NetResults ProblemTracker

Administration Guide Help Topics

NetResults ProblemTracker

Administration Overview

Welcome to Administration Guide for NetResults ProblemTracker.

This guide provides information about customizing and maintaining your ProblemTracker system. Topics such as user administration, email and workflow configuration settings within each workgroup (database) are covered in this guide. Information on installation and security are provided in the Installation Help Guide.

ProblemTracker is available in two versions: ProblemTracker and ProblemTracker Enterprise Edition. ProblemTracker Enterprise Edition includes all of the features of ProblemTracker plus some additional features such as Alerts and Discussions to provide improved support for enterprise wide use. In the Help library, we generally label sections that describe features that are unique to ProblemTracker Enterprise Edition as Enterprise Edition Only.

Prior to using the operations described in this guide, you should create a new workgroup (database) using the information in the Workgroup Management System Guide. The Workgroup Management System is the central interface for creating multiple workgroups (databases) within your ProblemTracker system.

Click here for the ProblemTracker User's Guide. Typical operations done by end users are covered in this guide.

NetResults ProblemTracker

Administration Guide Glossary

Glossary of Terms

Click on the term to read more about it within the Help section listed to the right.

- Add (Define Record)
- Customizing the Data Record
- Add (Edit User Group)
- User Administration - Privileges
- Add Attachments via Add Page
- User Administration - Privileges
- Add Item
- Customizing Menu Values
- Add New Group
- Workflow Properties
- Add Notification
- Email Notification Preferences
- Add State
- Workflow States
- Add Transition
- Workflow Transitions
- Add User
- User Administration - Users
- Admin (Navigation Bar button)
- Admin Overview
- Admin (Privilege)
- User Administration - Privileges
- Alerts
- Alerts
- All
- Customizing the Data Record
- Available Users to Add
- User Administration - Users
- Background Color
- Customer Bug Page
- Banner Background Color
- General Preferences

- By default include "Group" Users for Record Visibility...
- General Preferences
- Can be Assignee for Add
- User Administration - Privileges
- Character Set
- General Preferences
- Check DB Values
- Customizing Menu Values
- Configure Field Visibility for
- User Administration - Groups
- Copy Field Value for Next Add
- Customizing the Data Record
- Custom HTML (Bottom of Page)
- Customer Bug Page
- Custom HTML (Top of Page)
- Customer Bug Page
- Customer Bug Page
- Customer Bug Page
- Database Type
- General Preferences
- Date Delimiter
- User Preferences
- Date Format
- User Preferences
- Default State
- Workflow Properties
- Define Record
- Admin Overview
- Define Workflow
- Admin Overview
- Delete (Notification)
- Email Notification Preferences
- Delete (Privilege)
- User Administration - Privileges
- Delete (Transition)
- Workflow Transitions
- Delete All Records
- Permanently Deleting Multiple Records
- Delete State
- Workflow States
- Dependent Pulldowns

- Customizing Pulldown Menu Dependencies
- Discussion
- Discussion
- Display Order Button in Top Bar
- General Preferences
- Edit (Define Record)
- Customizing the Data Record
- Edit (Notification)
- Email Notification Preferences
- Edit (Transition)
- Workflow Transitions
- Edit Attachments (Privilege)
- User Administration - Privileges
- Edit Fields (Privilege)
- User Administration - Privileges
- Edit Groups
- User Administration - Groups
- Edit Items
- Customizing Menu Values
- Edit Query Result Set
- User Administration - Privileges
- Edit Record Visibility
- User Administration - Privileges
- Edit Source Code List (Privilege)
- User Administration - Privileges
- Edit State
- Workflow States
- Edit User
- User Administration - Users
- Email Configuration
- Admin Overview
- Email Header Encoding
- General Email Configuration
- Enable File Attachment
- Customer Bug Page
- Enable Record Level Security
- General Preferences
- Enable Session Locking with Administrator Override
- General Preferences
- Enable Source Code Control Integration
- General Preferences

- Field Visibility
- User Administration - Groups
- From Email Account
- General Email Configuration
- General Preferences
- Admin Overview
- Group Level Field Visibility
- Customizing the Data Record
- Groups
- User Administration - Groups
- Help (Privilege)
- User Administration - Privileges
- History (Privilege)
- User Administration - Privileges
- History Comment Required
- Workflow Transitions
- In Use
- Customizing the Data Record
- Include in Inet Page
- Customizing the Data Record
- Inet Page Options
- Admin Overview
- Item Dependencies
- Customizing Menu Values
- Item Label
- Customizing Menu Values
- Label
- Customizing the Data Record
- License Type
- User Administration - Users
- Limit Record Visibility to a Users Own Groups
- General Preferences
- Load Default Values
- Setting Notification Preferences
- Load Defaults
- Workflow Properties
- Logoff (User Sessions)
- User Administration - User Sessions
- Maintenance
- Admin Overview
- Maximum Records per page

- User Preferences
- Multi Part Email
- General Email Configuration
- New Assignee
- Workflow Transitions
- New State
- Workflow Transitions
- None
- Customizing the Data Record
- Not In Use
- Customizing the Data Record
- Not Visible
- User Administration - Groups
- Options Menu
- Admin Overview
- Order (Pulldown Menu Options)
- Customizing Menu Values
- Order (Transition)
- Workflow Transitions
- Order (Workflow State)
- Workflow States
- Override Record Level Security
- User Administration - Privileges
- Parent Pulldown
- Customizing Pulldown Menu Dependencies
- Password
- User Administration - Privileges
- Path to srcsafe ini file
- General Preferences
- Path to ss exe file
- General Preferences
- Query (Privilege)
- User Administration - Privileges
- Record Order
- Customizing the Data Record
- Related to Parent menu items
- Customizing Menu Values
- Remove
- Customizing the Data Record
- Remove Records from Database on "Delete" operation
- General Preferences

- Required
- Customizing the Data Record
- Reset (Notification)
- Email Notification Preferences
- Restrict Task Operation to Current Assignee
- General Preferences
- Save Group Queries
- User Administration - Privileges
- Save Group Report Formats
- User Administration - Privileges
- Send Email
- Admin Overview
- Sender Email Account
- General Email Configuration
- Set Default
- Customizing Menu Values
- Set Default Email Preferences
- Setting Notification Preferences
- Set Email Preferences
- Setting Notification Preferences
- Set Global Email Options
- Setting Notification Preferences
- Set Server Configuration
- General Email Configuration
- SMTP Email Server
- General Email Configuration
- Sort Order
- Customizing the Data Record
- Source Code Control Product
- General Preferences
- State Name
- Workflow States
- State Groups
- Workflow Properties
- Task (Privilege)
- User Administration - Privileges
- Task Fields
- Customizing Workflow
- Time Format
- User Preferences
- Transition Label Style

- Workflow States
- Transition Name
- Workflow Transitions
- Transitions
- Workflow Transitions
- Truncate Text and TextArea fields
- Setting Notification Preferences
- User Administration
- Admin Overview
- User ID
- User Administration - Privileges
- User Preferences
- User Preferences
- User Sessions
- User Administration - User Sessions
- Value is Public
- Customizing Menu Values
- View Attachments (Privilege)
- User Administration - Privileges
- View Fields (Privilege)
- User Administration - Privileges
- View Record History (Privilege)
- User Administration - Privileges
- View Source Code List (Privilege)
- User Administration - Privileges
- View User Information (Privilege)
- User Administration - Privileges
- Visible
- User Administration - Groups
- Workflow Properties
- Workflow Properties

Overview

This section discusses general issues related to tracking defects, and how these issue are addressed by ProblemTracker features. If you are not familiar with defect tracking, or do not have a particular development process in mind, this section can serve as a good general introduction to the subject and starting point for customizing ProblemTracker to your needs.

Defect Tracking

Defect tracking is the process by which a company accepts change requests to a product (could be a bug report, a feature enhancement, etc.) and handles each request across multiple organizations (Development, QA, etc.) each of which must perform some task to complete the handling of the change request.

Some key issues in designing an effective defect tracking process are:

Data Record
What data must be kept to allow the request to be correctly and completely processed?

Workflow
What steps are required to process the request, and what organizations should be assigned responsibility for each step? What data must be entered at each step?

Notification
At each step, who should the request be assigned to for processing, and who should be notified of significant events?

Security
How trusted is each user of the system? What operations are required at each step of the process?

A successful defect tracking process answers these questions and describes a life cycle for each request such that every request is accounted for and all requests are processed as required by the needs of the organization. ProblemTracker is an application that provides the framework for implementing such a process in an organization.

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The Data Record

Each change request is processed by several individuals, each requiring some information to perform their task. ProblemTracker creates a data record for each request entered into the system. This record allows the organization to keep all the information related to the request in a central location, and perform searches over all the data to look up particular records.

An important activity in designing the defect tracking process is identifying what information will be required for the data record. ProblemTracker provides the following fields for every record:

Record Number
Unique numeric identifier for the record.

Product
The product that the request is for.

Status
The current state of the record in the defect tracking process (workflow)

Assignee
Person who the record is currently assigned to.

Reporter
Person who entered the record.

In addition to these required fields, you can customize the data record with your own fields. It is recommended that you identify the organizations involved in your process and obtain a list of data required by each to determine what fields should be included the data record.

ProblemTracker allows you to use the following data types:

Integer
An integer numeric value.

Float
A floating point number.

Text
A text string up to 80 characters.

TextArea
A very large text string. The maximum size determined by the amount of data supported by the textarea type on

your web browser, and the particular database in use.

Url
A 255 character string that is a valid formatted URL.

Date
A string of the format MM/DD/YYYY HH:MM:SS AM/PM (US Default). ProblemTracker may also be configured to use the '-' and '.' delimiters as well as the "DD MM YYYY" and "YYYY MM DD" format for the date representation portion of this string. ***Please note that the usage of the alternative date formats is dependent on the localized settings for the database in use. Make sure your localized database settings accept the selected alternate format prior to entering your date/time strings.***

Pulldown
A pulldown menu. You can customize all values in the menu.

Release Number
A combination of four pulldown menus. You can customize all values in the menu.

YesNo
A pulldown with the values Yes and No.

Customization of the data record is performed by clicking on the Admin button in the Button Bar and then click on the "Define Record" button.

Overview

Central to a defect tracking process are the states that define the process. Each state encompasses its own rules regarding what action must be taken, by what individual, what data is involved, and where the request should go next within the process. The states and the behavior and rules associated with them are collectively called the workflow.

States and Transitions

In general, a state in the process can be defined as one or more actions that must be performed in a serial fashion by a single individual. In most cases, it will be a single task that must be performed by team member, for example, a developer must fix a bug, or a QA engineer must test a bug fix. By identifying the tasks that must be performed to process a request, you will have a good starting point for defining your workflow.

Once the states have been identified, you must determine the order in which they occur, and whether there are points where a record could be returned to a previous state. This information defines the state transitions. In the simplest case, the states are arranged in a single linear order, where at each point in the workflow, the only option is to cause the request to move to the next defined state. However, in some cases you may wish to give an individual the choice to move the record to one of several possible states. This is called *branching*. Branching from one to several possible states is useful in cases where an individual is entrusted with this decision making capability.

ProblemTracker allows you to define any number of states in your workflow, and also optionally an unlimited number of transitions to and from each state. To add, remove, or edit a state in the workflow, click on the Admin button in the Button Bar and then on the Define Workflow button.

Transition Data

Another important issue is determining what data should entered by a user when they have completed their assigned task. This information is kept in the data record, and generally is either used to process a state further down the workflow, or to log information about how the user completed the task.

Rather than just present the entire data record for editing to the user when marking the task complete, only the necessary information should be presented. This eliminates the need for each user to know what fields are important for each state transition. ProblemTracker allows this via the Task operation. This operation presents the user with only the fields defined for the particular state transition, and automatically changes the record state.

To define the set of fields to present for each state transition, click on the Admin button on the Button Bar, and then click on the Define Workflow button. Click on the Transitions button to the left of the desired state on the list in the Define Workflow section. Each transition listed for the state has a Task Fields button. Click on the

Task Fields button to define the set of fields to present for each transition.

Note that if all users are sophisticated enough to understand the entire workflow, it may be acceptable or preferable to have all users to mark a task complete by using the Edit operation, as this allows full access to all fields of the data record.

Transition Assignments

One final issue related to workflow is who should be assigned to each state. On a state transition it may be desirable to automatically assign the record to either a particular individual, or to a manager who will then assign it to particular individual.

There are many options available to choose from when determining your workflow. For example:

Option 1 - Assign to individual
Choosing to automatically assign a record to a particular user on a state transition has the advantage that no manager intervention is required, and the record becomes the user's responsibility as soon as possible. However, it does not allow for flexibility in scheduling resources - for example if you have several individuals who are capable of handling the task, only one of them can be assigned the job under this scheme.

Option 2 - Assign to manager
Assigning to the manager responsible for the state means that a manager must manually assign the record to another user for completion. This allows the manager to allocate resources more dynamically. One drawback to this scheme, is that it is difficult for someone to determine if the record is waiting to be assigned for completion, or if it has been assigned and is in the process of being handled.

Option 3 - Assign to manager using a state
Another option is to define a separate state for the task of assigning the record to an individual for processing. That is, when a task is marked complete, it is assigned to a new state with a particular manager. The only task associated with the state is for the manager to assign it to somebody, at which point it moves to the state associated with actually handling the work. For example, rather than a single state called "Scheduled" which covers both assignment and completion of the task, you might define two states called "Scheduled" and "In Development". In this case the "Scheduled" state only covers the assignment, while the "In Development" state covers the actual work.

Option 4 - Assign to last assignee for new state
In some cases, you may want to assign a record to a user who was previously assigned to it in a state earlier in the workflow process. This option is useful in situations where an approval decision is made. For example, when a QA engineer has to verify a fix. If the fix cannot be verified, the QA engineer may need to move the problem record back to the state where the fix is completed and assign to problem record to the original developer who completed the fix.

ProblemTracker is flexible enough to support any of these options, as well as others not listed.

NetResults ProblemTracker

Email Notification

An important aid to timely and smooth processing of the defect tracking process is automatic notification of events. Standard Internet email is the most widely accepted form of notification.

There are several events that could trigger notification:

- Adding a record
- Editing a record
- Deleting a record
- Performing the Task operation on a record
- Change of record state
- Change of assignment

For each of these events, a set of users may be affected. When a problem record is added, the following users may be interested:

- The user who is currently assigned to the problem record
- The user who reported the problem record
- The manager assigned to the state of the record when it is added
- User groups within your database

When an edit or task operation is performed on a problem record, the following users may be interested:

- The user who is currently assigned to the problem record
- The individual assigned to the record if the Assigned To field is changed during the Edit / Task operation.
- The individual who was the previous assignee if the Assigned To field is changed during the Edit / Task operation.
- The individual who reported the problem record.
- The manager assigned to the process state of the record when the Edit / Task operation is performed.
- The manager assigned to the new process state of the record if the State field is changed during the Edit / Task operation.
- The manager assigned to the previous process state of the record if the State field is changed during the Edit / Task operation.
- User Groups within your database

When a problem record is deleted, the following users may be interested:

- The individual who is currently assigned to the record.
- The individual who reported the problem record.
- The manager assigned to the process state of the record when it is deleted.
- User Groups within your database

On a change of record state, the following users may be interested:

- The individual who is currently assigned to the record.
- The individual who reported the problem record.
- The manager assigned to the new process state.
- The manager assigned to the original process state.
- User Groups within your database

On a change of record assignment, the following users may be interested:

- The individual the record is being assigned to.
- The individual the record was assigned to before the change of assignment.
- The individual who reported the problem record.
- The manager assigned to the current process state of the record.
- User Groups within your database

Determining which users and under what events notification should occur is really a trial-and-error process, determined by the personal working habits and preferences of users of the system. The issue should be discussed and tested with the users in your organization until consensus is reached on the desired behavior.

Overview

The basic purpose of security is to limited access to a resource on a per user basis. Resources may either be operations, or data. For example, you may wish to restrict some users from editing records, and other from viewing only certain records.

When used to limit access to operations, security can help to ensure that the desired workflow chain is maintained. For example, by removing the option to edit all fields in the data record, users can be prevented from mistakenly entering the wrong information or altering previously entered information.

Security can also be used to help protect data, allowing only select groups of individuals to operate on particular records. This is useful if you wish to prevent a group of users from viewing records that are of no concern to them, for example customers or users working on different projects.

ProblemTracker allows you to set security for both operations and data using a User Group security model similar to that used by Microsoft Windows NT. You can create any number of user groups and assign access to operations and other privileges to each group. Individual users can then be assigned to groups. Being a member of a group means that you obtain all the rights and privileges assigned to the group. For example, ot be able to access the Admin operations, you must be a member of a group that has that privilege assigned to it.

In addition, when you create a record, you can selectively make it visible to any group of which you are a member. All other groups will not be allowed access to the record.

Once you have determined how to handle the issues involved in a defect tracking process, you can implement it. There are many ways to do this, two of the largest challenges being maintaining the request information, and dissemination of the current state of the process to the individuals involved in making it happen.

ProblemTracker provides a framework to implement your defect tracking process, and in many ways can be thought of as a programmable general workflow engine. All the states, rules, and individuals that as a whole define your process can be entered into ProblemTracker. ProblemTracker makes it easy for all your users to follow the correct process and access real-time information about the state of any record in the system.

The following two sections discuss in some detail the sample templates provided with ProblemTracker, the Code Development and Web Development templates, and the bug tracking process supported by each.

NetResults ProblemTracker

The Code Development Template

Overview

The Code Development template supports a typical software development process. Typical of this process is the bundling of numerous bug fixes into a particular software release. This model assumes the follow organizations are involved in the defect tracking process:

Development
Responsible for performing development tasks necessary to handle the request.

QA
Verifies that the request has been successfully implemented by the Development organization.

Build
Places the updated files into the final product package.

Data Record

The data record contains the following fields. Note that you can customize the database by adding to or removing fields, or changing any pulldown menu values. Field names with an asterisk are required by the system and cannot be removed from the data record.

PRN*	Numeric record identifier. Assigned at the time the record is created.
Title	A one line text summary of the problem report. Set at the time the record is created.
Product*	Identifies the product for which the problem record has been reported. Set at the time the record is created.
Platform	Describes the hardware or software platform where the problem occurs. Examples are the operating system (e.g. Windows 95), or the CPU (e.g. Intel Compatible). Set at the time the record is created.
Reported In Version	Version number of the product where the problem occurs. Set at the time the record is created.
Request Type	Classifies the problem report. Possible values are: Bug, Contract Requirement, Customer Feedback, Customer Problem, Enhancement. Set at the time the record is created.
Severity	Describes how serious the problem is. Set at the time the record is created.
Description	Full description of the problem. Ideally describes the nature of the problem and how to reproduce the behavior. Set at the time the record is created.

Reported By*	Name of the user that reported the problem. Initially set to the name of the current user logged in. Set at the time the record is created.
Date Reported	The date the record was created. Automatically initialized, and set at the time the record is created.
Workaround	Describes how to work around the reported problem. Set at the time the record is created.
Status*	Current state of the problem record. Changes as the record is processed through the workflow.
Substatus	Describes the condition of the record in the current state. Possible values are: None, In Progress. Optionally set by each user while processing the record.
Assigned To*	User the record is currently assigned to for processing. Set either manually or automatically during processing of the workflow.
Estimated Size	Used to enter an estimated amount of time it will take for a developer to fix the problem.
Planned for Version	Identifies the release number of the product in which the fix for the problem report is planned to be included.
Released in Version	Identifies the release number of the product that the fix for the problem report will be included in.
Fix Date	Date when the problem record was fixed. Set by Development when the problem is fixed. Automatically initialized to the current date/time.
Fix Detail	A Description of the action taken by a developer to fix the problem. Set by Development when the problem is fixed.
Test Date	Date when the problem record was tested. Set by QA when the fix for the problem is tested. Automatically initialized to the current date/time.
Test Description	A Description of the action taken by a QA Engineer to test the problem. Set by QA when the fix for the problem is tested.
Priority	Describes the relative importance of handling this record compared to other records entered in the system.
Close Date	Date when the problem record was closed. Set by Process Manager when no development work will be done for the record. Automatically initialized to the current date/time.
Close Detail	A Description of the reason a record will be closed. Set by Process Manager when no development work will be done for the record.
Defer Reason	Describes the reason a problem record will not be worked on until a later date.
Duplicate Record #	Lists the problem record number of another previously-entered record in the database which describes the same problem.
Deleted*	Denotes whether the record has been deleted.

Workflow

It is assumed that records will be processed and moved through the workflow process by using the Task operation. The workflow implemented by the Code Development database is as follows:

1. **State 1 - Reported**

When a record is created, it is set to the state "Reported", and assigned to the Process Manager (process_mgr). It is assumed that the Process Manager is responsible for looking at all incoming problem reports and deciding how to process the problem record from a list of possible workflow paths. The Process Manager can choose one of the following:

- Start the process for the record by selecting the transition called "Schedule". This transition will assign the record to the Development Manager (dev_mgr) and place the record in the Scheduled state. The Process Manager can also enter a Planned for Version and Priority for the problem record when choosing this transition.
- Defer the processing of the record by selecting the transition called "Defer". This transition will place the record in the Deferred state and assign it to the state manager of that state (process_mgr). The Process Manager can review deferred problem records at a later time and decide whether processing will resume. The Process Manager must enter a Defer Reason and has the option of entering a Planned for Version when choosing this transition.
- Close the record by selecting the transition called "Close". This transition will place the record in the Closed state and assign it to TBD (no one - since this record will not be processed any further). The Process Manager will be required to enter a date in the Close Date field and enter a reason the record was closed in the Close Detail field.
- Mark the record as a duplicate of another record by selecting the transition called "Mark Duplicate". This transition will place the record in the Duplicate State and assign it to TBD (no one - since this record will not be processed any further). The Process Manager will be required to enter the problem record number of the original problem record that describes the same problem.

This is implemented by:

Workflow Properties

- Defining Reported as the default add state when a record is added
- Assigning the process_mgr user as the manager for the Reported and Deferred states
- Assigning dev_mgr as the manager for the Scheduled state
- Assigning TBD as the manager for the Closed and Mark Duplicate states

Transitions

- Defining transitions to move a record to the Scheduled and Deferred states where the assignee is the State Manager for each respective state.
- Defining transitions to move a record to the Closed and Mark Duplicate states where the assignee is TBD for each transition.

Task Fields

- Configuring Planned for Version and Priority to be presented as optional during the task operation for the transition to the Scheduled state.
- Configuring Defer Reason (required) and Planned for Version (optional) to be presented during the task operation for the transition to the Deferred state.
- Configuring Close Detail (required) and Close Date (read only and initialized) to be presented during the task operation for the transition to the Closed state.
- Configuring Duplicate Record # (required) to be presented during the task operation for the

transition to the Mark Duplicate state.

2. **State 2 - Scheduled**
   The Development Manager (dev_mgr) is assumed to be a manager responsible for assigning tasks to the developers for resolution. The Development Manager uses the task operation to assign the record to a developer (dev_one), a member of the developer user group. This places the record in the "In Development" state. The Development Manager can also decide to defer a problem record by choosing the Defer transition, which will place the record in the Deferred state and assign it to the Process Manager (process_mgr).

   This is implemented by:

   Transitions

   - Defining a transition to move a record to the "In Development" state with the assignee to be chosen from a list of developers (User Group called "Developers")
   - Defining a transition to move a record to the Deferred state with the state manager as the assignee

   Task Fields

   - Configuring Defer Reason (required) and Planned for Version (optional) to be presented during the task operation for the transition to the Deferred state

3. **State 3 - In Development**
   The Developer (dev_one) assigned to the problem record makes the changes necessary to address the problem and marks the task complete using the Task operation. This transition allows the Developer to enter a description and date of the fix, advances the state of the record to "Fixed", and assigns the record to the QA Manager (qa_mgr).

   This is implemented by:

   Workflow Properties

   - Defining the qa_mgr as the manager for the Fixed state

   Transitions

   - Defining a transition to move a record to the "Fixed" state where the assignee is the State Manager

   Task Fields

   - Configuring the Fix Date (read only and initialized) and Fix Detail (required) to be presented during the Task operation for the transition to the "Fixed" state. The Description field has been configured as a read only task field for the user to reference when selecting this transition.

4. **State 4 - Fixed**
   Once the record has entered the "Fixed" state, the QA Manager (qa_mgr) assigns the record to the QA Engineer (qa_one), a member of the QA user group, and advances the state to "In Test" by using the Task operation.

   This is implemented by:

   Transitions

   - Defining a transition to move a record to the "In Test" state with the assignee to be chosen from a list of QA Engineers (User Group called "QA")

5. **State 5 - In Test**
   The QA Engineer (qa_one) verifies that the problem report has been resolved, and then uses the Task operation to advance the record to "Tested" and assigns the record to the Build Manager (bld_mgr). If a problem report has not been resolved and needs to be returned to Development, the QA Engineer can move the problem record back to the "In Development" state and assign it to the developer who worked on the problem record. For each of these possible paths, the QA Engineer enters information in the Test Date and Test Description fields.

   This is implemented by:

   Workflow Properties

   - Configuring build_mgr to be the manager of the Tested state

   Transitions

   - Defining a transition to move a record to the "Tested" state where the assignee is the state manager
   - Creating a transition to move a record to the "In Development" state where the assignee is the Last Assignee for the new state.

   Task Fields

   - Configuring Test Date (read only and initialized) and Test Description (required) to be presented during the Task operation for the transitions to the In Development and Tested states. The Fix Detail field is presented as a read only task field for the QA Engineer to reference when selecting this transition.

6. **State 6 - Tested**
   The Build Manager (bld_mgr) user is assumed to be the user in charge of packaging the product for release, and responsible for ensuring that all the desired fixes are included in the release. The Build Manager does what is necessary to make sure that the fix for the record is included in the release, enters the released in version for the record, then advances the state of the record to "Released" using

the Task operation.

This is implemented by:

Workflow Properties

- Defining the user "TBD" as the manager for the Released state

Transitions

- Defining a transition to move the record to the "Released" state where the assignee is the state manager

Task Fields

- Configuring Released in Version (required) as a field to be presented during the task operation for the transition to the "Released" state. The Planned for Version field is presented as a read only task field for the Build Manager to reference when choosing this transition.

7. **State 7 - Released**
   This state indicates that processing of the record is complete.

8. **State 8 - Closed**
   This state indicates that the record will not be processed.

9. **State 9 - Deferred**
   This state indicates the decision on whether or not to process the record has been deferred until a future date. The Process Manager can update a record in this state by using the task operation. The Update transition will keep the record in the Deferred state and assigned to the state manager (process_mgr). The fields Defer Reason and Priority are presented as optional fields during the task operation. The Process Manager is required to enter a history comment to describe what was changed within the record when using the Update transition.

   The Process Manager can decide to begin processing a problem record by choosing the Schedule transition, which will place the record in the Scheduled state and assign it to the State Manager (dev_mgr). The Process Manager can set the Planned for Version and Priority fields when choosing this transition.

   This is implemented by:

   Transitions

   - Defining a transition called Update with "same state" and "same assignee" selected and history comment required
   - Creating a transition to move the record to the Scheduled state and assign it to the state manager

Task Fields

- Configuring Defer Reason and Priority to be presented during the task operation for the transition to update a deferred record
- Configuring Planned for Version and Priority to be presented during the task operation for the Schedule transition

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Sample Saved Charts

A set of sample saved charts are included in this template. Click here to see details of these sample metrics.

Email Notification

The Code Development template is set up to notify users as follows:

On Add or Delete Record
Both the current assignee, and the manager for the current state are notified.

On Change of State
The manager for the new state is notified.

On Change of State to Released, Deferred, Duplicate or Closed
The user who reported the problem report is notified.

On Change of Assignment
Both the previous and current assignee are notified of the change, and the manager for the current state is notified.

Security

The Code Development template assumes a very simple security model reflecting a workgroup situation where all users are able to see any record. This is implemented by setting Enable Record-Level Security option under General Preferences in the Administration Task page to No.

In addition, the privileges related to editing fields within the problem records have been removed from users that are not managers or Admin. With this configuration, users can rely on the Task operation to move records through the workflow. This can be changed within the User Administration section of the Admin page.

NetResults ProblemTracker

The Web Development Template

Overview

The Web Development template supports a traditional web site development process. Typical of this process is the immediate posting of bug fixes to the web site being developed and maintained. This model assumes the follow organizations are involved in the defect tracking process:

Development
Responsible for performing development tasks necessary to handle the request.

QA
Verifies that the request has been successfully implemented by the Development organization.

Build
Places the updated files onto the live server.

Data Record

The data record contains the following fields. Note that you can customize the database by adding to or removing fields, or changing any pulldown menu values. Field names with an asterisk are required by the system and cannot be removed from the data record.

PRN*	Numeric record identifier. Assigned at the time the record is created.
Title	A one line text summary of the problem report. Set at the time the record is created.
Product*	Identifies the product for which the problem record has been reported. Set at the time the record is created.
Browser	Identifies the browser type for which the problem record has been reported. Set at the time the record is created.
Platform	Describes the hardware or software platform where the problem occurs. Examples are the operating system (e.g. Windows 95), or the CPU (e.g. Intel Compatible). Set at the time the record is created.
Problem URL	URL of the web page where the problem was found. Set at the time the record is created.
Request Type	Classifies the problem report. Possible values are: Bug, Contract Requirement, Customer Feedback, Customer Problem, Enhancement. Set at the time the record is created.
Severity	Describes how serious the problem is. Set at the time the record is created.

Description	Full description of the problem. Ideally describes the nature of the problem and how to reproduce the behavior. Set at the time the record is created.
Reported By*	Name of the user that reported the problem. Initially set to the name of the current user logged in. Set at the time the record is created.
Date Reported	The date the record was created. Automatically initialized, and set at the time the record is created.
Workaround	Describes how to work around the reported problem. Set at the time the record is created.
Status*	Current state of the problem record. Changes as the record is processed through the workflow.
Substatus	Describes the condition of the record in the current state. Possible values are: None, In Progress. Optionally set by each user while processing the record.
Assigned To*	User the record is currently assigned to for processing. Set either manually or automatically during processing of the workflow.
Estimated Size	Used to enter an estimated amount of time it will take for a developer to fix the problem.
Fix Date	Date when the problem record was fixed. Set by Development when the problem is fixed. Automatically initialized to the current date/time.
Fix Detail	A Description of the action taken by a developer to fix the problem. Set by Development when the problem is fixed.
Date Tested	Date when the problem record was tested. Set by QA when the fix for the problem is tested. Automatically initialized to the current date/time.
Test Description	A Description of the action taken by a QA Engineer to test the problem. Set by QA when the fix for the problem is tested.
Test URL	A URL where the fix can be tested. Set by Developer when the problem is fixed.
Priority	Describes the relative importance of handling this record compared to other records entered in the system.
Close Date	Date when the problem record was closed. Set by Process Manager when no development work will be done on a problem record. Automatically initialized to the current date/time.
Close Detail	A Description of the reason for closing a record. Set by the Process Manager when no development work will be done on a problem record.
Defer Reason	Describes the reason a problem record will not be worked on until a later date.
Duplicate Record #	Lists the problem record number of another previously-entered record in the database which describes the same problem.
Date Released	Date when the fix for the problem record was released. Set by the Build Manager when the fix for the problem is released. Automatically initialized to the current date/time.
Deleted*	Denotes whether the record has been deleted.

Workflow

It is assumed that records will be processed and moved through the workflow process by using the Task operation. The workflow implemented by the Web Development database is as follows:

1. **State 1 - Reported**
   When a record is created, it is set to the state "Reported", and assigned to the Process Manager (process_mgr). It is assumed that the Process Manager is responsible for looking at all incoming problem reports and deciding how to process the problem record from a list of possible workflow paths. The Process Manager can choose one of the following:
   - Start the process for the record by selecting the transition called "Schedule". This transition will assign the record to the Development Manager (dev_mgr) and place the record in the Scheduled state. The Process Manager can also enter a Priority for the problem record when choosing this transition.
   - Defer the processing of the record by selecting the transition called "Defer". This transition will place the record in the Deferred state and assign it to the state manager of that state (process_mgr). The Process Manager can review deferred problem records at a later time and decide whether processing will resume.
   - Close the record by selecting the transition called "Close". This transition will place the record in the Closed state and assign it to TBD (no one - since this record will not be processed any further). The Process Manager will be required to enter a reason the record was closed in the Close Detail field. The Close Date will be updated automatically.
   - Mark the record as a duplicate of another record by selecting the transition called "Mark Duplicate". This transition will place the record in the Duplicate State and assign it to TBD (no one - since this record will not be processed any further). The Process Manager will be required to enter the problem record number of the original problem record that describes the same problem.

   This is implemented by:

   Workflow Properties

   - Defining Reported as the default add state when a record is added
   - Assigning the process_mgr user as the manager for the Reported and Deferred states
   - Assigning dev_mgr as the manager for the Scheduled state
   - Assigning TBD as the manager for the Closed and Mark Duplicate states

   Transitions

   - Defining transitions to move a record to the Scheduled and Deferred states where the assignee is the State Manager for each respective state.
   - Defining transitions to move a record to the Closed and Mark Duplicate states where the assignee is TBD for each transition.

   Task Fields

   - Configuring Priority (optional) to be presented during the task operation for the transition to the Scheduled state.
   - Configuring Defer Reason (required) to be presented during the task operation for the transition to the Deferred state.
   - Configuring Close Detail (required) and Close Date (read only and initialized) to be presented during the task operation for the transition to the Closed state.
   - Configuring Duplicate Record # (required) to be presented during the task operation for the

transition to the Mark Duplicate state.

2. **State 2 - Scheduled**
The Development Manager (dev_mgr) is assumed to be a manager responsible for assigning tasks to the developers for resolution. The Development Manager uses the task operation to assign the record to a developer (dev_one), a member of the developer user group. This places the record in the "In Development" state. The Development Manager can also decide to defer a problem record by choosing the Defer transition, which will place the record in the Deferred state and assign it to the Process Manager (process_mgr).

   This is implemented by:

   Transitions

   - Defining a transition to move a record to the "In Development" state with the assignee to be chosen from a list of developers (User Group called "Developers")
   - Defining a transition to move a record to the Deferred state with the state manager as the assignee

   Task Fields

   - Configuring Defer Reason (required) to be presented during the task operation for the transition to the Deferred state

3. **State 3 - In Development**
The Developer (dev_one) assigned to the problem record makes the changes necessary to address the problem and marks the task complete using the Task operation. This transition allows the Developer to enter a description and date of the fix as well as a URL to be used by QA to test the fix, advances the state of the record to "Fixed", and assigns the record to the QA Manager (qa_mgr).

   This is implemented by:

   Workflow Properties

   - Defining the qa_mgr as the manager for the Fixed state

   Transitions

   - Defining a transition to move a record to the "Fixed" state where the assignee is the State Manager

   Task Fields

   - Configuring the Fix Date (read only and initialized), Fix Detail (required), and Test URL (optional) to be presented during the Task operation for the transition to the "Fixed" state. The Description field is presented as a read only task field for the Developer's reference when

choosing this transition.

4. **State 4 - Fixed**
   Once the record has entered the "Fixed" state, the QA Manager (qa_mgr) assigns the record to the QA Engineer (qa_one), a member of the QA user group, and advances the state to "In Test" by using the Task operation.

   This is implemented by:

   Transitions

   - Defining a transition to move a record to the "In Test" state with the assignee to be chosen from a list of QA Engineers (User Group called "QA")

5. **State 5 - In Test**
   The QA Engineer (qa_one) verifies that the problem report has been resolved, and then uses the Task operation to advance the record to "Tested" and assigns the record to the Build Manager (bld_mgr). If a problem report has not been resolved and needs to be returned to Development, the QA Engineer can move the problem record back to the "In Development" state and assign it to the developer who worked on the problem record. For each of these possible paths, the QA Engineer enters information in the Test Description and Test URL fields. The Test Date is automatically updated.

   This is implemented by:

   Workflow Properties

   - Configuring build_mgr to be the manager of the Tested state

   Transitions

   - Defining a transition to move a record to the "Tested" state where the assignee is the state manager
   - Creating a transition to move a record to the "In Development" state where the assignee is the Last Assignee for the new state.

   Task Fields

   - Configuring Test Date (read only and initialized), Test Description (required), and Test URL (optional) to be presented during the Task operation for the transitions to the In Development and Tested states. The Fix Detail field is presented as a read only task field for the QA Engineer to reference when selecting this transition.

6. **State 6 - Tested**
   The Build Manager (bld_mgr) user is assumed to be the user in charge of packaging the product for release, and responsible for ensuring that all the desired fixes are included in the release. The Build Manager does what is necessary to make sure that the fix for the record is included in the release, then

advances the state of the record to "Released" using the Task operation. The Date Released field is automatically updated.

This is implemented by:

Workflow Properties

- Defining the user "TBD" as the manager for the Released state

Transitions

- Defining a transition to move the record to the "Released" state where the assignee is the state manager

Task Fields

- Configuring Date Released (read only and initialized) as a field to be presented during the task operation for the transition to the "Released" state

7. **State 7 - Released**
   This state indicates that processing of the record is complete.

8. **State 8 - Closed**
   This state indicates that the record will not be processed.

9. **State 9 - Deferred**
   This state indicates the decision on whether or not to process the record has been deferred until a future date. The Process Manager can update a record in this state by using the task operation. The Update transition will keep the record in the Deferred state and assigned to the state manager (process_mgr). The fields Defer Reason and Priority are presented as optional fields during the task operation. The Process Manager is required to enter a history comment to describe what was changed within the record when using the Update transition.

   The Process Manager can decide to begin processing a problem record by choosing the Schedule transition, which will place the record in the Scheduled state and assign it to the State Manager (dev_mgr). The Process Manager can set the Priority field when choosing this transition.

   This is implemented by:

   Transitions

   - Defining a transition called Update with "same state" and "same assignee" selected and history comment required
   - Creating a transition to move the record to the Scheduled state and assign it to the state manager

Task Fields

- Configuring Defer Reason and Priority to be presented during the task operation for the transition to update a deferred record
- Configuring Priority to be presented during the task operation for the Schedule transition

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Sample Saved Charts

A set of sample saved charts are included in this template. Click here to see details of these sample metrics.

Email Notification

The Web Development template is set up to notify users as follows:

On Add or Delete Record
Both the current assignee, and the manager for the current state are notified.

On Change of State
The manager for the new state is notified.

On Change of State to Released, Deferred, Duplicate or Closed
The user who reported the problem report is notified.

On Change of Assignment
Both the previous and current assignee are notified of the change, and the manager for the current state is notified.

Security

The Web Development template assumes a very simple security model reflecting a workgroup situation where all users are able to see any record. This is implemented by setting Enable Record-Level Security option under General Preferences in the Administration Task page to No.

In addition, the privileges related to editing the field of the problem records have been removed from users that are not managers or Admin. With this configuration, users can rely on the Task operation to move records through the workflow. This can be changed within the User Administration section of the Admin page.

NetResults ProblemTracker

Sample Saved Charts

The Metrics operation is a way to generate charts and graphs based on your ProblemTracker data. Sample charts are provided by default in the ProblemTracker templates to provide examples of the charts that can be generated. This section explains each sample chart provided. For information about the operations available in the Metrics page, such as generating a chart, saving a chart or chart layout, please review the Metrics section.

The explanations of each saved chart below assume that the fields and states in the templates have not been removed or renamed. Removing or renaming record fields or workflow states may change the configuration of the saved chart or may change the results displayed by the sample saved charts. The explanations below also assume that the sample saved charts and sample chart layouts have not been modified. To generate one of the sample charts, simply select it and click the Show Chart button. To change the chart layout (for instance, from a bar chart to a line chart), simply change the Chart Layout setting after selecting the Saved Chart, then click the Show Chart button. More information on these settings can be found in the Metrics section.

Project Status (default) [Users]

This metric will generate a pie chart which displays the relative number of records in each possible state.
It is designed to give you a quick breakdown of the overall status of a project. To limit the chart to a particular project or release, select a Saved Query that only displays (matches) the records for the project or release as the value for Input Records and click Show Chart.

Add Rate [Users]

This metric will generate two dimensional line chart with the number of records added during each week for the previous 26 weeks broken down by product (one line per product that has at least one record added in the last 26 weeks).
It is designed to give you display trend information about the number of new reports (records added) for each product over the last six months.

Average Fix Time [Users]

This metric will generate a two dimensional bar chart with the average number number of days it takes to fix a problem, with one bar for each Severity. The time is calculated by using the difference between the Date Reported field and the Fix Date field of each input record.
It is designed to easily see differences in how fast particular issues are fixed based on their Severity.

Fix Rate [Users]

This metric will generate a line chart which shows the number of records that were fixed in each of the last 12 months. There is one line for each Request Type. And, the most recent month is a partial month (unless today is the last day of the month). A record is considered fixed if it moved into the Fixed state during the month.

It can be used to view the number of fixes completed each month for the previous year. It allows you to distinguish by Request Type (e.g. Bug, Enhancement).

Fix Totals [Users]

This metric will generate a stacked line chart which shows the cumulative number of records that have been fixed as of the end of each month for the last twelve months. As with Fix Rate, there is one (filled) line for each Request Type and the most recent month is a partial month (unless today is the last day of the month). A record is considered Fixed if it has moved into the Fixed state at some point prior to the end of the month.
It can be used to see running totals of issues that were fixed in the previous year, broken down by Request Type (e.g. Bug, Enhancement).

Severity Trend [Users]

This metric will generate a three dimensional bar chart that displays the number of reacords added during each of the last twelve weeks, broken down by Severity.
It can be used to see if the severity of records being added is changing over time.

Test Fail Rate [Users]

This metric will generate a line chart which displays the number of times QA rejected a fix (a record moved from "In Test" to "In Develoment") during each of the last twelve months. There is one line per product. The most recent month may be a partial month.
It is used to see how many items that were marked as Fixed, subsequently failed quality assurrance testing.
Note: a single issue (record) may have failed multiple times.

Test Pass Rate [Users]

This metric will generate a line chart which displays the number of times QA accepted (passed) a fix (a record moved from "In Test" to "Tested") during each of the last twelve months. There is one line per product. The most recent month may be a partial month.
It is used to see how many items that were marked as Fixed, subsequently passed quality assurrance testing.

Workload [Users]

This metric will generate bar chart which displays the number of records assigned to each user.
This can give you a rough idea of the current workload. If you have a field which represents the actual work required for a particular item (e.g. Estimated Size), you can create your own chart to total the value(s) of that field for each user and display it in a similar fashion.

NetResults ProblemTracker

Admin Overview

The ProblemTracker Administrator is your interface to performing customization and maintenance. In order to access the Administrator you must be logged in as a user with Admin privileges. The Admin group always has this privilege, and the **Admin** user is always a member of this group.

The initial **Admin** user password is "Admin". When you first log in to the system after installation, you can do so using this User ID and password. It is recommended that you change this password before adding other users to the system.

A button linked directly to the ProblemTracker administrator can optionally is included in the ProblemTracker Button Bar for all users that have Admin privileges. The following options are available:

Define Record
Allows you to add and remove fields from the data record. Also allows setting options like which pages a field should appear on, the order that fields should be presented, and whether a field is required.

Option Menus
Allows you to define the values for all pulldown fields, and select a default value to select when the menu is displayed.

Define Workflow
Allows you to add, remove, and setup the workflow states. Also allows you to specify what fields should appear for the Task operation, and who the manager is for each state in the workflow.

User Administration
Allows you to add, remove and setup user groups, including access rights and privileges. Also allows you to add, remove, and setup individual users, including assigning them to user groups.

Email Configuration
Allows you to set up the email server, and also define the notification behavior for each product.

General Preferences
Allows setting of general behavior and preference parameters for each installation of ProblemTracker.

User Preferences
Allows setting of default personal preferences for new users

Inet Page Options
Allows customization of the look and feel of the Internet bug reporting page.

Send Email

Allows you to send an email to a ProblemTracker user.

Maintenance
Utilities used to diagnose and repair ProblemTracker.

Note that many administrative functions can make large changes to the ProblemTracker database. While not necessary, it is generally a good policy to back up the database before performing an administrative task. Also, to prevent confusion to users (things may change suddenly as a result of an administrative task), it is recommended that you do so when no one is using the system.

Overview

In addition to the security provided by the web server to limit access to web pages, ProblemTracker also incorporates a built-in security model that allows the administrator to control access to both function (Add, Delete, Edit, etc.) and data.

By using these features the administrator can create different classes of users (via user groups) with different available operations and access to data. For example, a user group could be defined that allows users access to query and view only those records created by other users in their group.

Note that this section is meant to serve as an introduction to basic ProblemTracker security concepts. Detailed information on how to perform specific tasks are covered in the various help subjects where the options are actually set.

User Groups and Logins

The ProblemTracker security model is based on the concept of individual users and user groups. Each individual user must log into the system, and each user is a member of one or more user groups. User groups are a convenient way to group similar users together, and define security for those users.

For example, rather than defining specific access privileges for all 50 users at a company, the administrator can split the users in to functional groups (Development, QA, Customers, etc.), define security for the functional groups, and then assign the users to those groups.

All users are a member of the system-defined user group "Users", and the Admin user is always a member of the system-defined user group "Admin".

Users and user groups are covered in detailed in these help topics:

- User Administration - Users
- User Administration - Groups

Restricting Access To Functions

Each user group can be assign privileges, and each user that is a member of the group inherits that privilege. All of the basic ProblemTracker function like Add, Edit, etc. are defined to be a privilege that can be assigned to a user group.

For example, to allow enable a user Edit and View records, you would create a user group that has both Edit and View privileges, and then assign the user to that group.

One special case is the Admin group, which always has Admin function privilege. Other user groups can also be defined to have this privilege, however it cannot be removed from the Admin group. Privileges are covered in detailed in the following help topic:

- User Administration - Privileges

Restricting Access To Data

ProblemTracker supports an optional record-level data security model. This means that each data record is defined to be visible to a set of user groups. The record can be seen by any user who is a member of a group in this set, it is invisible to all other users. This feature can be enabled or disabled via the setting under General Preferences.

By default, when a record is created, it is set visible to all groups that the user who is creating the record is a member of. You can assign a user group the ability to modify record security. All users with this privilege are given the ability to explicitly pick the user groups the record is visible to when it is created, and also the ability to later edit the visibility. There are two options that control this behavior (see General Preferences for details...):

- **Limit Record Visibility Selection To A User's Own Groups**
  When enabled, a user may only choose from the groups that the user is a member of, when setting record visibility.
- **By Default Include Group "Users" For Record Visibility On Add Operations**
  Since all users are a member of the Users group, it is impossible to restrict access to a record if it is made visible to the Users group. This setting allows you to specify that the record should not be made visible to the Users group when it is first created. If you are actually using record-level security this option should be set to "No".

If you have a set of users who should be able to access all records, irrespective of which user groups they belong to, you should give those users the Override Record-Level Security privilege. This can be useful for situations where internal users should be able to see all records, but external users should be limited to viewing only records they have added or records which have been explicitly made visible to them. You can configure the system to do this by giving Override Record-Level Security to internal user groups (and excluding it from the Users user group) and by removing Edit Record Visibility privilege from all external user groups (and the Users user group). When this is done in a system where Record-Level Security is enabled, Limit Record Visibility Selection to A User's Own Groups is set to Yes, and By Default Include Group "Users" for Record Visibility On Add Operations is set to No, external users will only be able to see records they (or others in their group(s)) have added and internal users will be able to see all records. See User Administration - Privileges and General Preferences for details on how to modify these settings.

NetResults ProblemTracker

General Preferences

To modify the ProblemTracker general preferences, press the "General Preferences" button located on the ProblemTracker Administrator home page. You can modify the following preferences:

General Options

- **Display Order Button on Button Bar**
  The order button displays the order form in a separate browser window. If you wish to remove this button from the button bar, select "No".

- **Remove Records from Database on "Delete" Operation**
  This option determines whether a delete operation merely marks a record and associated records as deleted or executes a true delete and removes these records from the database. The default setting for this option is "No".

- **Restrict Task operation to Current Assignee**
  This option prevents users from tasking records where they are not listed as the current assignee.

- **Enable Session Locking with Administrator Level Override**
  A record edit locking feature is activated when the "Yes" radio button is clicked. Users who begin editing, deleting or task operations on a record will lock access to that record until moving to another operation. Record locks can be overridden by users with Administrator level privileges. When an override occurs, the Administrator is notified and asked to confirm the override. The user who's lock has been released, will receive a notification message that their operation was overridden and could not be completed. The default setting for this is "No" (i.e. Session Record Locking is disabled).

- **Banner Background Color**
  You can choose from several colors for the ProblemTracker Title Area.

- **User Name Format for Reports and Email Messages**
  This option determines what will be displayed to identify a user in the Reported By and Assigned To fields in the Home, View, Query, History, and Email Notification Messages. The selection in this option will also affect the sorting of reports that use the Reported By or Assigned To fields in the layout.
    - When **User ID** is selected, the information entered in the User ID field of the user's profile will be displayed and used for sorting in the reports.
    - When **Full Name** is selected, the information entered in the First and Last Name of the user's profile will be displayed. The name will be sorted alphabetically by first name in the reports.
    - When **First Name** is selected, the information entered in the First Name field of the user's profile is displayed and used for sorting in the reports.
    - When **Last Name** is selected, the information entered in the Last Name field of the user's profile is displayed and used for sorting in the reports.

- **Database Type**
  This value must be selected when the workgroup is created through the Workgroup Management System. For information on selecting a database type, please review the section Adding a Workgroup.

- **Enable Alerts**
  Selecting Yes for this option allows you to use the Alerts feature. The Alerts feature allows you to configure ProblemTracker to send an alert message when a record's state has not changed within a certain period of time. This option will not be displayed unless you are using ProblemTracker Enterprise Edition and you have entered a valid Alerts license key in the License Manager (or you are using a trial version).

- **Enable Discussion**
  Selecting Yes for this option allows you to use the Discussion feature. Discussion allows various threads to be initiated within each record for users and groups to view and post messages. This option will not be displayed unless you are using ProblemTracker Enterprise Edition and you have entered a valid Discussion license key in the License Manager (or you are using a trial version).

Record Visibility Options

- **Enable Record Visibility**
  Enables record visibility control (record-level security). Record Visibility allows a ProblemTracker administrator to set up an environment where access to records is restricted on a user group basis. Disabling record visibility can have the benefit of faster performance since enforcing record visibility restrictions requires more complex database queries.

- **Limit Record Visibility Selection To A User's Own Groups**
  For those users with the ability to edit the visibility of a record, this option selects whether they should only be able to select from user groups that they are a member of (Yes), or whether they should be able to pick any user group (No).

- **By Default Include Group "Users" For Record Visibility On Add Operation**
  When a record is added, it is automatically made visible to the user groups that the user reporting the record is a member of. This option selects whether the "Users" group should be included in this list of user groups (Yes) or not (No). If you intend to actually use the ability to limit visibility of records, you should select the value No (since all users are a member of the "Users" group, including this group means that all users can view any record).

Source Code Control Options

- **Enable Source Code Control Integration**
  Setting this option to Yes allows your database to interact with the Source Code Control system specified in the next 3 options.

- **Source Code Control Product**
  Microsoft Visual Source Safe is the only product that can be used for Source Code Control Integration at this time.

- **Path to srcsafe.ini**
  Specify the path to the srcsafe.ini file that is present on the server machine where ProblemTracker is installed.

- **Path to ss.exe**
  Specify the path to the ss.exe file that is present on the server machine where ProblemTracker is installed.

Multinationalization Options

- **Available Languages**
  The available languages and corresponding character set for the database will be displayed. This list is based on the workgroup settings in the Workgroup Management System.

NetResults ProblemTracker

User Preferences

Default Personal Preferences for New Users

To modify the ProblemTracker user preferences, press the "User Preferences" button located on the ProblemTracker Administrator home page. You can modify the following preferences:

Report Settings

- **Maximum Records per Page**
  This option restricts the maximum number of records to be displayed in the results of Home and Query reports. The default is 20 records per page. The maximum value for this setting is 100 records per page. Individual users can specify their own setting in the Personal Preferences page.

- **First Home Page Report**
  This option specifies the saved query which will be used for the First Home Page Report for all users upon installation. Individual users can specify their own selection in the Personal Preferences page. By default, the saved query "Assigned To Me [Users]" is selected for this option. This saved query will display all records assigned to the login user. All saved queries within your database will appear in this pulldown as options for this field. To modify saved queries, please see the section Using Saved Queries & Reports.

- **Second Home Page Report**
  This option specifies the saved query which will be used for the Second Home Page Report for all users upon installation. Individual users can specify their own selection in the Personal Preferences page. By default, the saved query "Reported By Me [Users]" is selected for this option. This saved query will display all records reported by the login user. All saved queries within your database will appear in this pulldown as options for this field as well as the option "No Report", which will remove the second home page report from being displayed. To modify saved queries, please see the section Using Saved Queries & Reports.

Date Settings

- **Date Format**
  The date format supports arrangements between month, day and year fields which are common in most countries of the world. This date format will be used in all date values generated by ProblemTracker to support international date conventions. Legal formats are "mm dd yyyy"(default), "dd mm yyyy" and "yyyy mm dd".
  Important! -- the date format choice must conform to a date field format recognized by your database based on localization settings on your platform. Individual users can specify their own setting in the Personal Preferences page.

- **Time Format**
  The time format determines the format of any time values generated by ProblemTracker. The option "12 hour" will display the time using the numbers 1-12 to represent each hour. The option "24 hour" will display the time using the numbers 0-24 to represent each hour. Individual users can specify their own setting in the Personal Preferences page.

- **Time Zone**
  The time zone selected will be used for all data in the workgroup. The time zone you select for this option will also be used as the default for new users. To see a complete list of time zones available in your operating system, please refer to one of the following sections:
  Windows 2000 and Windows XP Time Zones
  Windows NT 4.0 Time Zones

- **Adjust to Daylight Saving Time (DST)**
  Checking the box here will enable the system to adjust the workgroup data to account for daylight saving time. If you selected a time zone for the workgroup where daylight saving time is observed, it is recommended that you enable this option.

Dependent Pulldowns

- **Enforce Pulldown Dependency in Query Page**
  This option determines whether the dependent relationships between pulldown fields configured in this workgroup via the Admin section will be enforced when using the Query operations.

Multi-Line Field Settings

- **Display Window**
  Select the maximum number of lines that should be displayed when viewing the text within a "BigText" field. By default, this will be set to 5 lines. If the contents of a BigText field extend beyond the number of lines set in this preference, the user will have the ability to scroll to see the complete contents of the field. If the user is using Internet Explorer as the browser, the option to expand the window to see the complete contents by clicking on the "+" will be available.

Discussion Settings (Enterprise Edition Only)

- **New Post Notification**
  This option determines when a user will be notified about discussions via email. Selecting "No Email" indicates that a user should not receive any email notification messages related to discussions. Selecting "Receive Email for each New Post" indicates that a user will receive one email notification for each new post in a discussion to which he / she is subscribed. Selecting "Receive Email for the first New Post to each Thread" indicates that the user will receive one email for the first post made to a discussion thread to which he / she is subscribed. Once the user browses to the message list of the thread, the next new post made to the thread will trigger another email to be sent to the user.

- **Invitation Notification by Email**
  This option determines whether a user should receive an email notification message when he / she has

been invited to participate in a discussion initiated for a particular record. Selecting "Yes" indicates that the user should receive an email invitation for each new discussion.

- **Message Display Window**
  Enter the number of lines of text you wish to see when displaying a message within a discussion. The default setting is 5 lines of text.

NetResults ProblemTracker

User Administration - Users

Overview

In order to use ProblemTracker, every user must log in as a registered user. ProblemTracker allows you to enter users and distinguish between internal users and external users like customers or partners. Before a user can begin using ProblemTracker, a user must be created and given access to a workgroup(s) in the License Administration section of the Workgroup Management System. After this is done, you can add a user to the User Administration section of your ProblemTracker workgroup. Within a workgroup, a user's access rights and privileges is determined by the user groups to which a user the user belongs.

System Defined Users

ProblemTracker has 3 pre-defined users. These users all serve a special purpose and are not counted towards the number of users you have licensed. You cannot remove or modify these users:

- **Admin**
  The ProblemTracker administrator user. Admin is always a member of the Admin group. The initial Admin password is "Admin". It is recommended that you change this password.
- **TBD**
  TBD is used to allow users to specify no choice. You cannot log in as TBD.
- **Inet**
  Inet is the user used by the Internet Bug Reporting page as the ProblemTracker user that is reporting the bug. You cannot log in as Inet.

Adding A User

To add a user:

1. Click on the User Administration button in the ProblemTracker Administration section
2. Click on the Add User button
3. A list of available users will be displayed. Click on the user id of the user you wish to add, then click on the Add button.
4. Click OK after the operation is complete.

To select multiple users, hold down the CTRL button on your keyboard while clicking on multiple users, then click on the Add button.

A user will only appear on the list of available users if the user account has been created and given access to the workgroup via the License Administration section of the Workgroup Management System.

Users that appear on the list of Available Users preceded by "*" are users that were previously deleted from the

User Administration section. These users can be restored by clicking on the user, then clicking on the Add button. Click here for more information about restoring a user.

Removing A User

You can remove a user by locating the desired user account in the User Administration page, and then clicking on the Delete button.

Deleting a user will not affect your existing records. However, before deleting a user we would recommend that you reassign any records currently assigned to that user to TBD or some other user in the system. You can search for all records assigned to the user by using the Query function. And, you can use the Edit Results operation from the query results page to reassign all records at once, rather than individually editing each record.

If you attempt to delete a user who is still the assignee for problem records within your database, you will be prompted to select a new assignee for the problem records from a list of active users in the system. Similarly, if you attempt to delete a user who is a state manager, you will be prompted to select a new state manager from a list of active users in the system.

Restoring A User

If the user is still listed in the "Available Users" list (indicating it is still active in the License Administration section of the Workgroup Management System), you can restore a previously deleted user by clicking on the Add User button in the User Administration page. Users who were previously deleted from the User Administration section will be denoted by a "*" in front of the user id on the Available Users list. Click on the user account, then click on the Add button. You will prompted that the user account you selected had been previously deleted. Click OK to restore the user account or click cancel to abort the operation.

If you choose to restore the user, the settings in the user's personal preferences will be preserved as they were at the time the user was deleted from the workgroup's User Administration section. A restored user will be only be added as a member of the Users group. The user must manually be added to any other user groups.

Editing the Admin User

The profile information of the Admin user account can be modified by clicking on the Edit button to the left of the Admin user account in the User Administration table. Click OK to save the changes to this account.

Definition of Users by License Type

For all licenses (both static and floating) only one user may be logged in to ProblemTracker per license. A static license is defined as one user account (user ID) for each license purchased. Only one user can login to the system with this particular user ID. A floating license is defined as up to 10 user accounts for each license purchased. Only one user per floating license can login to the system at a particular time. Others who try will be denied access until a floating license user logs off (clicks the Logoff icon).

Static licenses are typically used for users who regularly use ProblemTracker and therefore must be guaranteed access at any time (can never be denied access because too many users are already logged in). Floating licenses are typically used for infrequent users if it is acceptable that they may not be able to login to the system some of the time (as all floating licenses may be in use). For more details on licensing including your License Agreement and the number and type of license(s) you have, please run the License Manager.

Assigning User Groups

You can assign each user to user groups by locating the desired user record in the User Administration page and the clicking on the Groups button. Use the Add and Remove buttons to add or remove the user from a particular user group.

NetResults ProblemTracker

User Administration - Groups

Overview

A user group is a collection of zero or more users. Each group is assigned rights and privileges to the system, and all members of the group inherit those rights and privileges. For example, any user that is a member of the Admins group inherits the ability to access the Admin features of ProblemTracker.

You can assign each user to one or more user groups, and the privileges of each user is the sum of all the privileges for all of the groups that he/she is a member of. There are some restrictions, for example all users are a member of the Users group, and the Admin user is always a member of the Admins group.

To work with user groups, click on the Edit Groups button on the User Administration page.

Adding a User Group

To add a new group, click on the Add Group button. You will be presented a dialog that allows you to enter a name for the group, a description, and select the privileges for the group.

Editing a User Group

To edit a group, locate the desired group on the User Group page, and click on the Edit button. You will be presented with a dialog that allows you to change the group name, description, or privileges.

Assigning Users to a User Group

To assign users to a group, located the desired group on the User Group page, and click on the Users button. You will be presented with a dialog that allows you to add or remove users from the user group. To select multiple users (to add or remove), hold the control or shift key while clicking.

Field Level Visibility

Field Level Visibility provides the ability to limit the fields that are visible to a particular user group while performing operations such as Add, Edit, Query, and Email Notification. In some circumstances, it is necessary to restrict access to a field while performing certain operations to protect sensitive information or to prevent unauthorized changes to particular fields in a problem record.

A field's visibility can be configured by user group for the following areas in ProblemTracker:

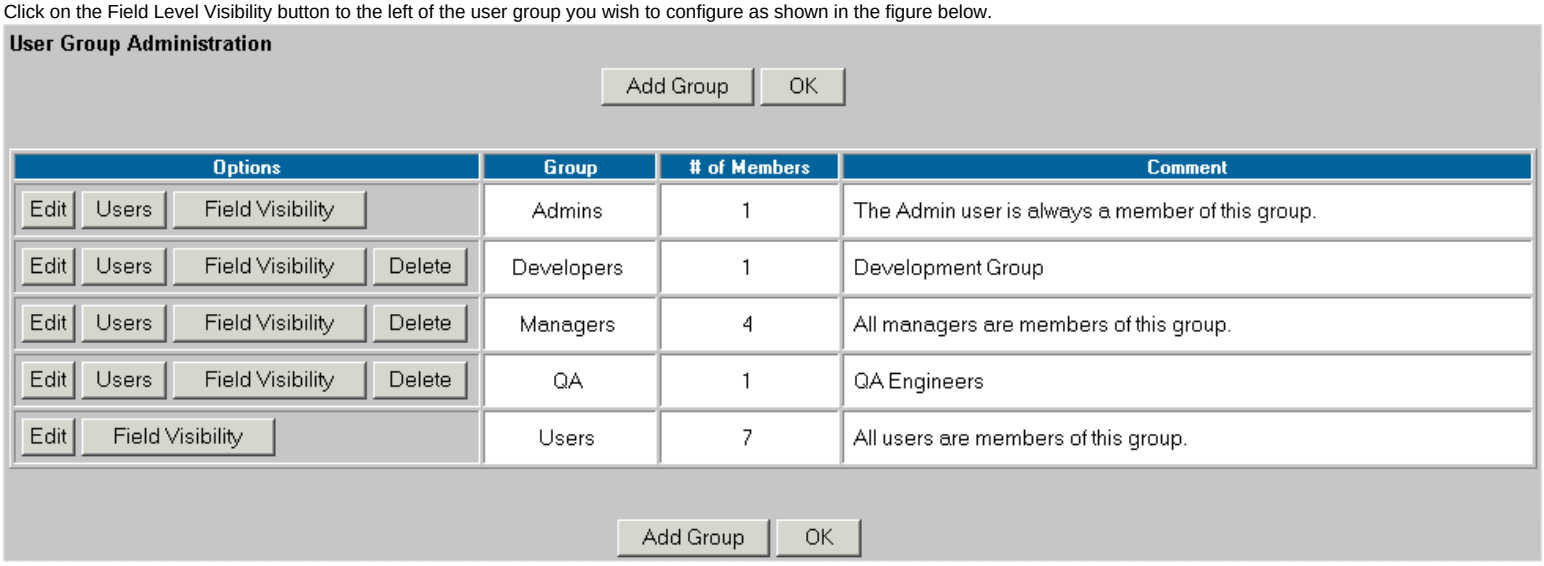
- Add page
- Edit page
- View page
- Query and Home Pages
- Email Notification Message

If you wish to restrict the fields which are made visible in the Task operation, this is done while configuring task fields for a transition. The Customizing Workflow Help section provides details on configuring task fields.

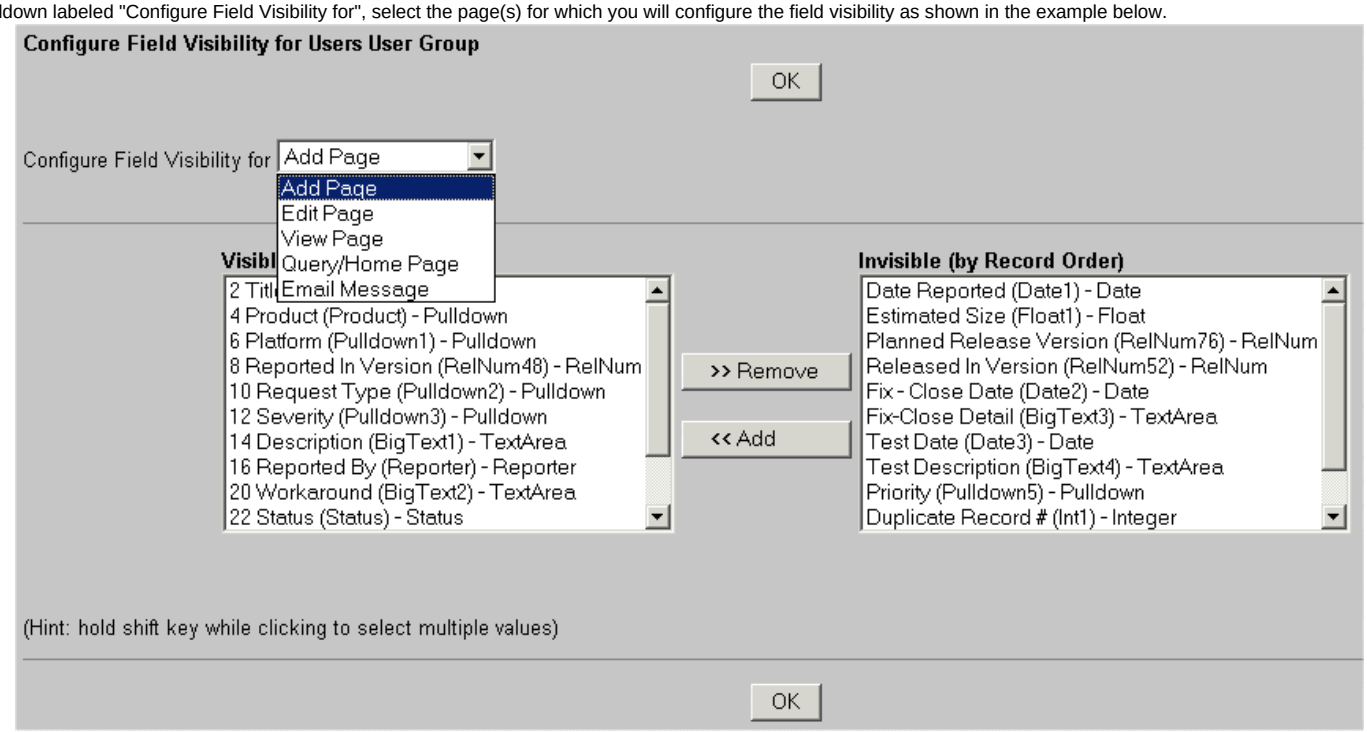
By default, all fields are visible to the Users group in all ProblemTracker pages until Field Level Visibility options are modified by using the instructions below. Field visibility options can be configured by modifying each user group or by modifying each field. The steps below allow you to configure the field visibility options by user group. If you prefer to configure the field visibility options by field, review the Field Level Visibility information in the Customizing the Data Record section.

To configure field level visibility for options for each user group:

1. Click on the Field Level Visibility button to the left of the user group you wish to configure as shown in the figure below.



2. In the pulldown labeled "Configure Field Visibility for", select the page(s) for which you will configure the field visibility as shown in the example below.



3. The fields that are visible to the user group will appear in the left column. In the right column, the fields that are "Invisible" to the user group are displayed. To make a field visible to the user group on the page(s) selected in the pulldown menu, click on the field in the right column, then click on the Add button. To make a field so that it is not visible to the user group on the page(s) selected in the pulldown menu, click on the field in the left column, then click on the Remove button. Multiple values can be selected by holding down the shift key while clicking on the values. Keep in mind that when you make a field invisible to a user group, the field will still be visible to users if this the field is configured to be visible to the "Users" group (since all users are members of this group). With this in mind, it is best to start by configuring the field level visibility options for the "Users" group, then proceed to configure the options for the remaining user groups.

Field Visibility Exceptions for Required fields

Certain fields in the data record are required, meaning that they cannot be removed from the data record. Some field visibility settings cannot be applied to these required fields.

PRN

This field is the record number assigned when a problem record is added to the database. Field visibility restrictions cannot be set for this field as it is a field that is displayed on ProblemTracker pages to distinguish the identity of each record.

Deleted

This field denotes whether a problem record has been deleted. By design, it does not appear on the Add page, and thus, field visibility for this field on the Add page cannot be set.

Effects of Field Visibility Restrictions on ProblemTracker operations

Add page

When a field is not visible to a user group on the Add page, the default value for will be applied to each invisible field when a member of this user group adds a problem record. The default values for each field type are listed in the Data Types section above.

Query and Home pages

When a field is not visible to a user group on the Query and Home pages, the field is also not visible in the personal or group Report Layouts for that user group. If a field is made "Not Visible" for a user group and this field is already in use in a report layout for this user group, the field will be replaced with the value "Do Not Use This Column" in the report layout.

Similar actions will occur with respect to personal or group saved queries and advanced saved queries. In this case, the restricted field will not be displayed in the saved query or advanced saved query. Any fields that are not visible to the user group will have a default value applied when the query is run. In most cases, this default value is "*", which indicates that all possible values for the field will be included in the query results even though this field will not be displayed on the query page or its results. In the case of the "Deleted" field, the default is "No", thus, all records that have not been marked deleted will be included in the query results. If the restricted field was being used as a "Sort By" field, the field will be replaced with "*" for the Sort by value.

Additionally, with respect to personal or group saved advanced queries that were created before a field was made invisible to a user group, any clause in the "Query Phrase" section containing a restricted field will be displayed as "read only". The clause cannot be edited because it contains a field that is invisible to the user group. However, this clause can be deleted from the advanced saved query.

NetResults ProblemTracker

User Administration - Privileges

The following describes the various privileges that may be assigned to a user group. To set the privileges for a user group:

1. Login to the workgroup as Admin
2. Click on the Admin icon in the button bar
3. Click on the User Administration button
4. Click on the Edit Groups button
5. Click on the Edit button to the left of the user group for which the privileges will be modified
6. To grant a privilege to a user group, check the box to the left of the privilege. To deny a privilege, uncheck the box.
7. Click OK to save your changes.

When assigning user group privileges, please note that all users are members of the "Users" group. Therefore, if a privilege is granted to the "Users" group, all users will have the privilege. Also, users can be members of one or more user groups, so the operations a user can perform are based on the privileges assigned to all of the user groups in which the user is a member.

General Privileges

The following privileges are basic ProblemTracker operations. An icon will appear in the top button bar for members of the user groups which have been granted one or more of the following general privileges:

Task
Members or groups with this privilege are allowed to use the Task operation.

Delete
Members or groups with this privilege are allowed to delete records.

History
Members or groups with this privilege are allowed to make queries into the record history database (changes made by whom and when).

Admin
Members or groups with this privilege allowed to perform Admin functions.

Help
Members or groups with this privilege are allowed to access the help documentation.

Add Privileges

The following privileges are related to the Add operation. The members of the user group(s) that are granted any of the privileges below will have the "Add" icon displayed in the button bar:

Add
Members or groups with this privilege are allowed to add records.

Add Attachments via Add Page
All members of groups with this privilege are allowed to add an Attachment on the Add page (along with the original problem record). To subsequently modify attachments (Edit, Delete, or Add additional attachments), a user must also be a member of a group with the Edit Attachments privilege.

Can Be Assignee For Add
All members of groups with this privilege appear in the Assignee list when a record is added. This allows you to limit which users can be assigned to a newly added record.

View Privileges

The following privileges are related to the View operation. The members of the user group(s) that are granted any of the privileges below will have the "View" icon displayed in the button bar and in the reports displayed on the Home and Query pages:

View Fields
Members or groups with this privilege are allowed to view the fields within records. The fields which the members or groups are allowed to view are based on the Field Level Visibility settings on the View page for each user group.

View Attachments
Members or groups with this privilege are allowed to view attachments within records.

View Source Code List
Members or groups with this privilege are allowed to view source code files associated with records when Source Code Control Integration is enabled.

View Record History
Members or groups with this privilege are allowed to view record history (audit trail documenting changes made by whom and when).

View User Information
When the "Assigned To" or "Reported By" fields appear on the View Page or in reports on the Home or Query pages, all members or groups with this privilege will be able to click on the user's name to see the details of their user administration profile (e.g. phone number, email address, company name).

Edit Privileges

The following privileges are related to the Edit operation. The members of the user group(s) that are granted any of the privileges below will have the "Edit" icon displayed in the button bar and in the reports displayed on

the Home and Query pages:

Edit Fields
Members or groups with this privilege are allowed to edit the fields within records. The fields which the members or groups are allowed to edit are based on the Field Level Visibility settings on the Edit page for each user group.

Edit Attachments
Members or groups with this privilege are allowed to edit the attachments within records.

Edit Source Code List
Members or groups with this privilege are allowed to edit the source code files associated with records when Source Code Control Integration is enabled.

Query Privileges

The following privileges are related to the Query operation. The members of the user group(s) that are granted any of the privileges below will have the "Query" icon displayed in the button bar:

Query
Members or groups with this privilege are allowed to query the database for records. The fields which the members or groups are allowed to query are based on the Field Level Visibility settings on the Query / Home pages for each user group.

Save Group Queries
Members or groups with this privilege are allowed to add, edit, and delete group-level saved queries for any group in which they are a member.

Save Group Report Formats
Members or groups with this privilege are allowed to add, edit, and delete group-level saved report formats for any group in which they are a member.

Edit Query Result Set
Members or groups with this privilege are allowed to perform a query and then perform an edit that affects all the records in the query result set. If a user is also a member of a group with Delete privilege, then they can perform a delete of all records matching a query.

Metrics Privileges

The following privileges are related to the Metrics operation:

Metrics
Members or groups with this privilege are allowed to generate Metrics reports and will have the Metrics icon displayed in the top button bar.

Save Group Charts
Members or groups with this privilege are allowed to add, edit, and delete group-level saved charts for any group in which they are a member. In order to use this function, the "Metrics" privilege mentioned above should also be enabled.

Save Group Chart Layouts
Members or groups with this privilege are allowed to add, edit, and delete group-level saved report formats for any groups in which they are a member. In order to use this function, the "Metrics" privilege mentioned above should also be enabled.

Record Visibility Privileges

The following privileges are related to Record Level Visibility, a feature which restricts a user's access to records based on the user groups in which they are a member:

Edit Record Visibility
When a record is added, it is made visible to all groups in which the reporter is a member. Members with this privilege are allowed to explicitly select which other groups may view the record when it is added, and also change what groups may view the record at any later time. If a user does not have this privilege and Record-Level Security is enabled, then when they add a new record the visibility of the record is based on the General Preferences settings related to Record-Level Security. Typically you should add this privilege for internal users and exclude it from external users. This privilege is only meaningful if Record-Level Security is enabled. User groups without this privilege will not see the field "Make Visible to These User Groups" on the Add page.

Override Record-Level Security
All members of groups with this privilege are allowed to view all the problem records, irrespective of whether or not Record-Level Security has been enabled. This is typically used to allow members of "internal" user group(s) to view records added by all other "external" user group(s) without having to be a member of every user group. Users with this privilege and with Edit Record Visibility privilege can set the visibility of any record to any set of User Groups (not just to User Groups to which they belong). This privilege is only meaningful if Record-Level Security is enabled.

Alert Privileges (Enterprise Edition Only)

The following privileges are related to Alerts, a feature which allows alert notification messages to be sent when a record has not changed state during a certain period of time:

Edit Alert Settings
Members or groups with this privilege are allowed to modify the alert settings for a record. In addition, members or groups with this privilege will have the "Edit" icon present in the button bar and in the reports displayed on the Home and Query pages when the Alerts feature is enabled.

Edit Own Alert Settings
Members or groups with this privilege are allowed to modify the alert settings for records in which they are the current assignee. In addition, members or groups with this privilege will have the "Edit" icon present in the button bar and in the reports displayed on the Home and Query pages when the Alerts feature is enabled.

View Alert Settings
Members or groups with this privilege are allowed to view the alert settings for a record. In addition, members or groups with this privilege will have the "View" icon present in the button bar and in the reports displayed on the Home and Query pages when the Alerts feature is enabled.

Discussion Privileges (Enterprise Edition Only)

The following privileges are related to Discussion, a feature which allows users to discuss various topics within a particular record. The members of the user group(s) that are granted any of the privileges below will have the "Discuss" icon displayed in the button bar and other discussion icons in the reports displayed on the Home and Query pages when the Discussion feature is enabled:

View Messages
Members or groups with this privilege may view messages within discussion threads for any record the group can access.

Post Messages
Members or groups with this privilege may post a new message or reply to a message within the discussion threads for any record the group can access. Granting this privilege to a group automatically grants the group the "View Messages" privilege as well.

Initiate Discussion Threads
Members or groups with this privilege may create a new discussion thread for any record the group can access. Granting this privilege to a group automatically grants the group the "View Messages" and "Post Messages" privileges as well.

Edit Messages
Members or groups with this privilege may edit the messages within a discussion for any record the group can access. Granting this privilege to a group automatically grants the group the "View Messages" privilege as well.

Delete Messages and Threads
Members or groups with this privilege may delete the messages and / or threads within a discussion for any record the group can access. Granting this privilege to a group automatically grants the group the "View Messages" privilege as well.

The privileges above make reference to "any record the group can access". If record visibility is enabled with a workgroup, the user can only access a record or the discussion within a record if that record is visible to a user group in which the user is a member.

NetResults ProblemTracker

User Sessions

Overview

A current snapshot of all user sessions can be displayed by clicking on the "User Sessions" button in the Admin page. Each user session begins when a user logs in and ends when they click the Logoff icon (or when you close their session, see below). A tally of user sessions by license type as well as total sessions allowed by each license key appears at the top of the page. Please note that the Admin user session is not not counted against the license limit.

Closing User Sessions

A listing of each individual user session follows, which includes the User ID and last login time. For installations with both static and floating license keys, the license type is listed for each user session. A "Logoff" button appears for each user session except Admin. You can terminate a user session by clicking the Logoff button. This is useful in cases where the limit of active floating user sessions has been reached causing another user to be unable to login. Also, this Logoff functionality can be used to clear out all user sessions when Administrative tasks need to be performed on the database (database backup, making large changes, etc.)

Note: A user may only terminate their session by clicking the Logoff icon. Simply exiting their browser will not terminate their session. If a user does exit their browser (or shuts down their machine) without clicking the Logoff icon, they can end their previous session by attempting to login again. At that point they will be offered an opportunity to terminate their previous session. By answering YES to terminating their previous session (and then clicking the Logoff icon at some point after successfully logging in this time), they can remove any "stale" sessions they have created without your assistance. Similarly, if a user browses off to another site without clicking the Logoff icon to end their ProblemTracker session, they can click the Back button on their browser several times to return to the last ProblemTracker page they were on and then click the Logoff icon. Or, they can simply browse back to the login page, login again (in this case no message about a previous session will be displayed as cookie information in their browser lets us know which session they were previously using), then click the Logoff icon on the Home page when it is displayed. ProblemTracker does not allow more than one active session per user account (irrespective of license type), so if a user logs in and then logs off they can always be certain that they have not left any active sessions around. The information above is explained to your users in the Logging In section of the User's Guide, though you may wish to provide an explanation that is more specific to your ProblemTracker configuration.

Session Timeout

Upon installation, the default session timeout is 12 hours. This setting can be adjusted for each workgroup and for the Workgroup Management System through your web server settings in Internet Information Server. To adjust the session timeout,

1. Launch Internet Services Manager for IIS
2. Under the web site where you have installed ProblemTracker, locate the virtual directory of the

workgroup you wish to modify. To adjust the timeout for the Workgroup Management System, locate the ptadmin virtual directory.

3. Right click on the virtual directory and select Properties.
4. In the Virtual Directory tab, click on the Configuration button.
5. Click on the App Options tab. You will find the Session Timeout option under Enable Session State. Specify a value for Session Timeout in minutes. The default is 720 minutes. It is recommended that you do not set this value to fewer than 20 minutes.
6. Click OK to save your selection.
7. Restart IIS so this new setting will take effect.

NetResults ProblemTracker

Customizing The Data Record

Overview

ProblemTracker allows you to customize the data record to your needs by adding and removing fields as necessary. In addition, you can specify the name displayed for all fields, the values for pulldown menus, and specify whether a field is required or not.

Data Types

ProblemTracker allows you to use the following data types:

Integer
An integer numeric value. The default value for this field is "0".

Float
A floating point number. The default value for this field is "0.0".

Text
A text string up to 80 characters. By default, this field is blank until information is added.

TextArea
A very large text string. The maximum size determined by the amount of data supported by the textarea type on your web browser, and the particular database in use. By default, this field is blank until information is added.

Url
A 255 character string that is a valid formatted URL. By default, this field is blank until information is added.

Date and Time
A string of the format MM/DD/YYYY HH:MM:SS AM/PM (US Default). ProblemTracker may also be configured to use the '-' and '.' delimiters as well as the "DD MM YYYY" and "YYYY MM DD" format for the date representation portion of this string. The time format can be represented in 12 hour or 24 hour formats. The representation of date and time formats within ProblemTracker on the localized settings for the database in use. The default value for this field type is controlled by the "Init for Add" option explained in the Editing Field Attributes section below.

Pulldown
A pulldown menu. You can customize all values in the menu. The default value for this field is determined in the Customizing Menu Values section.

Release Number
A combination of four pulldown menus. You can customize all values in the menu. The default value for this field is determined in the Customizing Menu Values section.

YesNo
A pulldown with the values Yes and No. The default value for this field is "Yes".

Adding and Removing Fields

It is often a good idea to create a backup of your database before making major changes such as modifying your fields as some modifications are irreversible other than by restoring backup copy of your database.

To add or remove a field from the data record, click on the "Define Record" button in the Admin section. Use the Add and Remove buttons to move fields from the right list (fields not in use) to the left list (fields in use) and vice versa.

Note that for release number types, only the first pulldown menu will be shown on this page, although all four components do appear in the "Options Menu" page in the Admin section, allowing you to specify the values for any of the component pulldown menus.

Effects on Existing Records when Adding and Removing Fields

When you add a field, existing records that do not have a value for this field (some may if the field was previously in use) will be given an initial value. For pulldown menus and release numbers, the current default value (see Option Menus) for the pulldown or release number is used as the initial value. For Date, Text, BigText, and URL fields, the initial value is blank (no value). For integer and float fields, it is zero. For YesNo fields, it is "No".

Fields that are removed from the data record are no longer displayed, but they actually remain in the database. Additionally, when a field is removed, any references to the field (in Saved Queries, Report Layouts, and Task Fields) are removed. Records which are added after you have removed a field do not get a value for the removed (inactive) field.

If you have configured dependent pulldowns, removing one of the pulldowns removes the relationship between the two pulldown fields. If a parent pulldown is removed, the child option menu values become independent, and thus, are no longer limited by the value entered in the parent pulldown.

The fact that the removed field does not get a value when new records are added is important to remember if you wish to re-add this field in the future. If you add a previously removed field, any existing problem records that do not have a value for this field (records which were added when this field was inactive) will be initialized with the default value for the field (see above). Any existing records that already had a value for this field (records which were added when this field was active) will not be initialized (the old value is preserved).

Therefore, all records that didn't have a value for the field now have a valid (default) value and records that did have a value are not changed. However, if you add a pulldown menu or release number field, we still recommend that you run Check DB Values in the Option Menus section, to verify that all values for this field in existing records are now valid to ensure consistency in your database (just follow the yellow triangles which will be displayed in the Admin page). If you wish to have all records in the system start with the same value for this newly added field (for example, you have a special value to note that the value wasn't actually set when the record was first created), you can use the Edit Results function to update all records after you Add the field. Click here for more information on the Edit Results function (scroll to the section called "Query Results").

If a field is renamed (the "label" property for the field is changed), there is no impact to existing data. The labels on the various pages (Add, Edit, Task, View, Query, etc.) will change to use the new "label".

Editing Field Attributes

To edit the attributes for a field, click on the "Define Record" button on the Administrator page. Select the desired field from the list of fields currently in use, and click on the Edit button. A table with options and an Update button appears below the field selection area to allow you to modify the field. When you have completed making your changes, press the Update button to save them.

The following attributes may be specified:

Label
The name displayed for this field.

Record Order
Integer specifying The order that the record should be presented relative to the other fields. For example, a field with a value of 5 will be presented before a field with a value of 100.

Required for Add
Specifies whether the field is required to be entered by the user when it appears on the Add page. For Integer, Float, Text, TextArea, or Date types this means that a blank value will not be allowed. For pulldown fields, this means that the user must select a value other than the initial value displayed on the form. You may wish to define the first element of a required pulldown with a value like "Please Select A Value" to indicate to the user they must select a value.

Init for Add
Only valid for Date types. Specifies that the field should be automatically initialized to the current date/time if it appears on the Add page.

Include on Inet Page
Specifies whether the field should be presented on the Internet bug reporting page (also known as the Customer Bug page).

Copy Field Value For Next Add
When adding a new record using the Add page, a user has the option to click "Add" or "Add & Copy" to save

the new record. Clicking on the "Add" button will save the new record, then return to the Add page with a "blank" form (all fields returned to default or blank values). Clicking on the "Add & Copy" button will save the new record, then return to the Add page with the values of the fields "copied" from the last record added. This allows the user to add another record with similar information as the last record added without having to re-type information into the fields. In order to have a field's value copied into the Add form after clicking on the "Add & Copy" button, the attribute "Copy Field Value For Next Add" must be set to Yes.

Editing Pulldown Attributes

When a field of pulldown format is edited, the Edit Pulldown Attributes section will be displayed below the Edit Field Attributes section. If you wish to configure a pulldown field to be dependent on another pulldown field, select the pulldown field which will act as the parent in the relationship between the fields in the Parent Pulldown field in this section. If the pulldown field for which you are editing the field attributes is to be the parent pulldown in the relationship, select <No Pulldown> in the Parent Pulldown field in the Edit Pulldown Attributes section.

Field Level Visibility

For a more detailed overview of Field Level Visibility, please review the Field Level Visibility portion of the User Groups Help section.

A field's visibility can be configured by user group for the following areas in ProblemTracker:

- Add page
- Edit page
- View page
- Query and Home Pages
- Email Notification Message

If you prefer to configure the field level visibility options for each user group instead of modifying each field, review the information in the User Groups Help section.

If you wish to restrict the fields which are made visible in the Task operation, this is done while configuring task fields for a transition. The Customizing Workflow Help section provides details on configuring task fields.

By default, all fields are visible to the Users group in all ProblemTracker pages until Field Level Visibility options are modified by using the instructions below.

To configure field level visibility options for each field on the data record:

1. Click on the field in the "In Use" column for which you wish to modify the visibility settings

2. Click on the Edit button
3. In the Group Visibility section, there are 4 areas listed. Within each area, select the groups to whom the field should be visible when performing the operation(s) listed. To make a field visible to all groups, click on the All button. Alternatively, a field can be made visible to all groups by selecting the User Group "Users" (since all users are members of this group). To remove the field such that it will not be visible to any groups, click on the None button or select the option <No Group>.
4. Click Update to save the changes

Field Visibility Exceptions for Required fields

Certain fields in the data record are required, meaning that they cannot be removed from the data record. Some field visibility settings cannot be applied to these required fields.

PRN

This field is the record number assigned when a problem record is added to the database. Field visibility restrictions cannot be set for this field as it is a field that is displayed on ProblemTracker pages to distinguish the identity of each record.

Deleted

This field denotes whether a problem record has been deleted. By design, it does not appear on the Add page, and thus, field visibility for this field on the Add page cannot be set.

NetResults ProblemTracker

Customizing Menu Values

Overview

ProblemTracker allows you to define the values of any Pulldown field type in the data record.

Defining Pulldown Field Values

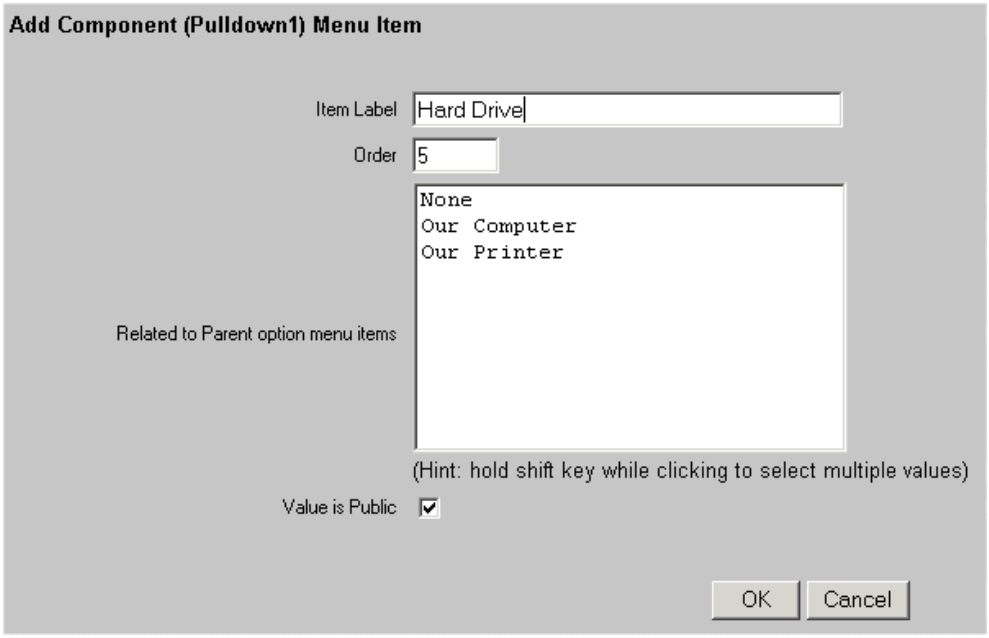
It is often a good idea to create a backup of your database before making major changes such as modifying your pulldown menus as some modifications are irreversible other than by restoring a backup copy of your database.

To define the pulldown values, click on the "Option Menus" button of the Administrator. You will be presented with a table containing all the Pulldown fields in the data record. Locate the row for the desired field, and click on the "Edit Items" button. You will be presented with a page listing all of the current values.

To add a value, click on the "Add Item" button. When adding an item you can specify:

- Name for the menu item in the "Item Label" field
- Relative order in which the item should appear in the "Order" field (all entries with the same relative order are listed alphabetically).
- Associated with Parent Option Menu Items. This field will only be displayed if the pulldown field to which this option menu item belongs has a parent pulldown defined in the Define Record section.
- Whether the value should be displayed if the field appears on the Customer Bug Page (checking the box marked "Value is Public" indicates the choice should appear on the Customer Bug Page).

The figure below displays the attributes that can configured when an option menu item is added. The field "Associated with Parent Option Menu Items" will only appear if the pulldown field is configured as a dependent pulldown.



To edit a value, locate row for the desired existing value and click on the "Edit" button. If you change the "Item Label" for a value, any records with this value selected will display the new "Item Label" you entered.

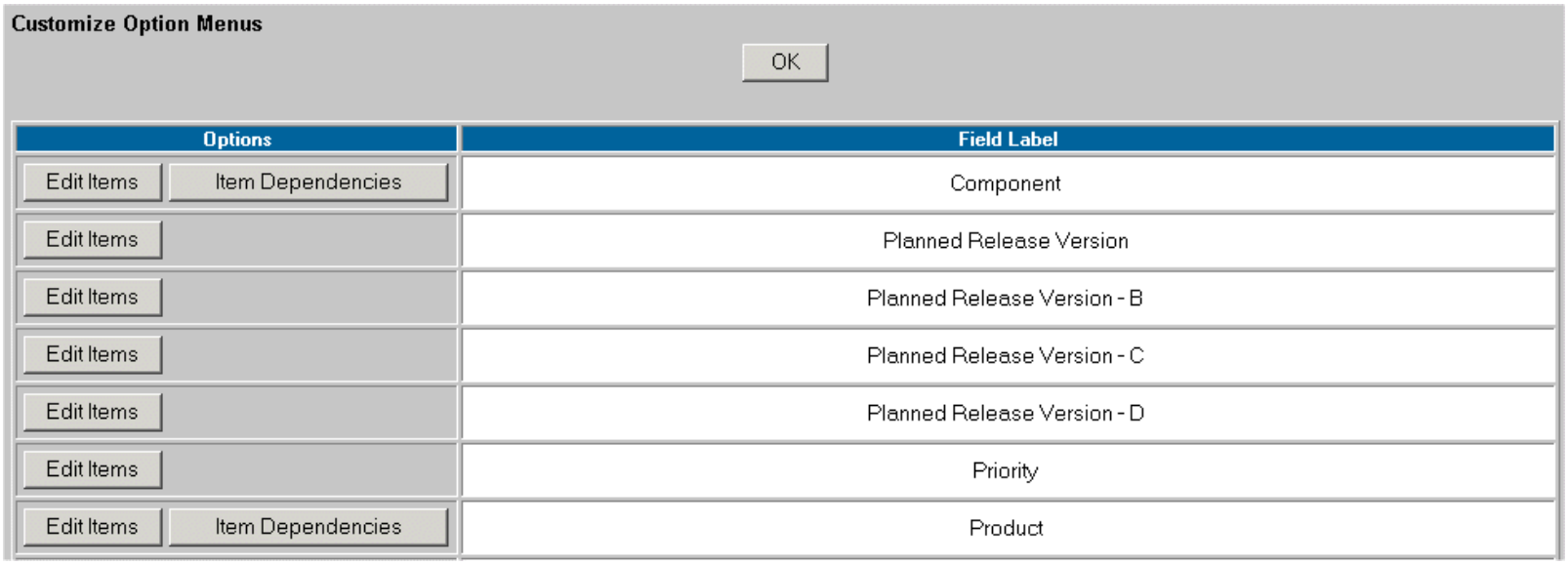
To delete a value, locate row for the desired existing value and click on the "Delete" button.

Selecting the Default Value for the Add Operation

You can set which value is used as the default value when a new problem record is created. You cannot delete a value if it is currently the default value. You must first set another value as the default, and then delete the value.

Item Dependencies

If a pulldown field is configured to be either the child pulldown or the parent pulldown in a dependent pulldowns relationship, the **Item Dependencies** button will be displayed to the left of the pulldown menu as shown in the figure below.



In the Item Dependencies page for a pulldown menu, you can map parent pulldown option menu items to each option menu item in the child pulldown and vice versa. Instructions on mapping pulldown option menu items can be found in the Dependent Pulldowns Help section.

Default Items

If a pulldown is configured to be a child pulldown in a dependent pulldowns relationship, the **Default Items** button will be displayed to the left of the pulldown menu.

In the Default Items page, you can select which option menu item in the child pulldown should appear as the default value for each possible option menu item in the parent pulldown. A default child option menu item must be specified for each parent option menu item. The defaults should only be selected after mapping the relationships between the menu items in the **Item Dependencies** page. Instructions on mapping pulldown menu values can be found in the Dependent Pulldowns Help section.

To set the defaults, click on the **Default Items** button to the left of the child pulldown menu on the Option Menus page. A tree structure will be displayed. Each parent option menu item will be preceded by "[-]". Under each parent option menu item, the related child option menu items will be displayed. If a parent option menu item does not appear on this page, this indicates that the parent item does not have any child items related (or mapped) to it.

Select one child option menu item to be the default value for each parent. To set the child option menu item as the default, click on the child option menu item, then click on the Toggle Default button. Once the child option menu item has been set as the default, "[Default]" will be noted after the name of the child option menu item. Click OK to return to the Option Menus page.

Checking Existing Database Values

If you enable a pulldown menu field and there are already existing records in the database, there may be invalid values (values that don't match one of the current pulldown menu entries) for the newly added field in the existing records. Old records may have a value from a previous time when the field was in use, perhaps for another purpose. To check the values in the database (and modify them to have appropriate values for the current use of this field), click on the "Check DB Values" button. If there are any invalid values in the database for the field, they will be listed. By selecting the invalid value, and specifying a value to replace it, you can update the database with valid values and guarantee that all records in the database have values that match the current set of options for the pulldown menu field. If you wish to leave (now) invalid values (perhaps to preserve old records), you can do this, but you can only View such old records. Operations which modify such records such as Edit and Task will not work with such invalid values. And, operations such as Query and Summary can not search for such invalid (obsolete) values.

Since many ProblemTracker operations can not be performed with such invalid values, we strongly recommend that you run Check DB Values after creating (or modifying) any pulldown menu fields.

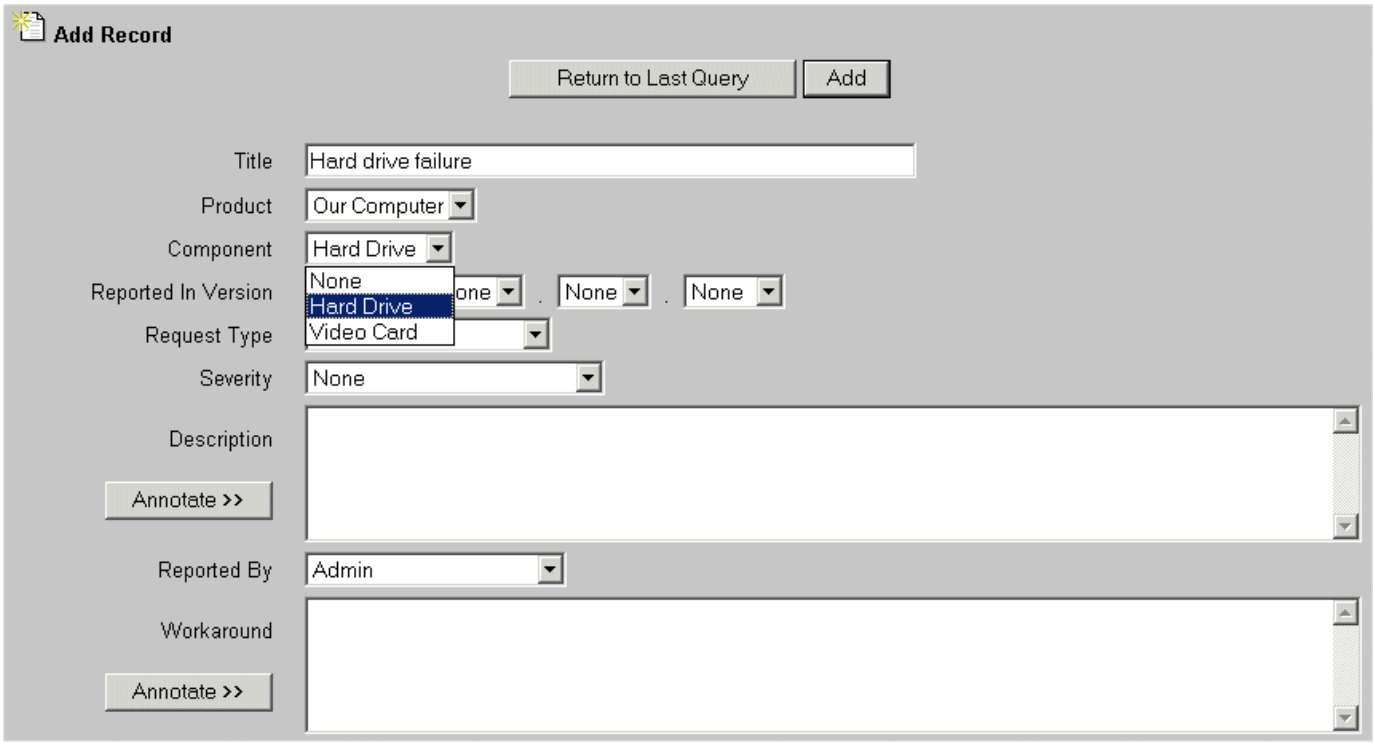
NetResults ProblemTracker

Customizing Pulldown Menu Dependencies

Overview

Dependencies can be configured between pulldown menu fields in ProblemTracker such that the option menu values displayed in one pulldown menu can be dependent on the option menu value selected in another pulldown menu. Pulldown B is dependent on Pulldown A. When a user selects a value in Pulldown A, the values displayed in Pulldown B are changed. Pulldown A is the parent pulldown and Pulldown B is the child pulldown. A simple example to illustrate this functionality:

A system has a pulldown called Product with two menu options "Our Computer" and "Our Printer". A pulldown called Component has the menu options "Hard Drive", "Video Card", "Toner", and "Paper Tray". The components "Hard Drive" and "Video Card" correspond to the "Our Computer" menu option in the Product pulldown field. The components "Toner" and "Paper Tray" correspond to the "Our Printer" menu option in the Product field. When a user selects "Our Computer" for the Product field, only the options "Hard Drive" and "Video Card" as well as "None" (the default value of the Component pulldown) will be displayed in the Component field (as shown in the figure below). The Component pulldown (child) is dependent on the Product pulldown (parent). This is achieved by configuring dependencies between the Product and Component pulldown fields.



Configuring a Pulldown to be Dependent on Another

Selecting fields

Select a pulldown field to be the parent pulldown, then select a pulldown field to be the child pulldown menu. Multiple dependencies on a single parent pulldown can be configured. For example, Pulldowns B, C, and D are all dependent on Pulldown A, that is to say, Pulldowns B, C, and D are all children of Pulldown A. Dependencies can be configured to span multiple levels as well. For instance, Pulldown C is dependent on Pulldown B and Pulldown B is dependent on Pulldown A.

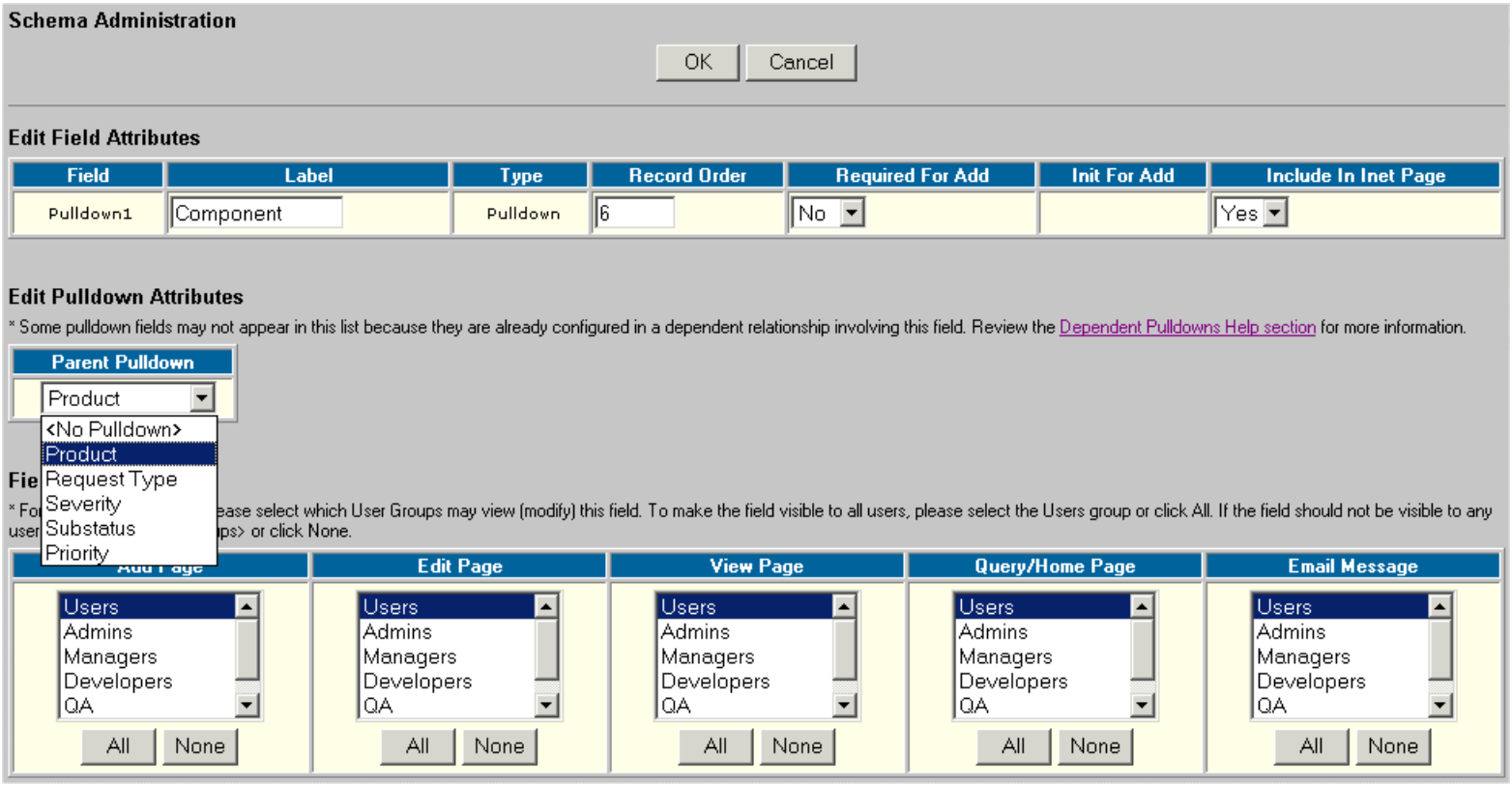
Set up the Child Pulldown Menu to select a Parent Pulldown

To configure the child pulldown menu so that a particular pulldown is selected to be the parent pulldown,

1. Login to ProblemTracker as Admin
2. Click on the Admin icon
3. Click on the Define Record button
4. Click on the field that will act as the child pulldown menu in the "In Use" column, then click on the Edit button
5. In the "Edit Pulldown Attributes" section, select the field that will act as the parent pulldown in the "Parent Pulldown" field (as shown in the figure below).
6. Click on the OK button to save this change.

Special Cases

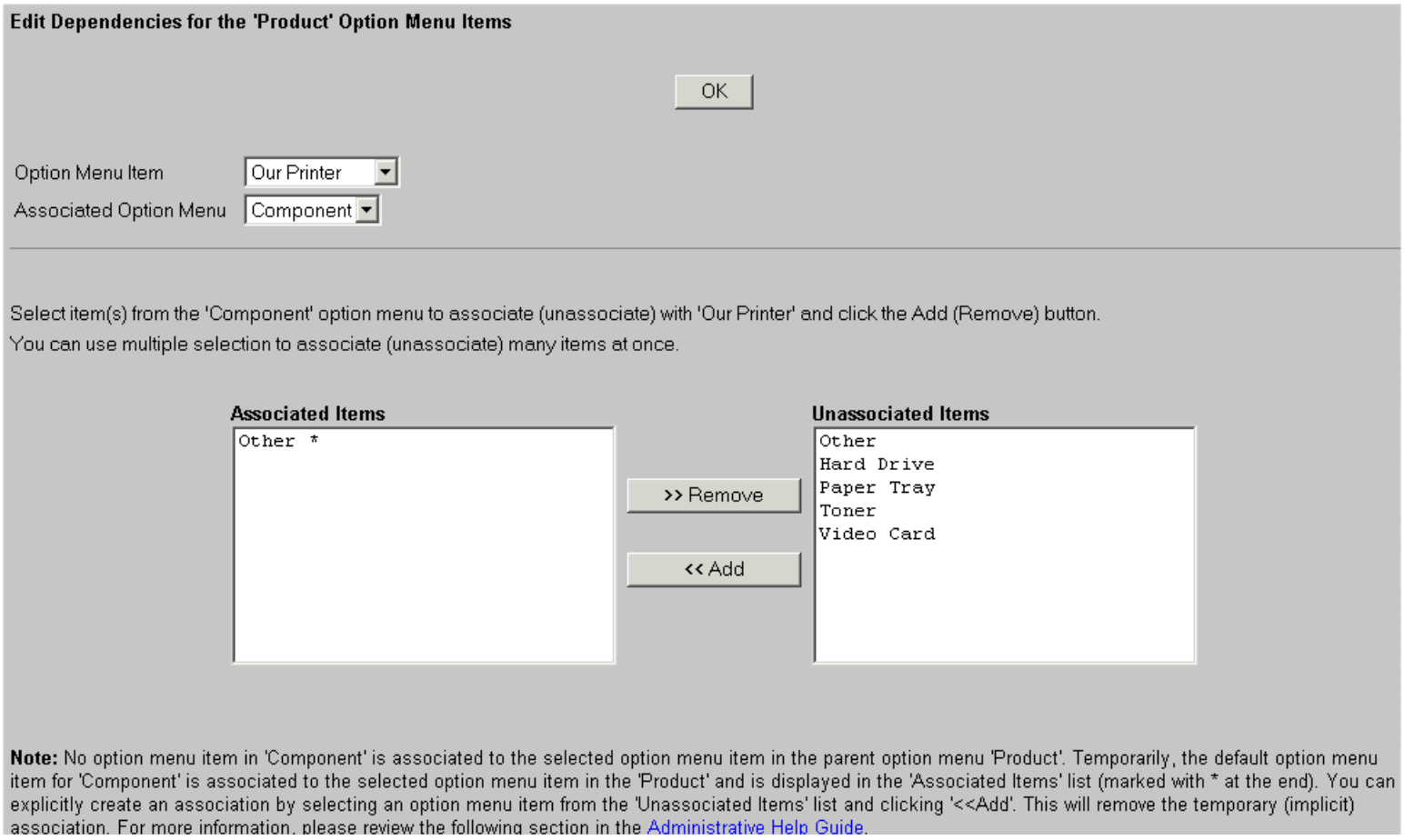
Please note that the fields Status, Assigned To, or Reported By cannot be involved in a dependent relationship. The only dependencies that can be created based on these fields is via the Define Workflow section.



Configure relationships between option menu values in the parent pulldown and the child pulldown

ProblemTracker must be configured to show which option menu values in the child pulldown correspond to each option menu value in the parent pulldown. This configuration will determine which values should be displayed in the child pulldown when a particular value is selected in the parent pulldown field.

When specifying a parent pulldown field for the child pulldown field, ProblemTracker will automatically create implicit relationships to relate the option menu items in the parent pulldown menu with the option menu items in the child pulldown menu. This is done to ensure that each parent option menu item is related to at least one option menu item from the child pulldown menu. The following example shows a temporary (implicit) relationship created automatically for a parent pulldown menu. The item "Other * " listed in the "Associated" column is an implicit relationship.



explicitly create an association by selecting an option menu item from the 'Unassociated Items' list and clicking '<<Add'. This will remove the temporary (implicit) association. For more information, please review the following section in the Administrative Help Guide.

These temporary (implicit) relationship(s) are just a starting point after configuring a dependent relationship. In this section, you will have the opportunity to change the implicit relationships created by ProblemTracker. Once you create an explicit relationship as mentioned in the steps below, the implicit relationship(s) will be removed.

There are 2 ways to configure the relationships between the option menu items in the parent and child pulldown fields:

- By mapping child option menu values to corresponding parent option menu values
  OR
- By mapping parent option menu values to corresponding child option menu values

To map the values with respect to the parent pulldown menu,

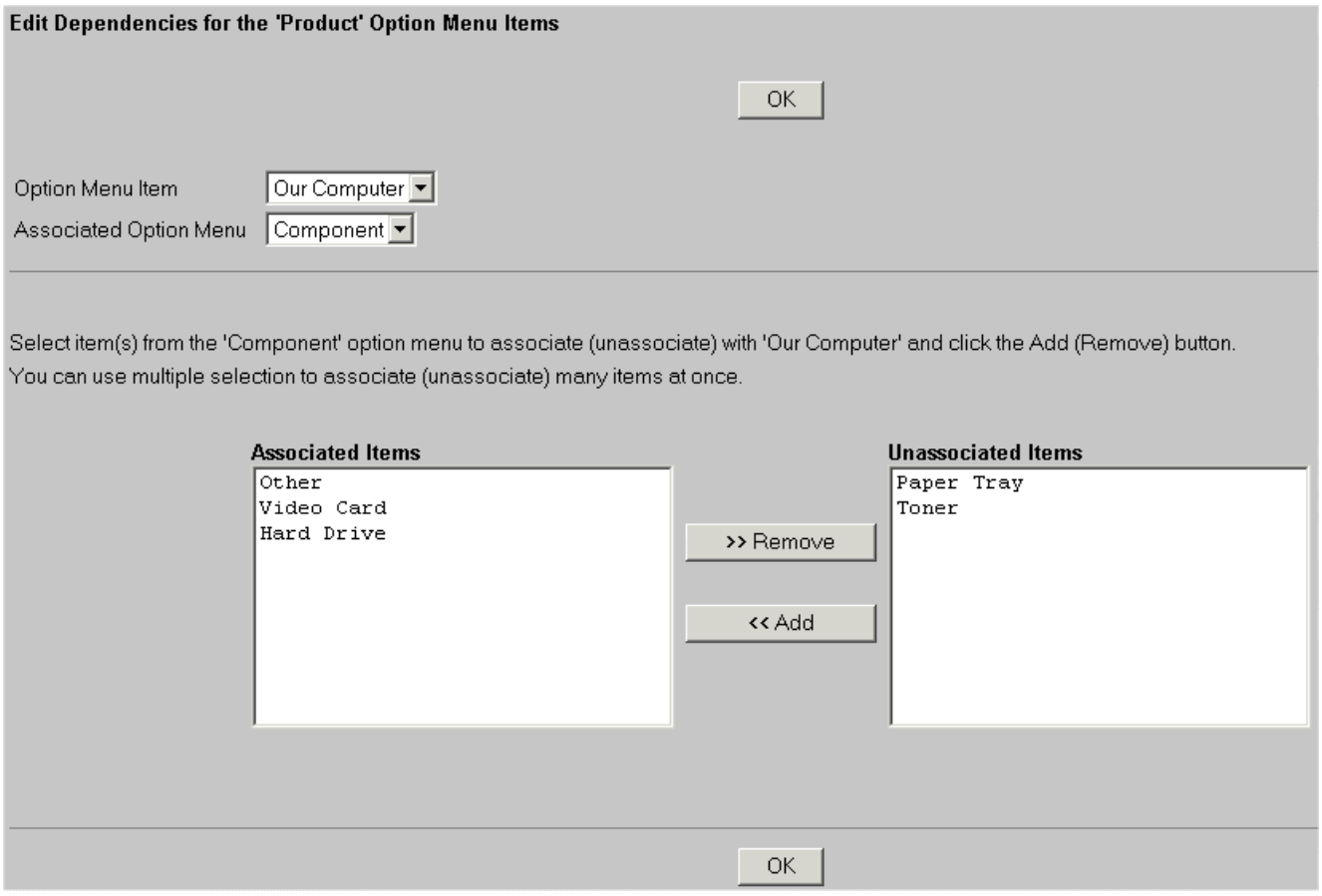
1. Login to ProblemTracker as Admin
2. Click on the Admin icon
3. Click on the Option Menus button
4. Click on the Item Dependencies button to the left of the parent pulldown menu
5. The "Option Menu Item" field will contain the option menu items configured for the parent pulldown menu. Make a selection in this field so that you can configure option menu items from the child pulldown to be associated to this option menu item from the parent pulldown.
6. The "Associated Option Menu" field will contain all option menus that are associated with the parent pulldown. The option menu items of the pulldown that you select in this field will be displayed in the columns below to be associated or unassociated to the parent option menu item selected in the "Option Menu Item" field.
7. Any child option menu items already associated with the parent option menu item will be displayed in the left column called "Associated". Any child option menu items in the "Associated" column proceeded by "*" are implicit relationships (these relationships were made when the parent pulldown was selected for the child pulldown field in the Edit Attributes section of the Define Record page).

   Any child option menu items not associated with the parent option menu item will be displayed in the right column called "Not Associated". A child option menu item temporarily associated to the parent (proceeded by "*") will also be listed in the "Not Associated" without "*".

   To select a pulldown menu value to be associated to the parent pulldown menu value, click on the child option menu item in the "Not Associated" column, then click on the Add button. The child option menu item will be moved to the left column called "Associated". To select multiple child option menu items, hold the shift key while clicking on multiple values.

   As soon as ANY child option menu item from the Not Associated column is added to the Associated column, any implicitly associated child option menu item (proceeded by "*") will be removed from the Associated column. When you choose to associate a child option menu item to a parent option menu item manually, you are creating an explicit relationship. Any explicit relationship removes the implicit (temporary) relationship created automatically by ProblemTracker.
8. Select another parent option menu item in the "Option Menu Item" field, then choose the corresponding child option menu items to be associated.
9. After assigning child option menu items to each parent option menu item listed in the "Option Menu Item" field, click on the OK button to return to the Option Menus section.

The following figure shows the result of associating option menu items from one pulldown to another. "Our Computer" is an option menu item of the "Product" field. The "Product" field is a parent to the "Component" field. The "Component" field has the option menu items "Other", "Video Card", and "Hard Drive", which have been associated to the "Our Computer" option menu item. "Component" also has the option menu items "Paper Tray" and "Toner", which are unassociated with the "Our Computer" option menu item.



To map the values with respect to the child pulldown menu,

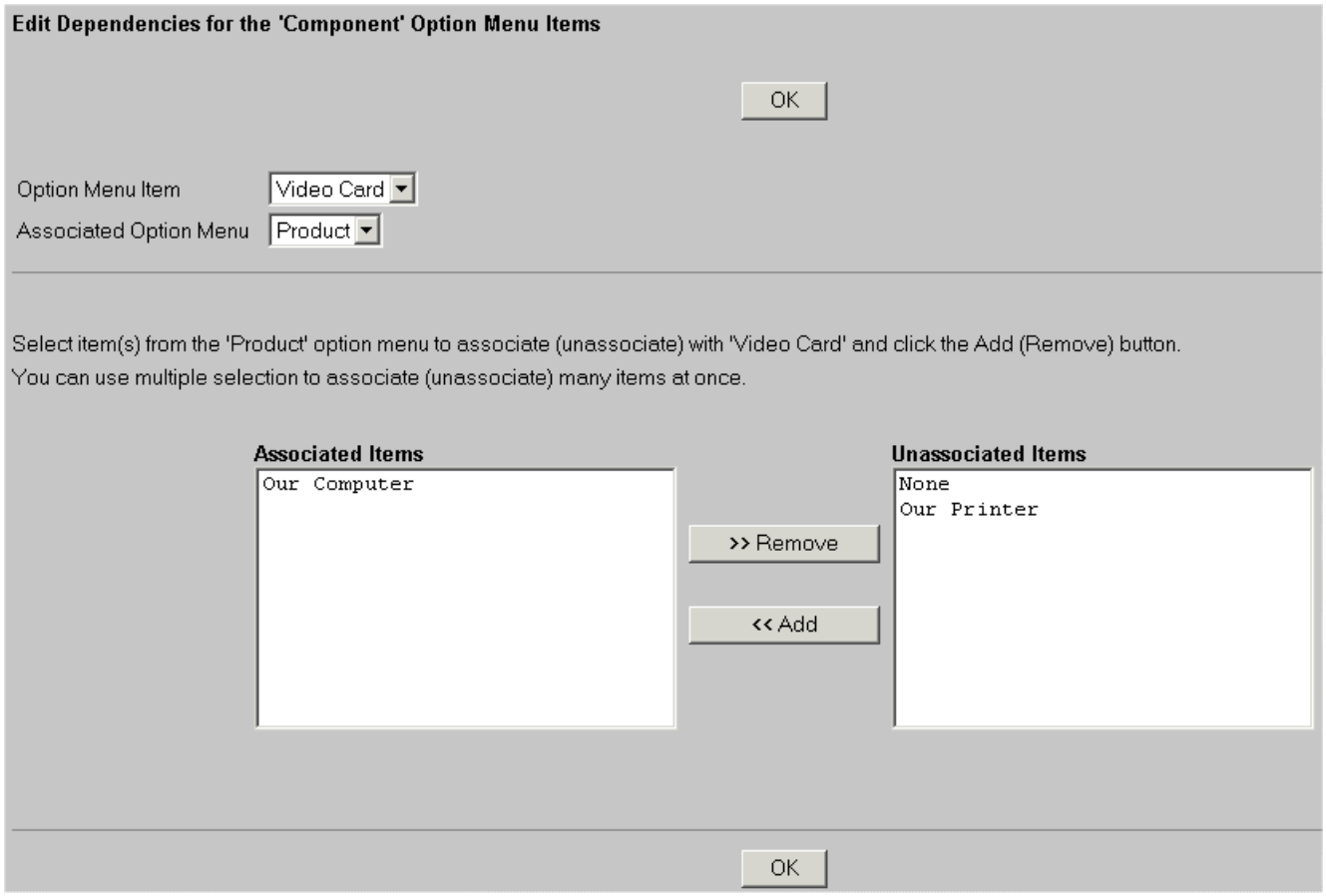
1. Login to ProblemTracker as Admin
2. Click on the Admin icon
3. Click on the Option Menus button
4. Click on the Item Dependencies button to the left of the child pulldown menu
5. The "Option Menu Item" field will contain the option menu items configured for the child pulldown. Make a selection in this field so that you can configure option menu items from the parent pulldown to be associated to this option menu item from the child pulldown.
6. The "Associated Option Menu" field will contain all option menus that are associated with the child pulldown. The option menu items of the pulldown that you select in this field will be displayed in the columns below to be associated or unassociated to the child option menu item selected in the "Option Menu Item" field.
7. Any parent option menu items already associated with the child option menu item will be displayed in the left column called "Associated". Any parent option menu items in the "Associated" column proceeded by "*" are implicit relationships (these relationships were made when the parent pulldown was selected for the child pulldown field in the Edit Attributes section of the Define Record page).

   Any parent option menu items not associated with the child option menu item will be displayed in the right column called "Not Associated". A parent option menu item temporarily associated to the child (proceeded by "*") will also be listed in the "Not Associated" without "*".

   To select a option menu value to be associated to the child option menu value, click on the parent option menu item, then click on the Add button. The parent option menu item will be moved to the left column called "Associated". To select multiple parent option menu items, hold the shift key while clicking on multiple values.

   As soon as ANY parent option menu item from the Not Associated column is added to the Associated column, any implicitly associated parent option menu item (proceeded by "*") will be removed from the Associated column. When you choose to associate a parent option menu item to a child option menu item manually, you are creating an explicit relationship. Any explicit relationship removes the temporary (implicit) relationship created automatically by ProblemTracker.
8. Select another child pulldown menu item in the "Option Menu Item" field, then choose the corresponding parent pulldown menu items to be associated.
9. After assigning parent menu items to each child menu item listed in "Option Menu Item" field, click on the OK button to return to the Option Menus section.

The following figure shows the result of associating option menu items from one pulldown to another. "Video Card" is an option menu item of the "Component" field. The "Component" field is a child of the "Product" field. The "Product" field has the option menu item "Our Computer", which has been associated to the "Video Card" option menu item. "Product" also has the option menu items "None" and "Our Printer", which are unassociated with the "Video Card" option menu item.

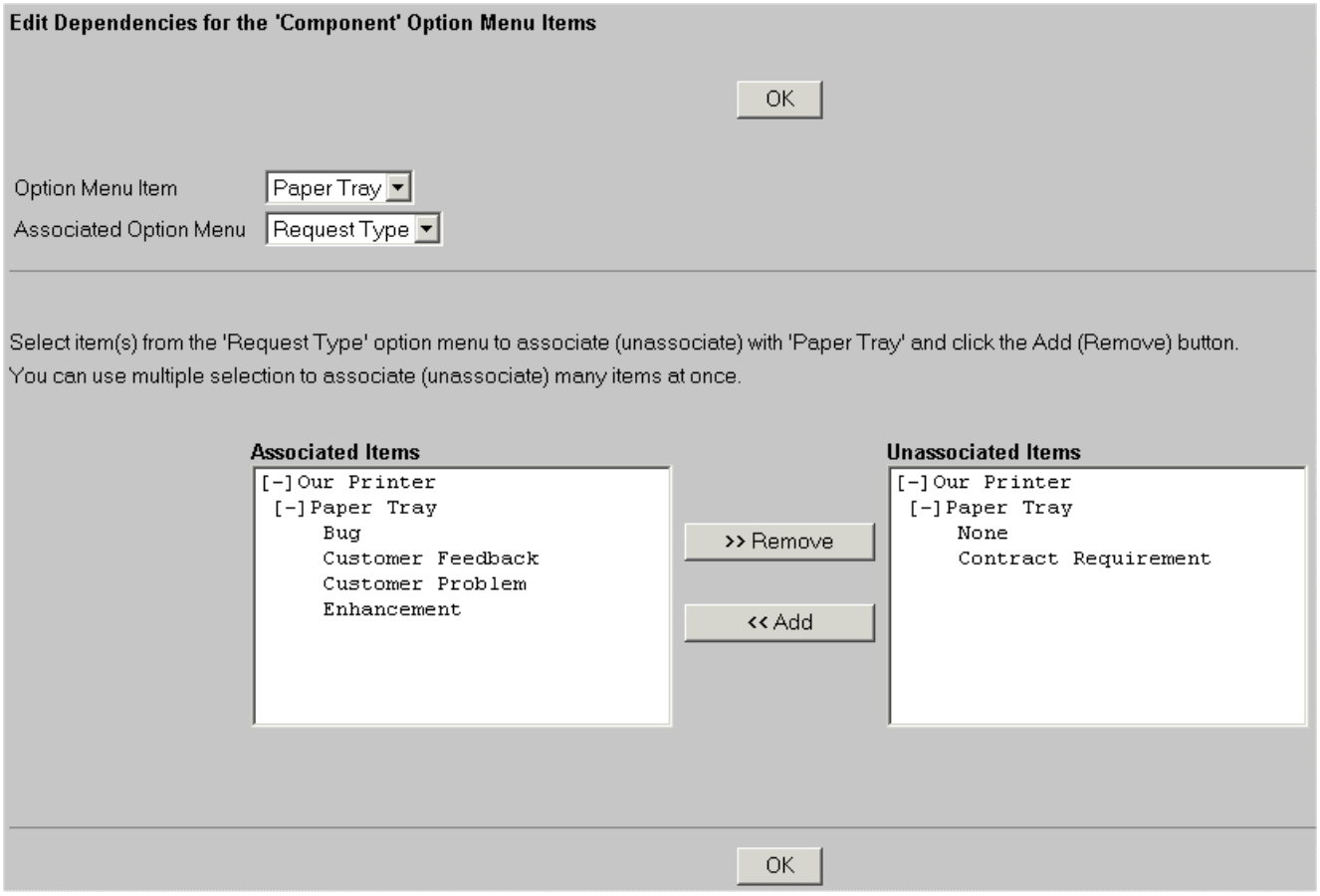


Dependent Relationships with Multiple Levels of Hierarchy

Dependent relationships between pulldown menus can span multiple levels. For instance, Pulldown A can be the parent of Pulldown B. Pulldown B is the parent of Pulldown C. This is a 3 level dependent relationship. Multiple level hierarchies (with 3 or more levels) are displayed slightly differently than a relationship where there is only 2 levels (one parent and its child pulldown menus). For multiple level hierarchies, the complete tree structure of all of the pulldown menus involved is displayed in the Item Dependencies page for each pulldown. The figure below demonstrates a 3 level hierarchy with the following dependencies established:

Product -> Component -> Request Type

The "Product" field represents the root (or highest) level in the hierarchy. The figure below shows the relationships between the "Component" field and "Request Type", its child pulldown.



This figure displays which option menu items from "Request Type" are associated with "Paper Tray", an option menu item in the "Component" field. In the "Associated Items" column, the option menu items "None", "Bug", "Customer Feedback", "Customer Problem", and "Enhancement" are associated with "Paper Tray". The option menu item "Contract Requirement" is unassociated with "Paper Tray".

Note the items "[-] Our Printer" and "[-] Paper Tray" in the tree structure displayed in this figure. "[-] Our Printer" is an option menu item of the "Product" field (from the root or highest level of the hierarchy). "[-] Paper Tray" is an option menu item of "Component" field (the second level of the hierarchy). When multiple level hierarchies exist in ProblemTracker, the Item Dependencies page for a pulldown menu will display the tree structure higher than its own level. So, in the example explained above, the figure shows the Item Dependencies page for the "Component" field and also shows the level above "Component".

Effects of Making Changes to Dependent Pulldowns

Dependent relationships between pulldown fields can be established at any time and also can be removed at any time. Because these changes can be made before and / or after problem records have been added, there are situations where these changes in the dependent relationships could result in additional changes with respect to the option menu items of the pulldowns involved. During the course of changing the relationship between pulldown fields (either in the Define Record or Option Menus section), ProblemTracker will prompt the user with information about the effects of changing dependent relationships. Examples of such changes are discussed below. The following **sample multiple level hierarchy** is provided to illustrate the examples below:

Product -> Component -> Request Type -> Priority

In addition, the "root" level is the highest level in the hierarchy (the "Product" field in this example). The "intermediate leaf" level are the levels in the middle of the hierarchy (the "Component" or "Request Type" fields). The "last leaf" level is the lowest level in the hierarchy (the "Priority" field in this example).

Click on the example to see an explanation of the effects

1. Pulldown Field at the root or last leaf level moved from "In Use" to "Not In Use"
2. Pulldown Field at an intermediate leaf level moved from "In Use" to "Not In Use"
3. Option Menu Item deleted from a pulldown menu involved at any level
4. Parent Pulldown changed to <No Pulldown>
5. The associations between an Option Menu Item and the next lower level are removed
6. Parent Pulldown changed to another pulldown field

Explanations for the above cases

1. **Pulldown Field at the root or last leaf level moved from "In Use" to "Not in Use" in the Define Record section**
   When a pulldown field is removed from the data record by moving it from the "In Use" column to the "Not In Use" column, any parent or child pulldown fields associated with the removed field will become independent of the relationship. The removed pulldown field will be removed from all records, but any levels of hierarchy above or below this field will be preserved.

   Using the example, if "Product" were removed from "In Use" to "Not In Use", the "Product" field and all of its option menu items would be removed from the data record. The option menu items in the "Component" field would be independent of the associations that existed with the "Product" field. However, the dependent relationship between "Component" and "Request Type" would be preserved. The dependencies in the level below "Request Type" are also preserved.

Similarly, if "Priority" were removed from "In Use" to "Not In Use", the "Priority" field and all of its option menu items would be removed from the data record. The option menu items in the "Request Type" field would be independent of the associations that existed with the "Priority" field. However, the dependent relationship between "Request Type" and "Component" would be preserved. The dependencies in the level above "Component" would also be preserved.

2. **Pulldown Field at an intermediate leaf level moved from "In Use" to "Not In Use" in the Define Record section**
When a pulldown field is removed from the data record by moving it from the "In Use" column to the "Not In Use" column, any parent or child pulldown fields associated with the removed field will become independent of the relationship. The removed pulldown field will be removed from all records, but any levels of hierarchy above or below this field will be preserved.

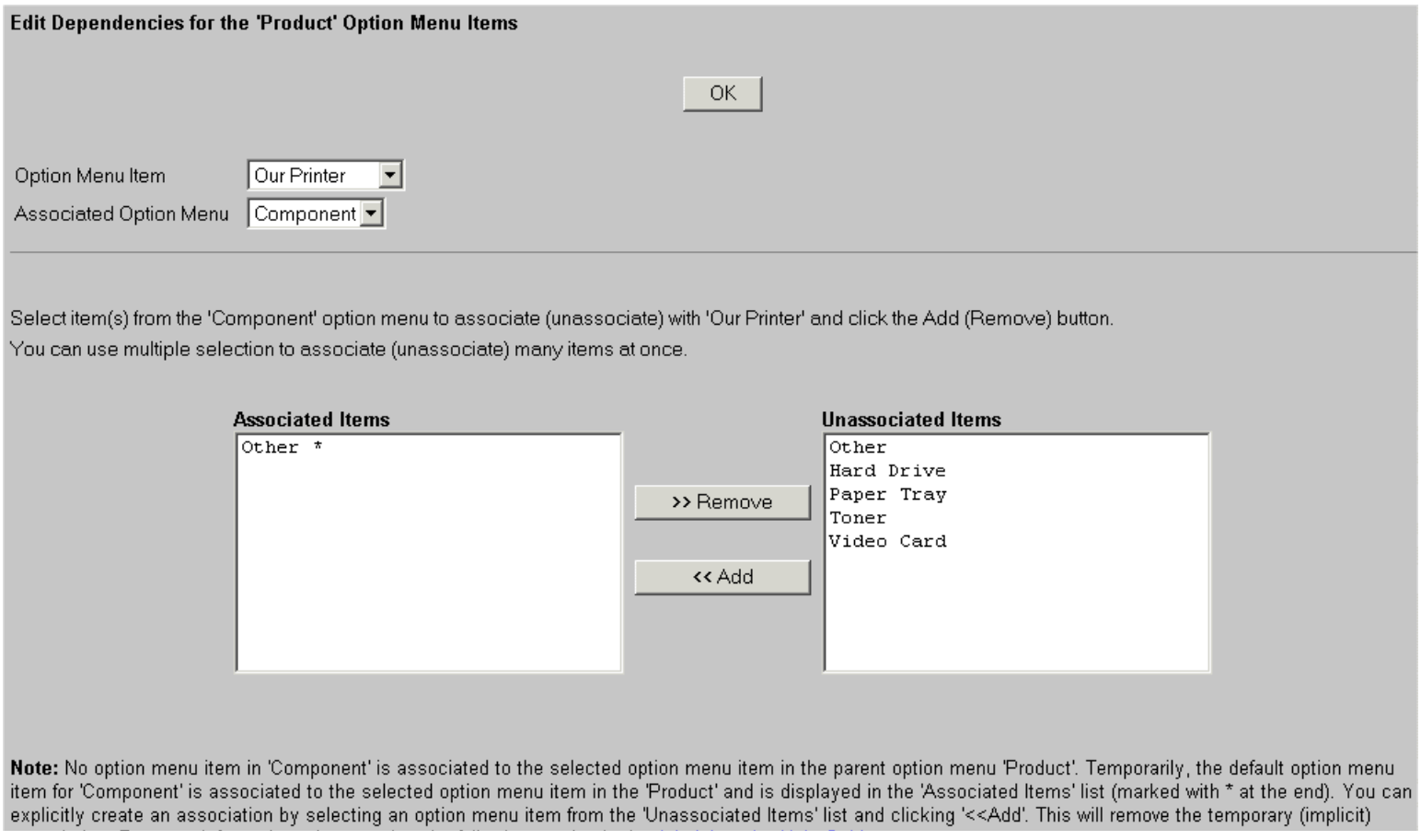
   Using the example above, if "Component" were removed from "In Use" to "Not In Use", the "Component" field and all of its option menu items would be removed from the data record. The option menu items in the "Product" and "Request Type" fields would be independent of the associations that existed with the "Component" field. However, the dependent relationship between "Request Type" and "Priority" would still be preserved.

3. **Option Menu Item deleted from a pulldown menu involved at any level**
When an option menu item is removed from the data record by deleting it in the "Edit Items" section of a pulldown menu, the user making the change will be prompted with the options below:
   - Choose one of the remaining menu values for that field to replace the removed value in records that have the obsolete value selected. If this option is chosen, there may be records where the parent and child values do not follow the dependent relationship configured in the Item Dependencies section. Using the example above, "Product" has the option menu items "Our Printer" and "Our Computer". "Our Printer" is associated with the option menu item "Paper Tray" from the "Component" field. "Our Computer" is associated with the option menu item "Hard Drive" from the "Component" field. If we choose to replace the value "Our Printer" in all records where "Our Computer" is selected, these records will have "Our Printer" entered with "Hard Drive" in the "Component" field even though "Hard Drive" is unassociated with "Our Printer" in the Item Dependencies section. However, after completing this operation, you could use the Edit Results operation to globally change these records to have acceptable values. In the case described above, you could run a query with the criteria "Product" = "Our Printer" and "Component" = "Hard Drive". Then, when the results are generated, use the Edit Results operation to change the "Component" field to have a value that is associated with "Our Printer" for all of the records displayed in the query results.
   - Delete any records that contain the obsolete value. Choosing this option will permanently delete these records.
   - Leave the records containing the obsolete value unchanged. Choosing this option may cause unexpected results in the Query and Home pages because the obsolete value cannot be selected as part of the query criteria after it has been deleted.
4. **Parent Pulldown changed to <No Pulldown> in the Define Record section**
When the "Parent Pulldown" attribute of a pulldown is changed to <No Pulldown> in the Define Record section, the option menu items of this pulldown become independent of any associations that existed between the pulldown and its former parent. However, any dependencies that exist at levels above or below this pulldown will be preserved.

   Using the sample hierarchy above, let's say the "Component" field was changed to have <No Pulldown> in the "Parent Pulldown" attribute in the Define Record section. The option menu items of "Component" will be independent of the associations that existed with "Product". However, the associations between the option menu items of "Component" and levels below it will be preserved.

   Using the sample hierarchy, let's say the "Request Type" field was changed to have <No Pulldown> in the "Parent Pulldown" attribute in the Define Record section. The option menu items of "Request Type" will be independent of the associations that existed with "Component". However, the associations between "Request Type" and "Priority" will be preserved. The associations between "Product" and "Component" will also be preserved.

5. **The associations between an Option Menu Item and the next lower level are removed in the Item Dependencies page**
If all of the associations between an Option Menu Item and the next lower level are removed, this indicates that the Option Menu Item is not explicitly associated with any option menu item in a child pulldown menu. When this occurs, ProblemTracker automatically creates an implicit (temporary) relationship between the Option Menu Item and the default option menu item of the child pulldown menu. This implicit relationship is shown in the figure below. The "*" after the child option menu item in the "Associated Items" column indicates that the association is implicit.



item for 'Component' is associated to the selected option menu item in the 'Product' and is displayed in the 'Associated Items' list (marked with '*' at the end). You can explicitly create an association by selecting an option menu item from the 'Unassociated Items' list and clicking '<<Add'. This will remove the temporary (implicit) association. For more information, please review the following section in the Administrative Help Guide.

Using the sample hierarchy and the figure displayed above, the "Product" field has the option menu item "Our Computer". All associations between "Our Computer" and the option menu items of the "Component" field were removed. The default option menu item of "Component" is "Other". Thus, when all of the associations between "Our Computer" and the option menu items of "Component" were removed, ProblemTracker automatically created an implicit relationship between "Our Computer" and "Other * ".

6. **Parent Pulldown changed to another pulldown field in the Define Record section**
When the "Parent Pulldown" attribute of a pulldown is changed to select another pulldown menu in the Define Record section, the option menu items of this pulldown become independent of any associations that existed between the pulldown and its former parent. However, any dependencies that exist at levels above or below this pulldown will be preserved.

   Using the sample hierarchy above, let's say the "Component" field was changed to have another field, "Severity", in the "Parent Pulldown" attribute in the Define Record section. The option menu items of "Component" will be independent of the associations that existed with "Product". However, the associations between the option menu items of "Component" and levels below it will be preserved.

   Using the sample hierarchy, let's say the "Priority" field was changed to have another field, "Severity", in the "Parent Pulldown" attribute in the Define Record section. The option menu items of "Priority" will be independent of the associations that existed with "Request Type". However, the associations between "Request Type" and "Component" will be preserved. The associations between "Component" and "Product" will also be preserved. ProblemTracker will automatically create an implicit association(s) between the default option menu item of "Priority" and the option menu items of its new parent, "Severity". These temporary associations can be changed by creating explicit associations in the Item Dependencies section.

Overview

ProblemTracker allows you to customize the workflow to match your organization's procedure for processing records. A workflow process is a set of steps, represented by states and transitions. Each record will move through the workflow steps to be processed by various users who enter information into the record throughout the process. Any number of states may be defined. Each state may have one or more transitions. A transition is a path from one state to another state. In addition, the workflow can be customized per product. Meaning that a different set of workflow steps and properties can be configured for different products.

The following sections describe aspects of the Workflow Customization in detail:

Workflow States
Workflow Transitions
Workflow Properties

Before customizing your workflow, it may be helpful to review the Tracking Defects with ProblemTracker section to get a feel for how the workflow settings interact with other areas in ProblemTracker.

NetResults ProblemTracker

Workflow States

The workflow is a set of steps that are used to process a record. Each step can be represented by a state. After creating the states in your workflow, you will create transitions, or paths, to move records from one state to another.

To define the workflow states, click on the "Define Workflow" button from the ProblemTracker Administration page.

Adding a State

To add a new state, click on the "Add State" button. The following options are presented:

State Name
Name of the state.

Order
The order of the state. This will determine the order in which it appears in the Workflow Administration table. You may wish to order the states according to their place in the workflow process. For example, if Reported is the first state for all records, you may want to specify "0" as the order for this state. States which have the same value specified in the order field will be listed alphabetically.

Transition Label Style
The style of the labels that will be displayed when a transition is displayed in the Task operation. You can choose from three types of label styles:

- Radio
  Transition options will be displayed as a radio button selection (listed vertically).
- Buttons
  Transition options will be displayed as clickable buttons (listed horizontally).
- Pulldown
  Transition options will be listed in a single pulldown menu.

After making selections for each of the options, click OK to add the new state. A message confirming the creation of the state will appear on the next screen. You can click on the Transitions button to define a set of transitions for this state. Or, click OK to return to the Define Workflow page.

Editing a State

To edit a state, click on the Edit button listed to the left of the state on the Workflow State table on the Define Workflow page.

Removing a State

To delete a state, click on the Delete button listed to left of the state on the Workflow State table on the Define Workflow page.

NetResults ProblemTracker

Workflow Transitions

A transition is a path used to move a record from one state to another in the workflow or can be used to assign the record to another user. A transition can include fields called "Task Fields" that require a user to enter some information into a record before it moves to the next step in the workflow. In some cases a transition may be a loop (a transition which keeps the record in the same state). A loop transition is used when a record simply needs to have information added to a field, but does not move to another state.

Defining Transitions for a State

To define the transitions for a state, click on the Define Workflow button in the ProblemTracker Administration section. Click on the Transitions button to the left of the state on the Workflow State table in the Define Workflow page.

Adding a New Transition

To add a new transition, click on the Add button. The following options will be presented:

Label
The name of the transition. This label will be used as the name of the transition during the Task operation as well.

Order
The order of the transition. This will determine the order in which it appears in the transitions table as well as the list displayed during the Task operation. States which have the same value specified in the order field will be listed alphabetically.

New State
The state to which the problem record will be routed when this transition is selected in the Task operation. For this option, you may select one of the following:

- A specific state
  Any state configured on the Workflow State table can be selected as the new state for a transition.

- Same State
  This option can be used for transitions where a problem record does not need to move to a new state. For example, if a record will be re-assigned to another assignee, but stay in the same state, this option can be used. Another example where this options can be used is if an assignee simply needs to update a problem record without changing the state.

- Prompt with <State Group>
  Selecting this option will allow the user performing the Task operation to choose from a list of all states within a particular state group as the new state for the problem record. When selecting this option, please select a state group from the second pulldown listed after "New State". Skip to the Defining State Groups section below for information on creating a state group. The current state of the record will be selected by default during the task operation if the current state is part of the state group selected. Otherwise, the states in the state group will be listed in alphabetical order.

- Previous State
  This option will send the problem record to the most recent state the problem record was in prior to the current state. ProblemTracker will examine the Record History to determine the previous state.

New Assignee

The user to whom the problem record will be routed when this transition is selected in the Task operation. For this option, you may select one of the following choices listed below. For each of the choices listed, you also have the option to include or exclude the user "TBD" as part of your selection.:

- State Manager
  The problem record will be routed to the State Manager based on the new state of this transition and the content of the product field.

- Same Assignee
  This option can be used for transitions where a problem record does not need to be assigned to a different user. For example, if a record simply needs to be updated by the assignee.

- Prompt with a specific User Group
  This option enables you to restrict the list of possible assignees to the members of a user group. The user performing the Task operation will select the assignee from a list of users within the User Group that you specify for this option. When selecting this option, please select a user group in the second pulldown next to "New Assignee". In the third pulldown next to "New Assignee", select whether the user "TBD" should be included or excluded from this user group when presented during the task operation. Please review the User Groups Help section for information on creating a user group. The current assignee will be selected by default during the task operation if the current assignee is a member of the user group selected. Otherwise, the users in the user group will be listed in alphabetical order.

- Last Assignee for New State
  When selecting this option, ProblemTracker will examine the Record History to find the last user who was assigned to this record when it was in the state specified in the field "New State" for this transition. For instance, if the New State is "Scheduled", ProblemTracker will look in the record history for the problem record and find the last entry where this record was in the Scheduled state. The assignee listed in this entry will become the new assignee for this problem record.

- Reporter
  This will assign the problem record to the original user who reported the problem according to the Reported By field.

- A specific user

Any user with ProblemTracker can be selected as the new assignee for a transition.

History Comment Requirement

- Selecting **Required** for this option will require the user to enter a history comment when selecting this transition in the Task operation.
- Selecting **Optional** will allow the user to leave this field blank when this transition is chosen during the task operation.
- When **Do Not Display** is selected here, the history comment field will not be presented to the user when this transition is chosen during the task operation. Even though the history comment is not displayed, the record history will still reflect that the task operation was performed on a record. In addition, if "Do Not Display" is selected and there are no task fields configured for the transition, the transition is set up for fast tasking.

Up to 2000 characters can be entered into the History Comment.

After making selections to define the transition, click OK to create the transition. The transition will now be displayed on the transition table.

Fast Tasking
"Fast Tasking" is the process where a transition is chosen and the user clicks OK, the record will immediately be updated because it is set such that there are no task fields and the history comment should not be displayed. If a transition is configured to allow "fast tasking" and is configured to display alert settings during the task operation, the alert settings will not be displayed during the task operation. The default alert settings for the transition will be used instead.

Editing a Transition

To edit a transition, click on the Edit button to the left of the transition. After making changes to the transition, click OK to save your modifications. For details on the properties of a transition, see "Adding a Transition" section above.

Removing a Transition

To delete a transition, click on the Delete button to the left of the transition. Click OK to confirm, then OK to complete the operation. The transition will be removed from the transition list.

Defining Fields For the Task Operation

For each transition within a particular state, you can specify which fields should be presented to the user for the Task operation. By only presenting the user with the necessary fields, you can ensure each user will correctly adhere to the development process. To do this, click on the Transitions button to the left of the desired state on

the Define Workflow page. Then, click on the Task Fields button to the left of the desired transition.

To add or remove a task field from the transition, use the Add and Remove buttons to move fields from the right list (fields "Not In Use") to the left list (fields "In Use") and vice versa.

When a Task Field is moved to the "In Use" column, there are several properties of these fields that can be configured. To edit the properties of a task field, click on the Task field, then click on the Edit button. The following properties will be displayed at the bottom of the screen. After making your changes to the attributes of the task field, click Update to save your changes:

- Field
  The name of the field. The name cannot be modified. If you wish to re-name the field, this can be done in the Define Record section. Please refer to the section Customizing the Data Record for details.

- Order
  The order in which the Task Field will appear on the page during the Task operation relative to the other task fields selected for the same transition. By default, the order will be the order value as listed in the Define Record section. Select an integer value. If multiple task fields have the same value for the order field, the task fields will be listed in alphabetical order.

- Type
  Specifies whether the field is required, optional, or read only when it appears during the Task operation. Selecting "Required" indicates that a user will not be able to complete the Task operation until something is entered in the field. For Integer, Float, Text, TextArea, or Date types this means that a blank value will not be allowed. For pulldown fields, this means that the user must select a value other than the initial value displayed on the form. Selecting "Optional" indicates that the user is not required to enter information into the field to complete the Task operation. Selecting "Read Only" indicates that the contents of the field will be displayed for the user's reference, but the field cannot be modified.

- Initialize
  Only valid for fields of Date type. Specifies that the field should be automatically initialized to the current date/time when it appears on the Task page. You may wish to use a combination of setting the Type to "Read Only" and Initialize to "Yes" for date fields. This combination will allow the date the Task operation was performed on a record to be initialized in the date field, but the user will not be allowed to modify the date field.

Alerts

Alerts are email notification messages that can be sent automatically by ProblemTracker at a later date and time to remind a user or group about a record. Alert settings can be configured for each transition. When an alert is set for a transition, when the Task operation is performed on a record using this transition, the alert settings will be applied to the record. It is also possible to allow users to be prompted to configure the Alert settings during the Task operation. Information on configuring default Alert settings for a transition can be found in the Administration section for the Alerts feature.

NetResults ProblemTracker

Workflow Properties

Defining State Groups

Often when formulating queries, you may wish to query for any of a group of states. ProblemTracker allows you to do this by defining State Groups. A State group is a collection of workflow states that appears as a choice on the Query page.

To define a group of workflow states, press the "State Groups" button. On the page displayed, you can add a new group, or edit an existing group. To edit an existing group, press the Edit button, and then set or clear the check mark in the column labeled Include.

Workflow Properties

ProblemTracker allows you to define a default set of workflow properties. These workflow properties include specifying a user that is treated as the manager for a state and defining a default state. In addition to the defaults, these properties can be defined on a per-product basis.

A set of default Workflow Properties are defined in ProblemTracker. These default workflow properties are applied to each new product added to ProblemTracker via the Option Menus section. To modify the default workflow properties:

1. Click on the Define Workflow button in the ProblemTracker Administration section
2. In the Product Pulldown field at the top of the page, select "(*) Default", then click on the Workflow Properties button.
3. Modify the properties described below, then click OK to save your changes.

To set the workflow properties for a specific product:

1. Click on the Define Workflow button in the ProblemTracker Administration section
2. In the Product Pulldown field at the top of the page, select the product you wish to modify, then click on the Workflow Properties button.
3. Modify the properties described below. If you wish to apply the default workflow properties to a product, click on the "Load Default Values" button.
4. Click OK to save your changes

Properties
The following properties can be set for the default workflow properties or for a specific product.

State Managers

The manager of a state can receive notification email when certain events occur related to records in the database when they either enter or leave the state. They can also have records automatically assigned to them by the Task operation.

A state manager can be specified for each product, allowing you to assign different managers for the same state on a per product basis.

To assign the state managers for a product, select the desired product from the pulldown labeled **Product:** and click on the Workflow Properties button. The value *(Default) indicates that these are the default settings. The default settings are used as the template for each new product as it is added to the system.

Default State

The Default State indicates the state a problem record will be routed to when it is first added to the database. A Default State can be defined for each product, allowing you to configure different states for problem records that are added to the system on a per-product basis.

To specify a default state for a product, select the desired product from the pulldown labeled **Product:** and click on the Workflow Properties button. The value *(Default) indicates that these are the default settings. The default settings are used as the template for each new product as it is added to the system.

Alerts

Alerts are email notification messages that can be sent automatically by ProblemTracker at a later date and time to remind a user or group about a record. Alert settings can be configured for each product. The alert settings defined for each product will be used when a new record is created using the Add page with a particular product selected. It is also possible to allow users to be prompted to configure the Alert settings during the Add operation. Information on configuring default Alert settings for a product can be found in the Administration section for the Alerts feature.

NetResults ProblemTracker

Customizing Alerts (Enterprise Edition Only)

Overview

Note: This feature is only available in ProblemTracker Enterprise Edition.

Alerts are a form of email notification messages that can be triggered by a lack of change in a record's state within a certain time period. For example, a problem record should not stay within a particular state for longer than 2 days. An alert can be sent if the record is still within the same state after a period of 2 days has passed. Alerts can also be used to remind a user about a record at a later date and time.

Alerts can be configured per record. Each record can have different alert settings including when, how, how often, and to whom the alerts should be sent.

Alerts can also be configured for each transition in the workflow. With the necessary privileges, users can override these alert settings when moving a record to another state using the task operation.

When specifying when to send an alert either for a given record or a transition, a fixed date and time can be entered or a date and time based on a date field within the record can be used. In addition, alerts can be sent once or configured to repeat periodically. Any combination of users and / or user groups can receive alerts for a particular record.

Enabling the Alerts Feature

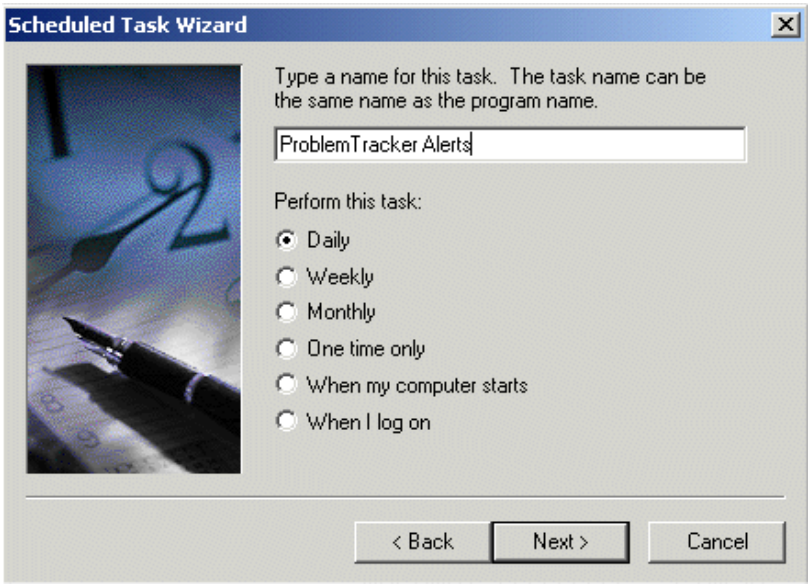
Performing the following steps will allow you to enable the Alerts feature in your workgroup:

Enter the Alerts license key in the License Manager
A license key is required to present in the License Manager in order to use the Alerts feature.

Enable Alerts in the General Preferences section
Login to the workgroup as Admin, then click on the Admin icon in the top button bar. Click on the General Preferences button, then in the "General Options" section set "Enable Alerts Function" to "Yes". Click OK to save this change

Create a Scheduled Task for the Alerts Feature
Alerts must be configured in the Scheduled Tasks section of the Control Panel on your ProblemTracker server. To create this scheduled task, perform the following steps:

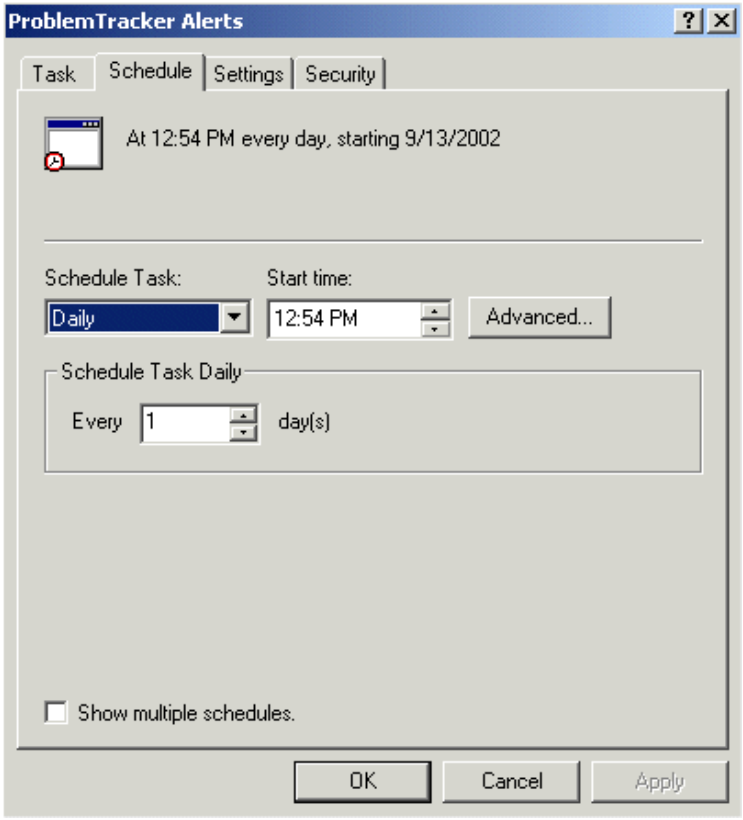
1. Go to Start -> Settings -> Control Panel on the machine where ProblemTracker is installed
2. Double click on Scheduled Tasks
3. Double click on "Add Scheduled Task", then click Next
4. Click on the Browse button, then navigate to the location you selected to for the ProblemTracker files during the installation. By default, this location is C:\Program Files\NetResults\ProblemTracker 5
5. Select the file called PTAlerts.jse, then click on the Open button
6. Enter a name for the scheduled task such as "ProblemTracker Alerts", then for the option "Perform this task:" select the radio button next to "Daily". Click Next to proceed.



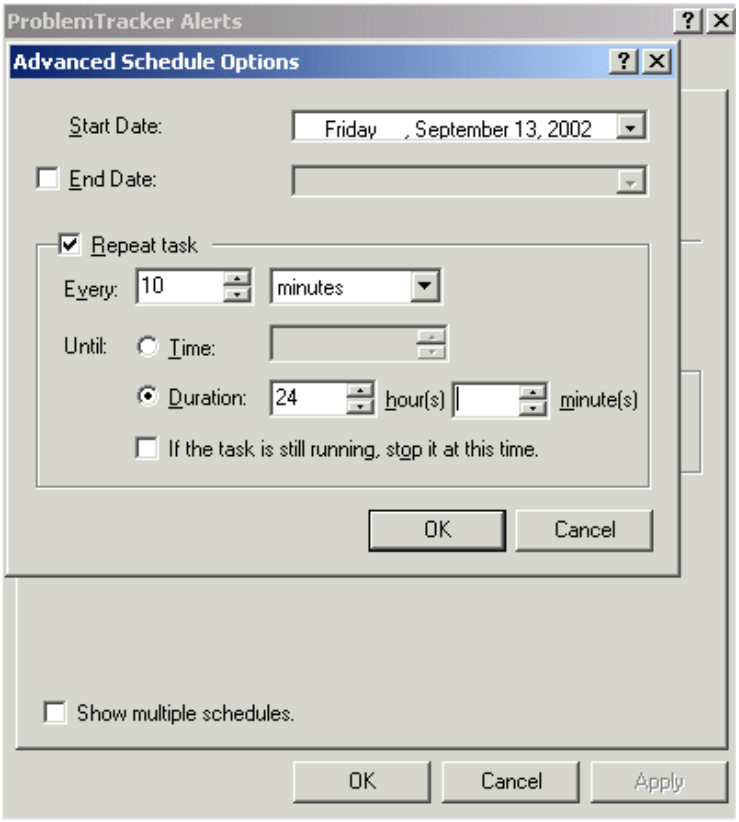
7. The current time will be displayed as "Start Time". For the "Perform this task:" option, select "Every Day". The current date will be displayed as "Start Date". Click Next to continue.

8. Enter the username of an Administrator user (it is recommended that you use the local Administrator user). Enter and confirm the password of this user. Click Next.
9. The values you entered will be displayed. Check the box next to the option "Open advanced properties for this task when I click Finish", then click on the Finish button.

10. The Advanced properties will be displayed. Click on the Schedule tab, then click on the Advanced button.



11. Check the box next to "Repeat task", then for "Every" select "10 minutes". For "Until" select the radio button next to "Duration". Enter "24 hours" for the "Duration". Click OK, then click OK again to save the changes.



Configure SMTP Mail Server for use with Alerts
An SMTP mail server is required to generate the alert notification messages. This can be configured in the Email Configuration section.

Ensure an email address is entered for the users that will receive alerts
A valid email address is required for a user to receive alerts. Email addresses are entered in a user's profile in the Workgroup Management System.

After enabling the Alerts feature using the steps above, configure the user group privileges and default settings for Alerts as described below.

Alerts User Group Privileges

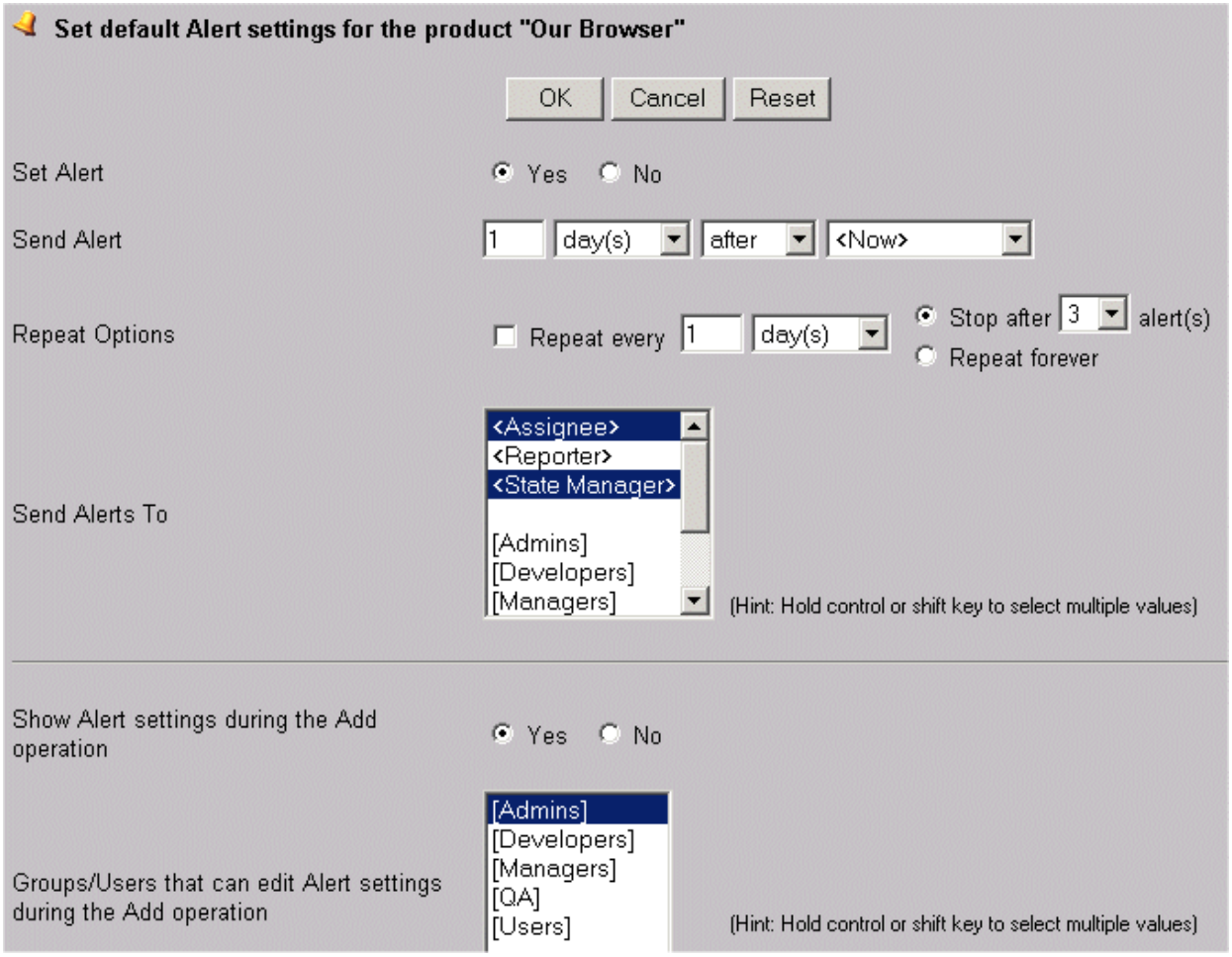
The following are the user group privileges related to the Alerts feature. These privileges can be set in the User Group Privileges page of the User Administration section. These privileges will only be displayed in the Privileges page if Alerts has been enabled using the steps in the section above.

- **Edit Alert Settings**
  Members of user groups with this privilege can edit the alert settings for a record
- **Edit Own Alert Settings**
  Members of user groups with this privilege can edit the alert settings for a record in which they are the Assignee.
- **View Alert Settings**
  Members of user groups with this privilege can view the alert settings for a record

Configuring Default Alerts Settings per Product

Default alert settings can be configured per product. These default settings will be used when a record is added to ProblemTracker. To configure default alert settings per product:

1. Login to the workgroup as Admin
2. Click on the Admin icon in the top button bar
3. Click on the Define Workflow button
4. Select a product in the pulldown at the top of the page
5. Click on the Alerts button
6. Make selections for the fields described below, then click OK save the changes



- **Set Alert**
  Selecting Yes indicates an alert should be generated for a newly added record which has the current product selected
- **Show Alert settings during the Add operation**
  Selecting Yes indicates that the user should be prompted to select alert settings on the Add page when creating a new record
- **Groups / Users that can edit alert settings during the Add operation**
  Click on the groups and / or users that should be allowed to edit the alert settings on the Add page when creating a new record. To select multiple users and / or groups, hold down the "CTRL" button on your keyboard while clicking on each user and group you would like to select.
- **Send Alert**
  The period of time that should pass before the alert is sent. You can enter a number from 1 - 99, select the interval (hour, day, week, or month), select "before" or "after" as the point of reference for the alert, and a starting point for the time period. The starting point can be "<Now>", or can be based on any of the date fields in the record. Example 1: By entering "1 day after <Now>", the alert will be sent 1 day after the record is added. Example 2: By entering "1 day before <Date Field>", the alert will be sent 1 day before the date entered in the date field selected.

  If a date field is selected as the date to generate an alert and this date field has no value in a record, an alert will not be generated. If a date field is selected as the date to generate an alert and this date field is later removed from the record (moved from the "In Use" to "Not In Use" column in the Define Record section, then <Now> will be set as the date to generate an alert (to replace the date field that was removed).
- **Repeat options**
  Check the box to allow the alert to be sent multiple times after the initial time period (in Send Alert field above) has passed. Select the repeat period by entering a number from 1 - 99 and the interval (hour, day, week, month). Then, select how many times the alert should be repeated. Select either "Stop after X alerts" where X is a number from 1 - 10 or "Repeat forever". "Repeat forever" will continue to repeat the alert periodically until the state of the record is changed.
- **Send Alerts To**
  Click on the groups and / or users who should receive the alert message if the record's state has not changed when the configured time period has passed. To select multiple users and / or groups, hold down the "CTRL" button on your keyboard while clicking on each user and group you would like to select.

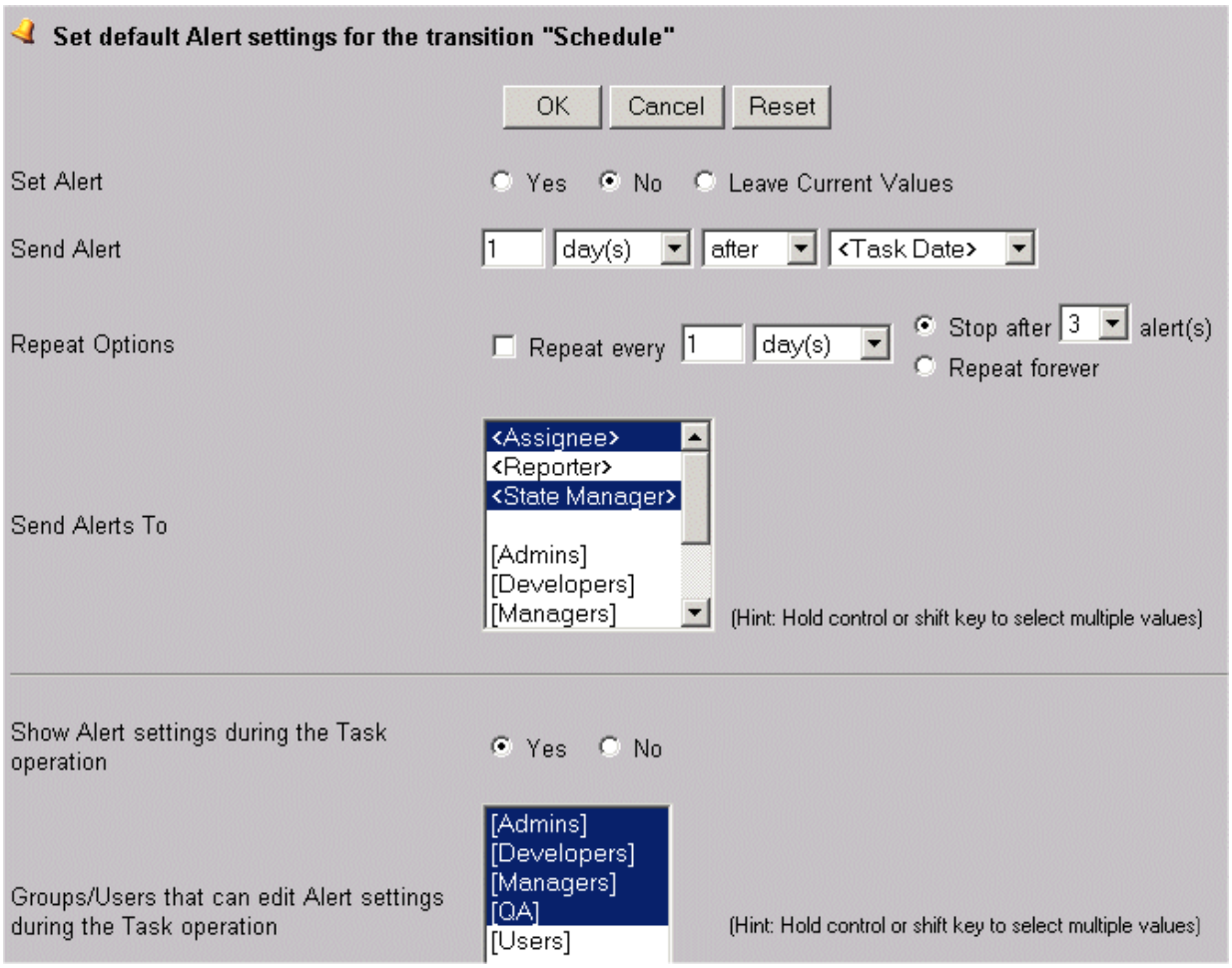
7. After clicking OK to save the changes, select another product from the pulldown on the Define Workflow page, then click on the Default Alert Settings button to configure the alert information for another product.

Configuring Default Alert Settings for Transitions

Default alert settings can be configured for each transition in your workflow. These default settings will be used when a record is added to ProblemTracker. To configure default alert settings for a transition:

1. Login to the workgroup as Admin
2. Click on the Admin icon in the top button bar

3. Click on the Define Workflow button
4. Click on the Transitions button for a state
5. Click on the Alerts button for a transition
6. Make selections for the fields described below, then click OK save the changes



- **Set Alert**
  Selecting "Yes" indicates an alert should be generated for a record that has been tasked using this transition and using the alerts settings below. By selecting this option, the user will not be prompted to Set the Alert Settings when selecting this transition. Selecting "No" indicates that no alert should be sent when this transition is selected for a record. Selecting "Leave Current Values" indicates that an alert should be generated for a record that has been tasked using this transition, but the existing alert settings in the record should be used instead of the settings for this transition. The existing alert settings are those that were set during the Add operation or by the transition selected the last time a task operation was performed on the record.
- **Show Alert settings during the Task operation**
  Selecting Yes indicates that the user should be prompted to select alert settings when this transition is selected during the Task operation. If a transition is configured for "fast-tasking" (the transition has no task fields and history comment is set to "do not display"), then the alert settings will not be displayed during the Task operation.
- **Groups / Users that can edit alert settings during the Task operation**
  Click on the groups and / or users that should be allowed to edit the alert settings during the Task operation when selecting this transition. To select multiple users and / or groups, hold down the "CTRL" button on your keyboard while clicking on each user and group you would like to select.
- **Send Alert**
  The period of time that should pass before the alert is sent. You can enter a number from 1 - 99, select the interval (hour, day, week, or month), select "before" or "after" as the point of reference for the alert, and a starting point for the time period. The starting point can be "<Now>", or can be based on any of the date fields in the record. Example 1: By entering "1 day after <Now>", the alert will be sent 1 day after the record is added. Example 2: By entering "1 day before <Date Field>", the alert will be sent 1 day before the date entered in the date field selected.

  If a date field is selected as the date to generate an alert and this date field has no value in a record, an alert will not be generated. If a date field is selected as the date to generate an alert and this date field is later removed from the record (moved from the "In Use" to "Not In Use" column in the Define Record section, then <Task Date> will be set as the date to generate an alert (to replace the date field that was removed).
- **Repeat options**
  Check the box to allow the alert to be sent multiple times after the initial time period (in Send Alert field above) has passed. Select the repeat period by entering a number from 1 - 99 and the interval (hour, day, week, month). Then, select how many times the alert should be repeated. Select either "Stop after X alerts" where X is a number from 1 - 10 or "Repeat forever". "Repeat forever" will continue to repeat the alert periodically until the state of the record is changed.
- **Send Alerts To**
  Click on the groups and / or users who should receive the alert message if the record's state has not changed when the configured time period has passed. To select multiple users and / or groups, hold down the "CTRL" button on your keyboard while clicking on each user and group you would

like to select.

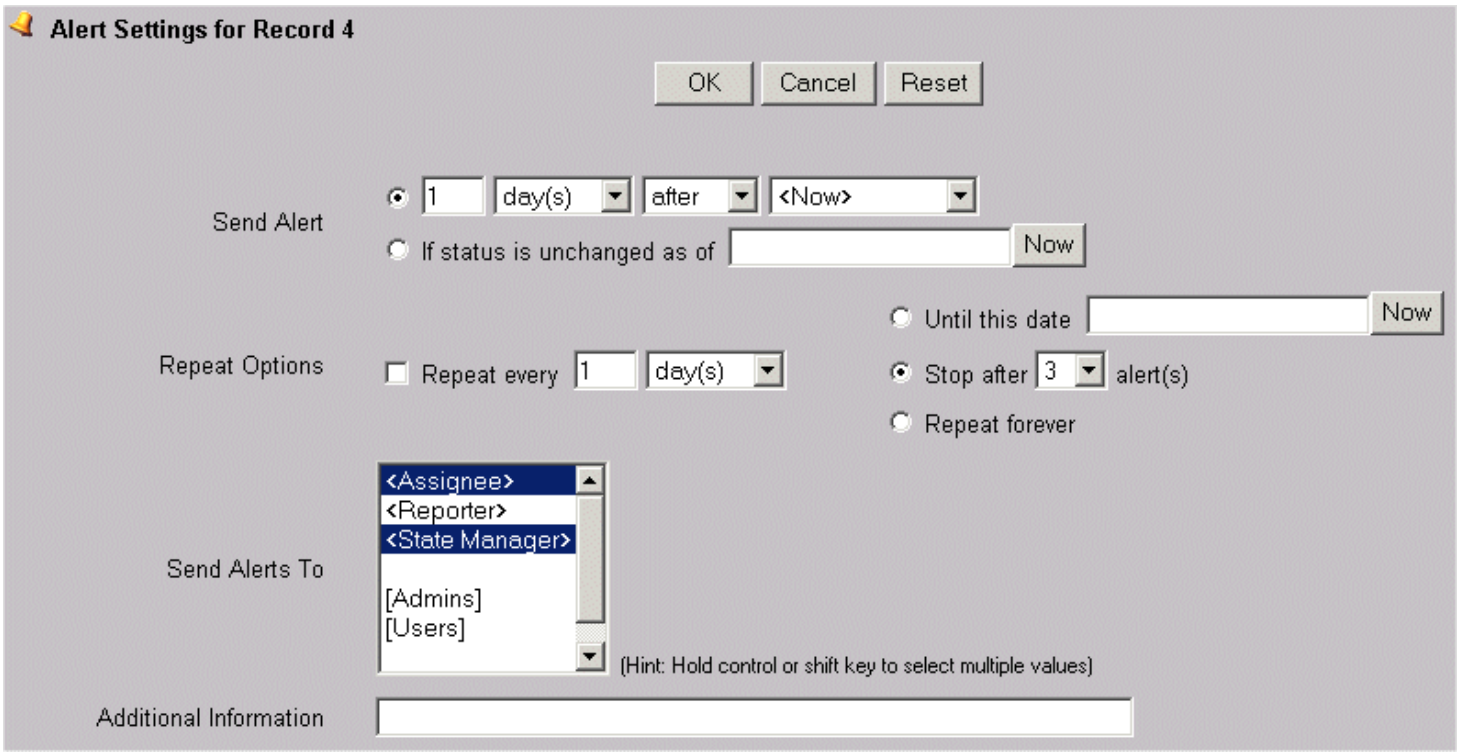
7. After clicking OK to save the changes, click on the Alerts button for another transition to configure the default alerts settings.

Configuring Alert Settings during Add Operation

When a record is added, the reporter may be prompted to configure alert settings depending on the default alert settings for the product selected in the record (setting the default alert settings for a product are defined in the Configure Default Alert Settings per Product section above.

In order for the user to **view** the alert settings when adding a new record, the product selected in the record must have "Show Alert Settings during Add Operation" set to "Yes" and the user must be a member of a group with the privilege "View Alerts Settings". On the Add page, the user meeting the criteria mentioned above will see the "Set Alert" field with a check box. Checking the box will allow the user to view the alert settings. When the user clicks OK to add a new record, the alert settings will be displayed, but cannot be modified. The "Additional Information" field can be modified to add a note or other information to be included in the alert notification message. Click OK to save the information entered.

For a user to **edit** the alert settings when adding a new record, the product selected in the record must have "Show Alert Settings during Add Operation" set to "Yes" and the user (or a group of which the user is a member) must be specified in "Groups / Users that can edit Alert Settings during the Add operation". On the Add page, the user meeting the criteria mentioned above will see the "Set Alert" field with a check box. Checking the box will allow the user to edit the alert settings. When the user clicks "Add" or "Add & Copy" to add a new record, the alert settings will be displayed. The user can modify the following settings with respect to alerts. By default, the values displayed here will be the values selected in the Default Alert Settings for the product selected in the record.

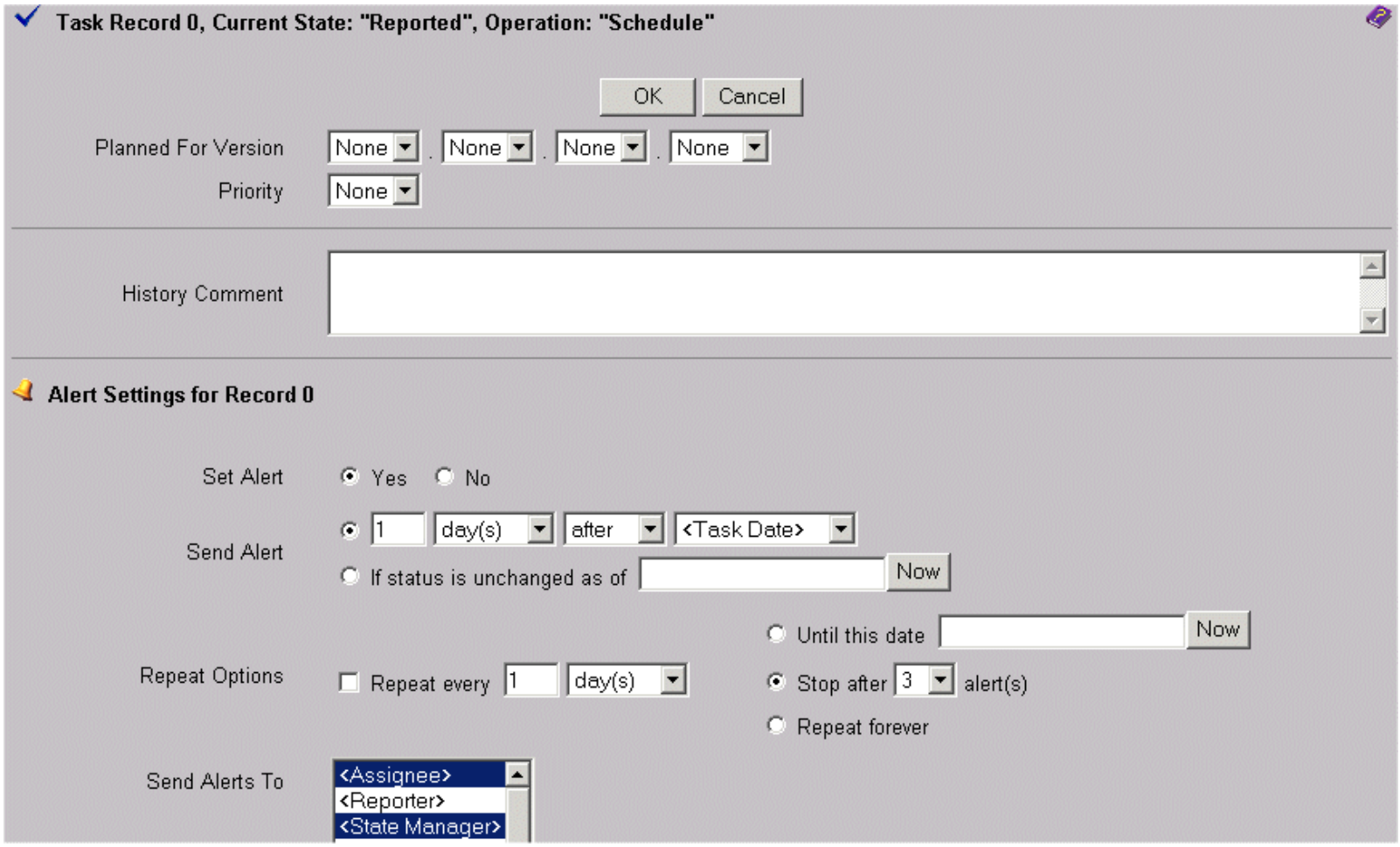


Configuring Alert Settings during Task Operation

When the task operation is performed on a record, the user may be prompted to configure alert settings depending on the default alert settings for the transition selected (setting the default alert settings for a transition are defined in the Configure Default Alert Settings per Transition section above.

In order for the user to **view** the alert settings when performing the task operation for a record, the transition selected must have "Show Alert Settings during Task Operation" set to "Yes" and the user must be a member of a group with the privilege "View Alerts Settings". After selecting a transition during the task operation, the user meeting the criteria mentioned above will be able to see the alert settings section, but cannot modify the values. The "Additional Information" field can be modified to add a note or other information to be included in the alert notification message. Click OK to complete the task operation.

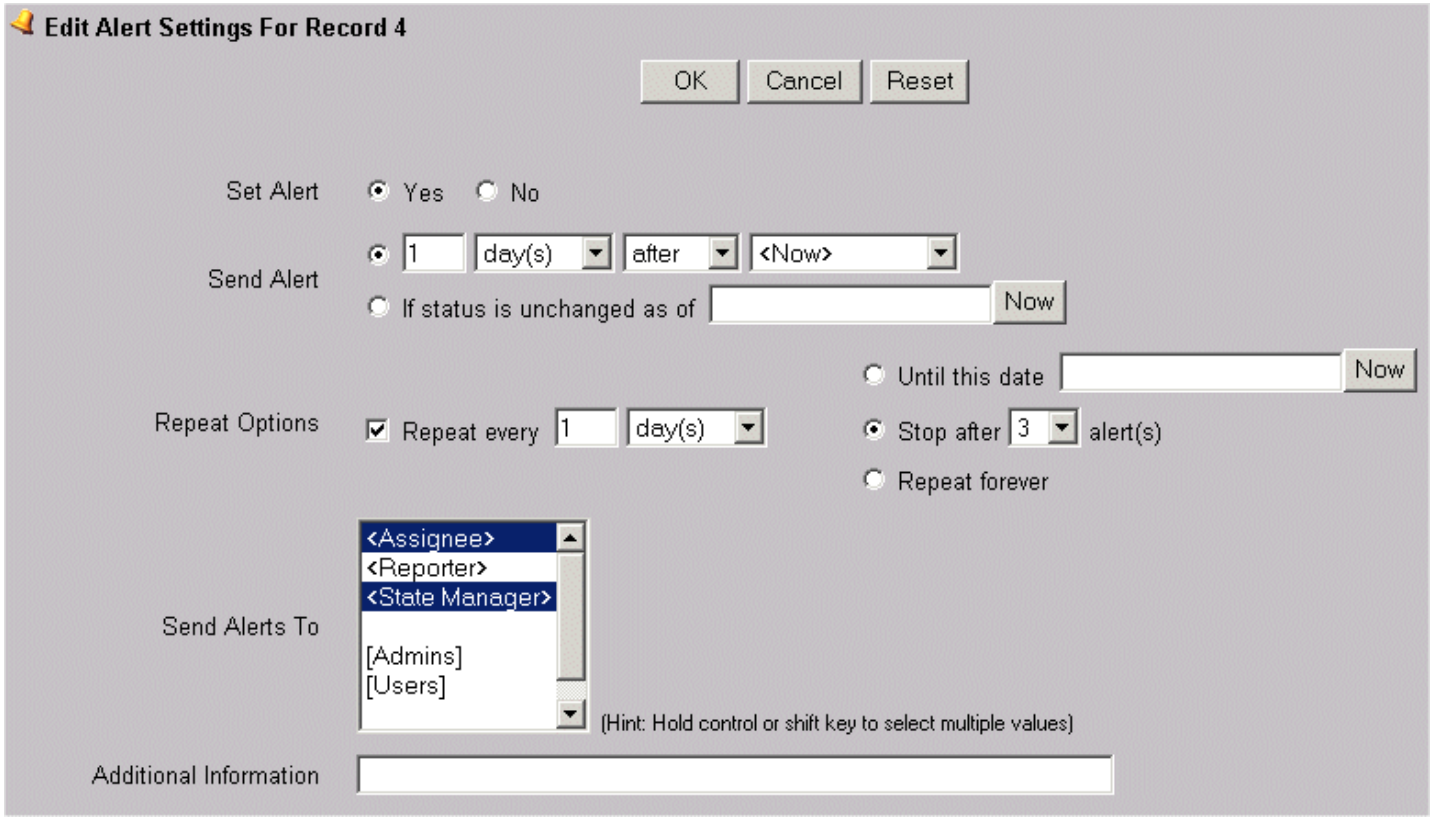
For a user to **edit** the alert settings during the task operation, the transition selected must have "Show Alert Settings during Task Operation" set to "Yes" and the user (or a group of which the user is a member) must be specified in "Groups / Users that can edit Alert Settings during the Task operation". After selecting a transition, the user meeting the criteria mentioned above will see the alert settings section. The user can modify the following alert settings. By default, the values displayed here will be the values selected in the Default Alert Settings for the transition selected.



Editing Alert Settings

A user can edit the alert settings for a record if they have the required privileges. If a user is a member of a group with the "Edit Own Alerts" privilege, the user can modify the alert settings for a record in which they are the Assignee. If a user is a member of a group with the "Edit Alert Settings" privilege, the user can modify the alert settings for any record.

A user meeting the criteria mentioned above can edit the alert settings for a record by clicking on the Edit icon in the top button bar and entering a record number or by clicking on the Edit icon next to a record number in a report on the Query or Home page. Clicking on the Edit Alerts button will display the following alert settings for the record:


Edit Alert Settings For Record 4
OK
Cancel
Reset
Set Alert
Yes
No
Send Alert
1
day(s)
after
<Now>
If status is unchanged as of
Now
Repeat Options
Repeat every
1
day(s)
Until this date
Now
Stop after
3
alert(s)
Repeat forever
Send Alerts To
<Assignee>
<Reporter>
<State Manager>
[Admins]
[Users]
(Hint: Hold control or shift key to select multiple values)
Additional Information

NetResults ProblemTracker

Customizing Discussions (Enterprise Edition Only)

Overview

Note: This feature is only available in ProblemTracker Enterprise Edition.

The Discussions feature is a means of allowing users to discuss various topics pertaining to a record. This allows users to collaborate without having to coordinate a meeting for everyone to contribute to the discussion. For example, a record may be assigned to a particular developer, but several developers are needed to provide input for an enhancement's design or the resolution of a bug. These discussions can continue in parallel to the record's progression through the workflow.

Discussions are also useful for archiving information for later use. For example, information on how to reproduce, workaround, or fix a bug can be addressed in a discussion thread. In a customer support organization, the discussion information would be useful to help the support team provide information to the customers as quickly as possible. Another example lies in integrating a new user into a project. The user can review the information present in the discussion to become familiar with the project's progress to date.

A discussion can be started for any record. The user initiating the discussion can invite other users or user groups to participate in the discussion. Within the discussion for each record, multiple threads can be started to discuss multiple topics. Users can post and reply to messages within a particular thread. Users can also choose to receive email messages to notify them about a new discussion or new posts to a discussion.

Enabling Discussions

Performing the following steps will allow you to enable the Discussions feature in your workgroup:

1. **Enter the Discussions key in the License Manager**
   A license key is required to present in the License Manager in order to use the Discussions feature.

2. **Enable Discussions in the General Preferences section**
   Login to the workgroup as Admin, then click on the Admin icon in the top button bar. Click on the General Preferences button, then in the "General Options" section set "Enable Discussion" to "Yes". Click OK to save this change

3. **Configure SMTP Mail Server for use with Discussions**
   An SMTP mail server is only required if you wish to generate notification messages related to the discussions (for inviting users to a new discussion or notifying users when a new post has been made to the discussion). This can be configured in the Email Configuration section.

4. **Ensure an email address is entered for the users that will receive discussion notification**

messages
A valid email address is only needed if you want a user to receive notification messages for discussions. Email addresses are entered in a user's profile in the Workgroup Management System.

After enabling the Discussions feature using the steps above, configure the user group privileges and default settings for Discussions as described below.

Discussions User Group Privileges

The following are the user group privileges related to the Discussions feature. These privileges can be set in the User Group Privileges page of the User Administration section. These privileges will only be displayed in the Privileges page if Discussions have been enabled using the steps in the section above.

View Messages
Members or groups with this privilege may view messages within discussion threads for any record the group can access.

Post Messages
Members or groups with this privilege may post a new message or reply to a message within the discussion threads for any record the group can access. Granting this privilege to a group automatically grants the group the "View Messages" privilege as well.

Initiate Discussion Threads
Members or groups with this privilege may create a new discussion thread for any record the group can access. Granting this privilege to a group automatically grants the group the "View Messages" and "Post Messages" privileges as well.

Edit Messages
Members or groups with this privilege may edit the messages within a discussion for any record the group can access. Granting this privilege to a group automatically grants the group the "View Messages" privilege as well.

Delete Messages and Threads
Members or groups with this privilege may delete the messages and / or threads within a discussion for any record the group can access. Granting this privilege to a group automatically grants the group the "View Messages" privilege as well.

The privileges above make reference to "any record the group can access". If record visibility is enabled with a workgroup, the user can only access a record or the discussion within a record if that record is visible to a user group in which the user is a member.

Default User Preferences for Discussions

The following default user preferences can be set for the Discussions feature. These settings will be used when a new user is added to ProblemTracker. These settings can be configured in the User Preferences page of the Admin section.

- **New Post Notification**
  This option determines when a user will be notified about discussions via email. Selecting "No Email" indicates that a user should not receive any email notification messages related to discussions. Selecting "Receive Email for each New Post" indicates that a user will receive one email notification for each new post in a discussion to which he / she is subscribed. Selecting "Receive Email for the first New Post to each Thread" indicates that the user will receive one email for the first post made to a discussion thread to which he / she is subscribed. Once a user visits the message list for the thread, another email will be sent when the next new post to the thread is made.

- **Invitation Notification by Email**
  This option determines whether a user should receive an email notification message when he / she has been invited to participate in a discussion initiated for a particular record. Selecting "Yes" indicates that the user should receive an email invitation for each new discussion.

- **Message Display Window**
  Enter the number of lines of text you wish to see when displaying a message within a discussion. The default setting is 5 lines of text.

Each user can change their own settings in the Personal Preferences page.

NetResults ProblemTracker

Customizing The Home Page

After logging in, each user is presented with their home page. By default, this page displays a summary of the records assigned to the user and the records reported by the user. The following elements of the home page can be customized:

- **Report Queries**
  "Assigned To Me", the first Home Page Report, is generated by a group saved query called "Assigned To Me [Users]". The second Home Page report, "Reported By Me", is generated by a group saved query called "Reported By Me [Users]". To modify the criteria for the reports on the Home Page, you can either modify the group saved queries "Assigned To Me [Users]" and / or "Reported By Me [Users]" or you can specify another saved query to be associated with these Home Page reports.

  To modify the group saved queries associated with the Home Page reports or to create a new saved query, use the information in the section Using Saved Queries & Reports.

  To associate a different saved query for either of these reports, login to ProblemTracker, then click on the Personal Preferences link. In the Personal Preferences page, scroll down to the Report Settings section. Select one of the saved queries listed in the pulldown menu for either the First Home Page Report field or the Second Home Page Report field. Click OK to save your selection.
- **Report Layouts**
  The report layout used (which columns, in what order) for both reports on the home page can be customized either globally or per user.

  By default, the report layouts "Home Report1 [Users]" and "Home Report2 [Users]" are used in the group saved queries "Assigned To Me [Users]" and "Reported By Me [Users]", respectively. These saved queries appear on the Home Page of all users by default. If you make changes to the report layouts "Home Report1 [Users]" and "Home Report2 [Users]", the changes will affect any saved queries where these report layouts are selected.

  Alternatively, you can select a different report layout for the saved query being used on your home page reports. To do this,

  1. Log in to ProblemTracker, then click on the Personal Preferences link.
  2. Scroll down to the Report Settings section and note which saved queries are selected for the First Home Page Report or Second Home Page Report fields.
  3. Click on the query button.
  4. In the Saved Queries pulldown menu, select the saved query being used for the First Home Page Report or Second Home Page report, then click on the Edit button to the right.
  5. Scroll down to the bottom and select the report layout that should be used for the saved query.
  6. Click OK to save your selection.

  To modify or create a new report layout, use the information in the section Using Saved Queries &

Reports.

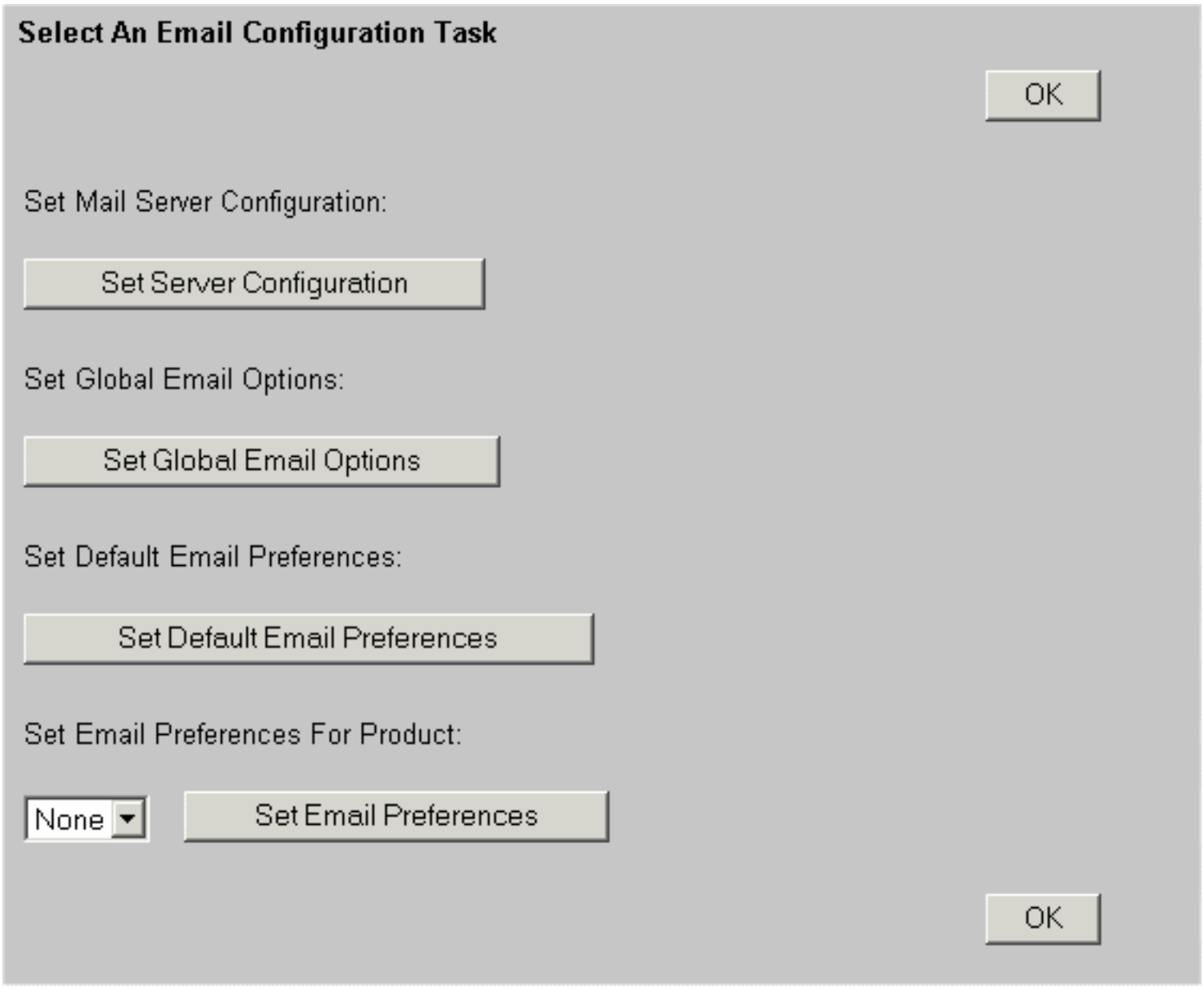
NetResults ProblemTracker

Email Integration

ProblemTracker is fully integrated with Internet standard SMTP email, supporting the following features:

- Email Notification messages can be sent to users and groups triggered by an action on a record (adding, editing, tasking, deleting) or a change in status or assignment
- Alerts Email Notification messages can be sent to users and groups at a designated date and time as a reminder about a record or a means of escalating a record.
- Discussion Email Notification messages can be sent to users and groups to invite them to participate in a discussion or to notify them about a new post to a discussion.

Email administration related to each of the above features is performed by pressing the "Email Configuration" button on the ProblemTracker administrator, displaying the Email admin page as shown below:



The remainder of this section covers the following topics:

- General Server Configuration
- Sending an Administrative Email
- Setting Notification Preferences
- Default Notification Preferences
- Email Notification Message Types

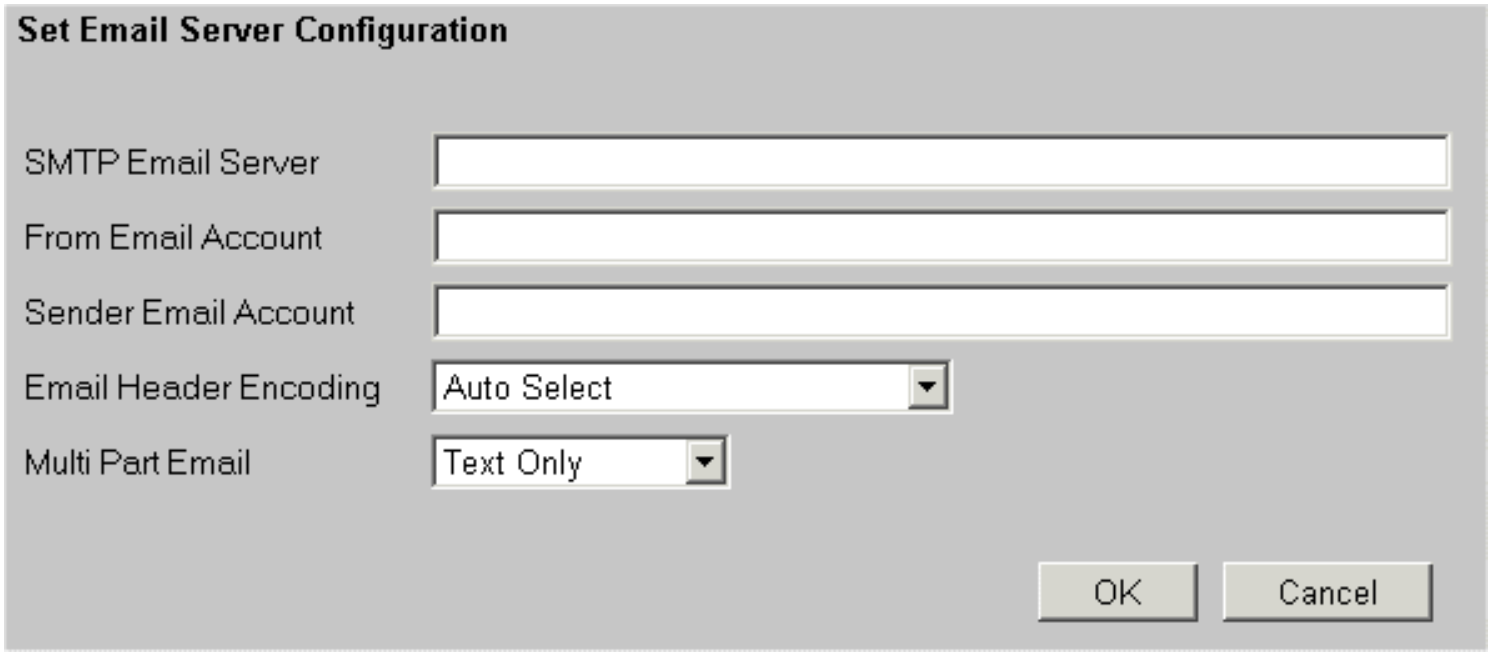
NetResults ProblemTracker

General Email Configuration

Enable Email Notification

Before using the email integration features of ProblemTracker, you must first perform some basic configuration by following these steps:

1. From the ProblemTracker Administrator, press the "Email Configuration" button.
2. Press the button labeled "Set Server Configuration". The following form is displayed:



3. Enter the name of the SMTP email server you would like to use in the field labeled "SMTP Email Server". This server will be used by ProblemTracker to send notification email.
4. Enter the email user account you would like to use to send ProblemTracker email messages in both the field labeled "From Email Account" and the field labeled "Sender Email Account". This is the account that will appear as the address to reply to in emails sent to users.
5. Select the type of Email Header Encoding you would like to use from the pulldown menu. The encoding that you choose for this option should be based on the characters you will be using. In general, email headers must contain only US-ASCII characters. Headers that contain non US-ASCII characters must be encoded so that they contain only US-ASCII characters. This process involves using either "B"(BASE64) or "Q"(Quoted-Printable) to encode certain characters. The "Q" encoding is recommended for use when most of the characters to be encoded are in the ASCII character set; otherwise, the "B" encoding should be used. If you are not sure what type of encoding is compatible with your mail server, choose Auto Select for this option.
6. Choose a format for the email content from the pulldown menu. This option determines whether the email messages generated by ProblemTracker will contain only text or text and HTML. For example, if the character set for your workgroup is UTF-8, email from ProblemTracker may also contain UTF-8 characters. If your email client cannot display UTF-8 characters, selecting "Text and HTML" for this option might help. If your email client can display HTML format, the UTF-8 characters in the email message can be displayed correctly.
7. Press the OK button.

If at any time you wish to turn of email notification, erase the SMTP Email Server setting.

NetResults ProblemTracker

Sending An Administrative Email

You can send an email with any message you would like to a ProblemTracker user from within ProblemTracker. You may wish to do this while performing administrative tasks as these emails will appear to be sent by the same user normally used to send notification emails.

To send an email to a user, follow these steps:

1. From the ProblemTracker Administrator, press the "Send Email" button.
2. Select a user from the combo box control labeled "To:", a message subject in the "Subject:" field, and a message body.
3. Press the OK button to send the email and return to the ProblemTracker administrator.

NetResults ProblemTracker

Email Notification Preferences

Overview

The following section discusses email notifications that can be triggered by operations performed on a record in ProblemTracker.

The Alerts feature can send email notification messages at a designated date and time to remind a user or group about a record or to notify a user or group that a record's status has not changed within a specific period of time. Information on configuring the Alerts feature to send email notification messages can be found in the Alerts section of this Help guide.

The Discussion feature can send email notification messages to invite a user or group to participate in a discussion for a record or can notify a user or group about a new post to a discussion. Information on configuring the Discussion feature to send email notification messages can be found in the Discussion section of this Help guide.

ProblemTracker will automatically send notification email when the following actions are performed on a problem record:

- **Add**
- **Edit**
- **Delete**
- **Task**
- **Change of Status**
- **Change of Assignment**

You have various choices to configure who should be notified for each type of event.

Additionally, you can assign a manager to each process state. This allows email notification to be sent to an individual that monitors or is responsible for a particular or set of process states.

Email configuration preferences are set on a per product basis, allowing custom behavior for each product under development by an organization. Such customization may be necessary to account for changes in the development process or project management personnel.

State Managers

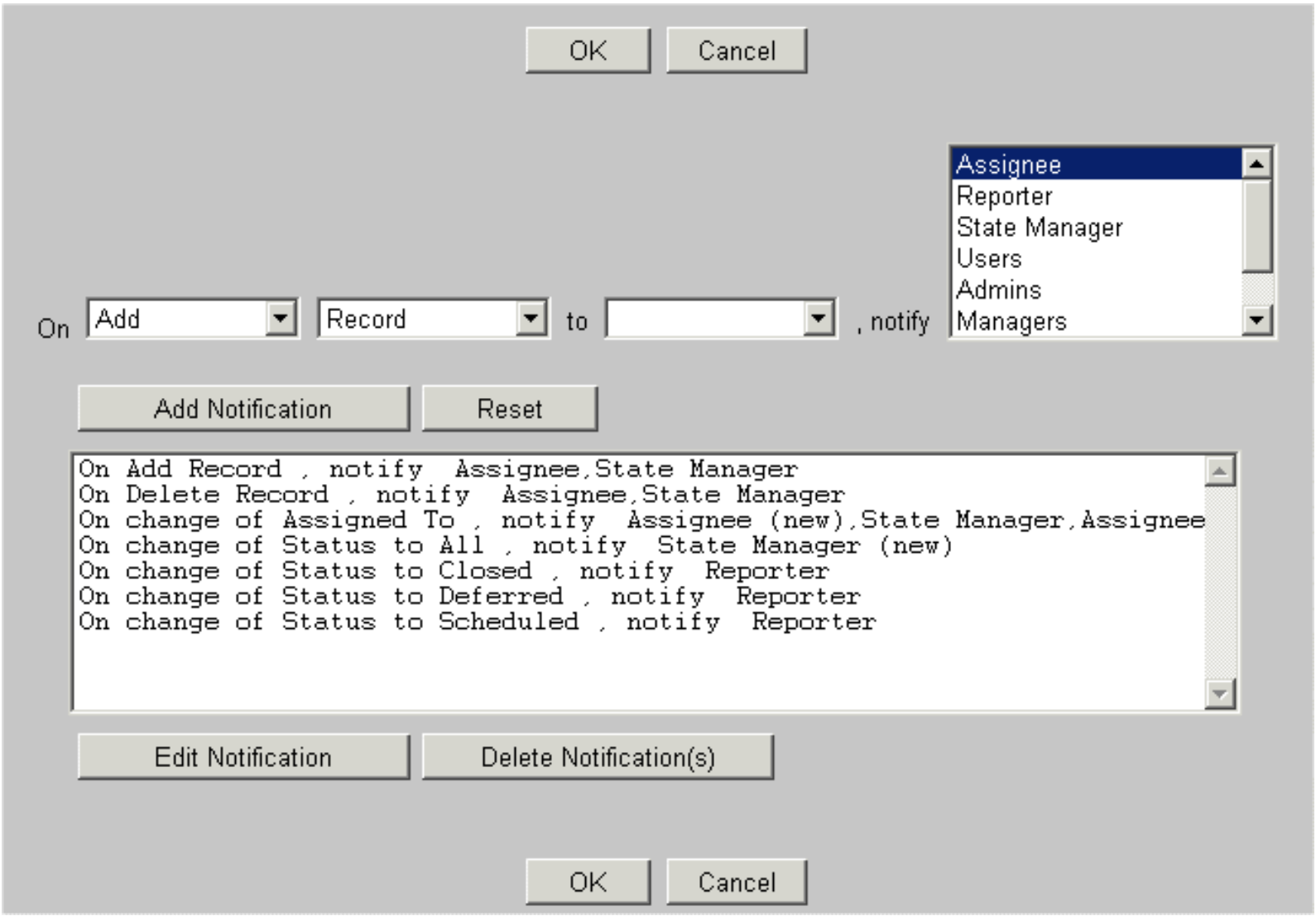
You can assign a manager to each state. This user will be notified of events at they occur, independent of whether they are currently assigned to the problem record. For example, the manager in charge of QA will probably want notification as problem records are changed to a state named "To Be Tested", and also as it is assigned to individuals while it is in this state. By selecting the QA manager as the manager for this process state, he or she will receive the desired notification. State managers are assigned under the "Define Workflow" option of the ProblemTracker Administrator page.

Configuring Notification Rules

You can configure notification rules in the Set Default Email Preferences section. Alternatively, you can configure notification rules per-product by selecting a product from the pulldown menu in the section Set Email Preferences for Product, then clicking on the Set Email Preferences button.

In each of these sections, several default notification rules are provided. You can edit or delete these default rules. You can

also create notification rules in addition to the defaults provided.



To edit an existing rule, click on the rule to highlight it, then click the Edit Notification button. The top row of pulldown menus will be updated with the values of the rule you selected to edit. Modify the values of the pulldown menus to choose the criteria you wish. You can select more than one choice for the user that receives the notification (the pulldown menu which follows "notify") by holding the CTRL button down on your keyboard as you click on the values you wish to select. Once you have modified the values, click on the Update Notification button. The rule will be added to the list.

To delete an existing rule, click on the rule to highlight it, then click on the Delete Notification button.

To add a new rule, click the Reset button so that the top row of pulldown menus return to their default values. Modify each pulldown menu such to select the values for your new notification rule. You can select more than one choice for the user that receives the notification (the pulldown menu which follows "notify") by holding the CTRL button down on your keyboard as you click on the values you wish to select. Once you have made your selections, click on the Add Notification button. On occasion, you may receive an error stating, "Rule already Exists. Please edit the existing rule to do the changes." This error indicates that there is a rule on the list which has the same action (value for the 1st pulldown on the left) as the rule you attempted to add.

Add Options

When an problem record is created, notification email can be sent to any of the following individuals and / or groups:

- Assignee
  The individual who is currently assigned to the record.
- Reporter
  The individual who reported the problem record.
- State Manager
  The manager assigned to the process state of the record when it is added.
- User Group
  The User Groups configured within your database will be listed. You can select any User Group(s) to receive notification when a record is added.

Edit Options

When a problem record is edited, notification email can be sent to any of the following individuals and / or groups:

- Assignee
  The individual who is currently assigned to the record.
- Assignee (new)
  The individual assigned to the record if the Assigned To field is changed during the Edit operation.
- Assignee (previous)
  The individual who was the previous assignee if the Assigned To field is changed during the Edit operation.
- Reporter
  The individual who reported the problem record.
- State Manager
  The manager assigned to the process state of the record when it is edited.
- State Manager (new)
  The manager assigned to the new process state of the record if the State field is changed during the Edit operation.
- State Manager (previous)
  The manager assigned to the previous process state of the record if the State field is changed during the Edit operation.
- User Group
  The User Groups configured within your database will be listed. You can select any User Group(s) to receive notification when a record is edited.

Delete Options

When a problem record is deleted, notification email can be sent to any of the following individuals and / or groups:

- Assignee
  The individual who is currently assigned to the record.
- Reporter
  The individual who reported the problem record.
- State Manager
  The manager assigned to the process state of the record when it is deleted.
- User Group
  The User Groups configured within your database will be listed. You can select any User Group(s) to receive notification when a record is deleted.

Task Options

When the Task operation is performed on a problem record, notification email can be sent to any of the following individuals and / or groups:

- Assignee

The individual who is currently assigned to the record.
- Assignee (new)
  The individual assigned to the record if the Assigned To field is changed during the Task operation.
- Assignee (previous)
  The individual who was the previous assignee if the Assigned To field is changed during the Task operation.
- Reporter
  The individual who reported the problem record.
- State Manager
  The manager assigned to the process state of the record when the Task operation is performed.
- State Manager (new)
  The manager assigned to the new process state of the record if the State field is changed during the Task operation.
- State Manager (previous)
  The manager assigned to the previous process state of the record if the State field is changed during the Task operation.
- User Group
  The User Groups configured within your database will be listed. You can select any User Group(s) to receive notification when a record is edited.

Assignment Change Options

When a change of assignment occurs for a problem record, notification email can be sent to the following individuals and / or groups:

- Assignee (new)
  The individual the record is being assigned to.
- Assignee (previous)
  The individual the record was assigned to before the change of assignment.
- Reporter
  The individual who reported the problem record.
- State Manager
  The manager assigned to the current process state of the record.
- User Group
  The User Groups configured within your database will be listed. You can select any User Group(s) to receive notification when a record is edited.

State Change Options

When a change of state occurs for a problem record, notification email can be sent to the following individuals and / or groups:

- Assignee
  The individual who is currently assigned to the record.
- Reporter
  The individual who reported the problem record.
- State Manager (new)
  The manager assigned to the new process state.
- State Manager (previous)
  The manager assigned to the original process state.
- User Group
  The User Groups configured within your database will be listed. You can select any User Group(s) to receive notification when a record is edited.

You can establish multiple notification rules based on changes to particular states. Examples of notification rules that can be used simultaneously based on various changes of the status field:

- When the status of a record is changed to the Closed state, the Reporter, the previous State Manager, and the new State Manager are notified.
- When the status of a record is changed to Fixed, the Reporter, the new State Manager, and the Managers user group are notified.

Please note that these are just examples of the many combinations that are possible to establish notification rules for a change in state.

NetResults ProblemTracker

Setting Notification Preferences

Default Email Preferences

Email notification preferences are customizable for each product, however it is very likely that these preferences (or large parts of them) are common across all products for the most part. ProblemTracker allows you to specify a default set of email notification preferences that are the initial values used when a product is added to the system.

To set the default email preferences, follow these steps:

1. From the ProblemTracker Administrator press the "Email Configuration" button.
2. Press the button labeled "Set Default Email Preferences".
3. Select the desired preferences.
4. Press OK
5. Press OK to return to the ProblemTracker Administrator.

Setting Email Preferences

To set the email preferences for a particular product, follow these steps:

1. From the ProblemTracker Administrator press the "Email Configuration" button.
2. Select the desired product from the combo box control under the "Set Email Preferences For Product" label, and press the button labeled "Set Email Preferences".
3. Select the desired preferences.
4. Press OK
5. Press OK to return to the ProblemTracker Administrator.

Setting Global Email Options

In the "Set Global Email Options" section, you have the option to select whether Text and TextArea fields that are included in the Email notification message should be truncated or fully displayed. ProblemTracker is set to truncate these fields by default. To display these fields without truncation, follow these steps:

1. From the ProblemTracker Administrator, press the "Email Configuration button.
2. Click on the "Set Global Email Options" button.
3. Select "No" from the dropdown menu for "Truncate Text and TextArea fields in notification emails".
4. Click OK

The option to include the hyperlink to view a record referenced in an email notification message can also be found in the "Set Global Email Options" section. Setting this option to Yes will include the hyperlink to view a record in the email notification messages sent according to the Email Notification Preferences. To enable the

hyperlink to be displayed in the email notification messages:

1. From the ProblemTracker workgroup Administration section, click on the "Email Configuration button.
2. Click on the "Set Global Email Options" button.
3. Select "Yes" from the pulldown menu for "Include hyperlink in notification emails to view the record".
4. Click OK

NetResults ProblemTracker

Email Notification Message Types

Email notification messages can be generated automatically by ProblemTracker triggered by the Email Preferences you have configured for each product. Notification messages can also be triggered by the use of the Alerts and Discussion features. Each of the features above generates a notification message with a unique structure. The structure of each message type is described below.

Email Notification Messages based on Email Preferences

The Email Preferences set for each product in ProblemTracker can be set to send an email message when an operation is performed on a record (such as adding, deleting, editing, or tasking a record) or when the record experiences a change in state or assignment. The email messages generated by these preferences are of the form shown int he example below. This example is a message sent to a user who has been assigned to a newly added record:

Hello Development Manager,

The following record has been assigned to you:

To view this record, login to ProblemTracker.
(http://servername/workgroup/ptlogin.asp?page=view&record=25)
 - (workgroup name)
PRN: 25
Title: Add a new print wizard
Product: Our Browser
Platform: All
Reported In Version: 1.3.-.-
Request Type: Enhancement
Severity: 3 (High Impact - Low %)
Description:
_____
==== 11/01/2002 02:17:21 PM [UTC-0800] ==== Process Manager ====
Add a new print wizard according to the attached spec.
_____
Reported By: Process Manager
Date Reported: 11/01/2002 02:17:50 PM [UTC-0800]
Workaround:
_____

The fields that are included in the email notification messages can be customized. Whether a particular field is displayed in the email message is determined by the Field Visibility settings for that field. Field Visibility can be customized for each field in the Define Record section of the Administration page.

Alerts Notification Messages

The Alerts feature can be configured to send an email notification message about a record at a particular date and time as shown in the example below Each message includes a link to the record that generated the alert, information about how long a record has been its current state, when the next alert will be sent, additional information from the alerts settings for the record, and fields from the record:

Hello Process Manager,

Alert for Record 2 (http://servername/pteval/ptlogin.asp?page=view&record=2).
In Reported State from 09/18/2002 03:12:39 PM for more than 1 hour(s).
Next alert is due on 09/18/2002 05:12:39 PM.
Additional Information: This is a critical record

PRN: 2
Title: Add print wizard
Product: Our Spreadsheet
Platform: All
Reported In Version: 2.1.3
Request Type: Enhancement

Note: This is an alert notice sent automatically by ProblemTracker.

The fields that are included in the message can be customized. Whether a particular field is displayed in the email message is determined by the Field Visibility settings for that field. Field Visibility can be customized for each field in the Define Record section of the Administration page.

Discussion Notification Messages

The Discussion feature can be configured to send an email notification message to invite a user or group to participate in a discussion for a record or to notify a user that a new post has been added to a discussion. The first example is an invitation to participate in a discussion. The second image is notification about a new post to a discussion. Each message has the subject (name) of the discussion thread, the record number where the thread is located, and a link to the thread:

Hello Development Manager,

You are invited to the "Specification Review" discussion thread for Record 2.

To read or post messages to this thread, login to ProblemTracker.
(http://servername/pteval/ptlogin.asp?page=thread&record=2&threadid=0)
After login the message list for this thread will be displayed.

Note: This email is sent automatically by ProblemTracker.
To change your discussion notification preferences, login to ProblemTracker,
(http://servername/pteval/ptlogin.asp)
click Personal Preferences, modify Discussion Settings, click OK.

Hello Developer One,

A new message has been posted to the "Specification Review" discussion thread for Record 2.

To read or post messages to this thread, login to ProblemTracker.
(http://servername/pteval/ptlogin.asp?page=thread&record=2&threadid=0)
After login the message list for this thread will be displayed.

Note: This email is sent automatically by ProblemTracker.
To change your discussion notification preferences, login to ProblemTracker,
(http://servername/pteval/ptlogin.asp)
click Personal Preferences, modify Discussion Settings, click OK.

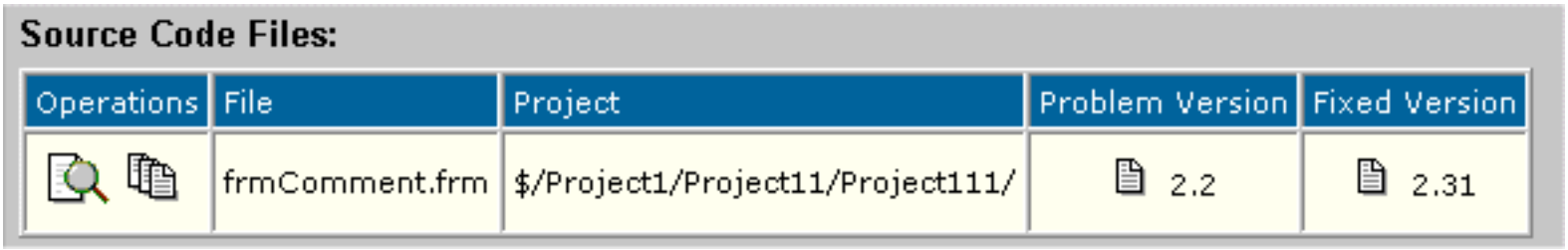
NetResults ProblemTracker

Overview and Requirements

Source Code Control Integration

Source Code Control Integration allows you to associate source code files to problem records within your ProblemTracker database. This is useful in order to denote which source code files were changed during the course of processing a problem record.

Additionally, ProblemTracker allows you to note the version of the source code file where a problem was found, and subsequently, fixed. This facilitates the ability to track the source code files that are affected by a particular problem or bug fix.



The Source Code Control Interface within ProblemTracker has the ability to compare versions of a source code file to show the differences in the content between versions.

The history of each source code file maintained by your source code control database can be accessed via ProblemTracker. The history information provides easy access to details related to each version of the source code file. Information such as file type, type and date of action, user who performed action, and comments about the action are displayed in the history entry for each version.

Various actions related to the Source Code Control Interface have been added as privileges, allowing you to control which functions user groups can access such as, viewing and editing the list of source code files associated with a problem record.

Requirements for Source Code Control Integration

Microsoft Visual SourceSafe Version 6.0 (Server or Client) must be installed on the server machine where ProblemTracker is installed. If your Microsoft Visual SourceSafe database is installed on a machine other than your ProblemTracker server, please refer to the following FAQ entry for special instructions:

`http://www.problemtracker.com/pt_faq_howdoi.htm#scciperm`

For the latest information about the requirements for using Source Code Control Integration, please refer to the following page on our web site:

http://www.problemtracker.com/pt_sysreq.html

Each person who uses the Source Code Control Integration feature must be a licensed user of Microsoft Visual SourceSafe. Indirect use of Microsoft Visual SourceSafe via ProblemTracker does not release you from your legal obligations under the Microsoft Visual SourceSafe license agreement. ProblemTracker does require that each user of source code control integration enter a Microsoft Visual SourceSafe username and password. However, it is still your responsibility to ensure that all users are in full compliance with the Microsoft Visual SourceSafe license agreement. Please review your Microsoft Visual SourceSafe license agreement for details.

NetResults ProblemTracker

Enabling Source Code Control Integration

Source Code Control Options

To enable Source Code Control within ProblemTracker, login as Admin, click on the Admin button, then click on General Preferences. Set the following options related to Source Code Control:

- **Enable Source Code Control Integration**
  Select Yes to enable Source Code Control Integration.
- **Source Code Control Product**
  Microsoft Visual SourceSafe Version 6.0 will appear in this section and cannot be changed.
- **Path to srcsafe.ini**
  Enter the path for the srcsafe.ini file on the server machine where ProblemTracker is installed. Alternatively, if you click on the Find button, the path will be detected based on your registry settings related to Microsoft Visual SourceSafe. If there is more than one Microsoft Visual SourceSafe ini file on your machine, the "Find" button may not detect the one that you want to use. In this case, you can type in the path of the ini file you wish to use.
- **Path to ss.exe**
  Enter the path for the ss.exe file on the server machine where ProblemTracker is installed. Alternatively, if you click on the Find button, the path will be detected based on your registry settings related to Microsoft Visual SourceSafe. If there is more than one Microsoft Visual SourceSafe ini file on your machine, the "Find" button may not detect the one that you want to use. In this case, you can type in the path of the ini file you wish to use.

Click OK to save the changes made to the Source Code Control Options.

Source Code Control User Privileges

In order for a user to access any information related to Source Code Control, they must be members of a group with the appropriate privileges assigned. User Privileges related to Source Code Control include:

- **View Source Code List**
  Members or groups with this privilege are allowed to view the list of Source Code files associated with a problem record.
- **Edit Source Code List**
  Members or groups with this privilege are allowed to edit the Source Code List, including adding new files to be associated with a problem record.

Source Code Control Login Settings

Each user must supply their SourceSafe Login Settings in order to edit the source code list. To enter the login information, the user should go to the Home page, then click on the link to edit their Personal Preferences. In the SourceSafe Login Settings section, the user should enter the User ID and Password they use to access the

Microsoft Visual SourceSafe database. The user should click OK to save these settings.

NetResults ProblemTracker

Customer Bug Page

Using the Customer Bug Page

ProblemTracker includes a page that you may use on your external web site to allow your customers to file bug reports. The URL of this page is:

`http://serverName/workgroup/Internet/user_add.asp`

where *serverName* is the TCP/IP name of the host where the ProblemTracker server software is installed, and *workgroup* is the name of the ProblemTracker workgroup you wish to access.

For example, if you installed the default workgroup on a server named `MyServer` , you would use this URL:

`http://MyServer/pteval/Internet/user_add.asp`

All problems reported using this web page are filed as having been reported by a special built-in user named "Inet" so that you can quickly identify (or search for) problems reported using the Customer Bug Page.

You can control which fields are displayed on the Customer Bug Page by setting the *Include in Inet Page* property of each field to Yes or No as appropriate (those with the property set to Yes will appear in the Customer Bug Page). For information on setting this property, see the Customizing the Data Record section of the Administration Guide.

You can also control which option menu values are displayed for fields of type *Pulldown*, by checking (setting) the *Public* property of each option menu item that you wish to be displayed in the Customer Bug Page. For information on setting this property, see the Customizing Menu Values section of the Administration Guide.

If you decide to incorporate the customer bug reporting page into your web site, you should use the user authentication provided by your web server to limit access to the rest of your ProblemTracker installation. Please click here for information on how to apply security to your ProblemTracker installation.

Customizing the Customer Bug Page

You can customize the customer bug page to match your web site look and feel. To do this, follow these steps:

1. From the ProblemTracker Administrator, press the "Inet Page Options" button.
2. On the form displayed, enter the following fields:
   - Background Color
     Enter the HTML color code for the desired background color. This field must be of the format #XXXXXX.
   - Custom HTML (Top of Page)

Enter any HTML source you would like to appear at the top of the page. Note that all file references must be fully qualified, relative paths will not work.

- Custom HTML (Bottom of Page)
  Enter any HTML source you would like to appear at the bottom of the page. Note that all file references must be fully qualified, relative paths will not work.

3. Press the OK button

NetResults ProblemTracker

Customizing the Log In Page

The Log In Page

ProblemTracker requires that all users first log into the system via a log in page. This page presents the user with a form with a username and password field.

You can specify the format of the top and bottom of this page to your liking. Reasons for doing this may be to better visually integrate ProblemTracker with your company's Intranet look and feel, or to provide users with an information or instructional message before logging in.

Customizing the Log In Page

There are two files located in the workgroup directory (ptdev, ptweb, etc.) of each installation of ProblemTracker that allow you to customize the log in page. Log in to the Workgroup Management System and find the workgroup you wish to modify on the list that appears on the Workgroup Management System Home Page. Note the path listed in the location column for this workgroup. The files are located in the workgroup location path in the folder called Include:

- **logintop.inc**
  The contents of this file are inserted just after the <body> tag on the log in page. You can include any HTML in this file, but do not edit below the last comment in the file.
- **loginbottom.inc**
  The contents of this file are inserted just before the </body> tag on the log in page. You can include any HTML in this file, but do not edit below the last comment in the file.

Do not include full HTML files (such as one created by Microsoft Front Page) in either logintop.inc or loginbottom.inc. You must only use HTML tags that are valid in the body of an HTML file. If you do not understand this restriction, please do not modify these files as you may eliminate access to the ProblemTracker login page.

NetResults ProblemTracker

Permanently Deleting Multiple Records

Overview

For various reasons you may wish to permanently remove multiple problem records from the ProblemTracker database. There are two ways this can be done. First, you can remove all problem records. This is typically done when you finish an evaluation. Second, you can selectively delete some records that match certain criteria. This is typically done when you wish to remove records related to an old project or obsolete release. Both are described in detail below.

Remove All Records

Caution: This operation is permanent. It cannot be undone. Please make a backup of your database prior to performing this operation.

To delete all problem records as well as all attachments and all record history, click the Admin icon in the navigation bar, then click the Maintenance button, then click the Remove All Records button. Once this operation is complete, newly added problem records will start at problem record number zero.

While this operation will remove all problem records, attachments, and history, it will leave other ProblemTracker configuration unchanged (data record customization (fields in the data record), option menus, workflow, users, user groups, email configuration, etc.).

This operation is typically used at the end of an evaluation to remove all test records.

Selectively Remove Records

Caution: This operation is permanent. It cannot be undone. Please make a backup of your database prior to performing this operation.

This operation will delete the problem records that match certain criteria as well as the attachments to those problem records. It will also delete all record history associated with those records, except for one history entry (per deleted record) which is created to indicate when (and by which user) the records were deleted. This operation can be used to remove all "closed" problem records or perhaps problem records from an old release or project that has been completed.

To selectively delete some problem records please follow the instructions below.

1. Login as Admin.
2. You may need to configure your system (at least temporarily) to allow this operation (as by default it is disabled).
    - The option "Remove Records from Database on 'Delete' Operation" in the General Preferences page in the Admin section should be set to Yes (by default it is set to No). This will make the change permanent (data will be deleted from the database). If you need to change this to Yes, you may wish to change it back to No after you have performed this delete operation (so that any other Delete operations are not permanent).
    - The user you are logged in as (e.g. Admin) must be a member of at least one User Group that has the Edit Query Result Set privilege. Verify that the Admins group has the Edit Query Result Set privilege (by default it does). This will allow you to perform an operation (in this case Delete) on all records that match a Query.
    - The user you are logged in as (e.g. Admin) must be a member of at least one User Group that has the Delete privilege. Verify that Admins group has the Delete privilege (by default it does). This will allow you to delete records.
3. Click the Query icon in the button bar.
4. Enter the criteria for the records you wish to delete and click Run Query
5. On the query results page, click the Delete Records button.
6. Click "OK" for the confirmation dialog and ALL the records matching the current query will be deleted permanently from the database. Note: Even though only the first 20 records are displayed, the Delete Records operation will delete all the records returned by the query. The total number of records returned by the current query will be displayed in the status area just below the button bar.

NetResults ProblemTracker

Windows 2000 / XP Time Zone Selection Chart

Help Topics << >>

The following is a list of time zones that are supported by ProblemTracker when installed on a Windows 2000 (or Windows XP) system. Entries with (*) are only available in Windows XP.

Time Zone Offset (in Hours)	**Time Zone**	**System Time Zone** (as displayed in Date/Time Settings)
-12:00	Dateline Standard Time	Eniwetok, Kwajalein
-11:00	Samoa Standard Time	Midway Is, Samoa
-10:00	Hawaiian Standard Time	Hawaii
-10:00	Alaskan Standard Time	Alaska
-08:00	Pacific Standard Time	Pacific Time (US & Canada); Tijuana
-07:00	Mexican Standard Time[La Paz](*)	Chihuahua, La Paz, Mazatlan
-07:00	Mountain Standard Time	Mountain Time (US & Canada)
-07:00	Mountain Standard Time [Arizona]	Arizona
-06:00	Central Standard Time	Central Time (US & Canada)
-06:00	Mexico Standard Time	Mexico City, Tegucigalpa
-06:00	Canada Central Standard Time	Saskatchewan
-06:00	Central America Standard Time	Central America
-05:00	Eastern Standard Time	Eastern Time (US & Canada)
-05:00	Eastern Standard Time [Indiana (East)]	Indiana (East)

-05:00	SA Pacific Standard Time	Bogota, Lima, Quito
-04:00	Atlantic Standard Time	Atlantic Time (Canada)
-04:00	SA Western Standard Time	Caracas, La Paz
-04:00	Pacific SA Standard Time	Santiago
-03:30	Newfoundland Standard Time	Newfoundland
-03:00	SA Eastern Standard Time	Buenos Aires, Georgetown
-03:00	E. South America Standard Time	Brasilia
-03:00	Greenland Standard Time	Greenland
-02:00	Mid-Atlantic Standard Time	Mid-Atlantic
-01:00	Azores Standard Time	Azores
-01:00	Cape Verde Standard Time	Cape Verde Is
00:00	Universal Coordinated Time	Casablanca, Monrovia
00:00	Greenwich Mean Time	Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
+01:00	Romance Standard Time	Amsterdam, CopenHagen, Madrid, Paris, Vilnius
+01:00	W. Central Africa Standard Time	West Central Africa
+01:00	Central European Standard Time	Belgrade, Sarajevo, Skopje, Sofija, Zagreb
+01:00	Central Europe Standard Time	Bratislava, Budapest, Ljubljana, Prague, Warsaw
+01:00	W. Europe Standard Time	Brussels, Berlin, Bern, Rome, Stockholm, Vienna
+02:00	Egypt Standard Time	Cairo
+02:00	South Africa Standard Time	Harare, Pretoria
+02:00	Israel Standard Time	Israel

+02:00	E. Europe Standard Time	Bucharest
+02:00	FLE Standard Time	Helsinki, Riga, Tallinn
+02:00	GTB Standard Time	Athens, Istanbul, Minsk
+03:00	Arab Standard Time	Kuwait, Riyadh
+03:00	E. Africa Standard Time	Nairobi
+03:00	Arabic Standard Time	Baghdad
+03:00	Russian Standard Time	Moscow, St. Petersburg, Volgograd
+03:30	Iran Standard Time	Tehran
+04:00	Arabian Standard Time	Abu Dhabi, Muscat
+04:00	Caucasus Standard Time	Baku, Tbilisi
+04:00	Afghanistan Standard Time	Kabul
+05:00	West Asia Standard Time	Islamabad, Karachi, Tashkent
+05:00	Ekaterinburg Standard Time	Ekaterinburg
+05:30	India Standard Time	Bombay, Calcutta, Madras, New Delhi
+05:45	Nepal Standard Time	Kathmandu
+06:00	Central Asia Standard Time	Almaty, Dhaka
+06:00	Sri Lanka Standard Time	Columbo
+06:00	N. Central Asia Standard Time	Almaty, Novosibirsk
+06:30	Myanmar Standard Time	Rangoon
+07:00	SE Asia Standard Time	Bangkok, Hanoi, Jakarta
+07:00	North Asia Standard Time	Krasnoyarsk
+08:00	China Standard Time	Beijing, Chongqing, Hong Kong, Urumqi
+08:00	W. Australia Standard Time	Perth
+08:00	Singapore Standard Time	Singapore

+08:00	Taipei Standard Time	Taipei
+08:00	North Asia East Standard Time	Irkutsk, Ulaan Bataar
+09:00	Tokyo Standard Time	Osako, Sapporo, Tokyo
+09:00	Korea Standard Time	Seoul
+09:00	Yakutsk Standard Time	Yakutsk
+09:30	AUS Central Standard Time	Darwin
+09:30	Cen. Australia Standard Time	Adelaide
+10:00	AUS Eastern Standard Time	Canberra, Melbourne, Sydney
+10:00	E. Australia Standard Time	Brisbane
+10:00	West Pacific Standard Time	Guam, Port Moresby
+10:00	Tasmania Standard Time	Hobart
+10:00	Vladivostok Standard Time	Vladivostok
+11:00	Central Pacific Standard Time	Magadan, Solomon Is, New Caledonia
+12:00	Fiji Standard Time	Fiji, Kamchatka, Marshall Is
+12:00	New Zealand Standard Time	Auckland, Wellington
+13:00	Tonga Standard Time	Nuku'alofa

NetResults ProblemTracker

Windows NT 4.0 Time Zone Selection Chart

Help Topics << >>

The following is a list of time zones that are supported by ProblemTracker when installed on a Windows NT 4.0 system.

Time Zone Offset (in Hours)	**Time Zone**	**System Time Zone** (as displayed in Date/Time Settings)
-12:00	Dateline Standard Time	Eniwetok, Kwajalein
-11:00	Samoa Standard Time	Midway Is, Samoa
-10:00	Hawaiian Standard Time	Hawaii
-10:00	Alaskan Standard Time	Alaska
-08:00	Pacific Standard Time	Pacific Time (US & Canada); Tijuana
-07:00	Mountain Standard Time	Mountain Time (US & Canada)
-07:00	Mountain Standard Time [Arizona]	Arizona
-06:00	Central Standard Time	Central Time (US & Canada)
-06:00	Mexico Standard Time	Mexico City, Tegucigalpa
-06:00	Canada Central Standard Time	Saskatchewan
-05:00	Eastern Standard Time	Eastern Time (US & Canada)
-05:00	Eastern Standard Time [Indiana (East)]	Indiana (East)
-05:00	SA Pacific Standard Time	Bogota, Lima, Quito
-04:00	Atlantic Standard Time	Atlantic Time (Canada)
-04:00	SA Western Standard Time	Caracas, La Paz

-03:30	Newfoundland Standard Time	Newfoundland
-03:00	SA Eastern Standard Time	Buenos Aires, Georgetown
-03:00	E. South America Standard Time	Brasilia
-02:00	Mid-Atlantic Standard Time	Mid-Atlantic
-01:00	Azores Standard Time	Azores
00:00	Universal Coordinated Time	Casablanca, Monrovia
00:00	Greenwich Mean Time	Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
+01:00	Romance Standard Time	Amsterdam, CopenHagen, Madrid, Paris, Vilnius
+01:00	Central European Standard Time	Belgrade, Sarajevo, Skopje, Sofija, Zagreb
+01:00	Central Europe Standard Time	Bratislava, Budapest, Ljubljana, Prague, Warsaw
+01:00	W. Europe Standard Time	Brussels, Berlin, Bern, Rome, Stockholm, Vienna
+02:00	Egypt Standard Time	Cairo
+02:00	South Africa Standard Time	Harare, Pretoria
+02:00	Israel Standard Time	Israel
+02:00	E. Europe Standard Time	Bucharest
+02:00	FLE Standard Time	Helsinki, Riga, Tallinn
+02:00	GTB Standard Time	Athens, Istanbul, Minsk
+03:00	Arab Standard Time	Kuwait, Riyadh
+03:00	E. Africa Standard Time	Nairobi
+03:00	Russian Standard Time	Moscow, St. Petersburg, Volgograd
+03:30	Iran Standard Time	Tehran

+04:00	Arabian Standard Time	Abu Dhabi, Muscat
+04:00	Caucasus Standard Time	Baku, Tbilisi
+04:00	Afghanistan Standard Time	Kabul
+05:00	West Asia Standard Time	Islamabad, Karachi, Tashkent
+05:00	Ekaterinburg Standard Time	Ekaterinburg
+05:30	India Standard Time	Bombay, Calcutta, Madras, New Delhi
+06:00	Central Asia Standard Time	Almaty, Dhaka
+06:00	Sri Lanka Standard Time	Columbo
+07:00	SE Asia Standard Time	Bangkok, Hanoi, Jakarta
+08:00	China Standard Time	Beijing, Chongqing, Hong Kong, Urumqi
+08:00	W. Australia Standard Time	Perth
+08:00	Singapore Standard Time	Singapore
+08:00	Taipei Standard Time	Taipei
+09:00	Tokyo Standard Time	Osako, Sapporo, Tokyo
+09:00	Korea Standard Time	Seoul
+09:00	Yakutsk Standard Time	Yakutsk
+09:30	AUS Central Standard Time	Darwin
+09:30	Cen. Australia Standard Time	Adelaide
+10:00	AUS Eastern Standard Time	Canberra, Melbourne, Sydney
+10:00	E. Australia Standard Time	Brisbane
+10:00	West Pacific Standard Time	Guam, Port Moresby
+10:00	Tasmania Standard Time	Hobart
+10:00	Vladivostok Standard Time	Vladivostok

+11:00	Central Pacific Standard Time	Magadan, Solomon Is, New Caledonia
+12:00	Fiji Standard Time	Fiji, Kamchatka, Marshall Is
+12:00	New Zealand Standard Time	Auckland, Wellington

NetResults ProblemTracker

Frequently Asked Questions

Our frequently asked questions section is updated quite often. For the latest information, available 24 hours a day, 7 days a week, please browse to the Frequently Asked Questions in the ProblemTracker Support section of our web site. It has answers to many questions that are asked by our customers. It is likely that you will find the answer to your question or resolution (or workaround) to a problem in the FAQ.

NetResults ProblemTracker

Contacting NetResults

Help Topics << >>

If you are unable to resolve a problem after searching the ProblemTracker Frequently Asked Questions section of our web site, and you are evaluating the product or have a current support agreement with NetResults, please contact us via email. Standard support is available via email on business days (Monday through Friday, excluding holidays). You should receive a response within one business day. Additional support options (e.g. phone support, extended hours) may be purchased from NetResults. Phone support is not included with the product, it must be purchased separately.

For the appropriate support email address, standard support hours, and a list of information to send us for fastest resolution to your problem, please click here. If for some reason you are unable to reach our site via the web, please send your support email to

pt_support@netresultscorp.com

In your email please be sure to include the following information (emails with this information are generally given priority over those without):

1. Version of ProblemTracker you are using.
2. Web Server software being used (e.g. IIS 4, Netscape Enterprise 3.6).
3. Database being using (e.g. MS Access, MS SQL Server 7.0).
4. Operating System of the server on which ProblemTracker is installed (e.g. Windows NT 4.0 Workstation, Windows NT 4.0 Server).
5. Web Browser software being used (e.g. IE 4, Navigator 4.0).
6. **The full text of any error message which is displayed.** In many cases if you get a generic database error message, you can scroll further down on the page to find more detailed error information.
7. **The steps required to reproduce the problem.**
8. Whether you are an evaluator or licensed user with support.
9. Attach the following files from your installation to your message:
    - Any files present in the folder NetResultsPTLog that can be found in the root of the drive where you installed ProblemTracker. By default, the files can be found in C:\NetResultsPTLog.
    - If your problem is related to the Workgroup Management System, attach the file called ptadminlog.txt that can be found in the pttmp folder of your installation directory. By default, this file can be found at C:\Inetpub\wwwroot\ProblemTracker\pttmp\ptadminlog.txt.
    - If your problem is related to email notification messages, attach the file called emaillog.txt that can be found in the pttmp folder of your installation directory. By default, this file can be found at C:\Inetpub\wwwroot\ProblemTracker\pttmp\emaillog.txt.

Please be as specific as possible in your description of what is wrong. Including steps to reproduce the problem and the full text of all error messages is very helpful and can significantly reduce the amount of time it takes to resolve a problem.