Infor LN Analytics for Quality Management User Guide

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About This Guide

This document describes the process to view Order Inspection, Inspection Order, Item Characteristic, Nonconformance Report, and Corrective Action Plan metrics.

Organization

This table lists the chapters of this guide:

Chapter	Description
Introduction	An overview of the BI reporting tool.
Order Inspection Metrics	Details of ageing analysis, average resolution time, and status by origin metrics of the order for which inspection is executed.
Inspection Order Metrics	Details of the status, ageing analysis, and reject reasons metrics for the inspection orders.
Item Characteristic	Details of the item characteristic metrics.
Nonconformance Reports	Details of the nonconformance report metrics.
Corrective Action Plans	Details of the corrective action plans metrics.

Contacting Infor

If you have questions about Infor products, go to the Infor Xtreme Support portal.

If we update this document after the product release, we will post the new version on this website. We recommend that you check this website periodically for updated documentation.

If you have comments about Infor documentation, contact documentation@infor.com.

Introduction

1

The LN Analytics Quality Management tool is used to track and evaluate quality related metrics and trends. The critical quality management parameters can be displayed on a single screen to simplify quality analysis and reporting.

These metrics are developed using the Infor ION BI tools.

The LN Analytics for Quality Management lists the metrics, in a graphical format, summarizing the quality management data.

BI Reporting

Business intelligence (BI) refers to the software-based techniques used to identify, extract, and analyze data related to Quality Management. The common functions of the BI reporting technology are analytics, forecast analytics, and so on.

The BI Reporting tool displays the operational and statistical qualitative analysis, using various graphical formats. This analysis is based on the data the tool receives from Infor LN. Using the tool, the quality manager can view, and analyze the data in varied formats based on specified levels and parameters.

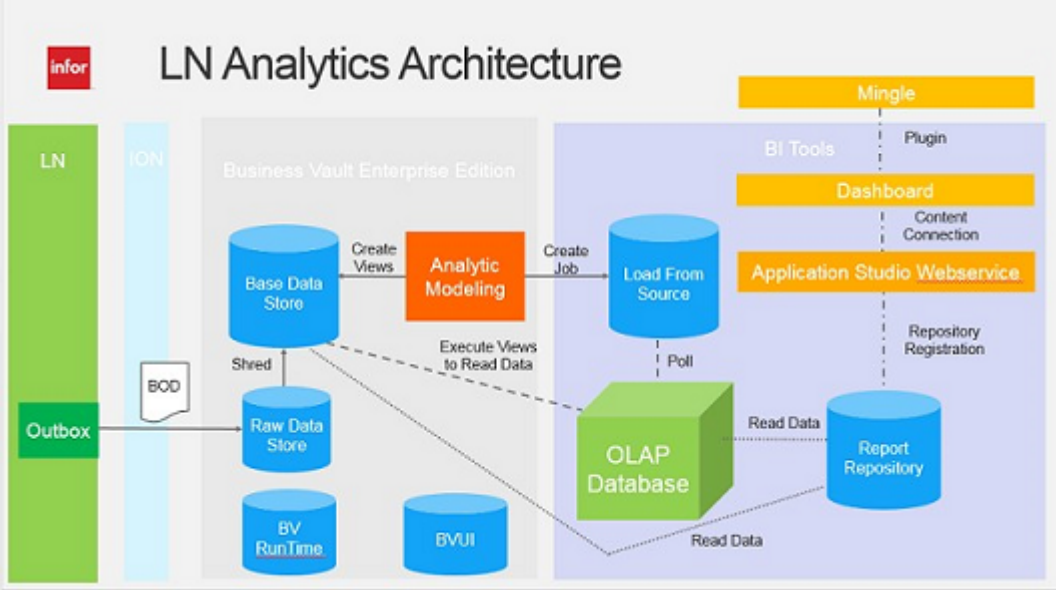
The tool also generates alerts, if there is any deviation in the business values, by highlighting the record.

These metrics can be generated using the Infor ION BI Reporting tool:

- Order Inspection
- Inspection Order
- Item Characteristic
- Nonconformance Reports
- Corrective Action Plan

The Architecture

Infor LN Analytics offers an optimal solution to implement an advanced business intelligence environment for the ERP system. The solution includes the common metrics that are required by the users for Quality Management analysis and reporting. This helps the users to accomplish the daily tasks effectively.



Using the LN Analytics solution, you can extract, transform, and load the data from an LN system to a BI environment. By default, the Infor suite manages the communication between modules and the storage data in the Business Vault.

The Business Vault is the central staging area. The ERP system can be connected to the vault using the standard ION connectors, custom-built ION connectors, or point-to-point integrations. When an ION connector is used, information corresponding to each transaction, posted in ERP, is converted to a standardized XML file, called a BOD (Business Object Document). This document is transferred to the Infor Business Vault using ION Connect. The information is stored in a raw data format and is automatically transformed to a relational schema in the Base Data Store, using a transformation process known as Shredding.

Business Vault Analytic Modeling is used for filling the OLAP database. Information to create the dimensions and cubes are published to the Load From Source database and the Base Data Store during a publication process. The OLAP database uses the published information in the Load From Source database and the information in the Base Data Store to create dimensions and cubes.

The reports use the data from the OLAP database and Base Data Store. Web services and plugins are used to display the reports and metrics in Infor Ming.le.

The BODs that are transferred from Infor LN to Infor LN Analytics Quality Management for reporting:

- Accounting Entity
- Code Definition
- Item Master
- Financial Calendar

- Customer Party Master
- Supplier Party Master
- Person
- Inspection Order
- Defective Material Notice
- Corrective Action Plan
- Quality Test Result

The codes used in Infor LN Analytics Quality Management:

- LN Corrective Action Categories
- Inspection Order Status
- Inspection Order Type Codes
- Reject Reasons
- Test Results
- Item Aspects
- Item Characteristics
- Source of Defect Codes
- Disposition Types
- Material Review Board Codes
- LN QM Order Origin
- Non Conformance Severity
- LN Non Material Severity Codes
- Defective Material Notice Status
- Non Conformance Types

Order Inspection Metrics

2

The Order Inspection metrics enables the analysis of orders. This analysis is based on various criteria such as ageing analysis and resolution time.

The quality manager dashboard provides these order inspection metrics:

- "Order Inspections Ageing Analysis by Origin (Days)" on page 11
- "Order Inspections Average Resolution Time by Origin" on page 12
- "Order Inspections Status by Origin" on page 12

Order Inspections Ageing Analysis by Origin (Days)

The Order Inspections Ageing Analysis metric is used to display the number of Open (includes status Free or Active) order inspections and the total number of days for which the reports are Open. The metric is based on the order origin and time period type.

Use **Filter** to modify the settings as required.

```
Age of an Order Inspection = Period end date - Order Inspection creation date
```

Order Inspections Ageing Analysis by Origin (Hours)

The Order Inspections Ageing Analysis metric is used to display the number of Open (includes status Free or Active) order inspections and the total number of days for which the reports are Open. The metric is based on the order origin and time period type.

Use **Filter** to modify the settings as required.

```
Age of an Order Inspection = Period end date - Order Inspection creation date
```

Order Inspections Average Resolution Time by Origin

The Order Inspections Average Resolution Time metric is used to display the average time for the order processing, from Creation to Disposition.

Use **Filter** to modify the parameters as required.

```
Average Resolution Time = Sum of time taken to close all Order Inspections
(in the selected period) / Total number of Order Inspections closed (in the
selected period)
```

Order Inspections Status by Origin

The Order Inspections Status by Origin metric is used to display the order inspections based on the order status (Free, Active, Processed, Completed, and Closed) for all order origins or a specific order origin.

Use **Filter** to modify the parameters as required.

Inspection Order Metrics

3

The Inspection Order metrics enables the analysis of inspection orders based on various criteria such as status, reject reasons, and ageing analysis.

These reports are generated:

- "Inspection Orders Status by Origin" on page 13
- "Inspection Orders Reject Reasons Analysis by Origin" on page 13
- "Inspection Orders Average Resolution Time by Origin" on page 14
- "Inspection Orders Percent Rejection by Origin" on page 14
- "Inspection Orders Ageing Analysis by Origin (Days)" on page 14

Inspection Orders Status by Origin

The Inspection Orders Status by Origin metric is used to display the inspection orders based on the order status (Accepted, Partially accepted, and Rejected) for all order origins or a specific order origin.

Use **Filter** to modify the settings as required.

Inspection Orders Reject Reasons Analysis by Origin

Inspection Orders Reject Reasons Analysis by Origin metric is used to display the Pareto analysis of the inspection orders based on the reject reason and the cumulative percentage for the number of inspection orders.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

Inspection Orders Average Resolution Time by Origin

The Inspection Orders Average Resolution Time by Origin metric displays the average time taken for the order processing, from Creation to Disposition.

Use **Filter** to modify the settings as required.

```
Average Resolution Time = Sum of time taken to close all Inspection orders
(in the selected period) / Total number of Inspection orders closed(in the
selected period)
```

Inspection Orders Percent Rejection by Origin

The Inspection Orders % Rejection by Origin metric is used to display the number of inspection orders that are rejected as a percentage of the total orders inspected, for the specified period.

Use **Filter** to modify the settings as required.

Inspection Orders Ageing Analysis by Origin (Days)

The Inspection Orders Ageing Analysis by Origin metric is used to display the number of Open inspection orders and the total number of days for which the reports are Open. The metric is based on the order origin and time period type.

Use **Filter** to modify the settings as required.

```
Age of an Inspection Order = Current Date(period end date) - Inspection
Order creation date
```

Inspection Orders Ageing Analysis by Origin (Hours)

The Inspection Orders Ageing Analysis by Origin metric is used to display the number of Open inspection orders and the total number of days for which the reports are Open. The metric is based on the order origin and time period type.

Use **Filter** to modify the settings as required.

```
Age of an Inspection Order = Current Date(period end date) - Inspection
Order creation date
```

Item Characteristic Metrics

4

This Item Characteristic functionality allows you to analyze the inspection results of the item characteristic. The results are displayed using Distribution Histograms, Process Capability Control Charts, and Quality Control Charts.

- Distribution histogram: These histograms are used to ascertain the variation in values by displaying a standard distribution curve of measured values, for an item.
- Process capability control charts: These charts are used to ascertain that the variation in process related characteristic is controlled statistically, by creating a chart which contains a calculated and target based upper and lower control levels.
- Quality control chart: This chart combines both the Process capability control chart and the Distribution histogram for the same aspect, characteristic, or both of the item and the specified date range.

Distribution Histogram of Inspection Results

This Distribution Histogram is a distribution of item inspection results data. The chart combines a column chart and a line graph to display the actual measurements of items, based on the aspect and characteristic data.

To ensure that the standard distribution curve is displayed as required, you must include results within +/-.5 of a standard deviation as part of the displayed mean.

For processes that are not controlled statistically, the results must be limited within the +/- 3 standard deviations. This is to ensure that the lowest class width includes all results less than 3 standard deviations and the highest class width includes all results greater than 3 standard deviations.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

Process Capability Control Charts

The Process Capability Control Chart displays data based on actual inspection results. The chart consists of an upper and a lower plotting area. The upper plotting area is used to monitor the process mean and the lower plotting area is used to monitor the process deviation from the mean.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

These are the three most commonly used chart types:

- Xbar and R control charts: This chart is used where the sample size is constant and relatively small. See "To create Xbar and R control charts"
- Xbar and S control charts: This chart is used where the sample size is variable, or relatively large, or both. See "To create Xbar and S control charts"
- Xm and R control charts: This chart is used when the characteristic of sample size is more dynamic and varied possibly due to inherent instability in the process that is executed. See "To create Xm and R control charts"

Quality Control Chart

The Quality control chart displays the inspection results of the item aspect/characteristic for the specified date range, by combining the data of the Process capability control chart and Distribution histogram.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

Nonconformance Metrics

5

The Nonconformance Report (NCR) functionality allows you to report material, that does not conform to the required standard during inspection (Quality or Warehouse Inspection), or during the movement of the material, and/or when the material is in stock.

- Inspection (Quality or Warehouse Inspection)
- The movement of the material or
- When the material is in stock.

This functionality is used to generate an analysis of material nonconformance based on metrics such as Severity, Disposition, and Ageing analysis.

These reports are generated:

- "Nonconformance Reports Analysis of Cause (Material)" on page 17
- "Nonconformance Analysis of Disposition (Material)" on page 18
- "Nonconformance Analysis of Cause (Nonmaterial)" on page 18
- "Nonconformance Analysis of Severity (Material)" on page 18
- "Nonconformance Analysis of Severity (Nonmaterial)" on page 18
- "Nonconformance Analysis of Type (Material)" on page 18
- "Nonconformance Average Resolution Time by Origin" on page 19
- "Nonconformance Status by Origin" on page 20
- "Nonconformance Ageing Analysis by Origin (Days)" on page 19

Nonconformance Reports Analysis of Cause (Material)

Nonconformance Material Cause Analysis metric is used to display the Pareto analysis of the material nonconformance based on the cause and the cumulative percentage for the number of NCRs.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

Nonconformance Analysis of Disposition (Material)

The Nonconformance Material Disposition Analysis metric is used to display the Pareto analysis of the material nonconformance based on the disposition and the cumulative percentage for the number of NCRs.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

Nonconformance Analysis of Cause (Nonmaterial)

The Nonconformance Nonmaterial Cause Analysis metric is used to display the Pareto analysis of the nonmaterial nonconformance based on the cause and the cumulative percentage for the number of NCRs.

Use **Filter** to modify the settings as required.

Nonconformance Analysis of Severity (Material)

The Nonconformance Material Severity Analysis metric is used to display the Pareto analysis of the material nonconformance based on the severity and the cumulative percentage for the number of NCRs.

Use **Filter** to modify the parameters as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

Nonconformance Analysis of Severity (Nonmaterial)

The Nonconformance Nonmaterial Severity Analysis metric is used to display the Pareto analysis of the nonmaterial nonconformance based on the severity and the cumulative percentage for the number of NCRs. Use **Filter** to modify the settings as required.

Nonconformance Analysis of Type (Material)

The Nonconformance Material Type Analysis metric is used to display the Pareto analysis of the material nonconformance based on the material type and the cumulative percentage for the number of NCRs.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

Nonconformance Average Resolution Time by Origin

The Nonconformance Average Resolution Time metric is used to display the average time for the NCR processing, from Creation to Disposition.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

The period can be specified in days, weeks, months, and quarters.

```
Average Resolution Time = Sum of time taken to close all NCRs(in the selected period)/ Total number of NCRs closed(in the selected period)
```

Nonconformance Ageing Analysis by Origin (Days)

The Nonconformance Ageing Analysis metric is used to display the number of Open (includes status Open, Submitted, and Assigned) nonconformance reports and the total number of days for which the reports are Open. The metric is based on the order origin and time period type.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

```
Age of a Nonconformance = Current Date (period end date) - Non Conformance Reported date
```

Nonconformance Ageing Analysis by Origin (Hours)

The Nonconformance Ageing Analysis metric is used to display the number of Open (includes status Open, Submitted, and Assigned) nonconformance reports and the total number of hours for which the reports are Open. The metric is based on the order origin and time period type.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

```
Age of a Nonconformance = Current Date (period end date) - Non Conformance Reported date
```

Nonconformance Status by Origin

The Nonconformance Status by Origin metric is used to display the nonconformance reports based on order status (Open, Assigned, Submitted, Dispositioned, Cancelled, and Closed) for all order origins or a specific order origin.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

Corrective Action Plan Metrics

6

The Corrective Action Plan (CAP) functionality is used to execute the actions required to prevent recurrence of nonconformance, and/or failure.

This functionality is used to generate an analysis of the corrective action plans for nonconformance or failure recurrence; based on the average resolution time and ageing analysis.

These reports are generated:

- "Corrective Action Plans Average Resolution Time by Owner" on page 21
- "Corrective Action Plans Ageing Analysis by Owner (Days)" on page 21
- "Corrective Action Plans Status by Owner" on page 22

Corrective Action Plans Average Resolution Time by Owner

The Corrective Action Plans Average Resolution Time metric is used to display the average time for the CAP processing, from Creation to Disposition.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

```
Average Resolution Time = Sum of time taken to close all CAPs / Total number
of CAPs closed
```

Corrective Action Plans Ageing Analysis by Owner (Days)

The Corrective Action Plans Ageing Analysis metric is used to display the number of Open (includes status Open, Submitted, and Approved) CAPs and the total number of days for which the reports are Open. The metric is based on the order origin and time period type.

Use **Filter** to modify the settings as required. For all the entities (order item, owner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

```
Age of a Corrective Action Plan = Current Date - CAP creation date
```

Corrective Action Plans Ageing Analysis by Owner (Hours)

The Corrective Action Plans Ageing Analysis metric is used to display the number of Open (includes status Open, Submitted, and Approved) CAPs and the total number of days for which the reports are Open. The metric is based on the order origin and time period type.

Use **Filter** to modify the settings as required. For all the entities (order item, owner and so on), you can set the filter to include all the data in the specified range or select a specific entity.

```
Age of a Corrective Action Plan = Current Date - CAP creation date
```

Corrective Action Plans Status by Owner

The Corrective Action Plans Status by Owner metric is used to display the corrective action plans based on order status and CAP owner.

Use **Filter** to modify the settings as required. For all the entities (order origin, item, business partner and so on), you can set the filter to include all the data in the specified range or select a specific entity.