

# Training Guide

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**XFRACAS Version 6 Training Guide**  
**Part Identification: XFR-TG-06**

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# XFRACAS Training Guide

# 1

## 1.1 About this Training Guide

This training guide is intended to provide you with detailed examples to demonstrate the use of the XFRACAS software. At any time during the training, please feel free to ask the instructor(s) any questions you might have.

## 1.2 XFRACAS Documentation

Like all of ReliaSoft's standard software products, XFRACAS is shipped with detailed printed documentation on the product (*XFRACAS User's Guide* and *XFRACAS Administrative User's Guide*). This training guide is intended to be a supplement to those references.



## 1.3 Contacting ReliaSoft

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For assistance, you may contact our Worldwide Headquarters in Tucson, Arizona or go to <http://Directory.Reliasoft.com> to locate the regional office nearest you.



# Features Summary

# 2

The examples included in this training guide have been designed to introduce you to the features available in XFRACAS. This section presents a brief summary of these features. If you are already familiar with XFRACAS's features, you can proceed to the examples.

## 2.1 FRACA/FRACAS - Incident (Failure) Reporting, Analysis and Corrective Action

XFRACAS provides full support for incident reporting (FRACA/FRACAS) activities.

- Enables users at multiple locations (*e.g.* internal testing facilities, phone support, on-site repair etc.) to report failures, incidents, issues and/or suggestions and view information reported by other users.
- Captures incident description, run hours, fault codes, incident resolution, part repairs/replacements and other details of the incident occurrence and resolution.
- Provides sufficient detail to support troubleshooting activities, analysis and reporting requirements and the development of a “knowledge base” that can be used for future product designs and problem resolutions.
- E-mail notifications to alert responsible personnel of specific incidents.

## 2.2 Problem Resolution/Corrective and Preventive Actions

XFRACAS provides problem identification, analysis and management resources that allow product design personnel to manage the failure analysis and corrective action process.

- Problem Resolution and Reporting (PRR)/Corrective and Preventive Action (CAPA) utility to define the problem, identify the root cause, manage and monitor corrective actions, etc.
- Support for the 8D problem management process, the Six Sigma process and other 4 to 8 step FRACAS processes such as IDOV, MDOV, etc.
- Ability to link individual incident records to a single problem report.
- Review and approval mechanisms to manage problem closures.

## 2.3 Actions Management

XFRACAS provides the ability to manage resources and problem resolution by assigning actions to specific personnel and tracking the progress of resolution activities. This includes:

- Detailed action definition, including the person responsible, due date/completion date, category, status updates, actions taken, etc.

- Automated e-mail notifications to alert responsible personnel of required actions and upcoming due dates.
- Ability to track the progress and completion of assigned actions.

### **2.4 Queries, Reports, Plots and Analyses**

XFRACAS provides extensive and flexible query, reporting and plotting capabilities with the ability to export query results/data to Microsoft Excel and to ReliaSoft's reliability analysis tools for complete and in-depth reliability analyses.

- Query records based on any data element.
- Generate reports based on pre-defined templates.
- Generate detailed charts and graphs using the Dashboard Page's extensive and automated Web-based graphical analysis and reporting functionality, including unlimited drill down capabilities.

### **2.5 Customer Support**

XFRACAS provides a complete array of resources to facilitate customer support activities for incidents reported through customer care channels.

- Customer contact information.
- Installation and system configuration details.
- History of reported incidents.

### **2.6 System Configuration Management and Part Tracking**

XFRACAS provides complete system configuration management and part tracking from the original Bill of Materials (BOM), through part repairs and replacements, to detailed failure analysis and remanufacturing of parts.

- Utility to fully define the system configuration (with or without serial numbers) using a flexible hierarchical structure.
- Part repair/replacement management and system configuration tracking for individual serialized units.
- Failure analysis reporting and processing.

### **2.7 Other Features...**

- Web-based user interfaces for easy access, collaboration and deployment for multiple sites, suppliers and dealers.
- Configurable, flexible and scalable to fit your organization's particular products and process and to grow with your needs. The system administrator can configure most aspects of the application including authorized users, failure modes lists, system configurations, responsible personnel and other system preferences.

# First Steps

# 3

## 3.1 A Note About this Training Guide

XFRACAS can be configured to meet your organization's needs and fit with your processes and workflow models. Consequently, the way you use XFRACAS will be unique to your organization. This training guide is intended to demonstrate some of the major features and capabilities of XFRACAS, but it cannot provide a comprehensive explanation of how the system may be configured for a particular organization or which features an organization will use. Screenshots in this manual show common configuration options; be aware, however, that it is possible to remove some of the elements shown here and to add elements that do not appear here. In addition, text can be customized using the XFRACAS Administrative Utility, so names of utilities, fields, reports, etc. can be different from those used in this guide (*e.g.* in your system, "incidents" might instead be called "issues" or "failures" or any other terminology appropriate for your organization).

XFRACAS is intended to be an enterprise-wide system, coordinating the incident reporting, analysis and corrective actions of multiple users. For this reason, it is recommended that you work through this training guide with one or more partners, each using a separate machine. While it is possible to perform most of these tasks on your own by simply using your own username wherever a username is called for, it is simpler and more effective if you have multiple user accounts to work with.

## 3.2 Accessing XFRACAS

Access to XFRACAS is limited to authorized users and the verification is conducted automatically. If you meet the access requirements and have configured your Web browser to automatically provide your NT Domain\UserID and password to the XFRACAS Web server, you will not be prompted to separately log in to the system. If you are prompted to enter your Windows NT Domain\UserID and password, you may need to modify your browser settings. *Optimum browser settings are presented in the next section.*

In order to gain access, the following requirements must be met:

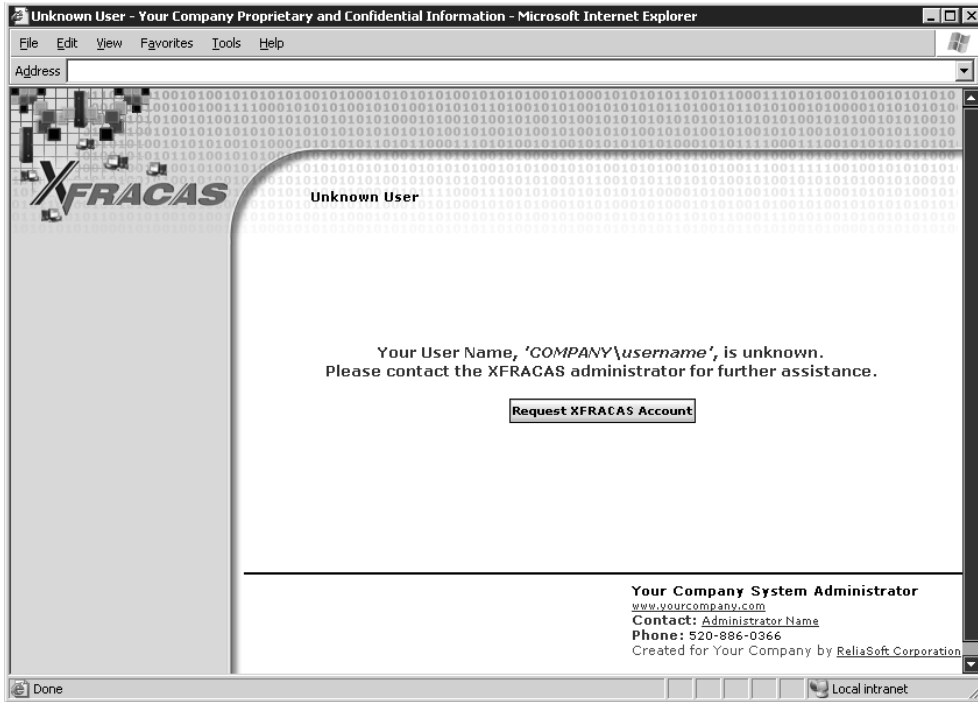
- You must obtain access to the XFRACAS Web pages located on the intranet/extranet/Internet from a computer that has been logged in to the network using a valid Domain\UserID and password.
- You must have been granted access to the XFRACAS system. This access is established by the XFRACAS system administrator. You can request access via XFRACAS (*Section 3.2.1*).

XFRACAS requires Internet Explorer 5.5 or higher. Other browsers do not currently support all of the functionality that Internet Explorer does and are not currently compatible with this web-based solution. Because this application is deployed via your Internet Explorer Web browser, the settings that you have established within your browser will impact your experience when using this application.

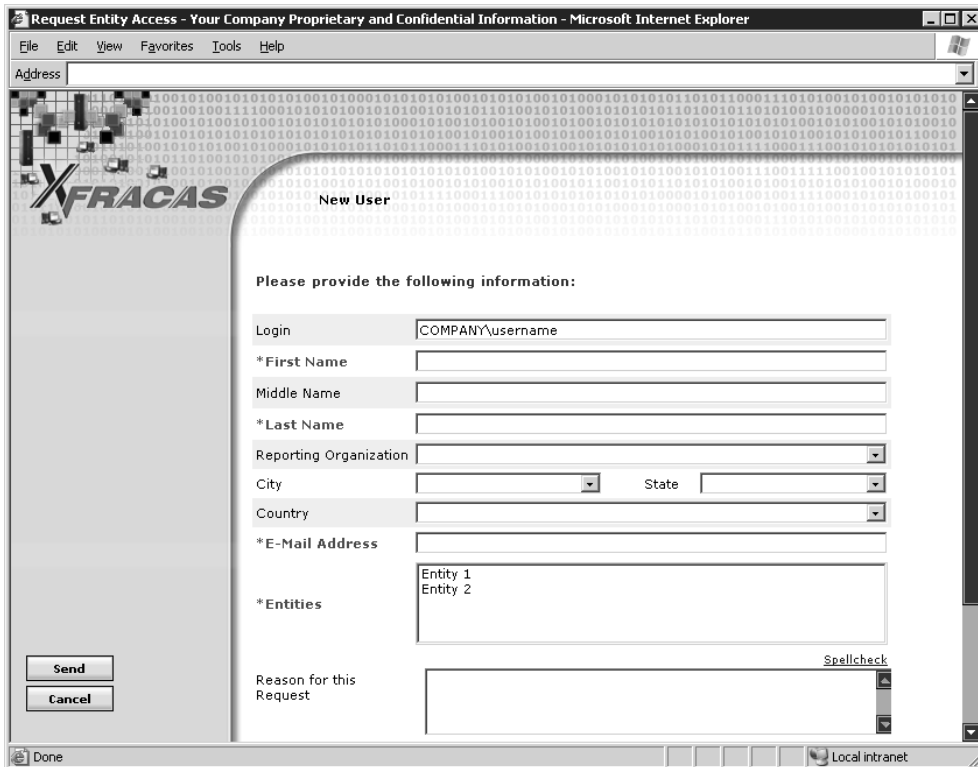
If you have configured your browser to meet the optimum browser settings and continue to have difficulty gaining access to the system, contact the XFRACAS system administrator.

### 3.2.1 Requesting Access to the XFRACAS System

When a user without permission to access the XFRACAS system attempts to open a page, the screen shown next will be displayed.



Click **Request XFRACAS Account** to open the Request Access page, as shown next.

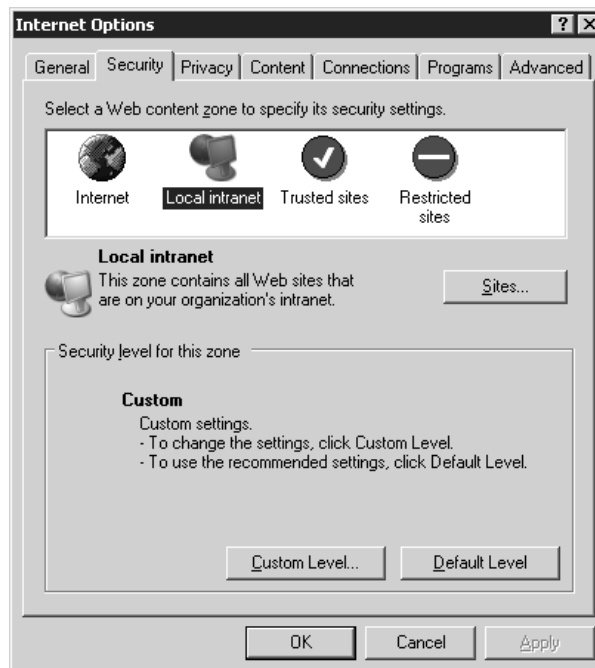


Your network login will be pre-populated by the system, and you will be able to add further information. Note that fields with names in red text and marked with an asterisk are required. To request access to multiple entities (business units), hold down the **CTRL** button and click your selections. When you click **Send**, an e-mail notice will be sent to the administrator of each entity that you request access to. In addition, you will receive a confirmation e-mail.

### 3.2.2 Optimum Browser Settings

This section presents instructions for configuring the settings in your Internet Explorer browser to allow you to use XFRACAS without encountering a number of security warnings and other message boxes. *(These instructions were prepared using Internet Explorer 6.0. If you are using another version of the browser, the appearance of the windows may vary.)* Note that your default browser settings may already be configured in a way that allows you to utilize all XFRACAS functionality without interruption. If they are not, the instructions provided here allow you to use Internet Explorer's "zone" configurations to set distinct properties for a subset of all of the Web sites you may visit with your browser without impacting the security settings for other sites.

- Open the Internet Properties window for your Internet Explorer Web browser. You can open this window by right-clicking the Internet Explorer shortcut icon on your desktop and selecting **Properties** from the shortcut menu. You can also open Internet Explorer and select **Internet Options** from the **Tools** menu.
- Click the **Security** tab to display the available security options in a page like the one shown next.

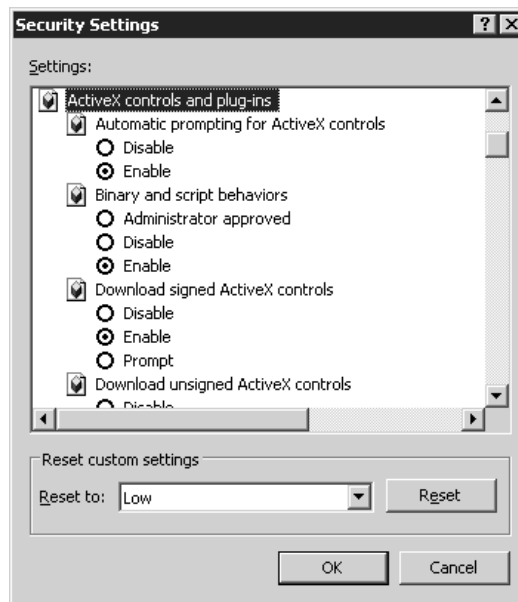


- To add the XFRACAS Web site to your Trusted Sites zone, select the **Trusted sites** Web content zone and then click **Sites...** to open a Trusted Sites window in which you can type the URL of the site(s) you would like to add to the Trusted Sites zone.
- Type the URL for the XFRACAS Web site (e.g. <http://XFRACAS.Reliasoft.com>) in the **Add this Web site to the zone** box. If SSL support has not been enabled for XFRACAS by the system administrator,

click to de-select the **Require server verification (https:) for all sites in this zone** option. The window will look like the figure shown next.



- Click **Add** to add the site to the list of Web sites displayed in the Web sites box. These are the sites that are included in the Trusted Sites zone. Click **OK** to close the window and return to the Security page of the Internet Options window.
- Now you can customize the security settings for the Web site(s) that you have included in the Trusted Sites zone. With **Trusted sites** still selected, click **Custom Level** to open a Security Settings window like the one shown next.



- In this window, you can specify whether you want to Enable, Prompt or Disable the browser to perform different functions and make other security selections. If you select **Enable**, the browser will perform the activity without prompting you. If you select **Prompt**, the browser will display a message box that allows you to indicate whether you want to perform the activity each time the activity is attempted. If you select **Disable**, the browser will not perform the activity. The following options must be set as specified below in order for XFRACAS to function properly.

- *ActiveX controls and plug-ins Options*
  - **Script ActiveX controls marked safe for scripting:** Select Enable or Prompt
  - **Run ActiveX controls and plug-ins:** Select Enable or Prompt
  - **Download signed ActiveX controls:** Select Enable or Prompt
- *Scripting Options*
  - **Active scripting:** Select Enable or Prompt
- *User Authentication Options*
  - **Logon:** Select **Automatic logon with current username and password.**

**NOTE:** If you have included one or more other sites in the Trusted Sites zone that use different usernames and passwords from those used by XFRACAS, you will not be able to use the Automatic logon with current username and password option. When this option is not selected, you will be prompted to enter your Domain\UserID and password whenever you want to access the XFRACAS Web server.

### 3.3 Getting Help in XFRACAS

ReliaSoft's XFRACAS includes complete on-line help documentation. This help can be obtained at any time by selecting **Contents** from the **Help** menu. For context-sensitive help (*i.e.* help on the current utility), select **Help** from the **Help** menu.



# Step-by-Step Examples

# 4

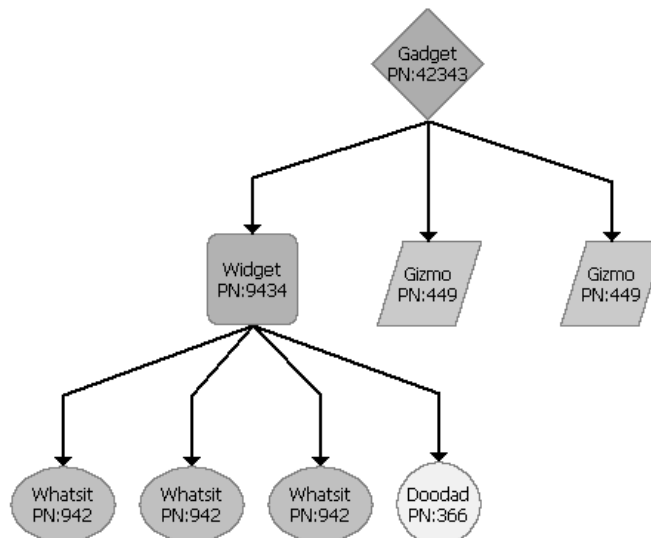
XFRACAS is designed to streamline and support the complete incident (failure) reporting, analysis and corrective action activities (“FRACAS” processes) of both large and small organizations. Due to the comprehensive nature of the process, the activities in this training guide will relate to two examples.

- Example 1 (*Section 4.1*) demonstrates the use of basic administrative functions and the process of creating and managing data in XFRACAS.
- Example 2 (*Section 4.2*) demonstrates how to use the bulk import capabilities of XFRACAS and some of the ways to extract, analyze and present data using reports and charts.

## 4.1 Example 1

This example will guide you through many of the basic steps involved in setting up an entity and in creating and managing data within that entity.

Your company, Acme Enterprises, offers a complete line of contraptions. The best selling of these is the Acme Gadget. Each Gadget (part number 42343) is made up of one widget (part number 9434) and two gizmos (part number 449). The widget consists of three whatsits (part number 942) and a doodad (part number 366).



MegaCorp Inc. purchased a Gadget via one of your distributors, Selzall. The Gadget, serial number 123456 with a build date of February 23, 2006 at 3:00 p.m., broke down on site on May 5, 2006 at 4:15 p.m., after 400 hours of operation. The breakdown was due to the failure of the gizmo with serial number gz876. MegaCorp contacted FixIt Unlimited, an authorized service provider in their area, to repair their Gadget. FixIt Unlimited replaced the failed gizmo with a new gizmo, serial number gz925, and sent the failed gizmo

back to Acme Enterprises for analysis. Upon examining the gizmo, you find that it has a deep crack near the left edge. Several gizmos have had this problem, so you're fairly certain that this is not a coincidence, but is representative of an ongoing problem.

To track and resolve this, you will need to do the following:

- Create an entity.\* (*Section 4.1.1*)
- Set system preferences for the entity.\* (*Section 4.1.2*)
- Add users to the entity.\* (*Section 4.1.3*)
- Add a detail field.\* (*Section 4.1.4*)
- Create a template & a serialized system.\* (*Section 4.1.5*)
- Assign a responsible individual for one or more parts in the template.\* (*Section 4.1.6*)
- Create a CSI. (*Section 4.1.7*)
  - Create a distributor.
  - Create a unit owner and location.
- Create a serialized incident. (*Section 4.1.8*)
  - Create/assign an incident action. (*Section 4.1.8.1*)
  - Add a status. (*Section 4.1.8.2*)
  - Replace a part. (*Section 4.1.8.3*)
- Create a failure analysis report. (*Section 4.1.9*)
- Create a PRR. (*Section 4.1.10*)
  - Create/assign a PRR action. (*Section 4.1.10.1*)
  - Modify the action. (*Section 4.1.10.2*)
  - Attach a file to the PRR. (*Section 4.1.10.3*)
  - Set up a Failure Review Board for a PRR step. (*Section 4.1.10.4*)
- Create a project. (*Section 4.1.11*)
  - Associate a PRR with the project. (*Section 4.1.11.1*)

\* Note that the starred steps are performed in the Administrative area of XFRACAS and require the user to have administrative privileges. Privileges are initially assigned when the administrator responds to the access request made in Section 3.2.1. The number of individuals with administrative privileges will depend on the decisions made by the administrator. Those without administrative privileges should observe while these steps are performed. Instructions throughout this guide are provided based on the assumption that all users have administrative privileges and that unlimited entities are permitted; some steps may need to be modified to accommodate the specifications of your XFRACAS system.

### 4.1.1 Create an Entity

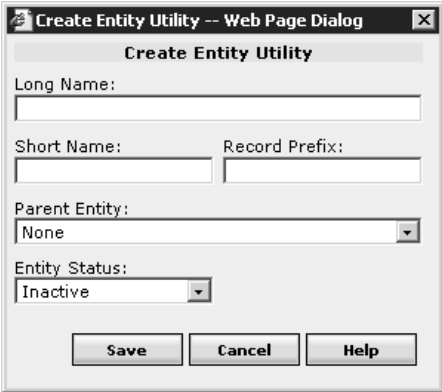
The first step is to create an entity within which all of your data will reside. An entity is essentially a complete setup of XFRACAS. Your organization may have subgroups or business units with differing needs, processes or terminologies. In such cases, each subgroup can use a separate entity within XFRACAS. Entities may have similar or even identical features and workflows, or they may be completely different. Users can have access to one or more entities, depending on the needs of the user. Typically, we recommend that multiple entities should be used when you have different data capture requirements during the incident

or PRR/CAPA phase of data collection, or you have a number of users that should access only one subset of data, while another group may need access to one or more subsets of data.

The “ACME Enterprises” entity is used for demonstration purposes throughout this example. When working through the example, however, each team of users (hereafter called “User 1” and “User 2”) should create an entity to work with. Each entity must have a unique long name, short name and record prefix. You may wish to use your own name in addition to or instead of the names shown in this guide (*e.g.* instead of calling the entity “Acme Enterprises,” you might call it “Joe User - Acme Enterprises” and use a record prefix of “JUACME-”).

*Note that if your license allows only one entity, you can change the name of the ReliaSoft Model Database entity to “Acme Enterprises” for this example, rather than creating a new entity. Be aware that all users currently working through the training guide will be attempting to perform the same actions within the same entity in this case. Working as a group will prevent conflicts.*

- *User 1:* From the XFRACAS home page, click the **Administration Home** link in the Utilities area on the left side of the page.
- Select **Entities Configuration** from the **System** menu.
- In the Utilities area of the Manage Entities utility, click **Create Entity**. The Create Entity utility will appear, as shown next.



- Enter the following information:
  - **Long Name:** Acme Enterprises
  - **Short Name:** AcmeEnt
  - **Record Prefix:** ACME-
  - **Entity Status:** Active

When you select the Active status, the Duplication settings area of the utility will be displayed. This area allows you to copy certain settings from an existing entity. Select **ReliaSoft Model Database** from the **Duplicate of Entity** drop-down list, then select **Copy Lookup Lists**, as shown next.

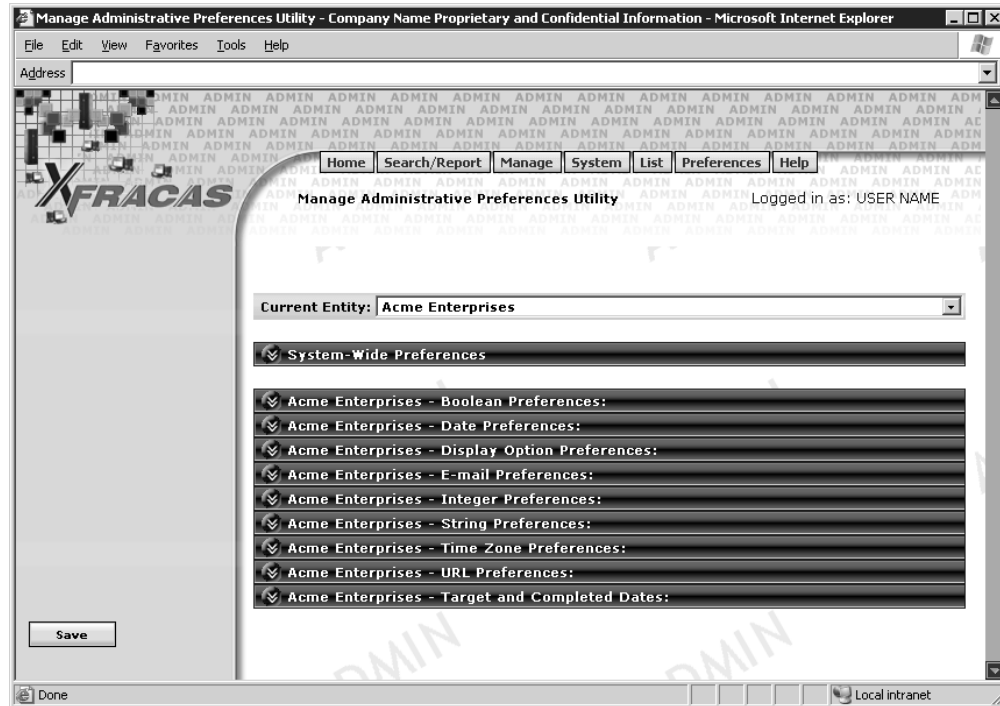
When you click **Save**, the Acme Enterprises entity will be created, including the lookup lists copied from the ReliaSoft Model Database entity. Duplication may take a few moments; you will see a status message letting you know that duplication is in progress. When the entity has been created, it will be displayed in the list of entities in the Manage Entities utility. Note that the entity count in the Utilities area has changed to reflect the presence of the new active entity.

- Select **Acme Enterprises** from the Current Entity drop-down list.

#### 4.1.2 Set System Preferences

The Manage Administrative Preferences utility allows you to maintain the system preferences that will be used to configure the XFRACAS system and each of its utilities. For example, administrative preferences determine the contact information for the system administrator that is displayed in the system home pages, whether or not notification e-mails will be sent under particular circumstances and many other features of the system.

- Select **System Preferences** from the **Preferences** menu. The Manage Administrative Preference utility will appear, as shown next.



- In the System-Wide Preferences area, make sure that your mail server (SMTP server) has been entered. If not, obtain the SMTP server and enter it, if possible. If you cannot or may not do so, be aware that the e-mail functionality mentioned throughout this guide will not work for you. You will still be able to perform the activities using minor workarounds.
- Make sure the following Boolean preferences are set as shown below. Note that these settings are appropriate for the purposes of this training guide. The settings used in your live entities may vary.
  - **E-Mail - Incident Action Creation:** True. When an incident action is created, XFRACAS will send an e-mail to the user who is responsible for the action.
  - **E-Mail - Incident Creation:** True. When an incident is created, XFRACAS will send an e-mail to the user the incident is assigned to.
  - **E-Mail - Incident Status Update:** True. When a new status report is made on an incident, you will be able to send an e-mail to the incident owner, the user who reported the incident, and/or the incident team members (if applicable).
  - **E-Mail - Incident Status Update Assigned To Checked:** False. When a new status report is made on an incident, the incident owner will not be automatically selected to receive an e-mail notification.
  - **E-Mail - Incident Status Update Reported By Checked:** False. When a new status report is made on an incident, the user who reported the incident will not be automatically selected to receive an e-mail notification.
  - **E-Mail - Incident Status Update Team Checked:** False. When a new status report is made on an incident, the incident team members will not be automatically selected to receive an e-mail notification.
  - **E-Mail - PRR Action Creation:** True. When a PRR action is created, XFRACAS will send an e-mail to the user who is responsible for the action.

- **Incident - Display Actual Criticality:** False. The Actual Criticality field will not be displayed in the Incident Disposition area of the Incident Tracking utility
- **Incident - Display Potential Criticality:** False. The Potential Criticality field will not be displayed in the Incident Disposition area of the Incident Tracking utility
- **Incident - Display Repair/Replace Parts:** True. The Repair or Replace Parts section will be displayed in the Incident Repair Information area of the Incident Tracking utility
- **Incident - Use Tree to Select Responsible Part:** True. The Responsible Part field in the Incident Tracking utility will be a link that opens a dialog with a tree view of all system templates, allowing the user to select multiple parts.
- **Project/PRR - Allow Cross Entity Association:** False. You will only be able to create associations between projects and PRRs that are within the same entity (ACME Enterprises).
- **PRR - Show Step - Measure - Develop Containment:** False. The Measure - Develop Containment step will not be displayed in the PRR Tracking utility.
- **PRR - Show Step - Analyze - Root Cause Analysis:** True. The Analyze - Root Cause Analysis step will be displayed in the PRR Tracking utility.
- **PRR - Show Step - Control - Implement Corrective Actions:** False. The Control - Implement Corrective Action step will not be displayed in the PRR Tracking utility.
- **PRR - Show Step - Recognize Team:** False. The Recognize Team step will not be displayed in the PRR Tracking utility.
- **System - Display Part Reference Designator:** True. The Part Reference Designator field will be used when adding/editing a System Template part.
- **XFRACAS - Autopopulate Associated Record Dialog:** False. Only currently assigned records will be displayed in Assign/Find dialog boxes (*e.g.* Assign PRRs to Incident utility) when the dialogs are first opened. To display all records, the user must click **Filter**
- **XFRACAS - Display Time in 24 Hour Format:** False. The system will use AM and PM for time fields.
- **XFRACAS - Display Time with Date Fields:** True. A time field will be displayed with the applicable date fields.
- Make sure the following Display Option preferences are set as shown here:
  - To display all three types of incident, with the Serial Number incident type as the default:
    - **Incident - Display Part Incident Type:** Displayed
    - **Incident - Display Serialized Incident Type:** Displayed (Default)
    - **Incident - Display Simple Incident Type:** Displayed
  - To control whether a Failure Review Board will be displayed for each step in the PRR Tracking utility:
    - **PRR - Display FRB - Measure - Describe the Problem:** Not Displayed
    - **PRR - Display FRB - Analyze - Root Cause Analysis:** Displayed
    - **PRR - Display FRB - Improve - Choose Corrective Actions:** Not Displayed
    - **PRR - Display FRB - Control - Prevent Recurrence:** Not Displayed

This will cause the Analyze - Root Cause Analysis step to display a Failure Review Board area, but not require the FRB. Note that the settings for the steps you have chosen not to display in the Boolean preferences area are not shown here, as they are unimportant.
- Click **Save** to apply the changes you have made.

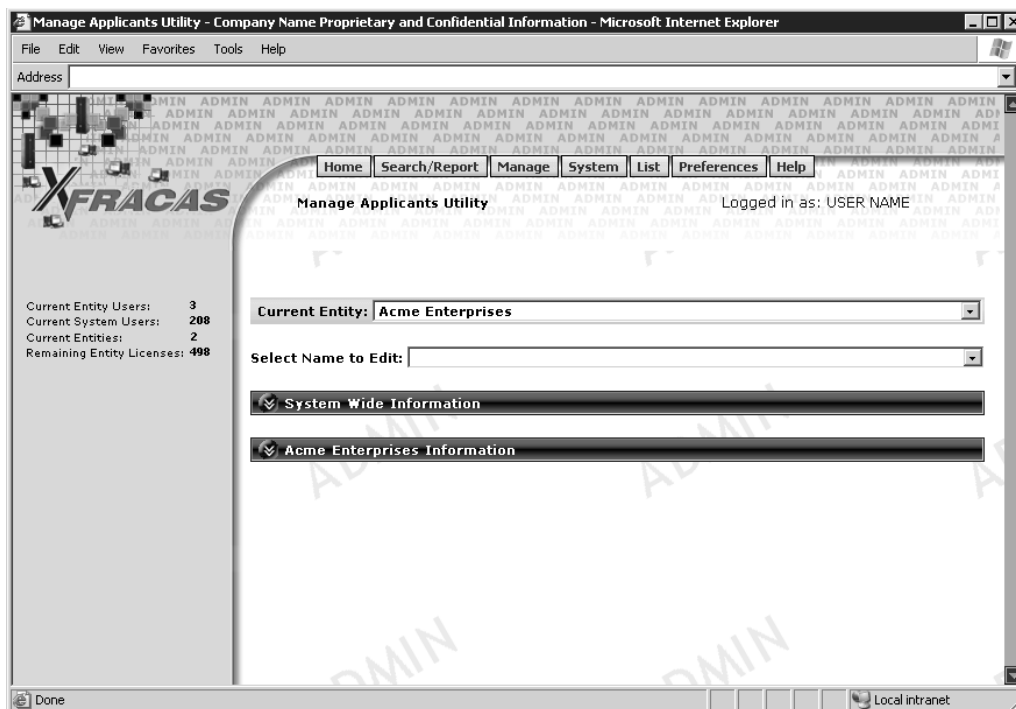
### 4.1.3 Add Users

The partner who did not create the entity (*i.e.* User 2) should now request access to the entity.

- If User 2 does not have access to the XFRACAS system at all, access to the system and to the Acme Enterprises entity should be requested via the Request Access page, as explained in Section 3.2.1 of Chapter 3.
- If User 2 has access to the XFRACAS system, access to the Acme Enterprises entity should be requested via the Request Entity Access interface. To do this:
  - Click the user name that appears in the upper right corner of the XFRACAS home page (*e.g.* Logged in as: XFRACAS Name) to open the User Information interface.
  - Click the **Request Entity Access** link to open the Request Entity Access interface. Your user information will be displayed in the corresponding fields at the top of the interface. Select the entity that you want to request to have access to in the **Entities** area. Enter the reason why you want access to the entity (*i.e.* “Training”) in the **Reason for this Request** input box. Click **Send** to send the request to the entity administrator.

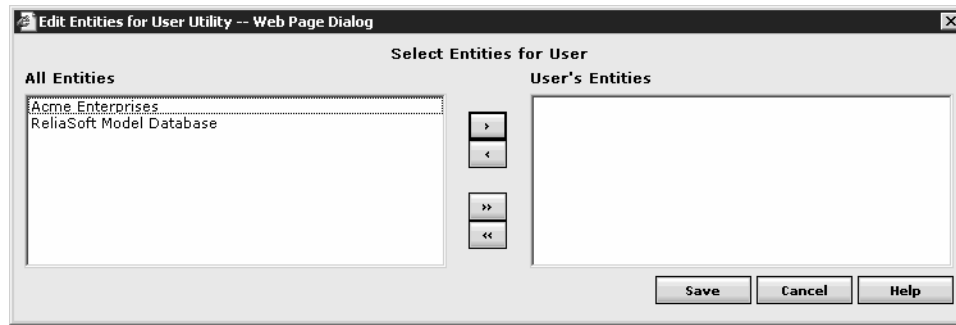
User 1, as the creator and administrator of the Acme Enterprises entity, will receive an e-mail reporting the access request.

- Click the **Applicant Information for...** link in the e-mail to open the Manage Applicants utility, as shown next.



- Select User 2’s name in the **Select Name to Edit** field.
- In the System Wide Information area, the user’s information will be displayed. If User 2 does not already exist in the system, this will be the information entered on the Request Access page.

- Click the Entities link to open the Edit Entities for User utility, as shown next.



- Select the **Acme Enterprises** entity in the All Entities area and click the > button to move the entity to the User's Entities area. Click **Save** to save your changes and close the utility. You will automatically be prompted to save the user account information when you return to the Manage Applicants utility.
- In the Entity-Specific Information area, assign all categories except Default PRR Reviewer to the user account.<sup>1</sup>
- Assign permissions to the user account. For this example entity, it is simplest to assign all permissions.
- Click **Save**.

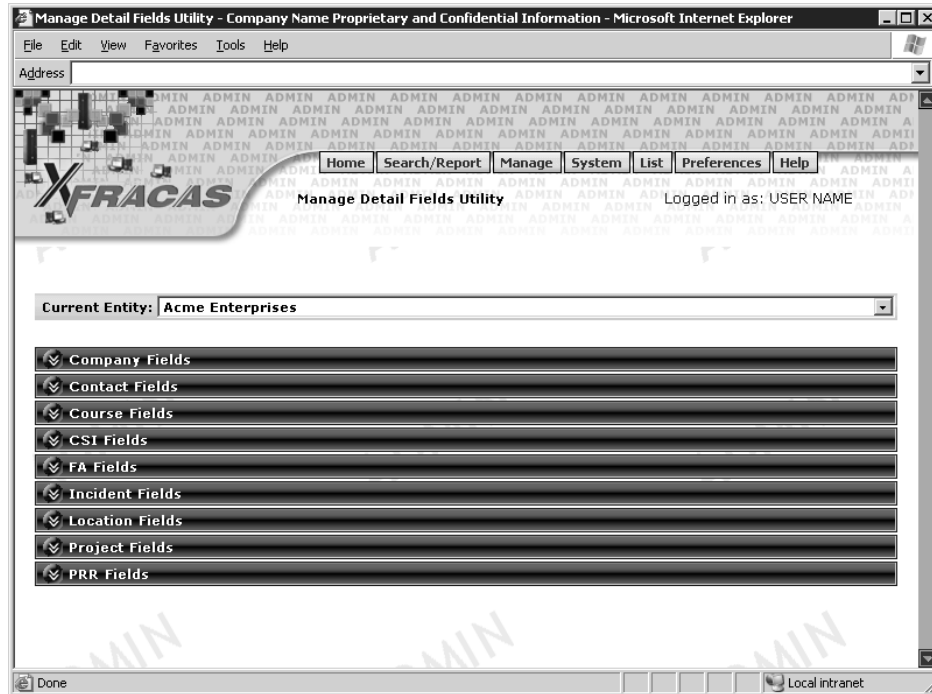
### 4.1.4 Add a Detail Field

Some of the fields in each utility are inherent in the system and cannot be removed (although they can be renamed via the XFRACAS Administrative Utility). You can, however, add fields to most utilities using the Manage Detail Fields utility. In addition, there are detail fields that are included with the system. These fields, referred to as “special detail fields,” appear with a purple asterisk (\*) and cannot be deleted from the system, although they can be retired (*i.e.* hidden) if desired.

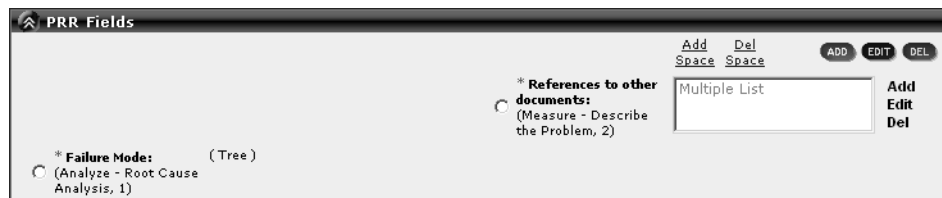
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<sup>1</sup> Note that User 1 should have the Default PRR Reviewer category assigned. To confirm this, after you have saved the changes to User 2's account, you can select **Users** then **Users** from the **Manage** menu. Confirm the settings in the Manage Users Utility and/or make any necessary changes, then click **Save**.

- Select **Detail Field Names** from the Preferences menu. The Manage Detail Fields utility will appear, as shown next.

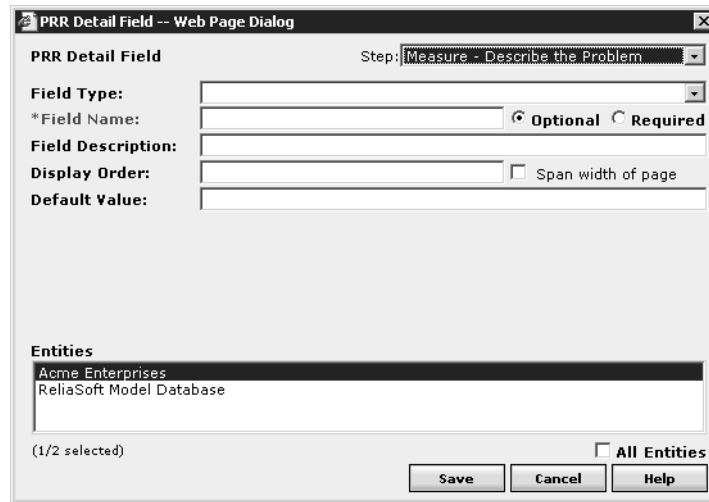


This interface displays a separate bar for each of the interfaces that you can maintain detail field names for. Click the bar to hide or display the field names for the interfaces. Below each detail field, the display order of the field will appear in parentheses. For example, (2) indicates that the detail field occupies the second detail field position. For detail fields in interfaces that have multiple areas, the area of the interface in which the field appears and the display order of the field will appear in parentheses. For example, in the figure shown here, the Failure Mode field (a special detail field, as indicated by the asterisk) is the first detail field in the Analyze - Root Cause Analysis area of the PRR Tracking Utility.

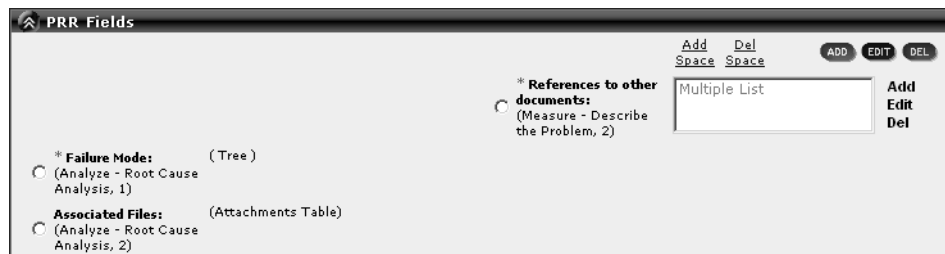


You will now add a detail field to the PRR Tracking utility. This detail field will be used in Section 4.1.10.

- In the PRR Fields area, click the **Add** button. The Detail Field utility will appear, as shown next.



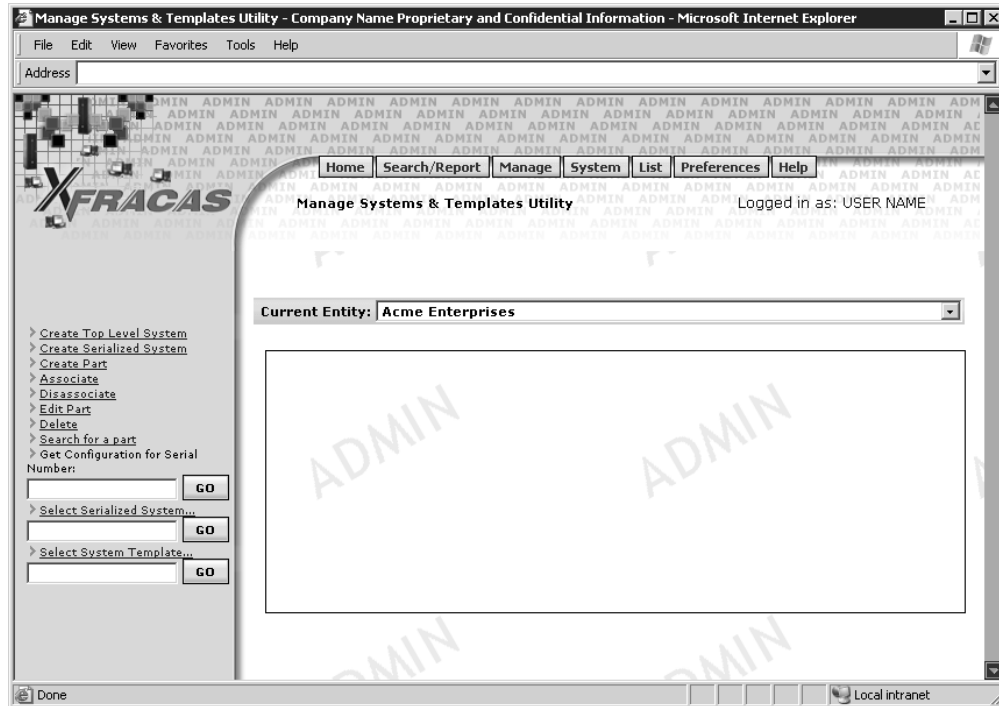
- Select **Analyze - Root Cause Analysis** in the Step field. You will notice that the steps you choose to hide in the system preferences are not displayed in this list.
- Enter the following information:
  - **Field Type: Attachments Table.** Note that your selection will change the fields in this utility.
  - **Field Name: Associated Files.** This is the name that will appear in the interface.
  - **Field Description: Files associated with the Root Cause Analysis step.** This is the tool tip that will appear when you mouse over the field.
  - **Display Order: 2**
- Select only the **Acme Enterprises** entity to add this detail field to.
- Click **Save** to save the detail field and return to the Manage Detail Fields utility. The detail field will appear in the PRR Fields area, as shown next.



### 4.1.5 Add Templates, Systems and Parts

You can use the Manage Systems & Templates utility to define the product configuration templates and to create/edit systems and parts. The first step is to define the generic system configurations, which are basic “system templates” that describe the parts that are included in all systems of a specific type or model. You can then, if needed, define serialized system configurations, which include the part numbers and serial numbers for the parts that are included in a specific serialized unit. Note that system configuration information can also be imported automatically into XFRACAS via the XFRACAS Administrative Utility. This process, demonstrated in Section 4.2.1, provides a streamlined way to define large numbers of systems and templates from an existing bill of materials.

- Select **System Configuration** from the **System** menu. The Manage Systems & Templates utility will appear, as shown next.



- In the Utilities area, click **Create Top Level System** to start creating the generic template for the Gadget. The Create Generic Part utility will appear. Enter the part number (**42343**) and description (**Gadget**) for the Gadget and use your initials as the part version. Make sure that only the **Acme Enterprises** entity is selected, as shown next.

Click **Save** to create the top level generic part.

- Right-click the Gadget in the Manage Systems & Templates utility and select **Create Part** from the shortcut menu that appears. (Note that you can also click the Gadget to select it and then click the **Create Part** link in the Utilities area.) The Create Generic Part utility that appears will look slightly different because you are now creating an associated part instead of a top level system. The part number with which this new part is associated is displayed at the top of the window. Enter the part number (**9434**) and

part description (**Widget**) for the widget and use your initials as the part version, as shown next, then click **Save**.

**Create Generic Part Utility -- Web Page Dialog**

Create Generic Part Associated with Part Number: 42343

New part number: 9434

New part version: JU

New part description: Widget

New part quantity:

New part reference designator:

Save Cancel Help

- Follow the same procedure to add a gizmo to the Gadget and a whatsit and a doodad to the widget. Note that you only need to associate one instance of each part to its parent part — when creating the serialized system, you will be able to create multiple instances, each with a separate serial number. When you have finished, the template will look like the one shown next.

Manage Systems & Templates Utility - Company Name Proprietary and Confidential Information - Microsoft Internet Explorer

Address

Home Search/Report Manage System List Preferences Help

Manage Systems & Templates Utility Logged in as: USER NAME

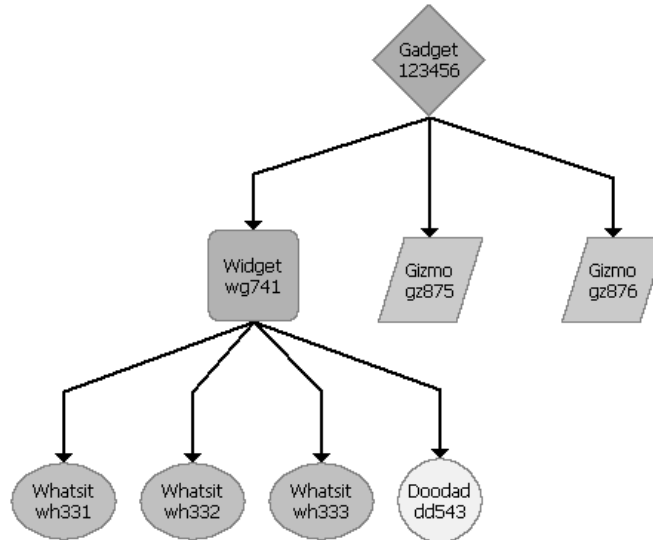
Current Entity: Acme Enterprises

System Configuration for: 42343 Gadget, ref. N/A, ver. JU  
[part number, (quantity), part description, ref., ver.]

- 42343, (1), Gadget, ref. N/A, ver. JU
- 449, (1), Gizmo, ref. N/A, ver. JU
- 9434, (1), Widget, ref. N/A, ver. JU
- 366, (1), Doodad, ref. N/A, ver. JU
- 942, (1), Whatsit, ref. N/A, ver. JU

Done Local intranet

Once the template is complete, you can create a serialized system based on it. The Gadget purchased by MegaCorp, including all serial numbers, is shown next.

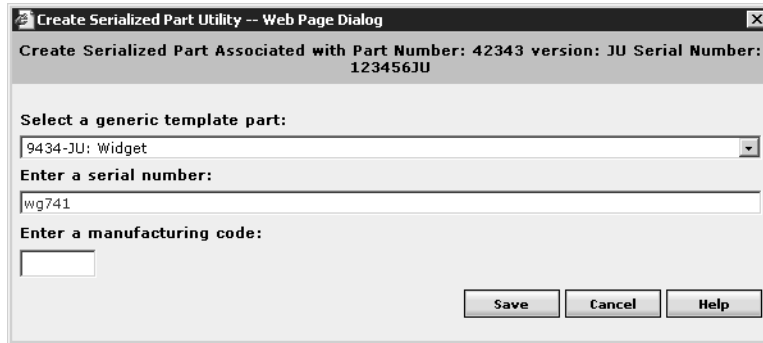


- In the Utilities area, click **Create Serialized System**. The Create Serialized Part utility will appear. Select the generic Gadget part to base the new serialized part on. (Note that this part will be pre-selected because it is the only system template in the current entity.) Enter the serial number of the Gadget purchased by MegaCorp (**123456**) and a build date of **February 23, 2006 at 3:00 p.m.**, as shown next, then click **Save** to create the serialized system.

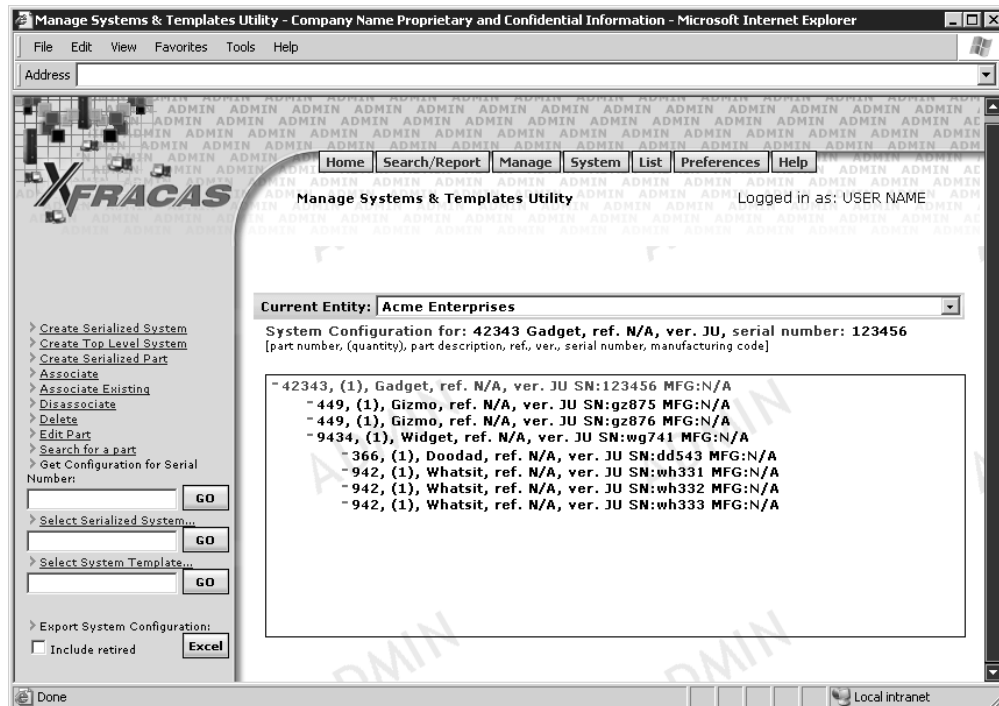
When you are returned to the Manage Systems & Templates utility, it will be in serialized mode, displaying the serialized system you have just created.

- Right-click the Gadget and select **Create Serialized Part** from the shortcut menu that appears. (Note that you can also click the Gadget to select it and then click the **Create Serialized Part** link in the Utilities area.) The Create Serialized Part utility that appears will look slightly different because you are now creating an associated part instead of a top level system. The part number with which this new part is associated is displayed at the top of the window. Select the generic widget template to base the serialized part on. You will see that you can only add either a widget or a gizmo here, because those are

the only two parts available in this position in the generic template. Enter the serial number for the widget (**wg741**), as shown next, then click **Save**.



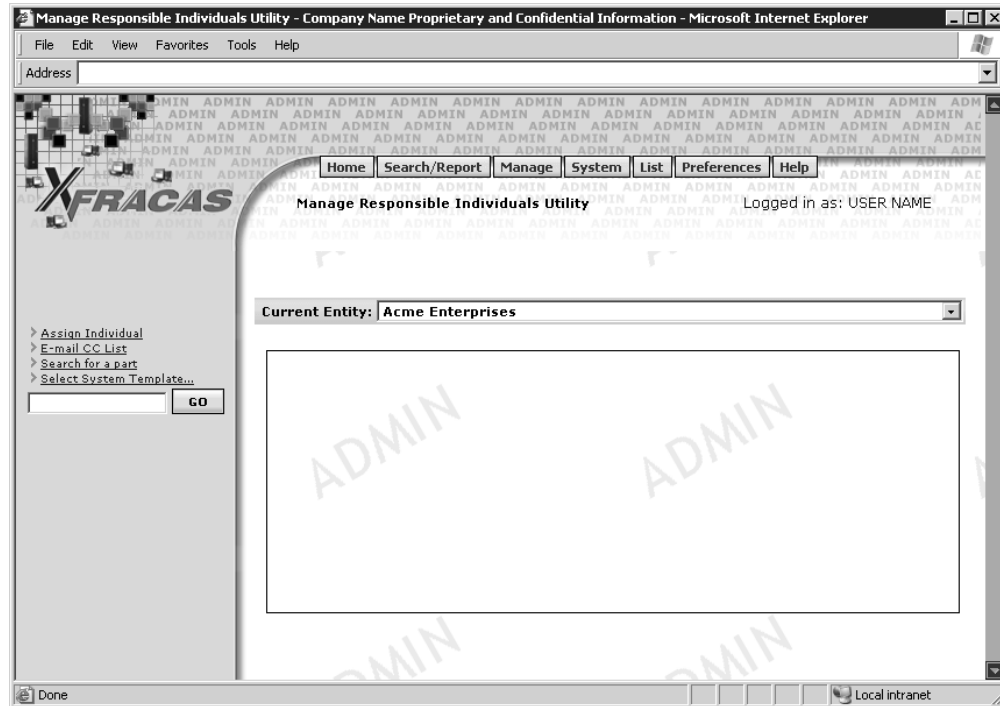
- Follow the same procedure to add the gizmos, the whatsits and the doodad. Unlike building a template, you will need to enter both gizmos and all three whatsits, because each one has a different serial number. When you have finished, the serialized system will look like the one shown next.



### 4.1.6 Assign Responsible Individuals

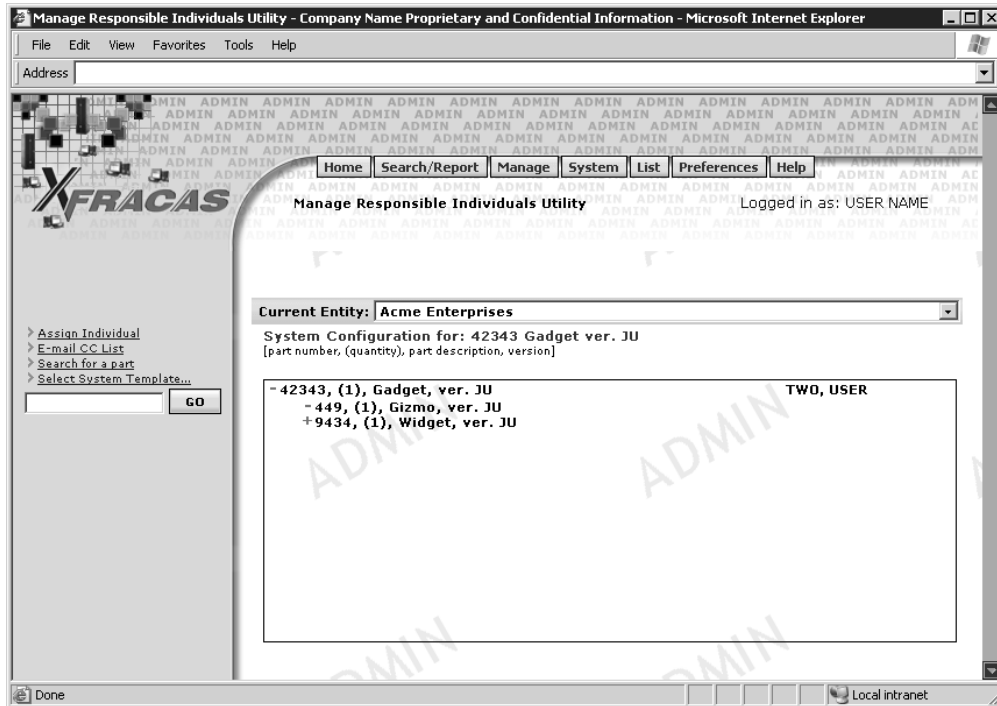
The Manage Responsible Individuals utility allows you to associate users with the parts that they are responsible for. The associations you make in this interface will determine who receives e-mail notifications from the system when an incident is created.

- Select **Responsible Individuals** from the **System** menu. The Manage Responsible Individuals utility will appear, as shown next.



- In the Utilities area, click **Select System Template**. In the System Template Search dialog that appears, select the Gadget template from the drop-down list and click **Select**. (Note that this template will be pre-selected because it is the only system template in the current entity.)
- Right-click the Gadget (top-level) part and select **Assign Individual** from the shortcut menu that appears. (Note that you can also click the Gadget to select it and then click the **Assign Individual** link in the Utilities area.) The Assign Responsible Individual utility will appear. Select User 2 to be responsible

for the Gadget part and click **Save**. You will be returned to the Manage Responsible Individuals utility, where the responsible user will be displayed beside the Gadget, as shown next.

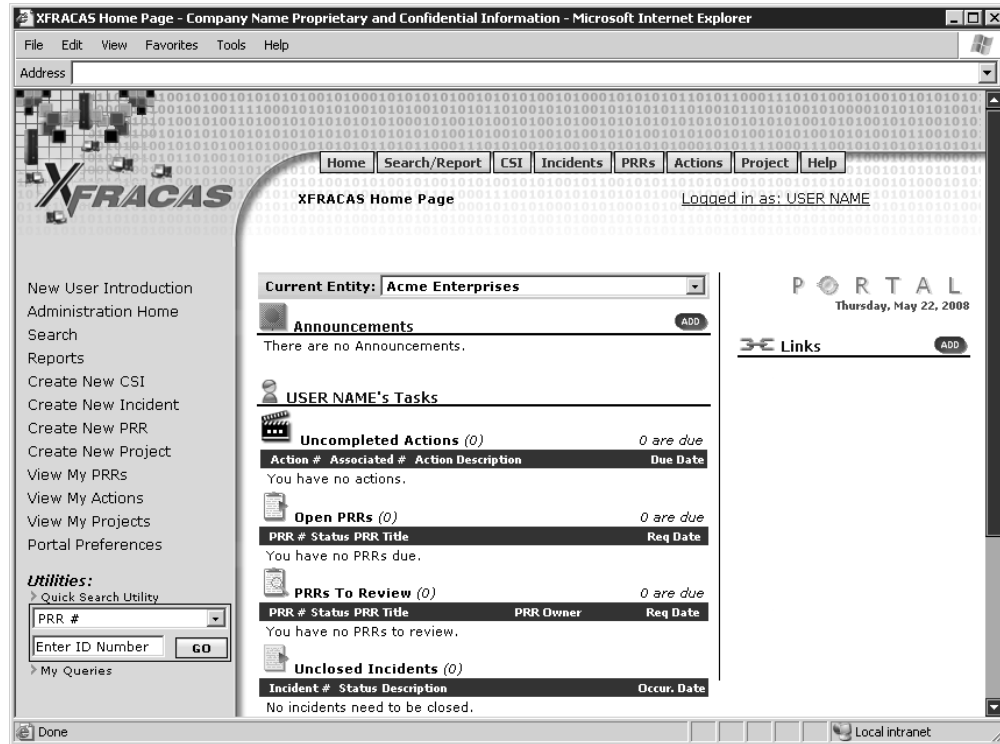


The user responsible for a part is also responsible for any children of that part not specifically assigned to another user. When XFRACAS searches for a responsible user for a part, if no user is assigned to the part in question, the system checks up the tree until it encounters a responsible user.

### 4.1.7 Create a Customer Support Information Record

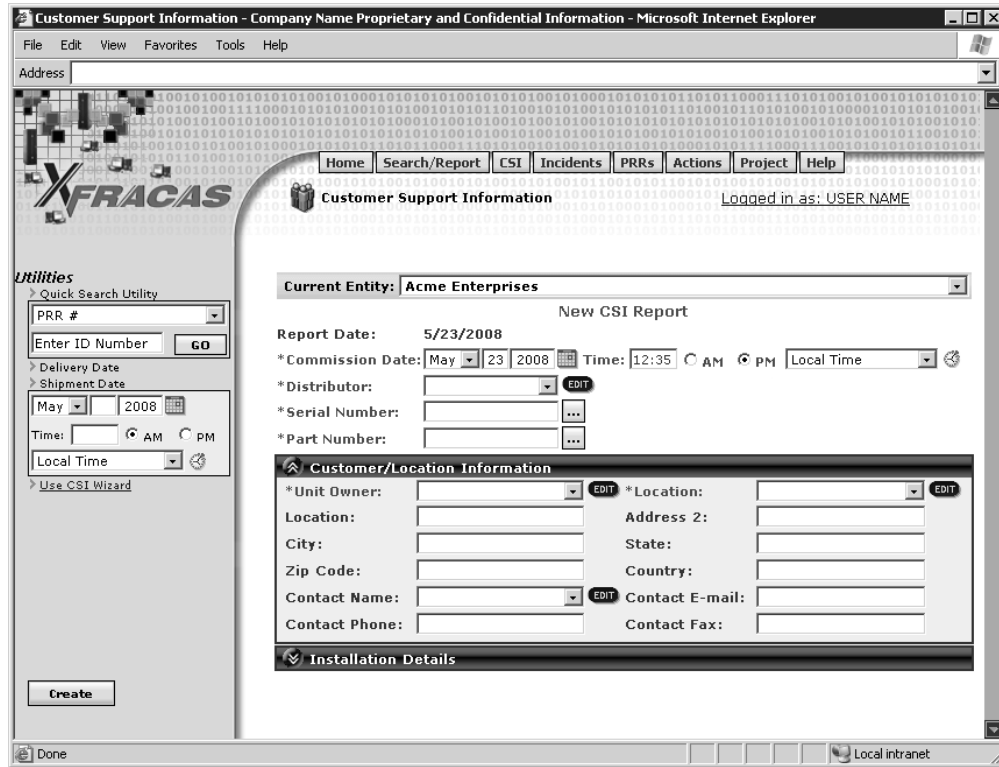
Customer Support Information (CSI) records allow you to manage information for particular serialized system units, including installation details, customer contact information and incident report history. You may find this useful if your company keeps detailed records on each serialized system and/or each customer.

- Select **XFRACAS Home** from the **Home** menu. You will be returned to the XFRACAS home page, as shown next.



Note that because you were working with the Acme Enterprises entity in the administrative interface, it will also be selected in the user interface. No data has yet been entered in this entity, so your task list will be empty.

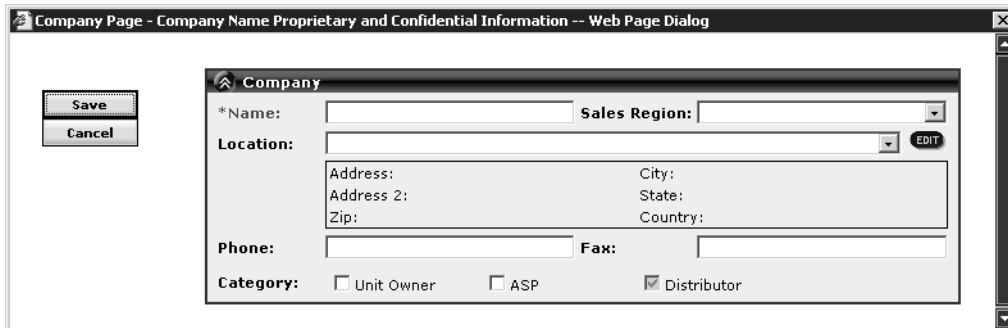
- Select **Create Customer Support** from the **CSI** menu. The Customer Support Information utility will appear, as shown next.



Items shown in red type with an asterisk (\*) are required. Note, however, that if you do not enter a commission date, XFRACAS will automatically use the build date of the serialized system.

Companies (including distributors, unit owners and authorized service providers) are not entity-specific — they are available system-wide. For this reason, there may be available distributors to choose from in the Distributor drop-down list. In this case, however, you will need to add the distributor that sold the Gadget in question.

- Select **Add a new Distributor** from the Distributor drop-down list. The Company page, which is an abbreviated version of the administrative Manage Companies utility, will appear, as shown next.



- Enter the distributor’s name, **Selzall**, and include your initials as the last two letters in the field (e.g. Selzall JU). This is the only required field in the utility. Note that the company category, distributor, is already checked. As you can see, companies can belong to multiple categories. Click **Save** to save the new distributor and return to the Customer Support Information utility.

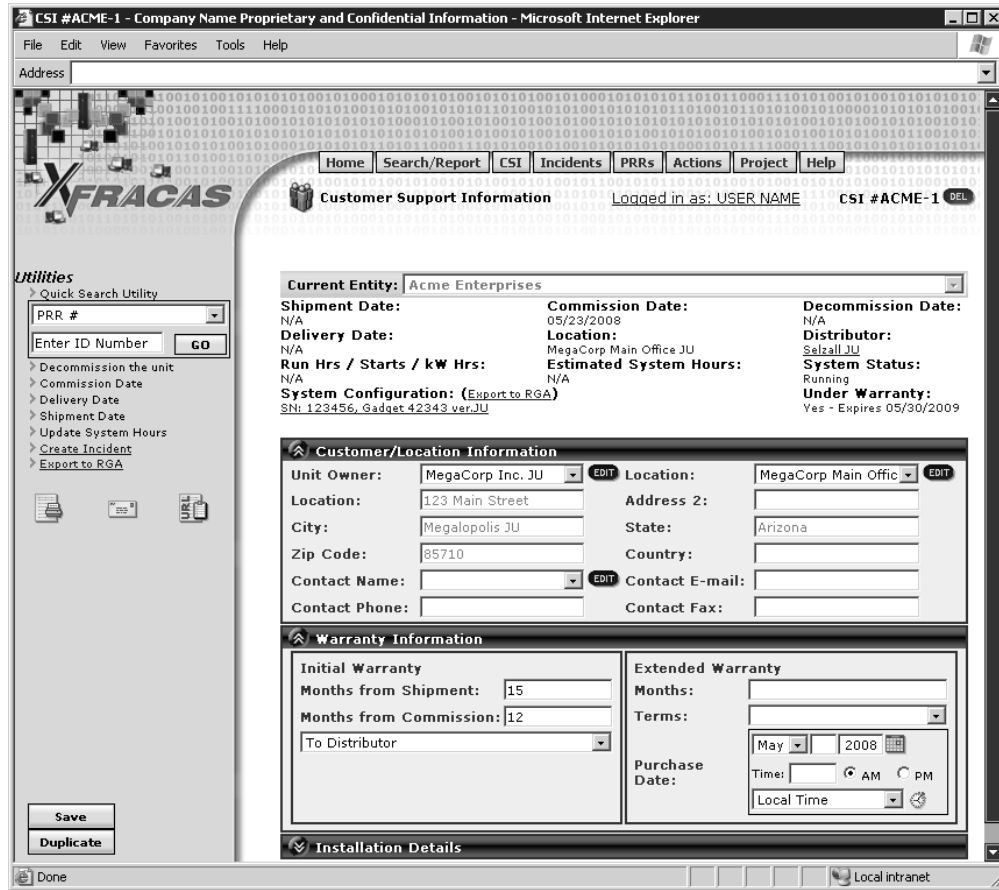
- In the Serial Number field, enter **123** and then click the Find button (...). The system will search for system serial numbers that contain the information you typed. If only one system serial number matches your input exactly, the system will automatically update the system part number. Note that there are several other ways to enter serial number and part number information. Please consult the User's Guide or on-line help for explanations of these methods.
- In the Customer/Location Information area, select **Add a new Unit Owner** from the Unit Owner drop-down list.
- In the Company Page that appears, enter the name of the unit owner (**MegaCorp Inc.**) and include your initials as the last two letters in the Name field.
- Select **Add a new Location** from the Location drop-down list in the Company page. An abbreviated version of the administrative Manage Locations utility will appear, as shown next.

The screenshot shows a web-based dialog box titled "Manage Locations Utility - Company Name Proprietary and Confidential Information -- Web Page Dialog". At the top, there is a dropdown menu for "Current Entity" which is currently set to "Acme Enterprises". Below this is a section titled "Location" with several input fields: "Company" (disabled), "Description", "Address", "Address 2", "City", "State", "Zip", and "Country". To the left of the "Location" section are two buttons: "Save" and "Cancel".

Note that the Company field is not available because you are creating a location that is associated with a particular company, MegaCorp.

- Enter a description for the location: **MegaCorp Main Office** and include your initials as the last two letters in the field. In the Address field, enter **123 Main Street**.
- Select **Add a new City** from the City drop-down list. In the Add/Edit City utility that appears, type **Megalopolis** and your initials and click **Save** to return to the Manage Locations utility, where the new city will now be selected in the City field.
- Select **Arizona** for the state and enter **85710** for the Zip code. Select **United States** for the country and click **Save** to return to the Company page. The location information you have just entered will now be displayed.
- Click **Save** to return to the Customer Support Information utility. MegaCorp will now be displayed as the Unit Owner. In the Location field, select **MegaCorp Main Office**. The location information will be displayed in the associated fields.

- In the Utilities area, click **Create** to save the new Customer Support Information record. The record will be displayed, as shown next.



#### 4.1.8 Create an Incident

The Incident Tracking utility allows you to report reliability-related incidents for the product. An incident is basically an issue that needs to be addressed. An incident could be a failure reported by a customer, an issue discovered during in-house testing, a suggestion made by a customer, engineer or manager, etc. In this case, you will be reporting the failure of the Gadget owned by MegaCorp Inc.

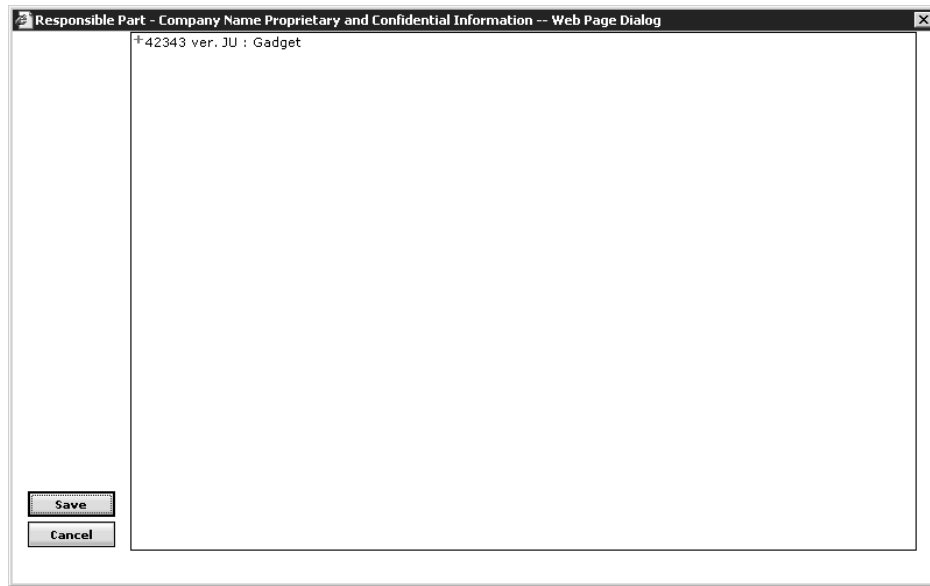
- In the Utilities area of the Customer Support Information utility, select **Create Incident**. The Incident Tracking utility will appear, as shown next.

The screenshot displays the XFRACAS Incident Tracking Utility interface. The browser window title is "New Incident Tracking Utility - Company Name Proprietary and Confidential Information - Microsoft Internet Explorer". The address bar shows "http://xfracasdocvnm/Incident.asp". The page features a navigation menu with buttons for Home, Search/Report, CSI, Incidents, PRRs, Actions, Project, and Help. The main content area is titled "Incident Tracking Utility" and shows a "New Incident Report" form. The "Current Entity" is set to "Acme Enterprises" and the "Incident Type" is "Serialized Incident". The "System/Component Information" section includes fields for Serial Number (123456), Part Number (42343), System Status (Running), System Hours (0), kW Run Hours (0), and Unit Location. The "Incident Disposition" section includes fields for Incident Title, Incident Occurrence Date (May 23, 2008), Incident Status, Report Type, Incident Category, Responsible Part, and Description of Incident. The "Incident Repair Information" section is partially visible at the bottom.

Note that the Serialized Incident incident type is pre-selected, due to the system preferences you set in Section 4.1.2, and that the serial number and part number are already populated because you created the incident directly from the associated CSI.

- Select **Running** from the System Status drop-down list, because the system has been fixed by the service provider and is now back up and running. (Note that the list of system statuses was copied to this entity when you duplicated lookup lists during the entity creation process. If you had not selected to duplicate lookup lists, you would have had to create a list of system statuses before attempting to create an incident, as System Status is a required field.)
- Enter **400** in the System Hours field, as the Gadget broke down at 400 hours of operation.
- In the Unit Location field, select the **MegaCorp Main Office** location.
- In the Incident Disposition area, enter the Incident Occurrence Date (**May 5, 2006, 4:15 p.m.**) and select the appropriate Incident Status (**Open**), Report Type (**Unplanned Field Event**) and Incident Category (**Component Failure**).

- Click the **Click to Choose Responsible Part** link. The Responsible Part dialog will open, as shown next.

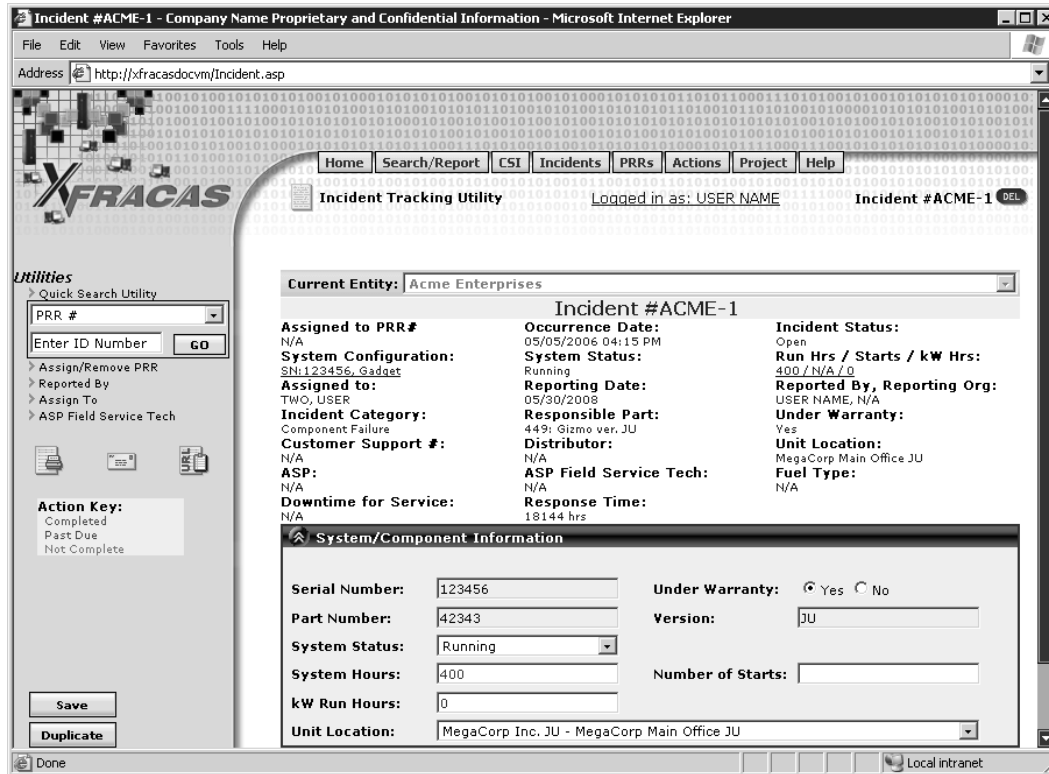


This dialog displays a tree view of all system templates, allowing you to select one or more responsible parts.

- Click the (+) to expand the tree view and select part **449: Gizmo** then click **Save**. You will return to the Incident Tracking utility, where you will see that the Responsible Part field has been populated with your choice, as shown next. Notice that XFRACAS has searched up the tree until finding a responsible individual — in this case, the one for the entire Gadget.

- Enter the following in the Description of Incident field: **Gadget failed on site due to failure of gizmo.**
- In the Utilities area, click **Create** to create the incident. When the incident is saved, an incident number (ACME-1 in the image shown next) is automatically assigned to it. This number, which is based on the prefix you specified when creating the entity, is displayed in the upper right corner of the utility and in

the browser's title bar. In addition, information that has been defined for the incident is now displayed in the Incident Summary area, as shown next.



- Make a note of your incident number, as it may vary from the one shown here.

In the Incident Summary area, you will see that the incident is assigned to the user who is responsible for the Gadget. This user should now check his/her e-mail. Based on the preferences you set in Section 4.1.2, the system will have automatically sent the responsible individual an e-mail notification when the incident was created.

Because this incident relates to the serialized system owned by MegaCorp, it will be displayed in the CSI record that you created. To see this, return to the browser window containing the CSI and press **F5** to refresh it. You will see that the information on the incident now appears in the Incident History area, as shown next.

The screenshot shows the "Incident History" section of the application. It includes a table with the following data:

Incident #	Occur Date	Status	Description
ACME-1	05/05/2006	Open	Gadget failed on site due to failure of gizmo.

- Close the browser window containing the Customer Support Information utility.

#### 4.1.8.1 Create an Incident Action

In order to fully analyze and resolve the problem, the individual responsible for an incident, PRR or project may wish to assign personnel to perform a variety of activities (actions) and follow up on the progress on those activities. An action is created directly from the record that it is associated with.

- In the Incident Disposition area of the Incident Tracking utility, click the **Create New Action Item** link. The Create Action utility will appear, as shown next.

You will notice that the entity, action type, incident number and incident owner are read-only. This is because this action is associated with the incident that you created and this association cannot be changed. In addition, the Assign to, Category and Due Date fields are pre-populated. Your name will be selected in the Assign to field. The due date is based on the Action - Default Due Date Offset by X Days preference in the Integer Preferences area of the administrative Manage System Preferences utility.

- In the Description field, type the following: **Follow up with customer.** Click **Create** to create the action. The Create Action utility will close and you will return to the Incident Tracking utility. The action will now appear in the Incident Action Items area, as shown next.

Action Number	Short Description	Due Date	Assigned to
10	Follow up with customer.	06/07/2008	NAME, USER

Note that this action will also appear in the Uncompleted Actions area of the Portal on the XFRACAS home page and, because of the system preferences you set in Section 4.1.2, the responsible user (you) will also receive an e-mail notification of the action creation.

### 4.1.8.2 Add a Status

To keep track of the progress on the incident, you can enter status information in the Incident Repair Information area of the Incident Tracking Utility.

- Click the **Add New Status** link. The Create Status utility will appear, as shown next.

You will notice that there is an E-Mail Notify field in the lower left corner. This allows you to select recipients for an e-mail notification of the new status, if desired. For this example, do not select any recipients. (Note that if the Incident - Display Team Members system preference is set to True, a checkbox will also appear for team members.)

- In the Status Description field, enter the following: **Repair performed on site by FixIt Unlimited. Waiting on customer contact for final resolution.**
- Click **Save**.

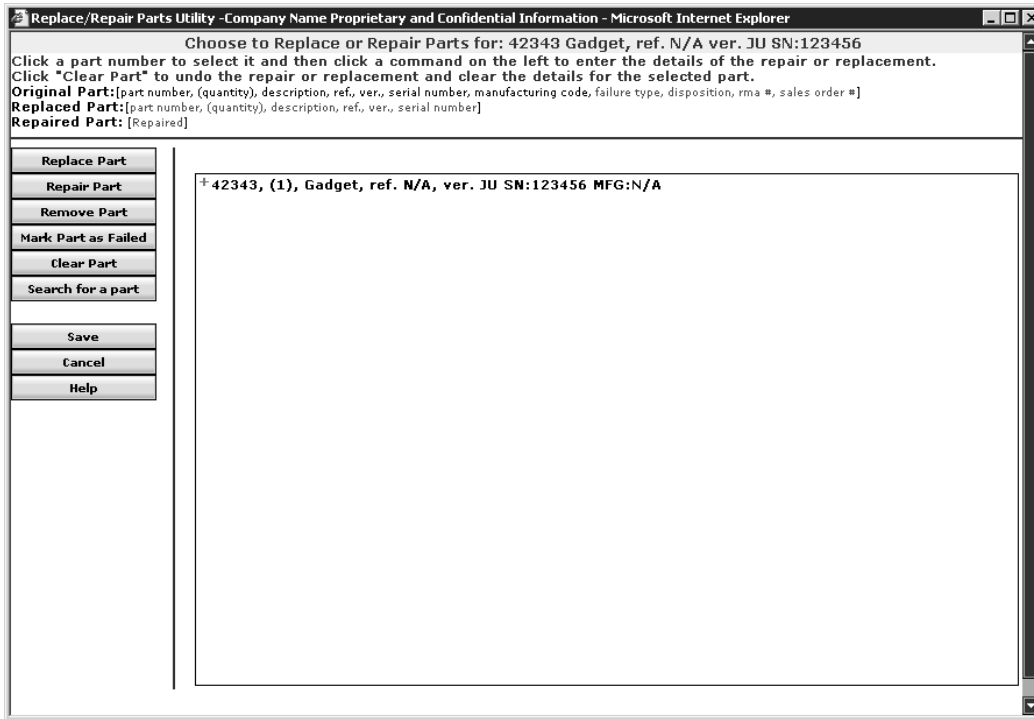
The Create Status utility will close and you will return to the Incident Tracking utility. The status will now appear in the Statuses for this Incident area.

### 4.1.8.3 Replace a Part

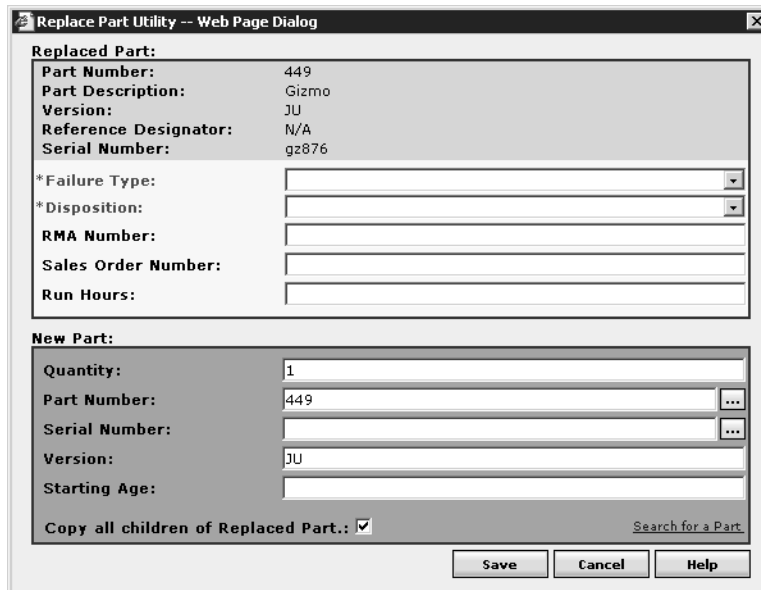
Incidents may involve the repair or replacement of one or more parts. You can keep track of each part that is repaired or replaced and update the serialized system's configuration in the Incident Repair Information area of the Incident Tracking Utility.

- Click the **Repair or Replace Parts** link. The Replace/Repair Parts utility will appear, as shown next. Note that because you are working with a serialized system, the part number, description and serial

number for the affected system unit are displayed at the top of the window and the system configuration for the unit is displayed.

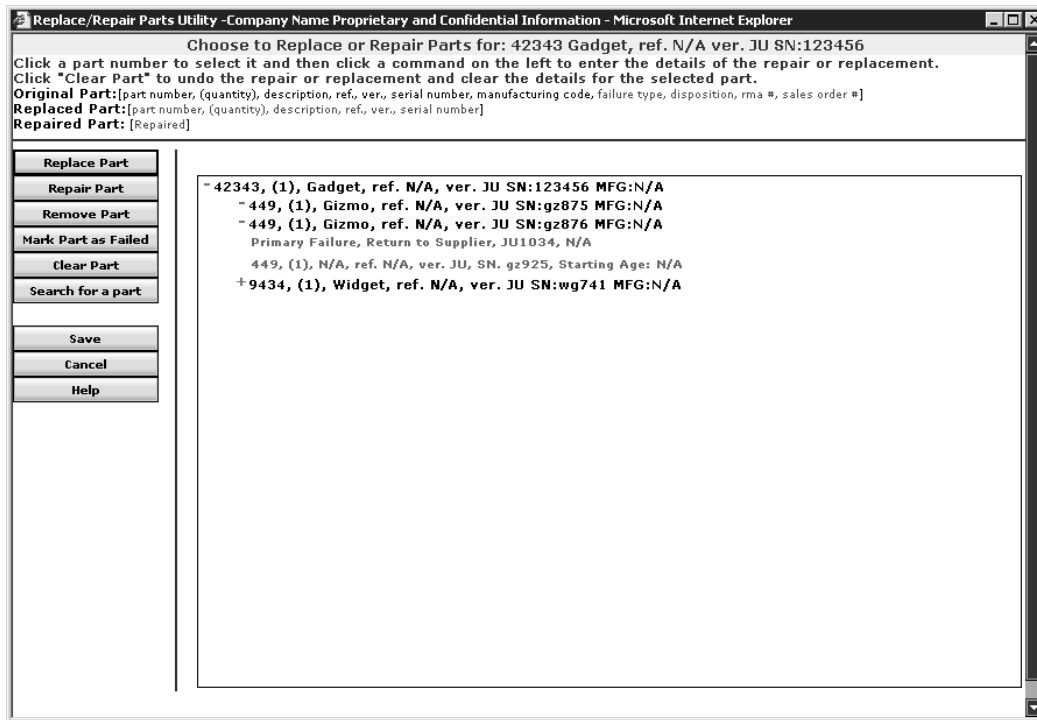


- Click the (+) to expand the tree view and select the responsible gizmo, serial number gz876. This part was replaced by the authorized service provider, FixIt Unlimited, so click the **Replace Part** button. The Replace Part utility will appear, as shown next.



- Fill out the required information about the part being replaced: select **Primary Failure** (*i.e.* the part failed and that failure was the primary cause for the system failure/incident) in the Failure Type field. Select **Return to Supplier** in the Disposition field and enter an RMA (Return Merchandise Authorization) number that consists of your initials followed by 1034 (*e.g.* **JU1034**).

- For the new (replacement) part, enter **gz925** in the Serial Number field. This will create a new serialized instance of part number 449 with serial number gz925.
- Click **Save** to save your changes and return to the Replace/Repair Parts utility. The details of the part replacement will be displayed below the replaced part, as shown next.



- Click **Save** to save your changes and return to the Incident Tracking utility. You will see a warning letting you know that you have entered a serial number that has not previously been recorded for part 449. Click **OK** to proceed with creating the new serialized part then click **Save**.

**NOTE:** The repairs/replacements you make are not final until you click **Save** in the Replace/Repair Parts utility. If you exit the utility without saving, your changes will be lost.

- Note that the repairs/replacements you make are not final until you click **Save** in the Replace/Repair Parts utility. If you exit the utility without saving, your changes will be lost.

The replacement you made will now appear in the Incident Repair Information area of the Incident Tracking Utility, as shown next.

**Incident Repair Information**

Service Response Date:   Time:   AM  PM Local Time

**Statuses for this Incident:** [Add New Status](#)

Status Date	Written by	Description
05/23/2008 03:06 PM	NAME, USER	Repair performed on site by FixIt Unlimited. Waiting on customer contact for final resolution.

**Incident Resolution:** [description criteria](#)

Incident Repair Date:   Time:   AM  PM Local Time

Repair Duration:  (1.5 = hour and a half)

Repair or Replace Parts, Add / Modify Parts

Original Part SN	Original Part Name	Orig Part #	Rev	Qty	Failure Analysis Report	Replacement Part SN	Rpl Part #	Rev
	Failure Type	Part Disposition	Hours to Failure	Starting Age				
	Return Type	RMA Number - Rcvd	SO Number					
g2876	Gizmo	449	JU	1	New	g2925	449	JU
	Primary Failure	Return to Supplier		400.00				
<input checked="" type="radio"/> DEL	N/A	JU1034 - N/A	N/A				0	

**Initial Failure Analysis:** [description criteria](#)

- Click **Save** to save your changes.

### 4.1.9 Create a Failure Analysis Report

Any time you repair or replace a part, you may wish to create a report specifying the details of your failure analysis on the part and any remanufacturing activities. Each failure analysis report is associated with a single incident, specifically with a single line item in the Repaired/Replaced Parts grid in the Incident Repair Information area of the Incident Tracking utility, and is created directly from the Repaired/Replaced Parts grid.

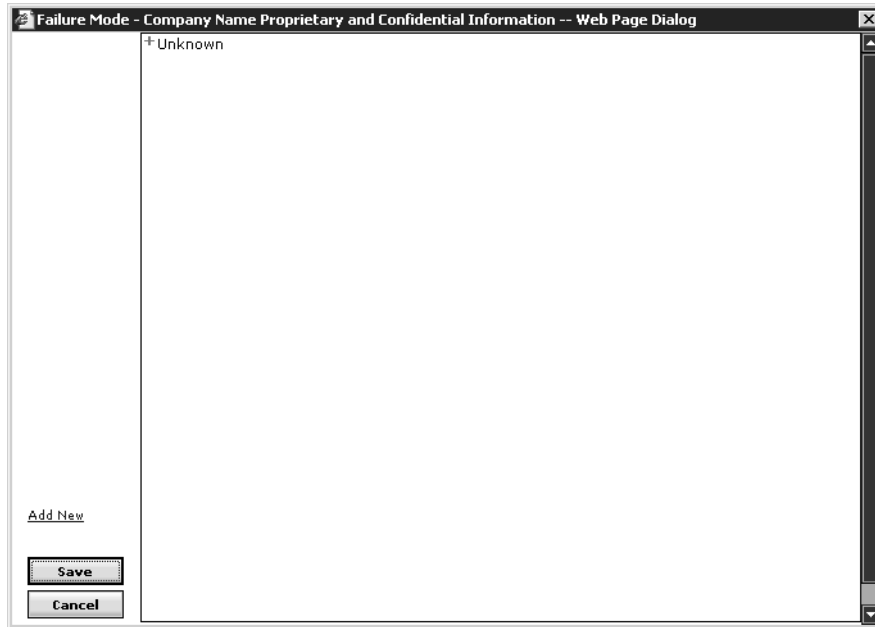
- In the Failure Analysis Report column of the Repaired/Replaced Parts grid, click the **New** link. The Failure Analysis utility will appear in a separate browser window, as shown next.

**Customer Requests Feedback:Associated PRR:**| N/A | No N/A | |
 \*Failure Type: | Primary Failure | \*FA Status: |  || \*Return Type: |  |  |  |
| \*Failure Mode (0): |  | | |

You will see that most of the information in the Failure Summary area is automatically filled out with data from the incident report.

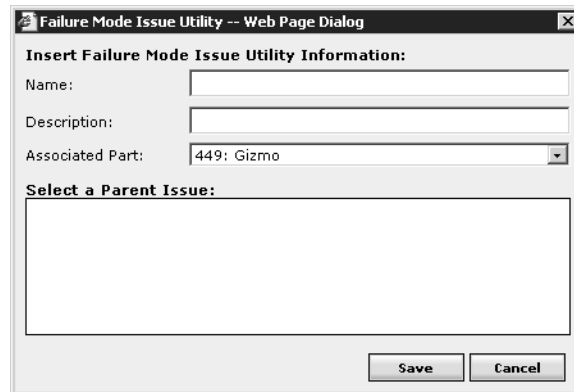
- Make the following selections:
  - **Failure Type:** Primary Failure
  - **Return Type:** Component Failure
  - **FA Status:** Open

- To specify a failure mode, click the **Add** button beside the Failure Mode field. The Failure Mode utility will appear, as shown next.



Failure modes may be associated with one or more part numbers. If a failure mode is not associated with a part number, it will appear under part number "Unknown."

- To create a failure mode associated with the gizmo, click the **Add New** link at the left side of the window. The PRR Failure Mode Issue utility will open, as shown next.

A screenshot of a web browser dialog window titled "Failure Mode Issue Utility -- Web Page Dialog". The dialog contains a section titled "Insert Failure Mode Issue Information:" with three input fields: "Name:" (empty), "Description:" (empty), and "Associated Part:" (a dropdown menu with "449: Gizmo" selected). Below this is a section titled "Select a Parent Issue:" with an empty list box. At the bottom right, there are "Save" and "Cancel" buttons.

The gizmo is preselected in the Associated Part field because that is the part associated with the current failure analysis report.

- Enter the following in the Description field: **Left side crack**

The Name field allows you to enter a name/code for the failure mode. This is used internally to indicate the failure mode's priority in relation to other failure modes. You do not need to enter anything in the Name field for this example.

- Click **Save** to save the failure mode and return to the Failure Mode utility.
- In the Failure Mode utility, click the (+) next to part number 449 to view the associated failure modes. Select the **Left side crack** failure mode that you just created and click **Save** to save your selection and

return to the Failure Analysis utility. The Failure Mode field will now display your selected failure mode, as shown next.

The screenshot shows a web form titled "Failure Analysis Information". It contains the following fields and controls:

- \*Failure Type: Primary Failure (dropdown)
- \*FA Status: Open (dropdown)
- \*Return Type: Component Failure (dropdown)
- \*Failure Mode (1): 449 -> Left side crack (text area with ADD and DEL buttons)
- Associated PRR: (dropdown)
- Report Sent to Customer:

- In the Visual Inspection area, select your name from the drop-down Technician field and click the clock icon to the right of the time field to automatically enter the current date and time. Enter notes on your visual inspection of the failed gizmo: **Gizmo has a deep crack near the left edge.**

The screenshot shows a web form titled "Visual Inspection". It contains the following fields and controls:

- Technician Name: NAME, USER (dropdown)
- Date: Jun 2 2008 (calendar icon)
- Time: 11:28 AM (clock icon)
- Local Time: (dropdown)
- Visual Inspection: (958) characters remaining (text area with description criteria link)
- Fault History: (text area with description criteria link)

- Click **Save** to create the failure analysis report. Make a note of your failure analysis report number; you will need this information in a later step.
- Close the browser window containing the failure analysis report. Return to the browser window containing the incident that you created. The information in the window was automatically updated when you created the failure analysis report. You will see that the failure analysis report number is now displayed in the Failure Analysis Report column of the Repaired/Replaced Parts grid.

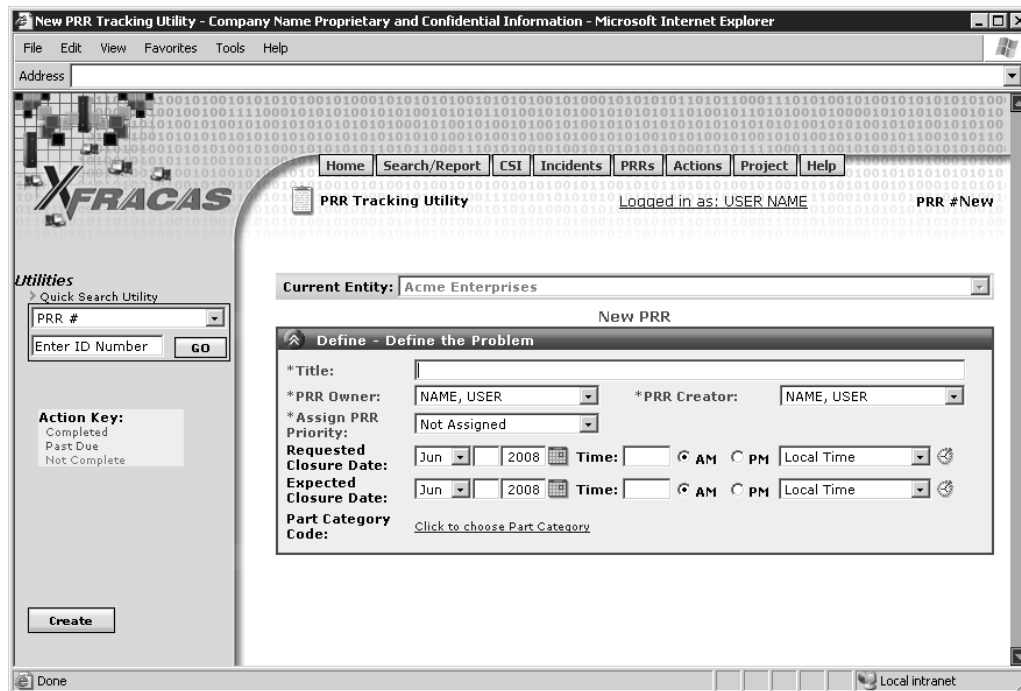
As mentioned in the original example, you are aware that several other gizmos have failed in this way. The incident reports that will be created for all of these failures can be grouped together for management by creating a Problem Resolution Report and associating the incidents with it.

#### 4.1.10 Create a PRR

A Problem Resolution Report (PRR) allows you to manage a problem by associating individual reported incidents with a single report that can be tracked and resolved. The PRR is a step-by-step process for problem resolution. XFRACAS offers support for the 8D problem management process, the Six Sigma process and other 4 to 8 step FRACAS processes such as IDOV, MDOV, etc. The number of steps involved in a PRR will depend on the model used by your organization. In this case, the system preference settings you implemented in Section 4.1.2 have hidden 3 of the 8 available steps, so your PRR will be a 5-step process.

You can create a PRR independent of any incidents and then associate incidents with it later. For this example, however, you will create the PRR directly from the incident you have been working with, which automatically creates the association.

- In the Utilities area, click the **Assign/Remove PRR** link. The utility will expand to show two possible options — you can create a new PRR to assign to the incident, or you can assign an existing PRR. For this example, click the **Create New PRR** link. The PRR Tracking utility will appear in a separate browser window with only the first step, Define - Define the Problem, displayed, as shown next. Note that the step is bordered in red — this indicates that it is the active step in the PRR.



- Enter **Gizmo - Left Side Crack** in the Title field.
- Leave your name selected in the PRR Owner field and the PRR Creator field.
- Select **High** in the Assign PRR Priority field.
- Click **Create** in the Utilities area to create the PRR. Make a note of your PRR number; you will need this information in a later step.

Once the PRR has been created, you will see that the first step is now bordered in green — this indicates that the step is complete. This does not mean that you cannot continue to edit the step. In fact, in order to assign team members for this PRR, you must do so.

- In the Define - Define the Problem step, click the **Assign/Remove Members** link. The Assign Team Members utility will appear, as shown next.

The Users area displays a list of the system users that are not on the team. The Current Team Members area displays a list of the users who are currently assigned to the team, including their roles.

- Select your own name in the Users area, then select **Team Leader** from the Team Member Role drop-down menu. Click the **Add Team Member** button to add your name to the Current Team Members area.
- Use the same steps to add your partner to the team, but select the **Team Member** role. When you have completed this step, the utility will look like the one shown next.

- Click **Save** to save your changes and return to the PRR Tracking Utility. The team members will now appear in the PRR Team Members field, as shown next.

The screenshot shows a web form titled "Define - Define the Problem". The "Title" field contains "Gizmo - Left Side Crack". The "Team Members" section contains a table with two columns: "User" and "Team Role". The first row lists "NAME, USER" as "Team Leader" and "TWO, USER" as "Team Member". Below this are fields for "PRR Owner" and "PRR Creator", both set to "NAME, USER". The "Assign PRR Priority" is set to "High". There are two "Requested Closure Date" and "Expected Closure Date" fields, both set to "Jun 2008". Each date field has a "Time" field with "AM" and "PM" radio buttons and a "Local Time" dropdown menu. At the bottom, there is a "Part Category Code" field with a link "Click to choose Part Category".

Team members are able to view the PRR, even if it is not visible to others (*i.e.* if you have set up an audience restriction), and, if they have the PRR - Team Edit permission, are able to edit it even if it is read-only for other users (*e.g.* if it is closed). In addition, you can select to send an e-mail to team members when you add a status to the PRR, as noted in Section 4.1.8.2. Note also that once you have set up a team, the E-Mail Team icon appears in the utility area.



This is a quick way to send the URL and/or printer-friendly view of the record to the record's team members and/or to any user(s) on the XFRACAS User List.

You may wish to click the title bar for the first step to hide the step, since it is complete. The second step, Measure - Describe the Problem, is now the active step and has a red border. The steps that follow are bordered in black because you have not yet reached them in the process.

Note that the Associated Incident Reports field in the Measure - Describe the Problem area shows an incident count of 1; this reflects the associated incident. The incident is listed as chargeable because you selected Component Failure for the Incident Category and Primary Failure for the Failure Type.

- In the Measure - Describe the Problem area, enter the following in the Problem Description field: **Gizmo develops a deep crack near the left edge. This deforms it and causes it to jam, causing the entire Gadget to fail.**
- Click the clock icon to the right of the Completed Date field to automatically enter the current date and time — doing this without selecting a name in the Completed By field will automatically insert your name into that field. This indicates who completed the step and when they did so. Click **Save** to save the PRR. The Measure - Describe the Problem step will now be bordered in green and the Analyze - Root Cause Analysis step, now active, will be bordered in red.
- In the Analyze - Root Cause Analysis step, add the Left side crack failure mode as described in Section 4.1.9. Note that because you created the relevant failure mode when you created the failure analysis report, it will now be available for selection, so you will not have to add it again.
- In the Root Cause Analysis field, type the following: **This problem appears to be caused by heat. Gizmo's heat tolerance may not accommodate entire range of normal operating temperatures.**

#### 4.1.10.1 Create a PRR Action

- In the Analyze - Root Cause Analysis step of the PRR Tracking utility, click the **Create New Action Item** link that appears beside the Root Cause Verification Action Items field. The Create Action utility will appear, as shown next.

- Select your partner's name in the Assign to field, and enter the following in the Description field: **Perform lab testing to determine heat tolerance. Please attach results to this PRR.**
- Click **Create** to create the action and return to the PRR Tracking utility. Save the PRR.

#### 4.1.10.2 Modify an Action

At this time, your partner should check his/her e-mail account to view the e-mail that was generated when the PRR action was created and do the following:<sup>2</sup>

- In the e-mail message, click the Action ID link. The Modify Action utility will appear, displaying the PRR action record, as shown next. (If you were unable to enter the SMTP address in the system

<sup>2</sup> If e-mail functionality is not enabled, the user that the action is assigned to can still perform this step. Select **XFRACAS Home** from the **Home** menu. On the XFRACAS home page, the action will appear in the Uncompleted Actions area. Click the Action ID link to open the Modify Action utility. This utility can also be accessed by clicking the action number when viewing the PRR in the PRR Tracking utility.

preferences, you can also access this utility by clicking the action number in the Root Cause Verification Action Items table in the PRR Tracking utility.)

**Modify PRR Action Utility - Company Name Proprietary and Confidential Information -- Web Page Dialog**

**Utilities**  
 > Delete this Action  
 > Create New Action

**Save**

**Associated PRR:** ACME-1  
**Assigned to:** USER TWO  
**PRR Owner:** USER NAME  
**Action Creator:** USER NAME

**Completed Date:** In Progress  
**Date Due:** 06/04/2008  
**Category:** Root Cause Verification

Associated PRR: ACME-1  
 Assign to: TWO, USER  
 Category: Root Cause Verification

Completed:   
 Due Date: Jun 04 2008

Description: description criteria  
 Perform lab testing to determine heat tolerance. Please attach results to this PRR.

Result:

**Statuses for this Action:** None Add New Status

- Select the **Completed** checkbox and type the following in the Result field: **Testing confirmed that the cracking is caused by overheating. Gizmo is reliable between 5 and 77 degrees C.**
- Click **Save** to save your changes to the action.
- The browser window containing the Modify Action utility will close and you will be returned to the browser window containing your PRR.

#### 4.1.10.3 Attach a File

Below the Root Cause Verification Action Items field, you will see the Associated Files field that was created in Section 4.1.4.

- Click the **Add** button in the Associated Files field. The Attachment Information utility will appear, as shown next.

**Attachment Information -- Web Page Dialog**

**Data Source Type:** XFRACAS  
**Short Description for File:**

**XFRACAS Type:**  
**XFRACAS ID:**

**Create Reciprocal Attachment**

**Save** **Cancel** **Help**

- In the Data Source Type field, select **Uploaded File**. Note that this will change the available fields in the utility.
- Type **Heat Stress Test Results for Gizmo** in the Short Description for File field.
- Click the **Browse** button beside the Associated File field. Since this example is merely demonstrating functionality, you can browse for and select any file you wish. (A copy of the file will be uploaded to either the XFRACAS database or a specified location on the server, depending on the settings in the

System-Wide Preferences area of the Manage Administrative Preferences utility.) Select a file and click **Open**.

- Click **Save** in the Attachment Information utility to create the attachment. You will return to the PRR Tracking utility, where you will see the file in the Associated Files field, as shown next.

Associated Files: <span style="float: right;">ADD EDIT DEL</span>			
Att. Type	Date	File	Description
Uploaded File	05/27/2008	Gizmo Heat Stress Test.rso7	Heat Stress Test Results for Gizmo

- In the Root Cause Verification Description field, enter: **Insufficient heat tolerance verified by lab testing.**
- In the Completed By field, select your partner's name then click the clock icon to the right of the Completed Date field to automatically enter the current date and time.

#### 4.1.10.4 Create a Failure Review Board

Because you chose in Section 4.1.2 to display the Failure Review Board (FRB) for the Analyze - Root Cause Analysis step, you can assign an FRB to review and approve the step. Because you did not choose for it to be required, the FRB field does not have to be used, but if the FRB is set up the members must sign off before the step is considered complete.

- In the FRB Approved By area, click the **Edit Reviewer List** link. The PRR Reviewer List Selection utility will appear, as shown next.

Note that you are automatically placed in the Selected Reviewers List in the D4 Reviewer role because your user account is marked as a Default PRR Reviewer and the step you are working on is step D4 in the 8D process. Your partner, who has reviewing privileges but is not marked as a default reviewer, appears in the Available Reviewers List.

- Keep the category selector in the Available Reviewers List area as D4 Reviewer.
- Select your partner's name and click the > button to move the name to the Selected Reviewers list.
- Click **Save** to save the PRR reviewer list and return to the PRR Tracking utility. The FRB members will appear in the FRB Approved By area, as shown next.

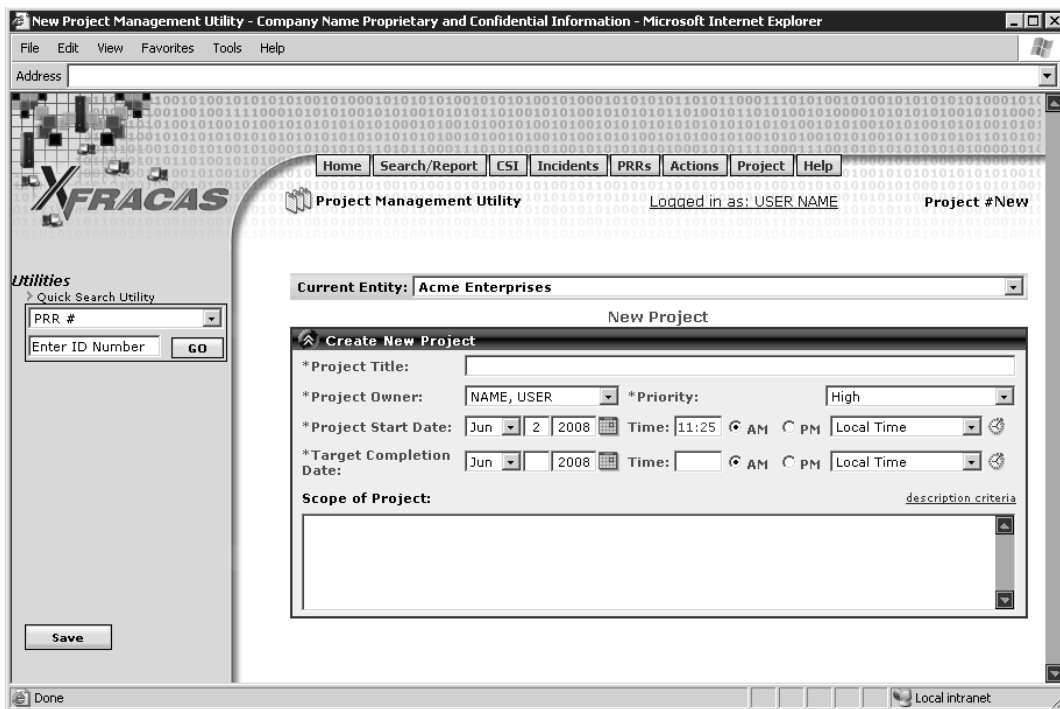
FRB Approved By:	Reviewer Name	Category	Sign-off Date
<a href="#">Edit Reviewer List</a>	NAME, USER	D4 Approver	Sign off: <input type="radio"/> Yes <input type="radio"/> No
	TWO, USER	D4 Approver	N/A

- Click **Yes** to sign off (*i.e.* approve the step as complete), then click **Save** to save the PRR. The sign-off date will appear beside your name in the PRR reviewer list. Note that your partner will need to sign in under his/her own ID and sign off, too, before the step will be considered complete and the PRR will move on to the next step.

#### 4.1.11 Create a Project

XFRACAS projects provide another level of organization. In much the same way that PRRs are used to manage related incident reports, projects can be used to manage related PRRs. You can create actions to be performed at the project level, just as you can create actions for incidents and PRRs.

- Select **Create New Project** from the **Project** menu. The Project Management utility will appear, as shown next.



- In the Project Title field, type **Training Guide Example**.
- Choose yourself or your partner as the project owner.
- In the Project Start Date field, click the clock icon to the right of the time field to automatically enter the current date and time if this information is not already present.
- Enter a Target Completion Date one week in the future.
- In Scope of Project, type **This project is intended to manage the PRRs created for the Training Guide example**.
- Click **Save** in the Utilities area to create the project.

#### 4.1.11.1 Associate a PRR with the Project

- In the Associated Data area of the Project Management utility, click the **Assign/Remove PRRs** link. The Assign PRRs to Project utility will appear, as shown next.

The list is currently empty because you set the XFRACAS - Autopopulate Associated Record Dialog preference to False in Section 4.1.2, causing the list to initially contain only currently associated PRRs.

- To display PRRs available for association, click **Filter**. All available records will appear. (If you had specified a PRR Title, PRR #, Part Category and/or PRR Status in the input boxes that appear above the corresponding columns, only the available records matching those criteria would have been displayed.) In the list of PRRs, check the box next to the PRR that you created and click **Save**. You will return to the Project Management utility, which will automatically save your changes. The PRR will now be displayed in the Associated Data area of the Project Management utility, as shown next.

Associated PRRs						
PRR	Problem Description	Owner	Status	# of IRs	Last Occurrence	Cpt. Date
ACME-1	Gizmo develops a deep crack near the left edge. This deforms it and causes it to jam, causing the entire Gadget to fail.	NAME, USER	Choose and Verify Permanent Corrective Action	1	05/05/2006	N/A

Associated Incident Reports: Open Incidents: 1, Closed Incidents: 0

Associated FA Reports: None

You can see that the incident associated with your PRR is also considered to be associated with the project, as it is now displayed in the Associated Incident Reports count. To view more details on the incident, you

can click the **Hide/Display Associated Incidents** link. This toggles the display between an incident count and the incident details, as shown next.

Associated Data						
Associated PRRs				Assign/Remove PRRs		
PRR	Problem Description	Owner	Status	# of IRs	Last Occurrence	Cpt. Date
ACME-1	Gizmo develops a deep crack near the left edge. This deforms it and causes it to jam, causing the entire Gadget to fail.	NAME, USER	Choose and Verify Permanent Corrective Action	1	05/05/2006	N/A

Associated Incident Reports						Hide/Display Associated Incidents
Incident #	Description	Assigned to	Occur Date	Status	Closed Date	
ACME-1	Gadget failed on site due to failure of gizmo.	USER TWO	05/05/2006	Open	N/A	

Associated FA Reports
None

You will notice that although the associated incident has an associated failure analysis report, that failure analysis is not currently considered to be associated with this project. This is because you must have selected the PRR in the Associated PRR field in the Failure Analysis utility in order to create an association between the failure analysis report and the PRR (and, hence, the project).

- Use the Quick Search utility in the Utilities area to open the failure analysis report. Select **Failure Analysis #** from the Quick Search drop-down menu and enter the failure analysis report number that you noted earlier (for example, the failure analysis report that was shown earlier in this example had a failure analysis report number of **ACME-1**). You can enter just the number after the prefix (e.g. 1), if desired, as XFRACAS will search for a matching record within the current entity first.<sup>3</sup> Click **GO**. The Failure Analysis utility will open in a separate browser window.
- In the Failure Analysis Information section of the Failure Analysis utility, select the PRR that you created from the Associated PRR drop-down list. Click **Save** to save the failure analysis report then close the browser window.

<sup>3</sup>. If you did not write down your failure analysis report number, you can open the failure analysis report in several other ways, including:

- ⇒ Click the incident number in the Associated Incident Reports area. The Incident Tracking Utility will open in a separate browser window. In the Repaired/Replaced Parts grid in the Incident Repair Information area, click the failure analysis report number to open it.
- ⇒ Search for the failure analysis report by selecting **My Search Page** from the **Search/Report** menu. In the Specialized Searches area of the XFRACAS Search interface that appears, select the **Query Failure Analysis (Serialized)** option. You can search using various criteria on this page. One simple way to find your failure analysis report is to enter **1034** in the RMA Number field and click **Search**. In the results, double-click the failure analysis report with the RMA number that includes your initials to open it.

- Return to the browser window containing the Project Management utility and press **F5** to refresh it. The failure analysis report now displays in the Associated FA Reports field, as shown next.

Associated Data						
<b>Associated PRRs</b> <span style="float: right;">Assign/Remove PRRs</span>						
PRR	Problem Description	Owner	Status	# of IRs	Last Occurrence	Cpt. Date
ACME-1	Gizmo develops a deep crack near the left edge. This deforms it and causes it to jam, causing the entire Gadget to fail.	NAME, USER	Choose and Verify Permanent Corrective Action	1	05/05/2006	N/A
<b>Associated Incident Reports</b> <span style="float: right;">Hide/Display Associated Incidents</span>						
Incident #	Description	Assigned to	Occur Date	Status	Closed Date	
ACME-1	Gadget failed on site due to failure of gizmo.	USER TWO	05/05/2006	Open	N/A	
<b>Associated FA Reports</b>						
PRR	FA Number	Created Date	Closed Date	RMA	Root Cause	
ACME-1	ACME-1	05/27/2008	N/A	N/A	Left side crack	

## 4.2 Example 2

This example will guide you through the steps involved in importing data in bulk via the XFRACAS Administrative Utility, rather than creating everything in the entity manually. You will then be able to explore the search and reporting capabilities of XFRACAS.

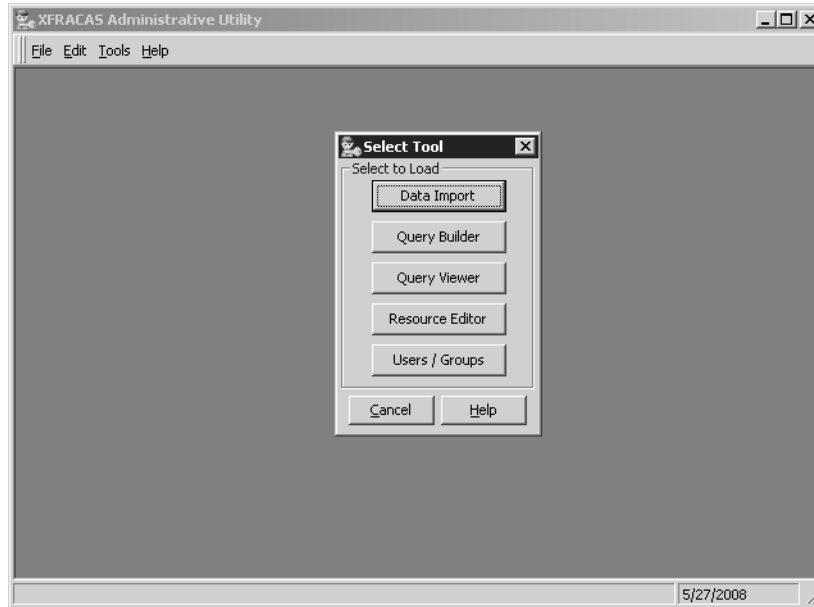
In this example, you will do the following:

- Import bulk data, including templates and serialized systems and incidents, from Microsoft Excel files. (*Section 4.2.1*)
- Run a report. (*Section 4.2.2*)
- Modify the way the report results are presented. (*Section 4.2.2.1*)
- Save the report for later re-use. (*Section 4.2.2.2*)
- Run a Dashboard report, creating a chart of data in the system. (*Section 4.2.3*)
- Use the “drill down” capability to generate a chart with a greater level of detail. (*Section 4.2.3.1*)
- Modify the chart. (*Section 4.2.3.2*)

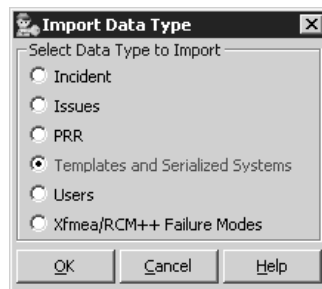
### 4.2.1 Import Data

XFRACAS allows you to import large quantities of data from Microsoft Excel spreadsheets using the XFRACAS Administrative Utility. This can greatly streamline the process of entering users, parts, incidents, PRRs, lookup list issues and/or failure modes into XFRACAS.

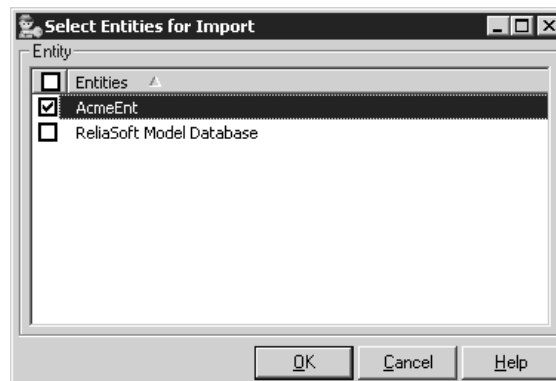
- Open the XFRACAS Administrative Utility, located in the Admin folder of the application directory (e.g. C:\Program Files\ReliaSoft\XFRACAS\Admin). The Select Utility window will appear, as shown next.



- Click **Data Import**.
- In the window that appears, select **Templates and Serialized Systems**, as shown next, then click **OK**.

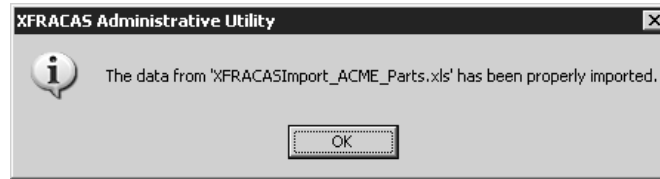


- Select the **AcmeEnt** entity to import the parts into, as shown next, then click **OK**. Note that the Short Name you specified when creating the entity is used in the Administrative Utility.



- In the window that appears, browse for the XFRACASImport\_ACME\_Parts.xls file, located in the Import folder within the Admin folder that contains the Administrative Utility (e.g. C:\Program Files\ReliaSoft\XFRACAS\Admin\Import), and then select it and click **Open**.

A progress indicator will appear in the status bar at the bottom of the Administrative Utility. Once all of the parts have been imported, you will see a message stating that the import was successful, as shown next.



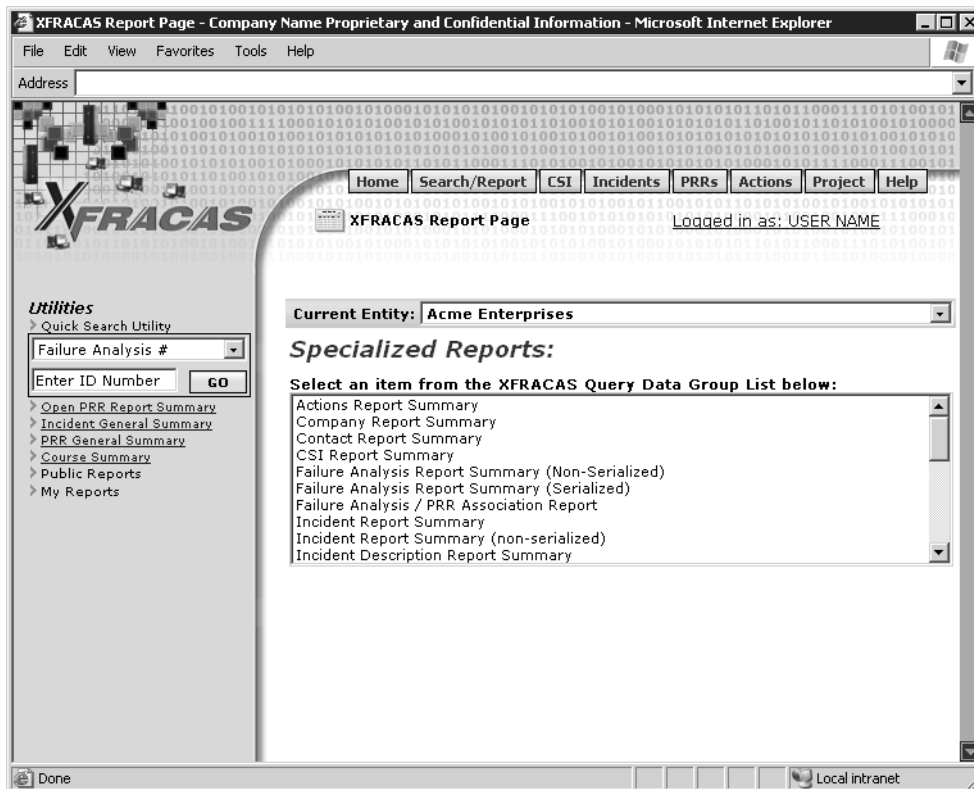
When you click **OK**, you will return to the main window of the Administrative Utility, with no utilities open.

- Select **Data Import** from the **Tools** menu to re-open the Data Import utility. In the window that appears, select **Incident** and then click **OK**.
- Using the same steps as above, import incidents into the AcmeEnt entity from the XFRACASImport\_ACME\_Incident.xls file.

## 4.2.2 Run a Report

You have now imported enough data to explore the reporting capabilities of XFRACAS.

- Close the Administrative Utility and return to any XFRACAS interface.
- Select **My Report Page** from the **Search/Report** menu. The Report page will appear, as shown next.



- In the Specialized Reports area, select **Incident Report Summary**. The search criteria that you can use to limit the records included in the report will appear.

## 4 Step-by-Step Examples

- For this example, you will include only the incidents that you imported, not the incident that you created in the first example. In the PRR Status field (the fourth field down in the right column), select **Unassigned**.
- Click **Report** to run the report. The results will appear in a separate browser window, as shown next.

Incident Number	Serial Number	Occurrence Date	Incident Status	Responsible Part	Incident Category	Author	ASP Field Tech	PRR Number	PRR Title	PRR Owner
ACME-7	SN A.1: Component A.1	04/04/2012	Open	A.1: Component A.1	Preventative Maintenance	System Admin	N/A	N/A	N/A	N/A
ACME-8	SN A.1: Component A.1	04/04/2013	Open	A.1: Component A.1	Production Error	System Admin	N/A	N/A	N/A	N/A
ACME-9	SN A.1: Component A.1	04/04/2014	Open	A.1: Component A.1	Component Failure	System Admin	N/A	N/A	N/A	N/A
ACME-5	SN A.3.1.1: Sub-Component A.3.1.1	04/04/2010	Closed	A.3.1.1: Sub-Component A.3.1.1	Component Failure	System Admin	N/A	N/A	N/A	N/A
ACME-2	SN A.4: Sub-System A.4	04/04/2007	Open	A.4: Sub-System A.4	Unknown	System Admin	N/A	N/A	N/A	N/A
ACME-6	SN A.4: Sub-System A.4	04/04/2011	Open	A.4.1: Component A.4.1	Component Failure	System Admin	N/A	N/A	N/A	N/A
ACME-1(2)	SN A: System A	04/04/2006	Open	A.3: Sub-System A.3	Component Failure	System Admin	N/A	N/A	N/A	N/A
ACME-3	SN B.1.1: Component B.1.1	04/04/2008	Under Review	B.1.1: Component B.1.1	Unknown	System Admin	N/A	N/A	N/A	N/A
ACME-10	SN B.1.2: Component B.1.2	04/04/2015	Open	B.1.2: Component B.1.2	Customer Complaint	System Admin	N/A	N/A	N/A	N/A
ACME-11	SN B.1.2: Component B.1.2	04/04/2016	Closed	B.1.2: Component B.1.2	Customer Complaint	System Admin	N/A	N/A	N/A	N/A
ACME-12	SN B.1.2: Component B.1.2	04/04/2017	Closed	B.1.2: Component B.1.2	Unknown	System Admin	N/A	N/A	N/A	N/A
ACME-4	SN C: System C	04/04/2009	Closed - Insufficient Data	C.2.1: Component C.2.1	Production Error	System Admin	N/A	N/A	N/A	N/A

You can see that there is an incident with ID ACME-1 in the imported data. Because an incident with that ID already exists, the imported incident is shown as ACME-1(2). In actual use of XFRACAS, it is best to ensure that imported items do not duplicate existing IDs, simply because such records cannot be found via the Quick Search utility (demonstrated in Section 4.1.11.1).

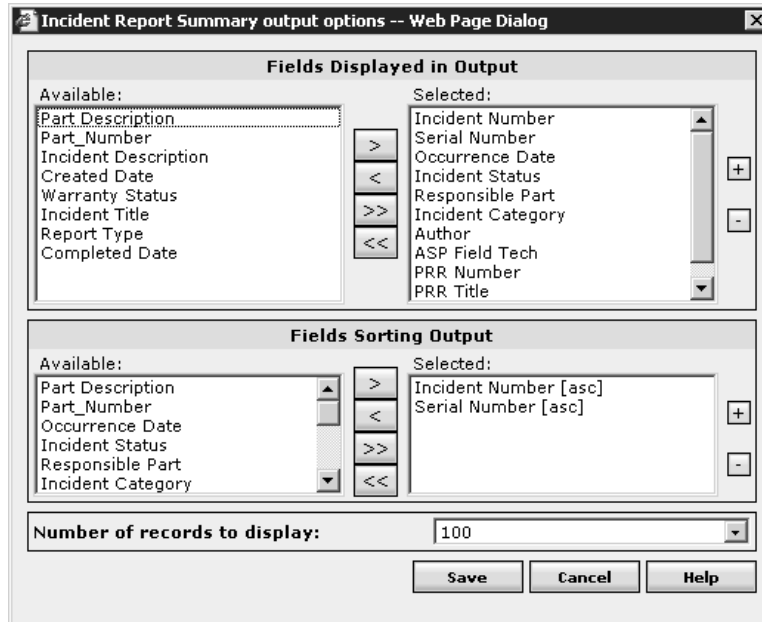
Please note that because the imported incidents used the administrative username inherent in the system for their author, the name displayed in the Author column of your results will vary. You will also see that the last four columns in this report are all populated with N/A because this information does not exist for the imported incidents. In the next section, you will see how to configure the report so that these columns are not shown.

- Click the column header of the Incident Number column to sort the report by incident number. A white arrow will be displayed in the header to indicate that the results are sorted by that column and the direction of the sort. Clicking the column header again reverses the sort direction.

### 4.2.2.1 Change the Output Options

- Return to the browser window containing the Reports page. (You can close the current report results or you can leave the window open to compare the results with the next results you will generate, if desired.) You will see that your search criteria selections are still in place.

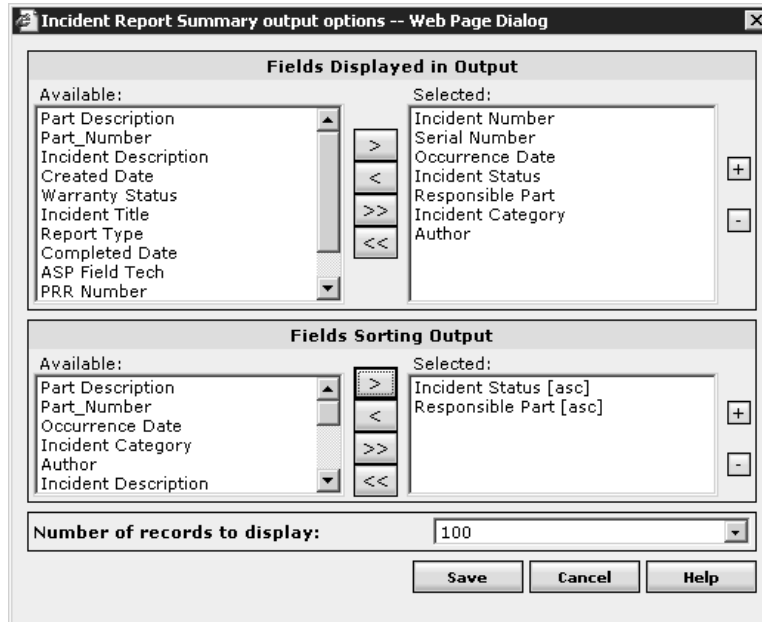
- Click the **Output** button at the bottom of the page. The Output Options window will appear, as shown next.



This window allows you to specify the columns you want displayed in the report results and how you want the columns to be sorted.

- In the Fields Displayed in Output section, select **ASP Field Tech** and click the < button. The ASP Field Tech field will be moved from the Selected list to the Available list, and will not be displayed the next time you generate the report.
- Repeat this step for the **PRR Number**, **PRR Title** and **PRR Owner** fields.

- In the Fields Sorting Output section, click the << button to remove all fields from the Selected list. Use the > button to move the **Incident Status** and **Responsible Part** fields from the Available list to the Selected list. The window will look like the one shown next.



- Click **Save**. The Output Options window will close and you will return to the Report page. The settings you have created are saved under your username and will be applied each time you run the Incident Report Summary.

- Click **Report** to run the report. The results will appear in a separate browser window, as shown next.

Incident Report Summary

Current Entity: Acme Enterprises

Results based on the following qualifier(s):

- PRR Status: Unassigned
- Entities: Acme Enterprises
- Number of records to display: 100

12 match(es) found

Report Generated: 05/29/2008 11:59 AM

Incident Number	Serial Number	Occurrence Date	Incident Status	Responsible Part	Incident Category	Author
ACME-5	SN A.3.1.1: Sub-Component A.3.1.1	04/04/2010	Closed	A.3.1.1: Sub-Component A.3.1.1	Component Failure	System Admin
ACME-12	SN B.1.2: Component B.1.2	04/04/2017	Closed	B.1.2: Component B.1.2	Unknown	System Admin
ACME-11	SN B.1.2: Component B.1.2	04/04/2016	Closed	B.1.2: Component B.1.2	Customer Complaint	System Admin
ACME-4	SN C: System C	04/04/2009	Closed - Insufficient Data	C.2.1: Component C.2.1	Production Error	System Admin
ACME-9	SN A.1: Component A.1	04/04/2014	Open	A.1: Component A.1	Component Failure	System Admin
ACME-8	SN A.1: Component A.1	04/04/2013	Open	A.1: Component A.1	Production Error	System Admin
ACME-7	SN A.1: Component A.1	04/04/2012	Open	A.1: Component A.1	Preventative Maintenance	System Admin
ACME-1(2)	SN A: System A	04/04/2006	Open	A.3: Sub-System A.3	Component Failure	System Admin
ACME-6	SN A.4: Sub-System A.4	04/04/2011	Open	A.4.1: Component A.4.1	Component Failure	System Admin
ACME-2	SN A.4: Sub-System A.4	04/04/2007	Open	A.4: Sub-System A.4	Unknown	System Admin
ACME-10	SN B.1.2: Component B.1.2	04/04/2015	Open	B.1.2: Component B.1.2	Customer Complaint	System Admin
ACME-3	SN B.1.1: Component B.1.1	04/04/2008	Under Review	B.1.1: Component B.1.1	Unknown	System Admin

Note that the sort order is indicated by colored arrows in the column headers. The first column used for sorting, Incident Status, is marked with a red arrow and the second column used for sorting, Responsible Part, is marked with an orange arrow. In addition, the ASP Field Tech, PRR Number, PRR Title and PRR Owner columns are not displayed.

#### 4.2.2.2 Save the Report for Later Re-Use

- Close the report results and return to the browser window containing the Reports page.
- Click the **Save** button at the bottom of the page. The Query Name utility will appear, as shown next.

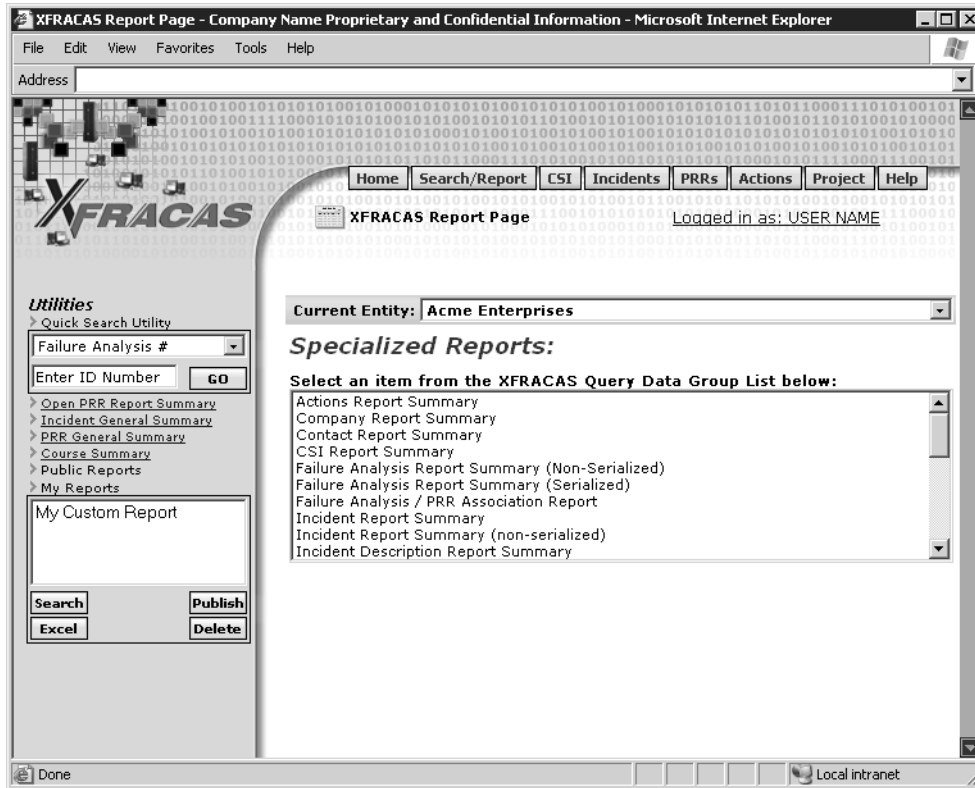
Query Name -- Web Page Dialog

Enter a name for your new query:

Save Cancel Help

- Enter the name **My Custom Report** and click **Save**. The Query Name utility will close and you will return to the Report page.

- In the Utilities area on the left side of the interface, click **My Reports**. The My Reports utility will expand, showing any saved custom reports, as shown next.

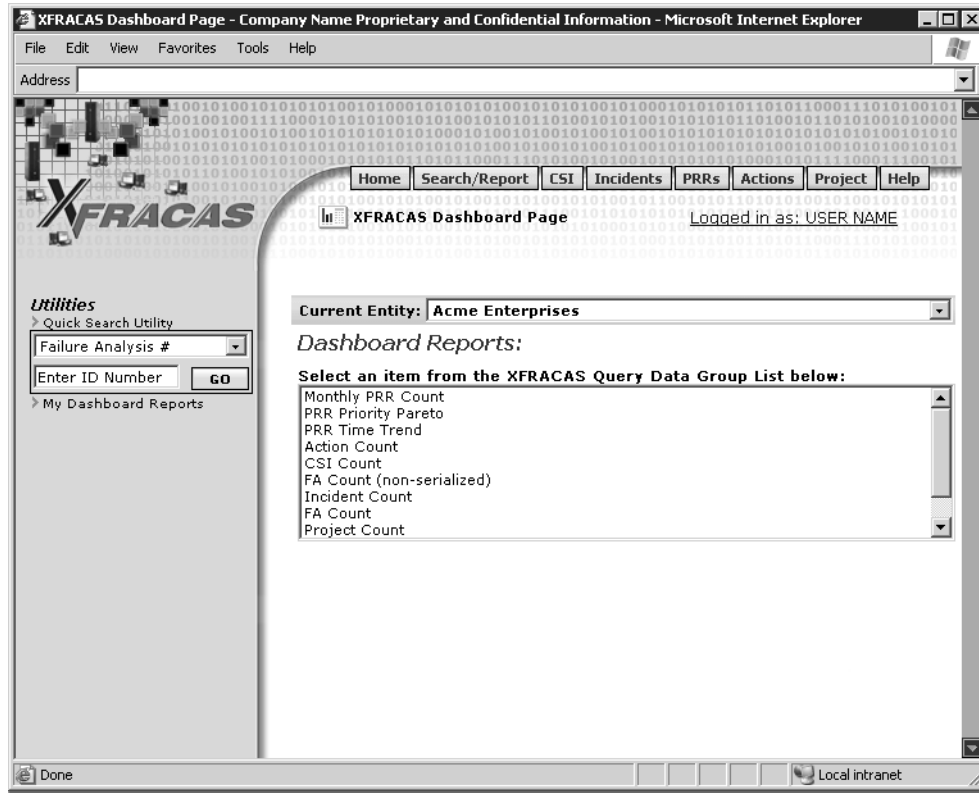


Your custom report is now available for future use in the Acme Enterprises entity.

### 4.2.3 Create a Chart

The XFRACAS Dashboard page is similar to the XFRACAS Report and Search interfaces and allows you to generate charts of the data in the system

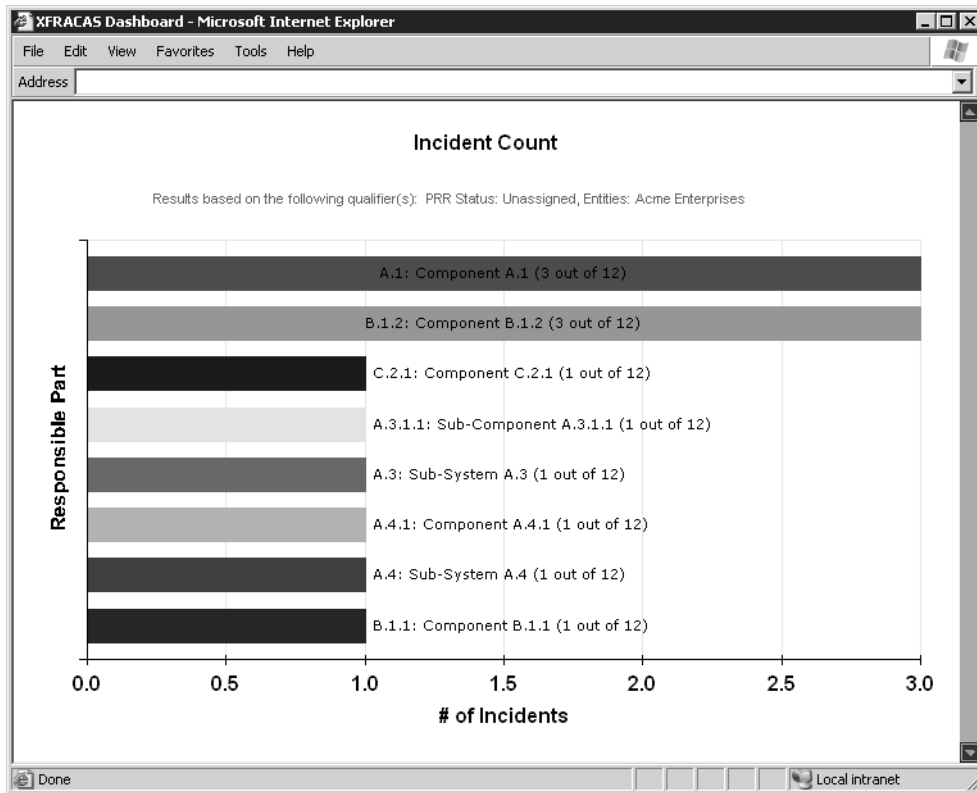
- Select **My Dashboard Page** from the **Search/Report** menu. The Dashboard page will open, as shown next.



- In the Dashboard Reports area, select **Incident Count**. The search criteria that you can use to limit the records included in the report will appear.
- For this example, you will include only the incidents that you imported, not the incident that you created in the first example. In the PRR Status field (the fourth field down in the right column), select **Unassigned**.

Note that the options in the grey area at the bottom of the page control the appearance of the chart, including the type of analysis, the type of chart, the number of records shown on the chart, and the metrics represented on the X and Y axes. In this case, you do not need to make any changes here.

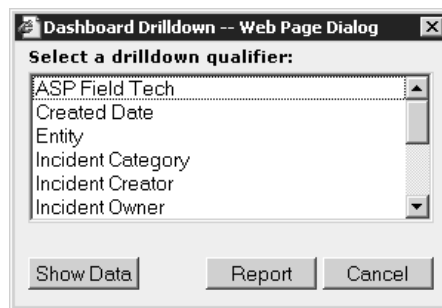
- Click **Report**. The report will appear in a separate browser window, as shown next.



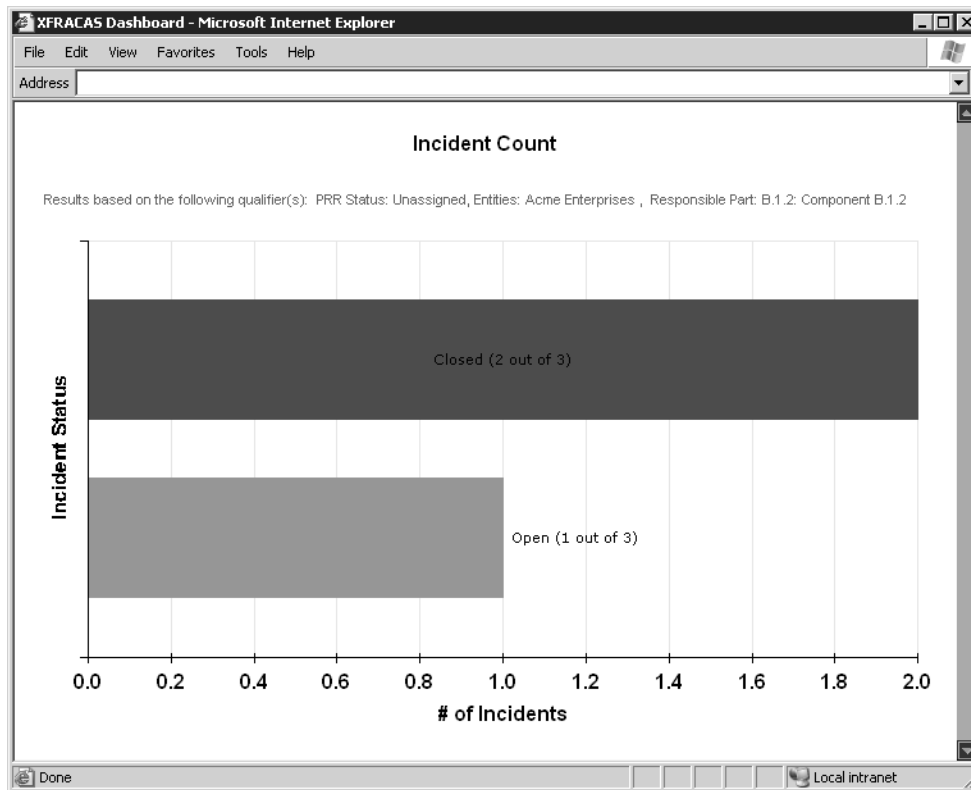
#### 4.2.3.1 Drill Down for Greater Specificity

In many of the pie and bar charts generated by the XFRACAS Dashboard, you can “drill down” to further categorize data until the desired level of results is obtained. For this example, you will create another chart showing the number of open and closed incidents on the B.1.2 component.

- Click anywhere on the chart to activate the control, then double-click the bar that represents Component B.1.2. The Drill Down dialog will appear, as shown next.



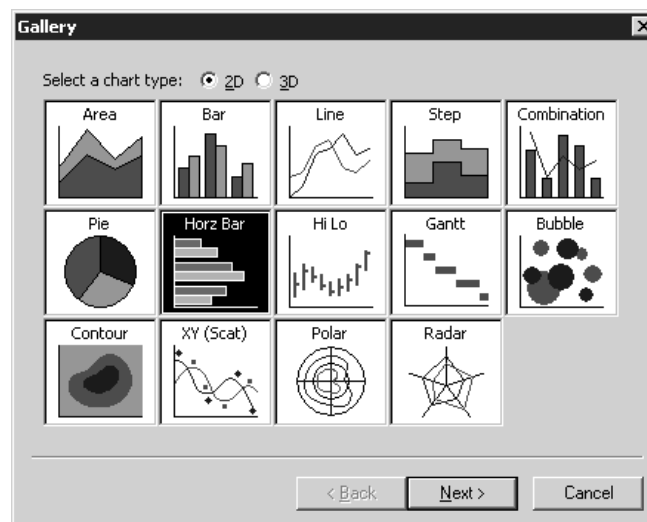
- Select Incident Status and click **Report**. (Note that you can click **Show Data** instead to display the three incident records in a Query Results screen. For this example, however, you should generate the chart.) The new chart will appear in a separate browser window, as shown next.



#### 4.2.3.2 Modify the Chart

The drilled down report was generated in a bar chart form because that was the form of the original report. It is very simple, however, to make changes to the chart.

- Click anywhere on the chart to activate the control, then right-click to bring up the Format Chart shortcut menu. Select **Wizard** from the menu. The Chart Wizard will appear, as shown next.



- On the Gallery page of the Chart Wizard, select the **Pie** chart type, then click **Next**.
- You will not need to make a new selection on the Style page of the Chart Wizard. Click **Next**.
- On the Layout page of the Chart Wizard, enter **Component B.1.2 Incidents** in the Chart Title field. Select **Right** from the Chart Legend drop-down and click **Next**.
- You will not need to make any changes on the Axes page of the Chart Wizard. Click **Finish**. The chart will refresh to reflect your new settings, as shown next.

