

11i Implement and Use Quality

Student Guide

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Preface

Profile

Before You Begin This Course

Prerequisites

There are no prerequisites for this course.

How This Course Is Organized

11i Implement and Use Quality is an instructor-led course featuring lecture and hands-on exercises. Online demonstrations and written practice sessions reinforce the concepts and skills introduced.

Related Publications

Oracle Publications

Additional Publications

- System release bulletins
- Installation and user's guides
- read.me files
- Oracle Magazine

Typographic Conventions

Typographic Conventions in Text

Convention	Element	Example
Bold italic	Glossary term (if there is a glossary)	The <i>algorithm</i> inserts the new key.
Caps and lowercase	Buttons, check boxes, triggers, windows	Click the Executable button. Select the Can't Delete Card check box. Assign a When-Validate-Item trigger to the ORD block. Open the Master Schedule window.
Courier new, case sensitive (default is lowercase)	Code output, directory names, filenames, passwords, pathnames, URLs, user input, usernames	Code output: <code>debug.set ('I', 300);</code> Directory: <code>bin (DOS), \$FMHOME (UNIX)</code> Filename: Locate the <code>init.ora</code> file. Password: User <code>tiger</code> as your password. Pathname: Open <code>c:\my_docs\projects</code> URL: Go to <code>http://www.oracle.com</code> User input: Enter <code>300</code> Username: Log on as <code>scott</code>
Initial cap	Graphics labels (unless the term is a proper noun)	Customer address (<i>but</i> Oracle Payables)
Italic	Emphasized words and phrases, titles of books and courses, variables	Do <i>not</i> save changes to the database. For further information, see <i>Oracle7 Server SQL Language Reference Manual</i> . Enter <code>user_id@us.oracle.com</code> , where <i>user_id</i> is the name of the user.
Quotation marks	Interface elements with long names that have only initial caps; lesson and chapter titles in cross-references	Select "Include a reusable module component" and click Finish. This subject is covered in Unit II, Lesson 3, "Working with Objects."
Uppercase	SQL column names, commands, functions, schemas, table names	Use the <code>SELECT</code> command to view information stored in the <code>LAST_NAME</code> column of the <code>EMP</code> table.

Convention	Element	Example
Arrow	Menu paths	Select File—> Save.

Brackets	Key names	Press [Enter].
Commas	Key sequences	Press and release keys one at a time: [Alternate], [F], [D]
Plus signs	Key combinations	Press and hold these keys simultaneously: [Ctrl]+[Alt]+[Del]

Typographic Conventions in Code

Convention	Element	Example
Caps and lowercase	Oracle Forms triggers	When-Validate-Item
Lowercase	Column names, table names	SELECT last_name FROM s_emp;
	Passwords	DROP USER scott IDENTIFIED BY tiger;
	PL/SQL objects	OG_ACTIVATE_LAYER (OG_GET_LAYER ('prod_pie_layer'))
Lowercase italic	Syntax variables	CREATE ROLE <i>role</i>
Uppercase	SQL commands and functions	SELECT userid FROM emp;

Typographic Conventions in Navigation Paths

This course uses simplified navigation paths, such as the following example, to direct you through Oracle Applications.

(N) Invoice > Entry > Invoice Batches Summary (M) Query > Find (B) Approve

This simplified path translates to the following:

1. (N) From the Navigator window, select Invoice > Entry > Invoice Batches Summary.
2. (M) From the menu, select Query > Find.
3. (B) Click the Approve button.

Notations :

(N) = Navigator

(M) = Menu

(T) = Tab

(I) = Icon

(H) = Hyperlink

(B) = Button

Typographical Conventions in Help System Paths

This course uses a “navigation path” convention to represent actions you perform to find pertinent information in the Oracle Applications Help System.

The following help navigation path, for example—

(Help) General Ledger > Journals > Enter Journals

—represents the following sequence of actions:

1. In the navigation frame of the help system window, expand the General Ledger entry.
2. Under the General Ledger entry, expand Journals.
3. Under Journals, select Enter Journals.
4. Review the Enter Journals topic that appears in the document frame of the help system window.

Getting Help

Oracle Applications provides you with a complete online help facility.

Whenever you need assistance, simply choose an item from the Help menu to pinpoint the type of information you want.

To display help for a current window:

1. Choose Window Help from the Help menu, click the Help button on the toolbar, or hold down the Control key and type 'h'.

A web browser window appears, containing search and navigation frames on the left, and a frame that displays help documents on the right.

The document frame provides information on the window containing the cursor. The navigation frame displays the top-level topics for your responsibility, arranged in a tree control.

2. If the document frame contains a list of topics associated with the window, click on a topic of interest to display more detailed information.

3. You can navigate to other topics of interest in the help system, or choose Close from your web browser's File menu to close help.

Searching for Help

You can perform a search to find the Oracle Applications help information you want. Simply enter your query in the text field located in the top-left frame of the browser window when viewing help, then click the adjacent Find button.

A list of titles, ranked by relevance and linked to the documents in question, is returned from your search in the right-hand document frame. Click on whichever title seems to best answer your needs to display the complete document in this frame. If the document doesn't fully answer your questions, use your browser's Back button to return to the list of titles and try another.

11*i* Overview of Oracle Quality Management

Chapter 1

11i Overview of Oracle Quality Management

11i Overview of Oracle Quality Management

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Course Objective

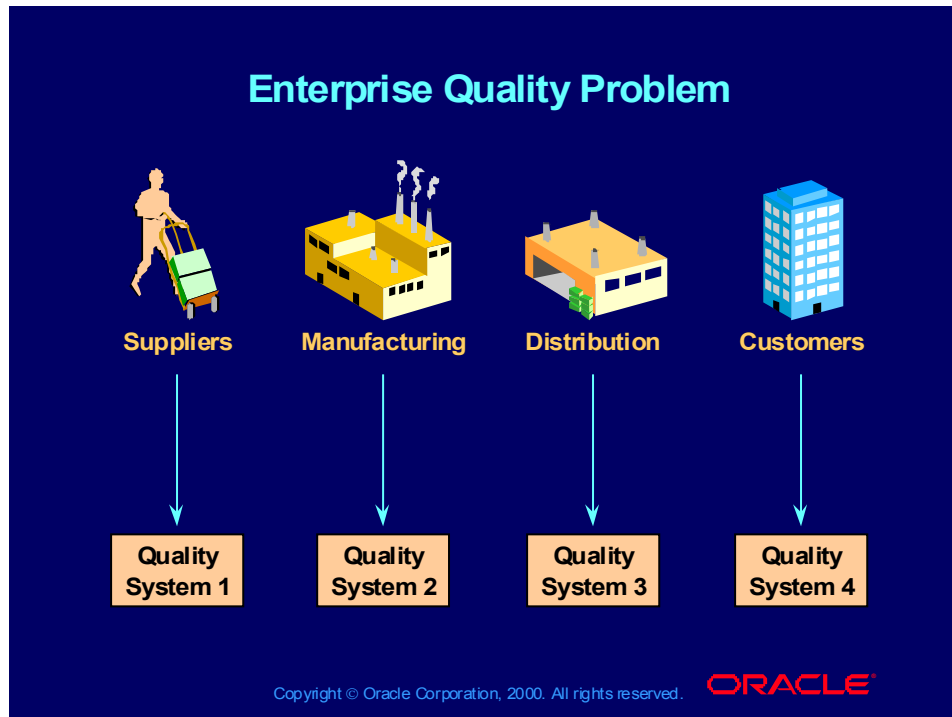
Course Objective

After completing this course, you should be able to describe basic features and benefits of Oracle Quality

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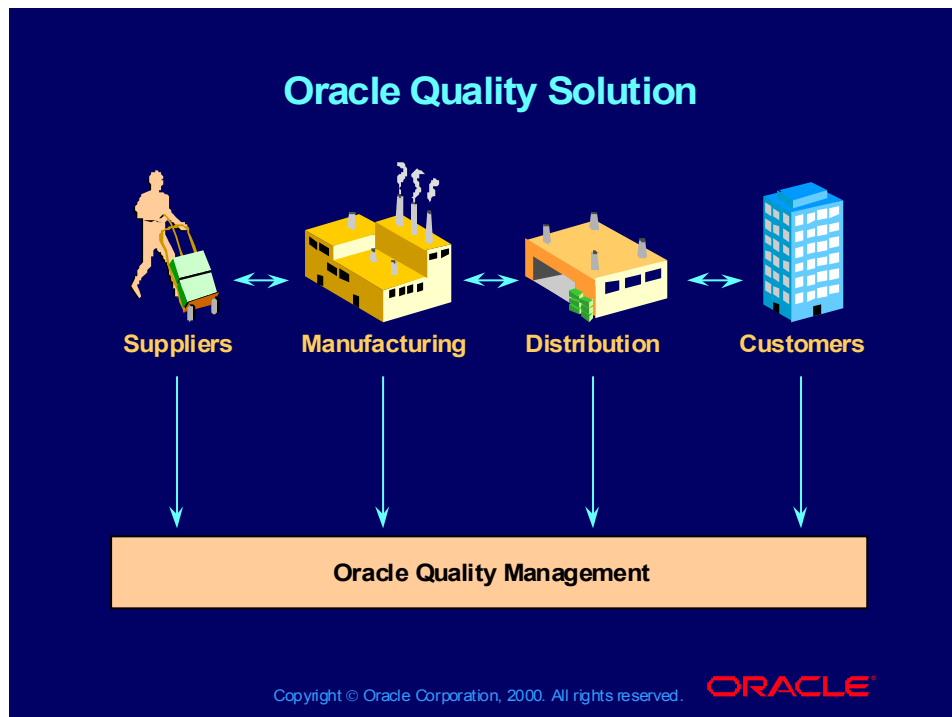
Enterprise Quality Problem



Overview

With increasing pressure to be competitive, companies are implementing quality systems throughout their organizations. These systems are not always integrated with business systems and frequently they are standalone databases. As a result, trying to correlate and analyze data gathered at different areas in the company can be difficult. For example, associating work in process test data with customer service repair data would be cumbersome.

Oracle Quality Solution



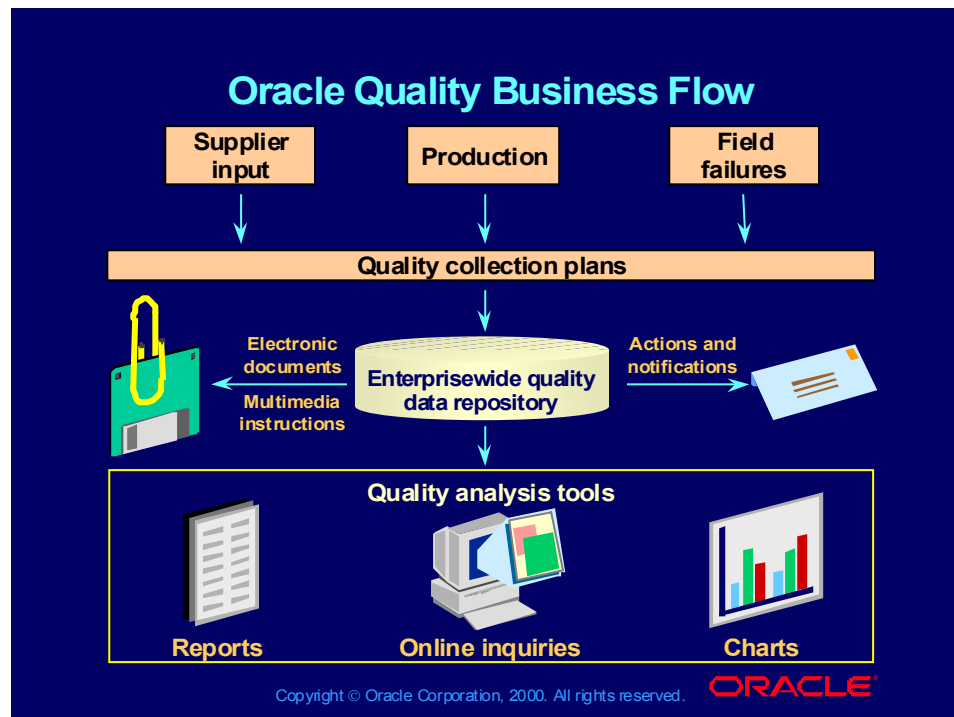
Oracle Quality Solution

Oracle Quality is integrated with the Oracle Manufacturing and Distribution applications to provide consistent quality data definition, data collection and data management across your enterprise and throughout your supply chain.

Oracle Quality:

- Enables your company to achieve consistent quality reporting across your organization by providing a central repository of quality data
- Provides complete data integration that reduces the amount of data being entered
- Automatically captures all information related to a transaction
- Maintains high data integrity
- Requires that data be entered only once and is available across the enterprise

Oracle Quality Business Flow



Oracle Quality Business Flow

You can use the Oracle Quality application to gather user-defined quality data. Data collected and input into Oracle Quality comes from functions such as these:

- Purchasing
- Production control
- Customer service

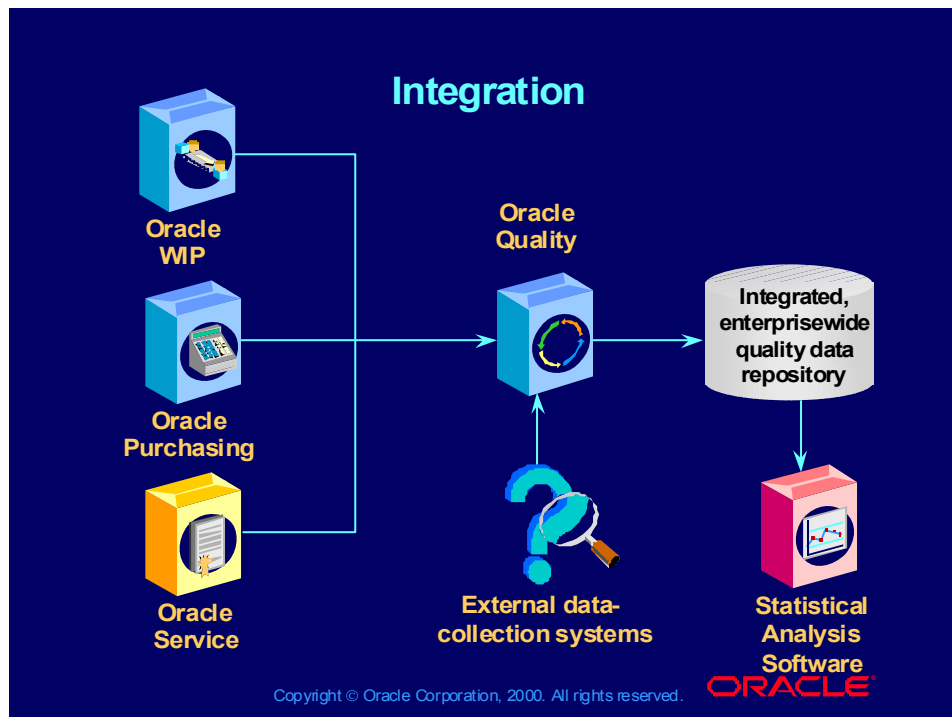
Examples of collection plans include the following:

- Incoming inspection
- Shop-floor inspection and test
- Final inspection
- Incident and failure details

Concepts of quality management in Oracle Quality include the following:

- Quality collection elements
- Specifications
- Quality collection plans that capture quality data for analysis and reporting
- Data collection
- Action rules and notifications
- Online inquiries, reports, and charts for analysis and reporting
- Attachments for procedures and documents that store multimedia and electronic documents

Integration



Product Integration

Collecting Data

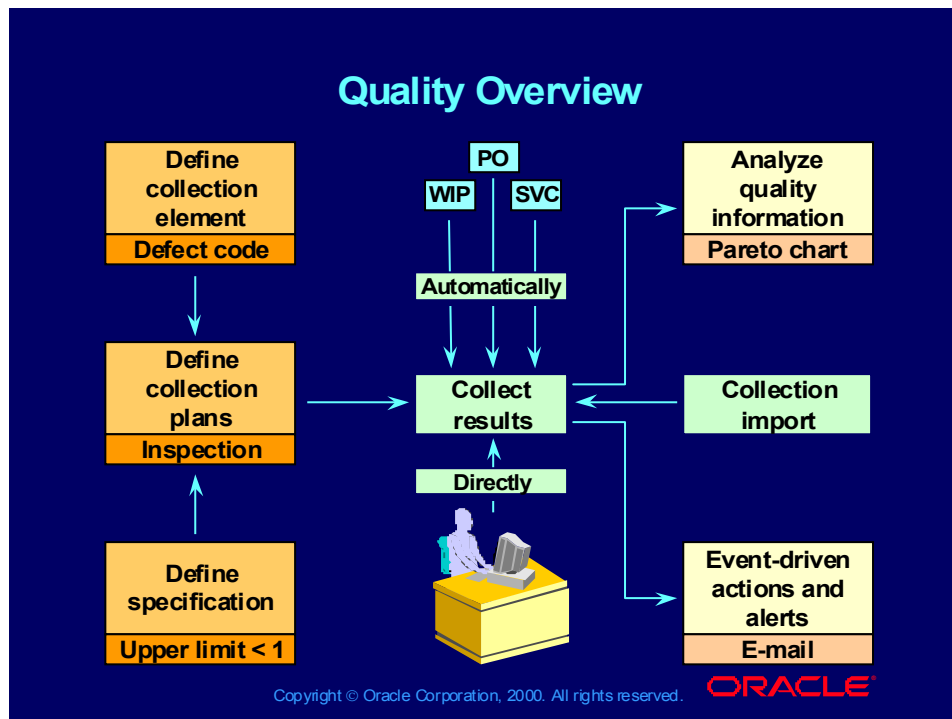
Oracle Quality is integrated with Oracle Work in Process, Oracle Purchasing, and Oracle Service so that you can collect quality data during transactions.

Oracle Quality also has an open interface that allows data to be collected by external data-collection systems and imports this data into the central quality data repository.

Analyzing and Reporting Data

Oracle Quality is integrated with a software package for statistical quality and process control. Using these statistical quality-control capabilities, you can create custom graphs and reports.

Quality Overview



Quality Collection Elements



Quality Collection Elements

The collection element is the foundation of the Oracle Quality application. The characteristics of the product or process define the collection elements. Quality collection elements represent the most basic data that you can collect and analyze.

You can use collection elements to accomplish the following:

- Identify the object that you are collecting information about:
 - Item
 - Lot number
 - Serial number
- Provide cross-reference information for analysis:
 - Supplier
 - Customer
 - Department
- Provide reference information:
 - Purchase order
 - Discrete job
 - Incident type
- Input key quality-control variables:
 - Temperature
 - Width

- Input key quality-control attributes:
 - Defect code
 - Cause code

You use collection elements to further define quality specifications, collection plans, and reports.

Collection Element Types

Collection Element Types			
Attribute		Reference	
Color	Blue Yellow Red	Job To Op Seq Lot	Oracle Work in Process
Disposition	Rework Scrap Use as is	PO number Supplier	Oracle Purchasing
Variable			
Diameter	2.75 cm + .05 cm		
Temperature	98° + 2°		

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Collection Element Types

A collection element type groups collection elements to distinguish types of data collected and is used for sorting and reporting quality data.

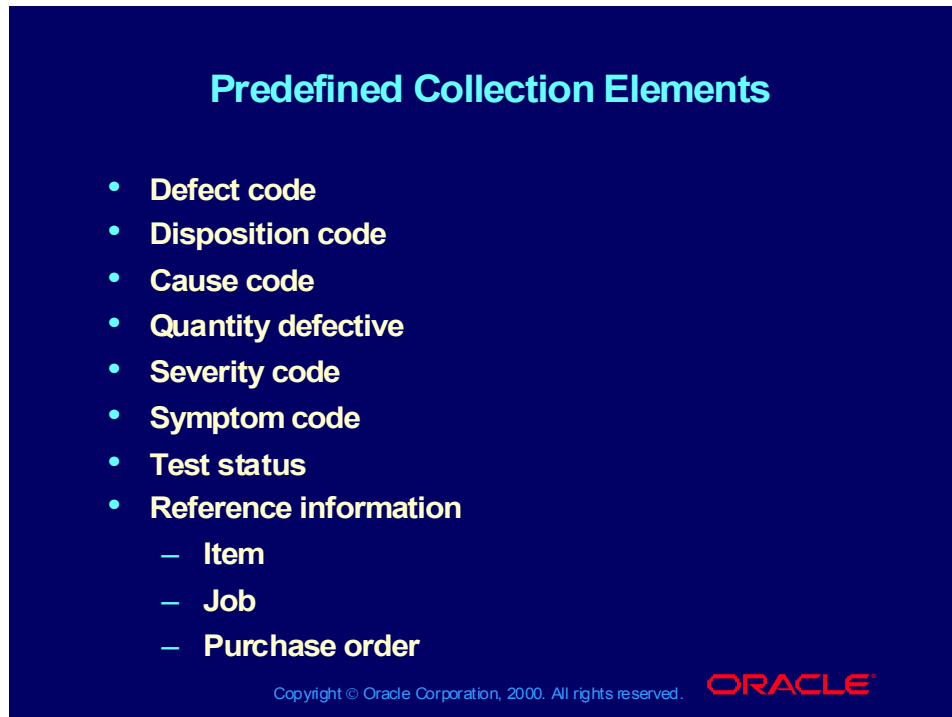
Predefined Collection Element Types

There are three predefined collection element types:

- Attribute: Often represents the outcome of a process or a discrete characteristic of an item
- Variable: Often represents numeric measurements
- Reference information: Refers to common objects defined in other Oracle Applications (They are also known as context elements because their values are derived in the context of transactions entered and saved in these applications.)

Each collection element must be associated with a collection element type.

Predefined Collection Elements



Predefined Collection Elements

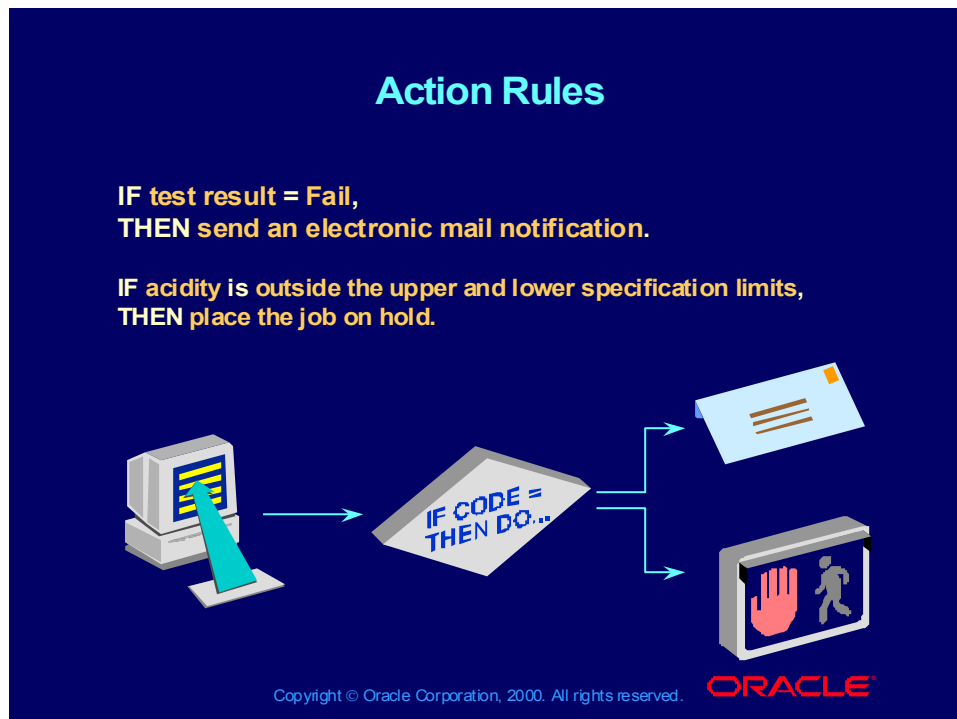
- Defect code
- Disposition code
- Cause code
- Quantity defective
- Severity code
- Symptom code
- Test status
- Reference information
 - Item
 - Job
 - Purchase order

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Predefined Collection Elements

In addition to reference information collection elements, Oracle Quality provides some predefined collection elements, as listed on the slide. You can create an unlimited number of additional collection elements.

Action Rules



Quality Actions

Depending on the quality data values collected, you may want to initiate certain actions. You can define collection element actions that are executed depending on a certain condition. This condition and the resulting action are defined as an action rule. Action rules are evaluated and executed during the quality data-collection process.

Types of Actions



Types of Actions

There are three types of actions in Oracle Quality.

Message Actions

- Display a message to the operator.
- Reject the input; forces you to enter an acceptable value before allowing you to continue.
- Post an entry to the Quality Action Log.

Alert Actions

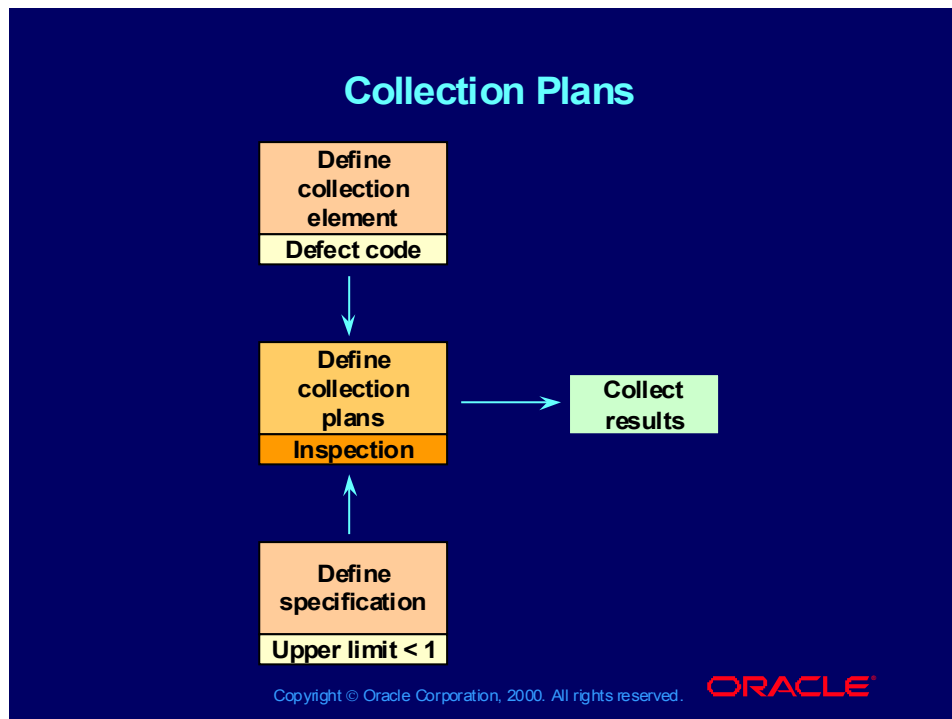
- Send an electronic mail notification.
- Execute an operating system script.
- Execute a SQL script.
- Launch a concurrent request.

Application-Specific Actions

- Work in Process actions
 - Place the job on hold.
 - Hold all schedules building this assembly on this production line.
 - Assign a shop-floor status to the interoperation step; you can specify a shop-floor status to assign to the To Move intraoperation step of the To Operation sequence.
- Purchasing actions
 - Accept the shipment.

- Reject the shipment; rejected shipments can be reinspected.
- Place the supplier on hold; prevents you from approving purchase orders for suppliers on hold.
- Place a document or release on hold; you cannot print, receive against, invoice, or approve purchase orders or releases that are on hold.
- Assign an ASL status; updates the approved supplier's status to the status that you specify.

Collection Plans



Collection Plans

Quality collection plans determine what data to collect, where to collect it, and what action to take based on the results. A collection plan is a test plan or inspection plan, consisting of a group of collection elements that you want to collect and analyze for a given business case.

Using Oracle Quality, you can create any number of collection plans to support the needs of your enterprise for quality data collection and analysis. For example, you can create collection plans to collect the following information:

- Supplier data
- Incoming inspection information
- Work-in-process defects
- Material review board data
- Equipment failures
- Details of field failures
- Customer complaints

Specifications

Specifications

Item Specification

Specification	Effective Date	Revision	Expiration Date	
Item				
Process Procedure				
Test Condition				
Characteristics	UOM	Target Value	Lower Spec Limit	Upper Spec Limit
Disposition of Noncompliant Product				

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Specifications

Products and services are designed to perform or accomplish a particular task. Specifications document the requirements to which a product or service should conform. They help ensure that the goods that you receive from a supplier, or that you produce or make for a customer, conform to quality standards.

Organizations develop specifications to document process or inspection procedures, disposition instructions, engineering drawings, or corrective actions.

You can use the Oracle Quality application to define specifications for the key quality characteristics of products that you manufacture or material that you receive from suppliers. Specification limits are retrieved during the collection of quality data, displayed in the Enter Quality Results window, and are used for evaluating action rules based on the specification.

Uses of Specifications

Uses of Specifications

- Specifications can be used to prohibit out-of-range values from being entered.
- Specifications display specification limits as quality results are being entered.
- You use specification limits to define action rules.

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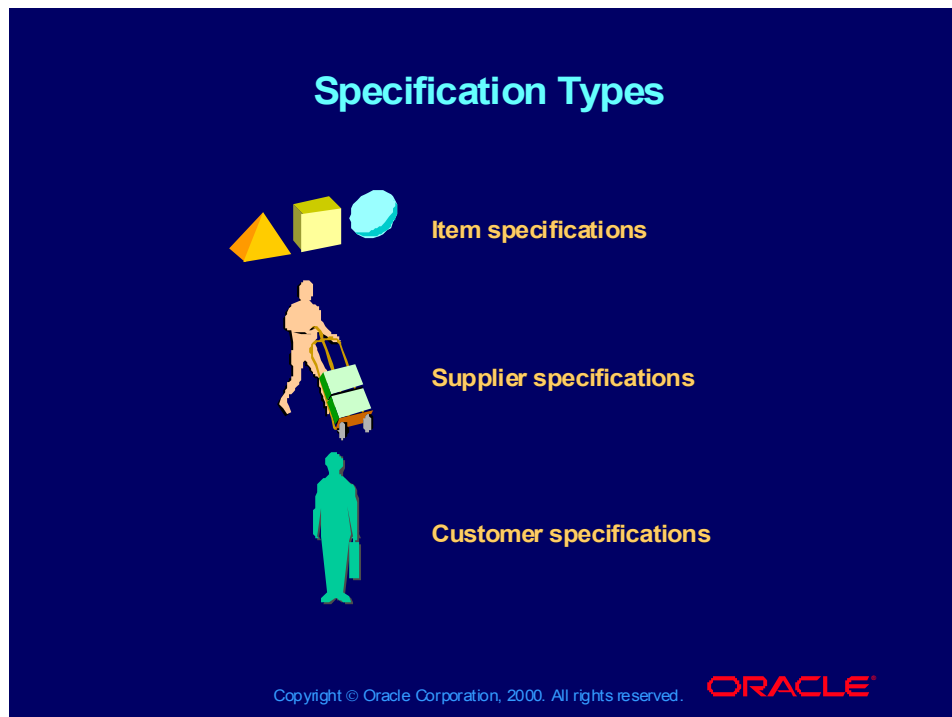
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Uses of Specifications

Specifications are used for the following purposes:

- During data collection, specifications prohibit entering values that lie outside the reasonable range of the specification.
- Specifications assist operators as they enter data, by allowing the display of specification limits during data entry.
- You define action rules based on specification limits.

Specification Types



Specification Types

When defining a specification, you must select a specification type. There are three types of specifications:

- Item specifications provide detail about an item.
- Supplier specifications provide detail about a supplier/item combination.
- Customer specifications provide detail about a customer/item combination.

Each type of specification can be based on either an item or an item category. If you are entering quality results for an item using a collection plan that is associated with a specification, but no specification exists for that item, Oracle Quality will use the specification defined for the category of that item.

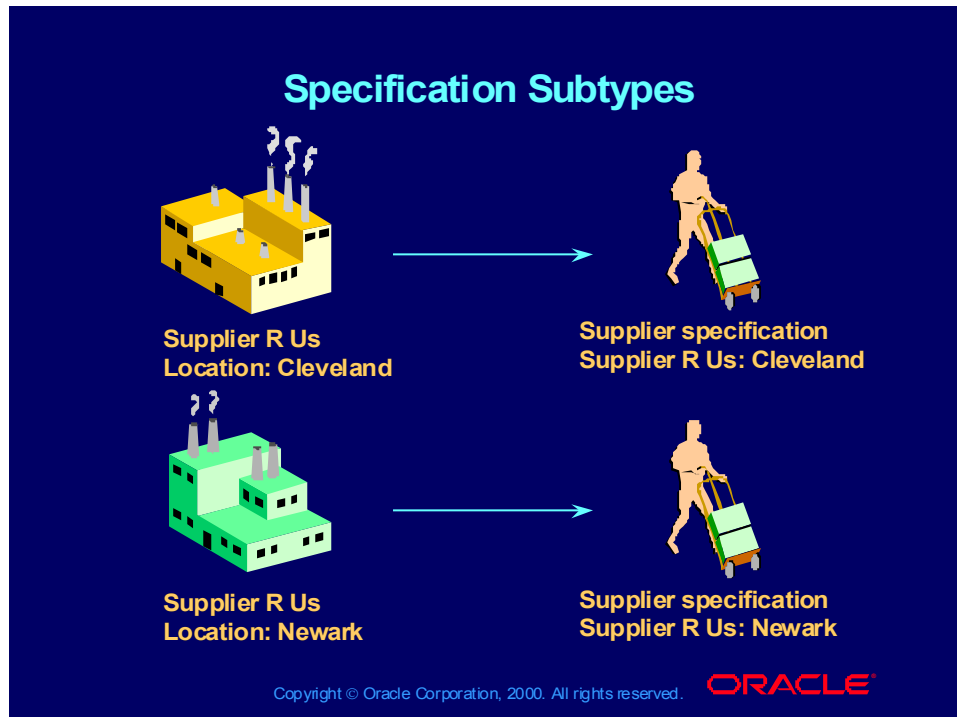
Specification Type Examples

Item specification: For a given item, thickness must be 0.55 inches, plus or minus 0.02 inches, torque strength must be between 4.5 and 5.2, and burn-in hours must be 48.

Supplier specification: Carbon black received from supplier XYZ must be tested to ensure that its particle size does not exceed 0.0026 millimeters.

Customer specification: Steel coils sold to customer ABC must always contain at least 1.5% molybdenum and 2.5% manganese, and they must have a tensile strength of at least 60.

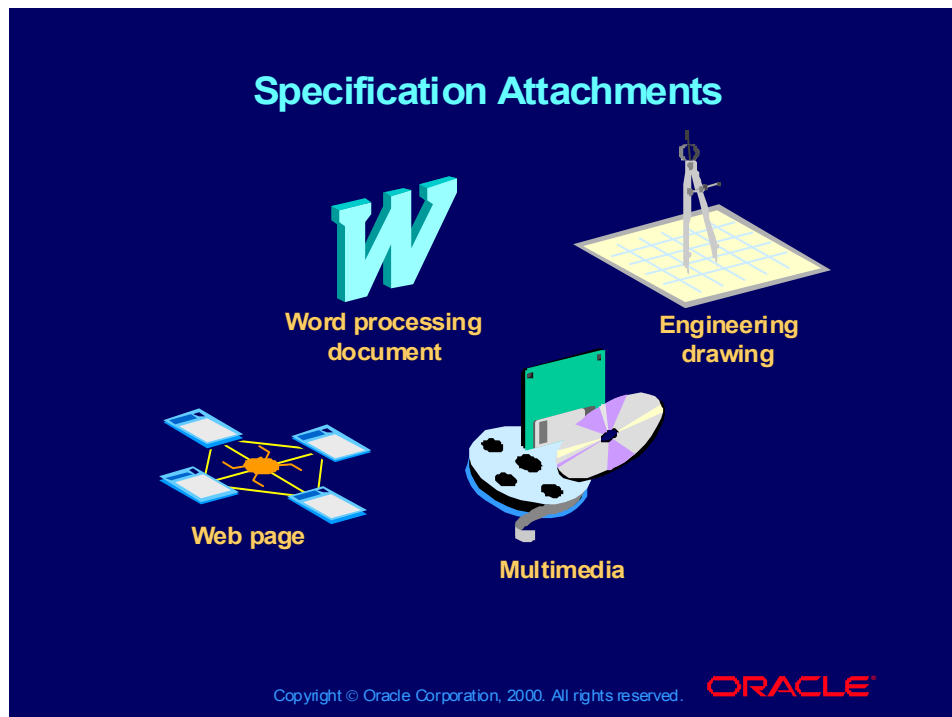
Specification Subtypes



Uses of Specification Subtypes

You can also define specification subtypes, which are used to create more detailed specifications. For example, if you require a different specification for deliveries from different locations from the same supplier, you could use specification subtypes to ensure that the correct specification is used.

Specification Attachments



Specification Attachments

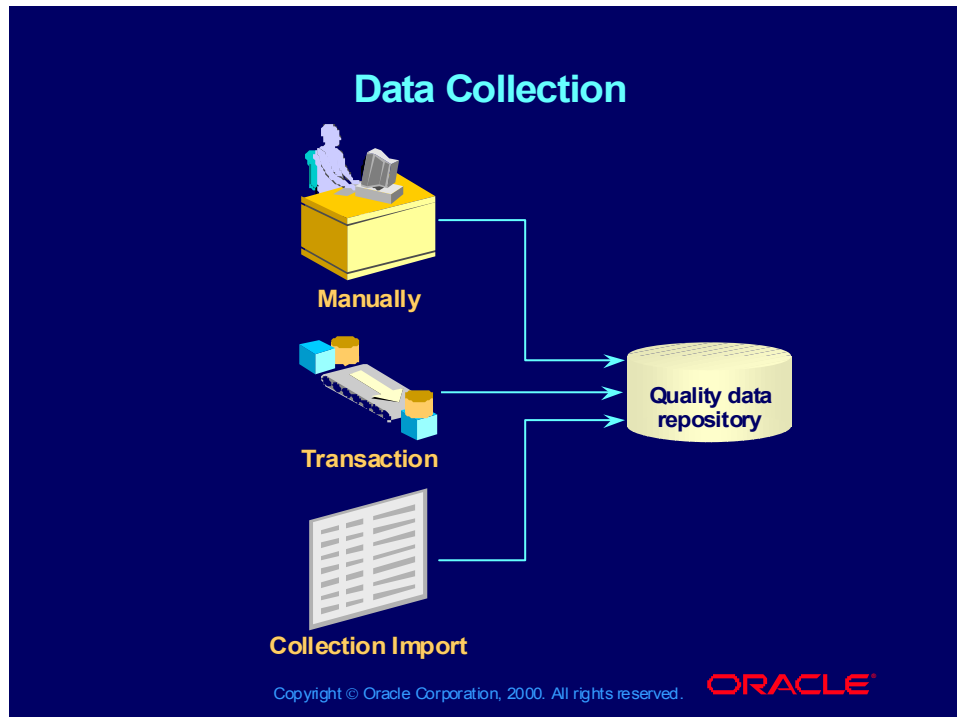
An attachment provides additional information regarding the specification. One example is the attachment of a drawing depicting an assembly process for an item. Each specification can have multiple attachments. Collection plans can also have attachments.

Attachments can be in any of these forms:

- Electronic documents (word processing document, spreadsheet)
- Images (engineering drawing)
- Multimedia instruction (video of an assembly procedure)
- Web page (specify a URL reference)
- Text (short or long—greater than 2,000 characters)

You can view specification attachments during the collection of quality data by clicking Attachments on the toolbar.

Data Collection

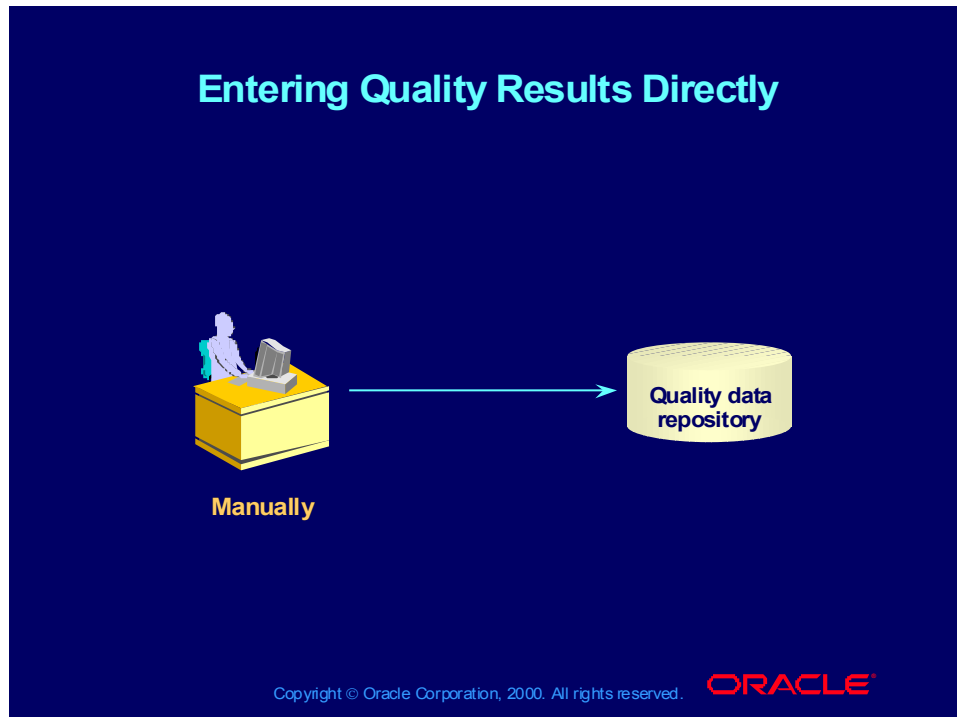


Data Collection Overview

Oracle Quality provides the following methods of collecting data:

- Entering results directly into Oracle Quality
- Collecting quality results during transactions within Oracle Purchasing, Oracle Work in Process, Oracle Flow Manufacturing, Oracle Supplier Management Portal, and Oracle Service
- Automatically, using the Oracle Quality Collection Import

Entering Quality Results Directly

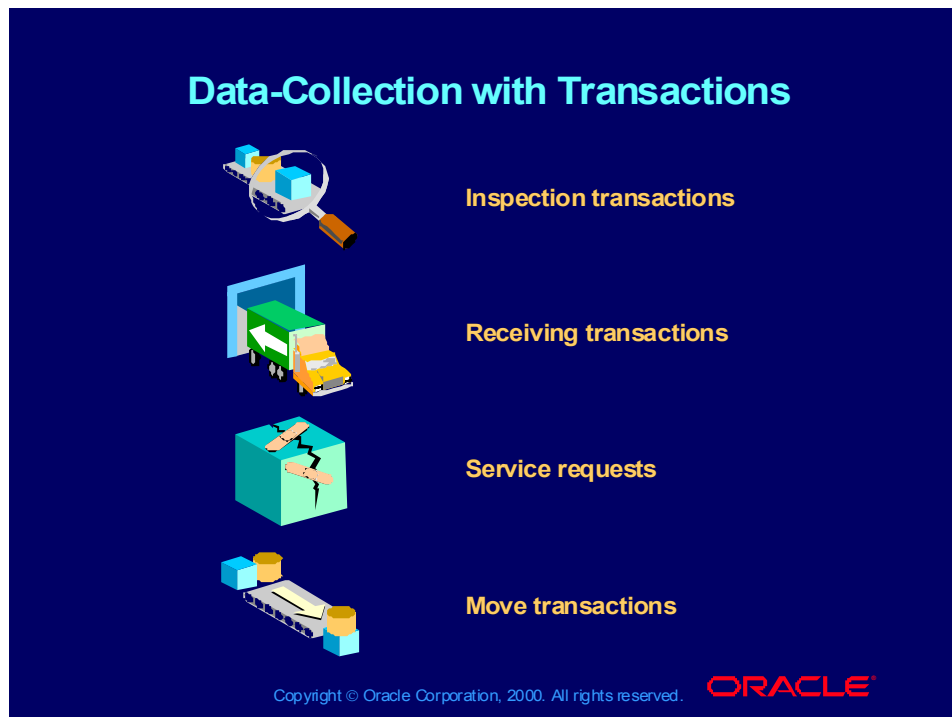


Entering Quality Results Directly

The first method of entering quality results is by manually entering data into the quality system. You can enter quality data directly into the collection plan using collection elements. Collection elements specified in the collection plan are automatically displayed in a spreadsheet format that allows several results to be entered at once.

As you enter results, the data is validated using the validation rules that you specified in the collection plan, such as acceptable values and valid data types.

Data-Collection with Transactions



Transactions

The second method for entering quality results is by collecting those results while using Oracle Applications transactions. As you execute a transaction, Oracle Quality searches for associated collection plans and evaluates the collection triggers. If the collection triggers are found to be true, the Enter Quality Results window is enabled for data entry.

You can associate the following transactions with your collection plans:

- Inspection transactions (Oracle Purchasing)
- Receiving transactions (Oracle Purchasing)
- Service requests (Oracle Service)
- Move transactions (Oracle Work in Process)

Oracle Purchasing

In Oracle Purchasing, you can collect quality data in two ways:

- You can use Oracle Quality instead of Oracle Purchasing to accept or reject items during receiving inspection. If you are using Oracle Quality, you can collect additional quality data during receiving inspection.
- You can collect quality data on items as you transfer and deliver them to other locations.

Oracle Service

You can collect data on service calls while entering service requests.

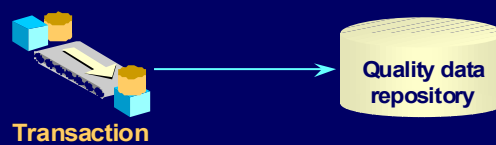
Oracle Work in Process

You can collect data on manufacturing processes during the WIP move transaction.

Transactional Data Collection

Transactional Data Collection

- Eliminates redundant data entry
- Enforces mandatory data collection
- Ensures data integrity
- Ensures timely quality data collection



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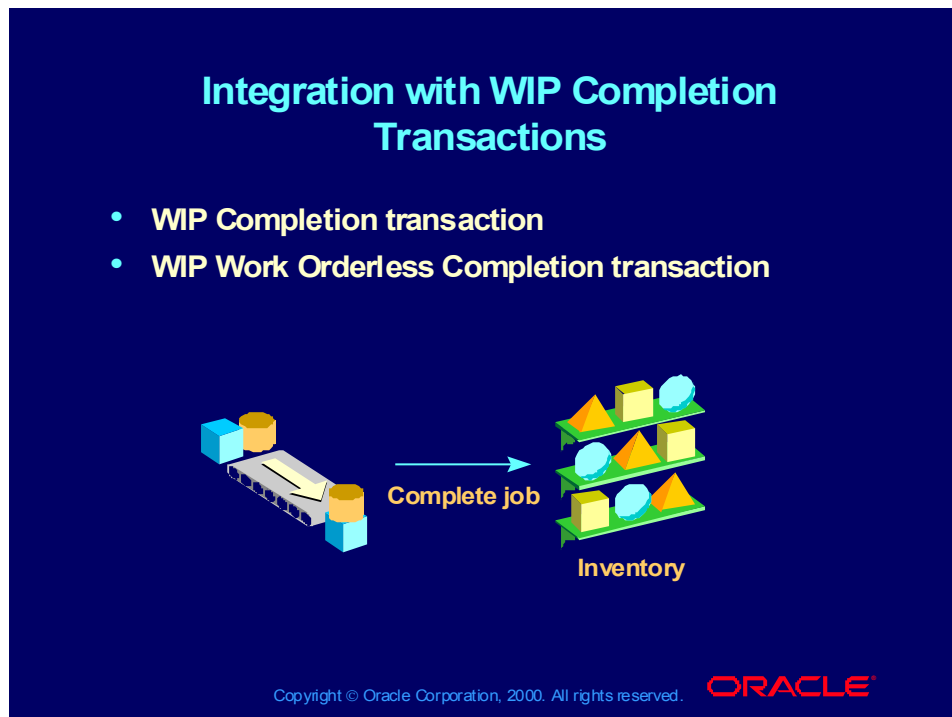
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Benefits of Transactional Data Collection

Transactional data collection offers the following advantages:

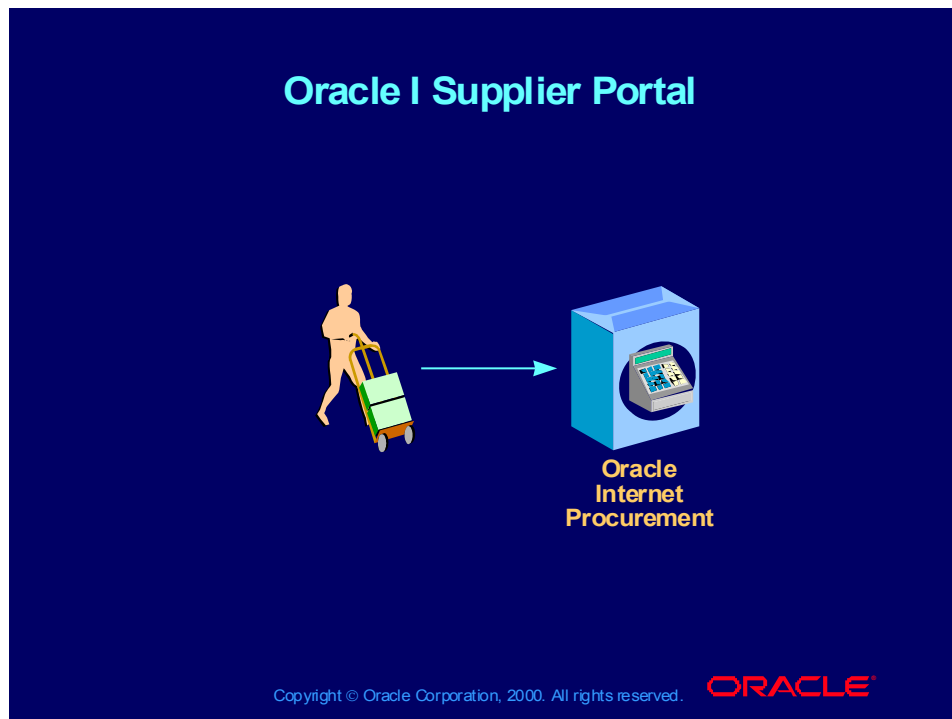
- Eliminates redundant data entry by writing context reference element data (job, item) to the quality data repository when you save the transaction
- Enforces mandatory collection of quality data by requiring that quality results are entered before the parent transaction can be saved
- Ensures data integrity by validating all reference elements
- Ensures that quality data collection is done in a timely manner

Integration with WIP Completion Transactions



WIP Completion Transactions Integration

You can collect quality data when completing a discrete job to inventory or when performing a work orderless completion. You can use this feature to collect inspection results and descriptive attributes of your assemblies when they are completed into inventory.



Self Service Quality

Using Oracle I Supplier Portal (formerly called Web Suppliers) you can have your suppliers enter or review quality data against purchase orders, including outside processing purchase orders.

About Oracle I Supplier Portal

Oracle I Supplier Portal enables your suppliers to review and research information that affects them directly. With Oracle I Supplier Portal authorized suppliers can use a standard Web browser to perform common business functions such as reviewing purchase agreements, tracking inventory balances, and verifying receipts. With a simple-to-use interface, your suppliers can register as new users; view schedules, orders, and requests for quotations; and perform other activities at their convenience. The portal provides your suppliers with direct and secure access to your systems, so that they can serve you better.

Setting Up Collection Plans

To enable a collection plan for your suppliers to use with Oracle I Supplier Portal, you must associate it with the correct quality collection transaction. You can use two different transactions:

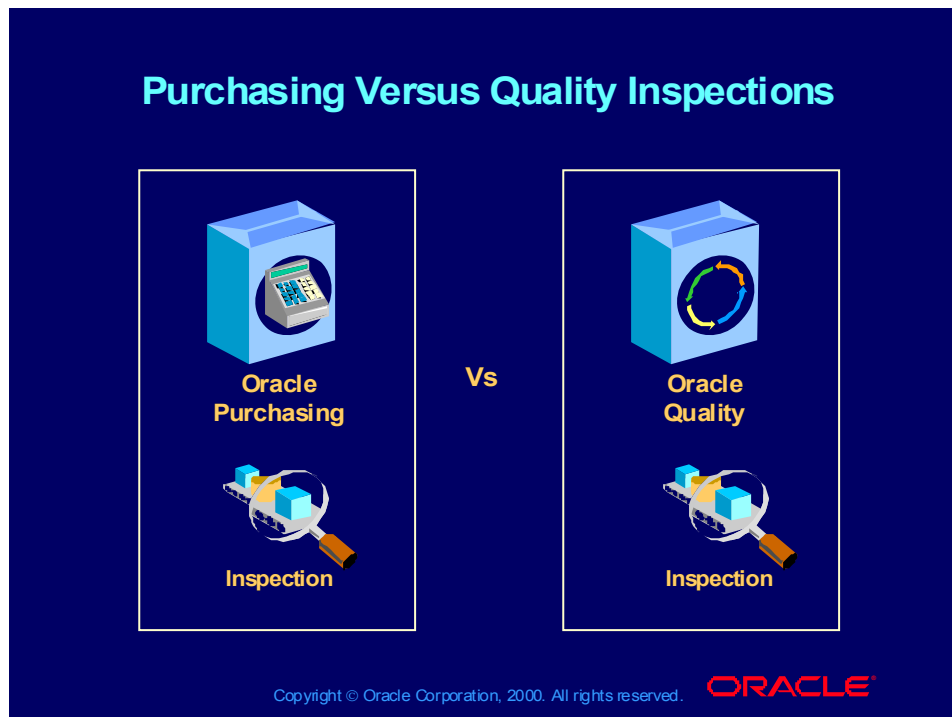
- Self Service Outside Processing for outside processing purchase orders
- Self Service Shipments for standard purchase orders

You can use two predefined collection plans as templates when defining your own collection plans:

- Template Self Service Outside Processing
- Template Self Service Shipments

Note: If you have set up a collection plan that can be accessed by multiple suppliers, be aware that all the suppliers will be able to view one another's data. To prevent this, you should make a different collection plan for each supplier.

Purchasing Versus Quality Inspections



Purchasing Versus Quality Inspections

You can use Oracle Quality instead of Oracle Purchasing to do a receiving inspection to determine whether to accept or reject the items.

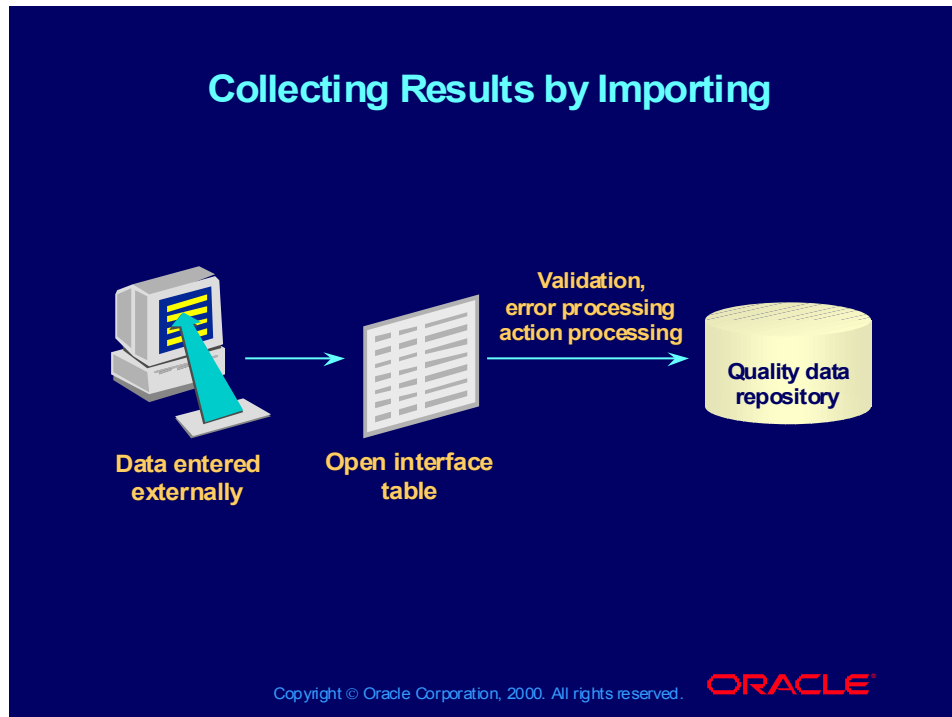
Oracle Purchasing

In Oracle Purchasing, you can enter the number of items that are accepted or rejected and enter some information about the inspection results. You can view the results online and print summary and detail reports to analyze your supplier's performance.

Oracle Quality

You can use Oracle Quality to perform the same inspection functions as Oracle Purchasing. You can also use Oracle Quality to collect additional attribute and variable data for collection elements in your collection plan and to analyze the data using charts, descriptive statistics, and custom reports. You can trigger certain actions, based on the results of the inspection.

Collecting Results by Importing

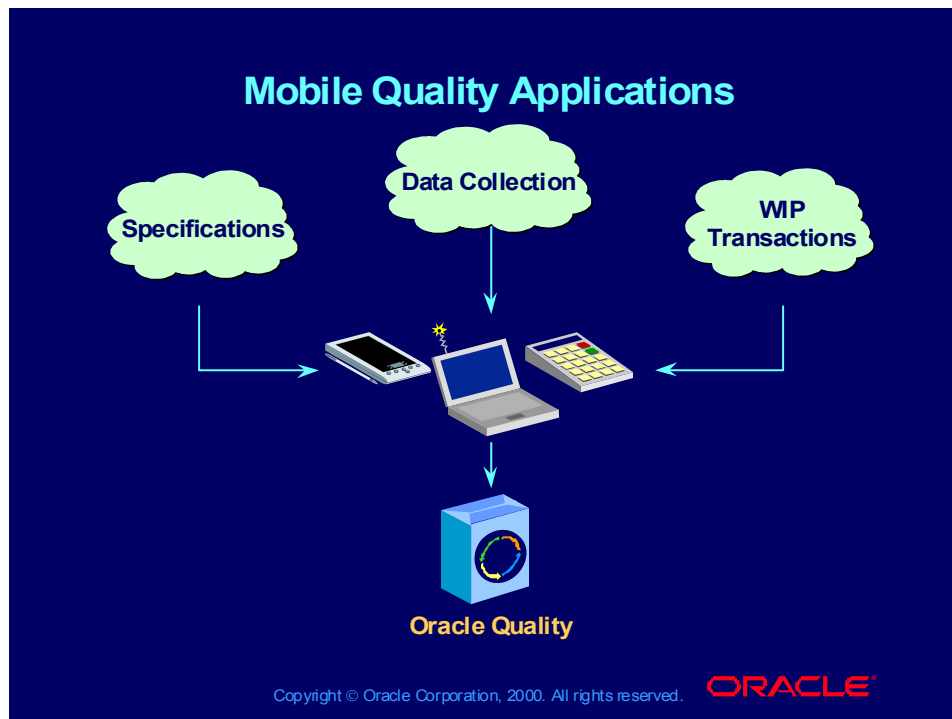


Importing

The third method for entering quality results is by collecting those results from sources external to Oracle Applications. You can insert new data into the quality data repository and update existing rows of data.

You can load data from the source into the Collection Import table, which temporarily stores the collection plan name and a value for each collection element on the collection plan. Data in the Collection Import table is validated by the Collection Import Manager, which imports valid records into the Quality Data Repository.

Mobile Quality Applications



Mobile Quality Applications

Oracle Mobile Quality Applications (MQA) are part of the mobile suite of applications that enable companies to extend the benefits of their Supply Chain applications to the mobile user.

Benefits of implementing the Mobile Quality Applications include:

- Eliminating duplicate data entry
- Reducing data entry errors
- Increasing productivity and reducing costs
- Improving inventory management by ensuring that appropriate tests are carried out during any movement of material

With Mobile Quality Applications, users will be able to perform data entry functions using devices that support Telnet clients. If your device is equipped with bar code scanners, you will also be able to enter data by simply scanning the bar codes.

Collecting Quality Data

You can query any quality collection plan and enter data directly. Inspectors can walk up to a laboratory or test crib, perform tests, and record the results immediately.

Specifications

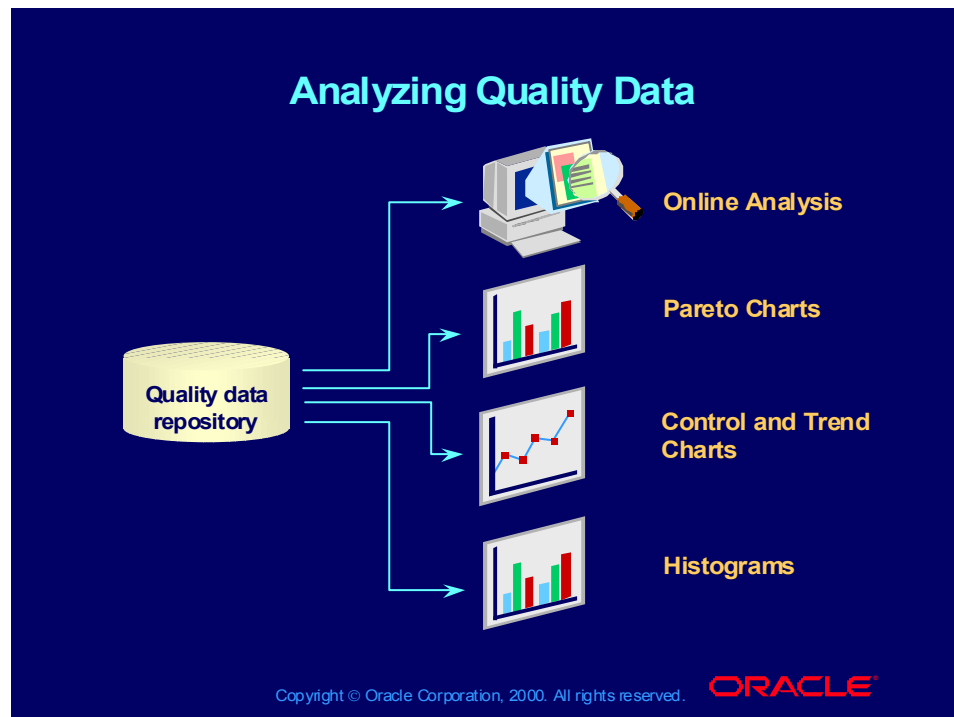
You can query any specification created in Oracle Quality whether it is an item specification, supplier specification, or a customer specification.

Transactional Data Collection

You can collect quality data whenever there is movement of material within your shopfloor or warehouse. Mobile Quality Applications support your data collection and inspection requirements while performing Work In Process transactions using a Telnet client. Examples of transaction data collection include:

- WIP move
- WIP return
- WIP scrap / reject
- WIP completions
- WIP workorderless completions
- Flow manufacturing completions
- WIP material transaction
- Template collection plans
- Lot serial support

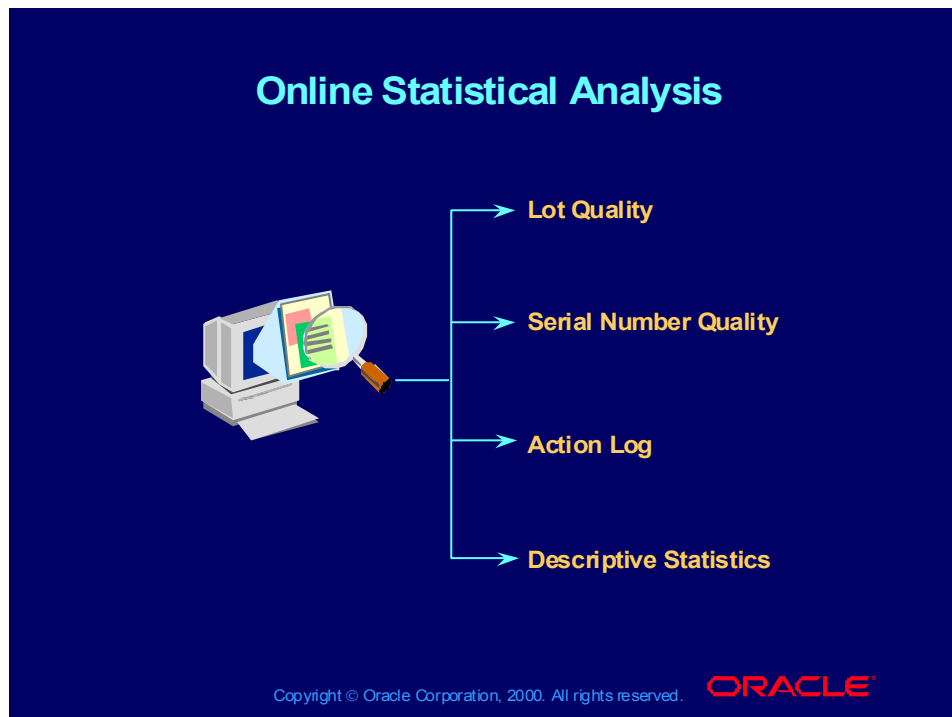
Analyzing Quality Data



Analyzing Quality Data

You can retrieve information from the Oracle Quality data repository in many ways. You can use the folder feature found in the inquiry windows. You can view the data in the form of Pareto charts, control charts, trend charts, or histograms. You can do basic statistical analysis on the data as well as create custom reports within Oracle Quality. You can also export quality results.

Online Statistical Analysis



Viewing Quality Results Online

You can find and view all quality results associated with a collection plan. You can also view detailed information such as the target value and specification limits for specific quality results values.

Viewing Quality Results by Lot Number

You can view quality results for specific lots and lot controlled items. You can monitor lot controlled assemblies, subassemblies, and components 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
- Record end lot quality characteristics during or after production
- Record a lot and the customer it was shipped to

Viewing Quality Results by Serial Number

You can view quality results for serial number controlled items. You can monitor serial controlled assemblies, subassemblies, and components by creating and using collection plans to:

- 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 dead-on-arrival (DOA) details for a serialized unit when it is reported as failed at a customer site
- Record return material authorization (RMA) details upon notification of a defective, serialized unit

Viewing 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. Action log entries are also created when an action being processed in background mode fails. For each entry in the quality action log, the following information is displayed:

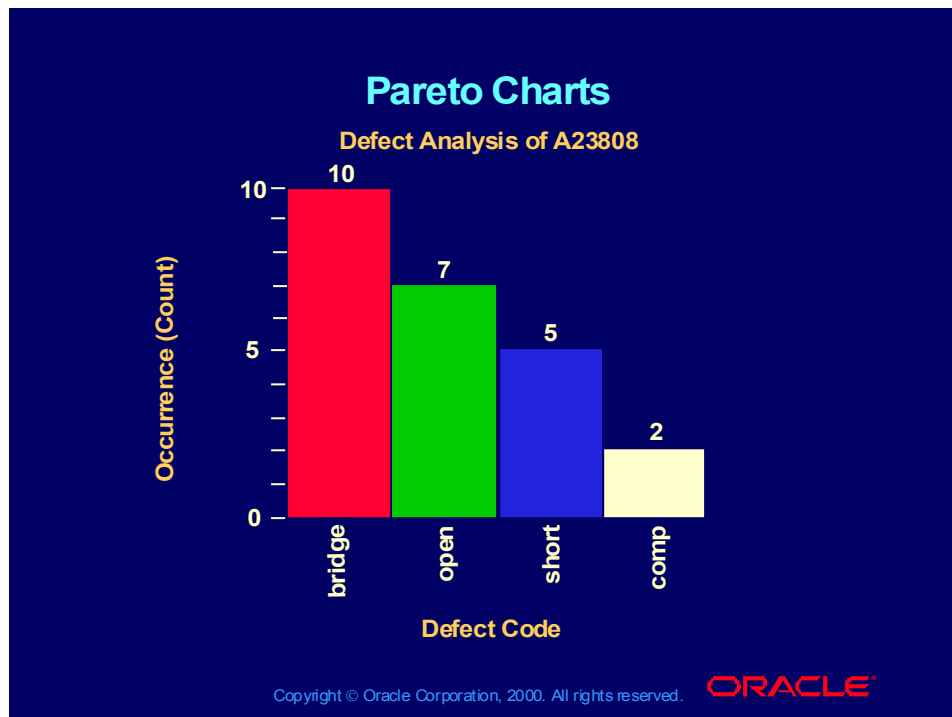
- Message tab: action Message
- Action Rule tab: Collection Element, Condition, Low, High, Result
- Collection tab: Collection Plan, Collection Number, Log (data entry) Date

Viewing Descriptive Statistics

You can compute basic statistics for quality results associated with any collection plan element using the Descriptive Statistics window. 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.

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 reproducibility of the product turned out by the process.

Pareto Charts



Pareto Charts

Pareto charts are based on Pareto's principle, which states that a small percentage of a group accounts for the largest fraction of the impact. In other words, 20% of the sources cause 80% of any problem. Pareto charts graphically show you the relative frequency or size of an event in a descending bar graph. You can create custom Pareto charts to help focus on top priorities, such as the types of failures that occur most frequently.

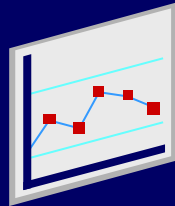
The X axis (horizontal dimension) on a Pareto Chart is the primary collection element for data analysis. It reflects the possible values for the primary collection element.

The Y axis (vertical dimension) represents the numeric measure, such as a count of occurrences of the primary collection element or the sum of a quantity.

Control Charts

Control Charts

- **Xbar and R charts**
- **Individual X and Moving Range charts**
- **Xbar and S charts**



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Control Charts

Control charts provide a graphical means of monitoring a process in real time. A control chart maps the output of a process over time and signals when a change occurs in the process. Control charts are used to analyze variable data.

The horizontal centerline on a control chart corresponds to the average quality at which the process should perform.

Two control limits, upper and lower, indicate that values falling between them can be attributed to chance variation. Values falling outside them indicate a lack of statistical control.

Types of Control Charts

Oracle Quality provides three pairs of control charts:

- **Xbar and R charts (Xbar R)**

These charts are used when the data falls naturally into meaningful homogeneous subgroups (readings by shift or by machine). The subgroups should consist of no more than ten values.

 - The Xbar chart plots the average value of each subgroup over time. This is used to test for a shift in the average value of a process.
 - The R chart plots the shift in the variance of a process. It plots the range of values within each subgroup.
- **Individual X and Moving Range charts (X mR)**

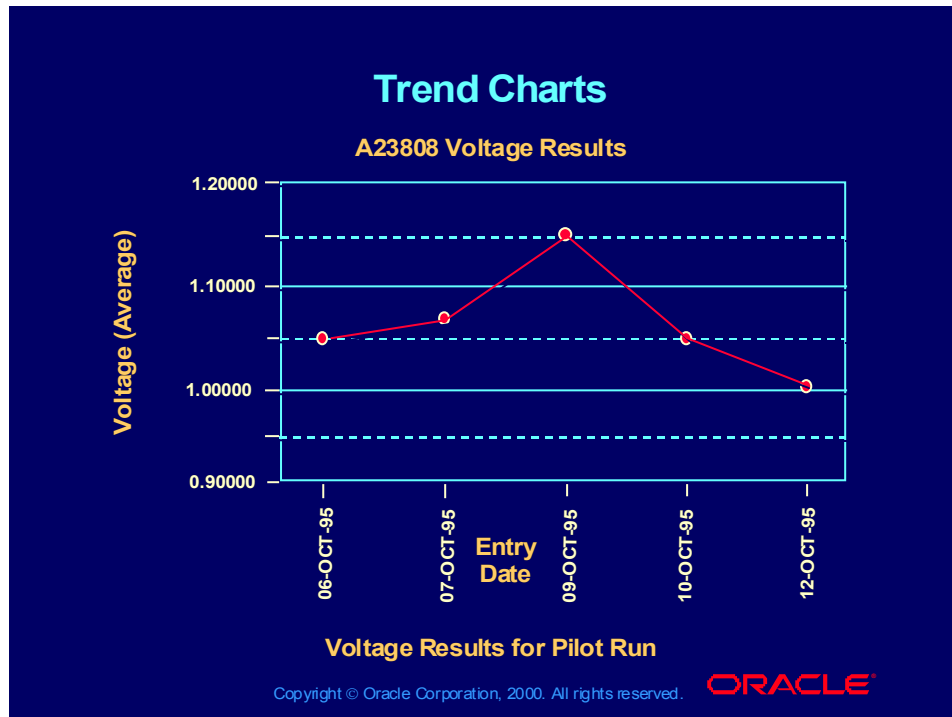
These charts are used when the data does not fall into meaningful subgroups and is instead based on individual data points.

- The X chart plots individual data points.
- The Moving Range (mR) chart plots a moving range value for each data point.

- Xbar and S charts (Xbar S)

These charts are similar to the Xbar and R charts, except that standard deviation is plotted instead of the range. This type of chart is typically used when the subgroups consist of more than ten values because it mitigates the effect of outlying data points.

Trend Charts



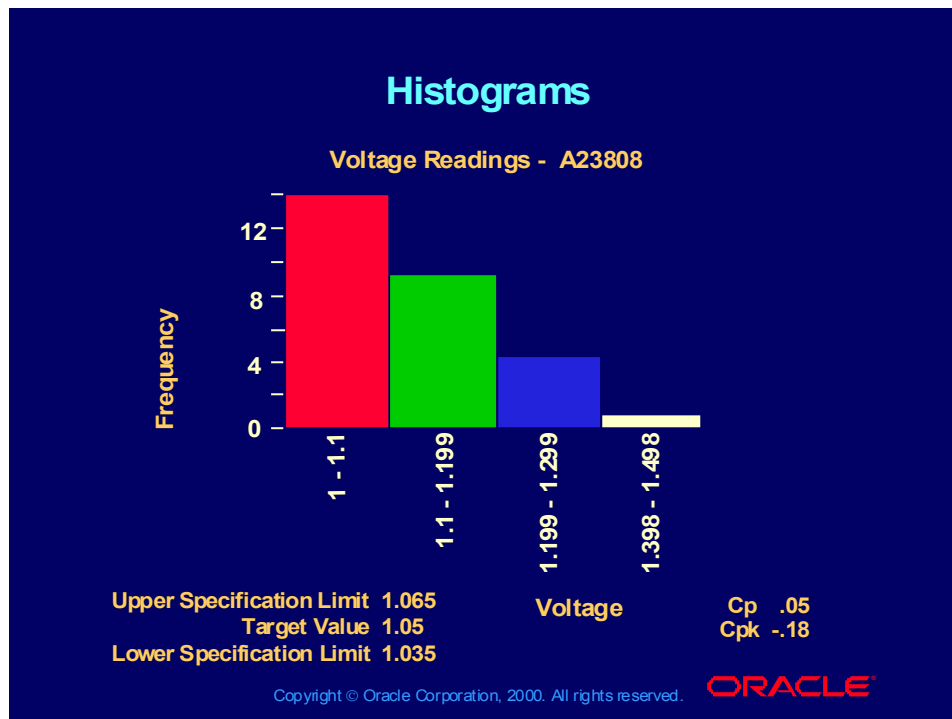
Trend Charts

You can use trend charts to analyze data collected over a period of time for a particular collection element. By observing the trend, you can take corrective action if the trend moves in an unfavorable direction.

The X axis on a trend chart represents individual results or groups of quality results presented collectively over time. You can chart individual results, or you can chart groups of results by collection number or by entry date.

The Y axis is the primary collection element whose value you are tracking and typically represents a variable collection element.

Histograms



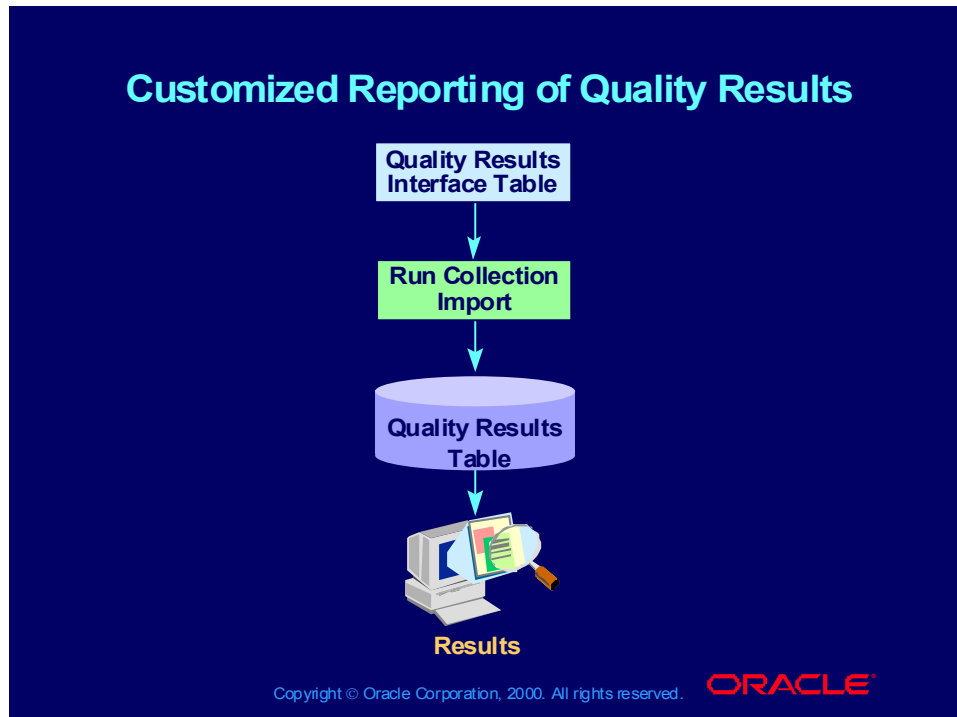
Histograms

Histograms graphically display the frequency distribution of data in bar form. This is done by partitioning the data into intervals and plotting the number of points in each interval. Histograms graphically show the distribution of data for elements with numeric data types. The histogram reveals the centering, variation, and shape of the data, which is typically bell shaped.

The X axis on a histogram reflects the intervals of possible values for the collection plan element.

The Y axis represents the count or sum of occurrences of the collection element.

Customized Reporting of Quality Results

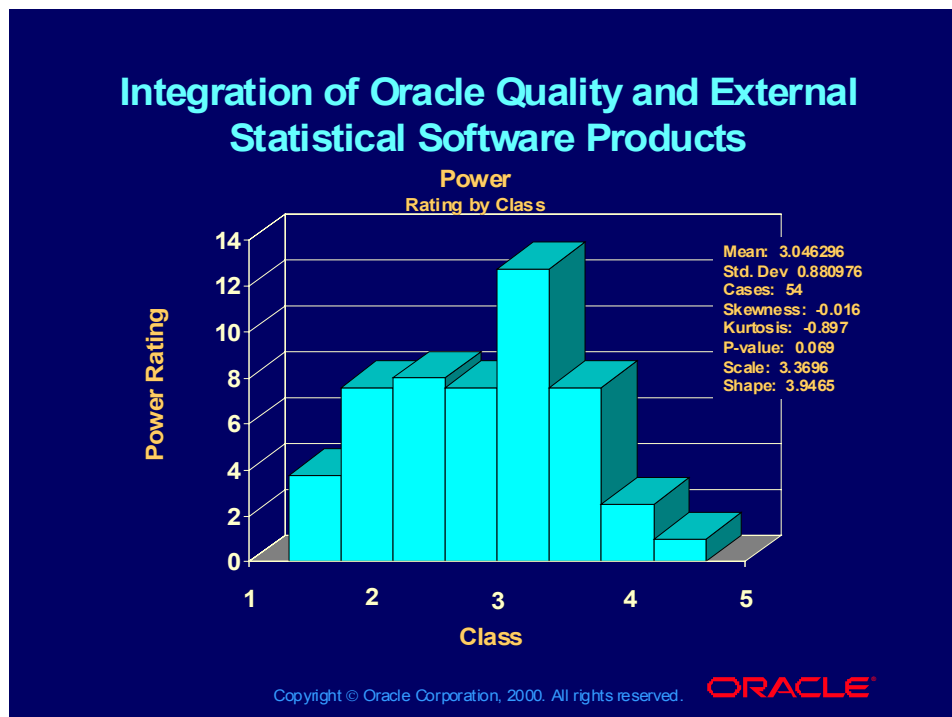


Customized Reporting of Quality Results

You can create your own custom reports using the Quality Results ReportWriter. By creating your own reports, you can:

- Include quality results for more than one collection element
- Sequence the results in any order
- Use functions (Average, Count, Sum, Min, Max) to further analyze your results

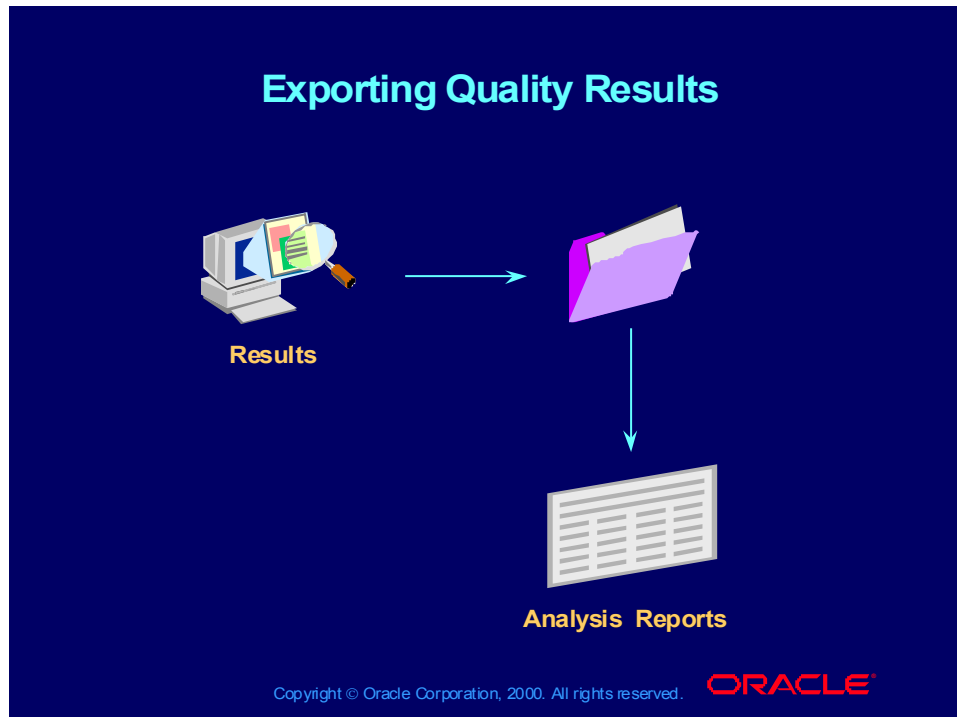
Integration of Oracle Quality and External Statistical Software Products



Analyzing Quality Data with External Statistical Products

You can choose to use the graphical capabilities of either Oracle Quality or external software products for statistical process control (SPC). For example, you can use Oracle Quality to collect and query collected data and then use Statware Statit to create sophisticated SPC charts, custom graphs, and reports.

Exporting Quality Results

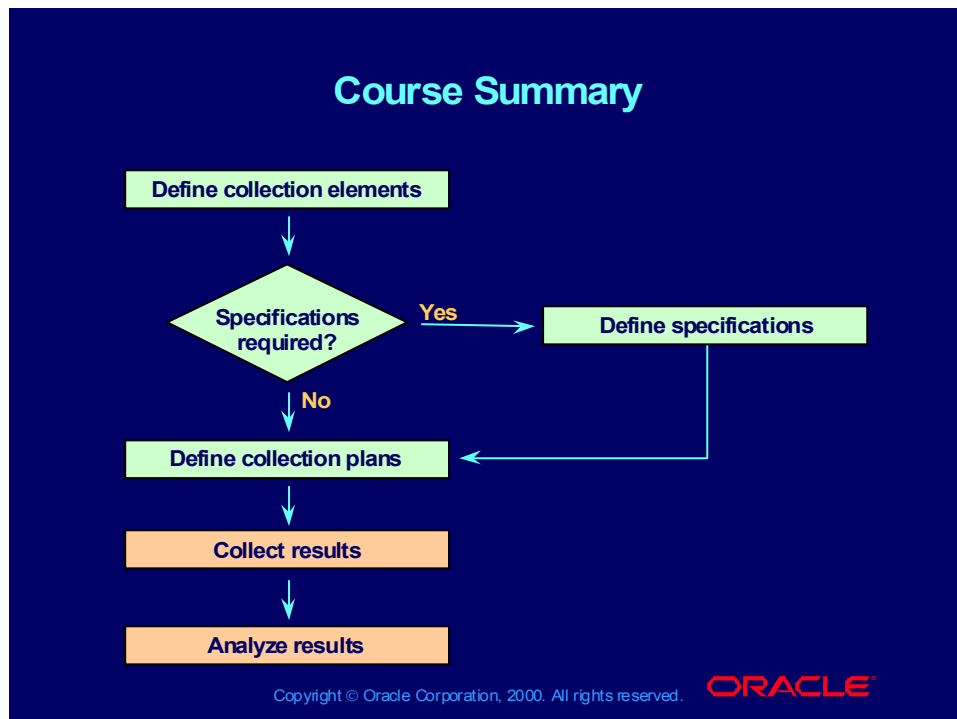


Exporting Quality Results

You can export quality results to a file and download the file to a spreadsheet, statistical analysis, or graphical presentation software package.

Each quality results inquiry window includes an Export Results function in the Special menu. A comma-delimited ASCII file is created from the retrieved quality results in your inquiry, chart, or report settings.

Course Summary



Summary

Data can be collected in three ways:

- Directly
- Within a transaction
- Using the Collection Import function

You can analyze your data in the following ways:

- Online inquiry
- Pareto charts, control charts, trend charts, and histograms
- Calculation of basic statistics
- Custom reports
- Export to statistical process control products or spreadsheets

11*i* Setting Up and Implementing Quality

Chapter 2

Oracle Quality: Setup and Implementation Release 11i

Course Introduction

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Course Objectives

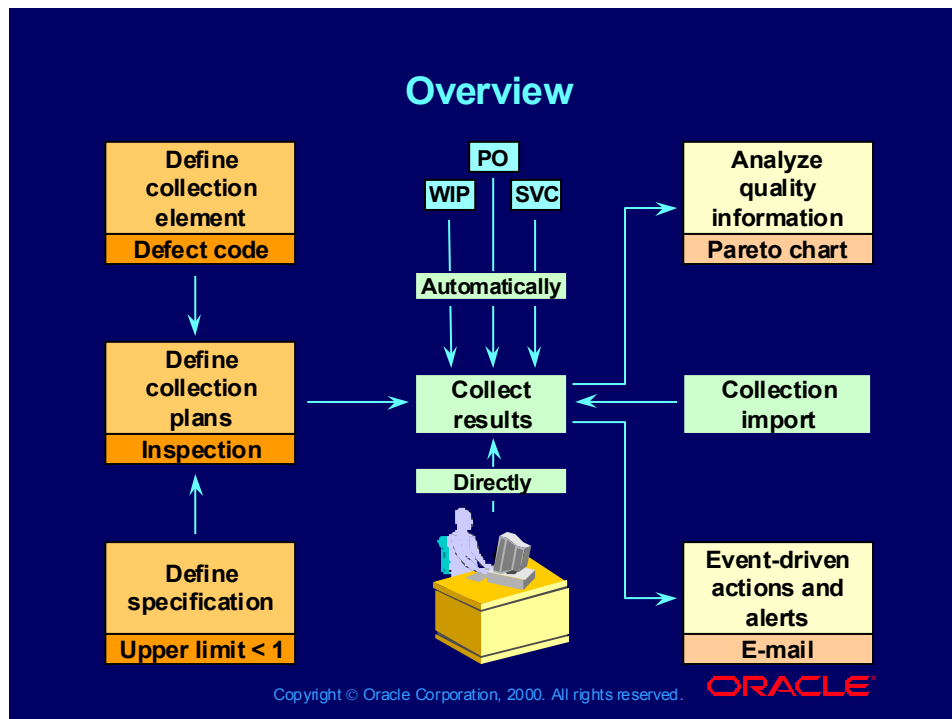
After completing this course, you should be able to do the following:

- **Set up your quality data-collection structure**
 - Define collection elements
 - Define specifications
 - Define collection plans
- **Discuss the issues involved in setting up the data-collection structure**

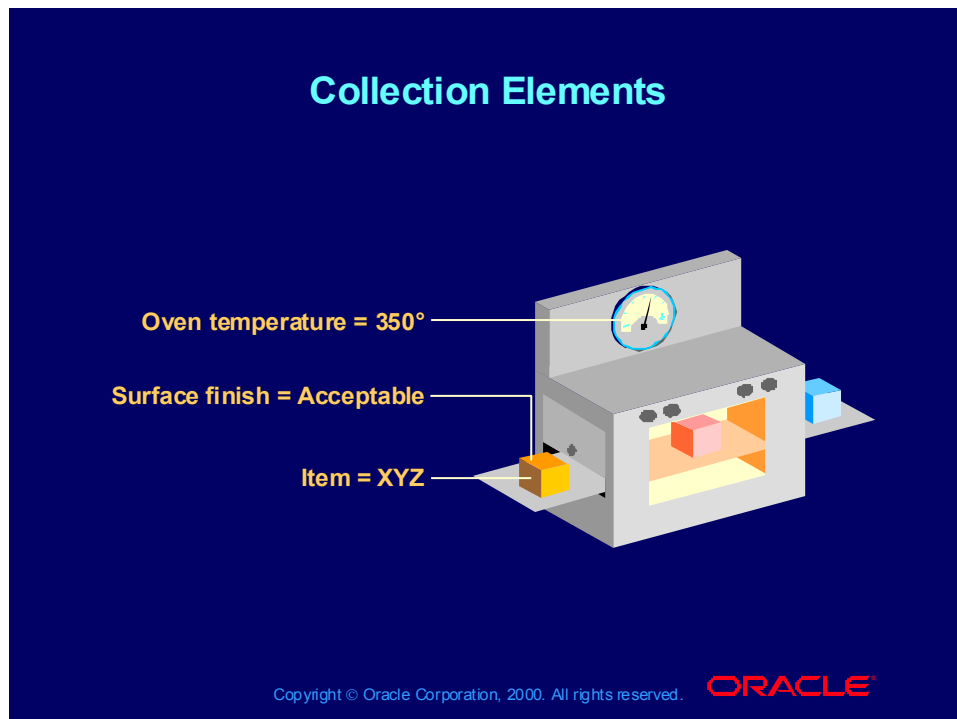
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Overview



Collection Elements

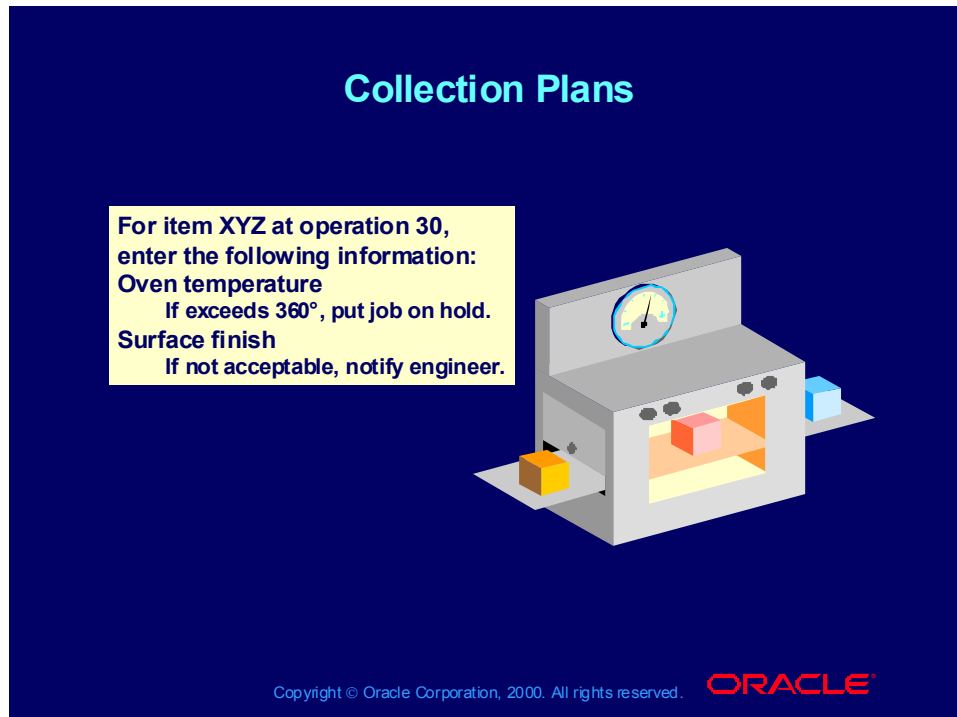


Overview

Before you can collect data with Oracle Quality, you must first set up your data-collection structure. The basic building block of this structure is the collection element, which is used in both the specification and the collection plan.

Collection elements define the characteristics of the product or process for which you are collecting, analyzing, and reporting data. For each collection element, you can specify a list of acceptable values or specification limits, such as target value and upper and lower limits.

Collection Plans



Overview of Collection Plans

Collection plans are similar to test or inspection plans. Collection plans specify the collection elements to use in collecting data. Collection plans specify when and how to collect the data as well as the actions to take based on the data collected.

Specifications

Specifications

Global Computers				
Item Specification				
Specification	Effective Date	Revision	Expiration Date	
506	5/5/97	5/12/97	12/2/98	
Item — 2601				
Item Name — Automotive Pinion				
Process Procedure				
Pinion stock is cut with spines and the shaft is turned to specifications to fit sleeve.				
Test Condition				
Failure code information has been established according to a quality control plan and must be entered, process is in operation—lot #12, heat #3 and runs 20 pieces per hour, quality data is being collected manually. Pieces for rework must be marked with lot # and heat #.				
Characteristics	UOM	Target Value	Lower Spec Limit	Upper Spec Limit
Shaft Diameter	Inches	3.14	3.135	3.145
Spine Cut Depth	Inches	0.6	0.595	0.605
Shaft Cut Length	Inches	22.5	22.494	22.505
Disposition of Noncompliant Product				
Disposition Code 1: Scrap when measurements are less than lower spec limit				
Disposition Code 2: Rework when measurements exceed upper spec limit				
Disposition Code 3: Production when measurements are within spec limits				

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Overview of Specifications

Specifications describe the requirements of a product. You can define specification limits for key characteristics of the product that you produce.

Collection Elements

Chapter 3

Collection Elements

Oracle Quality: Setup and Implementation Release 11i

Collection Elements

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Objectives

After completing this lesson, you should be able to do the following:

- **Define quality collection elements**
- **Assign acceptable values to collection elements**
- **Define default specification limits for collection elements**
- **Define action rules for collection elements**

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Quality Collection Elements



Overview

The collection element is the foundation of the Oracle Quality application. The characteristics of the product or process define the collection elements. Quality collection elements represent the most basic data that you can collect and analyze.

You can use collection elements to accomplish the following:

- Identify the object that you are collecting information about:
 - Item
 - Lot number
 - Serial number
- Provide cross-reference information for analysis:
 - Supplier
 - Customer
 - Department
- Provide reference information:
 - Purchase order
 - Discrete job
 - Incident type
- Input key quality-control variables:
 - Temperature
 - Width

- Input key quality-control attributes:
 - Defect code
 - Cause code

You use collection elements to further define quality specifications, collection plans, and reports.

Collection Element Types

Collection Element Types			
Attribute		Reference	
Color	Blue Yellow Red	Job To Op Seq Lot	Oracle Work in Process
Disposition	Rework Scrap Use as is	PO number Supplier	Oracle Purchasing
Variable			
Diameter	2.75 cm + .05 cm		
Temperature	98° + 2°		

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Collection Element Types Overview

A collection element type groups collection elements to distinguish types of data collected and is used for sorting and reporting quality data.

Predefined Collection Element Types

There are three predefined collection element types:

- Attribute: Often represents the outcome of a process or a discrete characteristic of an item
- Variable: Often represents numeric measurements
- Reference information: Refers to common objects defined in other Oracle Applications (They are also known as context elements because their values are derived in the context of transactions entered and saved in these applications.)

Each collection element must be associated with a collection element type.

Defining Collection Element Types

Defining Collection Element Types

Use the Element Type Lookups window to assign a collection element type to each collection element that you define.

(N) Quality > Setup > Collection Element Types

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Defining Collection Element Types

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Elements > Collection Element Types

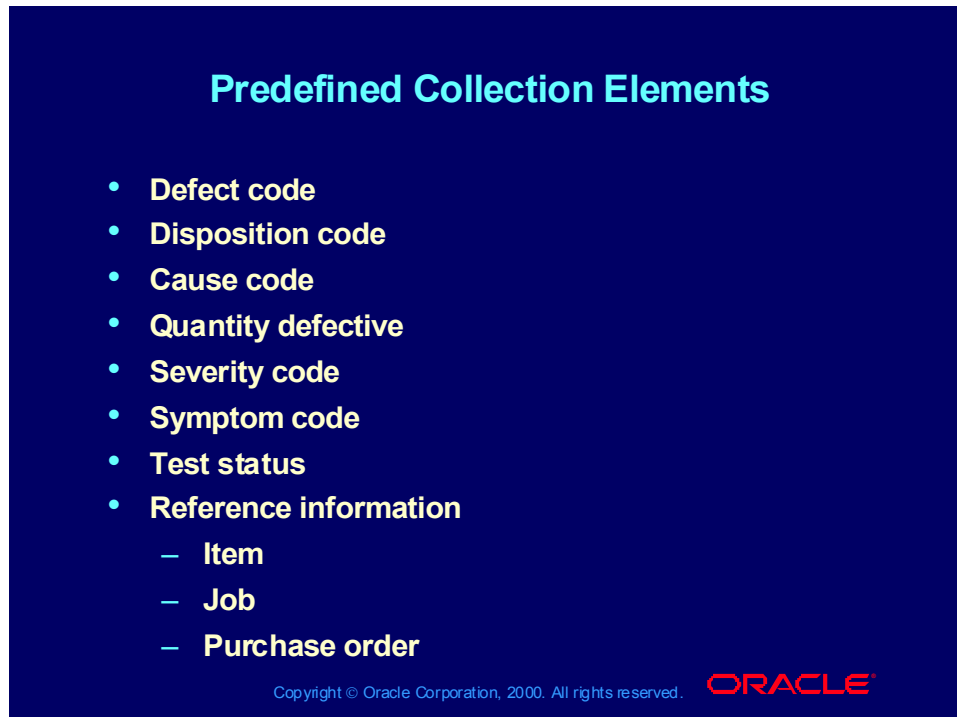
... > Defining Collection Element Types

How to Define Collection Element Types

Collection element types can be user defined, and you can have an unlimited number of types.

- Enter a unique code, meaning, and description to define a new collection element type.
- Select the Enabled check box before you assign the collection element type to the collection elements that you are defining.

Predefined Collection Elements



Predefined Collection Elements

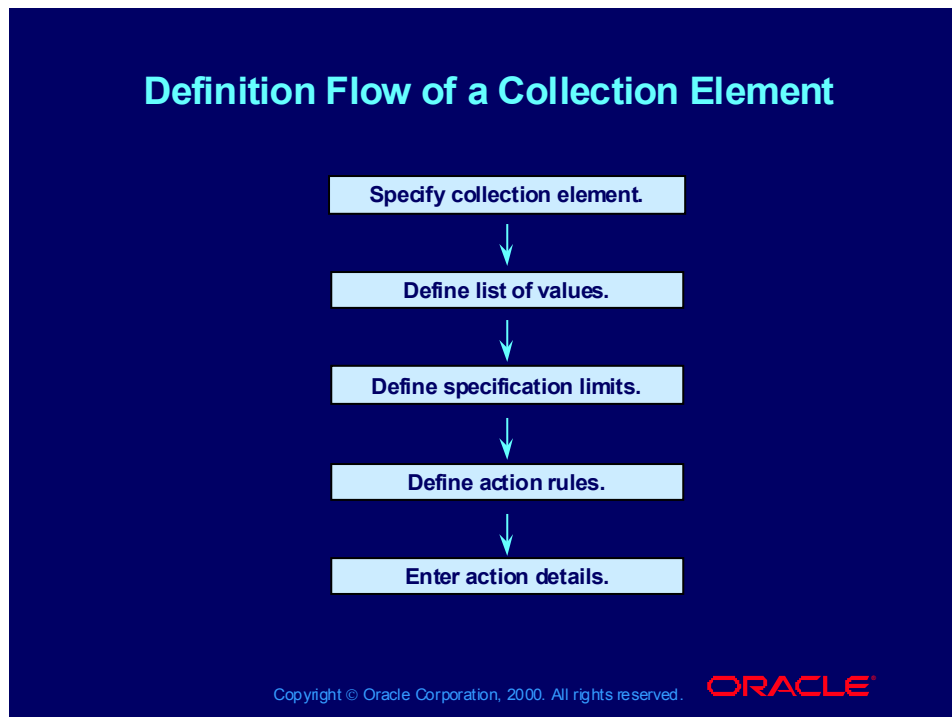
- Defect code
- Disposition code
- Cause code
- Quantity defective
- Severity code
- Symptom code
- Test status
- Reference information
 - Item
 - Job
 - Purchase order

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Predefined Collection Elements Overview

In addition to reference information collection elements, Oracle Quality provides some predefined collection elements, as listed on the slide. You can create an unlimited number of additional collection elements.

Definition Flow of a Collection Element



Definition Flow of a Collection Element

For each collection element that you create, you can define the following:

- Collection element values
- Specification limits
- Action rules and action details

Defining Collection Elements

Defining Collection Elements

Use the **Collection Elements** window to define, update, delete, and view collection elements.

(N) Quality > Setup > Collection Elements

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Defining Collection Elements

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Elements > Defining Collection Elements

... Process for Defining Collection Elements

How to Define Collection Elements

Having defined the collection element type, you can add user-defined collection elements. The collection element type classifies the collection element for reporting.

- Enter the name of the collection element.
- Select the Enabled check box before adding the collection element to a collection plan or quality specification. Only enabled collection elements can be used in collection plans and specifications. Collection elements can be disabled but not deleted if results are associated with them.
- Select a collection element type.
- Enter a prompt. The prompt is displayed in the Enter Quality Results window and serves as a column heading in the quality results reports and online inquiries. The name of the collection element is the default prompt.
- Enter a hint (optional). The hint is displayed in the Enter Quality Results window to guide you at data-collection time.
- Select a data type. The available data types are character, number, or date. You cannot change the Data Type field after defining the collection element.

- Select the Mandatory check box if you require users to enter results for this collection element when it is on a collection plan. The Mandatory check box indicates mandatory input at data-collection time. When adding this collection element to a collection plan, you can redefine it as nonmandatory.
- Enter the reporting length. The reporting length determines how much space to use for collection element values on reports and inquiries and for this collection element in the Enter Quality Results window.
- If the collection element is numerical, enter the decimal precision.
- Select a unit of measure to indicate how this collection element is measured.
- Enter a default value (optional). The default value is displayed in the Enter Quality Results window during collection of quality data.
- Enter a SQL validation statement (optional). This statement is used for validation when you enter quality data.

Validating a Collection Element

Validating a Collection Element

Comparing against a predefined list of machine codes:

```
SELECT machine_number code, machine_description  
description FROM machine_numbers
```

Comparing a desired date with a system date:

```
SELECT machine_number code, machine_description  
description FROM machine_numbers WHERE  
NVL(disable_date, SYSDATE+1) > SYSDATE ORDER BY  
custom_machine_number
```

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Example of a SQL Validation Statement

You can base the data validation of a collection element on any table in the Oracle database.

For example, if you store machine numbers in a user table, you can tell Oracle Quality to validate machines against entries in your custom machine numbers table.

To do this, you can define a SQL validation statement that Oracle Quality uses during data collection. This statement must be a SELECT statement in which you select two columns, one aliased to the column name Code and the other aliased to the column name Description.

Note: If you define both a SQL validation statement and a list of values, Oracle Quality uses the list of values and ignores the SQL validation statement during quality data collection.

Defining Collection Element Values

Defining Collection Element Values

Use the **Collection Element Values** window to define a list of values for a user-defined collection element that users must select from when they enter quality results.

(N) Quality > Setup > Collection Elements (B) Values

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Defining Collection Element Values

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Elements > Defining Collection Element Values

... Collection Element Values

Overview

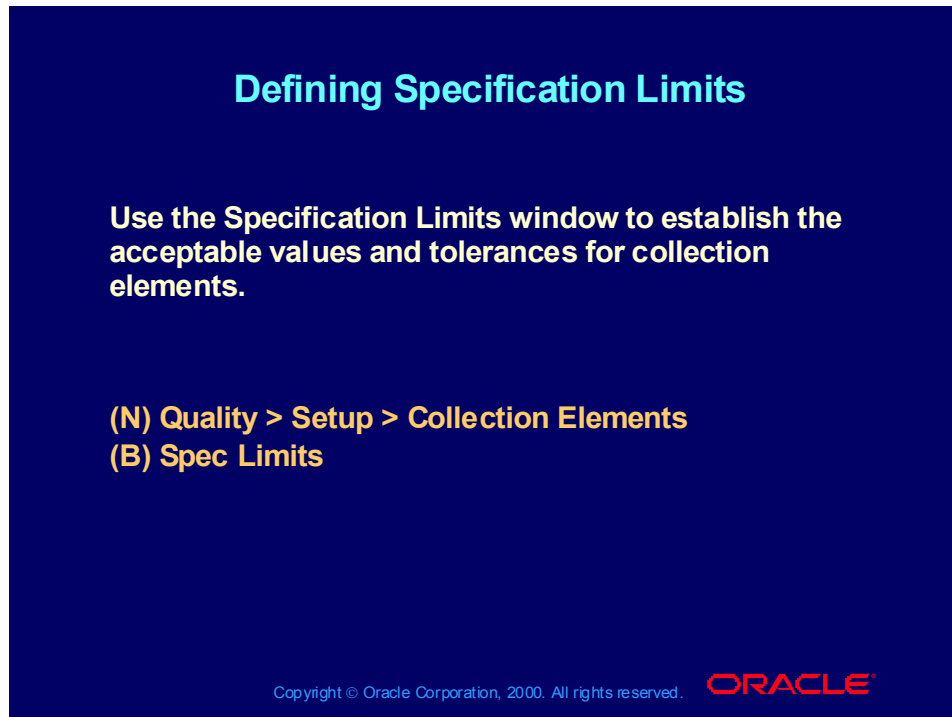
You can define a list of values for a user-defined collection element. The list ensures that users will enter valid values from the defined list. Default values are typically defined for attribute collection elements, although they are not limited to this. Associating a value to the collection element eases data entry by using a short code.

Collection element default values can be copied to any collection plan that contains that collection element. Make sure that the collection element has a value before adding it to a collection plan.

How to to Define Collection Element Values

- Select Values.
- Enter a unique short code that matches the data type of the collection element and a description.

Defining Specification Limits



Defining Specification Limits

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Elements > Defining Collection Element Specification Limits

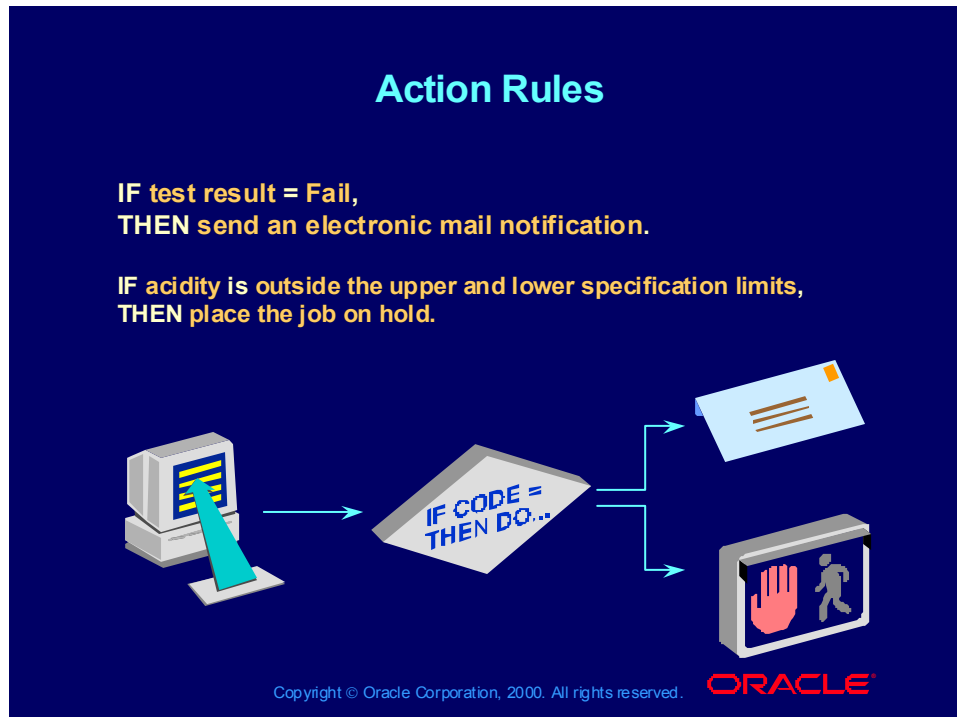
How to Define Specification Limits for Collection Elements

Specification limits that you define for the collection element are used as default values when you add collection elements to a quality specification.

- Enter the target value.
- Enter the lower and upper user-defined range limits.
- Enter the lower and upper specification range limits.
- Enter the upper and lower values for reasonable range limits.

When you enter the range values, make sure that the upper limit exceeds the lower limit.

Action Rules



Quality Actions

Depending on the quality data values collected, you may want to initiate certain actions. You can define collection element actions that are executed depending on a certain condition. This condition and the resulting action are defined as an action rule. Action rules are evaluated and executed during the quality data-collection process.

Types of Actions



Types of Actions

There are three types of actions in Oracle Quality.

Message Actions

- Display a message to the operator.
- Reject the input; forces you to enter an acceptable value before allowing you to continue.
- Post an entry to the Quality Action Log.

Alert Actions

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

Application-Specific Actions

- Work in Process actions
 - Place the job on hold.
 - Hold all schedules building this assembly on this production line.
 - Assign a shop-floor status to the interoperation step; you can specify a shop-floor status to assign to the To Move intraoperation step of the To Operation sequence.
- Purchasing actions
 - Accept the shipment.

- Reject the shipment; rejected shipments can be reinspected.
- Place the supplier on hold; prevents you from approving purchase orders for suppliers on hold.
- Place a document or release on hold; you cannot print, receive against, invoice, or approve purchase orders or releases that are on hold.
- Assign an ASL status; updates the approved supplier's status to the status that you specify.

Mutually Exclusive Action Rules

Mutually Exclusive Action Rules

Oven temperature = 191°
User-defined specification limits = 195° - 205°
Upper and lower specification limits = 190° - 210°

10	IF temp is outside the upper and lower specification limits, THEN place the job on hold.
20	IF temp is outside the user-defined specification limits, THEN display a message to operator.
30	IF temp is less than 193°, THEN send an electronic mail notification to Maintenance.

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Action Rule Sequencing

You can define more than one action rule for a collection element or collection plan element.

When action rules are mutually exclusive, you assign a unique sequence number to each action rule. The sequence number gives the order in which the action rules are evaluated.

- During the collection of quality data, the first rule in the sequence is evaluated.
- If that rule is true, then the action related to the action rule is invoked.
- If that rule is not true, the next rule in the sequence is evaluated, and so on, until an action rule is evaluated as true.
- Evaluation stops when a true condition is found. Use the action rule sequence to specify an action hierarchy.

Nonmutually Exclusive Action Rules

Nonmutually Exclusive Action Rules

Oven temperature = 191°

User-defined specification limits = 195° - 205°

Upper and lower specification limits = 190° - 210°

10	IF temp is outside the upper and lower specification limits, THEN place the job on hold.	
20	IF temp is outside the user-defined specification limits, THEN display a message to operator.	←
20	IF temp is less than 193°, THEN send an electronic mail notification to Maintenance.	←

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Overview

When action rules are not mutually exclusive, you can define multiple action rules for each sequence number. All action rules associated with the same sequence number are evaluated. Even if the first action rule is evaluated as true, the subsequent action rules with the same sequence are evaluated.


Defining Collection Element Actions

Defining Collection Element Actions

Use the **Quality Actions** window to specify that Oracle Quality initiates an action based on the quality data that you collect.

(N) Quality > Setup > Collection Elements
(B) Actions

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Defining Collection Element Actions

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Elements > Defining Collection Element Actions

- ... Quality Actions
- ... Types of Actions
- ... Action Rules and Invoked Actions
- ... Action Rule Sequencing

How to Define Collection Element Actions

- Enter the sequence for the action rule. The sequence number determines the order in which action rules are evaluated during data collection.
- Select the condition that must be met to invoke this action.
- Select the Value or Spec Limit check box to specify the evaluation method.
 - If you select the Value check box, you can specify a particular value or range of values. If the collection element has a list of predefined values associated with it, then you must select values from that list.
 - If you select the Spec Limit check box, you must specify which specification limit values you want to evaluate against.
- If the condition requires a range of values, enter the from and to values. If the condition requires only one value, enter only the from value.
- Select an action to invoke. You can associate one or more actions for a given action rule.

- Enter details for the related action. Not all actions require details, and depending on the action, there will be different ways of entering the action details.

Message Action Details

Message Action Details

Use the **Quality Actions Detail** window to define any action detail that may be required, such as message text or operation numbers.

(N) **Quality > Setup > Collection Elements > Actions**

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Entering Message Action Details

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Elements > Action Details

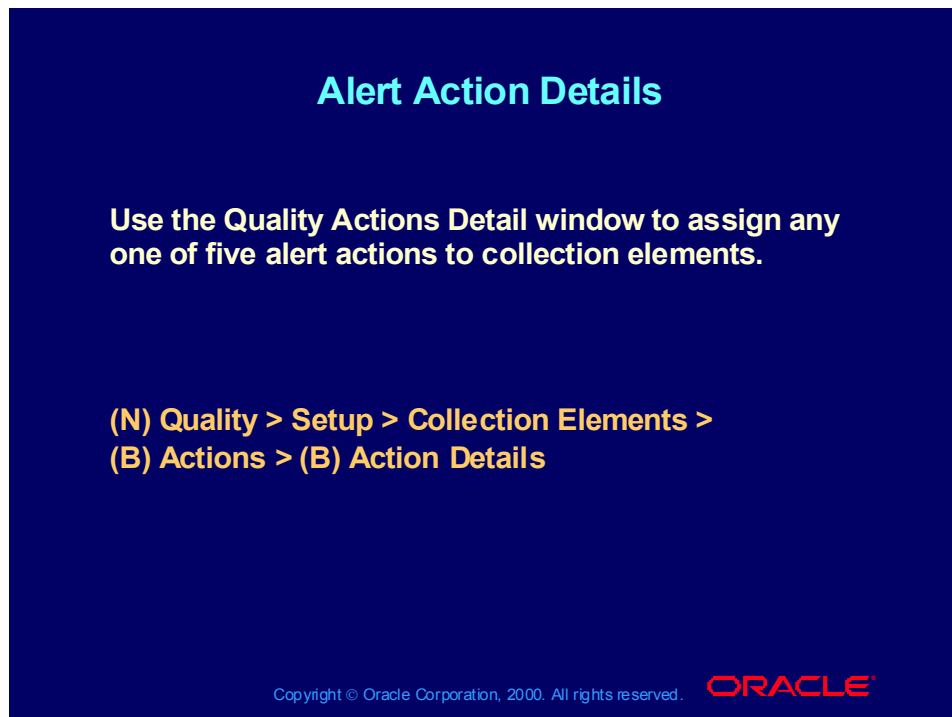
Action Details for Message Actions

Enter the message text that you want displayed as a message to the operator or posted to the Quality Action Log in the Action Details region.

Action Details for Application-Specific Actions

- Work in Process Actions
 - If the action is “Assign a shop floor status to the intraoperation step,” enter the status code to assign to the intraoperation step.
 - If the action is “Place the job on hold” or “Hold all schedules building this assembly on this production line,” then no action details are required.
- Purchasing Actions
 - The actions “Accept the shipment” and “Reject the shipment” work in conjunction. You must use both actions.
 - “Place the supplier on hold” and “Place a document or release on hold” do not require any action details.
 - If the action is “Assign an ASL status,” enter the status code to assign to the supplier.

Alert Action Details

A blue rectangular slide with white and yellow text. The title 'Alert Action Details' is at the top in white. Below it, a paragraph in white says 'Use the Quality Actions Detail window to assign any one of five alert actions to collection elements.' Further down, a navigation path is listed in yellow: '(N) Quality > Setup > Collection Elements > (B) Actions > (B) Action Details'. At the bottom right is the Oracle logo in red, and at the bottom left is the copyright text 'Copyright © Oracle Corporation, 2000. All rights reserved.' in small white font.

Alert Action Details

Use the Quality Actions Detail window to assign any one of five alert actions to collection elements.

(N) Quality > Setup > Collection Elements >
(B) Actions > (B) Action Details

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Entering Alert Action Details

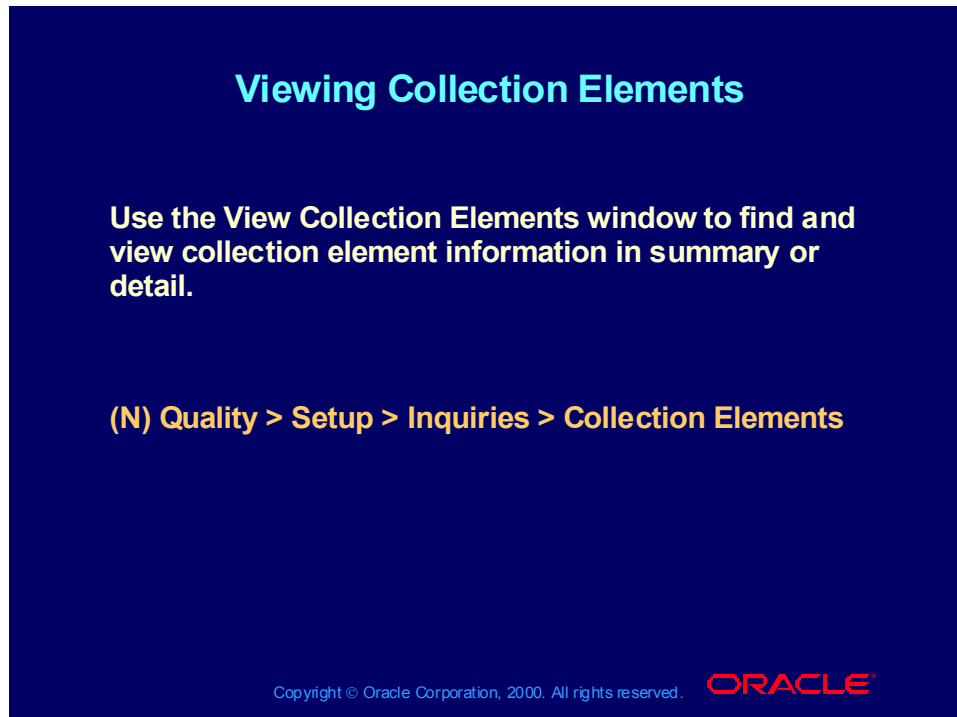
(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Elements > Defining Collection Element Alert Actions

Overview

The action detail window and information required vary depending on the quality action selected.

- Send electronic mail notification: You can create dynamic distribution lists and send a message that includes quality results values in the message text.
- Execute an operating system script: You can use output variables to pass quality results as arguments to operating system scripts.
- Execute a SQL script: You can use output variables to pass quality results as arguments to SQL scripts.
- Launch a concurrent request: Select the application name for the concurrent program, then select the name of the concurrent program, and enter any necessary parameters.

Viewing Collection Elements



Viewing Collection Elements

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Elements > Viewing Collection Elements

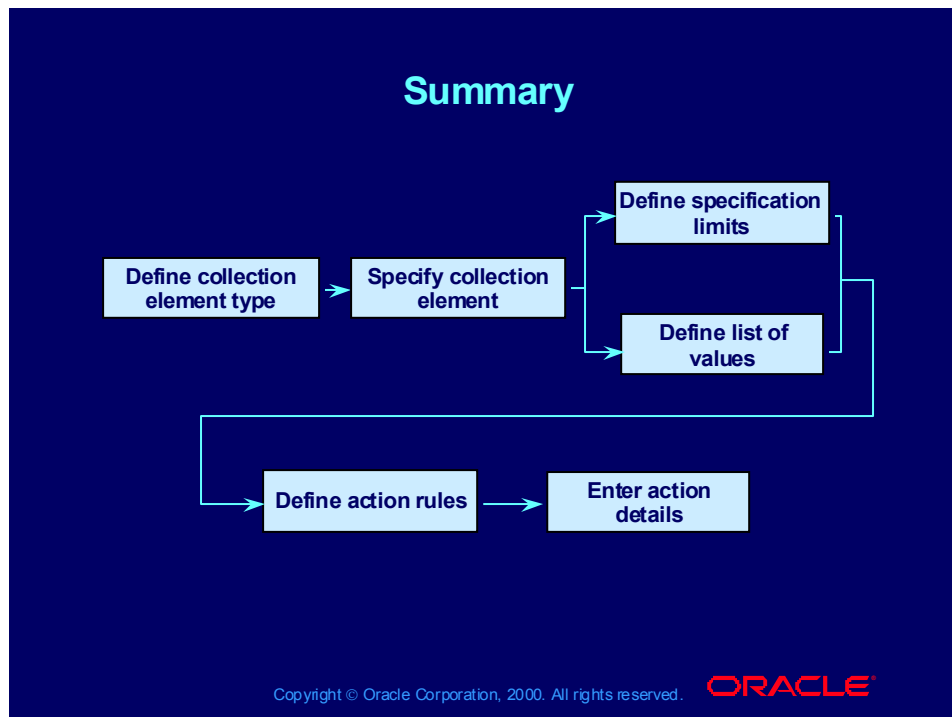
How to View Collection Elements

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

- Enter the appropriate search criteria in the Find Collection Elements window.
- Click Find.

If more than one collection element is found, the View Collection Elements Summary window will display a summarized list of the results.

Summary



Summary

This lesson has addressed the setup and uses of collection elements. Collection elements are the building blocks for all activities in the Oracle Quality application.

A collection element represents the characteristic of the product or process for which you are collecting, analyzing, and reporting data.

- All quality data is collected, analyzed, and reported using collection elements.
- Collection elements are either predefined or user defined.

You use a collection element type to group collection elements for sorting and reporting.

Optionally, you can associate values with user-defined collection elements for data entry validation.

You can use collection element specification limits to define acceptable values, to set tolerance ranges, to validate and collect data entered. Element specification limits are optional.

You can use collection element actions to initiate an activity or response to data being entered. Actions are invoked during data collection when an action rule is true. Actions are optional.

Instructor Demonstration

- Defining collection elements
- Assigning values to the collection elements

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Specifications

Chapter 4

Oracle Quality: Setup and Implementation Release 11i Specifications

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Objectives

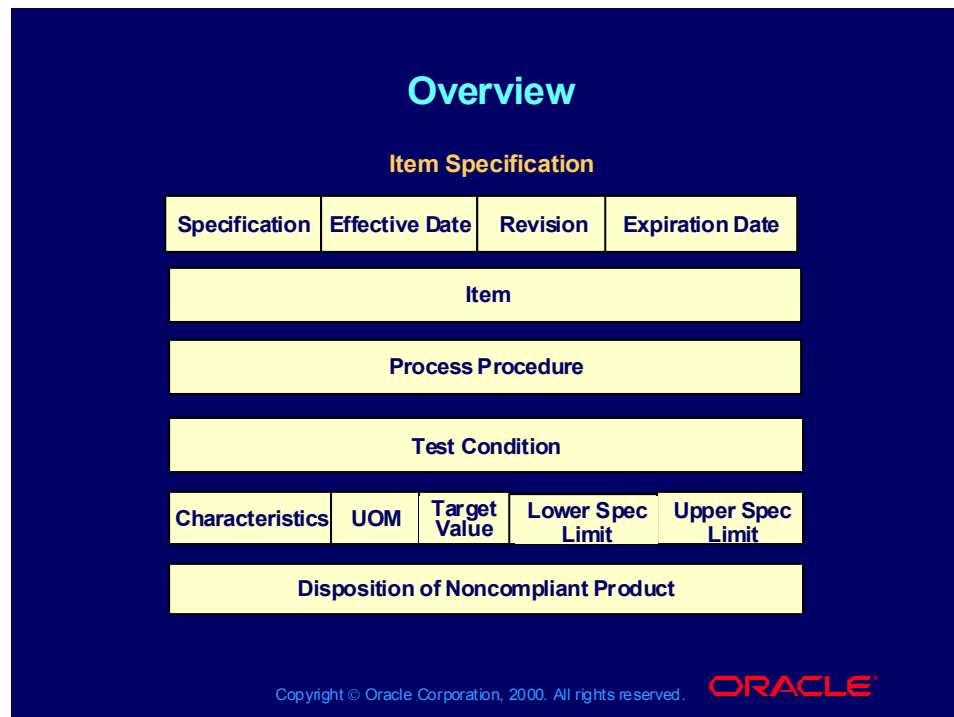
After completing of this lesson, you should be able to do the following:

- **Define quality specifications for an item, supplier, or customer**
- **Define a specification by copying specification elements from another specification**
- **Attach electronic documents, images, multimedia instructions, Web pages, or text to a specification**

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Overview



Overview

Products and services are designed to perform or accomplish a particular task. Specifications document the requirements to which a product or service should conform. They help ensure that the goods that you receive from a supplier, or that you produce or make for a customer, conform to quality standards.

Organizations develop specifications to document process or inspection procedures, disposition instructions, engineering drawings, or corrective actions.

You can use the Oracle Quality application to define specifications for the key quality characteristics of products that you manufacture or material that you receive from suppliers. Specification limits are retrieved during the collection of quality data, displayed in the Enter Quality Results window, and are used for evaluating action rules based on the specification.

Uses of Specifications

Uses of Specifications

- Specifications can be used to prohibit out-of-range values from being entered.
- Specifications display specification limits as quality results are being entered.
- You use specification limits to define action rules.

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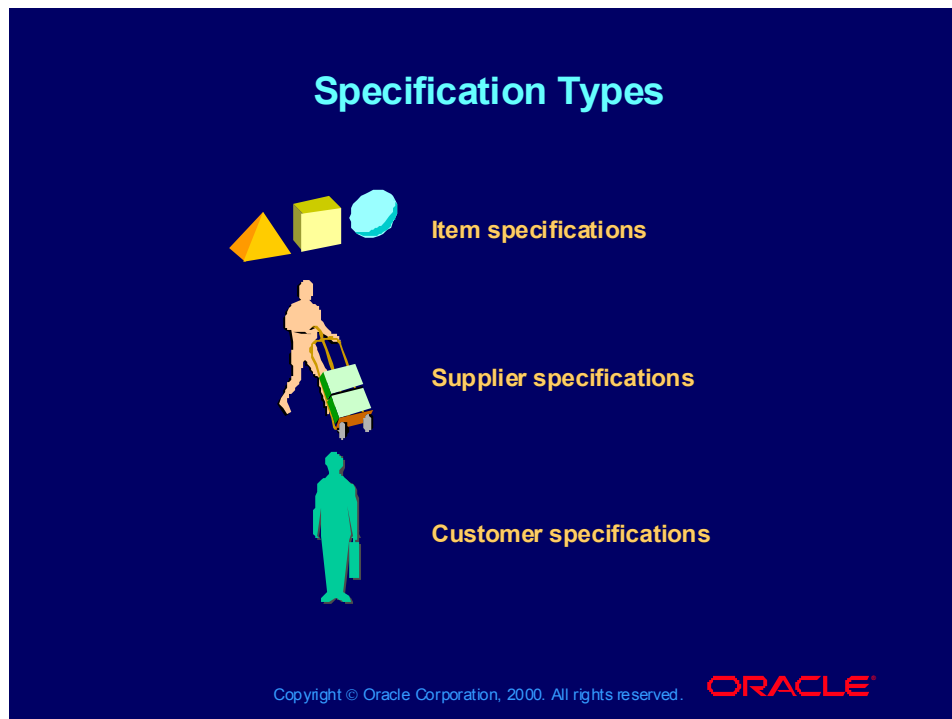
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Uses of Specifications

Specifications are used for the following purposes:

- During data collection, specifications prohibit entering values that lie outside the reasonable range of the specification.
- Specifications assist operators as they enter data, by allowing the display of specification limits during data entry.
- You define action rules based on specification limits.

Specification Types



Specification Types

When defining a specification, you must select a specification type. There are three types of specifications:

- Item specifications provide detail about an item.
- Supplier specifications provide detail about a supplier/item combination.
- Customer specifications provide detail about a customer/item combination.

Each type of specification can be based on either an item or an item category. If you are entering quality results for an item using a collection plan that is associated with a specification, but no specification exists for that item, Oracle Quality will use the specification defined for the category of that item.

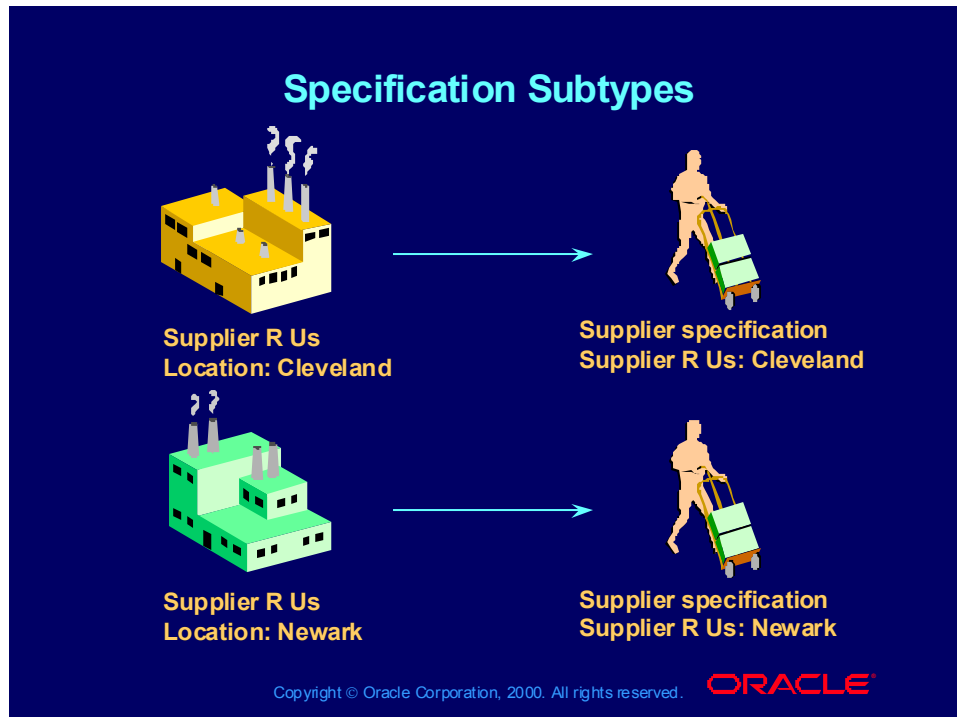
Specification Type Examples

Item specification For a given item, thickness must be 0.55 inches, plus or minus 0.02 inches, torque strength must be between 4.5 and 5.2, and burn-in hours must be 48.

Supplier specification Carbon black received from supplier XYZ must be tested to ensure that its particle size does not exceed 0.0026 millimeters.

Customer specification Steel coils sold to customer ABC must always contain at least 1.5% molybdenum and 2.5% manganese, and they must have a tensile strength of at least 60.

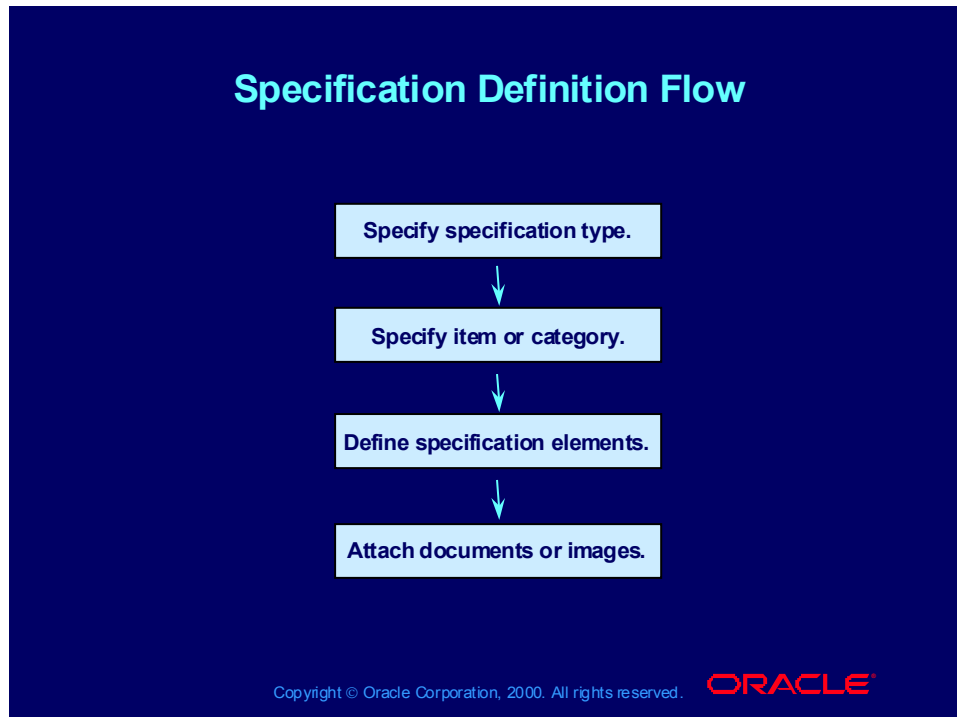
Specification Subtypes



Uses of Specification Subtypes

You can also define specification subtypes, which are used to create more detailed specifications. For example, if you require a different specification for deliveries from different locations from the same supplier, you could use specification subtypes to ensure that the correct specification is used.

Specification Definition Flow



Specification Definition Flow

For each specification that you create, you can:

- Specify the type of specification
- Define specification elements
- Attach documents or images

Defining a Specification



Defining a Specification

(Help) Oracle Manufacturing Applications > Oracle Quality > Specifications > Defining Specifications

... > Overview of Specifications

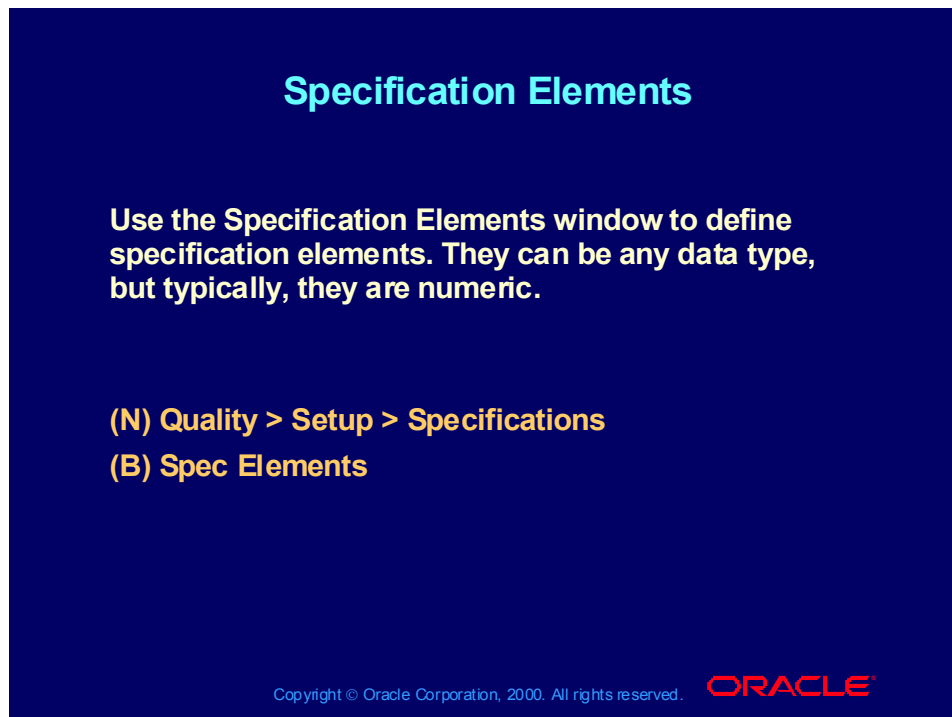
... > Specification Types

How to Define a Specification

- Enter a specification name.
- Enter an effective date range (optional).
- Select Item, Supplier, or Customer to determine the type of specification you are creating.
- Select either Item or Category to determine whether the specification that will be based on the item or item category.
- If the specification is based on:
 - An item: Enter the item and optionally the revision. You can have only one specification for each item/revision combination.
 - An item category: Select the category. The system will default the category set defined by the profile option QA:Quality Category Set.
- If the specification is:
 - A supplier specification: Select the supplier.
 - A customer specification: Select the customer.

- If you require further granularity, enter a specification subtype by selecting a collection element and a value for that collection element.

Specification Elements



Specification Elements

Use the **Specification Elements** window to define specification elements. They can be any data type, but typically, they are numeric.

(N) Quality > Setup > Specifications
(B) Spec Elements

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Defining Specification Elements

(Help) Oracle Manufacturing Applications > Oracle Quality > Specifications > Defining Specifications Elements
... > Specification Elements and Specification Limits

Overview

Specification elements are the basic components of a specification. You create specification elements by adding collection elements to your specifications. You can do this two ways:

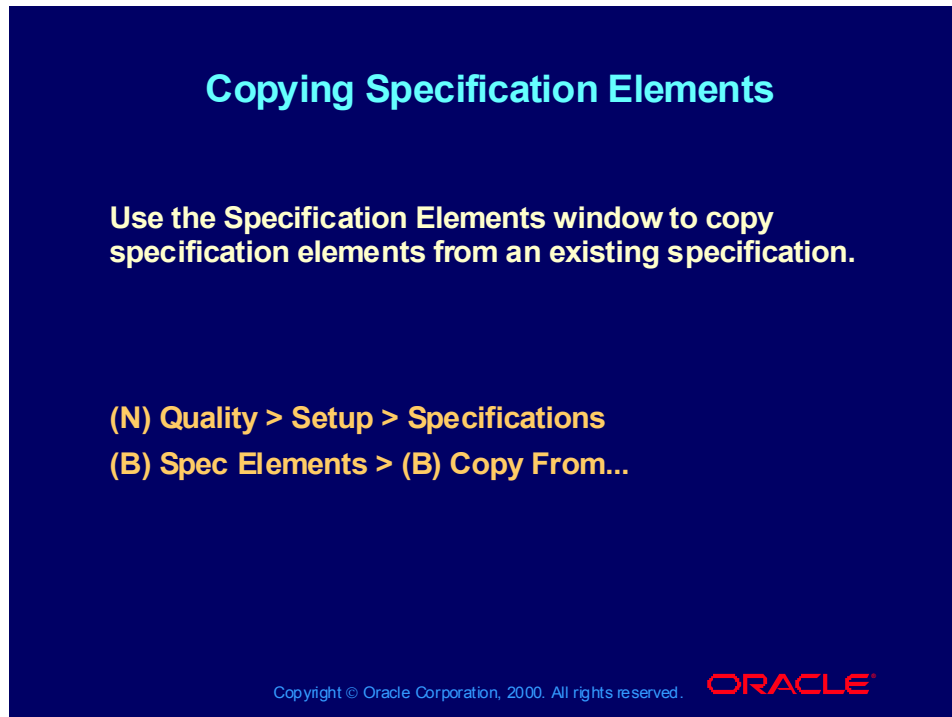
- By adding specific collection elements to your specification
- By copying specification elements from an existing specification

You must have already defined the specification elements as collection elements in the Collection Elements window.

How to Define Specification Elements

- Select the specification element from the list of collection elements.
- To use the specification element in the data-collection process, select the Enabled check box.
- Enter the target value, upper and lower specification range, upper and lower user-defined range, and upper and lower reasonable range. If you have defined target and limit values for the associated collection element, those values are defaulted. You can override these values.

Copying Specification Elements



Copying Specification Elements

(Help) Oracle Manufacturing Applications > Oracle Quality > Specifications > Defining Specification Elements

Copying Specification Elements

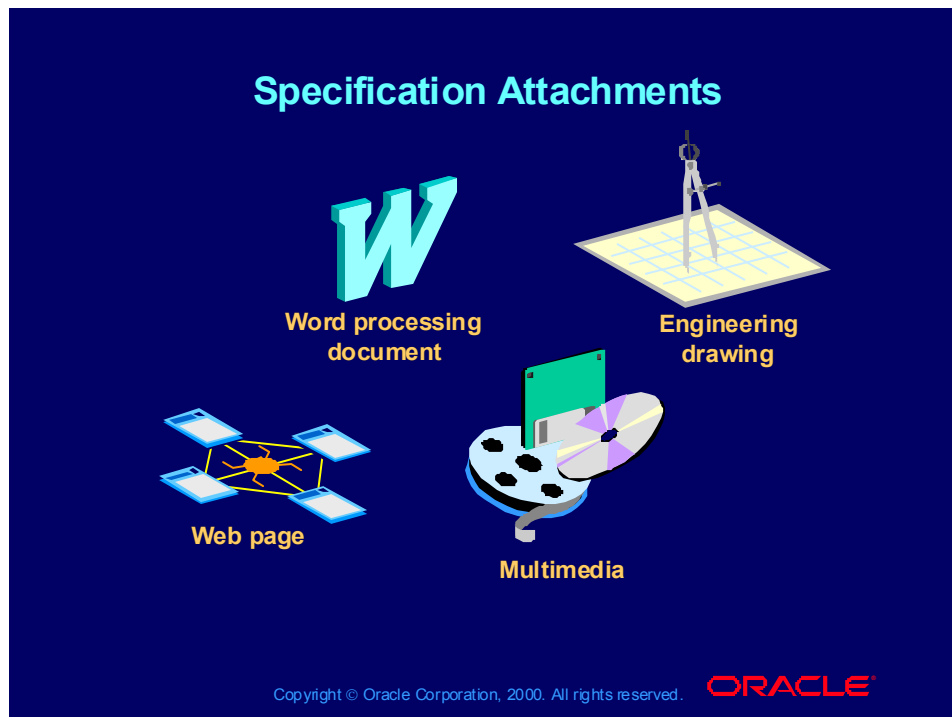
You can copy all specification elements from existing specifications by choosing Copy From... in the Specification Elements window. Using this feature, you can set up a template specification, which can be copied to additional specifications and then modified.

- Copied elements are appended to those elements previously defined in the specification.
- Existing elements are not deleted.
- Copied elements can be updated or deleted.
- Specification limits are defaulted from the source specification.

How to Copy Specification Elements

- From the Specification Elements window, click Copy From....
- From the list of specifications, select the specification to copy from.

Specification Attachments



Overview

An attachment provides additional information regarding the specification. One example is the attachment of a drawing depicting an assembly process for an item. Each specification can have multiple attachments. Collection plans can also have attachments.

Attachments can be in any of these forms:

- Electronic documents (word processing document, spreadsheet)
- Images (engineering drawing)
- Multimedia instruction (video of an assembly procedure)
- Web page (specify a URL reference)
- Text (short or long—greater than 2,000 characters)

You can view specification attachments during the collection of quality data by clicking Attachments on the toolbar.

Attaching Documents and Images

Attaching Documents and Images

Use the Attachments window to 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.

(N) Quality > Setup > Specifications >
(M) Attachments

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Attaching Files to Specifications

(Help) Oracle Manufacturing Applications > Oracle Quality > Specifications > Defining Specifications

How to Attach Documents and Images

- Select an existing specification by clicking the Find icon on the toolbar.
- Click the Attachments icon on the toolbar.
- Enter a sequence number.
- Select an attachments category.
- Enter a description.
- Select an attachment data type.
- If the attachment is:
 - A file: Select the file.
 - A Web page: Enter the URL.

Summary

- You can use specifications to identify key characteristics of an item.
- You can create specifications for items, suppliers, or customers.
- You can attach electronic images and documents to specifications.

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Instructor Demonstration

Defining specifications

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Collection Plans

Chapter 5

Oracle Quality: Setup and Implementation Release 11i

Collection Plans

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Objectives

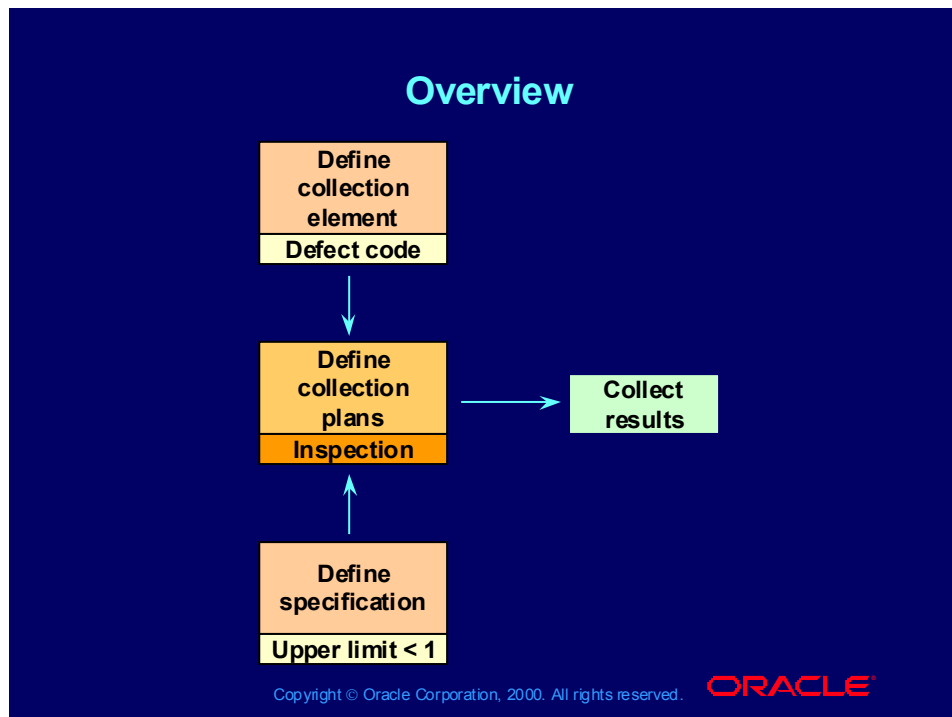
After completing of this lesson, you should be able to do the following:

- **Define a collection plan type and a collection plan**
- **Add collection elements to a collection plan and assign acceptable values to them**
- **Associate specifications to collection plans**
- **Define action rules for collection plan elements**
- **Associate collection transactions to a collection plan**
- **Create attachments for collection plans**

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Overview



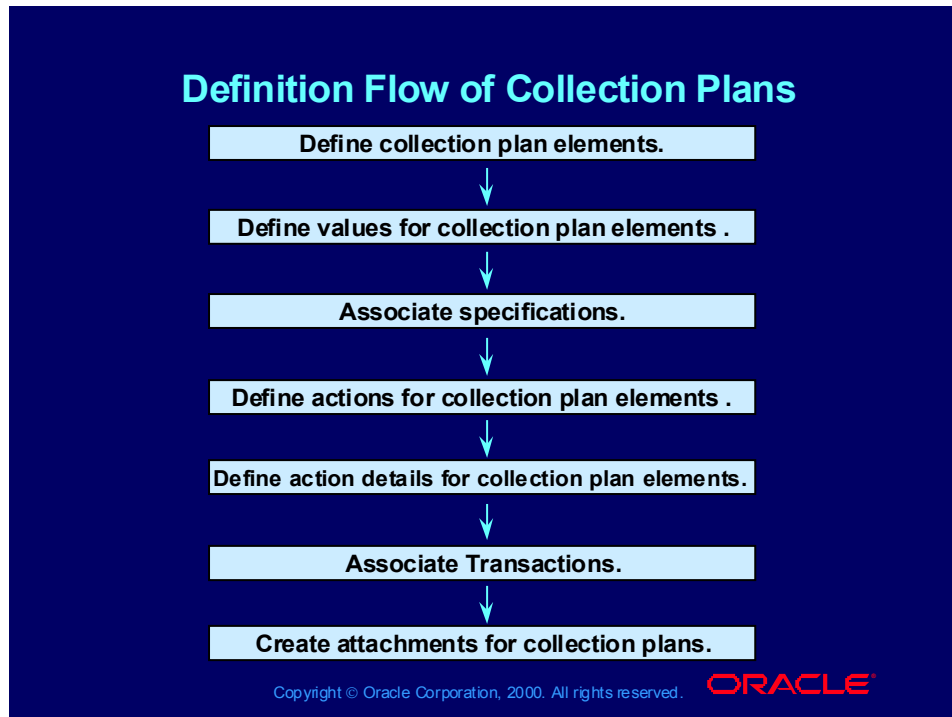
Overview

Quality collection plans determine what data to collect, where to collect it, and what action to take based on the results. A collection plan is a test plan or inspection plan, consisting of a group of collection elements that you want to collect and analyze for a given business case.

Using Oracle Quality, you can create any number of collection plans to support the needs of your enterprise for quality data collection and analysis. For example, you can create collection plans to collect the following information:

- Supplier data
- Incoming inspection information
- Work-in-process defects
- Material review board data
- Equipment failures
- Details of field failures
- Customer complaints

Definition Flow of Collection Plans



Overview

Collection elements are the building blocks of collection plans. They determine what data will be collected. You create collection plan elements by adding collection elements to collection plans. You can copy collection element values and actions to collection plans or define them directly in the collection plan.

For each collection plan that you create, you can:

- Define lists of acceptable values for collection plan elements
- Associate specification types: item, customer, or supplier
- Define action rules and conditions when those actions are invoked
- Specify which transactions in Oracle Applications will invoke data collection

Defining Collection Plan Types

Defining Collection Plan Types

Use the **Collection Plan Type Quick Codes** window to assign a collection plan type to each collection plan that you create for sorting, grouping, categorizing, and other informational purposes.

(N) Quality > Setup > Collection Plan Types

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Defining Collection Plan Types

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Plans
> Defining Collection Plan Types

... > Collection Plans

... > Collection Plan Types

Types of Collection Plans

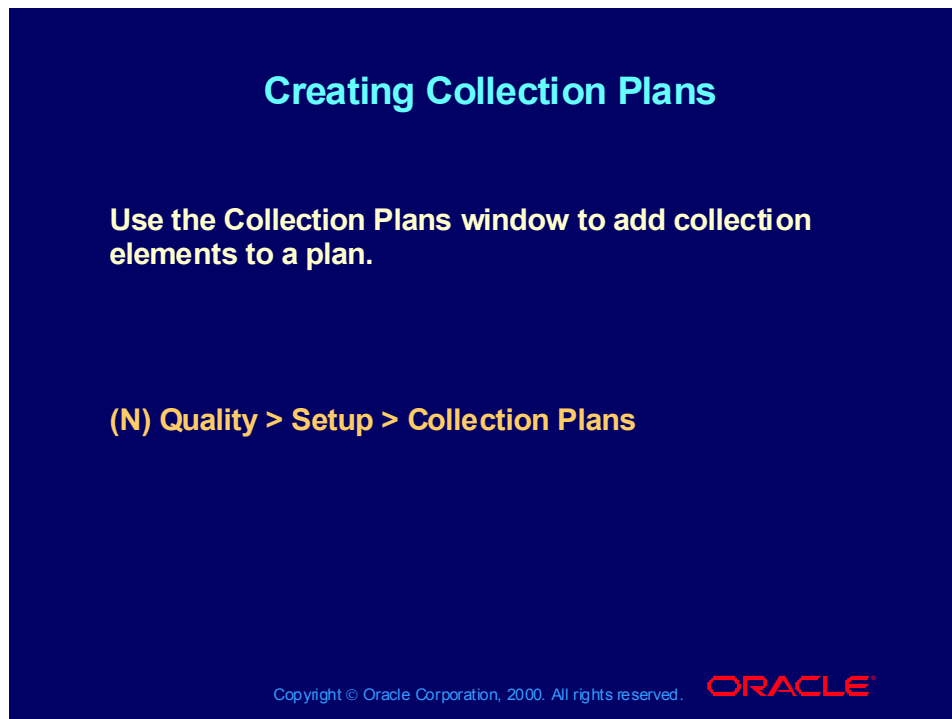
Collection plan types categorize collection plans and are informational only. You can create your own collection plan types or use the following predefined types:

- WIP inspection
- Receiving inspection
- Finished goods inspection
- Field returns
- Service requests

How to Define Collection Plan Types

- Enter a unique alphanumeric code for the collection plan type.
- Enter the meaning and description.
- (Optionally) Enter the from and to effective dates.
- Select the Enabled check box so that you can use it when creating collection plans.

Creating Collection Plans



Creating Collection Plans

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Plans
> Creating Collection Plans
... > Collection Plans

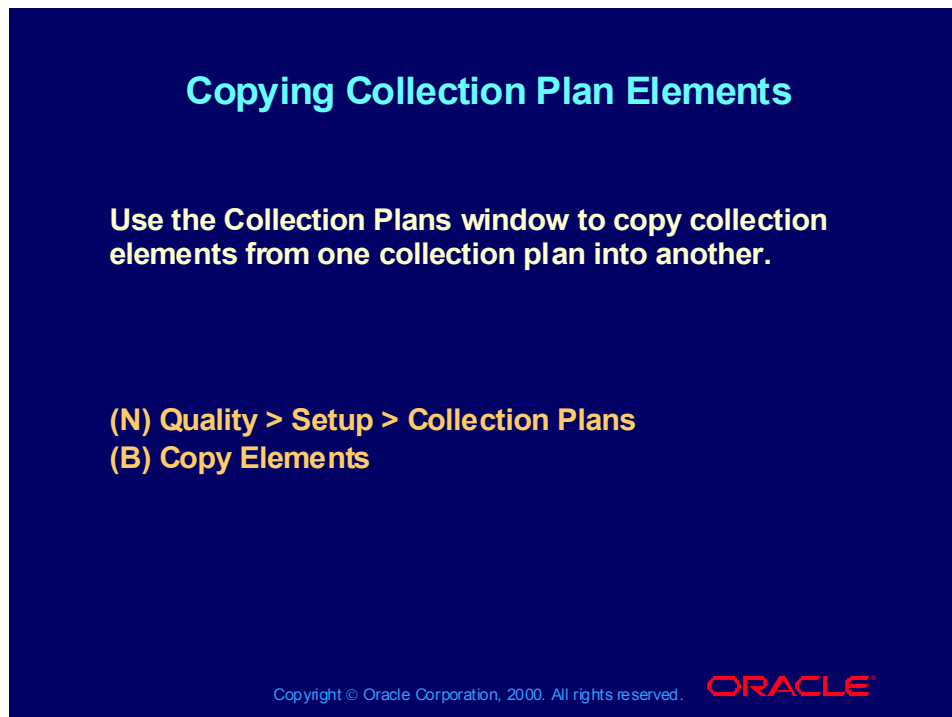
How to Define Collection Plans

You can define an unlimited number of collection plans. As your data collection requirements change, you can update existing plans, add new plans, or delete obsolete plans.

- Enter the name and the description of the collection plan. The name is also used as a database view name when the collection plan view is created. Each new or modified collection plan generates a database view used for custom reporting. Use these views to access the results of each collection plan.
- (Optionally) Enter the effective from and to dates.
- Select the collection plan type.
- Select the collection plan element. You must add at least one enabled and mandatory collection element.
- Enter the sequence number. The sequence number defines the order of the collection plan elements when you are entering data and the order of the columns in the database.

- Enter the prompt to be displayed at data-entry time. The prompt serves as a column heading in the quality results reports and online inquiries. The prompt defaults from the collection element but can be overwritten.
- Select the Mandatory check box if you require users to enter results for this collection plan element. The value defaults from the collection element but can be overwritten.
- Select the Enabled check box to enable the collection plan element to be used in the data-collection process.
- Select the Displayed check box so that the collection plan element is displayed in the Enter Quality Results window. This applies only to transactional data collection, not to quality data entered directly.
- Enter the default value (optional). The default value is displayed in the Enter Quality Results window during data collection. The value defaults from the collection element. **Note:** The collection element list of values and actions is not copied automatically.

Copying Collection Plan Elements



Copying Collection Plan Elements

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Plans
> Creating Collection Plans
... > Collection Plans

How to Copy Collection Plan Elements

You can copy collection plan elements from existing collection plans, including those created in other organizations. Collection plan elements that are copied from a source plan are appended to the destination collection plan. You can add, delete, or disable collection elements. You can disable, but not delete, any collection elements for which you have collected results.

- From the Collection Plans window, click Copy Elements....
- Select a collection plan from the Copy From Plan list.

Four collection plan templates are already predefined that you can copy to create your own collection plans. The collections plans are Template PO Inspection, Template PO Receiving, Template Service Request, and Template WIP Move.

Note: The collection plan element list of values and actions are not copied automatically.

Common Collection Plan Elements

Common Collection Plan Elements

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

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Overview

You can add any collection element to your collection plan. This list of collection elements is added automatically to your collection plan. Common collection elements give you an audit trail of when and how the data was collected. These elements are not visible on the collection plan, and you will not see them during data entry. They are visible only when you view the results of your data entry.

Defining Collection Plan Element Values

Defining Collection Plan Element Values

Use the **Values** window to define collection plan element values that are used to validate data as it is collected.

(N) Quality > Setup > Collection Plans (B) Values

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Defining Collection Plan Element Values

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Plans > Defining Collection Plan Element Values

Overview

When you copy a collection element to a collection plan, it does not automatically copy the list of values to the collection plan element. You can manually copy the entire list of values or a subset of the values to the collection plan element. You can also add and define values for a collection plan element independent of the collection element.

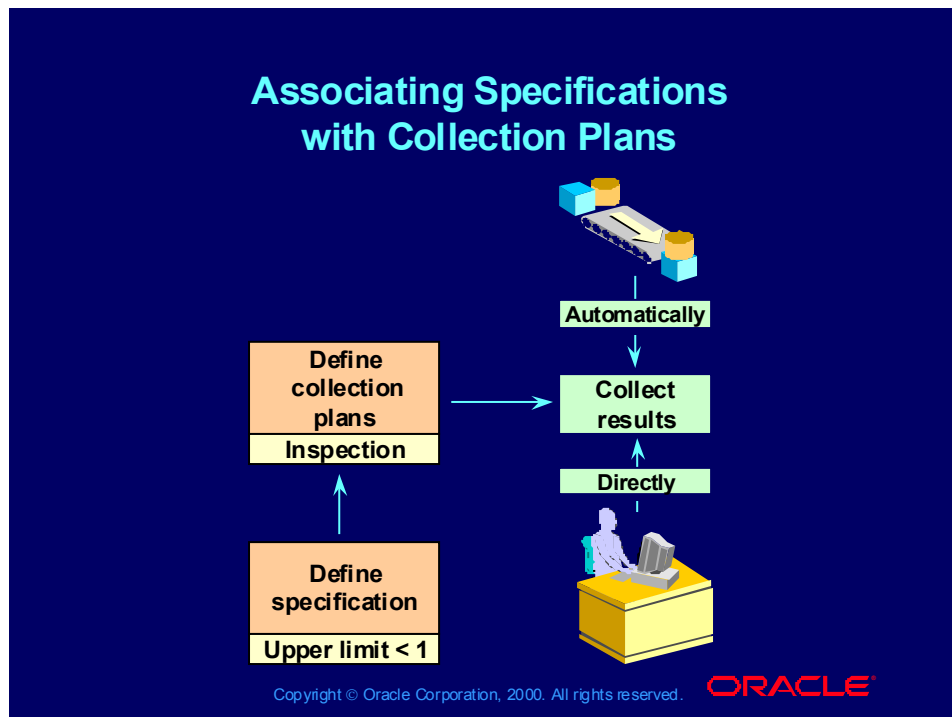
How to Copy Values

- Enter the name of the collection plan.
- Move to a collection element.
- If the collection element has a list of values, click **Values**.
- To copy individual collection element values, select a short code from the list of values. Click **Defaults** to copy the entire list of values defined for the collection element.

Defining New Values for a Collection Plan Element

In the **Values** window, enter a short code and description. The short code must match the data type of the collection element.

Associating Specifications with Collection Plans



Associating Specification Types with Collection Plans

The specification type enables Oracle Quality to find the correct specification during the collection of quality data. You can specify the type of specification that you want to associate to the collection plan:

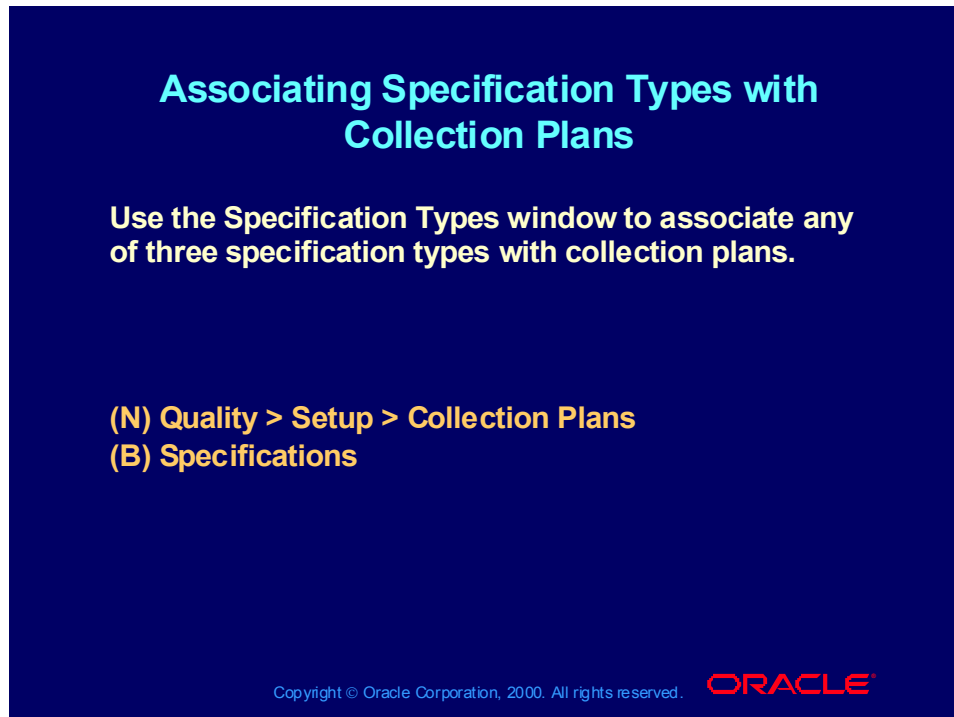
- Item specification
- Supplier specification
- Customer specification
- No specification

When entering quality data during transactions, context information about the transaction is used to determine the appropriate specification. For example, given that you have associated an item specification with the collection plan, when you enter quality data during a Work in Process move transaction, the specification associated with the item being moved is used.

Use the collection plan and the specification to compare specification limits with results.

- The Enter Quality Results window displays a target value and upper and lower tolerances.
- Use collection plan action rules, based on specification limits, to control when and how to respond to out-of-specification conditions.
- Use the upper and lower reasonable limits of the collection element if you want to automatically reject an input that is not within the specification.

Associating Specification Types with Collection Plans



Associating Specification Types with Collection Plans

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Plans
> Associating Specification Types with Collection Plans

How to Associate Specification Types with Collection Plans

- Navigate to the Collection Plans window.
- Select the Collection Plan.
- Click Specifications... The Specification Types window appears.
- In the Specification Types window, select the default specification type.

The specification type that you associate with a collection plan can be overridden during data collection.

Defining Collection Plan Actions

Defining Collection Plan Actions

Use the **Quality Actions** window to define action rules for each collection element that you add to a collection plan.

(N) **Quality > Setup > Collection Plans**
(B) **Actions**

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Defining Collection Plan Actions

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Plans
> Defining Collection Plan Element Actions

Defining Actions for a Collection Plan Element

When you copy a collection element to a collection plan, it does not automatically copy the action rule to the collection plan element. You can manually copy the action rule to the collection plan element. You can also add new action rules to the collection plan element or update the copied action rules.

How to Copy Action Rules

- Enter the name of the collection plan.
- Move to a collection element and click **Actions**.
- Click **Defaults...** The Copy Actions window will appear.
- Click **Copy** to copy the collection elements actions.

How to Define New Actions

- Enter the sequence for the action rule. The sequence number determines the order in which action rules are evaluated during data collection.
- Select the condition that must be met to invoke this action.
- Select the **Value** or **Spec Limit** check box to specify the evaluation method.
 - If you select the **Value** check box, you must specify a particular value or range of values. If the collection plan element has a list of

predefined values associated with it, then you must select values from that list.

- If you select the Spec Limit check box, you can specify which specification limit values you want to evaluate against.
- If the condition requires a range of values, enter the from and to values. If the condition requires only one value, enter only the from value.
- Select an action to invoke. You can associate one or more actions for a given action rule. All the actions available to you in defining collection elements are available to use when defining collection plan elements. “Assign a value to a collection element,” which takes advantage of user-defined formulas, is an additional action available to use on collection plan elements.
- Enter details for the related action. Not all actions require details, and depending on the action, there are different ways of entering the action details.

Assigning a Value to a Collection Element

Assigning a Value to a Collection Element

Use the Quality Actions window to assign a value when action rules associated with “Assign a value to a collection element” actions are evaluated and found to be true.

(N) Quality > Setup > Collection Plans
(B) Actions

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Assigning a Value to a Collection Element

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Plans
> Defining Collection Plan Element Values

Overview

Values are assigned when action rules associated with “Assign a value to a collection element” actions are evaluated and found to be true. You can define formulas to derive a value based on quality data entered. For example, as you enter quality results for a specific job, you can calculate your failure rate for a test operation by taking the defective quantity and dividing it by the job quantity. This value is dynamically assigned to a collection plan element as you collect quality data. The collection elements for both defective quantity and job quantity must already have values assigned to them for the formula to do the calculation. Therefore, if defective quantity is entered before job quantity, then the “Assign a value to a collection element” action should be on job quantity.

You can assign constants, character strings, and equations to collection plan elements. For example:

- 3
- $(40 + 780) / 50$
- 'FAIL'
- $\&\text{DEFECTQTY} / \&\text{QTY}$
- $\text{ABS}(\&\text{SEVERITY}) + \&\text{BAD}$
- 'Defect' | | $\&\text{DEFECTCODE}$

Defining Output Variables

Defining Output Variables

Use the **Output Variables** window to 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*.

(N) Quality > Setup > Collection Plans (B) Actions
> (B) Action Details > (B) Variables

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Defining Output Variables

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Plans > Defining Collection Plan Element Alert Actions > (L) Associating Output Variables with Actions

How to Define Output Variables for Actions

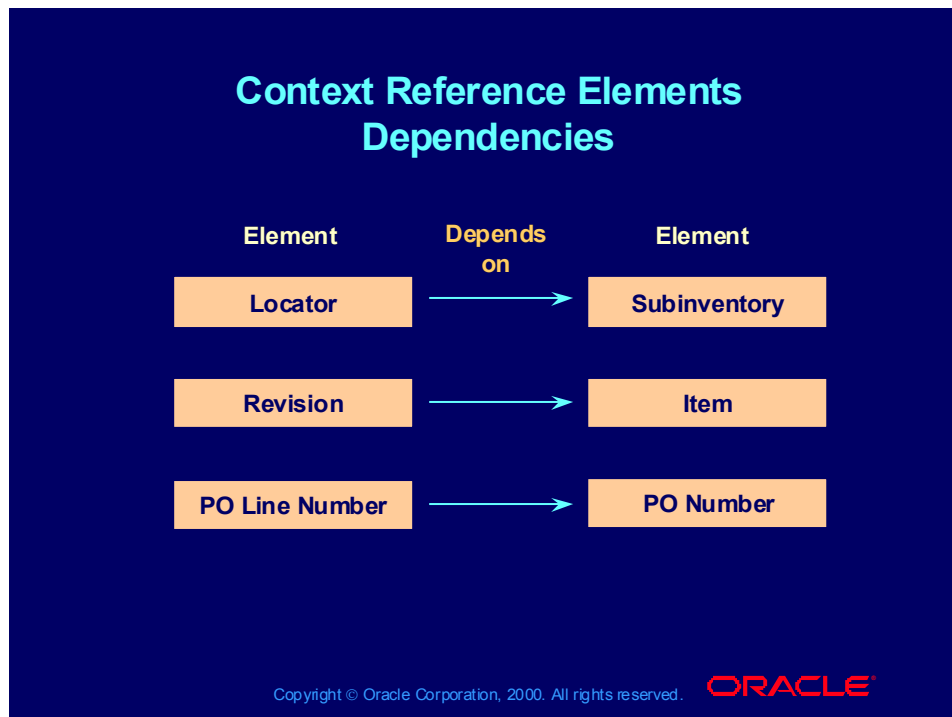
To use result values in your user-defined formulas, you will need to use output variable tokens, such as &DEFECTQTY, where DEFECTQTY is the quantity defective. In your formula you would use &DEFECTQTY as a variable. You use the Output Variables window to define the output variable token and associate it with the corresponding collection plan element.

- Enter the token name. Do not enter the ampersand (&).
- Select the collection element to associate with the token name. Only those collection elements on the collection plan are available to choose from.

You can also use output variables for the following actions:

- Sending an electronic mail notification
- Executing a SQL script
- Executing an operating system script

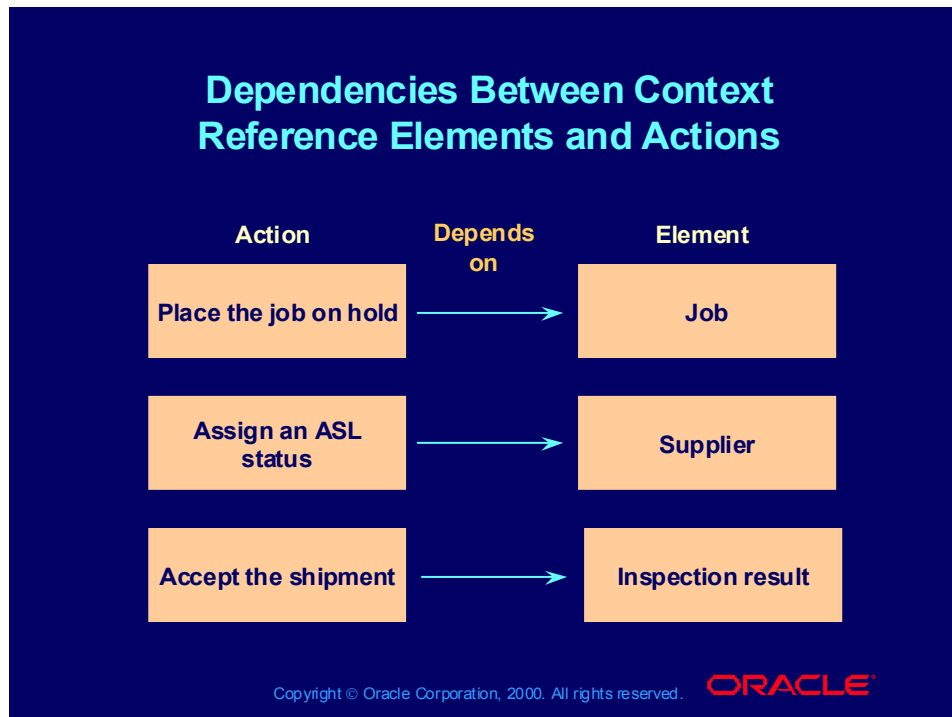
Context Reference Elements Dependencies



Dependencies of Context Reference Elements

Some context reference collection elements depend on others. For example, Locator depends on Subinventory. If you want to include Locator as a collection element in your collection plan, you have to include Subinventory as a collection plan element as well. This dependency is also enforced during data entry, where you are not allowed to enter locator information unless you have already entered the subinventory information.

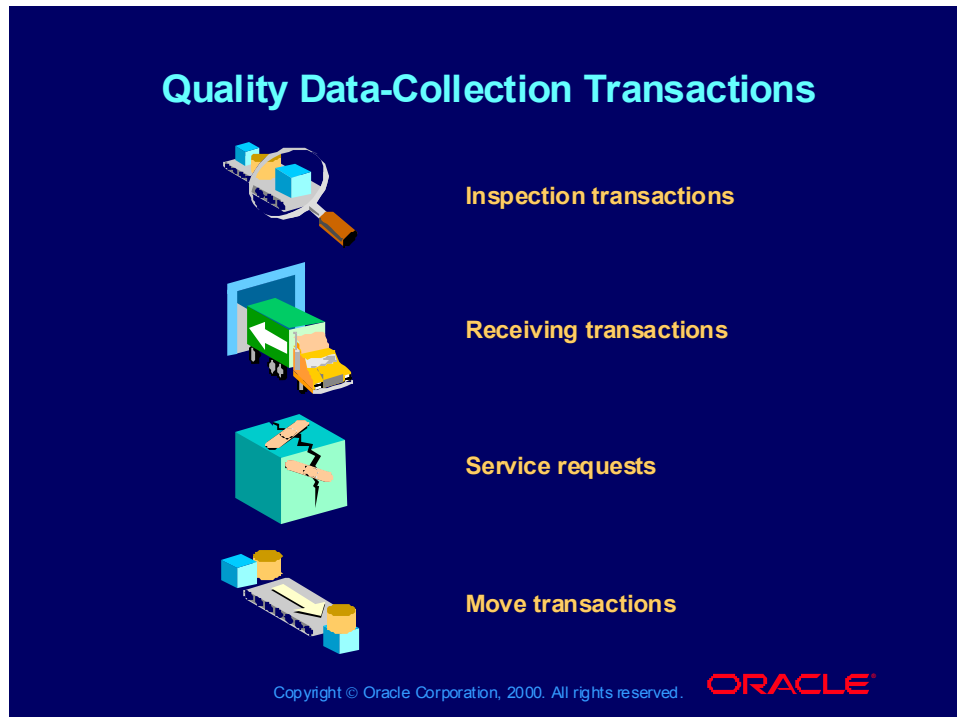
Dependencies Between Context Reference Elements and Actions



Dependencies Between Context Reference Elements and Actions

The actions listed on the slide depend on context reference elements being included in the collection plan. However, the action does not have to be defined for that element. For example, you have created a collection plan that includes the collection elements Failure Code and Job. You can create an action against Failure Code to put the job on hold if the Failure Code equals fail. The requirement is that Job must be included as an element in the collection plan.

Quality Data-Collection Transactions

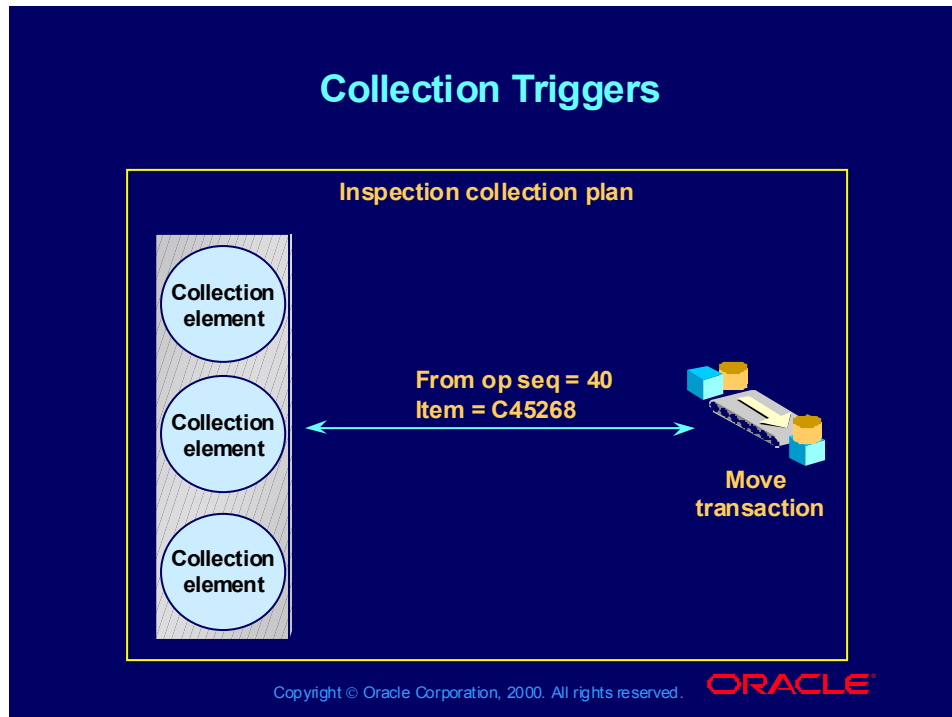


Overview

You can associate transactions with collection plans to integrate the collection of quality data with the manufacturing workflow. You can associate the following transactions with your collection plans:

- Inspection transactions (Oracle Purchasing)
- Receiving transactions (Oracle Purchasing)
- Service requests (Oracle Service)
- Move transactions (Oracle Work in Process)

Collection Triggers



Collection Triggers

Quality collection triggers are collection elements that represent transactional reference information.

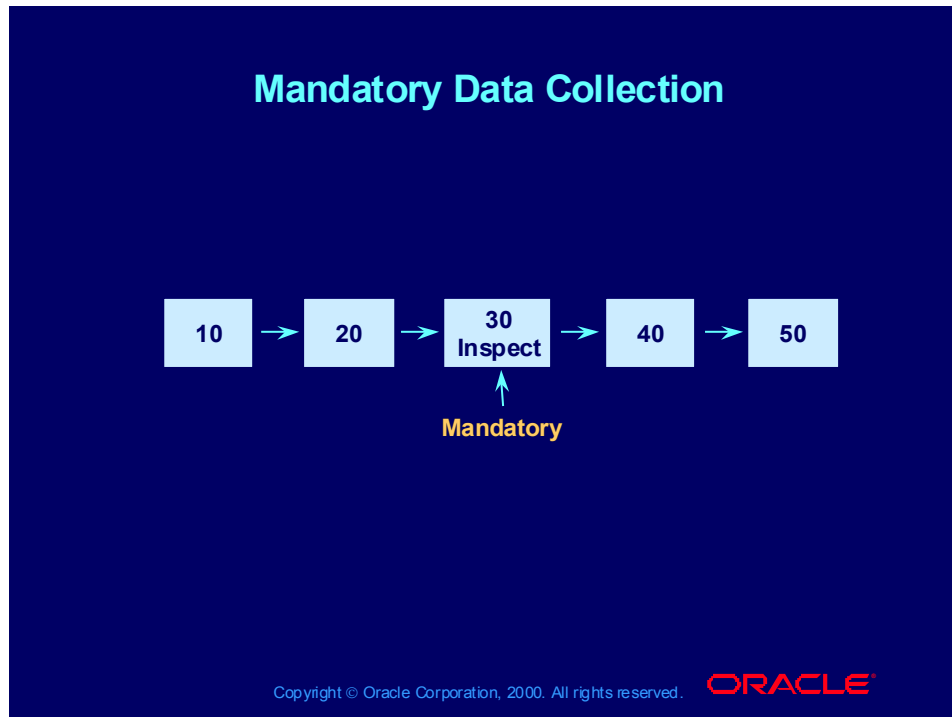
Each transaction that is integrated with Oracle Quality has a predefined list of associated context reference collection elements used as triggers. These context reference elements are reference collection elements whose values are already available in the context of the transaction. For example, in a Work in Process job, the specific job number, item, and from operation sequence are already available to be used in data collection. There is no need for the operator to manually enter these values.

These context reference collection elements are used to define conditions that must be satisfied before the transactional quality data collection can be automatically invoked.

Context reference elements that are used to trigger quality data collection do not have to be added to the collection plan. When they do appear on the collection plan, their values are automatically entered and saved when the parent transaction is saved.

You can assign multiple collection triggers to a transaction.

Mandatory Data Collection



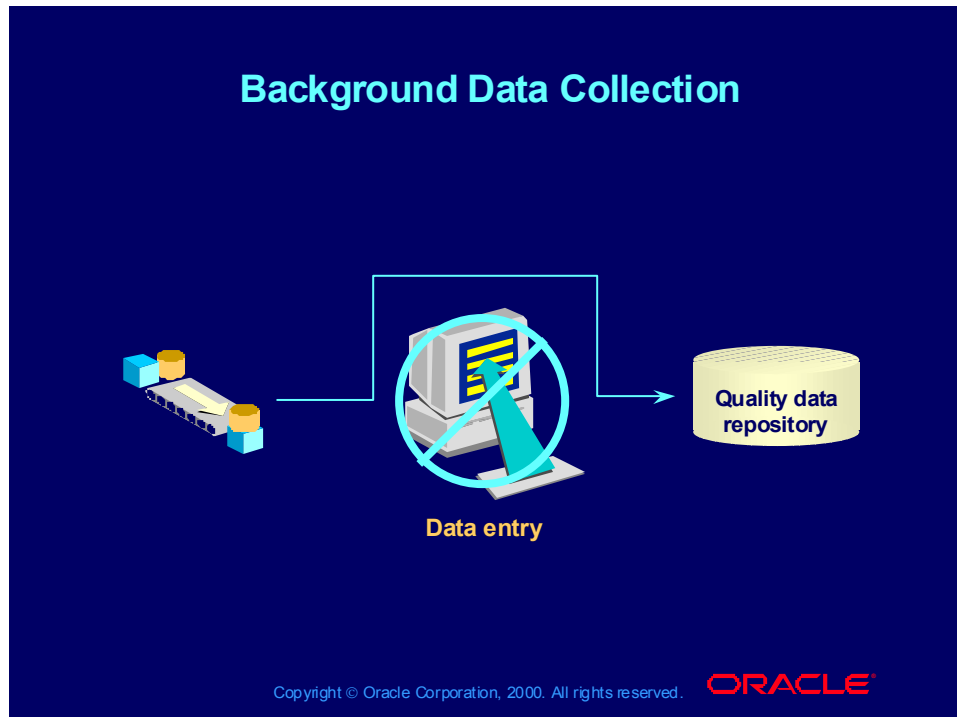
Overview

When associating a collection transaction with a collection plan, you can specify whether data collection should be mandatory or optional. By specifying it as mandatory, when all collection trigger conditions are met, it forces quality data to be entered.

Example

As illustrated on the slide, operation 30 is a required inspection operation. To prevent an operator from bypassing the inspection and entering the relevant quality data, you designate the associated collection transaction as mandatory. The assembly cannot be moved past operation 30 without forcing the operator to enter quality data.

Background Data Collection



Overview

You can use background data collection to collect quality results for context reference elements without invoking the Enter Quality Results window. When associating a collection transaction with a collection plan, you can specify whether data collection should be done in the background.

Background data collection is available only for actions that do not require user input. For example, “Assign a shop floor status to the intraoperation step” can be done only in the foreground because it requires input from the operator, whereas “Execute a SQL script” can be done in the background.

Associating Transactions with Collection Plans

Associating Transactions with Collection Plans

Use the Collection Transactions window to associate transactions with collection plans.

(N) Quality > Setup > Collection Plans
(B) Transactions

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Associating Collection Plans with Transactions

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Plans
> Associating Collection Plans with Transactions

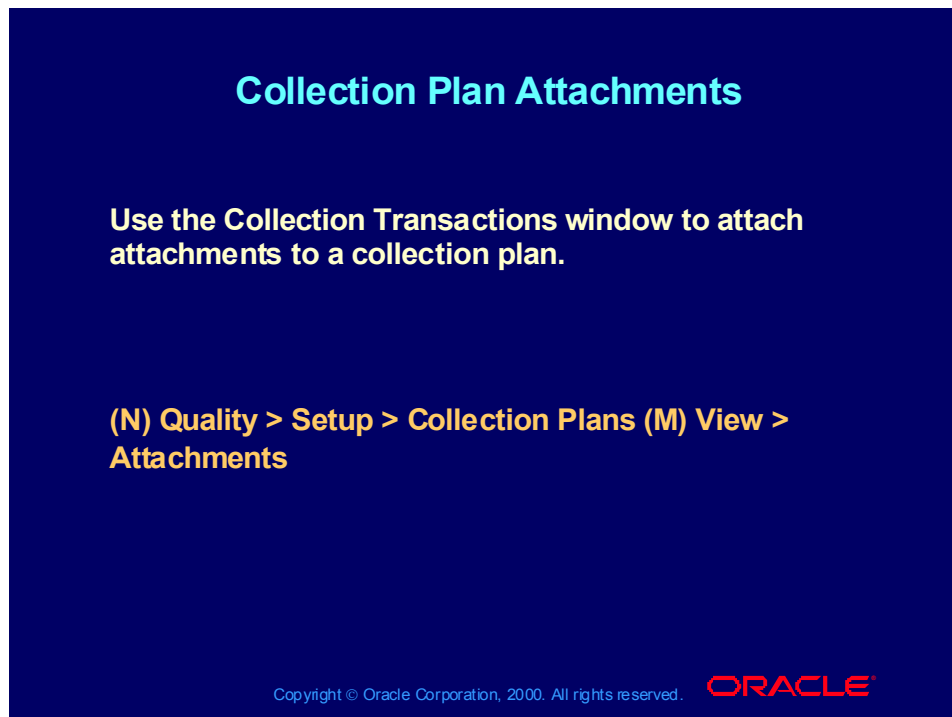
How to Associate Transactions with Collection Plans

You can associate multiple transactions with one collection plan and conversely, multiple collection plans with a single transaction.

- Select the transaction description for the type of transaction with which you want to integrate.
- Select the Mandatory check box to enforce data collection. By not having the data collection mandatory, you have the option of not entering quality data during the transaction.
- Select the Background check box to indicate that data collection is done in the background.
- Select a trigger name. The trigger name specifies which context collection element to use as part of the condition.
- Select the condition that must be true to invoke data collection.
- Based on the condition, enter a value or range of values.

Note: For a given collection transaction, all the trigger conditions must be true to invoke automatic quality data collection.

Collection Plan Attachments



Collection Plan Attachments

(Help) Oracle Manufacturing Applications > Oracle Quality > Collection Plans > Creating Collection Plans > (L) Attaching Files to Collection Plans, Specifications, and Results Lines

Overview

You can attach documents and images to collection plans. For example, you can attach inspection instruction documents that are accessible during data collection. Each collection plan can have multiple attachments.

How to Attach Documents and Images to a Collection Plan

- Select an existing collection plan by clicking the Find icon on the toolbar.
- Click the Attachments icon on the toolbar.
- Enter a sequence number.
- Select an attachment category.
- Enter a description.
- Select an attachment data type.
- If the attachment is:
 - A file: Select the file.
 - A Web page: Enter the URL.

Summary

Summary

Collection plans are similar to test or inspection plans. They determine:

- **What data to collect**
- **Which transaction to collect the data in**
- **When to collect the data**
- **Which action to take based on the data collected**

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Summary

You use a collection plan to collect quality data for a specific business case. Collection plans are similar to test or inspection plans.

The Oracle Quality application provides standard collection plan types, or you can create collection plan types.

You can copy collection elements and their values, specifications, and actions to a collection plan.

You can modify a collection plan.

You can associate transactions with a collection plan to eliminate duplicate data entry and multiple quality systems.

You can attach electronic documents, images, multimedia instructions, or text to a collection plan.

Instructor Demonstration

Defining a collection plan for a WIP move transaction

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Setup and Implementation Considerations

Chapter 6

Oracle Quality: Setup and Implementation Release 11i

Setup and Implementation Considerations

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Objectives

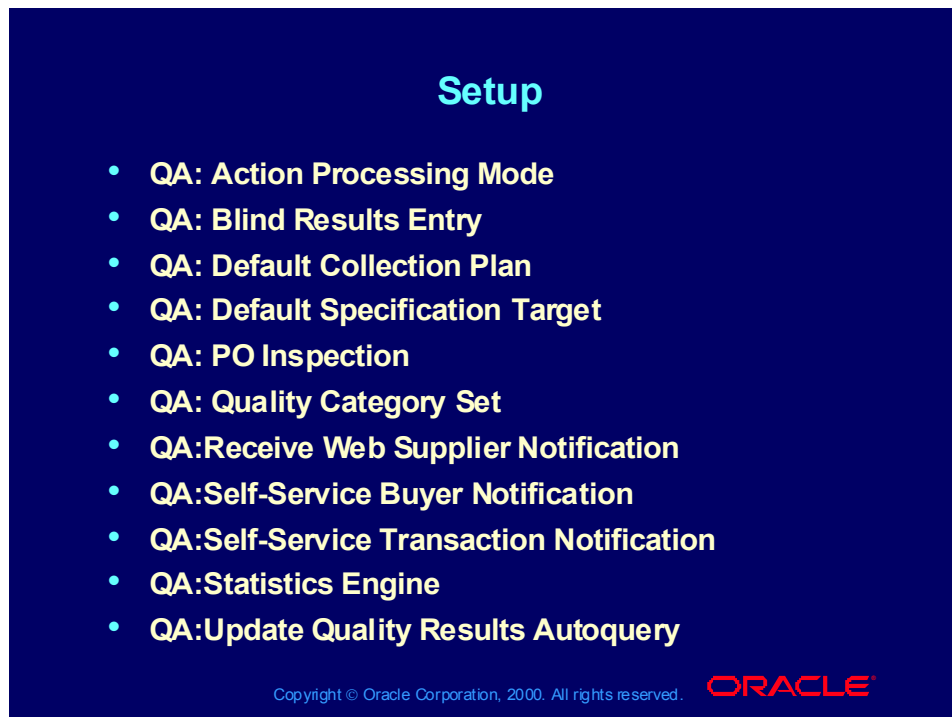
Objectives

After completing this lesson, you should be able to describe and perform Oracle Quality Release 11i Profile Option setup.

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Setup

A screenshot of the Oracle Quality Setup screen. The title 'Setup' is displayed in red at the top center. Below it is a bulleted list of setup options in white text on a dark blue background. The options are: QA: Action Processing Mode, QA: Blind Results Entry, QA: Default Collection Plan, QA: Default Specification Target, QA: PO Inspection, QA: Quality Category Set, QA:Receive Web Supplier Notification, QA:Self-Service Buyer Notification, QA:Self-Service Transaction Notification, QA:Statistics Engine, and QA:Update Quality Results Autoquery. At the bottom right is the Oracle logo, and at the bottom left is the copyright notice: Copyright © Oracle Corporation, 2000. All rights reserved.

- QA: Action Processing Mode
- QA: Blind Results Entry
- QA: Default Collection Plan
- QA: Default Specification Target
- QA: PO Inspection
- QA: Quality Category Set
- QA:Receive Web Supplier Notification
- QA:Self-Service Buyer Notification
- QA:Self-Service Transaction Notification
- QA:Statistics Engine
- QA:Update Quality Results Autoquery

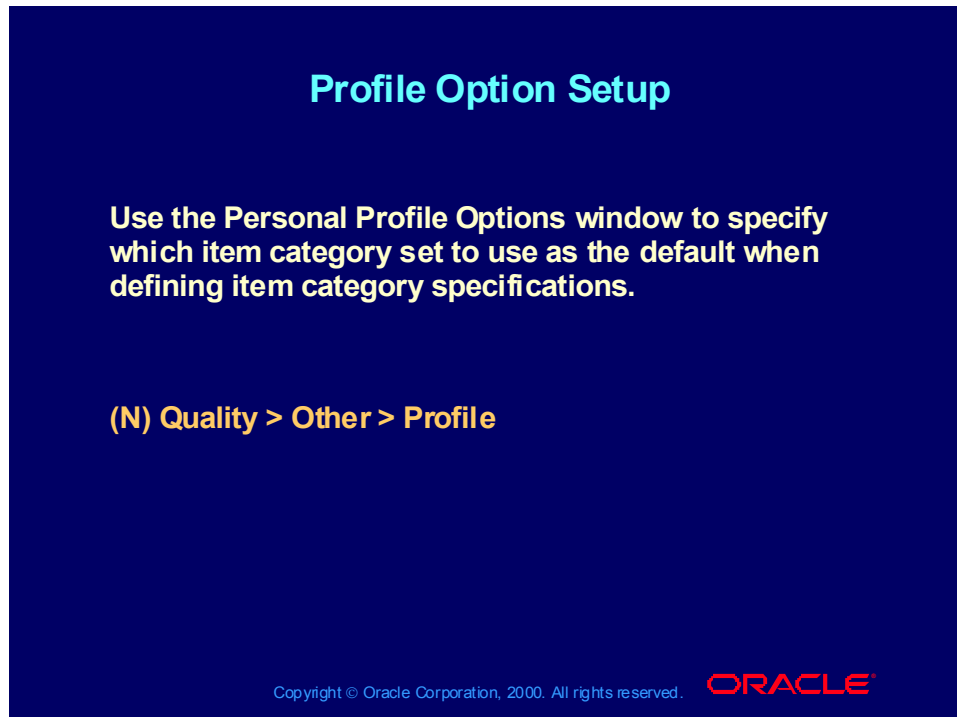
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Quality Setup

(Help) Oracle Manufacturing Applications > Oracle Quality > Setting Up > 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.

Profile Option Setup



Profile Option Setup

Use the **Personal Profile Options** window to specify which item category set to use as the default when defining item category specifications.

(N) Quality > Other > Profile

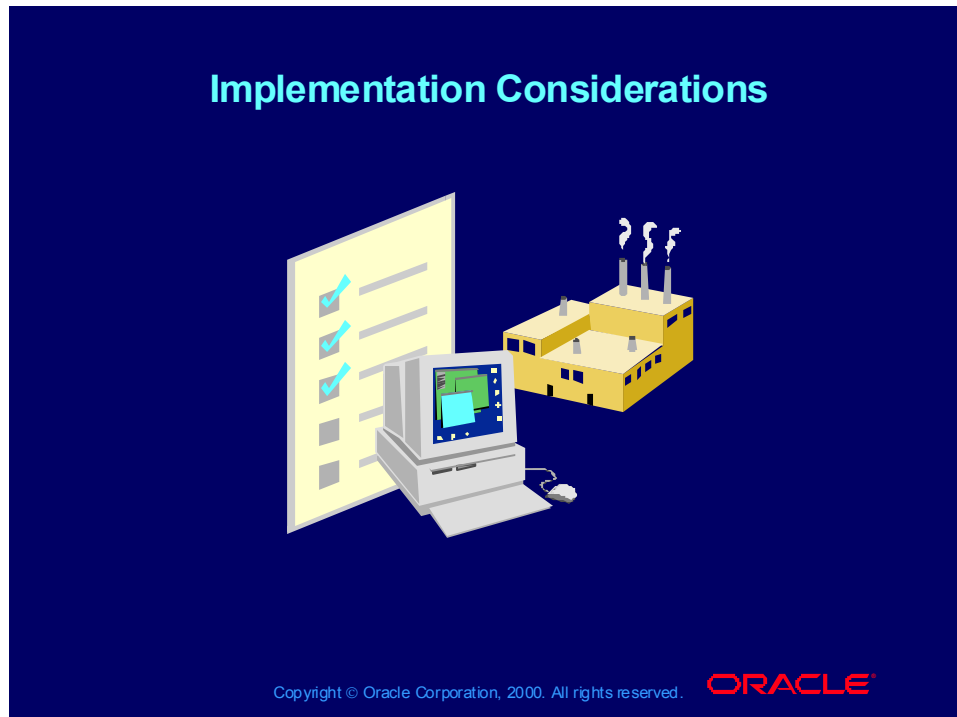
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QA: Quality Category Set

Specify which item category set to use as the default when defining item category specifications. This profile option must be set before defining item category specifications.

Item categories are defined in Oracle Inventory. If you are entering quality results for an item using a collection plan that is associated with a specification, but the specification for that item cannot be found, the system uses the category set specified in QA:Quality Category Set to find a specification for the category of that item.

Implementation Considerations



Business Process

- Do you monitor cycle history, such as multiple passes through testing or debugging?
- Do you maintain statistical process controls?
- Do you take or recommend action based on sampling or analysis of a series of outputs?
- How is failure data currently collected?
- Do you collect information on everything and not just failures?
- Do you have a corrective action loop in your process?
- What sampling programs do you use?
- What is your material review board workflow?
- Are responsibilities for dispositioning of nonconformances established by name, department, and role?
- Do you track corrective actions through analysis, action, and change control?
- Do you rework offline or during production?
- Do you keep track of quality costs (rework and repair orders)?
- Do you need to maintain history (for example, serial or lot) records, where you keep track of results for a particular item throughout its process?

Collection Elements

- What are the key variables and attributes that are monitored during production?
- Do you want collection elements to be autopopulated?
- Do you collect time-to-failure statistics?
- Do you currently log time spent debugging or troubleshooting failures?
- What important characteristics and elements do you plan to collect?
- What types of holds are used after a quality event has occurred and before disposition is made?

Specifications

- What criteria are used to pass material during inspection?
- Do you maintain specifications by item, supplier, and customer?
- Is it necessary to store schematics and other drawings online as electronic documents for inspection purposes?
- Do you maintain target values and validation limits on your specifications?

Collection Plans

- Are collection elements ever calculated as a function of other elements?
- How do you alert the appropriate personnel when quality nonconformance occurs?
- Do collection plans need to be updated frequently?
- Are collection elements derived from other elements? For example, symptom code might be derived from a comparison of results to specifications.
- Do test and inspection instructions need to be available throughout the process?
- Do you want the system to prompt suggested test or debug steps based on preliminary collection results?
- Are action rules and systematic notifications used when a quality event occurs?
- Do you collect symptom, cause, and action codes along the corrective action loop?
- Do you have the capability to determine what quality characteristics must be entered based on other entries or actions?
- Do you need the results on quality collection to initiate another program—for example, transfer material to a subinventory?
- Do collection plans vary by organization for the same transactions?
- Based on the quality results, what are the types of predefined actions you want to specify?

Data Collection and Analysis

- Do you need to be able to back out any collected results?
- Do you prefer to have quality results collected in the background, where no operator intervention is required?
- To what extent are Cp, Cpk, and other process capability statistics maintained and used?
- To what extent are correlation statistics maintained?
- Are failure analyses reported by problem and product?
- Given the data collected, what is the best way of displaying the results?
- What are the primary quality analysis reports in current use? How are they used? By whom are they used? How frequently are they generated?
- What is the frequency of data collected and reporting?

Supplier Quality

- Do suppliers do their own QA?
- Do you need access to their Quality reports?
- Should they be part of your normal quality system?
- Do you do receiving inspection still or do you only use qualified suppliers?
- What qualifies a supplier as a qualified supplier?
- How are they qualified?
- Do you need a quality interface with them?

11i Setting Up and Implementing Quality Summary

Chapter 7

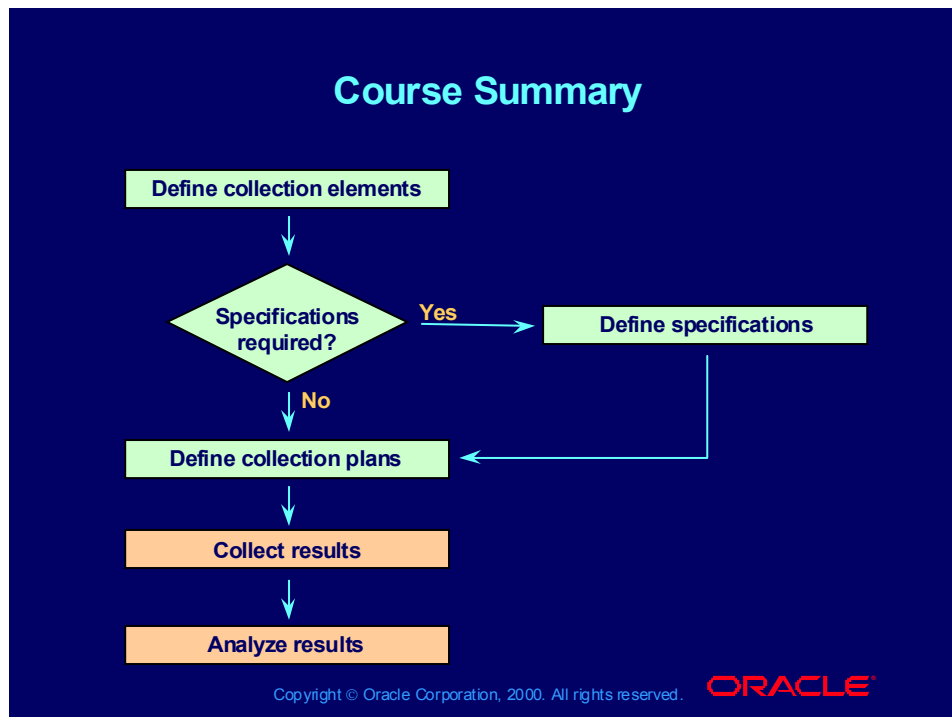
Oracle Quality: Setup and Implementation Release 11i

Course Summary

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Course Summary



Summary

Collection elements are the basic elements that are used to define both collection plans and specifications. They describe the type of data that you want to collect.

Specifications describe the requirements of the product that you are building. When data is collected, the values entered will be compared with the specification.

You create collection plans to collect quality data. Collection plans use collection elements to determine what data to collect and specifications to determine if the values entered are appropriate. Depending on the values entered, certain actions can take place.

11i Inspect Quality of Goods

Chapter 8

11i Oracle Quality: Inspect Quality of Goods

Course Introduction

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Course Objectives

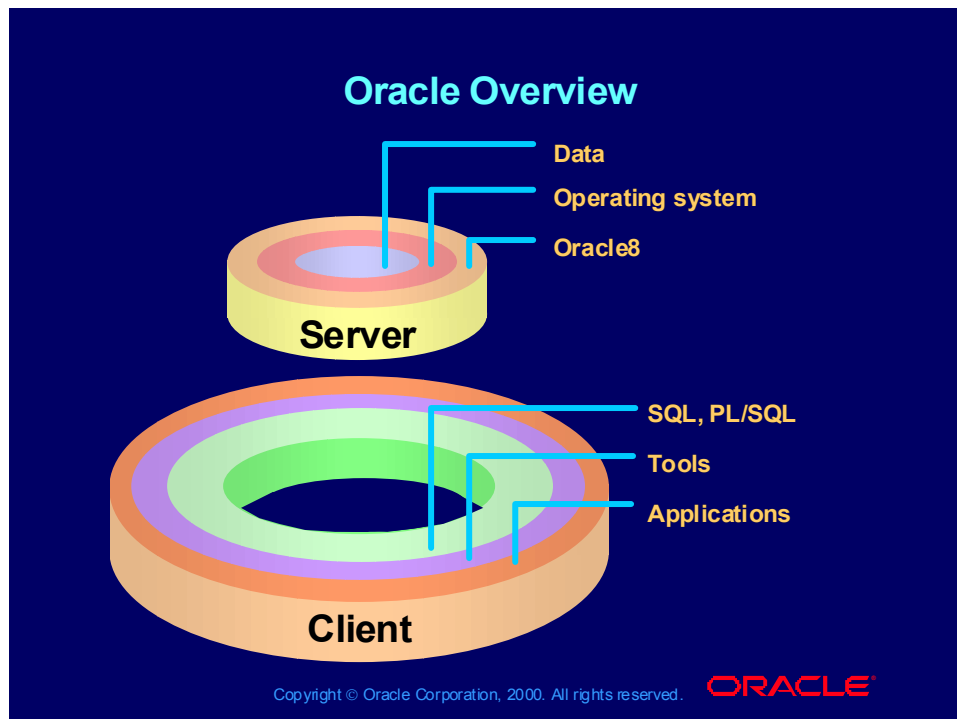
After completing this course, you should be able to do the following:

- **Collect quality data**
- **Analyze and report the results of quality data collected using Oracle Quality Release 11i**

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Oracle Overview



Product Overview

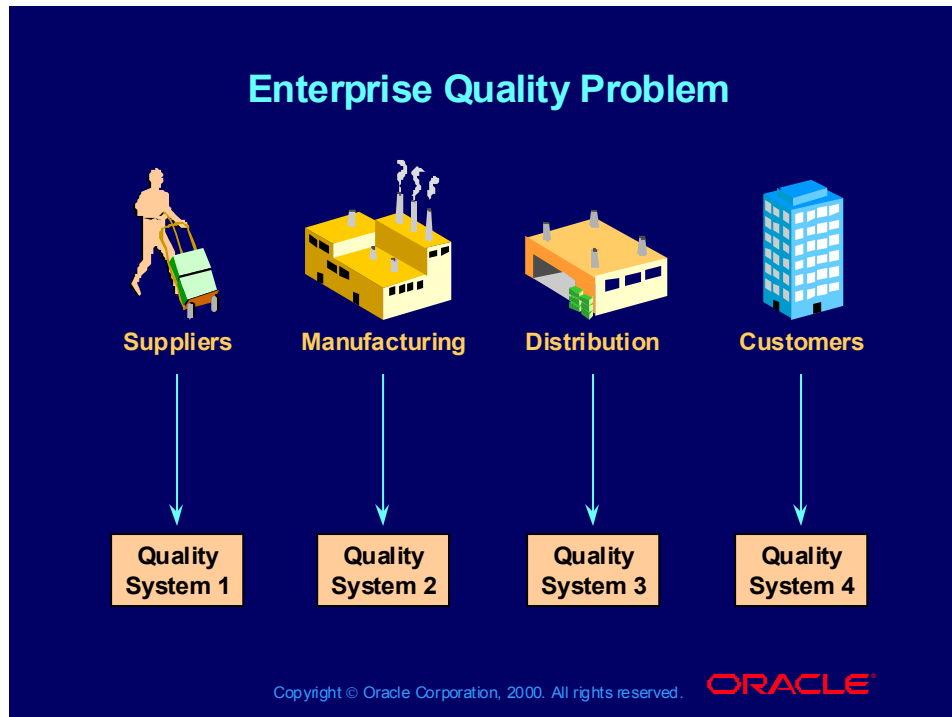
Oracle Quality Release 11i is:

- **An integrated quality-management application**
- **Designed to support manufacturers in the management and distribution of critical quality information throughout your organization**

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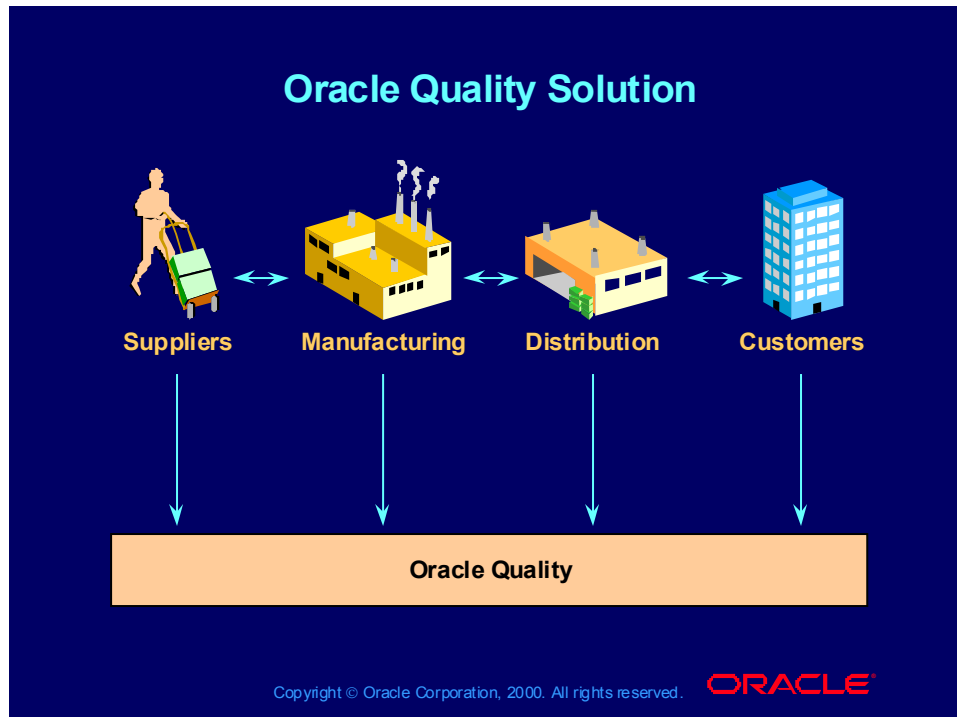
Enterprise Quality Problem



Overview

With increasing pressure to be competitive, companies are implementing quality systems throughout their organizations. These systems are not always integrated with business systems and frequently they are standalone databases. As a result, trying to correlate and analyze data gathered at different areas in the company can be difficult. For example, associating work in process test data with customer service repair data would be cumbersome.

Oracle Quality Solution

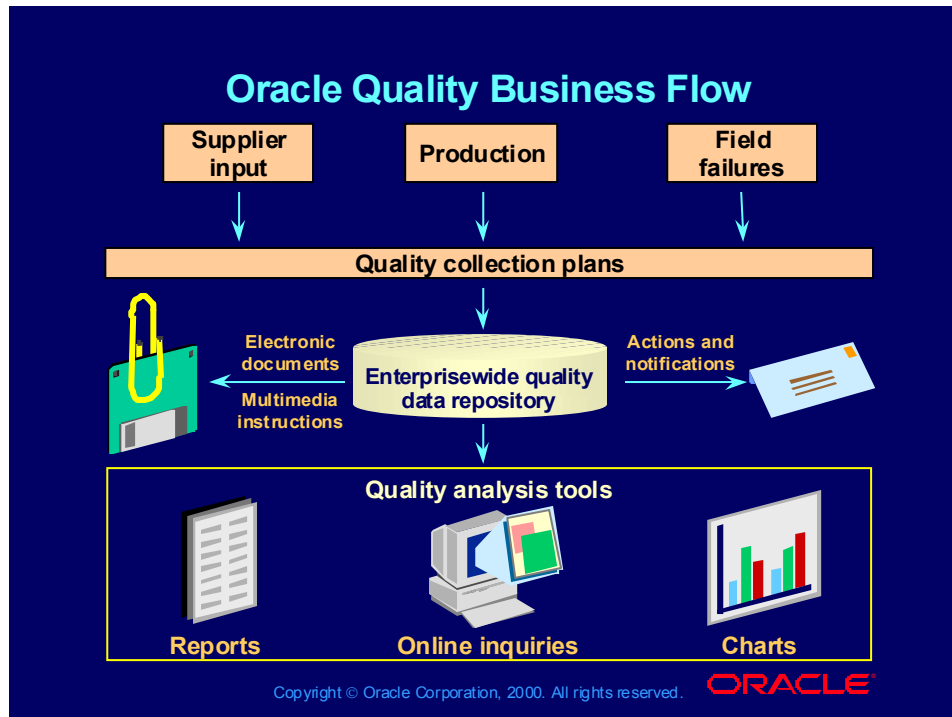


Oracle Quality Solution

Oracle Quality is integrated with the Oracle Manufacturing and Distribution applications to provide consistent quality data definition, data collection and data management across your enterprise and throughout your supply chain.

Oracle Quality enables your company to achieve consistent quality reporting across your organization by providing a central repository of quality data.

Oracle Quality Business Flow



Oracle Quality Business Flow

You can use the Oracle Quality application to gather user-defined quality data. Data collected and input into Oracle Quality comes from functions such as these:

- Purchasing
- Production control
- Customer service

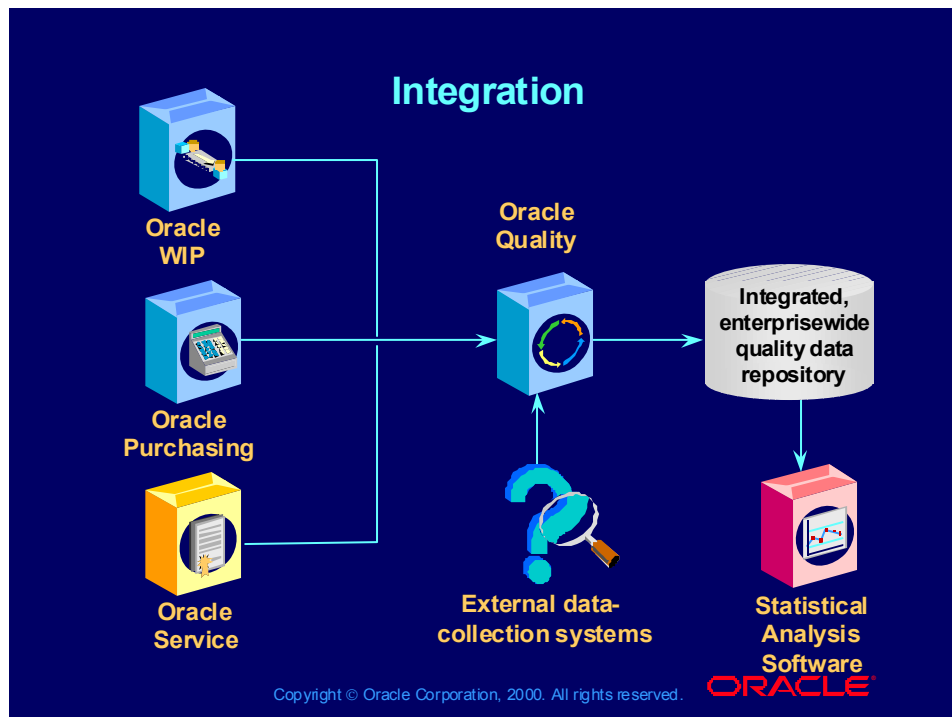
Examples of collection plans include the following:

- Incoming inspection
- Shop-floor inspection and test
- Final inspection
- Incident and failure details

Concepts of quality management in Oracle Quality include the following:

- Quality collection elements
- Specifications
- Quality collection plans that capture quality data for analysis and reporting
- Data collection
- Action rules and notifications
- Online inquiries, reports, and charts for analysis and reporting
- Attachments for procedures and documents that store multimedia and electronic documents

Integration



Product Integration

Collecting Data

Oracle Quality is integrated with Oracle Work in Process, Oracle Purchasing, and Oracle Service so that you can collect quality data during transactions.

Oracle Quality also has an open interface that allows data to be collected by external data-collection systems and imports this data into the central quality data repository.

Analyzing and Reporting Data

Oracle Quality is integrated with a software package for statistical quality and process control. Using these statistical quality-control capabilities, you can create custom graphs and reports.

Quality Data Collection

Chapter 9

11i Oracle Quality: Inspect Quality of Goods

Quality Data Collection

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Objectives

After completing this lesson, you should be able to do the following:

- **Enter quality results manually**
- **Enter quality results within a transaction**
- **Discuss Oracle I Supplier Portal**
- **Discuss importing quality data**

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Agenda

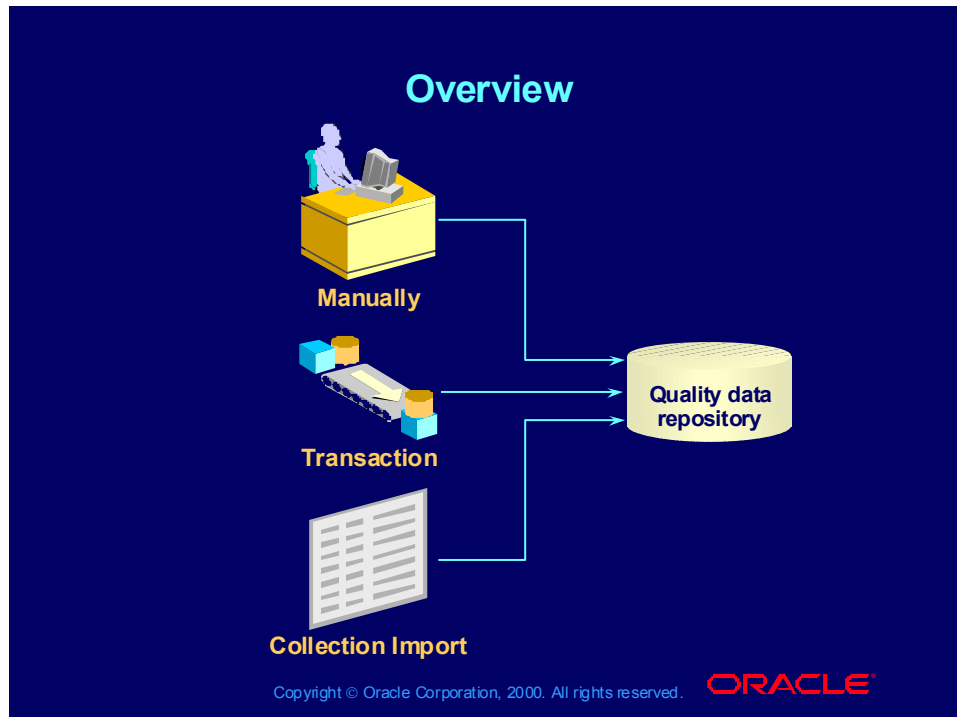
Agenda

- **Input Methods**
- **Building blocks**
- **Entering results directly**
- **Transactional data collection**
- **I Supplier Portal**
- **Import**
- **Practice**

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Overview



Overview

Oracle Quality provides the following methods of collecting data:

- Entering results directly into Oracle Quality
- Collecting quality results during transactions within Oracle Purchasing, Oracle Work in Process, Oracle Flow Manufacturing, Oracle Supplier Management Portal, and Oracle Service
- Automatically, using the Oracle Quality Collection Import

You can enter quality data directly into the collection plan using collection elements. Collection elements specified in the collection plan are automatically displayed in a spreadsheet format that allows several results to be entered at once.

As you enter results, the data is validated using the validation rules that you specified in the collection plan, such as acceptable values and valid data types.

Collection Plan Maintenance

Collection Plan Maintenance

Use the Collection Plans window to to create, update, delete, and view collection plans.

Oracle Quality Responsibility

(N) Quality > Setup > Collection Plans (B) Transactions

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Setting Up Collection Plans

(Help) Oracle Manufacturing Applications > Oracle Quality > Entering Self-Service Quality Results

The setup for collecting data during completion transactions is similar to that for the WIP move transaction:

- 1 Create a collection plan that has the collection elements on which you want to collect data, as well as collection triggers.
- 2 Associate the collection plan with the correct transaction:
 - Select Completion Transactions to invoke your collection plan during the WIP completion transaction.
 - Select Work Orderless Completions Transaction to invoke your collection plan during the Work Orderless Completion transaction.

There are two predefined collection plans that you can use as templates when setting up your own collection plans:

- Template WIP Completion
- Template Work Orderless Completion

Entering Quality Results Directly

Entering Quality Results Directly

Use the Enter Quality Results window to enter quality results into the quality data repository directly.

Oracle Quality Responsibility

(N) Quality > Results > Entry > Enter Quality Results

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How to Enter Quality Results Directly

(Help) Oracle Manufacturing Applications > Oracle Quality > Data Collection > Entering Quality Results Directly

- 1 Select a collection plan by clicking Find.
 - If you have assigned a collection plan to the profile QA:Default Collection Plan, it will default.
 - Once a collection plan is selected, the Results region is populated with columns and column headings that reflect the collection plan elements. The collection element prompts are used for column headings.

If the selected collection plan requires a specification, you will see the Find Specifications window.

- 2 Depending on the type of specification associated with the collection plan, you are prompted for a specification of that type. Select a specification.
 - The specification target and limit values will be displayed at the bottom of the Enter Quality Results window.
 - You can override the default specification type and select a specification of another type. You can then enter the appropriate item/supplier/customer combination for the desired specification.
 - You can bypass selecting a specification by clicking Cancel.

- 3 In the Results region, enter one or more records of quality results.
 - Values will be defaulted if specified in the collection plan for that element.
 - Select a value if the collection plan element has a list of values defined.
 - You must enter values for those collection plan elements that are designated as mandatory.

Displaying Specification Limits

		Element is on specification	
		Yes	No
Specification selected	Yes	Limits from specification	Limits not displayed
	No	Limits from collection element	Limits from collection element

Specifications will be displayed only if a specific one has been selected for this Item/Test, and only if the element is 'on specification' (which should also be defined). Otherwise, the system will display limits from the 'collection element' (define this) or Category specification.

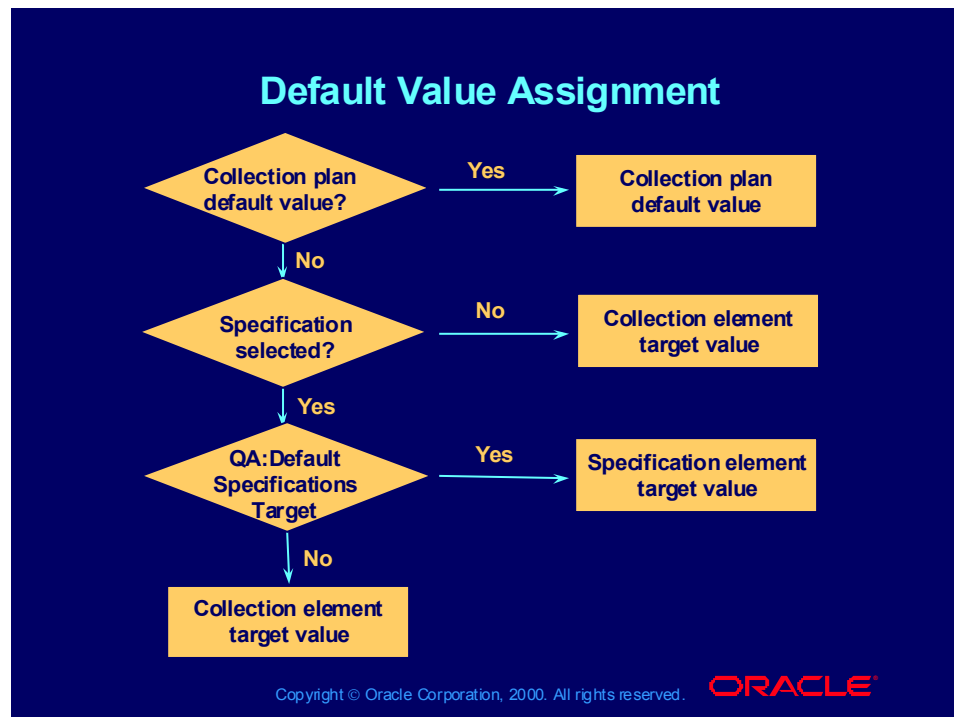
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Overview

You can define specification limits for collection elements and specification elements. The values used in validation and displayed in the target and specification limit fields in the Enter Quality Results window will vary depending on whether you select a specification and whether the collection element is defined in the specification.

If you cannot find a specification for a specific item, Oracle Quality will use the category specification for the item. The category used is based on the category set specified in the user profile QA:Quality Category Set. Specification limits will be displayed only if the profile QA:Blind Results Entry is set to Blind Entry Off.

Default Value Assignment

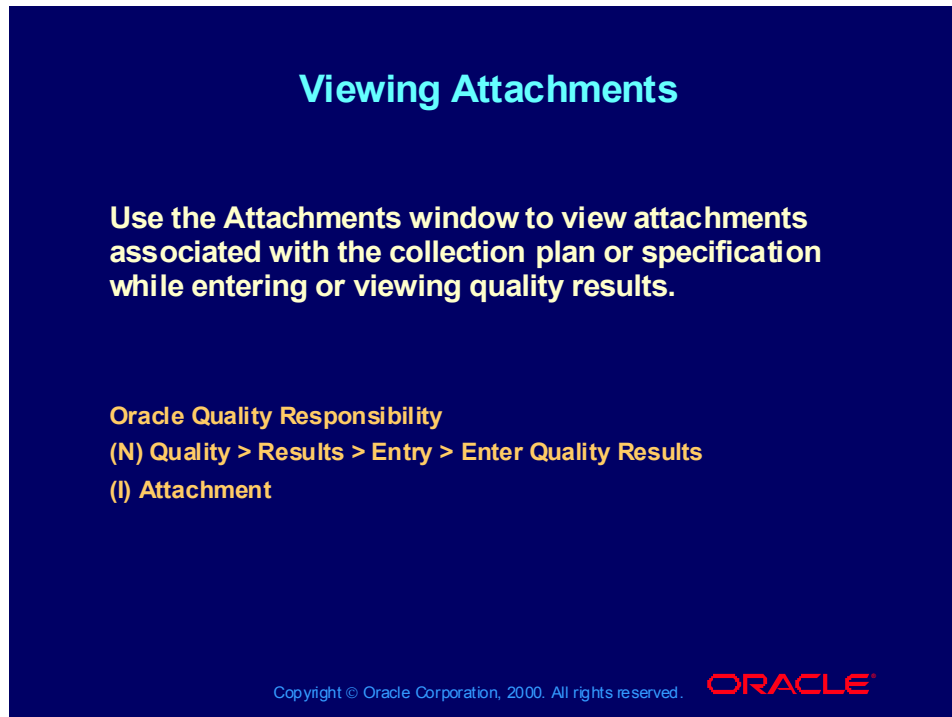


Default Value Assignment

Default values are displayed during data entry and are used to simplify entering quality results. Default values can come from three different sources: collection plans, specifications, and collection elements. Which value is displayed depends on the following rules:

- If the collection plan element has a default value defined, its value is always displayed as the default value during data entry
- If you do not select a specification when entering quality results, the default value will come from the target value of the collection element, regardless of the setting of the profile QA:Default Specifications Target
- If a specification was selected at data entry, you have the profile QA:Default Specifications Target set to Yes, you have specified target values at the specification level, and the specification target value is displayed as the default value during data entry
- If a specification was selected at data entry, you have the profile QA:Default Specifications Target set to No, you have specified target values at the collection element level, and the collection element target value is displayed as the default value during data entry
- Target values used for the current quality testing/reporting depend on whether current objectives, as specified in the collection plan, differ from general objectives reflected in stored specifications

Viewing Attachments



Viewing Attachments

(Help) Oracle Manufacturing Applications > Oracle Quality > Data Collection > Viewing Attachments Associated with Quality Results

How to View a Collection Plan Attachment

- 1 Select a collection plan.
- 2 Put the cursor in any field in the header portion of the window.
- 3 Click the Attachment icon from the menu.

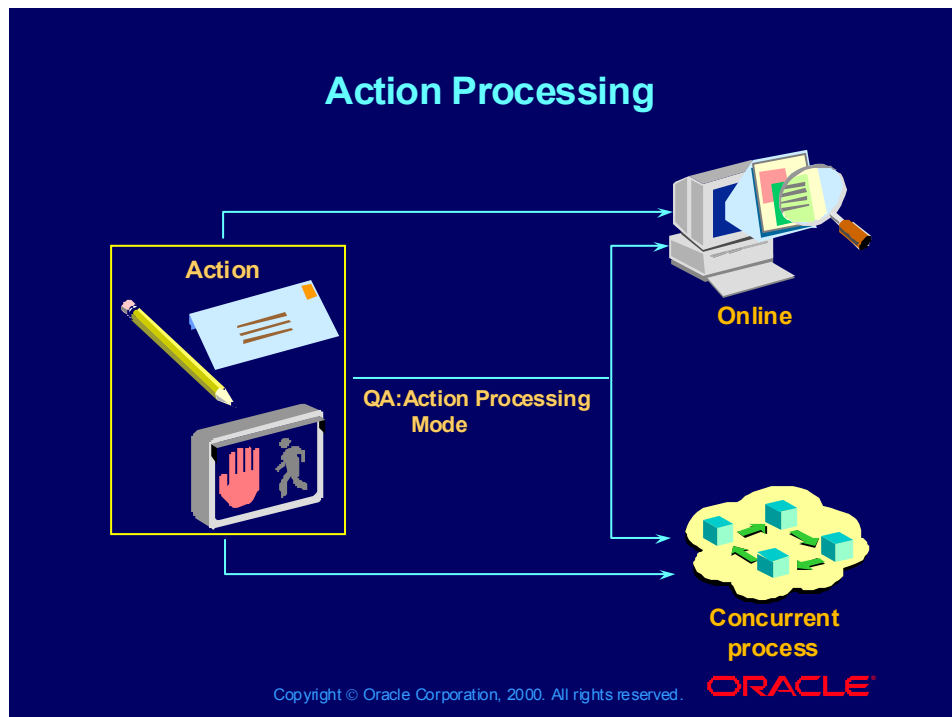
How to View a Specification Attachment

- 1 Select a collection plan and a specification.
- 2 Put the cursor in any field in the Results region of the window.
- 3 Click the Attachment icon from the menu.

You cannot view specification attachments if the QA: Blind Result Entry profile is set to Blind Entry Off.

Note: You can also view attachments while in the Update Quality Results and View Quality Results windows. You cannot view attachments while entering quality data during a transaction.

Action Processing



Action Processing

Actions are processed differently, depending on the action.

Immediately Processed Actions

The following actions are processed online immediately:

- Display a message to the operator
- Reject the input
- Assign a value to a collection element
- Accept the shipment
- Reject the shipment

Mode-Dependent Actions

The following actions can be processed either online or concurrently, depending on the setting of the profile QA:Action Processing Mode:

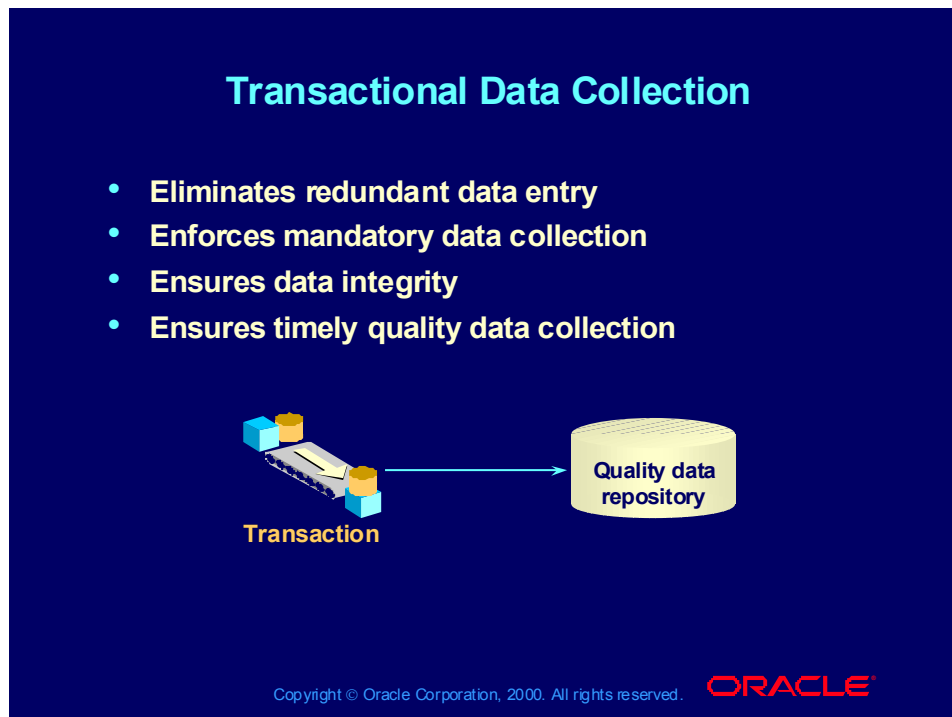
- Assign a shop floor status to the intraoperation step
- Place the job on hold
- Hold all schedules building this assembly on this production line
- Place the supplier on hold
- Place a document or release on hold
- Assign an ASL status
- Post an entry to the Quality Action Log

Background Actions

The following background actions are processed concurrently in the background, so that control immediately returns to you:

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

Transactional Data Collection



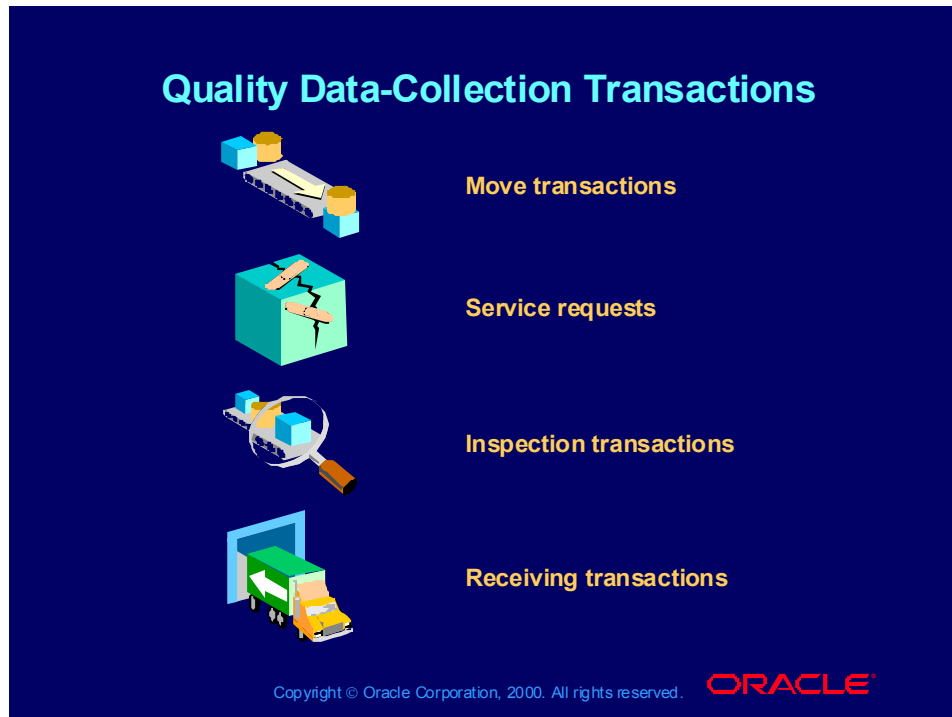
Transactional Data Collection

The second method for entering quality results is by collecting those results while using Oracle Applications transactions. As you execute a transaction, Oracle Quality searches for associated collection plans and evaluates the collection triggers. If the collection triggers are found to be true, the Enter Quality Results window is enabled for data entry.

Transactional data collection offers the following advantages:

- Eliminates redundant data entry by writing context reference element data (job, item) to the quality data repository when you save the transaction
- Enforces mandatory collection of quality data by requiring that quality results are entered before the parent transaction can be saved
- Ensures data integrity by validating all reference elements
- Ensures that quality data collection is done in a timely manner

Quality Data-Collection Transactions



Transactions

Oracle Work in Process

You can collect data on manufacturing processes during the WIP move transaction.

Oracle Service

You can collect data on service calls while entering service requests.

Oracle Purchasing

In Oracle Purchasing, you can collect quality data in two ways:

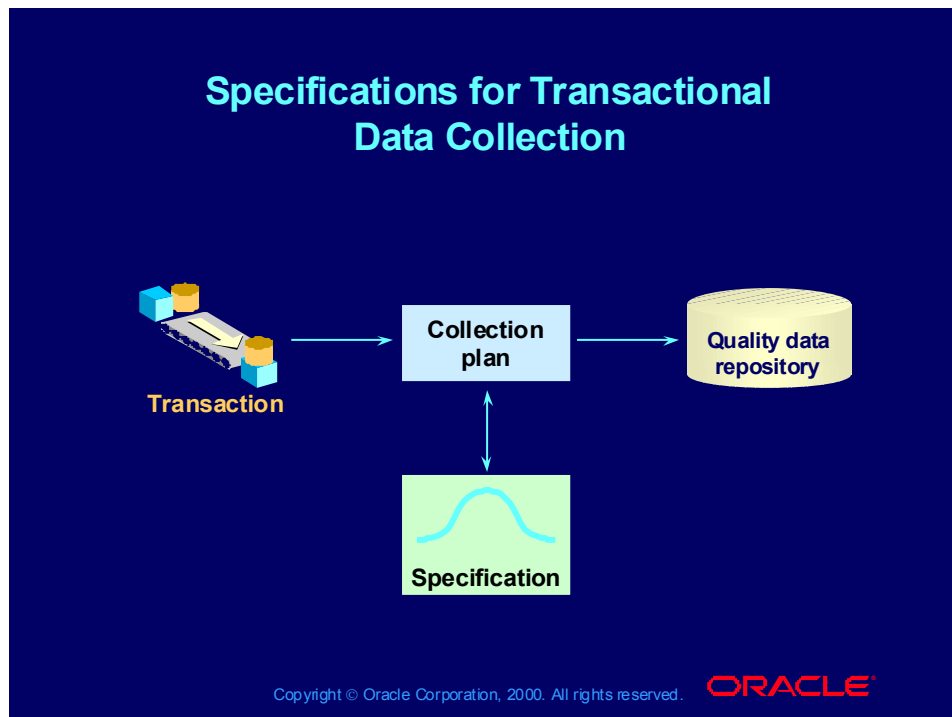
- You can use Oracle Quality instead of Oracle Purchasing to accept or reject items during receiving inspection. If you are using Oracle Quality, you can collect additional quality data during receiving inspection.
- You can collect quality data on items as you transfer and deliver them to other locations.

Changes in Transaction Flows and Integration Points

With Release 11i, you are given additional transactions in which to collect quality data:

- Oracle Work in Process (WIP)
- Oracle Flow Manufacturing
- Oracle I Supplier Portal

Specifications for Transactional Data Collection



Overview

If a specification type is associated with the collection plan that is invoked as you enter a transaction, Oracle Quality searches for the correct specification based on information provided by the transaction.

If an item specification type is associated with the collection plan and no item specification exists for the item in your transaction, the system searches for a category specification based on the item category. Oracle Quality uses the default category set defined in QA:Quality Category Set to determine the item category.

Collecting Results with WIP Move Transactions

Collecting Results with WIP Move Transactions

Use the **Enter Quality Results** window from the **Move Transactions** window to enter quality results during move transactions if at least one collection plan is associated with a Move transaction.

Oracle Work in Process Responsibility

**(N) Move Transactions > Move Transactions (M) Tools > Enter
Quality Results**

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Enter Quality Results

(Help) Oracle Manufacturing Applications > Oracle Work in Process > Shop Floor Control > Move Transactions > Performing Move Transactions (L)
Entering Quality Data During Move Transactions

How to Collect Results with Move Transactions

While entering the data for the transaction, the system searches for any collection plans associated with that transaction. If a collection plan does exist for this transaction, the Quality icon on the toolbar is enabled.

- 1 Enter the data required for the move transaction. Do not click Transact and do not save the transaction. The system searches for collection plans that are associated with the Work in Process move transaction.
- 2 Click the Quality icon on the toolbar, or select Enter Quality Results from the Special menu. The Enter Quality Results window appears.
- 3 Select a collection plan by clicking Find.
 - If all collection triggers for a single collection plan are found to be true, then that collection plan is defaulted.
 - If more than one collection plan is eligible, then you can use the Enter Quality Results window to select the specific collection plan to use.

- 4 If the system cannot find the correct specification to use based on the information associated with the job, you see the Find Specifications window. You can bypass selecting a specification by clicking Cancel.
- 5 In the Results region, enter one or more records of quality results. Values are defaulted depending on the setting of QA:Default Specification and whether a default value was specified in the collection plan. You must enter values for those collection plan elements that are designated as mandatory.

Note: If the collection plan transaction is defined as mandatory, you will not be able to save the transaction without entering quality results.

Collecting Results While Entering a Service Request

Collecting Results While Entering a Service Request

Use the Enter Quality Results window from the Service Requests window to enter results into a Quality Plan.

Oracle Service Responsibility

(N) Service Request Tracking > Enter Service Requests (M) Tools
> Enter Quality Results

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Enter Quality Results

(Help) Oracle Manufacturing Applications > Oracle Service > Installed Base > Service Request > Using Service Request > Entering Quality Results

How to Collect Results While Entering a Service Request

- 1 Enter the data required for the service request. Do not save your work. The system searches for collection plans that are associated with service requests.
- 2 If any eligible collection plan exists for this transaction, the quality icon is enabled. Click the Quality icon on the toolbar, or select Enter Quality Results from the Special menu. The Enter Quality Results window appears.
- 3 Select a collection plan by clicking Find.
 - If all collection triggers for a single collection plan are found to be true, then that collection plan is defaulted.
 - If more than one collection plan is eligible, then you can use the Enter Quality Results window to select the specific collection plan to use.
- 4 If the system cannot find the correct specification to use based on the information associated with the service request, you see the Find Specifications window. You can bypass selecting a specification by clicking Cancel.

- 5 In the Results region, enter one or more records of quality results. Values are defaulted depending on the setting of QA:Default Specification and whether a default value was specified in the collection plan. You must enter values for those collection plan elements that are designated as mandatory.

Collecting Results Within Receiving Transactions

Collecting Results Within Receiving Transactions

Use the Enter Quality Results window from the Receiving Transactions window to enter quality results directly if at least one collection plan associated with the Receiving transaction exists.

Oracle Purchasing Responsibility

(N) Receiving > Receiving Transactions (M) Tools > Enter Quality Results

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Enter Quality Results

(Help) Oracle Manufacturing Applications > Receiving > Entering Receiving Transactions (L) Entering Quality Data for Receiving Transactions

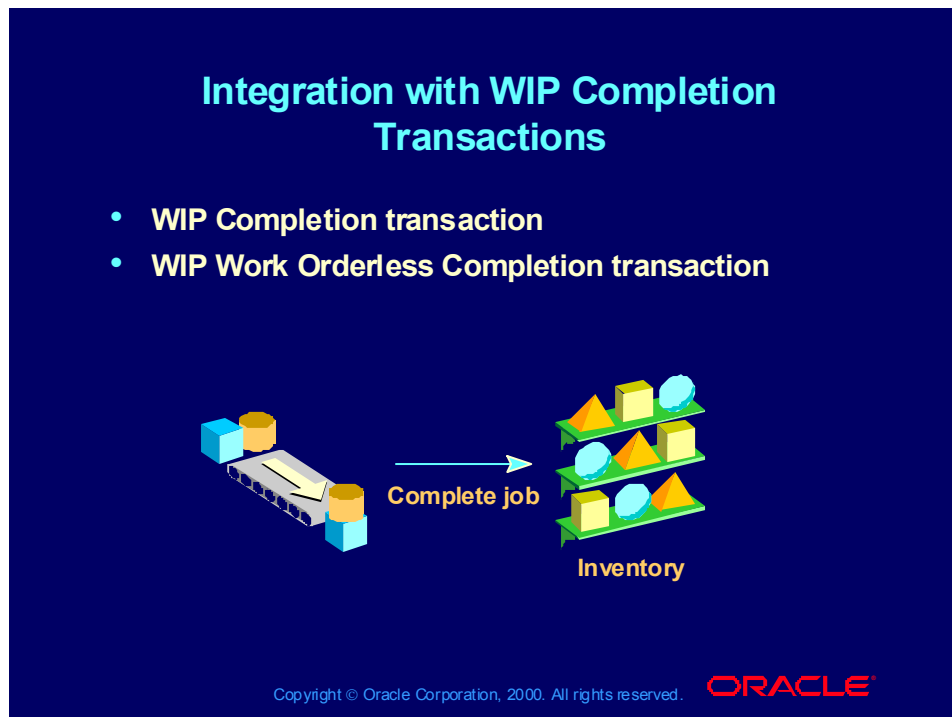
How to Collect Results in Transfer and Delivery Transactions

- 1 Enter the data required for the receiving transaction. Do not save the transaction. The system searches for collection plans that are associated with receiving transactions.
- 2 If any eligible collection plan exists for this transaction, the Quality icon is enabled. Click the Quality icon on the toolbar, or select Enter Quality Results from the Special menu. The Enter Quality Results window appears.
- 3 Select a collection plan by clicking Find.
 - If all collection triggers for a single collection plan are found to be true, then that collection plan is defaulted.
 - If more than one collection plan is eligible, then you can use the Enter Quality Results window to select the specific collection plan to use.
- 4 If the system cannot find the correct specification to use based on the information associated with the receipt, you see the Find Specifications window. Select a specification. You can bypass selecting a specification by clicking Cancel.

- 5 In the Results region, enter one or more records of quality results. Values are defaulted depending on the setting of QA:Default Specification and whether a default value was specified in the collection plan. You must enter values for those collection plan elements that are designated as mandatory.

Note: You will not be able to enter quality results if you are in Express mode. You can enter quality results while using the Cascading Receipts feature.

Integration with WIP Completion Transactions



WIP Completion Transactions Integration

You can collect quality data when completing a discrete job to inventory or when performing a work orderless completion. You can use this feature to collect inspection results and descriptive attributes of your assemblies when they are completed into inventory.

With this feature you can:

- Make the data collection mandatory where the transaction cannot be completed unless the required data is entered
- Enforce specifications
- Invoke actions based on the results collected
- Have data collected in the background, so that the user does not have to enter results directly

Collecting Completion Data

Collecting Completion Data

Use the Work Order-Less Completions and Enter Quality Results windows to enter data during the WIP completion transaction or the work order-less completion transaction.

Oracle Work in Process Responsibility

(N) Material Transactions > Work Order-less Completions (M)
Tools > Enter Quality Results

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Collecting Completion Data

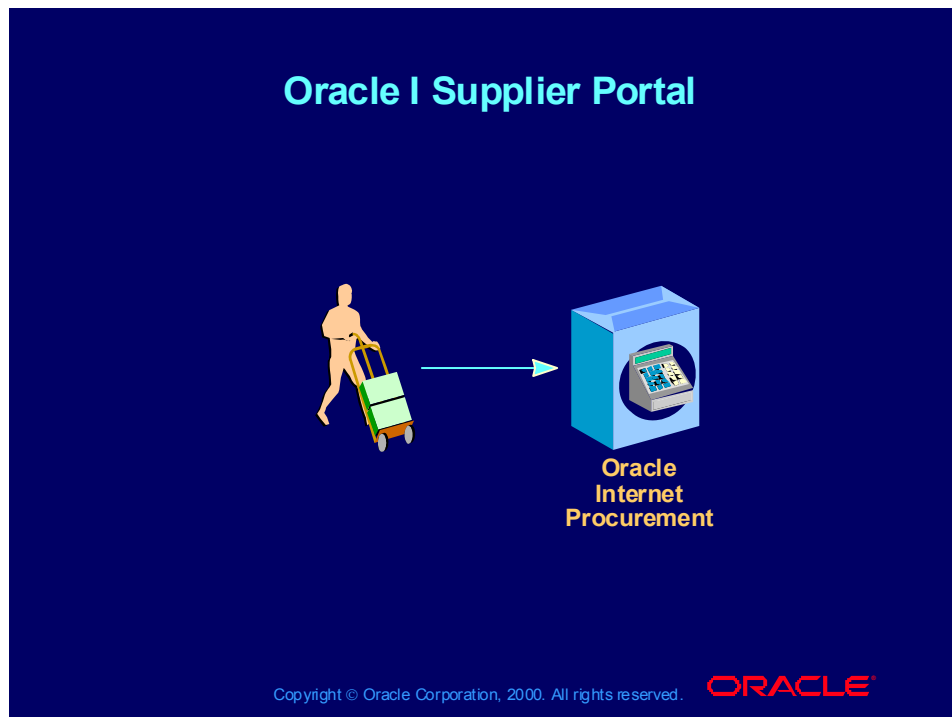
(Help) Oracle Quality > Work in Process Data Collection > Entering Quality Data
During Work Order-less Completions

How to Collect Completion Data

While you are entering the data during the WIP completion transaction or the work orderless completion transaction, the system searches for any collection plans associated with the appropriate transaction. If a collection plan exists for the transaction, the Quality icon on the toolbar is enabled.

- 1 Enter the data required for the transaction.
- 2 Select the Quality icon on the toolbar or select Quality Results from the Tools menu.
- 3 If only one collection plan applies, it defaults that plan in the Enter Quality Results window. If more than one collection plan applies, then select the specific collection plan to use.
- 4 Enter your quality data.

Note: If the collection plan transaction is defined as mandatory, you will not be able to save the transaction without entering quality results.



Self Service Quality

Using Oracle I Supplier Portal (formerly called Web Suppliers) you can have your suppliers enter or review quality data against purchase orders, including outside processing purchase orders.

About Oracle I Supplier Portal

Oracle I Supplier Portal enables your suppliers to review and research information that affects them directly. With Oracle I Supplier Portal authorized suppliers can use a standard Web browser to perform common business functions such as reviewing purchase agreements, tracking inventory balances, and verifying receipts. With a simple-to-use interface, your suppliers can register as new users; view schedules, orders, and requests for quotations; and perform other activities at their convenience. The portal provides your suppliers with direct and secure access to your systems, so that they can serve you better.

Setting Up Collection Plans

To enable a collection plan for your suppliers to use with Oracle I Supplier Portal, you must associate it with the correct quality collection transaction. You can use two different transactions:

- Self Service Outside Processing for outside processing purchase orders
- Self Service Shipments for standard purchase orders

You can use two predefined collection plans as templates when defining your own collection plans:

- Template Self Service Outside Processing

- Template Self Service Shipments


Note: If you have set up a collection plan that can be accessed by multiple suppliers, be aware that all the suppliers will be able to view one another's data. To prevent this, you should make a different collection plan for each supplier.

Viewing and Entering Quality Data

Viewing and Entering Quality Data

Your suppliers can enter and view quality data two different ways:

- For outside processing purchase orders, your outside processing suppliers use the Outside Processing Workbench.
- For purchase orders, your suppliers use Quality Plans for Shipments.



Supplier Services

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Viewing and Entering Quality Data in Oracle Supplier Management Portal

Your suppliers can enter and view quality data two different ways:

- For outside processing purchase orders, your outside processing suppliers use the Outside Processing Workbench.
- For purchase orders, your suppliers use Quality Plans for Shipments.

Search Quality Shipments

(H) Supplier Services (H) Quality Plans for Shipments (B) Search

Your suppliers can query purchase orders placed against them by using the Search: Quality Shipments page.

Quality Shipments

In the Quality Shipments page, suppliers can view purchase orders that are placed against them and that have at least one applicable Quality collection plan. By clicking on the Available hyperlink in the Quality Plans column they can see which quality plans are available to view or enter data against.

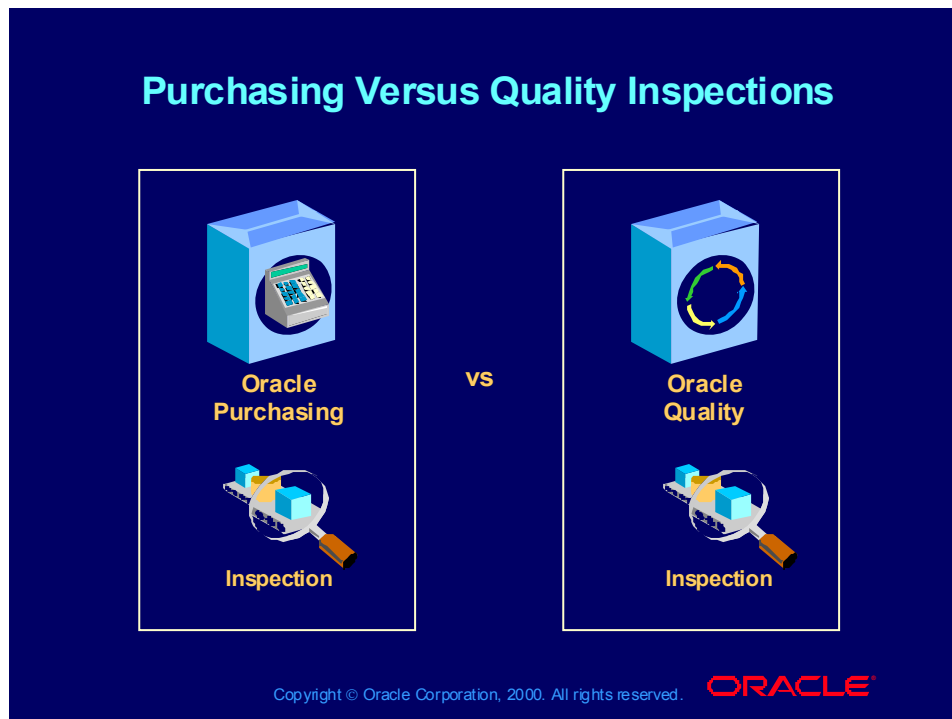
OSP Workbench

(H) Supplier Services (H) Outside Processing Workbench (B) Search

Outside Processing Workbench

In the Outside Processing Workbench page, outside processing suppliers can view purchase orders, job and operation information, and shipping information. Outside processing suppliers can download component attachments and job or schedule operating instructions. By clicking on the Available hyperlink in the Quality Plans column they can see which quality plans are available to view or enter data against.

Purchasing Versus Quality Inspections



Purchasing Versus Quality Inspections

You can use Oracle Quality instead of Oracle Purchasing to do a receiving inspection to determine whether to accept or reject the items.

Oracle Purchasing

In Oracle Purchasing, you can enter the number of items that are accepted or rejected and enter some information about the inspection results. You can view the results online and print summary and detail reports to analyze your supplier's performance.

Oracle Quality

You can use Oracle Quality to perform the same inspection functions as Oracle Purchasing. You can also use Oracle Quality to collect additional attribute and variable data for collection elements in your collection plan and to analyze the data using charts, descriptive statistics, and custom reports. You can trigger certain actions, based on the results of the inspection.

Collection Plan Requirements for Receiving Inspections

Collection Plan Requirements for Receiving Inspections

- **Mandatory collection transactions**
- **No background collection transactions**
- **Must include these elements:**
 - **Inspection result**
 - **Quantity**
 - **UOM name**
 - **Transaction date**
- **Inspection result element associated with “Accept the shipment” and “Reject the shipment” actions**

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Overview

Inspection collection plans have some unique requirements that must be met if they are to be used in place of Oracle Purchasing inspection.

- Receiving inspection collection transactions must be set as mandatory.
- Receiving inspection collection transactions cannot be set as background.
- Receiving inspection collection plans must include the following elements. These elements must be defined as displayed, mandatory, and enabled.
 - Inspection result
 - Quantity
 - UOM name
 - Transaction date
- The “Accept the shipment” and “Reject the shipment” actions should be associated with the inspection result element.

Note: Copy the template collection plan “PO Inspection” to create your own collection plan. Edit the collection plan to meet your business needs while keeping the required elements.

Collecting Results Within Receiving Inspection

Collecting Results Within Receiving Inspection

Use the Receiving Transactions window to collect results within Receiving Inspection

Oracle Purchasing Responsibility
(N) Receiving > Receiving Transactions (B) Inspect

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Enter Quality Results

(Help) Oracle Manufacturing Applications > Oracle Purchasing > Receiving > Inspections (L) Inspecting Received Items

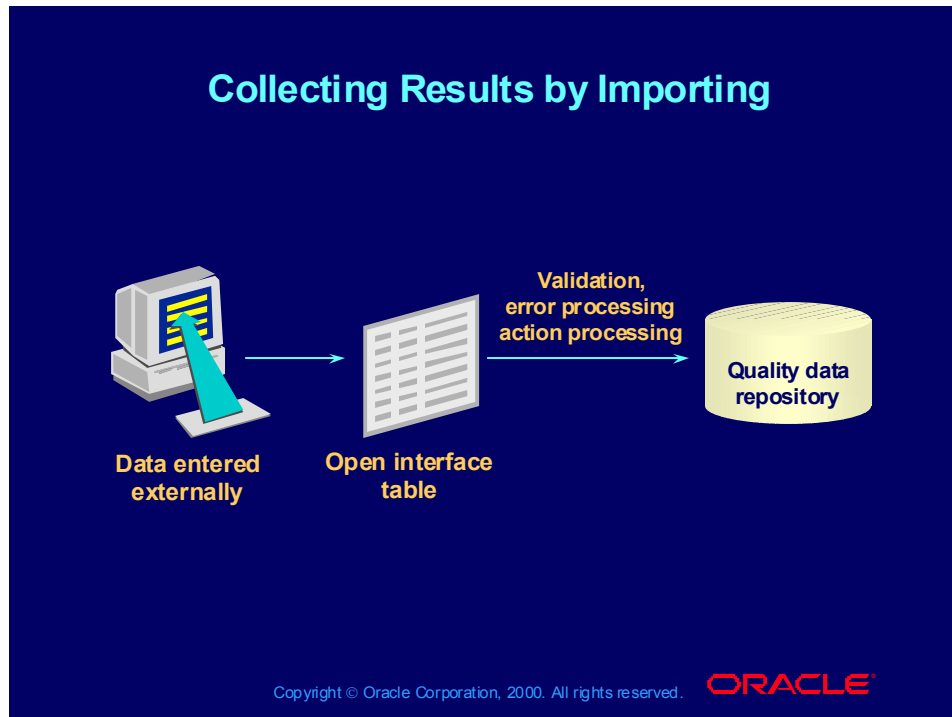
How to Collect Results Within Receiving Inspection

- 1 Enter the data required for the receiving transaction. Do not save the transaction.
- 2 Click the Inspect button. The system searches for collection plans that are associated with inspection transactions. The Enter Quality Results window appears. If all collection triggers for a single collection plan are found to be true, then that collection plan is defaulted.

Note: If more than one collection plan is eligible, then the Enter Quality Results window displays the collection plan that comes first alphanumerically. You will be able to enter only data against this one collection plan.

- 3 If the system cannot find the correct specification to use based on the information associated with the receipt, you see the Find Specifications window. Select a specification. You can bypass selecting a specification by clicking Cancel.
- 4 In the Results region, enter one or more records of quality results. Values are defaulted depending on the setting of QA:Default Specification and whether a default value was specified in the collection plan. You must enter values for those collection plan elements that are designated as mandatory.

Collecting Results by Importing



Overview

The third method for entering quality results is by collecting those results from sources external to Oracle Applications. You can insert new data into the quality data repository and update existing rows of data.

You can load data from the source into the Collection Import table, which temporarily stores the collection plan name and a value for each collection element on the collection plan. Data in the Collection Import table is validated by the Collection Import Manager, which imports valid records into the Quality Data Repository.

Updating Collection Import

Updating Collection Import

Use the Update Collection Import window to view, update, delete, and resubmit records (rows) that have failed validation and remain in the Collection Import Interface Table.

Oracle Quality Responsibility

(N) Quality > Import > Update Collection Import

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Updating Collection Import

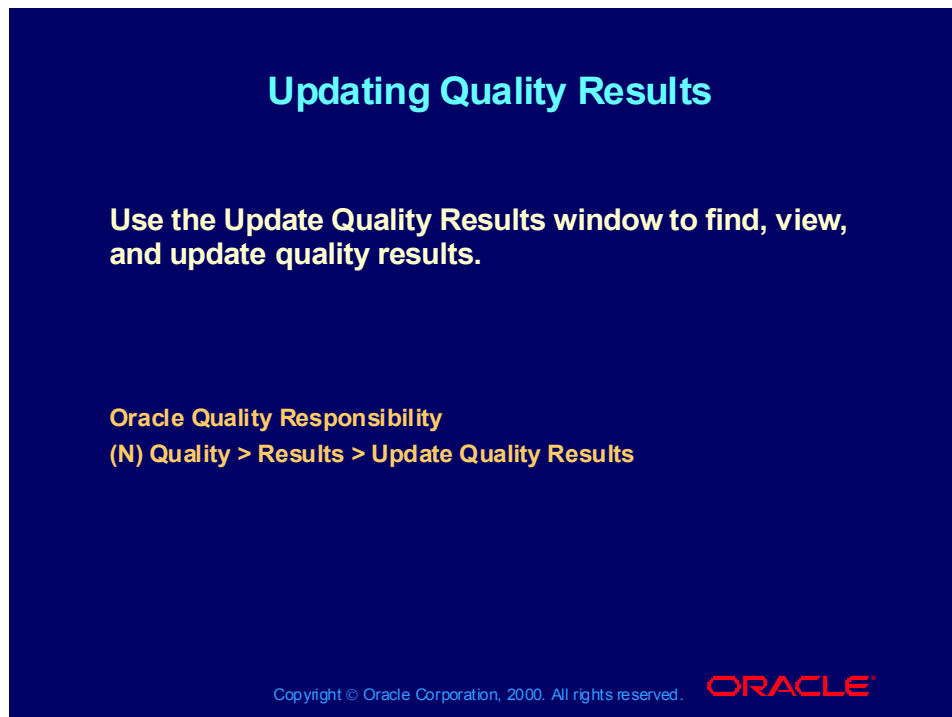
(Help) Oracle Manufacturing Applications > Oracle Quality > Data Collection > Updating Collection Import Records

How to Update Collection Import

You can update, delete, and resubmit records that have failed validation and remain in the Collection Import interface table.

- 1 Select the collection plan.
- 2 Select the failed record (row) and click Show Errors.... All errors for the selected record are displayed.
- 3 Return to the Update Collection Import window and update the necessary columns for the selected record.
- 4 Click Resubmit 1 to mark the record for resubmission. After resubmission, their process status flag is set to Pending (1).
- 5 You can also delete the records of any processing status by merely selecting that record and clicking Delete Record on the toolbar.

Updating Quality Results



Updating Quality Results

(Help) Oracle Manufacturing Applications > Oracle Quality > Data Collection > Updating and Deleting Quality Results

How to Update Quality Results

Use the Update Quality Results window to query and update previously entered quality results. You can find, view, and update quality results for a particular collection plan. You can also search for specific quality results by using the Find window in the Results region.

- 1 Select a collection plan. The collection plan assigned to the profile QA:Default Collection Plan is defaulted.
- 2 Position the cursor in the Results region.
- 3 Select Find from the Query menu. The Find Results window appears.
- 4 Enter a collection element to use in your search.
- 5 Select a condition and a value or range of values.
- 6 Repeat steps 4 and 5 until all the search criteria is entered.
- 7 Click Find to display all the quality results that match your search criteria.
- 8 Update those fields where necessary.

Instructor Demonstration

Instructor Demonstration

- Entering quality data within a WIP move transaction
- Updating quality data

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Guided Practice

Your company is now ready to use Oracle Quality to track the results collected during the inspection of power supplies. For this pilot run, two discrete jobs were created with a quantity of 8 each. The data collected is listed below.

Step 1: Entering Quality Results

Enter the results from the following table while doing a move transaction between operations 10 and 20.

Step 2: Updating Quality Results

You have determined that the XX-PS200 power supply that failed because of no voltage (Failure Code = Dead) actually had one of its connecting wires severed.

- 1 Use the Update Quality Results window to update the results to indicate physical damage.
- 2 While in the Update Quality Results window, view the collection plan attachment.

Item	Job	Voltage	Current	Failure Code
XX_PS130	XX_JOB130	11.9	3.05	Extreme Current
		12.1	2.85	
		12.0	3.00	
		12.1	2.95	
		11.7	3.05	Extreme Voltage

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		12.0	3.15	Extreme Current
		12.1	3.00	Overheat
		12.0	2.95	
XX_PS200	XX_JOB200	11.9	5.30	Extreme Current
		12.0	5.10	
		11.9	5.00	
		12.0	4.95	
		--	--	Dead
		11.9	5.05	
		11.7	5.20	Extreme Voltage
		12.1	4.95	

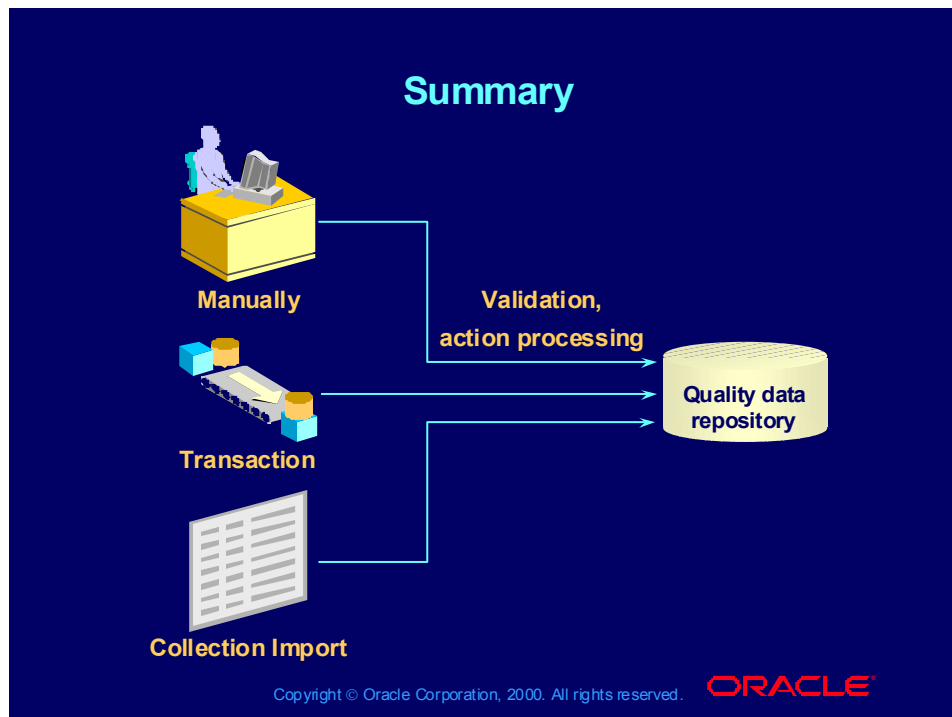
Instructor Demonstration

Entering quality data within a receiving inspection transaction

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Summary



Summary

The input to all quality systems is data collection. This lesson has defined the methods of collecting quality data using the Oracle Quality application.

You can:

- Enter data directly into Oracle Quality
- Enter data while executing a transaction within another Oracle application
- View collection plan and specification attachments while entering quality results
- Import data from sources external to Oracle Applications
- Evaluate actions associated with collection elements and collection plans during data collection
- Update the data that you have collected

Quality Data Analysis and Reports

Chapter 10

11i Oracle Quality: Inspect Quality of Goods

Quality Data Analysis and Reports

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Objectives

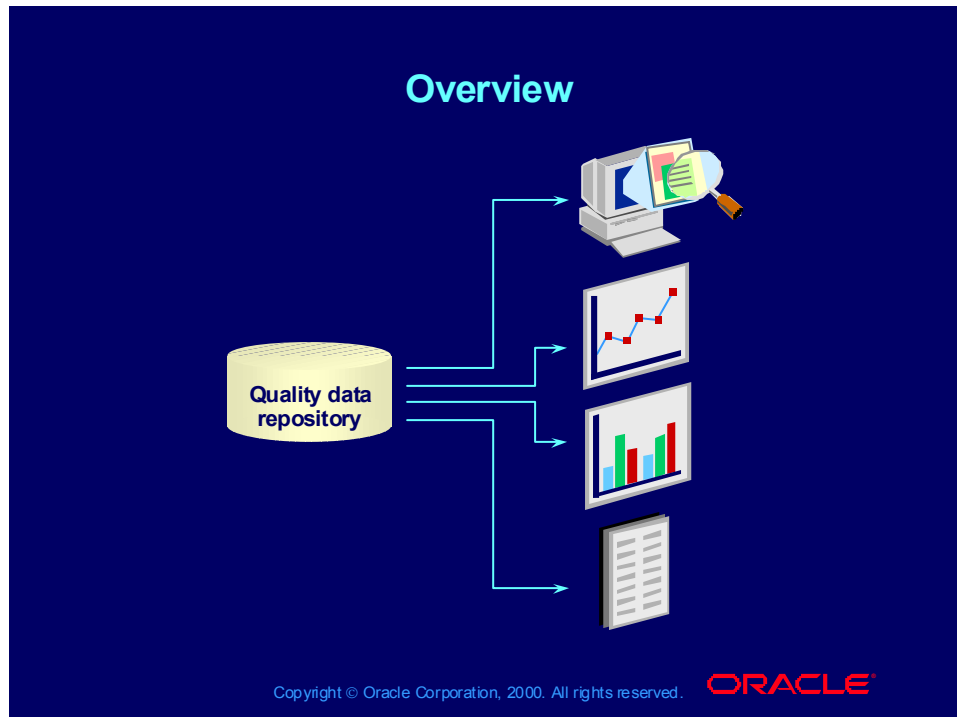
After completing this lesson, you should be able to do the following:

- **View the results of quality data collected for collection elements in a collection plan**
- **Create Pareto charts, trend charts, control charts, and histograms of quality data**
- **Analyze quality data collected using descriptive statistics**
- **Create custom reports containing quality data**
- **Export the data into a Microsoft Word document or Excel spreadsheet**

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Overview



Overview

You can retrieve information from the Oracle Quality data repository in many ways. You can use the folder feature found in the inquiry windows. You can view the data in the form of Pareto charts, control charts, trend charts, or histograms. You can do basic statistical analysis on the data as well as create custom reports, within Oracle Quality or using the tight integration with Statware Statit. You can also export quality results.

Viewing Quality Results



View Quality Results

(Help) Oracle Manufacturing Applications > Oracle Quality > Views, Charts, and Custom Reports > Viewing Quality Results

- ... > Viewing Quality Results Details
- ... > Viewing Quality Results by Lot Number
- ... > Viewing Quality Results by Serial Number

How to View Quality Results

When analyzing quality results for a collection plan or specific collection elements within that plan, you can view quality results online.

The View Quality Results window is a folder window that allows you to customize how the data is presented. You can resize, rearrange, and hide columns, specify how the data is to be sorted, and create and save custom queries for reuse later.

- 1 Select a collection plan. The default is the collection plan assigned to the profile QA:Default Collection Plan.
- 2 Position the cursor in the Results region.
- 3 Select Find from the Query menu. The Find Results window appears.
- 4 Enter a collection element to use in your search.
- 5 Select a condition and a value or range of values.
- 6 Repeat steps 4 and 5 until all the search criteria is entered.

- 7 Click Find to display all the quality results that match your search criteria.
- 8 While the cursor is on a record, click View Details to view specification limits.

Computing and Viewing Descriptive Statistics

Computing and Viewing Descriptive Statistics

Use the **Statistical Results** window to compute and view basic statistics for quality results associated with any collection plan element.

Quality Responsibility

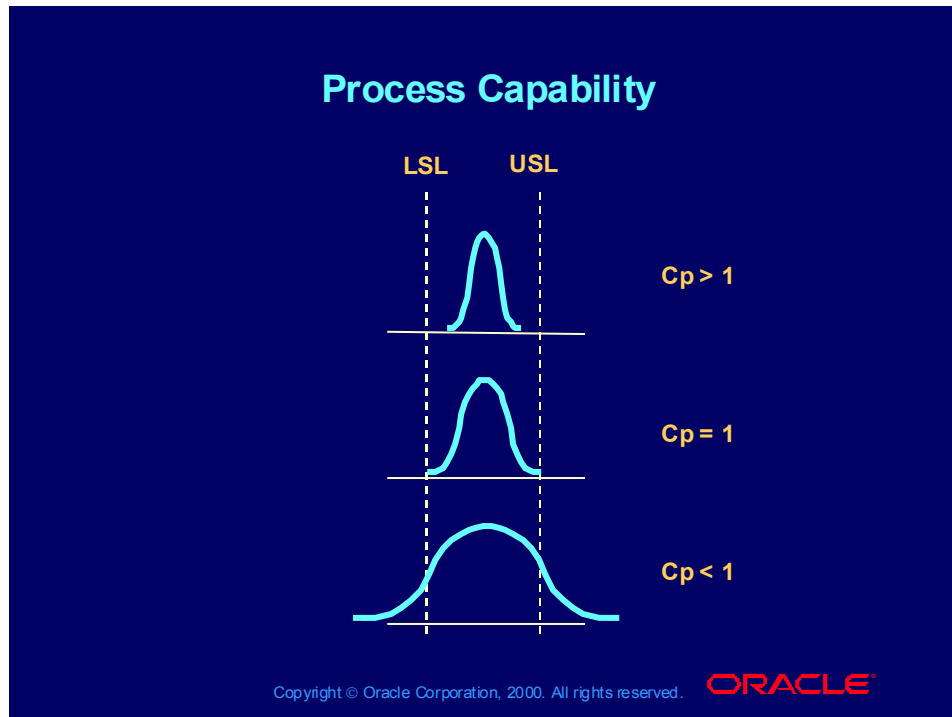
**(N) Quality > Results > Inquiries > Descriptive Statistics (B)
Statistics**

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(Help) Oracle Manufacturing Applications > Oracle Quality > Views, Charts, and Custom Reports > Viewing Descriptive Statistics

Process Capability



Process Capability Indexes

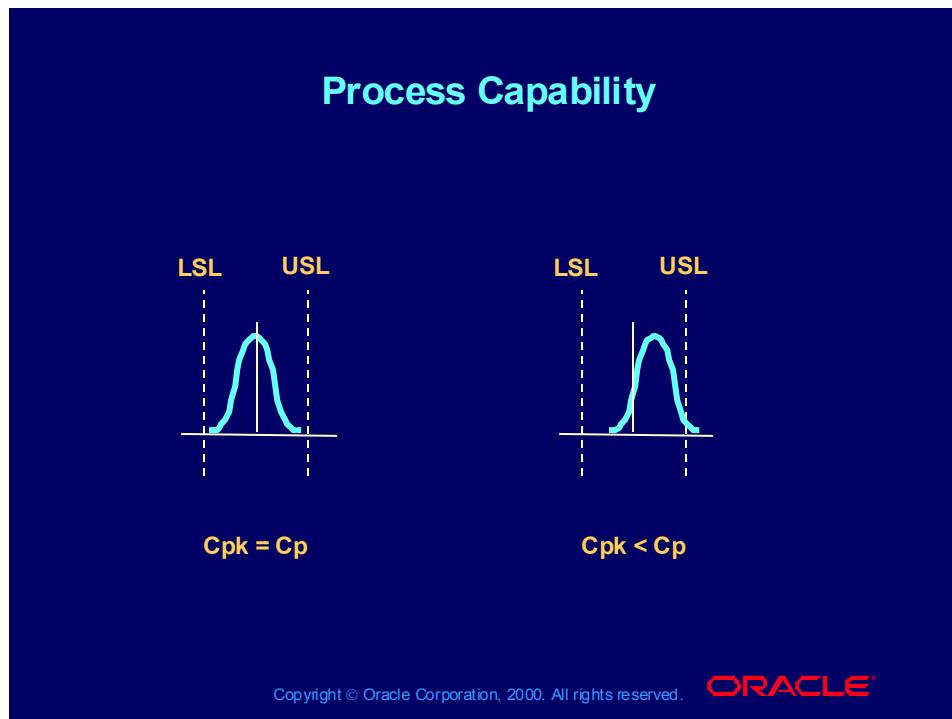
Process capability is measured by the process capability indexes, C_p and C_{pk} . These indexes determine whether a process, given its natural variability, is capable of meeting customer requirements or specifications.

C_p

C_p measures the ability of a process to produce a product that meets requirements by looking at the process variation and the dispersion of the results. This is done by comparing the distribution of the process in relation to the specification limits.

A process is considered just meeting specification if $C_p = 1$ and well within specification if $C_p > 1$. If $C_p < 1$, the process variation is exceeding specification and needs to be investigated.

Process Capability



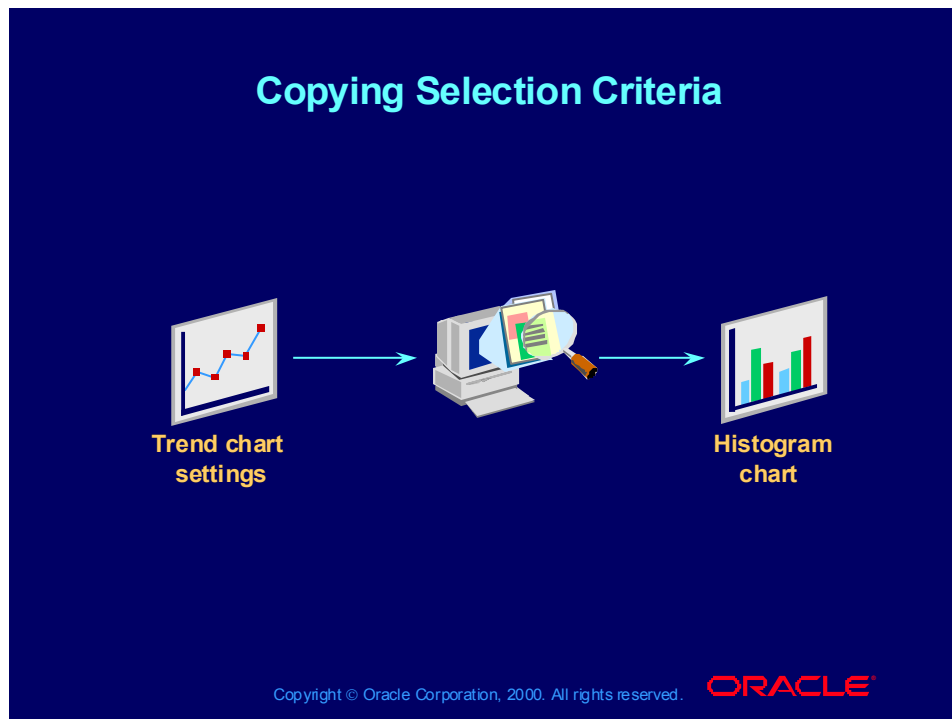
Process Capability Indexes (continued)

Cpk

Whereas C_p relates the spread of the process relative to the specification width, it does not look at how well the process average is centered to the target value. C_{pk} does take into account the process average.

When $C_{pk} = C_p$, then the process average (mean) is equal to the specification target value. This is the maximum value that C_{pk} can have. As the process average moves away from the target value, then C_{pk} becomes less than C_p . C_{pk} is used more frequently than C_p , since it measures both the variation and the centering of the data.

Copying Selection Criteria



Using the Copy Settings Functionality

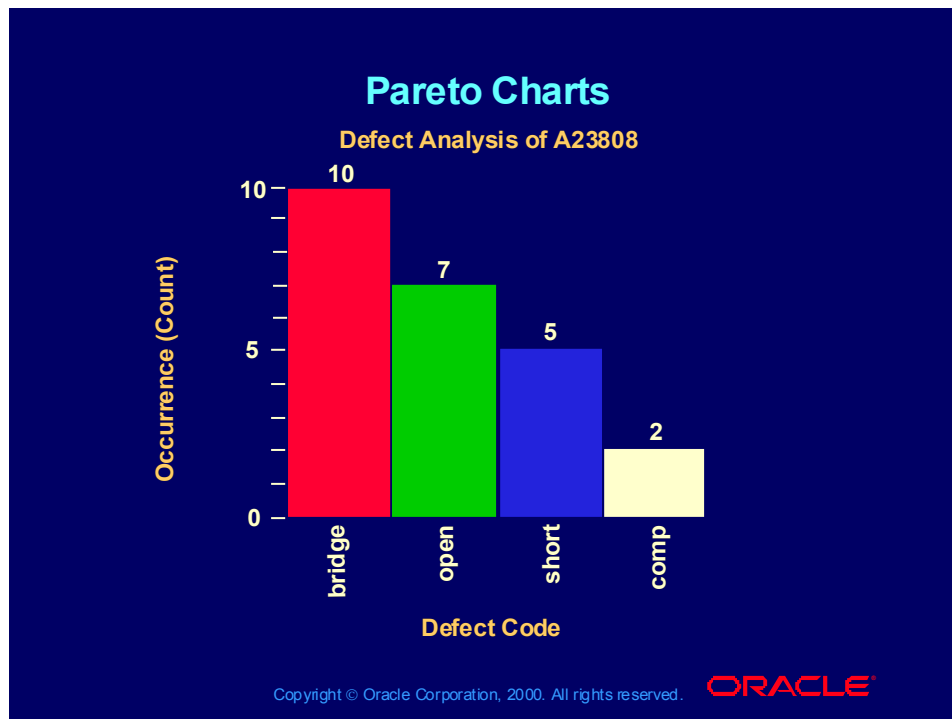
You can view the same data in different formats. Quality data that is used to derive the statistics in the View Descriptive Statistics window can also be viewed in a Pareto chart, histogram, control chart, or trend chart. You can also use copied criteria settings in creating custom reports using the Quality Results ReportWriter.

By using the Copy Settings functionality, you can copy record selection criteria from a saved source to a new destination chart, view, or report. You can copy the source collection plan and, if appropriate, the primary collection element and specification limits. Once copied you can change any of the settings, except the collection plan.

To save the criteria settings, you must enter a chart name or statistic name when creating the source chart or view. The name allows you to retrieve inquiry settings that you saved previously. If you want to perform a one-time-only inquiry, you do not need to enter a statistic name.

Note: Not all the settings for a source chart may be applicable for a destination chart; conversely, all the settings required for the destination chart may not be included in the source chart.

Pareto Charts



Pareto Chart

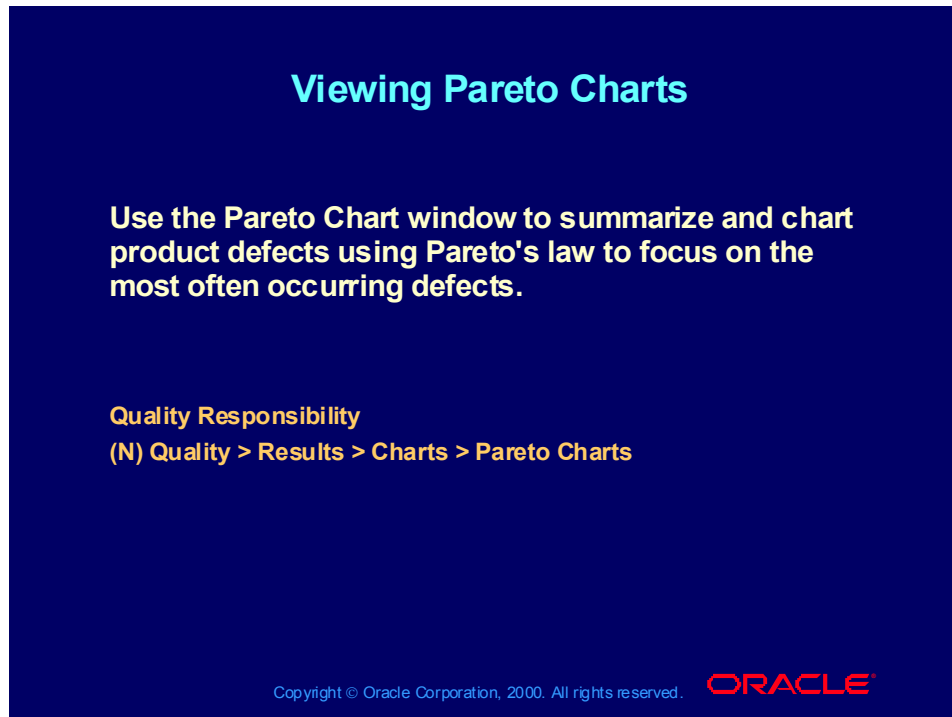
Description of Pareto Charts

Pareto charts are based on Pareto's principle, which states that a small percentage of a group accounts for the largest fraction of the impact. In other words, 20% of the sources cause 80% of any problem. Pareto charts graphically show you the relative frequency or size of an event in a descending bar graph. You can create custom Pareto charts to help focus on top priorities, such as the types of failures that occur most frequently.

The X axis (horizontal dimension) on a Pareto Chart is the primary collection element for data analysis. It reflects the possible values for the primary collection element.

The Y axis (vertical dimension) represents the numeric measure, such as a count of occurrences of the primary collection element or the sum of a quantity.

Viewing Pareto Charts



Pareto Charts

(Help) Oracle Manufacturing Applications > Oracle Quality > Views, Charts, and Custom Reports > Creating and Viewing Pareto Charts
... > Pareto Charts

How to View Pareto Charts

You can create custom Pareto charts from scratch or you can reuse chart settings that were saved previously.

- 1 Enter a chart name, or click Find on the toolbar to select a chart name previously saved.
- 2 Select a collection plan.
- 3 (Optionally) Enter a chart title.
- 4 Select the X-axis collection element on which you want to base the chart. Typically the collection element should be an attribute or reference collection element.
- 5 Select the Y-axis collection element and the Y-axis function. The Y axis reflects the number or sum of occurrences.
 - For X-axis collection elements that are numeric, select one of the functions Sum, Count, Min, Max, or Average.
 - For X-axis collection elements that are character or date, you can select only Count.

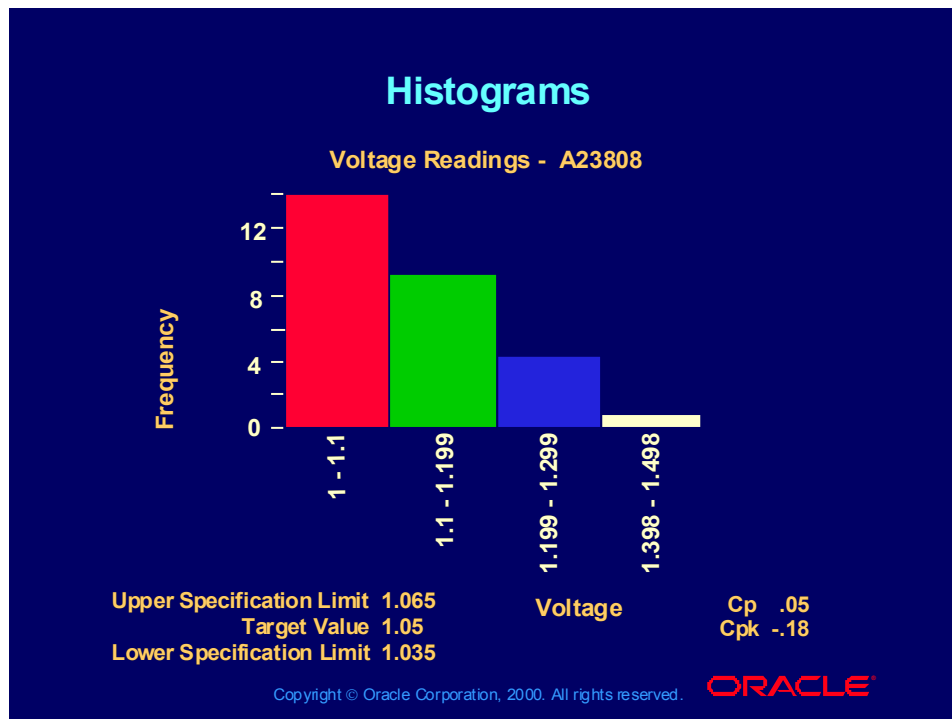
- 6 (Optionally) Enter the chart description to be displayed under the chart title.
- 7 Enter the top number of groups or values that you want to display.
- 8 Enter selection criteria to specify what quality results to include.
- 9 Click View Chart to display the Pareto chart.

Example

To show the breakdown by defect code for the ten highest defects, you select the following:

- Defect Code as the X-axis collection element
- Quantity Defective as the Y-axis collection element
- Sum as the Y-axis function
- 10 as the top number of groups to display

Histograms



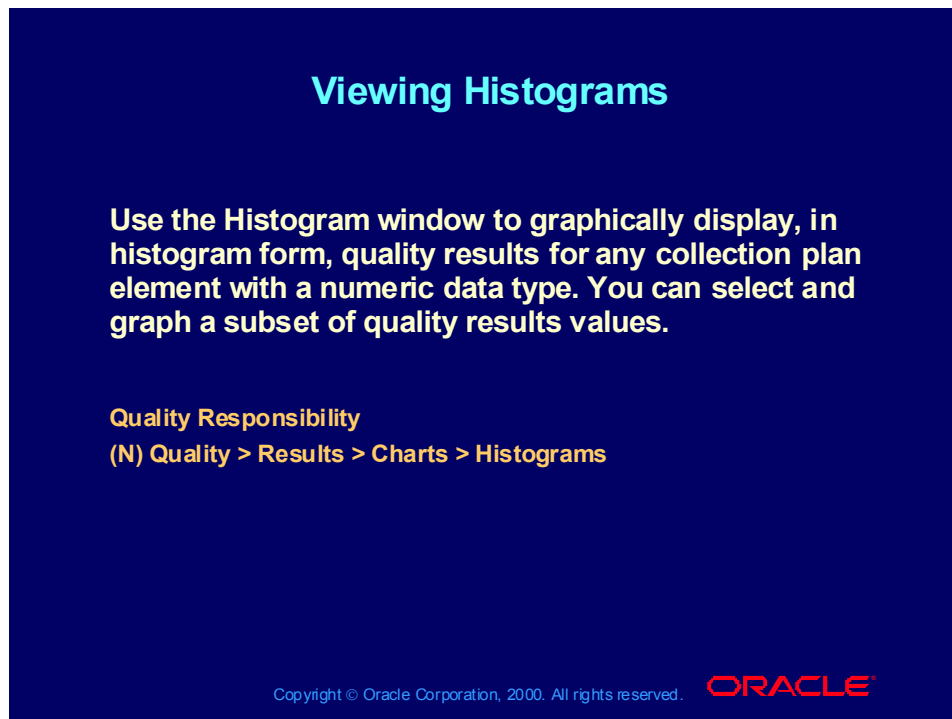
Description of Histograms

Histograms graphically display the frequency distribution of data in bar form. This is done by partitioning the data into intervals and plotting the number of points in each interval. Histograms graphically show the distribution of data for elements with numeric data types. The histogram reveals the centering, variation, and shape of the data, which is typically bell shaped.

The X axis on a histogram reflects the intervals of possible values for the collection plan element.

The Y axis represents the count or sum of occurrences of the collection element.

Viewing Histograms



Viewing Histograms

Use the Histogram window to graphically display, in histogram form, quality results for any collection plan element with a numeric data type. You can select and graph a subset of quality results values.

Quality Responsibility
(N) Quality > Results > Charts > Histograms

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Histograms

(Help) Oracle Manufacturing Applications > Oracle Quality > Views, Charts, and Custom Reports > Creating and Viewing Histograms
... > Histograms

How to View Histograms

- 1 Enter a chart name, or click Find on the toolbar to select a chart name previously saved.
- 2 Select a collection plan.
- 3 (Optionally) Enter a chart title and description. These are displayed at the top of the chart.
- 4 Select the X-axis collection element on which you want to base the chart. The collection element must have a numeric data type.
- 5 (Optionally) Select or find the specification. The specification limits are displayed at the bottom of the chart.
- 6 (Optionally) Enter the number of vertical bars for the graph. If no value is entered, the number of bars is calculated as the square root of the number of points.
- 7 (Optionally) Enter the number of data points to use in creating the histogram. The most recently collected results are used. All points are used if no value is entered.

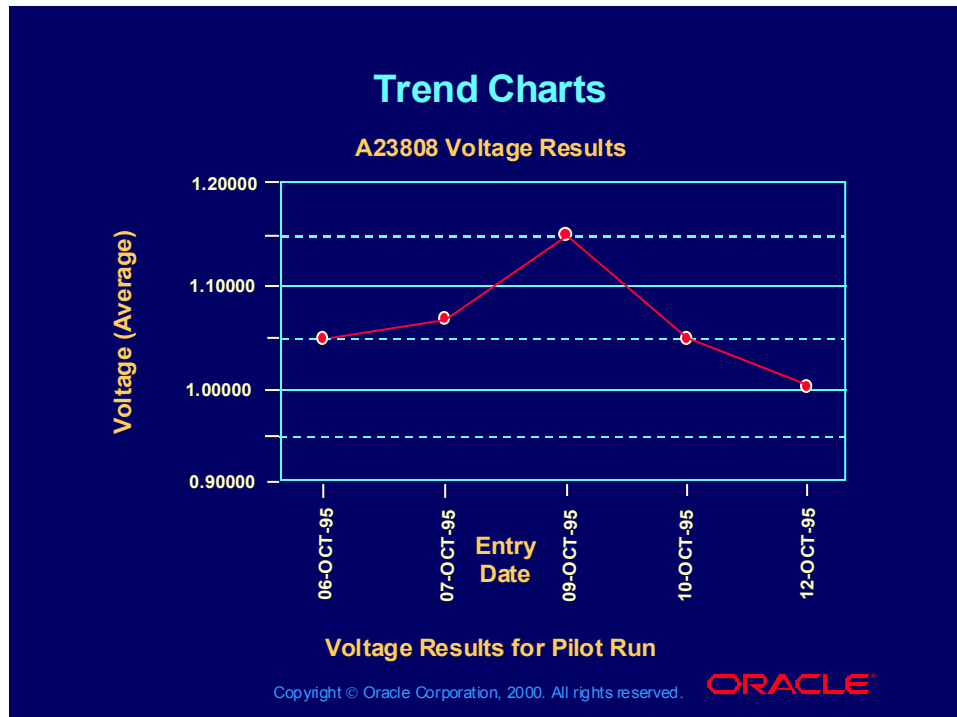
- 8 Enter selection criteria to find specific quality results for the collection plan.
- 9 Click View Chart to display the histogram.

Example

To show the distribution of oven temperature sampled ten times a day over the last 20 days, you select the following:

- Temperature as the X-axis collection element
- 14 for the number of bars (the square root of 200 is 14.14)
- 200 for the number of points (10 samples times 20 days)

Trend Charts



Trend Charts

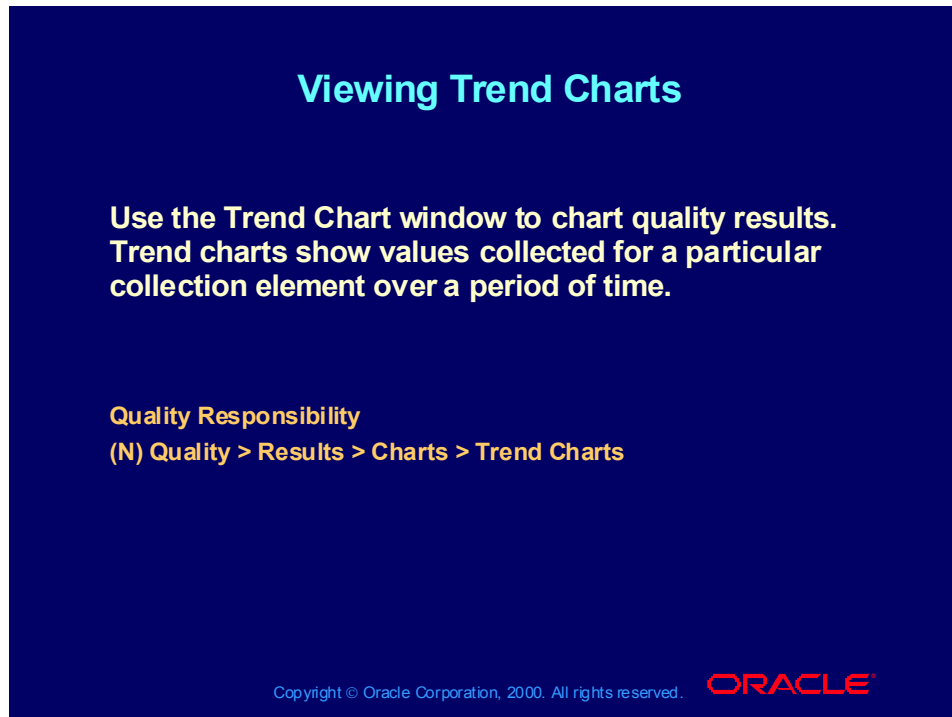
Description of Trend Charts

You can use trend charts to analyze data collected over a period of time for a particular collection element. By observing the trend, you can take corrective action if the trend moves in an unfavorable direction.

The X axis on a trend chart represents individual results or groups of quality results presented collectively over time. You can chart individual results, or you can chart groups of results by collection number or by entry date.

The Y axis is the primary collection element whose value you are tracking and typically represents a variable collection element.

Viewing Trend Charts



Trend Charts

(Help) Oracle Manufacturing Applications > Oracle Quality > Views, Charts, and Custom Reports > Creating and Viewing Trend Charts
... > Trend Charts

How to View Trend Charts

You can create trend charts from scratch or you can reuse chart settings that were saved previously.

- 1 Enter a chart name, or click Find on the toolbar to select a chart name previously saved.
- 2 Select a collection plan.
- 3 (Optionally) Enter a chart title and description. These are displayed at the top of the chart.
- 4 Select the X-axis element from the Group By field. Typically the element represents time (entry date, collection number) or quality results collected consecutively over time (occurrence).
- 5 Select the Y-axis collection element and the Y-axis grouping function. The Y axis represents the primary collection element whose value you are tracking. This is usually a variable collection element.
- 6 If you enter a collection number or an entry date for the X axis, you must select a grouping function for the Y axis. Select from Sum, Count, Min,

Max, or Average. For example, if the X axis is grouped by entry date, you can display the average of each day's collection.

- 7 Enter selection criteria to find specific quality results for the collection plan.
- 8 Click Save Settings if you want to save the settings.
- 9 Click View Chart to display the trend chart.

Example

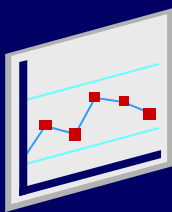
To show the trend over the course of a week by the number of defects reported per day on a particular operation, you select the following:

- Entry Date as the X-axis group by element
- Quantity Defective as the Y-axis collection element
- Sum as the Y-axis grouping function

Control Charts

Control Charts

- **Xbar and R charts**
- **Individual X and Moving Range charts**
- **Xbar and S charts**



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Description of Control Charts

Control charts provide a graphical means of monitoring a process in real time. A control chart maps the output of a process over time and signals when a change occurs in the process. Control charts are used to analyze variable data.

The horizontal centerline on a control chart corresponds to the average quality at which the process should perform.

Two control limits, upper and lower, indicate that values falling between them can be attributed to chance variation. Values falling outside them indicate a lack of statistical control.

Types of Control Charts

Oracle Quality provides three pairs of control charts:

- **Xbar and R charts (Xbar R)**

These charts are used when the data falls naturally into meaningful homogeneous subgroups (readings by shift or by machine). The subgroups should consist of no more than ten values.

 - The Xbar chart plots the average value of each subgroup over time. This is used to test for a shift in the average value of a process.
 - The R chart plots the shift in the variance of a process. It plots the range of values within each subgroup.
- **Individual X and Moving Range charts (X mR)**

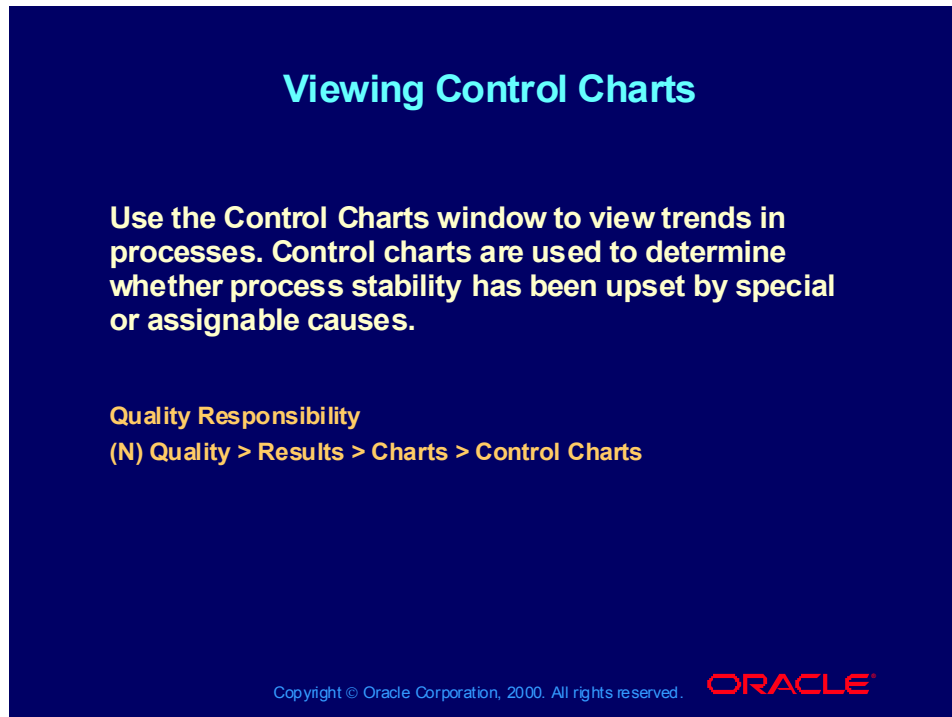
These charts are used when the data does not fall into meaningful subgroups and is instead based on individual data points.

- The X chart plots individual data points.
- The Moving Range (mR) chart plots a moving range value for each data point.

- Xbar and S charts (Xbar S)

These charts are similar to the Xbar and R charts, except that standard deviation is plotted instead of the range. This type of chart is typically used when the subgroups consist of more than ten values because it mitigates the effect of outlying data points.

Viewing Control Charts



Control Charts

(Help) Oracle Manufacturing Applications > Oracle Quality > Views, Charts, and Custom Reports > Creating and Viewing Control Charts
... > Control Charts

How to View Control Charts

You can create control charts from scratch, or you can reuse chart settings that were saved previously.

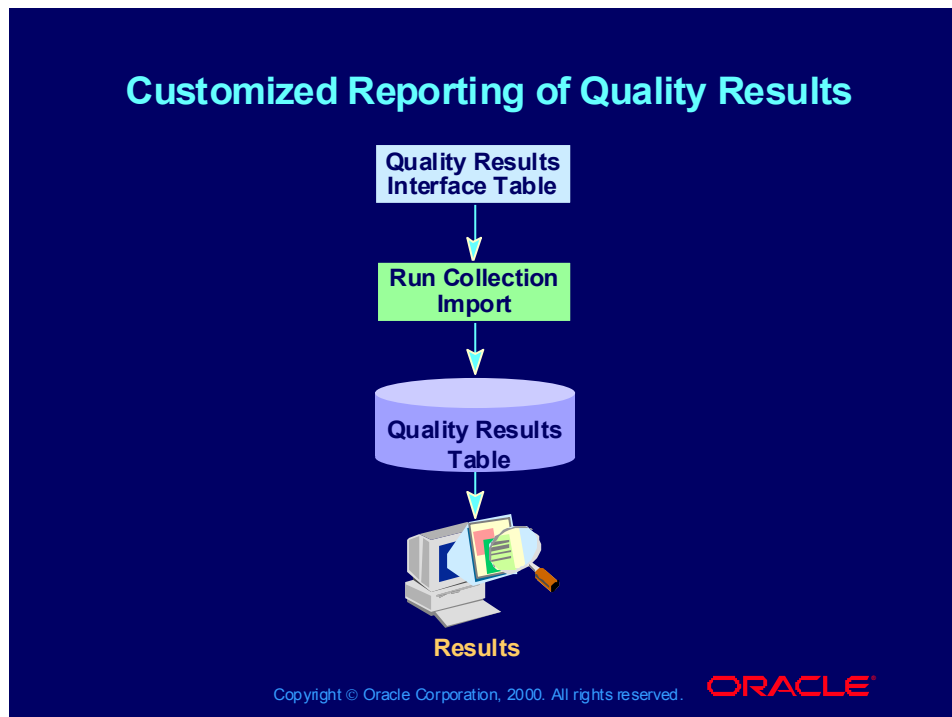
- 1 Enter a chart name, or click Find on the toolbar to select a chart name previously saved.
- 2 Select a collection plan.
- 3 (Optionally) Enter a chart title and description to be displayed at the top of the chart.
- 4 Select the chart type.
- 5 Select the Y-axis collection element on which you want to base the chart. It must have a numerical data type.
- 6 Click Control Limits... and specify which control limits to use.
- 7 Enter selection criteria to find specific quality results for the collection plan.
- 8 Click Save Settings if you want to save the settings.
- 9 Click View Chart to display the trend chart.

Example

To monitor the variation of the diameter of a machined part built in run sizes of 150, you select the following:

- Xbar S as the chart type
- Diameter as the Y-axis collection element

Customized Reporting of Quality Results



Customized Reporting of Quality Results

You can create your own custom reports using the Quality Results ReportWriter. By creating your own reports, you can:

- Include quality results for more than one collection element
- Sequence the results in any order
- Use functions (Average, Count, Sum, Min, Max) to further analyze your results

Customized Reporting of Quality Results

Customized Reporting of Quality Results

Use the Quality Results ReportWriter window to create custom reports.

Quality Responsibility

(N) Quality > Reports > Quality Results ReportWriter

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Quality Results ReportWriter

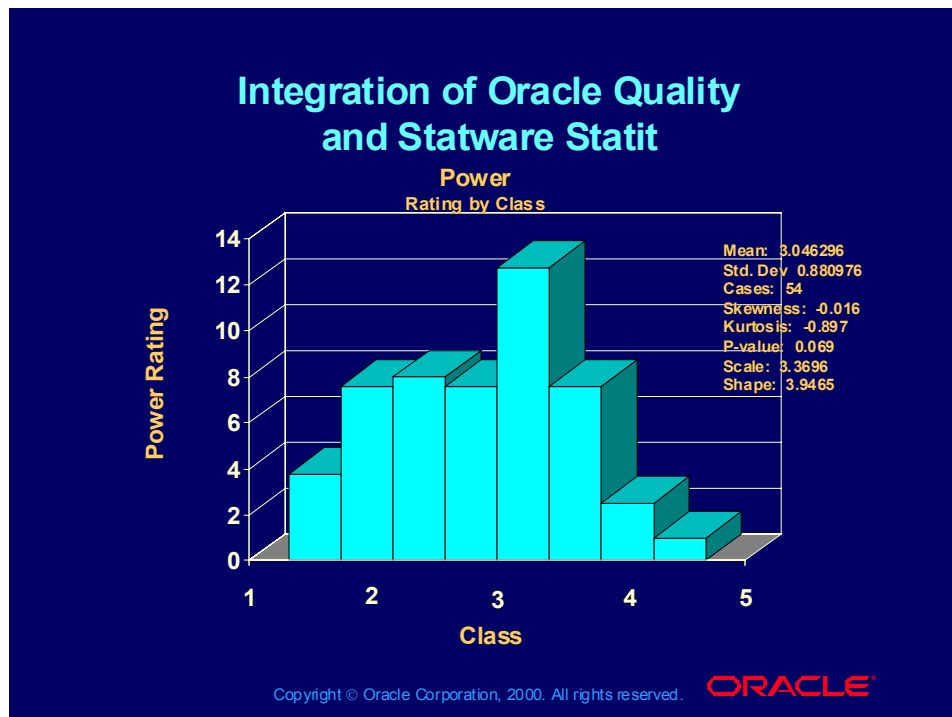
(Help) Oracle Manufacturing Applications > Oracle Quality > Views, Charts, and Custom Reports > Using the Quality Results ReportWriter

How to Create Customized Reports

- 1 Enter a report name.
- 2 Select a collection plan.
- 3 (Optionally) Enter a report title and description.
- 4 Enter the sequence and the collection plan element. The sequence determines the order of the columns of the collection plan element.
- 5 (Optionally) Select a function to use to process and group the results for that column. By selecting the Total check box, you can create a column total at the end of the report.
- 6 Repeat steps 4 and 5 until all columns are specified.
- 7 Enter selection criteria to find specific quality results for the collection plan. Select a collection element from the list of collection elements on the collection plan.
- 8 Select a condition.
- 9 Enter a value or range of values.
- 10 Repeat steps 7 through 9 to add selection criteria.
- 11 Click Submit Report to launch a concurrent request to process the report.

12 Click Save Settings to save the report settings for reuse later.

Integration of Oracle Quality and Statware Statit



Analyzing Quality Data with Statit

You can choose to use the graphical capabilities of either Oracle Quality or Statware Statit, software for statistical process control (SPC). You can use Oracle Quality to collect and query collected data and then use Statware Statit to create sophisticated SPC charts, custom graphs, and reports.

Setting Up Oracle Quality with Statit

To use Statit with Oracle Quality, you must set the following profiles:

- QA:Statistics Engine to Statit
- QA:Statistics Engine Path to the directory path on the client machine where Statit is installed.

How to Use Statit to Analyze Quality Data

You can invoke Statit in the Pareto Chart, Histogram, Control Chart, Trend Chart, or Descriptive Statistics windows.

- 1 Enter the selection criteria to specify what quality results to include.
- 2 Click Statit... to analyze the queried results within Statit. When the Statit integration is enabled, the View Chart button is replaced by the Statit button.

Action Log



Action Log

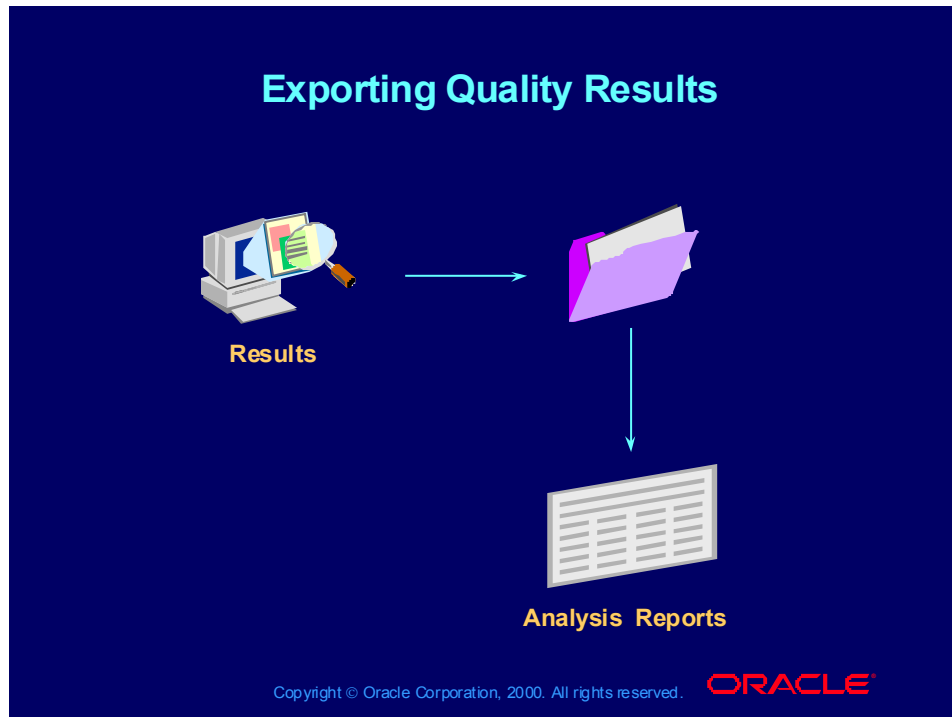
(Help) Oracle Manufacturing Applications > Oracle Quality > Views, Charts, and Custom Reports > Viewing and Deleting Action Log Entries

Logging Oracle Quality Actions

The Oracle Quality application provides a log of all actions executed by Oracle Quality. The Action Log is an audit trail of actions occurring during data collection when the action "Post an entry to the Quality Action Log" is selected for a collection element on a collection plan.

The Action Log report prints a custom message. It also prints the collection plan, number, entry date, and action rule that caused the Action Log entry. You can search for a particular message or for entries specific to a collection plan or element by entering your search criteria in the Find Log Entries window.

Exporting Quality Results



Overview

You can export quality results to a file and download the file to a spreadsheet, statistical analysis, or graphical presentation software package.

Each quality results inquiry window includes an Export Results function in the Special menu. A comma-delimited ASCII file is created from the retrieved quality results in your inquiry, chart, or report settings.

How to Export Quality Results

- 1 Navigate to any of the quality results inquiry windows.
- 2 Using selection criteria, display the quality results that you want to retrieve for export.
- 3 Select Export Results from the Tools menu.
- 4 Enter a filename in the Save As dialog box.

Instructor Demonstration

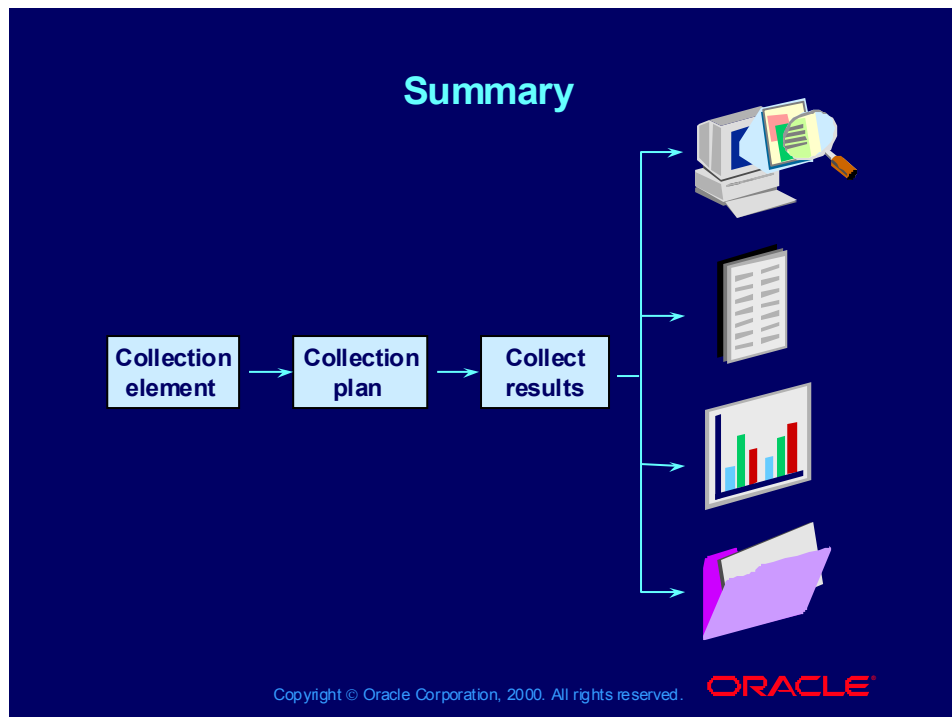
Analyzing data collection results using:

- **View Quality Results Inquiry and customizing how the data is displayed**
- **Pareto chart**
- **Descriptive statistics**
- **Control charts**

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Summary



Summary

This lesson has described viewing, reporting, and analyzing quality data. You can:

- Use the Quality Results folder to customize the way you view the data
- Calculate statistics for selected results for a single collection element
- Create Pareto charts, control charts, trend charts, and histograms to view the data graphically
- Use the Quality Results ReportWriter to create customized reports
- Take advantage of the tight integration between Oracle Quality and statistical software to create sophisticated SPC charts and custom graphs and reports
- Export data collected in Oracle Quality to another software product, such as a statistical process control product

Setup and Implementation Considerations

Chapter 11

11i Oracle Quality: Inspect Quality of Goods

Setup and Implementation Considerations

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Objectives

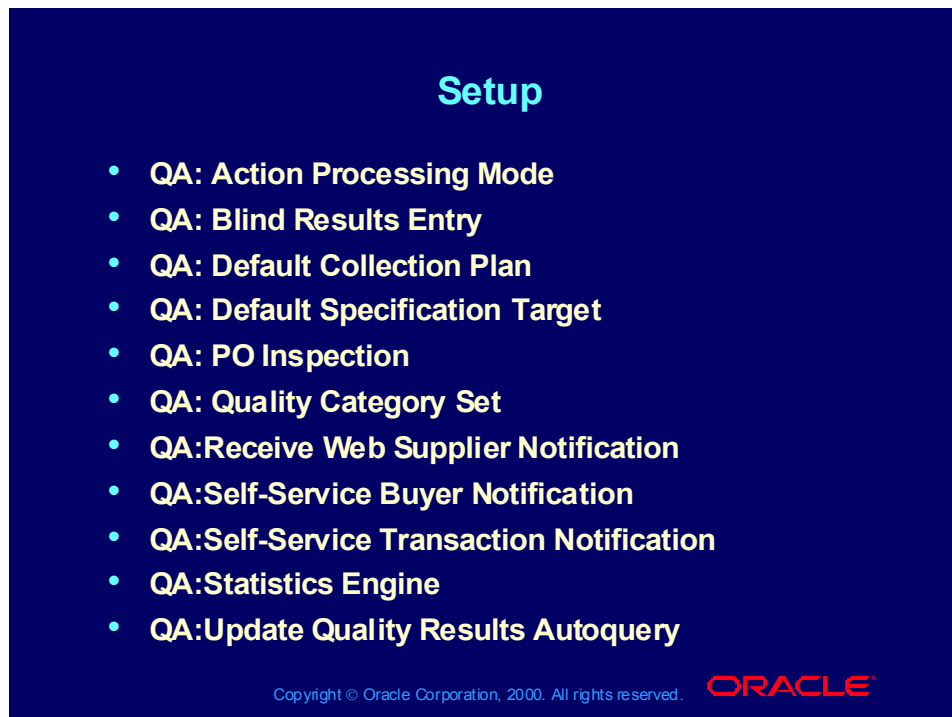
Objectives

After completing this lesson, you should be able to describe and perform Oracle Quality Release 11i Profile Option setup.

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Setup

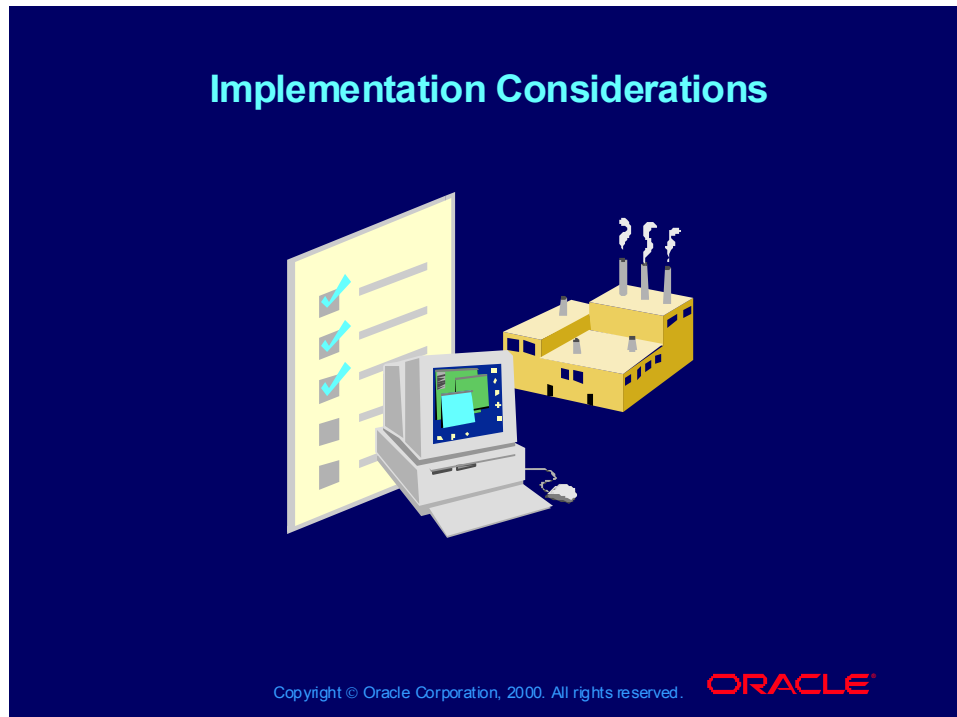
A screenshot of the Oracle Quality Setup screen. The title "Setup" is displayed in red at the top center. Below it is a bulleted list of setup options in yellow text on a dark blue background. The options are: QA: Action Processing Mode, QA: Blind Results Entry, QA: Default Collection Plan, QA: Default Specification Target, QA: PO Inspection, QA: Quality Category Set, QA:Receive Web Supplier Notification, QA:Self-Service Buyer Notification, QA:Self-Service Transaction Notification, QA:Statistics Engine, and QA:Update Quality Results Autoquery. At the bottom right is the Oracle logo, and at the bottom left is the copyright notice: "Copyright © Oracle Corporation, 2000. All rights reserved."

Quality Setup

(Help) Oracle Manufacturing Applications > Oracle Quality > Setting Up > 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.

Implementation Considerations



Business Process

- Do you monitor cycle history, such as multiple passes through testing or debugging?
- Do you maintain statistical process controls?
- Do you take or recommend action based on sampling or analysis of a series of outputs?
- How is failure data currently collected?
- Do you collect information on everything and not just failures?
- Do you have a corrective action loop in your process?
- What sampling programs do you use?
- What is your material review board workflow?
- Are responsibilities for dispositioning of nonconformances established by name, department, and role?
- Do you track corrective actions through analysis, action, and change control?
- Do you rework offline or during production?
- Do you keep track of quality costs (rework and repair orders)?
- Do you need to maintain history (for example, serial or lot) records, where you keep track of results for a particular item throughout its process?

Collection Elements

- What are the key variables and attributes that are monitored during production?
- Do you want collection elements to be autopopulated?
- Do you collect time-to-failure statistics?
- Do you currently log time spent debugging or troubleshooting failures?
- What important characteristics and elements do you plan to collect?
- What types of holds are used after a quality event has occurred and before disposition is made?

Specifications

- What criteria are used to *pass* material during inspection?
- Do you maintain specifications by item, supplier, and customer?
- Is it necessary to store schematics and other drawings online as electronic documents for inspection purposes?
- Do you maintain target values and validation limits on your specifications?

Collection Plans

- Are collection elements ever calculated as a function of other elements?
- How do you alert the appropriate personnel when quality nonconformance occurs?
- Do collection plans need to be updated frequently?
- Are collection elements derived from other elements? For example, symptom code might be derived from a comparison of results to specifications.
- Do test and inspection instructions need to be available throughout the process?
- Do you want the system to prompt suggested test or debug steps based on preliminary collection results?
- Are action rules and systematic notifications used when a quality event occurs?
- Do you collect symptom, cause, and action codes along the corrective action loop?
- Do you have the capability to determine what quality characteristics must be entered based on other entries or actions?
- Do you need the results on quality collection to initiate another program—for example, transfer material to a subinventory?
- Do collection plans vary by organization for the same transactions?
- Based on the quality results, what are the types of predefined actions you want to specify?

Data Collection and Analysis

- Do you need to be able to back out any collected results?
- Do you prefer to have quality results collected in the background, where no operator intervention is required?
- To what extent are Cp, Cpk, and other process capability statistics maintained and used?
- To what extent are correlation statistics maintained?
- Are failure analyses reported by problem and product?
- Given the data collected, what is the best way of displaying the results?
- What are the primary quality analysis reports in current use? How are they used? By whom are they used? How frequently are they generated?
- What is the frequency of data collected and reporting?

Supplier Quality

- Do suppliers do their own QA?
- Do you need access to their Quality reports?
- Should they be part of your normal quality system?
- Do you do receiving inspection still or do you only use qualified suppliers?
- What qualifies a supplier as a qualified supplier?
- How are they qualified?
- Do you need a quality interface with them?

Course Summary

Chapter 12

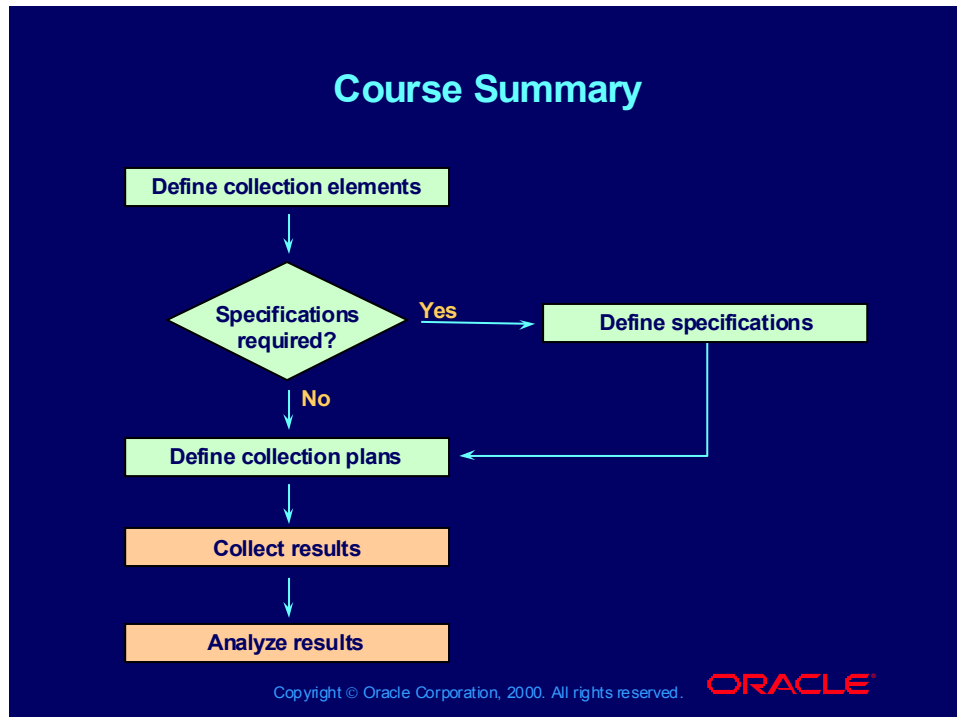
11i Oracle Quality: Inspect Quality of Goods

Course Summary

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Course Summary



Summary

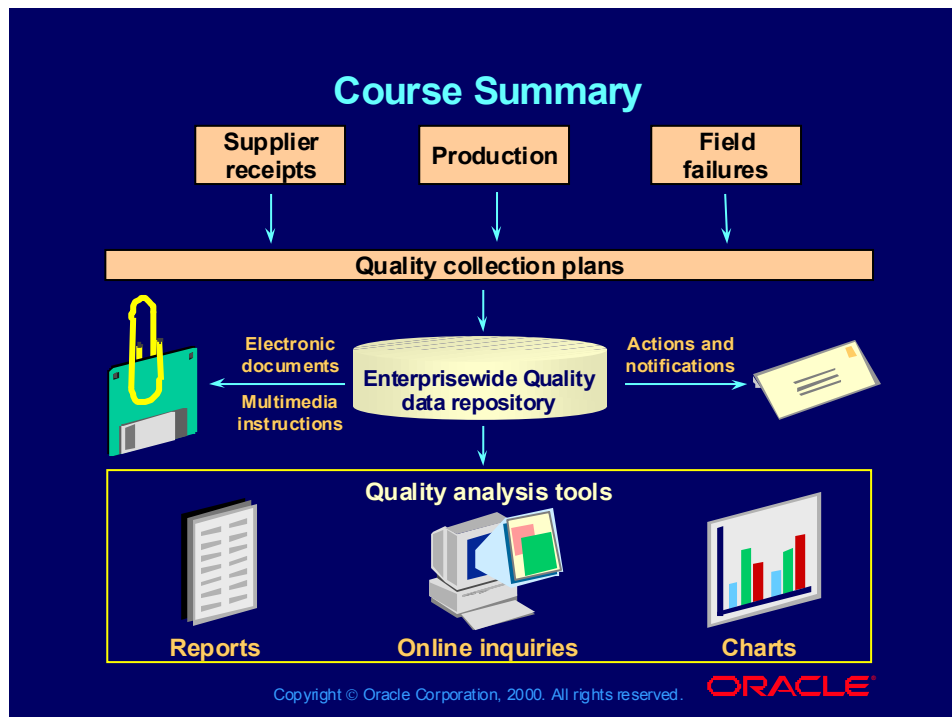
Data can be collected in three ways:

- Directly
- Within a transaction
- Using the Collection Import function

You can analyze your data in the following ways:

- Online inquiry
- Histograms and Pareto, control, and trend charts
- Calculation of basic statistics
- Custom reports
- Export to statistical process control products or spreadsheets

Course Summary



Oracle Quality Solution

The key features of Oracle Quality include:

- A shared repository for quality data
- Quality data-management integration with Oracle Applications
- Activities that are easily configured to meet user requirements
- Key fields that are user defined:
 - Collection elements
 - Material specifications
 - Data-collection plans
 - Event-driven actions and alerts
 - Reporting
- Flexible analysis tools