Oracle® Quality

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Send Us Your Comments

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- Did you understand the context of the procedures?
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- Do you need different information or graphics? If so, where, and in what format?
- Are the examples correct? Do you need more examples?

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Preface

Intended Audience

Welcome to Release 12.1 of the *Oracle Quality User's Guide.*

This guide is intended for users of the Oracle Quality application. See Related Documents for more about Oracle Applications product information.

See Related Information Sources on page xiii for more Oracle E-Business Suite product information.

Documentation Accessibility

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Structure

1 Overview of Oracle Quality

This chapter introduces quality management and describes how Oracle Quality can be used to meet its challenges. It also provides an overview of the components of Oracle Quality and illustrates how Oracle Quality can help you meet your quality data collection and analysis requirements.

2 Setting Up

This chapter provides you with implementation information for the parts of Oracle

Applications that are specific to Quality.

3 Collection Elements

This chapter explains how to define and use collection elements.

4 Specifications

This chapter explains how to define and use specifications.

5 Collection Plans

This chapter provides you with overviews and instructions for creating and using collection plans.

6 Data Collection

This chapter explains how to directly enter quality results data.

7 Quality Workbench

This chapter provides you with overviews and instructions for using the Quality Workbench.

8 Manage Supplier Quality

This chapter describes how to manage goods and services purchased from suppliers using:

- Receipt, transfer, inspection, internal delivery, return, and correction transactions in Oracle Purchasing
- Quality result entry by suppliers in Oracle iSupplier Portal
- Skip lot and inspection sampling in Oracle Quality

9 Manage Manufacturing Quality

This chapter explains how to manage the quality of manufactured items as you complete manufacturing transactions in the following applications:

- Oracle Work in Process
- Oracle Shop Floor Management
- Oracle Flow Manufacturing
- Oracle Project Manufacturing
- Oracle Process Manufacturing (OPM)
- Oracle Mobile Manufacturing

10 Manage Order Fulfillment Quality

This chapter explains how you can provide your customers with Internet access to Quality results.

11 Manage Customer Service Quality

This chapter describes how to set up quality collection plans for use when managing customer service quality.

12 Manage Material Quality

This chapter describes how to set up quality collection plans for use when managing material quality.

13 Manage Regulatory Compliance

This chapter discusses the acquisition of electronic signatures (e-signatures) on electronic records (e-records) in Oracle Quality. E-records and e-signatures enable you to comply with the 21 CFR Part 11 regulations.

14 Charts, Views, and Custom Reports

This chapter explains how to chart, view, and report quality results data.

15 Reports and Processes

This chapter explains how to submit report requests and briefly describes each Oracle Quality report.

16 ISO 9000 Compliance

This chapter discusses how Oracle Quality can help you meet ISO 9000 reporting standard requirements.

A Windows and Navigator Paths

This appendix lists each window available for use in the Oracle Quality application as well as the associated navigator path for each window.

B Attachments

This appendix explains how to attach documents to collection plans, specifications, and results lines.

C Results Queries

This appendix explains how to query quality results.

D Tools Menu Options

This appendix summarizes where you can find more information about the options available from the Tools menus of various windows.

E Context and Reference Information Collection Elements

This Appendix lists the predefined Context and Reference Information collection elements for all Oracle Applications integrated with Oracle Quality.

F Pre-Seeded Collection Plan Templates

This appendix lists the pre-seeded collection plans that are available, the elements in each plan and the actions associated with each element.

Glossary

Related Information Sources

- *Oracle E-Business Suite User's Guide*
- *Oracle Alert User's Guide*
- *Oracle E-Business Suite Developer's Guide*

- *Oracle E-Business Suite User Interface Standards for Forms-Based Products*
- *Oracle Bills of Material User's Guide*
- *Oracle Complex Maintenance, Repair, and Overhaul User's Guide*
- *Oracle E-Records Implementation Guide*
- *Oracle Engineering User's Guide*
- *Oracle Enterprise Asset Management User's Guide*
- *Oracle Flow Manufacturing User's Guide*
- *Oracle iSupplier Portal User's Guide*
- *Oracle Inventory User's Guide*
- *Oracle Manufacturing APIs and Open Interfaces Manual*
- *Oracle Manufacturing: Implementing Oracle E-Records in Discrete Manufacturing Guide*
- *Oracle Manufacturing Scheduling User's Guide*
- *Oracle Mobile Supply Chain Applications User's Guide*
- *Oracle Order Management Implementation Manual*
- *Oracle Order Management User's Guide*
- *Oracle Process Manufacturing Product Development User's Guide*
- *Oracle Process Manufacturing Quality Management User's Guide*
- *Oracle Process Operations User's Guide*
- *Oracle Purchasing User's Guide*
- *Oracle Quality Implementation Guide*
- *Oracle Shipping Execution User's Guide*
- *Oracle Work in Process User's Guide*
- *Oracle E-Business Suite Set Up Guide*
- *Oracle E-Business Suite Maintenance Guide*

- *Oracle E-Business Suite Security Guide*
- *Oracle Project Manufacturing User's Guide*
- *Oracle Warehouse Management User's Guide*
- *Oracle Workflow User's Guide*

Integration Repository

The Oracle Integration Repository is a compilation of information about the service endpoints exposed by the Oracle E-Business Suite of applications. It provides a complete catalog of Oracle E-Business Suite's business service interfaces. The tool lets users easily discover and deploy the appropriate business service interface for integration with any system, application, or business partner.

The Oracle Integration Repository is shipped as part of the E-Business Suite. As your instance is patched, the repository is automatically updated with content appropriate for the precise revisions of interfaces in your environment.

You can navigate to the Oracle Integration Repository through Oracle E-Business Suite Integrated SOA Gateway.

Do Not Use Database Tools to Modify Oracle E-Business Suite Data

Oracle STRONGLY RECOMMENDS that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle E-Business Suite data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL*Plus to modify Oracle E-Business Suite data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle E-Business Suite tables are interrelated, any change you make using an Oracle E-Business Suite form can update many tables at once. But when you modify Oracle E-Business Suite data using anything other than Oracle E-Business Suite, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle E-Business Suite.

When you use Oracle E-Business Suite to modify your data, Oracle E-Business Suite automatically checks that your changes are valid. Oracle E-Business Suite also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

1

Overview of Oracle Quality

This chapter introduces quality management and describes how Oracle Quality can be used to meet its challenges. It also provides an overview of the components of Oracle Quality and illustrates how Oracle Quality can help you meet your quality data collection and analysis requirements.

This chapter covers the following topics:

- Introduction to Quality Management
- Overview of Oracle Quality
- Track and Monitor Quality Results
- Analyze Product Defects Using Charts and Reports
- Identify Nonconformances and Implement Corrective Actions
- Audit Your Quality Management System
- Quality Business Flow Diagram
- Quality Process Flow Diagram

Introduction to Quality Management

Companies today operate in global markets that demand near-zero defect quality. High quality is required not just in production, but throughout the supply chain. ISO 9000 certification is a minimum requirement. To remain competitive, companies must respond to the pressures of reducing their costs while improving quality and customer service.

To address these challenges, most companies have implemented quality programs based on the principles and methodologies developed by Drs. Deming and Juran. Such programs have likely evolved over the years starting with the implementation of statistical process control (SPC); the adoption of zero-defect and continuous improvement programs; the acceptance of the total quality control (TQC) process, and a shift to the total quality management (TQM) approach.

Many companies have widespread quality requirements and consequently may have implemented several quality systems to address these requirements. Although these systems may represent a significant investment in quality processes, training, and software, users are often dissatisfied with them for a variety of reasons.

Quality Systems Today

One reason users are dissatisfied is that existing systems can't adapt to frequent changes in products and processes. Competitive pressures have shortened product life cycles. New products are launched frequently and processes must not only rapidly adapt to these changes, but also improve as they adapt.

Many quality systems can't keep up with the pace, largely because most are inflexible. They're "hardcoded" - they do not allow you to change data collection points or to collect new kinds of quality information when products and processes change.

Another typical problem is that quality systems are not always integrated with business systems. More often than not, they're standalone "pocket" databases.

Can you access critical quality data throughout your enterprise and across your supply chain with pocket databases? For example, can you associate the supplier quality data you collected at the receiving dock with the failure data you collected on the factory floor?

Do your systems cause you to collect the same data multiple times? For example, do you collect part number and quantity failed information in your automated test equipment, your shop floor PC-based SPC package, and your work order transactions system?

Maybe your analysis tools are robust, but do your quality engineers seem to spend more time locating and extracting data than they spend actually analyzing it?

Can you really afford the learning curve and ongoing maintenance costs of multiple quality collection and analysis tools?

Obviously processes and systems that are local, non-integrated, and inconsistent create hidden costs and wasted effort.

Oracle Quality Mission

The Oracle Quality mission, simply stated, is to complement and/or replace these divergent systems with an integrated, enterprise wide, flexible solution that meets your diverse quality needs.

Oracle Quality is integrated with the Oracle Applications product suite to provide unified quality data definition, data collection, and data management throughout your enterprise and across your supply and distribution networks.

Oracle Quality's flexible architecture can support a wide variety of business models and can change as rapidly as business demands.

The word complement is important here. Remember that many companies have

invested quite a lot in data collection systems, automatic test equipment, statistical analysis tools, etc. Our goal is to make Oracle Quality an open system with a data repository into which you can import data from existing data collection systems and out of which you can export the quality results you have collected.

Oracle Quality Repository

Oracle Quality helps a company achieve consistent quality reporting by providing a central and accessible repository of quality information. This is a key differentiation between Oracle and other quality systems. Many other quality systems are non-integrated point solutions.

With other systems, it is nearly impossible to analyze quality data across your enterprise - data integrity is not assured and database administration can be inconsistent.

Oracle Quality ensures data integrity by validating data as it is collected. For example, if you are collecting quality results for an item, the system verifies that the item exists in the Oracle Inventory item master. Similarly, the system verifies that suppliers and customers exist in Oracle Purchasing and Oracle Order Management as you collect supplier and customer data. Such data integrity does not exist in a quality database that is not integrated with your key business systems.

ISO 9000

Oracle Quality lets you collect your company's quality information and procedures to make ISO certification faster, simpler and more effective. ISO 9000 is *not* industry specific and is *not* an evaluation of a specific product or service.

It's an evaluation of the consistency in execution and maintenance of internal operation procedures that directly affect a company's ability to produce high quality products and services.

ISO 9000 requires that you fully document your business processes that ensure high quality product and service. You must then prove that you do what you've documented.

Oracle Quality helps you document and track product and process defects, non-conformances problems, and general quality issues. You can determine what quality data to collect, track, and report using user-definable collection plans. For example, you can collect quantitative information, such as defective quantities or measurements, or qualitative information, such as critical test results and defect cause codes. You can document what defects occurred, what you did with the nonconforming material, and what corrective action you took. In addition, you can attach your ISO 9000 documentation and standard operating procedures to your collection plans so that users can access these documents on-line while they're collecting quality data.

Total Quality Management

By making quality data collection a part of your standard workflow, you can distribute quality assurance responsibilities throughout your enterprise.

The most effective quality management system is one in which people in each functional area are able to define the critical quality data to collect, to take responsibility for collecting this data, and to produce meaningful output to track progress towards their quality goals.

Oracle Quality is a enterprise-wide repository for gathering and storing quality information. It helps enforce quality control and maximizes your quality tracking efficiency by integrating directly with Oracle Applications data and transactions.

Oracle Quality accommodates dynamic business needs by letting you control when and where to collect data in your supply chain. Oracle Quality's flexible architecture easily adapts to support your ever-changing TQM requirements.

Overview of Oracle Quality

Oracle Quality is an integrated quality management application designed to support manufacturers in the pursuit of total quality management (TQM), zero defects, continuous process improvement (CPI), and ISO 9000 certification. It is designed to support the diverse data collection needs of discrete, repetitive, assemble-to-order, and batch process manufacturers. Oracle Quality helps you manage and distribute critical quality information throughout your organization.

Oracle Quality can help do all of the following:

- establish quality standards for products and processes throughout the enterprise
- monitor performance relative to established quality standards
- identify and track process factors that are affecting product quality
- collect information about product defects, their causes, and their related dispositions
- ensure that test and inspection instructions are available at the appropriate steps throughout the supply chain for a given product
- ensure that the proper tests are performed at the right time and document all test results
- alert the appropriate personnel when products do not conform to standards
- provide flexible reporting on all aspects of quality management

- maintain a shared enterprise-wide repository of quality results

Actions and Alerts

You can designate that specific actions be taken based on the quality results that you collect. You can have Oracle Quality issue alerts and electronic notifications, as well as place jobs, repetitive schedules, items, suppliers, and purchase order lines on hold. For example, you can send an electronic mail notification to a given user or group of users, or put a job on hold when a critical measurement is outside the upper and lower specification limits. You also can associate workflows that you create in Oracle Workflow with Quality actions, and specify that they are automatically initiated based on quality results.

You can define action rules and related actions for any collection element, and copy them to any collection plan containing the collection element. You also can define action rules for collection elements within collection plans, which makes the action rule(s) applicable only when the collection element is used within that plan.

For information on how to set up actions and alerts, see: Defining Collection Element Actions, page 3-29 and Defining Collection Plan Element Actions, page 5-23.

Collection Plans

Collection plans are similar to test or inspection plans. They contain the collection elements that represent the specific data that you want to collect and report on. Collection plans can include collection elements that collect data on defect types, symptoms, causes, actions, critical measurements, or environmental characteristics, as well as reference information such as item, lot number, serial number, operation, department, subinventory, supplier and customer. You also can specify target values and limits for collection plan elements, and mandate that certain actions be taken, based on the quality results entered. For example, you can specify that an electronic mail notification be sent when a temperature reaches a certain level.

For information on how to set up and use Collection Plans, see the section on Collection Plans, beginning with: Overview of Collection Plans, page 5-2.

Specifications

In Oracle Quality, you can define specifications for key characteristics of the products that you produce or the material that you receive from suppliers. Specification describe the requirements of a product.

You can create specifications for items or categories of items by assigning them a group of collection elements and their specification limits. You can also create supplier specifications for items that you receive from specific suppliers. Further, you can create customer specifications specific to the product standards expected by customers. These three types of specifications help ensure that the goods you produce conform to your quality engineering standards and to your customers' quality standards.

For information on how to set up and use specifications, see the section on Specifications, beginning with: Overview of Specifications, page 4-1.

Collection Elements

To be able to collect quality data using Oracle Quality, you need to set up a data collection structure referred to as a "collection plan." Collection plans consist of "collection elements," which are the basic building blocks of collection plans, and determine the data the plan will collect and report. You can define an unlimited number of collection elements for attributes such as *defect, disposition, severity, cause, pass/fail results,* or for variables such as *voltage, resistance, temperature,* or *acidity*. For each collection element that you create, you can specify a list of acceptable values or specification limits such as target value and upper and lower limits.

For information on how to set up and use collection elements, see the section on Collection Elements, beginning with: Overview of Collection Elements, page 3-1.

Data Collection Options

You can enter results into the quality data repository:

- directly, See: Entering Quality Results Directly, page 6-7.
- as you perform transactions

  See:Quality Data Collection During Transactions, page 5-35 and Transactional Data Collection Fundamentals, page 6-5.

- by importing quality results from external sources using Collection Import.
  - See: Overview of Collection Import, page 6-20

You can enter quality results directly at any time. For example, a quality engineer can enter lot sampling results for a collection plan independent of the operator who enters the job completion transaction. The quality engineer can also query and update the quality results that the operator initiated.

If you collect quality data during transactions, you can optionally define quality collection triggers to determine which collection plan to use for a given transaction. For example, you can indicate that you want to use a collection plan called First Pass Yield when entering move transactions for a particular assembly item. Thus, you can control when and where in the transaction process to collect quality data. By making quality data collection a part of the standard workflow, you can distribute quality assurance responsibilities throughout your organization.

You can use Collection Import to import quality data from external systems into the quality data repository. For example, you can import data from sources such as test equipment and gauges. Imported data is validated according to validation rules of the collection plan. Invalid entries are marked so that you can correct and resubmit them.

This maintains the integrity of the quality data repository by rejecting invalid item numbers, supplier numbers, and defect codes. The actions that you defined in the collection plan, such as electronic mail notifications, are triggered based on the incoming data.

Query, Report, and Export Data

Oracle Quality provides you with powerful inquiries that enable you to quickly find quality results. You can define your own selection criteria. For example, you can view failure results that are specific to item A54888 and that occurred at operation 10 during May of last year.

You can view quality results using on-line, ad hoc queries and through printed reports. You can also chart your results using trend charts, Pareto charts, control charts, and histograms.

You can save the settings you use to create charts, descriptive statistic views, and custom reports. For example, you can create a Pareto chart that graphically illustrates the top failures for all assemblies on a specific production line. You can then save the settings for this chart. Later, after collecting additional data about failures occurring on this production line, you can re-chart your results.

Furthermore, you can copy the settings that you save for a (source) chart, descriptive statistic view, or custom report to a destination chart, descriptive statistic view, or custom report. Copying setting in this manner allows you to view the same subset of data in different ways. See: Copy Settings, page 14-2.

You can export information for further analysis. You can also access data directly from the quality data repository with products such as Oracle Discoverer. Direct database access is facilitated by database views. See: Exporting Quality Results, page 14-42 and Collection Plan and Import Results Database Views, page 5-5.

Track and Monitor Quality Results

You can use Oracle Quality to track and monitor quality results. You can, for example use Oracle Quality to do all of the following:

- Track First Article Inspection Defects, page 1-7
- Track Serial Controlled Items, page 1-8
- Track Lot Controlled Items, page 1-8
- Analyze Product Defects Using Charts and Reports, page 1-9

Track First Article Inspection Defects

You can use Oracle Quality to track quality results from first article inspections. If you

are only interested in knowing that a part is defective and the date that it was determined to be defective, you can create your collection plan accordingly. If you choose, you can create an alert action that sends the buyer of a part an electronic mail notification each time one of their parts is found to be defective.

Track Serial Controlled Items

You can monitor serial controlled assemblies, subassemblies, and components by creating and using collection plans to do the following:

- record quality characteristics about serialized units received from suppliers
- record movement, inspection, test results and disposition of serialized items throughout the production process
- maintain a history of inspection and test results for a particular serialized unit including the most current recorded activity or location in work in process
- record serial number genealogy by recording the relationship between two serialized units; for example, record an assembly serial number and a component serial number
- record the shipment of a serial controlled assembly and the customer site it was shipped to
- record DOA (dead-on-arrival) details for a serialized unit when it is reported as failed at a customer site
- record RMA (return material authorization) details upon notification of a defective, serialized unit; these details can be queried for receiving approval on the dock of your service organization or depot repair center

For example, you can create a collection plan that is used to collect component item, serial number, test date, test type, and test result data.

See: Viewing Quality Results by Serial Number, page 14-37

Use serial genealogy to track the transaction and multilevel composition history of any serial-controlled item from receipt through work in process and inventory to your customer sale. Using the Genealogy window, Quality Collections tab, you can view any quality collection plans associated with the item. See: Viewing Serial Genealogy, *Oracle Inventory User's Guide*.

Track Lot Controlled Items

You can monitor lot controlled assemblies, subassemblies, component, batches, and processes by creating and using collection plans to:

- record quality characteristics about lots received from suppliers

- track lots through production and record where a lot has been
- track lot genealogy by recording the relationship between two lots; for example, record a lot and the base lot it originated from
- record end lot quality characteristics during or after production
- record a lot and the customer it was shipped to

See: Viewing Quality Results by Lot Number, page 14-36

Use lot genealogy to view the relationship between lots and provide lot traceability that results from inventory transactions. Using the Genealogy window, Quality Collections tab, you can view any quality collection plans associated with the item. See: Viewing Lot Genealogy, *Oracle Inventory User's Guide*.

Analyze Product Defects Using Charts and Reports

You can create a variety of charts using Oracle Quality. You can also create custom reports.

Pareto Charts

You can summarize and chart product defects using Pareto's law to focus on the most often occurring defects. For example, you can create a Product Defects collection plan containing collection elements like defect code and quantity defective, as well as reference information collection elements like item, department, and supplier. You can use this collection plan to collect detailed results for each failed inspection. Once results are collected, you can create a Pareto chart showing the quantity of failed inspections by defect code, department, item category, and so on. See: Pareto Charts, page 14-8.

Histograms

You can use histogram to provide a graphic summary of variation in a set of data. Histograms are useful in the study of process capability because they graphically display the shape, location, and scatter of quality results data. See: Histograms, page 14-12.

Trend Charts

You can use trend charts to analyze data collected over a period of time. For example, you can create a Glazing Process collection plan to collect process quality variables such as oven temperature and voltage from a glazing process. You can use this collection plan to record five readings at random times during each shift. Once the results are collected, you can create a trend chart to graphically display the results of temperature or voltage. See: Trend Charts, page 14-16.

Control Charts

You can use control charts to determine whether process stability has been upset by special or assignable causes. You can create the following types of control charts in Oracle Quality:

- Xbar and R charts (*XBar R)*
- Individual X and Moving Range charts (*XmR)*
- Xbar and S charts (*XBar S*)

See: Control Charts, page 14-21.

Custom Reports

Using the Quality Results ReportWriter, you can create a variety of custom reports to list and summarize results. For example, if you have created and collected results using a collection plan that contains collection elements like item, job, job quantity, quantity completed, quantity scrapped, and inspection results, you can create a report that summarizes your inspection results as well as a report that uses these same results to show yield (quantity complete versus job quantity) by job, by item, or by item category.
See: Using the Quality Results ReportWriter, page 14-38.

Identify Nonconformances and Implement Corrective Actions

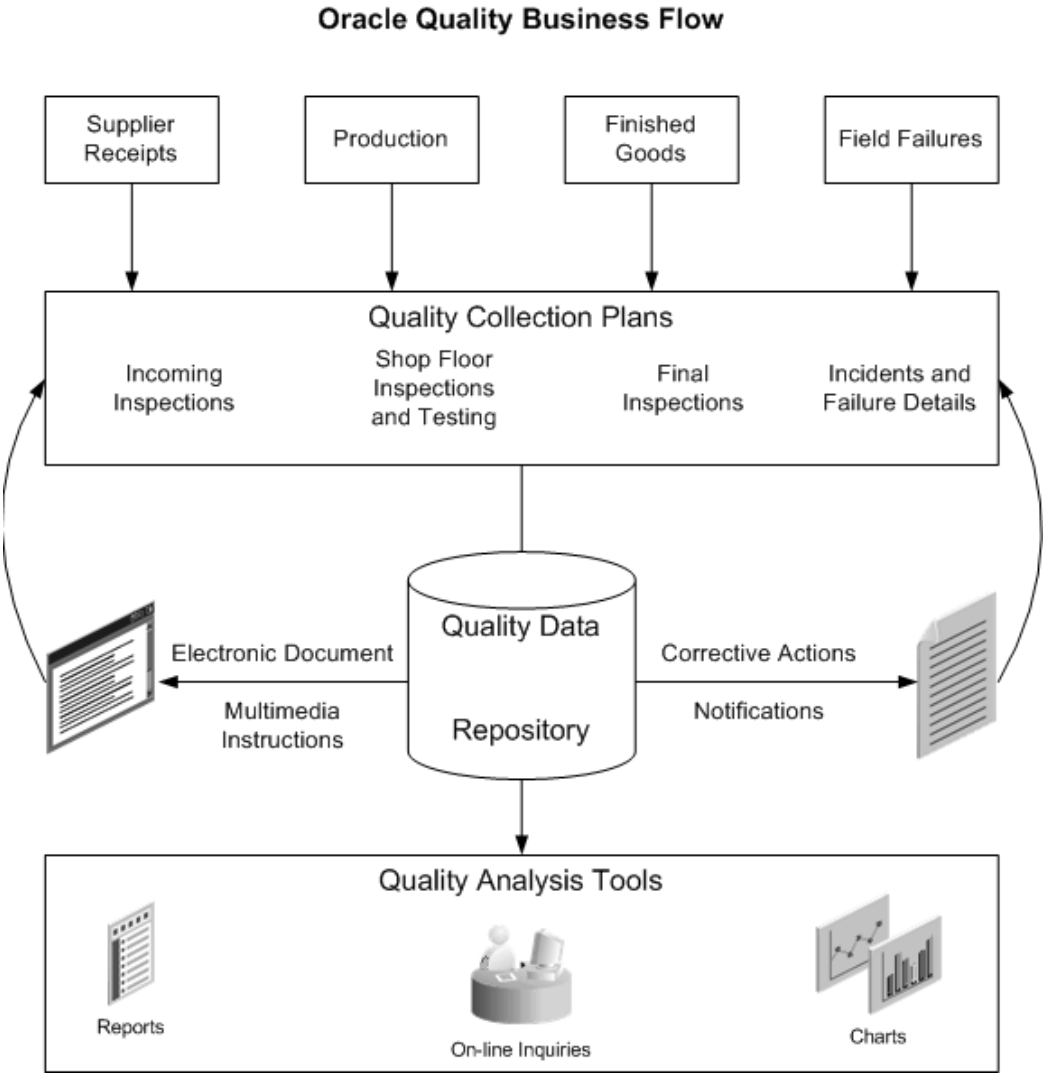
Oracle Quality provides a set of collection plan templates that enable suppliers or internal personnel to log quality nonconformances prior to receipt of purchased goods, during receipt, or during the manufacturing process. A nonconformance plan can initiate a disposition, which assigns the nonconformance to specific individuals for action and final resolution. You can use a corrective action request (CAR) to identify problems in the quality system, such as a nonconformance, an audit observation, or a finding. The CAR lifecycle includes problem identification, corrective actions, and actions that prevent recurrence of the problem. For more information about implementing a nonconformance, disposition, and corrective action request system, see the *Oracle Quality Implementation Guide*.

Audit Your Quality Management System

You can conduct audits of a potential supplier, an active supplier, or your own quality management system using seeded collection plan templates. Use the audit collection plans to generate corrective action requests, too, if desired. Audits can help ensure that you and your suppliers meet quality standards, such as ISO 9000 (see: ISO 9000 Compliance, page 16-1). For more information about implementing audits, see the *Oracle Quality Implementation Guide*.

Quality Business Flow Diagram

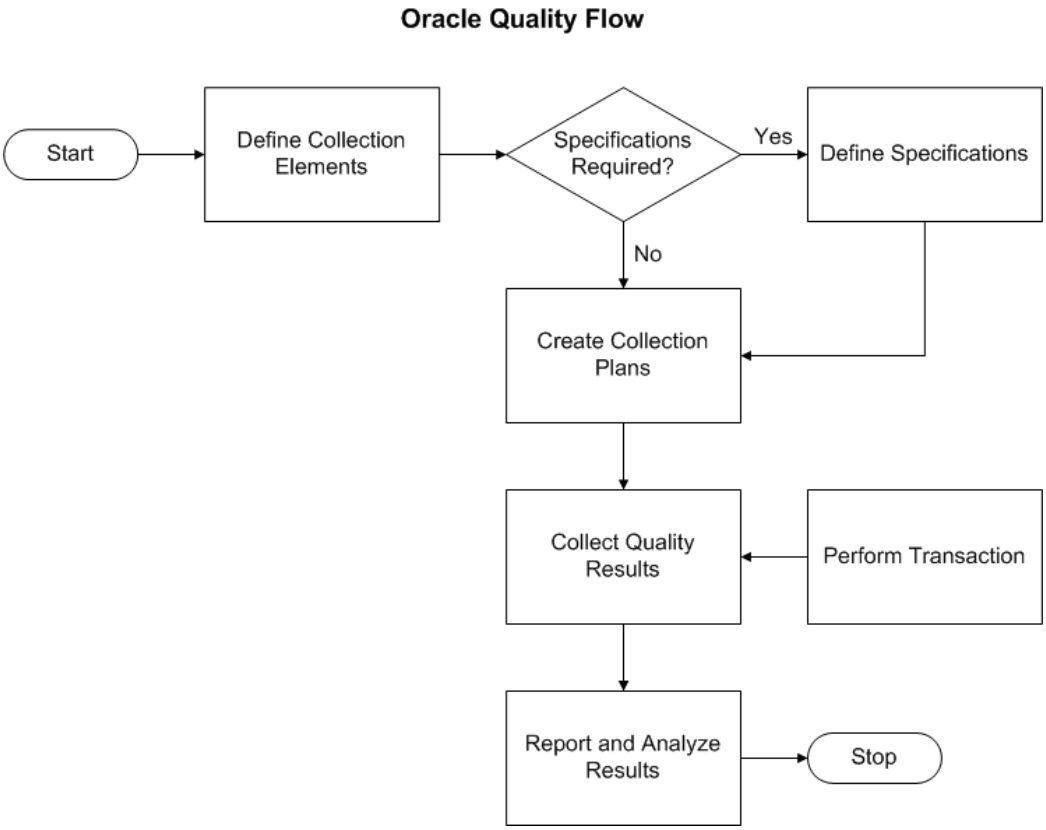
The following diagram illustrates the flow of quality information within a business using Oracle Quality:



Quality Process Flow Diagram

The entire process of defining data collection components, collecting, reporting, and analyzing data is summarized by the following diagram:

Quality Process Flow Diagram



2

Setting Up

This chapter provides you with implementation information for the parts of Oracle Applications that are specific to Quality.

This chapter covers the following topics:

- Related Product Setup Steps
- System Administrator Setup
- Alert Setup for Quality
- Security Functions
- Other Products Setup
- Device Integration Setup
- Quality Setup Considerations
- Profile Options

Related Product Setup Steps

The following steps may need to be performed to implement Oracle Quality depending on your business needs. These steps are discussed in detail in the Overview of Setting Up sections of the related Oracle product user's guides.

- Performing system-wide setup tasks such as configuring concurrent managers and printers
- Managing data security, which includes setting up responsibilities to allow access to a specific set of business data and complete a specific set of transactions, and assigning individual users to one or more of these responsibilities
- Setting up Oracle Workflow
- Setting up Oracle iSupplier Portal

See: *Oracle E-Business Suite System Administrator's Guide Documentation Set*.

See: *Oracle Workflow User's Guide*.

See: *Oracle iSupplier Portal User's Guide*.

System Administrator Setup

You can set up user specific email or fax IDs when you define users in the Users window from the System Administrators responsibility. Refer to the *Oracle E-Business Suite Set Up Guide*, and *Oracle E-Business Suite Security Guide*.

Related Topics

Defining Collection Element Alert Actions, page 3-31

Defining Collection Plan Element Alert Actions, page 5-26

Users Window, *Oracle Oracle E-Business Suite Security Guide*

Alert Setup for Quality

You can use the Default User Mail Account option in the Oracle Alert Options window to set the Operating System Login ID or Application Username. If the *Send an electronic mail notification* alert action is invoked during quality data collection, but one of the recipient IDs (To, CC, or Bcc) is invalid, the system attempts to return the message to the user who invoked the alert using the email or fax ID that was set up for that user in the Users window (from the System Administrators responsibility). If the value of the email or fax field for the user is null, then the system returns the message to either the Operating System Login ID or Application Username.

You can also use Oracle Alert to define distribution lists. You must define distribution lists before using them to define the recipients (To, CC, and Bcc) of an electronic mail notification alert. Refer the Overview of Setting Up section in the *Oracle Alert User's Guide.*

Related Topics

Defining Collection Element Alert Actions, page 3-31

Defining Collection Plan Element Actions, page 5-23

Defining a Distribution List, *Oracle Alert User's Guide*

Defining Other Options for Oracle Alerts, *Oracle Alert User's Guide*

Security Functions

Security function options specify how Oracle Quality controls access to and processes

data. The system administrator sets up and updates security functions.

Quality Action Log:Purge (QAALINF_PURGE)

This security function determines whether entries can be deleted from the action log. It is automatically set when the *Quality* user responsibility is selected. When set, users can choose Delete from the Edit Menu while in the Action Log window. If the *Quality Inquiry* user responsibility is selected, this security function is not set.

Quality Self-Service Enter Results (FNDSCRSP)

This security function controls user access to Quality collection plan results submitted during self-service data collection on Oracle iSupplier Portal. When this security function is set, users can only view Quality results.

Quality Self-Service View Quality Results (Quality_SS_VQR)

This security function enables you to restrict customer access to Quality collection plans on the Oracle Order Information Portal.

Other Products Setup

Oracle Quality integrates with many products, some of which require setup in order to complete the integration. Refer to the following list of related products and topics for setup information.

Related Topics

Oracle Workflow: User-Defined Actions, page 3-21

Oracle Purchasing and Oracle iSupplier Portal: Supplier Quality Collection Points, page 8-1

Oracle Work in Process, Oracle Shop Floor Management, Oracle Flow Manufacturing, Oracle Project Manufacturing, Oracle Process Manufacturing (OPM) Process Execution, and Oracle Mobile Manufacturing: Manufacturing Quality Collection Points, page 9-1

Oracle Order Management and the Order Information Portal: Viewing Quality Results Using the Order Information Portal, page 10-1

Oracle TeleService and Oracle Depot Repair: Customer Service Quality Collection Points, page 11-1

Oracle Mobile Warehouse Management: Integration With Oracle Mobile Warehouse Management, page 12-1

Oracle E-Records: 21 CFR Part 11 Overview, page 13-1

Oracle Enterprise Asset Management: Quality Integration Setup, *Oracle Enterprise Asset Management User's Guide*

Oracle Complex Maintenance, Repair, and Overhaul: Quality Collection Plans Setup, *Oracle Complex Maintenance, Repair, and Overhaul User's Guide*

Device Integration Setup

The device integration functionality enables you to read data directly from devices into the application. Data is collected directly from the point of generation of the data into the application. The device integration feature enables the collection of the shop floor data directly from active devices that are online and generating current data. Device Integration eliminates the need for manual input and associated errors with data entry.

Device Integration enables:

- Shop floor device data collection in MES transactions. See, Moving and Completing Assemblies, and Quality Display Modes in *Oracle Manufacturing Execution System for Discrete Manufacturing User's Guide.*.

- Shop floor device data collection in Standalone Quality Workbench. See,Collecting Device Data in Standalone Quality Workbench, page 7-12.

The device integration feature is available only if Oracle Manufacturing Execution System (MES) for Discrete Manufacturing is installed. Device integration in MES for Discrete Manufacturing and Quality Workbench is carried out through third party OPC Servers that serve as middleware connecting the sensors to the enterprise application. The data will be pulled from the third party OPC server on a fixed schedule. The application will read the latest data from the OPC server. However, data based on a user request or an event cannot be retrieved from the OPC server or devices.

Device integration feature captures numeric, date and character type data only which can be mapped to a string type data. Videos or graphics or any other type of data that is not passed on as a string cannot be captured. The application will convert the data type to the appropriate data type as per the setup of the collection element. The numeric precision of the data is determined by the OPC Server. You can also get a time stamp of the data generation time by the device.

To use the device integration functionality:

1. Install Oracle Manufacturing Execution System (MES) for Discrete Manufacturing and enable the profile option WIP: MES for Discrete Manufacturing Install.

2. Follow the instructions from the OPC server provider and install and commission the third party OPC server.

3. Set up device data in Oracle Quality. See, Setting Up Device Data.

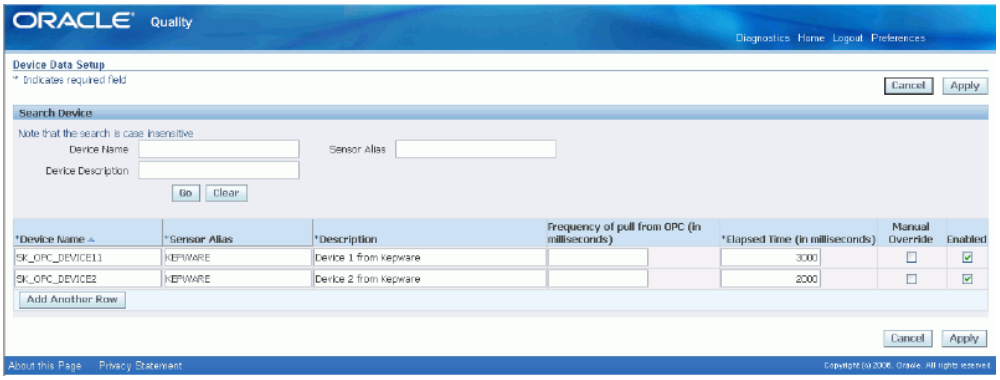
4. Set up collection plan elements as device enabled with the required device details. See,Defining Collection Plan Elements, page 5-15.

Setting Up Device Data:

Use the Device Data Setup page to define the list of devices with proper device identification details. You can also use the search region in this page to query for existing devices. Search for existing devices using any combination of Device Name, Sensor Alias and Device Description values.

> **Note:** Device integration is for active devices only that remain online continuously. This feature is not associated with passive devices that are activated on a need basis like triggering of an event.

1. Navigate to the Device Setup page. Click Add Another Row to add a blank row to define a new device.



2. In the Device Name field, enter the name of the device as it is defined in the third party OPC Server.

> **Note:** The application does not validate the device details you enter during the set up. The Device name is used as entered. Should there be any changes, update the device details. If the device name is incorrect in the set up, a value from a wrong device is pulled or no value is received from the repository for the parameters to which the device name is associated and a message displays.

3. Enter a sensor alias in the Sensor Alias field. This can be any value that would denote the OPC server which connects to the device.

4. In the Device Description field enter a description of the device. Device description is a user-friendly name for the device. This name will be available in the Collection Plan definition form.

> **Note:** The Sensor Alias and Device Name together must be unique

as they identify the device. If you enter a value that is not unique, an error message will display and the data will not be saved.

5. In the Frequency of Pull field, you can optionally enter the frequency value in milliseconds. This is the frequency at which the application is configured to receive data from the OPC Server.

6. Enter the Elapsed Time in milliseconds, which is the cutoff time to decide whether a particular data is current or historic. If the data is older than the elapsed time, it will be considered as historic data and if the data is captured within this time frame then it is current.

7. Check the Manual Override option to enable manual override of the device data. If the checkbox is unchecked, you cannot override the data captured through a device manually. Note that the value in this check box only provides a default value at the plan level. This can be overridden by setup at the plan level. The value chosen here will default at the collection plan level.

8. Check the Enabled option. Only the enabled devices will appear in the list of values in the Collection Plan definition form.

9. Click on Apply to save the device setup.

   After setting up the device data, associate the device in to the collection plan elements in the collection plan definition form. These collection plan elements can receive data from the shopfloor device in standalone Quality Workbench or in MES transactions if MES for Discrete Manufacturing is installed.

   Note: You can also import data to the Device Data Setup page from the third party OPC Servers. To import data from the third party OPC servers, refer to the appropriate OPC server documentation for details.

   See:

   Creating Collection Plans, page 5-11

   Defining Collection Plan Elements, page 5-15

Quality Setup Considerations

Addressing the following considerations before you set up Oracle Quality will help you meet your quality data collection needs more efficiently:

What information do you want to collect and report?

- Reference information: for example, items, lots, and departments
- Performance results: for example, failure rates and yields
- Product defect types, causes, and disposition information
- Process characteristics: for example, voltage and frequency
- Critical product dimensions and comparisons with specifications
- Equipment use, status, and calibration data

What is the best way to collect the data?

- Directly
- As you perform transactions
- Via Collection Import

Where do you need to collect the data?

- Receiving inspection
- Production
- Finished goods
- Field repairs and returns

Do you want to collect quality data during transactions?

If you want to collect quality data while performing transactions, determine which transactions you want to use and what events or conditions within these transactions will trigger quality data collection. You can collect quality data during the transactions listed under Quality Data Collection During Transactions, page 5-35.

What actions are automatically triggered based on the quality results collected?

- Operator notifications
- Electronic mail notifications

How do you want the data to be reported?

- Routine reports
- Ad hoc inquiries
- Charts

Profile Options

Quality profile options control how data is accessed and processed and how Quality integrates with other Oracle and non-Oracle products. During implementation, you set a value for each user profile option to specify how Oracle Quality controls access to and processes data. Generally, the system administrator sets and updates profile values. See: Setting User Profile Options, *Oracle System Administrator's Guide*.

Setup Profile Options Summary

The following table lists Quality profile options and indicates whether a user can view or update them, and at what system administrator levels (user, responsibility, application, or site) they can be updated. It also indicates whether the profile option is required and its default value, if any. You must provide a value for a **Required** profile option. An **Optional** profile option already provides a default value, so you do not need to change it unless you do not want to accept the default. The second column, User, references the user, while the next four columns, User, Resp, App, and Site, reference the System Administrator. The last two columns, Required and Default Value, reference requirements.

Profile Option Settings

Profile Option	User	User	Resp	App	Site	Required ?	Default Value
QA:Action Processing Mode	+	+	+	+	+	Required	Concurrent
QA:Blind Results Entry	+	+	+	+	+	Optional	No Default

QA:Collection Plan Security	-	-	-	-	+	Optional	No	
QA:Default Collection Plan	+	+	+	+	+	Optional	Null	
QA:Default Specification Targets	+	+	+	+	+	Required	No Default	
QA:PO Inspection	-	+	+	+	+	Optional	PO Inspection	
QA:Quality Category Set	+	+	+	+	+	Optional	Null	
QA:Receive Web Supplier Notifications	+	+	+	+	+	Obsolete	Null	
QA:Self-Service Buyer Notification	+	+	+	+	+	Optional	Null	
QA:Self-Service Transaction Notification	+	+	+	+	+	Obsolete	Null	
QA:Statistics Engine	+	+	+	+	+	Obsolete	Quality	

QA:Update Quality Results Autoquery	+	+	+	+	+	Optional	Always

+	You can update the profile option
-	You can view the profile option value, but you cannot change it
0	You cannot view or change the profile option value

Descriptions of Quality Profile Options

QA:Action Processing Mode

Determines the processing mode of actions that are invoked as quality results are collected or updated.

The Display a message to the operator, Reject the input message, andthe Assign a Value action are processed immediately regardless of how this profile option is set. See: Action Processing, page 6-13.

Alert actions are processed concurrently in the background regardless of how this profile option is set. See: Action Processing, page 6-13 and Alert Actions, page 3-21.

Available options are as follows:

Concurrent processing	When you save quality results, the system initiates a concurrent process and returns control immediately to you, allowing you to continue working.
Online processing	The system processes your actions while you wait, and control is returned to you once action processing is completed.

If a concurrent process fails, a failure message appears in the concurrent manager log file and in the Quality Action Log. See: Viewing and Deleting Action Log Entries, page 14-41.

QA:Blind Results Entry

When quality results are collected, the setting in this profile determines whether the specification limits and units of measure (UOMs) associated with collection plan elements or specification elements are displayed.

Available values are listed below:

Blind Entry On	The operator does not see the specification limits and UOMs when collecting quality results. Actions associated with results are processed regardless.
Blind Entry Off	The operator sees the specification limits and UOMs when collecting quality results.

> **Note:** While there is no default value for QA: Blind Results Entry, a blank value for this profile option is treated as "Blind Entry On".

QA:Collection Plan Security

Turns on collection plan security, which limits user access to specific collection plans. See: Collection Plan Security, page 5-70. This profile option must be set at the site level.

Available values are listed below:

Yes	Collection plan security is turned on. The administrator must set up user groups, then grant privileges to a collection plan before a user in that group can gain access to the plan. See: Setting Up Collection Plan Security, page 5-70.
No	Collection plan security is turned off.

QA:Default Collection Plan

Indicates which collection plan to use as the default when entering, updating, and viewing quality results. This default is also used when viewing lot and serial quality results and when finding and viewing action log entries. The default collection plan is not used during transactional data collection.

QA:Default Specification Target

Indicates whether to use specification element target values as collection plan element

default values when you collect quality results.

If you do not select a specification when entering quality results, or if no specification element target values are defined, target values from collection elements are defaulted instead.

If you have explicitly defined collection plan element default values, these values are used regardless of how this profile option is set. See: Default Value Assignment Rules, page 6-4.

Available values are listed below:

Yes	Defaults target values from specification elements.
No	Does not default target values from specification elements.

QA:PO Inspection

Determines whether accepted or rejected inspection results and quantities are entered in Oracle Purchasing or Oracle Quality.

Available options are as follows:

Quality Quality	If this option is set, Quality's Enter Quality Results window appears when you choose the Inspect button from the Purchasing Receiving Transactions window. See: Entering Quality Results Directly, page 6-7.
Oracle Purchasing	If this option is set, when you choose the Inspect button from the Purchasing Receiving Transaction window, Purchasing's Inspection Details window appears. See: Inspecting Received Items, *Oracle Purchasing User's Guide*.

QA:Quality Category Set

Indicates which item category set to use as the default in Oracle Quality. Item category sets are defined in Oracle Inventory. See: Overview of Item Categories, *Oracle Inventory User's Guide* and Defining Category Sets, *Oracle Inventory User's Guide*.

The item category set specified here is used as the default when defining item category specifications. You must therefore set this profile option before defining item category specifications.

If you are entering quality results for an item using a collection plan that is associated

with a specification, but no specification for that item can be found, then the system uses the Quality Category Set to find a specification that is defined with the item's category. See: Finding Specifications While Entering Results Directly, page 6-10 and Finding Specifications During Transactional Data Collection, page 6-19.

> **Note:** The Quality Category Set profile is the default category set used to populate the categories in the transaction trigger field in setup transaction triggers as well as the item category field in skiplot setup form. Set this profile to populate categories.

QA:Receive Web Supplier Notification

This profile option is obsolete.

QA:Self Service Buyer Notification

Enables you to specify which workflow is activated when the user enters quality results during transactions on Oracle iSupplier Portal. You can choose to activate either a pre-defined Oracle Quality workflow, which notifies the buyer that Quality results have been submitted, or a user-defined workflow that you customize to send the notification to your own list of recipients.

Oracle Quality	This option activates the *QA Self Service Buyer Notification (QASSNOT)* pre-seeded workflow. This workflow notifies the buyer that quality results have been submitted, and cannot be customized.
User-defined	This option activates the *QA Self Service Buyer Notification: User-Customizable (QASSUNOT)* pre-seeded workflow, which you can customize to send the notification to a list of recipients that you define. This workflow notifies the recipients that quality results have been submitted.

QA:Self Service Transaction Notification

This profile option is obsolete.

QA:Statistics Engine

This profile option is obsolete.

QA:Update Quality Results Autoquery

Controls whether the Update Quality Results form automatically queries results when a plan is selected.

Always	Default Value. Automatically inserts the Update Quality Results window with the plan data upon selecting a plan name.
Never	Never inserts the Update Quality Results window with the plan data upon selecting a plan name.
Ask Each Time	Asks each time if you want to insert the Update Quality Results window with the plan data upon selecting a plan name.

3

Collection Elements

This chapter explains how to define and use collection elements.

This chapter covers the following topics:

- Overview of Collection Elements
- Collection Element Types
- Predefined Collection Elements
- Defining Collection Elements
- Defining Collection Element Specification Limits
- Collection Element Values
- Defining Collection Element Values
- Quality Actions
- Defining Collection Element Actions
- Defining Collection Element Alert Actions
- Defining a Launch a Workflow Action
- Associating Output Variables with Actions
- Viewing Collection Elements

Overview of Collection Elements

Collection elements are the basic building blocks of collection plans, which are the data structures that you use to collect Quality results. Before you can collect Quality data, you must first create a collection plan. You begin by creating collection elements, which define the characteristics of the product or process that you want to monitor, record, and analyze. In general, collection elements:

- Identify the object that you are collecting information about; for example, a unique lot or serial number.

- Provide reference information about the quality collection; for example, the operation sequence from Oracle Bills of Material, the purchase order number, or the transaction date.

- Provide cross-reference information for analysis; for example, supplier, customer, or department.

- Represent a quality characteristic; for example, voltage, viscosity, defect code, or symptom.

When you define collection elements, you are creating data fields that you can use in collection plans to collect quality results. Once you create a collection element, it becomes available as a selection on a list of values that you can choose from when you set up collection plans. You can create an unlimited number of your own collection elements (which are referred to user-defined collection elements), or you can use any of Oracle Quality's predefined collection elements in your collection plans. You also can create collection elements by copying them from one collection plan into another.

Collection Elements in Collection Plans

Collection elements are generic until you use them in collection plans. Whenever you use collection elements in collection plans, they are associated with the plans and thereafter are referred to as "collection *plan* elements." Collection plan elements can have different actions, specifications, or values that make their use specific to that collection plan.

For example, you can define a collection element called Color that has the values red, yellow, and blue, then use it in a collection plan where you assign it all of these values and also assign it additional values, such as orange, and green. The next time you use Color in a collection plan, you can choose whether to use the Color collection element that has the values red, yellow, blue, or copy in the Color collection *plan* element, which has the values red, yellow, blue, green and orange.

Process for Defining Collection Elements

When you define your own collection elements, you name them, assign them a collection element type, label them, then specify their data type and other information needed for data collection and reports. You then have the option to further define a collection element by:

- Specifying a value or a list of values that must be used to validate it during data collection.

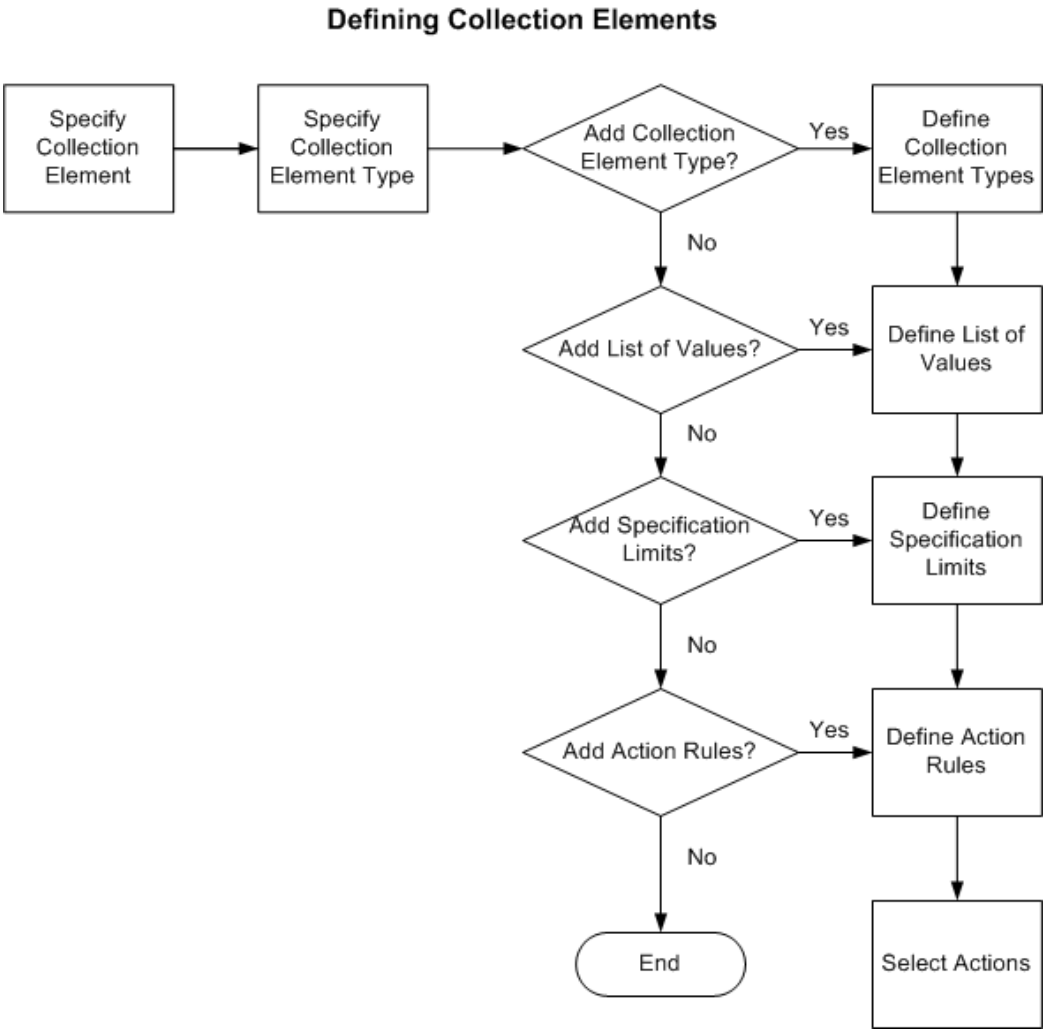
- Assigning it actions that cause events to occur, depending on the quality results entered.

- Defining specification limits for it, particularly if it is a numeric collection element.

Each step is fully described in its own section. For instructions on completing these steps, see:

- Defining Collection Element Types, page 3-6
- Defining Collection Elements, page 3-11
- Defining Collection Element Values, page 3-18
- Defining Collection Element Specification Limits, page 3-16
- Defining Collection Element Actions, page 3-29

The following diagram provides you with an overview of the process for creating collection elements:



Collection Element Types

Collection elements are categorized by type so that they can be sorted and grouped in database searches and on reports. You assign collection element types to collection elements when you define them. Thus, you must first set up collection element types before you create collection elements.

You can create your own collection element types and add them to collection plans, or you can use any of Quality's predefined collection element types. If you create your own collection element types, you must define them before you define collection elements.

Predefined Collection Element Types

Oracle Quality provides you with three predefined collection element types, Attribute, Variable, and Reference, which are available as selections on a list of values when you

define collection elements (see Defining Collection Element Types, page 3-6).

Attribute Collection Element Type

The Attribute collection element type groups collection elements according to specified characteristics (such as color, taste, or size) or the outcome of a process they are associated with, such as a pass/fail result collected during a Purchasing Receiving Inspection. These collection elements often have a limited list of acceptable values.

The following table presents attribute collection element types.

Examples of Attribute Collection Element Types

Attribute Collection Element Types	List of Values
color	blue
	yellow
	red
defect	broken lead
	cracked chassis
	component failure
disposition	scrap
	rework
	down-grade

Variable Collection Element Type

The Variable collection element type groups collection elements by their numeric measurements, such as size, viscosity, or temperature. They often have a range of acceptable values or specification limits expressed as preferred values with an acceptable degree of tolerance.

The following table presents variable collection element types.

Examples of Variable Collection Element Types

Variable Collection Element Types	Specification Limits
shaft diameter	3.25 cm. +/- 0.05 cm.

Variable Collection Element Types	Specification Limits
acidity	6.55 +/- 0.05
temperature	98 degrees F +/- 2 degrees

Reference Information Collection Element Type

The Reference Information collection element type groups collection elements that reference common objects defined in other Oracle Applications, such as Oracle Flow Manufacturing, Inventory, Order Management, Purchasing, and Work in Process. See: Reference Information Collection Elements, page 3-8.

Defining Collection Element Types

You must assign a collection element type to each collection element that you define. You can use the following procedure to create your own collection element types or you can use one of Quality's three predefined types: *attribute,variable,* and *reference information.*

To define collection element types:

1. Navigate to the Collection Element Type QuickCodes window.
2. Enter a unique Code for the collection element type. You can use alphanumeric characters, spaces, underscores (_), and single quotation marks (').

   You can define a maximum of 250 Codes, but you cannot change the values in these fields once you save them. To remove an obsolete Code you can either disable it, enter an end date, or change the meaning and description to match a replacement code.
3. Enter the Meaning of the Code.

   The Meaning is the translation of the Code. For example, the meaning of a Code called "IP-1" could be "Inspection Plan Number 1."
4. Enter the Description of the Code.

   The description provides additional information about the Code and is displayed on the list of values for the enabled collection element types. For example, the description for Code IP-1 is "Inspection Plan Number 1 for WIP Move Transactions."
5. Optionally, enter the date that the collection element type becomes effective in the Effective Date From field.

If you enter a date in this field, the collection element type cannot be used before this date. If you do not enter a date, the collection element type is valid immediately.

6. Optionally, enter the date that the collection element type is no longer effective in the Effective Date To field.

   If you enter a date in this field, the collection element type cannot be used after this date. If you do not enter an expiration date, the collection element type is valid indefinitely. Once a collection element type expires, you cannot select the collection element type as you define collection elements, but you can query records that already use it.

7. Check the Enable box to enable the collection element type.

   If you do not check this box, the collection element type will not appear on the list of values when you define collection elements. You can disable, but you cannot delete collection element types. If you disable a collection element type, you cannot select it as you define collection elements, but you can still query records that already use it.

8. Save your work.

See: Defining Collection Elements, page 3-11.

See: Lookups, *Using Oracle HRMS - The Fundamentals*.

Predefined Collection Elements

To save you time and to automate data entry, Oracle Quality provides you with several predefined collection elements that are available on a list of values when you set up collection plans. If you are collecting quality data during transactions, and your collection plan uses predefined collection elements that also are on the parent form, their values are automatically entered for you. Otherwise, you enter their values manually.

There are three kinds of predefined collection elements: Reference Information, Context (all context collection elements are also reference collection elements), and Quality collection elements. Quality also has several reserved words that cannot be used as collection element names. For a list of these collection elements and reserved words see: Reference Information/Context Collection Elements, page 3-8 and Reserved Words, page 3-9

Related Topics

Defining Collection Elements, page 3-11.

Quality Specific Collection Elements, page 3-9.

Reference Information and Context Collection Elements

In most collection plans, it is necessary to have some collection elements that simply provide basic background or reference information for the plan, such as Department, Item, or Date. These collection elements are referred to as *reference information* collection elements.

When you perform transactions in Oracle applications, the values for any related reference information collection elements are automatically entered in the collection plan, if they are available on the parent form. Because the values for these collection elements are derived from within the context of the transaction, they also are considered *context* collection elements. All context elements are reference information collection elements, and can be used as triggers for collecting quality data during transactions. See: Quality Data Collection During Transactions, page 5-35 and Context Element Relationships, page 5-37.

If you are manually entering quality results data for reference information or context collection elements (and not in the context of a transaction), you must select their values from a list of values.

For example: you are performing a Move Transaction in Work in Process, and are using a collection plan that contains Job, Item, and Defect Code reference information collection elements. The Job number and Item number are also on the parent form, thus they are automatically entered as you perform the transaction. Defect Code, however, although predefined, is not on the parent form, thus you must enter it manually by selecting it from the list of values.

The following Oracle Applications have predefined Context and Reference Information collection elements. See: Context and Reference Information Collection Elements, page E-1, for a complete list of each application's predefined elements.

- Complex Maintenance, Repair, and Overhaul
- Depot Repair
- Enterprise Asset Management
- Flow Manufacturing
- Inventory
- Mobile Supply Chain Applications
- Order Management
- Oracle Process Manufacturing (OPM) Process Execution
- Oracle Process Manufacturing (OPM) Quality Management

- Project Contracts
- Purchasing
- iSupplier Portal
- TeleService
- Shop Floor Management
- Warehouse Management
- Work in Process

Quality Specific Collection Elements

The following collection elements are specific to Oracle Quality. These collection elements are commonly used in quality data collection, analysis, and control, and therefore are predefined:

- Cause Code
- Defect Code
- Disposition Code
- Quality Code
- Quantity Defective
- Severity Code
- Symptom Code
- Test Status

Related Topics

Overview of Collection Elements, page 3-1

Defining Collection Element Types, page 3-6

Common Collection Plan Elements, page 5-6

Reserved Words

The following words are used in database views and therefore cannot be used as collection element names, regardless of case or spacing, i.e., changing the underscore (_) to a space does not create a different name. For more information about database views,

see Collection Plan and Import Results Database Views, page 5-5

- Collection_ID
- Created_By
- Created_By_ID
- Creation_Date
- Insert_Type
- Last_Updated_By
- Last_Update_Date
- Last_Update_Login
- Matching_Elements
- Occurrence
- Organization_Code
- Organization_ID
- Organization_Name
- Plan_ID
- Plan_Name
- Process_Status
- QA_Created_By_Name
- QA_Last_Updated_By_Name
- Row_ID
- Source_Code
- Source_Line_ID
- Spec_Name
- Transaction_Interface_ID

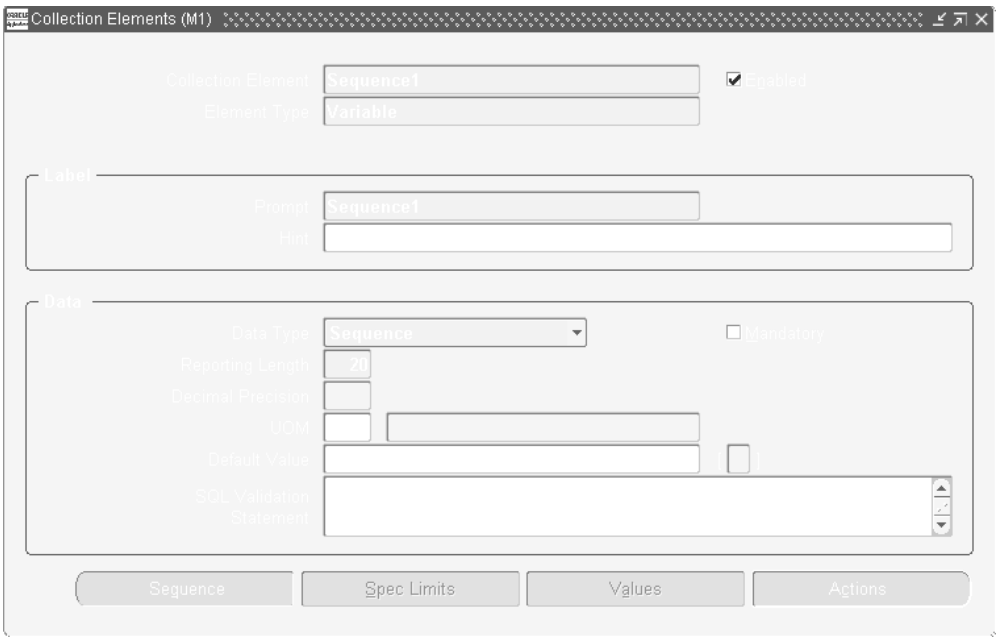
Defining Collection Elements

You can define an unlimited number of collection elements, which you can then add to collection plans to determine what quality results data will be collected and tracked. You can add, change, and delete collection elements as your requirements change. You also can customize your collection elements by:

- Defining collection element values. See: Defining Collection Element Values, page 3-18.
- Defining specification limits. See: Defining Collection Element Specification Limits, page 3-16.
- Defining action rules and quality actions. See: Defining Collection Element Actions, page 3-29.

To define a collection element:

1. Navigate to the Collection Elements window.



Important: The steps listed below describe how to define collection elements one-at-a-time in the Collection Elements window. You also can define several collection elements simultaneously using the Collection Elements Summary window. See: Combination Blocks, *Oracle E-Business Suite User's Guide*.

2. Enter the Collection Element name.

   The collection element name can contain alphanumeric characters, spaces, underscores (_), and single quotation marks ('). You cannot use words that are reserved for column names in collection plans such as NAME, OCCURRENCE, ORGANIZATION_ID, and CREATED_BY. See: Reserved Words, page 3-9.

3. Check the Enabled check box to enable the collection element.

   You can only add enabled collection elements to collection plans and specifications.

4. Select its Collection Element Type. See: Collection Element Types, page 3-4.

5. Enter text for the data entry Prompt.

   The prompt is the label for the collection element field displayed in the Results region of the Enter Quality Results window. Prompts also become the column headings on reports and online inquiries. The default prompt is the name of the collection element, but you can overwrite it.

6. Optionally, enter a Hint.

   Hints are additional text that appears in the message line as the user enters quality results to guide the user during data entry. See: Entering Data in Forms, *Oracle E-Business Suite User's Guide*.

7. You can select any data type, however, you cannot change it once you define the collection element. The available data types are Character, Number, Date, Date and Time, Comment, and Sequence.

   Comment: This Data Type enables you to define up to 2000 characters within the current collection element. Up to five Comment collection elements can be added to a collection plan (See: Creating Collection Plans, page 5-11), each with the ability to contain up to 2000 characters in its string value. The Reporting Length field indicates the number of comment characters viewable within the Long Comments field, when viewing quality results (See: Viewing Quality Results, page 14-32). When within the View Quality Results window, you can select Ctrl-E to view or update all 2000 characters of the comment.

   Sequence: This Data Type enables the current collection element to be a sequential, automatic numbering identifier. The sequence number is generated when the record is saved, not when the record is created. The Sequence Element Audit Report enables you to verify that all sequence type collection element numbers generated when entering collection plan results have been used and that you can account for any deleted numbers. See: Sequence Element Audit Report, page 15-11.

   > **Note:** Sequence and Comment types are not supported in Enterprise Asset Management Transaction Integration

8. Optionally, check the Mandatory check box to indicate that a value must always be entered for this collection element when entering quality results.

   A mandatory collection element can be redefined as non-mandatory or read only when added to a collection plan. See: Defining Collection Plan Elements, page 5-15.

9. Enter the Reporting Length.

   The reporting length specifies how much space is allocated for this collection element's quality results values on reports, inquiries, and in the Enter Quality Results window.

   > **Note:** The reporting length does not determine the amount of space used to store quality results values in the quality data repository. Results values can be up to up to 150 characters in length.

10. If the data type is Number, enter the Decimal Precision.

    If you define specification limits for this collection element, entering the decimal precision (refers to the number of places after the decimal point) here controls the decimal precision of the specification limit values that you can define. You can enter a decimal precision up to 12 places.

11. Optionally, enter a UOM. See: Overview of Units of Measure, *Oracle Inventory User's Guide*.

    Units of measure can be entered for any collection elements regardless of data type. You can override the UOM assigned here with a different UOM once you assign a collection element to a collection plan. See: Defining Collection Plan Elements, page 5-15.

12. Optionally, enter a Default Value for the collection element.

    When you set a Default Value for the collection element (generally the most commonly used value for that collection element), it is automatically entered when the user enters quality results. For example, assume that you define a collection element called Inspector ID. Since inspector 101 performs most inspections, you enter 101 as the Default Value for the Inspector ID collection element. As you enter quality results, the value 101 automatically appears in the Inspector ID field. You can override this value unless the collection element has been defined as read only in the collection plan. See: Default Value Assignment Rules, page 6-4 and Defining Collection Plan Elements, page 5-15.

13. This statement is used for validation when you enter quality data. You can base a collection element's data validation on any table in the Oracle database. To do this, you can define a SQL validation statement that Quality uses for validation when you collect quality data. This SQL statement must be a SELECT statement in which you select two columns. For example, if you have entered machine numbers in a

database table, you can cross-validate machine numbers entered as you collect quality results against the numbers. See: *SQL*Plus User's Guide and Reference,* Release 3.2.

For example to validate machine numbers from a table called 'machine_numbers' stored in the database, enter the following SQL validation statement:

SELECT machine_number, machine_description

FROM machine_numbers

WHERE NVL(disable_date, SYSDATE+1) > SYSDATE

AND organization_id=:parameter.org_id

ORDER BY custom_machine_number

> **Important:** To constrain the SQL Statement to the current organization, you can use the variable ':parameter.org_id' for the current organization id. To constrain the SQL Statement to the current user's id, you can use the variable ':parameter.user_id' for the current user's id.

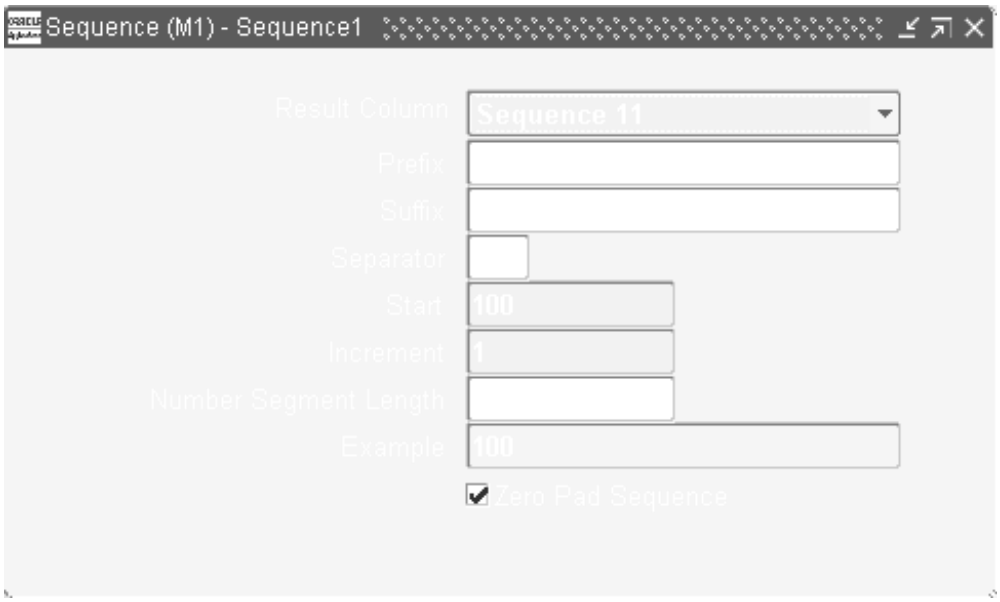
If you define both a SQL validation statement and a list of collection element values, only the list of values is used for validation; the SQL validation statement is ignored.

14. Save your work.

To define sequential counter information for a collection element:

If you selected Sequence in the Data Type field, you can customize how the sequence numbering will appear when entering and displaying quality results. Once the current collection element is included within a collection plan (See: Creating Collection Plans, page 5-11), automatic counter sequencing will display within the Results column, accessed when entering Quality results (See: Entering Quality Results Directly, page 6-7). Once the quality results have been entered for the collection plan containing the Sequence collection element, you can view the the sequence elements when viewing your quality results.

1. Choose Sequence.



2. Select one of 15 seeded sequence elements from the Result Column list of values.

3. Optionally, enter a Prefix and a Suffix for the current sequence element.

4. Optionally, enter a Separator. This will separate the prefix and suffix value from the sequence number.

5. Enter a sequence Start number. The default is 100.

6. Enter a sequence Increment number. The sequences will automatically increment by the value entered in this field. The default is 1.

7. The Number Segment Length value default is 8. This is the maximum length of the sequence element within the Results column, accessed when entering Quality results. See: Entering Quality Results Directly, page 6-7.

8. The Example field with default based on the information that you have entered in the Prefix, Suffix, Separator, and Start fields. This is an example of what the sequence element will look like within the Results column, accessed when entering Quality results. See: Entering Quality Results Directly, page 6-7.

9. Optionally, select the Zero Pad Sequence check box to enable the sequence number to have zero as the prefix. In the example above, the sequence number would display as 0100 within the Results column, accessed when entering Quality results. See: Entering Quality Results Directly, page 6-7.

10. Save your work.

To delete collection elements:

1. Navigate to the Collection Elements window.
2. Select the Collection Element using Query Find. See: Searching for Data, *Oracle E-Business Suite User's Guide*.

   You cannot delete collection elements that have been added to collection plans or specifications even if they have not been used to collect quality results. You cannot delete collection elements that are referenced in settings that have been saved. See: Copy Settings, page 14-2.

   You also cannot delete predefined reference information collection elements. You can, however, disable collection elements that you cannot delete.
3. Choose Delete Record from the Edit Menu.
4. Save your work.

Related Topics

Overview of Collection Elements, page 3-1

Defining Collection Element Specification Limits

Specification limits establish the acceptable values and tolerances for collection elements. You can set specification limits for collection elements of any collection element or datatype; however, they normally are associated with variable collection elements that represent numeric measurements such as length, weight, and temperature. Specification limits include a target value (the preferred value) and three sets of upper and lower range limits, which can be changed without restriction.

You create specification elements by adding collection elements to your specifications. Collection element specification limits are defaulted to these specification elements. For example, if you create a specification element by adding the Frequency collection element to a specification, the target value of 2000, and lower and upper user-defined, specification, and reasonable range limits - 1800-2200, 1720-2080, and 1600-2400 respectively - are defaulted to the specification element.

> **Important:** If you are defining specification limits for numeric collection elements, the decimal precision of the collection element controls the decimal precision of the specification limits. For example, if the decimal precision of the collection element is 3, you can define specification limits of up to 3 decimal places such as 3.999.

To define collection element specification limits:

1. Navigate to the Collection Elements window.
2. Select the Collection Element.

   You can select any collection element, even those that are disabled.
3. In the Collection Elements window, choose the Spec Limits button. The Specification Limits window appears.
4. Enter the Target Value.

   The target value represents the preferred value.
5. Enter the lower and upper User-Defined Range limits.

   The lower and upper user-defined range limits can be used to represent a process control limit. Your user-defined limits can be inside of, outside of, or overlapping your specification range limits. The upper limits must exceed the lower limits.
6. Enter the lower and upper Specification Range limits.

   The lower and upper specification range limits can represent engineering tolerances. The upper limits must exceed the lower limits.
7. Enter the upper and lower values Reasonable Range limits.

   The lower and upper reasonable range limit ensures that you collect values that make sense. The upper limits must exceed the lower limits.
8. Save your work.

   Note: You can explicitly save your work, but if you do not, your work is saved when the collection element is saved.

Collection Element Values

When you create collection elements, you define a list of values for them that users must select from when they enter quality results. This ensures that valid values are entered in fields (to ease data entry, enter a short code for the value when you define it).

When you use a collection element in a collection plan, however, the values are not copied into the plan, and you therefore must reassign some or all of them to the collection plan element, or create new values for it. This enables you to control how collection elements are used within collection plans.

For example: you could create a collection element called Color and define a list of values for it that includes the values red, yellow, and blue. You then have the option to

use the Color collection element in a collection plan with all of its values assigned, in a second collection plan with only its red value assigned, in yet another collection plan with only its yellow and blue values assigned.

Default Values

You also can define default values for collection elements. A default value is the most commonly used value for that collection element, and it is automatically entered when the user enters quality results. For example, if Color is a collection element, and you are collecting quality results for a product most frequently produced in Black, you can make Black the default value for the Color collection element. When the user enters quality results, the value Black is automatically entered in the Color field. You can override this value (see: Default Value Assignment Rules).

Default values typically are defined for attribute collection elements, although they are not limited to these. Collection element default values can be copied to any collection plan that contains that collection element. To assign them to the elements while collecting quality results, you can define default values at the element level as well as the plan level. Defining a default value at the plan level, automatically assigns it to the element while collecting results.

Related Topics

Defining Collection Plan Element Values, page 5-19

Defining Collection Element Values

Defining values for collection elements ensures valid quality data entry since the user can only select a value from the list that you define. For example, if your list of values for a *Pass_Fail* collection element only contains the values Pass and Fail; these are the only values that appear on the list of values when users collect quality results. Thus no other results values can be collected.

Collection elements with defined values also give you greater flexibility in creating collection plans, since you can choose which values you want to assign to the collection element when it is used in a collection plan.

To define a list of collection element values:

1. Navigate to the Collection Elements window.
2. Select the Collection Element.

   You can define values and lists of values for user-defined collection elements and predefined collection elements.
3. Choose the Values button. The Values window appears.

4. Enter the Short Code.

   The short code generally is an abbreviation of the value and is used to ease data entry. For example, if you had a collection element called Color, you could assign the short code "Blk" to it's black value. The short code must match the data type of the collection element. For example, if the data type is number, the short code must be numeric.

5. Enter the Description.

   The Description provides additional information about the short code. For example, the short code *lead* might have a Description of *broken lead.*

6. Save your work.

   Note: You can explicitly save your work, but if you do not, your work is saved when the collection element is saved.

To delete collection element values:

From the Values window, select the value's short code. Choose *Delete Record* from the Edit Menu.

You can only delete collection element values if they have not been copied to a collection plan element.

Related Topics

Defining Collection Elements, page 3-11

Defining Collection Plan Element Values, page 5-19

Quality Actions

When you define a collection element, you can specify that Oracle Quality initiates an action based on the quality data that you collect. You can have Quality issue alerts and electronic notifications, launch workflows created in Oracle Workflow, as well as place jobs, repetitive schedules, items, suppliers, and purchase order lines on hold. For example, if a test result on a critical component is entered as "Failed," you can have Oracle Quality automatically send an electronic mail notification to the responsible person(s).

The condition that you specify and the resulting action comprise what is called an Action Rule. Action rules are evaluated and executed during the quality data collection process. When an action rule is found to be true, the action associated with it is invoked. You can define the same actions and action rules for both collection elements and collection plan elements, with the exception of the Assign a Value action, which can only be defined for collection plan elements. You also can copy Actions and Action

Rules to other collection plan elements.

Quality Actions are defined in the following process:

- Define the Action Rule(s) that determine when an action is invoked (see: Action Rules and Invoked Actions, page 3-26).
- Specify the action(s) that the Action Rule invokes when found to be true (see: Action Rules and Invoked Actions, page 3-26).
- Define any Action Detail(s) that may be required, such as message text or operation numbers (see: Action Details, page 3-26).
- Specify the evaluation Sequence that must be followed to determine whether an Action is invoked (see: Action Rule Sequencing, page 3-27).

Types of Actions

There are four types of actions: Message, Alert, User-defined, and Application Specific. These are described below:

Message Actions

Message actions either display a message or post it to the Quality Action Log. They reject input and force the user to enter an acceptable value before the user can continue. You can use Message actions to prompt an operator to take immediate action, such as putting nonconforming parts into a separate holding area or shutting down faulty equipment. Message actions provide immediate feedback and help resolve problems at the source.

Message actions require action details. For example, when you define the *Display a message to the operator* action, you must enter the message that is to be displayed. Message actions options are as follows:

Display a message to the operator	Displays the message entered to the operator.
Reject the input	Displays the message entered message and rejects the input. Before you can continue with quality data collection, you must enter an acceptable quality results value.

Post an entry to the Quality Action Log	Posts the message entered to the Quality Action Log. For example, you can post an entry each time a critical part is found to be defective so that the source of the problem can be determined and eliminated. This creates a quality results audit trail. See: Viewing and Deleting Action Log Entries, page 14-41.

Alert Actions

Quality Alert Actions can launch various processes, as well as send electronic mail notifications to users. They are similar, yet distinctly different from the event alerts that you can define using Oracle Alerts. They share the same underlying database tables and require some of the same setups, however, Quality alerts do not have the full functionality of Oracle Alerts. Quality alert actions include:

- Execute an operating system script
- Execute a SQL script
- Launch a concurrent request
- Send an electronic mail notification

User-Defined Actions

User-defined actions are actions that you can set up to meet your specific business needs. The actions can initiate SQL scripts, formulas, programs, or workflow processes that you design. These are Quality's two user-defined actions:

Assign a Value Action

The Assign a Value action enables you to assign a value to a collection plan element based upon your own formula or SQL script. You can only define the Assign a Value action for collection plan elements. For detailed information on this action, see: Defining Actions that Assign a Value: User-Defined Formulas, page 5-32.

Launch a Workflow Action

The Launch a Workflowaction enables you to activate a previously defined workflow process when specified quality results are collected. For example, you could activate a workflow that sends a notification to the maintenance manager and shop floor supervisor when a machine's temperature is recorded as exceeding a specified tolerance.

To use this action, you must first create the workflow in Oracle Workflow (see the *Oracle Workflow User's Guide*). You also must create a collection plan and collection elements, and select the collection element that will be used as the action trigger. You then define an action rule and associate it with the Launch a Workflow action.

See: Defining Launch a Workflow Actions, page 3-37.

Application Specific Actions

Actions are either specific to an Oracle Applications product and act upon database objects associated with that product, or they are non-product specific. There also are dependencies between some application specific actions and context elements. See: Dependencies Between Context Elements and Actions, page 5-22.

The table below summarizes Oracle Application specific actions, and is followed by their descriptions:

Oracle Application	Action
Work in Process Actions	Assign a shop floor status to the intraoperation step
-	Place the job on hold
-	Hold all schedules building this assembly on this production line
Purchasing Actions	Accept the shipment
-	Reject the shipment
-	Place the supplier on hold
-	Place a document or release on hold
-	Assign an ASL status
Warehouse Management Actions	Assign a lot status
-	Assign a serial status
Enterprise Asset Management Actions	Create a work request
-	Create a maintenance work order

Work in Process Actions:

These actions are associated with Oracle Work in Process:

Assign a shop floor status to the intraoperation step	Assigns the shop floor status that you specify in the Action Details region of the Quality Actions window to any intraoperation step of the operation you are moving assemblies into. Shop floor statuses can be used to prevent movement out of a particular job or line/assembly intraoperation step or over an operation step. You can only assign shop floor statuses that are active in Work in Process. See: Shop Floor Statuses, *Oracle Work in Process User's Guide*. Shop floor statuses assigned by Quality Actions can be changed in Work in Process. See: Assigning and Viewing Shop Floor Statuses, *Oracle Work in Process User's Guide*.
Place the job on hold	Changes the status of the job to On Hold. See: Discrete Job Statuses, *Oracle Work in Process User's Guide*. The statuses of jobs placed On Hold by Quality Actions can be changed in Work in Process. See: Changing Discrete Job, *Oracle Work in Process User's Guide*.
Hold all schedules building this assembly on this production line	Changes the status of all repetitive schedules on a production line to On Hold. See: Repetitive Schedule Statuses, *Oracle Work in Process User's Guide*. The statuses of schedules placed On Hold by Quality Actions can be changed in Work in Process.See: Changing Repetitive Schedules , *Oracle Work in Process User's Guide*.

Purchasing Actions:

Actions associated with Oracle Purchasing or Oracle Supplier Scheduling are as follows:

Accept the shipment	Accepts an inspected shipment from a supplier. You can correct erroneously accepted shipment information in Oracle Purchasing. See: Entering Returns, *Oracle Purchasing User's Guide*andEntering Corrections, *Oracle Purchasing User's Guide*.

Reject the shipment	Rejects a shipment from a supplier. Shipments that are rejected by Quality can be reinspected.

Important: The Accept and Reject the Shipment transaction work in conjunction. You cannot define one without the other.

Place the supplier on hold	Places the supplier on hold. You can approve new purchase orders for suppliers on hold. You cannot approve payments for suppliers on hold. Suppliers placed on hold by quality actions can be released in Oracle Payables. See: Releasing Holds, *Oracle Payables User's Guide*.
Place a document or release on hold	Places the purchase order or release on hold. You cannot print, receive against, invoice, or approve for the future purchase orders or releases that are on hold.

Important: This action does not support internal requisition audits. It only supports purchase orders or releases.

	Documents placed on hold by Quality Actions can be released in Oracle Purchasing. See: Controlling Documents, *Oracle Purchasing User's Guide*.

Assign an ASL Status	Updates the approved supplier's status to the status that you specify. See: Approved Supplier Status, *Oracle Supplier Scheduling User's Guide*. Supplier statuses assigned by quality actions can be changed in Supplier Scheduling. See: Defining the Supplier and Item/Commodity Combination, *Oracle Supplier Scheduling User's Guide*.

Caution: If you use the Assign an ASL Status action on a plan that has the Supplier but not the Item collection element on it, the ASL status is applied to all supplier and item/commodity combinations for that supplier.

Warehouse Management Actions:

Actions associated with Oracle Warehouse Management are as follows:

Assign a lot status	Assigns a lot status to an inventory lot. See: Overview of Material Status, *Oracle Inventory User's Guide*.
Assign a serial status	Assigns a status to an inventory serial number. See: Overview of Material Status, *Oracle Inventory User's Guide*.

Enterprise Asset Management Actions:

Actions associated with Oracle Enterprise Asset Management are as follows:

Create a work request	Creates an eAM work request. See: Triggering a Work Request page , *Oracle Enterprise Asset Management User's Guide*. Optionally, you can use the collection element Work Request Priority to assign a work priority to the work request. Define the values for Work Request Priority in eAM. See: Work Order and Work Request Priority Codes page , *Oracle Enterprise Asset Management User's Guide*.
Create a maintenance work order	Creates a released eAM work order See: To manually create a work order, *Oracle Enterprise Asset Management User's Guide*.

Related Topics

Defining Collection Element Alert Actions, page 3-31.

Defining Collection Plan Element Alert Actions, page 5-26.

Overview of Oracle Alert, *Oracle Alert User's Guide*

Action Rules and Invoked Actions

Action rules define conditions that when found to be true, invoke actions. They are evaluated during the quality data collection process.

You can define more than one action rule for a collection element or collection plan element. You can also define one or more related actions per action rule. Here are some examples of action rules and the actions they invoke:

Examples: Action Rules and the Actions they invoke

- When Severity equals most severe (Action Rule) then *place the job on hold* (Action)
- When Oven temperature is outside the upper and lower specification limits (Action Rule) then *send an electronic mail notification* (Action)
- When Tolerance equals OOT High (out-of-tolerance high) (Action Rule), then *display a message to the operator* (Action).

Action Details

Some actions require that you supply details, such as the text of a message or the number of a particular step. For example, when you associate the "Assign a shop floor status to the intraoperation step"action with an action rule, you must specify *which shop floor status* is to be assigned when the actionis invoked during data collection.

Other actions, such as the "Place the job on hold" action, do not require action details. When an action rule that is associated with this action is found to be true, for example "when Defect Code equals Severe" then "Place the job on hold," the status of the job is automatically changed to On Hold.

Related Topics

Application Specific Actions, page 3-22

Dependencies Between Context Elements and Actions, page 5-22

Defining Collection Element Actions, page 3-29

Defining Collection Plan Element Actions, page 5-23

Action Rule Sequencing

Since you can define more than one action rule for a collection element or collection plan element, you must assign each rule a sequence number. Assigning a number to an action rule establishes the order in which it is evaluated when the action is invoked. If the action rules are mutually exclusive, you must assign each a unique sequence number. If the action rules are non-mutually exclusive, you can assign more than one action rule to a sequence. During quality data collection, the rules are evaluated as follows:

- The first rule in the sequence is evaluated.
- If the rule is true, then its related action is invoked. Evaluation stops.
- If the rule is not true, the next rule in the sequence is evaluated, and so on, until an action rule is evaluated as true.
- When a true condition is found, the action associated with the action rule is then invoked. Evaluation stops.

One Rule Per Sequence Number

When action rules are mutually exclusive, there is only one action rule for each sequence number. For example, consider the action rules associated with a collection element called "Oven Temperature":

MUTUALLY EXCLUSIVE ACTION RULES Oven Temperature = 191 degrees F. Upper to Lower specification limits = 190 to 210 degrees F. User-defined specification limits = 195 to 205 degrees F.

Sequence	Action Rule	Action Rule Exclusivity
10	IFtemp is outside the upper and lower specification limits, THENplace the job on hold	(OR)
20	IF temp is outside the user-defined specification limits, THEN display a message to operator	(OR)
30	IF temp is less than 193 degrees F., THEN send an electronic mail notification to Maintenance	-

In this example, if an Oven Temperature value of 185 degrees F. is collected, the action rule at Sequence 10 is true and the job is placed on hold. The action rule at Sequence 20 is not evaluated even though the 185 value is outside the range specified.

If an Oven Temperature value of 192 degrees F. is collected, the action rule at Sequence 20 is the first rule to be evaluated and found to be true, thus a warning message to the operator is displayed.

Multiple Rules per Sequence Number

When action rules are not mutually exclusive, you can define multiple action rules for each sequence number, and all action rules associated with the same sequence number are evaluated. Even if the first action rule in the sequence is evaluated as true, subsequent action rules within the same sequence also are evaluated. For example:

NON-MUTUALLY EXCLUSIVE ACTION RULES Oven Temperature = 191 degrees F. Upper and Lower specification limits = 190 to 210 degrees F. User-defined specification limits = 195 to 205 degrees F.

Sequence	Action Rule	Action Rule Exclusivity
10	IFtemp is outside the upper and lower specification limits, THENplace the job on hold	(OR)

Sequence	Action Rule	Action Rule Exclusivity
20	IF temp is outside the user-defined specification limits, THEN display a message to operator	(AND)
20	IF temp is less than 193 degrees F., THEN send an electronic mail notification to Maintenance	-

In this example, the two action rules assigned to Sequence 20 are non-mutually exclusive. If an oven temperature of 189 degrees F. is collected, the first action rule at Sequence 20 is found to be true, the job is placed on hold, and evaluation stops.

If an oven temperature of 192 degrees F. is collected, the action rule at Sequence 10 is not true, the action is not invoked, and the next action rule is evaluated. Sequence 20 has two action rules. If either one of the rules or if both rules are true, either or both of the actions are invoked. In this case, since an oven temperature of 192 degrees F. is both outside the user-defined specification limits and less than 193 degrees F., both rules are true, and as a result a message is displayed to the operator, and an electronic mail notification is sent to Maintenance.

Related Topics

Defining Collection Element Actions, page 3-29

Defining Collection Element Alert Actions, page 3-31

Defining Collection Plan Element Actions, page 5-23

Defining Collection Plan Element Alert Actions, page 5-26

Defining Collection Element Actions

When you define a collection element, you can specify that Oracle Quality initiates an action, based on the quality data collected. Defining quality actions requires that you:

- Define action rules that determine when an action is invoked
- Specify the action(s) that the rule invokes when evaluated as true
- Define any action details needed to carry out the action (e.g., message text or operation number)
- Sequence action rules to determine their evaluation sequence

To define collection element action rules:

1. Navigate to the Collection Elements window.

2. Select the Collection Element.

   You can select any enabled collection element.

3. Choose the Actions button. The Quality Actions window appears.

4. In the Action Rules region of the Quality Actions window, enter the Sequence number for the action rule. See: Action Rule Sequencing, page 3-27.

   The Sequence number establishes the order in which action rules are evaluated as data is collected. The sequence number can be from 0 to 99999.

5. Select the Condition that must be met to invoke the action. See: Query Operators, page C-2.

6. Choose either the Value or Spec Limit button to specify the evaluation method.

   Value: If you choose Value, as quality data is collected the action rule is evaluated using the results value and the value or values entered here. If you have defined values for the collection element, you must choose a value from this list. If you have not defined values for the collection element, you can enter any value.

   Spec Limit: If you choose Spec Limit, as quality data is collected the action rule is evaluated using the quality results value and either the specification limit target value, the upper or lower user-defined range limits, or the upper or lower specification range limits.

   Spec Limit can be used to define action rules that evaluate numeric results.

   > **Important:** You are automatically precluded from collecting data that is not within the user-defined range limits. Therefore these range limits cannot be used to define action rules.

7. If the selected Condition requires a range of values, enter both the From and To value. If the selected Condition requires only a single value, enter only the From value.

   > **Note:** Some conditions (e.g. Is Entered and Is Empty) do not require values.

   If you have chosen the Values, and a list of values has been defined for the collection element, you can only select values from this list. If you have not defined collection element values, you can enter any value. See: Defining Collection Element Values, page 3-18.

To associate actions with action rules:

1. From the Quality Actions window, select an Action Rule in the Action Rules region.

2. Select an Action in the Actions this Rule Invokes region. See: Quality Actions, page 3-19.

   You can associate one or more actions with each action rule; however, if the action selected requires action details, you must define action details before selecting another action.

   Some dependencies exist between collection plan elements and actions. For example, you can only define an "Assign a shop floor status to the intraoperation step" action, if you have first created the 'To Operation Sequence' and 'To Intraoperation Step' collection elements. See: Dependencies Between Context Elements and Actions, page 5-22.

To define action details:

1. If the selected action requires a message, enter the message in the Action Details region. Messages can be up to 256 characters in length. See: Message Actions, page 3-20.

   If the selected action requires a status code, enter the status code in the Action Details region. See: Application Specific Actions, page 3-22.

   If the action selected is an alert action, see: Defining Collection Element Alert Actions, page 3-31.

2. Save your work.

Defining Collection Element Alert Actions

You can assign any of these five alert actions to collection elements:

- *Send an electronic mail notification*
- *Execute a SQL script*
- *Execute an operating system script*
- *Launch a concurrent request*

Quality alert actions require action details. Examples of action details include recipients (for electronic mail notifications), arguments, and file names (for SQL and operating system scripts). Further, you can customize alert action details using output variables. Output variables represent quality results values(e.g. &ITEM represents "C12345") and are dynamically defined as action rules are evaluated. Output variables can be imbedded in alert action details and can thus be used in the following contexts:

Send an electronic mail notification: You can create dynamic distribution lists by including output variables in the recipient/distribution fields (List, To, Cc, and Bcc). If you send a text message, you can include quality results values in the message text.

Execute an operating system script: You can use output variables to dynamically pass quality results values as arguments to operating system scripts. If you enter operating system script text, you can include output variables in the text.

Execute a SQL script: You can use output variables to dynamically pass quality results values as arguments to SQL scripts. If you enter SQL script text, you can include output variables in the text.

> **Important:** SQL script actions are limited to Updates or Inserts. To Select a SQL string, use the *Assign a Value* action. See: Defining Actions that Assign a Value: User-Defined Formulas, page 5-32.

See: Associating Output Variables with Actions, page 3-31.

To select collection elements and action rules:

1. Navigate to the Collection Elements window.
2. Select the Collection Element.
3. Choose the Actions button. The Quality Actions window appears.
4. In the Action Rules region, select the action rule.

To define electronic mail alert actions:

1. In the Actions this Rule Invokes region, select the *Send an electronic mail notification* action.
2. In the Action Details tab, choose the Action Details button. The Actions:Send Electronic Mail window appears.
3. Optionally, select an Oracle Office public mail List or a distribution List. If you select an Oracle office public mail list, you can enter the list name in any of the recipient (To, Cc, Bcc) fields. If you select a distribution list, the electronic mail IDs associated with the list are automatically displayed in the recipient fields. You cannot change these values.

   > **Note:** Before using alert outputs in a distribution list, note that distribution lists can be used for many alerts, and each alert can have different outputs. An output you use in a distribution list for one alert could result in an error when used in another alert. There is no support for a distribution list to be passed as an output

variable.

4. In the To field, enter the electronic mail IDs of the mail message recipients, separated by spaces or commas. You can enter as many recipients as you want (up to 240 characters). You can dynamically distribute mail messages by including output variables in the recipient fields.

   For example, you could define and use an output variable for an Inspector ID collection plan element if Inspector IDs are equivalent to electronic mail IDs.

5. In the Subject field, enter the subject (up to 240 characters), of the mail notification.

6. Optionally, in the Cc field enter the electronic mail IDs of the mail recipients to whom you want to send an electronic copy.

7. Optionally, in the Bcc field, enter the electronic mail IDs of the mail recipients to whom you want to send a blind electronic copy (these recipients' names do not appear on the electronic mail message or on any copies of the message).

8. Define your message source by selecting either File or Text.

   File: Enter the File name including the full path name.

   Text: Enter the message Text for the electronic message. You can include output variables in the text. For example, you can specify that the quality results values associated with the Item collection plan element appear in the text of an electronic mail notification.

   An example of a text message containing output variables is as follows:

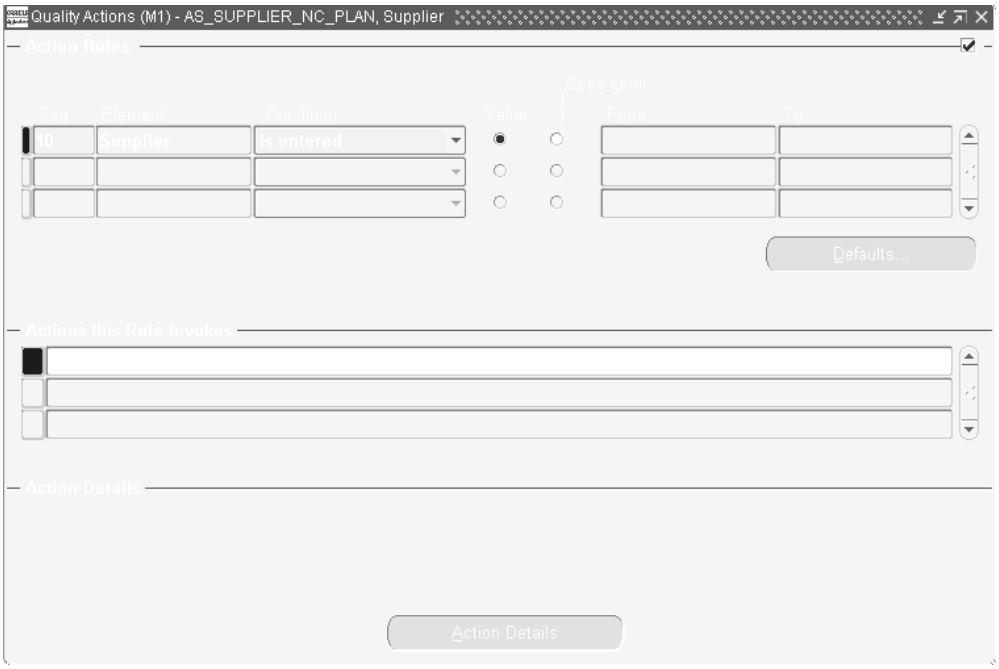
   Please test the contents of item number *&ITEM* received on *&TRANSACTION_DATE.*

9. Choose the Variables button to associate output variables with the action. See: Associating Output Variables with Actions, page 3-39.

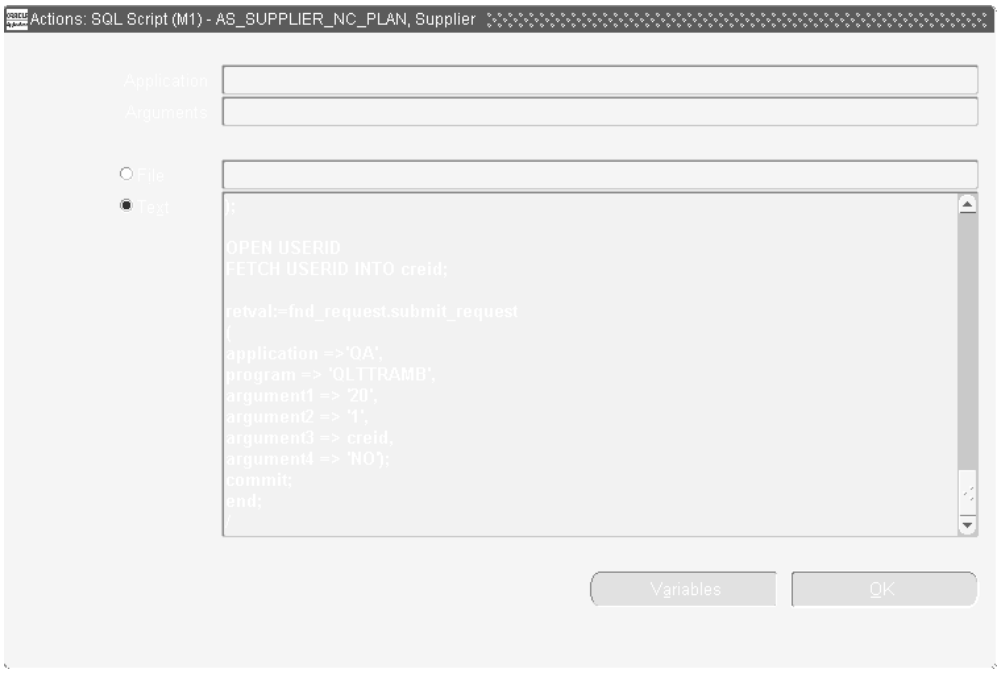
10. Choose OK to Save your work.

To define concurrent request alert actions:

1. In the Actions this Rule Invokes region, select Execute a SQL script from the list of values (See: To define SQL script alert actions, page 3-36).



2. Choose Action Details to display the Actions:SQL Script window.



3. Select the Text radio button and enter the arguments within a SQL script. The SQL script enables you to use variables to associate the concurrent request arguments with entered quality results.

   For example, the Template Supplier Nonconformance Record Plan launches the Collection Import Manager concurrent process to import results records into the master collection plan.

4. Choose OK to save your work.

To define operating system script alert actions:

1. In the Actions this Rule Invokes region, select the *Execute an operating system script* action.

2. In the Action Details region, choose the Action Details button. The Actions:Operating System Script window appears.

3. Choose the source of the operating system script by selecting either File or Text. You cannot select an application or enter arguments if you choose to enter a text script.

   File: You can enter the full path and file name of the operating system script source file rather than select an Application.

   Text: You can enter the a text operating system script. You can include output variables in the text. For example, you can specify that the quality results values

associated with the Item collection element appear in the text of an operating script.

An example of text operating system script containing output variables is as follows:

echo Please test the contents of lot number *&LOT* received on *&TRANSACTION_DATE* from supplier *&SUPPLIER*. The following defect was noted by receiving: *&DEFECT_CODE*

4. If the operating system script you want to execute is in a file located in an Application's base path *bin* directory, select the Application name.

   Important: If you enter an application name or *arguments* then choose to enter operating system script Text, values entered in these fields are erased.

5. Optionally, enter arguments, separated by spaces, to pass to the operating system script file.

   You can dynamically pass arguments to your operating system script using output variables. If these output variables select character or date data, place single quotes around the output variable to correctly pass the argument.

6. Optionally, choose the Variables button to associate output variables with the actions. See: Associating Output Variables with Actions, page 3-39.

7. Choose OK to Save your work.

To define SQL script alert actions:

1. In the Actions this Rule Invokes region, select the *Execute a SQL script* action.

2. In the Action Details region, choose the Action Details button. The Actions:SQL Script window appears.

3. Choose the source of the SQL system script by selecting either File or Text. You cannot select an application or enter arguments if you choose to enter a text script.

   File: You can enter the full path and file name of the SQL script source file rather than select an Application.

   Text: You can enter the a text SQL script. You can include output variables in the text. For example, you can specify that the quality results values associated with the Item collection element appear in the text of an SQL script.

   If your SQL script text includes output variables that select character or date data, place single quotes around your output variables so the system can correctly pass the data. If a single quote lies within your character string, the system adds a second single quote. For example, if your character string is resume', the system

displays this as resume".

An example of SQL script text containing output variables is as follows:

update wip_discrete_jobs

set attribute1 = &defect

where organization = &org.id

and wip_entity_id=

(select wip_entity_id

from wip_entities

where wip_entity_name=&job);

Note that in conformance with SQL standard formatting conventions, a semicolon (;) or a forward slash (/) must be placed at the end of each SQL statement.

4. If the SQL system script you want to execute is in a file located in an Application's base path *sql* directory, select the Application name.

   Important: If you enter an application name or *arguments* then choose to enter SQL script Text, values entered in these fields are erased.

5. Optionally, enter arguments, separated by spaces, to pass to the SQL script file.

   You can dynamically pass arguments to your SQL script using output variables. If these output variables select character or date data, place single quotes around the output variables to correctly pass the argument.

6. Optionally, choose the Variables button to associate output variables with the actions. See: Associating Output Variables with Actions, page 3-39.

7. Choose OK to Save your work.

What's Next

See: *SQL*Plus User's Guide and Reference,* Release 3.2.

Defining a Launch a Workflow Action

In order to associate a workflow with an action, you must first create the workflow in Oracle Workflow. To then be able to dynamically pass quality results values to the workflow during data collection, you must create output variables for the collection plan elements whose values you want to pass, and assign them a token. The token that you assign is the internal name for the workflow attribute that corresponds to the

collection element.

For example, if you have two collection plan elements called Item and Job Number whose values you want displayed in the workflow, you open the Output Variables window and assign each element a "token" that matches the workflow's internal name for that attribute (it must be exactly the same). When the workflow is launched, the elements' values are automatically passed to the workflow.

The following parameters must be defined in the Output Variables window, for any workflow that you create (See: Associating Output Variables with Actions, page 3-39):

1. Plan_id : Mapped to the element Collection plan name.
2. Collection_id: Mapped to element Collection Number.
3. Occurrence: Mapped to element Occurrence.
4. Recipient: Mapped to element Send Notification To.

These collection elements are part of all seeded workflows defined by Quality. The values for these parameters (along with other parameters that you may define) should be passed through variables defined in Actions in the Collection Plans Setup window.

Prerequisites

- ❒ You must have previously created the workflow that you want to launch in Oracle Workflow.
- ❒ You must obtain the name of the workflow attributes that correspond to the collection elements whose values you want to pass to the workflow.
- ❒ You must have created a collection plan, associated it with a plan type and collection plan elements, and selected the collection plan element that will be used as the action trigger.

To define a Launch a Workflow Action:

1. In the Collection Plans window, choose the Actions button.
2. In the first blank row in the Actions this Rule Invokes region, select the *Launch a Workflow* action from the list of values (the Action Details button becomes visible in the Action Details region).
3. In the Action Details region, choose the Action Details button. The Launch a Workflow window opens.
4. In the Workflow Name field, select the workflow that you previously created in Oracle Workflow from the list of values.

5. Define output variables for the workflow. See: Associating Output Variables with Actions, page 3-39.

   - Choose the Variables button to open the Output Variables window.
   - In the Token Name field, enter the internal name for the workflow attribute that you want to associate with the collection plan element (*the token name must be entered exactly the same as the workflow attribute's internal name*).
   - In the Collection Element field, select the collection element from the list of values.
   - Similarly, using the Output Variables window, define the following as output variables: Plan_id mapped to Collection plan name, Collection_id mapped to Collection Number, Occurrence mapped to Occurrence and Recipient mapped to Send Notification To. Optionally, define any other output variables.
   - Choose OK to save your work and close the Output Variables window.

6. Save the collection plan.

Associating Output Variables with Actions

Using output variables, you can incorporate quality results values into the action details of the following alert actions: *Send an electronic mail notification, Execute a SQL script,* and *Execute an operating system script* (see: Defining Collection Element Alert Actions, page 3-31), and the *Launch a Workflow* user-defined action. Output variables can also be used to incorporate quality results values into the action details of *Assign a Value* actions.

> **Note:** The above listed Alert actions can be defined for both collection elements and collection plan elements, but *Assign a Value* actions can only be defined for collection plan elements.

For example, you can use an output variabletoken (e.g. &DIAMETER) to represent numeric diameter values (e.g. 45 inches), so that these values can be included in the details (text) of *a Send an electronic mail notification* alert action.

Output variable tokens are defined by entering an ampersand (&) followed by a token name (for example, &ITEM_NUMBER) that represents a results value.

Prerequisites

❒ Include an output variable token as you define your Alert, Assign a Value, and Launch a Workflow actions. See: Defining Collection Element Alert Actions, page 3-31, Defining Collection Plan Element Alert Actions, page 5-26, Defining Actions that Assign a Value: User-Defined Formulas, page 5-32, and Defining Launch a

Workflow Actions, page 3-37.

- ❒ The token that you associate with the output variable for the Launch a Workflow action is the Oracle Workflow attribute for that collection element. You must enter the token name exactly as the attribute name is written in the workflow.

To associate output variables with actions:

1. From the Actions:Send Electronic Mail, Actions: SQL Script, Actions:Operating System Script, Assign a Value, or Launch a Workflow windows, choose the Variables button. The Output Variables window appears.

2. Enter the Token Name.

   Do not enter the ampersand (&). For example if you included an &ITEM_NUMBER output variable token in the Message Text field of the *Actions: Send Electronic Mail window,* you would enter ITEM_NUMBER as the token name.

   > **Important:** If you are creating a Launch a Workflow output variable, the token must be entered *exactly the same* as the workflow attribute's internal name is written or the workflow will not launch.

3. Select the collection element to associate with the token name.

   You can associate token names with any collection element, including common collection plan elements. For example, you can associate the Item collection element with the &ITEM_NUMBER token name as described above.

4. Save your work.

5. Choose OK to close the Output Variables window.

Viewing Collection Elements

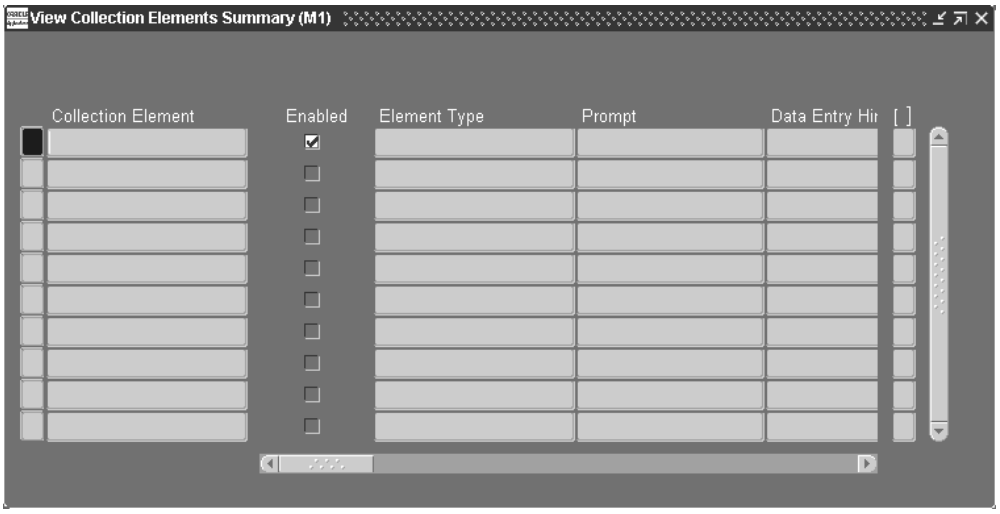
You can find and view collection elements. You can view collection element information in summary or detail.

To view collection elements:

1. Navigate to the View Collection Elements window. The Find Collection Elements window appears.

   You can find specific collection elements. You can also query to find all collection elements of a particular collection Element Type or Datatype, as well as all collection elements that are Mandatory or Enabled. You can combine search criteria as required.

2. Enter any combination of search criteria and Choose the Find button. The results display in the View Collection Elements Summary window.



You can view collection elements in either the View Collection Elements window or the View Collection Elements Summary window.

To view collection element values:

From the View Collection Elements window, choose the Values button.

To view collection element specification limits:

From the View Collection Elements window, choose the Spec Limits button.

To view collection element actions:

From the View Collection Elements window, choose the Actions button.

Related Topics

Defining Collection Elements, page 3-11

Searching for Data, *Oracle E-Business Suite User's Guide*

4

Specifications

This chapter explains how to define and use specifications.

This chapter covers the following topics:

- Overview of Specifications
- Specification Types
- Specification Collection Elements
- Defining Specifications
- Defining Specification Collection Elements

Overview of Specifications

Specifications define the requirements to which the product must conform. You can define specifications for the key characteristics of the products that you produce or for the materials that you receive from suppliers.

You can attach illustrative or explanatory files to specifications, such as text, images, word processing documents, spreadsheets, video, and so on. Attachments can be used to document processing instructions as well as inspection and disposition procedures.

You can use specifications to ensure that:

- Items produced internally conform to internal requirements
- Items shipped to customers conform to customer requirements
- Items received from suppliers conform to supplier requirements
- The same item used in multiple organizations has the same specifications in all organizations

For each specification that you define, Quality allows you to specify:

- A specification type - in this example, an item specification
- An item, item category, or item category set
- A specification subtype
- A reference specification
- A group of specification elements describing the item
- Specification limits for each specification element, with up to three different specification ranges
- Attachments for electronic documents, multimedia instructions, or images

Uses of Specifications

Specifications and their specification elements make it possible to do the following:

- Prohibit the collection of data that lies outside the reasonable range of a specification element. Input that falls outside the reasonable limit range is rejected.
- Assist operators as they enter data. You can optionally display specification element specification limits as quality results are directly entered. You can choose to hide specification limits by setting the *QA: Blind Results Entry* profile option to Blind Entry On. Also, you can specify that the target value be automatically defaulted in when quality results are entered by setting the *QA:Default Specification Target* profile option to Yes. See: Profile Options, page 2-8.
- Use specification limit values to define action rules and the actions they invoke. Action rules control when and how to react to the entry of off-specification quality results. For example, you can define an action rule that invokes an action, such as sending an electronic mail message, when a quality results value is outside the upper and lower range limits of a specification element.

  Note: If you change the profile set, re-login to the application to ensure that correct data is collected for different number type collection elements.

Related Topics

Defining Specifications, page 4-4

Defining Specification Elements, page 4-7

Specification Types, page 4-3.

Specification Elements, page 4-3.

Uses of Specifications, page 4-2.

Specification Types

Quality supports three types of specifications: item, supplier, or customer. The specification type that you can select is determined by your business application. For example, Item specifications can be used to define requirements for items without regard to the customer or supplier that may purchase or sell them. Conversely, customer and supplier specifications can be used to define the requirements for items sold to or purchased from specific customers or vendors respectively.

The following table presents the three supported specification types.

Specification Types

Specification Type	Business Example
Item Specification	For a given item, thickness must be 0.55 inches, plus or minus 0.002 inches; torque strength must be between 4.5 and 5.2; burn-in hours must be 48.
Supplier Specification	Carbon black received from supplier Acme Corporation must be tested to ensure its particle size does not exceed 0.0026 millimeters.
Customer Specification	Steel coils sold to customer ABC Corp. must always contain at least 1.5 percent molybdenum, 2.5 percent manganese, and have a tensile strength of at least 60.

Specification Subtypes

Quality also supports specification subtypes. Specification subtypes are used to create more detailed specifications. For example, if a similar, yet different supplier specification is required when a supplier ships from one location to another, you can use a specification subtype to ensure that the correct specification is applied.

Specification Collection Elements

Specification elements are the basic components of a specification. They can be any data type, but typically, they are numeric.

You create specification elements by first defining them as collection elements in the Collection elements window, and then adding the collection elements to your specifications. Adding the collection elements to your specification causes them to become specification elements. You also can create specification elements by copying them from an existing specification into a new specification. This is useful when similar items, suppliers, or customers require the same specification elements.

Specification Collection Element Limits

As you create specification elements, any limits that have been assigned to them are defaulted from the source. Limits to specifications can include an acceptable target value as well as user-defined, reasonable, and range limits. The specification limits for a specification element can be updated as required.

Examples of specification elements and their associated limits are presented in the following table.

Specification Elements

Specification Element	Specification Limit Target Value or Range
Thickness	User Defined Range: 0.55 +/- 0.002
Torque	Reasonable Range: 45 and <52
Burn-in time	Target Value: 48 hours

Related Topics

Defining Collection Elements, page 3-11

Defining Collection Element Specification Limits, page 3-16

Defining Specifications, page 4-4

Defining Specification Elements, page 4-7

Defining Specifications

Specifications describe the requirements to which a product should conform. There are three specification types: item, supplier, and customer. Specifications can be further defined using subtypes. By carefully defining your specification you can ensure that the correct specification is applied as you collect data.

Each type of specification can be based on either an *Item*,*Item Category* or *Item Category Set*. If your specification is based on an *Item*, you must assign an item and, depending

on the item, an item revision. If your specification is based on an *Item Category*, you must assign an item category from a list of values based on either the default item category set specified in the QA:Quality Category Set profile option or on any other category set available in the list of values. If your specification is based on an *Item Category Set*, you must assign a category set from the list of values based on category sets defined in the Oracle Inventory Category Sets window.

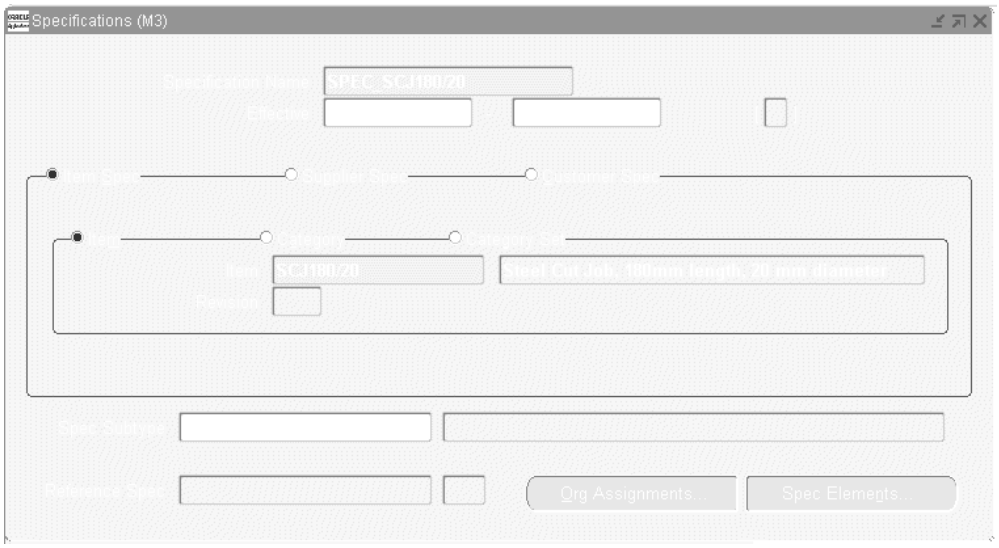
You can also attach illustrative or explanatory files - in the form of text, images, word processing documents, spreadsheets, video, and so on - to specifications. Attachments can be used to document processing instructions as well as inspection and disposition procedures. They can be viewed by operations personnel during quality data collection.

Prerequisites

❒ Define collection elements. See: Defining Collection Elements, page 3-11.

To define specification header information:

1. Navigate to the Specifications window.



2. Enter the Specification Name.

3. Optionally, enter the From Effective date.

   You cannot use the specification before this effective date. If you do not enter a From Effective Date, the specification is effective immediately.

4. Optionally, enter the To Effective date.

   You cannot use the specification after this date. Once a specification expires, you cannot select this specification when entering quality result. You can, however,

query quality results that were collected using it. If you do not enter a "To" effective date, the specification is valid indefinitely.

To define specifications:

1. Choose the Item Spec, Supplier Spec, or Customer Spec radio button.
2. Choose either the Item, Category, or Category Set radio button to base the specification on an Item, Category, or Category Set.
3. If the specification is based on an Item, select the Item and, optionally, the Revision.
4. If the specification is based on the Category, select the Category Set and the Category.

   If you are defining an item category specification, the system automatically defaults the category set defined by the *QA:Quality Category Set* profile option. See: QA:Quality Category Set, page 2-12. You can also select a category set from the list of values. You must assign a category that is a member of the category set selected.
5. If the specification is based on the Category Set, select the Category Set.

   If you are defining an item category set specification, the system automatically defaults the category set defined by the *QA:Quality Category Set* profile option. See: QA:Quality Category Set, page 2-12. You can also select a category set from the list of values.
6. Save your work.

To define specification subtypes:

1. Select a collection element.
2. Enter a value for the specification element.

To use the same specification limits as another specification:

1. Enter a reference specification in the Reference field.

   The child specification uses the same specification limits as the parent specification shown in the Reference field. Any changes to the parent specification limits automatically change the child specification limits, too. The child specification limits are read only and can have a different item, supplier, or customer than the parent specification.
2. Save your work.

To create new specifications linked to an existing specification:

1. Choose the Org Assignments button.

   The Organization Assignments window shows all of the organizations that the item belongs to.

2. Check the box next to each organization in which you want to create child specifications.

   The child specifications use the same specification limits as the parent specification. Any changes to the parent specification limits automatically change the child specification limits, too. The child specification limits are read only.

3. Enter a specification name for each new child specification.

   Later, you can inquire on the child specifications. The Reference field shows the parent specification.

4. Choose the Assign button to create the new child specifications.

> **Important:** Define the specification limits for a parent specification before following these instructions to create child specifications. This ensures that the child's specification limits are linked to the parent's limits. See: Defining Specification Elements, page 4-7.

To define specification elements:

See: Defining Specification Elements, page 4-7.

To attach files to specifications:

See: Attaching Files to Collection Plans, Specifications, and Results Lines, page B-2.

Related Topics

Finding Specifications While Entering Results Directly, page 6-10.

QA:Quality Category Set, page 2-12.

Attaching Files to Collection plans, Specifications, and Results Lines, page B-2.

Specification Types, page 4-3

Overview of Item Categories, *Oracle Inventory User's Guide*

Defining Specification Collection Elements

You can create specification elements by:

- Adding individual collection elements to your specification
- Copying specification elements from one or more "source" specifications
- Copying specification elements from a source specification and adding individual collection elements

> **Important:** Copying specification elements from a source specification is useful when similar items, suppliers, or customers require the same specification elements.

Specification collection elements that are copied from a source specification are addedto the destination specification. If any of the specification elements from the source specification have already been created on the destination specification, these specification elements and the specification limits you have entered for them are not overwritten. You can delete specification elements that are copied if they are not required.

To define specification elements:

1. From the Specification Elements window, select the Collection Element (Specification Element).
2. Change the UOM (Unit of Measure), if desired.

   You can either accept the default unit of measure or change the unit of measure. You enter quality results in the unit of measure defined here, in the Specification Elements window.
3. Check the Enabled check box to enable the specification element.

   Specification elements must be enabled before you they can be used in the data collection process.

   > **Caution:** You may need to enable specification elements that were copied from a source specification.

4. Enter the Target Value.

   The target value represents the preferred value.

   > **Important:** If your specification elements correspond to collection plan elements, you can choose to use specification element *target values* as the *default values* when you enter quality results. See: Default Specification Limit Values, page 6-3.

5. On the Spec Range tab, enter the lower and upper Specification Range limits.

   The lower and upper specification range limits can represent engineering tolerances. The upper limits must exceed the lower limits.

6. On the User-Defined Range tab, enter the lower and upper User-Defined Range limits.

   The lower and upper user-defined range limits can be used to represent process control limits. Your user-defined limits can be inside of, outside of, or overlapping your specification range limits. The upper limits must exceed the lower limits.

7. On the Reasonable Range tab, enter the upper and lower values Reasonable Range limits.

   The lower and upper reasonable range limit ensures that you collect values that make sense. The upper limits must exceed the lower limits.

8. Save your work.

To select specifications:

1. Navigate to the Specifications window.

2. Select the Specification Name.

To copy specification elements from an existing specification:

1. From the Specifications window, choose the Spec Elements button. The Specification Elements window opens.

2. Choose the Copy button. The Copy From Specification list appears.

3. Select the name of the source Specification.

   You can copy specification elements from any specification even those that are not effective. You can copy specification elements from more than one specification. You can delete specification elements that are copied if they are not required.

   > **Note:** Oracle Quality permits you to copy specification elements across organizations.

   When you copy specification elements from another specification, the specification limits (target value and range limits) are defaulted from the source. These values can be changed.

   > **Caution:** If you copy specification elements that are disabled on the

source specification, they are copied to the destination specification as disabled.

To add individual collection elements to specifications:

From the Specification Elements window, select the Collection Element from the Collection Elements list of values.

You can add any enabled user-defined or predefined reference information collection element.

When you add individual collection elements, the specification limits (target value and range limits) are defaulted from the source. These values can be changed.

Related Topics

Defining Specifications, page 4-4

Defining Collection Element Specification Limits, page 3-16

5

Collection Plans

This chapter provides you with overviews and instructions for creating and using collection plans.

This chapter covers the following topics:

- Overview of Collection Plans
- Collection Plan Types
- Collection Plan and Import Results Database Views
- Collection Elements in Collection Plans
- Creating Collection Plans
- Defining Collection Plan Elements
- Defining Collection Plan Element Values
- Associating Specification Types with Collection Plans
- Dependencies Between Context Elements and Actions
- Defining Collection Plan Element Actions
- Defining Collection Plan Element Alert Actions
- User-Defined Formulas
- Defining Assign A Value Actions: User-Defined Formulas
- Business Examples: User-Defined Formulas
- Quality Data Collection During Transactions
- Associating Collection Plans with Transactions
- Updating and Deleting Collection Plans
- Viewing Collection Plans
- Parent-Child Collection Plans
- Collection Plan Security

Overview of Collection Plans

You create collection plans to determine the data that you want to collect, where and when in the manufacturing process you want to collect it, and what actions you want to take based on the quality results that you collect. You can use collection plans to model your test or inspection plans, and you can create an unlimited number of plans to support your enterprise-wide quality data collection and analysis needs.

You can create collection plans for departments, functional areas, product lines, or for specific purposes, such as collection plans that enable you to record the following information:

- Supplier defects in receiving and inspection
- Shop floor defects resulting in scrapped assemblies
- Equipment breakdowns
- Quality characteristics, such as acidity and viscosity, for lots produced
- Recording serial number test history
- Root causes and resolutions for discrepant material
- Repair codes and quantities for rework
- Symptoms for field returns and customer returns

Quality Data Collection Structure

In order to collect quality data with Oracle Quality, you must set up a data collection structure called a collection plan. Collection plans are composed of collection elements, their values and specifications, and any actions that you want to initiate in response to quality results. There are some considerations that you must make before you set up collection plans. You first must create collection element types, then the individual collection elements that comprise the plan.

Collection Elements

Collection Elements are the building blocks of collection plans. They are the fields that you set up in the collection plan for the data that you want to collect. You must define collection elements before you can use them in a collection plan. Once you use them in a collection plan they become collection *plan* elements specific to that plan.

You can create collection plan elements by adding collection elements that you have defined to collection plans. You also can copy them from one collection plan into another. Collection plans can contain both predefined reference information collection elements, as well as user-defined collection elements. See: Collection Elements in

Collection Plans, page 5-6.

Size and Complexity

You can add up to 100 user-defined collection elements to collection plans. In addition, common collection plan elements are automatically added as collection plans are created. Context elements may or may not be automatically added.

A simple equipment maintenance collection plan, for example, might only collect machine number and date maintained information, whereas a complex equipment maintenance collection plan might include machine number, serial number, maintenance personnel, machine supplier, machine parts supplier, and a historical record of all routine and remedial maintenance.

Data Collection Methods

Collection plans can be invoked manually for direct results entry, or automatically as you enter transactions in other Oracle Applications. You also can import data through Quality's Collection Import feature, as well as through Oracle Applications Open Interface. See: Collection Import, page 6-20 and the *Oracle Manufacturing APIs and Open Interfaces Manual*.

Attachments

You can attach illustrative or explanatory files to collection plans, in the form of text, images, word processing documents, spreadsheets, or video. Attachments can be used to document instructions and corrective action procedures. They can be viewed by operations personnel during quality data collection. See: Attachments for Collection Plans, Specifications, and Result Lines, page B-1 and Viewing Attachments Associated with Quality Results, page 6-12.

Collection Plan Types

For sorting, grouping, categorizing, and other informational purposes, you must assign a collection plan type to each collection plan that you create. You can define your own collection plan types, or you can use any of these eight predefined collection plan types:

- Corrective Action Requests (Corrective Action Request Plan)
- Counter Readings (Counter Readings Plan)
- Dispositions (Disposition Plan)
- FGI Inspection (inspection plans for finished goods inventory)
- Field Returns (collection plans for field failure details)
- Nonconformances (Nonconformance Plan)

- Receiving Inspection (goods receipt inspection plans)
- WIP Inspection (in-process inspection plans)

Since collection plan types are only informational, they do not affect a collection plan's association with transactions. For example, you can associate a collection plan that has been assigned a WIP Inspection plan type with a Receiving Inspection transaction.

Defining Collection Plan Types

You must define collection plan types before you create collection plans so that they are available on the collection plan type list of values when you set up the plan. You define collection plan types on the Collection Plan Type Quick Codes window where you can define up to 250 unique collection plan types.

To define collection plan types:

1. Navigate to the Collection Plan Type Quick Codes window.

   The Type, User Name, Application, and Description fields contain default information about the Quick Code window.

2. Enter a unique Code for the collection plan type. Codes can include alphanumeric characters, spaces, and underscores (_).

   The system uses the Code during database searches to find that particular collection plan type.

   > **Note:** You cannot change the values in this field after saving them. To remove an obsolete QuickCode you can either disable it, enter an end date, or change the meaning and description to match a replacement code.

3. Enter the Meaning of the Code.

   The Meaning is the complete name or translation of the Code. For example, you could create a collection plan type Code called "IP-1" whose meaning is "Inspection Plan-1."

4. Enter a Description for the collection plan type. The Description provides additional information about the Code, and is displayed on the list of values for the enabled collection plan types.

5. Optionally, enter the start date that the collection plan type becomes effective in the Effective Dates *From* field.

   You cannot use the collection plan typebeforethis effective date. If you do not enter a From effective date, the collection plan type is valid immediately.

6. Optionally, enter the date that the collection plan type expires in the Effective Dates *To* field.

   You cannot use the collection plan typeafterthis date. Once a collection plan type expires, you cannot select this collection element type as you create collection plans, but you can query records that already use it. If you do not enter a To effective date, the collection plan type is valid indefinitely.

7. Check the Enable box to enable the collection plan type.

   If you disable a collection plan type, you cannot select it as you define collection plans, but you can still query records that already use it. You can disable but not delete collection plan types.

8. Save your work.

Related Topics

Creating Collection Plans, page 5-11

Lookups, *Using Oracle HRMS - The Fundamentals*

Collection Plan and Import Results Database Views

Database views are virtual tables. They allow you to access data without having to know where or how that data is stored.

In Oracle Quality, collection plan and import results database views are dynamically created and updated as you create and update collection plans. View names are derived from the collection plan name. Plan results views use the *Q_collection_plan_name_V* namingconvention. Import results views use the *Q_collection_plan_name_IV* naming convention.

Collection Plan Views

Collection plan results database views can be used to create custom reports, charts, and views for your quality results. You can also use database views to access quality results with products such as Oracle Discover and Oracle Developer, as well as any other data inquiry products that can select data from an Oracle database.

To make custom reporting easier, foreign key information for entities in other Oracle Applications are automatically included when collection plan results database views are created. This feature makes it possible to dynamically access information in foreign database tables. For example, if your collection plans contains the Supplier (ID for the supplier) collection element, the supplier name can be resolved using the collection plan result database view.

Collection Import Views

Collection import result database views facilitate the insertion of data into the Collection Import Interface Table. Instead of inserting data directly into the import table, you insert data into a view of the table.

What's Next

Table and View Definitions, *Oracle Quality Technical Reference Manual*

Collection Import, *Oracle Manufacturing APIs and Open Interfaces Manual*

Collection Elements in Collection Plans

When you add collection elements to collection plans, they become collection *plan* elements specific to that collection plan, and can have a different definition in every collection plan in which they are used. When you use a collection element in a collection plan, only its specifications and default value are copied into the plan, not its actions or values. You must reassign it some or all of its values and actions, or create new values and actions for it once you associate it with a collection plan. Any actions that you define for a collection plan element only apply to that element when used in that collection plan.

You can define your own collection elements (User-defined collection elements), use any of Quality's pre-defined collection elements (Pre-defined Reference Information collection elements), or you can copy collection elements from one collection plan into another. See: Collection Elements, page 3-8 and Defining Collection Plan Elements, page 5-15.

Common Collection Plan Elements

In addition to the collection elements that you add to collection plans, there is a group of common elements that are automatically added to collection plans as they are created. The following common collection plan elements are predefined as mandatory, enabled, and displayed:

- Collection Number
- Collection Plan Name
- Collection Plan Type
- Created By
- Entry Date
- Last Update Date

- Last Updated By
- Organization

These common collection plan elements can be used to define output variables when reporting quality results. To view the results for common collection plan elements, see: Viewing Quality Results, page 14-32.

The item description is also recorded at the time of data collection, but it is not a common collection plan element. To view the item description, see: Viewing Quality Results Details, page 14-35.

Context Element Dependencies

Some context collection elements are dependent on other context elements. If you add them to collection plans before you add the context elements they depend on, a warning message is displayed, but you are allowed to continue.

For example, if you add the Lot Number collection element to a collection plan, before adding the Item collection element, you are warned that you should add Item to the collection plan before adding Lot Number. The following table lists all context dependencies.

Collection Element Dependencies

Context Element...	..Depends On (Add first)
Component Locator	Component Subinventory
Component Lot Number	Component Item
Component Revision	Component Item
Component Serial Number	Component Item
Component Subinventory	Component Item
Component Unit of Measure	Component Item
From/To Intraoperation Step	From/To Operation Sequence
From/To Operation Sequence	Job Name or Production Line
Line Operation	Flow Manufacturing Routing

Context Element...	..Depends On (Add first)
Locator	Subinventory
Lot Number	Item
PO Line Number	PO Number
PO Release Number	PO Number
PO Shipment	PO Line Number
Production Line	Item (Repetitive)
Revision	Item (under revision control)
Serial Number	Item
SO Line Number	Sales Order Number
Subinventory	Item
Task Number	Project Number
Unit of Measure	Item

You can choose to save a collection plan that you have added a dependent collection element to (Lot Number) even if you do not add the collection element that it depends on (Item). When you enter results using this collection plan, however, the field for the dependent collection element (Lot Number) is disabled and you are prohibited from entering results.

It is possible to sequence collection plan elements so that a dependent collection element (Lot Number) precedes the collection element it depends on (Item). In this case, as you enter results, the Lot Number field remains disabled until Item results are entered.

Collection Plans for Transactions

You can create collection plans that are specifically used to collect quality data during transactions performed in other applications. In general, these collection plans have only one requirement: that they be associated with a transaction in another product (collection plans that are used to inspect received items in purchasing, however, have additional requirements).

Additional information on creating collection plans to be used with other products can be found in the following sections:

- Quality Data Collection in Work in Process, Shop Floor Management, and Flow Manufacturing, page 9-6
- Collection Plans for Receiving Transfers and Deliveries, page 8-8
- Collection Plans for Receiving Inspections, page 8-6
- Quality Data Collection in Oracle TeleService, page 11-2
- Quality Data Collection in Oracle Depot Repair, page 11-7
- Creating eAM Quality Collection Plans, *Oracle Enterprise Asset Management User's Guide*
- Mobile Quality, *Oracle Mobile Supply Chain Applications User's Guide.*
- Quality Collection Plans Setup (Complex Maintenance Repair, and Overhaul), *Oracle Complex Maintenance, Repair, and Overhaul User's Guide*

Collection Plan Templates

You can create collection plans by copying from another plan in two ways:

- Copying a collection plan, including child plans, and creating a new plan
- Copying the components from one plan to a new plan

To determine which method to use, decide whether you want to copy associated child plans along with the parent plan you have chosen to copy. See: Parent-Child Collection Plans, page 5-51. If you do want to copy the associated child plans, refer to Setup Steps, Step 2 - Copy from Template Collection Plans, *Oracle Quality Implementation Guide*. These instructions explain how to copy a seeded template collection plan, but are valid for user-defined collection plans as well.

The remaining discussion focuses on creating a collection plan when only copying the components from an existing plan to a new plan. The collection plan from which you copy the components from acts as a template for the new collection plan. You can use collection plans created in one organization as templates to create new collection plans in another organization as well as in the current organization.

When you create a collection plan using a template, all of the following components are automatically copied from the source to the destination collection plan:

- Collection plan elements and, if defined, their values
- Collection plan element actions, action triggers, action details, and, if defined,

output variables for alert actions

Collection plans for transactions and their collection triggers are not copied. Also, the specification type for the source plan is not defaulted to the destination plan.

When you create collection plans from templates, the transactions associated with the source plan are not copied, therefore you must manually associate the appropriate transaction with the new plan. You also must enable the collection plan that you set up for the transaction. When you save your work the system checks to make sure that all required collection plan elements, actions, and values exist. If they do not, you are prompted to fill in the missing fields (you also can choose to have the system automatically fill in the missing components).

You can use both pre-seeded and user-defined collection plans as templates. The following list describes the pre-seeded collection plans that are available. The elements in each plan and the actions associated with each element are listed in an appendix, Pre-Seeded Collection Plan Templates, page F-1.

You can delete collection plan elements that are copied but are not required. You can also add user-defined and additional context elements.

See: Inspection Collection Plans, page 8-6

Creating Collection Plans From Templates

To create a collection plan from a template:

1. Navigate to the Collection Plans window.

   Important: To assist you as you create collection plans, you can choose the Summary/Detail option from the View Menu and run a query to view existing collection plans in summary format. See: Combination Blocks, *Oracle E-Business Suite User's Guide*.

2. Enter the Collection Plan name.

   Collection Plan names consist of alphanumeric characters and spaces. Collection plan names can have up to 30 characters, and the first 25 characters must be distinctive. The only special characters that you can use in a collection plan name are the underscore (_) and the single quotation mark (').

3. Optionally, enter the date that the Collection Plan becomes effective in the Effective "from" field, the first field after Effective.

   You cannot use the collection plan before this effective date. If you do not enter a "from" Effective date, the collection plan is effective immediately.

4. Optionally, enter the date that the Collection Plan expires in the Effective "to" field, the second field after Effective.

You cannot use the collection plan after this date. Once a collection plan expires, you cannot enter quality results using the plan, but you can query records that already use it. If you do not enter a "to" effective date, the collection plan is valid indefinitely.

5. Select the collection Plan Type from the list of values for that field. See: Collection Plan Types, page 5-3.

6. Choose the Copy Elements button. The Copy From Plan list appears.

7. Select the name of the source or template collection plan.

   You can select any collection plan, even those that are not effective. You also can copy collection elements from more than one collection plan.

   When you copy collection elements from another collection plan, their sequence numbers, prompts, parameters (mandatory, enabled, displayed), actions, lists of values, and default values are defaulted from the source. These values can be changed.

   > **Caution:** If you copy collection elements that are disabled on the source collection plan, they are copied to the destination collection plan as disabled.

8. Choose OK.

9. Change the new collection plan as required.

   You can delete collection elements that are copied if they are not required. If any of the collection plan elements from the 'source' collection plan have already been added to the destination collection plan, those on the destination collection plan are not overwritten.

Related Topics

Predefined Collection Elements, page 3-8

Creating Collection Plans

Collection plans are the structure that you use for data collection. Collection plans are composed of collection elements (the fields that you set up for the data that you want to collect), their values and specifications, and any actions that you want to initiate in response to quality results. You can create a collection plan that you can use as the default when you directly enter, view, and update quality results and when you view lot quality results, serial quality results, and action log entries. See: QA:Default Collection Plan, page 2-11.

Collection plan elements are the building blocks of collection plans. You can create collection plan elements by adding individual collection elements to your collection plan. You can also create collection plans by copying the collection elements from one collection plan into another. You can define lists of values for each collection plan element that you create.

> **Note:** In addition to the collection elements that you explicitly add to a collection plan, there are a number of common collection plan elements that are added to every collection plan that you create. See: Common Collection Plan Elements, page 5-6.

You can customize collection plans to meet your specific data collection needs by:

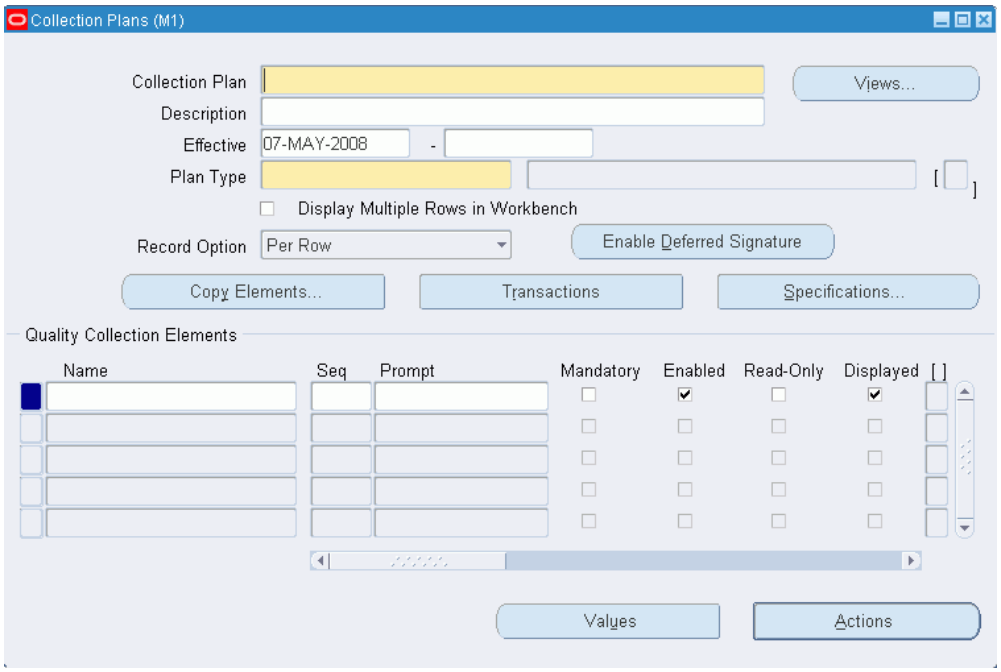
- Associating specification types with collection plans, such as item, customer, or supplier
- Specifying which transactions in other Oracle Manufacturing products invoke a collection plan and thus quality data collection
- Defining values and lists of acceptable values for collection plan elements
- Defining action rules and when those action rules are invoked
- Attaching illustrative or explanatory files in the form of text, images, word processing documents, spreadsheets, video clips, and so on, to collection plans
- Associating devices to collection plan elements to enable device data collection, if Oracle Manufacturing Execution System (MES) for Discrete Manufacturing is installed.

Prerequisites

❒ Define collection elements. See: Defining Collection Elements, page 3-11.

To create collection plans:

1. Navigate to the Collection Plans window.



Important: To assist you as you create collection plans, you can choose the Summary/Detail option from the View Menu and run a query to view existing collection plans in summary format. See:Combination Blocks, *Oracle E-Business Suite User's Guide*.

2. Enter the Collection Plan name.

   Collection plan names can include alphanumeric characters and spaces. Collection plan names can have up to 30 characters, and the first 25 characters must be distinctive. The only special characters that can be included in a collection plan name are the underscore (_) and the single quotation mark (').

3. Optionally, enter the date that the Collection Plan becomes effective in the Effective "from" field, the first field after Effective.

   You cannot use the collection plan before this effective date. If you do not enter a "from" Effective date, the collection plan is effective immediately.

4. Optionally, enter the date that the Collection Plan expires in the Effective "to" field, the second field after Effective.

   You cannot use the collection plan after this date. Once a collection plan expires, you cannot enter quality results using the plan, but you can query records that already use it. If you do not enter a "to" effective date, the collection plan is valid indefinitely.

5. Select the collection Plan Type. See: Collection Plan Types, page 5-3.

6. Check the Display Multiple Rows in Workbench checkbox to display standalone and parent collection plans in the multiple row layout mode in the Quality Workbench.

7. Select the Record Option for entering quality results. The options are Per Row or Per Collection. This field only appears if the profile option value for EDR: E-records and E-signatures is Yes. See: E-records and E-signatures for Oracle Quality, page 13-2.

   Tip: The following example illustrates why you need to select Per Row as the record option:

   You must enter quality results for different item numbers using one collection plan. Item A requires the approval of Approver 1 and Item B requires the approval of Approver 2. In this scenario, you must capture e-records and e-signatures per row to enable both Approver 1 and Approver 2 to enter their e-signatures.

8. Choose Enable Deferred Signature if you want to enable deferred e-signatures when entering or updating quality results for this plan. This button only appears if the profile option value for EDR: E-records and E-signatures is Yes. See: E-records and E-signatures for Oracle Quality, page 13-2.

   Important: This button only enables deferred e-signatures when entering or updating quality results directly or when entering or updating quality results during the following transactions:

   - Depot Repair Task Transaction (Depot Repair)
   - Process Nonconformance (Oracle Process Manufacturing)
   - Service Requests (Oracle Service)

To copy collection elements and actions from a template plan:

See: Creating Collection Plans from a Template, page 5-9.

To define collection plan elements:

See: Defining Collection Plan Elements, page 5-15.

To copy collection element values to collection plans:

See: Defining Collection Plan Element Values, page 5-19.

To define quality actions for collection plan elements:

See: Defining Collection Plan Element Actions, page 5-23.

To associate specification types with collection plans:

See: Associating Specification Types with Collection Plans, page 5-21.

To associate collection transactions with collection plans:

See: Associating Transactions with Collection Plans, page 5-46.

To attach files to collection plans:

See: Attaching Files to Collection Plans, Specifications, and Results Lines, page B-2.

Defining Collection Plan Elements

You can add and define collection plan elements one-by-one. You can also define or redefine collection plan elements that have been copied from another collection plan.

Prerequisites

❒ Create a collection plan. See: Creating Collection Plans, page 5-11.

To add and/or define collection plan elements:

1. Navigate to the Collection Plans window.
2. Select the Collection Plan.
3. In the Quality Collection Elements region, select Name of the collection element.

   If you are adding a collection element, you can select any enabled user-defined or predefined collection element.

   > **Note:** You must add at least one enabled and mandatory collection element to a collection plan. You can add up to 100 user-defined collection elements.

   When you add collection elements, the prompt, parameters (mandatory and displayed), and default values are defaulted from the source collection element. These values can be changed.

   > **Note:** You can add up to five collection elements with a Data Type of Comment to a collection plan.

Some reference information collection elements are dependent on others. If you add them to collection plans before you add the collection elements they are dependent on, a warning message is displayed, but you are allowed to continue. If you create a collection plan that has a dependent collection element, but does not have the collection element that it depends on, the field for the dependent collection element (Lot Number) is disabled and you are prohibited from entering results for it. See: Context Element Dependencies, page 5-7.

> **Important:** Adding collection elements does not automatically copy the lists of the values or the actions that are defined for that collection element.

4. Enter the Sequence number.

   The sequence number defines the columnar order of collection elements when entering quality results. You can change the sequence number as required.

5. Enter text for the data entry Prompt.

   The Prompt defaults from the collection element but can be overridden. The prompt, which is displayed as you enter quality results, asks the user for required information, and also becomes the column headings for reports that you create using the Quality Results ReportWriter.

   > **Note:** Avoid using special characters like (#), (%),and (@) in the collection element prompts.

   > **Important:** If your prompt begins with a hyphen (-), the hyphen and the text that follows it are suppressed as you enter, view, and update quality results.

6. Check the Mandatory check box if you want to indicate that a value must always be entered for this collection plan element.

7. Check the Enabled check box to enable the collection plan element.

   Collection plan elements must be enabled before you can use them in the data collection process.

   > **Caution:** You may need to enable collection plan elements that were copied from a source collection plan.

8. Check the Read Only check box if you do not want users to change a default value or an Assign a Value action.

When an element is read only, it can be populated by a default value and an Assign a Value action, but cannot be changed. (See: Default Specification Limit Values, page 6-3 and Defining Actions that Assign a Value: User-Defined Formulas, page 5-32.)

9. Remove the check mark from the Displayed check box to suppress prompts requesting that you enter results for the collection plan element.

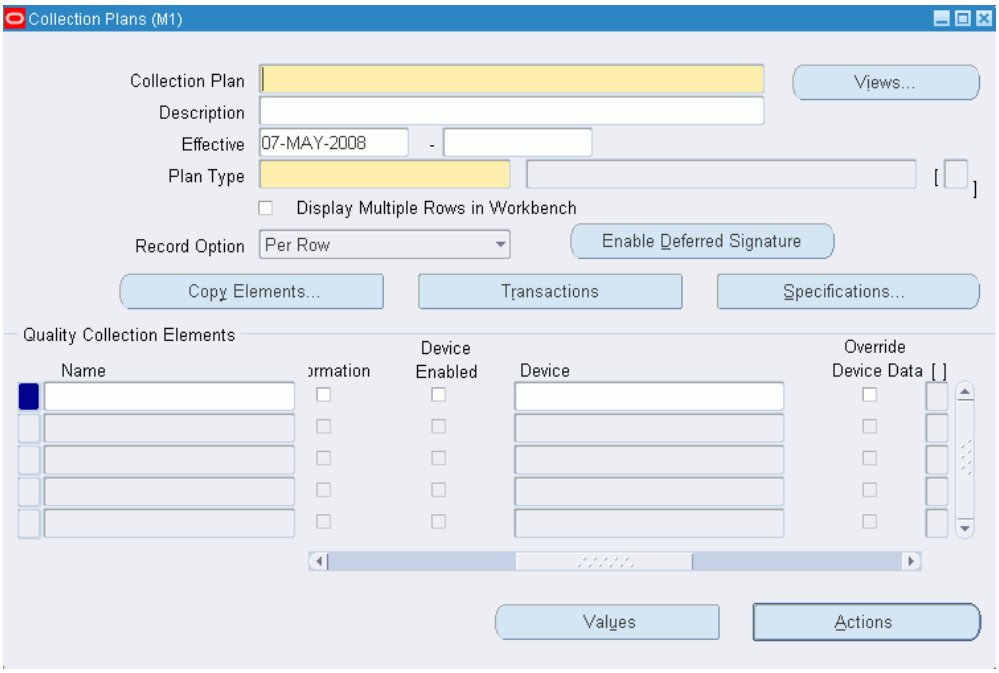
10. Check the Information check box to view the collection element data within the Quality Workbench rows of collection plan results (See: Overview of the Quality Workbench, page 7-1).

    You can check the Information check box for as many as five collection elements within a plan. You can then view the collection element data of these fields in the Information column of the Quality Workbench - View page. Use the data in this column to find quality results entered, then update or view them.

11. Check the Device Enabled option, if Manufacturing Execution System (MES) for Discrete Manufacturing is installed and you want to collect data from a device for this collection plan element.

    - Comment type collection elements cannot be device enabled. Context elements will not exhibit device enabled features in transactions even if they are set up as device enabled. Context elements in transactions can receive their values only from parent transactions.

    - One collection plan element in a collection plan can receive values through one device only. You can however, connect the same collection element to different devices in different plans.



12. If you select the Device Enabled checkbox for a collection plan element in the Collection Plans form, the Device field will become mandatory. Use the Device field to add device details. You can choose from the list of values one combination of the Device description, Sensor Alias and the Device name. The devices you setup and enabled in the Device Data Setup page (See, Device Integration Setup, page 2-4) will appear in this list of values.

13. When you enable a collection plan element for device data collection, you can use the Override Device Data option to override the device data at the plan level. The default value for this check box will be the one defined at the device data setup described earlier. If the override is enabled at the device data setup, then the check box at the plan will be by default checked but can be optionally unchecked. If the override is disabled at the device data setup level then the override check box will be by default unchecked at the plan but can be optionally checked.

    Note: If the Read Only check box in the plan definition is checked for a collection element, then the data cannot be overridden irrespective of the override setup. If you check both the Read Only and Override Device Data check boxes, a message will display that device data for read only elements cannot be overwritten. If a collection plan element is defined as not displayed, the device data for this element cannot be captured irrespective of the setup.

14. Enter the unit of measure (UOM) that you want to use when entering quality results for this organization.

Note: If the collection plan element is device enabled, the device data is generated only in one UOM as defined in the setup of the collection plan element. There is no need for any UOM conversions for the data collected from the device including specifications.

15. Enter the default Precision if the element is a Number data type.

    The value in the Precision field represents the number of decimal places that appear when you view results for the collection element.

16. Enter the Default Value.

    The value you enter appears as the default when you enter quality results. See: Default Specification Limit Values, page 6-3.

    Note: In the Quality Workbench, if there is a default value for a collection element, it will not be considered as user entered value when you save the plan. For example, in the multiple row entry mode in the quality workbench for multiple row result entry in parent plans, all the five new rows that are displayed initially will have all the default values populated as per the setup. If you enter values for the first two rows, only these entries will be saved. The other rows with the default values will not be saved and will be considered as blank rows.

17. Save your work.

Related Topics

Defining Collection Elements, page 3-11

Common Collection Plan Elements, page 5-6

Defining Collection Plan Element Values

Collection plan element values are used to validate data as it is collected. You can define collection plan element values by copying one or all values from a collection element to a collection plan element. You can change and delete the values that you copy, as required. You can also add and define collection plan element values independently.

You can define values and lists of values for all user-defined collection elements as well as predefined attribute collection elements. You cannot define values for reference information collection elements and common collection plan elements. See: Reference Information Collection Elements, page 3-8.

To define collection plan element values:

1. From the Quality Collection Elements region of the Collections Plan window, select the collection element.

2. Choose the Values button. The Values window appears.

3. In the Values window, enter the Short Code.

   The short code you enter must match the data type of the collection element. For example, if you have defined a Diameter collection element that is numeric, you could enter a short code such as 45.67. Similarly, if you have defined a Nonconformity collection element that is character, you could enter an abbreviated short code such as *lead* to indicate a *broken lead* nonconformity. An abbreviation of this sort might be necessary because short code values can only be up to 11 characters long.

4. Enter the Description.

   The Description provides additional information about the short code. In the above example, the short code *lead* might have a Description of *broken lead.*

5. Check the Display as Poplist on Workbench box.

   The Display as Poplist on Workbench box enables you to view defined collection plan element values in a pull down list when entering results using the Quality Workbench. See: Overview of the Quality Workbench, page 7-1.

6. Save your work.

To copy individual collection element values to collection plan elements:

1. Navigate to the Collection Plans window.

2. Select the Collection Plan.

   You can select any collection plan including collection plans that are not currently effective.

3. From the Quality Collection Elements region, select the collection element.

4. Choose the Values button. The Values window appears.

5. In the Values window, select the Short Code for the collection element value.

6. Save your work.

To copy all collection element values to a collection plan element:

1. From the Quality Collection Elements region of the Collections Plan window, select the collection element.
2. Choose the Values button. The Values window appears.
3. In the Values window, choose the Defaults button. The Copy Values window appears.
4. Choose the Copy button to copy the entire list of values from the collection element.
5. Save your work.

To delete collection plan element values:

From the Values window, select the value's short code. Choose *Delete Record* from the Edit Menu.

You can delete collection plan element values even if those values have been used in the data collection process.

Associating Specification Types with Collection Plans

You can associate any of three specification types with collection plans. You can also choose not to associate a collection plan with any specification type. Associating a specification type with a collection plan speeds the specification selection process both when entering quality results directly and when collecting data during transactions. It also enables you to determine whether or not the collected result values are within the limits established by the specification element.

> **Important:** Most specifications are associated with items. However, it is possible to define a specification that does not have an item specification element and select it as you enter quality results.

Direct Data Entry

If you enter quality results directly, for example, using a collection plan that is associated with a Supplier Specification type, the system prompts you to find and select a Supplier Specification after you select the collection plan.

Data Collection During Transactions

If you are collecting results as you enter transactions within Oracle Manufacturing Applications, and the collection plan that you invoke is associated with a specification

type, Quality automatically searches for a specification for the item being transacted. If none exists, Quality searches for a specification for the category of the item (see: Specifications for Transactional Data Collection, page 6-17).

When you collect results during Oracle iSupplier Portal transactions, however, the system does not automatically search for specification types for collection plans associated with these transactions. You therefore must include them on an attachment, which the user can view online or download and print.

To associate specification types with collection plans:

1. Navigate to the Collection Plans window.
2. Select the Collection Plan.
3. Choose the Specifications button. The Specification Types window appears.
4. Choose the default specification type, *Item Specification, Supplier Specification*, or *CustomerSpecification,* or choose *No specification used.* See: Specifications, page 4-3.

   The specification type that you associate with a collection plan can be overridden when you enter quality results. For example, you can associate a Supplier Specification type with a collection plan, but select an Item Specification as you enter quality results. If you choose not to associate a specification type with the collection plan, by choosing *No Specification Used,* you are not prompted to find a specification as you enter quality results.
5. Choose OK to save your work.

Related Topics

Overview of Specifications, page 4-1

Finding Specifications While Entering Quality Results Directly, page 6-10

Finding Specifications During Transactional Data Collection, page 6-19

Defining Specification Limits for Collection Elements, page 3-16

Dependencies Between Context Elements and Actions

Some actions are independent of the collection plan elements they are associated with. For example, you can define message actions, such as *Display a message to the operator*, or alert actions, such as *Send an electronic mail notification*,for any collection plan element.

Dependencies exist, however, between collection plan elements that are context elements and actions. For example, you can only define an *Assign a shop floor status to the intraoperation step* action, if you have added the *To Operation Sequence* and *To Intraoperation Step* context elements to your collection plan.

The following table lists these dependencies:

Action and Collection Plan Element Dependencies

Action To Be Invoked	Context Element(s) Required for Action
Place the job on hold	Job
Assign a shop floor status to the intraoperation step	To operation sequence To intraoperation step
Hold all schedules building this assembly on this production line	Production Line and Item
Assign an ASL status	Supplier and Item
Accept the shipment	Inspection Result
Reject the shipment	Inspection Result
Place the supplier on hold	Supplier
Place a document or release on hold	PO Number and PO Release Number
Assign a lot status (See: Quality Actions, page 12-3).	Item and Lot Number
Assign a serial status (See: Quality Actions, page 12-3).	Item and Serial Number
Create a work request (See: Triggering a Work Request, *Oracle Enterprise Asset Management User's Guide*).	Asset Group and Asset Number
Create a maintenance work order (See: Triggering a Work Order, *Oracle Enterprise Asset Management User's Guide*).	Asset Group, Asset Number, and Followup Activity

Related Topics

Quality Actions, page 3-19

Defining Collection Plan Element Actions

You can define several action rules for each collection element that you add to a

collection plan.

You can also copy a collection element's default action rules and related actions to a collection plan element. For example, if you define the action rule and related action when *"Severity equals most severe, place the job on hold"* for the *Severity* collection element, you can copy this action rule and related action to any *Severity* collection plan element. You can update copied action rules and related actions as required.

Prerequisites

❒ Create a collection plan. See: Creating Collection Plans, page 5-11.

To define collection plan element action rules:

1. From the Quality Collection Elements region of the Collections Plans window, select the collection element.

   You can select any enabled collection element.

2. Choose the Actions button. The Quality Actions window appears.

3. In the Action Rules region of the Quality Actions window, enter the Sequence. See: Action Rule Sequencing, page 3-27.

   The Sequence number establishes the order in which action rules are evaluated as data is collected. The sequence number can be from 0 to 99999.

4. Select the Condition that must be met to invoke the action. The condition that you select tells the system what records to search for.

   For example, selecting the condition "equals (=)" tells the system to select only those records that are equal to the *From* value. Selecting "greater than(>)" tells the system to select only those records that are greater than the *From* value (for a complete list of conditions, see: Query Operators, page C-2).

   If you define an action rule for a collection element called Failure Code, whose values are Damage, Rough Finish, and Wrong Color, and you choose to activate the action when the condition "equals (=)" the value Damage, the system will only invoke the action when it finds records in which the Failure Code is recorded as Damage. The action will not be invoked for records in which Failure Code is recorded as Rough Finish or Wrong Color.

5. Choose either the Value or Spec Limit to specify the evaluation method.

   Value: If you choose Value, as quality data is collected the action rule is evaluated using the results value and the value or values entered here. If you have defined values for the collection plan element, you must choose a value from this list. If you have not defined values for the collection plan element, you can enter any value.

   Spec Limit: If you choose Spec Limit, as quality data is collected the action rule is

evaluated using the quality results value and either the specification limit target value, the upper or lower user-defined range limits, or the upper or lower specification range limits.

Spec Limit can be used to define action rules that evaluate numeric results.

> **Important:** You are automatically precluded from collecting data that is not within the user-defined range limits. Therefore these range limits cannot be used to define action rules.

6. If the Condition selected requires a range of values, enter both the From and To value. If the Condition selected requires only a single value, enter only the From value.

   > **Important:** Some conditions (e.g. Is Entered and Is Empty) do not require values.

To copy all action rules and actions from collection elements to collection plan elements:

1. Navigate to the Collection Plans window.
2. Select the Collection Plan.
3. From the Quality Collection Elements region, select a collection element.
4. Choose the Actions button.
5. From the Quality Actions window, choose the Defaults button. The Copy Actions window appears.
6. Choose the Copy button to copy all action rules and actions.

To associate actions with action rules:

1. From the Quality Actions window, select an Action Rule in the Action Rules region.
2. Select an Action in the Actions this Rule Invokes region. See: Quality Actions, page 3-19.

   You can associate one or more actions with each action rule. However, if the action selected requires action details, you must define action details before selecting another action.

   Some dependencies exist between collection plan elements and actions. For example, you can only define the "Assign a shop floor status to the intraoperation

step" action, if To Operation Sequence and To Intraoperation Step collection elements have been added to the collection plan. See: Dependencies Between Context Elements and Actions, page 5-22.

To define action details:

1. If the action requires a message, enter the message in the Action Details region. Messages can be up to 256 characters in length. See: Message Actions, page 3-20.

   If the action requires a status code, enter it in the Action Details region. See: Application Specific Actions, page 3-22.

   If the action is an alert action, see: Defining Collection Plan Element Alert Actions, page 5-26.

   If the Assign a Value to a collection element action is selected, see: Defining Actions that Assign a Value: User-Defined Formulas, page 5-32.

   If the Launch a Workflow action is selected, see: Defining Launch a Workflow Actions, page 3-37.

2. Save your work.

Defining Collection Plan Element Alert Actions

There are four alert actions available in Oracle Quality:

- *Send an electronic mail notification*
- *Execute a SQL script*
- *Execute an operating system script*
- *Launch a concurrent request*

Oracle Quality alert actions are similar but distinctly different from the event alerts you can define using Oracle Alerts. They share the same underlying database tables and require some of the same setups. See: Overview of Oracle Alert, *Oracle Alert User's Guide* and Alert Setup for Quality, page 2-2.

Quality alert actions require action details. Examples of action details include recipients (for electronic mail notifications), arguments, and file names (for SQL and operating system scripts).

You can customize alert action details using output variables. Output variables represent quality results values(e.g. &ITEM represents "C12345") and are dynamically defined as action rules are evaluated. Output variables can be imbedded in alert action details and can thus be used in the following contexts:

Send an electronic mail notification: You can create dynamic distribution lists by including

output variables in the recipient/distribution fields (List, To, Cc, and Bcc). If you send a text message, you can include quality results values in the message text.

Execute an operating system script: You can use output variables to dynamically pass quality results values as arguments to operating system scripts. If you enter operating system script text, you can include output variables in the text.

Execute a SQL script: You can use output variables to dynamically pass quality results values as arguments to SQL scripts. If you enter SQL script text, you can include output variables in the text.

> **Important:** SQL script actions are limited to Updates or Inserts. To Select a SQL string, use the *Assign a Value* action. See: Defining Actions that Assign a Value: User-Defined Formulas, page 5-32.

Prerequisites

- ❒ Define quality actions for collection plan elements. See: Defining Collection Plan Element Actions, page 5-23.

To select collection elements and action rules:

1. Navigate to the Collection Plans window.
2. Select the Collection Plan.
3. Select the Collection Element.
4. Choose the Actions button. The Quality Actions window appears.
5. In the Action Rules region, select the action rule.

To define electronic mail alerts:

1. In the Actions this Rule Invokes region, select the *Send an electronic mail notification* action.
2. In the Action Details region, choose the Action Details button. The Actions:Send Electronic Mail window appears.
3. Optionally, select an Oracle Office public mail List or a distribution List. If you select an Oracle office public mail list, you can enter the list name in any of the recipient (To, Cc, Bcc) fields. If you select a distribution list, the electronic mail IDs associated with the list are automatically displayed in the recipient fields. You cannot change these values.
4. Enter the electronic mail IDs of the "To" mail message recipients separated by

spaces or commas. You can enter as many recipients as you want, up to 240 characters. You can dynamically distribute mail messages by including output variables in the recipient fields.

For example, you could define and use output variable for an Inspector ID collection plan element if Inspector IDs are equivalent to electronic mail IDs.

> **Note:** If you are integrated with Oracle Office, all electronic mail IDs listed in the recipient (To, Cc, and Bcc) fields are validated before the alert is processed. If an invalid ID is entered in any of the recipient fields, the system returns the message to the *user who invoked the alert*. The user's electronic mail ID is determined from the value entered in the Email/Fax field of the Users window (from the System Administrator responsibility). If the value of the Email/Fax field is null, then the system checks to see whether the value for the Default User Mail Account option in the Oracle Alert Options window is set to Operating System Login ID or Application Username and sends the message to the appropriate user using one of these two IDs. The Electronic mail validation is disabled if you integrate with other electronic mail systems to send outgoing messages.

5. Enter the Subject, up to 240 characters, of the mail notification.
6. Optionally, enter the electronic mail IDs of the *C*c, carbon copy, mail recipients.
7. Optionally, enter the electronic mail IDs of the *B*cc, blind carbon copy, mail recipients.
8. Define your message source by selecting either File or Text.

   File: Enter the File name including the full path name.

   Text: Enter the message Text for the electronic message. You can include output variables in the text. For example, you can specify that the quality results values associated with the Item collection plan element appear in the text of an electronic mail notification.

   An example of a text message containing output variables is as follows:

   Please test the contents of item number *&ITEM* received on *&TRANSACTION_DATE.*
9. Choose the Variables button to associate output variables with the action. See: Associating Output Variables with Actions, page 3-39.
10. Choose OK to Save your work.

To define concurrent request alerts:

1. In the Actions this Rule Invokes region, select the *Launch a concurrent request* action.
2. In the Action Details region, choose the Action Details button. The Actions:Concurrent Program window appears.
3. Select the name of the Application that owns the concurrent program.
4. Select the concurrent Program Name.
5. Enter arguments, separated by spaces.

   Arguments are dependent on the application and program name selected.
6. Select OK to save your work.

To define operating system script alerts:

1. In the Actions this Rule Invokes region, select the *Execute an operating system script* action.
2. In the Action Details region, choose the Action Details button. The Actions:Operating System Script window appears.
3. Choose the source of the operating system script by selecting either File or Text. You cannot select an application or enter arguments if you choose to enter a text script.

   File: You can enter the full path and file name of the operating system script source file rather than select an Application.

   Text: You can enter the a text operating system script. You can include output variables in the text. For example, you can specify that the quality results values associated with the Item collection element appear in the text of an operating script.

   An example of text operating system script containing output variables is as follows:

   echo Please test the contents of lot number *&LOT* received on *&TRANSACTION_DATE* from supplier *&SUPPLIER*. The following defect was noted by receiving: *&DEFECT_CODE*
4. If the operating system script you want to execute is in a file located in an Application's base path *bin* directory, select the Application name.

   Important: If you enter an application name or *arguments* then choose to enter operating system script Text, values entered in

these fields are erased.

5. Optionally, enter arguments, separated by spaces, to pass to the operating system script file.

   You can dynamically pass arguments to your operating system script using output variables. If these output variables select character or date data, place single quotes around the output variable to correctly pass the argument.

6. Optionally, choose the Variables button to associate output variables with the action. See: Associating Output Variables with Actions, page 3-39.

7. Choose OK to Save your work.

To define SQL script alerts:

1. In the Actions this Rule Invokes region, select the *Execute a SQL script* action.

2. In the Action Details region, choose the Action Details button. The Actions:SQL Script window appears.

3. Choose the source of the SQL system script by selecting either File or Text. You cannot select an application or enter arguments if you choose to enter a text script.

   File: You can enter the full path and file name of the SQL script source file rather than select an Application.

   Text: You can enter the a text SQL script. You can include output variables in the text. For example, you can specify that the quality results values associated with the Item collection element appear in the text of an SQL script.

   If your SQL script text includes output variables that select character or date data, place single quotes around your output variables so the system can correctly pass the data. If a single quote lies within your character string, the system adds a second single quote. For example, if your character string is resume', the system displays this as resume''.

   An example of SQL script text containing output variables is as follows:

   update my_lot

   set status = 3

   where lot_name = &LOT;

   Note that in conformance with SQL standard formatting conventions, a semicolon (;) or a forward slash (/) must be placed at the end of each SQL statement.

4. If the SQL system script you want to execute is in a file located in an Application's base path *sql* directory, select the Application name.

Important: If you enter an application name or *arguments* then choose to enter SQL script Text, values entered in these fields are erased.

5. Optionally, enter arguments, separated by spaces, to pass to the SQL script file.

   You can dynamically pass arguments to your SQL script using output variables. If these output variables select character or date data, place single quotes around the output variables to correctly pass the argument.

6. Optionally, choose the Variables button to associate output variables with the action. See: Associating Output Variables with Actions, page 3-39.

7. Choose OK to Save your work.

User-Defined Formulas

User-defined formulas make it possible to assign or derive quality results values. Values can be derived from user-defined formulas that are simple arithmetic expressions which use simple operators (+, -, *, /), specified values (3, 2, 4000, 'FAIL', 50), complex operators (square root, sin, cosine and so on), functions (SORT), and/or output variable tokens (&DEFECTIVE).

Examples

3

3+2

'A'

(4000 + 34500)/50

'FAIL'

&DEFECTIVE/&QTY

&D + SQRT(&DISCREPANCY)/SQRT(&E)

ABS(&SEVERITY) + &BAD

'Defect '||&DEFECTCODE

Values can also be derived from user-defined SQL scripts which read values from Oracle database tables.

Examples

select assigned_to from customer_reps

where customer_name = &CUSTOMER

and organization_id=:parameter.org_id

Important: To constrain the SQL Statement to the current organization, you can use the variable ':parameter.org_id' for the current organization id. To constrain the SQL Statement to the current user's id, you can use the variable ':parameter.user_id' for the current user's id.

Defining Assign A Value Actions: User-Defined Formulas

You can dynamically assign values to collection plan elements as you enter quality results. Values are assigned when action rules associated with *Assign a Value* actions are evaluated and found to be true. When you assign a value to a collection plan element, its current value is overwritten. See: User-Defined Formulas, page 5-31 and Business Examples: User-Defined Formulas, page 5-33.

Failure Conditions

Formulas and SQL scripts may fail to process if one or more of the following conditions exist:

- The value represented by an output variable token is null. For example, if the results value represented by the token &QTY is null in the formula &DEFECTIVE/&QTY.
- More than one value is returned by a SQL statement. For example if the SQL statement *select assigned_to from customer_reps where customer_name* = &CUSTOMER returns three values.
- The SQL statement returns no rows.
- An invalid SQL statement is specified.

Note: This is not an exhaustive list.

Prerequisites

❒ Define quality actions for collection plan elements. See: Defining Collection Plan Element Actions, page 5-23.

To define a user-defined formula:

1. From the Quality Actions window, select an Action Rule in the Action Rules region.
2. In the Actions this Rule Invokes region of the Quality Actions window, select the *Assign a value* action.

3. In the Action Details region, choose the Action Details button. The Assign a Value window appears.

4. Select a collection plan element to assign the value to.

   You can select any collection plan element.

5. Choose the appropriate check box to define the value using either a Formula or an SQL script. The default is formula.

   Formula: Use when an arithmetic expression is required. Arithmetic express can include simple operators (+, -, *, /), specific values (3, 2, 4000, 34500, 50), complex operators (square root, sin, cosine and so on), functions (SQRT), and/or output variables tokens (&DEFECTIVE) that represent quality results values.Output variables correspond to collection plan elements (e.g. &QTY represents the Quantity Defective collection plan element). As quality data is collected, quality results values are passed to your formulas via the output variables you have defined.

   An example of a formula is as follows:

   3 + &*QTY*

   In this example the output variable &QTY corresponds to the Quantity Defective collection plan element.

   SQL Text: Use when data must be read from database tables. You can include specific values and output variables tokens (&PARTICLE_SIZE) in your SQL text as well.

   An example of *SQL Text* is as follows:

   select kit_grade_name

   from lot_grades

   where &PARTICLE_SIZE between low_size and high_size

   Note that in the case of user-defined formulas, it is not necessary to place a semicolon (;) or a forward slash (/) at the end of each SQL statement.

6. If you have included output variable tokens in your Formula or SQL Text, choose the Variables button to associate these output variable tokens with the action. See: Associating Output Variables with Actions, page 3-39.

7. Choose OK to Save your work.

Business Examples: User-Defined Formulas

The following two examples explain how to create user-defined formulas that 1) calculate process yield based upon total quantity and quantity defective and 2) calculate line thickness deviation in a circuit board based upon the actual and optimum specified

thicknesses.

Calculating Percent Yield Example

To calculate the percent yield from a process, define the following collection plan elements:

- Seq 40: Defect Quantity
- Seq 50: Total Quantity
- Seq 60: Yield

If the collection plan elements are sequenced in the order shown above or a similar order (e.g. 60, 70, 80), define the Assign a Value action per the following:

1. From the Collection Plans window, select the 'Total Quantity' collection plan element then choose the Actions button. The Quality Actions window appears.
2. In the Action Rules region, select the 'is entered' condition. This condition ensures that Oracle Quality calculates the Yield after the user enters the Defect Quantity and the Total Quantity.
3. In the Actions this Rule Invokes region, select the *Assign a value* action.
4. In the Action Details region, choose the Action Details button. The Assign a Value window appears.
5. Select the 'Yield' collection plan element to Assign the value To.
6. Select the option to assign a value using a formula (this is the default selection).
7. Enter the following formula:

   (1 - &DEFECTQTY/&TOTAL)*100
8. Choose the Variables button. The Output Variables window appears.
9. Enter the token name 'DEFECTQTY' for the Defect Quantity collection plan element. Also enter the token name 'TOTAL' for the Total Quantity collection plan element.
10. Choose OK to exit both the Output Variables and Quality Actions windows.
11. Save your work.

Calculating Deviation in Line Thickness Example

To determine the deviation of the line thickness in a circuit board that is over or under a specified specification, define the following collection plan elements:

- Seq 40: Line thickness

- Seq 50: Specified Thickness
- Seq 60: Deviation

If the collection plan elements are sequenced in the order shown above or a similar order (e.g. 60, 70, 80), define the Assign a Value action per the following:

1. From the Collection Plans window, select the 'Specified Thickness' collection plan element then choose the Actions button. Then Quality Actions window appears.
2. In the Action Rules region, select the 'is entered' condition. This condition ensures that Oracle Quality calculates the Deviation after the user enters the Line Thickness and Specified Thickness.
3. In the Actions this Rule Invokes region, select the *Assign a value* action.
4. In the Action Details region, choose the Action Details button. The Assign a Value window appears.
5. In the Assign a Value window, select a collection plan element to Assign the value To.
6. Select the option to assign a value using a formula (this is the default selection)
7. Enter the following formula:

   &LINETHICKNESS-&SPECTHICKNESS
8. Choose the Variables button. The Output Variables window appears.
9. Enter the token name 'LINETHICKNESS' for the Line thickness collection plan element. Also enter the token name 'SPECTHICKNESS' for the Specified Thickness collection plan element.
10. Choose OK to exit both the Output Variables and Quality Actions windows.
11. Save your work.

Related Topics

User-Defined Formulas, page 5-31

Defining Actions that Assign a Value: User-Defined Formulas, page 5-32

Quality Data Collection During Transactions

You can collect quality data as you perform the following transactions in Flow Manufacturing, Purchasing, TeleService, Work in Process, Enterprise Asset

Management, Advanced Service Online, Mobile Supply Chain Applications, Warehouse Management System, Shop Floor Management, Oracle Process Manufacturing and iSupplier Portal:

- Asset Query (Enterprise Asset Management)
- Check In and Check Out transactions (Enterprise Asset Management)
- Completion transactions (Work in Process, Enterprise Asset Management, Flow Manufacturing)
- Operation Completion transactions (Enterprise Asset Management, Flow Manufacturing)
- Inspection transactions (Purchasing)
- Maintenance transactions (Complex Maintenance, Repair, and Overhaul)
- Mobile transactions (Mobile Supply Chain Applications, Warehouse Management System)
- Move transactions (Work in Process, Shop Floor Management)
- Process Nonconformance transactions (Oracle Process Manufacturing)
- Receiving transactions (Purchasing)
- Service Requests (TeleService, Depot Repair)
- Work Order-less Completion transactions (Flow Manufacturing)
- Quality for Outside Processing (iSupplier Portal)
- Quality for PO Shipments (iSupplier Portal)

To be able to collect quality data during a transaction, you must first define and associate a collection plan specific to the transaction. You can associate a transaction with one or more collection plans. For example, you can create a collection plan to track final test results (e.g., pass/fail status) and another to record the serial numbers of serial controlled assemblies that fail final test. You then can associate the Work in Process transaction with both collection plans to ensure that the final test and serial number data is captured as assemblies are moved. Enter child data in a move transaction validates assembly serial numbers and will not save invalid serial numbers.

You also can associate a collection plan with one or more transactions. For example, you could associate a Surface Inspection collection plan with both the WIP Move transaction andthe PurchasingInspection transaction. You would then be able to collect surface inspection data as you move assemblies and complete resurfacing operations, as well as when you receive assemblies resurfaced by an outside supplier.

Collection Triggers

Collection triggers are events or conditions that a transaction must satisfy before quality data collection is invoked. They enable you to tie quality data collection to specific points in your routing, thus ensuring that quality data is recorded as soon as it is available. You can define a unique set of collection triggers for each collection transaction that you associate with a collection plan. You can define as many collection triggers as are required to make data collection as specific as possible.

Defining triggers for a transaction's collection plan is optional. If you define collection triggers for transaction collection plans, Quality data collection is automatically invoked only when *all* conditions forallor somecollection triggers are met.

For example, if you define the following collection triggers for the Move transaction:

- Item = (equals) C45268
- From Operation Sequence Number = (equals) 40

Quality data collection is automatically invoked only when C45268 assembly items are moved out of operation sequence 40. In this example, the triggers work together to ensure that the right data is collected at the right point - operation sequence 40 - a critical inspection point in an assembly's routing.

For information on how to create AND and OR relationships between collection triggers, See: Associating Collection Plans with Transactions, page 5-46.

Context Element/Collection Trigger Relationships

When you collect quality data during transactions in other Oracle applications, you have the option to add context elements to your collection plans and/or you can use them to define collection triggers. Collection triggers are evaluated as transactions are entered and can be used to determine which collection plan should be used in the quality data collection process.

For example, if you define the trigger 'Department = (equals) Inspection' for the WIP Move transaction, data collection can be invoked each time assemblies are moved into the Inspection department. Furthermore, you can define this trigger regardless of whether or not the Department context element has been explicitly added to the collection plan because values for context elements are automatically saved in the quality data repository when you enter the parent transaction.

The following lists show the collection transactions in various Oracle applications and their associated context elements/triggers.

Oracle Advanced Service Online (Complex Maintenance, Repair, and Overhaul)

Transactions include MRB Disposition, Maintenance Job Deferral, Maintenance Operation Completion, and Mainteance Route Completion. You can use the Inspection Type trigger for all transactions.

Oracle Depot Repair

The Depot Repair Task Transaction can use the following triggers:

- Actual Effort
- Actual Effort UOM
- Contract Number
- Customer
- Estimated Effort
- Estimated Effort UOM
- Item
- Item Instance
- Planned End Date
- Planned Start Date
- Repair Order Number
- Repair Type
- Serial Number
- Service Request
- Service Task Assignee
- Service Task Name
- Service Task Number
- Service Task Owner
- Service Task Priority
- Service Task Status
- Service Task Type

Oracle Enterprise Asset Management

Transactions include EAM Asset Check In Transaction, EAM Asset Check Out Transaction, EAM Work Order Completions, EAM Operation Completions, and EAM Asset Query. Triggers include the following:

- Asset Activity
- Asset Group
- Asset Num
- Asset Serial Number

- Maintenance Op Seq
- Maintenance WorkOrder

Oracle Flow Manufacturing

Transactions include Work Order-less and Line Operation Completions. Triggers include the following:

- Accounting Class
- BOM Date
- BOM Revision
- Build Sequence
- Demand Class
- Item
- Item Category
- Kanban Number
- Line Operation
- Locator
- Production Line
- Project Number
- Quantity
- Reason Code
- Routing Revision
- Sales Order Number
- Schedule Group
- Schedule Number
- Scrap Account
- Scrap Account Alias
- Scrap Op Seq
- Subinventory
- Task Number
- Transaction Date
- Transaction Type
- UOM

Oracle iSupplier Portal

Transactions include Self-Service Outside Processing and Self-Service Shipments. Triggers include the following:

- From Op Seq Number
- Item
- Item Category
- Job
- Ordered Quantity
- PO Line Number
- PO Number
- PO Release Number
- PO Shipment
- Production Line
- Revision
- Ship To
- Ship To Location
- Supplier
- Supplier Site
- UOM Name

Oracle Mobile Supply Chain Applications

Transactions include Mobile Completion, Mobile Flow, Mobile Material, Mobile Move, Mobile Move and Complete, Mobile Receiving, Mobile Return, Mobile Return and Move, Mobile Scrap/Reject, Serialized Completion, Serialized Move, Serialized Move and Complete, Serialized Return, Serialized Return and Move, Serialized Scrap/Reject, and Serialized Work Orderless. Triggers include the following:

- ASL Status
- Available Quantity
- Completed Quantity
- Component Item
- Component Revision
- Customer
- From Intraoperation Step
- From Op Seq Number

- Inspection Quantity
- Intransit Shipment Num
- Item
- Item Category
- Job
- Job Quantity
- Line Operation
- Locator
- PO Number
- PO Receipt Number
- Production Line
- Project Number
- Quantity
- Reason Code
- Revision
- RMA Number
- Schedule Number
- Scrap Account
- Scrap Op Seq
- Serial Number
- Subinventory
- Supplier
- Task Number
- To Intraoperation Step
- To Op Seq Number
- Transaction Type
- UOM

Oracle Process Manufacturing (OPM) Process Execution

The Process Nonconformance transaction can use the following triggers:

- Item
- Lot Number

- Process Activity
- Process Batch Number
- Process Batch Step Num
- Process Operation
- Process Parameter
- Process Resource
- Quantity

Oracle Purchasing

Transactions include Receiving and Inspection. Triggers include the following:

- ASL Status
- Customer
- Customer Item Number
- Department
- Destination Type
- Expected Receipt Date
- Hazard Class
- Item
- Item Category
- Job
- Location
- Locator
- Order Type
- Ordered Quantity
- PO Line Number
- PO Number
- PO Receipt Number
- PO Release Number
- PO Routing Name
- PO Shipment
- Parent Transaction Quantity
- Production Line

- Project Number
- Reason Code
- Receipt Source Code
- RMA Line Number
- RMA Number
- Requestor
- Revision
- Source Document Code
- Subinventory
- Supplier
- Supplier Lot Number
- Task Number
- To Op Seq Number
- Transaction Type
- UN Number
- UOM Name
- Vendor Item Number

Shop Floor Management

You can collect quality data during Move Lot Based Job transactions. Triggers include the following:

- BOM Revision
- Department
- From Intraoperation Step
- From Op Seq Number
- Item
- Item Category
- Job
- Operation Code
- Production Line
- Quantity
- Reason Code
- Sales Order Number

- To Department
- To Intraoperation Step
- To Op Seq Number
- To Operation Code
- Transaction Type
- UOM

Oracle TeleService

The Service Requests transaction can use the following triggers:

- Actual Resolution Date
- Customer
- Expected Resolution Date
- Incident Type
- Item
- Item Category
- Item Instance
- Item Instance Lot
- Item Instance Serial
- Owner
- Party
- Problem Code
- Request Date
- Resolution Code
- Serial Number
- Service Request
- Severity
- Urgency

Oracle Warehouse Management System

You can collect quality data during Mobile License Plate Number transactions and the WMS LPN Based Quality Check. Triggers include the following:

- ASL Status
- Customer

- Inspection Quantity
- Item
- Item Category
- License Plate Number
- Locator
- Lot Inspection Qty
- PO Number
- Project Number
- RMA Number
- Revision
- Serial Inspection Qty
- Subinventory
- Supplier
- Task Number
- UOM

Oracle Work In Process

Transactions include Move and Completion. Triggers include the following:

- Available Quantity
- BOM Revision
- Completed Quantity
- Department
- From Intraoperation Step
- From Op Seq Number
- Item
- Item Category
- Job
- Kanban Number
- Locator
- Operation Code
- Production Line
- Project Number

• Quantity	• Reason Code
• Sales Order Number	• Subinventory
• Task Number	• To Department
• To Intraoperation Step	• To Operation Code
• To Op Seq Number	• Transaction Date
• Transaction Type	• UOM

Associating Collection Plans with Transactions

Once you setup and define a collection plan to be used with a transaction, you then must associate it with the transaction and enable it. This makes the associated collection plan available on the transaction's list of values when Quality collection is invoked.

To associate collection plans with transactions:

1. Navigate to the Collection Plan window.
2. Select a Collection Plan.
3. Choose the Transactions button. The Collection Transactions window appears.
4. In the Quality Collection Transactions region, select a collection transaction. See: Quality Collection Transactions, page 5-35.
5. In the Workbench Layout field, select whether you want to enter a single set of results or multiple rows of results at one time when using the Quality Workbench.

   This field is only enabled for those transactions that you can enter using the Oracle Applications Framework interface.
6. Optionally, check the Mandatory check box to indicate that quality data collection is mandatory when the transaction is entered, and that all of the conditions specified in the collection triggers, if any, must be met. If you do not check the Mandatory check box, you can skip quality result entry for this transaction.

Note: Mandatory is the default for Purchasing Receiving Transactions. Non-mandatory is the default for all other transactions, except for Purchasing Inspection transactions, which cannot be set to non-mandatory, and Oracle iSupplier Portal transactions, which ignore mandatory settings.

7. Optionally, check the Background check box to indicate that quality data collection occurs in the background. The default is non-background.

   Background data collection allows you to collect quality results without invoking the Enter Quality Results window. Background data collection is initiated when a you perform a transaction associated with a collection plan marked 'background' and all the conditions specified in the collection triggers, if any, are met. Quality results are automatically saved as you save the transaction.

   Important: Inspection (Purchasing) collection transactions and Oracle iSupplier Portal transactions cannot be set to background (background settings for iSupplier Portal transactions are ignored).

8. Optionally, check the Enabled check box to indicate that data collection for this quality collection plan is enabled. *The default is non-enabled.*

   This makes the collection plan available for quality data collection during transactional data entry.

To define triggers for collection plans used with transactions:

1. Navigate to the Collection Triggers region.

2. Select the Trigger Name.

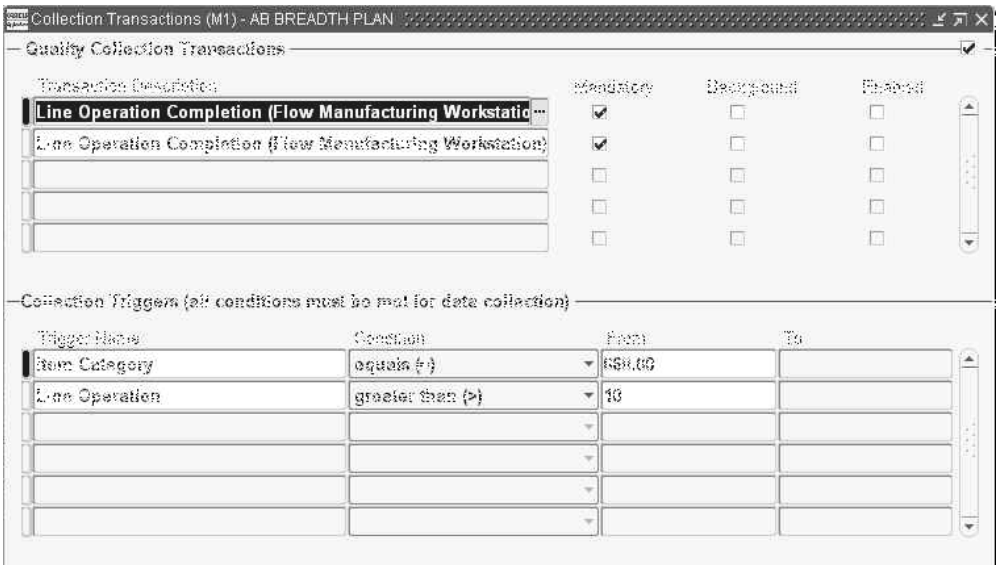
   The trigger name specifies which context collection element is used to define the trigger. See: Reference Information Collection Elements, page 3-8.

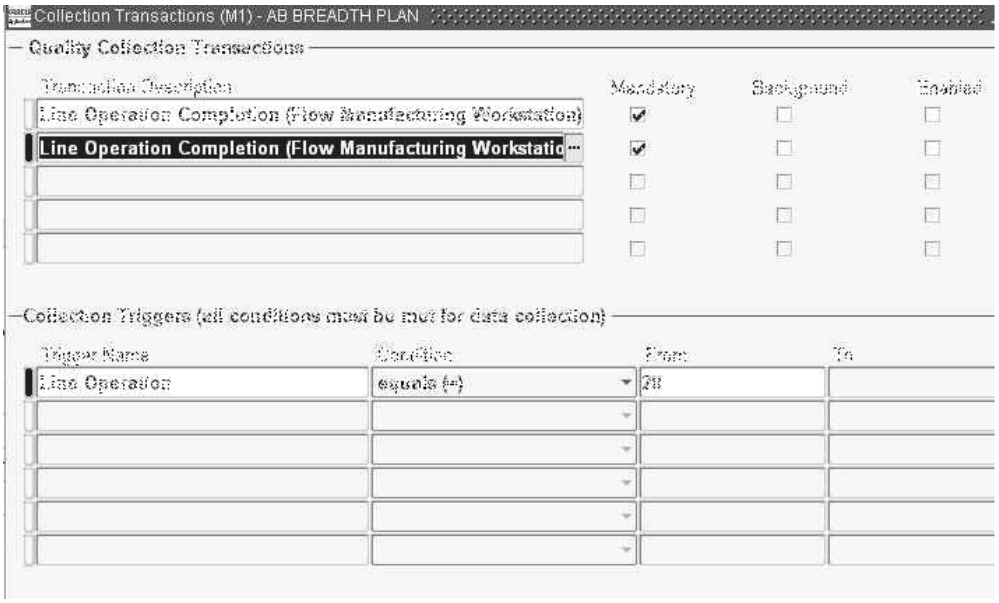
3. Select the Condition that must be met to trigger results entry. See: Query Operators, page C-2.

   The condition entered determines when quality data collection is triggered. For example, for the WIP Move transaction you might choose to trigger data collection when assemblies are moved from the To Move intraoperation step of Operation Sequence 20 to the Queue intraoperation step of Operation Sequence 30. Before quality data collection can be invoked, all collection triggers and conditions must be met for the current transaction selected.

   Just as you can create AND and OR relationships for transactions, you can create AND and OR relationships between triggers. To create an OR relationship between triggers, enter a second record for the same transaction in the Transaction

Description field, within the Quality Collection Transactions region. For example, the windows below imply that, for the Line Operation Completion Transaction, the Item Category trigger must equal 060.00 AND the Line Operation trigger must be greater than 10 OR the Line Operation trigger must equal 20.





4. Based on the Condition, enter a value or range of values for the specified trigger.

   If the condition requires a single value enter only a From value. If the condition selected requires a range, you must enter both a From and To value.

5. Save your work.

Related Topics

Transactional Data Collection Fundamentals, page 6-5

Entering Quality Results for Move Transactions, page 9-6

Updating and Deleting Collection Plans

Oracle Quality supports changing business practices. The people in your organization responsible for specifying and maintaining key quality information can change their quality information requirements easily and quickly.

For example, as you select or certify new suppliers, inspection requirements often change, perhaps requiring changes to the supplier collection plans. You can define new collection elements that represent new or modified products and processes then create collection plan elements from them. Similarly, you can delete collection plan elements as they become obsolete.

To update collection plans:

1. Navigate to the Collection Plans window.

2. Select the Collection Plan using Query Find. See: Searching for Data, *Oracle E-Business Suite User's Guide*.

3. Update the collection plan.

   You can change the description, effective dates, and plan type of a collection plan. You can also change the type of specification that is associated with a collection plan. You can change and delete quality actions and values. Finally, you can change and delete quality collection transactions. There are no restrictions on any of these changes.

   You can add collection elements to an existing collection plan. You can update parameters - mandatory, enabled, displayed - as well as the default values of your collection plan elements. You can add, change, and delete collection plan element actions and values. You can make all of these changes without restriction.

4. Save your work.

To update database views:

1. Choose the Views button. The Database Views window appears.

2. Choose the Create Views button.

   As you add and delete collection plan elements or change some collection plan element fields, such as the prompt, the database views for the collection plan are

automatically updated. If the view update fails, however, you can manually update your database views using Create Views. See: Collection Plan and Import Results Database Views, page 5-5.

3. Save your work.

To delete collection plans:

1. Navigate to the Collection Plans window.
2. Select the Collection Plan.

   You cannot delete collection plans for which you have collected results. You can, however, disable a collection plan by changing its effective dates.

3. Choose Delete Record from the Edit Menu.
4. Save your work.

To update collection plan attachments:

See: Attaching Files to Collection Plans, Specifications, and Results Lines, page B-2.

Related Topics

Creating Collection Plans, page 5-11

Viewing Collection Plans, page 5-50

Viewing Collection Plans

You can view collection plan information in summary or detail. See: Combination Blocks, *Oracle E-Business Suite User's Guide*.

To view collection plans:

1. Navigate to the View Collection Plan window. The Find Collection Plans window appears.

   You can find specific collection plans. You can also can query to find all Enabled collection plans. You can combine search criteria as required.

2. Enter any combination of search criteria and Choose the Find button. The results display in the View Collection Plans Summary window.

   You can view collection plans in either the View Collection Plans or the View Collection Plans Summary window.

Important: You can also view collection plans in summary format as you create collection plans. See: Creating Collection Plans, page 5-11.

To view the names of collection plan and import results database views:

From the View Collection Plan window, choose the Views button.

To view associated collection transactions and triggers:

From the View Collection Plan window, select a collection plan element and choose the Transactions button.

To view collection plan element values:

From the View Collection Plan window, select a collection plan element and choose the Values button.

To view collection plan specification assignments:

From the View Collection Plan window, choose the Specifications button.

To view collection plan element actions:

From the View Collection Plan window, select a collection plan element and choose the Actions button.

Parent-Child Collection Plans

You can create logical relationships between collection plans and the collected quality data within them. Parent-Child collection plans enable you to collect quality data in an organized, multi-level fashion. The parent collection plan is created with a key definition of the collection plan, including elements such as the process name, item number, and status. While entering results information, this information defaults to all child collection plans created.

One parent collection plan can have multiple child plans, and one child plan can have multiple parent plans. Multi-level plans are also supported; a child plan can be a parent plan to additional child plans.

Caution: Take care not to create a closed loop for a parent and child collection plan. For example, if you create a collection plan named PARENT and link a collection plan named CHILD to it, do not make the PARENT collection plan a child of the CHILD collection plan.

When creating a parent-child relationship, you can specify that the data entry mode is

for history. You can set up copy relationships between elements in a parent collection plan and child (history) plans, enabling you to track changes made to the parent record. When you enter or update a parent record, child records are created automatically to capture the updates. These child records contain information such as, plan information, the date updated, and the record creator's user identification number.

> **Note:** When there is a parent-child relationship declared between two collection plans with Data Entry Mode set as "History", the history data copied in the child collection plan is for audit purposes and is not available for standalone entry and update.

Parent-Child collection plan tasks include the following:

- Defining Parent-Child Collection Plans, page 5-52
- Updating Parent-Child Collection Plans, page 5-58
- Executing Parent-Child Collection Plans, page 5-60
- Inquiring on Parent-Child Collection Plans, page 5-62
- Inquiring on Results, page 5-65

Once you define a Parent-Child collection plan, you can make a copy of the multi-level plan in your existing organization or for another organization. Refer to Collection Plan Templates, page 5-9 for more information.

Defining Parent-Child Collection Plans

Collection plans determine the data that you want to collect, and what actions you want to take based on the quality results that you collect. You can use collection plans to model your test or inspection plans, and you can create an unlimited number of plans to support your enterprise-wide quality data collection and analysis needs. Before you define parent-child relationship collection plans, valid collection plans need to already exist. See: Overview of Collection Plans, page 5-2.

The definition of Parent-Child collection plans involves a five step process. First, a Plan Relationship is defined, indicating whether the child data entry will be immediate, automatic, historical, or delayed. Second, the collection plan's Element Relationships are defined. Next, the collection plan's required collection criteria is defined. The final steps include confirming and completing the plan setup.

> **Note:** Aggregation functions are supported only for Number type of Collection Elements for Parent-Child plans.

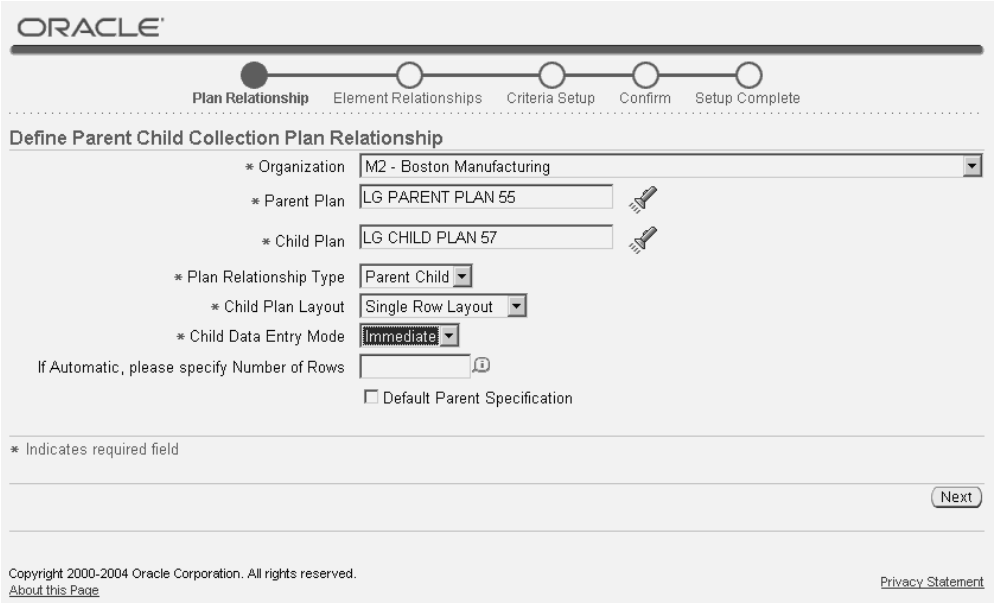
Defining Plan Relationships:

The first step is to define a plan relationship, indicating whether the child data entry will be immediate, automatic, historical, or delayed.

Creating a parent-child relationship does not automatically establish a relationship between collection plans for existing data.

To define a plan relationship

1. Navigate to the Plan Relationships page.



2. Select an Organization from the list of values.

3. Select a Parent Plan from the list of values. Valid collection plans must exist before you can create a parent-child relationship between them. See: Overview of Collection Plans, page 5-2.

4. Select a Child Plan from the list of values. Valid collection plans must exist before you can create a parent-child relationship between them. See: Overview of Collection Plans, page 5-2.

5. Select a Plan Relationship Type from the list of values. Currently, Parent Child is the only valid value.

6. Select a Child Plan Layout from the list of values. This value determines how child plan quality results fields are displayed in the Quality Workbench - Enter Results page (see: Entering Quality Results, page 7-5).

    - Single Row Layout - Enter and save one child row of results at a time.

- Multiple Row Layout - Enter multiple rows of results and then save.

7. Select a Child Data Entry Mode from the list of values. This value specifies how the child record is created.
   - Automatic - Child records are created automatically when the parent record matches the setup criteria; results do not need to be entered.
   - Delayed - Child records are entered manually, later.
   - History - Child records are created automatically when changes are made to the parent record.
   - Immediate - Child records are entered immediately after the parent record.

8. If the Child Data Entry Mode field is populated with Automatic, specify the number of Rows. For all other Child Data Entry Modes, this field must be blank. Automatic Data Entry Mode ensures the creation of child records when the parent record matches the setup criteria. The number of child records entered is equal to the number specified in this field.

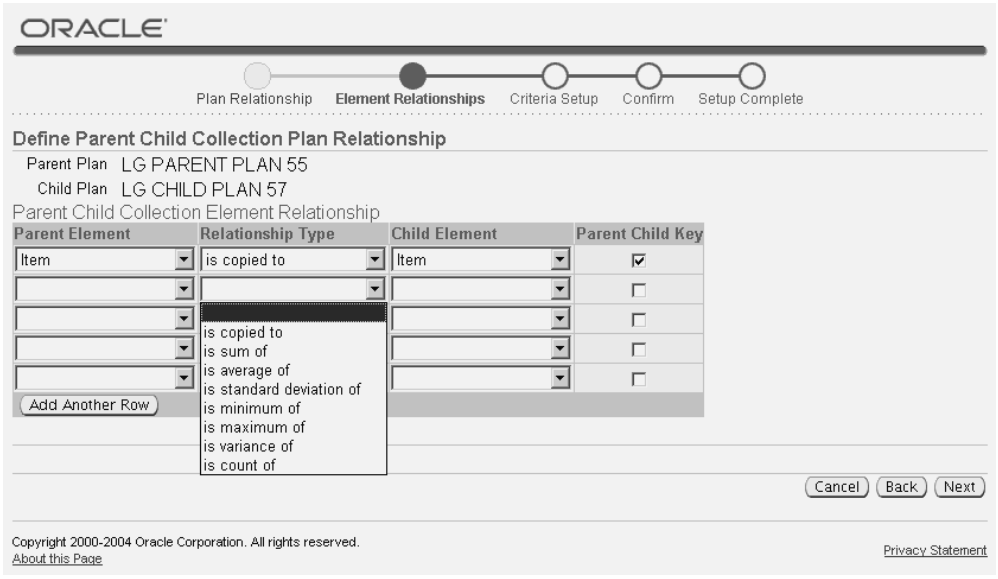
9. Optionally, select the Default Parent Specification field to enable specification requirements to default from the parent record to the created child records. See:Overview of Specifications, page 4-1.

Defining Element Relationships

Collection elements are the basic building blocks of collection plans, the data structures that you use to collect quality results. They define the characteristics of the product or process that you want to monitor, record, and analyze. See: Overview of Collection Elements, page 3-1.

The next step is to define how the parent collection elements will relate to the child collection elements. For example, you can define that the sum of all Brakepad Thickness Child Elements be stored within the parent record.

10. Choose Next.



11. Select a valid Parent Element from the list of values (See: Collection Element Values, page 3-17). For example, Summary Thickness.

12. Select a Relationship Type from the list of values. If you select 'is copied from', the relationship type is Parent to Child; the parent element is copied to the child element. There is a 2000 character limitation while copying elements from parent plan to child plan. All other relationship types are Child to Parent. If the Parent Element field is populated with Sequence, and the Relationship Type is populated with 'is copied to', the parent sequence element is copied to the child element without generating a new sequence number for the child element. If you select 'is sum of', the results entered into the child collection plan are summed up and stored within the parent element. If you select 'is average of', 'is standard deviation of', 'is minimum of', 'is maximum of', 'is variance of', or 'is count of', the calculation of the mean, standard deviation, minimum, maximum, variance, or count, respectively, from the child results, is stored within the parent record. Set up aggregation fields as read-only and non-mandatory while defining a parent collection plan.

    Note: If the child collection plan has a Child Data Entry Mode of History and the Parent Element field is populated with Sequence, then the Relationship Type 'is copied to' is the only relationship type supported. History plans are used as audit trails, so sequence number generation in child collection plans is not allowed.

13. Select a valid Child Element from the list of values (See: Collection Element Values, page 3-17). For example, Brakepad Thickness.

14. Optionally, select the Parent Child Key check box to indicate that the Parent

Element value and the Child Element value are logically linked together.

For example, in a serial number tracking scenario, parent records containing serial numbers are created during Work In Process move transactions, and child records are created to store attributes of a routing. It is logical to store the serial number in both the parent and child collection plans to establish this link. In addition to a logical link, elements that are links are available as search criteria, within the Results Inquiry page.

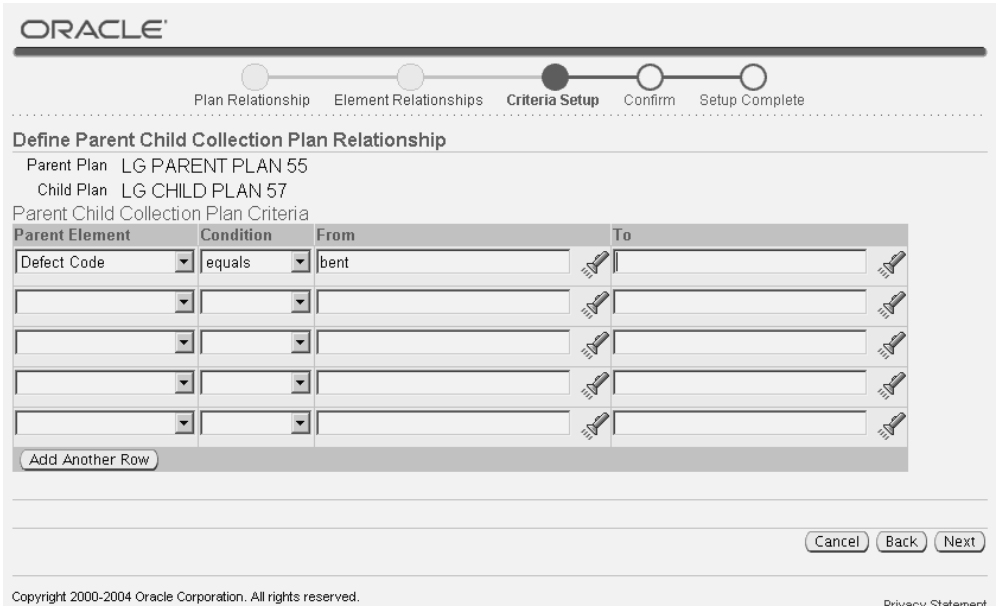
> **Note:** Specification limits in parent plan do not apply to aggregate values. Specifications attached to the collection elements in the Parent Plan, which get the values aggregated from the Child plans, will not be honoured. While you can save the record, you may get a message that the value is out of specification limit.

Defining Criteria Setup

Finally, you need to set up collection criteria, and then confirm and complete the parent-child relationship.

After establishing parent-child relationships, you may optionally define specific criteria that determine when the relationships are established. When creating a collection plan, you have the option of adding collection triggers to the plan. Triggers are defined restrictions for a collection plan. Data collection is only initiated if all collection trigger conditions are satisfied. Similarly, the Criteria setup establishes when the parent-child relationship is supported.

15. Choose Next.

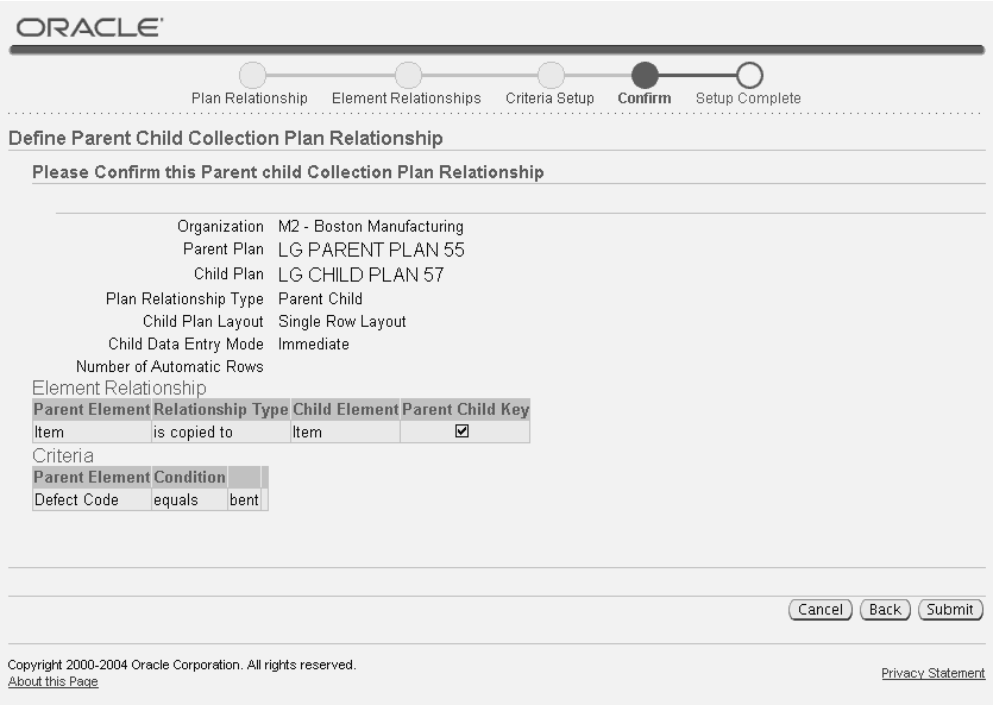


16. Select a valid Parent Element from the list of values. This is the trigger, or restriction, defined for the current Parent-Child relationship.

17. If you selected a Parent Element, select a Condition from the list of values.

18. Select a From value from the list of values. The valid values are dependent upon what is selected in the Parent Element field. Optionally, you can select a To value to create a range condition. For example, if the Parent Element is Work Order, you can enter a range of work order numbers.

19. Choose Next to confirm the current parent-child relationship.



20. Choose Submit to complete the parent-child relationship setup.

Overview of Collection Elements, page 3-1

Overview of Collection Plans, page 5-2

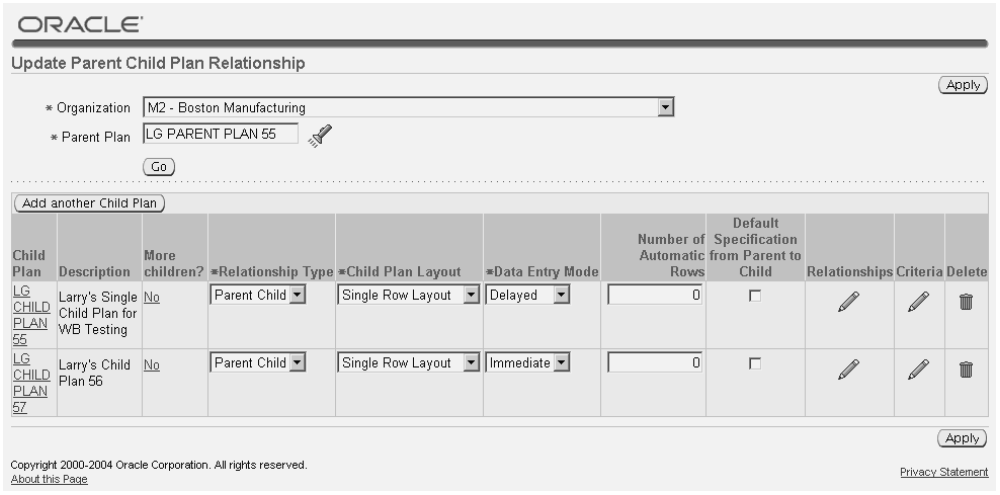
Updating Parent-Child Collection Plans, page 5-58

Updating Parent-Child Collection Plans

You can update or inquire upon the definition of existing parent-child relationship collection plans. You can also delete existing parent-child relationships.

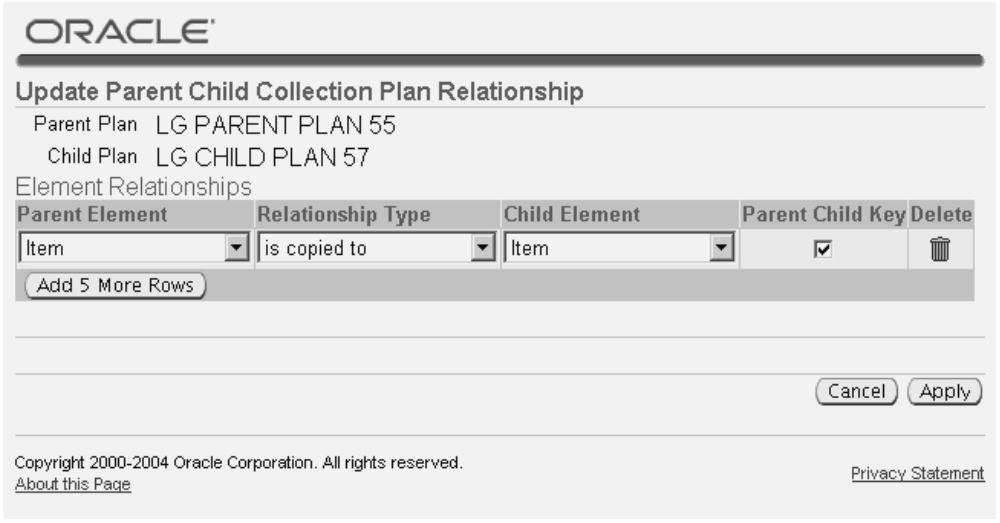
To update or inquire upon parent-child collection plans:

1. Navigate to the Update/Inquire Parent Child Collection Relationship page.
2. Select a valid Organization from the list of values.
3. Select a Parent Plan from the list of values.
4. Choose Go. Child collection plans that are associated with the current parent collection plan display in the Child Plans region.



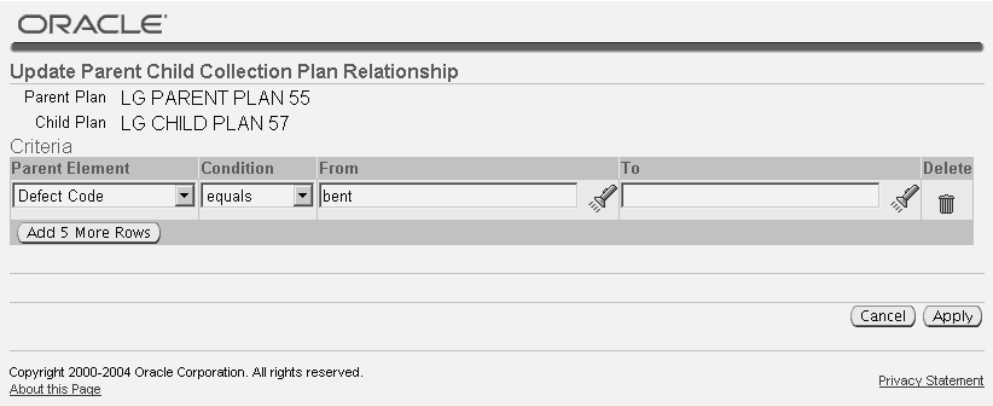
5. After updating the Relationship Type, Child Plan Layout, Data Entry Mode, Number of Automatic Rows, or Default Specification from Parent to Child, choose Apply to save the changes. For information on these fields, see: Defining Plan Relationships, page 5-53.

6. Choose the Relationships (pencil) icon to update the element relationships of the current Parent-Child Collection Plan relationship.



7. After updating the Parent Element, Relationship Type, Child Element, or Parent Child Key, choose Apply to save the changes. For information on these fields, see: Defining Element Relationships, page 5-54.

8. From the Update Parent Child Relationship page, choose the Criteria (pencil) icon to update the defined criteria of the current Parent-Child Collection Plan relationship.

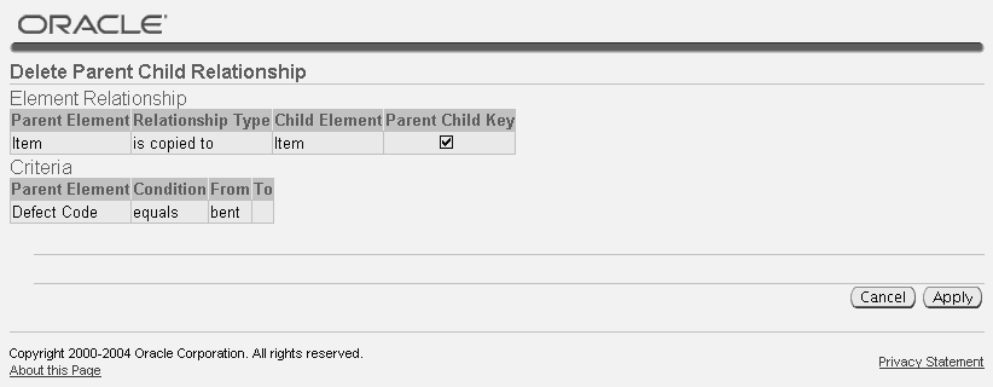


9. After updating the Parent Element, Condition, or From and To range fields, choose Apply to save the changes. For information on these fields, see: Defining Criteria Setup, page 5-56.

To delete parent child relationships

10. From the Update Parent Child Relationship page, choose the Delete icon to delete the current Parent-Child Collection Plan relationship.

    Deleting a parent-child relationship does NOT delete related collection plan data from parent or child collection plans.



11. Choose Apply to confirm the deletion of the parent-child collection plan relationship.

Defining Parent-Child Collection Plans, page 5-52

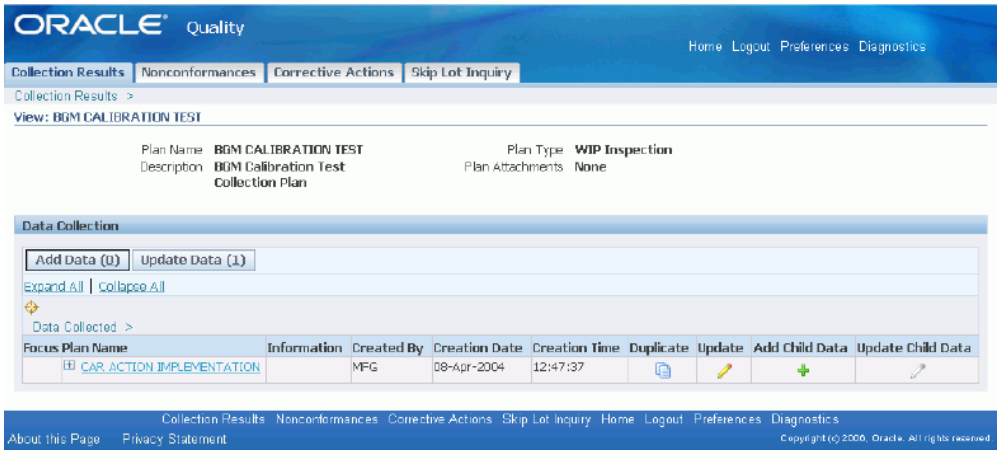
Entering Quality Results in Parent-Child Collection Plans

You can enter, update, and view parent-child quality results within the forms application or from the Quality Workbench user interface. You can enter quality results directly. You can access the Enter Quality Results window from the menu, or you can

invoke it as you enter quality results during transactions.

To enter quality results:

1. Navigate to the Enter Quality Results window in the forms application or choose Collection Results from the Quality Workbench. Select an Organization and then search for the Collection Plan.



2. Select a valid Collection Parent Plan from the list of values. Collection plans with current effective dates are available. If a default collection plan has been specified, it is automatically selected. You can choose Find Plan or the standard list of values to find and select a collection plan.

3. Select a Child Collection plan, related to the parent, from the list of values. In the Results region, enter one or more Parent results records. The prompts that you entered while defining collection elements display as column headings. You must enter results for mandatory collection plan elements.

   If the element columns, within the Results region, are key elements that are copied from the parent record (you selected the Parent Child Key check box to indicate that the Parent Element value and the Child Element value are logically linked together, during the definition of the element relationships), the columns are disabled. See: Defining Element Relationships, page 5-54.

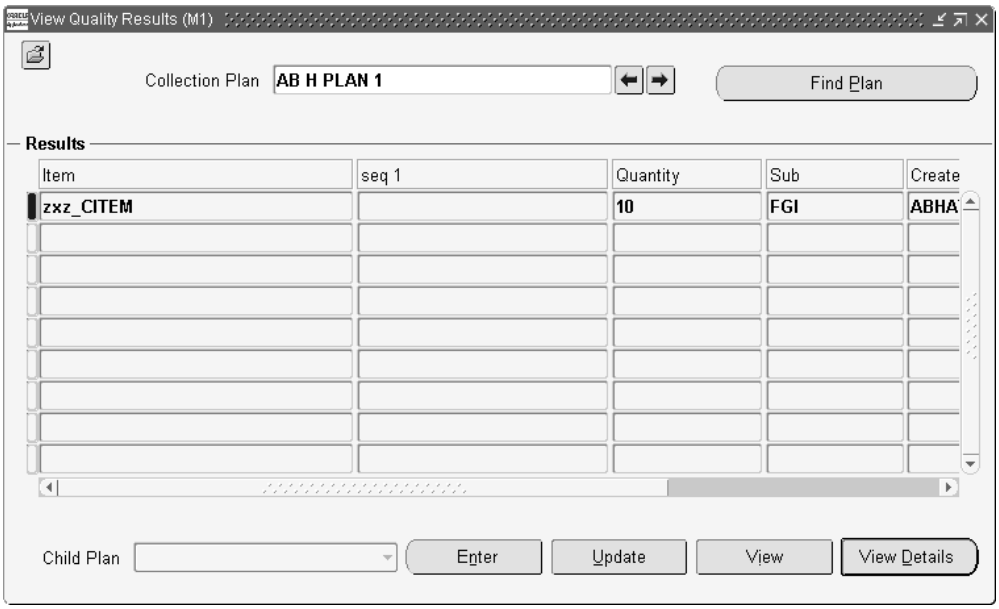
   > **Note:** If the current collection plan is a parent collection plan, and the Child Data Entry Mode is Immediate for the current parent-child collection plan relationship, (See: Defining Plan Relationships, page 5-53), you will receive a warning upon saving the record; the warning indicates that you should enter values for child plan(s) before saving.

4. Save your work. The parent record will be updated from the entered children

records once the information is saved. For information on all remaining fields and buttons within this window, see: Entering Quality Results Directly, page 6-7.

To view quality results:

1. Navigate to the View Quality Results window.



2. Select a valid Collection Plan from the list of values. Collection plans with current effective dates are available. If a default collection plan has been specified, it is automatically selected. You can choose Find Plan or the standard list of values to find and select a collection plan.

3. In the Results region, view the results records entered for the current collection plan.

4. To view child records for a parent record, select a parent record in the Results region, then select a child record from the Child Plan list of values. Choose View.

Entering Parent - Child Quality Results, page 7-10

Viewing Quality Results, page 7-8

Updating Quality Results, page 7-9

Entering Quality Results Directly, page 6-7

Defining Collection Plan Elements, page 5-15

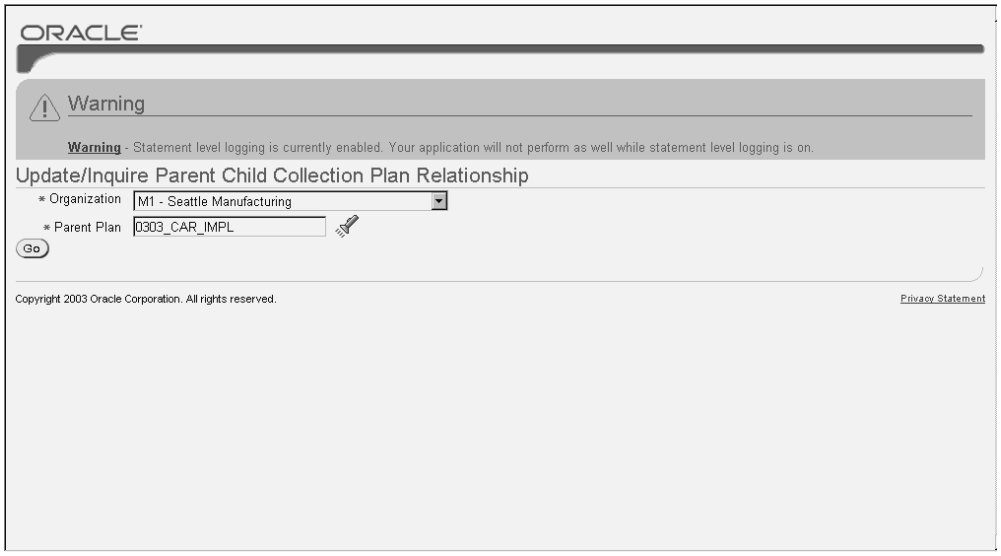
Inquiring on Parent Child Collection Plans

You can view Parent Collection Plans' related child collection plans, relationships, and

criteria information via self service.

To inquire on parent-child collection plan information:

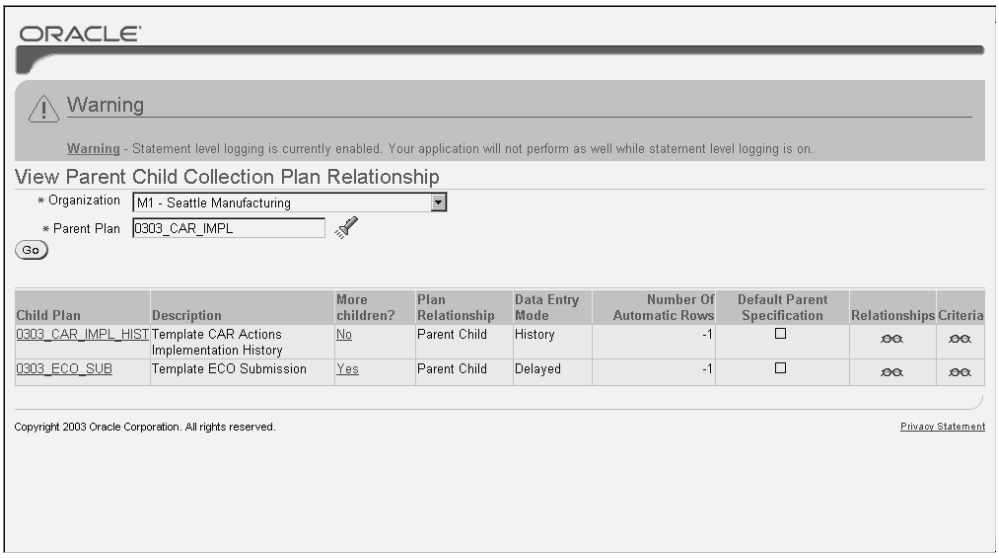
1. Navigate to the Update/Inquire Parent Child Collection Plan Relationship page.



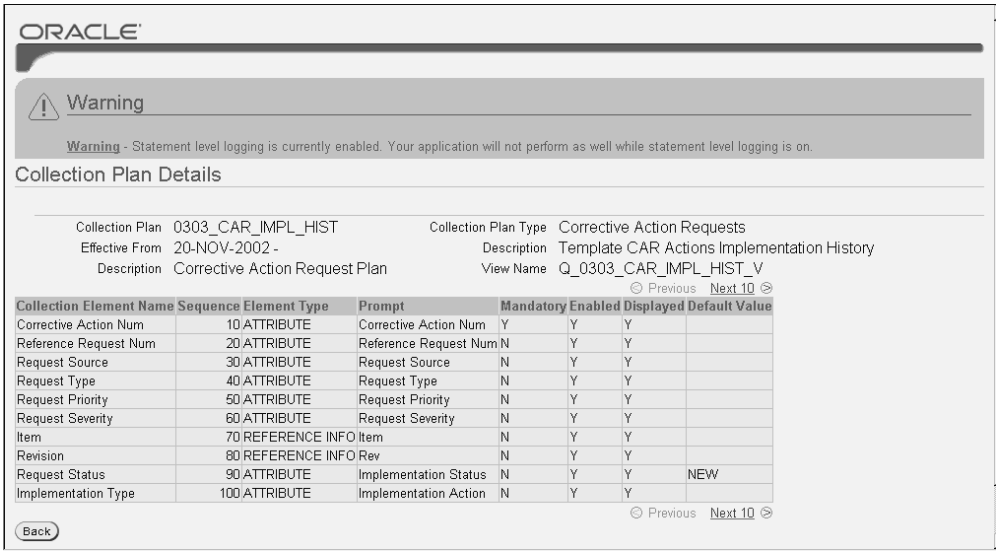
2. Select an Organization from the list of values.

3. Select a Parent Plan from the list of values.

4. Choose Go.

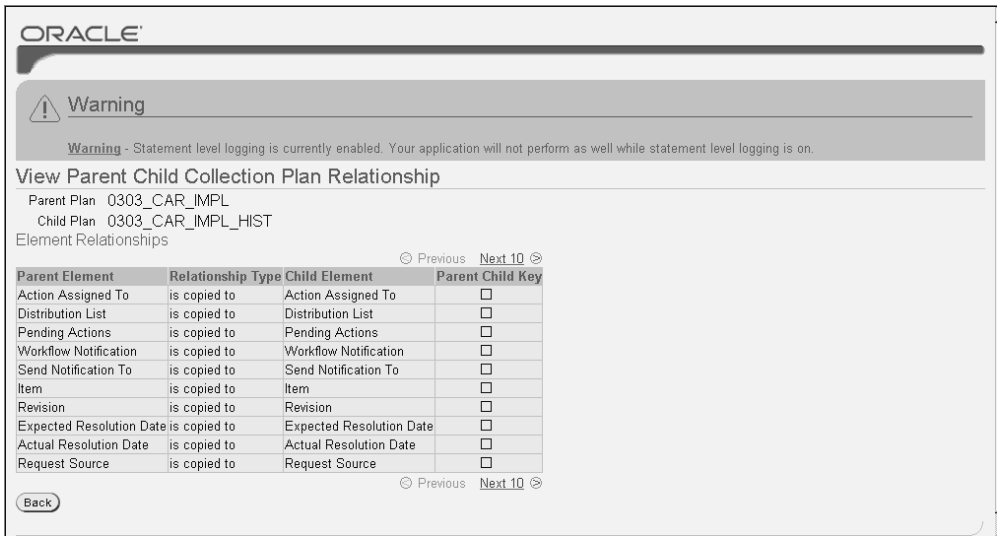


5. Optionally, select the Child Plan to view the current Child plan details.



Choose Back to return to the View Parent/Child Collection Plan Relationship page.

6. Optionally, choose the Relationships (glasses) icon to view relationship information for the current Parent and Child collection plan relationship.



Choose Back to return to the View Parent/Child Collection Plan Relationship page.

7. Optionally, choose the Criteria (glasses) icon to view relationship information for the current Parent and Child collection plan relationship. Choose Back to return to the View Parent/Child Collection Plan Relationship page.

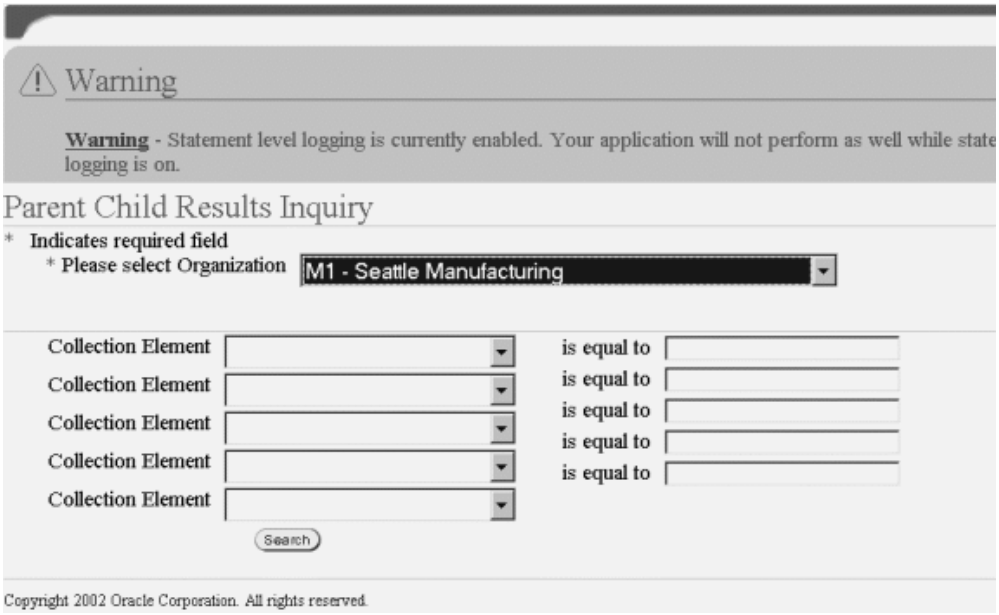
Inquiring on Results

You can inquire upon existing quality results for Parent-Child Collection Plans.

To inquire on results:

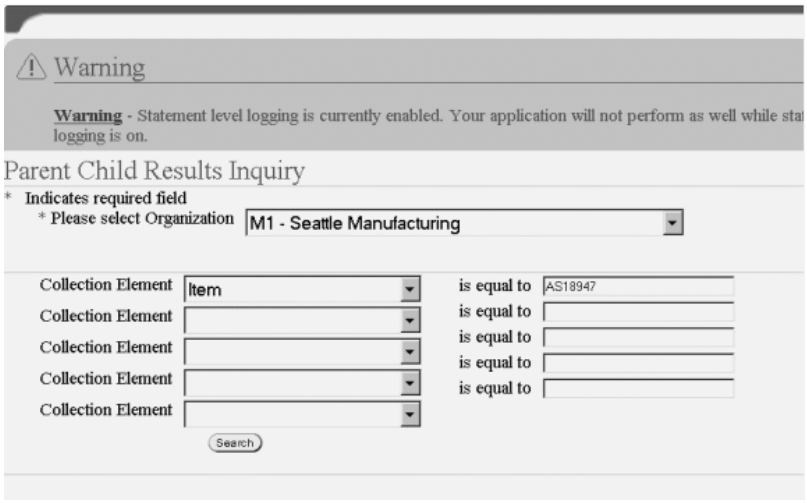
1. Navigate to the Parent Child Results Inquiry page.

2. Select an Organization from the Please select Organization list of values.

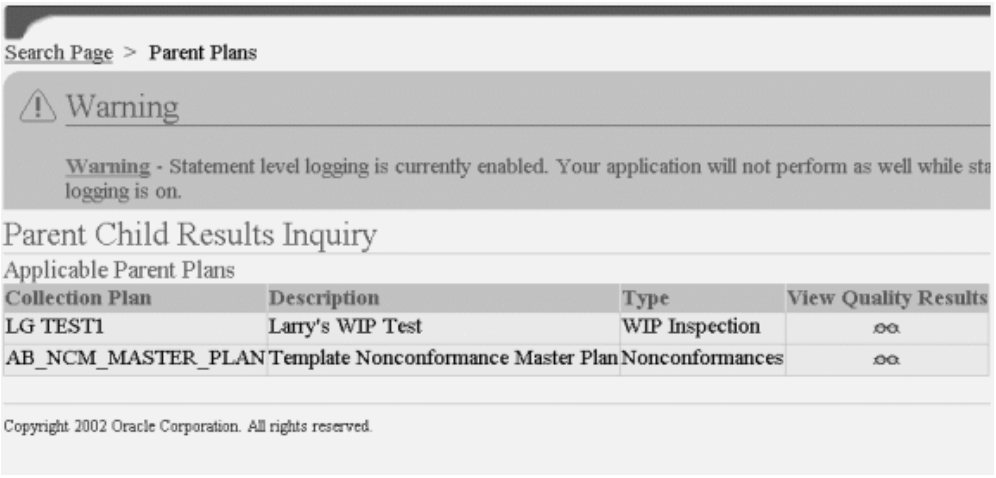


3. Select Collection Element search criteria to narrow down your search results.

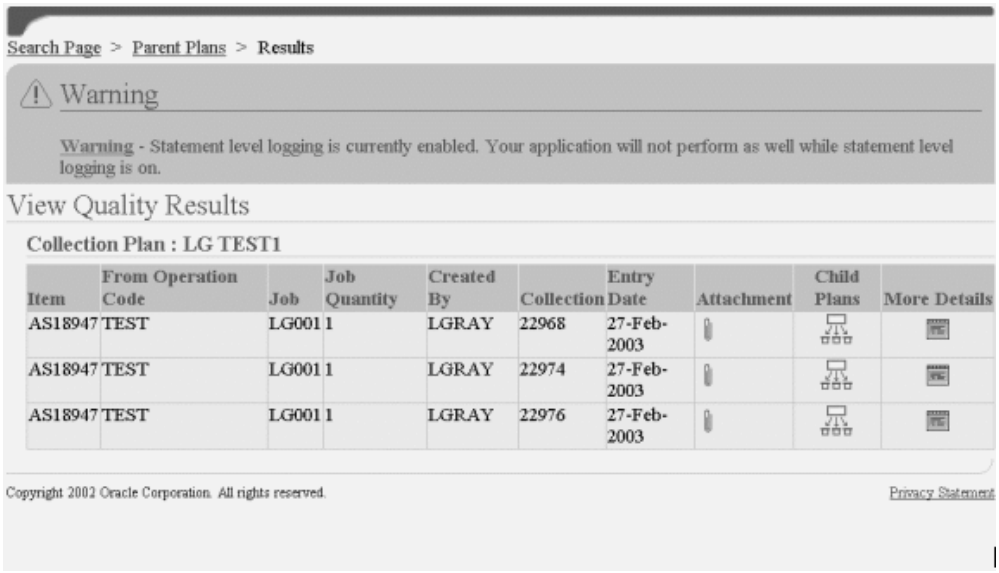
   Note: You must select at least one valid Collection Element, and enter valid data within their respective 'is equal to' fields.



4. Choose Search to display Parent Child quality results. A list of collection plans, meeting the above criteria, is displayed.

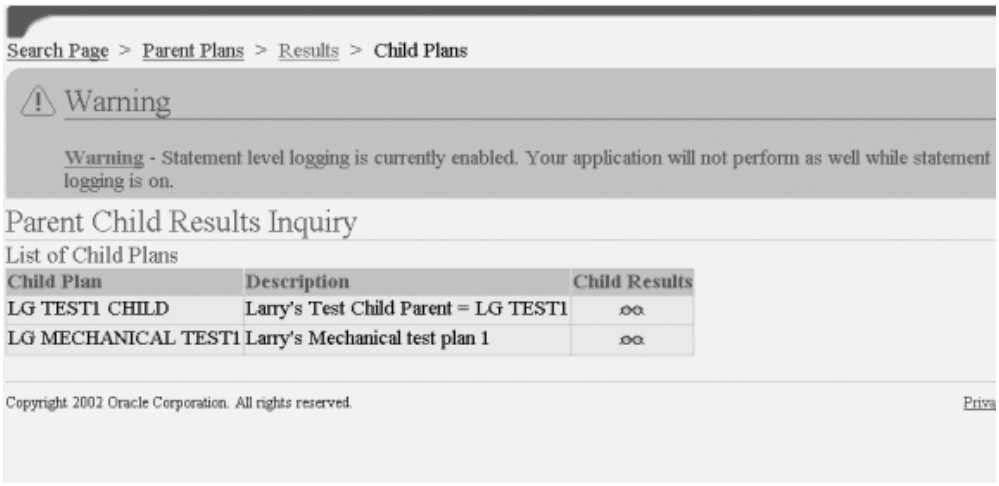


5. Optionally, choose the View Quality Results (glasses) icon to view quality results for the current Parent collection plan.

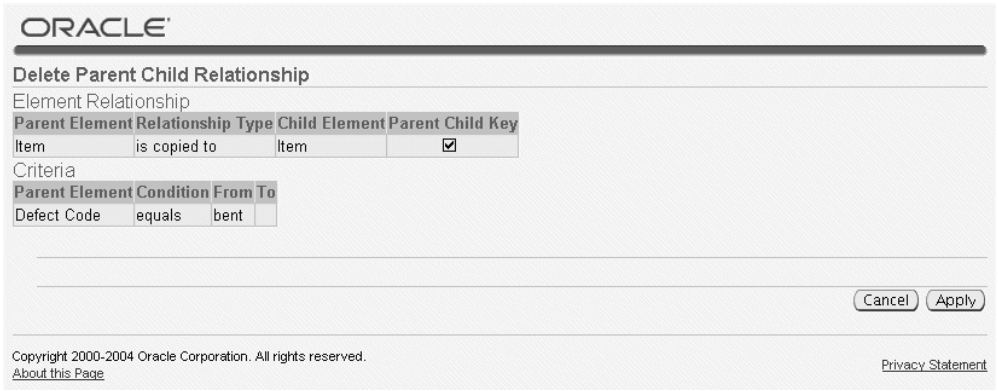


6. Optionally, choose the Attachments (paperclip) icon to view attachments associated with the current, Parent collection plan.

7. Optionally, choose the Child Plans icon to view the child collection plans that are associated with the current Parent collection plan.



8. Optionally, choose the Child Results (glasses) icon to view quality results for the current Child collection plan.



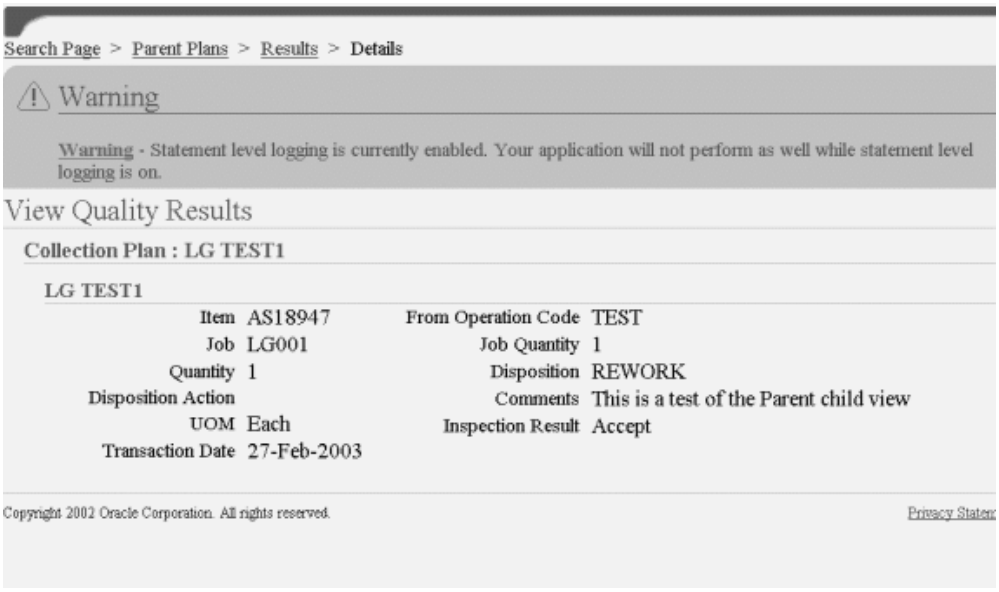
9. Optionally, choose the Attachments (paperclip) icon to view attachments associated with the current Child collection plan.

10. Optionally, choose the Child Plans icon to view the child collection plans that are associated with the current Child collection plan (a collection plan can be both a parent to and a child of multiple collection plans).

11. Optionally, choose the More Details icon to view the data collection details for the current Child collection plan.

12. Select the Results link to return to the View Quality Results page for Parent collection Plans.

13. Optionally, choose the More Details icon to view the data collection details for the current Parent collection plan.



Collection Plan Security

In addition to function-level and organization-level securities, you can limit user access to specific collection plans. Security controls are implemented at a group level by assigning specific privileges to groups and collection plan combinations. You can grant one or more privileges to user groups, such as view, enter, update, and delete authority on quality results, for a collection plan. You can also grant collection plan update authority.

Collection plan security tasks include the following:

- Setting Up Collection Plan Security, page 5-70

Setting Up Collection Plan Security

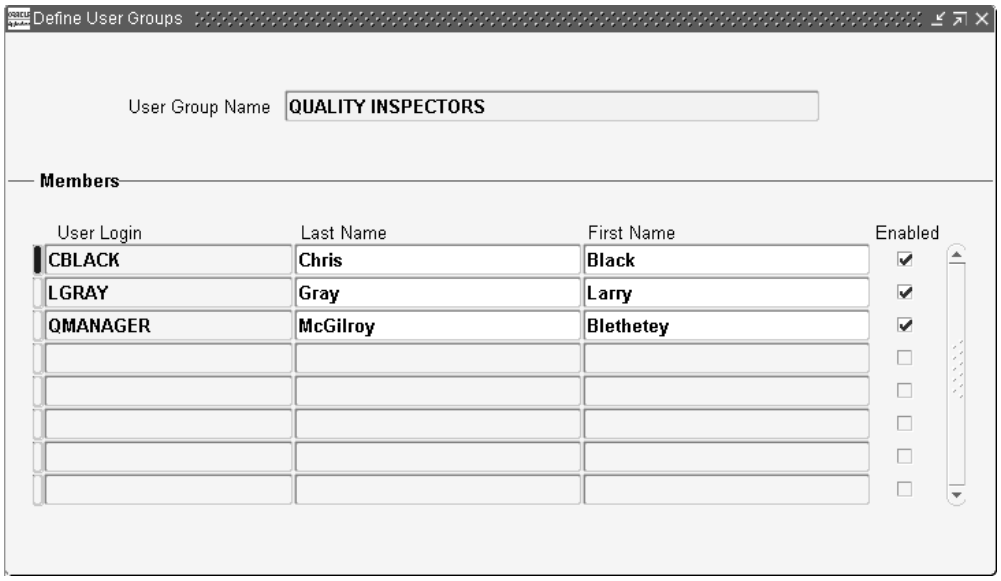
The setup of collection plan security involves defining user groups and then granting those user groups collection plan specific privileges.

Defining User Groups

You can add one or many users to a user group. This step involves assigning a name to a group of users. Once the group of users is assigned to a user group name, that user group name can be associated with specific collection plans and privileges.

To define a user group:

1. Navigate to the Define User Groups window.



2. Enter a User Group Name.

3. In the Members region, enter the User Login of the first member of the group. The User Login needs to be a valid value within the list of values.

   Note: If a person has more than one user login, then all of the user logins are automatically added to the user group, giving them access to granted privileges. This occurs when, in the Users window, different user names have the same customer (see: Users Window, *Oracle E-Business Suite Security Guide*)

4. Enter the user's Last Name.

5. Enter the user's First Name.

6. Optionally, select the Enabled check box to indicate that the user is a current member of the group.

7. Save your work.

Granting Privileges

Once user groups have been created, you can grant collection plan specific privileges to those user groups. You can enable user groups to update collection plans, or view, update, enter, and delete quality results for specific collection plans.

To grant collection plan privileges:

1. Navigate to the Grant Privileges window.

2. Select a valid user group from the Grantee list of values.

3. Select a valid Collection Plan from the list of values.

4. Grant privileges for the current user group and collection plan combination.

   Change Plan: Users in the current user group can update the current collection plan.

   Enter Results: Users in the current user group can enter quality results for the current collection plan.

   View Results: Users in the current user group can view quality results for the current collection plan.

   Update Results: Users in the current user group can update quality results for the current collection plan.

   Delete Results: Users in the current user group can delete quality results for the current collection plan.

5. Save your work.

6

Data Collection

This chapter explains how to directly enter quality results data.

This chapter covers the following topics:

- Overview of Data Collection
- Data Collection Fundamentals
- Transactional Data Collection Fundamentals
- Entering Quality Results Directly
- Finding Specifications While Entering Results Directly
- Results Entry Folders
- Viewing Attachments Associated with Quality Results
- Action Processing
- Updating and Deleting Quality Results
- Posting Action Log Entries
- Specifications for Transactional Data Collection
- Collection Import
- Updating Collection Import Records

Overview of Data Collection

You can enter quality results into the quality data repository directly, as you transact in other Oracle Manufacturing Applications, or using Collection Import.

Direct Data Collection

You can enter quality results directly in stand-alone mode, using either the forms user interface or the Quality Workbench. You can then update, view, report, and chart these results as required. When you enter results in stand-alone mode, the data entered is

validated, using acceptable values and valid data types, and actions are executed per the collection plan used.

Data Collection During Transactions

You can collect data during transactions, and you can specify that it be mandatory or optional. You must create a collection plan specific to the transaction, and in the plan you can indicate whether or not quality results are to be collected automatically and in the background as you transact. If you indicate that quality results are not to be collected in the background, you use the Enter Quality Results window (via the forms user interface, not the Quality Workbench) to enter them. As with direct data collection, the data that you enter is validated, and actions executed, per the collection plan.

Integrating quality data collection with standard manufacturing transactions provides the following benefits:

- You can collect quality data without changing responsibilities. See: Getting Started, *Oracle E-Business Suite User's Guide*.
- It eliminates redundant data entry and ensures data integrity since data specific to the transaction - such as transaction quantities, dates, and times - is automatically saved in the quality data repository when the parent transaction is saved. See: Reference Information Collection Elements, page 3-8.
- You can optionally enforce mandatory quality data collection by requiring that quality results be entered before the parent transaction can be saved. See: Quality Collection Transactions, page 5-35.
- You can collect quality results automatically in the background without user intervention.
- You can ensure that quality data collection is timely and accurately entered.

Collection Import

You can import quality results data directly into the quality data repository using Collection Import. You can also update quality results data using Collection Import.

Related Topics

Transactional Data Collection Fundamentals, page 6-5

Data Collection Fundamentals, page 6-3

Data Collection Options, page 1-6

Data Collection Using the Quality Workbench, page 7-2

Data Collection Fundamentals

If you use the Enter Quality Results window to enter data, the following rules are applied. Note that these rules also apply to transactional data collection except where noted.

Specification Selection

When you enter quality data using a collection plan that has been associated with a specification type, you are prompted to find and assign a specification before you can enter quality results.

For example, if you associated the customer specification type with your collection plan, you are prompted to select a *customer specification*. You can select a customer specification, a specification of another type, or no specification at all. See: Finding Specifications While Entering Results Directly, page 6-10.

Default Specification Limit Values

If you define specification limits for collection elements and specification elements, you can use profile options to control which specification limit values are displayed, and whether or not they are automatically displayed (the defaults) when quality results are entered:

- *QA:Default Specification Target:*This profile option enables you to determine whether or not the specification limit values that you defined when you created the specification are the default values.

  When this profile option is set to *Yes,* and you enter results for a collection plan element that corresponds to a specification element on the assigned specification, the specification limits from that specification element are the default values. They are displayed in the specification limit fields at the bottom of the Enter Quality Results window.

  If the profile option is set to *Yes* and you enter results for a collection plan element that does not correspond to a specification element on the assigned specification, the specification limit values are not defaulted, and the specification limit fields at the bottom of the Enter Quality Results window are blank.

  If you have not selected a specification, and this profile option is set to *No*, when you enter quality results for a collection plan element, the specification limits from the collection element are the default values, and are displayed in the fields at the bottom of the Enter Quality Results window. When you enter results for a collection plan element, but no specification limits have been defined for that collection element, the specification limit fields are blank.

Important: If you have explicitly defined default values for the collection plan element, these values are used regardless of how this profile option is set.

- *QA:Blind Results Entry* profile option: When you enter quality results for a collection plan element with specifications, and this profile option is set to *Blind Entry Off,* the specification values and limits are displayed at the bottom of the Enter Quality Results window. If you do not want the specification values and limits to be displayed, set this profile option to *Blind Entry On.*

  Tip: You can easily determine the source of defaulted target values and specification limits. If target values and specification limits are defaulted from specification elements, the name of the specification appears in Spec Name field at the bottom of the window. If target values and specification limits are defaulted from collection elements, the field is blank.

Default Value Assignment Rules

When you enter quality data, the following rules determine which default values are displayed:

- **Default Values from Collection Plan Elements**

  If your collection plan elements have default values, these values are displayed without exception. You can enter default values as you define collection plan elements.

- **Default Values from Specification Element Target Values**

  Setting the *QA:Default Specifications Target* profile option to Yes displays the target values that you entered when you defined the specification elements (not the default values). Deriving the default value from the specification element target value is most useful when it is difficult or impossible to determine a reasonable default value for a collection plan element.

- **Default Values from Collection Element Target Values**

  If the *QA:Default Specifications Target* profile option is set to No, or if no specification element target values are defined, the target values that you entered when you defined the collection element specification limits are the default values.

Dependencies and Data Entry Order

When you enter quality results in the Enter Quality Results window, dependencies

between context elements are enforced. For example, you cannot enter a value for To/From Operation Sequence without first entering a value for Job or Line. See: Context Element Dependencies, page 5-7.

Quality Actions

When you enter quality results, the action rules associated with collection plan elements are evaluated to determine whether to invoke alerts, notifications, or other actions.

Collection Number

Collection numbers are assigned by the system and are used to group and track quality results. During data entry, the field shows the word "Automatic". The assigned sequence number displays after you save the data. Once the sequence number is generated, the field becomes a read-only field. You can generate a report to audit all collection results entered. See: Sequence Element Audit Report, page 15-11.

Unit of Measure Conversion

You can enter quality results in different units of measure than those used to define the specification limits. For example, a collection element named Length with a unit of measure (UOM) equal to M for meters is created. This collection element is used in many collection plans at locations all over the world. The specification for Length is defined with a UOM equal to CM for centimeters. When you add this collection element to a particular collection plan, you change the UOM to FT for feet. This requires you to enter the Length quality result in this particular collection plan in feet. The specification limits have been converted and are shown in feet also.

Attachments

You can view collection plan or specification attachments as you enter quality results. Attachments, which are illustrative or explanatory files, can be used to help guide you through the quality results entry process.

Related Topics

Defining Collection Elements, page 3-11

Defining Collection Plan Elements, page 5-15

Defining Specification Elements, page 4-7

QA:Default Specification Target, page 2-11

Transactional Data Collection Fundamentals

Collection plans that have been associated with collection transactions can be used to

collect quality results as you transact in other Oracle Manufacturing Applications. You can optionally define collection triggers so that quality data collection is invoked when certain transaction conditions are met. When invoked, data collection occurs either automatically in the background, the Enter Quality Results window appears, or, when using the Oracle Applications Framework interface, the Add Data: Enter Results region appears in the transaction page. See: Quality Collection Transactions, page 5-35 and Associating Transactions with Collection Plans, page 5-46.

For example, if you create a collection plan named IN-PROCESS INSPECTION and add the context elements Job, Item, and From/To Operation Sequence Numbers to it, you can then associate this collection plan with the Oracle Work in Process Move transaction using the Collection Transactions window.

In this example, if you define the collection triggers 'Item equals (=) C31556' and 'From Operation Sequence equals (=) 20', when C31556 assembly items are moved from operation sequence 20, the system determines that the trigger conditions are met and the IN-PROCESS INSPECTION collection plan is automatically invoked.

Mandatory Data Collection

When you associate a collection transaction with a collection plan, you can choose whether data collection for the transaction is mandatory or whether it is optional. If you make a collection transaction mandatory, you must save at least one quality data record before saving the parent transaction.

For example, if all parts that are resurfaced at a grinding operation must be surface inspected before being moved to the next operation, you can make data collection at the grinding operation mandatory. You can do this by associating the collection plan and with the WIP move transaction and by defining the following collection trigger and trigger conditions:

- From Operation Sequence = 40 (Grinding Operation)
- To Operation Sequence = 60 (Grinding Operation)

When assemblies are moved from operation 40 to operation 60, the collection triggers are evaluated and data collection is automatically invoked. The operator must enter the results of the surface inspection before the move transaction can be completed and saved.

> **Important:** Inspection Transactions must always be made mandatory. See: Inspection Collection Plans, page 8-6.

Background Data Collection

When you collect quality results during transactions, you can define the collection plan as 'background,' which enables you to collect quality results for context elements without invoking the Enter Quality Results window. Background data collection is

initiated when you enter quality results during the transaction, and the system finds, selects, and initiates the appropriate collection plan or plans.

If collection triggers are defined for background data collection, data collection is initiated only if all collection trigger conditions are satisfied (you define triggers for transactional data collection in the Collection Transactions window).

Several collection plans can collect data in the background during the same transaction. When this is the case, the results for context elements on all of these collection plans are automatically saved when the parent transaction is saved.

Non-Displayed Collection Plan Elements

You are not prompted to enter quality results for collection plan elements that are defined as non-displayed. Any collection plan element can be defined as non-displayed but normally only context elements, for which data is automatically collected as you transact, are suppressed. This is useful because values for context elements are automatically collected and cannot be changed, therefore displaying them to the user is unnecessary.

For example, you can create a Scrap collection plan that contains the following collection plan elements: Item, Serial Number, Job, Quantity, Scrap, and Operator, so that you can collect quality data each time defective assemblies are scrapped using the Work in Process move transaction. You can associate this collection plan with the Work in Process move transaction and optionally define a collection trigger so that the Scrap collection plan is invoked each time assemblies are moved into a Scrap intraoperation step.

If you define the context elements on this collection plan (Item, Job, and To/From Operation Sequences) as non-displayed, the results values for these context elements are not displayed when the Scrap collection plan is invoked for data entry. Thus you are prompted to enter results values for only those collection plan elements that are defined as displayed (Quantity, Scrap, and Operator).

Related Topics

Creating Collection Plans, page 5-11

Associating Transactions with Collection Plans, page 5-46

Entering Quality Results Directly

You use the Enter Quality Results window to enter quality results directly. You can open it from the main menu, or you can invoke it as you enter quality results during transactions.

This section includes the following topics:

- Finding Specifications While Entering Results Directly, page 6-10

- Results Entry Folders, page 6-11

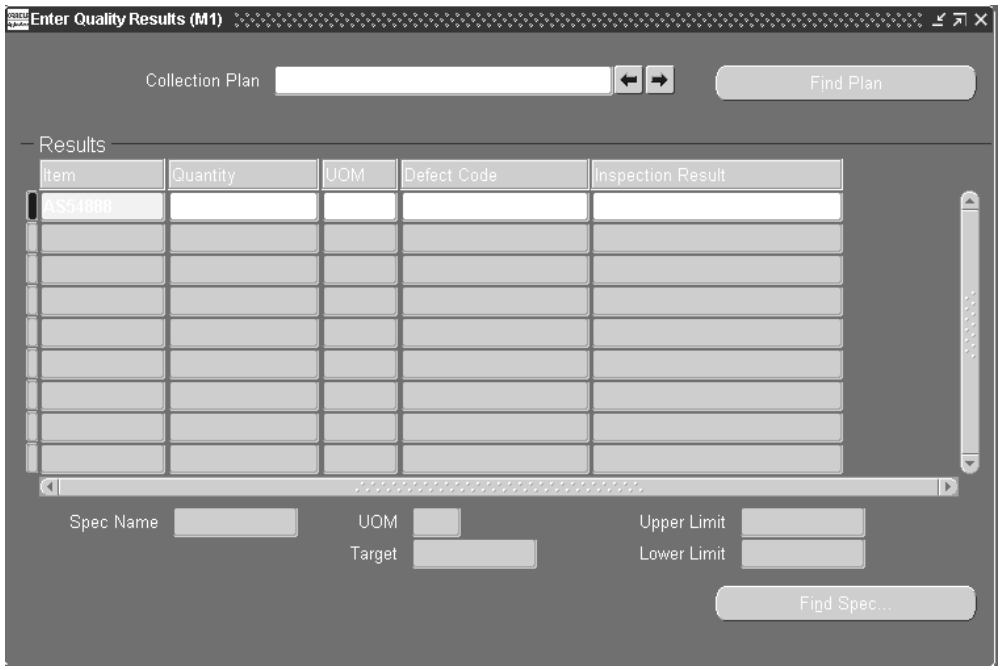
When you enter quality results for collection plan elements with specifications, the Spec Name, UOM, Target, Upper Limit, and Lower Limit fields are displayed in the fields at the bottom of the window, *as long as the QA:Blind Results Entry profile option is set to " Blind Entry Off."* If you do not want the specifications to be displayed, set the QA: Blind Results Entry profile option to "Blind Entry On" (see: Profile Options, QA:Blind Results Entry, page 2-8.

Prerequisites

❒ Create a collection plan. See: Creating Collection Plans, page 5-11.

To find collection plans:

1. Navigate to the Enter Quality Results window.



2. Select a collection plan.

   You can only select a collection plan that has a current effective date. If a default collection plan has been specified, it is automatically selected. See the information on Profile Option: QA:Default Collection Plan, page 2-11.

   You can use the Find Plan button or the standard list of values to find and select a collection plan. Once you have selected a collection plan, you can use the previous plan/next plan arrow buttons, located to the right of the collection plan name, to scroll to another valid collection plan. See: Entering Data in Forms, *Oracle E-Business*

Suite User's Guide.

If you select a collection plan that *requires* that you find and assign a specification, the Find Specifications window appears. See: Finding Specifications While Entering Results Directly, page 6-10.

To enter quality results values:

1. In the Results region, enter one or more results records. The following mechanisms can be used to simplify data entry:

   Default value: Default values, if defined, are automatically displayed. They can be overridden. See: Default Specification Limit Values, page 6-3.

   Lists of Values: if results values have been defined, they are available on a list of values. See: Defining Collection Plan Element Values, page 5-19.

   Duplication: You can duplicate fields and records and edit them if required. See: Controlling Records in a Window, *Oracle E-Business Suite User's Guide*.

   > **Important:** The Prompts that you enter when you define collection elements are displayed as column headings. The Hints that you define are displayed at the bottom of the window.

   You must enter results values for mandatory collection plan elements.

2. Save your work. See: Saving Changes, *Oracle E-Business Suite User's Guide*.

   > **Important:** If you save your work using *Save and Proceed,* the current results are cleared and the Collection Number counter is incremented. You can continue to enter results for the same collection plan and specifications, if assigned.

To optionally find and assign specifications:

From the Enter Quality Results window, choose the Find Specs button. The Find Specifications window appears. See: Finding Specifications While Entering Quality Results Directly, page 6-10.

To view collection plan or specification attachments while entering quality results:

See: Viewing Attachments Associated with Quality Results, page 6-12.

Related Topics

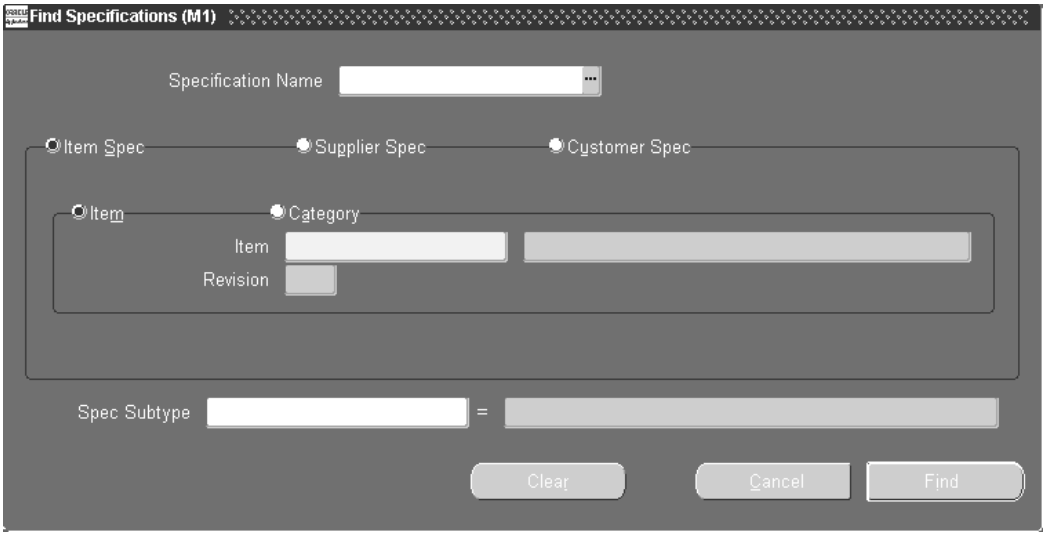
Profile Options, page 2-8

Finding Specifications While Entering Results Directly

If a specification type has been associated with the collection plan selected, you are prompted to find and select a specification of that type as you enter quality results. You can select a specification from the list of values or by entering search criteria. You can optionally select a specification of another type. You can also select specifications for collection plans that do not have a designated specification type.

To find and select specifications by name:

In the Find Specifications window, select or enter the Specification Name. The window is automatically populated with the defaults associated with your specification selection.



Selecting a specification by name is the fastest specification selection method.

To bypass specification selection:

Choose the Cancel button.

> **Important:** If you choose Cancel, the specification limits that are defined for the collection elements are used. See: Defining Collection Element Specification Limits, page 3-16.

To find and select specifications by type:

Enter your search criteria then choose the Find button.

You can narrow your search criteria by choosing the specification type (Item Spec, Supplier Spec, or Customer Spec) and an Item or Item Category and Revision. If you

select a Supplier Spec or Customer Spec specification type, you must also select the Customer or Supplier.

If you try to find any type of specification, but a specification for that item cannot be found, Oracle Quality searches for a specification based on the category of the item entered. The *default category set* you defined using the *QA:Quality Category Set* profile option is used to determine the item category. See: QA:Quality Category Set, page 2-12.

If you entered search criteria and no specification that matches the criteria is found, a warning message is displayed and the specification limits that were defined for the collection element are used. See: Defining Collection Element Specification Limits, page 3-16.

Related Topics

Specification Types, page 4-3

Associating Specification Types with Collection Plans, page 5-21

Results Entry Folders

You can customize which fields and records display within the Enter Quality Results window, for a collection plan (See: Customizing the Presentation of Data, *Oracle E-Business Suite User's Guide*). This folders feature provides a user defined display of retrieved information, such as:

- Columns displayed
- Width of columns displayed
- Sequence of columns
- Prompts associated with columns
- Sequence of records

> **Important:** When saving a newly created results entry folder, select **Never** from the Autoquery option group. The query is then saved with the folder, but does not automatically run when you open the folder. You want to enter results in the Enter Quality Results window, not query results. If you query results, an error appears.

To prevent users from creating or modifying folders:

You can prevent users from creating or modifying folders with the profile option FLEXVIEW: ALLOW_CUSTOMIZATION.

Related Topics

Results Update Folders, page 6-16

Quality Results Folders, page 14-8

Customizing the Presentation of Data, *Oracle E-Business Suite User's Guide*

Viewing Attachments Associated with Quality Results

You can define and view specification and collection plan attachments using the Specifications and Collection Plans windows. You can also view collection plan attachments as you enter, update, and view quality results. Similarly you can view specification attachments as you enter quality results.

Prerequisites

❒ Attach files to collection plans and specifications. See: Attaching Files to Collection Plans, Specifications, and Result Lines, page B-2.

To view collection plan attachments while entering, updating, or viewing quality results:

1. After selecting a collection plan in either the Enter Quality Results, Update Quality Results, or View Quality Results window, position the cursor in the Collection Plan region at the top of the window.

2. Choose the Attachments icon or choose Attachments from the Edit menu. The Attachments window appears.

To view specification attachments while entering quality results:

1. After selecting a collection plan and specification in the Enter Quality Results window, position the cursor in the Specifications region at the bottom of the window.

   The cursor can be in any field in this region: the Spec Name, UOM, Target value, Upper specification, or Lower specification field.

2. Choose the Attachments icon or choose Attachments from the Edit menu. The Attachments window appears.

   Important: You can only view specification attachments if the *QA: Blind Results Entry* profile option is set to Blind Entry Off. See: QA:Blind Results Entry, page 2-11.

Related Topics

Entering Quality Results Directly, page 6-7

Updating and Deleting Quality Results, page 6-14

Viewing Quality Results, page 14-32

Action Processing

As you collect quality results, the action rules associated collection plan elements are evaluated to determine whether to invoke alerts, notifications, or other actions.

Immediate Actions

The following actions are immediate actions. When invoked, they are *always* processed on-line immediately and control is returned to you:

- Display a message to the operator(message action)
- Reject the input (message action)
- Assign a Value action

Processing Mode Dependent Actions

The following actions can be processed either concurrently or online depending on how the *QA:Action Processing Mode* profile option is set:

- *Assign a shop floor status to the intraoperation step* (WIP action)
- *Place the job on hold* (WIP action)
- *Hold all schedules building this assembly on this production line* (WIP action)
- *Post an entry to the Quality Action Log* (message action)

Background Actions

All alert actions, listed below, are background actions. When invoked, they are always processedconcurrently in the background and control is immediately returned to you:

- *Send an electronic mail notification*
- *Execute a SQL script*
- *Execute an operating system script*

- *Launch a concurrent request*

Related Topics

Quality Actions, page 3-19

Viewing and Deleting Action Log Entries, page 14-41

QA:Action Mode Processing, page 2-10

Updating and Deleting Quality Results

You can use Query Find and Query-by-Example to find, view, and update quality results, including specific quality results associated with a collection plan. You also can view collection plan attachments as you update quality results. Attachments, which are illustrative or explanatory files, can be used to help guide you through the quality results update process.

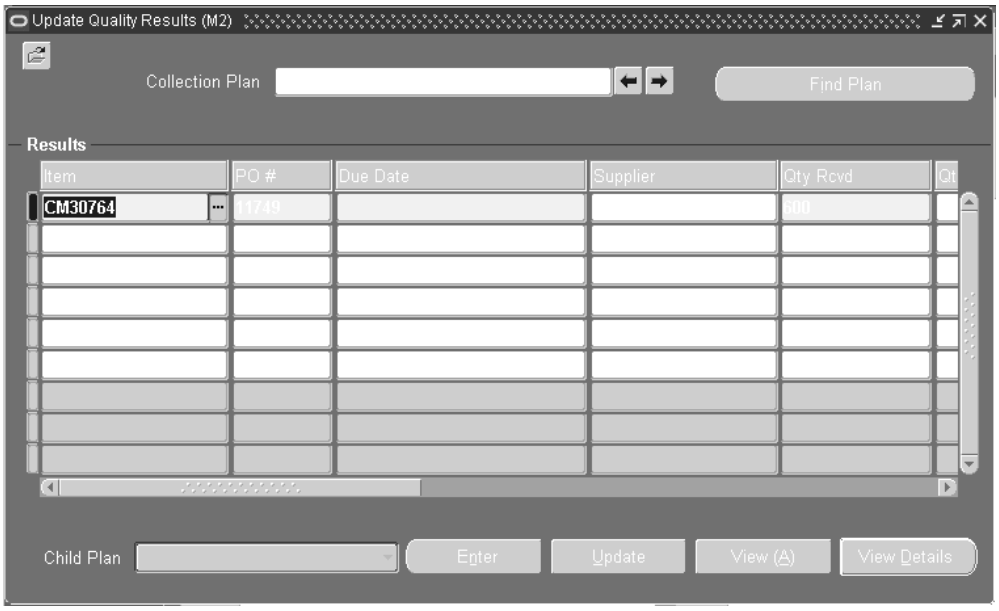
> **Tip:** Ask your system administrator to run the Manage Collection Element Indexes Process, page 15-8, if you want to enable faster searches on user-defined collection element values.

Prerequisites

❒ Enter quality results. See: Entering Quality Result Directly, page 6-7.

To select all quality results for a collection plan:

1. Navigate to the Update Quality Results window. The Update Quality Results window appears.



2. Select the Collection Plan.

   You can only select a collection plan that has a current effective date. If a default collection plan has been specified, it is automatically selected. See: QA:Default Collection Plan, page 2-11.

   You can use the Find Plan button or the standard list of values to find and select a collection plan. After selecting a collection plan, you can use the previous plan/next plan arrow buttons, located to the right of the collection plan name, to scroll to another valid collection plan. See: Entering Data in Forms, *Oracle E-Business Suite User's Guide*.

   Once a collection plan is selected, the results associated with that collection plan are automatically displayed in date order. The Prompts entered when defining the collection elements are displayed as the column headings.

To find specific quality results:

Position the cursor in any field in the Results region and choose *Find* from the Query menu. The Find Results window appears. See: Finding Quality Results, page C-1.

To find specific quality results using query-by-example:

Position the cursor in any field in the Results region and choose *Enter* from the Query menu. See: Searching for Data, *Oracle E-Business Suite User's Guide*.

To update quality results:

In the Results region select the results record, then update it.

To delete quality results:

In the Results region select the results record, then choose *Delete Record* from the Edit Menu.

To view detailed target value and specification limit information for a quality results value:

See: Viewing Quality Results Details, page 14-35.

To export quality results:

See: Exporting Quality Results, page 14-42.

To view collection plan attachments while updating quality results:

See: Viewing Attachments Associated with Quality Results, page 6-12.

What's Next

Results Update Folders

It can be necessary to have specific key collection elements visible at all times within the Update Quality Results window. For example, while updating quality results for lengthy collection plans, the first collection elements might disappear from display while collection elements near the end of the collection plan are entered. If you are interrupted while updating quality results into lengthy collection plans, it can be difficult to find the correct record in order to continue updating information, because key collection elements at the beginning of the record have scrolled out of display of the window.

You can customize which fields and records display within the Update Quality Results window, for a collection plan (See: Customizing the Presentation of Data, *Oracle E-Business Suite User's Guide*). This folders feature provides a user defined display of retrieved information, such as:

- Columns displayed
- Width of columns displayed
- Sequence of columns
- Prompts associated with columns
- Sequence of records

To prevent users from creating or modifying folders:

You can prevent users from creating or modifying folders with profile option, *Folders: Allow Customization*.

Related Topics

Profile Options, page 2-8

Results Entry Folders, page 6-11

Quality Results Folders, page 14-8

Customizing the Presentation of Data (in a Folder), *Oracle E-Business Suite User's Guide*

Posting Action Log Entries

Action log entries are created when the "Post an entry to the Quality Action Log" action is invoked. See: Message Actions, page 3-20.

Consider the following action rule and its associated actions:

Action Rule:	When a critical measurement is outside the upper and lower specification limits then
Action 1:	Put a job on hold.
Action 2:	Post an entry to the Quality Action Log

In this example, two actions are linked to a single rule. When the rule is evaluated and the actions invoked, the text that was entered for the "Post an entry to the Quality Action Log" action is automatically written to the Quality Action Log.

Action log entries are also created when an action being processed in background mode fails. See: QA:Action Mode Processing, page 2-10.

Prerequisites

- ❒ Define a "Post an entry to the Quality Action Log" action. See: Defining Collection Element Actions, page 3-29 and Defining Collection Plan Element Actions, page 5-23.

To post action log entries:

Enter quality results that satisfy the action rule (this will invoke the related action). See: Entering Quality Results Directly, page 6-7.

Specifications for Transactional Data Collection

If a specification type has been associated with the collection plan that is invoked as you enter a parent transaction, the system searches for the correct specification based on

information provided by the transaction. If there is not enough information to find a specification, you are prompted to select one. You can select a specification other than the type designated for the selected collection plan. You can choose not to select a specification if prompted to do so.

You can enter quality results as you enter transactions using collection plans that have a designated specification type. If no item specification can be found for the item, the system searches for a specification based on the item category. The default category set you defined using the *QA:Quality Category Set* profile option is used to determine the item category. See: QA:Quality Category Set, page 2-12.

> **Important:** Once you have selected, or chosen not to select, a specification during transactional data collection you cannot change your specification selection without deleting the results you have already entered.

Item Category Specification Example

You create a Scrap collection plan to collect data about scrap transactions associated with the WIP Move transactions. You also associate this collection plan with the "Item" specification type. However, you do not define a specification for the item, AX100, you plan to scrap. Instead you define a specification that is associated with the item's category. As you scrap AX100 item assemblies (by moving them into a scrap intraoperation step), the system searches item specification (e.g. a specification for AX100) then, not finding an item specification, searches for and finds a specification for the category of item AX100. See: Specification Types, page 4-3.

Supplier Specification Example

You create an Outside Processing collection plan and associate it with the "Supplier" specification type. As you enter WIP move transactions for item A54888, worked on by supplier Comprehensive Components, you are prompted to enter the supplier. The system then searches for a specification that is defined for this item and supplier combination.

Customer Specification Example

The Customer Dimension Requirements collection plan captures inspection results in the WIP Move transaction for items produced for key customers. Each customer has different specification requirements so you created specifications by item and customer to track these requirements. You designated specification type Customer Specifications for the Customer Dimension Requirements collection plan. Oracle Quality searches for specifications by item and customer during quality data collection; however, the move transaction does not automatically know the customer number, so you are prompted for this information before the search for the specification begins.

Finding Specifications During Transactions:

If a specification type has been associated with the collection plan that is invoked as you enter a parent transaction, the system searches for the correct specification based on information provided by the transaction. If there is not enough information to find the specification, the Find Specifications window appears and you are prompted to find and select a specification. You can select a specification other than the type associated with the collection plan. You can also choose not to select a specification.

To find and select specifications by name

If the system cannot find the correct specification based upon the context element information derived from the parent transaction, the Find Specifications window appears. Information from the parent transaction is automatically defaulted. Select or enter the Specification Name.

> **Important:** Selecting a specification by name is the fastest specification selection method.

To by-pass specification selection

Choose the Cancel button.

> **Important:** If you choose Cancel, the specification limits that are defined for the collection elements are used. See: Defining Collection Element Specification Limits, page 3-16.

To find and select specifications by type

Again, if the system cannot find the correct specification based upon the context element information supplied by the parent transactions, the Find Specifications window appears. Information from the parent transaction (e.g. item) is automatically defaulted but you can enter your own search criteria then choose the Find button.

You can narrow your search criteria by choosing the specification type (Item Spec, Supplier Spec, or Customer Spec) and an Item or Item Category and Revision. If you select a Supplier Specification or Customer Specification, you must also select the Customer or Supplier.

If you try to find any type of specification, but a specification for that item cannot be found, Oracle Quality searches for a specification based on the category of the item entered. The *default category set* you defined using the *QA:Quality Category Set* profile option is used to determine the item category. See: QA:Quality Category Set, page 2-12.

If you have entered search criteria and no specification that matches the criteria entered is found a warning message is displayed and the specification limits that are defined for the collection element are defaulted. See: Defining Collection Element Specification Limits, page 3-16.

To select a different specification

Choose the Find Specs button to find and select another specification. When you choose the find button, information from the parent transaction is automatically defaulted, but you can enter your own search criteria.

> **Caution:** You can only select a different specification if no results have been collected. Once a specification is selected and results are entered, this same specification is used until you delete the current results or change the collection plan or collection number.

Related Topics

Specification Types, page 4-3

Associating Specification Types with Collection Plans, page 5-21

Collection Import

You can load quality results data from external systems into the quality data repository using the Collection Import Interface. For example, you can load data from sources such as test equipment and gauges into the Collection Import Interface.

From the Launch Collection Import Manager window, you open the Collection Import Manager, which validates records in the Collection Import Interface, then imports the data into the quality data repository. Quality results data that fails validation or processing is marked. You can use the Update Collection Import window to view, update, and resubmit this information.

The Collection Import Manager allows you to insert multiple rows of data into the quality data repository, and to update existing rows of data. When you launch the Collection Import Manager, you can either insert multiple rows or update a single row at a time. You cannot, however, both insert and update rows at the same time.

> **Caution:** The Collection Import Interface does not automatically relate imported parent and child collection plan records.

Importing Quality Results Data

You can use the Collection Import Manager program to add quality results to the quality data repository and to update quality results already in the quality data repository.

When the Collection Import Manager program is launched, the system searches the Collection Import Interface Table (QA_RESULTS_ INTERFACE) and creates or updates quality results records in the quality results database table (QA_RESULTS) for each row

that passes validation. Records in the Collection Import Interface Table that have their update flag set to 2 update current records in QA_RESULTS, while those with an update flag other than 2 create new quality results records. If a row fails validation, an error message is entered in the errors table (QA_INTERFACE_ERRORS) and the invalid rows remain in the Collection Import Interface Table. You can update these failed rows and resubmit them.

Prerequisites

- ❒ Insert rows into the collection import table. See: Collection Import, *Oracle Manufacturing APIs and Open Interfaces Manual*.

To specify the number of import workers to use and launch the import manager:

1. Navigate to the Launch Collection Import Manager window. The Parameters window appears.
2. Enter the number of Worker Rows. This is the number of rows each Collection Import Worker processes.
3. Select the Transaction Type from the field's list of values. The Transaction Type window opens.

   If you select Update Transaction, Quality updates existing records in the database.

   If you select Insert Transaction, Quality inserts multiple records into the database.
4. Choose OK to close the Transaction Type window.
5. Choose OK to close the Parameters window.

   The Collection Import Manager polls the Collection Import Interface Table, validates each row of data and either creates or updates quality results records for that row or enters an error message in the Errors table. Invalid rows remain in the Collection Import Interface Table.

   > **Important:** If a collection element value in the Collection Import Interface Table is null, the null value is inserted in the database even if the existing collection plan in the database specifies a default value for the collection element.
6. Choose Submit.

To specify print options, define run options, and submit the request:

See: Standard Request Submission, *Oracle E-Business Suite User's Guide*.

Related Topics

Importing Quality Results Data, page 6-20

Updating Collection Import, page 6-22

See: Collection Import Interface, *Oracle Manufacturing APIs and Open Interfaces Manual*

Updating Collection Import Records

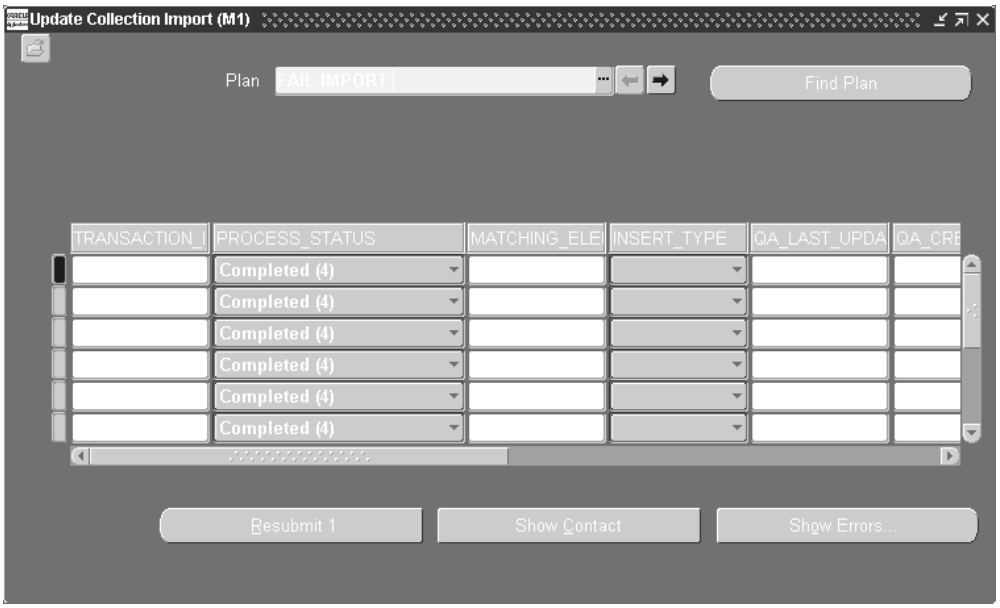
You can use the Update Collection Import window to view, update, delete, and resubmit records (rows) that have failed validation and that remain in the Collection Import Interface Table (QA_RESULTS_ INTERFACE). You also can view contact information and error messages associated with failed records. Error messages assist you in updating failed records prior to resubmission. You cannot, however, use this window to insert new collection import records.

Prerequisites

❒ Insert quality results data into the Collection Import Interface Table. See: Collection Import Interface, *Oracle Manufacturing APIs and Open Interfaces Manual*.

To display all collection import records for a collection plan:

1. Navigate to the Update Collection Import folder window. See: Customizing the Presentation of Data, *Oracle E-Business Suite User's Guide*.



2. Select the Collection Plan.

   You can use the Find Plan button or the standard list of values to find and select a collection plan. After selecting a collection plan, you can use the previous plan/next plan arrow buttons, located to the right of the collection plan name, to scroll to another valid collection plan.

   When you select a collection plan, all collection import records that are associated with that collection plan are displayed.

To display contact information for any record:

1. Navigate to the record.
2. Choose the Show Contact button.

To view error details for a failed record:

1. In the Update Collection Import window, select the failed row.
2. Choose the Show Errors button. The Errors window appears.

   All errors for the selected row are displayed. *Error Column* indicates the name of the column in the Collection Import Interface Table that failed validation. *Error Message* indicates why the transaction failed. Messages that are not specific to a Column may also be displayed.

To update failed collection import records:

From the records displayed in the Update Collection Import window, select a failed record and update as required. You can update any column of any record.

Records that are updated are not automatically resubmitted.

> **Important:** The list of values that are displayed for dependent context elements contain all values. For example, if you are updating a row that includes a Revision and an Item, the list of values associated the Revision context element list all Revisions, not just those for the Item specified in the row.

To resubmit failed collection import records:

1. From the records displayed in the Update Collection Import window, select the record or records to resubmit. You can select or deselect records as required. See: Multiple-Record Selection, *Oracle E-Business Suite User's Guide*.

2. Choose the Resubmit button to mark the record or records for resubmission.

3. Save your work.

   When you save your work, marked records are resubmitted. Resubmitting records resets their process status flags to 1 (Pending), and nulls their Group ID. The next time the Collection Import Manager polls the Collection Import Interface Table, these records are reprocessed and revalidated.

To delete collection import records:

1. From the records displayed in the Update Collection Import window, select the record or records to resubmit. You can select or deselect records as required. See: Multiple-Record Selection, *Oracle E-Business Suite User's Guide*.

   You can delete records of any processing status. When you delete records, their corresponding error messages are deleted from the Errors table (QA_INTERFACE_ERRORS).

2. Choose Delete from the Edit menu.

3. Choose Save to commit the deletion.

7

Quality Workbench

This chapter provides you with overviews and instructions for using the Quality Workbench.

This chapter covers the following topics:

- Overview of the Quality Workbench
- Data Collection Using the Quality Workbench
- Nonconformance Management
- Corrective Action Management
- Finding Skip Lot Inspections

Overview of the Quality Workbench

The Quality Workbench provides an enhanced user interface for entering quality data and performing analysis even in retrieving quality results from collection plans with large number of records or attachments as well as complex parent child plans. Benefits of using the Quality Workbench include:

- Managing quality results by business process. Select from the following four tabs to enter or view results: Collection Results, Nonconformances, Corrective Actions, and Skip Lot Inquiry.

- Viewing the hierarchical relationship between parent and child collection plans. Expand the view to show results that are related in the parent-child hierarchy, then select a view link to view individual result details.

- Entering and viewing each quality result on one page versus by row. The page view shows more fields at once. You must scroll to the right to view all fields by row in the forms based user interface.

- Searching for quality results using several criteria at once.

- Personalizing quality results data entry and views.
- Enabling multiple row entry for standalone and parent plans.
- Displaying validation and error messages on the results entry.
- Executing online actions while entering values in collection elements like assigning a value to the collection elements, displaying messages to the operator and rejecting the input.
- Exporting results records to spreadsheets.
- Deleting records that are saved in the workbench.
- Reading or updating data collected from devices associated with collection plan elements, if Oracle Manufacturing Execution System (MES) for Discrete Manufacturing is installed.

You can also access the Quality Workbench menu in the Forms Navigator. When you use the Quality Workbench, the organization you are working in displays in the page header. Also, when you navigate from forms to the Quality Workbench, the same organization context is retained. Note that as in Forms, dependent elements remain disabled until the parent values are entered

Quality Workbench supports online actions based on collection element values as well as online validations of collection elements values. You can also use the Quality Workbench to overwrite values assigned through collection actions.

Data Collection Using the Quality Workbench

The methods of quality data collection using the Quality Workbench are the same for all types of collection plans, including nonconformances, dispositions, corrective actions, and plans with parent - child relationships. Using the Quality Workbench, you can search for and find a collection plan, then enter, view, or change quality results. You can also personalize the data entry/view pages of collection plans at different levels (site, responsibility, and organization).

This section includes the following topics:

- Finding a Collection Plan, page 7-3
- Entering Quality Results, page 7-5
- Viewing Quality Results, page 7-8
- Updating Quality Results, page 7-9
- Entering Parent - Child Quality Results, page 7-10

- Customizing Your View of Quality Results, page 7-11
- Exporting Quality Results, page 7-11
- Collecting Device Data in Standalone Quality Workbench, page 7-12

Finding a Collection Plan

The Quality Workbench provides four tabs that automatically narrow your search capabilities by organization:

- Collection Results tab - search through all collection plans
- Nonconformances tab - search through only nonconformance/disposition master plans
- Corrective Actions tab - search through only corrective action master plans
- Skip Lot Inquiry tab - search through only skip lot inspection collection plans

You can perform a simple or advanced search within each tab. A search returns the list of collection plans matching your search criteria, including all child plans. You can also bookmark each of the Quality Workbench Collection Results, Nonconformances, and Corrrective Actions tabs separately.

> **Tip:** Use your internet browser to bookmark one or each of the Collection Results, Nonconformances, and Corrective Actions tabs as separate search pages. This gives you quick and easy access to the Quality Workbench search page that you need.

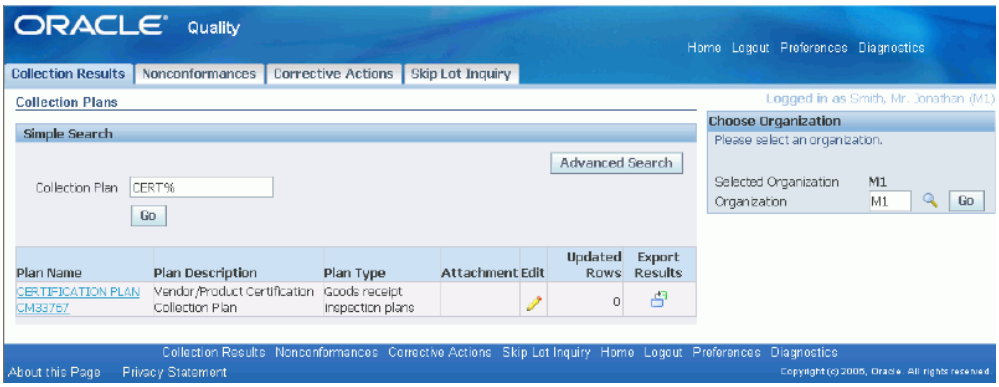
To find a collection plan using a simple search:

1. Navigate to the Quality Workbench - Collection Results Search Page.
2. Select the appropriate collection plan tab.

   The Collection Results tab enables you to search through all collection plans. The Nonconformances, Corrective Actions, and Skip Lot Inquiry tabs narrow your search to those types of collection plans.
3. Enter the organization in which you want to search in the Organization field.

   You can use the flashlight button to access the list of valid organizations.
4. Select the Go button to select the organization.
5. Enter a plan name or a partial plan name in the Collection Plan field to search for a collection plan.

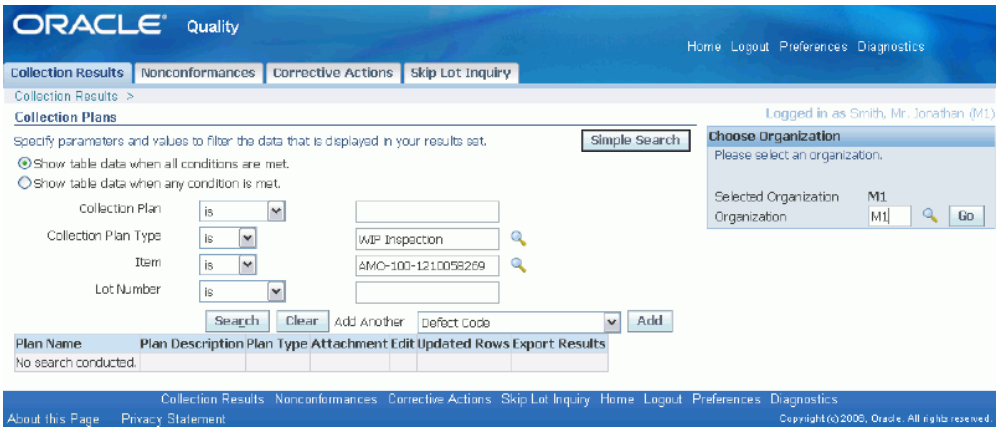
6. Select the Go button.



Click on the plan name to access the details.

To find a collection plan using an advanced search

7. Select the Advanced Search button to access more search criteria.



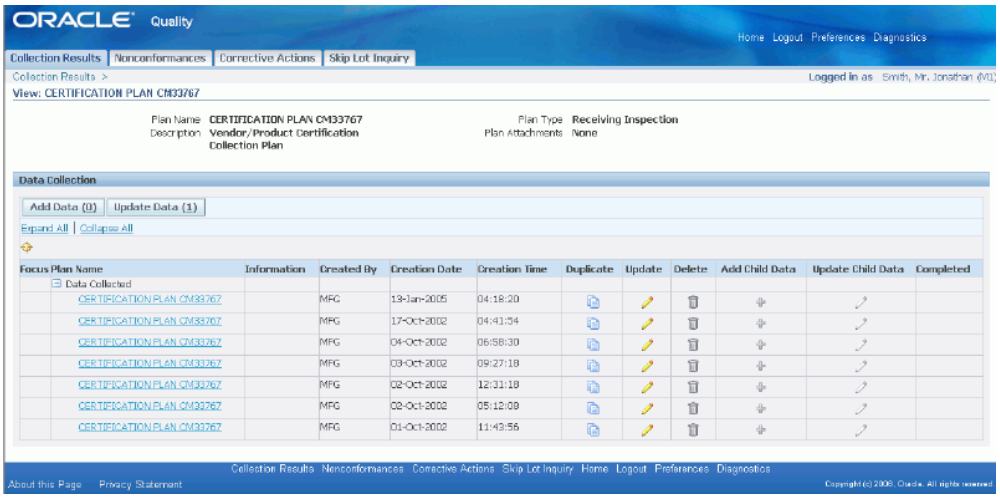
8. Enter the search criteria parameters and values.

9. Optionally, select additional search criteria in the Add Another field from the pull down list. Select the Add button to include the additional search criteria in the advanced search.

> **Note:** Only those collection elements shipped with the Oracle Quality product are available in the pull down list to select as additional search criteria.

10. Select the Search button.

11. Select the collection plan name to display the details.



You can use the Delete icon to delete previously saved result records. Use the Add Data button to enter quality results.

Entering Quality Results

Once you locate a collection plan using the Quality search capabilities, you can enter quality results for the plan.

To enter quality results:

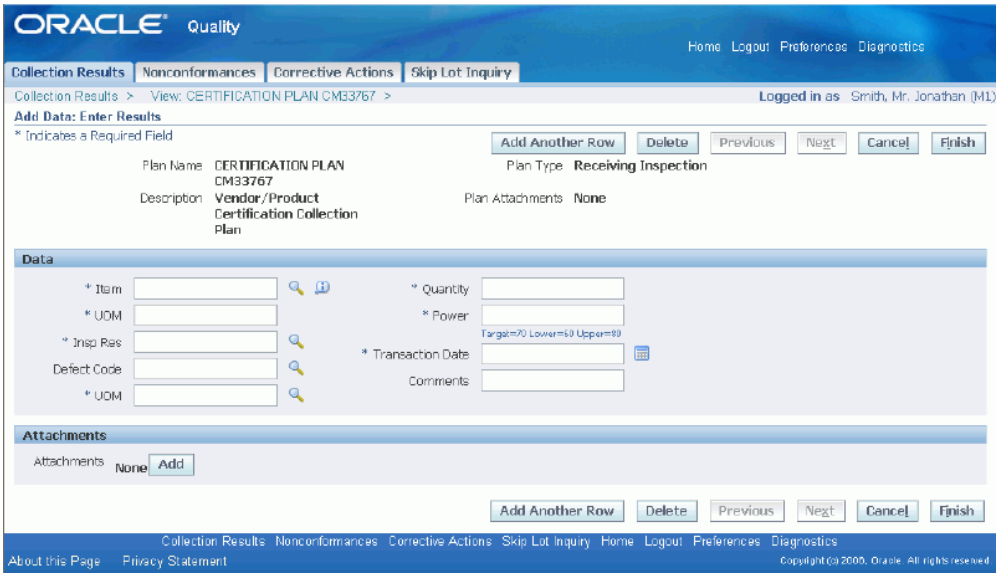
1. Select a Plan Name from the search results on the Quality Workbench - Collection Results Search Page. See: Finding a Collection Plan, page 7-3.

   The list of quality results data previously collected appears in the Quality Workbench - View Results page.

   Alternatively, select the pencil icon in the Edit column in the appropriate plan name row. No previously collected data appears when using this method.

2. Select the Add Data button to add quality results. Depending on the collection plan set up, the standalone parent collection plans displays either in single row mode or multiple rows. Child plans display depending on the setup in Parent-Child relationship definition.

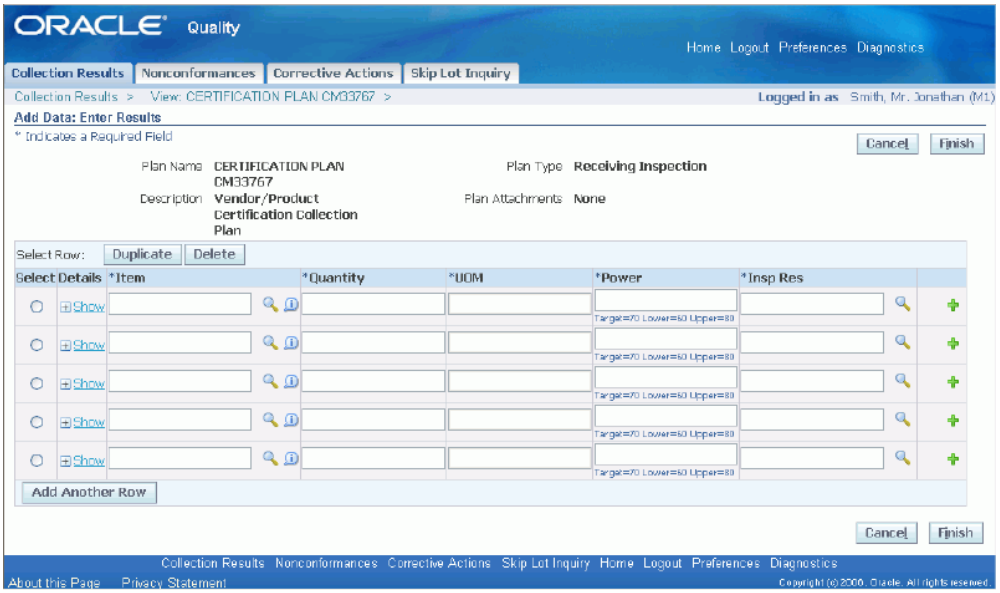
   Note: Note : The single row mode or multiple row mode display of collection plans in transactions is governed by the transaction setup.



You can use the Add Another Row button that is available in the single row entry display to add another row.

You can use the delete button to delete a result.

3. To display multiple rows in standalone collection plans or parent plans, select the option to display multiple rows in the Collection Plans definition form (See: Creating Collection Plans, page 5-11) .



While entering quality results for multiple rows, you can use the Duplicate button to duplicate results and the Delete button to delete a result. Use the Add Another Row button to add another row.

4. If the plan is associated with a quality item specification, the Quality Workbench - Select Specification page appears. If there are no quality item specifications associated with the plan, then the Quality Workbench - Enter Results page appears.

To optionally find and assign specifications

5. Enter search criteria in the Search region.

6. Select Go.

   The specifications that are valid for your search criteria appear.

7. Select the specification that you want to use while entering this quality result by selecting the icon in the Select Specification column.

   The Quality Workbench - Enter Results page appears with the specifications shown under each field.

To enter quality results (continued)

8. Optionally, select View to view the plan level attachments, if any.

9. In the Data region, enter a result record. All result fields display in this region in two columns. The following mechanisms are used to simplify data entry:

   Flashlight button: Displays the Search and Select List of Values page. From this page, you can search and select from a list of valid values.

Pull down list: Select a valid value from a list. Pull down lists only appear in the Quality Workbench if they are enabled for the collection plan element. See: Defining Collection Plan Element Values, page 5-19.

Long tip button: Displays the description of the field name. This button looks like a text bubble with the letter "i" inside.

Date picker button: Displays a calendar. Use pull down lists within the calendar to select a month and year, then select a day.

10. Optionally, in the Comments region, enter your comments.

    Comments entered can help with problem collaboration. Up to five comments fields are available for each result.

11. Optionally, in the Attachments region, select the Add button to add an attachment to this quality results record (See: Attaching Collection Plans, Specifications, Results Lines, page B-2).

12. Select the Finish button.

    This returns you to the Quality Workbench - Enter Results page.

13. Optionally, select the Plan Name of the record you just finished or another record to view or make changes to the record before saving the record to the database.

14. Click the Save button on the H-Grid page to save your changes and remain on the H-Grid page. A message in the Information region of the H-Grid page displays the generated sequences that informs you of the effects of online actions associated with the collection elements.

15. Click on Apply to save your changes and navigate back to the Quality Workbench-Collection results Search page. A message in the Information region of this page displays the generated sequence that informs you of the effects of online actions associated with the collection elements.

Viewing Quality Results

Once you locate a collection plan using the Quality search capabilities, you can view the quality results previously entered for the plan or the plan header information.

To view a quality result:

1. Select a Plan Name from the search results on the Quality Workbench - Collection Results Search Page. See: Finding a Collection Plan, page 7-3.

   The list of quality results data collected appears in the Quality Workbench - View Results page, if any results exist.

2. Optionally, view a child quality result by selecting the plus sign in the caret next to

the plan name.

A hierarchical representation of the relationship between parent and child plans called the H grid in the Quality Workbench pages enables you to navigate from parent to child results within the same page.

If more than one child result exists, then the list of child plans appears. Select the appropriate child plan.

3. Select a quality result from the Plan Name column.

   The information column is useful in determining which quality result to select. You can choose up to five fields to display in this column. Choose which fields to display in the information column when you set up the collection plan. See: Defining Collection Plan Elements, page 5-15.

Updating Quality Results

You can update a quality result entered at any time. For example, you can add a comment to a quality result if you have more information to share that could aid in problem resolution.

To update a quality result:

1. Select a Plan Name from the search results on the Quality Workbench - Collection Results Search Page. See: Finding a Collection Plan, page 7-3.

   The list of quality results data collected appears in the Quality Workbench - View Results page.

2. Select a pencil button from the Update column for the appropriate quality result.

   The information column is useful in determining which quality result to select. You can choose up to five fields to display in this column. Choose which fields to display in the information column when you set up the collection plan. See: Defining Collection Plan Elements, page 5-15.

   If there is more than one result entered for a plan, the list of results entered appears.

3. Optionally, view a child quality result by selecting the plus sign in the caret next to the plan name.

   A hierarchical representation of the relationship between parent and child plans called the H grid in the Quality Workbench pages enables you to navigate from parent to child results within the same page.

   If more than one child result exists, then the list of child plans appears. Select the appropriate child plan.

4. Optionally, change or add data in any collection element field.

5. Optionally, in the Comments region, change or add a comment.

6. Optionally, in the Attachments region, select the Add button to add an attachment to this quality results record(See: Attaching Collection Plans, Specifications, Results Lines, page B-2).

7. Select the Finish button.

   This returns you to the Quality Workbench - Enter Results page.

8. Optionally, select the Plan Name of the record you just finished or another record to view or make changes to the record before saving the record to the database.

   Note: You cannot update a quality results record belonging to a history plan.

9. Click the Save button on the H-Grid page to save your changes and remain on the H-Grid page. A message in the Information region of the H-Grid page displays the generated sequences that informs you of the effects of online actions associated with the collection elements.

10. Click on Apply to save your changes and navigate back to the Quality Workbench-Collection results Search page. A message in the Information region of this page displays the generated sequence that informs you of the effects of online actions associated with the collection elements.

Entering Parent - Child Quality Results

You can find, enter, view, and update parent - child quality results using the same methods described previously (See: Finding a Collection Plan, page 7-3, Entering Quality Results, page 7-5, Viewing Quality Results, page 7-8, and Updating Quality Results, page 7-9). A hierarchical representation of the relationship between parent and child plans called the H grid in the Quality Workbench pages enables you to navigate from parent to child results within the same page.

Note: Ensure that a dependent element is disabled till you enter the parent element. Also note that you cannot update Parent-Child Criteria elements.

To enter parent - child quality results:

1. If not previously entered, enter parent quality results as described in Entering Quality Results, page 7-5.

2. Find the parent quality results as described in Finding a Collection Plan, page 7-3.

3. Optionally, add a child quality result by selecting the plus sign in the Add Child Data column of the Quality Workbench - View Results page.

   If more than one child plan exists, then the list of child plans appears. Select the appropriate child plan.

4. Enter quality results for the child plan as described in Entering Quality Results, page 7-5 for the Quality Workbench - Enter Results page.

Customizing Your View of Quality Results

System Administrators have the authority to customize views of the Quality Workbench by user or by responsibility. Each Quality Workbench page has a Personalize Page link, enabling the customization of each page by field using the Oracle Applications Personalization Framework. See: *Oracle Applications Framework Personalization Guide*, My Oracle Support, Note Number: 268969.1 .

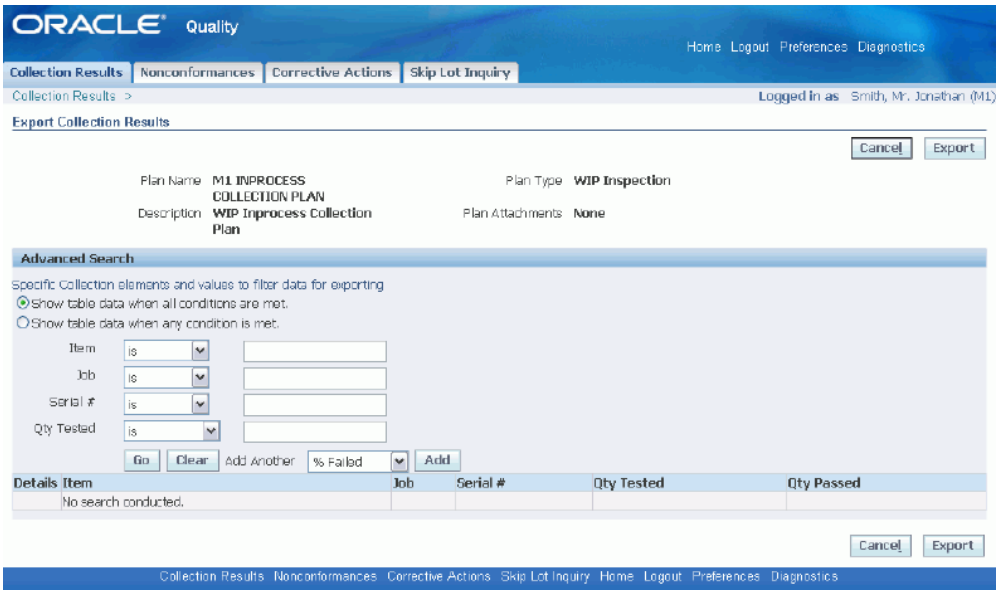
Exporting Quality Results

You can export quality results to external applications. You can search for the required rows of results, view the results in a tabular form and then export the viewed results.

To export results:

1. Search for the required plan on the Quality Workbench - Collection Results Search Page. See,Finding a Collection Plan, page 7-3.

2. Click on the Export Results icon for the required plan on the search results region to initiate the export. The Export Collection Results displays.



3. You can export the entire results or alternatively you can export selected rows from the collection results. Enter a combination of criteria in the Advanced Search region to select the result you want to export. Click on Go.

4. View the search results that displays in the Details region. Click on Export to export the results. The results will be exported to a spreadsheet, which you can save and view.

Collecting Device Data in Standalone Quality Workbench

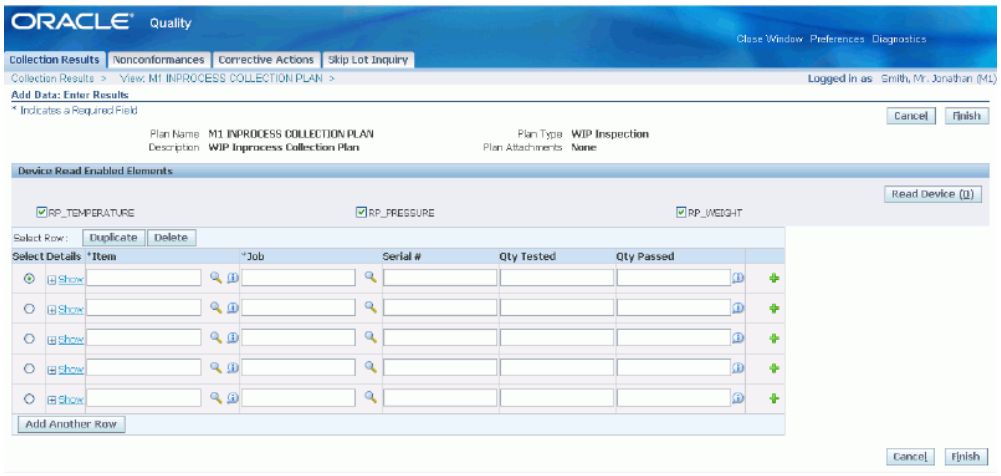
If you have installed Manufacturing Execution System (MES) for Discrete Manufacturing, you can collect device data for a collection plan in the standalone Quality Workbench. You would need to set up device data and link collection elements in the collection plan to these devices. See: Device Integration Setup, page 2-4, and Defining Collection Plan Elements, page 5-15.

If you set up collection plan elements as device enabled in a collection plan and associate them with appropriate devices, you can collect the data for the collection plan elements from devices. You can collect the device data in the entry or update mode in standalone quality workbench.

The device enabled collection plan elements display in the Device Enabled Elements region. The check boxes for each element is checked by default when the page displays. You can collect device data for all or selected device enabled collection plan elements. You can uncheck the collection plan elements for which you do not want the device data and select Read Device to populate the device data.

To enter quality results in standalone quality workbench:

1. Select a Plan Name from the search results on the Quality Workbench - Collection Results Search Page. See: Finding a Collection Plan, page 7-3.



2. In the Device Read Enabled Elements region, select the elements and click on Read Device. The values will display in the Data region. The data for the elements will display according to how they have been defined in the collection set up plan. For example, if the element is setup with Override disabled, data captured from device will be visible but cannot be updated.

    - The device data that is captured is online device data, generated at the time of measurement. The application captures the data immediately from the measuring equipment. The data is not historic.

    - The device data that is collected from devices associated to each collection plan element is independent. One data is not dependent on any other data. Dependent data is not supported currently.

3. You can manually override device data if the collection plan element is not setup as Read Only and if override is enabled.

4. Click on Finish to save your work.

To update quality results in the standalone Quality Workbench:

1. Select a Plan Name from the search results on the Quality Workbench - Collection Results Search Page. See: Finding a Collection Plan, page 7-3.

2. Click on Update and update the data.

Related Topics

Overview of Data Collection, page 6-1

Entering Quality Results Directly, page 6-7

Nonconformance Management

Oracle Quality provides nonconformance templates for you to copy and use to enter quality problems. The nonconformance templates are a set of collection plans that enable everyone involved with the quality problem and solution (such as the inspector, quality engineer, and members of the Material Review Board) to communicate their findings and actions (See: Solution Templates, *Oracle Quality Implementation Guide*).

You can manage nonconformances from the Quality Workbench as well as from the Oracle Quality forms. Managing nonconformances includes the following steps. Each step is explained in detail in Process Steps, *Oracle Quality Implementation Guide*.

- Recording nonconformances
- Reviewing nonconformances
- Segregating nonconforming material
- Entering nonconformance details and assigning actions
- Determining and initiating disposition
- Closing the nonconformance

You can accomplish each step using the procedures described previously for collection plans in general (See: Data Collection Using the Quality Workbench, page 7-10). The procedure for recording nonconformances is slightly different and is described next (See: Recording Nonconformances, page 7-14).

This section includes the following topic:

- Recording Nonconformances, page 7-14

Recording Nonconformances

When you, your supplier, or your customer discovers material outside of your quality standards, you can record this nonconformance. Record the nonconformance in a copy of one of the nonconformance master plan templates provided with Oracle Quality (See: Step 2 - Copy from Template Collection Plans, *Oracle Quality Implementation Guide*).

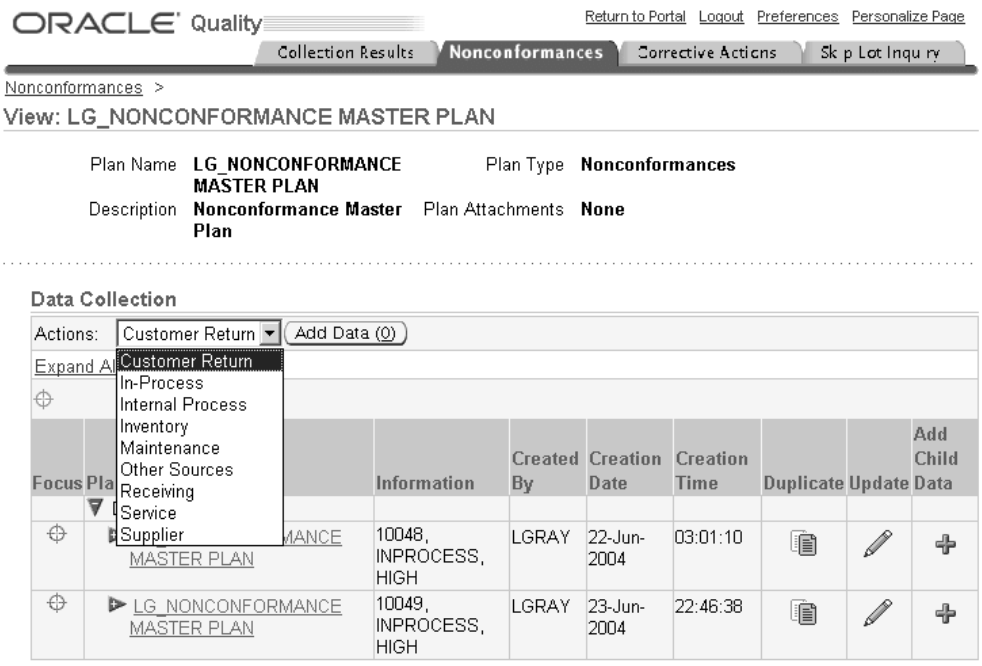
To record a nonconformance:

1. Select a Plan Name from the search results on the Quality Workbench - Nonconformances Search Page. See: Finding a Collection Plan, page 7-3.

   The list of nonconformance data collected, if any, appears in the Quality Workbench - View Nonconformance page.

2. Select an action from the Actions pull down list.

   The action explains the source of the nonconformance. Choices include, but are not limited to: Customer Return, In Process, Internal Process, Inventory, Maintenance, Other Sources, Receiving, Service, and Supplier.



3. Select the Add Data button to add nonconformance results.

   The Quality Workbench - Enter Nonconformance page appears. The process of recording a nonconformance is the same as entering any other type of quality result from this point on (See: Entering Quality Results, page 7-5). As you collect more details about the nonconformance and determine its disposition, you can record this information in the child plans of the nonconformance master plan(See: Entering Parent - Child Quality Results, page 7-10). Once you are ready to resolve the problem causing the nonconformance, you can enter a corrective action request (See: Corrective Action Management, page 7-16).

   The nonconformance templates include collection elements that can trigger the sending of notification emails to a distribution list once you save the nonconformance. For example, once you save the nonconformance, you can notify

the Material Review Board, quality engineer, or anyone else by e-mail.

Oracle Quality supports the personalization of nonconformance data entry pages for different types of nonconformance sources.

Corrective Action Management

Oracle Quality provides Corrective Action Request (CAR) templates for you to copy and use to enter quality problem solutions. The CAR templates are used similarly to the nonconformance templates, except that they address the solution to the nonconformance problem (See: Corrective Action Process, *Oracle Quality Implementation Guide*).

You can manage CARs from the Quality Workbench as well as from the Oracle Quality forms. The process of managing different types of CARs is described in Chapter 12, Implementation, *Oracle Quality Implementation Guide*. The different types of CARs include, but are not limited to:

- Customer initiated request
- Customer initiated request with supplier
- Internal request
- Internally initiated request with supplier
- Request supplier action

You can create CARs using the procedures described previously for collection plans in general (See: Data Collection Using the Quality Workbench, page 7-2). The procedure for submitting a CAR can vary depending on the type, but is explained in Chapter 12, Implementation, *Oracle Quality Implementation Guide*. The procedure for submitting a CAR is similar to the procedure for recording nonconformances (See: Recording Nonconformances, page 7-14), except that the Actions pull down list referred to in this procedure includes the CAR types listed above. Oracle Quality supports the personalization of corrective actions data entry pages for different CAR types.

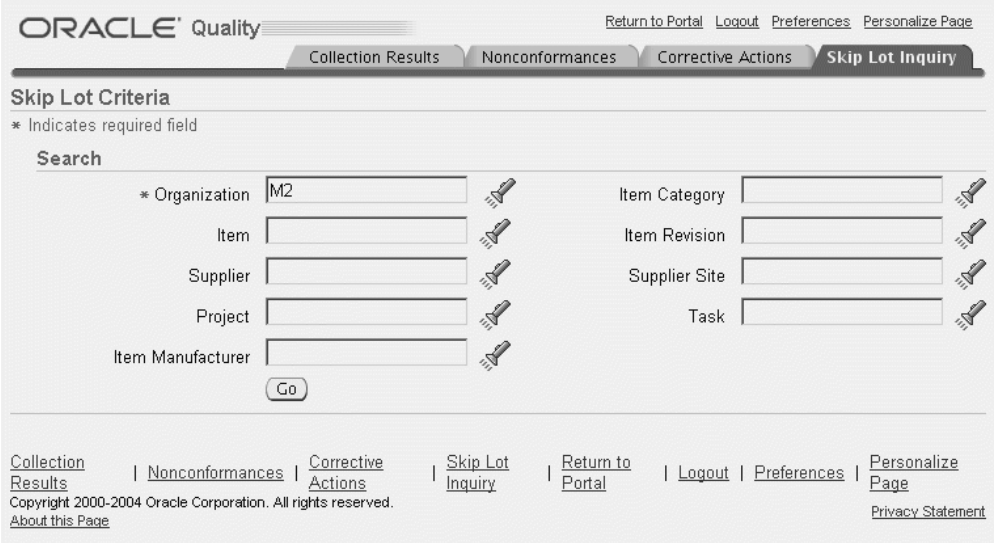
Finding Skip Lot Inspections

You can find skip lot inspections (See: Skip Lot Inspections, page 8-3) using the same method you use to find collection plans in the Quality Workbench. Once you find a skip lot plan, you can view the inspection history, plan state, or frequency change history.

To find skip lots:

1. Navigate to the Skip Lot Criteria page.

You can search on many fields within this page.



2. Enter your search criteria, then select Go.

   The Skip Lot Criteria Results page appears.

To optionally view a skip lot inspection history:

Select the eyeglasses icon in the Inspection History column for the row you want to view.

The Inspection History page appears.

To optionally view the plan state or frequency change history:

From the Skip Lot Criteria Results page, select the eyeglasses icon in the Plan State column for the row you want to view.

The Plan State page appears.

Optionally, select the eyeglasses icon in the View Frequency Change History column for the row you want to view.

The Frequency Change History page appears.

8

Manage Supplier Quality

This chapter describes how to manage goods and services purchased from suppliers using:

- Receipt, transfer, inspection, internal delivery, return, and correction transactions in Oracle Purchasing
- Quality result entry by suppliers in Oracle iSupplier Portal
- Skip lot and inspection sampling in Oracle Quality

This chapter covers the following topics:

- Supplier Quality Collection Points
- Quality Data Collection in Oracle Purchasing
- Collection Plans for Receiving Inspections
- Collection Plans for Receiving Transfers and Deliveries
- Entering Quality Results: Receiving Transfers and Deliveries
- Entering Quality Results for Receiving Inspections
- Oracle Purchasing Business Example
- Setting Up Oracle Quality for Use with iSupplier Portal
- Entering and Viewing Supplier Quality Results in iSupplier Portal
- Performing Skip Lot Inspections
- Performing Inspection Sampling

Supplier Quality Collection Points

When managing supplier quality, you can collect quality data from:

- Oracle Purchasing Receiving Transactions window

- Oracle iSupplier Portal

Additional Oracle Quality features designed specifically for collecting supplier quality data include:

- Skip lot inspections
- Inspection sampling

Purchasing Versus Quality Inspections

In this release of Oracle Purchasing, you can collect quality data from Purchasing's Receiving Transactions window, where you can use Oracle Quality in one of two different ways:

- *Receiving Transfers and Deliveries*: You can use Oracle Quality to collect quality data on items as you transfer them internally within Oracle Purchasing, or before you deliver them to their final locations. To use Oracle Quality for Receiving Transfers or Receiving Deliveries, select the Quality button on Oracle Purchasing's toolbar in the Receiving Transactions window.
- *Receiving Inspections*: You can choose to use Oracle Quality instead of Oracle Purchasing to accept or reject item quantities in a Receiving Inspection. By using Oracle Quality in place of Oracle Purchasing, you can also collect additional quality data in your Receiving Inspection using customized collection plans. To use Oracle Quality for Receiving Inspections, you will need to first ensure that the *QA:PO Inspection* profile option is set to Oracle Quality; then, when you are in the Receiving Transactions window, select the Inspect button.

If you choose to use Oracle Quality in place of Oracle Purchasing to conduct your Receiving Inspections, you will be able to perform every task that is available in a Purchasing Inspection *in addition to* some other tasks not supported in Purchasing. Quality Inspections functionality is a superset of Purchasing Inspections functionality.

For more information on collecting quality data from the Receiving Transactions window, see:

- Quality Data Collection in Oracle Purchasing, page 8-5
- Collection Plans for Receiving Inspections, page 8-6
- Collection Plans for Receiving Transfers and Deliveries, page 8-8
- Entering Quality Results: Receiving Transfers and Deliveries, page 8-10
- Entering Quality Results for Receiving Inspections , page 8-12
- Oracle Purchasing Business Example, page 8-14

Purchasing Inspections

If you use Oracle Purchasing, you can enter the number of items that were accepted or rejected items and enter information about your inspection results. You can review your inspection results on-line by receipt number, purchase order number, supplier, item, and/or transaction date range. You can also print summary and detail reports to help you analyze your suppliers' performance. Reports can be printed by buyer, supplier, and item. The receiving inspection register can be used to review your inspection results by receipt. See: Inspecting Received Items, *Oracle Purchasing User's Guide*

Quality Inspections

If you use Oracle Quality for inspections, you can collect the same data as in Purchasing plus data for any other collection elements included on the collection plan. You can create charts, descriptive statistic views, and custom reports with the data collected using Quality. Similar to Purchasing Inspections, Quality Inspections allow to Accept and Reject shipments. However, using Quality enables you to trigger additional actions based upon your inspection results.

Collecting Quality Data in iSupplier Portal

With Oracle iSupplier Portal installed, you can associate collection plans with transactions linked to your suppliers' purchase orders. Your suppliers can then access the collection plans from the iSupplier Portal web pages, and use them to enter and submit Quality results.

The supplier logs on, selects the appropriate web page, and queries the system for their purchase orders. If a collection plan has been associated with any of the purchase order shipments listed, a hypertext link titled Available is visible in the Quality Plans column. Through this link, suppliers can enter and view quality results. For more information, see: Setting Up Oracle Quality for Use with iSupplier Portal, page 8-18 and Entering and Viewing Supplier Quality Results in iSupplier Portal, page 8-20.

Access to iSupplier Portal

To access iSupplier Portal , all your suppliers need is a browser, a user ID for the application, and the Internet address or URL (Uniform Resource Locator). The user ID determines which application they can log on to and which menus are available. See: Registration, *Oracle iSupplier Portal User's Guide*.

Attachments

If attachments such as instructions or other documents are available for a collection plan, suppliers can view them online or print them on a local printer.

Skip Lot Inspections

Quality practitioners are faced with many choices regarding quality assurance procedures. A lot-by-lot inspection plan assumes that every lot received is inspected.

Skip Lot inspection is a technique often utilized as an alternative to lot-by-lot inspection plan. The Skip Lot procedure enables the inspection of a set number of receipts and the skipping of inspection for another set number of receipts.

Skip lot inspection offers the following advantages:

- Cost reduction
- Reduced material handling
- Faster material throughput
- Less redundant and destructive testing
- Inspect a receipt using more than one collection plan at a time

Skip Lot inspection is used when goods are received from a supplier and inspection is reduced based on a predefined Skip Lot plan. Quality managers set up a plan to define the ratio of inspected lots to skipped lots. When material is received, the receipt is evaluated to see if inspection can be skipped and the skipping status of the receipt is determined by the system. Material that does not require inspection can be put away; it does not need to move to an inspection area.

When a lot is received, there are two alternatives; it can be inspected, or moved to direct delivery. This is determined during the receiving transaction. If more than one inspection collection plan is applicable, then you can inspect the receipt using more than one collection plan at a time, treating each plan as a test performed on the receipt. Within the Receiving transaction window, a lot that needs to be inspected displays a status of Pending until the inspection is performed. The acceptance enables subsequent lots to skip inspection. For example, if the lot displays a Pending status, then until is has been inspected and dispositioned, all subsequent lots will display a Pending status, indicating a need for inspection.

For more information, see: Performing Skip Lot Inspections, page 8-23.

Inspection Sampling

Sampling is the procedure of drawing a number of units from a lot at random, and inspecting those units. The size of the samples to be inspected is first determined, and lots' pass or fail statuses are determined by their sample inspections. The inspection results of the entire lot are based on the results of the sample. The number of units selected is in proportion to the size of the lot, identified by a specified, rational criterion.

Sampling enables lot-by-lot inspection, as opposed to unit-by-unit inspection. This decreases costs, handling damage, and inspection errors.

Oracle sampling complies with industry accepted sampling standards, including MTL-STD-105E (Military Standards set by the Department of Defense), and its civilian counter part, ANSI/ASQC, c=0, and ISO 9000 series. They provide the conceptual guidelines for sampling procedures. ANSI/ASQC standard sampling plans are

classified as three types: single sampling, double sampling, and multiple sampling. The single sampling plans are further divided into single sampling plans for normal inspection, single sampling plans for reduced inspection, and single sampling plans for tightened inspection.

> **Note:** The current implementation of sampling does not support double and multiple samples.

For more information, see: Performing Inspection Sampling, page 8-28.

Related Topics

Overview of Receiving , *Oracle Purchasing User's Guide*

Receiving Transactions, *Oracle Purchasing User's Guide*

Quality Data Collection in Oracle Purchasing

In Oracle Purchasing, you can manage goods and services purchased from suppliers using receipt, transfer, inspection, internal delivery, return, and correction transactions. See: Overview of Receiving, *Oracle Purchasing User's Guide*.

By using Oracle Quality and Oracle Purchasing together, you can directly control quality at the supply end of the supply chain. You can, for example, do all of the following:

- inspect, then accept or reject, products from a supplier
- collect historical data on items, lots, and serial numbered items received from suppliers
- report failure analysis by problem and product
- place a supplier on hold when their product quality falls below a prescribed level
- place a document on hold until supplier product problems are resolved
- update a supplier's "approved supplier" status based on the quality results entered
- notify buyers automatically when an action, such as placing a supplier or a supplier's document on hold, takes place

Related Topics

Supplier Quality Collection Points, page 8-1

Collection Plans for Receiving Inspections, page 8-6

Collection Plans for Receiving Transfers and Deliveries, page 8-8

Entering Quality Results: Receiving Transfers and Deliveries, page 8-10

Entering Quality Results for Receiving Inspections, page 8-12

Oracle Purchasing Business Example, page 8-14

Collection Plans for Receiving Inspections

When you decide to inspect item quantities and make a decision as to whether or not to accept or reject them, you can use Oracle Quality in place of Oracle Purchasing to conduct an inspection (called a *Receiving Inspection*).

Inspection collection plans must be associated with the Receiving Inspection collection transaction and are unique in several ways:

- Receiving Inspection collection transactions must be set as mandatory for items that have inspection required attributes. They are not mandatory for items with direct delivery or standard receipt attributes. Also, because Accept and Reject actions cannot be performed when the data collection is background, Receiving Inspection collection transactions cannot be set as background.

  Note: You can override a mandatory collection plan. For example, you can change the inspection required attribute to direct delivery within the purchase order.

  Receiving Inspections collection plans used for Receiving Inspections must be enabled.

- Receiving Inspection collection plans must include the following collection elements:
  - Inspection Result
  - Quantity
  - UOM Name
  - Transaction Date

    Note: These collection elements must be defined as *Displayed*, *Mandatory* and *Enabled*. If you disable any of these required collection elements or make them non-mandatory, the collection plan cannot be used for inspections.

- The *Accept the shipment* and *Reject shipment* actions should be associated with the

Inspection Result collection plan element.

To ensure that these conditions are met, when you associate the Receiving Inspection collection transaction with an enabled collection plan, the system prompts you to complete the setup. You cannot save your work until you have entered quality results or had them defaulted in.

Creating an Inspection Collection Plan from a Template

To simplify the process of creating inspection collection plans, two template collection plans, PO Inspection (for discrete manufacturing organizations) and Template OPM Receiving Inspection Collection Plan (for process manufacturing organizations), are pre-seeded in Oracle Quality. See: Creating Collection Plans from Templates, page 5-9.

You can copy the elements from either template collection plan to the inspection collection plan you have created to ensure that the required collection elements are included. Both template collection plans also include collection elements that are not required. Once copied over to your own collection plan, you can delete those collection plan elements - Comments, Quality Code, Reason Code, Supplier Lot Number - that are copied but are not required. You can also add user-defined and additional context elements.

Specifications

You can optionally define specifications and specification sub-types. When quality data is collected, you can choose a specification to be used during quality data collection.

Return Material Authorization (RMA) Receiving and Inspections

RMAs are created in Order Management, and distinguished from sales orders via the Order Type field on the Sales Order form. When an item is returned in Order Management, the original sales order number is used as the RMA number.

RMA receiving and inspection is performed in Oracle Purchasing, and uses the same process as Oracle Purchasing receiving and inspection transactions. The receipt sources are distinguished by Source Type. Oracle Quality's existing receiving and inspection functionality supports RMA. You can define collection plans and associate them with receiving and inspection transactions.

Related Topics

Supplier Quality Collection Points, page 8-1

Quality Data Collection in Oracle Purchasing, page 8-5

Collection Plans for Receiving Transfers and Deliveries, page 8-8

Entering Quality Results: Receiving Transfers and Deliveries, page 8-10

Entering Quality Results for Receiving Inspections, page 8-12

Oracle Purchasing Business Example, page 8-14

Completing Receiving Inspection Based on Sample Results within Understanding Results, *Oracle Process Manufacturing Quality Management User's Guide*

Collection Plans for Receiving Transfers and Deliveries

When you transfer items within Oracle Purchasing both internally (called *Receiving Transfers*) and right before delivering them to their final destinations (called *Receiving Deliveries*), you can use Oracle Quality to collect quality data on these items.

In Oracle Purchasing, you can use *Receiving Transfers* to transfer items from receiving and inspection to inventory or the shop floor, or to transfer items to different locations in the receiving and inspection area. For example, you might need to move refrigerated items from the receiving dock into a cold storage area while you are waiting to inspect them.

In Oracle Purchasing, you can use *Receiving Deliveries* to deliver items to their final destinations. For example, you can deliver items in receiving and inspection to stock or expense.

Oracle Quality allows you to collect quality data on items during transfers and deliveries and trigger actions.

Collection Plan Elements

The context elements that can be added to Receiving transfer and delivery collection plans are listed in the Collection Transaction and Context Element Relationships table. See: Collection Transactions and Context Element Relationships, page 5-37.

You can also add user-defined collection elements to these collection plans so that you can collect data that is not dependent on the transaction itself. See: Collection Elements, page 3-7 and Defining Collection Elements, page 3-11.

Creating a Transfer or Delivery Collection Plan from a Template

To simplify the process of creating transfer and delivery collection plans, a template collection plan, Template PO Receiving, is pre-seeded in Oracle Quality. See: Creating Collection Plans from Templates , page 5-9.

You can copy the elements from the PO Receiving template collection plan to the transfer or delivery collection plan you have created to ensure that certain collection elements are included. Once copied over to your own collection plan, you can delete certain collection elements that are copied. You can also add user-defined collection elements to these collection plans.

Actions

You can specify actions specific to purchasing transactions in your collection plan. See: Application Specific Actions, page 3-22. However, when you are creating a collection plan for a receiving transfer or delivery, we suggest that you not include the *Accept the Shipment* or *Reject the Shipment* actions as these actions have no effect in a receiving transfer delivery.

In addition to these actions, you can add message actions, alert actions, and actions that determine a value based on a user-defined formula. See: Quality Actions, page 3-19, Message Actions, page 3-20, Alert Actions, page 3-21, and User-Defined Actions, page 3-21.

Collection Transactions and Collection Triggers

The *Receiving Transaction* collection transaction must be associated with the collection plans you use for receiving transactions. Also, Receiving Transactions collection plans used for Receiving Transfers or Receiving Deliveries must be enabled.

You can make the entry of quality data mandatory for the receiving transaction by setting its Mandatory option. If data entry is required, you cannot save the parent transaction, in this case the receiving transaction, without entering quality data. See Mandatory Data Collection, page 6-6.

You can also specify that data should be collected in the background. See: Background Data Collection, page 6-6.

You can define one or more collection triggers for each collection transaction. Collection triggers allow you to specify the conditions under which quality data collection is invoked as receiving transactions are entered. See: Quality Data Collection During Transactions, page 5-35 and Associating Collection Plans with Transactions, page 5-46.

Related Topics

Overview of Oracle Quality, page 1-4

Defining Specifications, page 4-4

Creating Collection Plans, page 5-11

Supplier Quality Collection Points, page 8-1

Quality Data Collection in Oracle Purchasing, page 8-5

Collection Plans for Receiving Inspections, page 8-6

Entering Quality Results: Receiving Transfers and Deliveries, page 8-10

Entering Quality Results for Receiving Inspections, page 8-12

Oracle Purchasing Business Example, page 8-14

Entering Quality Results: Receiving Transfers and Deliveries

This section describes how you can use Oracle Quality for Receiving Transfers or Receiving Deliveries.

If Oracle Quality is installed and at least one collection plan that is associated with the *Receiving transaction* exists, the Enter Quality Results Tools menu option and the Quality button are enabled and quality results can be entered.

> **Warning:** The Tools menu option is enabled even if, based upon the transaction information entered, the collection triggers conditions for this collection plan are not met.

In fact, based upon the receiving transaction entered, quality results entry may be required. See: Mandatory Data Collection, page 6-6.

Background data collection occurs automatically if valid background collection plans are found when you save receiving transactions.

Cascade, Express, and Lot and Serial Functions

The *Cascade* function, which distributes a receiving transaction quantity to multiple lines, is compatible with Oracle Quality. Quality enforces quality data collection as you enter each line. See: Cascading Receipts and Receiving Transactions, *Oracle Purchasing User's Guide*

To save Receiving Transactions quickly and automatically with a minimal amount of data entry, you can choose the *Express* button to put Oracle Purchasing in *Express mode*. However, when you are in Express mode, Oracle Purchasing prevents you from manually entering data for those collection elements that you have defined as mandatory in Oracle Quality. For this reason, choosing the Express button disables the toolbar's Quality button, as well as the Enter Quality Results Tools menu option.

Lot and serial entry quality data collection is not enabled in this release.

Prerequisites

- ❒ Define the relevant collection plan in Oracle Quality, enable it and associate it with a Receiving Transaction.
- ❒ Enter receiving transaction line and transaction detail information but *do not save your work*. See: Entering Receiving Transactions, *Oracle Purchasing User's Guide*.

To enter receiving quality data for receiving transactions:

1. Before saving your work, choose Enter Quality Results from the *Tools menu* or

choose the Quality button. The Find Collection Plans window appears.

> **Important:** If you attempt to save a receiving transaction and the system finds one or more mandatory collection plans, you must enter quality results before proceeding.

2. Navigate to the Enter Quality Results window. The first applicable plan will appear by default.

3. Select a collection plan.

   To switch to another plan, choose one from the selections in the List of Values (LOV). You can select any collection plan that is associated with and enabled for the *Receiving Transaction* collection transaction.

To find and assign specifications:

If the selected collection plan is associated with a supplier or customer specification type, the Find Specifications window automatically appears. If the selected collection plan is associated with an item specification type, the system searches for a specification defined for that item. If a valid item specification cannot be found, the system searches for a specification based on the item's category. The default category set you defined using the *QA:Quality Category Set* profile option is used to determine the item category. See: QA:Quality Category Set, page 2-12.

If the collection plan is not associated with a specification type, you can invoke the Find Specifications window using the Find Specs button. See: Finding Specifications During Transactional Data Collection, page 6-19.

The Enter Quality Results window reappears after you select a specification or cancel selection.

To enter quality results:

1. In the Results region of the Quality Results window, enter one or more results records.

   If the collection plan selected requires mandatory data collection, you must enter quality results. You cannot save the receiving transaction line until you do so. If data collection is not mandatory, you can skip quality results entry.

   > **Important:** The Prompts entered when defining the collection elements are displayed as the column headings.

   You must enter results values for mandatory collection plan elements.

2. Save your work. See: Saving Changes, *Oracle E-Business Suite User's Guide*.

If you save your work, the current results are cleared and the Collection Number counter is incremented. You can continue to enter results for the same collection plan and, if assigned, specification.

To view collection plan or specification attachments while entering quality data:

See: Viewing Attachments Associated with Quality Results, page 6-12.

Related Topics

Overview of Data Collection, page 6-1

Data Collection Fundamentals, page 6-3

Entering Quality Results Directly, page 6-7

Supplier Quality Collection Points, page 8-1

Quality Data Collection in Oracle Purchasing, page 8-5

Collection Plans for Receiving Inspections, page 8-6

Collection Plans for Receiving Transfers and Deliveries, page 8-8

Entering Quality Results for Receiving Inspections, page 8-12

Oracle Purchasing Business Example, page 8-14

Entering Quality Results for Receiving Inspections

This section describes how you can use Oracle Quality for Receiving Inspections.

If you have Oracle Quality installed, you have the option of entering receiving inspection information using the Inspections window in Oracle Purchasing or the Enter Quality Results window in Oracle Quality.

If you require receiving inspections using Oracle Quality, data collection is mandatory since you must opt to either accept or reject items and cannot save your receiving transaction information without doing so. See: Mandatory Data Collection, page 6-6. This is also the reason background data collection cannot be used.

Prerequisites

- ❒ Define the relevant collection plan in Oracle Quality, enable it and associate it with a Receiving Inspection transaction.
- ❒ Set the *QA:PO Inspection* profile option to Oracle Quality.
- ❒ Enter a receiving transaction. See: Enter Receiving Transaction, *Oracle Purchasing User's Guide*.

To enter quality results as you enter receiving transactions:

1. Before saving the line, choose the Inspect button. The Enter Quality Results window appears.

   When you select the Inspect button, the system searches for all applicable inspection plans; the plan which comes first alphanumerically appears by default and you cannot select another applicable plan until after you save the first plan. See: Associating Transactions with Collection Plans, page 5-46.

2. If the selected collection plan is associated with a supplier or customer specification type, the Find Specifications window automatically appears.

   If the selected collection plan is associated with an item specification type, the system searches for a specification defined for that item. If a valid item specification cannot be found, the system searches for a specification based on the item's category. The default category set you defined using the *QA:Quality Category Set* profile option is used to determine the item category. See: QA:Quality Category Set, page 2-12.

   If the collection plan is not associated with a specification type, you can invoke the Find Specifications window using the Find Specs button. See: Finding Specifications During Transactional Data Collection, page 6-19.

   After selecting a specification, the Enter Quality Results window appears.

To enter quality results values:

1. In the Results region of the Quality Results window, enter one or more results records.

   If the data collection for the collection plan selected is mandatory, you must always enter quality results.

   > **Important:** The Prompts entered when defining the collection elements are displayed as the column headings.

   You must enter results values for mandatory collection plan elements. See: Context Element Dependencies, page 5-7.

2. Save your work. See: Saving Changes, *Oracle E-Business Suite User's Guide*.

To view collection plan or specification attachments while entering result values:

See: Viewing Attachments Associated with Quality Results, page 6-12.

Related Topics

Transactional Data Collection Fundamentals, page 6-5

Entering Quality Results Directly, page 6-7

Supplier Quality Collection Points, page 8-1

Quality Data Collection in Oracle Purchasing, page 8-5

Collection Plans for Receiving Inspections, page 8-6

Collection Plans for Receiving Transfers and Deliveries, page 8-8

Entering Quality Results for Receiving Inspections, page 8-12

Entering Quality Results: Receiving Transfers and Deliveries, page 8-10

Oracle Purchasing Business Example, page 8-14

Oracle Purchasing Business Example

The following example describes how you might use Oracle Quality with Oracle Purchasing. This example illustrates a common application of Oracle Quality in the area of Purchasing control.

Supplier Product Analysis

Your company manufactures refrigerators. Your receiving department conducts inspection (receiving inspection) on components that are purchased, among them: compressors, plastic parts, and steel shelves.

Let's consider a representative purchased part - a plastic pan cover for a refrigerator. The inspection process could be as follows:

1. Purchased parts are staged in the receiving area. If the person staging uses a mobile client device such as a bar code scanner, they can enter the subinventory and locator using Oracle Mobile Supply Chain Applications.

2. Inspector retrieves the part file to conduct the inspection. The part file contains the following:

   - a current engineering drawing

   - a control plan which describes the sample size, dimensions to measure and gauges to use, critical attributes such as color and smooth edges, and other applicable information. (example below)

     The following table delineates the specifications to which your item should adhere:

Part Number:	**1107943**
Description	**Pan Cover**
Sample Size	**5 pieces per shipment**

Specification	Location	Method	Sample 1	Sample 2
length: 17.000 +/- 0.05 in.	G3	24" caliper	17.015 in.	16.999 in.
radius: 0.250 +/- 0.005 in.	H5	radius gauge	0.250 in.	0.252 in.
diameter: 1.625 +/- 0.05 in.	H1	3" caliper	1.622 in.	1.625 in.
check for scratches	A2	visual appearance	OK	OK

Setup in Quality

Based upon the above information, you have determined that you must create a collection plan that includes the following collection elements:

- Item
- Supplier
- Quantity
- Transaction Date
- UOM Name
- Subinventory
- Locator
- Inspection Result

- Sample Size
- Length
- Radius
- Diameter
- Appearance

Collection Elements

Four of the collection elements listed above (Quantity, Transaction Date, UOM Name and Inspection Result) are pre-seeded and mandatory for all inspection plans. Four of the collection elements listed above are also pre-seeded context elements (Item, Supplier, Subinventory and Locator). Five of them (Sample Size, Length, Radius, Diameter and Appearance) will have to be user-defined.

Specifications

Create an item specification, pan cover, specifically for the pan cover. Add the collection elements length, radius and diameter to the specification and specify that they conform to the requirements delineated above in Table 8-1.

Collection Plan

Next, create a Receiving Inspection collection plan called "Supplier Quality." The collection plan can be assigned any collection plan type.

Your collection plan should contain the collection elements listed above. You should define all of them to be displayed. You must define the four required collection elements (Quantity, Transaction Date, UOM Name and Inspection Result) to be both mandatory and enabled.

> **Note:** Copying collection elements from the template collection plan: Template PO Inspection will ensure that the required collection elements are included.

Collection Plan Element Actions

For all Receiving Inspection collection plans, you must associate two actions ('Accept the shipment' and 'Reject the shipment') with the collection element called Inspection Result Action.

Next, define appropriate actions for your other collection plan elements. For example, you can associate actions for the collection elements length, radius and diameter which fire when the length, radius or diameter do not fall within the specifications you define. For example, you can define an action which, when the length is not within your specification, displays the message: "Reject the item" or "Remeasure the length." See:

Defining Collection Element Actions, page 3-29.

Inspection Transactions

Next, associate the Supplier Quality collection plan with the Receiving Inspection transaction. The Receiving Inspection must be both enabled and mandatory to ensure that quality data is collected before the receiving transaction is saved.

After you have finished setting up your collection plan in Quality and associated it with a Purchasing transaction, navigate to Oracle Purchasing. You can conduct your inspection by selecting the Inspect button in Purchasing's Receiving Transactions window. This will enable you to collect quality data for the elements defined in your 'Supplier Quality' collection plan.

> **Note:** Before you can view and analyze your quality results, the PO Transaction Processor must *successfully* process and deliver your inspection input.

Results Analysis

Once a representative sample of data is collected, you can analyze the data using a trend chart to determine which suppliers are lowering your overall product quality.

To do this you can create a trend chart using the length, radius or diameter as the Y-axis element (element to be analyzed). You can create charts showing all the following:

- trends over time of the dimension specifications for all suppliers
- trends over time of the dimension specifications for specific suppliers

Periodic analysis of the data will reveal any trends pertaining to product quality. For example, you may observe a drift in diameter over time. If different suppliers supply the same item, your Oracle Quality analysis can reveal if one can maintain closer tolerances than the other.

Related Topics

Creating Collection Plans, page 5-11

Defining Collection Plan Elements, page 5-15

Associating Specification Types with Collection Plans, page 5-21

Defining Actions that Assign a Value: User-Defined Formulas, page 5-32

Associating Transactions with Collection Plans, page 5-46

Creating and Viewing Pareto Charts, page 14-9

Viewing Quality Results, page 14-32

Viewing Quality Results Details, page 14-35

Using the Quality Results ReportWriter, page 14-38

Enter Receiving Transaction, *Oracle Purchasing User's Guide*

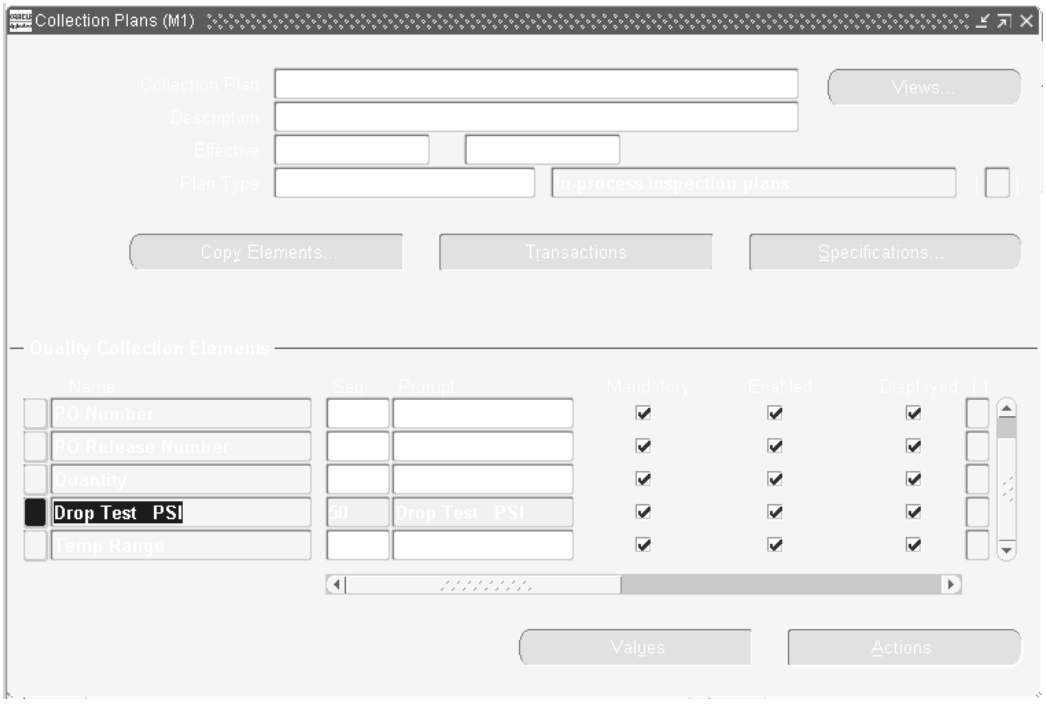
Setting Up Oracle Quality for Use with iSupplier Portal

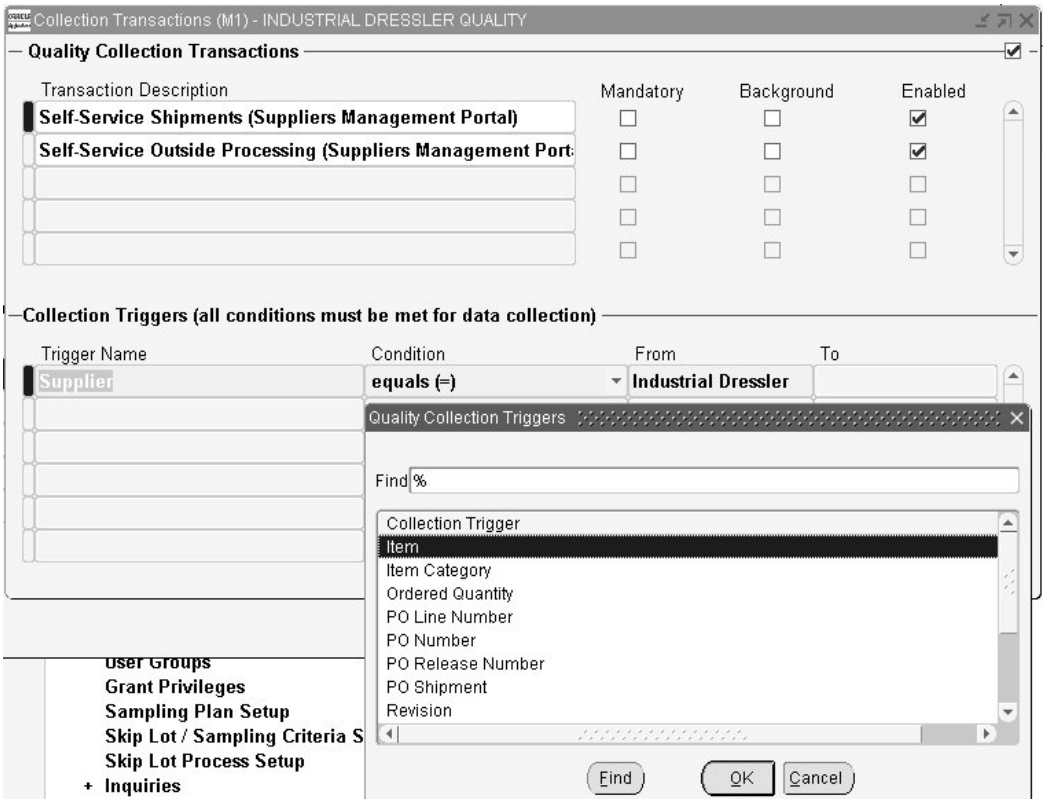
In order for your suppliers to be able to enter quality results for items on purchase orders, you first need to create one or more collection plans and associate them with either of the following two transactions:

- Self-Service Shipments (Suppliers Management Portal) - associate your collection plan with this transaction when you want a supplier to enter quality results upon shipment.

- Self-Service Outside Processing (Suppliers Management Portal) - associate your collection plan with this transaction when you have outsourced an Oracle Work in Process operation and want the outside processor (supplier) to enter quality results upon shipment. See: Supplier Access to Outside Processing Purchase Orders, *Oracle Work in Process User's Guide*

You create collection plans for iSupplier Portal transactions the same way that you create them for other transactions, including defining collection triggers. See: Associating Collection Plans with Transactions, page 5-46. The collection elements that you define for the collection plan become the columns on the web page that you use to enter quality results.


Collection Plans (M1)
Collection Plan
Description
Effective
Plan Type
n-process inspection plans
Views...
Copy Elements...
Transactions
Specifications...
Quality Collection Elements
Name
Seq
Prompt
Mandatory
Enabled
Displayed
PO Number
PO Release Number
Quantity
Drop Test PSI
40
Drop Test PSI
Temp Range
Values
Actions



Once a supplier enters quality results, the buyer (or whoever you choose) is notified. This notification is controlled by the QA:Self-Service Buyer Notification profile option. See: Profile Options, page 2-8. If the value of this profile option is null, no notification is sent.

Related Topics

Supplier Quality Collection Points, page 8-1

Entering and Viewing Supplier Quality Results in iSupplier Portal, page 8-20

Entering and Viewing Supplier Quality Results in iSupplier Portal

A supplier can enter as well as view quality results by shipment in iSupplier Portal. For entering and viewing quality results associated with a Self-Service Shipments (Suppliers Management Portal) transaction, see: Quality Information in the Shipping Information chapter, Oracle iSupplier Portal User's Guide. For entering and viewing quality results associated with a Self-Service Outside Processing (Suppliers Management Portal) transaction, see: Supplier Access to Outside Processing Purchase Orders, *Oracle Work in Process User's Guide*

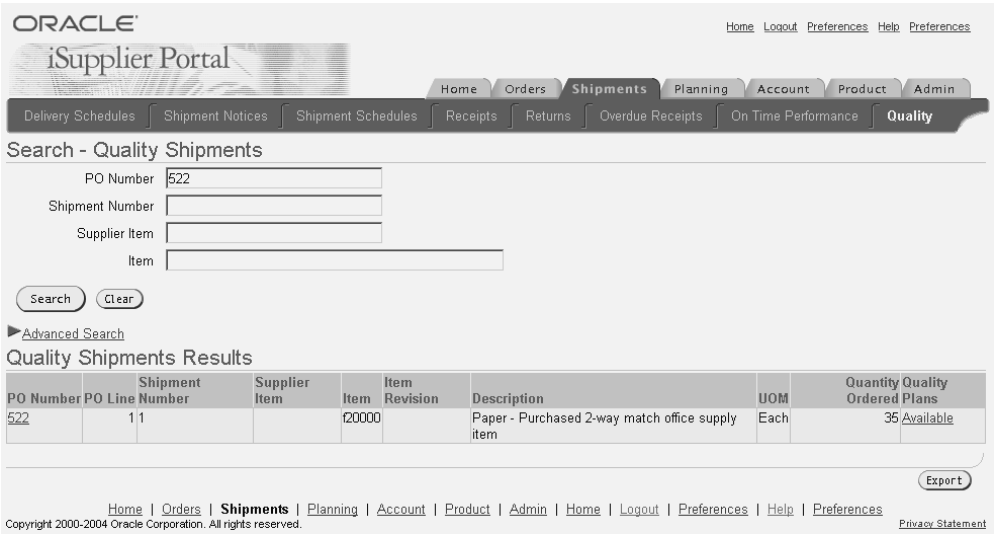
To enter and view quality results in iSupplier Portal:

1. Navigate to the Shipments tab in Oracle iSupplier Portal when filling a purchase order. Navigate to the Orders tab when filling a manufacturing order.

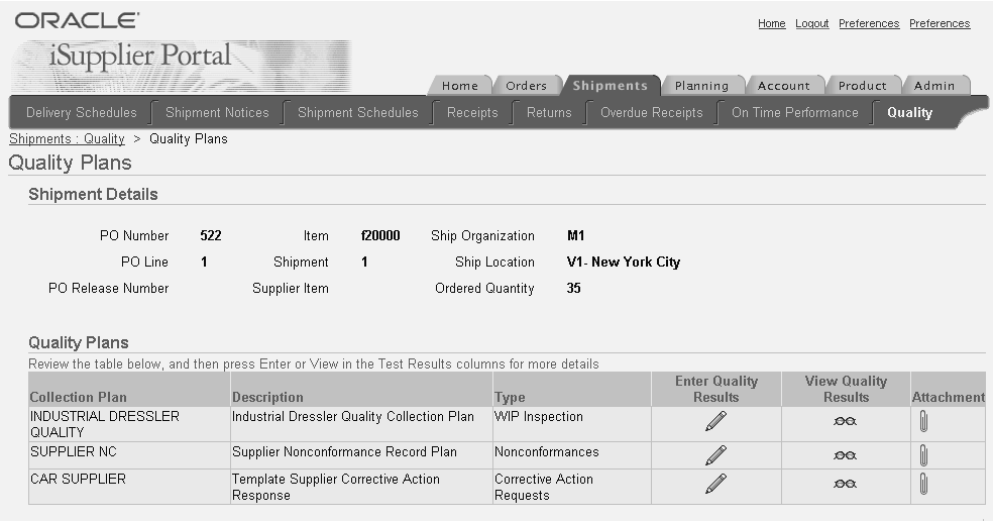
   Note: Quality results are entered for purchase orders as a result of the Self-Service Shipments (Suppliers Management Portal) transaction Enter quality results for manufacturing orders as a result of the Self-Service Outside Processing (Suppliers Management Portal) transaction.

2. Select Quality in the task bar directly below the tabs if filling a purchase order. Select Manufacturing Orders if filling a manufacturing order.

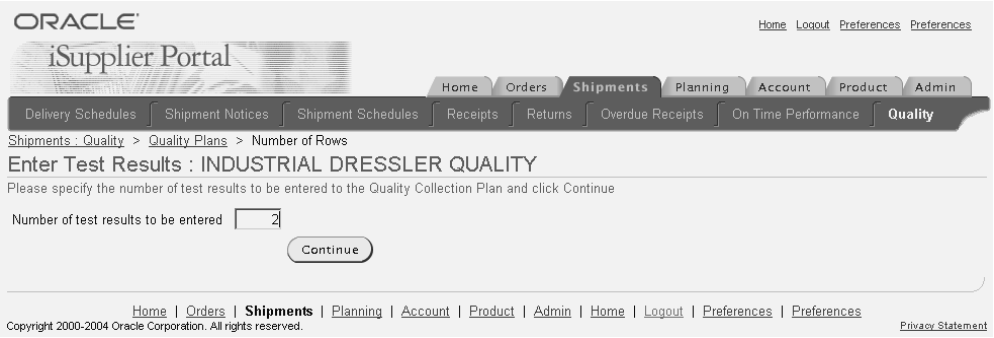
3. On the Quality Shipment Results page, search for a shipment.



4. To view the quality plans available for a shipment, select Available in the Quality Plans column.

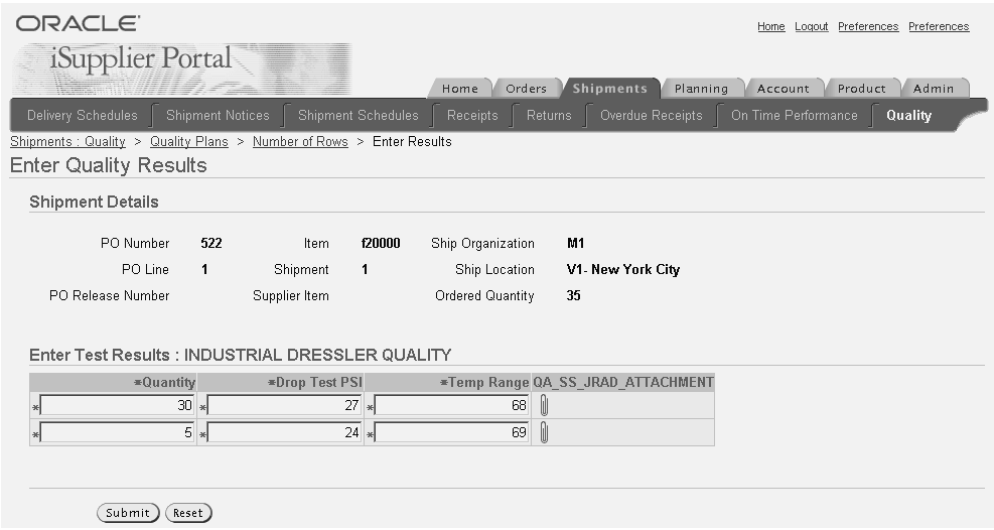


5. On the Quality Plans page, select the Enter Quality Results pencil icon. To view existing quality results, select the View Quality Results eyeglasses icon. To view attachments, select the Attachment paper clip icon.



6. On the Enter Test Results page, enter the number of quality results you want to enter and select the Continue button.

   You can enter up to 25 rows of quality results at a time.



7. On the Enter Quality Results page, enter your quality results information and select the Submit button.

   Once you submit the quality results, a notification is sent to the buyer.

Related Topics

Supplier Quality Collection Points, page 8-1

Setting Up Oracle Quality for Use with iSupplier Portal, page 8-18

Performing Skip Lot Inspections

To perform skip lot inspections, you must first enable skip lot inspections, then set them up by defining their parameters.

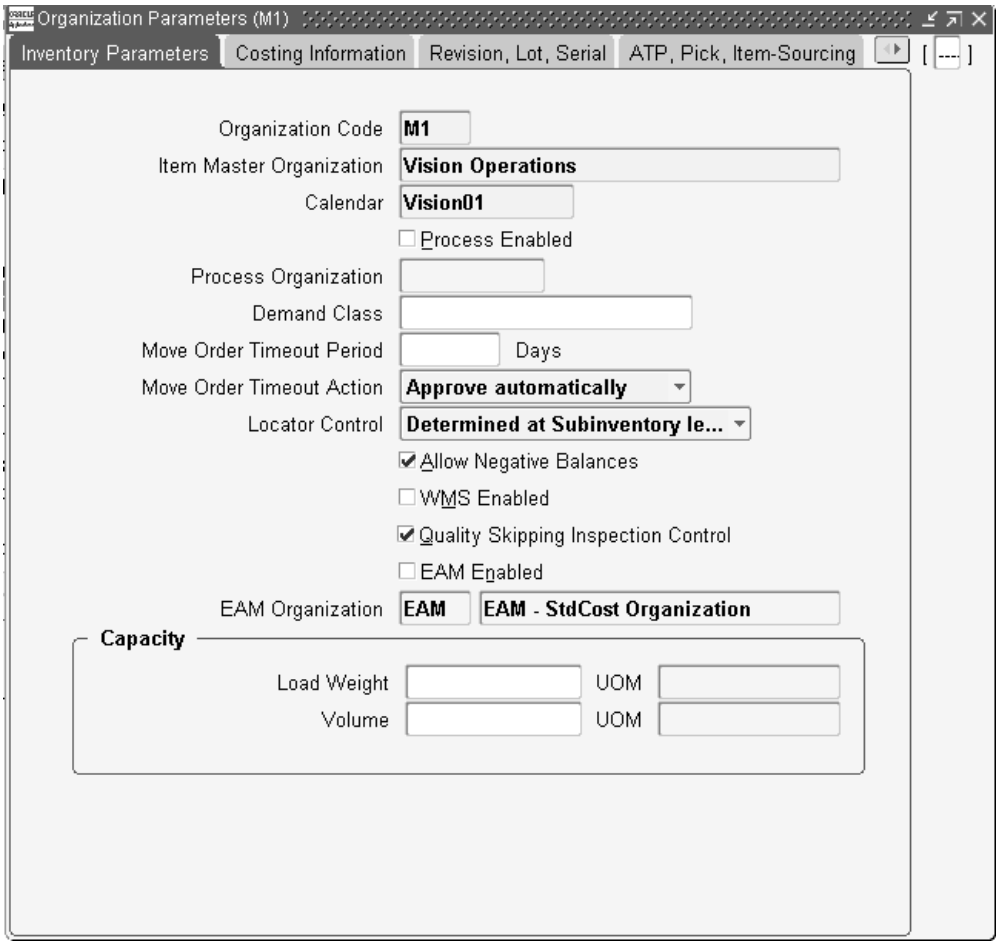
Prerequisites

❒ Set the profile option *QA:PO Inspection* to Oracle Quality.

To enable skip lot inspections:

You must activate an organization parameter to enable the Skip Lot process to evaluate your Skip Lot criteria. You will set up the Skip Lot criteria later (See: To set up skip lot inspections, page 8-24).

1. Navigate to the Organization Parameters, page A-1 window.



2. Enter a valid organization code. For information on how to create a valid organization, See: Creating an Organization, *Using Oracle HRMS - The Fundamentals*.

3. Select the Quality Skipping Inspection Control check box to enable the evaluation of Skip Lot criteria for the current organization.

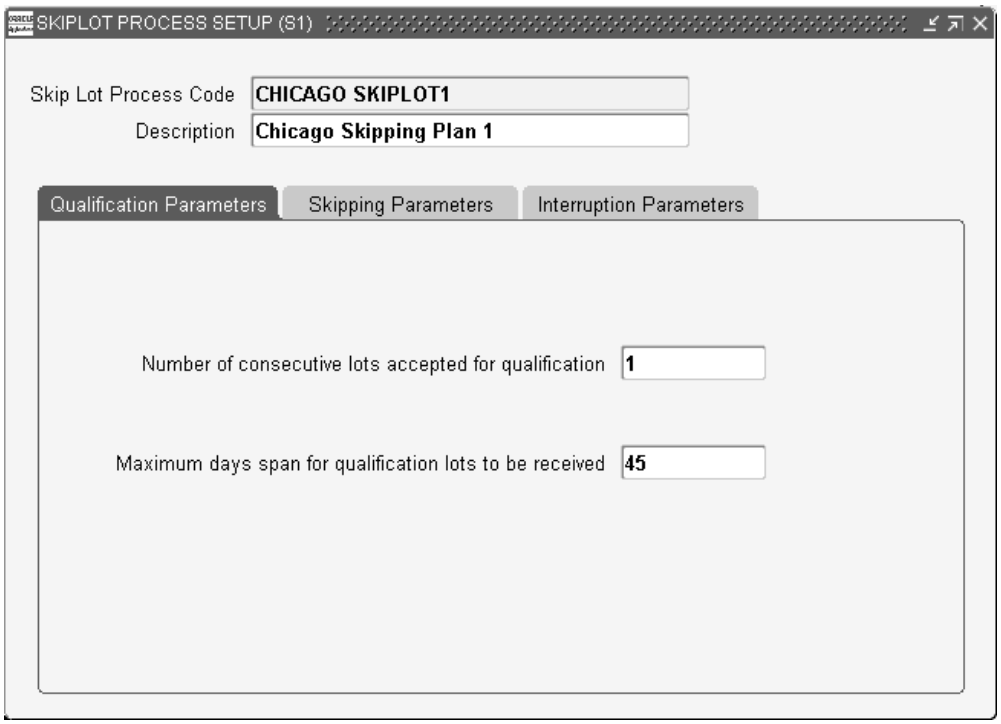
4. Save your work.

   For information on the remaining fields within the Inventory Parameters, see Defining Default Inventory Parameters, *Oracle Inventory User's Guide*.

To set up skip lot inspections:

Skip Lot inspections are generally used with suppliers that have achieved a specified level of conformity and reliability in their relationship with you. To model this process, you can set up qualification controls for your skip lot procedure. These controls can specify how many good receipts must be processed before skip lot is initiated and/or a specific time limit within which the good receipts must be received.

1. Navigate to the Skiplot Process Setup window.



2. Enter a Skip Lot Process Code name.

3. Optionally, enter a Description for the Skip Lot Process Code.

4. Enter a Number of consecutive lots accepted for qualification. This number indicates the number of good lots received before skip lot inspection begins.

5. Optionally, enter a Maximum days span for qualification lots to be received. This is the number of days that the indicated Number of consecutive lots accepted for qualification needs to be within, before skip lot inspection can begin. For example, if the Number of consecutive lots accepted for qualification is 2, and the Maximum days span for qualification lots to be received is 45, then two good lots must be received within 45 days before skip lot inspection will begin.

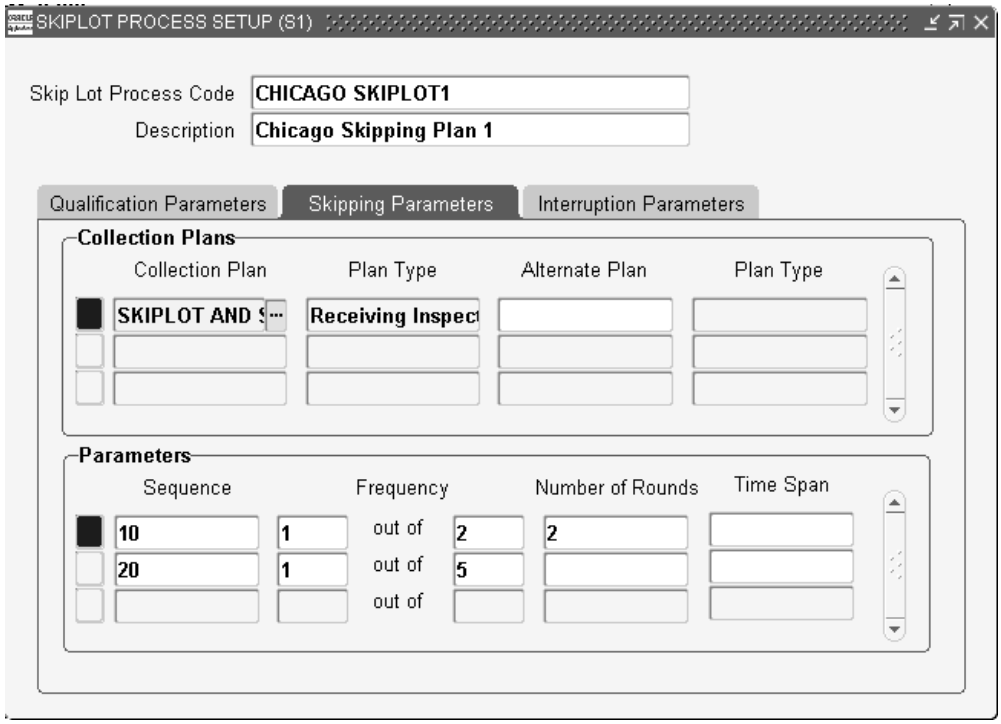
To define skipping parameters

Skipping Parameters define how skip lot inspections will be conducted for a specific Skip Lot Process Code. Each set of parameters consists of a collection plan (optionally, an alternate plan) and skipping frequency values. The frequency values specify how many inspections will be performed for a given number of receipts. For example, inspect one of every three receipts. The Number of Rounds value specifies how many times the frequency is repeated before the next set of values are used. For example, if the Number of Rounds was set to three (3), we would expect to inspect one of every three receipts. Therefore, over a period of nine receipts, we would inspect three receipts.

The Time Span value specifies that the rounds must be completed within a certain time frame or the next set of values are not used.

The Alternate Plan enables you to define a collection plan to be used on the skipped receipt. In this case, every receipt is inspected but two different inspection plans are used. For example, with normal inspections, we might employ a destructive testing plan, while on the skipped receipts, we might use a dimensional test.

6. Select the Skipping Parameters tabbed region.



7. In the Collection Plans region, select a valid Collection Plan from the list of values. See: Overview of Collection Plans, page 5-2. You can have multiple collection plans selected for the current Skip Lot Process Code. For example, you can carry out a materials test 25 percent of the time, and a dimensional test 50 percent of the time. The Plan Type will default based on the Collection Plan selected. If it is not a Receiving Inspection plan type, the system will issue a warning message indicating that some elements will be added. See: Collection Plan Types, page 5-3.

8. Optionally, select an Alternate Plan from the list of values. This plan will be used for the inspection of the skipped receipts.

9. In the Parameters region, enter a Sequence. This determines the sequential order that the frequency parameters are considered by the inspection sampling process.

10. Enter a Frequency for the sequence. For example, you can specify to inspect one out of every two lots submitted.

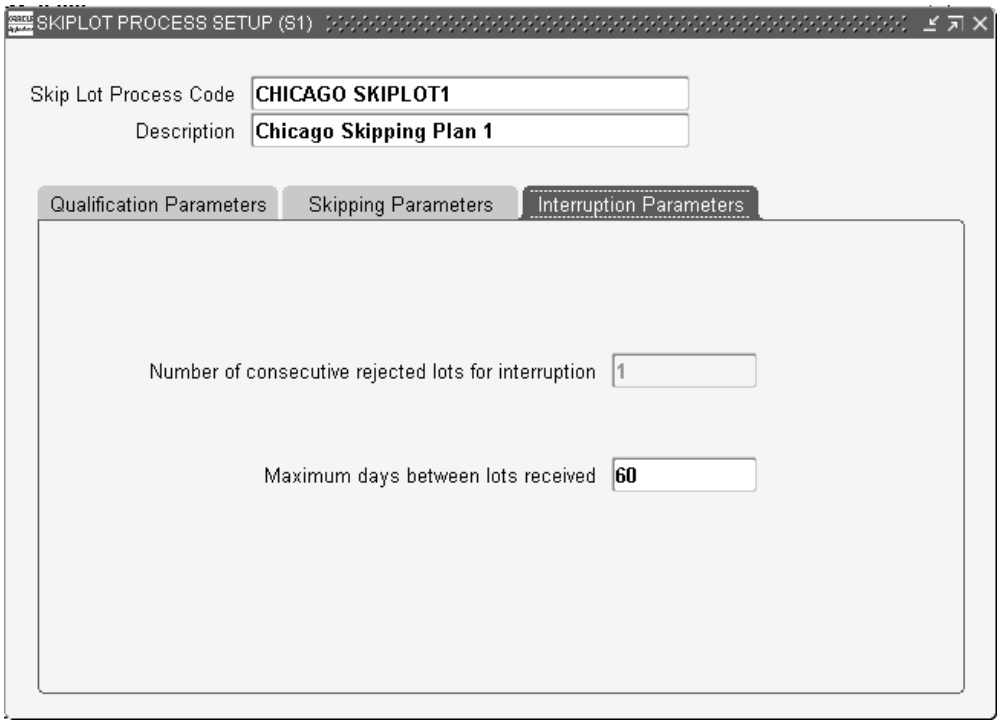
11. Optionally, enter the Number of Rounds. This specifies how many times the frequency will be executed.

12. Optionally, enter a Time Span. This enables you to indicate a number of days that the frequency must be completed within.

To define interruption parameters

Skip Lot inspection is performed with suppliers on a predictable schedule. Interruption parameters are values that define when that schedule is no longer predictable. If the interruption values are exceeded, that skip lot process reverts to the qualification stage.

13. Select the Interruption Parameters tabbed region.



14. You cannot update the Number of consecutive rejected lots for interruption field. This field specifies that skip lot inspection is interrupted if even one lot is rejected. If interrupted, you can either perform lot-by-lot inspection, or set the skip lot inspection qualification parameters to be more stringent.

15. Enter the Maximum days between lots received. If you have not received a lot within the maximum number of days specified, skip lot inspection will be interrupted. If needed, you can obtain a more frequent inspection process by either assuming a lot-by-lot inspection, or by setting the qualification parameters to a lower number.

16. Save your work.

Using notifications for skip lot inspections

After you have set up skip lot inspections, you can set notifications to be informed of any skip lot frequency changes.

17. Navigate to the Skip-Lot/Sampling Criteria Setup window.
18. Enter skip lot criteria, and choose the Skip Lot Association button.
19. Use the Skip-Lot association to criteria window to enter details of the skip lot process and effective to and from dates.
20. Enter the lot size information and the person to be notified in case of skip lot frequency change. Save your work.

Related Topics

Skip Lot Inspections, page 8-3

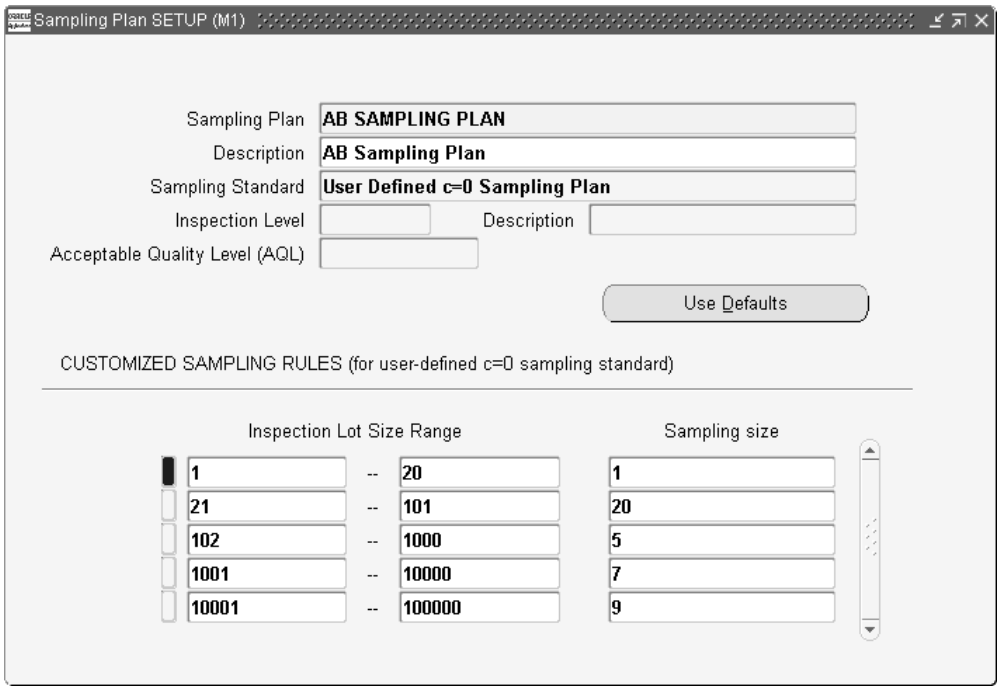
Inspection Sampling, page 8-4

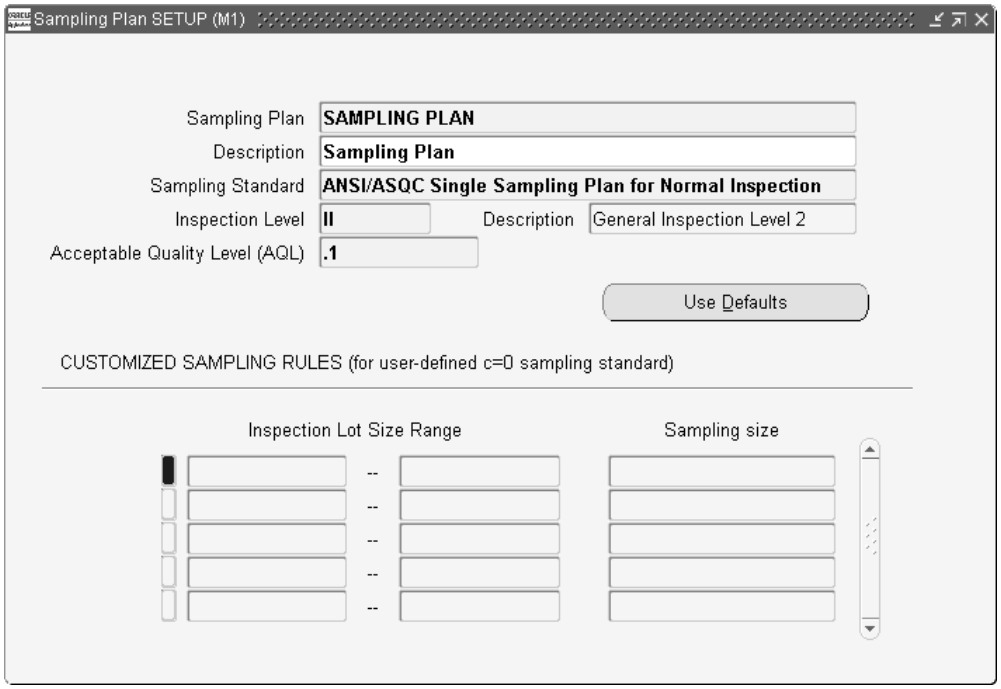
Performing Inspection Sampling

Before performing inspection sampling, you need to first set up a sampling plan and the plan criteria. For more information on inspection sampling, see: Inspection Sampling, page 8-4.

To set up a sampling plan:

1. Navigate to the Sampling Plan SETUP window.





2. Enter a name for the sampling plan in the Sampling Plan field.

3. Enter a Description for the sampling plan.

4. Select a Sampling Standard from the list of values, for example, Normal, Tightened,

or Reduced. Sampling Standard is based on ANSI/ASQC Z.4-1993. When beginning a sampling plan, you should start with Normal inspection. You can also define your own valid sampling standards.

5. If you selected a normal Sampling Standard, select an Inspection Level from the list of values. Valid values are I, II, III, and S-1 through S-4.

   I: inspection level for reduced inspection plans

   II: inspection level for normal inspection plans

   III: inspection level for tightened inspection plans

   S1 - S4: inspection levels for small sample sizes

6. If you selected a normal Sampling Standard, select an Acceptable Quality Level from the list of values. This value indicates the maximum percentage of nonconforming units acceptable. The quality management team generally sets this value based upon a detailed analysis of acceptable risk to your organization.

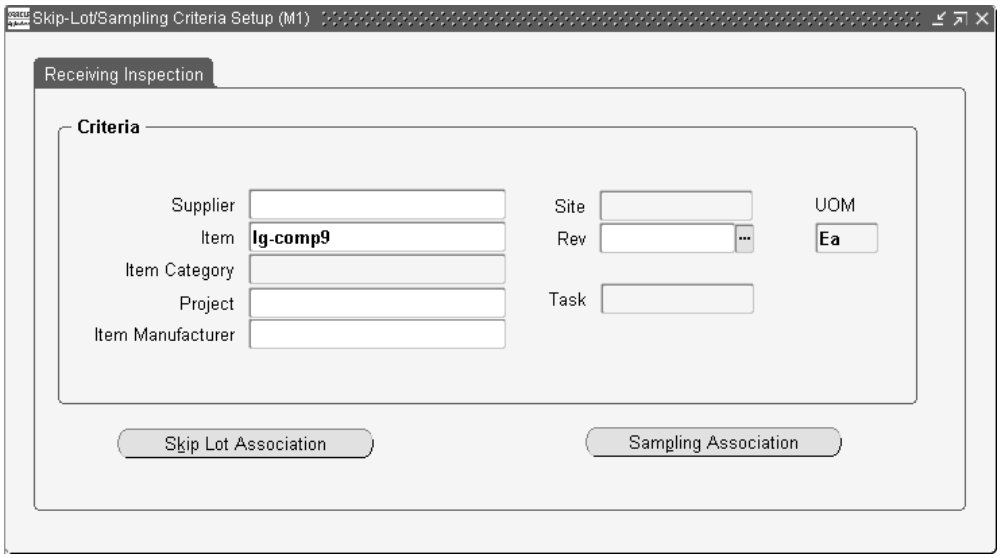
7. If you selected a c=0 Sampling Standard, you can define sampling rules within the Customized Sampling Rules region.

8. Save your work.

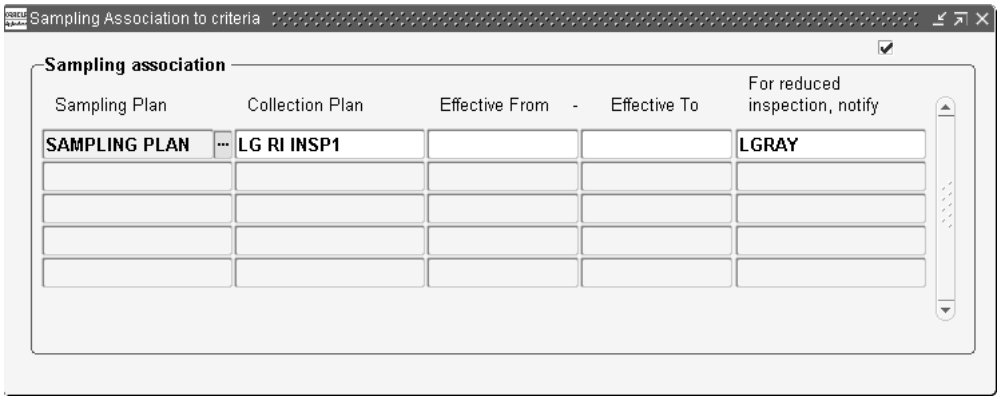
To set up sampling plan criteria:

Several criteria can be used to limit what items will be sampled. After you have set up your sampling plan (See: To set up a sampling plan, page 8-28), you need to set up specific criteria that will be referenced before the sampling plan is invoked.

1. Navigate to the Skip-Lot/Sampling Criteria Setup window.



2. Enter sampling criteria, then choose Sampling Association.



3. Within the Sampling Association to criteria window, select a Sampling Plan from the list of values. This is the sampling plan to which you want the criteria linked.

4. Optionally, select a quality data Collection Plan that will be used to collect the data from Receiving Inspection.

5. Optionally, enter Effective From and Effective To dates to indicate the time period that the current sampling plan/criteria relationship is valid.

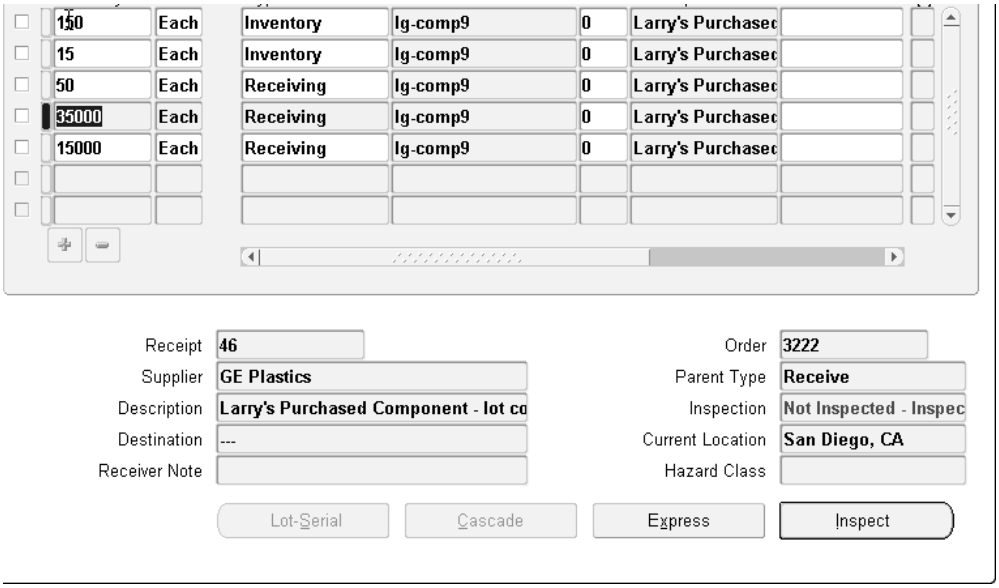
6. Optionally, select a user from the For reduced inspection, notify list of values, to notify if reduced inspection is required. A workflow notification is sent to this user.

7. Save your work.

To execute inspection sampling:

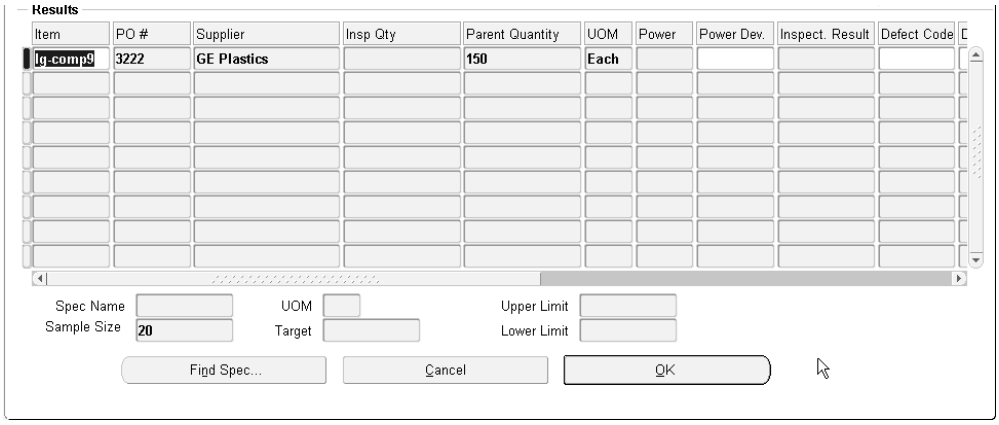
Sampling plans are invoked from Receiving Transactions. Once the lot to be inspected is selected, you are required to enter quality results. Upon inspecting the sample, you can accept or reject the lot. If part or all of the sample is rejected, the sample plan setup determines whether the amount rejected will reject the entire lot, or not. Rejected lots are then transferred to the Material Review Board subinventory.

1. Navigate to the Receiving Transactions window.



2. Select the line containing the lot needing inspection.

3. Choose Inspect to invoke the Sample Plan to inspect the lot quantity selected.



4. Within the Enter Quality Results window, enter the Inspection Quantity for the amount of the sample. The sample amount is populated in the Sample Size field.

You need to enter the entire sample quantity (in one or multiple rows) before you can exit the window.

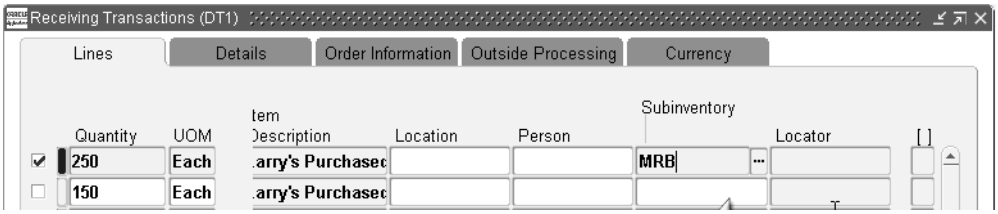
5. After sampling the units, select the Inspection Result from the list of values. Valid values are Accept and Reject. If part or all of the sample is rejected, the sample plan setup determines whether the amount rejected will reject the entire lot, or not (Acceptable Quality Level field). See: To set up a sampling plan, page 8-28.

   Note: You can enter multiple rows to separate the Inspection Quantities. This enables you to track what will happen to the rejected lot.

6. Choose OK.

7. Save your work. Within the Receiving Transactions window, the lot now displays its status in the Inspection field, for example, Accepted - Inspection.

8. Rejected lots are moved to the MRB (Material Review Board) subinventory.



Related Topics

Skip Lot Inspections, page 8-3

Receiving Transactions, *Oracle Purchasing User's Guide*

9

Manage Manufacturing Quality

This chapter explains how to manage the quality of manufactured items as you complete manufacturing transactions in the following applications:

- Oracle Work in Process
- Oracle Shop Floor Management
- Oracle Flow Manufacturing
- Oracle Project Manufacturing
- Oracle Process Manufacturing (OPM)
- Oracle Mobile Manufacturing

This chapter covers the following topics:

- Manufacturing Quality Collection Points
- Quality Data Collection in Work in Process and Shop Floor Management
- Inline Quality in Manufacturing Execution System
- Setting up Quality Data Collection
- Work in Process Business Examples
- Quality Data Collection in Project Contracts
- Quality Data Collection in Oracle Process Manufacturing

Manufacturing Quality Collection Points

When managing manufacturing quality, you can collect quality data from transactions in the following applications:

- Work in Process, Shop Floor Management, Manufacturing Execution System, and

Flow Manufacturing

- Oracle Process Manufacturing
- Mobile Manufacturing

Additionally, you can collect Project Manufacturing quality data using the existing Quality integration with other manufacturing transactions.

Work in Process, and Shop Floor Management

You can collect quality data during the Work in Process Move and Completion transactions and the Shop Floor Management Move Lot Based Job transaction. As you perform these transactions, you can:

- Collect data on manufacturing processes that affect product quality
- Collect data on the lot and serial controlled items that you build
- Report failure by problem and product
- Place a job or repetitive schedule on hold

For example, you can collect information about the life cycle of serialized assemblies, as well as Work in Process-specific information required for process control improvements.

Before you can collect quality data during transactions, you must first set up and associate one or more collection plans with the transaction. This will enable you to enter quality results, by accessing the Quality windows or pages either directly from Quality or from the WIP or SFM windows or pages.

Manufacturing Execution System

In the Manufacturing Execution System, quality data can be collected inline for single level plans without any child plans. You can enter quality results in the same page as parent transactions for single level collection plans associated with the move assembly and complete assembly transactions.

Flow Manufacturing

Quality's integration with Flow Manufacturing enables you to collect quality data while performing completion transactions. Completion transactions include line operation completions, assembly completions, and work orderless completions.

When you have one or more collection plans associated to the transaction, you can access the Quality application. This will enable you to enter quality results either:

- directly into the Quality application, in the Enter Quality Results window

- through the HTML Flow Workstation
- by activating the transaction window's Quality button and the Tools menu's Enter Quality Results selection from the forms user interface

Oracle Process Manufacturing (OPM)

Quality's integration with OPM enables you to log nonconformances whenever actual production results or actions differ from the OPM Master Batch Record. You can log a nonconformance when entering or updating a batch. See: *Oracle Process Operations User's Guide*.

> **Note:** You must install Oracle Process Operations to track nonconformances within OPM. A nonconformance is defined as the difference between the observed conditions and the acceptance criteria or the deviation between the testing performed and the approved procedure. The acceptance criteria is stated within an approved protocol such as a master batch record.

Mobile Manufacturing

If you are using Oracle Quality and at least one qualified collection plan exists, the Quality button is enabled on Mobile Manufacturing windows.

See the list of supported mobile transactions in Collection Plans for Managing Manufacturing Quality, page 9-4.

Other resources:

Mobile Manufacturing, *Oracle Mobile Supply Chain Applications User's Guide*.

Mobile Quality, *Oracle Mobile Supply Chain Applications User's Guide*.

Setting Up Serial Number Control Tracking, *Oracle Work in Process User's Guide*

Project Manufacturing

Oracle Quality's integration with Oracle Project Contracts is accomplished through other manufacturing transactions, including WIP Move, WIP Completion, WIP Work Order-less Completion, Purchasing Receiving, and Purchasing Inspections. Transactional data is collected using Project Number and Task Number Collection Triggers.

You can enter project contract quality results directly. See: Entering Quality Results Directly, page 6-7, and query quality data, based on a Contract, Contract Number, and Deliverable Number combination.

For more information, see:

Flow Manufacturing, page 9-2

Quality Data Collection in Oracle Purchasing, page 8-5

Work in Process and Shop Floor Management, page 9-2

Overview of Project Contracts, *Oracle Project Contracts User's Guide*.

Related Topics

Collection Plans for Managing Manufacturing Quality, page 9-4

Quality Data Collection in Work in Process, Shop Floor Management, and Flow Manufacturing, page 9-6

Quality Data Collection in Project Contracts, page 9-38

Quality Data Collection in Oracle Process Manufacturing, page 9-40

Oracle Process Operations User's Guide

Collection Plans for Managing Manufacturing Quality

To be able to collect quality results during a transaction, you must set up and define one or more collection plans specific to the transaction. See: Quality Data Collection During Transactions, page 5-35 and Associating Collection Plans with Transactions, page 5-46. You can create your own collection plan, or you can use a template provided specifically for a transaction to create a plan. See: Collection Transaction Templates, page 5-9. The manufacturing transactions with their respective templates are:

- Move Transactions (Oracle Work in Process)
  - Template WIP Move Plan
- Completion Transactions (Oracle Work in Process)
  - Template WIP Completion Plan
- Work Order-less Completions (Flow Manufacturing)
  - Template Work Order Less Completion Plan
  - Template Work Orderless Plan
- Line Operation Completion (Flow Manufacturing Workstation)
  - Template Completions Plan
- Move Lot Based Job (Shop Floor Management)
- Process Nonconformance (Oracle Process Manufacturing)

    - Template Nonconformance Master Plan
    - Template Nonconformance Master Plan(Nonconformance only)

- Oracle Mobile Manufacturing provides the following Oracle Work in Process transactions using mobile device hardware:
    - Mobile Completion Transactions (Oracle Manufacturing Mobile Applications)
    - Mobile Flow Transactions (Oracle Manufacturing Mobile Applications)
    - Mobile License Plate Number Inspection (Oracle Warehouse Management System)
    - Mobile Material Transactions (Oracle Manufacturing Mobile Applications)
    - Mobile Move Transactions (Oracle Manufacturing Mobile Applications)
    - Mobile Move and Complete (Oracle Manufacturing Mobile Applications)
    - Mobile Return Transactions (Oracle Manufacturing Mobile Applications)
    - Mobile Return and Move (Oracle Manufacturing Mobile Applications)
    - Mobile Scrap/Reject Transactions (Oracle Manufacturing Mobile Applications)
        - Template Scrap Reject Plan
    - Mobile Serialized Completion (Oracle Manufacturing Mobile Applications)
    - Mobile Serialized Material Transaction (Oracle Manufacturing Mobile Applications)
    - Mobile Serialized Move (Oracle Manufacturing Mobile Applications)
    - Mobile Serialized Move and Complete (Oracle Manufacturing Mobile Applications)
    - Mobile Serialized Return (Oracle Manufacturing Mobile Applications)
    - Mobile Serialized Return and Move (Oracle Manufacturing Mobile Applications)
    - Mobile Serialized Scrap/Reject (Oracle Manufacturing Mobile Applications)
    - Mobile Work Orderless Transactions (Oracle Manufacturing Mobile Applications)

While specifying the transaction, you can define one or more unique collection triggers for the plan, to enable you to choose the conditions under which quality data is collected during the transaction:

- You can make quality data entry mandatory by setting the Mandatory option See: Mandatory Data Collection, page 6-6.
- You can define a collection plan to run in the background if you want to collect data without user intervention. See: Background Data Collection, page 6-6.
- You can add quality actions to collection plans, to define the rules that determine when these actions are to be invoked. See: Quality Actions, page 3-19, Message Actions, page 3-20, Alert Actions, page 3-21, and User-Defined Actions, page 3-21.

Quality Data Collection in Work in Process and Shop Floor Management

Prerequisites

❒ Set up and define one or more collection plans specific to the transaction. See: Collection Plans for Managing Manufacturing Quality, page 9-4.

❒ Perform the Move transaction in Work in Process, but do not save your work. See: Performing Move Transactions, *Oracle Work in Process User's Guide*.

❒ At a minimum, you must complete Job or Assembly Line, From/To, and Transaction Quantity before the Enter Quality Results option is available on the Tools menu or the Quality button is activated.

To enter quality results during a Work in Process Move transaction:

If Oracle Quality is installed, and if at least one collection plan is associated with a Move transaction, the Enter Quality Results Tools menu option and the Quality button on the toolbar in the Move Transactions window are enabled and you can enter quality results. You can also enter quality results in the Discrete Execution Workstation during the Move transaction. See the *Oracle Work in Process User's Guide* for more information if you plan to use the Discrete Execution Workstation.

> **Note:** These instructions also apply to the Shop Floor Management Move Lot Based Job window. The Move Lot Based Job window (for lot based jobs) is the same as the Move Transactions window (for discrete jobs). The Shop Floor Management Supervisor Workbench and Dispatch List are similar to the Discrete Execution Workstation.

1. Before saving your work, choose Enter Quality Results from the Tools menu or select the Quality button. The Enter Quality Results window opens.

Important: If you attempt to save a Move transaction and Oracle Quality finds one or more mandatory collection plans, you must enter quality results before proceeding.

2. Select a collection plan. The Enter Quality Results window opens.

   You can select any collection plan that is associated with Move Transactions (Oracle Work in Process) and enabled.

3. Find and assign specifications:

   - If the selected collection plan is associated with the item specification type, the specification is derived from the assembly item being moved.

   - If the selected collection plan has been associated with the customer or supplier specification type, the Find Specifications window opens.

   - If no specification can be found for the item, the system searches for a specification based on the item's category. The default category set that you defined using the QA:Quality Category Set profile option is used to determine the item category. See: QA:Quality Category Set, page 2-12.

   - If the collection plan is not associated with a specification type, you can optionally invoke the Find Specifications window from the Enter Quality Results window using the Find Specs button. See: Finding Specifications During Transactional Data Collection, page 6-19.

     After you either select a specification or cancel the selection, the Find Specifications window closes and the Enter Quality Results window is again in view.

4. In the Results region of the Enter Quality Results window, enter one or more records.

   You must enter quality data for mandatory collection plan elements. See: Context Element Dependencies, page 5-7. When you define collection elements, the Prompts that you enter display as column headings. If data collection is not mandatory, you can select Cancel to skip quality data entry.

   Note: You can enter quality data as you perform move transactions, if you are working in a Shop Floor Management enabled organization. In the Results region, enter the Quanity, To Step, To Operation and Job.

5. Save your work.

If you save your work using Save and Proceed the current results are cleared. You can continue to enter results for the same collection plan and for the same specification, if assigned.

To view collection plan or specification attachments while entering quality data

See: Viewing Attachments Associated with Quality Results, page 6-12.

To enter quality data during a Work in Process Completion transaction:

If Oracle Quality is installed, and if at least one collection plan is associated with a Completion transaction, the Enter Quality Results Tools menu option and the Quality button are enabled in the Completion Transactions window and you can enter quality results. You can also enter quality results in the Discrete Execution Workstation during the Completion transaction. See the *Oracle Work in Process User's Guide* for more information if you plan to use the Discrete Execution Workstation.

Before you can enter quality results, you must perform a Completion transaction, but do not save your work. See: Completion Transaction Types, *Oracle Work in Process User's Guide*.

> **Tip:** Enter lot and serial information if applicable. It is recommended that lot and serial data be entered before entering quality data. If the item in question is under lot and serial control, it is required that lot and serial data be added.

1. Before saving your work, choose Enter Quality Results from the Tools menu or select the Quality button from the toolbar. The Enter Quality Results window opens.

   The collection plan that is alphabetically first is displayed first. You can use the Collection Plan field's arrows to navigate to other collection plans.

2. Select a collection plan.

   You can select any collection plan that is associated with the Completion transaction and that is enabled.

3. Find and assign specifications (during this step the Find Specifications window opens in front of the Enter Quality Results window):

   - If the selected collection plan has been associated with the customer or supplier specification type, the Find Specifications window automatically opens.
   - If the selected collection plan is associated with the item specification type, the specification is derived from the assembly item being moved.
   - If no specification for the item can be found, the system searches for a

specification based on the item's category. The default category set that you defined using the QA:Quality Category Set profile option is used to determine the item category. See: QA:Quality Category Set, page 2-12.

- If the collection plan is not associated with a specification type, you can optionally invoke the Find Specifications window from the Enter Quality Results window using the Find Specs button. See: Finding Specifications During Transactional Data Collection, page 6-19.

After you either select a specification or cancel the selection, the Find Specifications window closes and the Enter Quality Results window is again in view.

4. In the Results region of the Enter Quality Results window, enter one or more records.

   You must enter quality data for mandatory collection plan elements. See: Context Element Dependencies, page 5-7. When you define collection elements, the Prompts that you enter display as column headings. If data collection is not mandatory, you can select Cancel to skip quality data entry.

   Note: If you have defined more than one collection plan for this transaction, you can repeat steps 2, 3, and 4 to enter quality data for all applicable collection plans. Use the Collection Plan field's arrows to navigate to other collection plans.

5. Save your work.

   Note: Selecting OK accepts the quality data and returns you to the Completion transaction window in Work in Process. Selecting Cancel rejects the quality data that you entered and also returns you to the Completion transaction window.

During a WIP Move transaction in the discrete execution workstation, after entering quality results in a nonconformance plan, you can generally view the nonconformance number it generates.

Related Topics

Overview of Oracle Quality, page 1-4

Defining Collection Elements, page 3-11

Defining Specifications, page 4-4

Creating Collection Plans, page 5-11

Quality Actions, page 3-19

Quality Collection Transactions, page 5-35

Overview of Data Collection, page 6-1

Data Collection Fundamentals, page 6-3

Entering Quality Results Directly, page 6-7

Work in Process and Shop Floor Management, page 9-2

Collection Plans for Managing Manufacturing Quality, page 9-4

Setting up Routings for Quality Data Collection, page 9-10

Work in Process Business Examples, page 9-17

Inline Quality in Manufacturing Execution System

Inline quality data entry in Manufacturing Execution System (MES) for Discrete Manufacturing is available for the following transactions:

- Move Assembly Transactions
- Complete Assembly Transactions

You can use the inline region to enter quality results in the same page as the parent transaction without having to navigate to multiple pages for single level plans without any child plans. The inline quality result entry will available only for single level plans. If there are only single level applicable plans, the need to navigate to multiple pages is eliminated.

See: Moving and Completing Assemblies, and Quality Display Modes in *Oracle Manufacturing Execution System for Discrete Manufacturing User's Guide*.

Setting up Quality Data Collection

You have a number of choices regarding the exact point of quality data collection. Through collection triggers, you can tie a very specific point in your routing to quality data collection, thus ensuring that quality results are recorded as soon as they become available, and quality problems are caught as soon as they become evident.

In setting up your routings and planning your quality collection, you should consider the following key questions:

- Who should be entering the data?
- When does the data become available to this person?
- When is it appropriate and convenient to enter the data?

The answers to these questions should help you determine how to set up your routings and collection triggers. Keep them in mind as you read on.

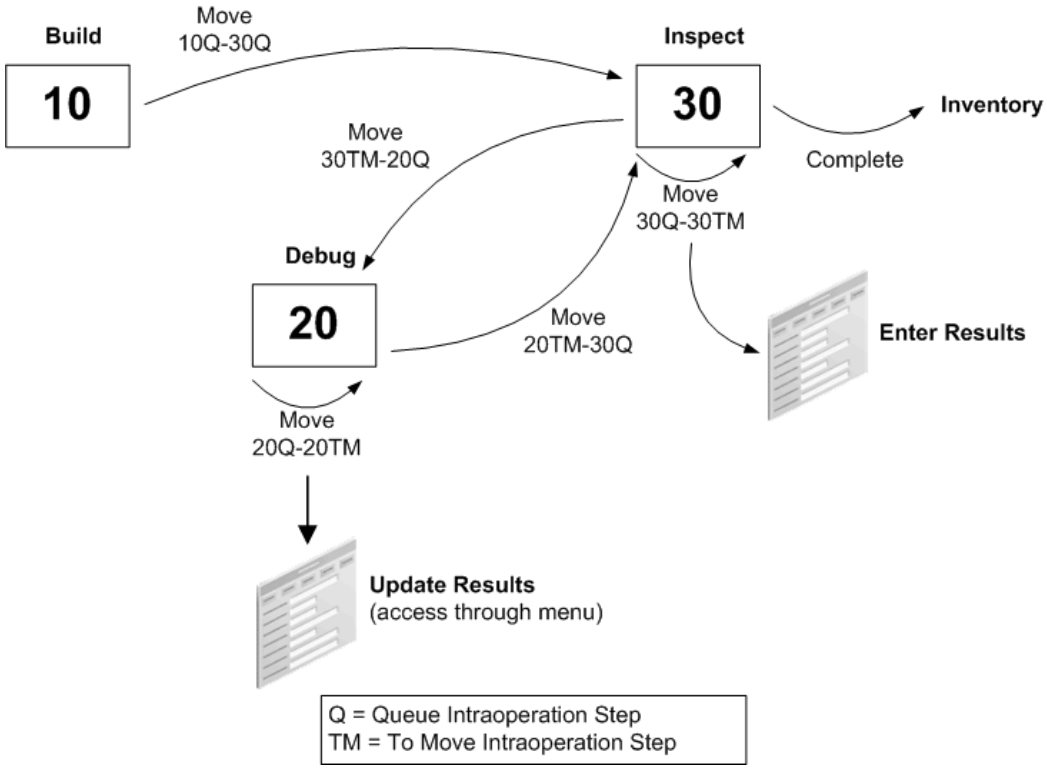
Business example: Quality Data Collection for Work Order Routings

The following are examples of how you might set up your routings to support meaningful integration with Oracle Quality via collection triggers. They are designed to show you how you might address some of the same issues that may arise during the set up process.

Routing 1: Planned Inspection, All Assemblies

If you are performing inspections on 100% of your assemblies at key points in your assembly process, you would likely set up inspection operations as part of your assembly's routing. The Defect Code Pareto Analysis business example for the RF transmitter manufacturer used this kind of approach.

The following diagram illustrates the above text.



The inspection operation needs to be last in the routing because 100% inspection is required. Making the inspection the last operation ensures that all of your assemblies, including those that may need to be reinspected if any debugging or reworking has taken place, are inspected because all assemblies must pass through the To Move step of the last operation before they can be completed. Your debug operation should not be a count point operation, and as such, should not be the last operation on your routing.

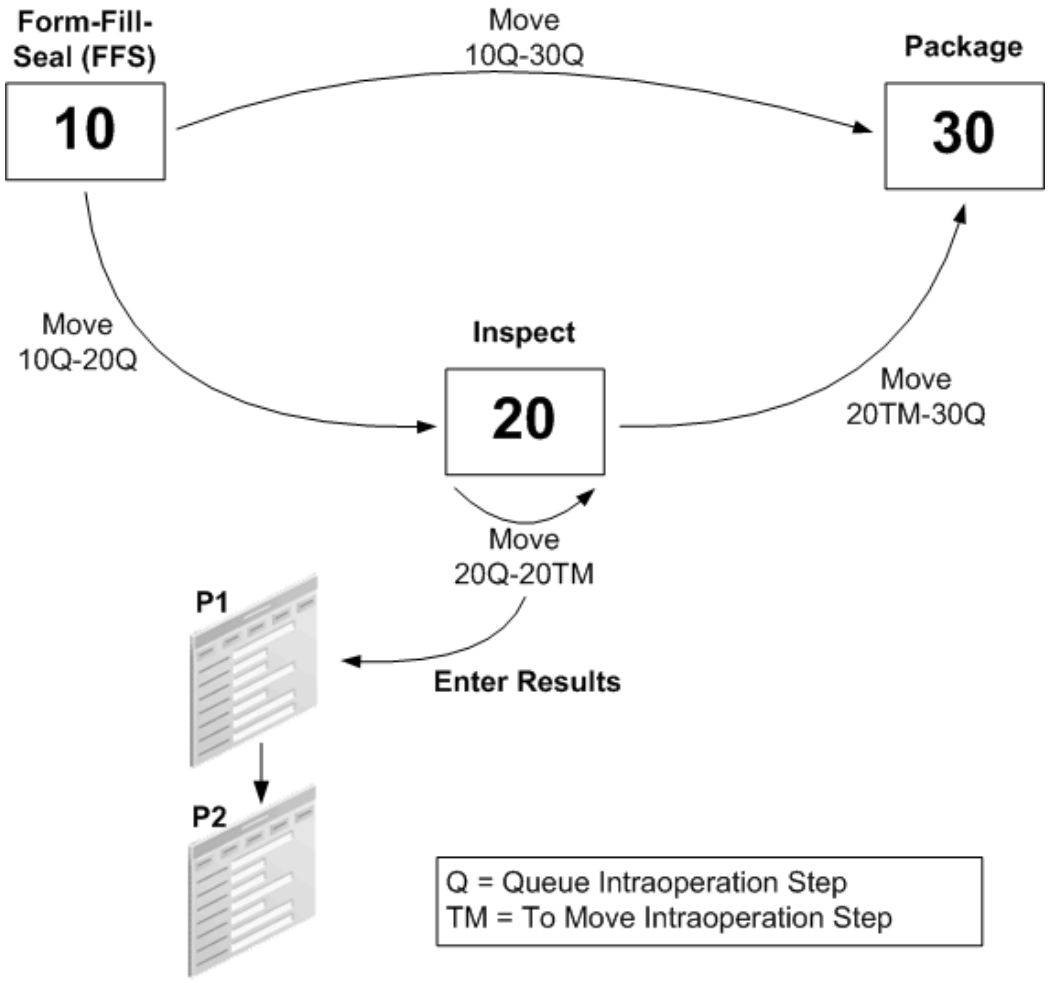
Since all of your assemblies must go through the inspection operation, this operation should be a count point operation. Defining the collection trigger as a move into the To

Move step of the inspection operation ensures that the results are entered when the inspection work at the operation is done and the assemblies are ready to move on, either into Inventory or to the debug operation. Triggering results collection off a move into the last intraoperation step of the operation helps ensure that the qualified personnel at the inspection operation enters the inspection results. Note that the move that triggers the quality data collection could be an intraoperation move, as shown in the diagram, but could also be an interoperation move straight into To Move of the inspection operation.

You should use the Update Quality Results window to update the results records with appropriate defect and disposition codes. You can access this window through the Oracle Quality menu.

Routing 2: Planned Inspection, Some Assemblies

If inspection is part of your standard routing for an assembly, but only a fraction of your assemblies actually go through inspection, you may want to use the routing model illustrated in the following diagram:

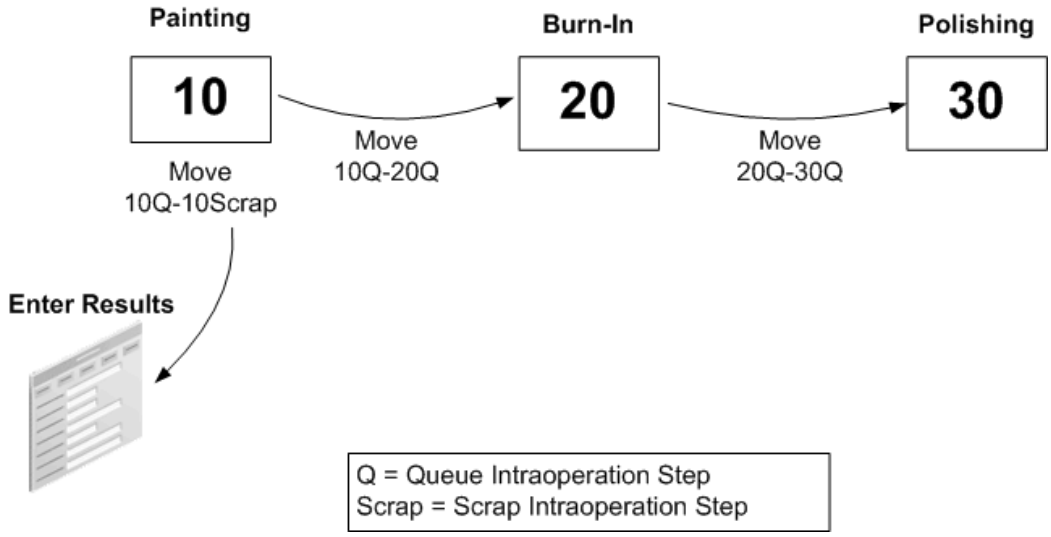


The medical compound manufacturer in the Yield Reporting example used this particular model. While this routing contains similar steps as the previous example, the key difference is that not all assemblies are inspected. Therefore neither the inspection nor the disposition operations should be count point operations. This means that if you do a move transaction from operation 10, operation 30 (i.e. the next count point operation) is defaulted as your "to" operation. You should override the default for those assemblies that are to be inspected.

A move into the To Move step of your inspection operation can once again serve as the collection trigger for results entry.

Routing 3: Exception Reporting

You may want to capture quality information only when there is a quality problem. You may also want to give employees at every point on the routing the authority to report a quality problem, regardless of whether the operation is an inspection operation. The simplest way to support this need would be to use the routing model, illustrated in the following diagram:



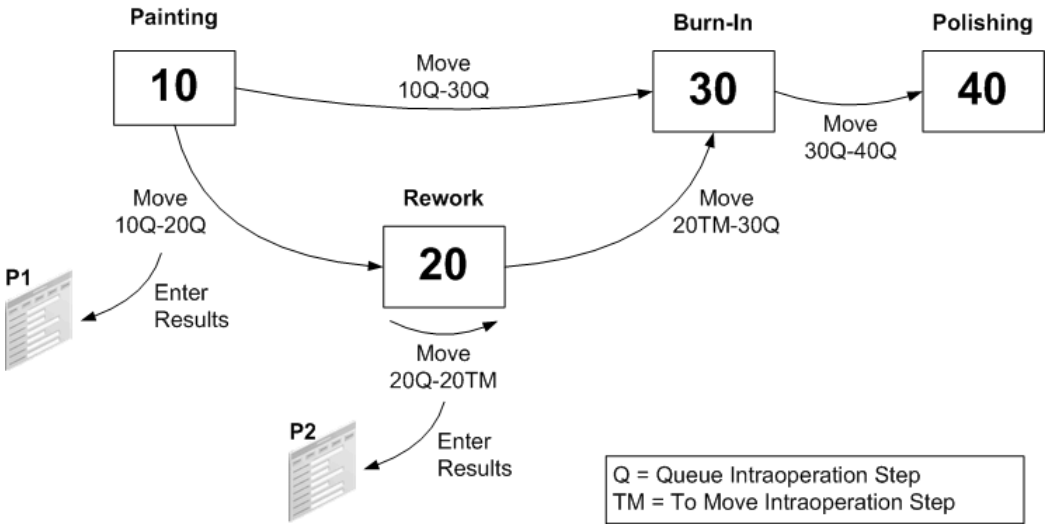
In other words, you simply use your regular routing, and define a collection trigger to fire on move into the Scrap intraoperation step. You can make this specific to one or several operations, or use the same trigger to fire whenever a move to Scrap is entered.

Similarly, you could define moves into Reject to be a collection trigger for quality results entry.

Routing 4: In-line Debug or Rework

If your product and processes support in-line rework, that is, if you can sometimes fix an assembly at a designated rework operation, you may want to concentrate on recording quality data pertaining to the assemblies you are reworking. For example, you may want to capture historical information about serialized assemblies. You may also do the detailed analysis of the cause of the defect at the rework center, and consequently you want to report this information there.

The following diagram illustrates the above text.



The rework operation should not be a count point operation, since you do not expect to be moving all assemblies into the rework operation. The example shows two collection triggers associated with the rework operation, one fires when you move into the Queue of the rework operation from any other operation, the other fires when you do an intraoperation move to the To Move step of the operation. The first collection plan, P1, might have the Employee ID, the operation sequence or resource ID of the machine where the defect was discovered, and a free text description of the problem captured at the source, and it may invoke an action rule to alert the rework center that a failed assembly is on its way. This could be particularly relevant if the rework operation is in another building, or tends to get overloaded. P2 may include more detailed information, i.e. information that becomes available after some analysis has been done at the rework operation.

The advantage of using two collection plans rather than using one and updating it, is that you can invoke both collection plans through collection triggers. If you used one collection plan, as in the previous example, you would have to update it to enter the results of your analysis by accessing the Update Quality Results window through the menu. The advantage of having only one collection plan, on the other hand, is that results are typically displayed by collection plan.

Routing 5: Enforcing Data Collection During Final Inspection

Your process may include inserting resistors into circuit boards. The boards then go through a burn in period so that any early failures can be detected and reworked. Each unit that passes the burn in period is further tested for voltage measurement before it is completed and put into inventory. You are interested in capturing the quantity of units that pass or fail burn in, as well as in ensuring that the test activity is performed and that appropriate test results are captured.

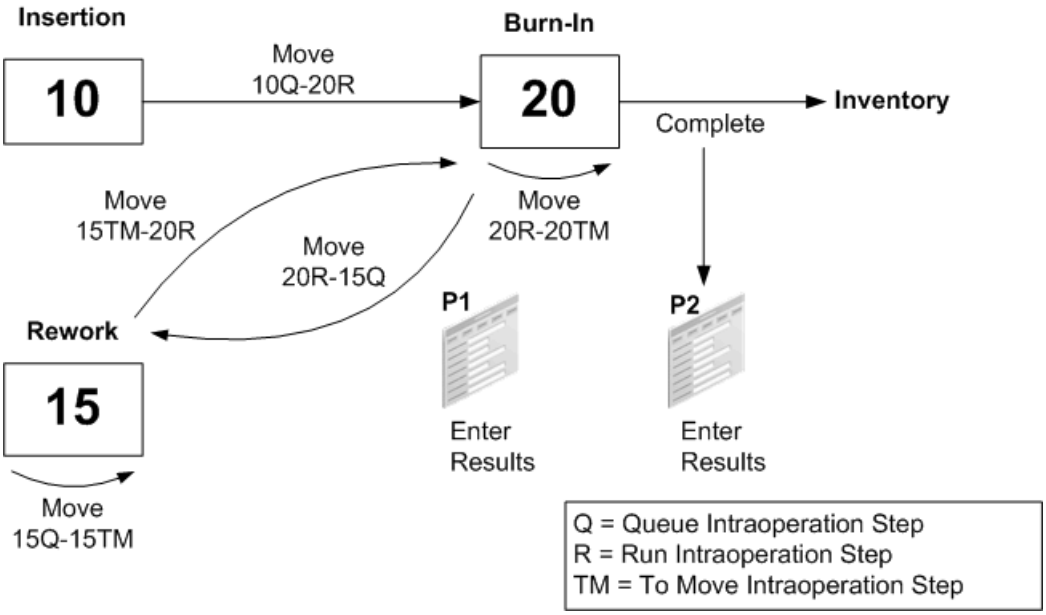
To accomplish this, you have to define two collection plans.

- **Plan P1** will be associated with the Run intraoperation step of the burn in operation

and will capture the quantity of units that pass or fail burn in. This plan will be triggered whenever you move your boards from the Run intraoperation step of the burn in operation. You thus will be able to capture both the quantity of units that pass burn in (20R-20TM), as well as those that fail (20R-15Q) it and have to be reworked. Since only some of your assemblies will undergo rework, the rework operation will not be a count point operation.

- **Plan P2** will be triggered by the Work in Process Completions transaction to enforce testing and collecting the results. In this plan, if your assemblies are under serial control, you can capture the test voltage pertaining to each serialized assembly. Later on, you may want to query up historical information about the serialized assemblies.

The following diagram illustrates the above text.



Related Topics

Overview of Routings, *Oracle Bills of Material User's Guide*

Creating a Routing, *Oracle Bills of Material*

Overview of Routings and Operations, *Oracle Bills of Material User's Guide*

Work in Process Business Examples, page 9-17

Quality Data Collection in Work in Process and Shop Floor Management, page 9-6

Work in Process and Shop Floor Management, page 9-2

Collection Plans for Managing Manufacturing Quality, page 9-4

Work in Process Business Examples

The following examples describe how you might use Oracle Quality with Oracle Work in Process. These examples illustrate some of the most common applications of quality systems on the shop floor and demonstrate how to use Oracle Quality to collect the desired information.

- Defect Code Pareto Analysis, page 9-17
- Yield and Quality Cost Reporting, page 9-23
- Process Capability Study, page 9-32
- Mobile Manufacturing, page 9-3

Defect Code Pareto Analysis

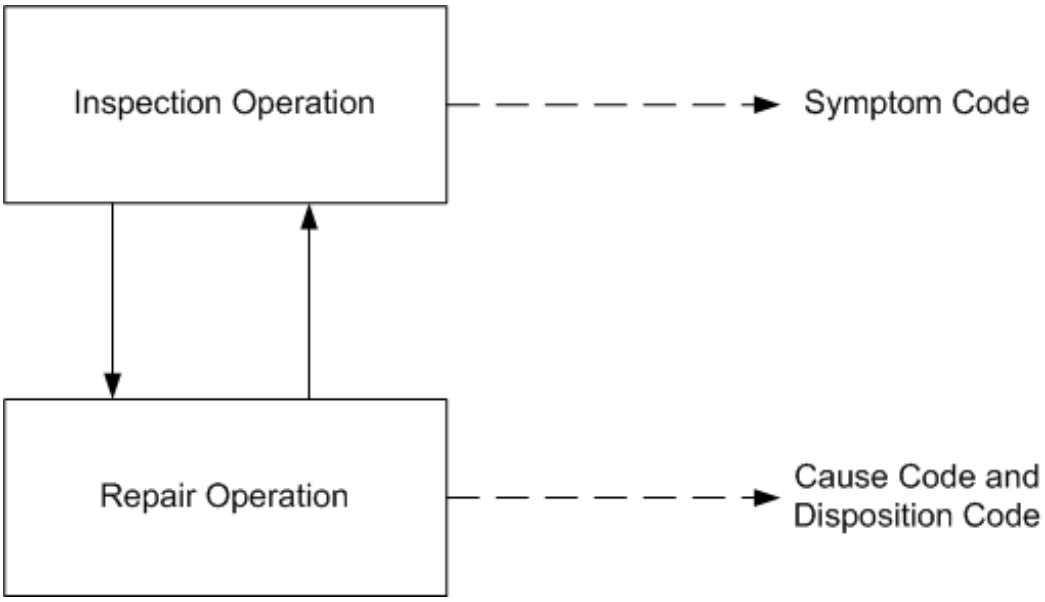
You are the quality manager for a manufacturer of radio frequency (RF) transmitter equipment used in fiber optics communications applications. Your long-term quality goal is to achieve zero-defect manufacturing. However, you realize that small step improvements are required before your long-term goal can be reached. Therefore your immediate short-term goal is zero-defects in one particular area - customer shipments.

To meet this goal you must implement procedures that ensure that every transmitter is tested with a power meter at an Inspection station before it leaves the factory. To ensure a "flat" response over a wide range of frequencies, two samples are taken based on a given frequency input. The resultant output measured in decibels (DB) is an indicator of how well the RF transmitter meets customer requirements. The choice of input frequency used depends on the type of transmitter you are building, i.e. on the item model. For instance, for one model, the RF transmitter model, has output of 20 dB +/- 0.5 at an input frequency of 10 megahertz (Mhz) but has an output of 19.5 dB +/- 1.0 at an input frequency of 500 Mhz.

When a transmitter fails test, a Symptom Code that clearly describes the observed results is assigned and the unit is moved to a repair operation. Based on the Symptom Code, directed analysis in the repair area leads to the assignment of a Cause Code and subsequently a Disposition Code.

You can use inquiries, reports, and Pareto Charts to analyze the most common causes of defects. Appropriate corrective actions can then be taken to ensure that your long-term goal of zero-defect manufacturing is met.

The following diagram illustrates the quality data collection points discussed above:



Setup

Based upon the above information, you have determined that you need to create a RF Transmitter collection plan that includes the following collection elements:

- Job
- Item
- Serial Number
- Transaction Date
- Assembler ID
- Symptom Code
- Cause Code
- Disposition Code
- Date of Manufacture
- Low Frequency
- Low dB Reading
- High Frequency

- High dB Reading
- Quality Control Id (Employee Id of the person performing the analysis

Collection Elements

Of the collection elements listed above, six (Assembler ID, Low Frequency, Low dB Reading, High Frequency, High dB Reading, and Quality Control Id) are user-defined. All others are predefined (Symptom Code, Cause Code, and Disposition Code) or context elements (Job, Item, Serial Number, and Transaction Date). See: Defining Collection Elements, page 3-11.

Specifications

Specifications ensure that products are useable and are typically based upon customer requirements. Therefore the next step is to define an item specification, 'RF Transmitter1', specifically for your Model 1 RF Transmitter. Note that you can define separate specifications for each transmitter model that you manufacture.

Add the Low DB and High DB collection elements to the RF Transmitter1 specification. If the required specification limits for these collection elements, 19.5 dB +/- 1.0 and 20 dB +/- 0.5 respectively, have been defined for the collection element they are automatically copied as you add them to the specification. If they have not been defined, you can define them in the Specification Elements window. See: Defining Specifications, page 4-4 and Defining Specification Elements, page 4-7.

Finally, add the Low Frequency and High Frequency collection elements to the specification. If the required target values for these collection elements, 10 megahertz (Mhz) and 500 (Mhz) respectively, have been defined for the collection element they are automatically copied as you add them to the specification. If they have not been defined, you can define them in the Specification Elements window. If you set the *QA:DefaultSpecifications Target* profile option to Yes, these target values are automatically defaulted when the RF Transmitter collection plan is invoked by a move transaction.

Collection Element and Collection Plan Element Values

You can define lists of values or SQL validation statements for the required predefined attribute collection elements (Symptom Code, Cause Code, and Disposition Code) and for your user-defined collection elements. Lists of values can be defined at the collection element level and copied to their corresponding collection plan elements. However, you can also define unique lists of values for the collection plan elements. For example, the list of values for the RF Transmitter collection plan elements Symptom Code, Cause Code, and Disposition Code - Okay and Failed, Not Applicable and Assembler Error, and Not Applicable and Scrap respectively - are unique to only this collection plan. See Defining Collection Element Values, page 3-18 and See: Defining Collection Plan Element Values, page 5-19.

Important: Upper and Lower Specification Limits are not required for the Low Frequency and High Frequency specification elements since frequency is an input in testing RF transmitters.

Collection Plan

Next, create the "RF Transmitter" collection plan and add the above listed collection elements to it. All collection plan elements, except Cause and Disposition Code, should be defined as displayed and mandatory. Cause and Disposition Code should be defined as non-mandatory so that they can be skipped when you enter your initial results. Later, after further results analysis has been done, they can be updated using the Update Quality Results window.

Collection Plan Element Actions

Next, define appropriate actions for each of your collection plan elements. For example, when a Symptom Code results value of 265 (indicating no signal output) is entered, you can send a message to the power meter operator that says "Db reading is too low. Please move this item to the repair station." See: Defining Collection Element Actions, page 3-29.

Transactions

Next, associate the RF Transmitter collection plan with the WIP move transaction. The move transaction should be made mandatory to ensure that quality data is collected before the move transaction is saved.

Based upon the moves shown in Figure 1 - from Final Assembly operation to Inspection, from Inspection to Repair, from Repair back to Inspection - define the following collection triggers and conditions:

- From Operation Sequence Number <= 50 (Inspection)
- To Operation Sequence Number > 50 (Inspection)

The above collection triggers and conditions accomplish the following:

- Assemblies cannot be completed into inventory from Operation 40 (Final Assembly) without passing through Operation 50 (Inspection)
- All moves into Operation 60 (Repair) trigger mandatory data collection

Important: Multiple results entries for a serial number indicate that the item was repaired, perhaps more than once.

Specification Type

Last, assign a default specification type to the collection plan, in this case an item

specification. Assigning a default specification type ensures that an appropriate specification can be chosen during quality data collection.

Data Collection

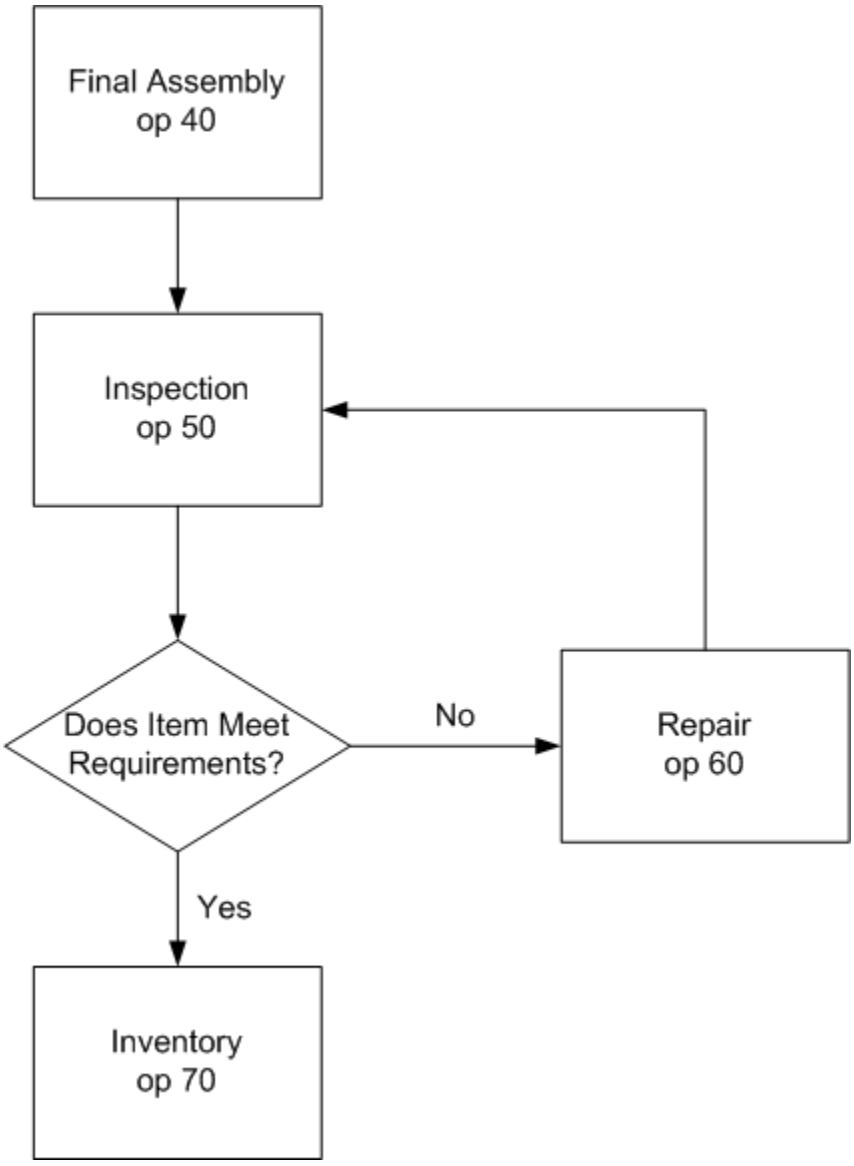
As transmitters are moved into the Inspection operation, the RF Transmitter collection plan is invoked. Because a specification type has been associate with the RF Transmitter collection plan, a specification - in this case the RF Transmitter1 specification - should be selected before data collection can begin.

The inspector is prompted for the serial number of the transmitter and for the assembler's ID (the assembler ID is noted on the routing sheet that the inspector receives along with the transmitter). Low and High Frequency default values, defaulted from the Low and High Frequency specification element target values, are automatically displayed. The inspector tests the transmitter using the suggested frequencies, then enters the corresponding Low DB and High DB results values. If both DB values are within the specification limits defined for the RF transmitter, the inspector enters the "Okay" Symptom Code and "Not Applicable" Cause and Disposition Codes. The tested transmitter can now be completed into inventory.

If however, the Low or High DB value is outside the specification limits, the message action "Item DB is outside specification. Please route item to repair station." is invoked. The inspector selects the failed Symptom Code, but because they are not mandatory, skips data entry for the Cause and Disposition Code. Once quality data collection is complete, the failed transmitter is moved to the Repair operation.

In the Repair operation, a technician determines the exact cause of the problem, fixes it, then updates the Cause and Disposition Code values using the Update Quality Results window. Once the problem is fixed the technician moves the transmitter back to the Inspection operation where the process is repeated until the transmitter passes inspection. Transmitters that pass test can be completed into inventory.

The following diagram illustrates the process operations discussed above:



Results Analysis

You can view and report quality results in a variety of ways. You can view all results for a particular serialized item or for a particular Symptom Code = 055 (no signal output). You can also create custom reports based on your results.

You can view your results in graphical form. For example, you can create Pareto chart with using the symptom code as the X-axis element and limiting the results selected to those Cause Codes that are equal to 265. You can them create similar Pareto charts using the same Symptom Code but different Cause Codes to visualize the differences between different cause codes. Cause Codes resulting in a significant symptomatic occurrences indicates that the product or process should be redesigned.

Similarly, you can create then compare Pareto charts for one Cause Code but different

Assembler IDs. You can then determine if a particular assembler is contributing to increased transmitter rejects and repairs. Once problems are identified, corrective actions - such as training or assembly process improvements - can be taken.

The identification and analysis of production problems are essential if the goal of zero defects is to are realized. Studies have shown that operator and other familiar with manufacturing processes are adept at devising solutions once they are convinced that problems do indeed exist. Pareto and other charts that graphically illustrate problems are vital to any quality improvement effort.

Related Topics

Creating Collection Plans, page 5-11

Defining Collection Plan Elements, page 5-15

Associating Specification Types with Collection Plans, page 5-21

Defining Actions that Assign a Value: User-Defined Formulas, page 5-32

Associating Transactions with Collection Plans, page 5-46

Creating and Viewing Pareto Charts, page 14-9

Viewing Quality Results, page 14-32

Viewing Quality Results Details, page 14-35

Using the Quality Results ReportWriter, page 14-38

Performing Move Transactions, *Oracle Work in Process User's Guide*

Work in Process Business Examples, page 9-17

Quality Data Collection in Work in Process and Shop Floor Management, page 9-6

Work in Process and Shop Floor Management, page 9-2

Collection Plans for Managing Manufacturing Quality, page 9-4

Yield and Quality Cost Reporting

Yield reporting is a very common measure of quality and yield, the percent of defect-free units produced, can be calculated using Oracle Quality's user-defined formulas. As director of quality at a printed circuit board (PCB) manufacturing facility, you have decided to use yield reporting and quality cost reporting, another common tool in quality analysis, in your quality program.

An important quality characteristic of a printed circuit boards in your industry is that they be free from of 'open' and 'short' defects. An open is a defect that creates a break in the circuit; a short is a defect that changes the circuit pattern. Both of these defects can be detected by an electrical test performed by a board tester. Boards that are tested and free from defects are shipped to various computer manufacturers who populate them with components before assembling them into their products.

Boards that are found to be defective during test are normally routed to a Rework operation. Rework typically involves repairing circuits by either soldering for open defects and/or cutting out circuit lines for short defects. Rework repairs are expensive and, when they happen too often, can results in escalating manufacturing costs.

Sometimes boards with intermittent defects pass final electrical test and are shipped to customers. If defective boards are used in a customer's product, not only is your product quality compromised but the customer's is compromised as well. Defective products can erode customer confidence and result in losses for all parties involved. Obviously, board quality is therefore an important issue.

Currently your the plant is experiencing an increase in quality related problems. As director of quality it is your responsibility to discuss these problems with your customers and to outline to them a program for improving product quality.

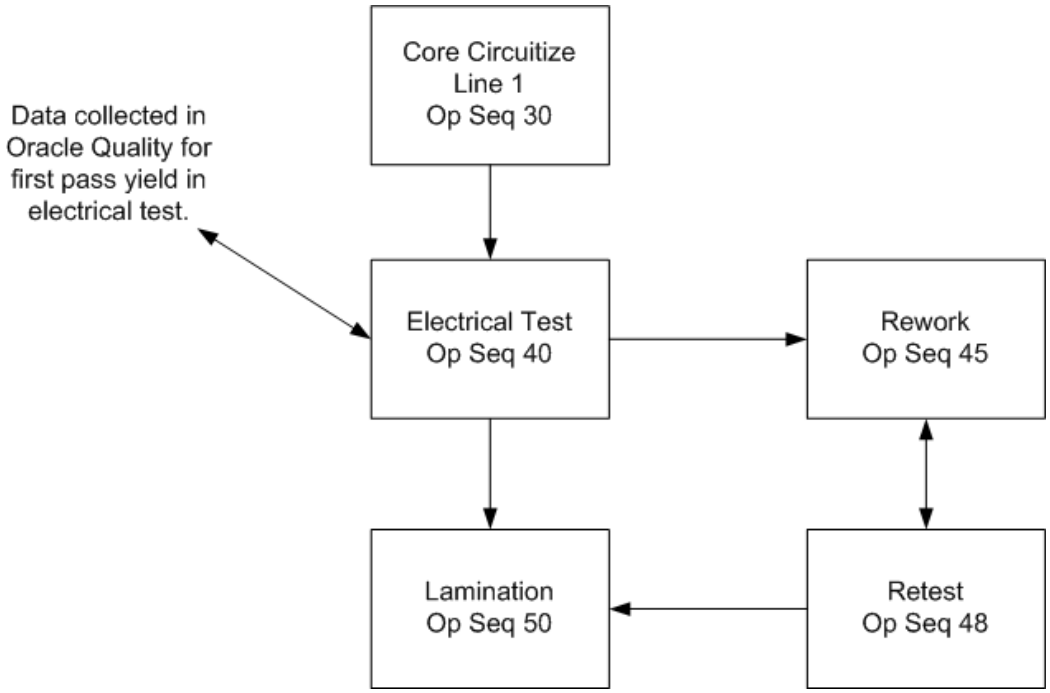
Your first step is to assemble a product quality team. The quality team's initial mission is to improve the 'circuitize' process. A typical measure of quality for this process is first pass yield which is the yield measured during the first pass, before any rework is done.

The plant produces PCBs in batches of 200 units and all units are put through electrical test. It is during test that defective units are detected. Units that fail electrical test are moved to a rework operation where rework is performed for certain defects, namely 'open' and 'short' defects. Units that are inspected and found to have either Handling or Machine damage are disposed off as scrap.

The team is also interested in another measure of process quality: determining the cost of quality. They realize that they can more readily grab management's attention by presenting an analysis of quality costs than an analysis of first pass yield. The components of quality costs, also known as internal failure costs, include rework process costs and the costs of material that go into rework and the costs of scrap. Internal failure costs are dependent on the following factors.

- The item type, whether it is core, multi-layer board etc.
- Defect code
- Defect occurrences

The following diagram illustrates the process operations discussed above:



Setup

Based upon this business example, you have determined that you need to create two collection plans. The first, First Pass Yield, should include the following collection elements.

- Job
- Item
- Product Type
- Quantity Inspected
- Quantity Passed
- First Pass Yield

The second collection plan, Quality Cost, should include the following collection elements:

- Job
- Item
- Quantity Inspected

- Quantity Rejected
- Defect Code
- Total Quality Cost

Cost Table

In this example, Total Quality Cost is calculated using information stored in a custom Oracle database table that is external to Oracle Quality and Oracle Manufacturing. This table should, at a minimum include Item, Defect Code, and Defect Unit Cost columns as it is assumed that for a given Item and Defect Code there is a specific Defect Unit Cost. Total Quality Cost is calculated by multiplying the defect cost per unit by the number of occurrences.

> **Important:** You could also create a collection plan to collect the data that is stored in Cost Table.

Normally, such a cost table would be maintained by the costing department with input from the quality department regarding the cost of defective units. Defect Unit Costs are either the cost of scrap, when items cannot be repaired, or the cost of rework, or both. Rework costs are normally calculated based on actual labor costs and average labor time required to repair an item. Scrap costs are normally based on the cost of scrapped material and the actual labor cost incurred in the disposal of the scrapped product.

In this example, the unit costs associated with *open* and *short* defects are considered rework costs since items with these defects are reworked. Defects that are caused by machine and handling damage cannot be repaired and result in scrap costs. It should be noted that an item with multiple 'open' and 'short' defects can be reworked many times but can only be scrapped once.

Collection Elements

Of the collection elements listed above (for both collection plans), six (First Pass Yield, Product Type, Quantity Inspected, Quantity Rejected, Quantity Passed, and Total Quality Costs) must be defined by the user. Item and Job are context elements and data for these collection elements is automatically collected as move transactions are entered. Defect Code is a predefined collection element. See: Defining Collection Elements, page 3-11.

Collection Element and Collection Plan Element Values

You can define lists of values for the predefined collection element, Defect Code, and the user-defined collection elements. For example, the Defect Code list of values must include, at a minimum, the following values: *open*, *short*, *handling damage*, *machine damage*. See: Defining Collection Element Values, page 3-18 and Defining Collection Plan Element Values, page 5-19.

Collection Plan

Next, create the First Pass Yield collection plan and add the above listed collection elements to it. All collection plan elements, except First Pass Yield, should be defined as mandatory.

Also create the Cost of Quality collection plan and add the above listed collection elements to it. All collection plan elements should be defined as displayed and mandatory.

Transactions

Next, associate the First Pass Yield collection plan with the WIP move transaction. The move transaction should be made mandatory to ensure that quality data is collected before the move transaction is saved.

Based upon the fact that data collection for First Pass Yield should be invoked each time a move into or out of the Test Operation is made, define the following collection triggers and conditions:

- From Operation Sequence Number <= 40 (Test Operation)
- To Operation Sequence Number > 40 (Test Operation)

Also associate the Cost of Quality collection plan with the WIP move transaction and define the following collection triggers and conditions.

- From Operation Sequence number = 45 (Rework Operation)
- To Operation Sequence number = 48 (Retest Operation)

Again, the move transaction should be made mandatory to ensure that quality data is collected before the move transaction is saved.

> **Important:** The "=" condition is used when defining collection triggers for the From Operation and To operation sequences because data should be collected when boards are moved from Rework to Retest. The "<=" conditions was not used for the Rework operation because rework is not mandatory. All PCBs do not require rework and many boards that pass through the Retest Operation are found to be defect free.

Quality Actions: Calculating First Pass Yield

To calculate First Pass Yield, select the First Pass Yield collection plan and define a user-defined formula per the following steps:

1. From the Collection Plans window, select the 'Quantity Passed' collection plan element then choose the Actions button. The Quality Actions window appears.

2. In the Action Rules region, selecting the 'is entered' condition.

   Note: The formula that calculates First Pass Yield should be triggered by an action rule defined for the Quantity Passed collection plan element. It is assumed that the user enters results values for Quantity Inspected, then Quantity Passed since these two values must be entered before the value of First Pass Yield can be calculated.

3. In the Actions this Rule Invokes region, select the *Assign a value* action.
4. In the Action Details region, choose the Action Details button. The Assign a Value window appears.
5. In the *Assign to* field, select the First Pass Yield collection plan element.
6. Select the option to assign a value using a formula (this is the default selection).
7. Enter the following formula:

   (&QP/&QI)*100

   where QP and QI are tokens for collection elements Quantity Passed and Quantity Inspected respectively

8. Choose the Variables button. The Output Variables window appears.
9. Enter the token name *QP* for the Quantity Passed collection plan element. Also enter the token name *QI* for the Quantity Inspected collection plan element.
10. Choose OK to exit both the Output Variables and Quality Actions windows.
11. Save your work.

When results are entered, First Pass Yield is automatically calculated using the values entered for Quantity Passed and Quantity Inspected.

Since a First Pass Yield of less than 70% indicates a severe quality problem, you can optionally define an action, such as sending a message to the quality team leader, that is triggered when this critical yield is reached.

Quality Actions: Calculating Total Cost of Quality

To calculate Total Cost of Quality, select the Cost of Quality collection plan then define a user-defined formula per the following:

1. From the Collection Plans window, select the *Defect Code* collection plan element then choose the Actions button. The Quality Actions window appears

2. In the Action Rules region, selecting the *is entered* condition.

3. In the Actions this Rule Invokes region, select the *Assign a value* action.

4. In the Action Details region, choose the Action Details button. The Assign a Value window appears.

5. In the *Assign to* field, select the Total Quality Cost collection plan element.

6. Select the option to define SQL text (formula is the default selection).

7. Enter the following formula:

   Select &QD*unit_cost

   From cost_table

   where defect_code = &DEF and item_type = &ITEM

   > **Note:** QD, DEF and ITEM are tokens names (see Step 9) and unit_cost, defect_code and item_type are names of columns in the cost_table.

8. Choose the Variables button. The Output Variables window appears.

9. Enter the token name *QD* for the Quantity Defective collection plan element, enter the token name *DEF* for the Defect Code collection plan element, and enter the token name *ITEM* for the Item collection plan element.

10. Choose OK to exit both the Output Variables and Quality Actions windows.

11. Save your work.

When results are entered for the Cost of Quality collection plan, the collection element values for Item and Defect Code are read from the external cost table and the Total Cost of Quality is automatically calculated per the above user-defined SQL script.

Results Analysis: First Pass Yield

After a few jobs are processed in the Circuitize operation and enough sample data has been collected, the quality team can choose to analyze data either after a given number of jobs have been processed or days have elapsed or after a member of the quality team is notified that the first pass yield has dropped below the threshold level of 70 percent.

The team can then view and chart quality results in a variety of ways. For example:

- By item
- By product type

- By job

Data can be viewed in View Quality Results then exported to a statistics program/package and checked for differences between data sample subgroups. Statistical tests can be performed to determine differences in product types. Histograms can be created for to check for First Pass Yields differences between jobs.

The patterns of defects within subgroups can be further analyzed using Pareto charts. In this example, two important subgroups in such an analysis would be the subgroups resulting from open and short defects. Differences in subgroups should always be investigated since they reveal process anomalies that, once corrected, contribute to the continuous improvement process.

Continuous Improvement

A preliminary data analysis soon reveals that the primary cause of low first pass yields is 'open' defects. The operators performing the rework validated this conclusion when they met with quality team members. Furthermore, these operators stated that open defects occurred more frequently in core items.

Based on results of the quality teams data analysis and real-time observations, you have decided to focus your efforts on investigating the causes of open defects. As part of this investigative process, you have called a meeting with the quality team and performed a cause-and-effect analysis using an Ishikawa diagram. From this brainstorming session a list of the factors that contribute to defects has been drawn. These factors include:

1. Conveyor speed
2. Concentration of Etch chemicals
3. Laminator pressure
4. Thickness of copper

Your next step is to narrow this list of factors down to just one key factor using statistical tools. First a factorial experiment, an industrial experiment that statistically analyzes the effects of various factors on product quality, is designed and executed. Then the data from this experiment is analyzed using a statistical analysis software package. Analysis reveals that conveyor speed is the major factor influencing first pass yields. Therefore the quality team recommends that conveyor speed be increased by about 20 percen%.

After increasing the conveyor speed there is a noticeable increase in the first pass yield. Thus the team has achieved their first small step towards process improvement. To close the loop in the continuous improvement cycle, an analysis of post-process improvement data is made and plans to further reduce defects are made. This cycle of improvements is consistent with the Deming cycle for continuous improvement.

The following diagram illustrates Deming's Circle For Continuous Improvement:

Results Analysis: Cost of Quality

Using the Descriptive Statistics window, select the Cost of Quality collection plan and generate descriptive statistics using the Total Quality Cost collection plan element as the statistical element. You can generate descriptive statistics based on all or selected subgroups of data. For example, using the search capabilities of the Show Results Where region, you can select and analyze results that are specific to an Item, a Job, or a specific Defect Code. The statistical sums of the various subgroups represent the cost of quality.

Related Topics

Creating Collection Plans, page 5-11

Defining Collection Plan Elements, page 5-15

Associating Transactions with Collection Plans, page 5-46

Defining Actions that Assign a Value: User-Defined Formulas, page 5-32

Associating Specification Types with Collection Plans, page 5-21

Viewing Quality Results, page 14-32

Viewing Descriptive Statistics, page 14-29

Creating and Viewing Pareto Charts, page 14-9

Creating and Viewing Histograms, page 14-13

Performing Move Transactions, *Oracle Work in Process User's Guide*

Work in Process Business Examples, page 9-17

Quality Data Collection in Work in Process and Shop Floor Management, page 9-6

Work in Process and Shop Floor Management, page 9-2

Collection Plans for Managing Manufacturing Quality, page 9-4

Process Capability Study

You are the general manager for a precision sheet metal job shop specializing in high quality fabricated parts to the computer industry. Customer orders are usually large and are built-to-order by job based on customer specifications. Each part produced has several critical dimensions that should meet customer specifications. In an effort to meet high quality standards, you have implemented a quality improvement program throughout the shop.

Process result for all critical dimensions are collected on the shop floor. For example, one critical dimension is the width of a rear flange that is formed on a press brake. The press brake operator measures the flange width immediately after forming the part. Measurements are randomly taken for four parts produced over the life of the job; for example, the first and last parts produced on the job as well as two from the middle might be measured. The deviation between the specified and actual flange width is calculated by subtracting the actual width from the nominal specification width stated by the specification. Although specifications can vary for each customer, the deviation specification for flange width is 2.0 +/- 0.04 units for all customers.

The immediate goal of your quality improvement program is to maintain a process capability index of at least 1.2. By agreement, process capability is to be estimated only after 40 measurements are recorded. The two Process Capability indices used most often in evaluating the relationship between the process and the customer are Cp and Cpk. They are described mathematically as follows:

Cp = (upper spec - lower spec) / 6 * Standard Deviation

Cpk = min {(Mean - Lower Spec) / 3 * Standard Deviation, (Upper Spec - Mean)} / 3 * Standard Deviation

---

Cp measures how dispersed the data is without regard to whether the data is evenly distributed around the midpoint between the Upper and Lower Specification Limits (usually referred to as the nominal value).

Cpk weights the dispersion of data about the nominal which usually lies as a midpoint between the Upper and Lower Specification Limits. The denominator in the Cpk index indicates how much room is needed on either side of the mean to contain most of the

distribution. The numerator measures the amount of room from the mean to the specification on the side where there is less room. For both Cp and Cpk, higher values are better and indicate higher process capability.

Cp depends only on the value of the standard deviation and is not affected by the relative position of the mean with respect to the nominal specification. On the other hand Cpk considers the value of the standard deviation and the mean. However, before estimating process capability the issue of statistical control should be addressed. Without statistical control, process capability estimations may prove erroneous due to the inherent instability of the process. Therefore, statistical control should be established before calculating process capability indices.

When a process is in statistical control - is operating with the minimum amount of variation possible (the variation due to common causes) - it can be expressed mathematically as follows:

Standard Deviation = s = Rbar / d_2

Using the above expression it is possible to calculate process capability using the Rbar value from a Xbar and R chart. Establishing statistical control for flange width became a priority action item. A quality team was set up in the sheet metal job shop. They established three objectives which are:

1. control the process
2. measure process capability
3. improve the process

Setup

Create collection elements and a collection plan as described below.

Collection Elements

Define the user-defined collection elements Flange Width, Deviation and Machine number in collection element setup.

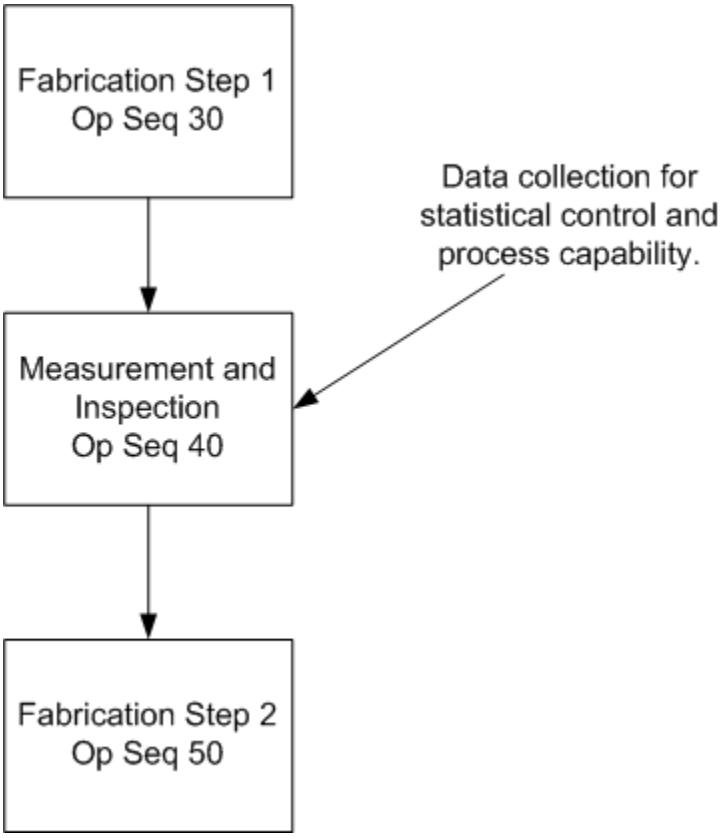
Collection Plan

Create a collection plan called "Rear Flange" with the following collection elements:

- Item
- Job Number
- Customer Name

- Specification
- Employee Name
- Machine Number
- Flange Width
- Deviation

The following diagram illustrates the process flow for the fabricated parts:



Associated Collection Transactions and Collection Plans

Choose the Transactions button in Collection Plan window. Select the move transaction and define the following collection triggers and conditions:

- From Operation Sequence Number <= (at most) 40
- To Operation Sequence Number > (greater than) 40
- Item = (equals) rear flange

Make results entry for the move transaction mandatory using the Mandatory check box.

Associated Specification Types and Collection Plans

Associate the collection plan with a customer specification using the Specification button in the Collection Plans window. This ensure that you are prompted to select a customer specification when the collection plan is invoked as you enter move transactions.

Profile Option for Specification

The team wants to populate the collection element Specification with the specification value for Flange Width for the customer entered during data entry. This can be achieved by setting the QA:Default Specification Target profile option to Yes. See: Profile Options, page 2-8.

When the default specification value is use, the correct specification for a given customer name is automatically defaulted. The next step is to calculate the deviation of the flange reading from the specification. We use user-defined formula to calculate the deviation. The steps are as follows:

1. From the Collection Plans window, select the 'Flange Width' collection plan element then choose the Actions button. The Quality Actions window appears
2. In the Action Rules region, select the 'is entered' condition.
3. In the Actions this Rule Invokes region, select the *Assign a value* action.
4. In the Action Details region, choose the Action Details button. The Assign a Value window appears.
5. Select the Deviation collection plan element to Assign the value To.
6. Select the option to assign a value using a formula (this is the default selection).
7. Enter the following formula:

   &FW - &SP

   where FW and SP are tokens for collection elements Flange Width and Specification respectively
8. Choose the Variables button. The Output Variables window appears.
9. Enter the token name 'FW' for the Flange Width collection plan element. Also enter the token name 'SP' for the Total Quantity collection plan element.
10. Choose OK to exit both the Output Variables and Quality Actions windows.
11. Save your work.

Specification

Every customer has a different set of specifications for Flange width. Therefore for every customer a flange width specification is created in Specification setup. There were seven different customers and therefore a similar number of specifications were created. For the sake of convenience the specifications were provided with their respective customer names.

The quality team is interested in examining the control chart after 40 readings have been recorded in the collection plan.

The collection plan is now ready for collecting data. Every job containing Rear Flange triggers a collection plan where the inspector after selecting the customer specification enters readings on flange width. The team uses the View Quality Results window to see whether at least 40 records have been entered in for the Rear Flange collection plan. After two days, they realize that the requisite number of readings is available for analysis.

The team devises a plan for control chart implementation. They realize that certain considerations are paramount in initiation of a control chart including rational sub-grouping, type of chart, frequency and the type of study being conducted. Their initial conclusion is that the chart should be an Xbar and R chart.

Control Chart Analysis

An examination of the control charts reveals that the process average is not under control. This implies that the average is affected by assignable causes on several occasions:

- Three separate points above Upper control limit: point 10,14,17
- Three separate points below Lower control limit: point 7, 11, 15

In addition, there is excessive short term variation represented by:

Standard Deviation = s = Rbar / d_2

---

as discussed previously. Even with an R chart in control, the manufacturing process for flange width is not constructed to meet the desired specifications.

As shown below, the pattern suggests that the process average crept upward then was probably adjusted downward. This adjustment cycle, which was repeated for a total of four cycles, is an observation worth investigating.

The inherent process capability was estimated as follows:

Standard Deviation = Rbar / d_2 = 0.057 / 2.06 = 0.027

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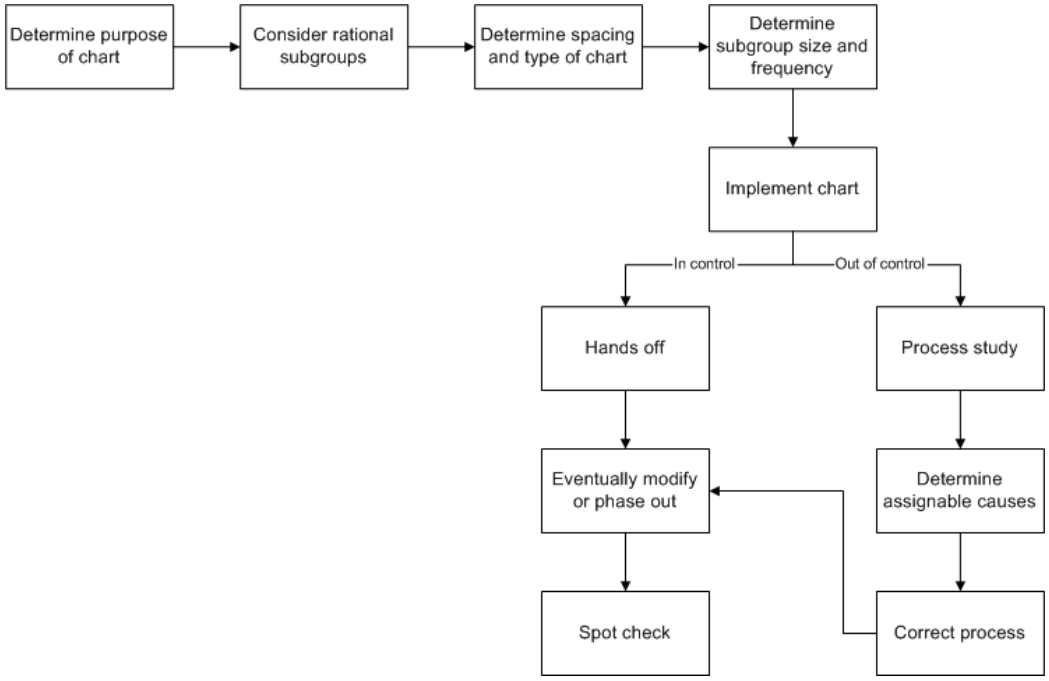
and 6 times the standard deviation, which is 0.162, and the specification width is 0.08 which means that the inherent variability is twice what is specified.

The following diagram illustrates the above text.



Two major types of investigations are needed to reduce the process variability to the stated specifications:

- What are the important assignable causes producing the shifting process average shown by the X bar control chart?

  Once identified, how can improvements be effected? The control chart can be continued and watched by production personnel to learn how to control this average.

- What are the possible ways of reducing the inherent variability of the process as measured by the standard deviation?

Standard Deviation = s = Rbar / d_2

Sometimes relationships between recorded adjustments made in the process and changes in the Range chart can be helpful. For example there is a suggestion that the process variation increased during point 14 to 18 on the R chart. This suggestion would usually be disregarded in routine production; however in a process capability study (which is an industrial investigation of the ability of a process to manufacture within specification) it would warrant investigation.

These two major investigations can lead to other major studies and with every study a greater understanding of process variation takes place. The quality team turns this knowledge into action items and implement them. These action items result in a predictable measure of statistical process control. With every improvement step a SPC chart is generated and process capability is remeasured and the continuous improvement cycle is repeated.

Related Topics

Creating Collection Plans, page 5-11

Defining Collection Plan Elements, page 5-15

Associating Specification Types with Collection Plans, page 5-21

Defining Actions that Assign a Value: User-Defined Formulas, page 5-32

Associating Transactions with Collection Plans, page 5-46

Creating and Viewing Control Charts, page 14-22

Viewing Quality Results, page 14-32

Performing Move Transactions, *Oracle Work in Process User's Guide*

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Work in Process and Shop Floor Management, page 9-2

Collection Plans for Managing Manufacturing Quality, page 9-4

Quality Data Collection in Project Contracts

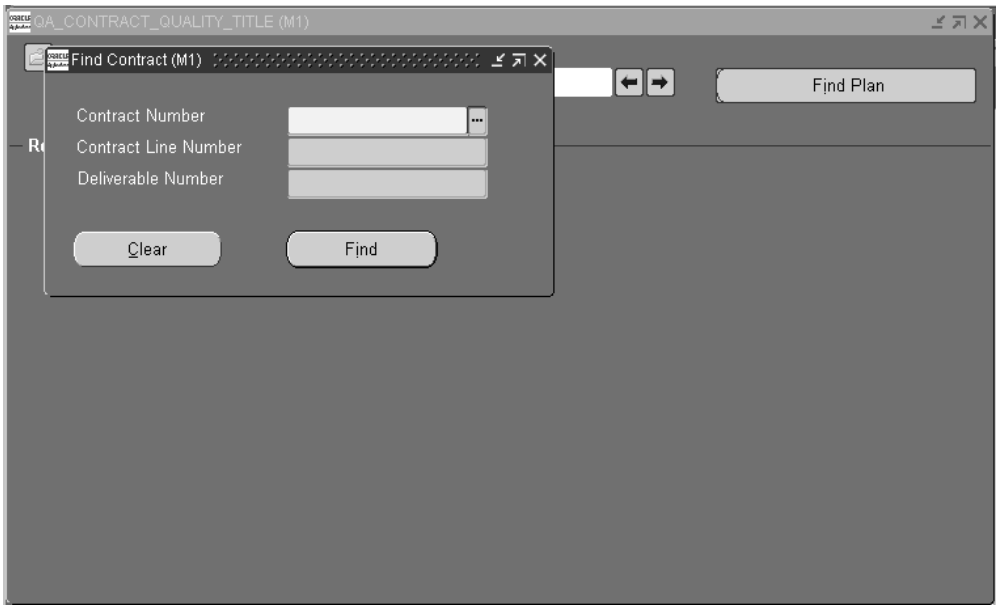
Oracle Project Contracts uses Quality's existing integration with other manufacturing transactions, including WIP Move, WIP Completion, WIP Work Order-less Completion, Purchasing Receiving, and Purchasing Inspections.You cannot set up a collection plan to collect data during a specific Project Contracts transaction. Instead, transactional quality data is collected by other manufacturing transactions using the Project Number and Task Number collection triggers. See: Collection Triggers, page 5-37.

You can use three collection elements specific to Oracle Project Contracts. You can collect data based on Contract Number, Contract Line Number, and Deliverable Number when entering quality results directly (not during a transaction).

To query project contract data:

You can query quality data for the three Project Contracts collection elements, which include Contract Number, Contract Line Number, and Deliverable Number.

1. Navigate to the Find Contract form.



2. Enter a Contract Number.
3. Optionally, enter the Contract Line Number to view specific information.
4. Optionally, enter the Deliverable Number of the contract. You can only enter data into this field if you entered a Contract Line Number.
5. Select Find to view quality information.

Related Topics

Quality Data Collection During Transactions, page 5-35

Associating Collections Plans with Transactions, page 5-46

Creating Collection Plans, page 5-11

Predefined Collection Elements, page 3-8

Defining Collection Elements, page 3-11

Defining Specifications, page 4-4

Quality Actions, page 3-19

Quality Collection Transactions, page 5-35

Entering Quality Results Directly, page 6-7

Viewing Quality Results, page 14-32

Project Manufacturing, page 9-3

Quality Data Collection in Oracle Process Manufacturing

Quality's integration with Oracle Process Manufacturing (OPM) enables users of Oracle Process Operations to log nonconformances whenever actual production results or actions differ from the OPM Master Batch Record. Log a nonconformance from the following windows by selecting Log Nonconformance from the Actions menu:

- Batch window
- Batch Details window
- Batch Steps window

Before you can collect quality data when working with OPM batches, you must first set up and associate one or more collection plans with the Process Nonconformance (Oracle Process Nonconformance) transaction. This activates the Actions menu's Log Nonconformance selection so that you can enter quality results. You can create your own collection plan, or you can use one of the following templates provided specifically for the Process Nonconformance transaction as well as nonconformances in general:

- Template Nonconformance Master Plan
- Template Nonconformance Master Plan(Nonconformance only)

See: Template Nonconformance Master Plan, *Oracle Quality Implementation Guide*.

Prerequisites

❒ Set up and define one or more collection plans specific to the transaction. See: Collection Plans for Managing Manufacturing Quality, page 9-4.

To enter process nonconformance data during batch production:

1. Select Log Nonconformance from the Actions menu.
2. Select a collection plan. The Enter Quality Results window opens.

   You can select any collection plan that is associated with the Process Nonconformance transaction and enabled.
3. In the Results region of the Enter Quality Results window, enter one or more records.

   When you define collection elements, the Prompts that you enter display as column headings. If data collection is not mandatory, you can select Cancel to skip quality data entry.
4. Save your work.

Related Topics

Nonconformance and Dispositions Solution, *Oracle Quality Implementation Guide*

Oracle Process Operations User's Guide

Oracle Process Manufacturing (OPM), page 9-3

Collection Plans for Managing Manufacturing Quality, page 9-4

10

Manage Order Fulfillment Quality

This chapter explains how you can provide your customers with Internet access to Quality results.

This chapter covers the following topics:

- Viewing Quality Results Using the Order Information Portal

Viewing Quality Results Using the Order Information Portal

With Oracle Order Management installed, you can provide your customers with access to Quality results data collected for items on sales orders, which they can view on the Order Information Portal web pages.

Your customers can view the quality results you enter by sales order using the Order Information Portal. See: Viewing Sales Order Details, *Oracle Order Management User's Guide* and Process Item Information for Sales Orders, *Oracle Order Management User's Guide*.

The customer logs on, selects the appropriate web page, and queries the system for their sales orders. If a collection plan has been associated with a sales order, a hypertext link titled View Quality Plan is visible in the General region of the sales order.

To access Order Information Portal, all your customers need is a browser, a user ID for the application, and the Internet address or URL (Uniform Resource Locator). The user ID determines which application they can log on to and which menus are available. See: Setup within the Order Information Portal chapter, *Oracle Order Management Implementation Guide*.

11

Manage Customer Service Quality

This chapter describes how to set up quality collection plans for use when managing customer service quality.

This chapter covers the following topics:

- Customer Service Quality Collection Points
- Quality Data Collection in Oracle TeleService
- Oracle TeleService Business Example
- Quality Data Collection in Oracle Depot Repair
- Oracle Depot Repair Business Example

Customer Service Quality Collection Points

You can collect quality data at two points in the customer service business process:

- Service Requests window in Oracle TeleService. Collect quality data when saving or updating a service request.
- Repair Orders window in Oracle Depot Repair. Collect quality data when closing a repair task.

The Service Request module in Oracle TeleService enables customer support personnel to create and manage customer or employee requests for service from the time the customer contacts the organization or logs a service request on the Web until the problem is resolved. As service requests are logged, collection plans in Oracle Quality can capture data related to inspection and test results, nonconformances, corrective action requests, etc. See: About Oracle TeleService, *Oracle TeleService User Guide*.

The depot repair process includes the return of broken and serviceable items, their diagnoses and repair job estimates, customer approvals and repairs management, and subsequent return of items to customers. As repair order tasks are closed, collection plans in Oracle Quality can capture data for all repair order tasks or for specific types of repair order tasks, such as repair order tasks with a repair type of refurbishment. See:

What is Oracle Depot Repair?, *Oracle Depot Repair User Guide*.

Collection Plans for Managing Customer Service Quality

To be able to collect quality results during a transaction, you must set up and define one or more collection plans specific to the transaction. For service requests, this transaction is named Service Requests (Service). For depot repair tasks, this transaction is named Depot Repair Task Transaction (Depot Repair). See: Quality Data Collection During Transactions, page 5-35 and Associating Collection Plans with Transactions, page 5-46. You can create your own collection plan, or you can use the template provided specifically for each transaction to create a plan. See: Collection Transaction Templates, page 5-9. While specifying the transaction, you can also define one or more unique collection triggers for the plan, which will enable you to specify the conditions under which quality data is collected during the transaction.

As with other collection plans, you can make quality data entry mandatory by setting the Mandatory option. If quality collection is mandatory, the user must save at least one quality data record before saving the parent transaction. If the user attempts to complete the transaction without entering data on a mandatory collection plan, Oracle Quality raises a warning. See: Mandatory Data Collection, page 6-6.

You can define a collection plan to run in the background if you want to collect data without user intervention. Background data collection is hidden from the user and occurs automatically, if valid background collection plans are found when the transaction is saved (a "valid" background collection plan is a plan that is associated with the transaction and set to background data collection). See: Background Data Collection, page 6-6.

You can also add quality actions to collection plans, then define the rules that determine when these actions are to be invoked. See: Quality Actions, page 3-19. Types of actions include message actions, alert actions, and actions that determine a value based on a user-defined formula. See: Message Actions, page 3-20, Alert Actions, page 3-21, and User-Defined Actions, page 3-21.

Related Topics

Quality Data Collection in Oracle TeleService, page 11-2

Oracle TeleService Business Example, page 11-5

Quality Data Collection in Oracle Depot Repair, page 11-7

Oracle Depot Repair Business Example, page 11-9

Quality Data Collection in Oracle TeleService

If Oracle Quality is installed and at least one collection plan that is associated with the Service Requests (Service) transaction exists, the Enter Quality Results Tools menu option and the Quality button are enabled and you can enter quality results from the

Service Requests window.

> **Warning:** The Tools menu option is enabled even if, based upon the transaction information entered, the collection trigger conditions for this collection plan are not met.

In fact, based upon the service request information entered, quality results entry may be required. See: Mandatory Data Collection, page 6-6.

Background data collection occurs automatically if valid background collection plans are found when you save service requests. The Enter Quality Results window is not displayed during background collection. See: Background Data Collection, page 6-6.

> **Note:** The Service: Inventory Validation Organization profile option specifies the inventory organization for the items against which service requests can be created. Oracle Quality also uses this organization, but only if the organization is defined as an Item Master organization. You can only enter quality results in Item Master organizations (see: Implementing the Item Master Organization, *Oracle Inventory User's Guide*).
>
> The organization code represents an operating unit and is more encompassing than what a manufacturing organization covers, so Oracle Quality uses the operating unit from Service to locate collection plans for recording quality results. If the profile is not set, Oracle Quality retrieves the organization from Manufacturing_Org_Id in the CS_SYSTEM_PARAMETERS table.

You can update and delete quality results as you enter and view service request information.

Prerequisites

- ❒ Enter all service request information, but do not save your work. See: Creating a Service Request, *Oracle TeleService User Guide*.

To enter quality results as you enter service requests:

1. Before saving your work, select Enter Quality Results from the Tools menu or choose the Quality button. The Find Collection Plans window appears.

   > **Important:** If you attempt to save a service request and the system finds valid collection plans that are defined as mandatory, you must enter quality results before you can save the transaction. Valid collection plans in this case are those that are associated with

the Service Request collection transaction and for which all collection triggers are evaluated as true.

2. Select a collection plan. The Enter Quality Results window appears.

   You can select any collection plan that is enabled, that is associated with the service request collection transaction, *and* for which the transaction's triggers evaluate to TRUE. If the triggers evaluate to FALSE for a particular collection plan, you will not be able to access or select that plan. Of those collection plans for which the triggers evaluate to TRUE, the first one (in alphanumeric order) will default directly into the Enter Quality Results Window.

To find and assign specifications:

See: Finding Specifications During Transactions, page 6-19.

To enter quality results:

1. In the Results region of the Enter Quality Results window, enter one or more results records. See: Entering Quality Results Directly, page 6-7.

   If the collection plan selected requires mandatory data collection, you must first enter quality results and then save the service request. You cannot save the service request until you do so.

   Depending on the collection plan and its elements, you can use several mechanisms to speed data entry.

   Default value: Default values, if defined, are automatically displayed. They can be overridden. See: Default Specification Limit Values, page 6-3.

   Lists of Values: You can choose results values from a list of values if defined. See: Defining Collection Plan Element Values, page 5-19.

   Duplication: You can duplicate fields and records. Duplicated records and fields can be changed as required. See: Controlling Records in a Window, *Oracle E-Business Suite User's Guide*.

2. Save your work.

To view collection plan or specification attachments while entering result values:

See: Viewing Attachments Associated with Quality Results, page 6-12.

Related Topics

Customer Service Quality Collection Points, page 11-1

Oracle TeleService Business Example

The following example describes how you might use Oracle Quality with Oracle TeleService to analyze service request data. In addition to analyzing customer service behavior, your analysis of service request data can also yield valuable information that you can use to improve both the quality of products and of customer service.

Photocopier Service Requests

As the Service Manager for a manufacturer of photocopiers, you are seeking ways to improve the quality of your product, while at the same time, reduce expenses and manage costs.

Your call center receives telephone calls from customers calling to report a problem with a particular product or to seek information regarding its use. A service request is then made to repair the product. The record of such a service request may include the following information:

- Customer Name
- Product affected
- Problem reported by customer
- Resolution to the problem as reported by the service person

Setup

Oracle Quality enables you to set up collection plans to collect the following types of information:

- inspection or test results on items received for service
- complaints
- results from complaint investigations
- corrective and preventative actions (CAPA) to resolve complaints
- corrective action requests (CAR) based on complaints
- records of nonconformances

In this example, we will record complaint information in Oracle Quality automatically, using the background data collection feature.

Collection Elements

Include the following collection elements (at a minimum) in your complaint collection plan. See: Collection Elements, page 3-7.

- Customer
- Incident Type
- Item
- Item Category
- Problem Code
- Product
- Urgency
- Severity
- Request Date

Specifications

No specification is required.

Collection Plan

Next, create a collection plan called Service Request Complaints containing the collection elements listed above.

> **Note:** Copying the collection elements from the template collection plan called Template Service Request automatically copies many of the needed collection elements into your collection plan.

Transactions

Next, associate the Service Request transaction with your collection plan. Enable this transaction and check the Background box. See: Associating Transactions with Collection Plans, page 5-46

Triggers

Set the Incident Type trigger equal to Complaint. This ensures that, each time a service request with a Complaint Incident Type is created, quality results are entered into the Service Request Complaints collection plan.

Results Analysis

You can construct a pareto chart to check which problems make up the majority of the complaints. You can also use a pareto chart to find other information, such as the five models which account for the most service requests. Or, to reveal other information, you can construct a trend chart of problem codes over time, to see which parts' replacement rates are abnormally high. See: Quality Results Analysis, page 14-2.

Related Topics

Customer Service Quality Collection Points, page 11-1

Quality Data Collection in Oracle TeleService, page 11-2

Quality Data Collection in Oracle Depot Repair

If Oracle Quality is installed and at least one collection plan that is associated with the Depot Repair Task Transaction (Depot Repair) exists, the Enter Quality Results Tools menu option and the Quality button are enabled when a depot repair task is selected in the Depot Repair window, Repair Tasks tab.

> **Note:** If the task meets conditions for data entry into at least one collection plan, then the Applicable QA Plans field value equals Yes. The Tools menu option is enabled even if, based upon the transaction information entered, the collection trigger conditions for a collection plan are not met.

In fact, based upon the depot repair task information entered, quality results entry may be required before you change the depot repair task Status to Closed. See: Mandatory Data Collection, page 6-6.

Background data collection occurs automatically if valid background collection plans are found when you change the depot repair task Status to Closed. The Enter Quality Results window is not displayed during background collection. See: Background Data Collection, page 6-6. You can manually enter data into a background collection plan before a depot repair task Status equals Closed, though. The background collection plan will not collect data again when you change the task Status to Closed if you collected data previously.

You can update and delete quality results as you enter and view depot repair tasks.

Prerequisites

- ❒ Enter all depot repair task information, but do not change the task Status to Closed. See: Create and Process Repair Tasks, *Oracle Depot Repair User Guide*.

To enter quality results as you enter depot repair tasks:

1. Before saving your work, select Enter Quality Results from the Tools menu or choose the Quality button. The Find Collection Plans window appears.

   Important: If you attempt to save a depot repair task with a Status equal to Closed and the system finds valid collection plans that are defined as mandatory, you must enter quality results before you can save the transaction. Valid collection plans in this case are those that are associated with the Service Request collection transaction and for which all collection triggers are evaluated as true.

2. Select a collection plan. The Enter Quality Results window appears.

   You can select any collection plan that is enabled, that is associated with the depot repair task transaction, *and* for which the transaction's triggers evaluate to TRUE. If the triggers evaluate to FALSE for a particular collection plan, you will not be able to access or select that plan. Of those collection plans for which the triggers evaluate to TRUE, the first one (in alphanumeric order) will default directly into the Enter Quality Results Window.

To find and assign specifications:

See: Finding Specifications During Transactions, page 6-19.

To enter quality results:

1. In the Results region of the Enter Quality Results window, enter one or more results records. See: Entering Quality Results Directly, page 6-7.

   If the collection plan selected requires mandatory data collection, you must first enter quality results and then close the depot repair task. You cannot close the depot repair task until you do so.

   Depending on the collection plan and its elements, you can use several mechanisms to speed data entry.

   Default value: Default values, if defined, are automatically displayed. They can be overridden. See: Default Specification Limit Values, page 6-3.

   Lists of Values: You can choose results values from a list of values if defined. See: Defining Collection Plan Element Values, page 5-19.

   Duplication: You can duplicate fields and records. Duplicated records and fields can be changed as required. See: Controlling Records in a Window, *Oracle Applications User's Guide*.

2. Save your work.

To view collection plan or specification attachments while entering result values:

See: Viewing Attachments Associated with Quality Results, page 6-12.

Related Topics

Customer Service Quality Collection Points, page 11-1

Oracle Depot Repair Business Example, page 11-9

Oracle Depot Repair Business Example

The following example describes how you might use Oracle Quality with Oracle Depot Repair to analyze depot repair task data. In addition to analyzing inspection and test results, your analysis of depot repair task data can also yield valuable information that you can use to improve both the quality of products and of customer service.

Refurbishing Appliances

As the Service Manager for an appliance manufacturer, you are seeking ways to improve the quality of your products, while at the same time, reduce expenses and manage costs.

Your service department receives appliances returned under warranty. If possible, you refurbish the appliances, which are then resold at a discounted price.

Whenever an appliance is returned under warranty, it undergoes an inspection to determine the cause of the appliance failure. If the failure can be corrected through refurbishment, then a depot repair task is entered with a Repair Type equal to Refurbishment. You want to collect detailed quality data on appliances undergoing refurbishment to help improve the quality of the appliances.

Setup

Oracle Quality enables you to set up collection plans to collect the following types of information:

- inspection or test results on items received for service
- nonconformance information collected when you receive the item
- corrective action requests (CAR) for nonconformances

In this example, we will record receiving inspection results in Oracle Quality whenever an appliance needs refurbishing.

Collection Elements

Include the following collection elements (at a minimum) in your refurbishment collection plan. See: Collection Elements, page 3-7.

- Repair Order Number
- Repair Type
- Service Request
- Service Task Number
- Service Task Type
- Product
- Estimated Effort
- Estimated Effort UOM
- Actual Effort
- Actual Effort UOM

Specifications

No specification is required.

Collection Plan

Next, create a collection plan called Refurbishments containing the collection elements listed above.

> **Note:** Copying the collection elements from the template collection plan called Template Depot Repair Task Plan automatically copies many of the needed collection elements into your collection plan.

Transactions

Next, associate the Depot Repair Task Transaction (Depot Repair) with your collection plan. Enable this transaction and make this plan mandatory. See: Associating Transactions with Collection Plans, page 5-46

Triggers

Set the Repair Type trigger equal to Refurbishment. This ensures that, each time a service request with a Refurbishment Repair Type is created, you must enter quality results before closing the depot repair task.

Results Analysis

You can construct a pareto chart to check which items you refurbish the most. You can also construct a trend chart of problem codes over time, to see which parts' replacement rates are abnormally high. See: Quality Results Analysis, page 14-2.

Related Topics

Customer Service Quality Collection Points, page 11-1

Quality Data Collection in Oracle Depot Repair, page 11-7

12

Manage Material Quality

This chapter describes how to set up quality collection plans for use when managing material quality.

This chapter covers the following topics:

- Integration With Oracle Mobile Warehouse Management

Integration With Oracle Mobile Warehouse Management

Oracle Mobile Warehouse Management's License Plate Number (LPN) Inspection integrates with Oracle Quality. (The LPN transaction that integrates with Oracle Quality is the Receipts Inspection transaction. Other LPN transactions like flow completion, and workorderless completion transactions, are not supported.) First scan the LPN number and enter the Item number, Revision, and indicate a Quantity to be inspected. The system takes you to the Inspection form. This form is dynamically determined at run-time. You will either see the default WMS Inspection screen, or the Quality Inspection screen.

Oracle Quality is triggered only if the following conditions are met:

- Oracle Quality application is installed
- The profile QA:PO Inspection is set to Oracle Quality
- There is at least one applicable collection plan

Sampling would be applicable for serial controlled items. However, when the inspection mode is not serial range inspection, the Inspection Quantity from the parent form to the child page would always be 1 and the sample size also would be 1. Hence, it would be necessary that all serial controlled items in the LPN would be inspected. For serial controlled items, wherein the parent inspection mode is not serial range inspection, the sampling though applicable would not be of any use as every item quantity needs to be individually inspected till the entire LPN Quantity is inspected.

If Oracle Quality is triggered, you can enter multiple records of quality-related data,

such as an Inspection Result of Accept or Reject. The inspection results are then passed back to the Inspection form. You can also perform receiving and inspection functions on multiple platforms.

> **Note:** Mobile Quality result entry also supports User Mask support for Datetime collection elements.

Here are two example scenarios:

Example 1: Mobile Receipt, Desktop Inspection, then Mobile Return to Inventory

Enter the receipt into the mobile device by entering the purchase order number, LPN, receiving subinventory, locator, quantity, receipt number,, packing slip, and airbill numbers.

At a desktop computer, find your receipt in the Receiving Transactions window. Select the Inspect button. The collection plan opens and contains the subinventory, locator, LPN, and date and time of the receipt. You can transfer some of the quantity to another LPN if needed due to rejection or another reason within the collection plan.

Use a mobile device to put away the inspected goods. Enter the LPN. The system requests that you reenter the subinventory and locator to confirm the location of the goods.

Example 2: Desktop Receipt, Mobile Inspection, then Desktop Return to Inventory

At the desktop computer, create a new receipt in Oracle Purchasing. Using the Packing Workbench window, pack the receipt into an LPN. The system generates a LPN.

Use a mobile device to enter inspection results. Use the LPN to identify the receipt undergoing inspection, then enter the data into the collection plan.

Using the desktop computer, navigate to the Receiving Transactions window. Enter the location where you put away the inspected goods.

Collection Elements

You are enabled to collect data through Direct Data Entry using seeded Collection Elements. In case of mixed mode transaction (i.e. receipt through desktop and put-away through mobile and vice versa) for WMS enabled organizations, the desktop inspection collection plan must have the collection element 'License Plate Number' included. Use the following collection elements:

- License Plate Number
- Inspection Quantity
- Lot Inspection Quantity

- Serial Inspection Quantity

Quality Actions

You can launch actions to set lot status and serial status to any user defined value. You can use the Quality Collection Plan or Quality Collection Element forms to define an action: For example, when the inspection result is Rejected, set the status of Lot A to Hold.

There are two pre-defined actions:

- Assign A Lot Status
- Assign A Serial Status

Related Topics

Overview of Collection Elements, page 3-1

Predefined Collection Elements, page 3-8

Entering Quality Results Directly, page 6-7

Profile Options, page 2-8

Actions, page 3-19

Generating License Plate Numbers, *Oracle Warehouse Management User's Guide*

13

Manage Regulatory Compliance

This chapter discusses the acquisition of electronic signatures (e-signatures) on electronic records (e-records) in Oracle Quality. E-records and e-signatures enable you to comply with the 21 CFR Part 11 regulations.

This chapter covers the following topics:

- 21 CFR Part 11 Overview
- E-records and E-signatures for Oracle Quality
- Viewing Oracle E-Records and E-Signatures

21 CFR Part 11 Overview

The Food and Drug Administration (FDA) protects the public health by regulating the food and drug industries. In 1997, the FDA issued new regulations for quality systems using computerized software in the FDA Code of Federal Regulations (CFR) Title 21 Part 11, otherwise known as 21 CFR Part 11. The regulations strive to assure that computerized records are safe, secure, and as accurate as a paper based system.

According to 21 CFR Part 11, the software application's role in the data management process is to guarantee and substantiate that the manufactured product data is electronically captured, manipulated, extracted, and coded during the manufacturing of the product. All subject data and definitional objects (metadata) must have a complete audit trail.

In general, 21 CFR Part 11 describes the requirements that must be met when using electronic records (e-records) and electronic signatures (e-signatures), but does not describe where they are required. The FDA left the definition of where to use electronic records and which signatures to apply as electronic signatures to the discretion of the medical device manufacturers who use software applications as part of their quality management system. The predicate rule used by the medical device manufacturers is FDA 21 CFR Part 820. Oracle Discrete Manufacturing Applications enable electronic records and signatures for certain business events, as well as give users ways to choose which business events must meet 21 CFR Part 11 requirements, by using the Oracle

E-Records product. Refer to the *Oracle Manufacturing Implementing Oracle E-Records in Discrete Manufacturing Guide* and the *Oracle E-Records Implementation Guide* for information on how to tailor Oracle E-Records to meet your needs.

Depending on the type of business event, an electronic signature is either online or deferred. An online signature requires that you enter a valid signature before saving the event or transaction. A deferred signature enables you to save the event in a Pending Approval state before obtaining a final signature. Many times a deferred signature requires a workflow approval, so the event is saved before full approval is received back from the workflow process.

Certain business events also include any attachment made to the business event object in the e-record. For example, if a drawing depicting an engineering change is attached to an engineering change order, you can review the drawing in the e-record for the engineering change order.

The e-records and e-signatures (ERES) framework is a central tool designed to achieve 21 CFR Part 11 compliance for the necessary Oracle Applications business events. The ERES framework uses common Oracle Applications components such as Oracle Workflow business events, the XML Gateway, and others.

In order to enable electronic records and signatures for Oracle Quality, you must follow the steps listed in Implementing E-Records, *Oracle E-Records Implementation Guide*. Otherwise, no e-records or e-signatures are required.

Related Topics

E-records and E-signatures for Oracle Quality, page 13-2

Viewing Oracle E-Records and E-Signatures, page 13-9

E-records and E-signatures for Oracle Quality

The following table lists the Oracle Quality events seeded in Oracle E-Records.

Event	Online or Deferred E-signature	E-Record Includes Attachment
Collection Element Creation	Online*	No
Collection Element Update	Online*	No
Collection Plan Creation	Online	Yes
Collection Plan Update	Online	Yes

Event	Online or Deferred E-signature	E-Record Includes Attachment
Specification Creation	Deferred	Yes
Specification Organization Assignment	Online	No
Specification Update	Online	Yes
Quality Result Creation	Online**	Yes
Quality Result Update	Online**	Yes
Nonconformance Creation	Online*	Yes
Nonconformance Update	Online*	Yes
Nonconformance Header Approval	Deferred	Yes
Nonconformance Detail Approval	Deferred	Yes
Disposition Creation	Online*	Yes
Disposition Update	Online*	Yes
Disposition Header Approval	Deferred	Yes
Disposition Detail Approval	Deferred	Yes
Corrective Action Creation	Online*	Yes
Corrective Action Update	Online*	Yes
Corrective Action Approval	Deferred	Yes
Corrective Action Review Approval	Deferred	Yes
Corrective Action Implementation Approval	Deferred	Yes

* By default, the online e-signatures marked with an asterisk (*) are disabled. To enable e-signatures for these events, change the ESIG_REQUIRED configuration variable default value to Y. See: Setting Up the Configuration Variables, *Oracle E-Records Implementation Guide* for information on changing the default value so e-signatures are required.

** You can enable deferred e-signatures when entering or updating quality results directly and when entering or updating quality results for the following three transactions. See: Creating Collection Plans, page 5-11.

- Depot Repair Task Transaction (Depot Repair)
- Process Nonconformance (Oracle Process Manufacturing)

  Note: This transaction launches either the Nonconformance Creation, Nonconformance Update, or Nonconformance Header Approval event, as appropriate, in addition to either the Quality Result Creation or Quality Result Update event.

- Service Requests (Oracle Service)

Collection Element Creation or Update

The Collection Elements window starts the e-record capturing process whenever a collection element is created or changed (See: Defining Collection Elements, page 3-11). Select eRecord Details from the Tools menu to view the e-record associated with the collection element.

Collection Plan Creation or Update

The Collection Plans window starts the e-record and e-signature capturing process whenever a collection plan is created or changed (See: Creating Collection Plans, page 5-11). You can sign the e-signature to save the new or changed plan. Select eRecord Details from the Tools menu to view the e-record associated with the collection plan.

Important: You can also create collection plans using the Copy Collection Plans process (See: Setup Steps, *Oracle Quality Implementation Guide*, Step 2 - Copy from Template Collection Plans). These instructions explain how to copy a seeded template collection plan, but are valid for user-defined collection plans as well. When using this method to create collection plans, no e-record or e-signature is captured. To capture the e-record and e-signature, you must first create the plan using the Copy Collection Plans process. When you enter the new plan name, you must also check the Create Plans as Disabled box. This box only appears when the profile option value for EDR:

E-Records and E-Signatures is Yes. Once you have created the new plan, open it in the Collection Plans window, change the date range in the Effective fields to valid dates, then save the plan. This triggers the collection of an e-record and e-signature.

Specification Creation

The e-record and e-signature capturing process starts after a specification is created and you select Request eSignature Approval from the Tools menu in the Specifications window (See: Defining Specifications, page 4-4). The specification has a status of Draft until you request e-signature approval. You can enter your signature online, while the event is happening in the window or in deferred mode. Any users responsible for additional required signatures receive workflow notifications informing them that their e-signature must be entered before the specification is approved for use. The workflow notification includes links to the e-record. You can view the status of the specification at any time. The Status field in the Specifications window shows whether the specification is draft, pending approval, approved for use, rejected, or no approval required. Select eRecord Details from the Tools menu to view the e-record associated with the specification.

Specification Organization Assignment

The Organization Assignment window starts the e-record and e-signature capturing process whenever a specification is assigned to or removed from an organization (See: To create new specifications linked to an existing specification, page 4-7). Select eRecord Details from the Tools menu to view the e-record associated with the organization assignment.

Specification Update

The Specifications window starts the e-record and e-signature capturing process whenever a specification is changed (See: Defining Specifications, page 4-4). You can sign the e-signature to save the updated specification. Select eRecord Details from the Tools menu to view the e-record associated with the specification.

Quality Result Creation or Update

The Enter Quality Results window starts the e-record and e-signature capturing process whenever quality results are entered directly or changed (See: Entering Quality Results Directly, page 6-7 and Updating and Deleting Quality Results, page 6-14). You can sign the e-signature to save the new or changed quality results. When you enter quality results during another transaction (See: Quality Data Collection During Transactions, page 5-35), then the e-record and e-signature capturing process rules for the main transaction take precedence in most cases. For example, if you enter quality results

while performing a WIP Move transaction, the e-record for the WIP Move transaction contains the WIP Move transaction information and the quality results. The exceptions where the quality data is stored in a separate e-record from the transaction e-record include the following transactions:

- Depot Repair Task Transaction (Depot Repair)
- Service Requests (Oracle Service)

When entering quality results directly, you can choose whether to create an e-record and e-signature for each quality result row entered or one e-record and e-signature for all rows entered per collection. You make this choice in the Record Option field when you enter or update a collection plan (See: Creating Collection Plans, page 5-11). Capturing e-records and e-signatures by row is recommended for most cases and required for nonconformance and corrective action collection plans. Consider capturing an e-record and e-signature per collection when your plan meets the following criteria:

- The quality results for the plan are entered directly
- The approval rules in Oracle Approvals Management are the same for all collection plan rows (See: Setting Up Oracle Approvals Management, *Oracle E-Records Implementation Guide*).
- You want all rows contained within one e-record.

E-records and e-signatures captured when you update quality results are always captured by row.

> **Caution:** Always update and save quality results one row at a time to ensure accurate e-records. This avoids the possibility of problems occurring when you update multiple rows. For example, if you approve some e-record rows and reject others, then save all of them, it is possible for the e-records of rejected results to be saved (since a partial rejection is not possible for online signatures). Therefore, it is strongly recommended that you update and save quality results one row at a time for e-record purposes.
>
> If you accidentally update multiple rows, then save, but must reject one or more of the quality result e-records, then use the Cancel button on the e-signature page to terminate the process, instead of closing the browser page. This properly rolls back the e-signature process.

When you enter quality results for Parent-Child collection plans, the Record Option field setting in the parent plan takes precedence over the setting in the child plan (See: Parent-Child Collection Plans, page 5-51). For example, a parent plan requires capturing e-records and e-signatures by collection and its child plan requires capturing e-records and e-signatures by row. If you enter quality results into the parent plan, then only one e-record and e-signature is captured for all rows entered and the e-record contains all

child plan results pertaining to the parent plan. If you enter quality results directly into the child plan, then e-records and e-signatures are captured for each row entered into the child plan (and no e-record or e-signature is collected for the parent plan). If you update a child row that is related to a parent row or other child rows, all of the related rows are captured by the e-record generated as well.

Nonconformance and Corrective Action Events

You can only generate e-records and e-signatures for nonconformance, disposition, and corrective action events when two conditions exist:

- You copied the collection plans from Oracle seeded templates (or from modified copies of Oracle seeded templates) using the Copy Collection Plans process. (See: Setup Steps, *Oracle Quality Implementation Guide*, Step 2 - Copy from Template Collection Plans and the previous discussion in this section about the Copy Collection Plans process underneath the Collection Plan Creation or Update event description).

- You enter quality results into a nonconformance, disposition, or corrective action collection plan using the Oracle forms user interface. Once the quality results are entered, you can view quality results using either the forms user interface or the Quality Workbench user interface (See: Overview of the Quality Workbench, page 7-1).

  Copied Collection Plans Example

  Oracle provides the nonconformance template (for example, the Template Nonconformance Master Plan). A user copies this template and modifies the copy. This copy is maintained and used as a master plan by the user. A copy of the user's master plan is made for each organization within the user's company. Each of these copies generates the appropriate e-record and e-signature for nonconformance events.

Nonconformance Creation or Update

The Enter Quality Results and the Update Quality Results windows capture an e-record when you enter or update a nonconformance result in a copy of a nonconformance template.

Nonconformance Header Approval and Detail Approval

The Enter Quality Results and the Update Quality Results windows can require an approval for a nonconformance if you enter **Yes** in the eSignature Required collection element field (See: Logging the Nonconformance, *Oracle Quality Implementation Guide*) in a copy of either the Nonconformance Master or the Template Nonconformance Detail collection plan. The Request eSignature and eSignature Status collection elements are disabled in the nonconformance templates, so you must enable them in your copy of the template if you require a nonconformance approval. You can enter your signature online, while the event is happening in the window or in deferred mode. Any users

responsible for additional required signatures receive workflow notifications informing them that their e-signature must be entered. You can view the status of the nonconformance result at any time. The eSignature Status collection element, viewable using the Workbench - View Nonconformance page, shows whether the nonconformance result is pending, approved, rejected, or no approval required.

Disposition Creation or Update

The Enter Quality Results and the Update Quality Results windows capture an e-record when you enter or update a disposition result in a copy of a disposition collection plan template. Updates to dispositions include action assignments, implementing, correcting and resubmitting, and closing dispositions.

Disposition Header Approval or Detail Approval

The Enter Quality Results and the Update Quality Results windows can require an approval for a disposition if you enter **Yes** in the Request eSignature collection element field (See: Disposition Lifecycle, *Oracle Quality Implementation Guide*) in a copy of either the Template Disposition Header or the Template Disposition Detail collection plan. The Request eSignature and eSignature Status collection elements are disabled in the disposition templates, so you must enable them in your copy of the template if you require a disposition approval. You can enter your signature online, while the event is happening in the window or in deferred mode. Any users responsible for additional required signatures receive workflow notifications informing them that their e-signature must be entered. The workflow notification includes the e-record. You can view the status of the disposition result at any time. The eSignature Status collection element, viewable using the Workbench - View Nonconformance page, shows whether the disposition e-signature status is pending, approved, rejected, or no approval required.

Corrective Action Approval

Quality result entry into a copy of a corrective action request collection plan template triggers the capture of an e-record. The Enter Quality Results and the Update Quality Results windows can also trigger an approval for a corrective action if you enter **Yes** in the Request eSignature collection element field. (See: Corrective Action from an Audit, *Oracle Quality Implementation Guide*). If you trigger the e-signature process, you can enter your signature online, while the event is happening in the window or in deferred mode. Any users responsible for additional required signatures receive workflow notifications informing them that their e-signature must be entered. The workflow notification includes the e-record. You can view the status of the corrective action result at any time. The eSignature Status collection element, viewable using the Workbench - View Corrective Action Request page, shows whether the corrective action result is pending approval, approved for use, rejected, or no approval required.

Corrective Action Creation and Update

You capture an e-record when you create and update a Corrective Action collection plan or this plan's children in the Update Quality Results window.

Corrective Action Review Approval

Quality result entry into a copy of the Corrective Action Request Review collection plan template triggers the capture of an e-record when the Request eSignature collection element is set to **Yes**. The Enter Quality Results and the Update Quality Results windows can also trigger the approval of a corrective action review if you enter **Yes** in the Request eSignature collection element field. (See: Corrective Action Process Flow, Step 2, *Oracle Quality Implementation Guide*). If you trigger the e-signature process, you can enter your signature online, while the event is happening in the window or in deferred mode. Any users responsible for additional required signatures receive workflow notifications informing them that their e-signature must be entered. The workflow notification includes the e-record. You can view the status of the corrective action review at any time. The eSignature Status collection element, viewable using the Workbench - View Corrective Action Request page, shows whether the corrective action review is pending approval, approved for use, rejected, or no approval required.

Corrective Action Implementation Approval

Quality result entry into a copy of the CAR Actions Implementation collection plan template triggers the capture of an e-record when the Request eSignature collection element is set to **Yes**. The Enter Quality Results and the Update Quality Results windows can also trigger the approval of a corrective action implementation if you enter **Yes** in the Request eSignature collection element field. (See: Corrective Action Process Flow, Step 4, *Oracle Quality Implementation Guide*). If you trigger the e-signature process, you can enter your signature online, while the event is happening in the window or in deferred mode. Any users responsible for additional required signatures receive workflow notifications informing them that their e-signature must be entered. The workflow notification includes the e-record. You can view the status of the corrective action implementation at any time. The eSignature Status collection element, viewable using the Workbench - View Corrective Action Request page, shows whether the corrective action implementation is pending approval, approved for use, rejected, or no approval required.

Related Topics

21 CFR Part 11 Overview, page 13-1

Viewing Oracle E-Records and E-Signatures, page 13-9

Viewing Oracle E-Records and E-Signatures

You can view e-records and e-signatures using the following methods:

- Using the Oracle E-Records Evidence Store to query e-records and e-signatures. See: Evidence Store, *Oracle E-Records Implementation Guide*.

- Selecting the eRecord Details option from the Tools menu of a transaction or event initiating form. This option is available from many, but not all, of the transaction or event initiating forms.

Related Topics

21 CFR Part 11 Overview, page 13-1

E-records and E-signatures for Oracle Quality, page 13-2

14

Charts, Views, and Custom Reports

This chapter explains how to chart, view, and report quality results data.

This chapter covers the following topics:

- Quality Results Analysis
- Copy Settings Function
- Copying Settings
- Functional Grouping and Processing
- Quality Results Folders
- Pareto Charts
- Histograms
- Trend Charts
- Control Charts
- Cp and Cpk Indexes
- Viewing Descriptive Statistics
- Viewing Quality Results
- Viewing Quality Results Details
- Entering, Updating, or Viewing Related Child Quality Results
- Viewing Quality Results by Lot Number
- Viewing Quality Results by Serial Number
- Using the Quality Results ReportWriter
- Viewing and Deleting Action Log Entries
- Exporting Quality Results

Quality Results Analysis

You can view quality results data in a variety of ways. You can select specific data for analysis based on any combination of collection element criteria.

You can chart quality results using Pareto Charts, Trend Charts, Control Charts, and Histograms. You can use the View Descriptive Statistics window to calculate basic statistics (sum, mean, variance, standard deviation, total number of occurrences, number of null occurrences, maximum, minimum, and range) on them. You can also use the Quality Results ReportWriter to create custom reports. The quality results that you view, chart, and include in reports can be exported for further analysis.

> **Tip:** Ask your system administrator to run the Manage Collection Element Indexes Process, page 15-8, if you want to enable faster searches for reports and charts on user-defined collection element values.

Related Topics

Creating and Viewing Pareto Charts, page 14-9

Creating and Viewing Histograms, page 14-13

Creating and Viewing Trend Charts, page 14-16

Creating and Viewing Control Charts, page 14-22

Viewing Descriptive Statistics, page 14-29

Copy Settings Function

You can view the same subset of data in different ways using the Copy Settings function. Copy Settings copies the saved settings from a source chart, descriptive statistic view, or custom report to a destination chart, descriptive statistic view, or custom report. The "settings" that are copied include the collection plan and the record selection criteria, and, depending on the source chosen, may also include the primary collection element, specification limits, or both.

You can change all of the settings that are copied - the primary collection element, selection criteria, control limits (where applicable), and the specification (where applicable) - except the collection plan.

Copying Settings from a Trend to a Pareto Chart

The following provides you with an example of how you can create settings for a source Trend Chart then apply these settings to a destination Pareto chart.

Creating the Source Chart

Using the Trend Charts window, create a trend chart called *Jones Trend* usingthe *WIP Defects* collection plan. The *WIP Defects* collection plan has several collection plan elements assigned to it among which are Defect Code, Inspector ID, and Entry Date.

Specify that the Defect Code collection element is to be the primary (Y-axis) Collection Element and Entry Date is to be the Group By (X-axis) collection element. To chart only those quality results that inspector Jones has entered since 01-JAN-1996 and that have a Defect Code of 40 or greater, enter the following record selection criteria in the Show Results Where region of the Trend Chart window:

Inspector ID *equals* 'Jones' and Defect Code *at least* '40'and Entry Date *at least* '01-JAN-1996'

View the trend chart by choosing the View Chart button, then save the settings for the *Jones Trend* chart by choosing the Save Settings button.

Creating the Destination Chart

To create a new Pareto chart using the saved settings from *Jones Trend*, navigate to the Pareto Charts window.

Do *not* enter a Chart Name. Instead, choose the Copy Settings button to invoke the Copy Settings From list of values. This list includes the names of all charts, reports, and descriptive statistic views for which settings have been saved.

SelecttheSource chart, *Jones Trend,* from the listand choose OK. The following settings are copied from the source chart to the new chart:

- Collection plan: WIP Defects
- Show Results Where record selection criteria: Inspector ID *equals* Jones and Defect Code *at least* '40' and Entry Date *at least* '01-JAN-1996'
- Primary (X-axis) collection element: Defect Code

> **Important:** In this example, the Defect Code collection element (primary X-axis collection element) is copied to the X-axis Element (primary collection element) of the new chart. The non-primary Y-axis collection element, Group By, is not copied.

Finish creating your chart by choosing a Y-axis Element and optionally entering the chart name, *Jones Pareto*, and chart title. View the Pareto chart by choosing the View Chart button. If you have entered a chart name you can save the settings for *Jones Pareto* by choosing the Save Settings button.

Copied Settings

The specific settings copied from a source report, chart, or descriptive statistic view to a

destination report, chart, or descriptive statistic view depend on the source chosen and the destination specified. Not all the settings saved for a source may be applicable to the destination. Conversely, the settings of a source may not include some settings required by the destination.

For example, you can use Copy Settings to copy all the information associated with a source descriptive statistics view - its collection plan, primary collection element, selection criteria, control limits, and specification - to a destination descriptive statistic view. However, if you use Copy Settings to copy from a source descriptive statistics view to a destination Pareto chart, information that is not applicable to Pareto charts, in this case the specification and control limits, is lost. The following table illustrates the later case:

Copy Settings: Descriptive Statistic View to Pareto Chart

Settings	Source: Descriptive Statistics View	Destination: Pareto Chart
Collection Plan	+	+
Primary Collection Element	+	+ (X-axis element)
Control Limits	+	-
Specification	+	-
Selection Criteria	+	+

Conversely, if you Copy Settings from a source Pareto chart to a destination descriptive statistics view, the control limits and specification are not copied because they do not exist for the source. In such a case, you would need to enter control limits and select a specification for the destination descriptive statistics view. The following table illustrates this case:

Copy Settings: Pareto Chart to Descriptive Statistic View

Settings	Settings Copied From Source (Pareto Chart)	Setting Copied To Destination (Descriptive Statistic View)
Collection Plan	+	+

Settings	Settings Copied From Source (Pareto Chart)	Setting Copied To Destination (Descriptive Statistic View)
Primary Collection Element	+	+
	(X-axis element)	n/a
Control Limits	None	Required
Specification	None	Required
Selection Criteria	+	+

Also, as noted above, Copy Settings copies only the primary collection element, if one exists, from a source to a destination. *Primary collection elements* represent those collection elements that are being graphed or those collection element for which statistics are being collected. If you are copying from a source whose primary collection element is plotted along the X-axis to a destination whose primary collection element is plotted along the Y-axis, the source's X-axis collection element is mapped to the destination's Y-axis collection element. Non-primary axis collection elements are not copied.

The following table describes what source data is associated with the various charts, custom reports, and descriptive statistic views:

Settings Associated with Source Charts, Views, and Custom Reports

Description	Collection Plan	Primary Collection Element	Control Limits	Specification	Selection Criteria
Histogram	+	+ (Y-axis element)	-	+	+
Control Chart	+	+ (X-axis element)	+	-	+
Pareto Chart	+	+ (X-axis element)	-	+	+
Trend Chart	+	+ (Y-axis element)	-	-	+

Description	Collection Plan	Primary Collection Element	Control Limits	Specification	Selection Criteria
Custom Reports	+	-	-	-	+
Descriptive Statistic View	+	+	+	+	+

Important: If you Copy Settings from a source report to a chart or descriptive statistics view, you must always enter primary collection elements and specification limits for the destination chart or descriptive statistic view. Reports do not have primary collection elements and specification limits associated with them.

Copying Settings

You can apply the saved settings from a source chart, descriptive statistic view, or custom report to a destination chart, descriptive statistic view, or custom report. See: Copy Settings, page 14-2.

Prerequisites

❒ Create and save a source chart, descriptive statistic view, or custom report. See: Creating and Viewing Control Charts, page 14-22, Creating and Viewing Histograms, page 14-13, Creating and Viewing Trend Charts, page 14-16, Viewing Descriptive Statistics, page 14-29, and Using the Quality Results ReportWriter, page 14-38.

To copy selection criteria:

1. From the Pareto Charts, Trend Charts, Quality Results Report Writer, or Descriptive Statistics View window, choose the Copy Settings button. The Copy Settings From list of values appears.

2. From the Copy Settings From list, choose the copy from Source (chart, report, or descriptive statistics view).

Important: Also displayed in the Copy Settings From list of values

are the names of the collection plans and the names of the primary collection elements associated with the available Source reports, charts, or descriptive statistic views.

3. Choose OK to copy all settings from the source to the destination chart, report or descriptive statistic view.

   You can modify the copied settings as required. Previously entered settings on the destination chart, report or descriptive statistic view, if any, are overwritten.

Functional Grouping and Processing

Functions are used to group quality results when creating Pareto charts, trend charts, and custom Quality Results ReportWriter reports.

Functions and Groups

You can use functions to specify how to group and process quality results values associated with a collection plan element. The five available functions are as follows:

Sum	Sums all quality result records.
Count	Counts the number of quality result records.
Average	Calculates an average of the quality result records.
Min	Evaluates and groups quality results to find those records with the minimum value.
Max	Evaluates and groups quality results to find those records with the maximum value

Note: If you select a function when using the Quality Results ReportWriter, all the reported columns where a function has not been selected are grouped together. For example, assume you want to report Item, Department, and Test Voltage (Average). The report displays the average test voltage for each item and department.

Functions and Data Types

The data type - numeric, character, or date - of the chosen collection plan element

determines what function or functions can be applied to quality results values for a collection element. You can, for example, select and sum quality results for a "numeric" Quantity Defective collection plan element. Similarly for a "non-numeric" (character or date) Defect Code collection plan element, you can choose the "count" function to produce a count of all the Defect Codes results that meet the specified selection criteria. Numeric quality results can also be totalled.

Data types and the functions that can be performed for values of each are as follows:

Numeric data type	Numeric values can be Summed, Counted, and Averaged. They can also be grouped based on Minimum or Maximum quality result values.
Character data type	Character values can only be Counted.
Date data type	Date values can only be Counted.

Data types are assigned as you define your collection elements. See: Defining Collection Elements, page 3-11.

Quality Results Folders

You can use folders to customize the field and record layouts that are used when:

- Viewing Quality Results, page 14-32
- Viewing Quality Results by Lot Number, page 14-36
- Viewing Quality Results by Serial Number, page 14-37
- Updating Collection Import, page 6-22

Related Topics

Results Entry Folders, page 6-11

Results Update Folders, page 6-16

Customizing the Presentation of Data, *Oracle E-Business Suite User's Guide*

Pareto Charts

You can summarize and chart product defects using Pareto's law to focus on the most often occurring defects. For example, you can create Pareto charts to monitor the following:

- top defects
- most occurring causes
- most frequent repair types

You can chart quality results for any collection plan element. For example, you can chart the top defects entered for a particular production line this week.

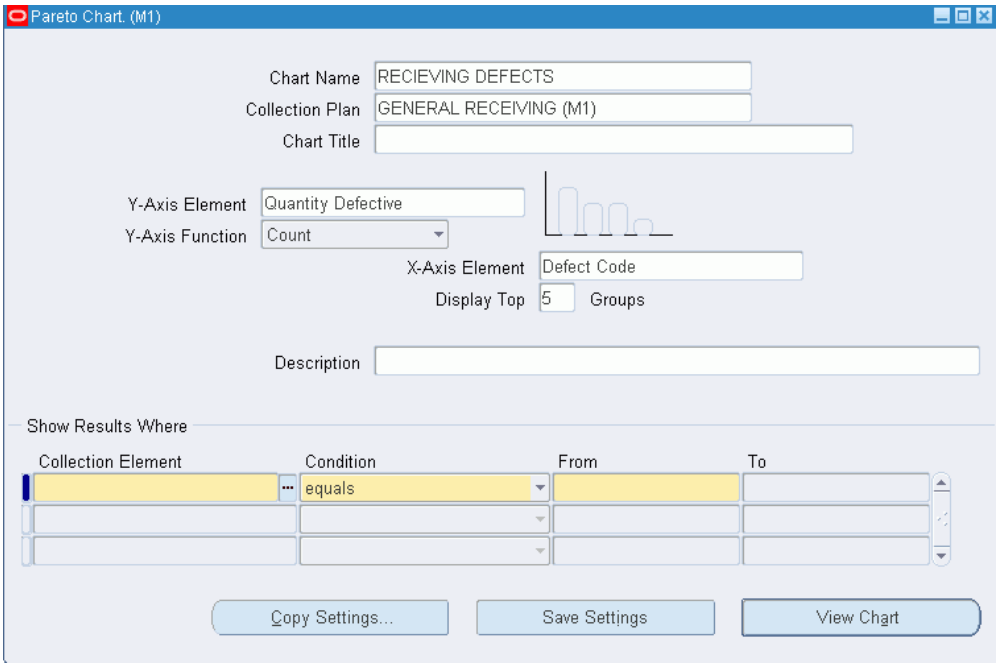
Creating and Viewing Pareto Charts

You can chart quality results using Pareto charts. You can create Pareto charts from "scratch" or you can create them by copying settings from another chart, descriptive statistic view, or custom report. Copying settings allows you to view the same subset of data in different ways. See: Copy Settings, page 14-2.

You can save your chart settings so that you can recreate charts using the same settings. You can change these settings to create new charts. You can select only those results that are to be charted. When you are satisfied with your settings and record selection, you can view your chart. You can optionally export chart information for further analysis.

To copy settings to your Pareto chart:

1. Navigate to the Pareto Chart window.



2. Choose the Copy Settings button. See: Copying Settings, page 14-6.

3. Enter missing information or change the copied information as required (See below).

   You can change all copied settings except the collection plan.

To specify settings for your Pareto charts:

1. Navigate to the Pareto Chart window.

2. Enter the Chart Name.

   To save your chart parameters, you must enter a chart name.

3. Select the Collection Plan to chart.

   If you are creating a chart, you can select any collection plan, even those that are no longer effective. If you are changing a chart, you cannot change the collection plan.

4. Optionally, enter the Chart Title.

   The text you enter here is displayed at the top of the chart.

5. Select the X-axis Collection Element.

   The X-axis of the chart (the horizontal dimension) is the primary collection element that you want to analyze. For example, for a top defects Pareto, choose Defect Code as the collection element for the X-axis.

The X-Axis Element can be any collection plan element. However, usually you should select a collection element that represents an attribute or reference collection element; for example, Defect Code, Cause Code, Department, or Item Category.

6. Select the Y-axis Collection Element.

   The Y-axis of the chart (the vertical dimension) usually represents a quantity or count of occurrences.

7. Select the Y-axis Function.

   If the X-axis collection element selected is a number, you can sum or count the values associated with that collection element. You can also choose to determine the minimum, maximum, or average of these values. For example, if the collection plan contains collection elements Defect Code and Quantity Defective, you can choose Defect Code for the X-axis element, Quantity Defective for the Y-axis, then select the *sum* function for the Y-axis. When sum is selected all the defective quantities for each defect code are added up and charted. See: Functional Grouping and Processing, page 14-7.

   If the X-axis collection element you select is a character or date (for example, Defect Code), you must select count. For example, if you have a collection plan with collection elements Serial Number and Defect Code, you might assume a quantity of 1 for each serialized unit. In this case, you can select Defect Code as the X-axis and specify the chart to count all the occurrences for each defect code.

8. Enter the Top n Groups to display on the chart. For example, enter 5 to chart the top five defect codes.

9. Optionally, enter the chart Description.

   The text you enter here is displayed at the top of the chart, under the chart title.

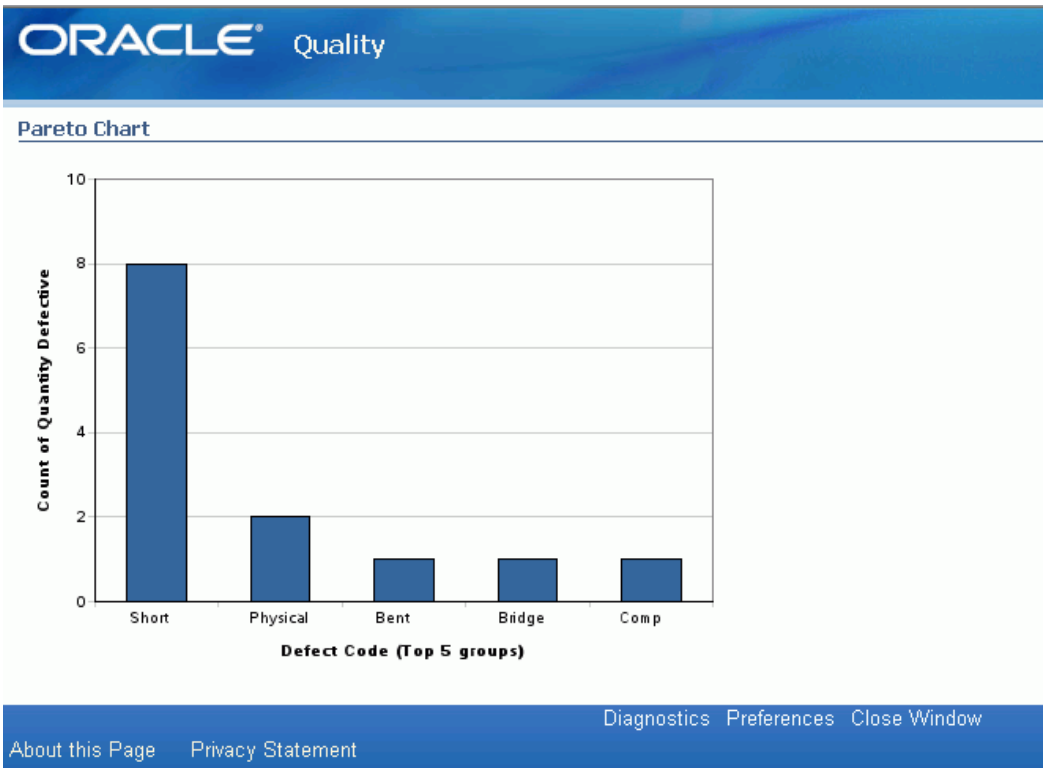
To find and select quality results:

Navigate to the Show Results Where region of the Pareto Chart window. See: Finding Quality Results, page C-1.

If you do not select which quality results to chart, all results associated with the collection plan are used.

To view charts:

Choose the View Chart button. The chart you created will display in a separate window.



To save chart settings:

Choose the Save Settings button if you want to save the inquiry settings.

To export chart results:

Choose Export Results from the Tools menu. See: Exporting Quality Results, page 14-42.

Histograms

Histograms provide a graphic summary of variations in a set of data. This is done by partitioning the range of data into several intervals of equal length, counting the number of points in each interval, and plotting the counts as bar lengths. Histograms are useful in the study of process capability since they graphically display one or more of three important data distribution properties: shape, location, and scatter.

The process should be, approximately, normally distributed for the SPC techniques, supported by Oracle Quality, to be directly applicable. If the process is not normally distributed, data should be transformed to make them approximately normal, before these techniques can be applied.

Histogram analysis is a basic step in analyzing a process and can provide the following sense of accomplishment:

- We have quantified some aspect of the process; we are managing by facts, not opinions.
- We have a better understanding of the variability inherent in the process; we have a more realistic view of the ability of the process to produce acceptable results consistently.
- We have new ideas and theories about how the process operates or about the causes of a problem and we have set the stage for additional investigative efforts.
- We have pictured the distribution of the process.

Creating and Viewing Histograms

You can graphically display, in histogram form, quality results for any collection plan element with a numeric data type. You can select and graph a subset quality results values.

You can create histograms from "scratch" or you can create them by copying settings from another chart, descriptive statistic view, or custom report. Copying settings allows you to view the same subset of data in different ways. See: Copy Settings, page 14-2.

You can save your chart settings. You can re-create charts using these saved settings, and you can change these settings to create new charts.

Histogram X-Axis and Y-Axis

The X-axis of the chart (the horizontal dimension) represents the value of the selected collection plan element. The Y-axis of the chart (the vertical dimension) represents the count or sum of occurrences of the primary collection element on the X-axis. Usually, this axis represents a quantity or count of occurrences. For example, if you select the collection plan element Quantity Defective, the Y-axis is used to show the frequency of occurrences.

Prerequisites

❒ Optionally, define specifications and specification elements with specification limits. See: Defining Specifications, page 4-4 and Defining Specification Elements, page 4-7.

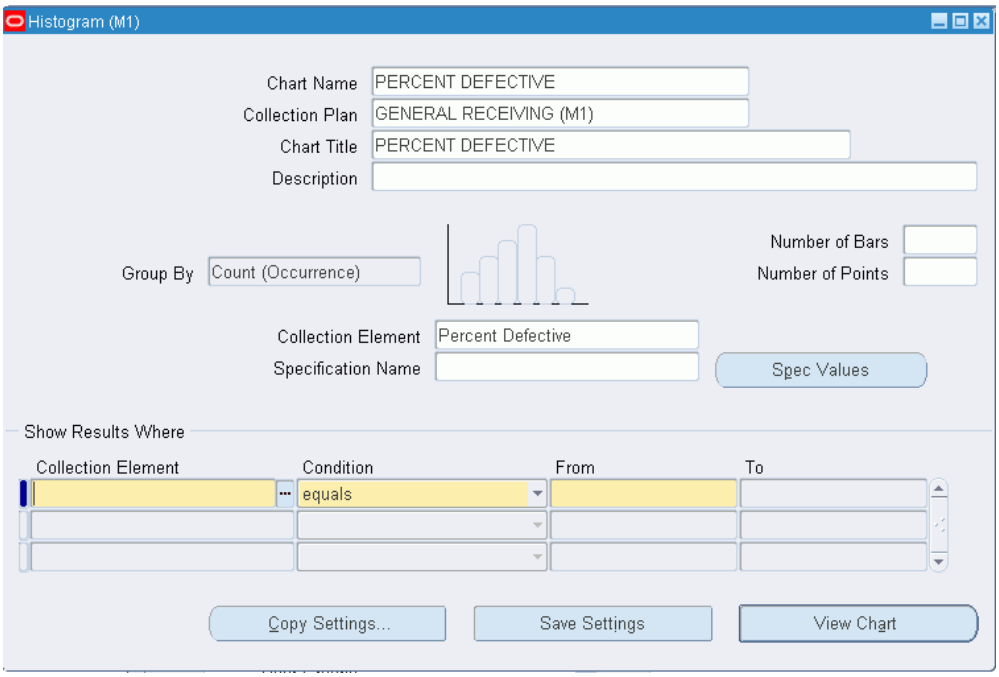
To create histograms using copied settings:

1. Navigate to the Histograms window.
2. Choose the Copy Settings button. See: Copying Settings, page 14-6.
3. Enter missing information or change the copied information as required (see

below). (You can change all copied settings except the collection plan.)

To create histograms:

1. Navigate to the Histograms window.



2. Enter the Chart Name.

   To save your chart parameters, you must enter a chart name.

3. Select the Collection Plan.

   If you are creating a chart, you can select any collection plan, even those that are no longer effective. If you are changing a chart, you cannot change the collection plan.

4. Enter the Chart Title.

   The text you enter here is displayed at the top of the chart.

5. Enter the chart Description.

   The text you enter here is displayed at the top of the chart, under the chart title.

6. Select the Collection Element.

   You can select any collection element on the collection plan, however, you must select a collection plan element with a numeric data type.

7. Optionally, select or find the specification.

You can only select specifications that have specification elements in common with the selected collection plan element defined. See: Defining Specification Element, page 4-7.

You can find and select any specification, even specifications that do not have the selected collection element as a specification element. If this is the case, Upper and Lower Specification Limits and the Target Value are defaulted from the collection element. See: Defining Collection Element Specification Limits, page 3-16.

8. Optionally, enter the Number of Bars for the graph.

   If you do not enter a number, the number of bars is calculated as the square root of the number of points.

9. Optionally, enter the Number of Points.

   The Number of Points represents the total number of data points to be included. If you do not enter a specific number of points, all points are used. If you do enter a specific number, the most recently collected results are used.

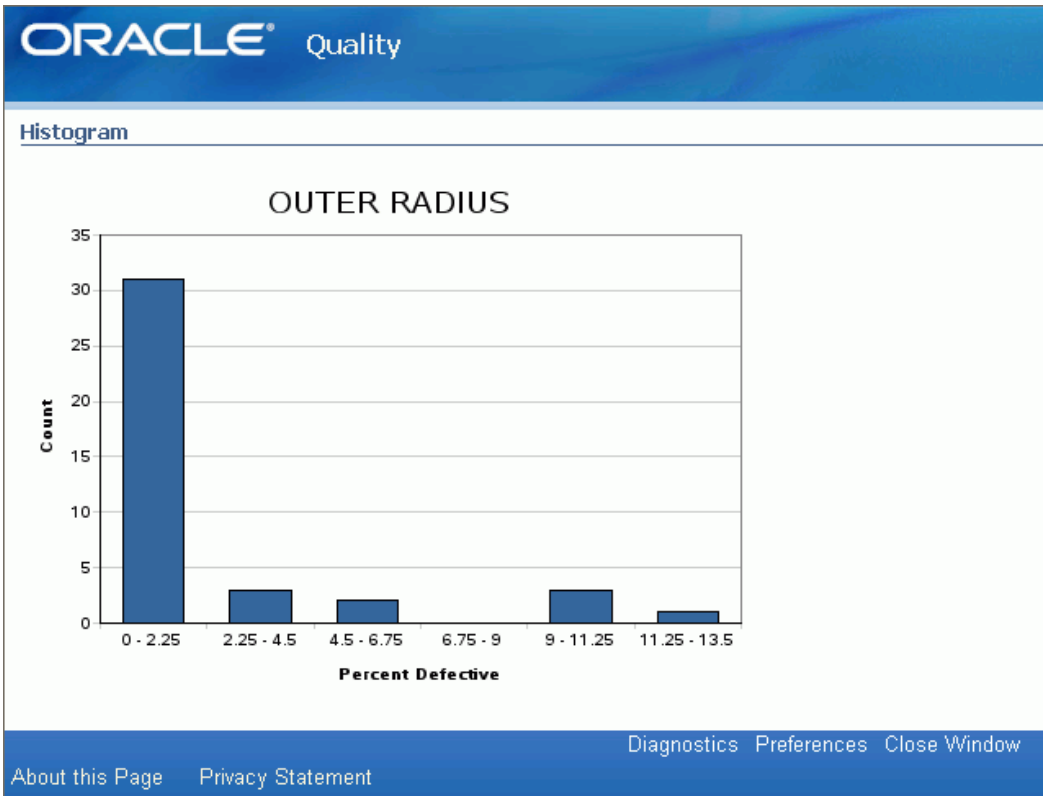
To find and select quality results:

Navigate to the Show Results Where region of the Control Chart window. See: Finding Quality Results, page C-1.

If you do not select which quality results to chart, all results associated with the collection plan are used.

To view charts:

Choose the View Chart button. The histogram you created will be displayed in a separate window.



To save chart settings:

Choose the Save Settings button if you want to save the inquiry settings.

To export chart results:

Choose Export Results from the Tools menu. See: Exporting Quality Results, page 14-42.

Trend Charts

You can use trend charts to analysis data collected over a period of time. By observing trends, you can determine the appropriate time to take corrective action. For example, you can create a Glazing Process collection plan to collect process quality variables such as oven temperature and voltage from a glazing process. You can use this collection plan to record five readings at random times during each shift. Once the results are collected, you can create a trend chart to graphically display the results of temperature or voltage. See: Creating and Viewing Trend Charts, page 14-16.

Creating and Viewing Trend Charts

You can chart quality results using Trend Charts. Trend charts show values collected

for a particular collection element over a period of time.

You can select results based on any combination of collection elements in the collection plan. For example, you can chart oven temperatures for a burn-in chamber for a particular production line this week.

You can create Trend charts from "scratch" or you can create them by copying settings from another chart, descriptive statistic view, or custom report. Copying settings allows you to view the same subset of data in different ways. See: Copy Settings, page 14-2.

You can save your chart settings. You can re-create charts using these saved settings, and you can change these settings to create new charts.

After creating and viewing your chart, you can optionally export the raw data that the chart was based upon. Exported data can be further analyzed using a spreadsheet or statistical analysis software package.

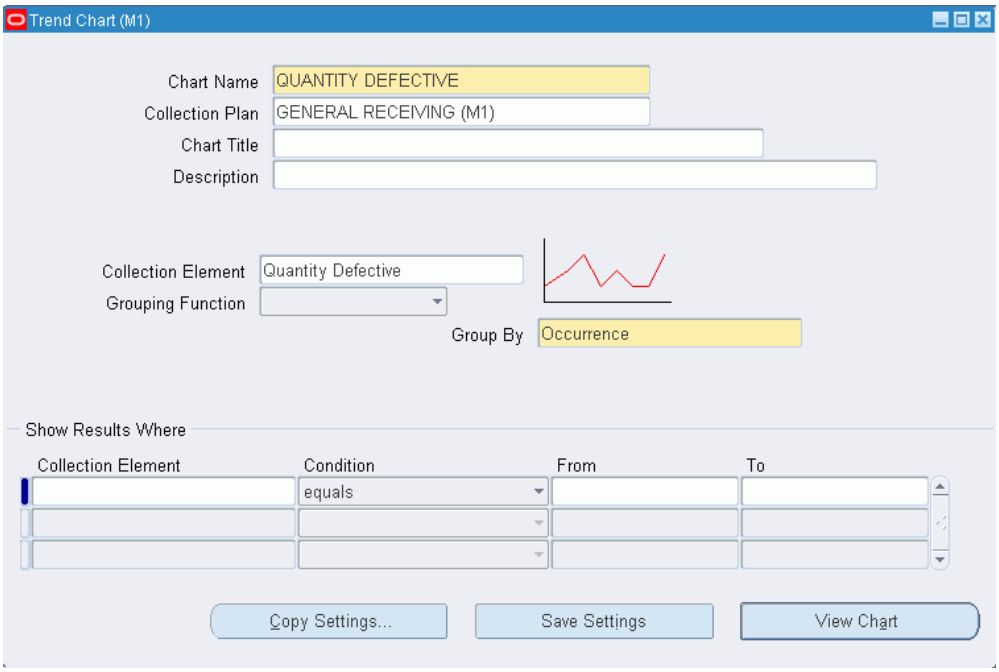
To create trend charts using copied settings:

1. Navigate to the Trend Chart window.
2. Enter missing information or change the copied information as required (See below).
3. Choose the Copy Settings button. See: Copying Settings, page 14-6.

   You can change all copied settings except the collection plan.

To create trend charts:

1. Navigate to the Trend Chart window.



2. Optionally, enter the Chart Name.

   To save your chart parameters, you must enter a chart name.

3. Select the Collection Plan to chart.

   If you are creating a chart, you can select any collection plan, even those that are no longer effective. If you are changing a chart, you cannot change the collection plan.

4. Optionally, enter the Chart Title.

   The text you enter here is displayed at the top of the chart.

5. Select the X-Axis Element.

   The X-axis of the chart (the horizontal dimension) can be any collection plan element but is usually a collection element that represents time or groups of quality results collected consecutively over time. For example, you can view results by:

   Occurrence: individual quality results or readings presented consecutively over time, from the oldest occurrence to the most recent occurrence

   Collection number: a group of individual quality results or readings, grouped into a collection and identified by a collection number

   Entry date: individual quality results or readings, grouped by the date in which they were entered

6. Select the Y-axis Element.

The Y-axis of the chart (the vertical dimension) represents the primary collection element that you want to analyze. Usually, this axis of the chart represents a variable collection element; for example, temperature or voltage.

7. Select the Y-axis Function if you want to group the collection element values. See: Functional Grouping and Processing, page 14-7.

   If the X-axis represents a grouping (for example, Collection Number or Entry Date), you must select a grouping function for the Y-axis. For example, if the X-axis is Entry Date, you can select a function like Average to display average values for the collection element for each day. If you choose Occurrence for the X-axis, you cannot select a grouping function. See: Functional Grouping and Processing, page 14-7.

8. Optionally, enter the chart Description.

   The text you enter here is displayed at the top of the chart, under the chart title.

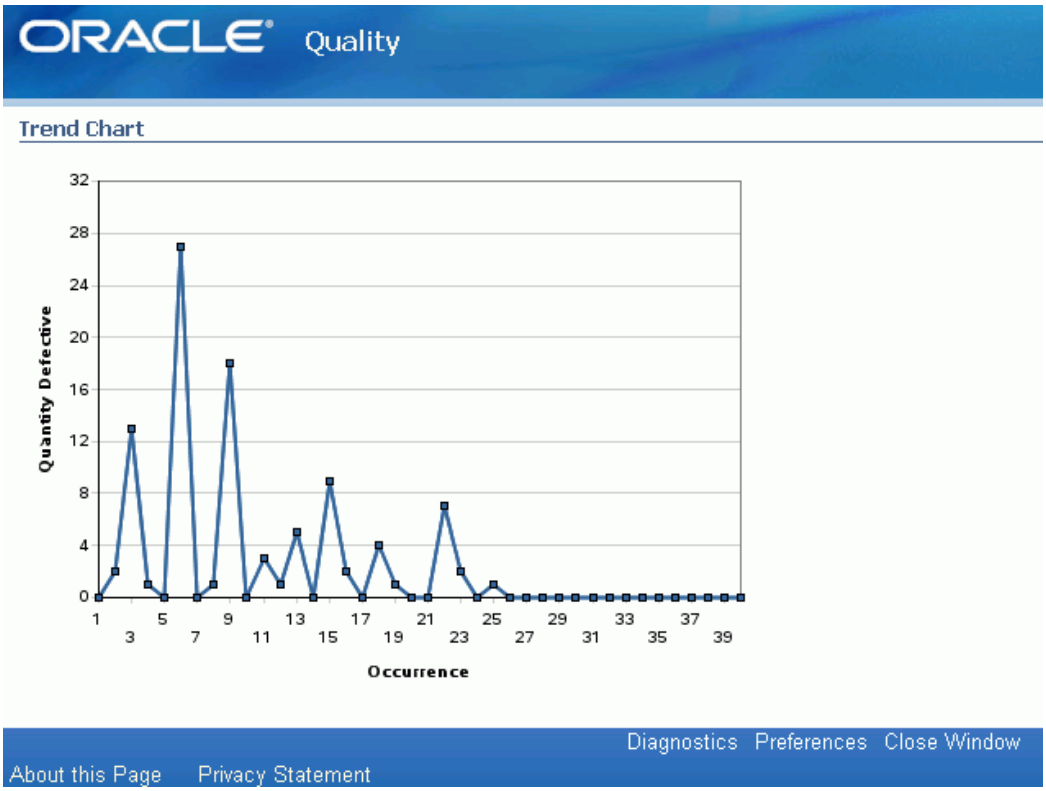
To find and select quality results:

Navigate to the Show Results Where region of the Control Chart window. See: Finding Quality Results, page C-1.

If you do not select which quality results to chart, all results associated with the collection plan are used.

To view charts:

Choose the View Chart button. The trend chart you created will be displayed in a separate window.



To save chart settings:

Choose the Save Settings button if you want to save the inquiry settings.

To export chart results:

Choose Export Results from the Tools menu. See: Exporting Quality Results, page 14-42.

Statistical Process Control (SPC)

Traditionally enterprises have depended on their production departments to make products and on their quality control departments to inspect and screen out items that do not meet specifications. Often this approach results in reiterative inspections in an effort to detect instead of prevent problems. Obviously this approach is wasteful because it allows time and materials to be invested in products or services that are not always usable. After the fact inspection is both uneconomical and unreliable.

Statistical process control, on the other hand, is a preventative system. Because it provides immediate feedback, it can minimize or eliminate waste. There are essentially four elements involved in SPC:

- *The process:* The combination of people, equipment, materials, methods, and environment that work together to produce output.

- *Information about Performance:* Process output provides qualitative and quantitative information about process performance. In a broad sense, process output includes not only the products that are produced, but also any intermediate 'outputs' that describe the operating state of the process, such as temperatures or cycle times. Collected and interpreted correctly, this data can provide the information you need to determine whether the product or process or both require corrective action.

- *Action on the process:* Action on the process is future oriented because it prevents the production of out-of-specification products. Corrective actions can include changes in operations (e.g. operator training), raw materials, and even in the process itself. Process changes might include equipment repair and maintenance or the addition of temperature and humidity controls.

- *Action on the output:* Action on the output is past-oriented, because it involves detecting out of specification output already produced. Unfortunately, if current output does not consistently meet customer requirements, it may be necessary to sort all products and to scrap or rework any nonconforming items.

Process control focuses on gathering process information and analyzing it so that actions can be taken to correct the process itself.

Process Variation

To use process control, it is important to understand the concept of variation. Some sources of variation in the process cause short term or piece to piece differences, such as backlash and clearances within a machine and its fixturing. Other sources of variation cause changes in the output over the long term. Consequently, the time period and conditions under which measurements are made have a direct affect on the amount of total variation.

They are two types of variations: common cause and special cause variations. Common cause variations occur when processes are in statistical control. They are inherent to the system and are therefore difficult to reduce or eradicate. The variability that exists within the control limits of a typical control chart is usually due to common causes. Special cause (often called assignable cause) variations can be attributed to factors or sets of factors that are external to the system. Examples of special cause variations include operator errors, poor machine maintenance, and missed process steps. Special cause variations can be detected by simple statistical techniques one of which is the control chart.

Related Topics

Control Charts, page 14-21

Control Charts

Control charts are used to determine whether process stability has been upset by special

or assignable causes. Oracle Quality provides the following types of control charts and pairs of control charts.

- Xbar and R charts (*XBar R)*: A pair of line graph charts which plot subgroups of data collected over a continuous period of time. The Xbar chart plots the average value for each subgroup. The R chart, or range chart, plots the range (difference between the maximum and minimum observations within a subgroup) of values within each subgroup.

- Individual X and Moving Range charts (*XmR)*: A pair of charts based on individual data points instead of subgroups. The individual X chart simply plots individual data points. The moving range chart plots a specified range of the data points up to and including the current data point. For example, if a subgroup size of 5 is specified then the 10th point on the Moving Range chart is plotted using the range between points 6 and 10. These charts are commonly used when the process results do not fall into subgroups, for instance when the process is slow and data does not form clusters over a period of time.

- Xbar and S charts (*XBar S*): A pair of line charts similar to the Xbar and R charts except that the standard deviation is used instead of the range when the S chart is plotted. The S chart is an inherently superior estimator of process standard deviation than the R chart, for any sample size, because it uses all observations. The R chart uses only maximum and minimum observations. The difference in efficiencies of these two estimators become acute for large sample sizes. For example, if you had a subset size of 20 that contained one outlying data point, the range plotted on an R chart would be large even though the remainder of the data is fairly evenly distributed.

Subgroups

Selection of a subgroup is extremely important when defining a control chart. Improper subgroup selection can lead to misleading results and false corrective actions.

> **Note:** Control charts supported by Oracle Quality work well only when the process distribution is approximately normal. Histograms can be used to check the distribution of the process.

Creating and Viewing Control Charts

Control charts are Statistical Process Control (SPC) tools used for monitoring the state of a process. After viewing data samples, out-of-control processes can be adjusted accordingly. See: Statistical Process Control, page 14-20 and Control Charts, page 14-21.

You can chart all or only specific quality results associated with a collection plan. You can create Control charts from "scratch" or you can create them by copying settings from another chart, descriptive statistic view, or custom report. Copying settings allows

you to view the same subset of data in different ways. See: Copy Settings, page 14-2.

You can save your chart settings. You can re-create charts using these saved settings, and you can change these settings to create new charts.

You must define control limits before you can view a control chart. Control limits can be defined in any of the following three ways:

- *Based on Collection Results:* You can compute new control limits by entering the subgroup size and number of subgroups to use. Pressing the Compute New button then computes control limits based on the data most recently collected for the specified Collection Plan.

- *Based on Saved Limits:* You can use the control limits that were last used to generate the chart. You can also select saved limits from another chart, however, the selection of charts is limited by the chart type and the collection element.

  Note: You can only save one set of control limits for a chart.

- *Based on Manual Entries:* Enter the subgroup size, number of subgroups to use, and all control limits computed via some other mechanism.

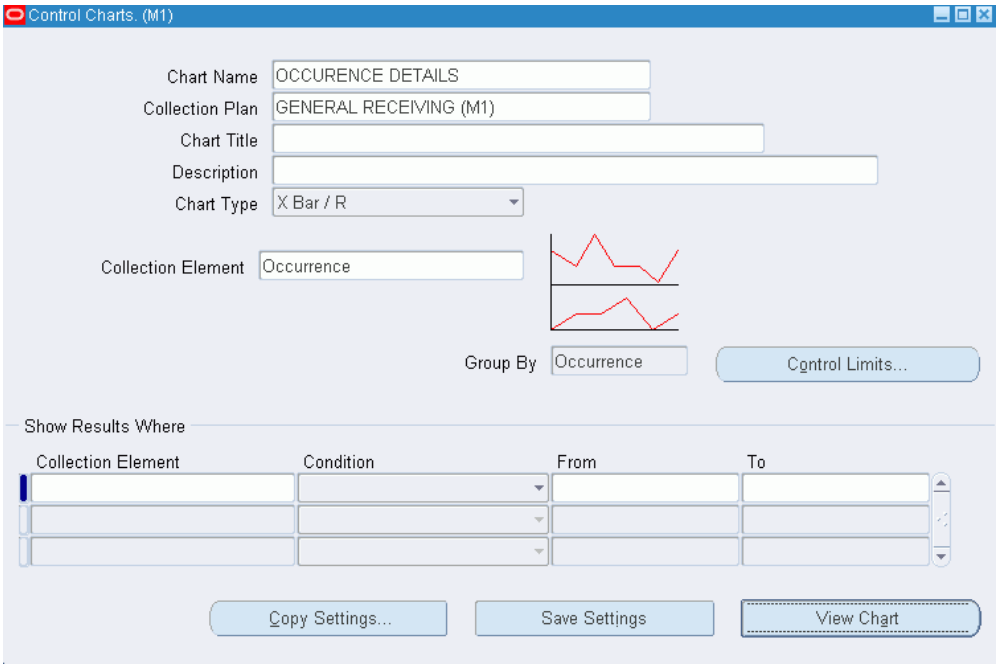
To create control charts using copied settings:

1. Navigate to the Control Charts window.
2. Choose the Copy Settings button. See: Copying Settings, page 14-6.
3. Enter missing information or change the copied information as required (See below).

   You can change all copied settings except the collection plan.

To create control charts:

1. Navigate to the Control Charts window.



2. Enter the Chart Name.

   To save your chart parameters, you must enter a chart name.

3. Select the Collection Plan to chart.

   If you are creating a chart, you can select any collection plan, even those that are no longer effective. If you are changing a chart, you cannot change the collection plan.

4. Optionally, enter the Chart Title.

   The text you enter here is displayed at the top of the chart.

5. Optionally, enter the Chart Description

   The text you enter here is displayed at the top of the chart, under the chart title.

6. Select the Chart Type. See: Control Charts, page 14-21

   Recommendations for the use of each set of charts are as follows:

   XBar R: Use when the subgroup size is less than 10.

   X mR: Use when monitoring a process that produces quality results that do not naturally fall into subgroups.

   XBar S: Use when the subgroup size is greater than 10.

7. Select the Collection Element.

   This is the primary collection element that you want to analyze. It must have a

numerical data type.

Important: Quality results are always grouped by occurrence or by the order in which the results were collected.

To find and select quality results:

Navigate to the Show Results Where region of the Control Chart window. See: Finding Quality Results, page C-1.

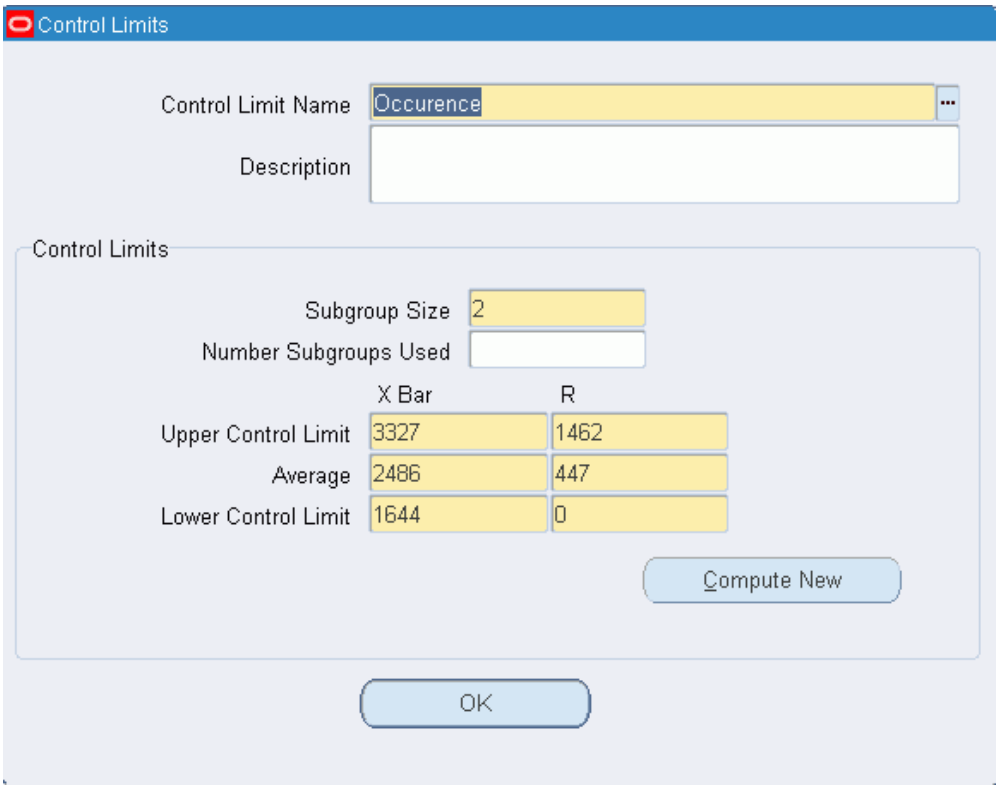
If you do not select which quality results to chart, all results associated with the collection plan are used.

To define control limits based on collection results:

1. From the Control Charts window, select the Control Limits button.
2. Select or enter the Control Limit Name.
3. Enter the Description.

   You can use descriptions to identify the set of data you are charting.
4. Enter the Subgroup Size. You must enter a subgroup size and it must be between 2 and 25.

   Important: You must recalculate control limits after changing the subgroup size.
5. Optionally, enter the Number of Subgroups to use in the calculation of control limits. If you do not enter the number of subgroups to use for the calculation, you can manually specify the control limits.
6. Choose the Compute New button.



To choose saved control limits:

1. From the Control Charts window, select the Control Limits button.
2. Select the Control Limit Name of the saved set of control limits.

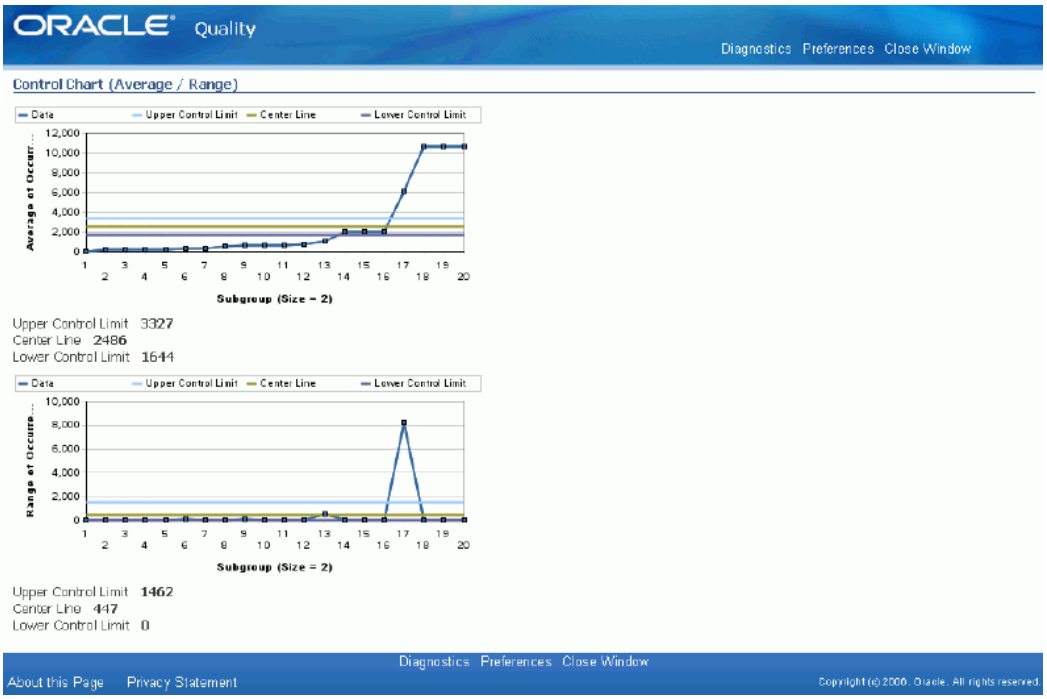
   You can also select saved limits from other charts, however, the selection of charts is limited by the chart type and the collection element.
3. Choose OK to save your work.

To manually specify control limits:

1. Specify control limits by manually entering new limits - Upper X and R Control Limits, X and R Average values, and Lower X and R Control Limit values.
2. Choose OK to save your work.

To view charts:

Choose the View Chart button. The control chart you created will display in a separate window.



To save chart settings:

Choose the Save Settings button if you want to save the inquiry settings.

To export chart results:

Choose Export Results from the Tools menu. See: Exporting Quality Results, page 14-42.

Cp and Cpk Indexes

Cp and Cpk, commonly referred to as process capability indices, are used to define the ability of a process to produce a product that meets requirements. These indices, which are a fairly recent addition to the field of statistical process management, greatly simplify the management of statistically controlled processes.

To understand Cp and Cpk you must have an understanding of the following terms:

Specification	Specifications define product requirements. In other words, they define what is expected from an item for it to be usable.Specifications are normally defined in terms of nominal (+/-) tolerances or ranges (low to high. A specification for a piston ring, for example, might specify that the diameter be 74mm +/- 0.05mm. The upper specification limit (USL) is the upper limit of the specified range. Similarly the lower specification limit (LSL) is the lower limit of the specified range. See: Overview of Specifications, page 4-1.
Standard Deviation	The standard deviation is a measure of variability in a process. Defined as the root mean square (RMS) deviation from average it indicates how much a process can be expected to vary from the average. The standard deviation is normally fixed for a process that is under statistical control and can only be affected by a process change that affects the variability in a process.
Mean	The arithmetic average of a group of values.

Cp

The Cp index is calculated using specification limits and the standard deviation only. This index indicates, in general, whether the process is capable of producing products tospecifications. No information on the ability of the process to adhere to the target value is included in this index.

The formula for Cp is as follows:

Cp = (upper spec - lower spec) / 6 * Standard Deviation

CpK

This Cpk index is calculated using specification limits, the standard deviation, and the mean. The index indicates whether the process is capable of producing within specification and is also an indicator of the ability of the process to adhere to the target specification.

The formula for Cpk is as follows:

Cpk = min {(Mean - Lower Spec)/ 3 * Standard Deviation, (Upper Spec - Mean) / 3 * Standard Deviation}

Application of Cp and CpK

The following conditions must be met before Cp and CpK can be successfully used to evaluate the ability of a process:

- the sample size must be adequate (large enough)
- the data should be tested for normality
- the process being analyzed should be under statistical control

> **Caution:** Only after a process is under statistical control, can one safely assume that the mean and standard deviation to have a stable values over time.

Cpk is more widely used than Cp, since it takes into account the mean and the standard deviation in its calculation. Please note that the difference between Cp and Cpk is an indicator of how far the average of the process is from the target specification. When the average of the process approaches the target value, the gap between Cpk and Cp closes. When the average of the specification is equal to the target value, then Cpk is equal to Cp. Cpk can never exceed Cp.

Both Cp and Cpk can be calculated with the generation of descriptive statistic views and histograms.

Related Topics

Histograms, page 14-12

Viewing Descriptive Statistics, page 14-29

Viewing Descriptive Statistics

You can compute basic statistics for quality results associated with any collection plan element using the Descriptive Statistics window. You can enter selection criteria to find only specific quality results for the collection plan element.

You can create descriptive statistic views from "scratch" or you can create them by copying settings from another chart, descriptive statistic view, or custom report. Copying settings allows you to view the same subset of data in different ways. See: Copy Settings, page 14-2.

You can save your descriptive statistic view settings. You can recreate descriptive statistic view using these saved settings, and you can change these settings to create new views.

The statistics calculated include the sum, mean, variance, standard deviation, total number of occurrences (the count), number of null occurrences (that is, occurrences where a value was not entered for the collection element), maximum, minimum, and range.

If you select specification limits, you can also calculate Cp and Cpk values as you view descriptive statistics. Cp and Cpk are measures of process capability, which is defined as the measured, inherent reproducibly of the product turned out by the process. See: Cp and Cpk, page 14-27.

After viewing descriptive statistics, you can optionally export the raw data that was used to create the view. Exported data can be further analyzed using a spreadsheet or statistical analysis software package.

To create a descriptive statistic view using copy settings:

1. Navigate to the Descriptive Statistics window.
2. Choose the Copy Settings button. See: Copying Settings, page 14-6.
3. Enter missing information or change the copied information as required (See below).

   You can change all copied settings except the collection plan.

To create a descriptive statistic view:

1. Navigate to the Descriptive Statistics window.
2. Optionally, enter the Statistic Name.

   To save your settings, you must enter a statistic name.
3. Select the Collection Plan.

   If you are updating a descriptive statistics view, you cannot change the collection plan.
4. Select the Statistical Element for which to view descriptive statistics. You can select any collection element on the collection plan.
5. Optionally, select the Specification Limits for the Cp and Cpk calculation using one of the following methods. If you do not select specification limits, Cp and Cpk are not calculated when statistical results are calculated and displayed.

   Select Specification Element Specification Limits: To select specification element specification limits, select a Specification Name from the Specifications list of values

and choose OK. When the Specification Limits window appears, the specification element specification limits (if any) are displayed. See: Defining Specification Elements, page 4-7.

> **Important:** The Specification list of values that appears displays only those Specifications that have the selected Statistical Element as a specification element.

Find Specification Element Specification Limits by Finding a Specification: If you do not know which specification has the required specification element specification limits, you can choose the Find Spec Limits button from the Specification Limits window. The Find Specifications window appears.

In the Find Specifications window, you can narrow your search criteria by choosing the specification type (Item Spec, Supplier Spec, or Customer Spec) and an Item or Item Category and Revision. If you select a Supplier Spec or Customer Spec specification type, you must also select the Customer or Supplier.

If you try to find an "item" specification, but a specification for that item cannot be found, Oracle Quality searches for a specification based on the category of the item entered. To determine the item category, the default category set you defined using the *QA:Quality Category Set* profile option is used. See: QA:Quality Category Set, page 2-12.

To select which quality results to include in the calculation:

1. In the Show Results Where region, select the Collection Element to use for your query.
2. Select the query Condition (operator). See: Query Operators, page C-2.
3. If the condition selected requires a range, enter both the From and To value. If the condition requires a single value, enter only the From value. If the condition (not equals) requires a null character, do not enter anything. To create an In or Not in List, see Creating In and Not In Lists, page C-4.
4. Repeat steps 1 through 3 until all selection conditions are entered.

To calculate and display statistical results:

Choose the Statistics button. The Statistical Results window appears displaying the calculated statistics. If specification limits were selected, Cp and Cpk are automatically calculated.

To save your descriptive statistic settings:

Choose the Save Settings button to save the inquiry settings.

To export chart results:

Choose Export Results from the Tools menu. See: Exporting Quality Results, page 14-42.

Viewing Quality Results

You can find and view all quality results associated with a collection plan. You can also find and view specific quality results associated with a collection plan using Query Find and Query-by-Example. You can also view detailed information - the target value and specification limits, if any - for specific quality results values.

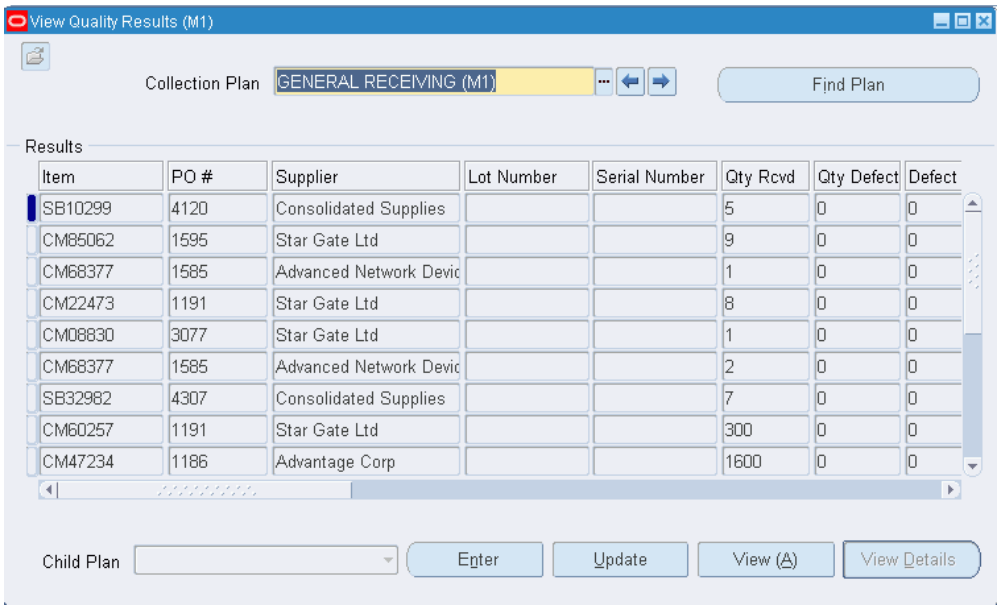
You can view collection plan attachments, which are illustrative or explanatory files, as you view quality results.

You can optionally export results after viewing them.

> **Tip:** Ask your system administrator to run the Manage Collection Element Indexes Process, page 15-8, if you want to enable faster searches on user-defined collection element values.

To select all quality results for a collection plan:

1. Navigate to the View Quality Results folder window. See: Customizing the Presentation of Data, *Oracle E-Business Suite User's Guide*.



2. Select a Collection Plan.

   If a default collection plan has been specified, it is automatically selected. See: QA:Default Collection Plan, page 2-11.

   You can choose the Find Plan button or the standard list of values to find and select a collection plan. After selecting a collection plan, you can use the previous plan/next plan arrow buttons, located to the right of the collection plan name, to scroll to another valid collection plan.

   Once a collection plan is selected, the results associated with that collection plan are automatically displayed in date order. The Prompts entered when defining the collection elements are displayed as the column headings.

   You can view the following three common collection plan elements here (See: Collection Elements in Collection Plans, page 5-6):

   - Created By
   - Collection (Collection Number)
   - Entry Date

     To view the remaining common collection plan elements, select Help, then Record History from the menu.

To find specific quality results:

Position the cursor in any field in the Results region and choose Find from the Query menu. The Find Results window appears. See: Finding Quality Results, page C-1.

To find specific quality results using query-by-example:

Position the cursor in any field in the Results region and choose Enter from the Query menu. See: Searching for Data, *Oracle E-Business Suite User's Guide*.

To view quality result details:

See: Viewing Quality Results Details, page 14-35.

To enter, update, or view related child plan results:

See: Entering, Updating, or Viewing Related Child Quality Results, page 14-35.

To export quality results:

See: Exporting Quality Results, page 14-42.

To view collection plan attachments while viewing quality results:

See: Viewing Attachments Associated with Quality Results, page 6-12.

To view item descriptions along with items while viewing quality results:

1. Create a collection element for the item description. See: Defining Collection Elements, page 3-11.

   Caution: You cannot name this collection element Item Description. The name Item Description is used for a pseudo common collection plan element (See: Collection Elements in Collection Plans, page 5-6 .). You can use this pseudo element in charts and graphs, but you cannot include it in a collection plan. You can use similar names, such as Description or Item Desc when creating an actual collection element for item description.

2. Create a collection plan that includes at least your item description collection element and the Item collection element. See: Creating Collection Plans, page 5-11.

3. Define an Assign a Value action for the Item collection plan element that assigns a value to the item description collection plan element once the item is entered. See: Defining Assign A Value Actions: User-Defined Formulas, page 5-32. Use the following SQL script:

   select description

   from mtl_system_items_kfv

   where concatenated_segments = &ITEM and organization_id = :parameter.org_id

4. Choose the Variables button to associate the token *&ITEM* with the Item collection

plan element.

Related Topics

Profile Options, page 2-8

Viewing Quality Results Details

You can view detailed information about a specific quality results value. Details include the target value and the specification limits.

Prerequisites

❒ Query quality results. See: Viewing Quality Results, page 14-32, Updating and Deleting Quality Results, page 6-14, Viewing Quality Results by Lot Number, page 14-36, and Viewing Quality Results by Serial Number, page 14-37.

To view details for results value:

1. From the Results region, select a results value.

2. Choose the View Details button. The Details window appears displaying the description, target value, and specification limits for the selected result.

To view long comments:

You can define up to 2000 comment characters on a collection plan if a comment collection element was added to the collection plan (See: Defining Collection Elements, page 3-11). Position the cursor within the Comment field and select Ctrl-E to view or update the long comment.

Entering, Updating, or Viewing Related Child Quality Results

You can enter, update, or view the child quality results related to the parent quality results queried from the View Quality Results folder window.

Prerequisites

❒ Query quality results. See: Viewing Quality Results, page 14-32, Updating and Deleting Quality Results, page 6-14, Viewing Quality Results by Lot Number, page 14-36, and Viewing Quality Results by Serial Number, page 14-37.

To enter, update, or view child quality results related to the parent quality results queried:

1. Choose the related child plan that you want to work with from the Child Plan field pull down list.

   The Child Plan field initially appears empty even if related child plans exist. If the pull down arrow is black, you can select one of the related child plans to work with. If the pull down arrow is gray, no related child plans exist.

2. Select either the Enter, Update, or View button to enter, update, or view related child plan quality results.

Viewing Quality Results by Lot Number

You can view quality results for specific lots and lot controlled items by collection plan. You can also view detailed information about the target value and specification limits, if any, that are associated with a quality results value. See: Tracking Lot Controlled Items, page 1-8.

You can optionally export results after viewing them.

To find quality results for specific lots and/or lot controlled items:

1. Navigate to the Lot Quality folder window. See: Customizing the Presentation of Data, *Oracle E-Business Suite User's Guide*. The Find Lot window appears.

2. In the Find Lot window, select a Lot number or select an Item and Lot Number then choose the Find button. The Lot Quality window appears.

3. Select a collection plan.

   Your collection plan choices are restricted to those than collection plans that contain the selected lot number, including those that are no longer effective. If there is only one valid collection plan, it is automatically selected. If the default collection plan is one of the valid choices, it is automatically selected. See: QA:Default Collection Plan, page 2-11.

   You can choose the Find Plan button or the standard list of values to find and select a collection plan. After selecting a collection plan, you can use the previous plan/next plan arrow buttons, located to the right of the collection plan name, to scroll to another valid collection plan.

   Once a collection plan is selected, the results associated with that collection plan are automatically displayed in date order. The Prompts entered when defining the collection elements are displayed as the column headings.

To find specific quality results:

Position the cursor in any field in the Results region and choose Find from the Query menu. The Find Results window appears. See: Finding Quality Results, page C-1.

To view quality result details:

See: Viewing Quality Results Details, page 14-35.

To export chart results:

Choose Export Results from the Tools menu. See: Exporting Quality Results, page 14-42.

Related Topics

Profile Options, page 2-8

Viewing Quality Results by Serial Number

You can view quality results for serial number controlled items by collection plan. You can also view detailed information about the target value and specification limits, if any, that are associated with a quality results value. See: Tracking Serial Controlled Items, page 1-8.

You can optionally export results after viewing them.

To find quality results for specific serial numbered items:

1. Navigate to the Serial Number Quality folder window. See: Customizing the Presentation of Data, *Oracle E-Business Suite User's Guide*. The Find Serial Number window appears.

2. In the Find Serial Number window, select a Serial number or select an Item and Serial Number then choose the Find button.

3. Select a collection plan.

   Your collection plan choices are restricted to those collection plans that contain the selected serial number, including those that are no longer effective. If there is only one valid collection plan, it is automatically selected. If the default collection plan is one of the valid choices, it is automatically selected. See: QA:Default Collection Plan, page 2-11.

   You can use the Find Plan button or the standard list of values to find and select a collection plan. After selecting a collection plan, you can use the previous plan/next plan arrow buttons, located to the right of the collection plan name, to scroll to another valid collection plan.

Once a collection plan is selected, the results associated with that collection plan are automatically displayed in date order. The Prompts entered when defining the collection elements are displayed as the column headings.

To find specific quality results:

Position the cursor in any field in the Results region and choose Find from the Query menu. The Find Results window appears. See: Finding Quality Results, page C-1.

To view quality result details:

See: Viewing Quality Results Details, page 14-35.

To export chart results:

Choose Export Results from the Tools menu. See: Exporting Quality Results, page 14-42.

Related Topics

Profile Options, page 2-8

Using the Quality Results ReportWriter

You can create custom quality results reports using the Quality Results ReportWriter. You can include quality results for some or all collection plan elements. Results can be sequenced in any order that you choose.

You can use functions - sum, count, average, min, or max - to specify how to group and process the quality results you include in your reports. The data type - numeric, character, or date - of the chosen collection plan element determines what function or functions can be applied.

Report output can be saved to a file or sent to a printer. You can also export the raw results data that your reports are based upon. You can save the settings of a report so that users throughout your organization can use it.

You can optionally create custom reports using settings copied from another chart, descriptive statistic view, or custom report. Copying saved settings allows you to view the same subset of data in different ways.

Item Category Reporting

You can choose to report quality results by item category when an Item collection element appears on a collection plan. Oracle Quality determines an item's category based on the default category set from *QA:Quality Category Set* profile option. See: Profile Options, page 2-8.

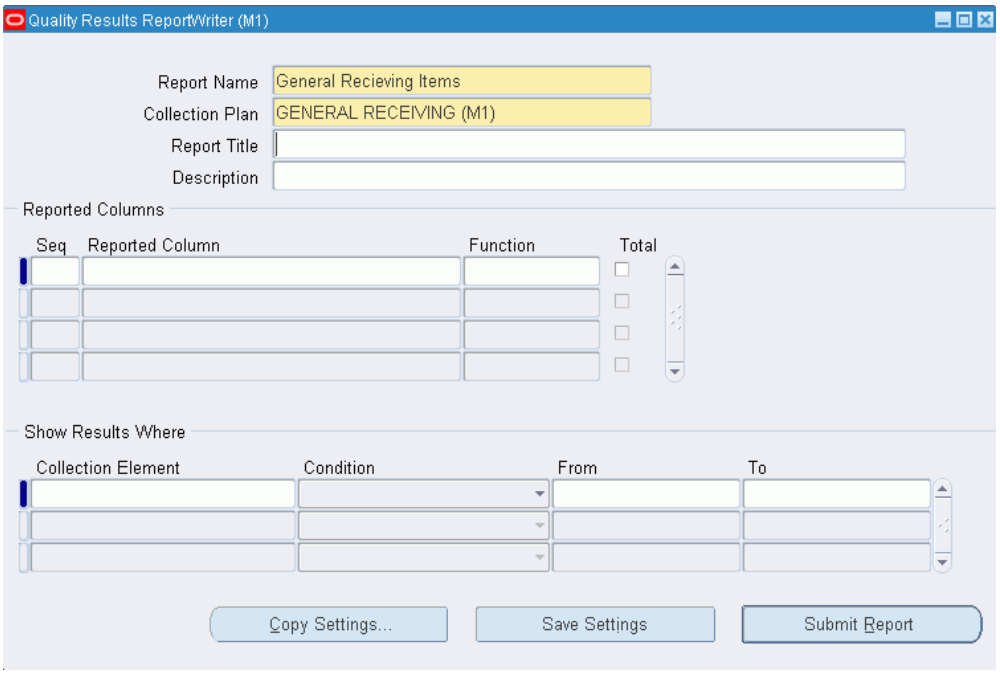
To create a customer report using copied settings:

1. Navigate to the Quality Results ReportWriter window.
2. Choose the Copy Settings button. See: Copying Settings, page 14-6.
3. Enter missing information or change the copied information as required (See below).

   You can change all copied settings except the collection plan.

To create a quality results report:

1. Navigate to the Quality Results ReportWriter window.



2. Optionally, enter a Report Name.

   To save your report and its parameters, you must enter a report name.
3. Select the Collection Plan.
4. Optionally, enter the Report Title.

   The text you enter here is displayed on the report.
5. Optionally, enter the Report Description.

To specify and format results:

1. In the Reported Columns region, enter the column Sequence number.

   The sequence number determines the columnar order of the collection plan elements that appear on your report.

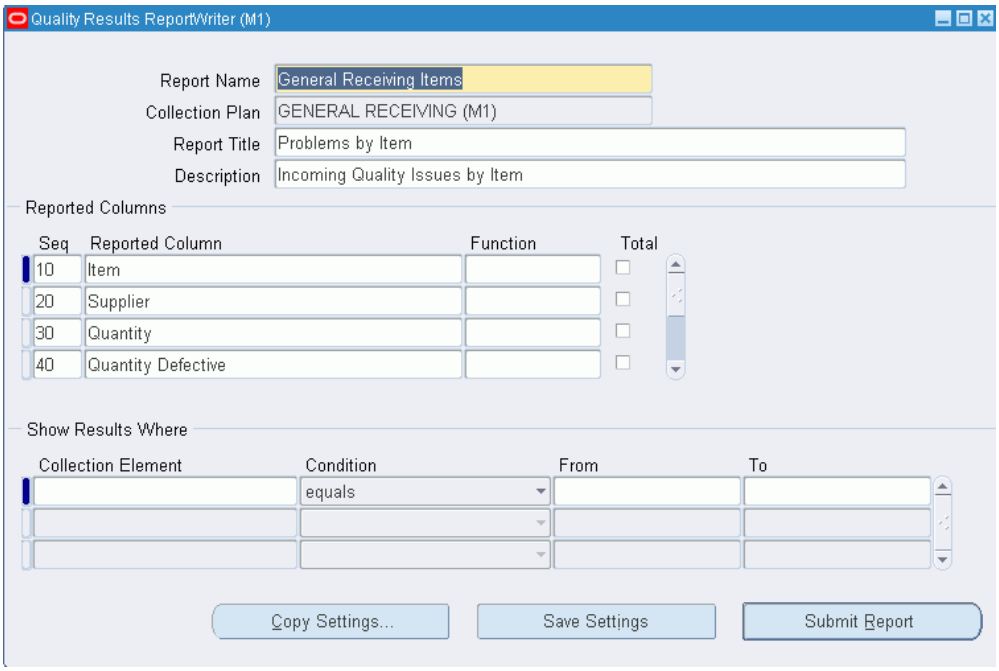
2. Select the collection plan element for the Reported Column.

3. Optionally, select a Function to use to process and group the results in the reported column. See: Functional Grouping and Processing, page 14-7.

4. Optionally, check the Totals check box to create a column total at the bottom of the report.

   You can only total a reported column if it contains a numeric collection plan element.

5. Repeat Steps 2-4 for each collection element you wish to include on your report.



To find and select quality result:

Navigate to the Show Results Where region of the Pareto Chart window. See: Finding Quality Results, page C-1.

If you do not select which quality results to report, all results associated with the collection plan are used.

To process the report:

Choose the Submit Report button to launch a concurrent request to process the report. All quality results that meet the specified selection conditions are reported.

To save report settings:

Choose the Save Settings button to save the report settings.

To export chart results:

Choose Export Results from the Tools menu. See: Exporting Quality Results, page 14-42.

Viewing and Deleting Action Log Entries

Entries are made in the Quality Action Log when the *Post an entry to the Quality Action Log* message action is invoked. See: Posting Action Log Entries, page 6-17 and Message Actions, page 3-20.

For each numbered log entry in the quality action log, the following information is displayed on each of three tabs:

- *Message tab:* action Message
- *Action Rule tab:* Collection Element, Condition, Low, High, Result
- *Collection tab:* Collection Plan, Collection Number, Log (data entry) Date

After viewing action log entries you can delete them if you have function security set to allow you to do so. See: Security Functions, page 2-2.

To find and view specific action log entries:

1. Navigate to the Action Log window. The Find Log Entries window appears

   If a default collection plan has been assigned using the *Default Collection Plan* profile option, that collection plan name appears as the default in this window.

2. Enter query criteria in the Find Log Entries window.

   You can search for a particular message, or for action log entries for a particular collection plan or collection element. You can also search by action log number, collection number, or by date or date range.

3. Choose the Find button. The Action Log window appears with the results of your query.

To delete action log entries:

1. Select and deselect queried records as required. See: Multiple-Record Selection, *Oracle E-Business Suite User's Guide*.

2. Choose Delete from the Edit Menu.

Related Topics

Searching for Data, *Oracle E-Business Suite User's Guide*

Exporting Quality Results

You can export to a browser as a tab-delimited ASCII file. You can then import this information into a spreadsheet, statistical analysis, or graphical presentation software package for further analysis.

Results Exported: Oracle Quality Statistics Engine

If you are using the Oracle Quality statistics engine, the information that is exported is limited and varies based on which window you exporting from.

Information is always exported to a browser as a tab-delimited ASCII file and can then be imported into spreadsheet, statistical analysis, or graphical presentation software packages.

By window, the information and the order that it is exported in is as follows:

Control Charts	For each record that satisfies the selection criteria entered, the Subgroup Number entered (X-axis collection element), and the calculated X-bar average, X-bar range, X-bar Upper Control Limit (UCL), X-bar target value, X-bar Lower Control Limit (LCL), and the calculated R-bar UCL, R-bar target value, and R-bar LCL values are exported in this order. See: Creating and Viewing Control Charts, page 14-22.

Note: If you have manually specified Upper X and R Control Limits, X and R Average values, and Lower X and R Control Limit values, these values are exported instead.

Histogram	For each selected record, the calculated values for the range and number of occurrences within that range are exported. See: Creating and Viewing Histograms, page 14-13.
Pareto Chart	For each selected record, the X and Y collection element values are exported. For example, if you are charting the defect codes and the number of items classified with those codes, only the selected and charted values for defect codes (X) and quantities (Y) and are exported. See: Creating and Viewing Pareto Charts, page 14-9.
Trend Chart	For each selected record, the X and Y collection element values are exported. For example, if you are charting annealing temperatures recorded over a period of several weeks, only the selected and charted values for X (temperatures) and Y (dates) are exported. See: Creating and Viewing Trend Charts, page 14-16.
Descriptive Statistics	Only the values for the statistical element specified for each selected record. For example, if your statistical element is item number and your selection criteria indicates all items inspected in a given date range, a list of items, which may include duplicate entries, is exported. See: Viewing Descriptive Statistics, page 14-29.
Lot Quality	Only result records that meet the lot selection criteria and the record selection criteria entered in the Find Results window are exported. Values for all collection plan elements as well as the common collection plan elements - Created By, Collection Number, and Entry Date - are included for each record. See: Viewing Quality Results by Lot Number, page 14-36.

Serial Number Quality	Only result records that meet the serial number selection criteria and the record selection criteria entered in the Find Results window are exported. Values for all collection plan elements as well as the common collection plan elements - Created By, Collection Number, and Entry Date - are included for each record. See: Viewing Quality Results by Serial Number, page 14-37.
View Quality Results	Only result records that meet the record selection criteria entered in the Find Results window are exported. Values for all collection plan elements as well as the common collection plan elements - Created By, Collection Number, and Entry Date - are included for each record. See: Viewing Quality Results, page 14-32
Quality Results ReportWriter	Only the results values that are included on the report are exported. They are exported in columnar order. See: Using the Quality Results ReportWriter, page 14-38.
Update Quality Results	Only result records that meet the record selection criteria entered in the Find Results window are exported. Values for all collection plan elements as well as the common collection plan elements - Created By, Collection Number, and Entry Date - are included for each record. See: Updating and Deleting Quality Results, page 6-14.

Prerequisites

- ❒ Collect quality results. See: Data Collection Options, page 1-6.
- ❒ Consider asking your system administrator to run the Manage Collection Element Indexes Process, page 15-8, if you want to enable faster searches on user-defined collection element results to export.

To export results if you are using the Oracle Quality Statistics Engine:

1. Query results in the View Quality Results, Update Quality Results, View Quality Results by Lot Number, View Quality Results, Pareto Charts, Trend Charts, Control

Charts, Histograms, or Quality Results Report Writer window.

2. Choose Export Results from the Tools menu.

   When Quality results are exported, a web browser window opens. Depending on your browser's configuration for MIME type, the exported results may appear on your browser, a helper application may open and display the data, or you may be prompted to save the data to your local file system.

Related Topics

Tools menu, page D-1

Viewing Quality Results, page 14-32

Updating Quality Results, page 6-14

Viewing Descriptive Statistics, page 14-29

Viewing Quality Results by Lot Number, page 14-36

Viewing Quality Results by Serial Number, page 14-37

Using the Quality Results ReportWriter, page 14-38

Creating and Viewing Pareto Charts, page 14-9

Creating and Viewing Trend Charts, page 14-16

Creating and Viewing Control Charts, page 14-22

Creating and Viewing Histograms, page 14-13

15

Reports and Processes

This chapter explains how to submit report requests and briefly describes each Oracle Quality report.

This chapter covers the following topics:

- Overview of Reports
- Collection Element Action Rules Report
- Collection Element Usages Report
- Collection Elements Report
- Collection Plan Action Rules Report
- Collection Plan Details Report
- Collection Plan Summary Report
- Manage Collection Element Indexes Process
- Quality Results Report
- Quality Specifications Report
- Sequence Element Audit Report
- Collection Plan Transactions Report
- Quality to AK Plan Mapper
- Quality Shipping ERES Collector

Overview of Reports

Oracle Quality provides you with a wide variety of reports and processes, intended for different business needs. Detailed information on submitting and analyzing Oracle Quality reports and processes is provided in these topics:

- Collection Element Action Rules Report, page 15-2

- Collection Element Usages Report, page 15-3
- Collection Elements Report, page 15-4
- Collection Plan Action Rules Report, page 15-5
- Collection Plan Details Report, page 15-6
- Collection Plan Summary Report, page 15-7
- Manage Collection Element Indexes Process, page 15-8
- Quality Results Report, page 15-9
- Quality Specifications Report, page 15-10
- Sequence Element Audit Report, page 15-11
- Collection Plan Transactions Report, page 15-12
- Quality to AK Plan Mapper, page 15-13
- Quality Shipping ERES Collector, page 15-13

Collection Element Action Rules Report

Use the Collection Element Action Rules Report to list your collection elements and the action rules associated with them. You can choose to list information for one or all collection elements. You can also choose to list information for only enabled collection elements. Collection elements, their associated action rules, and the actions related to those action rules are listed in alphanumeric order by collection element.

Report Submission

In the Submit Requests window, enter Collection Element Action Rules Report in the Name field. You can also choose to select Collection Element Action Rules Report (XML).

Report Parameters

Collection Element Name

Enter a collection element name. Oracle Quality prints information for only this collection element. If you do not enter a collection element name, information for all collection elements is printed.

Collection Element Enabled

Choose one of the following options:

Yes	Print information for enabled collection elements only. This is the default option.
No	Print information for all collection elements.

Related Topics

Defining Collection Elements, page 3-11

Defining Collection Element Actions, page 3-29

Submitting a Request, *Oracle E-Business Suite User's Guide*

Collection Element Usages Report

Use the Collection Element Usages Report to list your collection elements and the collection plans they have been copied to. You can choose to report information for one or all collection elements. You can also choose to list only enabled collection elements and enabled collection plans associated those collection elements. Collection elements and the collection plans they are associated with are grouped by collection element type and listed in alphanumeric order by collection element name.

Report Submission

In the Submit Requests window, enter Collection Element Usages Report in the Name field. You can also choose to select Collection Element Usages Report (XML).

Report Parameters

Collection Element

Enter a collection element name. Oracle Quality prints information for only this collection element. If you do not enter a collection element name, information for all collection elements is printed.

Enabled Collection Elements Only

Choose one of the following options:

Yes	Print only enabled collection elements. This is the default option.
No	Print all collection elements.

Enabled Plan Elements Only

Choose one of the following options:

Yes	Print only collection elements that are enabled on the collection plan they are associated with. This is the default option.
No	Print all collection elements that are on the collection plan they are associated with.

Related Topics

Defining Collection Elements, page 3-11

Creating Collection Plans, page 5-11

Defining Collection Plan Elements, page 5-15

Submitting a Request, *Oracle E-Business Suite User's Guide*

Collection Elements Report

Use the Collection Elements Report to list information about your collection elements. You can choose to list all collection elements for a particular collection element type. You can also choose to list information for one or all collection elements. Lastly, you can also choose to list information for enabled collection elements only. Collection element information includes the datatype, reporting length, decimal precision (if applicable), default value (if any) and whether they are enabled, predefined, or mandatory. Information is listed in alphanumeric order by collection element name.

Report Submission

In the Submit Requests window, enter Collection Elements Report in the Name field. You can also choose to select Collection Elements Report (XML).

Report Parameters

Collection Element Type

Choose a collection element type. See: Collection Element Types, page 3-4.

Collection Element

Enter a collection element name. Oracle Quality prints information for only this collection element. If you do not enter a collection element name, information for all collection elements is printed.

Enabled Collection Elements Only

Choose one of the following options:

Yes	Print information for enabled collection elements only. This is the default option.
No	Print information for all collection elements.

Related Topics

Defining Collection Element Types, page 3-6

Defining Collection Elements, page 3-11

Submitting a Request, *Oracle E-Business Suite User's Guide*

Collection Plan Action Rules Report

Use the Collection Plan Action Rules Report to list your collection plans and collection elements and action rules assigned to them. You can choose to list collection elements and action rules for one or all collection plans. You can also choose to report information for only enabled collection plans. Collection plans, their effectivity dates, associated collection elements and the action rules and related actions associated with those collection elements are listed in alphanumeric order by collection plan name.

Report Submission

In the Submit Requests window, enter Collection Plan Action Rules Report in the Name field. You can also choose to select Collection Plans Action Rules Report (XML).

Report Parameters

Collection Plan Name

Enter a collection plan name. Oracle Quality prints information for only this collection plan. If you do not enter a collection plan name, information for all collection plans is printed.

Enabled Collection Plans Only

Choose one of the following options:

Yes	Print information for enabled collection plans only. This is the default option.
No	Print information for all collection plans.

Collection Element

Enter a collection element name. Oracle Quality prints information for only this collection element. If you do not enter a collection element name, Oracle Quality reports information for all collection elements.

Enabled Collection Elements Only

Choose one of the following options:

Yes	Print information for enabled collection elements only. This is the default option.
No	Print information for all collection elements.

Related Topics

Defining Collection Plan Element Actions, page 5-23

Submitting a Request, *Oracle E-Business Suite User's Guide*

Collection Plan Details Report

Use the Collection Plan Details Report to list detailed information about your collection plans. You can choose to list details for a particular collection plan type. You can choose to list information for one or all collection plans. Collection plan details include information on the collection elements assigned to the collection plan, such as their

sequence number on the plan, element type, prompt, default value (if any) and whether they are mandatory, enabled, or displayed. Information is listed in alphanumeric order by collection plan name.

Report Submission

In the Submit Requests window, enter Collection Plan Details Report in the Name field. You can choose to select Collection Plan Details Report (XML).

Report Parameter

Collection Plan Type

Choose a collection plan type. See: Collection Plan Types, page 5-3.

Collection Plan Name

Enter a collection plan name. Oracle Quality prints information for only this collection plan. If you do not enter a collection plan name, information for all collection plans is printed.

Enabled Collection Plans Only

Choose one of the following options:

Yes	Print information for enabled collection plans only. This is the default option.
No	Print information for all collection plans.

Related Topics

Creating Collection Plans, page 5-11

Submitting a Request, *Oracle E-Business Suite User's Guide*

Collection Plan Summary Report

Use the Collection Plan Summary Report to list summary information about your collection plans. You can choose to list summary information for a particular collection plan type. You can choose to list information for one or all collection plans. Collection plan summary information includes the specification type (if any) and the view name. Information is listed in alphanumeric order by collection plan name.

Report Submission

In the Submit Requests window, enter Collection Plan Summary Report in the Name field. You can also choose to select Collection Plan Summary Report (XML).

Report Parameters

Collection Plan Type

Choose a collection plan type. See: Collection Plan Types, page 5-3.

Related Topics

Creating Collection Plans, page 5-11

Submitting a Request, *Oracle E-Business Suite User's Guide*

Manage Collection Element Indexes Process

Ask your System Administrator to run the Manage Collection Element Indexes process if you want to enable faster searches on user-defined collection element values across one or multiple collection plans. This process creates a function-based index that determines which database column in each collection plan contains a particular user-defined collection element. The following search windows and pages use the indexes to quickly find collection element values:

- View Quality Results
- Update Quality Results
- Criteria engine for charts
- Criteria engine for reports
- Criteria engine for exports
- Quality Workbench advanced search

> **Note:** The above search windows and pages can find collection element values even if you do not run this process, but the search time decreases when the search windows and pages use function-based indexes.

In most cases, you only need to run this process once for each of the user-defined collection elements that you intend to search on often. If the system detects a need to regenerate an existing index when you add a collection element, a message appears,

informing you to ask the System Administrator to run the Manage Collection Element Indexes process.

Process Submission

In the Submit Requests window, enter Manage Collection Element Indexes in the Name field.

Process Parameters

Action

Choose one of the following options:

Create or Regenerate	Create or regenerate the user-defined collection element index.
Drop	Delete the user-defined collection element index.

Index Name

Enter an index name. This becomes the name of the user-defined collection element index in the database.

Collection Element

Choose a user-defined collection element from the list of values.

Additional Parameters

Optional. Enter SQL command words to append to the index create, regenerate, or drop command.

Related Topics

Submitting a Request, *Oracle E-Business Suite User's Guide*

Quality Results Report

Use the Quality Results Report to print custom reports created using the Quality Results ReportWriter.

Report Submission

In the Submit Requests window, enter Quality Results Report in the Name field.

Report Parameters

Report Name

Enter the name of a previously saved report. See: Using the Quality Results ReportWriter, page 14-38.

Related Topics

Submitting a Request, *Oracle E-Business Suite User's Guide*

Quality Specifications Report

Use the Quality Specifications Report to list information about your quality specifications. You can choose to list all specifications for a particular specification type. You can also choose to list information for one or all specifications. Lastly, you can choose to list specifications by their category sets and categories. Specification information includes the specification type, effectivity date, characteristic name, unit of measure, target value, and upper and lower specification limits, reasonable limits, and user-defined limits. Information is listed in alphanumeric order by specification name.

Report Submission

In the Submit Requests window, enter Quality Specification Report in the Name field. You can also choose to select Quality Specifications Report (XML).

Report Parameters

Specification Type

Choose a specification type. See: Specification Types, page 4-3.

Specification Subtype

Choose a specification subtype. See: Specification Subtypes, page 4-3

Characteristic Group

Choose a characteristic group.

Category Set

Choose a category set.

Category

Choose a category depending on the category set chosen.

Item/Customer/Supplier

Choose an item, customer, or supplier depending on the specification type chosen.

Related Topics

Defining Specifications, page 4-4

Submitting a Request, *Oracle E-Business Suite User's Guide*

Sequence Element Audit Report

Use the Sequence Element Audit Report to verify that all sequence type collection element numbers generated when entering collection plan results have been used and that you can account for any deleted numbers. For example, you have entered collection plan results and the sequence numbers generated for this set of results are 101, 102, 104, and 105. If you ran the Sequence Element Audit Report over this set of results, the report would only show results associated with the missing number, 103. You can choose to list any numbers unaccounted for in a sequence for all sequence type collection elements or for one particular sequence type collection element. You can also choose to list only the sequential numbers unaccounted for within a date range or those unaccounted for on all dates. The report lists, for each sequence type collection element in alphanumeric order, the following information:

- Organization code
- Collection plan name
- Collection number
- Occurrence number
- Sequence value
- Source code
- Source ID
- Audit type meaning (such as Deleted)
- Audit date
- User name

Report Submission

In the Submit Requests window, enter Sequence Element Audit Report in the Name

field. You can also choose to select Sequence Element Audit Report (XML).

Report Parameters

Sequence Collection Element

Choose a sequence type collection element. See: To define sequential counter information for a collection element, page 3-14. and Step 3 - Update of Sequence prefix and suffix (mandatory), *Oracle Quality Implementation Guide*.

From Date

Enter a beginning date to restrict the report to a range of dates.

To Date

Enter an ending date to restrict the report to a range of dates.

Related Topics

To define sequential counter information for a collection element, page 3-14.

Submitting a Request, *Oracle E-Business Suite User's Guide*

Step 3 - Update of Sequence prefix and suffix (mandatory), *Oracle Quality Implementation Guide*.

Collection Plan Transactions Report

Use the Collection Plan Transactions Report to list detailed information of all the transactions associated with your collection plan. The report displays all the associated transation along with the transactions triggering conditions defined on the context elements.

Report Submission

In the Submit Requests window, enter Collection Plan Transactions Report in the Name field.You can also select Collection Plan Transactions Report (XML).

Report Parameters

Collection Plan Name

Enter a collection plan name. Oracle Quality prints information for only this collection plan.

Quality to AK Plan Mapper

Use the Quality to AK Plan Mapper to generate the dynamic regions for the collection plans, which form the data entry, update, and view regions on the Workbench application. The Quality to AK Plan Mapper is automatically executed every time a collection plan is changed to enure that the associated new elements, prompts, and element attributes like mandatory properties, attached values, and list of values reflect in the data entry regions in the Quality Workbench. Quality to AK Plan Mapper also generates entry, and/or view regions for the Standalone Quality Workbench, Nonconformance/Correction action plans (if defined using the template), and EAM transaction regions (if the plan is associated with any of the five available EAM transactions.).

Report Submission

In the Submit Requests window, enter Quality to AK Plan Mapper in the Name field.

Report Parameters

Collection Plan Name

Enter a collection plan name. Oracle Quality prints information for only this collection plan.

Organization Name

The organization name defaults to the organization you are working in.

Quality Shipping ERES Collector

Use the Quality Shipping ERES Collector to collect the E-Record information for outbound shipping delivery transactions for each delivery. To use this feature, enable the ERES profile option. Note that you can run the Quality Shipping ERES Collector for a date range of five days.

Report Submission

In the Submit Requests window, enter Quality Shipping ERES Collector in the Name field.

Report Parameters

From Date

Enter a beginning date to restrict the collection of E-Record information to a range of

dates. Ensure that you enter a date range for a period of five days.

To Date

Enter an ending date to restrict the collection of E-Record information to a range of dates. Ensure that you enter a date range for a period of five days.

16

ISO 9000 Compliance

This chapter discusses how Oracle Quality can help you meet ISO 9000 reporting standard requirements.

This chapter covers the following topics:

- ISO 9000 Compliance

ISO 9000 Compliance

ISO 9000 standards are a series of quality management standards proposed by the International Organization for Standards (ISO) in 1987. These standards require manufacturers to implement a quality management system to track products through the manufacturing process, inspect and test products, and document test procedures and results.

ISO 9000 is an evaluation of the consistency in execution and maintenance of internal operation procedures that directly affect a company's ability to produce high quality products and services.

ISO 9000 states that you must:

- have a 'quality system' of some kind
- document the processes that you use to guarantee that you create quality products or services (for example: your inspection operations, your production operations, how you determine and segregate defective products)
- be able to prove that you have done what you've documented, typically through an ISO 9000 audit performed by an auditing organization

There are several PC-based products on the market that can help a company format and create a "Quality Manual" according to ISO 9000 guidelines. Many of these include templates which help you get started, suggest a format, suggest general topics to include and give you checklists to follow. Oracle Quality is not a Quality Manual creation product-but, if you already have such documentation in electronic form, you

can attach these documents to Oracle Quality collection plans and specifications.

Oracle Quality can assist your ISO 9000 effort by providing an effective tool to collect details about product and process defects and to track dispositions and corrective actions. A large part of ISO 9000 is record-keeping - records of your inspections, defects found, corrective actions taken, quality specifications, quality results you've collected, etc. Oracle Quality is essentially a quality record-keeping system to help you in this endeavor.

Oracle Quality can help manufacturers achieve and maintain ISO 9000 certification by documenting the quality standards associated with products and processes and by facilitating collection of results related to these standards. You can use the quality collection plan to define the critical quality data to collect and track, and to document the test and inspection instructions for each step. The collection plan helps ensure that the correct quality data is collected at the correct step and by the correct operator. You can use the quality specification to define critical collection elements and specification limits for specific items. In addition, you can use collection plan attachments and specification attachments to display your standard operating procedures and other relevant ISO 9000 documentation during quality data collection.

A

Windows and Navigator Paths

This appendix lists each window available for use in the Oracle Quality application as well as the associated navigator path for each window.

This appendix covers the following topics:

- Quality Windows and Navigator Paths

Quality Windows and Navigator Paths

Although your system administrator may have customized your navigator, typical navigational paths are presented in the following table:

Note: [B] indicates a button and [M] indicates a menu.

Window Name	Navigation Path
Action Log , page 14-41	Results > Inquiries > Action Log
Actions:Concurrent Program , page 3-31	Setup > Collection Elements > Actions [B] > Action Details [B]
Actions:Concurrent Program , page 5-26	Setup > Collection Plans > Actions [B] > Action Details [B]
Actions:Operating System Script , page 3-31	Setup > Collection Elements > Actions [B] > Action Details [B]
Actions:Operating System Script , page 5-26	Setup > Collection Plans > Actions [B] > Action Details [B]
Actions:Send Electronic Mail , page 3-31	Setup > Collection Elements > Actions [B] > Action Details [B]

Window Name	Navigation Path
Actions:Send Electronic Mail , page 5-26	Setup > Collection Plans > Actions [B] > Action Details [B]
Actions:SQL Script , page 3-31	Setup > Collection Elements > Actions [B] > Action Details [B]
Actions:SQL Script , page 5-26	Setup > Collection Plans > Actions [B] > Action Details [B]
Assign a Value , page 5-32	Setup > Collection Plans > Actions [B] > Action Details [B]
Chart , page 14-22	Results > Charts > Control Chart > View Chart [B]
Chart , page 14-13	Results > Charts > Histogram > View Chart [B]
Chart , page 14-9	Results > Charts > Pareto Chart > View Chart [B]
Chart , page 14-16	Results > Charts > Trend Chart > View Chart [B]
Collection Element Types , page 3-6	Setup > Collection Element Types
Collection Elements , page 3-11	Setup > Collection Elements
Collection Plans , page 5-11	Setup > Collection Plans
Collection Plan Types , page 5-4	Setup > Collection Plan Types
Control Chart , page 14-22	Results > Charts > Control Charts
Control Limits , page 14-22	Results > Charts > Control Charts > Control Limits {Button]
Copy Values , page 5-19	Setup > Collection Plans > Values [B] > Defaults [B]
Database Views , page 5-49	Setup > Collection Plans > Views [B]

Window Name	Navigation Path
Descriptive Statistics , page 14-29	Results > Inquiries > Descriptive Statistics
Details , page 14-35	Results > Inquiries > View Quality Results > [View Details]
Details , page 14-35	Results > Entry > Update Quality Results > [View Details]
Details , page 14-35	Results > Inquiries > Lot Quality > [View Details]
Details , page 14-35	Results > Inquiries > Serial Number Quality > [View Details]
Device Data Setup, page 2-4	Setup > Device Data Setup
Enter Quality Results , page 6-7	Results > Entry > Enter Quality Results
Histogram , page 14-13	Results > Charts > Histogram
Launch Manager , page 6-20	Import > Launch Collection Import Manager
Lot Quality , page 14-36	Results > Inquiries > Lot Quality
Organization Parameters , page 8-23	Inventory > Setup > Organizations > Parameters
Output Variables , page 3-39	Setup > Collection Plans > [B] Actions > [B] Action Details > Variables [B]
Output Variables , page 3-39	Collection Elements > Actions [B] > Action Details [B] > Variables [B]
Packing Workbench , page 12-1	Warehouse Manager > Inventory Management > Material Transactions > Packing Workbench
Parent Child Results Inquiry , page 5-65	Quality > Results > Inquiries > Parent Child Results Inquiry
Pareto Chart , page 14-9	Results > Charts > Pareto Chart

Window Name	Navigation Path
Personal Profile Values , page 2-8	Other > Profiles
Quality Actions , page 3-29	Setup > Collection Elements > Actions [B]
Quality Actions , page 5-23	Setup > Collection Plans > Actions [B]
Quality Results ReportWriter , page 14-38	Reports > Quality Results ReportWriter
Serial Number Quality , page 14-37	Results > Inquiries > Serial Number Quality
Specification Elements , page 4-4	Setup > Specifications > Spec Elements [B]
Specification Types , page 5-21	Setup > Collection Plans > Specifications [B]
Specifications , page 4-4	Setup > Specifications
Statistical Results , page 14-29	Results > Inquiries > Descriptive Statistics > Statistics [B]
Trend Chart , page 14-16	Results > Charts > Trend Chart
Update Collection Import , page 6-22	Import > Update Collection Import
Update Quality Results , page 6-14	Results > Entry > Update Quality Results
Update/Inquire Parent Child Collection Plan Relationship , page 5-62	Setup > Inquiries > Parent Child Collection Plans Inquiry
Values , page 3-18	Setup > Collection Elements > Values [B]
Values , page 3-18	Setup > Collection Plans > Values [B]
Values , page 3-18	Setup > Specification Types > Values [B]
View Collection Elements , page 3-40	Inquiries > Collection Elements
View Collection Plans , page 5-50	Inquiries > Collection Plans
View Quality Results , page 14-32	Results > Inquiries > View Quality Results

For forms described in other manuals:

See...	Refer to this manual for a complete form description
Flex	Oracle E-Business Suite Flexfields Guide
MRP	Oracle Master Scheduling/MRP and Supply Chain Planning User's Guide
User	Oracle E-Business Suite User's Guide

Change Organization (see MRP)	Other > Change Organization
MRP	Oracle Master Scheduling/MRP and Supply Chain Planning User's Guide
User	Oracle E-Business Suite User's Guide

B

Attachments

This appendix explains how to attach documents to collection plans, specifications, and results lines.

This appendix covers the following topics:

- Attachments for Collection Plans, Specifications, Result Lines
- Attaching Collection Plans, Specifications, Results Lines

Attachments for Collection Plans, Specifications, Result Lines

You can attach illustrative or explanatory files - in the form of text, images, word processing documents, spreadsheets, video, graphics, OLE objects, and so on - to collection plans and specifications. You can also attach files to individual quality results line records.

Collection Plan Attachments

For example, if you create Microsoft Word documents containing standard operating procedures, ISO 9000 quality procedures, inspection instructions, or disposition procedures, you can attach these documents to related collection plans. You can also attach video clips that illustrate how to perform an inspection, take a reading, or calibrate a machine to collection plans for training purposes. You can view collection plan attachments as you *enter*,*view*, and *update* quality results.

Specification Attachments

For example, if you have electronic documents such as an engineering specification document, a scanned image of a product or process specification, a CAD drawing, or a supplier contract, you can attach these documents to specifications. You can view specification attachments only as you *enter* quality results.

Result Line Attachments

For example, an inspector that rejects an item because of a visible flaw can attach a picture or detailed description of the flaw to the results line record. Result line

attachments can then be viewed and analyzed prior to taking corrective actions.

Related Topics

Attaching Files to Collection Plans, Specifications, and Result Lines, page B-2

Attachments, *Oracle E-Business Suite User's Guide*

Attaching Collection Plans, Specifications, Results Lines

You can attach illustrative or explanatory files - in the form of text, images, word processing documents, spreadsheets, video, graphics, OLE objects, and so on - to collection plans and specifications as they are created or updated. You can also attach files to quality results as you enter them.

You can view collection plan attachments as you enter, view, and update quality results. You can only view specification attachments as you enter quality results. You can view quality results line attachments as you update and view quality results. See: Viewing Attachments Associated with Quality Results, page 6-12.

> **Important:** Deleting an attachment to an image or OLE object deletes the link to the file not the file itself.

To add collection plan or specification attachments:

1. Navigate to the Collection Plans or Specifications window. See: Creating Collection Plans, page 5-11 and Defining Specifications, page 4-4.

   > **Important:** You must save the collection plan or specification before you can add an attachment to it.

2. Choose the Attachments icon or choose attachments from the Edit menu. The Attachments window appears.

3. See Attachments, *Oracle E-Business Suite User's Guide* for detailed steps on adding attachments.

   > **Important:** The Data Type field's list of values no longer contains the value Long Text. You can maintain existing Long Text Data Type attachments, but you cannot add a new one. Instead, you can attach a file or use the Short Text Data Type, which has been expanded to 4000 characters.

To add attachments to quality results lines:

1. Navigate to the Enter Quality Results window. See: Entering Quality Results Directly, page 6-7.

2. Select a quality results line.

3. Choose the Attachments icon or choose attachments from the Edit menu. The Attachments window appears.

4. See Attachments, *Oracle E-Business Suite User's Guide* for detailed steps on adding attachments.

> **Important:** The Data Type field's list of values no longer contains the value Long Text. You can maintain existing Long Text Data Type attachments, but you cannot add a new one. Instead, you can attach a file or use the Short Text Data Type, which has been expanded to 4000 characters.

Related Topics

Attachments for Collection Plans, Specifications, and Results Lines, page B-1

Attachments, *Oracle E-Business Suite User's Guide*

C

Results Queries

This appendix explains how to query quality results.

This appendix covers the following topics:

- Finding Quality Results
- Query Operators
- Creating In and Not In Lists

Finding Quality Results

You can query to find specific quality results using the Find Results window or by using the Show Results Where region.

The Find Results window can be invoked as you are:

- Updating and Deleting Quality Results, page 6-14
- Viewing Quality Results, page 14-32
- Viewing Quality Results by Lot Number, page 14-36
- Viewing Quality Results by Serial Number, page 14-37

The Show Results Where region automatically appears as you are:

- Viewing Descriptive Statistics, page 14-29
- Using the Quality Results ReportWriter, page 14-38
- Creating and Viewing Pareto Charts, page 14-9
- Creating and Viewing Trend Charts, page 14-16
- Creating and Viewing Control Charts, page 14-22

- Creating and Viewing Histograms, page 14-13

Quality results can be found using any combination of selection criteria. For instance, you can select quality results that were entered on a specific date, by a specific user, and were assigned the same collection number.

To enter search criteria:

1. In the Find Results window or the Show Results Where region, select the Collection Element to use for your query.

2. Select the query Condition (operator). See: Query Operators, page C-2.

3. If the condition selected requires a range, enter both the From and To value. If the condition requires a single value, enter only the From value. If the condition (e.g., is entered) requires a null character, do not enter anything. To create an In or Not in List, see Creating In and Not In Lists, page C-4.

4. Repeat steps 1 through 3 until all selection conditions are entered.

5. If you are using the Find Results window, choose the Find button to display all quality results that meet the specified selection criteria. If you are using the Show Results Where region, the quality results that meet the specified selection criteria are used to create your descriptive statistic view, chart, or report.

To clear search criteria from the Find Results window

1. From the Find Results window, choose Clear to clear the current search criteria so you can enter new search criteria.

> **Important:** Clearing the Find Results window does not clear the results records retrieved, only the conditions of your query. If you want to clear the results records, you must choose Clear Block from the Edit Menu.

To close the Find Results window:

1. The Find Results window remains open after you perform a search. Choose Close from the Control menu of the Find Results window to cancel Query Find.

Related Topics

Entering Quality Results Directly, page 6-7

Query Operators

You can use query operators in your search criteria to restrict your search to the information you need. The query operators you can use in most fields are presented in the following table:

Query Operator	Meaning	Example Expression
equals (=)	Select only those records that are equal to the *From* value	Defect Code = 3
is not (<>)	Select only those records that are not equal to the *From* value	To Department = Assembly
less than (<)	Select only those records that are less than the From value	Quantity < 500
at most (<=)	Select only those records that are less than or equal to the From value	Quantity Rejected <= 5
at least (>=)	Select only those records that are greater than or equal to the From value	Quantity Passed >= 10
greater than (>)	Select only those records that are greater than the From value	Job > 14526
between	Select only those records that are between the From and To values	Revision A02 and Revision A04
outside of	Select only those records that are less than the From and greater than the To values	Cause Code 10 and Cause Code 20
is empty	Select only those results that have no value	Not Applicable
is entered	Select only those records that have a value	Not Applicable

Important: When you use the between query operator, the search criterion "between value 1 and value 2" retrieves all records containing values between and including value 1 and value 2. The same applies to dates. For example, the search criteria "between '01-JAN-96' and '01-MAR-96'" retrieves all records with dates between and including 01-JAN-96 and 01-MAR-96.

Query operator expressions retrieve results according to the ordering rules for character fields and number fields. For example suppose you have the following fields values: 002, 003, 004, 005, 078, 123, 253, 441, 576, 775, 1274, 3298, 4451, 5600, 9578, 10500, 58437, and 70845.

These values are shown in the order you expect for numeric values, where 005 is between 004 and 078. If the field is defined as character, the search criteria "between 4

and 7" retrieves the values 441, 576, 4451, 5600, and 58437, which all start with characters between 4 and 7. The values 775 and 005 would not appear because 775 is lexically greater than 7, and 0 is lexically less than 4.

> **Important:** When using Query Find, it may not be possible to determine whether a field is defined as character or numeric and you may have to experiment with different search criteria expressions to see what results are returned.

You can also choose and define "in" and "not in" list operators when:

- Creating and Viewing Pareto Charts, page 14-9
- Creating and Viewing Trend Charts, page 14-16
- Updating and Deleting Quality Results, page 6-14
- Viewing Quality Results, page 14-32
- Viewing Quality Results by Lot Number, page 14-36
- Viewing Quality Results by Serial Number, page 14-37
- Viewing Descriptive Statistics, page 14-29
- Using the Quality Results ReportWriter, page 14-38

and when defining collection triggers as you are Associating Transactions with Collection Plans, page 5-46.

Related Topics

Creating In and Not In Lists, page C-4

Creating In and Not In Lists

In addition to the standard query operators (conditions) that can be used to select quality results, you can define custom "in" and "not in" list operators. See: Finding Quality Results, page C-1.

The "in" record selection condition allows you to create a user-defined list of values. Only quality results values that match the values in this list are selected. The "not in" record selection condition also allows you to create a user-defined list of values. However in this instance, only quality results values that do *not* match the values in this list are selected.

To define "in" and "not in" lists of values for conditional results selection

1. From the query operators list, select the *in* or *not in* Condition. (Multiple) appears in the From field.

2. Position the cursor in the From field.

3. From the Edit Menu choose List of Values. The In List Value window appears.

4. Enter the Values in List.

   The data type of the selected collection element restricts the data type of the values you can enter.

D

Tools Menu Options

This appendix summarizes where you can find more information about the options available from the Tools menus of various windows.

This appendix covers the following topics:

- Tools menu

Tools menu

In Oracle Applications, the active window and conditions applying to that window, determine whether options are available from the Tools menu. See: Exporting Quality Results, page 14-42.

Results Inquiry and Update Windows

- Update Quality Results
  - See: Updating Quality Results, page 6-14
- View Quality Results window
  - See: Viewing Quality Results, page 14-32
- Lot Quality
  - See: Viewing Quality Results by Lot Number, page 14-36
- Serial Number Quality
  - See: Viewing Quality Results by Serial Number, page 14-37
- Descriptive Statistics
  - See: Viewing Descriptive Statistics, page 14-29

Report Window

- Quality Results Report Writer
  - See: Using the Quality Results ReportWriter, page 14-38

Charts

- Pareto Charts
  - See: Creating and Viewing Pareto Charts, page 14-9
- Trend Charts
  - See: Creating and Viewing Trend Charts, page 14-16
- Control Charts
  - See: Creating and Viewing Control Charts, page 14-22
- Histograms
  - See: Creating and Viewing Histograms, page 14-13

E

Context and Reference Information Collection Elements

This Appendix lists the predefined Context and Reference Information collection elements for all Oracle Applications integrated with Oracle Quality.

This appendix covers the following topics:

- Context and Reference Information Collection Elements

Context and Reference Information Collection Elements

Use Context and Reference Information collection elements to automatically collect transactional quality data. The following lists contain the predefined Context and Reference Information collection elements provided for you. See: Reference Information and Context Collection Elements, page 3-8.

Complex Maintenance, Repair, and Overhaul Collection Elements

There is only one context element associated with Complex Maintenance, Repair, and Overhaul: Inspection Type.

Depot Repair Collection Elements

The following context elements are associated with Depot Repair:

- Repair Order Number
- Repair Type
- Service Request
- Service Task Assignee
- Service Task Name

- Service Task Number
- Service Task Owner
- Service Task Priority
- Service Task Status
- Service Task Type
- Planned Start Date
- Planned End Date
- Estimated Effort
- Actual Effort
- Estimated Effort UOM
- Actual Effort UOM

Enterprise Asset Management Collection Elements

The following context elements are associated with Enterprise Asset Management:

- Asset Serial Number
- Asset Num
- Asset Group
- Asset Activity
- Followup Activity
- Maintenance Op Seq
- Maintenance WorkOrder

Flow Manufacturing Collection Elements

The following context elements are associated with Flow Manufacturing:

- Accounting Class
- BOM Date

- BOM Revision
- Build Sequence
- Demand Class
- Item
- Kanban Number
- Line Operation
- Locator
- Production Line
- Project Number
- Quantity
- Reason Code
- Routing Date
- Routing Revision
- Schedule Group
- Schedule Number
- Scrap Account
- Scrap Account Alias
- Scrap Op Seq
- Subinventory
- Task Number
- Transaction Date
- Transaction Type
- UOM

Inventory Collection Elements

The following context elements are associated with Inventory:

- Component Item **
- Component Locator **
- Component Lot Number **
- Component Revision **
- Component Serial Number **
- Component Subinventory **
- Component UOM
- Item
- Locator
- Lot Number**
- Quantity
- Reason Code
- Revision**
- Serial Number**
- Subinventory
- Unit of Measure

**Not a context element/collection trigger

Mobile Supply Chain Applications Collection Elements

The following context elements are associated with Mobile Supply Chain Applications:

• ASL Status	• Available Quantity
• Completed Quantity	• Component Item

- Component Revision
- Customer
- From Intraoperation Step
- From Op Seq Number
- Inspection Quantity
- Intransit Shipment Num
- Item
- Item Category
- Job
- Job Quantity
- Line Operation
- Locator
- PO Number
- PO Receipt Number
- Production Line
- Project Number
- Quantity
- Reason Code
- Revision
- RMA Number
- Schedule Number**
- Scrap Account
- Scrap Op Seq
- Serial Number
- Subinventory
- Supplier
- Task Number
- To Intraoperation Step
- To Op Seq Number
- Transaction Type
- UOM

**Not a context element/collection trigger.

Order Management Collection Elements

The following context elements are associated with Order Management:

- Customer
- RMA Number**
- Sales Order Number
- SO Line Number**

**Not a context element/collection trigger

Oracle Process Manufacturing (OPM) Process Execution Collection Elements

The following context elements are associated with OPM Process Execution:

- Process Batch Number
- Process Batch Step Num
- Process Operation
- Process Activity
- Process Resource
- Process Parameter
- Sample Disposition Code

Oracle Process Manufacturing (OPM) Quality Management Collection Elements

The following context element is associated with OPM Quality Management: Sample Disposition Code.

Project Contracts Collection Elements

The following context elements are associated with Project Contracts:

- Contract Number
- Contract Line Number
- Deliverable Number

Purchasing Collection Elements

The following context elements are associated with Purchasing:

- ASL Status
- Department (OSP Receiving Transactions)
- Destination Type
- Expected Receipt Date
- Freight Carrier **
- Hazard Class
- Inspection Result **
- Item
- Job (OSP Receiving Transactions)
- Location
- Locator
- Number of Container **
- Order Type
- Ordered Quantity
- PO Line Number
- PO Number
- PO Packing Slip **
- PO Receipt Date **
- PO Receipt Number
- PO Release Number

  PO Routing Name
- PO Shipment
- PO Shipped Date **

- Parent Transact in Quantity
- Production Line (OSP Receiving Transactions)
- Quantity **
- Reason Code
- Received By
- Requestor
- Revision
- Subinventory (OSP Receiving Transactions)
- Supplier
- Supplier Lot Number
- To Operation Sequence (OSP Receiving Transactions)
- Transaction Type (Inspection Transactions only)
- UN Number
- Unit of Measure
- Vendor Item Number

**Not a context element/collection trigger

iSupplier Portal Collection Elements

The following context elements are associated with iSupplier Portal:

- Item
- Item Category
- Ordered Quantity
- PO Line Number
- PO Number
- PO Release Number
- PO Shipment

- Revision
- Ship To
- Ship To Location
- Supplier
- Supplier Site
- UOM Name
- Vendor Item Number

TeleService Collection Elements

The following context elements are associated with TeleService:

- Actual Resolution Date
- Customer
- Expected Resolution Date
- Incident Type
- Item
- Item Category
- Item Instance
- Owner
- Party
- Problem Code
- Product
- Resolution Code
- Severity
- Serial Number
- Service Request

- Urgency

Shop Floor Management Collection Elements

The following context and reference information collection elements are associated with Shop Floor Management:

- Quantity
- To Step
- To Operation
- Job

Warehouse Management Collection Elements

The following context and reference information collection elements are associated with Warehouse Management:

- License Plate Number
- Inspection Quantity
- Lot Inspection Quantity
- Serial Inspection Quantity

Work in Process Collection Elements

The following context and reference information collection elements are associated with Work in Process:

- Available Quantity*
- Completed Quantity*
- Department (for move transactions only)
- From Intraoperation Step
- From Operation Sequence Number
- Item
- Item Category

- Job
- Kanban Number
- Locator
- Operation Code
- Production Line
- Quantity
- Reason Code
- Resource Code
- Revision
- Sales Order Number
- Subinventory
- To Department
- To Intraoperation Step
- To Operation Code
- To Operation Sequence
- Transaction Date
- Transaction Type
- UOM

*Reference Information Collection Element

F

Pre-Seeded Collection Plan Templates

This appendix lists the pre-seeded collection plans that are available, the elements in each plan and the actions associated with each element.

This appendix covers the following topics:

- Pre-Seeded Collection Plan Templates

Pre-Seeded Collection Plan Templates

The following tables present the pre-defined collection plan templates. The elements in each plan and the actions associated with each element are listed. For more information about using collection plan templates, see Collection Plan Templates, page 5-9.

Advanced Service Online Counter Readings Plan

Elements	Associated Actions
Maintenance WorkOrder	n/a
Counter Name	n/a
Counter Reading	n/a

Advanced Service Online Job Deferral Plan

Elements	Associated Actions
Maintenance WorkOrder	n/a

Elements	Associated Actions
Maintenance Job Status	n/a
Maintenance Requirement	n/a
Item	n/a
Item Instance	n/a
Item Instance Lot	n/a
Item Instance Serial	n/a
Mechanic	n/a
Inspector	n/a
Due Date	n/a
Approval Requested	n/a
Approval Confirmed	n/a

Advanced Service Online MRB Disposition

Elements	Associated Actions
Maintenance WorkOrder	n/a
Maintenance Op Seq	n/a
Item	n/a
Revision	n/a
Item Instance	n/a
Subinventory	n/a

Elements	Associated Actions
Locator	n/a
Item Instance Lot	n/a
Item Instance Serial	n/a
Quantity	n/a
UOM	n/a
Service Request	n/a
Maintenance Requirement	n/a
Rework Job	n/a
Disposition Source	n/a
Disposition	n/a
Disposition Action	If equals to INV_SCRAP_AAI then execute a SQL script to perform Inventory Scrap Account Alias API.
Scrap Account Alias	n/a
Location	n/a
Reason Code	n/a
Engineering Approval	n/a
Purchasing Approval	n/a
QA Approval	n/a
Approval Required	n/a
Approval Confirmed	n/a

Elements	Associated Actions
Launch Action	n/a
Disposition Status	n/a
Disposition Message	n/a
Action Fired	n/a

Advanced Service Online Operation Completion Plan

Elements	Associated Actions
Maintenance WorkOrder	n/a
Maintenance Requirement	n/a
Maintenance Op Seq	n/a
Maintenance Op Status	n/a
Item	n/a
Item Instance	n/a
Item Instance Lot	n/a
Item Instance Serial	n/a
Mechanic	n/a
Inspector	n/a

Advanced Service Online Route Completion Plan

Elements	Associated Actions
Maintenance WorkOrder	n/a
Maintenance Job Status	n/a
Maintenance Requirement	n/a
Item	n/a
Item Instance	n/a
Item Instance Lot	n/a
Item Instance Serial	n/a
Mechanic	n/a
Inspector	n/a

Enterprise Asset Management Asset Check-In Collection Plan

Elements	Associated Actions
Asset Group	n/a
Asset Num	n/a
Asset Serial Number	n/a

Enterprise Asset Management Asset Check-Out Collection Plan

Elements	Associated Actions
Asset Group	n/a

Elements	Associated Actions
Asset Num	n/a
Asset Serial Number	n/a

Enterprise Asset Management Asset Query Plan

Elements	Associated Actions
Asset Group	n/a
Asset Number	n/a
Asset Activity	n/a

Enterprise Asset Management Operation Completion Plan

Elements	Associated Actions
Asset Group	n/a
Asset Number	n/a
Asset Activity	n/a
Maintenance WorkOrder	n/a
Maintenance Op Seq	n/a

Enterprise Asset Management Work Order Completion Plan

Elements	Associated Actions
Asset Group	n/a

Elements	Associated Actions
Asset Number	n/a
Asset Activity	n/a
Maintenance WorkOrder	n/a

Template Completions Plan

Elements	Associated Actions
Item	n/a
Job Quantity	n/a
Available Quantity	n/a
Completed Quantity	n/a
Job	n/a
Locator	n/a
Quantity	n/a
Subinventory	n/a
Comments	n/a

Template Depot Repair Task Plan

Elements	Associated Actions
Service Request	n/a
Repair Order Number	n/a

Elements	Associated Actions
Item	n/a
Item Instance	n/a
Serial Number	n/a
Customer	n/a
Repair Type	n/a
Contract Number	n/a
Service Task Number	n/a
Service Task Name	n/a
Service Task Status	n/a
Service Task Type	n/a
Service Task Priority	n/a
Service Task Owner	n/a
Service Task Assignee	n/a
Planned Start Date	n/a
Planned End Date	n/a
Start Date	n/a
End Date	n/a
Estimated Effort	n/a
Estimated Effort UOM	n/a
Actual Effort	n/a

Elements	Associated Actions
Actual Effort UOM	n/a
Comments	n/a

Template Material Plan

Elements	Associated Actions
Item	n/a
Component Item	n/a
Job	n/a
Locator	n/a
Quantity	n/a
Subinventory	n/a
To Op Seq Number	n/a
Comments	n/a

Template Mobile Flow Plan

Elements	Associated Actions
Item	n/a
Line Operation	n/a
Locator	n/a
Production Line	n/a

Elements	Associated Actions
Quantity	n/a
Reason Code	n/a
Schedule Number	n/a
Subinventory	n/a
Comments	n/a

Template Mobile License Plate Number Inspection

Elements	Associated Actions
License Plate Number	n/a
Item	n/a
Revision	n/a
UOM	n/a
Quantity	n/a
Inspection Result	n/a
Inspection Reason Code	n/a
PO Quality Code	n/a
Transaction Date	n/a
Lot Number	n/a
Serial Number	n/a
Inspection Quantity	n/a

Elements	Associated Actions
Lot Inspection Qty	n/a
Serial Inspection Qty	n/a
PO Number	n/a
PO Receipt Number	n/a
Supplier	n/a
ASL Status	n/a
Customer	n/a
RMA Number	n/a
Intransit Shipment Num	n/a
Comments	n/a

Template Mobile Move Plan

Elements	Associated Actions
Item	n/a
From Intraoperation Step	n/a
From Op Seq Number	n/a
Job	n/a
Quantity	n/a
To Intraoperation Step	n/a
To Op Seq Number	n/a

Elements	Associated Actions
Comments	n/a

Template Mobile Return Plan

Elements	Associated Actions
Item	n/a
Job Quantity	n/a
Available Quantity	n/a
Completed Quantity	n/a
Job	n/a
Quantity	n/a
Reason Code	n/a
Scrap Op Seq	n/a
Comments	n/a

Template Move Lot Plan

Elements	Associated Actions
Job	n/a
Item	n/a
Reason Code	n/a
Quantity	n/a

Elements	Associated Actions
UOM	n/a
From Op Seq Number	n/a
To Op Seq Number	n/a
Operation Code	n/a
To Operation Code	n/a
Department	n/a
To Department	n/a
From Intraoperation Step	n/a
To Intraoperation Step	n/a
Comments	n/a

Template OPM Receiving Inspection Collection Plan

Elements	Associated Actions
PO Number	n/a
PO Line Number	n/a
PO Shipment	n/a
PO Receipt Number	n/a
Item	n/a
Quantity	n/a
UOM Name	n/a

Elements	Associated Actions
Sample Disposition Code	n/a
Inspection Result	n/a
Transaction Date	n/a
Comments	n/a

Template PO Inspection Plan

Elements	Associated Actions
Comments	n/a
Inspection Reason Code	n/a
Inspection Result Action	Accept the Shipment Reject the Shipment
Inspection Supplier Lot Number	n/a
Item	n/a
PO Quality Code	n/a
Quantity	Assign a value to a collection element
Transaction Date	n/a
UOM Name	n/a

Template PO Receiving Plan

Elements	Associated Actions
Comments	n/a

Elements	Associated Actions
Defect Code	n/a
Item	n/a
PO Number	n/a
Quantity	n/a
Quantity Defective	n/a
Supplier	n/a
Transaction Date	n/a
UOM Name	n/a

Template Scrap Reject Plan

Elements	Associated Actions
Item	n/a
From Intraoperation Step	n/a
Job	n/a
Quantity	n/a
Reason Code	n/a
Scrap Op Seq	n/a
Comments	n/a

Template Self-Service Outside Processing

Elements	Associated Actions
Comments	n/a
From Operation Sequence Number	n/a
Item	n/a
Job	n/a
Ordered Quantity	n/a
PO Number	n/a
PO Release Number	n/a
Supplier	n/a
UOM Name	n/a
Vendor Item Number	n/a

Template Self-Service Shipments

Elements	Associated Actions
Comments	n/a
Item	n/a
Job	n/a
Ordered Quantity	n/a
PO Number	n/a
PO Release Number	n/a

Elements	Associated Actions
PO Shipment	n/a
Ship To	n/a
Ship To Location	n/a
Supplier	n/a
Supplier Site	n/a
UOM	n/a
Vendor Item Number	n/a

Template Service Request Plan

Elements	Associated Actions
Actual Resolution Date	n/a
Comment	n/a
Customer	n/a
Expected Resolution Date	n/a
Item	n/a
Owner	n/a
Problem Code	n/a
Resolution Code	n/a
Severity	n/a
Urgency	n/a

Template WIP Completion Plan

Elements	Associated Actions
Defect Code	n/a
Item	n/a
Job	n/a
Locator	n/a
Lot Number	n/a
Quantity	n/a
Reason Code	n/a
Sales Order Number	n/a
Serial Number	n/a
Subinventory	n/a
Transaction Date	n/a
Transaction Type	n/a
Unit of Measure (UOM)	n/a

Template WIP Move Plan

Elements	Associated Actions
Defect Code	n/a
Department	n/a
From Intraoperation Step	n/a

Elements	Associated Actions
From Operation Sequence Number	n/a
Item	n/a
Job	n/a
Operation Code	n/a
Quantity	n/a
Quantity Defective	n/a
To Department	n/a
To Intraoperation Step	n/a
To Operation Code	n/a
To Operation Sequence Number	n/a
Unit of Measure (UOM)	n/a

Template Work Order Less Completion Plan

Elements	Associated Actions
Defect Code	n/a
Item	n/a
Locator	n/a
Lot Number	n/a
Production Line	n/a
Quantity	n/a

Elements	Associated Actions
Reason Code	n/a
Schedule Group	n/a
Serial Number	n/a
Subinventory	n/a
Transaction Date	n/a
Transaction Type	n/a
UOM	n/a

Template Work Orderless Plan

Elements	Associated Actions
Item	n/a
Locator	n/a
Quantity	n/a
Reason Code	n/a
Subinventory	n/a
Comments	n/a

Glossary

21 CFR Part 11

This rule represents the combined effort of divisions within the US Food and Drug Administration (FDA), along with members of the pharmaceutical industry, to establish a uniform, enforceable, baseline standard by which the FDA will consider electronic records equivalent to paper records and electronic signatures equivalent to traditional handwritten signatures.

action rule

A conditional statement is evaluated during quality data collection. Action rules must be evaluated and found to be true before their associated quality actions are invoked.

acquisition cost

The cost necessary to obtain inventory and prepare it for its intended use. It includes material costs and various costs associated with procurement and shipping of items, such as duty, freight, drayage, customs charges, storage charges, other supplier's charges, and so on.

activity

A business action or task which uses a resource or incurs a cost.

assemble-to-order (ATO)

An environment where you open a final assembly order to assemble items that customers order. Assemble-to-order is also an item attribute that you can apply to standard, model, and option class items.

assembly

An item that has a bill of material. You can purchase or manufacture an assembly item.

See also: assemble-to-order, bill of material

assembly completion pull transaction

A material transaction where you backflush components from inventory to work in process as you complete the operation where the component is consumed.

See also: operation completion pull transaction

assembly completion transaction

A material transaction where you receive assemblies into inventory from a job or schedule upon completion of the manufacture of the assembly.

assembly move completion transaction

A move transaction that completes assemblies into inventory.

assembly scrap transaction

A move transaction where you charge a scrap account as you move assemblies into a Scrap intraoperation step. This reduces the value of your discrete job.

attribute collection element

A collection element that represents the outcome of a process.

See also: collection element types

backflush operation

A routing operation where you backflush component items.

backflush transaction

A material transaction that automatically issues component items into work in process from inventory when you move or complete the assembly. Also known as post-deduct or pull.

See also: pull transaction

category

Code used to group items with similar characteristics, such as plastics, metals, or glass items.

category set

A feature in Inventory where users may define their own group of categories. Typical category sets include purchasing, materials, costing, and planning.

collection element

Represents a quality results value. An unlimited number of collection elements can be defined. Collection elements are used to create collection plan elements and specification elements.

collection element type

Can be used to sort and group information. There are three standard types: reference information, attribute, and variable.

collection number

An identifier for a group of quality results.

collection plan

A collection plan determines what data to collect, where to collect it, when to collect it, and what action to take based on this data. A collection plan is similar to a test or inspection plan.

collection plan element

A collection element that has been added to a collection plan.

collection trigger

A set of conditions that invoke quality data collection when satisfied. Collection triggers are evaluated as parent transaction are entered.

component item

An item associated with a parent item on a bill of material.

concurrent manager

Components of your applications concurrent processing facility that monitor and run time-consuming tasks for you without tying up your terminal. Whenever you submit a request, such as running a report, a concurrent manager does the work for you, letting you perform many tasks simultaneously.

concurrent process

A task in the process of completing. Each time you submit a task, you create a new concurrent process. A concurrent process runs simultaneously with other concurrent processes (and other activities on your computer) to help you complete multiple tasks at once with no interruptions to your terminal.

concurrent queue

A list of concurrent requests awaiting completion by a concurrent manager. Each concurrent manager has a queue of requests waiting in line. If your system administrator sets up simultaneous queuing, your request can wait to run in more than one queue.

concurrent request

A request to complete a task for you. You issue a request whenever you submit a task, such as running a report. Once you submit a task, the concurrent manager automatically takes over for you, completing your request without further involvement from you, or interruption to your work. Concurrent managers process your request according to when you submit the request and the priority you assign to your request.

If you do not assign a priority to your request, your application prioritizes the request for you.

context element

A collection element associated with a quality collection transaction. Values for context elements are automatically transferred to Oracle Quality as their parent collection transaction are entered.

corrective action

Restores material to a satisfactory condition.

customer specification

See: specification type

database diagram

A graphic representation of application tables and the relationships among them.

database view

Provides access to an underlying database table. You do not need to know how the data is stored to use a database view. There are two types associated with Oracle Quality: the collection plan results and the collection import results database views.

deliver-to location

A location where you deliver goods previously received from a supplier to individual requestors.

delivery

Internal delivery of items to requestors within your organization.

department

An area within your organization that consists of one or more people, machines, or suppliers. You can also assign and update resources to a department.

department class

A group of departments.

discrete job

A production order for the manufacture of a specific (discrete) quantity of an assembly, using specific materials and resources, in a limited time. A discrete job collects the costs of production and allows you to report those costs, including variances, by job. Also known as **work order** or **assembly order**.

discrete manufacturing

A manufacturing environment where you build assemblies in discrete jobs or batches. Different from a repetitive production environment where you build assemblies on production or assembly lines at a daily rate.

distribution list

A predefined list of electronic mail IDs that you can use rather than entering individual mail IDs (To, Cc, and Bcc) when defining mail message alert actions in Oracle Quality.

dynamically defined serial number

Creating and assigning serial numbers as you need them, instead of creating serial numbers before their assignment.

effective date

Date when an Oracle Manufacturing function is available for use. For example, this could be the date a bill of material component or routing operation becomes effective, or the date you anticipate revised item changes become part of a bill of material and can no longer be controlled by an ECO.

electronic record

Any combination of text, graphics, data, audio, pictorial, or other information representation in digital form that is created, modified, maintained, archived, retrieved, or distributed by a computer system.

electronic signature

A computer data compilation of any symbol or series of symbols executed, adopted, or authorized by an individual to be the legally binding equivalent of the individual's handwritten signature.

entity

A data object that holds information for an application.

ERES

Electronic Records and Electronic Signatures

See also: electronic recordelectronic signature

event

An occurrence in an internet or intranet application or program that is significant to other objects in a system or to external agents.

FIFO (first-in-first-out) costing method

A cost flow method used for inventory valuation. Inventory balances and values are updated perpetually after each transaction is sequentially costed. It assumes that the earliest inventory units received or produced are the first units used or shipped. The ending inventory therefore consists of the most recently acquired goods. FIFO cost flow does not have to match the physical flow of inventory.

flexfield segment

One of the parts of your key flexfield, separated from the other parts by a symbol you choose (such as -, /, or \). Each segment typically represents a cost center, company, item family, or color code.

flow charging

A repetitive transaction method where you charge material, move, resource, and overhead transactions to a specific assembly on a line rather than a specific repetitive schedule.

See also: repetitive allocation

folder

A flexible entry and display window in which you can choose the fields you want to see and where each appears in the window.

general ledger transfer

The process of creating a postable batch for the general ledger from summarized inventory/work in process activity for a given period. Using Journal Import in General Ledger, you can create a postable batch in your general ledger. After running Journal Import, you can post your journal using the General Ledger posting process.

General Services Administration

See: GSA

generic agreement

An agreement without a specified customer, so it is available to all customers.

See also: agreement, customer family agreement

GSA (General Services Administration)

A customer classification that indicates the customer is a U.S. government customer and pricing for products on the GSA price sheet should reflect the fixed pricing of the GSA contract. Whenever a product is on the GSA price sheet, it cannot be sold to commercial customers for the same or less price than the government customer.

gross requirements

The total of independent and dependent demand for an item before the netting of on-hand inventory and scheduled receipts.

gross weight

The weight of the fully loaded vehicle, container, or item, including packed items and packaging material.

guarantee

A contractual obligation to purchase a specified amount of goods or services over a predefined period of time.

hazard class

A category of hazardous materials. Most hazardous materials belong to only one hazard class. Some materials belong to more than one hazard class and some materials do not belong to any. If a material belongs to more than one hazard class, you should list these classes in a specific order.

hidden collection plan

A collection plan that consists entirely of context elements. Data collection for these collection plans occurs in the background and requires no user intervention.

inspection

A procedure you perform to ensure that items received conform to your quality standards. You can use inspections to prevent payment for goods and services that fail to meet your quality standards.

intraoperation steps

The particular phases within an operation. There are five intraoperation steps in Work in Process: Queue, Run, To Move, Reject, and Scrap.

inventory organization

An organization that tracks inventory transactions and balances, and/or that manufactures or distributes products.

inventory transaction

A record of material movement. The basic information for a transaction includes the item number, the quantity moved, the transaction amount, the accounting flexfields, and the date.

See also: material transaction

issue transaction

A material transaction to issue component items from inventory to work in process.

item

Anything you make, purchase, or sell, including components, subassemblies, finished products, or supplies. Oracle Manufacturing also uses items to represent planning items that you can forecast, standard lines that you can include on invoices, and option classes you can use to group options in model and option class bills.

item category

See: category

item specification

See: specification type

job

A category of personnel in your organization. Examples of a typical job include Vice President, Buyer, and Manager.

See also: position

job status

An Oracle Manufacturing function that lets you describe various stages in the life cycle of a discrete job and control activities that you can perform on the job.

LIFO (last-in-first-out) costing method

A cost flow method used for inventory valuation. Inventory balances and values are updated perpetually after each transaction is sequentially costed. It assumes that the most recent inventory units received or produced are the first units used or shipped. The ending inventory consists of old goods acquired in the earliest purchases or completions.

locator

Physical area within a subinventory where you store material, such as a row, aisle, bin, or shelf.

locator control

An Oracle Manufacturing technique for enforcing use of locators during a material transaction.

lot

A specific batch of an item identified by a number.

lot control

An Oracle Manufacturing technique for enforcing use of lot numbers during material transactions thus enabling the tracking of batches of items throughout their movement in and out of inventory.

mail message action

An electronic mail message distributed when an electronic mail alert is invoked by action rule processing in Oracle Quality.

mandatory collection plan

A collection plan for which quality results must be entered before the parent transaction can be saved.

manual resource

A resource manually charged to a discrete job or repetitive schedule.

material requirement

An inventory item and quantity needed to build an assembly on a job or repetitive schedule. Discrete job and repetitive schedule material requirements are created based on the component items defined on the assembly's bill of materials. Issue transactions fulfill material requirements.

material transaction

Transfer between, issue from, receipt to, or adjustment to an inventory organization, subinventory, or locator. Receipt of completed assemblies into inventory from a job or repetitive schedule. Issue of component items from inventory to work in process.

message action

An action that displays or logs a message for the user. In Oracle Quality, message actions differ from mail message actions.

move transaction

A transaction to move assemblies from operation to operation or within an operation on a discrete job or repetitive schedule.

nonconformance

A material not meeting quality standards.

on hold job/schedule

A job or repetitive schedule not accepting further activity and is therefore untransactable.

open interface

A Manufacturing function that lets you import or export data from other systems through an open interface. An example is a bar code reader device accumulating data you later import into your manufacturing system for further processing.

operating script action

An operating system script invoked by action rule processing in Oracle Quality.

operation

A step in a manufacturing process where you perform work on, add value to, and consume department resources for an assembly.

operation code

A label that identifies a standard operation.

operation completion pull transaction

A material transaction where you backflush components from inventory to work in process as you complete the operation where the component is consumed.

See also: backflush transaction

operation completion transaction

A move transaction from one operation to the next where you have completed building the assembly at that operation. In this process, you can also charge resources and overheads and backflush component items.

operation sequence

A number that orders operations in a routing relative to each other.

organization

A business unit such as a plant, warehouse, division, department, and so on. Order Management refers to organizations as warehouses on all Order Management windows and reports.

output variable

A variable whose output changes based upon the outcome of action rule processing. You can use output variables in alert actions to define mail IDs, display exception data, and pass parameters to concurrent program request, SQL script, and operating system script alert actions in Oracle Quality.

outside processing

Performing work on a discrete job or repetitive schedule using resources provided by a supplier.

parent transaction

A transaction entered in an Oracle Manufacturing product that invokes quality data collection.

Pareto's law

Vilfredo Pareto's theory that a small percentage of a group accounts for the largest fraction of the impact for the group. For example, 90% of your inventory value may be attributed to 5% of your inventory items.

processing status

The processing state of a row (record) in an open interface table. Common statuses include, but are not restricted to, Pending, Running, and Error.

See also: repetitive processing days

production line

The physical location where you manufacture a repetitive assembly, usually associated with a routing. You can build many different assemblies on the same line at the same time. Also known as assembly line.

pull transaction

A material transaction that automatically issues component items into work in process from inventory when you move or complete the assembly. Also known as post-deduct or backflush.

See also: backflush transaction

purchase order

A type of purchase order you issue when you request delivery of goods or services for specific dates and locations. You can order multiple items for each planned or standard purchase order. Each purchase order line can have multiple shipments and you can distribute each shipment across multiple accounts.

See also: standard purchase order, planned purchase order

purchase order receipt

See: receipt

push transaction

A material transaction to issue component items from inventory to work in process before you manufacture the assembly.

quality action

An action, such as sending electronic mail or putting a job on hold, triggered when an action rule is evaluated and found to be true. For example, if quality results values

indicate that a critical measurement for a discrete job assembly is out-of-tolerance, the job is put on hold

quality data repository

The database table which stores quality data.

quality results

Actual results recorded during quality data collection. These results might include test or inspection outcomes, measurements taken, details of defects, lot attributes, start and stop times for machines and resources.

quantity accepted

The number of items you accept after inspection.

quantity completed

For an operation on a discrete job or repetitive schedule, the quantity of the assembly that you transacted beyond the Run intraoperation step. For a discrete job or repetitive schedule, the quantity of the assembly that you received into inventory.

quantity issued

The quantity of a component item issued from inventory to a discrete job r repetitive schedule to fulfill a WIP material requirement.

quantity rejected

The number of items you reject after inspection.

queue

An intraoperation step in an operation where assemblies are waiting to be worked on. The default intraoperation step for every operation in a routing.

receipt

A shipment from one supplier that can include many items ordered on many purchase orders.

recipient

Anyone that receives a mail message as a result of mail message action rule processing.

reference designator

An optional identifier you can assign to a component on a bill. For example, when the bill requires four of a component, you can assign four reference designators to that component, one for each usage.

reference information collection element

A collection element that represents an Oracle Application object such as an item, lot number, serial number, routing, supplier, and customer.

See also: collection element types

reject

For Oracle Automotive, Oracle TeleService and Oracle Work in Process, reject is an intraoperation step in an operation where you can record assemblies that require rework or need to be scrapped. For Oracle Purchasing and Oracle Quality, reject is an option you use to indicate that you do not want to approve a document. Purchasing returns the document to its owner for modification and resubmission if appropriate.

repetitive manufacturing

A manufacturing environment where you build assemblies repetitively, on production lines, rather than in discrete jobs or batches.

repetitive schedule

The process of dividing suggested aggregate repetitive schedules and allocating them across individual production lines, based on predefined line priorities and **production rates.**

repetitive schedule status

An Oracle Manufacturing function that lets you describe various stages in the life cycle of a repetitive schedule and control activities that you can perform on the schedule.

resource

Anything of value, except material and cash, required to manufacture, cost, and schedule products. Resources include people, tools, machines, labor purchased from a supplier, and physical space.

resource charge

See: resource transaction

resource requirement

A resource and quantity needed to build an assembly on a job or repetitive schedule. Discrete job and repetitive schedule resource requirements are created based on the resource requirements specified on the assembly's routing. Resource transactions fulfill resource requirements.

resource transaction

A transaction where you automatically or manually charge resource costs to a discrete job or repetitive schedule.

return material authorization (RMA)

Permission for a customer to return items. Receivables allows you to authorize the return of your sales orders as well as sales made by other dealers or suppliers, as long as the items are part of your item master and price list.

reversing transaction

A transaction that reverses a previously processed material, move, resource, or overhead transaction.

revision

A particular version of an item, bill of material, or routing.

revision control

An inventory control option that tracks inventory by item revision and forces you to specify a revision for each material transaction.

route sheet

A report that provides full routing, operation, resource, and material requirement details for jobs and repetitive schedules. Typically used to know how, when, where, and who builds an assembly. Also known as traveler.

routing

A sequence of manufacturing operations that you perform to manufacture an assembly. A routing consists of an item, a series of operations, an operation sequence, and operation effective dates.

run

An intraoperation step where you move assemblies that you are working on at an operation.

scrap

An intraoperation step where you move assemblies that cannot be reworked or completed.

scrap account

An account that you may use to charge scrap transactions.

serial number

A number assigned to each unit of an item and used to track the item.

serial number control

A manufacturing technique for enforcing use of serial numbers during a material transaction.

serialized unit

The unique combination of a serial number and an inventory item.

shelf life

The amount of time an item may be held in inventory before it becomes unusable.

shop floor status

An Oracle Manufacturing function that lets you restrict movement of assemblies at an operation and intraoperation step within a discrete job or repetitive schedule.

short code

An abbreviated notation of a collection element value.

specification

Describes the requirements of a product in Oracle Quality. You can define specifications for the key characteristics of the products you produce.

specification element

A collection element copied or assigned to a specification.

specification limits

Numeric values used to specify an acceptable range of values for a quality element. Consists of a target value, and upper and lower control limit, and an upper and lower reasonableness limit.

specification subtype

A user-defined subclassifcation of the standard specification types: customer, vendor, or an item/item category. For example a customer specification can be assigned a specification subtype that indicates the customer's plant location.

specification type

A classification for specifications. Specifications can be specific to a customer, vendor, or an item/item category.

SQL validation statement

A statement written in SQL to customize action details.

SQL script action

An SQL script invoked by action rule processing in Oracle Quality.

subassembly

An assembly used as a component in a higher level assembly.

subinventory

Subdivision of an organization, representing either a physical area or a logical grouping of items, such as a storeroom or receiving dock.

supplier

Provider of goods or services.

supplier purchasing hold

A hold condition you place on a supplier to prevent new purchasing activity on the supplier. You cannot approve purchase orders for suppliers you placed on hold.

target value

A number which indicates the desired result of a given quality characteristic. Can also be used to denote the expected average of values for a quality characteristic.

to move

An intraoperation step where assemblies can either be completed to a subinventory or wait to be moved to another operation.

transaction date

The date you enter and Oracle Manufacturing maintains for any manufacturing transaction. The date must fall within an open accounting period and be greater than the release date for transactions on a discrete job or repetitive schedule.

transaction interface

An open interface table through which you can import transactions.

See also: open interface

transaction manager

A concurrent program that controls your manufacturing transactions.

transaction worker

An independent concurrent process launched by a transaction manager to validate and process your manufacturing transactions.

upper and lower specification limits

Defines a valid range of acceptable values.

variable collection element

A collection element that represents numeric measurements.

See also: collection element types

vendor

See: supplier

WIP move resource

A resource automatically charged to a discrete job or repetitive schedule by a move transaction. Resources are automatically charged when a forward move occurs, or uncharged when a backward move occurs.

work in process

An item in various phases of production in a manufacturing plant. This includes raw material awaiting processing up to final assemblies ready to be received into inventory.

worker

An independent concurrent process that executes specific tasks. Programs using workers to break large tasks into smaller ones must coordinate the actions of the workers.

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