



Infor M3 Analytics Administration Guide

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About this guide

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This guide contains conceptual information on basic and advanced features of Infor M3 Analytics. This guide describes the components of the analytics and how to configure and administer these components for your organization.

Intended audience

This guide is for administrators, business consultants, system engineers, and super users who maintain and configure M3 Analytics to monitor the performance of their business.

Related documents

You can find the documents in the product documentation section of the Infor Xtreme Support portal.

- *Infor M3 Analytics Installation Guide*
- *Infor M3 Analytics for <Industry> Technical Guide*
- *Infor M3 Analytics for <Industry> Product Guide*
- *Infor Operating Service Administration Guide*
- *Infor Business Vault Administration Guide*
- *Infor Business Vault Analytic Modeling User Guide*
- *Infor Business Vault Data Warehouse Designer Administrator Guide*
- *Infor BI OLAP Server Administration Guide*
- *Infor BI Platform Support Guide*
- *M3 Core Administration Guide*

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.

M3 Analytics refers to the content of the Infor BI Application Studio package. The application collects the data from M3 Business Engine (M3 BE). M3 Analytics provides users with strategic and tactical business intelligence by generating this type of measures for analytic data or reports:

- Key Performance Indicators (KPIs) provide future-oriented measures, which direct you to critical areas of business performance that needs improvement.

The reports generated by M3 Analytics for < Industry> may cover these topic areas:

- Sales (customer, product, and sales organization, revenues and margins, revenue leakage, delivery performance, and sales versus budget or forecast)
- Finance (customer payments and debt, financial key ratios, profit and loss, balance sheet, inventory valuation, operational metrics for accounts receivable and accounts payable, and purchase price variance)
- Procurement (price history, supplier performance, and agreements monitoring)
- Production (production accuracy, inventory turnover, pre- and post-calculation, scrap and yield, resource utilization, and material variances)
- Warehouse/Logistics (forecast accuracy and stock transactions statistics)
- Quality Management (quality-test analysis to determine causes of high number of failed tests, comparison of passed versus failed tests across laboratories, testers, and products)
- Equipment (rental utilization, equipment profitability, contract profitability, labor resource analysis)

M3 Analytics offers support for these languages: Chinese, Dutch, English, French, German, Japanese, Spanish, and Swedish.

M3 Analytics components

This topic describes the basic components of M3 Analytics to help you search for and navigate to the information that you need.

Business Measurement Models (BMMs)

BMMs extract and transform the source data into an analytical data model that contains fact tables and dimension tables.

The resulting star schema can be analyzed as is or be used as source for an OLAP cube.

Online Analytical Processing (OLAP) cubes

The OLAP cubes summarize data along defined dimensions and hierarchies. The cubes also contain dimensions for time and time-series analysis, making it easy to compare years or periods on various levels.

The OLAP cubes contain a set of dimensions and hierarchies. These may need to be adjusted during implementation.

Entities

A widget is associated with a detail report and provides the user with deep integration to Self-Service through an Ad-Hoc jump. These components are part of the entity concept that is used in M3 Analytics. Selection forwarding is provided within an entity.

Widgets with charts are designed to be used in a six-widget dashboard. Long category names can affect the chart's visibility. If the category name is 15 characters long or longer, then its substring (from Nth character to Nth character) will be replaced with three dots (ellipsis).

Dashboards

Dashboards enable a single view of a number of KPIs that are relevant to a specific business process. They present varied information such as summaries, key trends, comparisons, and exceptions through charts and graphs with metrics.

The dashboards delivered in M3 Analytics are designed to cover a business process within a single domain in a company, as well as cover a specific topic within a domain in the company. Several dashboards in the Finance, Sales, Procurement, and Production domains are designed based on this logic.

Each dashboard is built up by a number of widgets. Within the dashboard, all widgets are connected with each other through the widget communication. This means that if a user performs changes for one widget, for example changing a filter, that change is propagated through all widgets within the dashboard.

Required products

Ensure that you have installed and configured the necessary hardware and software for all of these components:

- Infor M3 BE
- Infor Business Vault Data Warehouse Designer
- Infor Business Vault Enterprise Edition
- Infor Business Intelligence including the OLAP Server
- Infor Operating Service (OS)

See the *Infor M3 Analytics Release Notes* for the supported release versions of these software components.

Process overview

The Extract, Transform, Load (ETL) process is used to update the operational data to the data warehouse.

The term Extract applies to the process of extracting operational data from the data sources to the staging database. The data is then transformed and filtered using compiled DWD components that are created and stored in the DWD catalog. The transformed data is loaded into dimensions and fact tables in the data warehouse. OLAP cubes are created in Business Vault Analytic Modeling to provide the user-requested views of the data.

This process involves both ETL jobs and publications.

ETL jobs

For information about ETL jobs, see *Managing ETL jobs* and *Working with ETL jobs* in *Infor Business Vault Data Warehouse Designer Administrator Guide*.

M3 Analytics also provides the Data Flow Validation model that can be used to monitor the ETL.

Data Flow Validation

The purpose of the Data Flow Validation model is to provide a tool for monitoring the ETL process. Apart from capturing counts of records and execution time, it also provides information about exception records and the data flow. With this model, you will have information on the overall performance of the latest run of the ETL jobs as well as historical data of previous runs. Comparisons between runs are made easy by providing measure for average, minimum, and maximum duration. This information is captured:

- Current/Previous record count
- Min/Max record count
- ETL execution information

- Duration
- Rows read/inserted/updated
- Number of exception records in a dimension
- Total duration
 - Minimum
 - Maximum
 - Average

Requirements

For the Data Flow Validation model to capture ETL statistics, the model must be run only after all other models have finished running. The model only captures information on compiled objects.

The ETL statistics is stored in the Data Validation fact table. Available dimensions for analysis are ModelObjects, ModelHierarchy, and ExceptionTracker:

ExceptionTracker and exception handling

The ExceptionTracker tracks the result of the exception handling that is done in the data warehouse. Exception handling is a DWD feature that adds keys for missing dimension data. The records are inserted in the dimension tables with status 255.

Records with status 255 indicate an issue with the data in M3 and can be corrected in the next run of the ETL. The exception statistics shows a count of the 255 records at the time the ETL job was run. When performing a detailed analysis of the 255 records, the corresponding record might have been corrected and will not be present in the dimension table.

Data cleansing

When running the Data Flow Validation model, the first step is to cleanse the 255 records filled with NULLs to have blanks, zeros, or N@s, depending on field.

Historical data

The DataValidation_MinMaxDays variable controls the number of days a data is retained in the model. Depending on the setting, the N number of days/records (for a given object) will be kept in storage. If the variable is set to 5, the model will keep five days of records in the Stage1 composer. The oldest record will be deleted.

Data Flow Validation report

You can use the ModelObject – Combination report to analyze the information that is provided by the Data Flow Validation model. The report queries the model directly and combines the perspectives given by the ModelObjects, ModelHierarchy, and ExceptionTracker dimensions into one tabular report.

The data can be filtered by model and date. By selecting, for example, Sales in the model filter, all fact tables in the model are displayed. The report allows for drilling into a fact table to show the underlying objects in a hierarchical structure.

Exception record counts are available for dimensions. You can further analyze these records by clicking a value to show the ModelObject- Dialog Exceptions report with data for a specific dimension. Further analysis of dKeys is possible in the ModelObject- Dialog Exceptions Details report.

The dimensions are used across models, and the record exception counts are for all models in the solution for a given dimension.

Measures

Measure	Report	Description
RecordCount	Record Count	Number of rows currently in the object.
PrevRecordCount	Prev Record Count	Number of rows from the previous run of the Data Validation Model.
Min_RecordCount	Min	Lowest record count for the object within the last N days, where N is the value in the variable DataValidationMinMaxDays.
Max_RecordCount	Max	Highest record count for the object within the last N days, where N is the value in the variable DataValidationMinMaxDays.
Duration in_Minutes	Duration	Object execution time (minutes).
Duration in_Seconds		Object execution time (seconds).
RowsRead	Rows Read	Number of rows read from the object.
RowsInserted	Rows Inserted	Number of rows inserted in the object.
RowsUpdated	Rows Updated	Number of rows updated in the object.
ExceptionRecordCount	Exception Record Count	Number of 255 rows in the object, only for dimensions.
Total_Duration	Total Duration	The total execution time from source extractions to fact table loading. Applicable to fact and dimension tables only.
Total_Duration_Min	Total Duration (min)	The fastest execution time from source extractions to fact table loading for a given object within the last N days, where N is the value in the variable DataValidationMinMaxDays. Applicable to fact and dimension tables only.

Measure	Report	Description
Total_Duration_Max	Total Duration (max)	The slowest execution time from source extractions to fact table loading for a given object within the last N days, where N is the value in the variable DataValidationMinMaxDays. Applicable to fact and dimension tables only.
Total_Duration_Avg	Total Duration (avg)	The average execution time from source extractions to fact table loading for a given object within the last N days, where N is the value in the variable DataValidationMinMaxDays Applicable to fact and dimension tables only.

Total Duration

Total Duration is calculated as the sum of all durations of objects under a given fact table. If an object is present more than once in the fact table hierarchy, it will be counted once only.

Publications

You can monitor publications through Publications Monitor in Business Vault or through OLAP jobs.

Publications Monitor

- 1 To monitor the loading of data in OLAP cubes, log in to Business Vault.
- 2 Select Monitoring > Publications Monitor to view a list of published jobs.
- 3 Click Details to view the Process Report. The report includes details of the objects that are published and error codes, if any.

See Process report codes and messages in *Infor Business Vault Analytical Modeling User Guide* and Error Codes for Infor BI OLAP Server in *Infor BI OLAP Server Development Kit (OLAP SDK)*.

OLAP jobs

The Jobs report reads the error log of the OLAP jobs database. The report lists all the load from source jobs that are run. The report shows the types of jobs, when they ran, and whether they ran successfully.

You can view the details of any errors that are reported. Additionally, you can filter the report by group, type, and status. Use the Business Vault publication process ID and OLAP job numbers to search for process and error reports.

To view these reports, log in to Infor BI dashboard. On the M3 Analytics tab, select OLAP Administration > Jobs.

Setting up users

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SQL Server Management Studio is used to authorize users to Infor Data Warehouse Designer.

See the *Infor Business Vault Administration Guide* for information to authorize users to the Business Vault application.

See the *Infor Business Intelligence Installation Guide* for information to authorize users to Infor BI. Upon installation, only basic authentication is used.

See "[Assigning a Preconfigured Permission set](#)" on page 39.

Access BI Content

Infor BI provides a role-based security concept. You can secure BI content on these levels:

- Restrict access to an application
- Restrict access to dashboards
- Restrict access to Application Studio Reports
- Restrict access to OLAP data

Assigning users to BI Application Roles (cloud)

Application roles help improve the usability of the role-based BI security. These roles can be used to restrict the user's access to reports and dashboards.

Infor M3 Analytics provides these standard application roles:

- Distribution industry
M3A Finance User, M3A Procurement User, M3A Production User, M3A Quality Management User, M3A Sales User, and M3A Warehouse User
- Equipment industry
M3A Equipment User, M3A Finance User, M3A Procurement User, M3A Production User, M3A Rental User, M3A Sales User, and M3A Warehouse User
- Fashion industry
M3A Finance User, M3A Procurement User, M3A Production User, M3A Quality Management User, M3A Sales User, and M3A Warehouse User
- Food and Beverage industry
M3A Finance User, M3A Procurement User, M3A Production User, M3A Quality Management User, M3A Sales User, and M3A Warehouse User
- Manufacturing industry
M3A Finance User, M3A Procurement User, M3A Production User, M3A Quality Management User, M3A Sales User, and M3A Warehouse User

Role name	Grants access to
M3A Equipment User	<ul style="list-style-type: none"> Dashboards in the Equipment Analysis folder: Warranty Claims Manager, Service Center Manager, Service Planner, Fleet Manager, and Reliability Manager In the M3 Analytics Catalog folder, dashboards in these subfolders: Contract Profitability, Equipment Profitability, Equipment Reliability, Labor Resource Analysis, Technician Performance, and Warranty Claims Warranty Claims Drillback Dashboard Equipment Reliability Drillback Dashboard Dashboards in the Self-Service folder: Self-Service and Chart Guide Reports in folders: Contract Profitability, Equipment Profitability, Equipment Reliability, Labor Resource Analysis, Technician Performance, Warranty Claims, and Self-Service In the Drillback folder: Warranty Claims Drillback and Equipment Reliability Drillback In-Context widgets: Billable Trend, Labor Util % Trend, Labor vs Travel Trend, Labor vs Travel YTD, Revenue and Margin % Trend, Revenue vs Cost Trend, and Technician Util % Trend <p>Users with these roles can view dashboards and reports, and browse folders. They can create new dashboards but not modify any existing ones.</p>

Role name	Grants access to
M3A Finance User	<ul style="list-style-type: none"> • Dashboards in the Financial Performance Measurement folder: Ratios, Income Statement, and Balance Sheet • Dashboards in the Finance Manager folder: Accounts Receivable, Accounts Payable Operational Metrics, Accounts Receivable Performance, Accounts Receivable Operational Metrics, Stock Valuation, and Purchase Price Variance • In the M3 Analytics Catalog folder, dashboards in these subfolders: AP Operational Metrics, AR Operational Metrics, Credit Management Performance, Finance Key Ratio, Invoice Accuracy, Purchase Price Variance, and Stock Valuation • AP Supplier Invoice Drillback Dashboard AR Customer/Payer Drillback Dashboard AR Customer Invoice Drillback Dashboard • Dashboards in the Self-Service folder: Self-Service and Chart Guide • Reports in folders: AP Operational Metrics, AR Operational Metrics, Credit Management Performance, Finance Key Ratio, Invoice Accuracy, Purchase Price Variance, Stock Valuation, and Self-Service • In the Drillback folder: Accounts Payable Supplier Invoice Drillback, Accounts Receivable Customer/Payer Drillback, and Accounts Receivable Customer Invoice Drillback • In-context widgets: Amt Paid Past Due Date Trend, Avg Days – Due and Pmt Trend, Days Receivable Trend, Efficiency Index Trend, Outstanding Receivable Trend, Purchase Order Variance Trend, Receivable Index Trend, Stock Valuation, and Top 5 FAM Functions YTD <p>Users with these roles can view dashboards and reports, and browse folders. They can create new dashboards but not modify any existing ones.</p>

Role name	Grants access to
M3A Procurement User	<ul style="list-style-type: none"> Dashboards in the Supply Chain folder: Supplier Performance, Purchase Manager, and Procurement Quality Inspection In the M3 Analytics Catalog folder, dashboards in these subfolders: Procurement Analysis, Purchase Orders, and Quality Inspection Procurement Drillback Dashboard Dashboards in the Self-Service folder: Self-Service and Chart Guide Reports in folders: Procurement Analysis, Purchase Orders, Quality Inspection, and Self-Service In the Drillback folder: Purchase Order Drillback In-context widgets: Delivery Accuracy – Lines, Delivery Accuracy – Qty, Lines with Rejection %, Purchase Agreement Trend, Qty and Time Accuracy Trend, Undelivered PO Trend, Rejected Qty Trend, and Rejection Reasons <p>Users with these roles can view dashboards and reports, and browse folders. They can create new dashboards but not modify any existing ones.</p>
M3A Production User	<ul style="list-style-type: none"> Dashboards in the Supply Chain folder: Production Manager In the M3 Analytics Catalog folder, dashboards in these subfolders: Material Variances, Operation Analysis, Order Costing, and Work Center Utilization. Dashboards in the Self-Service folder: Self-Service and Chart Guide Reports in folders: Material Variances, Operation Analysis, Order Costing, Work Center Utilization, and Self-Service In-Context widgets Actual vs Standard Cost, Costing Components YTD, Manufactured vs Order Qty, Scrap Analysis Trend, Top Material Cost Var % YTD, Total Cost Variance % Trend, and Work Center Util Trend <p>Users with these roles can view dashboards and reports, and browse folders. They can create new dashboards but not modify any existing ones.</p>

Role name	Grants access to
M3A Rental User	<ul style="list-style-type: none"> • Dashboards in the Equipment Analysis folder: Rental Manager • In the M3 Analytics Catalog folder, dashboards in this subfolder: Rental Utilization • Dashboards in the Self-Service folder: Self-Service and Chart Guide • Reports in folders Rental Utilization and Self-Service • In-context widgets: Financial Util % Trend and Time Util % Trend <p>Users with these roles can view dashboards and reports, and browse folders. They can create new dashboards but not modify any existing ones.</p>

Role name	Grants access to
M3A Sales User	<ul style="list-style-type: none"> Dashboards in the Sales Dashboard folder: Sales Manager, Sales Manager Budget, Sales Margin Erosion, Sales Delivery Performance, Sales Manager Margin, Customer Open Orders, and Fashion Sales (Fashion only) Dashboards in the Food and Beverage folder: Catch Weight Analysis (Food and Beverage only) Sales Drillback Dashboard Dashboards in the Self-Service folder: Self-Service and Chart Guide In the M3 Analytics Catalog folder, dashboards in these subfolders: Delivery Performance, Sales Analysis, Sales Budget, and Sales Orders Reports in folders: Delivery Performance, Sales Analysis, Sales Budget, Sales Orders, and Self-Service In the Drillback Folder: Sales Order Drillback In-context widgets: COGS vs Invcd Net Amt, Delivery Performance Trend, Discount % Trend, Sales Volume Trend, Sales Budget Invoiced Qty YTD, Sales Margin Trend, and Top 5 Products YTD <p>Users with these roles can view dashboards and reports, and browse folders. They can create new dashboards but not modify any existing ones.</p>
M3A Warehouse User	<ul style="list-style-type: none"> Dashboards in the Supply Chain folder: Warehouse Management In the M3 Analytics Catalog folder, dashboards in this subfolder: Stock Transactions Statistics Dashboards in the Self-Service folder: Self-Service and Chart Guide Reports in folders: Stock Transactions Statistics and Self-Service <p>Users with these roles can view dashboards and reports, and browse folders. They can create new dashboards but not modify any existing ones.</p>

Role name	Grants access to
M3A Quality Management User	<ul style="list-style-type: none"> Dashboards in the Supply Chain folder: Quality Manager In the M3 Analytics Catalog folder, dashboards in this subfolder: Quality Management Dashboards in the Self-Service folder: Self-Service and Chart Guide Reports in folders: Quality Management and Self-Service <p>Users with these roles can view dashboards and reports, and browse folders. They can create new dashboards but not modify any existing ones.</p>
Built-in BI Repository Roles (AdministratorRole, DesignerRole, MasterRole, and ViewRole)	<ul style="list-style-type: none"> Dashboards in the Self-Service folder: Self-Service, Data Configuration, and Chart Guide Reports in folders: Dataflow Validation, Permission Manager, OLAP Administration, and General <p>Note: These built-in roles have access to all reports and dashboards by default.</p>

You can assign IFS users or IFS roles to the standard roles by using the Manage Users and Permissions dashboard in BI Application Manager.

For more information, see the *Infor BI Online Help*.

Note: The application roles have corresponding User Groups on the repository level, which are named identically. The application roles are not allowed to access the Dataflow Validation reports, OLAP Administration reports, Permission Manager reports, or the configuration pages. Users who must have access to these should be included in the general Administrator role.

Assigning users to standard basic groups (on-premise)

See the Application Roles table in "[Assigning users to BI Application Roles \(cloud\)](#)" on page 17 for a list of standard basic groups that M3 Analytics provides.

You can assign users or user groups to the standard groups in Infor BI Repository Administration. See the *Infor BI Online Help* for more details.

If you require additional restrictions that are not covered by existing application roles, you can create additional application roles in Infor BI Repository Administration. See "[Creating application roles](#)" on page 40.

See the *Infor M3 Analytics for <Industry> Technical Guide* for information on extending the Analytics product.

See the Infor BI documentation for details on security controls.

Restricting access to OLAP data

OLAP Server provides extensive access security. There are two levels of access permission for OLAP Server databases.

- Global access permissions enable access to the database and control the ability of users to manipulate the database structure.
For cloud: The global permissions are defined when creating application roles in BI Application Manager.
For classic Infor BI 11: The global permissions are defined when creating OLAP Permission Management roles in Repository Administration.
- The global permissions are defined when creating OLAP Permission Management roles in Repository Administration.

Note: If a user is a member of the AdministratorRole role, then permissions are not checked.

Data access permissions are stored as values in access cubes. Access cubes grant access permissions for each role. All access cubes contain a role dimension (_GDP). The types of access cubes are these:

- TABACC Cube access control. Stores permissions for each cube. The cube has a dimension that lists the cubes of the database. All OLAP databases contain a TABACC cube.
- DAC Dimension access control. Controls access to the elements of a dimension. The cube contains the dimension to be secured. DACs are manually created in Analytic Modeler.
- MDAC Multi dimension data access control. Controls access to individual cells of a cube. MDACs are manually created.

You can assign these permissions:

Permission	Value in database
No access	0
Read access	1
Write access	2
Default	empty
The default is configured in the database and can be Read, Write, or None.	
Pass No access (DAC only)	8

Permission	Value in database
Pass Read access (DAC only)	9
Pass Write access (DAC only)	10

In a DAC, if you apply a Pass permission to an element that has child elements, then the child elements inherit the permission. The permission is inherited all the way down the hierarchy until another permission is encountered.

Passed permissions have these values in the database:

Passed permission	Value
None	16
Read	17
Write	18

Securing dimensions

To set up dimension security:

- 1 Create a dimension security access cube in the Infor Business Vault.
- 2 Configure that the dimension shall use the access cube.
- 3 Maintain the permissions within the dimension access cube.

See "[Maintaining Permissions in Infor BI Access Cubes](#)" on page 26.

Setting up dimension security in Business Vault

You can add a security access cube to a dimension in the Business Vault. The security applies to all members in the dimension, regardless of the hierarchies in the dimension.

See the *Infor M3 Analytics for <Industry> Technical Guide* for additional information on extending, or customizing, dimension definitions.

See the *Infor Business Vault Analytic Modeling User Guide* for more information on dimension access control setup and publishing dimensions.

Securing cubes

To set up cube access control:

- 1 Specify access control for the cube in Infor Business Vault.
- 2 After you publish the cube, manage permissions within the TABACC cube to determine which roles can see or change which cubes.

See "[Maintaining Permissions in Infor BI Access Cubes](#)" on page 26.

Setting up cube access control in Business Vault

You can specify access control for a cube definition in the Business Vault. Publish the cube to OLAP Server to set the access control.

See the *Infor M3 Analytics for <Industry> Technical Guide* for information on extending cube definitions.

See the *Infor Business Vault Analytic Modeling User Guide* for more information on cube access control and publishing cubes.

See the *Infor Business Vault Analytic Modeling User Guide* for more information on editing cube definitions and publishing cubes.

Maintaining Permissions in Infor BI Access Cubes

- 1 Go to Permission Manager > Manage OLAP Permissions.
- 2 Select the data source and the access cube.
In each cell of the table, an icon indicates the permission that is applied.
- 3 To assign a permission, click an icon in the table and select from the list of permissions that is displayed. You can assign permissions individually.
- 4 If you click a permission in the toolbar you can apply that permission repeatedly to cells that you select. The selected permission is highlighted in the toolbar. To revert to using the list of permissions, click the toolbar icon twice.
- 5 Use the Roles button to control which elements of the columns dimension are displayed. Click Roles and select Select elements. In the Select Element dialog, select the elements to display. To display all elements, click Roles and select Show all.

These configuration reports are included in the front-end delivery:

- Configuration Page
- Drillback Configuration Page

They are, by default, not accessible to any of the standard application roles provided within the M3 Analytics delivery.

Uses of the Configuration Page

Similar to how variables function, the M3 Analytics Configuration Page helps adopt the way M3 is configured to be used. It can be used in these configurations:

- Define whether the Manufacturing Period is based on Weeks.
- For Equipment only, define whether Equipment Period is based on Weeks.
- Select between the Simple hierarchy and the Class hierarchy in Accounting Dimension 2/Cost Center.
- Select the Account hierarchy for the Account dimension. The available options are Simple, Class, and Group.
- Customize a target value (two decimals) for Receivable Index, which is used in AR Operational Metrics reports. Default is 1.00.
- Customize a target value (two decimals) for Invc and Recon, which is used in AP Operational Metrics reports. Default is 25.00.

Uses of the Drillback Configuration Page

M3 Analytics is delivered with a specific configuration page for drillback reports. It can be used in these configurations:

- Define the URL to the instance of M3 that the drillback action will be performed against
- Customize drillback actions

Drillback reports are delivered with predefined actions and can support up to four drillback actions to different programs in M3 BE. Each drillback action can be either active or inactive, and you can change its settings. You can also edit the predefined drillback actions to customize them to fit your business needs. When editing the actions, ensure that the parameters correspond to the requirements of the program in M3 BE.

You should not customize drillback default actions that have FieldNames configured, such as for Accounts Payable and Accounts Receivable drillback. Assigning values for FieldNames in the report is done with different approach as the other parameters, so customizing it might cause the report to not work correctly. For additional information about FieldNames, see the *Infor M3 Analytics for <Industry> Technical Guide*.

Drillback actions for each drillback report

These actions are defined for each drillback report.

Purchase Orders

- 1 Program=PPS200;TableName=MPHEAD;Option=5;Panel=E;KeyNames=IACONO,IAPUNO
- 2 Program=PPS220;TableName=MPLINE;Panel=B;SortingOrder=1;KeyNames=IBCONO,IBPUNO,IBPNLI,IBPNLS

Sales Orders

- 1 Program=OIS100;TableName=OOHEAD;Option=5;Panel=E;KeyNames=OACONO,OAORNO
- 2 Program=OIS120;TableName=OOHEAD;Option=5;Panel=E;KeyNames=OACONO,OAORNO
- 3 Program=OIS130;TableName=OOLINE;Panel=B;SortingOrder=1;KeyNames=OBCONO,OBORNO,OBPONR,OBPO SX
- 4 Program=OIS300;TableName=OOHEAD;Panel=B;SortingOrder=1;View=F73;KeyNames=OACONO,OAORNO

Accounts Payable Supplier Invoice

- 1 Program=APS200;TableName=FPLEDG;Panel=B;SortingOrder=1;KeyNames=EPCONO,EPDIVI,EPYEA4,EPJRNO,EPJSNO;FieldNames=WLSINO,WWSPYN,WWSUNO,WWINVT
- 2 Program=APS205;TableName=FPLEDG;Panel=B;SortingOrder=1;View=STD01-01;KeyNames=EPCONO,EPDIVI,EPYEA4,EPJRNO,EPJSNO;FieldNames=WWSINO,WWINVT

Accounts Receivable Customer/Payer

- `Program=ARS200;TableName=FSLEDG;Panel=B;SortingOrder=1;KeyNames=ESCONO,ESDIVI,ESYEA4,ESJRNO,ESJSNO;FieldNames=WWPYNO,WWCUNO,WWINVT`

Accounts Receivable Customer Invoice

- `Program=ARS205;TableName=FSLEDG;Panel=B;SortingOrder=1;View=STD01-01;KeyNames=ESCONO,ESDIVI,ESYEA4,ESJRNO,ESJSNO;FieldNames=WWCINO,WWINYR,WWOPCL`

Drillback actions for Equipment industry

These actions are specifically defined for the Equipment industry.

Equipment Reliability

- 1 `Program=MOS100;TableName=MMOHED;Option=5;Panel=E;KeyNames=QHCONO,QHFACI,QHPRNO,QHMWNO`
- 2 `Program=MOS101;TableName=MMOMAT;Panel=B;SortingOrder=1;KeyNames=QMCONO,QMFACI,QMPRNO,QMMWNO,QMMSEQ`

Warranty Claims

- 1 `Program=MOS750;TableName=ACLHED;Option=5;Panel=E;KeyNames=AZCONO,AZCLNO`
- 2 `Program=MOS751;TableName=ACLSPC;Panel=B;SortingOrder=1;KeyNames=AZCONO,AZCLNO,AZVENO,AZCLSP`

Enabling auto-publishing of Infor Business Context in Infor Ming.le

The Business Context messages are required to be able to run In-Context widgets. These can be enabled by the user in each individual screen where ICBI should be available, or auto-publishing can be enabled by an administrator.

When auto-publishing is enabled, the Infor Business Context messages are published on all panels that are running in Infor Ming.le. Enabling this setting removes Infor Business Context from the Context Publisher menu.

- 1 From the application menu, select Administration Tools > Administration Tools > H5 Settings tab.
- 2 In the Application settings section, enable this setting:
Enable automatic publishing of Infor Business Context in Ming.le
- 3 Click Save.

This section includes troubleshooting information for these products:

- Infor Data Warehouse Designer
- Infor BI
- Infor Business Vault

Troubleshooting Data Warehouse Designer

See the product documentation for information to troubleshoot issues with DWD processes.

Troubleshooting when ETL job execution fails

Cause: The ETL job fails when performing one of these steps:

- Full Extraction of [M3 Sales Budget Data Set] step
- User Transformation step of Dim_PD_ManufacturingPeriod, Dim_PD_SalesBudgetPeriod, or Dim_PD_FiscalPeriod

Solution:

- 1 In DWD, under the Execution menu, select Background Jobs.

In the Background Jobs in SQL Server Agent window, select the failed ETL job, for example, M3A1121 - M3A Daily ETL, and click the Starts selected job in SQL Server Agent button in the left bottom corner.

- 2 In the <Repository prefix> - M3A Daily ETL window, for example, M3A1121 - M3A Daily ETL, scroll down to find which job failed to execute.
- 3 If the execution fails in the Full Extraction of [M3 Sales Budget Data Set] step:
 - a Select the next step and click Start.

- b** When ETL job execution is completed, use SQL Server Management Studio to remove or skip the step to extract M3 Sales Budget Data Set from the SQL Server Agent. The M3 Sales Budget Data Set table can be read after the customer creates a budget data set in M3.
- 4** If execution fails in the User Transformation step of Dim_PD_SalesBudgetPeriod, Dim_PD_ManufacturingPeriod, Dim_PD_FiscalPeriod, or Dim_PD_EquipmentPeriod, and this message is displayed:

```
Procedure <SP name> has no parameters and arguments were supplied. [SQLSTATE 42000] (Error 8146).
The step failed.
```

- a** You must apply the latest fix pack for DWD version 11.3.004 because this issue occurs only on this DWD version. After applying the fix pack, generate the ETL job again.
- b** If the fix pack is not applied, modify the corresponding job steps and delete 'F' in the Command text box to remove the parameter.

For example, in the Job Step Properties window of the User Transformation step, change **exec [xFD__Dim_PD_ManufacturingPeriod]'F'** to **exec [xFD__Dim_PD_ManufacturingPeriod]**.

Note: Parallel Extract steps can also be implemented or considered if data volumes are high. In Parallel Extract, multiple tables of data are pulled from multiple tables in M3 at the same time.

Troubleshooting when an ETL job stops responding

Solution:

- 1** Access SQL Server Management Studio.
- 2** Run the command `exec_sp_updatestats` on the table where the ETL job stops responding.

Setting the Sales Budget Dataset

Solution:

- 1** In DWD Designer, click the Data Sources tab.
- 2** Go to All Data Sources > M3_15_1_X > schema.
- 3** Right-click "LBI1 (#Sales_Budget_Dataset_Name)" and select Properties.
- 4** In the Overview panel, select Compilation & categorization.
- 5** Click Modify Categorization.

- 6 In the Table View Name in database, specify the M3 Sales Budget Data Set created in M3. Click OK.
- 7 Right-click LBI1 and select Uncompile > Delete SSIS package.
- 8 After object is uncompiled, right-click LBI1 again and select Compile.

ETL job fails with "Invalid object name <Dim_Period_Locale>"

Cause: Locale tables were not installed in the datamarts database during BMM installation.

Solution: Reinstall all BMMs. See the Installing BMMs section of the *Infor M3 Analytics Installation Guide*.

Arithmetic overflow or string truncation issue

See KB 1860031 "M3 Analytics: How to Resolve Arithmetic Overflow or String Truncation Issue."

Troubleshooting Infor Business Vault

See the *Infor Business Vault Analytic Modeling User Guide* for information on troubleshooting analytic modeling issues such as hierarchy, dimension, and cube definitions, publications, publication schedules, and publication monitor errors. See the *Infor BI OLAP Server Development Kit (OLAP SDK)* for error details.

For on premise: Use BusinessVaultUI.log file when troubleshooting analytic modeling issues.

Use the OLAP Server Jobs report to see the dimensions and cubes that are published to Infor BI OLAP Server. See "[OLAP jobs](#)" on page 14.

Use the Business Vault publication process ID and OLAP job numbers to search for process and error reports.

Common publication errors

Error tableName: <tablename>_Locale columnName: null database related error

Cause: Locale tables were not installed in the datamarts database during BMM installation.

Solution: Install all BMMs again in DWD. See the *Infor M3 Analytics Installation Guide*.

OLAP Server error status: 26 (The dimension could not be found)

Cause: Dimension publication is not completed successfully.

Solution: Run the dimension publication in Business Vault.

OLAP Server error status: 65 (Dimension element could not be found)

Cause: Dimension publication is not completed successfully.

Solution: Run the dimension publication in Business Vault.

OLAP Server error status: 299

Cause: There is a NULL value in one of the fields that is used in the hierarchy.

Solution: Ensure that the Data Flow Validation job runs successfully after the ETL job. See the Create the M3 Analytics ETL job section of the *Infor M3 Analytics Installation Guide*.

OLAP Server error status: 196 (One element name contains invalid characters)

Cause: Some elements of the dimension had invalid characters. The element might contain one of these characters:

- [,]
- <TAB>
- <Carriage Return>
- <Line Feed>

Solution: Correct the data in M3.

Publication does not end immediately

Cause: OLAP Target is inactive.

Solution: Activate the OLAP Target:

- 1 In Business Vault, go to Analytic Modeling > Publication Targets.
- 2 Select the M3 Analytics Target, and click the Activate button in the toolbar.

The status of the publication changes from Inactive to Active.

Cause: Standard and target database connections are not configured properly.

Solution: Check the JDBC and ODBC URLs of both standard and target connections:

- 1 In Business Vault, go to Administration > Database Connections.
- 2 Drill-down to the Standard Database Connection. Under the Parameters section, select Advanced.

- In JDBC URL, ensure that the server and database names are correct.
 - In ODBC URL, ensure that the driver specified exists in the machine (e.g. SQL Server or SQL Server Native Client 11.0), and the server and database names are correct.
- 3 Specify the connection information and test the connection.
 - 4 After making sure that the connection is successful, save the standard database connection.
 - 5 Perform the same procedure for the target database connection.

Troubleshooting BI

See the product documentation for information on troubleshooting issues and errors in publishing dimensions and cubes to Infor BI OLAP Server. Use the OLAP Server Jobs report to investigate jobs, data exceptions, and errors. See "[OLAP jobs](#)" on page 14.

For on-premise, use the ALEAPR log file when troubleshooting OLAP Server issues.

Adding Business Context in M3 BE

This Business Context is required to be able to run the Finance widget Top 5 FAM Functions YTD:

M3 BE Field	Seq Number	Entity Code
FNCN	1	InforAccountingTransactionEntryType

These Business Contexts are required to be able to run the Equipment In-Context widgets:

M3 BE Field	Seq Number	Entity Code
EMNO	1	InforEmployee
SERN	1	InforEquipment
ITNO	2	InforEquipment
PLGR	1	InforWorkCenter
FACI	2	InforWorkCenter

You should add a Business Context in M3 BE to make sure that the In-Context widgets will work. See these JIRA tickets for the prerequisites for Finance:

- For M3 BE 15.1.3: JT-1075856
- For M3 BE 15.1.4: JT-1075857

See these JIRA tickets for the prerequisites for Equipment:

- For M3 BE 15.1.3: JT-1049854
- For M3 BE 15.1.4: JT-1049855

To add the required Business Context manually, perform these steps:

- 1 Download the MTest application, which is included in the M3 API Tool package, from the Infor Product Download Center. Open the application.
- 2 Click Configuration to open the Configuration settings MI-Test window.
- 3 Log on by specifying information that is related to your M3 BE installation in the Host name/address, Socket port, and Description fields. Click OK.
- 4 In the Program field, specify MNS035MI.
- 5 In the Cono/Divi, specify your company and division, for example, 760AAA.
- 6 Click Connect.
- 7 When connected, select AddEntityMap from the field list below the Command string field.
- 8 Refer to the table above to specify information in these fields:

Field	Specify an M3 BE field, for example, EMNO.
Sequence number	Specify the corresponding sequence number for the field. For example, specify 1 for the EMNO field.
Infor Standard entity code	Specify the corresponding entity code for the M3 BE field. For example, for the EMNO field, specify InforEmployee.

- 9 Press Enter to apply the settings.

List of Incontext Widgets is not displayed in the drop-down list

Cause: The In-Context utility app is not configured correctly.

Solution: Ensure that the repository information specified in Infor Ming.le is correct.

M3 does not run after clicking on a program

Cause: The Logical ID of M3 might be incorrect.

Solution: Make sure that the Logical ID provided in the Drillback Configuration Page is correct.

Only the BI Widget is available in the list

Cause: The required M3 Analytics start widgets were not configured.

Solution: See the Creating the M3 Analytics start widgets section in the *M3 Analytics Installation and Configuration Guide*.

The start widgets do not load

Cause: The required M3 Analytics start widgets were not configured.

Solution: Ensure that the Content Connection unique name and Report unique name values are correctly set for both widgets.

Adding BI Repository authentication methods

A set of application roles for each domain is included with Analytics. These roles are bundled in User Groups which can be assigned to the Windows, IFS, or basic users of your organization.

See the *BI Guide for Security and Roles*.

Adding Windows Authentication or other Authentication Methods

If you want to allow authentication methods, like Windows or LDAP, you must add the authentication method to your repository. After you add the authentication method, you can register Windows Users (Active Directory) or LDAP users in the BI User Management.

- 1 Open the Repository Administration.
- 2 Expand Repository Registrations.
- 3 Right-click the repository name and select Connect. Log-in to the repository.
- 4 Expand to User Management.
- 5 Right-click User Management and select Authentication Systems.
- 6 In the Authentication Systems window, click Register. The Register Authentication System dialog box listing the available authentication systems is displayed.
- 7 Select an authentication system, for example, Windows. Click OK.
The authentication system that you selected is listed in the Authentication Systems window.
- 8 If you selected Infor Federation Services, specify the authentication system properties:
 - a Select Infor Federation Services from the list of registered authentication systems.
 - b Click Properties.
 - c Specify this information:

Server URL	Specify the IFS server URL.
-------------------	-----------------------------

User name	Specify the user name.
------------------	------------------------

Password	Specify the password.
-----------------	-----------------------

- 9 Click OK.

Assigning a Preconfigured Permission set

You can assign a user group, which acts like a container for Application roles, to a user. With this role, the user can access a dashboard and see the widgets.

- 1 Open the Repository Administration.
- 2 Expand Repository Registrations.
- 3 Right-click the repository name and select Connect.
- 4 Specify this information:

Authentication	Specify Basic.
-----------------------	----------------

User name	Specify Admin.
------------------	----------------

Password	Leave blank. The Admin user has no password.
-----------------	--

- 5 Expand Infor BI Repository Administration > Repository Registrations.
- 6 Click the repository name and click User Management.
The Users and Groups tab shows the user roles. The Basic Groups tab shows the Group Dashboards Creator role.
- 7 To register a user to the list of allowed users:
 - a On the Users and Groups tab, click the Add users and groups button.
 - b Click Register Windows Users and Groups.
 - c Select your group domain from the list.
 - d Click the Search button.
 - e In the Search for Users and Groups window, specify the user or group name or the account name. Click Search.
 - f Click the name displayed in the search result and click OK. The user name added is displayed on the Users and Groups tab.
- 8 To add a single user to a role:
 - a Click the Users and Groups tab.
 - b Right-click the user. Select Basic Groups.

- c** In the Assign Basic Groups window, select a group name and click Add or double-click the group name. The selected group name is added to the list of basic groups assigned to the user.
 - d** Click OK.
- 9** To add multiple users to a role:
 - a** Click the Basic Groups tab.
 - b** Right-click for example, M3A Sales User, and select Assign Users and Groups.
 - c** In the Assign Users and Groups window, select a user name and click Add or double-click the user name. Repeat this step for all the user names that must be added to the specified basic group.
 - d** Click OK.

Creating application roles

Model roles are roles on Project Permission Management, Report Catalog Permission Management, Dashboard Catalog Permission Management, and OLAP Permission Management (OPM) level. Whenever a model is created, these roles are created and assigned to predefined permissions and built-in groups. Project roles, report catalog roles, dashboard catalog roles, and OLAP roles are merged into Application Roles in BI Services except the OLAP role BulkImport.

When developing the application roles using Repository Administration, you must manually create the single roles on all levels with the same name. You have to do this on all levels of the project, using consistent names.

An application role consists of a role with the same name in all levels of a project. For example, the application role Sales Executive in an analytic application is assigned to these levels:

- Project role
 - Report catalog role
 - Dashboards role
 - OPM role
- 1** Access Infor BI Repository Administration.
 - 2** Connect to the repository using an administrator account.
 - 3** Select the project. Project Permission Management is displayed in the work area.
 - 4** Click the Roles tab.
 - 5** Click the New Project Role button.
 - 6** Specify the role name and provide a description.

- 7 Click OK. The role is included in the list of available project roles.
- 8 After the role is created, right-click the role to assign users and project permissions.
Perform this procedure for all nodes of the project structure. The Project Data for M3 Analytics contains prebuilt roles that content developers can use to administer reports and dashboards permissions.

Note: Each role has to have at least the view Permission in the node where it is created.