groups who own the problem.

Phase 2: Categorization

After you create the problem record, the problem classification process begins. Classification identifies relationships, urgency, assesses the impact on the customer's business service, determines priority, and assigns the problem to a specialist or support group. Problem classification is an important activity because it identifies the relationships that the problem has with other services provided, and assesses the amount of effort required to research the problem and recover from it.

Categorize the problem

Problem Management has four categorization levels that refine the problem description. Statistical analysis of problems enables you to spot trends and identify areas that need further analysis. The categories are:

- Category
- Area
- Subarea
- Problem Type

For example, there are 10 out-of-box categories for Configuration Items. If the Category is `problem`, the Area is `failure`, and the Subarea is `job failed`, there are seven different problem Types that you can choose. This refinement provides data for trend analysis.

Classify the problem

Classification determines how much effort is necessary to restore the Configuration Items to service and return the user to full functionality. Classification is a subjective assessment based on impact, urgency, and priority. Each has a numeric assignment.

Classification	Description	Possible values
Impact	The potential business vulnerability. There is no global value; each business must set its own impact criteria.	1 – Enterprise 2 – Site/Dept 3 – Multiple Users 4 – User
Urgency	How soon the problem must be resolved to avoid business consequences. It identifies the amount of time that you have to avert or reduce the impact of the problem on customers.	1 – Critical 2 – High 3 – Average 4 – Low
Priority	How an individual problem fits into the ongoing sequence of problem resolution. Indicates when a problem can be addressed. Determining the priority of a single problem depends on how many problems need attention, the risk of delay, and the resources to fix the problem. Summarizes the assessment of urgency plus impact on customers.	1 – Critical 2 – High 3 – Average 4 – Low

Problem Management calculates priority to be the average of Impact plus Urgency. Fractional results round to the lower number. For example, if the Impact is 4 and the Urgency is 3, the Priority is 3.

Problem record information

Problem records are usually linked to incident records and contain some of the same information. As the problem moves through successive phases, you should add information about the solution, workaround, and link to the known error record. There are two ways to create a problem record:

- Open a related problem record from an existing incident record. The required information from the incident record automatically populates the problem record.
- Open a problem record directly. You must provide all required information.

The problem record includes the following information.

Field	Required?	Description
Title	Yes	Title of the problem.
Description	Yes	Summary of the problem.
Affected Service	Yes	The service that is affected by the problem.
Status	No	Categorize, Assigned, Work in Progress, or Closed.

Field	Required?	Description
Problem ID	Yes	System-generated problem record number with a PM prefix.
Phase	No	The current workflow phase of the problem.
Target Resolution Date	No	Date promised to the customer. All subordinate tasks to resolve the problem must have due dates that do not exceed this date.
Primary CI	No	Click **Fill** to select the primary hardware or software resource affected.
Affected CI Count	No	A system-generated count of the number of CIs affected by the outage. The count does not include the Primary CI. Affected CI count is based on the number of items entered in the Assessment section. It is calculated based on what is in the Assessment section in the Affected CIs table. The information in this field is read-only.
Category	Yes	This field is prepopulated with the value "problem".
Area	Yes	This field is prepopulated with data from an escalated incident. Service Manager displays different lists of areas depending on the category you selected.
Subarea	Yes	This field is prepopulated with data from an escalated incident. Service Manager displays different lists of subareas depending on the area you selected.
Problem Source	No	The source of the problem. Click the drop-down list to choose one of these values: 1 – User 2 – Event 3 – Group 4 – Incident
Contact Information	No	If the problem is created from an interaction, this field is populated with the value in the corresponding field in the interaction record.
Related incident Count	No	Problem Management calculates the number of related incidents. The information in this field is read-only.
Impact	Yes	A numeric value that measures the potential business vulnerability of the customer. It may reflect the effect on related agreements or expected service levels. Click the drop-down list to choose one of these values: 1 – Enterprise 2 – Site/Dept 3 – Multiple Users 4 – User
Urgency	No	A numeric value that measures how soon the problem must be resolved to avoid business consequences. Click the drop-down list to choose one

Field	Required?	Description
		of these values: 1 – Critical 2 – High 3 – Average 4 – Low
Priority	No	How soon the problem needs resolution, based on impact and urgency. The values are: 1 – Critical 2 – High 3 – Average 4 – Low The information in this field is read-only. Problem Management calculates Priority based on the Impact and Urgency values that you choose.
Root Cause Description	Yes	Detailed description of the problem.
Assignment Group	Yes	The group tasked with resolving the problem.
Problem Coordinator	Yes	Click **Fill** to select a problem coordinator.
Major Problem	No	When checked, indicates that the problem is a major problem, and a **Problem Manager** field appears. In addition, the **Major Problem Review** tab appears in the problem record, and the Review phase becomes mandatory.
Attachments section	No	Click **Add File...** to attach a document to the problem.
Related Records section	No	HP Service Manager automatically populates the table entry with related record information.
Workflow section	No	Graphic representation of the Problem Management workflow for the current record.

Note: To open a problem record, your operator record security profile must include the Open privilege. The SysAdmin capability word includes this privilege.

Searching for a Configuration Item

You can specify a Configuration Item (CI) in the problem record. Problem Management transfers the primary CI information in the problem record to the known error record. If the CI that caused the issue is an associated CI, you must make it the primary CI in the problem record, or edit the CI information in the known error record.

When you search for a CI from a problem form, There are three check boxes that add criteria to the query: CI Down, Critical CI, and Pending change. HP Service Manager logical fields (check boxes) can have four values: true, false, null, and unknown. If you do not select a checkbox, it has a null value and any query ignores it. If you select the checkbox, it has a value of true. If you clear the checkbox, it has a value of false.

When you search for a CI, ensure that you consider these possible checkbox values when you construct your query.

Problems with multiple Configuration Items

If a problem affects more than one Configuration Item (CI), you must repeat the steps in the Investigation phase for each CI. Problem Management enables you to open a separate task for each CI and assign an owner to complete the Investigation activities for the CI. As you open each task, Problem Management automatically links the individual task record to the main problem record.

Advancing a problem to the next phase

When you complete any phase within Problem Control (or Error Control), you can advance the problem to the next logical phase within the category. If you follow the out-of-box workflow, you can close a problem only when it is in the last phase of problem Control. If you have a customized problem Control and Error Control progression, the best practice is to complete each phase before you advance to the next one.

To advance a problem to the next phase, you must change its status and complete all of the fields that are required for that status.

When you complete the last phase in Problem Control, you must open a Known Error record to continue advancing through Error Control.

Phase 3: Investigation

When the specialist or support group formally accepts responsibility for the problem, the problem investigation process begins. Problem investigation examines the symptoms of the problem to identify the root cause. A correct analysis of the root cause enables you to identify the solution correctly during the Error Control process. It may be necessary to offer a workaround to restore full or partial service to the customer while you wait for a permanent solution.

Documenting the root cause

The root cause is the reason why the problem exists. Identifying and documenting the root cause leads to a workaround and known error status. Identifying the root cause also formally stores this information in the database for future reference. The following table shows a sample problem and different root causes that affect the workaround and final solution.

Problem	Root Cause
HP Service Manager upgrade fails	User error. The user did not uninstall the previous version first.
HP Service Manager upgrade fails	Training required. The user did not know that the client version must be the same as the server version.
HP Service Manager upgrade fails	Configuration Item error. The operating system is not supported.

Phase 4: Resolution

Problem resolution and closure is the final activity in Problem Control. The objective is to test the root cause candidate. Then you can reclassify the problem as a known error. You might also open a Request for Change (RFC) during this activity.

Due dates

Problem Management uses date fields to set expectations for problem resolution.

Type of record	Date field name	Comments
Problem	Expected Resolution Date	You must specify a future date.

Type of record	Date field name	Comments
Task	Due Date	This date must occur on or before the expected resolution date for the problem unless the problem resolution date has already expired. The task owner cannot edit this date and time after initial entry.
	Expected Resolution Date	Read-only. This field has a value only if the parent problem record has an expected resolution date specified before you create the task. You cannot adjust the expected resolution date of the problem to fit the task.
Known error	Expected Resolution Date	This time and date are not dependent on the expected resolution date of the problem record.

Notes:

1. The default time (00:00:00) is midnight of the date specified. You may want to edit it to fall within daytime business hours.
2. Problem Management allows you to open a task for a problem record with an expired resolution date when necessary. The notification system continues to notify you that the resolution date of the problem with a status of past due is expired. You must close the new task before you can close the problem record with the expired resolution date.

Error Control overview

The Error Control objective is to effect permanent changes to Configuration Items (CIs) with known errors. Making permanent changes reduces the number of current and prospective incidents. Integrated HP Service Manager Error Control and Change Management processes enable you to track the entire workflow and update all affected records automatically.

Error Control activities

HP Service Manager has an appropriate action for each Error Control activity.

ITIL activity	ITIL workflow	Service Manager phases	Possible Service Manager actions
Error Control	Error Identification	Logging	Click **Problem Management** > **Search Known Errors**. For a known error record that is in the Logging and phase, you can:

ITIL activity	ITIL workflow	Service Manager phases	Possible Service Manager actions
			• Elaborate the description of the underlying cause and possible workaround (if identified). • Define a temporary fix or permanent solution for the known error. Different solution alternatives can be evaluated until a definitive solution can be proposed to the Problem Manager. • Create a Request for Change record. To do so, select the known error record, click **More** or the More Actions icon and choose **Open Related Change**.
	Error Assessment		
	Error Resolution		
	Close Error	Closure	Click **Problem Management** > **Search Known Errors**. You can select a known error record in the Closure phase to record the resolution and close the known error.

Tracking and monitoring errors

The team that identified the root cause is not necessarily the team who will locate and apply the resolution. The first stage of Error Control is important for a smooth hand off of the error. The team that tracks the error keeps sources on the primary reporting matrix updated as necessary.

The steps in tracking and monitoring errors are:

- Obtain the error status.
- Reassess the error status.
- Update primary reporting matrix about the error status.
- Track any relevant data and ensure that the problem, known error, incident, and change records are all updated.

HP Service Manager posts updates to affected records automatically.

Phase 1: Logging

This phase is critical because it is where technical experts study the error to understand it and develop a solution.

Although a known error is the usual result of completing the last phase of Problem Control, an internal organization, such as Development or Customer Support can also identify known errors. For example, Development might notice a known error when performing current or new development activities such as upgrades, enhancements, or technology acquisitions. In this case, Development would Create a new problem record and verify the error during the Error assessment phase.

A permanent solution may require a change to the affected Configuration Item (CI). If this is the case, the error assessment team can open a Request for Change (RFC). HP Service Manager enables you to open an RFC from the known error record. It also updates all affected records automatically.

Known errors

Known errors are related records that link to the parent problem record, or to change records that also relate to the parent problem record. Problem records reside in the rootcause table; known error records reside in the knownerror and rootcause tables.

Creating a known error record has certain restrictions:

- To open a known error from a problem record, a Problem Management administrator must enable the option in *both* the phase record and the user profile record.
- You cannot open a task record from a known error record.
- The problem record must be in the Investigation phase if you follow the out-of-box ITIL workflow.
- If you open a known error record from a problem record, Problem Management copies the Description field from the problem record.

Error identification

The first phase of Error Control captures all information about the known error. A known error is the usual result of completing the last phase of problem Control.

An internal organization, such as Development or Customer Support may identify known errors, but the primary record must be the problem record, which becomes the parent of the known error record. For example, Development might notice a known error when performing current or new development activities such as upgrades, enhancements, or technology acquisitions. The first step is to open the

problem record, then step through the problem Control phases before opening an associated known error record. The known error is verified during the Error identification phase.

When a known error evolves from problem Control phases, the known error has an identified root cause and a workaround, or an explanation of why root cause and workaround information does not apply.

Change requests

Error control often initiates a Request for Change (RFC) to implement a solution. The solution may require a technical change, revised process, training, or other organizational change. When you create an RFC, it becomes the responsibility of change Management. The priority of the RFC depends on the impact of the problem on business activities.

As long as Known error resolution is pending, the status of the RFC must be reported back to Problem Management and recorded in the known error record. The known error cannot close until the RFC closes.

Phase 2: Closure

Closing the record is the last Error Control activity and the last Problem Management activity. Do not close the record until you ensure that the error is resolved, and the Problem Management process functioned correctly.

You cannot close a known error record if there are any related Request for Change (RFC) records open.

Error resolution

The input to Error resolution is from the Error assessment phase, which produces a solution. This phase applies the solution to the known error through a Request for Change (RFC), submitted to change Management. The Change Management process applies the solution to the Configuration Item (CI) to eliminate the known error.

You must verify that the Request for Change (RFC) is complete, removes the error in the infrastructure, and does not introduce a new error before you can close the known error record.

When does a known error close?

Closing the known error record depends on these conditions:

- All related Request for Change (RFC) records must be closed.
- The Known Error Details section must have information about a Solution, Root Cause, and Workaround before you can close the known error record.
- The record must be in the Error Closure phase.

Using Problem Management

Users and administrators must know how to complete certain tasks that are associated with Problem Management. For example, you need to be familiar with the Knowledge Base, be able to find problem and known error records, and create reminders. For more information about working in Problem Management, see the related topics.

Problem Management searches

Problem Management enables you to search for problem records and display them in a list. You can also save these queries as views. The search form fields enable you to narrow the search parameters.

There are three types of searches available:

- Use a **Basic Search** to look for records using key search criteria.
- Use an **Advanced Search** to find records opened, updated, or closed within a certain time frame.
- Use an **IR Search** to locate specific text within records.

Searching the central Knowledge Base

The central Knowledge Base is the default database for any knowledge search in HP Service Manager. You can search it using the standard Service Manager Knowledge application, or you can choose other Knowledge Bases. However, if you choose the global Knowledge Base, you are searching all knowledge resources at once.

Problem Management assignment groups

When you Create a new problem, the assignment group that you specify is a list of users who are responsible for a problem.

Administrators define the available assignment groups for problems, tasks, and known errors. It is important to make the same assignment groups available for problems, tasks, and errors. If an assignment group is available for a problem, but not for a task or known error, HP Service Manager generates an error message when you create a new task or known error record. The user must choose an available assignment group to continue.

To define Problem Management assignment groups, add a list of available groups to the Problem Management Security Role. If you do not define Problem Management assignment groups, Problem Management makes all assignment groups available when you create problem, task, or known error records.

Problem Management Macro List Editor

Macros are actions, driven by predefined conditions, that execute when Problem Management saves a record in the database. Macro actions are associated with files and reflect certain states in the records of those files.

You can create, edit, and delete macros from the Tailoring tools.

Problem Management tables

Problem Management uses the following tables.

Record type	Table	Record prefix
Problem Management record	rootcause	PM
Problem Management task record	rootcausetask	PM (Task records append a second sequential number to the parent task number)
Problem Control category record	rootcausecat	none
Problem Control phase record	rootcausephase	none
Problem Control task category record	rootcausetaskcat	none
Known error record	rootcause	KE
Error Control category record	rootcause	none
Error Control phase record	rootcause	none
Incident record	probsummary	IM
Request for Change (RFC) record	cm3r	C

Click **System Definition** > **Tables** > ***anytablename*** to see associated fields, keys, links, forms, triggers, records.

Problem Management link records

Problem Management uses the following link records to link data:

- PMscrelate.problem.task
- rootcause
- rootcausetask
- screlate.rootcause
- screlate.rootcausetask

Problem Management and Service Level Management

Problem Management supports the selection of more than one applicable SLA for a problem record. When you open a problem, you can choose a Customer SLA for the contact, a Customer SLA for the contact and one or more applicable Service SLAs for the contact's subscriptions to a service, or no SLAs at all. Service SLAs only apply if the problem references a Business Service, the contact has a subscription to the service, and the subscription references an SLA. The following describes the system's process for adding SLAs to a problem record.

- If one SLA is associated with the problem based on the contact, the Customer SLA is added to the problem.
- If the contact has an Individual Subscription for the CI, the Service SLA from that subscription is added to the problem.
- If the contact has a Department Subscription for the CI, the Service SLA from that subscription is added to the problem.
- If the contact has neither, then no Service SLA is added to the problem.

The SLAs should contain all Service Level Targets (SLTs) that define the business rules for all process and service metrics. You can choose as many SLTs as necessary to describe your process and service commitment. If necessary, you can add more SLTs that meet your criteria.

When you view the new record, the SLA section lists the Process Time Objectives that apply to the problem.

See the related topics to view the definitions for Customer SLA and Service SLA.

Escalation and notification

HP Service Manager can escalate Problems based on thresholds defined in the Problem Management module or thresholds associated with SLAs, which can be applied to Problem records. Alerting, escalation, reporting, and breach tracking are part of the integration between the Problem Management and Service Level Management modules.

Historical problem records

You can search for and access historical Problem and Known Error records through the Problem Management module during the investigation process.

Incident trending for problem identification

HP Service Managerfacilitates incident trending for pro-active problem identification. Problem Managers can use charts and dashboards to view historical interactions or incident data.

The charts and dashboards allow sorting by certain incident characteristics which demonstrate relatedness (such as incident rates, related CI, category/area/subarea, and affected service). Therefore, the analyst is able to study the incidents types that occur on certain IT infrastructure or services, to measure both the frequency of those incidents over time and the rate of change (increase/decrease), to pinpoint which CIs/Services experience certain types of issues more frequently, etc.

With this information, Problem Managers can analyze the patterns and trends to draw hypotheses for the incidents and targets. More targeted queries as a result of initial analysis can support Total Quality Control (TQC) methodology that helps progress the investigation from identifying symptoms to uncovering root causes to prevent future incidents.

For example, reporting on historical incident data and determining an increasing trend of downtime incidents related to a particular CI might indicate the need for maintenance or replacement of that CI. An increasing trend of degraded-response-time incidents against a given service might be traced back to a capacity inadequacy on an infrastructure component of that service.

In addition, key information such as Related Incident Counts is associated with a Problem Record. This information can be consolidated in reports showing time-line related trends.

Integration

HP Service ManagerProblem Management is fully integrated with other Service Managermodules such as Change Management, Incident Management, Configuration Management, and Knowledge Management.

Integration: Change Management

HP Service ManagerProblem Management and Change Management modules are fully integrated, so Known Error records can be linked to Change requests. When a Change request is created from a Known Error record, the link is established automatically. Links between the existing records can also be created manually. Links are referenced in each linked record.

Integration: CMDB

Each Problem Record includes links to all related/affected CIs. The user can drill down into any CI record to view its CMDB definition (as appropriate for the user based on user roles and security restrictions). Important information such as CI relationship and impact analysis is greatly aided by this integration.

Integration: Configuration Management

Each Problem record references the primary CI that is the subject of the Problem record, as well as other affected CI records.

Authorized users can access CI records from the Problem record to gather additional information on the subject CIs. Authorized users can also directly access the Configuration Management module (the HP Service Manager CMDB) to gather Problem Management related information through direct record access or queries.

Integration: Incident Management

HP Service Managerprovides separate modules for creating and tracking Incident records and Problem records, but you can link the records from these modules. You can open Problem records from Incident

records (and vice versa), and Service Manager automatically copies all relevant information from the source record to the target record and links the records. You can also link the records manually, or link multiple records from one module to multiple records from the other module. Links between records are referenced in linked record.

Integration: Knowledge Management

Problem information can be promoted to HP Service Manager Knowledge Management module; when you search for potential resolutions in Knowledge Management, you can find applicable workarounds from Problem records.

Service Manager Knowledge Management module is a fully integrated solution for knowledge-management support. It supports Knowledge-Centered Support (KCS) standards and guidelines by providing a natural language search engine and rich-text authoring tools that enable you to search, update, and author knowledge articles.

Knowledge Management integrates with Interaction, Incident, and Problem records so that you are able to search for and use knowledge from the existing Incidents or Problems while attempting to resolve a new Incident or Problem, or to create new knowledge. You can also use the rich-text editor to include image files and document files of various types as attachments that can be linked to other documents or included as part of an existing document.

Known Error

There are two main phases to the Problem Management process: Problem Control and Error Control. In the first phase, the Problem Manager or technician assigned to the process studies infrastructure trends and analyzes services and CIs to determine possible failure points. In the second phase, the analyst documents the findings related to an identified problem, and initiates a corrective course of action that may include: documenting a workaround; recording a Known Error condition pending future action; or creating a Request for Change. The “recording of a Known Error condition pending future action” could be the result of a defect that requires resolution from a third party such as a software patch or firmware upgrade.

Problems and Known Errors can be opened against multiple environments, including development, testing, and production environments, by using Category/Area/Sub-Area and/or CI names that identify the environment following the same general process.

Known Errors are visible in linked Incident records. Similar Known Errors can be searched for during Incident creation. Known Errors are also visible in related Change records. Known Errors are indexed by the search engine and presented in knowledge search results.

Known Error found in the development environment

Known Error records can be opened directly to show the known errors found in the development environment. This is a useful activity as Known Error records are automatically used to support other processes including Incident and Knowledge Management. Automatic searches and matching of problem descriptions in an Incident creation or knowledge search can highlight Known Error records for the user.

Problem record data model

Problem Management enables you to track different types of information related to a problem, such as categorization, prioritization, description, contact information, and so on.

Assignment

HP Service Manager Problem Management routes and assigns records to predefined users and user groups based on Category of the problem, or the skill set, location, and availability (these routing rules require configuration). Problem records can be assigned to individuals or groups. The status or Problem records can also be viewed through service queues and the reporting applications.

Categorization

Each problem record includes tiered categorization that identifies the problem and can associate it with a specific service, as well as with a category/area/sub-area.

In addition, each Problem is associated with one or more affected CIs that are linked via their own relationship tracking to one or more affected Services. The user can visualize the list of impacted CIs and Services as they relate to the Problem.

Closure

Problem closure activities trigger the prompting of a closure code that identifies the type of activity category associated with the ability to close the Problem Record.

The possible values of Cause Code and Resolution are:

- Automatically Closed
- Not Reproducible
- Out of Scope
- Request Rejected
- Solved by Change/Service Request
- Solved by User Instruction
- Solved by Workaround
- Unable to solve
- Withdrawn by User

Contact information

The contact for the problem, the Problem Coordinator, is a field in the Problem record with a link to the Contact record. The Contact record for that Problem Coordinator contains all his/her contact information, including name and preferred method of contact.

Click on the magnifying glass icon next to the **Problem Coordinator** field to execute a Find action, which links to the Contact record. The path of the linkage is from Problem-Coordinator to the Operator table, which then links to the Contact table.

Problem description

Each Problem record includes a field for providing detailed descriptive information recording the symptoms and other relevant information.

Problem lifecycle

The HP Service Manager Problem Management module implements ITIL processes for problem management. The module helps ensure that standardized methods and procedures are used for all problem investigation activities. Separate workflows are provided for the Problem and Known Error processes. By its out-of-box workflows, Problem Management enables personnel and management to:

- Create Problem and Known Error records, assigning a unique number against which all activities can be tracked and reported
- Within a Problem and Known Error record, identify the tasks required to determine the root cause of the Problem or resolve the Known Error
- Follow, track, and query Problem and Known Error records through their entire lifecycle. Workflow phases identify the logical sequence of the repeatable steps within the problem management lifecycle. There is also a visualization of the current, previous, and potential future phases of the Problem or Known Error.

Problem resolution

In addition to storing analysis activities in the Activity list, the Problem Record also stores specific resolution and recommendation instructions in their own fields which can be used to populate useful, related Knowledge Management database entries. The date/time stamps of the resolution activities are also stored.

Problem status

Each Problem Record includes a Status field that is populated with an appropriate pre-defined list of lifecycle states.

Source of problem records

Each Problem record stores the information about the initial originator/creator of the information. A problem will often be created from one or more related incidents. These can be seen in the related incidents section of the problem form.

When the source of the related incident(s) to a problem is a person, then basic information-such as whether the Incident was opened through the self-service interface, the details of the submitter, the Incident trigger, and location of the issue-is shown in the Interaction record linked to the Incident record.

When the source of the related incident(s) to a problem is an event trigger, then the incident record contains that information in the Title and Description fields. These fields reference the source event displayed in the External ID field of the Event Browser in HP Operations Manager.

Problem prioritization

Problem records include fields to capture impact and urgency codes. Urgency can be automatically or manually populated based on the Category of the Problem record. Impact is populated manually or could be related to other information in the problem record such as the related service or CIs. HP Service Manageruses these values to automatically derive the priority of the record.

Problem prioritization based on associated records

Using the related records function in HP Service Manager, operators may increase the severity of a Problem. Service Manager can also be configured to increase the severity or impact rating of a Problem record based on the number of linked Incident records or the number of the affected end users .

Problem records creation

HP Service Manager provides various mechanisms for creating Problem records:

- Problem records can be created manually from a blank Problem screen.
- Problem records can be created manually from an incident to support a reactive problem activity.
- Problem records can be created automatically based on a configured event criteria.
- When Incident records are opened, automatic matching/Problem creation can also be triggered.

Problem record identifier

HP Service Manager tracks problems in individual Problem Record, and each is assigned with its own unique identifier. The default is to automatically assign a unique number using a format such as PM<XXX>. This helps the user not only identify the record uniquely, but also know that the record comes from Problem Management.

Problem workarounds

Problem solutions and workarounds can be communicated to the service desk staff in two ways.

- System administrators can configure a help desk operator's interface to automatically check for potentially similar records based on similar Known Errors, root causes, Incident records, Incident record duplicates on a device, or Incident record duplicates on parents.
- When a user creates an Incident record, HP Service Manager prompts the user with a list of similar Problem records, which the user can access for workaround information. In addition, Problem information can be promoted to the Service Manager Knowledge Management module; when users search for potential resolutions in Knowledge Management, applicable workarounds from Problem records are presented.

Logs of problem record updates

Each problem record includes the date/time/activity logging that describes any action taken on the record and the lifecycle activity that it is related to. The log is maintained automatically, and the user is prompted to enter descriptive information when taking an action so that the details of the action can be properly logged.

Problem diagnostic information

Each Problem record includes an activity audit trail that stores the date, time, and text for each root cause analysis activity. This information is shown within an "Activities" section in the Problem record.

Problem Management user roles

The following table describes the responsibilities of the Problem Management user roles.

Problem Management user roles

Role	Responsibilities
Problem Manager	• Communicate with stakeholders if required • Inform the Change Manager if required • Defer problems if needed • Decide on investigation of problems • Register Request for Changes or Service Requests to solve problems • Validate proposed solutions to problems • Validate the outcome of closed changes and close problem • Validate that a problem is solved • Conduct problem review and document lessons learned • Close problem and inform stakeholders • Monitor the problem resolution progress and perform the required action
Problem Coordinator	• Periodically perform analysis to see if new problems need to be registered • Register problems • Categorize and prioritize problems • Assign work to the Problem Analysts • Schedule the problem resolution • Coordinate root cause analysis and diagnosis
Problem Analyst	• Investigate and diagnose assigned problems for workarounds and/or root causes • Review and accept or reject assigned errors problems or problem tasks • Investigate and diagnose assigned problems and propose solutions and workarounds

Problem Management user roles , continued

Role	Responsibilities
	• Identify known errors • Implement corrective actions

Problem Management workflows and user tasks

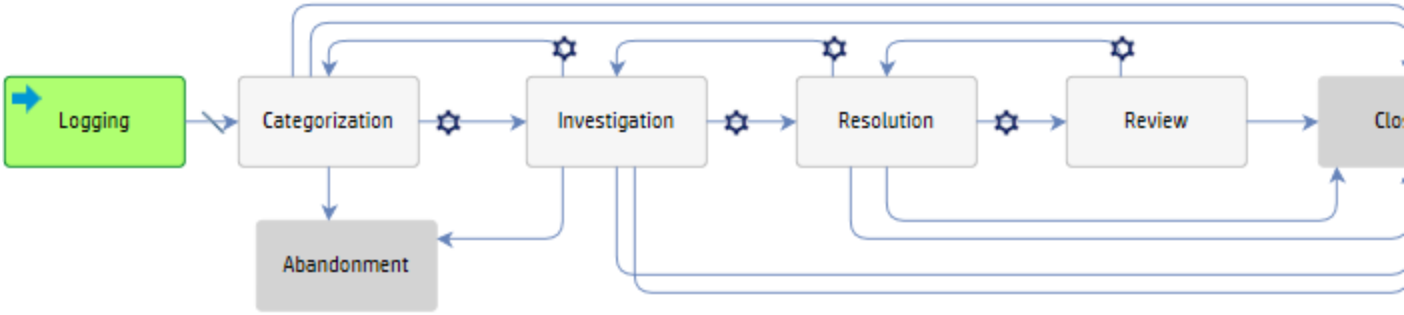
The Problem Management process includes the activities required to identify and classify problems, to diagnose the root cause of incidents, and to determine the resolution to related problems. It is responsible for ensuring that the resolution is implemented through the appropriate control processes, such as Change Management.

Problem Management includes the following out-of-box workflows:

Problem Management

The Problem Management workflow is a sequence of connected steps in the life cycle of a support or service request. In the workflow, a Problem record goes through several phases to complete the life cycle.

The Problem Management workflow consists of the following phases and tasks.



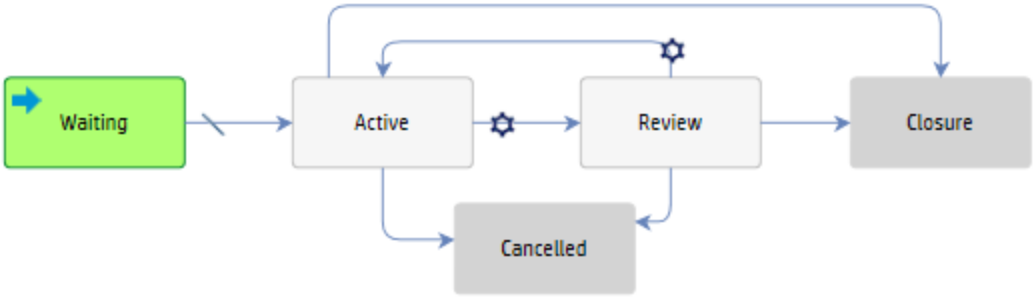
Workflow phase	Tasks
Logging	• Find problem candidates • Review incidents • Create a new problem from an incident • Create a new problem not based on an incident
Categorization	• Associate a problem with an existing incident • Update a problem • Defer a problem • Evaluate a problem • Close a problem that will not be fixed

Workflow phase	Tasks
	• Access the knowledgebase • Review deferred problems
Investigation	• Update a problem • "Schedule a problem" on page 59 • Close a problem that will not be fixed • Review deferred problems • Access the knowledgebase • Document the workaround • Reassign a problem for additional support • Schedule a problem • Set a reminder for a problem record • View records related to a problem
Resolution	• Update a problem • Document the root cause
Review	• Close a problem
Closure	• None
Abandonment	• None

Problem Task

The Problem Task workflow is a sequence of connected steps in the life cycle of a support or service request. In the workflow, a Problem task goes through several phases to complete the life cycle.

The Problem Task workflow consists of the following phases and tasks.



Workflow phase	Tasks
Waiting	• "Open a Problem Management task" on page 68
Active	• "Assign a Problem Management task" on page 74 • "Investigate and diagnose a Problem Management task" on page 69 • "Test the workaround" on page 71
Review	• "Close a problem task" on page 70
Closure	• None
Cancelled	• None

Known Error

The Known Error workflow is a sequence of connected steps in the life cycle of a support or service request. In the workflow, a Known Error goes through a single phase before closure.

The Known Error workflow consists of the following phases and user tasks.

Workflow phase	Tasks
Logging	• Open a known error • Update a known error • Close a known error • Assign a known error record to schedule a fix • Associate a change request with a known error record
Closure	• None

To see more workflow diagrams and more information about these workflows, refer to the HP Service Manager Processes and Best Practices Guide linked to in the related topics.

Problem Management views

Part of Workflow(s):

All

The Problem Management views contained in the Favorites and Dashboards navigation pane allow you to easily and quickly access specific types of records, including known errors, problems, and problem tasks.

Note: HP Service Manager provides default Problem Management views. Views that are available to a specific role or roles are noted below.

Available views for known errors

Click **Favorites and Dashboards** > **Problem Management** > **Known Error**.

The following views are available to the Problem Analyst:

- All Open Known Errors
- Open Known Errors Assigned to Me
- Open Known Errors Assigned to My Group

The following views are available to the Problem Coordinator:

- All Open Known Errors
- Open Known Errors Assigned to My Group

The following views are available to the Problem Manager:

- All Known Errors
- All Closed Known Errors
- All Open Known Errors

- Known Errors Not Assigned in Known error investigation Phase
- Known Errors Where Solution Time Is Not Met

Available views for problems

Click **Favorites and Dashboards** > **Problem Management** > **Problem**.

The following views are available to the Problem Analyst:

- All Open Problems
- High Priority Problems
- Open Problems Assigned to My Group
- Problem Tickets Owned by Me

The following views are available to the Problem Coordinator:

- All Open Problems
- High Priority Problems
- Open Problems Assigned to Me
- Open Problems Assigned to My Group
- Problem Tickets Owned by Me

The following views are available to the Problem Manager:

- All Open Problems
- High Priority Problems
- Open Problems Assigned to Me
- Problems in Problem Prioritization and Planning Phase
- Problems Not Assigned in Problem Investigation and Diagnosis Phase
- Problem Tickets Owned by Me

Available views for problem tasks

Click **Favorites and Dashboards** > **Problem Management** > **Problem Tasks**.

The following views are available to the Problem Analyst:

- All Open Problem Tasks Assigned to Me

Find problem candidates

Part of Workflow(s):

Problem Management: Logging

Applies to User Roles:

Problem Coordinator

There are times when you may need to create a problem before any incidents are reported. Typically, such problems arise from periodic reviews of incident trend analysis or from vendor/supplier published issues. You can also obtain lists of specific incidents to review from your stakeholders, from external reporting systems, or by searching for incidents flagged as problem candidates. You should set up periodic reviews for all areas mentioned below, and any other areas that might be problematic.

To find problem candidates, follow these steps:

1. Review known error information published by your suppliers to identify potential problems.
2. Review events for all systems to identify potential functional problems.
3. Review performance, capacity, and availability for all systems to identify potential performance and capacity issues.
4. Review data provided by security management to identify potential security problems.
5. Search for priority 1 incidents in the database. To do this, follow these steps:
   a. Open **Problem Management** > **Search Problems**.
   b. In the **Look For** list, select **Incident**.
   c. In the **Priority field** list, select **1 - Critical**.
   d. Use search or advanced search to find one or more records.Service Manager displays incidents with a priority of 1.

6. Search for problem candidates. To do this, follow these steps:
   a. Open **Problem Management** > **Search Problems**.
   b. In the **Look For** list, select **Problem**.
   c. In the **View** list, select **Open Problem Management Candidates**.
   d. Use search or advanced search to find one or more records.Service Manager displays incidents flagged as problem candidates.
7. Search for problem candidates in the incidents queue. To do this, follow these steps:
   a. Open **Problem Management** > **Search Problems**.
   b. In the **Look For** list, select **Incident**.
   c. In the **View list**, select **All Open Incidents**.
   d. Use search or advanced search to find one or more records.
   e. Refine your search by adding the following kinds of incidents, or other candidates, as required.
      - Closed incidents
      - Candidates resolved through a workaround or temporary fix
      - Candidates not linked to problems or known errors
      - Suspected problems (as identified by stakeholders)

      Service Manager displays incidents that meet the search criteria.

Review incidents

Part of Workflow(s):

Problem Management: Logging

Applies to User Roles:

Problem Coordinator

You should periodically review incidents (whether they have been closed or are currently open) to determine if they are the result of a new problem or if they match an existing problem. Your analysis of incident data may reveal similar or reoccurring incidents, which may indicate a problem. By default, Service Manager requires that all closed incidents not resolved through a permanent fix must be

related to a problem. You can match such incidents to existing problems or create a new problem record for them.

To review incidents, follow these steps:

1. Open the incident that you want to review.
2. Review the details of the incident.
3. Determine whether the incident is already related to an existing problem or known error.
4. Search for problems and known errors similar to this incident (such as same classification, same CI, or same product or model).
5. If the incident is similar to an existing problem, associate the incident to that problem. You can relate a configuration item (CI) group to the problem or create a new CI group to define the set of CIs that have this problem.

   Note: The Incident Management staff may have already linked some incidents to existing problems.

   Service Manager automatically updates the incident count of a problem record when you associate an incident to it.
6. If you cannot find a matching problem or known error, create a new problem record.

Create a new problem from an incident

Part of Workflow(s):

Problem Management: Logging

Applies to User Roles:

Problem Coordinator

When you create a problem record from an incident, Service Manager automatically associates the incident record to the problem record. Every time someone associates another incident to this problem, Service Manager updates the incident count for the problem. The more related incidents a problem has, the greater the impact the problem has on an organization and the higher priority it should have.

Note: By default, problem record identification numbers have a prefix of PM.

To create a new problem record based on an existing incident record, follow these steps:

1. Click **Incident Management** > **Search Incidents**.
2. Use search or advanced search to find one or more records. Specify search criteria to find the incidents that you want to make new problems for.
3. Select an incident from the record list.
4. In the **Related Records** tab, select **Related Problems** from the **Link Type** drop-down list, and the then click **Link New Record**.
5. Fill out the remainder of the problem record as needed.
6. Click **Save**.

Note: You can add parts and labor costs tracking to an incident, problem, change, or request or to any associated task of a record. To do this, navigate to the **Cost** tab, specify the currency, and then specify the date, part number, and quantity for any parts used. Alternatively, specify the date, technician name (used to derive the rate from the operator record), and hours worked for any labor. Service Manager will automatically calculate and roll up costs from any sub tasks into the **Total cost** field on the **Costs** tab.

Create a new problem not based on an incident

Part of Workflow(s):

Problem Management: Logging

Applies to User Roles:

Problem Coordinator

There are times when you may need to create a problem before any incidents have been reported. Typically, such problems arise from periodic reviews of incident trend analysis or from vendor/supplier published issues. You can address these problems as part of an organization's preventive or scheduled maintenance. Should any incidents arise from these problems, you can associate them with the problem after creating it.

Note: By default, problem record identification numbers have a prefix of PM.

To create a new problem record not based on an existing incident record, follow these steps:

1. Click **Problem Management** > **Create New Problem**.
2. In the **Title** field, type a title that accurately describes the problem.
3. In the **Description** field, type the following details:
   - The problem
   - The symptoms, including any error messages
   - The impact from a business perspective
   - The frequency of reoccurrence
   - The conditions under which any service disruption occurs
4. Fill in the following required fields, and any other required or relevant fields.

   Note: Problems created from Incidents or other records may contain some prepopulated fields.

   - Select the **Affected Service**.
   - Select the **Status**.
   - Select the **Impact** and **Urgency**.

     Note: Service Manager selects the default priority based on the impact and urgency values.
5. Click **Save**.

Note: You can add parts and labor costs tracking to an incident, problem, change, or request or to any associated task of a record. To do this, navigate to the **Cost** tab, specify the currency, and then specify the date, part number, and quantity for any parts used. Alternatively, specify the date, technician name (used to derive the rate from the operator record), and hours worked for any labor. Service Manager will automatically calculate and roll up costs from any sub tasks into the **Total cost** field on the **Costs** tab.

Associate a problem with an existing incident

Part of Workflow(s):

Problem Management: Categorization

Applies to User Roles:

Problem Coordinator

Any time that you discover that an incident was caused by an outstanding problem, you should link the incident to the problem record. It is important to link incidents to problems so that you can determine the impact of the problem in your organization. The more related incidents a problem has, the greater the impact of the problem. Monitoring the number of related incidents will also help you identify problems that require additional work to resolve.

To associate a problem with an existing incident, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.
3. Select an existing problem from the record list.
4. In the **Related Records** tab, select **Related Incidents** from the **Link Type** drop-down list, and the then click **Link Existing Record**.
5. Specify the incident number or click **Search** to view the incident search form.
6. Add optional filtering criteria, and then click **Search** again to display an incident record list.
7. Double-click the incident record you want to associate with the problem record. The incident record ID is displayed.
   - Click **OK** to link the incident record to the problem record.
   - Click **Cancel** to stop the search and exit.
   - Click **Search** to view the incident record search form again. Click **Search** again to redisplay the incident record list.
8. Click **OK**. Problem Management populates the Related Records section with information about the related incident.

Associate a problem with an existing problem

Part of Workflow(s):

Problem Management: Investigation

Applies to User Roles:

Problem Analyst

Problem Coordinator

Problem Manager

If you determine that a problem was caused by an existing problem record, you should link the problem with an existing problem record. It is important to link the problem, so you can determine the impact of the problem on your organization.

To associate a problem with an existing problem record, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.
3. Select an existing problem from the record list.
4. In the **Related Records** tab, select **Related Problems** from the **Link Type** drop-down list, and the then click **Link Existing Record**.
5. Specify the problem number or click **Search** to view the incident search form.
6. Add optional filtering criteria, and then click **Search** again to display a problem record list.
7. Double-click the problem record you want to associate with the current problem. The problem record ID is displayed.
   - Click **OK** to link the problem record to the current problem.
   - Click **Cancel** to stop the search and exit.
   - Click **Search** to view the problem record search form again. Click **Search** again to redisplay the problem record list.
8. Click **OK**. Problem Management populates the Related Records section with information about the related problem.

View records related to a problem

Part of Workflow(s):

Problem Management: Investigation

Applies to User Roles:

Problem Analyst

Problem Coordinator

Problem Manager

Part of the review process for monitoring problems includes reviewing related records. When you review records related to a problem, you can see how many incidents and other record types are affected by the reported problem. As the Problem Manager reviews and monitors problems and known errors, this is an opportunity to see if any trends are developing, and to resolve any issues quickly.

To view a related record, follow these steps:

1. Click **Problem Management** > **Search problems**.
2. Use search or advanced search to find one or more records.
3. Select a problem from the record list.
4. In the **Related Records** tab, click on the record number of the related record that you want to view. The related record opens.
5. Click **Cancel** to return to the problem record.
6. Click **Save & Exit**.

Create a new problem from a problem record

Part of Workflow(s):

Problem Management: All

Applies to User Roles:

Problem Coordinator

Problem Manager

There are times when you may need to open a new problem from an existing problem record. Whether a periodic review of incident trend analysis or as part of an organization's preventive or scheduled maintenance, you can open a related problem record that will be associated with the existing problem record.

To open a new problem from an existing problem record, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.
3. Select a target problem record.
4. In the **Related Records** tab, select **Related Problems** from the **Link Type** drop-down list, and the then click **Link New Record**. A New Problem form opens.
5. Add the required information to create the new problem record.
6. Click **Save & Exit**. You are returned to the existing problem record.
7. In the **Activities** tab of the original problem record, document the current activities. In the **New Update Type** field, select the applicable update type.
8. In the **New Update** field, type notes to explain the new open problem and any other current activity information.
9. Click **Save & Exit**.

Create a new problem from a user interaction

Part of Workflow(s):
Problem Management: Logging
Applies to User Roles:
Service Desk Agent
You can create a problem from a user interaction. You can also update a problem from a user interaction that has already been triggered to a problem.

Create a problem from a user interaction

To create a problem from a user interaction, follow these steps:

1. Click **Service Desk** > **Create Streamlined Interaction**. The New Interaction form is displayed.
2. Specify the **Contact** for the interaction.
3. In the **Service Recipient** field, select the service recipient.
4. In the **Notify By** field, select the user's preferred notification method.
5. Type a description for the interaction.

6. In the **Category** field, select the **problem** category.
7. (Optional) In the **Subcategory** and **Area** fields, select the subcategory and area for the interaction.
8. In the **Affected Service** field, select the affected service.
9. Click the **Continue** button. The New Problem form is displayed, with fields populated with the values from the interaction.
10. Proceed with opening a new problem by updating fields such as **Affected Service**, and then click **Save**.
11. Search possible solutions in the form that appears. If matching solutions are found, select the corresponding record, and then click **Link Selected Record**. If you do not want to link a problem to the new problem or if no matching problems are found, click **Continue**.
12. Complete the problem form with any other relevant information.
13. Click **Save & Exit**.

Update the new problem

To update the new problem from the related user interaction, follow these steps:

1. Click **Service Desk** > **Interaction Queue**. Service Manager opens the Interaction queue.
2. Click the interaction in the queue to display the details of the record.

   Those items with a status of **Dispatched** are user interactions that have been triggered to Problem Management (or another module).
3. On the record details page, click the **Related Records** tab, and then click the related problem that you want to update.
4. Proceed with updating the problem. After closing the problem form, you are returned to the user interaction list.

Update a problem

Part of Workflow(s):

Problem Management: Categorization

Problem Management: Investigation

Problem Management: Resolution

Problem Management: Review

Applies to User Roles:

Problem Analyst

Problem Coordinator

Problem Manager

You may need to update problem records many times. Typically, you add relevant information to the Activities tab to describe the work you performed to resolve the problem. The Activities tab provides you with information about the work other operators have performed to resolve the problem. You can use the Activity tab to view the history of other activities, such as when the record opened or when the status of the record changed.

You should record all the investigation activities in the known error to track the effort associated with the problem, task, or known error. After the current activities for a phase are complete, you advance the known error record to the next phase.

To update a problem, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.
3. Select an existing problem from the record list.
4. To document test results provided by the Problem Analyst, follow these steps:
   a. In the **Investigation and Resolution** tab, enter a detailed update in **Suggested Workaround** field. Include the necessary actions to implement the solution and any possible risks.
   b. Enter the following information to document the estimated costs and resources:
      - The estimated number of days to apply the fix
      - The estimated costs
   c. In the **Affected Configuration Items** tab, click the **Fill** icon to select any affected CIs.
   d. If the solution needs to be implemented through the Change Management process, open a change request.
5. In the **Activities** tab, select the applicable update type in the **New Update Type** drop-down list.
6. In the **New Update** field, type the description of the update.

7. Consider whether the priority of resolving this problem has changed. If you need to update the priority of this record, select the **Categorization** tab, and then follow these steps:
   - Update the **Impact**, if necessary.
   - Update the **Urgency**, if necessary.
8. Consider whether the problem needs further investigation. If so, update the **Status** field to **Deferred**.
9. Click **Save & Exit**.

Note: You can add parts and labor costs tracking to an incident, problem, change, or request or to any associated task of a record. To do this, navigate to the **Cost** tab, specify the currency, and then specify the date, part number, and quantity for any parts used. Alternatively, specify the date, technician name (used to derive the rate from the operator record), and hours worked for any labor. Service Manager will automatically calculate and roll up costs from any sub tasks into the **Total cost** field on the **Costs** tab.

Note:

- If you update the workaround before the Problem Analyst is finished diagnosing and testing, make sure you notify the Problem Analyst.
- If any outstanding incidents matched the problem, notify the Incident Analyst.

Add an attachment to a problem record

To add an attachment to a record, follow the steps below:

1. Open the record to which you want to add an attachment. To do this, select a record from the queue or search for a specific record.

   Note: You can also add an attachment when you create a new record.

2. Scroll down to and click the **Attachments** tab.
3. Click **Add files**, and then browse to the file or files that you want to attach to the record.

After you confirm your selection, a progress bar in the **File Name** column displays the progress of the file upload process.

Note: The multiple file upload and progress bar functionality is only available in browsers that support the HTML5 File API (for example, Mozilla Firefox, Google Chrome, or Windows Internet Explorer 10).

The file is now uploaded. However, the file is not attached to the record until you click **Save**. To remove a file that is uploaded in error, click the **X** icon in the **Remove** column before you click **Save**.

Note:

- The size limit for individual attachments and the space that is available for storing attachments are displayed in the upper-right corner of the **Attachments** section.
- If you try to attach a file that exceeds the size limit for individual attachments or the total available space, you receive an error message, and the attachment is not uploaded.
- If you try to attach a type of file that is not permitted (for example, an .exe file), you receive a message that prompts you to remove the attachment. If you do not remove the attachment, it is removed automatically when you click **Save**.
- There is no limit to the number of files that you can attach to a record, provided that they do not exceed the size limit. However, we recommend that you do not attach more than 20 files to a single record.
- If you refresh the browser or click certain comfill buttons that refresh the browser before the file upload process is complete, the file is not uploaded.
- Whether you can attach a file with a duplicated name against the attachment list depends on the setting of the **preventDuplicatedAttachmentName** parameter.

4. Click **Save**.

Open an attachment in a problem record

To open a file that is attached to a record, follow these steps:

1. Open the record to which the file that you want to open is attached. To do this, select a record from the queue or search for a specific record.
2. Scroll down to and click the **Attachments** tab.
3. To open a single file, click the file name or the download icon in the **Download** column.

   To open multiple files, select the files that you want to open by using the check-boxes next to the file names, and then click **Download**.

   Note: When you download multiple attachments concurrently, HP Service Manager packages the files in a compressed (zipped) folder. Some third-party unzipping tools may not correctly handle file names that contain non-Roman characters. In this situation, the name of the unzipped file may change unexpectedly. We recommend that you use WinRAR to unzip the compressed folder.
4. Click **Save**.

View the details of an attachment in a problem record

To view the details of the files that are attached to a record, scroll down to and expand the **Attachments** section of the appropriate record.

Note: The number of attached files is displayed on the **Attachments** tab heading. This enables you to identify whether a record has attachments quickly without having to expand the **Attachments** section.

However, the number of attached files is not displayed if a custom dynamic view dependency is configured for the section or tab title. This is because the custom dynamic view dependency may include file count information.

If a file is attached to the record, the following information is displayed in the table in "Attachments" section:

- The name of the attached file
- The size of the attached file (in KB)

- The login name of the person who attached the file
- The date when the file was attached to the record

Attached files are displayed in the order in which they were uploaded.

Delete an attachment from a problem record

To delete an attachment from a record, follow these steps:

1. Open the record from which you want to delete an attachment. To do this, select a record from the queue or search for a specific record.
2. Scroll down to and click the **Attachments** tab.
3. To delete a single file, click the **X** icon in the **Remove** column.

   To delete multiple files, select the files that you want to delete by using the check-boxes next to the file names, and then click **Remove**.
4. In the dialog box that appears, confirm the deletion.
5. Click **Save**.

Evaluate a problem

Part of Workflow(s):

Problem Management: Categorization

Problem Management: Investigation

Applies to User Roles:

Problem Analyst

Problem Coordinator

The goal of evaluating a problem is to determine what priority resolving the problem has in your organization. A problem's priority is a combination of the problem's impact, urgency, severity, frequency, and risk. For example, the frequency of reoccurring incidents may influence the urgency to resolve the problem. Furthermore, you may need to perform a risk assessment to determine the problem's impact on the business, such as whether the problem affects service availability or customer

satisfaction. Due to resource constraints, it is important to focus on those problems that have the highest impact on the business.

To evaluate a problem, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.
3. Discuss the problem with stakeholders (for example, during a meeting) and answer the following questions:
   - What is the priority of resolving this problem?
     - Update the **Impact**, if necessary.
     - Update the **Urgency**, if necessary.
   - Is this problem correctly documented? If the problem is not correctly documented, update the problem documentation.
   - Does the problem need further investigation?
     - If the problem is still relevant, update the Status field to **Deferred** and schedule it for investigation at a later date.
     - If the problem is no longer relevant, close the problem record.
4. In the Activities tab, select an update type in the **New Update Type** field.
5. In the **New Update** field, type a description of your update.
6. Click **Save & Exit**.
7. If you have determined that you can close the problem record, follow these steps:
   - Make sure all known errors are closed. For more information, see the related topics.
   - Complete the necessary actions until the problem record progresses to the Review phase.
   - Click **Close** in the taskbar, confirm that the subcategory and area are correct, and then select an applicable closure code.
   - Click **Finish** to close the problem.

Schedule a problem

Part of Workflow(s):

Problem Management: Investigation

Applies to User Roles:

Problem Coordinator

Problem Manager

When you schedule a problem, set the target dates based on the priority and impact on affected services and whether there is a workaround or fix available. Assign or reassign the problem to a group with the skills necessary to find a resolution to the problem.

To schedule a problem:

1. Click **Problem Management** > **Search problems**.
2. Use search or advanced search to find one or more records.
3. Select a record from the list.
4. In the **Investigation and Resolution** tab, enter values in the **Expected Root Cause Identified Date** and **Expected Problem Resolution Date** fields.

   Note: The Investigation and Resolution tab is only available once the problem moves to the Investigation phase.
5. In the Activities section, click the **New Update Type** field list and select the applicable update type.
6. In the **New Update** field, type notes to include the current activity update.
7. Click **Save**or **Save & Exit**.
8. Notify the Problem Coordinator and the stakeholders about the plans and resources assigned to this problem.

Close a problem that will not be fixed

Part of Workflow(s):

Problem Management: Categorization

Problem Management: Investigation

Applies to User Roles:

Problem Coordinator

Problem Manager

If, after investigation, you determine that an open problem is not considered to be a problem by the stakeholders, or that the problem is invalid or a duplicate, you can close it without fixing it.

To close a problem that will not be fixed, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.
3. Double-click the problem record that you want to close.
4. In the Activities tab, select the applicable type from the **New Update Type** field.
5. In the **New Update** field, enter the reason that this problem will not be fixed.
6. Click **Close** in the taskbar, confirm that the subcategory and area are correct, and then select an applicable closure code.
7. Click **Finish** to close the problem.

Note: You can add parts and labor costs tracking to an incident, problem, change, or request or to any associated task of a record. To do this, navigate to the **Cost** tab, specify the currency, and then specify the date, part number, and quantity for any parts used. Alternatively, specify the date, technician name (used to derive the rate from the operator record), and hours worked for any labor. Service Manager will automatically calculate and roll up costs from any sub tasks into the **Total cost** field on the **Costs** tab.

Defer a problem

Part of Workflow(s):

Problem Management: Categorization

Problem Management: Investigation

Applies to User Roles:

Problem Coordinator

Problem Manager

If you want to defer a problem, you must specify the reason for deferral. For example, if after investigation you decide to delay scheduling a problem for resolution, you can defer it. Or, if the Problem Analyst was unable to successfully test and validate a fix and you want to continue investigating a solution, you can defer the problem. You can later finalize how to handle the problem when you review deferred problems.

To defer a problem, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.
3. Double-click the problem record that you want to defer.
4. In the Status drop-down list, select **Deferred**.
5. In the Activities section, select the applicable update type from the **New Update Type** field list.
6. In the **New Update** field, type the reason for the deferral.
7. Click **Save & Exit**.

Note: Make sure you update the status of the problem during your regularly-scheduled review of deferred problems.

Review deferred problems

Part of Workflow(s):

Problem Management: Categorization

Problem Management: Investigation

Applies to User Roles:

Problem Manager

You should periodically review problems that are deferred to determine whether additional actions are required. As you evaluate these problems, you can determine if they should be deferred again, reassigned for further investigation, or closed if the problem is no longer relevant.

To review deferred problems:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records. You can refine your search by selecting **Deferred** in the Status field.
3. Double-click the problem record you want to review.
4. If necessary, discuss the problem with stakeholders to determine the current answers to the following questions:
   - What is the priority of resolving this problem?
     - Update the **Impact**, if necessary.
     - Update the **Urgency**, if necessary.
   - Is this problem correctly documented? If the problem is not correctly documented, update the problem documentation.
   - Does the problem need further investigation?
     - If the problem is still relevant, the problem retains a **Deferred** status, and you schedule it for investigation at a later date.
     - If the problem is no longer relevant, you close the problem record.
5. In the **Activities** tab, click the **New Update Type** drop-down list, and then select the update type.
6. In the **New Update** field, type notes to update information about the current activity.
7. Click **Save & Exit**.
8. If you determine that you can close the problem record, follow these steps:
   a. Click **Close** in the taskbar, confirm that the subcategory and area are correct, and then select an applicable closure code.
   b. Click **Finish** to close the problem.

Reassign a problem for additional support

Part of Workflow(s):

Problem Management: Investigation

Applies to User Roles:

Problem Manager

After the Problem Manager has reviewed the outstanding problems and known error records and determined that the action needed is to escalate the problem for further investigation, the Problem Manager reassigns the problem record to another level of support.

To reassign a problem record, follow these steps:

1. Click **Problem Management** > **Search Problems**
2. Use search or advanced search to find one or more records. If you searched for a specific problem ID, the problem record you specified opens. Otherwise a list of problem records opens.
3. Double-click the problem record that you want to reassign.
4. Update the **Status** to **Work in progress**.
5. Clear the assignment group in the **Assignment Group** field, and then click **Fill** to select a new assignment group.
6. Clear the assignee in the **Assignee** field, and then click **Fill** to select an assignee from the new assignment group.
7. In the **Activities** tab, click the **New Update Type** field list and select the applicable update type.
8. In the **New Update** field, type notes to include your current activity update.
9. Click **Save & Exit**.

Set a reminder for a problem record

Part of Workflow(s):

Problem Management: Investigation

Applies to User Roles:

Problem Analyst

Problem Coordinator

Problem Manager

You can set a reminder to notify you if an existing problem record meets certain conditions by a specified time. For example, you may want to be reminded if a problem is still open or is not updated by a given date.

When you set the reminder, you can choose when and how you want to be notified. You will find this particularly helpful for persistent problems that need your immediate attention.

To set a reminder, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.
3. Select a problem from the list of records.
4. Click **More** or the More Actions icon and select **Set Reminder**.
5. In the **Set Reminder** area, select one of the following reminder options:
   - **Remind At**:

     Set a reminder for a particular day and time. Click **Fill** to display a calendar to choose a date and time for the reminder.

   - **Remind In**:

     Set the reminder to occur after a particular time interval. If you choose this option, you must specify the time interval in hours, minutes, and seconds using the 00:00:00 format. You must also select a shift to specify the work schedule that this time interval is **Based On**.
6. Select one of the following conditions in the **Remind if** drop-down list:
   - **Always** (the default value)
   - **Problem has not been updated**
   - **Problem is still open**
   - **Problem is still assigned to me**
7. In the **Pop-up Message** area, select one of the following types of notification:
   - **Pop-up**
   - **Page**
   - **Email**
   - **SM Mail**

8. If you selected **Pop-up** or **Page**, type the message that you want to appear in the reminder in the **Message** field.
9. If you selected **Email** or **SM Mail**, type a title for the mail in the **Title** field., and then select the type of mail message to send in the **Message Type** area.
10. Click **OK**.

Document the root cause

Part of Workflow(s):

Problem Management: Investigation

Applies to User Roles:

Problem Coordinator

Problem Manager

When a root cause has been identified for a problem record, you can document the root cause in the problem record and add other necessary and helpful information.

To document the root cause of a problem, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.
3. Select the record to be updated.
4. Select the **Investigation and Resolution** tab.
5. In the **Root Cause** field, type the root cause information.
6. In the **Expected Root Cause Identified Date** field, select a target identification date.
7. In the **Activities** tab, click the **New Update Type** field list and select the applicable update type.
8. In the **New Update** field, type notes to include your current activity update.
9. Click **Save & Exit**.

Document the workaround

Part of Workflow(s):

Problem Management: Investigation

Applies to User Roles:

Problem Analyst

Problem Coordinator

Problem Manager

A workaround is a temporary solution to a problem. It might be a strategy that diverts your work flow around the affected configuration item or changes the service temporarily until the problem is resolved. For example, the workaround for a planned maintenance outage on printer A is to create a temporary connection to printer B. The additional number of users for printer B will increase the workload beyond normal levels, but the users for printer A can continue working until it returns to full service.

When the workaround is documented by the assigned Problem Analyst or Problem Coordinator, it also becomes the workaround in the known error record. Once the workaround is validated, you should inform the affected stakeholders.

When a workaround description is entered and saved in a problem record, Problem Management automatically records the workaround information in the related incident, if the incident is still open.

To document a workaround, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.
3. Select the record to update.
4. In the **Investigation and Resolution** tab, type the workaround in the **Suggested Workaround** field.
5. In the **Activities** tab, select the applicable update type in the **New Update Type** field.
6. In the **New Update** field, type notes to include your current activity update.
7. Click **Save & Exit**.

Access the knowledgebase

Part of Workflow(s):

Problem Management: Categorization

Problem Management: Investigation

Applies to User Roles:

Problem Analyst

Problem Coordinator

Problem Manager

The central knowledgebase is the default database for any knowledge search in HP Service Manager. You can search the knowledgebase by using the standard Service Manager knowledge application, or you can choose other knowledgebases to search.

To access the Service Manager knowledgebase, follow these steps:

1. Click **Problem Management** > **Search Knowledgebase**.
2. Use search or advanced search to find one or more records. For example, type a word or phrase in the **Search for** field.

Note: You can search for the following libraries:

- Knowledge Library
- Known Errors
- Problems
- Incidents
- Interactions

Open a Problem Management task

Part of Workflow(s):

Waiting

Applies to User Roles:

Problem Coordinator

Problem Manager

When a problem is prioritized and the investigation and resolution activities are planned (such as deadlines for the root cause analysis, solution investigation, and resolution target dates), you can create the tasks for investigating, diagnosing, and testing a workaround.

To open (or create) a Problem Management task, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.
3. Select the target record.
4. In the **Tasks** tab, click **Link New Tasks**and then choose a task category.
5. Enter values in the **Title**, **Description**, **Urgency**, and **Task** fields.
6. Click **Save** to move the task to the Active phase.

Investigate and diagnose a Problem Management task

Part of Workflow(s):

Active

Applies to User Roles:

Problem Analyst

A Problem Coordinator will assign a problem task to the Problem Analyst who has the required skills and resources to investigate the problem. The Problem Analyst is then expected to take the information provided in the task to investigate and duplicate the problem, and then find a root cause and determine a workaround for it.

To work with a current problem task, follow these steps:

1. Click **Problem Management** > **Problem Task Queue** or view your To Do list.
2. Select the target record. You can see the description of the problem, due date, category, urgency, and other details provided in the task.
3. In the **Status** field, update the status to **Work In Progress**.
4. You can begin your investigation, trying to reproduce the problem so that it is clear to you what went wrong. You can also search incident records to see if any might match the problem. For information on associating a problem record with an incident record(s), see the related topics.
5. If you cannot reproduce the problem, document your activities in the **Activities** tab. To do this, follow these steps:
   a. In the **New Update Type** drop-down list, select the applicable update code.
   b. In the **New Update** field, add notes to document what you did while trying to investigate, diagnose, and duplicate the problem. Include your time spent performing the investigation.
   c. Notify the Problem Coordinator so the coordinator can determine what other resources and skills are required to diagnose the problem.
   d. Click **Close Task**.
6. If you find the root cause and determine a workaround, document your workaround in the **Activities** tab. To do this, follow these steps:
   a. In the **New Update Type** field list, select the applicable update code.
   b. In the **New Update** field, add notes to document what you did to duplicate the problem and type a description of the temporary workaround to fix the problem. Include your time spent during the investigation.
7. Click **Save & Exit**.
8. Test your workaround, and then document the results in the problem task.

Close a problem task

Part of Workflow(s):

Active

Review

Applies to User Roles:

Problem Analyst

Problem Coordinator

Problem Manager

To close a problem task, follow these steps:

1. Click **Problem Management** > **Search Problem Tasks**.
2. Use search or advanced search to find one or more records.
3. Double-click the problem task that you want to close.
4. In the **Activities** tab, select the applicable update type from the **New Update Type** list.
5. In the **New Update**field, add any activity notes.
6. Click **Close** in the taskbar.
7. In the in the **Closure Code** drop-down list, select a closure code.
8. In the **Task Outcome** field, enter an outcome.
9. Click **Finish** to close the problem task.

Note: You can add parts and labor costs tracking to an incident, problem, change, or request or to any associated task of a record. To do this, navigate to the **Cost** tab, specify the currency, and then specify the date, part number, and quantity for any parts used. Alternatively, specify the date, technician name (used to derive the rate from the operator record), and hours worked for any labor. Service Manager will automatically calculate and roll up costs from any sub tasks into the **Total cost** field on the **Costs** tab.

Test the workaround

Part of Workflow(s):

Active

Applies to User Roles:

Problem Analyst

One of the tasks of the Problem Analyst is to review and test the workaround identified and documented in the problem task. These tests help to validate the suitability for resolving related

incidents. When the test is successful, the Problem Coordinator documents the workaround in the problem record and creates a known error record.

To update tested workarounds, follow these steps:

1. Click **Problem Management** > **Problem Task Queue** or view your To Do list.
2. View and identify any problem tasks whose workaround can be tested.
3. Test the workaround described in the **Activities** tab, using a test environment that mimics the production environment.
4. If the workaround fails, follow these steps:
   a. Document your findings in the **Activities** tab.
   b. Select the applicable update code from the **New Update Type** field list.
   c. Add notes to the **New Update** field with the results of your testing. If applicable, document the reasons a root cause is not found. Include your time spent during the investigation.

      Note: Notify the Problem Coordinator of the test results who then escalates the problem to the Problem Manager. The Problem Manager determines other resources and skills required to diagnose the problem.
5. If the workaround is successful and has been validated, follow these steps:
   a. Document your findings in the **Activities** tab.
   b. Select the applicable update type from **New Update Type** field list.
   c. In the **New Update** field, type a description of the test results.

      Note: Notify the Problem Coordinator of the test results. The Problem Coordinator validates the test results and makes additional determinations, such as whether the root cause is related to an outstanding known error, and then creates a new known error.
6. Click **Close Task**.

Close a problem

Part of Workflow(s):

Resolution

Review

Applies to User Roles:

Problem Analyst

Problem Manager

The Problem Analyst verifies that all related known errors are closed or resolved before closing the problem record. If you try to close a problem that has open related known errors, the following message is displayed:

The Problem has open associated Known Errors. Force those Known Errors closed?

If you answer "yes," the open known errors are closed, and the solution to the problem is cascaded to all those known errors (but not to known errors that were already closed). If you answer "no," only the problem is closed, and the known errors remain unchanged.

The Problem Analyst then consults with the Problem Manager to determine if a problem review and problem report are required. If a review is required, the Problem Manager documents the results of the review as part of the problem report. As part of the problem closure and review process, the phase of the problem record is updated to Problem Closure . When the review is complete, the problem is closed with the applicable closure code.

To close a problem, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.
3. Double-click the problem record that you want to close.
4. In the Activities tab, select the applicable type from the **New Update Type** field.
5. In the **New Update** field, enter the reason that this problem will not be fixed.
6. Click **Close** in the taskbar, confirm that the subcategory and area are correct, and then select an applicable closure code.
7. Click **Finish** to close the problem.

Note: You can add parts and labor costs tracking to an incident, problem, change, or request or to any associated task of a record. To do this, navigate to the **Cost** tab, specify the currency, and then specify the date, part number, and quantity for any parts used. Alternatively, specify the date,

technician name (used to derive the rate from the operator record), and hours worked for any labor. Service Manager will automatically calculate and roll up costs from any sub tasks into the **Total cost** field on the **Costs** tab.

Assign a Problem Management task

Part of Workflow(s):

Active

Applies to User Roles:

Problem Coordinator

The problem investigation and diagnosis process in Problem Management is aimed at identifying the root cause of a problem. After the Problem Coordinator determines the required skills and resources needed to investigate a problem, the Problem Coordinator creates a task and assigns it to a Problem Analyst who meets the requirements. If there are multiple configuration items (CIs) involved in the problem, the Problem Coordinator should create a separate task for each CI. This allows the Problem Coordinator to assign different specialists or external resources to investigate the problem.

To assign a Problem Management task, follow these steps:

1. Click **Problem Management** > **Search Problem Tasks**.
2. Use search or advanced search to find one or more records.
3. Select the target record.
4. Add the following information to the task:
   - **Due Date**
   - **Assignment Group**
   - **Assignee**
5. Click **Save & Exit**. Service Manager updates task records with related record information as updates occur.

Open a known error

Part of Workflow(s):

Known Error: Logging

Applies to User Roles:

Problem Coordinator

Problem Manager

A known error is an issue for which a root cause (the underlying cause of a problem, or one or more incidents) has been diagnosed and a solution or workaround has been determined. When the Problem Coordinator validates a workaround that has been successfully tested by the Problem Analyst, the Problem Coordinator determines whether the root cause is related to an outstanding known error. You can open a known error only for problems in the Problem and Investigation phase and if there is a primary configuration item specified in the problem record.

If there is an existing known error, the Problem Coordinator relates this problem to the outstanding known error.

If there is not an existing known error, the Problem Coordinator opens a new known error record, and then moves the phase of the problem record to the Problem Resolution phase.

Note: Known error records can be opened by the assigned Problem Coordinator from a problem record, or directly (that is, unassociated with an existing problem record). When opened from a problem record, Problem Management automatically populates the new record with the relevant information from the problem record.

To open a known error record from a problem record, follow these steps:

1. Click **Problem Management** > **Search Problems**.
2. Use search or advanced search to find one or more records.

   Note: Known error records can be only be opened by the assigned Problem Coordinator, so if you intend to open a known error you should include the assigned Problem Coordinator as part of your search criteria.

3. Select a record.
4. In the **Related Records** tab, select **Related Known Errors** from the **Link Type** drop-down list, and the then click **Link New Record**. A New Problem form opens.
5. Complete any required fields on the form.

6. Click **Save & Exit**. You are returned to the problem record form.
7. Click **Save & Exit**.

To open a known error record directly, follow these steps:

1. Click **Problem Management** > **Create New Known Error**.
2. In the **Title** field, type a title that accurately describes the problem.
3. In the **Description** field, type the details of the known error.
4. Fill in the following required fields, and any other required or relevant fields.
   - Select the **Affected Service**.
   - Select the **Impact** and **Urgency**.

     Note: Service Manager selects the default priority based on the impact and urgency values.

   - In the **Root Cause** field, type a description of the root cause of the known error.
   - In the **Workaround** field, type a description of the workaround of the known error.
5. Click **Save & Exit**.

Update a known error

Part of Workflow(s):

Known Error: Logging

Applies to User Roles:

Problem Coordinator

Problem Manager

You should always update a known error record with the outcome of the known error investigation. If the solution is validated, the Problem Coordinator updates the known error with the information about the solution, including the cost and resources needed to implement the solution and any possible risks. You can view related tasks to see what work others have done to determine the known error, a workaround, and the time spent working on the investigation.

You should record all the investigation activities in the known error to track the effort associated with the problem, task, or known error. After the current activities for a phase are complete, you advance the known error record to the next phase.

To update a known error, follow these steps:

1. Click **Problem Management** > **Search Known Errors**.
2. Use search or advanced search to find one or more records.
3. Select an existing known error from the record list.
4. Type detailed information in the **Solution** field. You will find this information in the known error task where the Problem Analyst documented the details. Make sure that you include cost, resource information, and any possible risks.
5. In the **Activities** tab, select the applicable update type from the **New Update Type** field list.
6. Type additional updates in the **New Update** field.
7. Click **Save & Exit**.

Assign a known error record to schedule a fix

Part of Workflow(s):

Known Error: Logging

Applies to User Roles:

Problem Manager

When you have validated a solution to a known error and determined that the required approach can be resolved by a Problem Analyst, follow these steps:

1. Click **Problem Management** > **Search Known Errors**.
2. Use search or advanced search to find one or more records.
3. Select the known error record that you want to assign from the record list.
4. Click the Fill icon in the **Assignment Group** field to select the assignment group. The Problem Coordinator for the group is automatically displayed in the **Assignee** field.

If you need to reassign this known error record to a different coordinator, click **Fill** to generate a record list of Problem Coordinator names, and then choose one.

5. Note the resolution information from the problem management meeting.
   - In the **Activities** tab, click **New Update Type**, and then select Problem meeting.
   - Type notes in **New Update** to add information about the proposed fix and requested fix date. The Problem Coordinator uses this information to schedule the fix for a Problem Analyst to resolve.
6. Click **Save & Exit**. The system notifies the Problem Coordinator of this updated record.

Associate a change request with a known error record

Part of Workflow(s):

Known Error: Logging

Applies to User Roles:

Problem Manager

When you have validated a solution to a known error and determined that the required approach can be resolved with a change request, follow these steps:

1. Click **Problem Management** > **Search Known Errors**.
2. Use search or advanced search to find one or more records.
3. Select a known error record in the Logging phase from the record list.
4. In the **Related Records** tab, select **Caused Change** or **Solved by Changes** from the **Link Type** drop-down list, and the then click **Link Existing Record**.
5. Specify the change number or click **Search** to view the change search form.
6. Add optional filtering criteria, and then click **Search** again to display a change record list.
7. Double-click the change record you want to associate with the current known error. The change record ID is displayed.
   - Click **OK** to link the chage record to the current problem.
   - Click **Cancel** to stop the search and exit.

- Click **Search** to view the change record search form again. Click **Search** again to redisplay the change record list.

8. Click **OK**. Problem Management populates the Related Records section with information about the related change.

Close a known error

Part of Workflow(s):

Known Error: Logging

Applies to User Roles:

Problem Coordinator

Problem Analyst

Problem Manager

After you verify that a known error meets the closure conditions, you can close the known error. For example, when the Problem Coordinator receives notification from the Change Management process that a solution is successfully implemented and verifies that the known error is resolved, the known error record can be closed.

To update and close a known error, follow these steps:

1. Click **Problem Management** > **Search Known Errors**.
2. Use search or advanced search to find one or more records.
3. Double-click the known error record that you want to update and close.
4. In the **Activities** tab, select the applicable update type in the **New Update Type** field.
5. In the **New Update** field, type current activity update notes.
6. Click **Save**.
7. Click **Close** in the taskbar, confirm that the subcategory and area are correct, and then select an applicable closure code.

Access Problem Management reports

Applies to User Roles:

Problem Manager

Problem Coordinator

The Reporting tool in HP Service Manager provides a number of out-of-box reports on the problem data in your system. You can view these reports through a dashboard named Problem Overview (Global). You can also create your own dashboards to display other reports of your interest.

To access Problem Management reports, follow these steps:

1. Click **Problem Management** > **Problem Overview**.

   By default, the **Problem Overview (Global)** dashboard is displayed.

2. View the reports on the dashboard. For descriptions of these reports, see "Report descriptions and usage" on page 1.

3. Add your own dashboards as needed. For details, see "Update a dashboard" on page 1.

   Your custom dashboards are added to the dashboard list on the toolbar of the dashboard page.

   Tip: You can click **Export** to export the reports on a dashboard to PDF format.

4. Click the **Open dashboard settings** icon on a dashboard to set its properties, or click the **Set as Default Dashboard** button to set it as your default one.

Example: Problem workflow

The following example demonstrates the minimum needed steps to resolve the out-of-box Problem workflow:

Phase	User Actions	Options
Logging	1. Enter a title in the **Title** field. 2. Provide a description of the problem in the **Description** field. 3. Click the **Fill** button for **Affected Service**, and then select an appropriate value(s) that describes the **Affected Service**. 4. If necessary, set the **Impact** and **Urgency** fields. 5. Click **Save**. Service Manager displays a solution matching screen.	This is the phase that is initiated when an end user Opens a New Problem (**Problem Management** > **Open a New Problem**). **Note:** The out-of-box default category is **-None-**. You can change the default category in **Problem Management** > **Administration** > **Settings**
Categorization	1. Click the **Fill** button to specify the **Subcategory**. a. Select an appropriate area. b. Select an appropriate subcategory. 2. Set the Status field to **Assign**. 3. Click the **Fill** button for the **Assignment Group**, and then select an appropriate assignment group. 4. Click the **Fill** button for the **Assignee**, and then select an appropriate assignee. 5. Set the Status field to **Work In Progress**. 6. Click **Save**.	From the Categorization Phase, you can also move to any of the following: • Jump directly to the Closure Phase. • Abandon the Problem.
Investigation	1. Set the **Expected Resolution Date**. 2. Set the **Root Cause Identified Date**. 3. Enter the **Root Cause**. 4. Click **Save**.	From the Investigation Phase, you can also move to any of the following: • Jump directly to the Closure Phase. • Abandon the Problem. • Return to the Categorization Phase.

Phase	User Actions	Options
Resolution	1. Set the **Solution Identified Date**. 2. Enter the **Solution**. 3. Set that Status to **Resolved**. 4. Click **Save**.	From the Resolution Phase, you can also move to any of the following: • Jump directly to the Closure Phase. • Return to the Investigation Phase.
Review	1. Review the data entered for the Problem.	From the Review Phase, you can also move to any of the following: • Return to the Resolution Phase.
Closure	1. Click the **Close** button. 2. Select the appropriate **Closure Code**. 3. Enter the **Closure Comments**. 4. Click **Finish**.	

Notes:

- In all the phases except the Logging, Abandonment, and Closure phases, you can create or link a known error from the **Related Records** tab of the problem record.
- In all the phases except the Logging, Abandonment, and Closure phases, you can create a problem task by clicking the **Link New Task** button. All tasks must be closed before you can close a Problem.

Problem Management Administration

Problem Management administration consists of the following:

- Problem Management Environment: Problem Management application contains an environment record for problems. This record contains options that defines the functionality of the Problem Management application for all Problem Management users.
- Settings: You can set the default category for new problems and problem tasks.

Configure the Problem Management settings

Applies to User Roles:

System Administrator

To configure the Problem Management settings, follow these steps:

1. Click **Problem Management** > **Administration** > **Settings**.
2. In the topmost pane, select **Problem** or **Problem Task**.
3. Configure the **Default Category** setting for the Problem or Problem Task. This setting defines the default category that is used when you register a new Problem or Problem Task. The out-of-box value for this setting is **None**.
4. Click **Save**.

Configure the Problem Management environment

Applies to User Roles:

System Administrator

System Administrators can modify the Problem Management environment parameters to match the operational requirements of their organization.

To configure a Problem Management environment, follow these steps:

1. Click **Problem Management** > **Administration** > **Environment**.
2. Select or clear the parameters and populate the required fields as appropriate to the Problem Management environment.
3. Configure the settings for your Problem environment.

   Tip: You can use the field help to view the description for each setting. To view the help on field:

   - Web client: Select a field, and then press **F1**.
   - Windows client: Select a field, and then press **Ctrl+H**.

4. Click **Save**.

Problem Management Configuration

Problem Management configuration enables you to configure alert, problem categories, workflow, solution matching, and so on.

Create a Problem Category

User Roles: System Administrator

If you are an HP Service Manager Administrator, you may want to create a problem category. To do this, you can modify an existing category record, or you can create a new category record. HP Service Manager provides out-of-box category records that you can use or modify.

> **Note:** When a category is set as the default category in settings, do not delete it to avoid unpredictable issues.

To create a new problem category record, follow these steps:

1. Click **Problem Management**.
2. Click **Configuration** > **Problem Categories**.
3. In the menu of the **Problem Category** pane, click **New**.
4. Type the name of the problem category.
5. Clear the **Active** check box if you do not want the new category to appear in the category list. If the **Active** check box is cleared, the new category is not available when you create a new record.
6. Type a description of the problem category.
7. Select a workflow for the category.
   The **Workflow** tab is displayed.
8. Click **Save**.
   The **Subcategories** tab is displayed.
9. ***Optional***: Click the **Subcategories** tab to create subcategories for the problem category. When you have finished, click **Save**.

Note: The **Apply To** flag indicates whether the category is shared across different modules.

For example, if the **Apply To** is set to "Interaction/Incident", then this category will be created in both the interaction category table and the incident category table.

Typical shared categories in OOB include Complaint, Request for Information, Incident, and Request for Administration.

For the **Apply To** flag in Problem Category:

When creating a problem category, the **Apply To** option is predefined as "Problem" only and cannot be modified. However, an problem category can also be created when creating an interaction category with the **Apply To** option set as "Interaction/Incident/Problem".

When searching for a problem category, all the **Apply To** values that include Problem can be used.

The following list is used in Problem Category:

2 - Problem

4 - Interaction/Incident/Problem

Note: Problem category name is read-only after the category is created.

Create a Problem Task Category

User Roles: System Administrator

If you are an HP Service Manager Administrator, you may want to create a problem task category. To do this, you can modify an existing category record, or you can create a new category record. HP Service Manager provides out-of-box category records that you can use or modify.

To create a new problem task category record, follow these steps:

1. Click **Problem Management**.
2. Click **Configuration** > **Problem Task Categories**.
3. In the menu of the **Problem Task Category** pane, click **New**.
4. Type the name of the problem task category.

5. Clear the **Active** check box if you do not want the new category to appear in the category list. If the **Active** check box is cleared, the new category is not available when you create a new record.
6. Type a description of the problem task category.
7. Select a workflow for the category.
   The **Workflow** tab is displayed.
8. Click **Save**.

Note: To avoid unpredictable issues, it is highly recommended that you do not change the problem task category name after it is created.

Add a new subcategory to a problem category

User Roles: System Administrator

You can add a new subcategory to a problem category directly. Additionally, you can view a list of the subcategories that are associated with the current category, together with the record details for each subcategory.

To add a new subcategory for a problem category, follow these steps:

1. Click **Problem Management** > **Configuration** in the system navigator.
2. Click **Problem Categories** > **Search**.
3. Select the problem category to which you want to add a subcategory.
4. Under the **Subcategories** tab, click the **Link New Subcategories** button.
5. Type a name for the new subcategory.
6. Type a description for the subcategory.
7. Click **Save** to add the new subcategory.
8. ***Optional***: Click the **Link New Areas** button to create problem areas for the subcategory.
9. Click **Save**.

Related tasks

Create a problem category
Add a New Problem Area To a Subcategory

Add a new problem area to a subcategory

User Roles: System Administrator

You can add a new problem area to a subcategory directly. Additionally, you can view a list of the areas that are associated with the current subcategory, together with the record details for each area.

To add a new problem area to a subcategory, follow these steps:

1. Click **Problem Management** > **Configuration** in the system navigator.
2. Click **Problem Categories** > **Search**.
3. Select the problem category with which the subcategory is associated.
4. Under the **Subcategories** tab, select the subcategory to which you want to add a new area.
5. Click the**Link New Areas** button.
6. Type a name for the new area.
7. Type a description for the area.
8. Click **Save** to add the new area.

Related tasks

Create a problem category
Add a New Subcategory To a Problem Category

Problem Management solution matching

When you create a new problem, Service Manager enables you to link that problem to an existing problem. Service Manager includes the following out-of-box queries, with which you can search for existing problems:

- Find a problem or known error with a matching configuration item
- Find a problem or known error with a matching service

- Find a problem or known error with a matching title

To modify an out-of-box Problem management solution matching query, follow these steps:

1. Click **Problem Management** > **Configuration** > **Solution Matching**.
2. In the topmost pane, select the query that you want to modify.
3. Modify the **Name**, **Match**, and **With** fields as appropriate to your needs, and then click **Save**.

Problem Management Security

The topics in this section explain the Problem Management security roles, security areas, and rights.

Problem Management Security Areas

User Role: System Administrator

The security areas for Problem Management are Problem, Problem Task, and Problem Management Configuration. These areas contain the default security rights and settings for Interactions in the Problem Management module. The security rights settings will be inherited by the new roles created in an area when no settings are specified in the security role.

Area	System navigator menu items for this area
Problem	This area contains the default security rights and settings for Problem. The rights will be copied to new roles created for this area. However, the settings will only be inherited if there are no settings specified on the Role.
Problem Tasks	This area contains the default security rights and settings for Problem Tasks. The rights will be copied to new roles created for this area. However, the settings will only be inherited if there are no settings specified on the Role.
Problem Management Configuration	This area contains the default security rights and settings for Problem Management Configuration. The rights will be copied to new roles created for this area. However, the settings will only be inherited if there are no settings specified on the Role. **Note:** When you set the security rights for a security role in the Problem Management Configuration area: • The **View** right is to view the settings defined in the **Administration** menu and the **Configuration** menu. • The **Update** right is to update the values of existing settings defined in the **Administration** menu and the **Configuration** menu. • The **New** and **Delete** rights are to create and delete a setting in the **Configuration** menu, such as category. • The **Admin** right is to add, edit, or delete the settings in the **Administration** > **Settings** menu.

Default rights

When you create new security roles, they inherit the default rights that are defined in the security area. The following table describes the out-of-box rights that are defined in the Problem, Problem Tasks, and Problem Management Configuration areas.

Area Name	View	New	Update	Delete/Close	Expert	Admin
Problem	TRUE	FALSE	Never	Never	FALSE	FALSE
Problem Tasks	TRUE	FALSE	Never	Never	FALSE	FALSE
Problem Management Configuration	FALSE	FALSE	Never	Never	FALSE	FALSE

Default settings

The default settings defined in areas will be inherited when you create new security roles. In an out-of-box system, none of the default settings is checked or set in the Problem, Problem Tasks, and Problem Management Configuration areas.

Related concepts

Problem Management security roles and settings
Problem Management user roles

Problem Management security roles and settings

The out-of-box security roles for Problem Management module include the following:

- Problem process owner
- Problem coordinator
- Problem analyst
- Problem task assignee
- Reviewer

Mapping between previous security profiles and current PD security roles

The following table lists the mapping relationship between previous Problem security profiles and current PD security roles in the Problem module.

Security Profile	Security Role/Area
DEFAULT	DEFAULT/Problem
initiator	initiator/Problem
problem analyst	problem analyst/Problem
problem coordinator	problem coordinator/Problem
problem manager	problem manager/Problem
reviewer	reviewer/Problem
sysadmin	systadmin/Problem
N/A	problem task assignee/Problem
N/A	problem process owner/Problem

Field mapping between security profiles and PD security rights/settings

The following table lists the mapping of fields in legacy Problem security profiles and Process Designer security roles.

Security profile settings	Process Designer security rights and settings
Allow Inefficient Query	Allow Inefficient Query
Allowed Statuses	Allowed Statuses
Append Query	Append Query
Assignment Groups	Assignment Groups
Can Create Personal Views	Can Create Personal Views
Can Create System Views	Can Create System views
Create Known Error	Create Known Error
Close	Delete/Close
Edit Format	Edit Format
Templates Mass Update	Expert
Complex Mass Update	
Initial Inbox	Initial View
List Format	List Format
Lock on Display	Lock on Display
Manage Format	Manage Format
Change Phase	N/A
Post to Knowledge	
Initial Format	
Open Script	
Resolution Script	
New	New
New Thread: Inbox -> Edit	New Thread: Inbox -> Edit
New Thread: Inbox -> Search	New Thread: Inbox -> Search
New Thread: List -> Edit	New Thread: List -> Edit
New Thread: Search -> List	New Thread: Search -> List
Print Format	Print Format

Security profile settings	Process Designer security rights and settings
Reopen	Reopen
Search Format	Search Format
Skip Query Warning	Skip Inefficient Query Warning
Update	Update
Change Category	
View	View
Views	
Count	
Advanced Search	

Note: N/A means the previous fields are obsolete and are not mapped to PD security rights/settings.

Out-of-box role rights

Based on the mapping rules, the rights and settings in previous security profiles are mapped to the rights and settings in the Problem area specified in the corresponding security roles. See the table below for the out-of-box security rights in the Problem, Problem Tasks, and Problem Management Configuration areas. This table only lists the new security roles that have different settings with the default rights.

Area Name	Role Name	View	New	Update	Delete/Close	Modify Template	Expert	Admin
Problem	problem process owner	TRUE	TRUE	Always	Always	TRUE	TRUE	TRUE
	system administrator	TRUE	TRUE	Always	Always	TRUE	TRUE	TRUE
Problem Tasks	problem process owner	TRUE	TRUE	Always	Always	TRUE	TRUE	TRUE
	problem task assignee	TRUE	FALSE	When assigned to workgroup	When assigned to workgroup	FALSE	FALSE	FALSE
	system administrator	TRUE	TRUE	Always	Always	TRUE	TRUE	TRUE

Area Name	Role Name	View	New	Update	Delete/Close	Modify Template	Expert	Admin
Problem Management Configuration	problem manager	TRUE	TRUE	Always	Always	FALSE	FALSE	FALSE
	problem process owner	TRUE	FALSE	Never	Never	FALSE	FALSE	FALSE
	system administrator	TRUE	TRUE	Always	Always	TRUE	TRUE	TRUE

Related concepts

Problem Manager user roles

Related Tasks

Add security roles and settings

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