QAD

Training Guide

Business Intelligence Application Level 1

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Contents

ABOUT THIS COURSE 15

BI CERTIFICATION PROGRAM OVERVIEW 18

BI Certification Program Overview 19

Agenda 20

Available BI Certifications 21
- BI Application Level 1 - Course Description 22
- BI Application Level 1 - Potential Participants 23
- BI Application Level 1 - Course Prerequisites 24
- BI Technical Level 1 - Course Description 25
- BI Technical Level 1 - Potential Participants 26
- BI Technical Level 1 - Course Prerequisites 27
- BI Technical Level 2 - Course Description 28
- BI Technical Level 2 - Potential Participants 29
- BI Technical Level 2 - Course Prerequisites 30

Certification Components 31
- Learning Path – Application Level 1 32
- Learning Path – Technical Level 1 34
- Learning Path – Technical Level 2 36

BI OVERVIEW 38

BI Overview 39

BI Overview - Course Agenda 40

Course Objectives 41

Why BI? 42
- Closed-Loop Decision-Making 45
- Areas for Investigation 46
- Value of BI 47
- Why BI? BI Domain Space 48
- BI Positioning 49
- Browses & Collections 50
- Operational Metrics 51
- Reporting Framework 52
- Business Intelligence 53
- Different Data Requirements 54
- Business Drivers 55
- Benefits of BI 56

Why BI? – Summary 57

Review Questions 58

BI – Basic Terms and Concepts 60
BI Glossary 61
Fact Tables, Facts & Measures 62
Dimensions 63
Facts - Dimensions – Star Schema 65
Facts & Dimensions 66

Review Questions 67

QAD BI Solution Overview 70
QAD BI Components 71
BI Architecture 72

QAD BI Data Warehouse Designer (DWD) 78
BI DWD – Key Features 79
BI DWD 80
Source & Target Data 81
Track Back and Where-Used 82
Documentation – Auto-Generated 83
BI DWD – Scheduler 84
BI Components 85

Review Questions 86

QAD BI Modules 88
BI Modules - Benefits 89

Review Questions 91

QAD BI Collaborative Portal 93
BI Portal 94
BI Portal Features 95

QAD BI Basic Technical Information 96
Technology and Architecture 97

BI Overview 99
BI Overview - Review 100

QAD BI Level 1 Learning Path -Next Steps for Certification! 102

BI PORTAL USER 103

BI Portal User 104

Course Overview 105

Course Objectives & Benefits 106

QAD BI - Review 107
QAD BI Components 108
BI Portal – User Roles 109

Logging in to the BI Portal 110
Access BI Portal 111
Login Screen 112

Using Dashboards 113
Dashboards 114
Parameter Bar 117
Enter Parameters 118
Dashboard – Visual Item Controls 119
Dashboard – Minimized Visual Items 120
Dashboard – Visual Item - Export 121
Dashboard – Visual Item Controls 122
Dashboard – Visual Item – Drill Down 123
Dashboard – Visual Item - Grids 125
Dashboard – Visual Item – Heat Maps 126
Dashboard – Visual Item – Gauges 127

Review Questions 128

Running Reports 130
Reports - Access 131
Reports – Dashboard Browse 132
Reports – Parameters 133
Reports – Export 134
Reports – BI Portal Menu 135
Reports – Drill Down from Visual Item 136
Reports – Drill Down from Report 137
Reports – Exit 138

Review Questions 139

Collaboration 140
BI Portal – Collaboration - Components 141
BI Portal – Collaboration - Forum Comments 146

Review Questions 148

BI Portal User Introduction 150
BI Portal User – Review 151

QAD BI Level 1 Learning Path -Next Steps for Certification! 153

BI MODULES 154

BI Modules 155

Course Overview 156

Course Objectives & Benefits 157

QAD BI - Review 158
QAD BI Components 159
BI Glossary 160
Fact Tables, Facts & Measures 161
Dimensions 162
Facts - Dimensions – Star Schema 164
Facts & Dimensions 165
Fact Table Types 166
Closed Loop Decision Making 167
Metrics vs. Indicators 168
KPI Characteristics 169
Dashboards & Visual Items 170

BI3 Current Modules 171
BI Modules v3.9 172
Standard BI Portal Objects 173
BI Modules – Financials 174
Financials – CFO Metrics 175
Financials – Submodules 176
Financials – General Ledger 177
Financials – Accounts Payable 180
Financials – Accounts Receivable 183

BI Modules – Order Management 186
Order Management Roles 187
BI Module – Order Management 188

BI Module – Order Management 191
Operations – Submodules 192
Inventory 193
Purchasing 194
Manufacturing Operations 197

BI Modules – Enterprise Asset Management (EAM) 200
BI Module – EAM 201
EAM Fact Tables 202

Transportation Management 206
Transportation Management - Dashboards 207
Transportation Management - Fact Tables 208

Dimensions 209
Dimensions 210

Review Questions 211

BI3 Modules - Documentation 214
BI User Documentation 215
BI Technical Documentation 217

QAD BI Level 1 Learning Path - Course Summary 219
BI Modules – Review 220

QAD BI Level 1 Learning Path -Next Steps for Certification! 221

BI PORTAL DESIGNER - QUERIES 222

BI Portal Designer - Queries 223

Course Overview 224

Course Objectives and Benefits 225

QAD BI - Review 226
QAD BI Components 227
BI Portal – User Roles 228
BI Portal – Key Components 229

Create a Query 230
Access Queries 231
Query Toolbar 232
Create Queries – Requirement 1 234
Create Queries 235
Create Queries – Select Items 236
Create Queries – Arrange Items 240
Create Queries – Remove Items 241
Create Queries – Sort Type 242
Create Queries – Requirement 2 243
Create Queries – Filters 244
Create Queries – Test Run 250
Create Queries – Query Results 251
Create Queries – Save Query 252
Review 254

More About Filters 255
Create Queries – Requirement 3 256
Add Filters 257
Test Run 260
Test Run Results 261
Create Queries – Requirement 4 264
Filter Child Group (Subfilter) 265
Test Run 266
Create Queries – Requirement 5 267
Summary Filter 268

Additional Query Capabilities 271
Tooltips 272
Create Queries – Requirement 6 273
Calculated Columns 274
Create Queries – Requirement 7 277
Compare By 278

Compare By – Test Run 279
Create Queries – Requirement 8 280
Query Options 281
Advanced Queries 283

QAD BI Level 1 Learning Path -Course Summary 286
BI Portal Designer – Queries – Course Overview 287

QAD BI Level 1 Learning Path -Next Steps for Certification! 288

BI PORTAL DESIGNER - REPORTS 289

BI Portal Designer - Reports 290

Course Overview 291

Course Objectives and Benefits 292

QAD BI - Review 293
QAD BI Components 294
BI Portal – User Roles 295
BI Portal – Key Components 296

Create a Report 297
Access Report Designer 298
Report Designer Toolbar 299
Report Information 300
Create Report – Requirements 302
Report Wizard 303
Select Query 304
Select Fields 305
Arrange fields 306
Add Field Formats 307
Report Groups 310
Add Subtotals and Totals 311
Report Layout 312
Report Parameters 313
Save Report 316
Preview Report 318
Report Navigation 320
Using the Report Wizard - Review 321
Report links – Detailed Report 322
Add Report Link 323
Action Binding 324
Action Target Item 325
Action Target Items 326
Report Links 328
Test Report Link 329
Modify Query 332
Reference By 333
Refresh Report Definition 334

Parameter Selection Source: Query Library 335
Create Lookup Query 336
Parameter Selection Source: Query Library 337
Test Parameter Source - Query 338
Report Parameter Source – Query 339

BI Portal – Report Designer – Course Summary 340
BI Portal – Report Designer 341

QAD BI Level 1 Learning Path -Next Steps for Certification! 342

PORTAL DESIGNER – VISUAL ITEMS AND DASHBOARDS 343

Portal Designer – Visual Items and Dashboards 344

Course Overview 345

Course Objectives and Benefits 346

QAD BI - Review 347
QAD BI Components 348
BI Portal – User Roles 349
BI Portal – Key Components 350

Create a Visual Item 351
Access Visual Item Designer 352
Visual Item Designer Toolbar 353
Visual Item types 354
Visual Item Requirements 356
Create New Visual Item 358
Select Query 359
Select Columns 360
Labels 361
Options 362
Change Chart Type 363
Review - Create a Chart 364

Link Visual Items 365
Visual Item Requirements 366
Create a Query 368
Create New Visual Item - Grid 369
Grid Options 370
Grid Columns 371
Action Type 372
Action Binding 373
Action Target Item 374
Action Item 375
Review - Create an Action Item 376
Link Visual Items – Drill Out Action Type 377

Dashboards 380

Simple Dashboard 382
Dashboard Designer 383
Test the Dashboard 385

BI Portal Designer – Visual Items and Dashboard – Course Review 387

Course Overview 388

QAD BI Level 1 Learning Path -Next Steps for Certification! 389

BI PORTAL DESIGNER – VISUAL ITEMS AND DASHBOARDS – PART 2 390

BI Portal Designer – Visual Items and Dashboards – Part 2 391

Course Overview 392

Course Objectives and Benefits 393

QAD BI - Review 394
QAD BI Components 395
BI Portal – User Roles 396
BI Portal – Key Components 397
Visual Items and Dashboards - Review 398
Visual Item types 399

Visual Items: Parameter Bar 400
Parameter Bar – Example Requirements 401
Lookup Queries 402
Create Parameter Bar 403
Create Parameter Bar - Year 404
Create Parameter Bar - Month 405
Define Corporate Dashboard Template 406
Add Parameter Bar to Dashboard 407
Visual Item Properties 408
Test Dashboard 409
Dashboard Properties 410
Visual Item – Pie Chart 411
Use Parameter Bar 414
Test Dashboard 415

Other Types of Visual Items 416
Visual Item types 417
Free Form Visual Item 418
Visual Item types 421
Visual Item Type: Links 422
Report Browser 423
Link List 424
Image 425

Visual Items: Collaboration 426
Collaboration - Messages 427

Collaboration Forums 428
Visual Item Type - Forums 430
Internationalization 432
Internationalization - Designer 433
Internationalization – Portal User 435

BI Portal Designer – Visual Items and Dashboards – Part 2 – Course Review 436

Course Summary 437

QAD BI Level 1 Learning Path -Next Steps for Certification! 438

BI PORTAL ADMINISTRATION 439

BI Portal Administration 440

Course Overview 441

Course Objectives and Benefits 442

QAD BI - Review 443
QAD BI Components 444
BI Portal – User Roles 445
BI Portal – Key Components 446

Portal User Security 447
New User 448
User Maintenance 449
Add User 450
Add New User – Build Security 451
Add New User - Email 452
Add New User – User Confirmation 453

Object Security Groups 454
Object Security 455
Add Object Security Group 456
Assign Object Security Group to User 457
Assign Security Group to Object 458
Test Object Security Group Changes 459

Data Security Model 460

Data Security Model - User 461

Data Security Model - Designer 462
Define New Data Security Model 463
Save Data Security Model 466
Associate Data Security Model to User 467
Data Security Model Builder 468
Data Security Model Builder - Results 469

Model Administration 470
Model Administration 471

Data Migration 473
Data Migration 474

Library Administration 475
Library Administration 476

Forum Administration 477
Collaboration Forums 478
Forums Administration 479

BI Portal Administration - Course Review 480
Course Summary 481

QAD BI Level 1 Learning Path -Next Steps for Certification! 482

INTRODUCTION TO DATA WAREHOUSE DESIGNER 483

Introduction to Data Warehouse Designer 484

Course Overview 485

Course Objectives and Benefits 486

QAD BI - Review 487
QAD BI Components 488
BI DWD – Key Features 489

DWD Interface 490
Logging in to QAD DWD 491
DWD Builder/Browser Window Panes 492
DWD Builder/Browser Panes 493
DWD Builder/Browser Toolbar 494
Wherescape RED© 495

DWD Concepts 496
Data Flow – Normalized Models 497

DWD Objects 498
Data Objects Types 499
DWD Object Builder 501
DWD Object Builder - Groups / Projects 502
DWD Object Builder – Groups / Projects 503
Connections 504
Load Tables 505
Load Tables - Properties 506
Staging Tables 507
Table Update Procedures 509
Dimension Tables and Dimension Views 510

Fact Tables 511
Data Stores 512
Cubes 513
Procedures 514
Index 515

Diagrams 516
Diagram 517
Source Tracking Diagram 520

Reports 521
DWD Reports 522
Fact to Dimension Matrix 523
Export Report To Excel 524

Course Review 525
Course Summary 526

QAD BI Level 1 Learning Path -Next Steps for Certification! 528

INTRODUCTION TO DATA WAREHOUSE SCHEDULER 529

Introduction to Data Warehouse Scheduler 530

Course Overview 531

Objectives and Benefits 532

QAD BI - Review 533
QAD BI Components 534

Scheduler Components 535
Data Flow 536
Scheduler Hierarchy 537
Common Task Actions 538
Objects & Procedures 539
Jobs and Tasks 540

Scheduler Navigation 541
Scheduler access 542
Scheduler Toolbars and Menus 543
Scheduler Panes 544

Scheduler States 545
Scheduler States - JOBS 546
Scheduler States - TASKS 548
Scheduler Status 549
Refresh Display 550

Troubleshooting Scheduler Issues 551
Audit Logs 552

Audit Trail at Job Level 553
Manually Starting a Job 554
DAILY_START 555

Scheduler Documentation 556
Job Diagram 557
Job Documentation 558
DWD Reports 559

Course Review 560
Course Review – DWD Scheduler 561

QAD BI Level 1 Learning Path -Next Steps for Certification! 562

Change Summary

The following table summarizes significant differences between this document and the previous version.

Date/Version	Description	Reference
October 2013/QAD BI 3.9	Minor changes throughout	--
March 2013/QAD BI 3.8.1	Rebranded for QAD BI 3.8.1	--
September 2011/QAD BI 3.5	Rebranded for QAD BI 3.5	--
March 2011/QAD BI 3.4	Rebranded for QAD BI 3.4	--
September 2010/QAD BI 3.3	Rebranded for QAD BI 3.3	--

About This Course

Course Description

This class is designed to teach the basic features and functions of QAD Business Intelligence. The topics include the QAD BI Portal (End User, Designer, and Administrator functions), QAD modules, and the QAD Data Warehouse Designer. Topics are presented and then practiced with hands-on exercises. On the last day, students will have the opportunity to test their understanding and knowledge by taking the BI App Level 1 Certification Exam, which covers the topics discussed during the class.

Course Objectives

This class is designed to provide you with a fairly intensive overview of BI: The major components, the current modules and some basic technical information. This class provides the baseline knowledge you need for the remaining BI Application coursework. The objectives for this course are very high level, but they are critical for you to achieve in order to progress along the certification path. Your objectives upon completion of this class and its associated activities in the Activities Handbook will be to be able to:

- Define key Business Intelligence concepts.
- Understand the main components of the BI Solution
- Demonstrate the basic functions available in QAD BI

Audience

This class is intended for QAD and partner services, QAD and Partner support, QAD customers, internal BI support, QAD R&D functional teams, and anyone who is preparing for QAD technical levels 1 and 2.

Prerequisites

There are no prerequisites for the BI Application Level 1 class. For reference, the following self-study videos and validation quizzes are available in the QAD Learning Center:

- BI 1-2 BI Overview
- BI 1-3 BI Portal
- BI 1-4 BI Modules
- BI 1-5 BI Portal Designer – Queries
- BI 1-6 BI Portal Designer – Reports
- BI 1-7 BI Portal Designer – Visual Items & Dashboards – Part 1
- BI 1-8 BI Portal Designer – Visual Items & Dashboards – Part 2
- BI 1-9 BI Portal Administration
- BI 1-10 Introduction to BI DWD
- BI 1-11 Introduction to BI DWD Scheduler

Course Credit and Scheduling

This course provides 30 credit units. It is designed to be taught in 5 days.

Virtual Environment Information

The hands-on exercises in this book should be used with the latest BI learning environment.

Additional Resources

If you encounter questions on QAD software that are not addressed in this book, several resources are available. The QAD corporate Web site provides product and company overviews. From the main site, you can access the QAD Learning or Support site and the QAD Document Library. Access to some portions of these sites depends on having a registered account.

http://www.qad.com/

QAD Learning Center

To view available training courses, locations, and materials, use the QAD Learning Center. Choose Education under the Services tab to access this resource. In the Learning Center, you can reserve a learning environment if you want to perform self-study and follow a training guide on your own.

QAD Document Library

To access release notes, user guides, training guides, and installation and conversion guides by product and release, visit the QAD Document Library. Choose Document Library under the Support tab. In the QAD Document Library, you can view HTML pages online, print specific pages, or download a PDF of an entire book.

To find a resource, you can use the navigation tree on the left or use a powerful cross-document search, which finds all documents with your search terms and lets you refine the search by book type, product suite or module, and date published.

QAD Support

Support also offers an array of tools depending on your company's maintenance agreement with QAD. These include the Knowledgebase and QAD Forums, where you can post questions and search for topics of interest. To access these, choose Visit Online Support Center under the Support tab.

CHAPTER 1

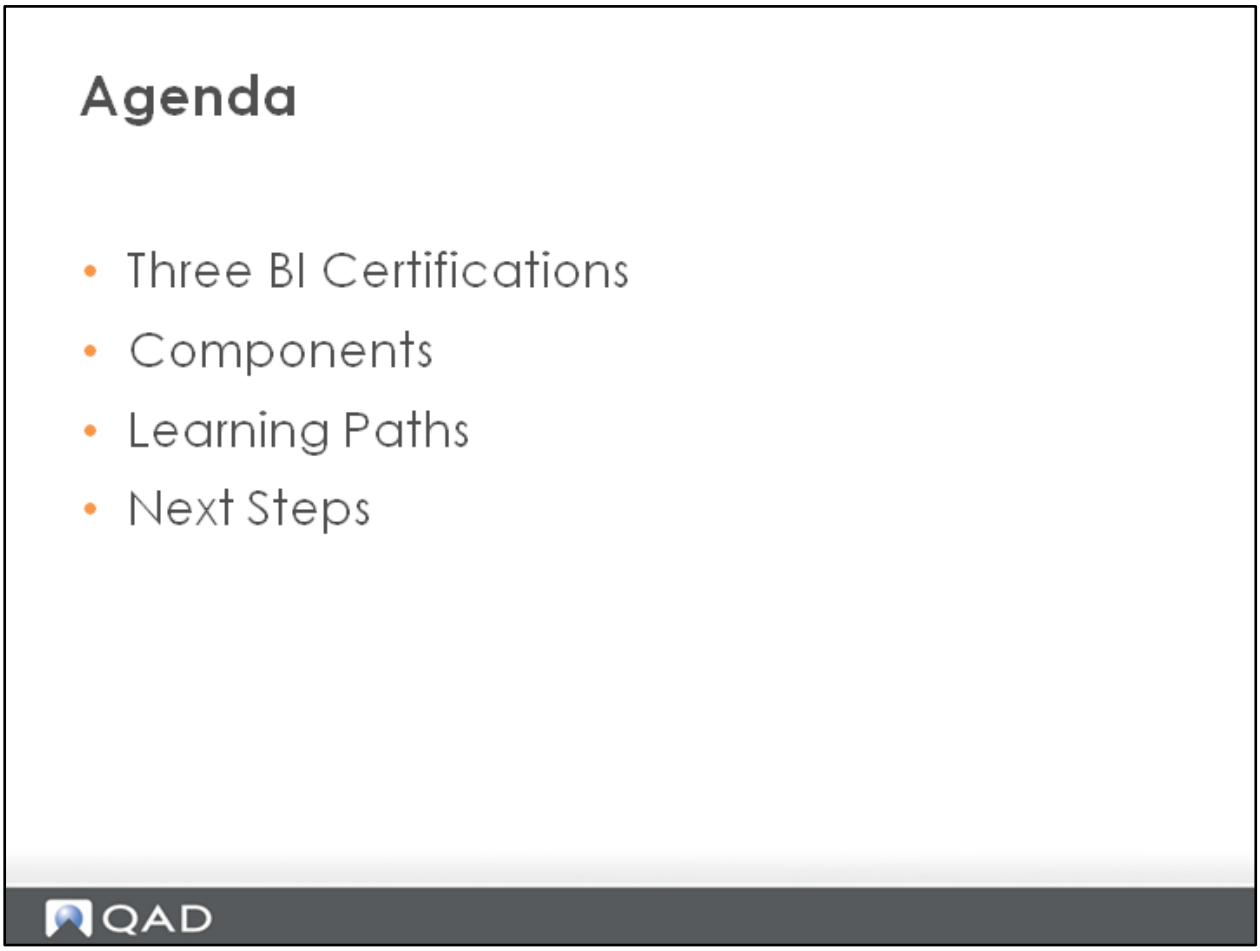
BI Certification Program Overview

BI Certification Program Overview



The BI Certification programs include a mix of videos, formal classroom training and certification exams. Students may choose to utilize a subset of the available materials.

Agenda


Agenda
Three BI Certifications
Components
Learning Paths
Next Steps
QAD

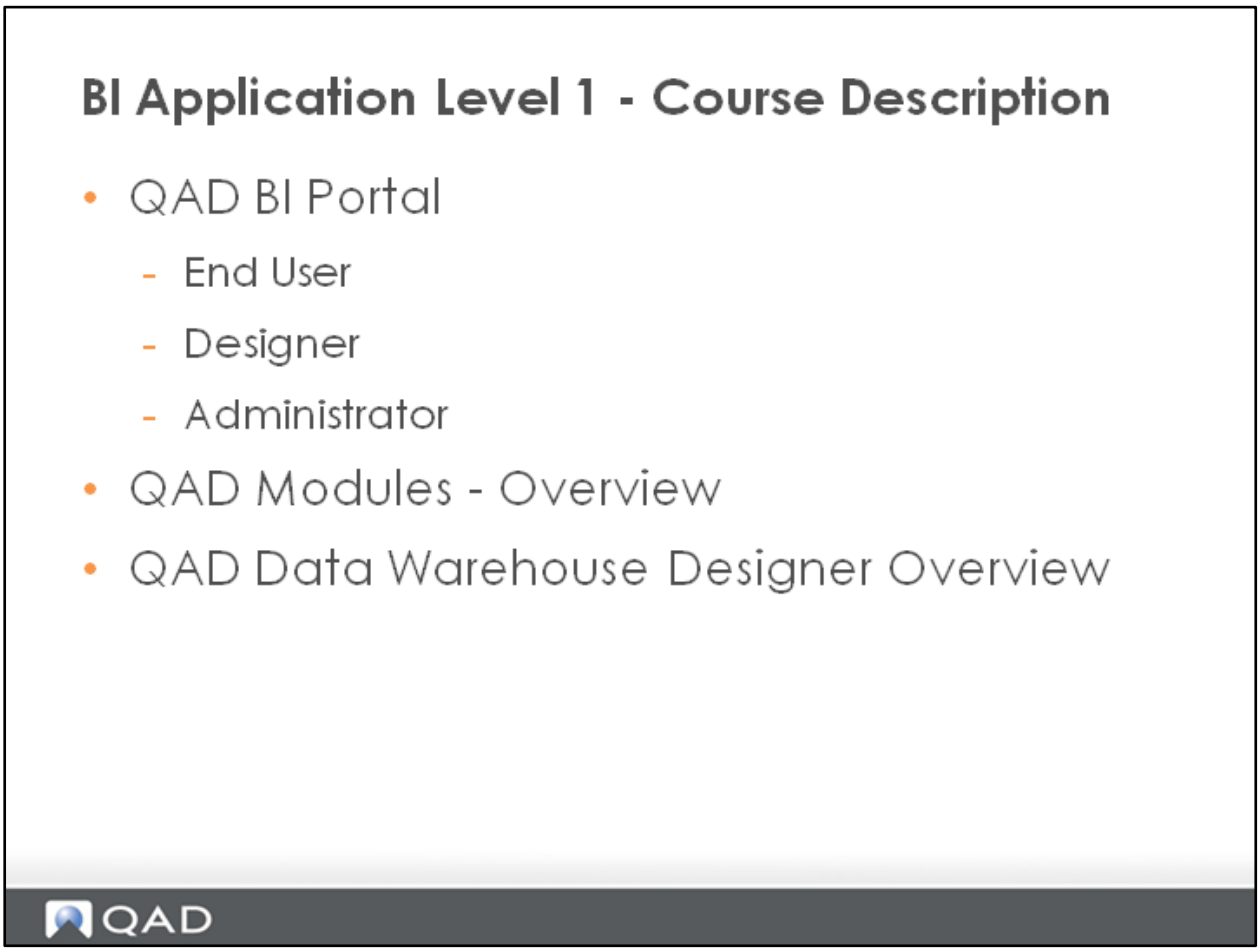
Available BI Certifications



There are current 3 available BI Certification programs.

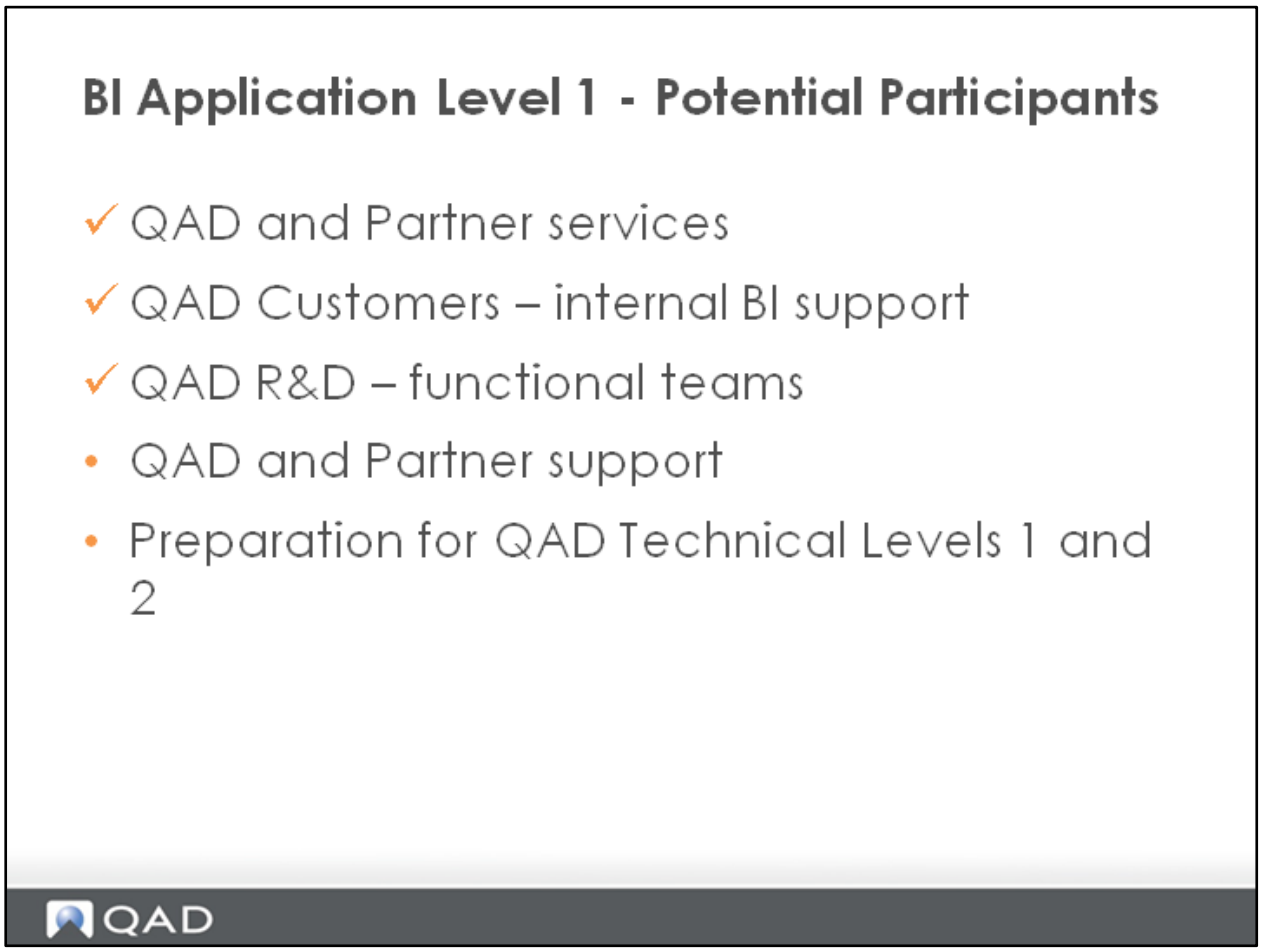
- Application Level 1
- Technical Level 1
- Technical Level 2

BI Application Level 1 - Course Description



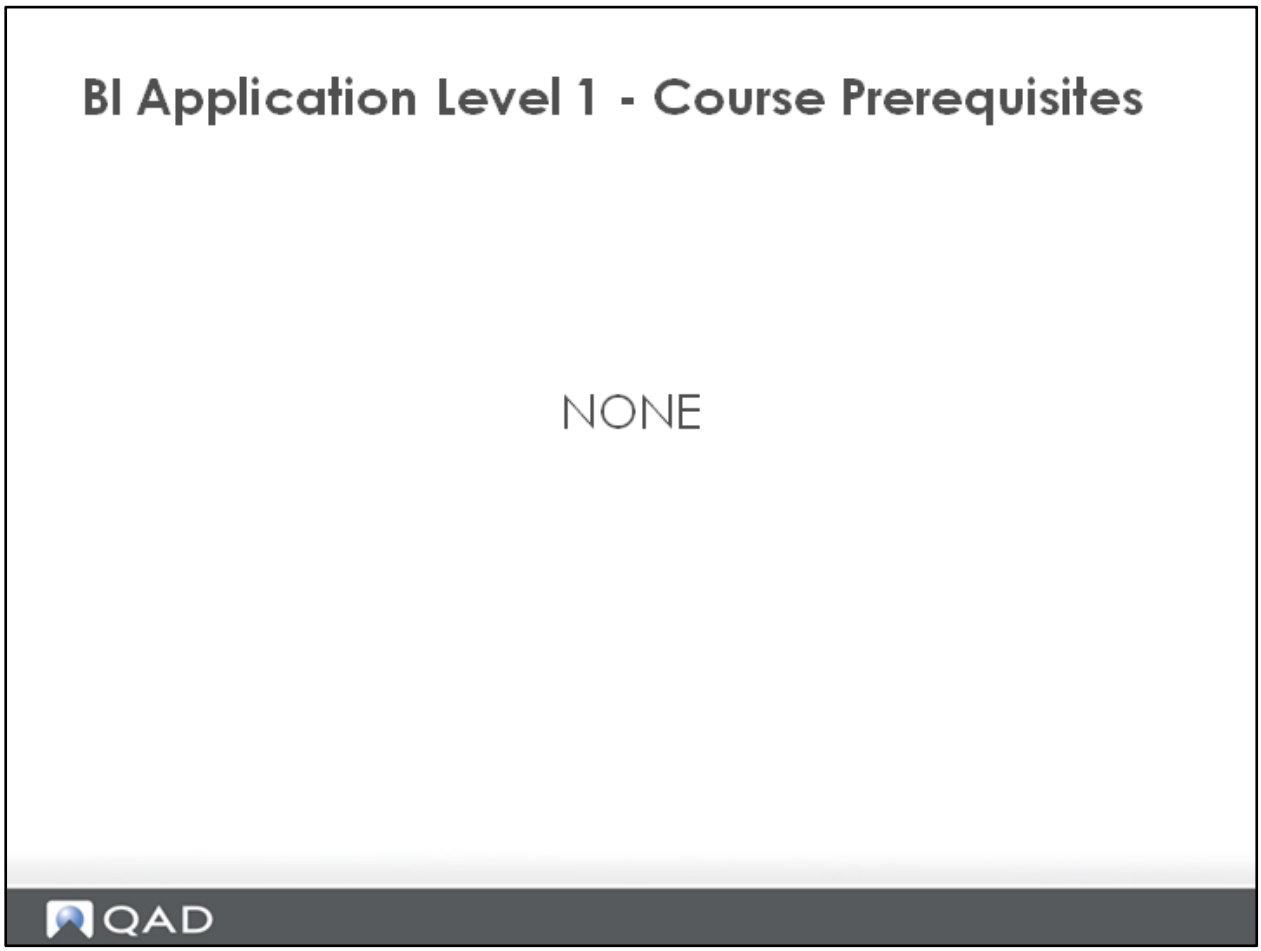
The BI Application Level 1 is focused on the use of QAD BI Portal. The BI Portal is the primary tool used to access the data that resides in the BI Data Warehouse.

BI Application Level 1 - Potential Participants



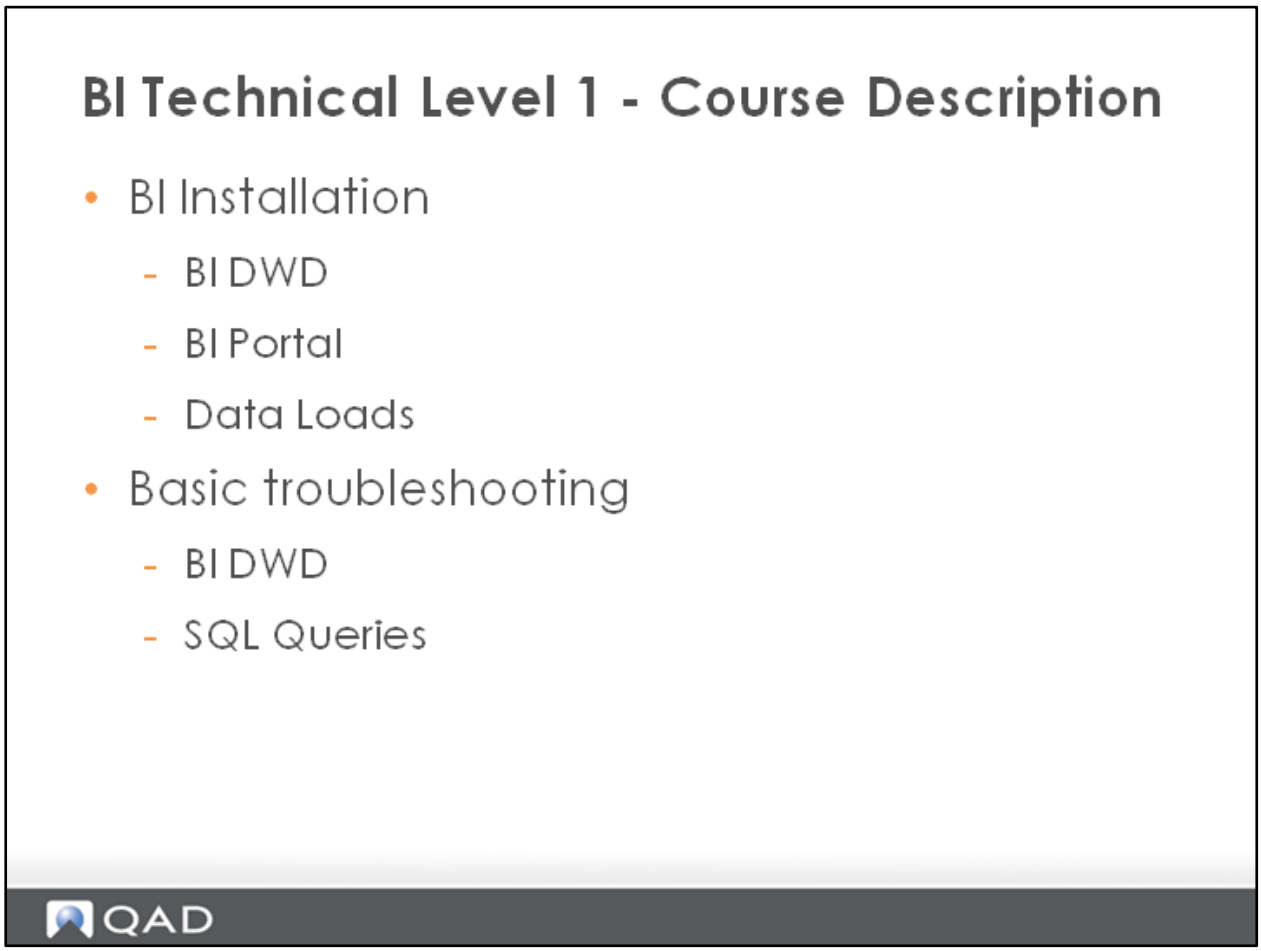
Groups that will be most interested in achieving BI Application Level 1 Certification are QAD Services, Customer's BI Support and QAD R&D Functional Teams.

BI Application Level 1 - Course Prerequisites



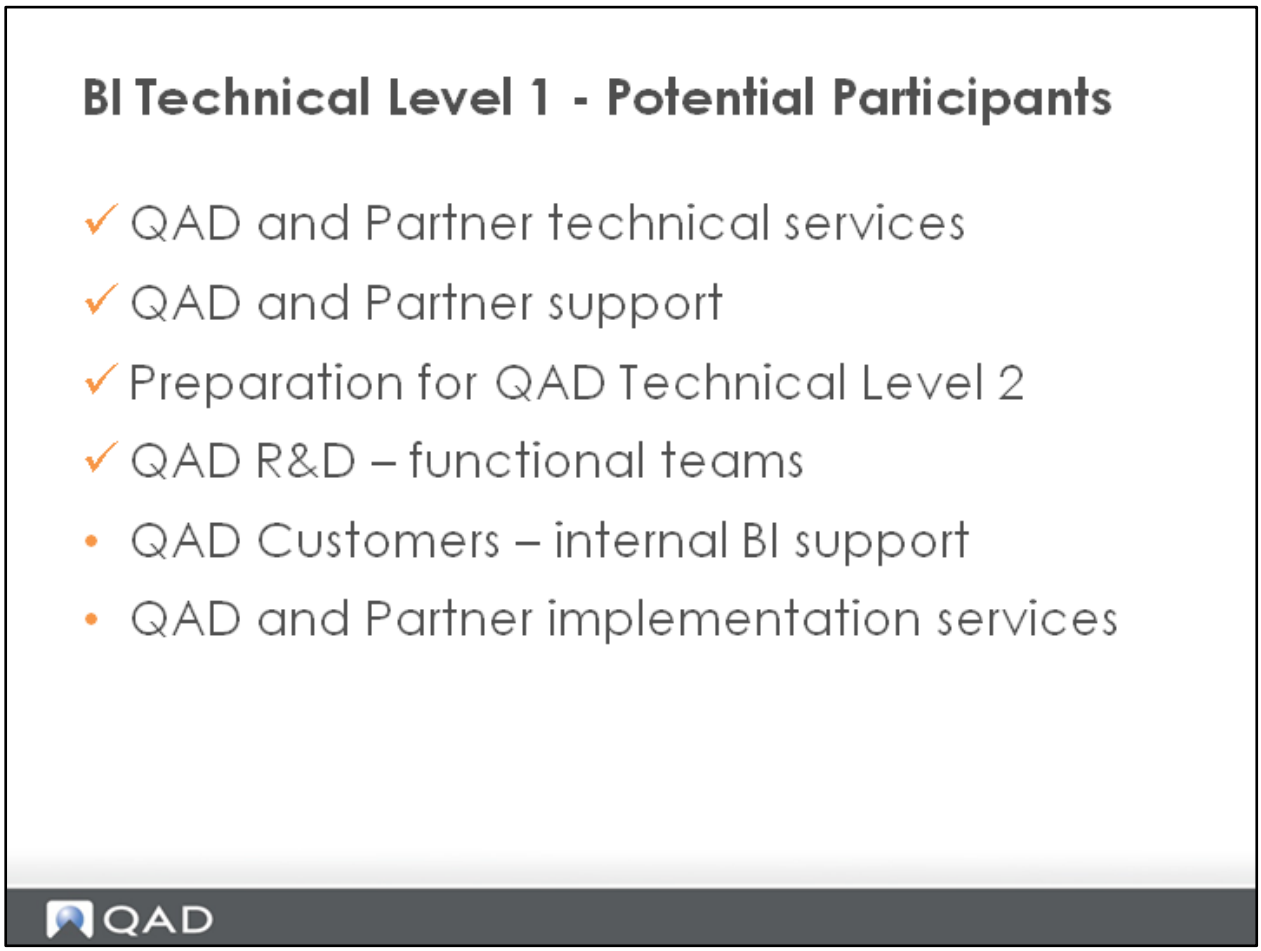
There are no prerequisites to BI Application Level 1 Certification Learning Path.

BI Technical Level 1 - Course Description



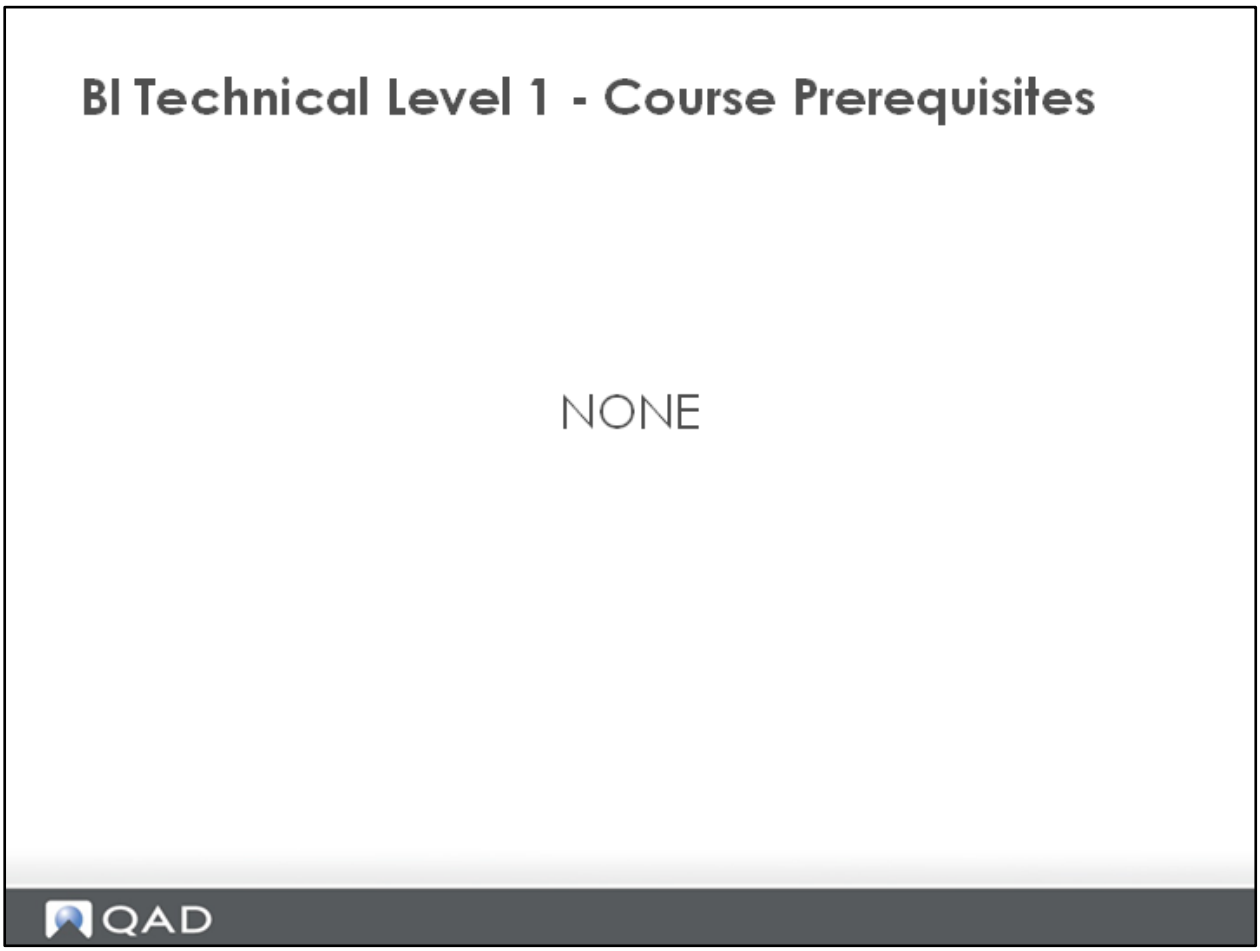
The BI Technical Level 1 course focuses on installation of the BI application and basic troubleshooting.

BI Technical Level 1 - Potential Participants



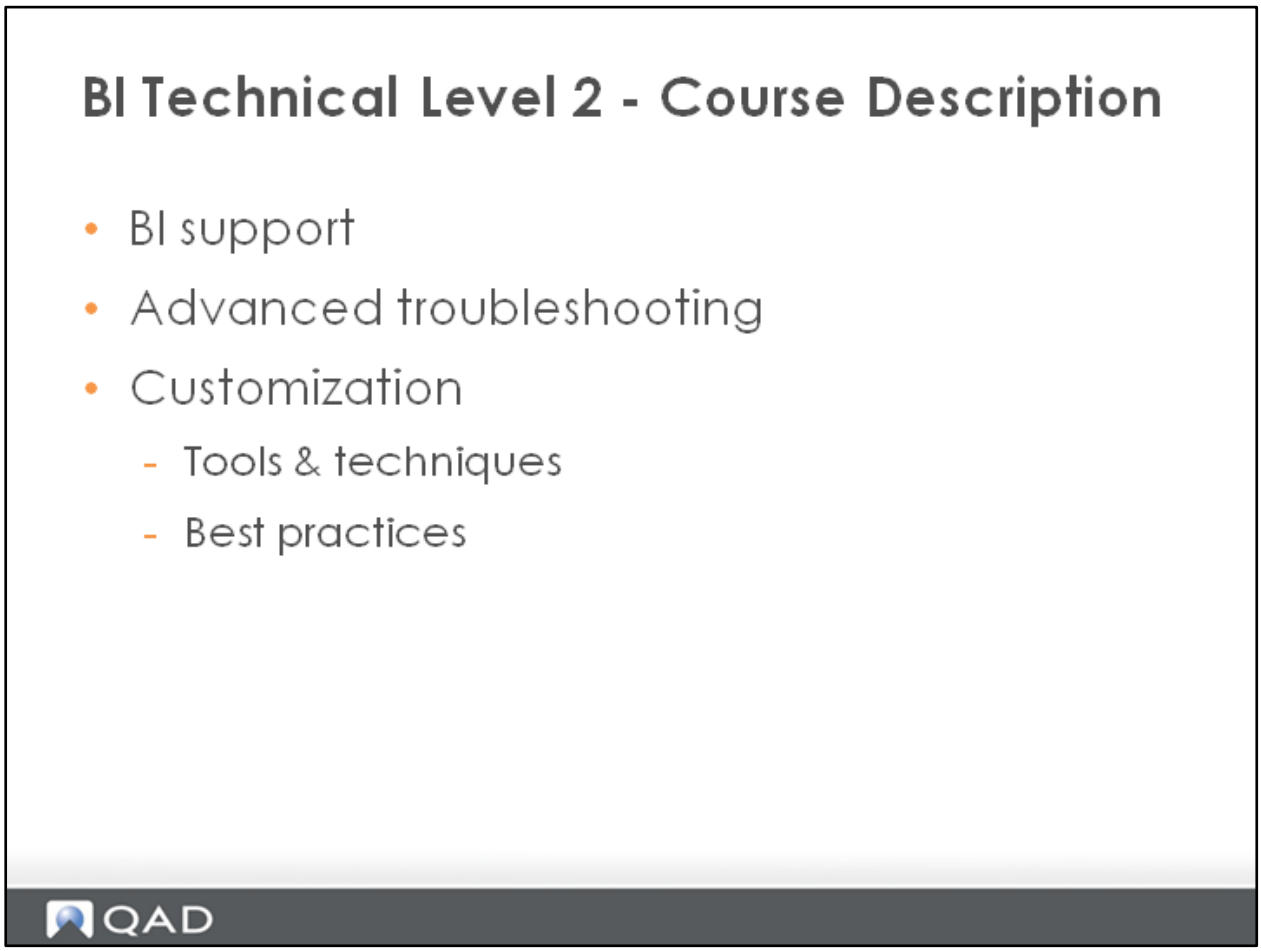
Groups that will be most interested in achieving BI Technical Level 1 certification are Technical Services, QAD and Partner Support and QAD R&D Functional teams.

BI Technical Level 1 - Course Prerequisites



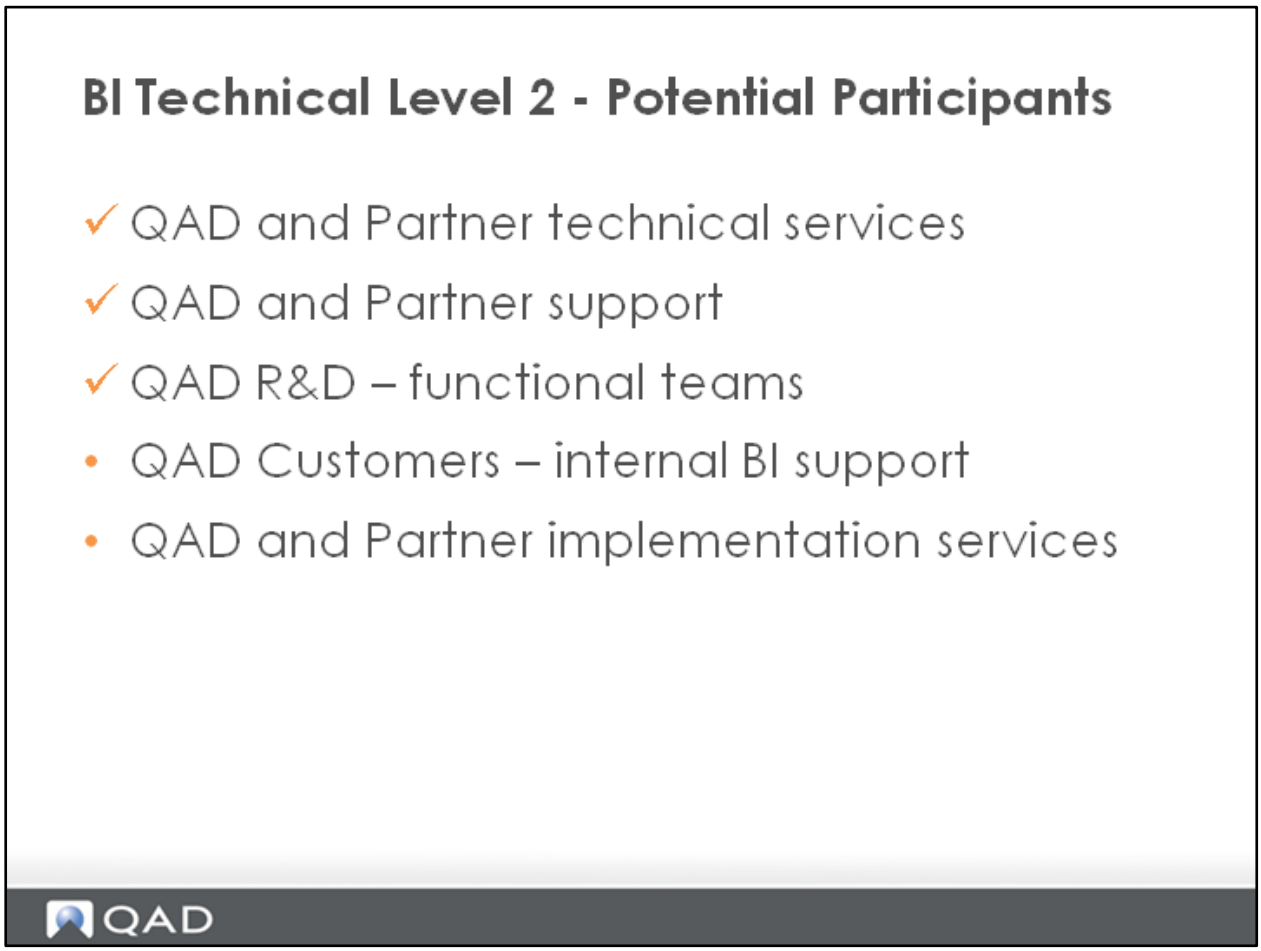
There are no prerequisites to the BI Technical Level 1 Certification learning path.

BI Technical Level 2 - Course Description



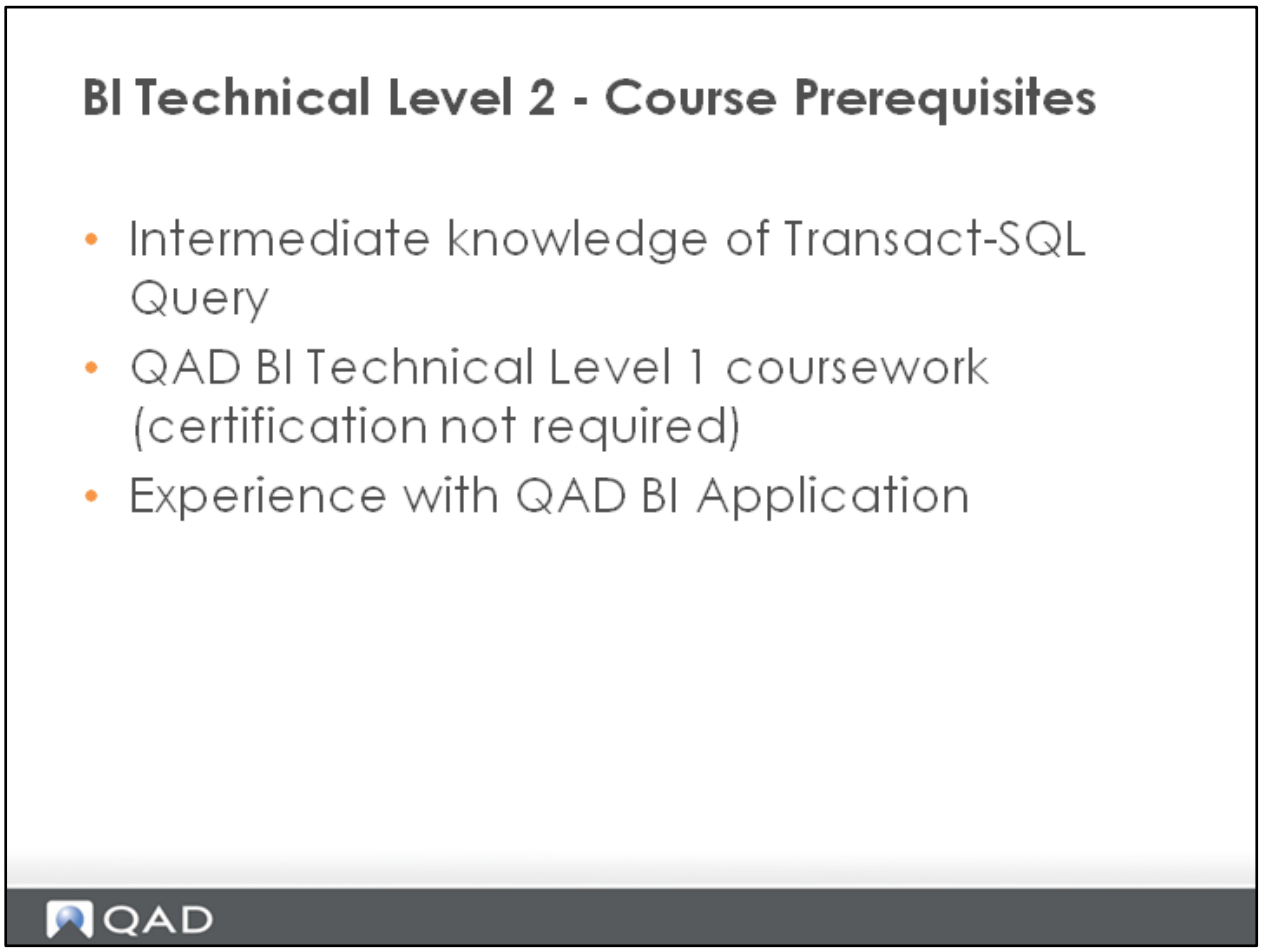
The Technical Level 2 certification builds on the support and troubleshooting concepts covered in Technical Level 1. In addition, there is a strong emphasis on customization. Not only tools and techniques to create BI customizations, but also Best practices.

BI Technical Level 2 - Potential Participants



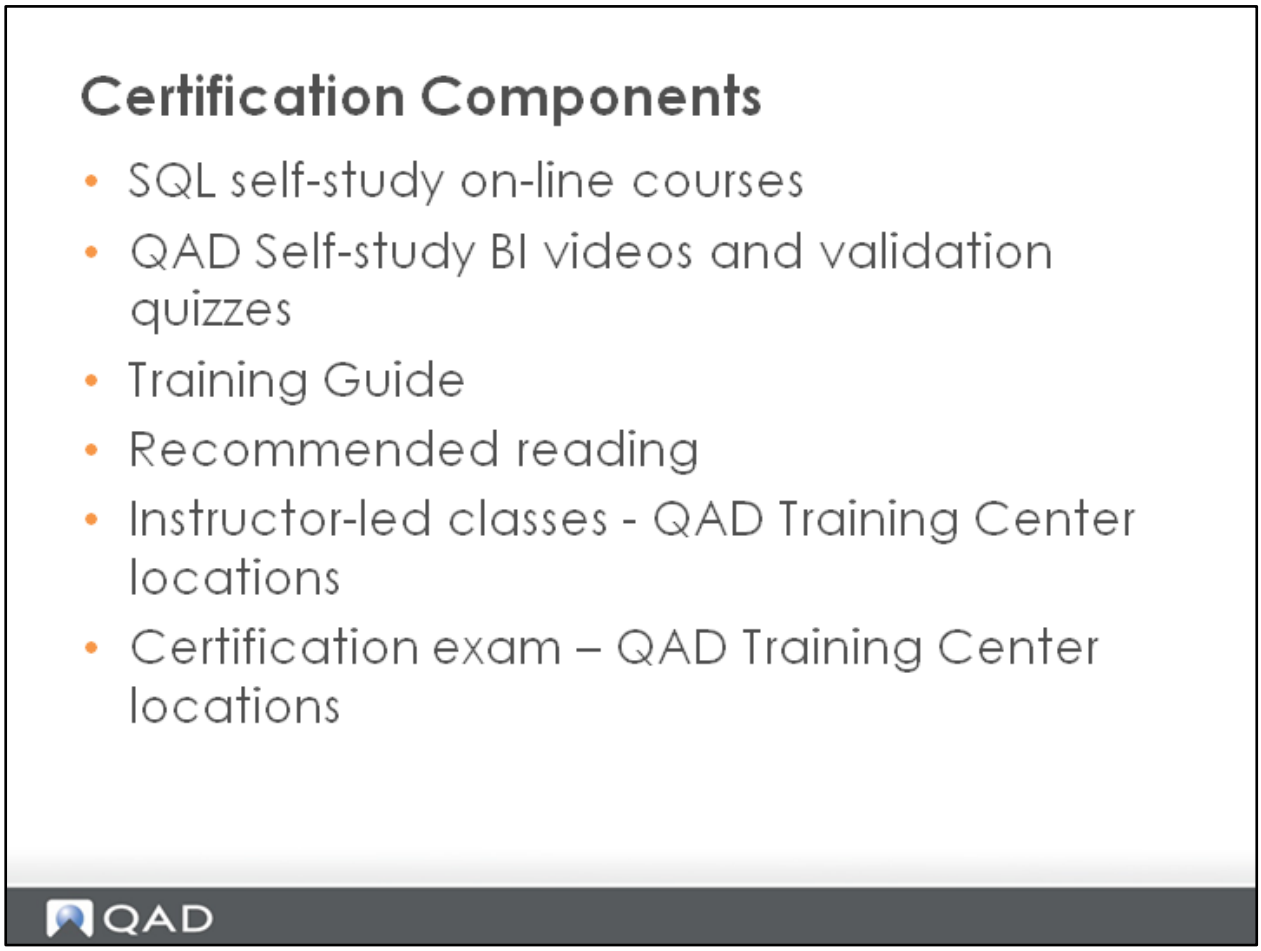
As with the Technical Level 1 certification, the following groups are the primary target audience for the this learning path: QAD and partner technical services groups, Tier-2 and Tier-3 support, and QAD R&D functional teams.

BI Technical Level 2 - Course Prerequisites



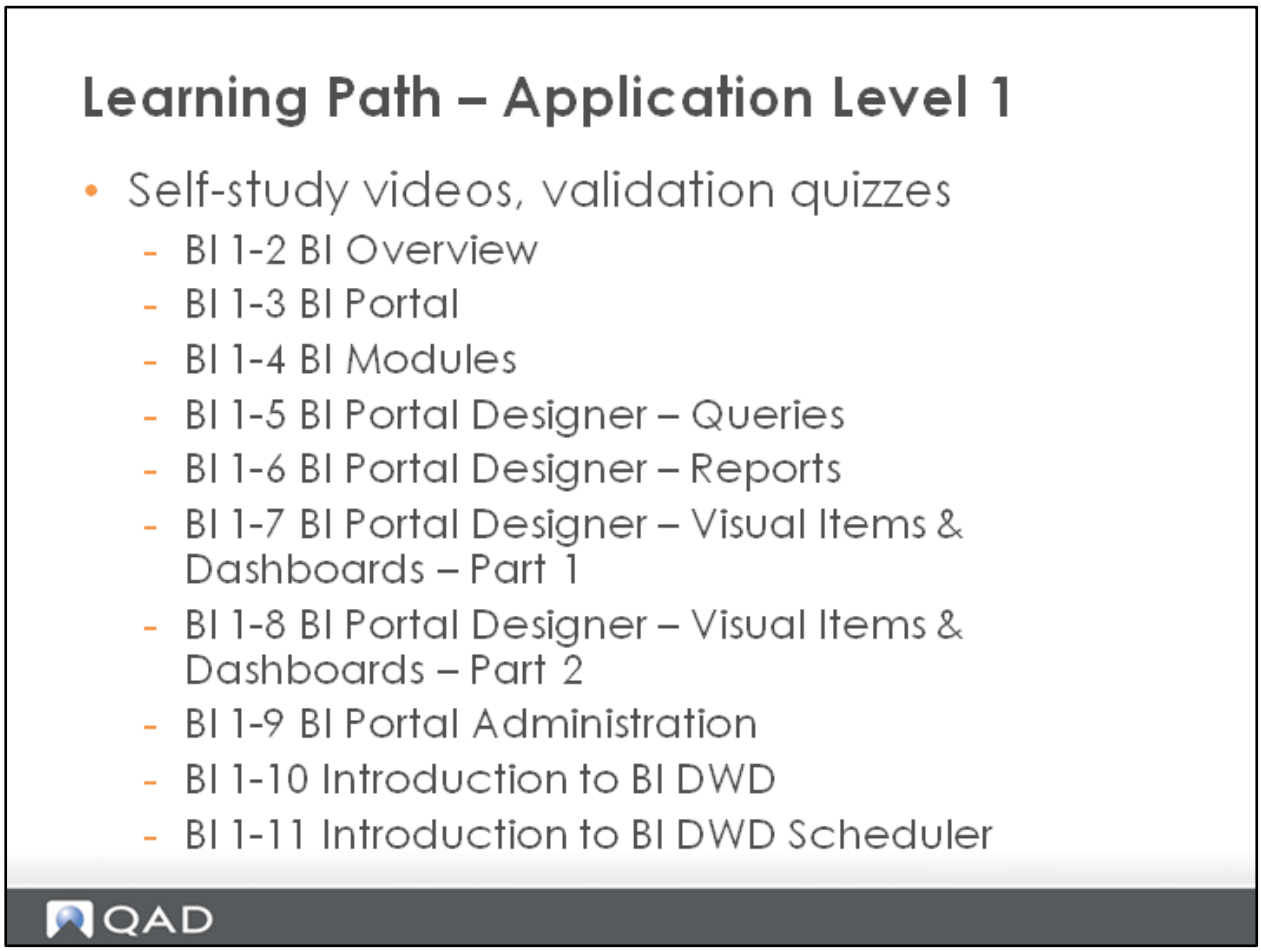
The prerequisites for the QAD Technical Level 2 course include an Intermediate knowledge of SQL Query, experience with the QAD BI application and the coursework for the BI Technical level 1. Achievement of a Technical level 1 certification is not a requirement.

Certification Components



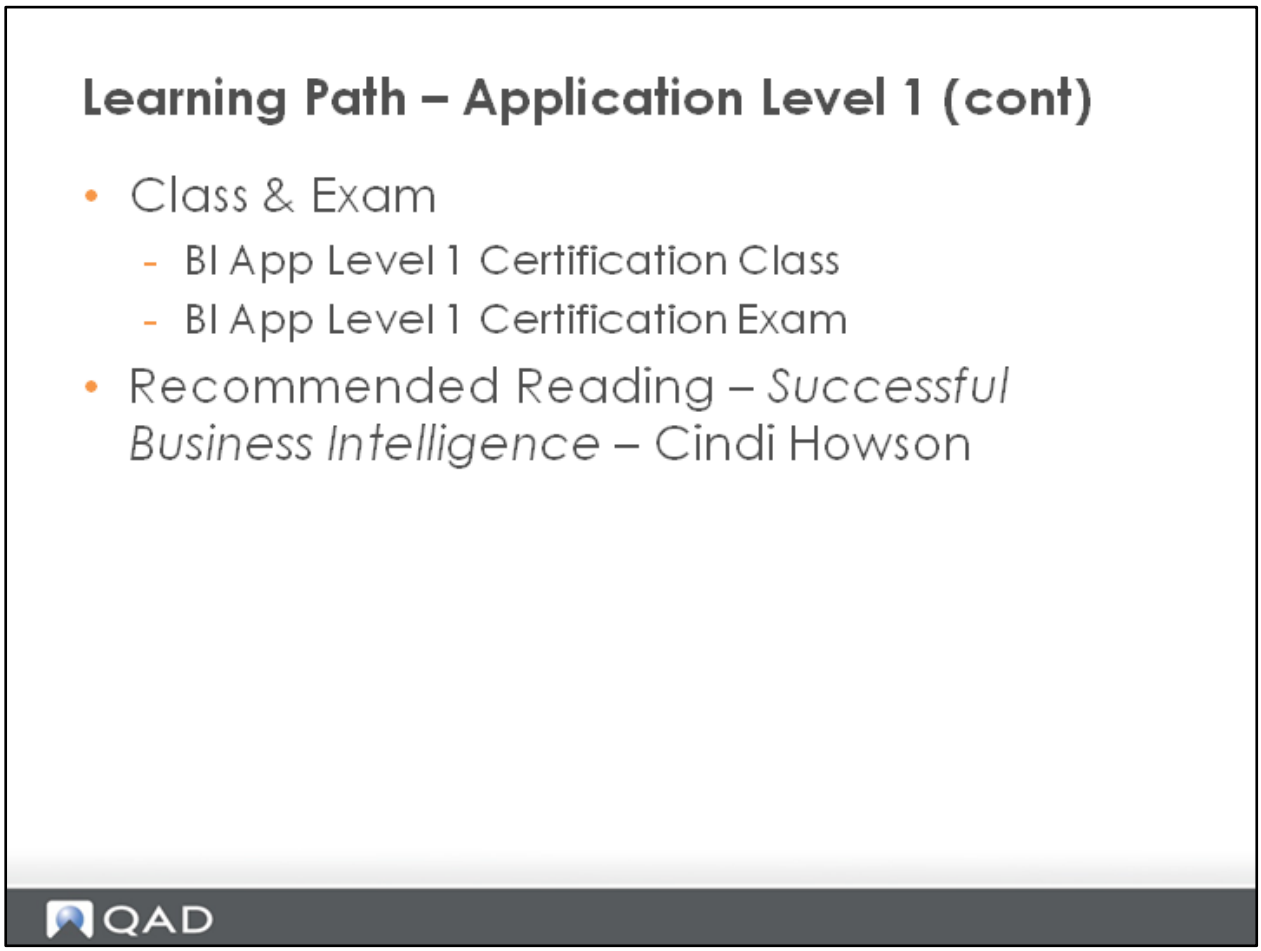
The BI Certification learning paths employ a variety of training methods. These includes external SQL on-line courses, a series of self-study in-house produced videos and their related validation quizzes. We also make recommendations for outside reading materials. Finally, there is a 4 day class conducted at a QAD Training facility, followed by a multiple-choice certification exam.

Learning Path – Application Level 1

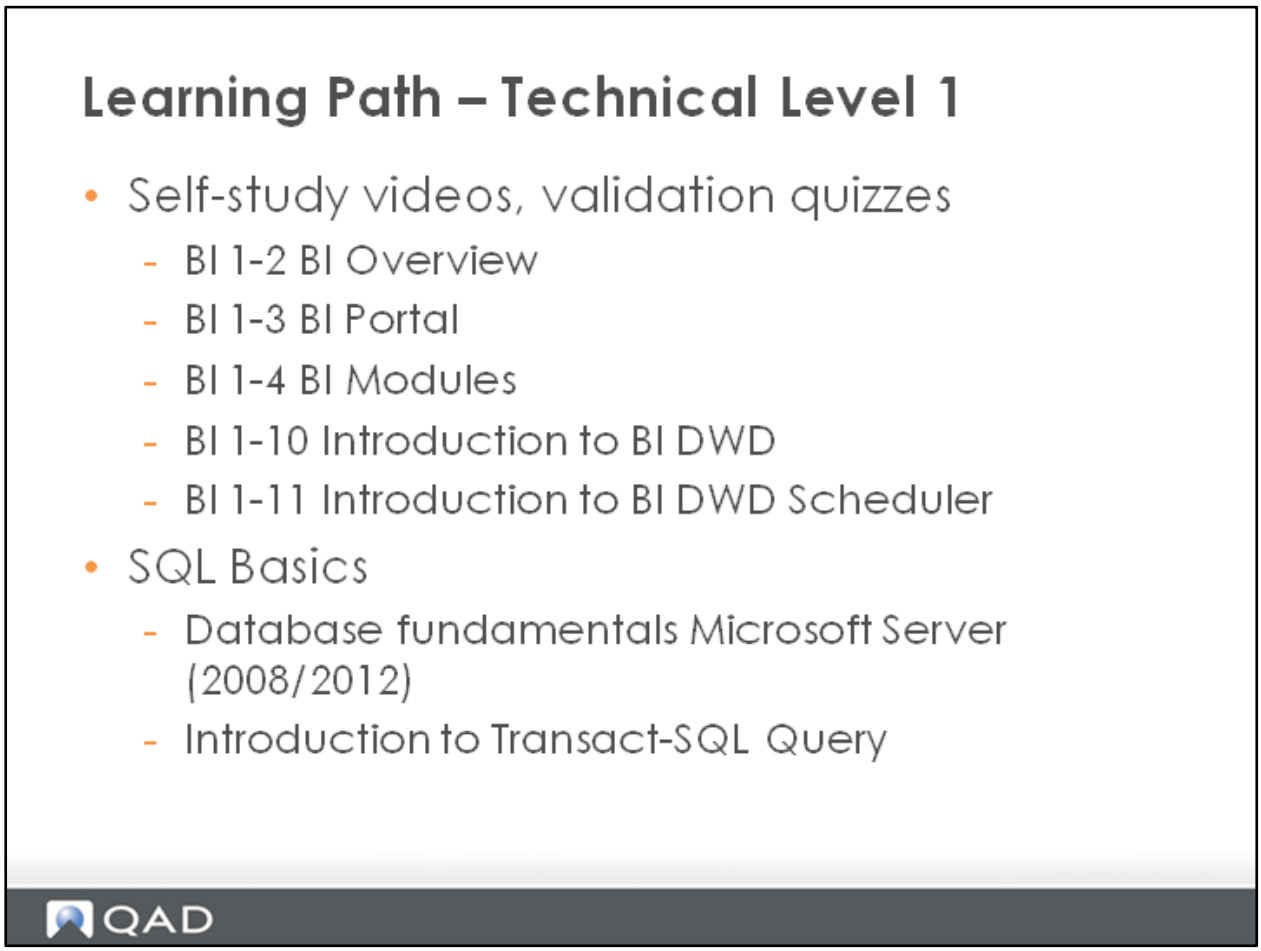


The Learning path for the BI App Level 1 includes all 10 BI Self-study videos.

Learning Path – Application Level 1 (cont)

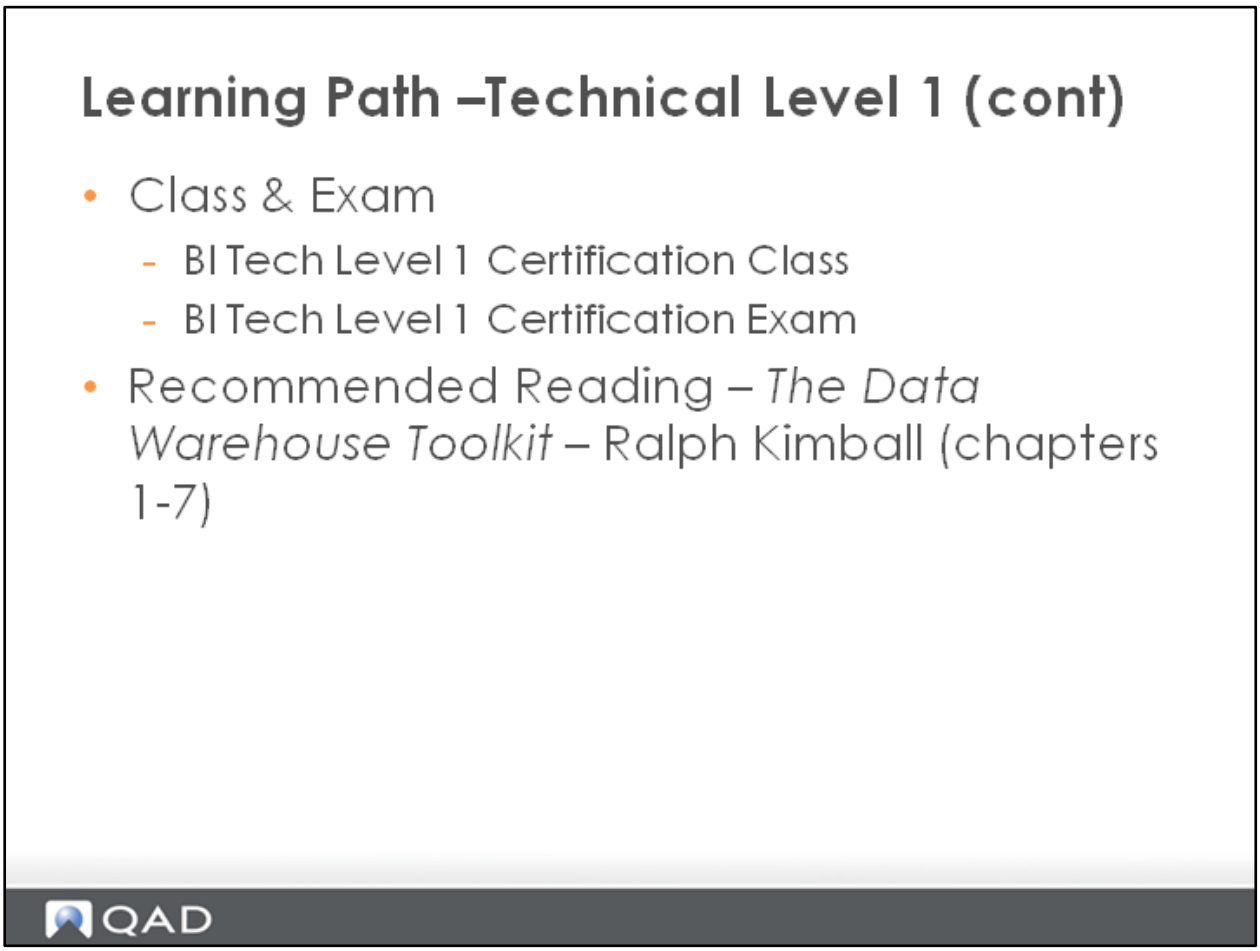


Learning Path – Technical Level 1

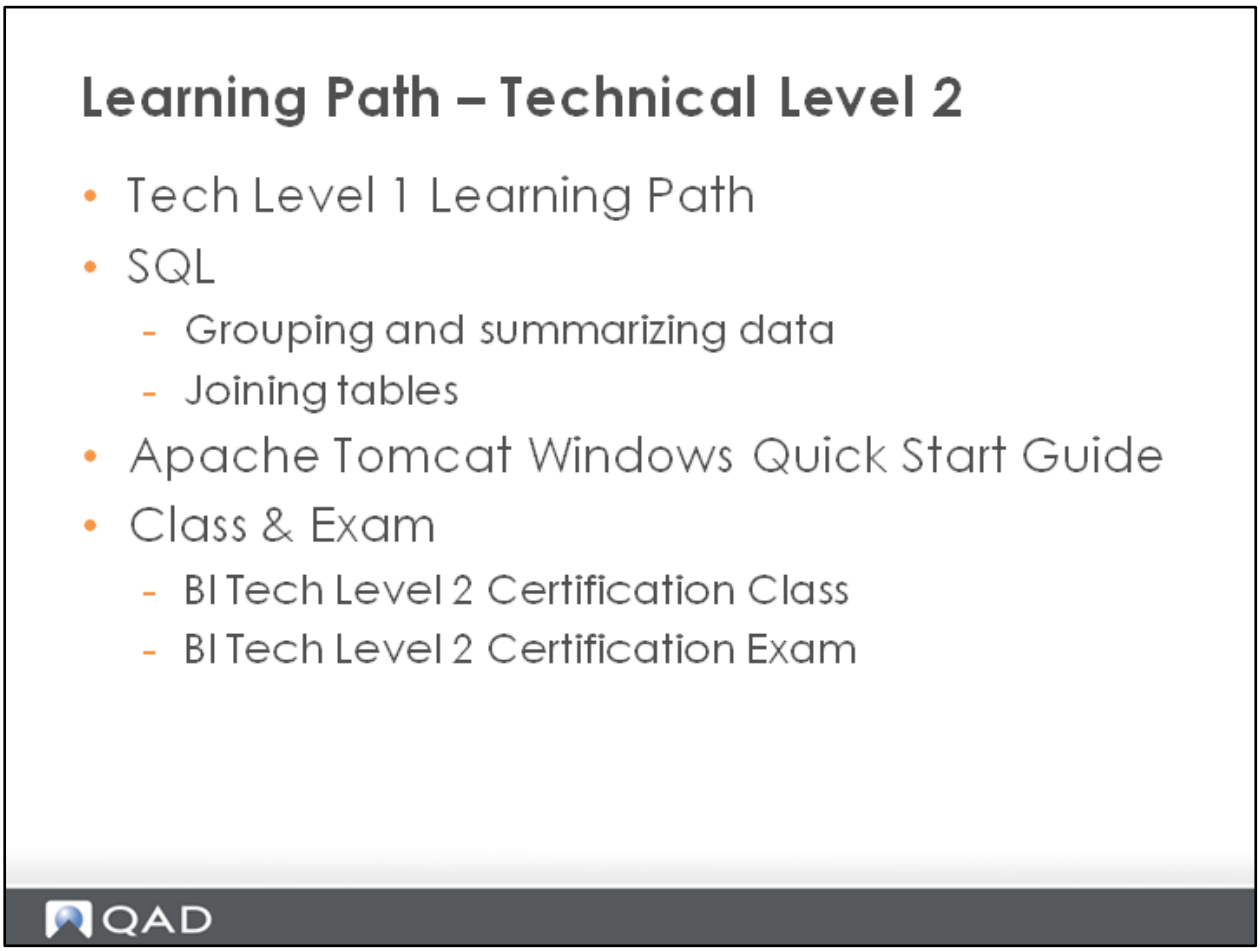


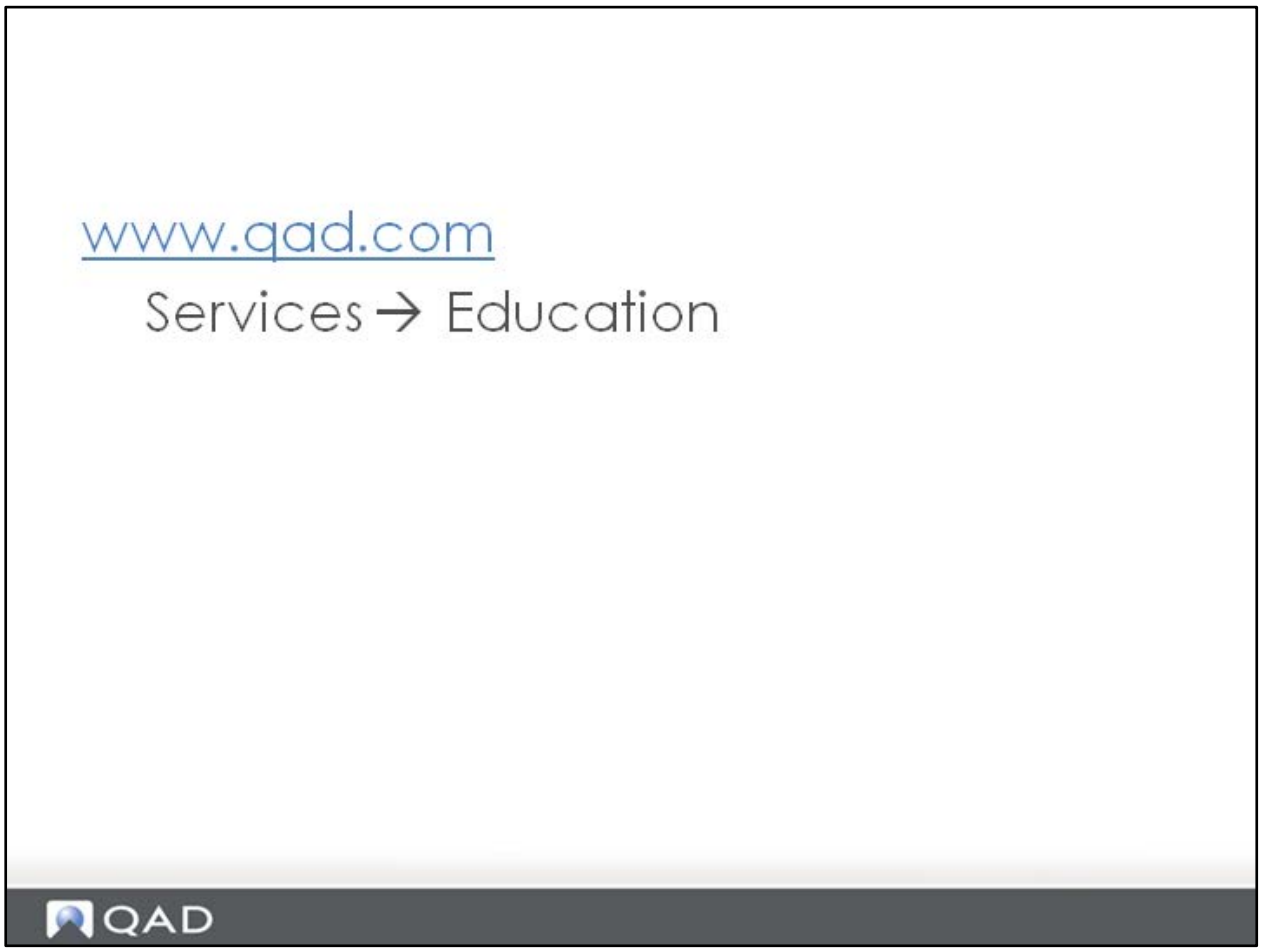
The Technical Level 1 learning path includes a subset of the self-study videos, and some external SQL Basics videos.

Learning Path –Technical Level 1 (cont)



Learning Path – Technical Level 2




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Services → Education
QAD

CHAPTER 2

BI Overview

BI Overview



Welcome to the Business Intelligence Level 1 system overview class!

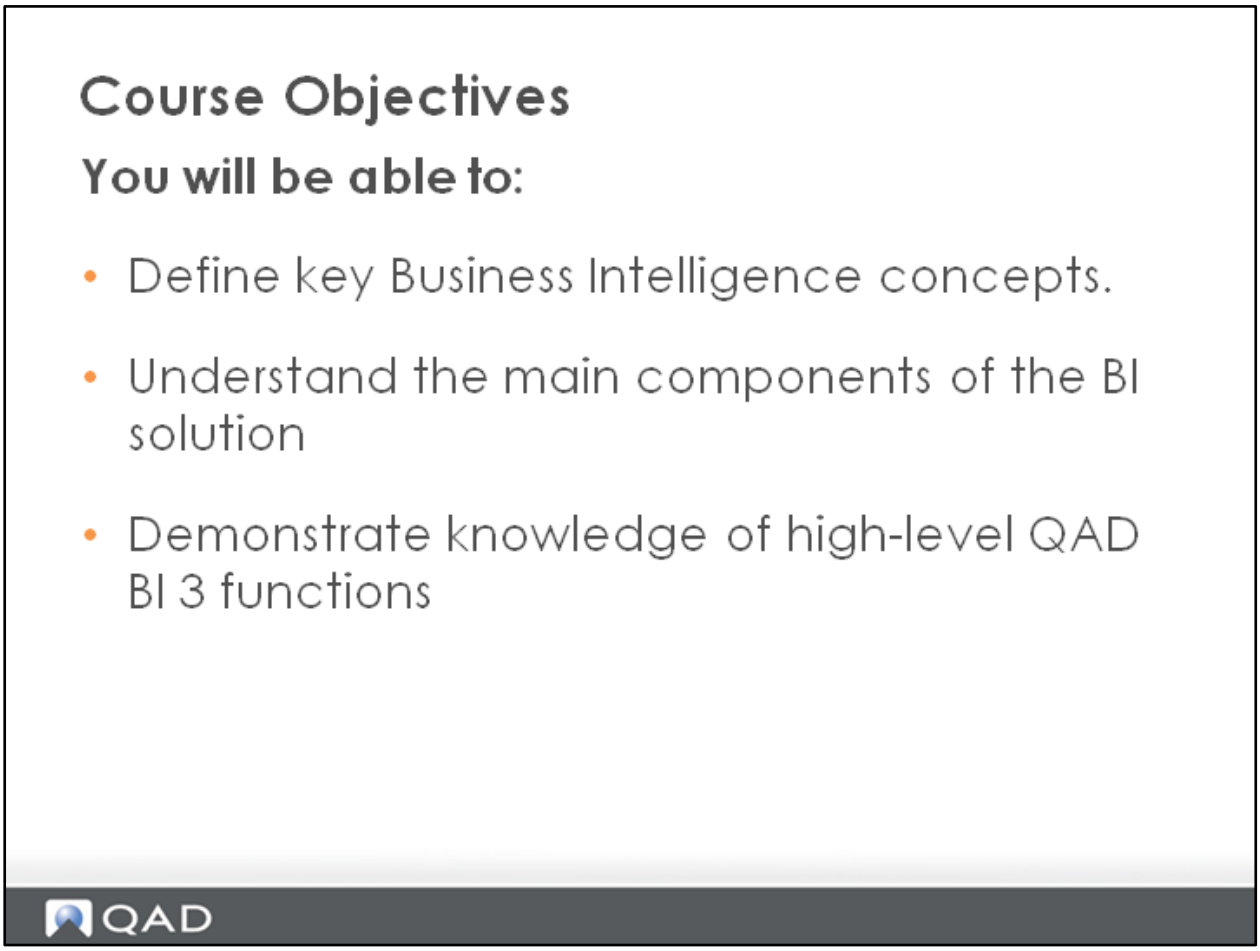
BI Overview - Course Agenda



This class is designed to provide you with a fairly intensive overview of BI: The major components, the current modules and some basic technical information.

This class will provide the baseline knowledge you will need for the remaining BI Application coursework.

Course Objectives



This class is designed to provide you with a fairly intensive overview of BI: The major components, the current modules and some basic technical information.

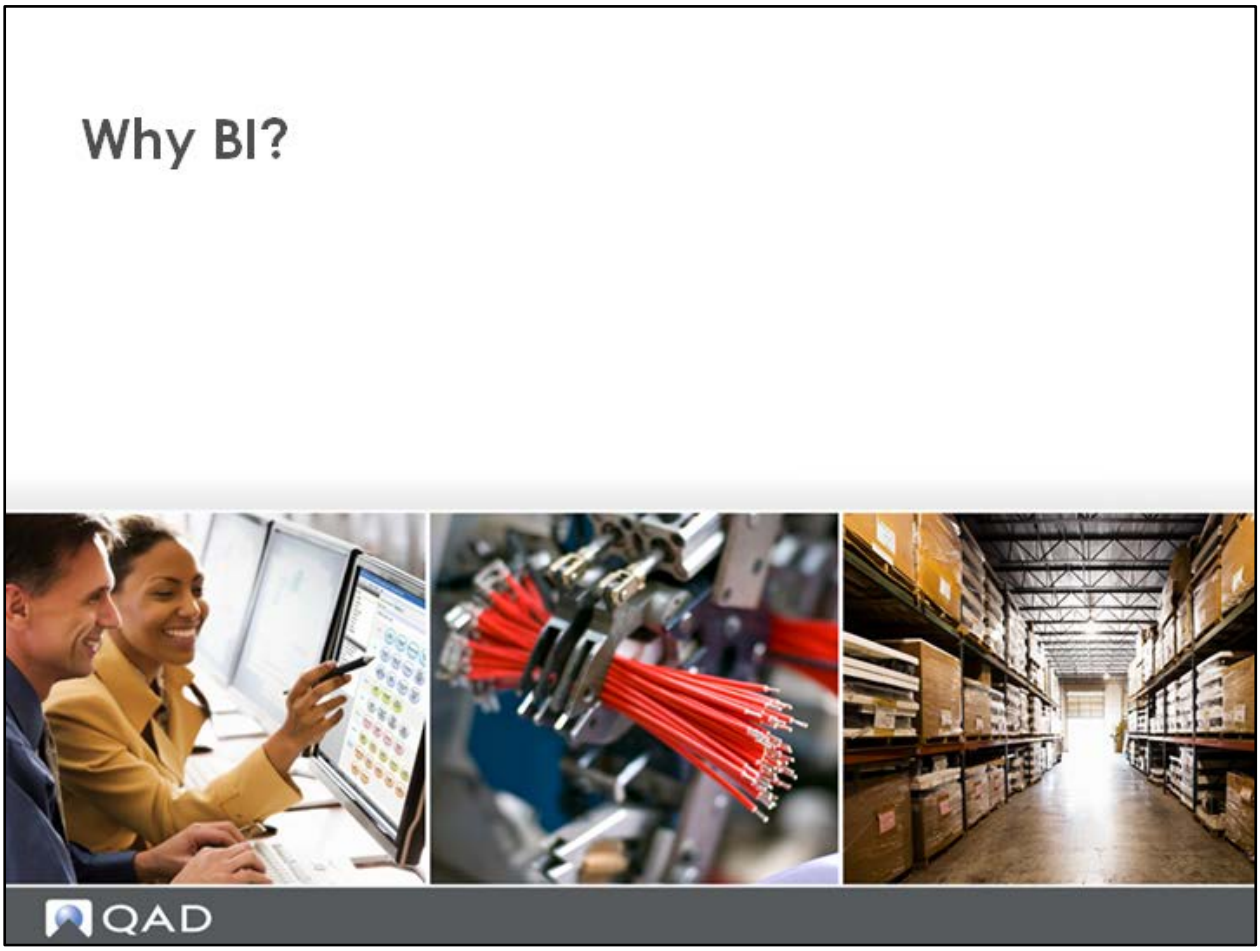
This class will provide the baseline knowledge you will need for the remaining BI Application coursework.

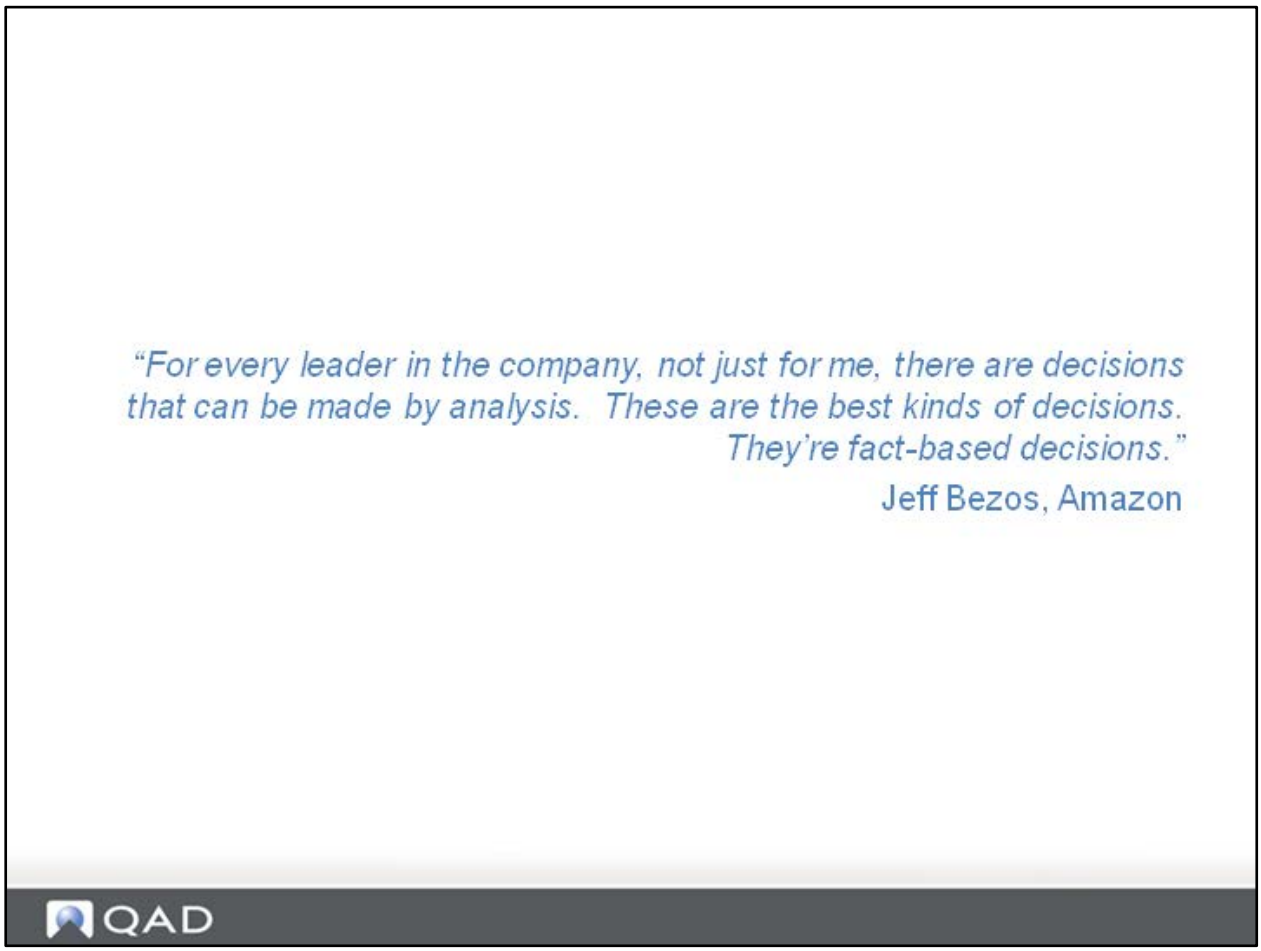
The objectives for this course are very high level, but they are critical for you to achieve in order to progress along the certification path.

Your objectives upon completion of this class and its associated activities in the Activities Handbook will be to be able to:

1. Define key Business Intelligence concepts.
2. Understand the main components of the BI Solution
3. Demonstrate the basic functions available in QAD BI

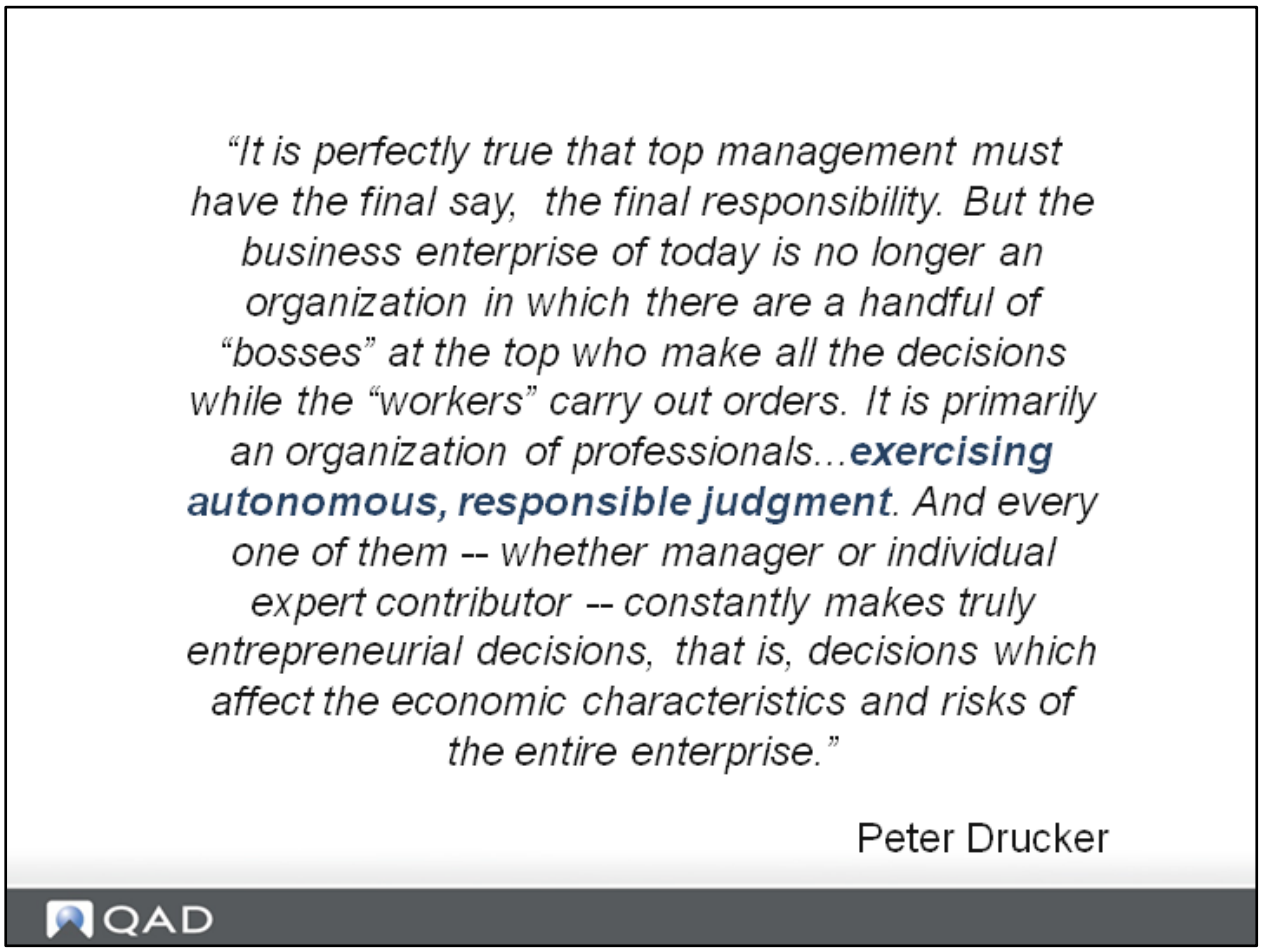
Why BI?





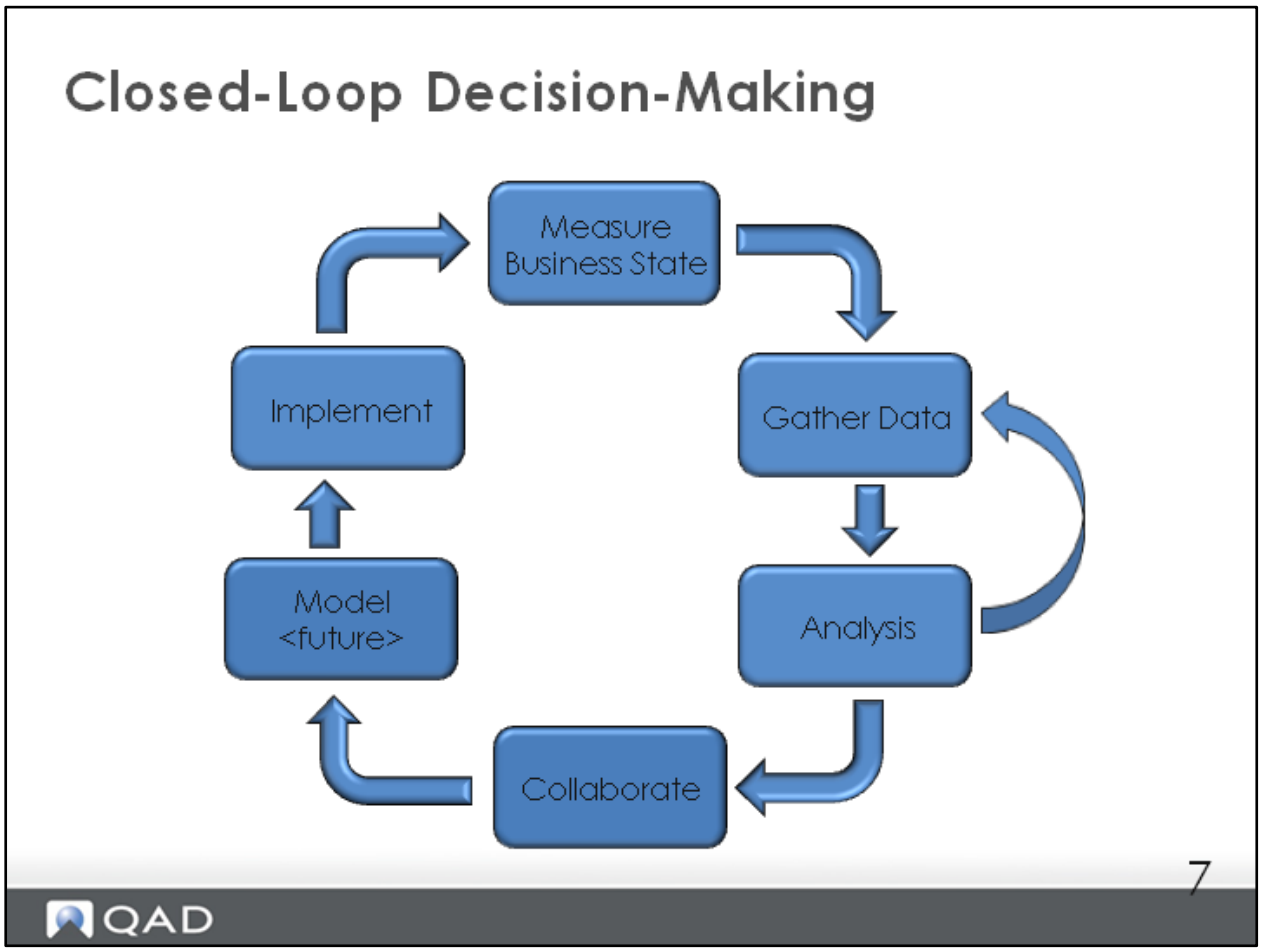
Key Concept:

Fact-based decisions are based on analysis.



Not only are areas of investigation evolving and unique to various companies and industries, but those involved in participating are changing. We are finding, in our customer base, exactly what Peter Drucker is referring to within the quote above. Where making impactful decisions, was once the domain of a few upper management representatives, that decision making level is moving down through the organization from the higher levels to a broader range of functional members across the company. Decisions that do affect the company's performance and risk potential.

Closed-Loop Decision-Making

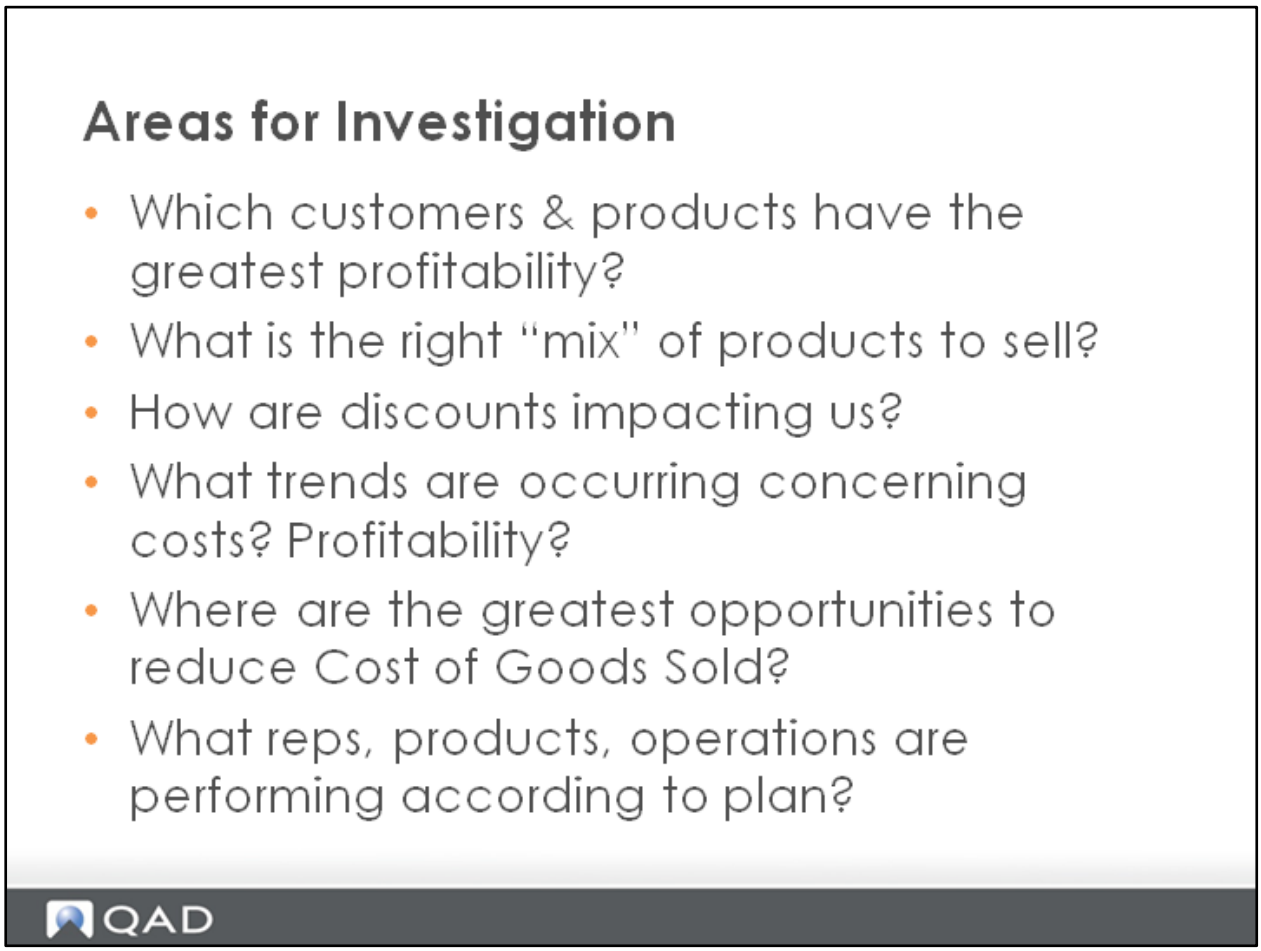


A key concept supported by our evolving BI solution is referred to as closed-loop decision making. In the closed loop decision making process, one begins by identifying a key business measurement. The data is gathered from one, or a variety of sources and then analyzed. Collaboration provides insights outside of one's usual experiences and helps lead to better analysis. Following the collaborative process, a variety of simulations can be conducted to determine the impact of proposed changes. An appropriate change can be implemented which may impact the initial key measurement and the cycle restarts.

QAD's BI solution roadmap is focused on supporting the closed-loop process.

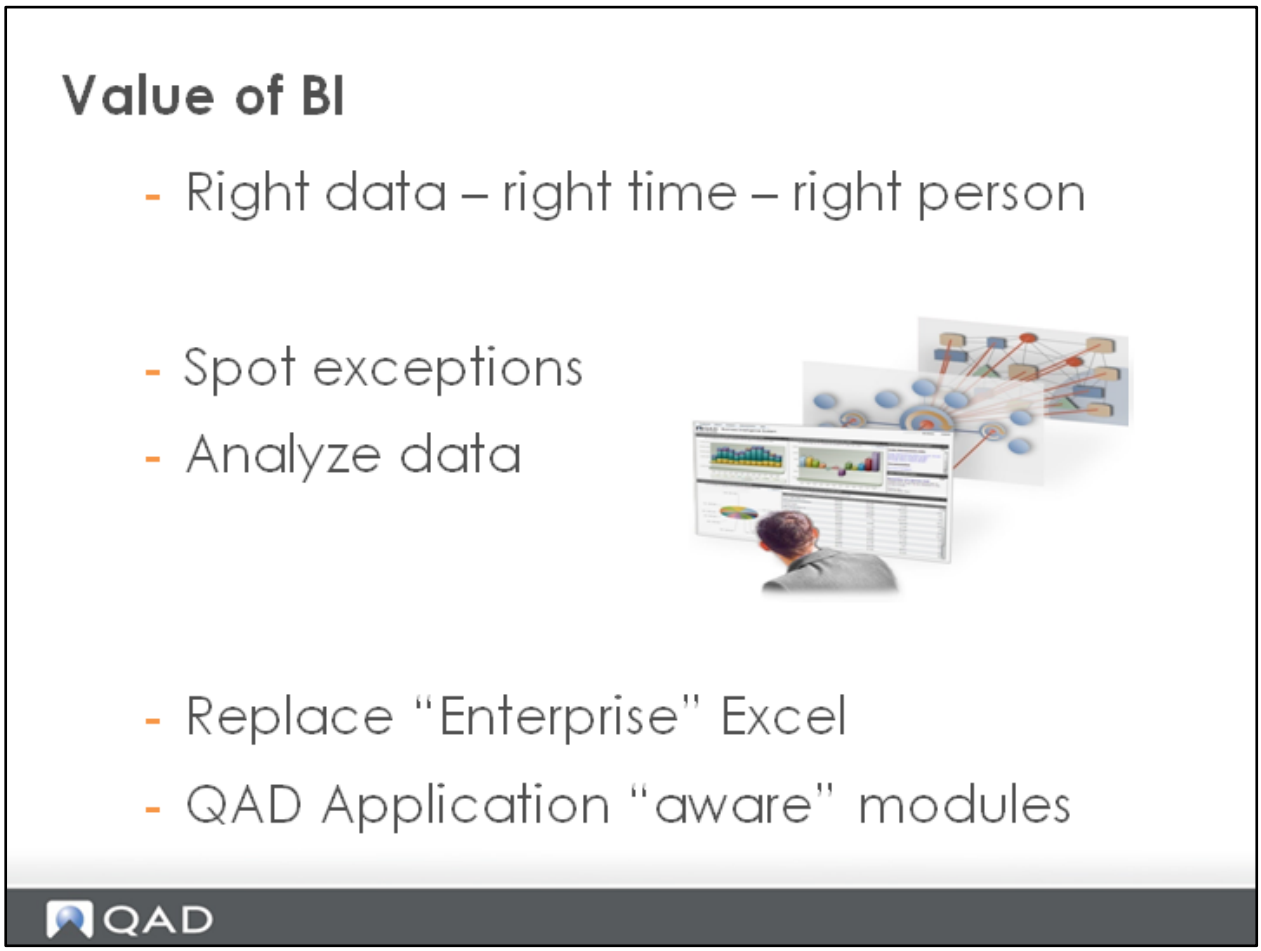
Modeling requires the importing of forecast information for extension of analytical data. This is planned for a future BI release.

Areas for Investigation



Among the most common areas investigated are those listed but needs will vary by organization.

Value of BI

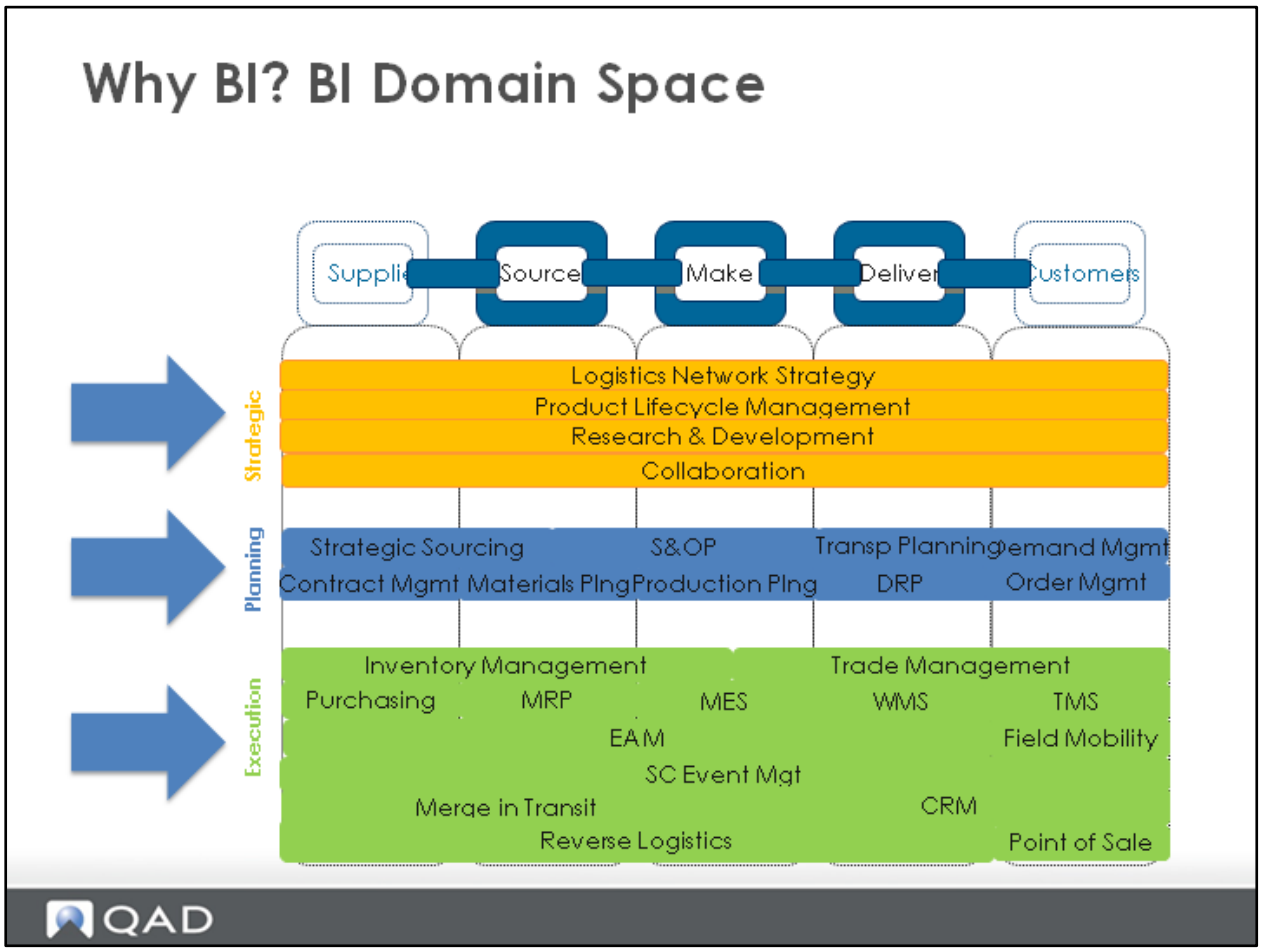


BI systems use visual objects to improve user's ability to spot exceptions.

Tools make it possible to drill down to more detailed information to analyze exceptions.

The QAD modules can be updated as the source application changes.

Why BI? BI Domain Space



QAD has such a variety of solutions in our product suite. This is because each solution has its own unique area “expertise” in a business.

Another way to think about areas of expertise is as “Domain Space”.

While it may appear that QAD BI shares some functionality in common with other QAD solutions, it occupies its own unique space.

As an example, our core product (often referred to as the “ERP” system for clarity in this training) is very focused on Financials and the critical pieces of manufacturing that enable organizations to deliver quality products on-time and profitably. The ERP system contains many disparate pieces of data. The BI allows business managers to see that data in a summarized, visual format that supports better decisions.

Consider the SCOR model. Organizations move from operational or execution tier to planning and optimization processes. At the strategic tier, Performance Management is important.

BI Positioning



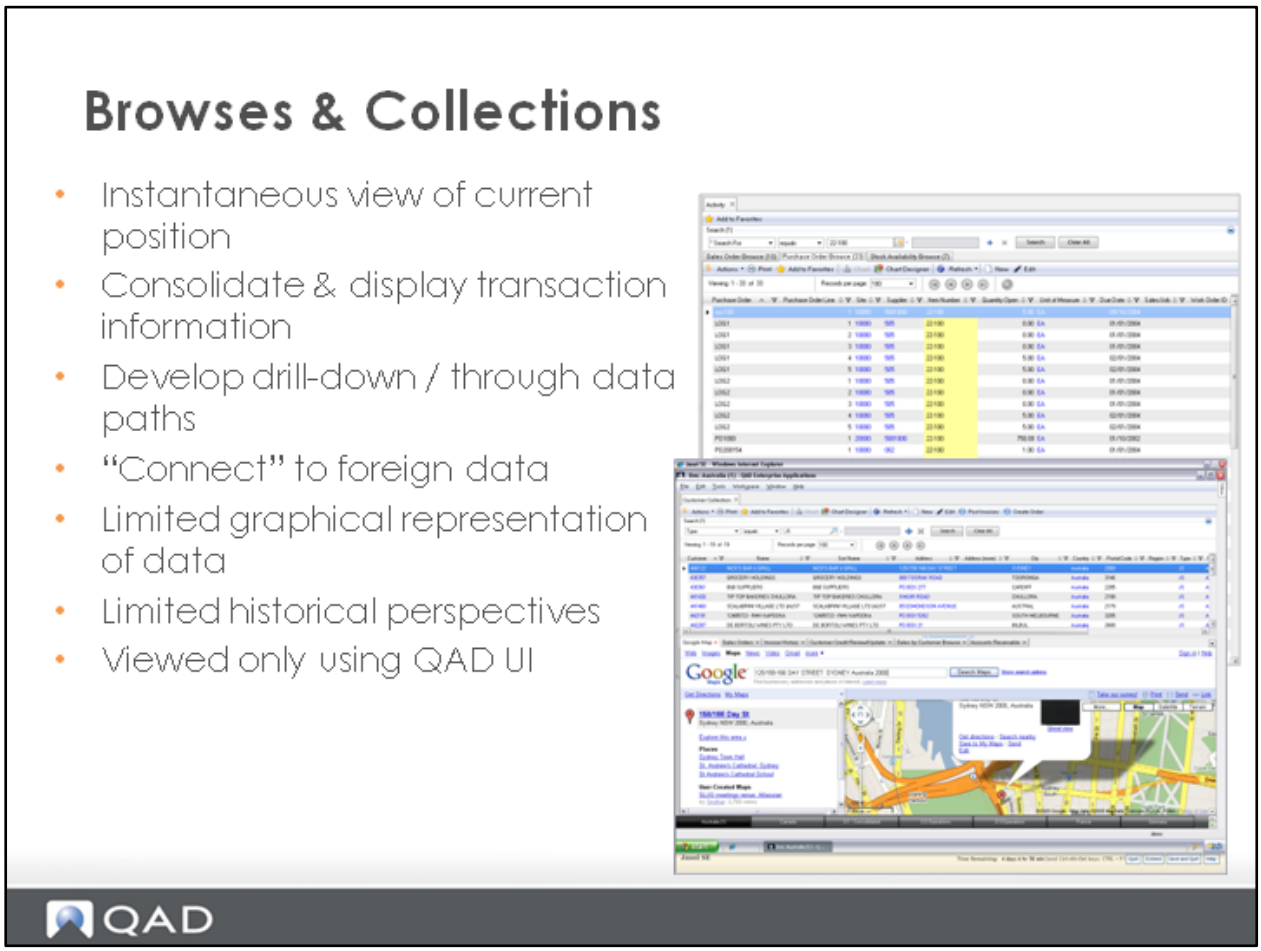
While decision making is moving down the organization, the day to day requirements of company representatives and the breadth of the analysis varies by a user's position in the corporate hierarchy.

Operational representatives such as warehouse staff and planners regularly use very detailed capabilities such as inquiries and reports or browses and collections to manage their operational tasks.

As we move up through the level of focus from Operational to Strategic, we move from detailed, daily requirements to higher levels of aggregation and a greater need for analysis by various attributes such as product family, product group, customer, or region. Another form of analysis is changes tactically and strategically over time. How have our inventory turns changed by product line or family over the past 6 or 12 months.

Aggregations, attributes, and changes over time are all the domain of Business Intelligence.

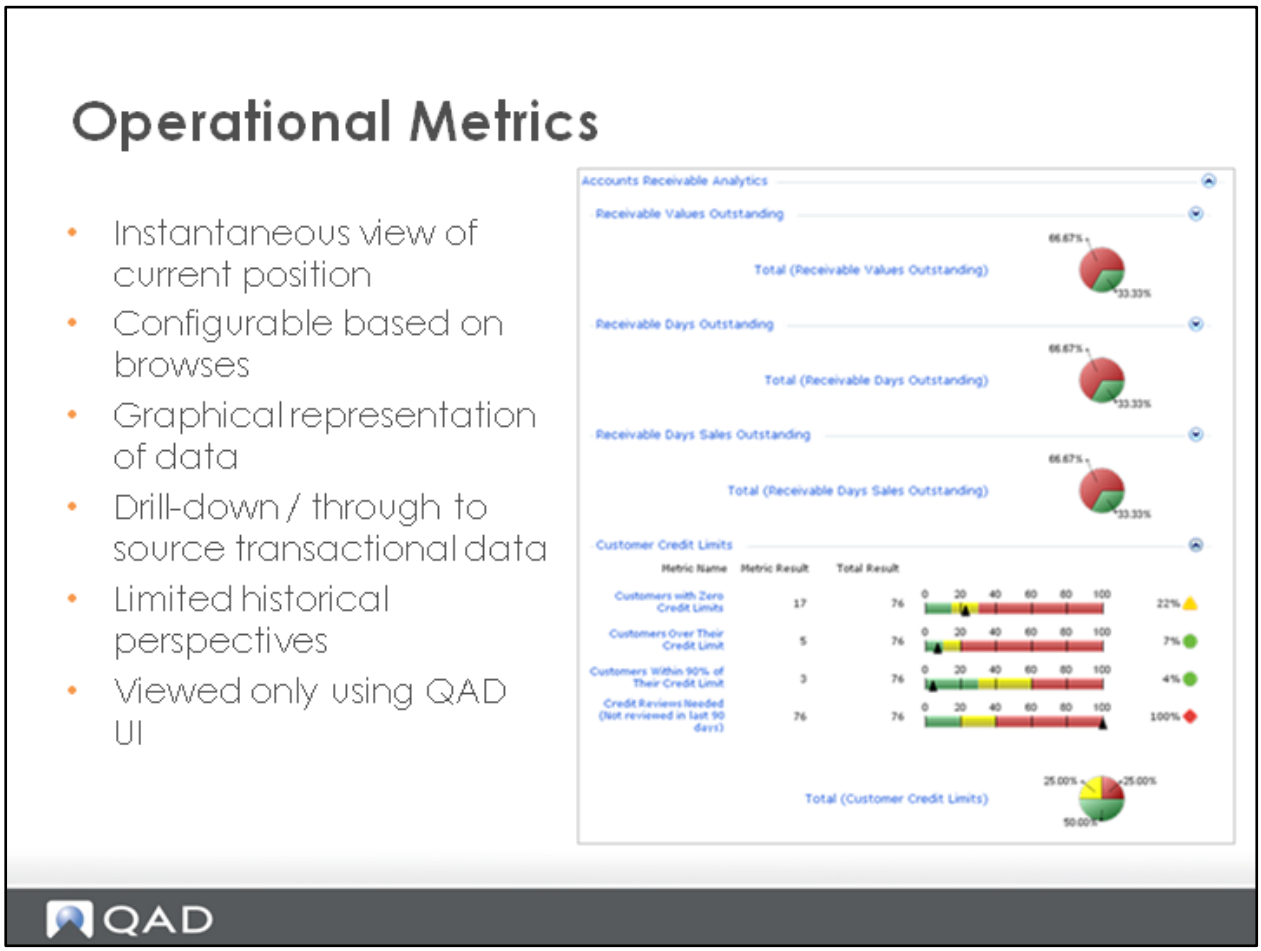
Browses & Collections



There is little doubt that the introduction of Browses and Collections has dramatically improved the user's ability to report, drill down and work with related products such as Excel. It's important, however, for us to appreciate their advantages and limitations.

Browses provide an instantaneous view of the current position. However, there are limited graphical representation and historical data. Browses and collections can only be viewed using the QAD UI.

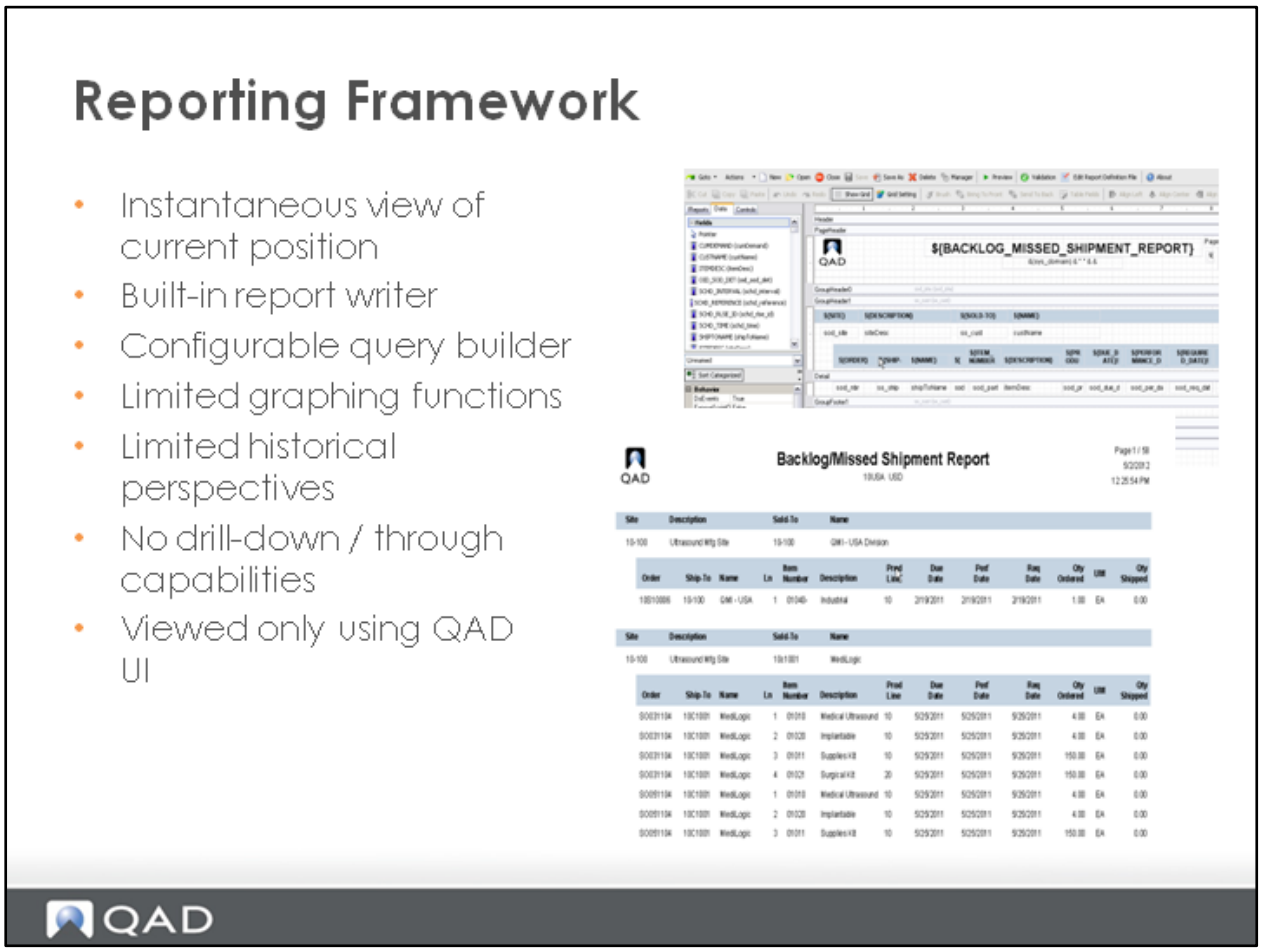
Operational Metrics



Operational Metrics have further improved our offerings, allowing customers to measure the readiness and status of processes such as ABC Analysis or Credit Management. They also allow customers to monitor a growing number of metrics such as inventory turns or receivable days outstanding. As with Browses & Collections, we should understand the benefits and limitations.

Operational Metrics provide an instantaneous and graphical view of the current positions. There are limited historical perspectives and the Metrics can only be viewed in the QAD UI.

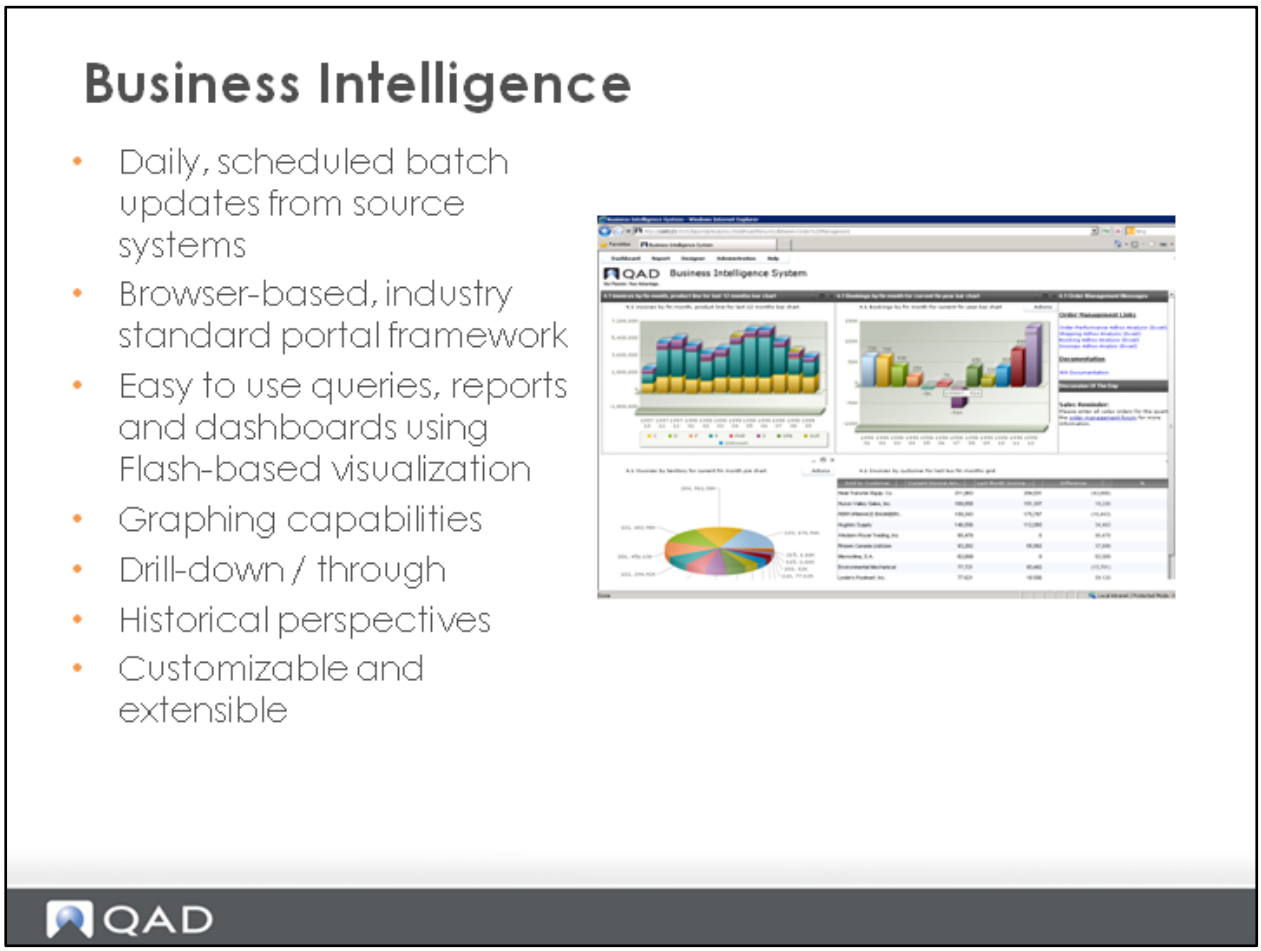
Reporting Framework



Key Concept: It is very important to understand that BI is not intended to be used as a report writer. The QAD Reporting Framework should be used to create and run reports against ERP operational data.

As with Browses and Operational Metrics, the Reporting Framework provides an instantaneous view of the current position. Also, limited historical perspectives. The Reporting Framework requires the QAD UI.

Business Intelligence

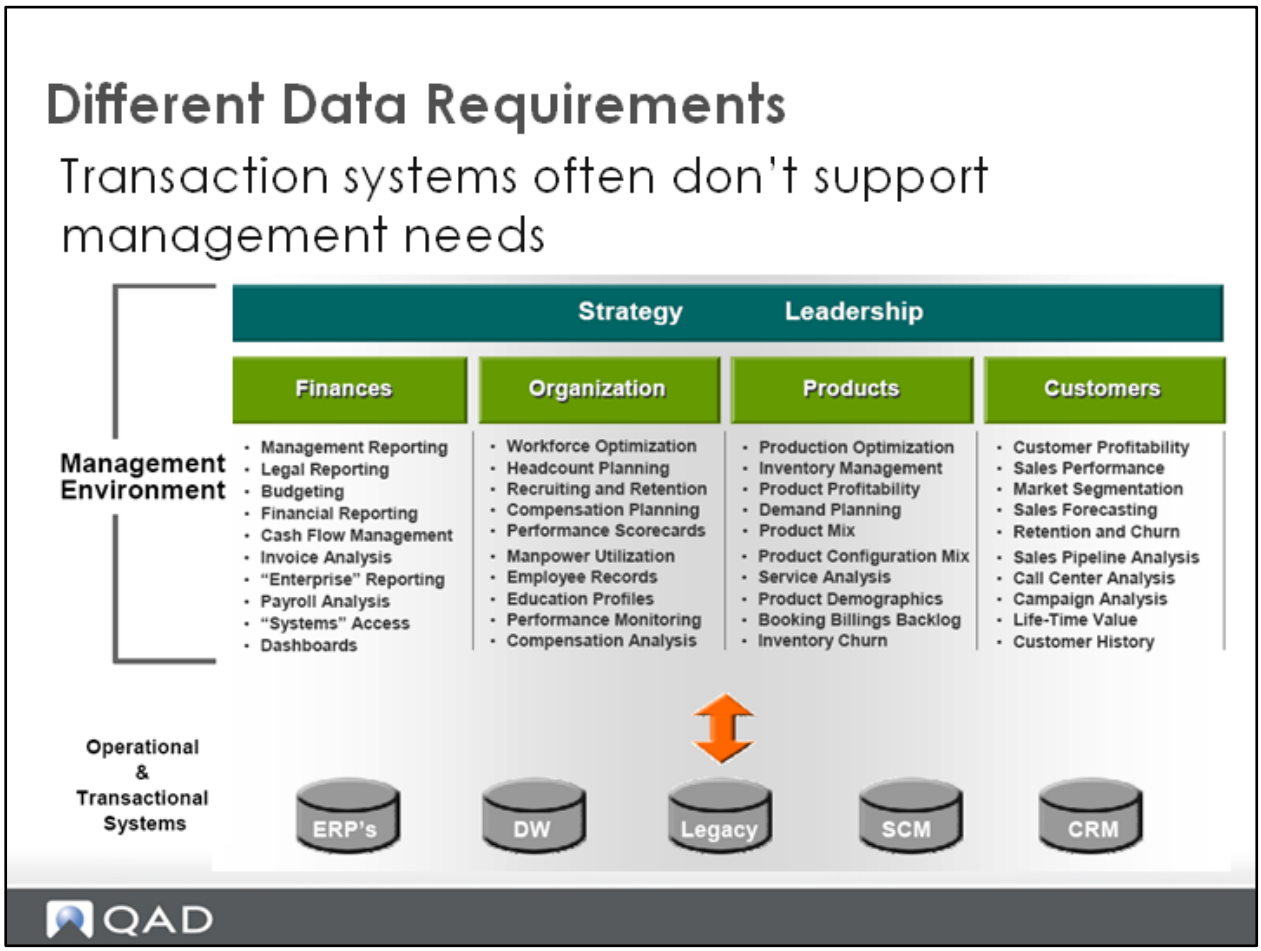


In composed to our other solutions, BI is not an instantaneous view of current data. The data in the BI is updated via batch updates, generally scheduled for once a day.

The BI Portal is browser-based, it does not use the standard QAD UI.

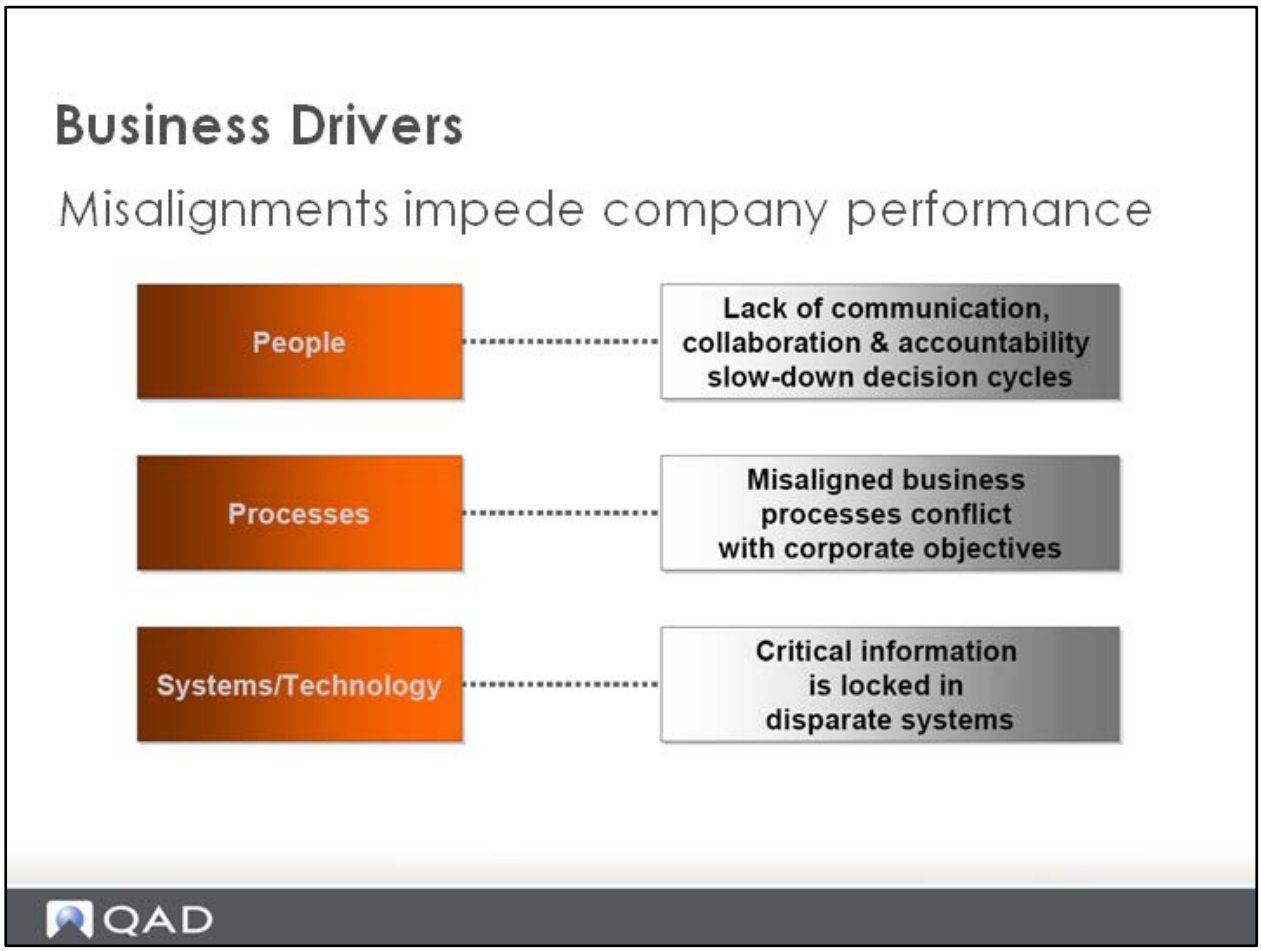
Our advantage is – simple, easy to use, not overloaded with features like others are – AND our application leverages the meta data in the Warehouse – labels, descriptions that are user friendly, not cryptic database names.

Different Data Requirements



ERP systems support the operational needs of a company. However, the data in an ERP application is not organized in way that supports ad-hoc analysis.

Business Drivers

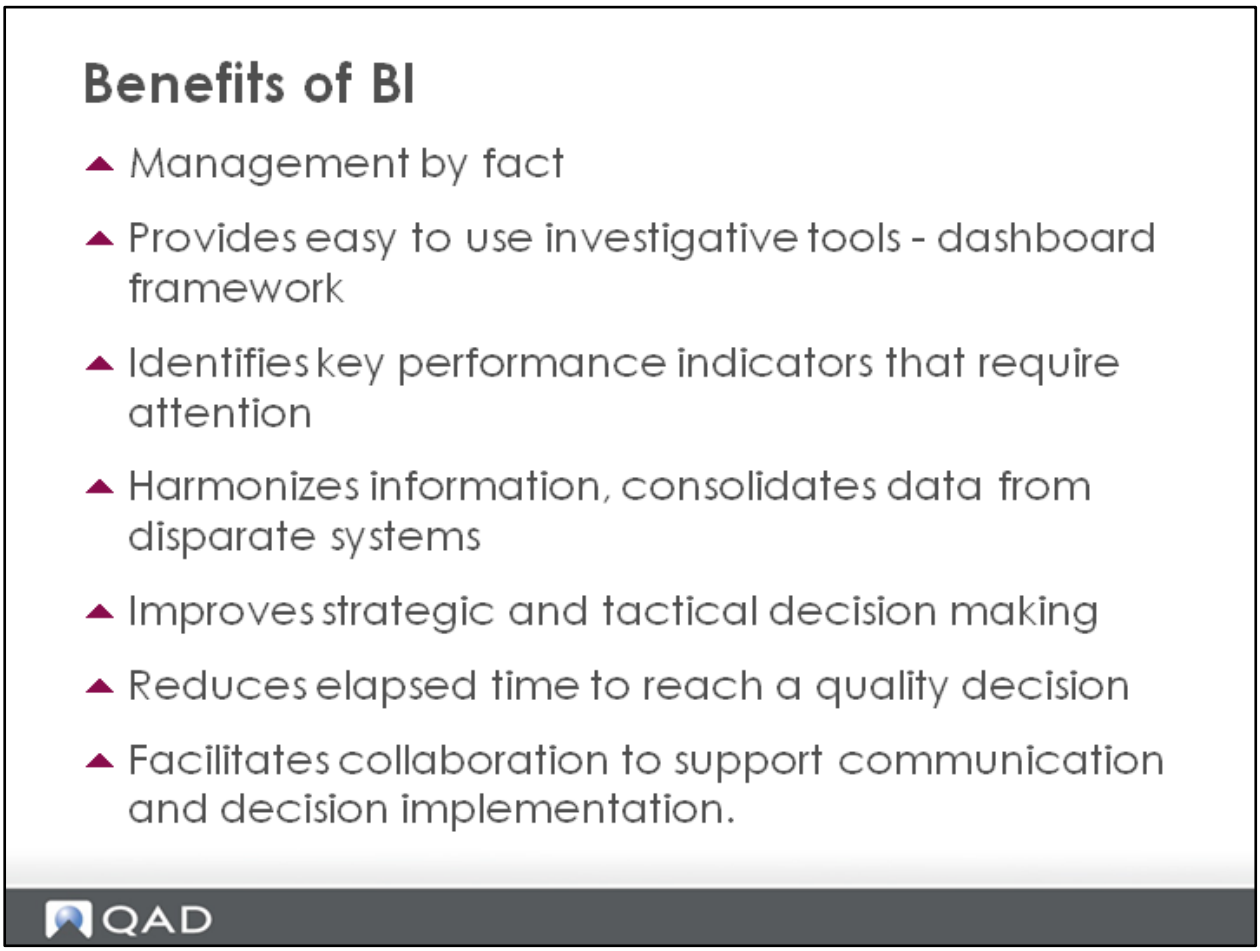


Key concept:

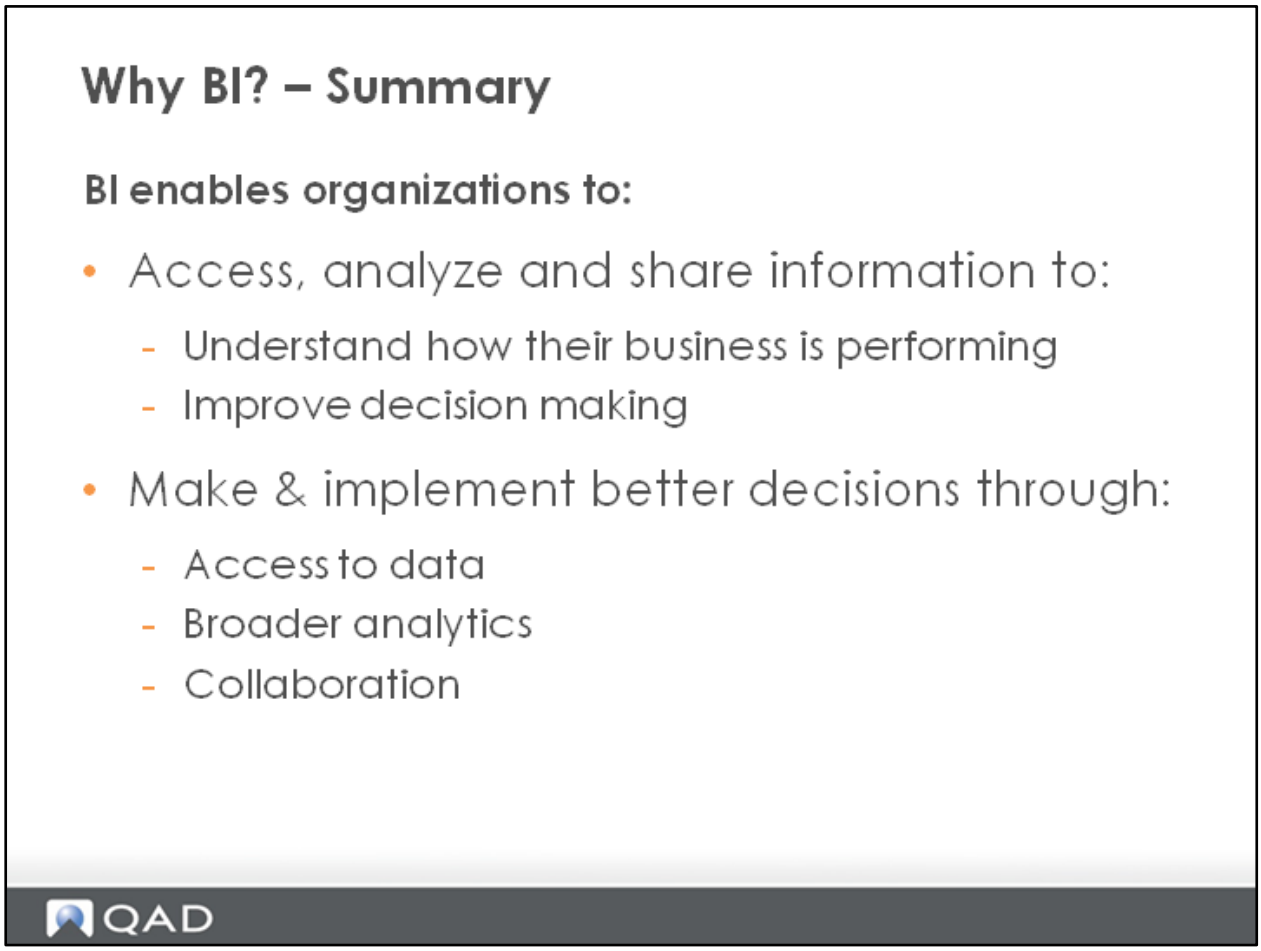
Important business drivers of the BI Solution include:

- The need to consolidate data from a variety of sources.
- Business decision makers need to view data in a summary.
- Collaboration on data is required. It is important that all decision makers be looking at the same data.

Benefits of BI

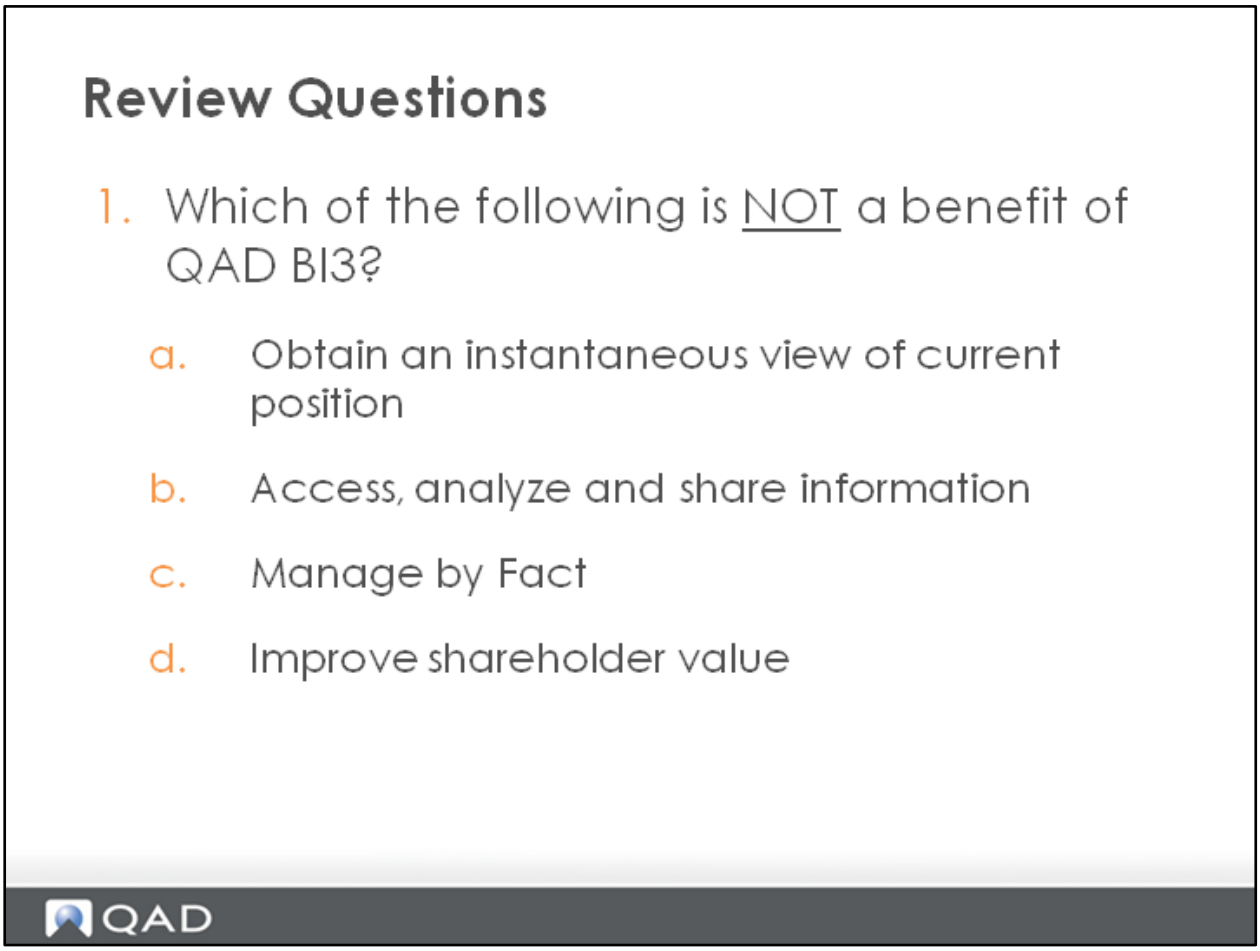


Why BI? – Summary



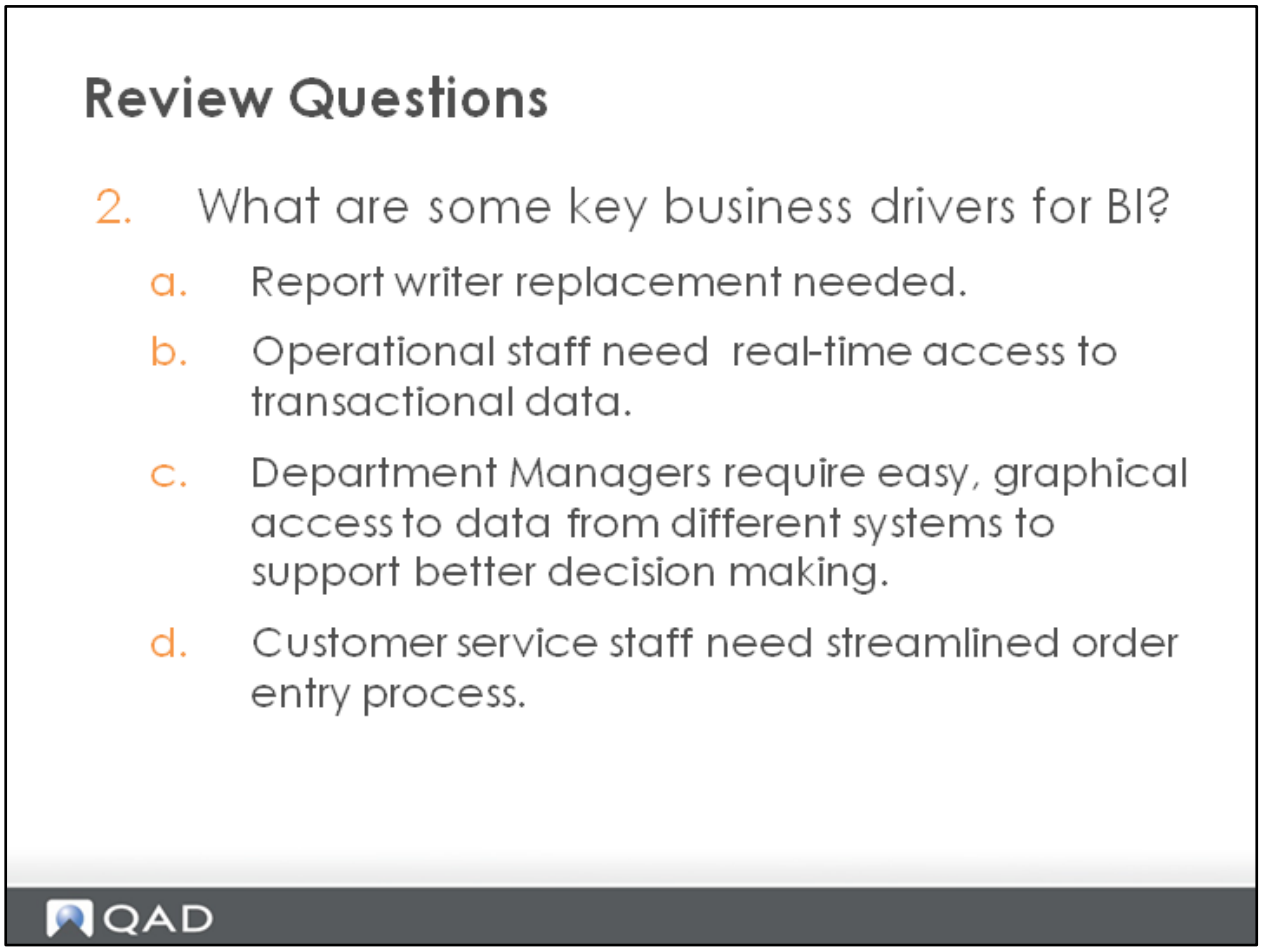
In summary, the QAD BI solution provides management, analysts and planners visibility to key business data to support improved decision making. Collaboration tools make it possible to shorten the cycle-time for problem investigation and resolution.

Review Questions



1 - a

Review Questions

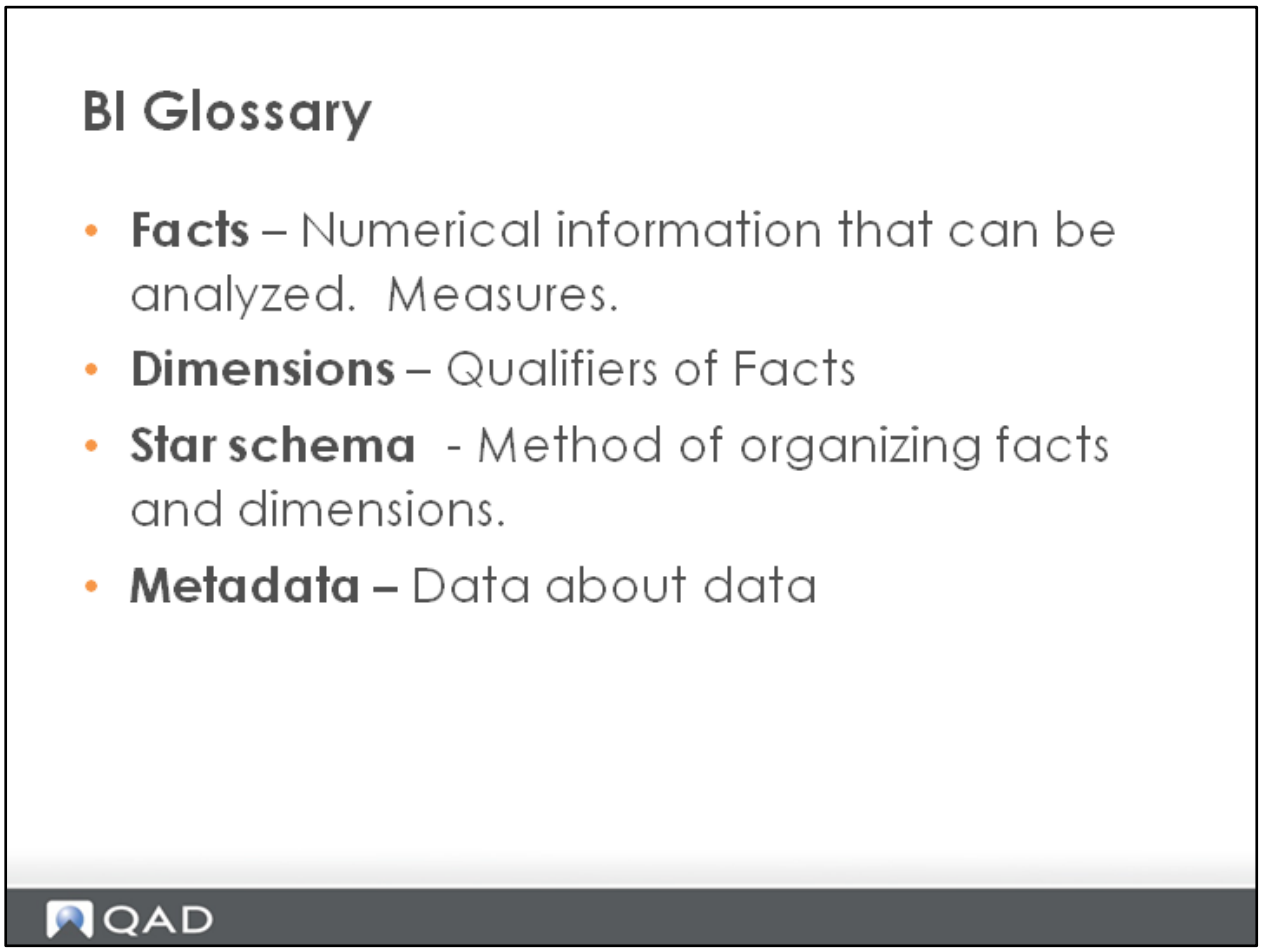


2-c

BI – Basic Terms and Concepts



BI Glossary



Glossary:

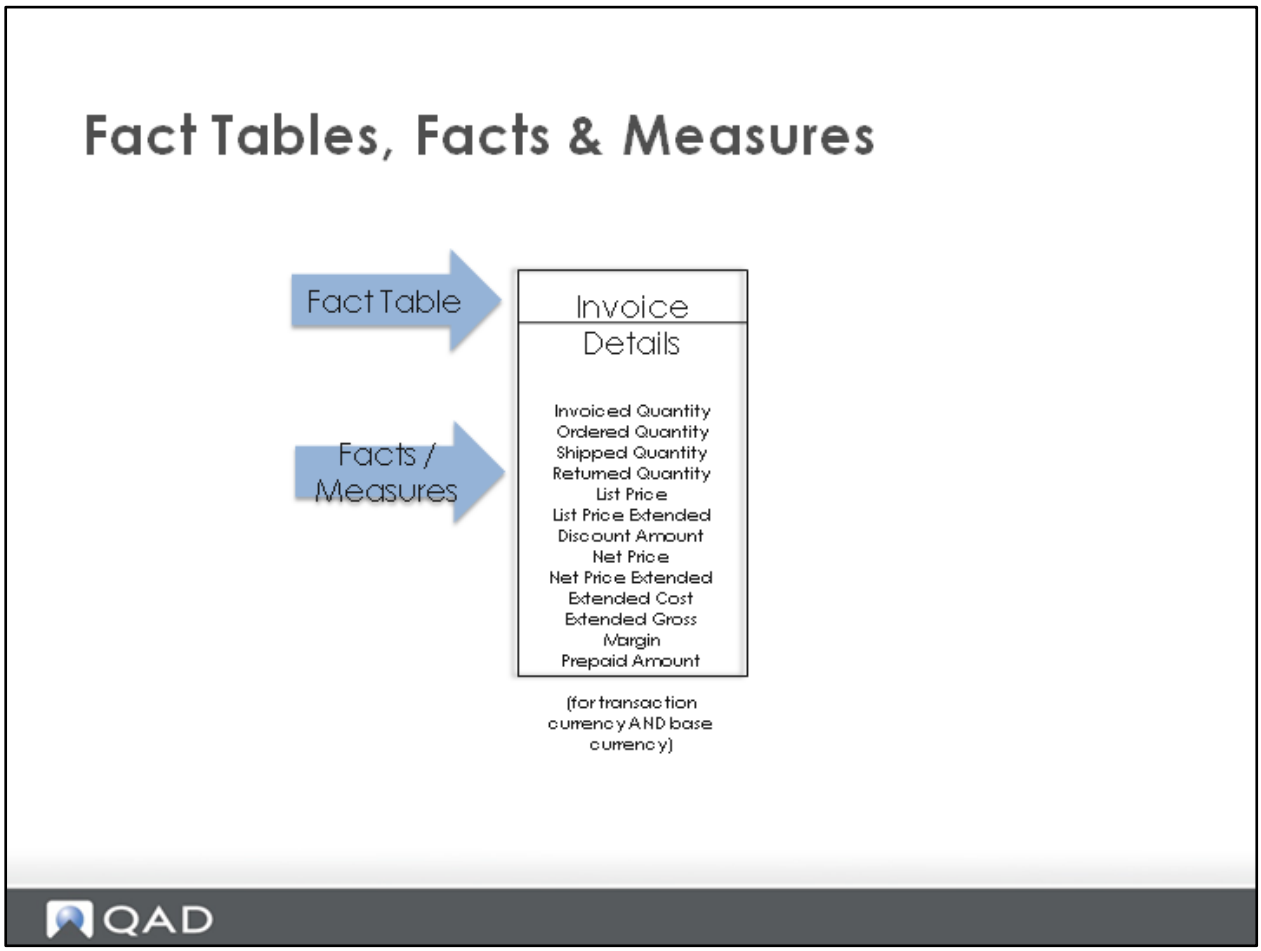
Facts – Numerical information that can be analyzed by BI applications. E.g. total quantity sold, total sales dollars. Individual Facts are also called *Measures*

Dimensions – Qualifiers of Facts. E.g. Transaction date, Customer name, Sales territory

Star schema - Method of organizing facts and dimensions for BI purposes. Star schemas can be deployed into relational databases (in our case SQL Server) and into proprietary Cubes. Examples of the latter are Microsoft's Analysis Services cubes or Cognos' cubes.

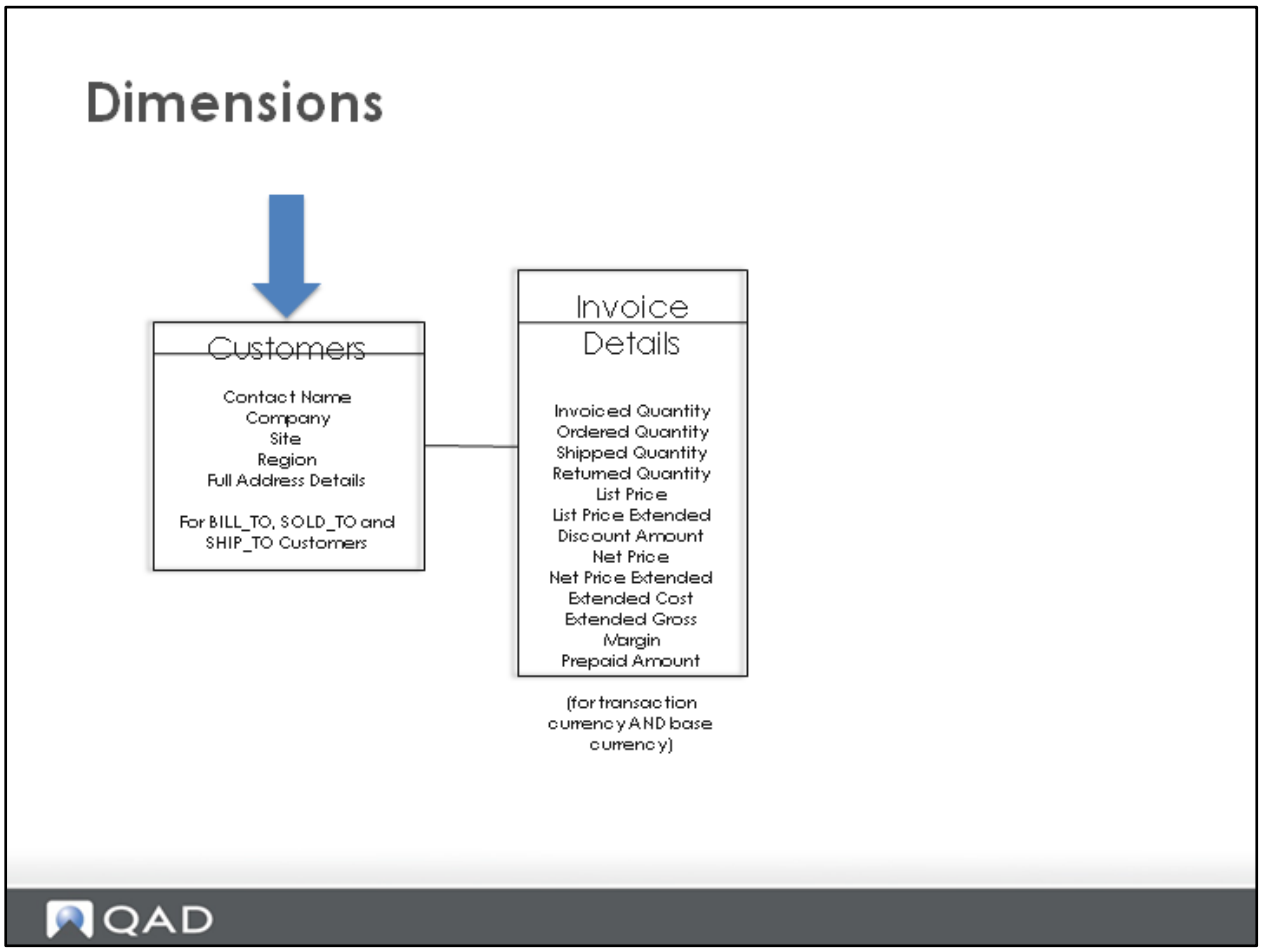
Metadata – Data about data. For example: Columns in a fact table. Column names and formats.

Fact Tables, Facts & Measures



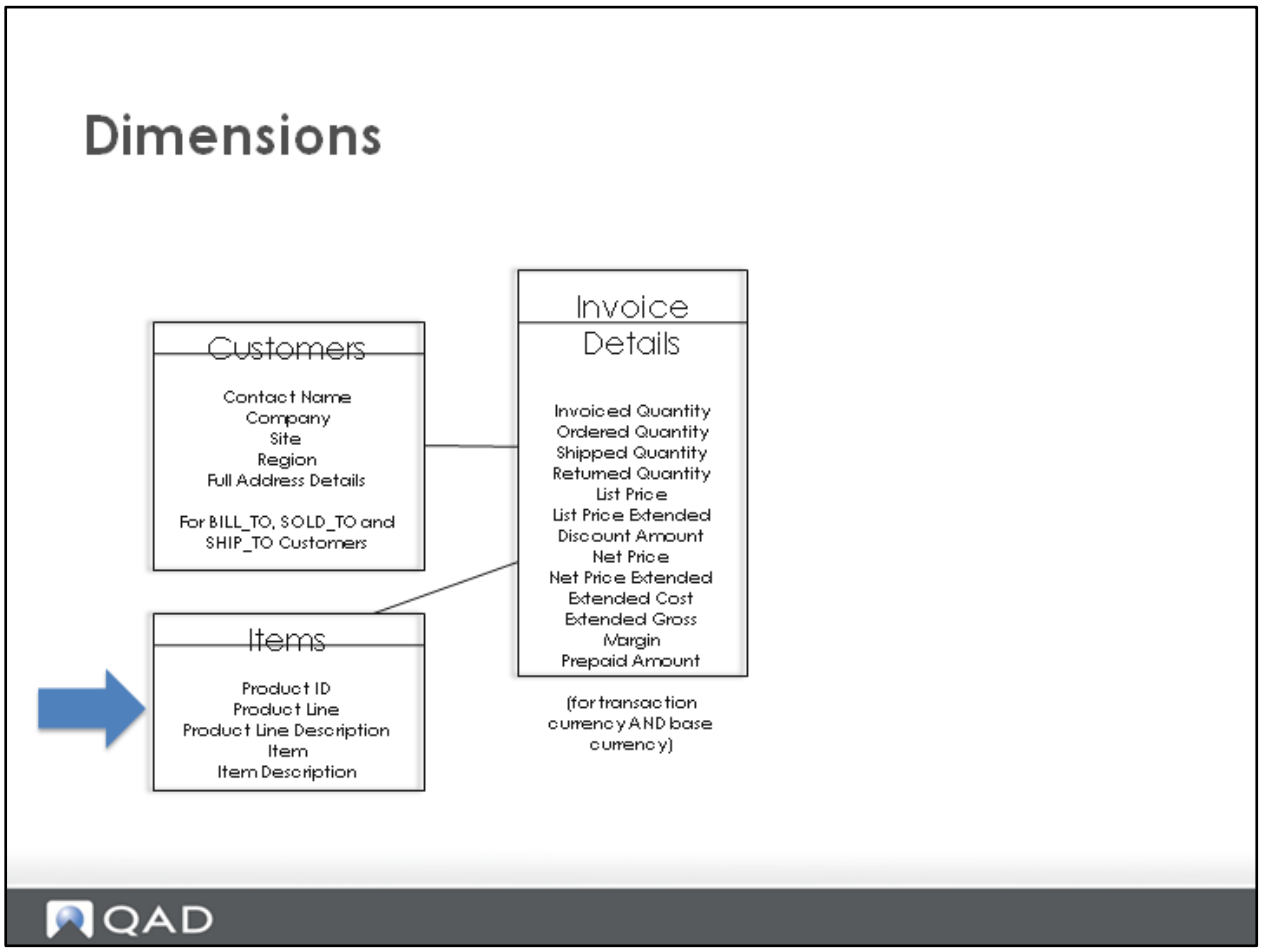
The object *Invoice Details* is an example of a **Fact** table.

Dimensions



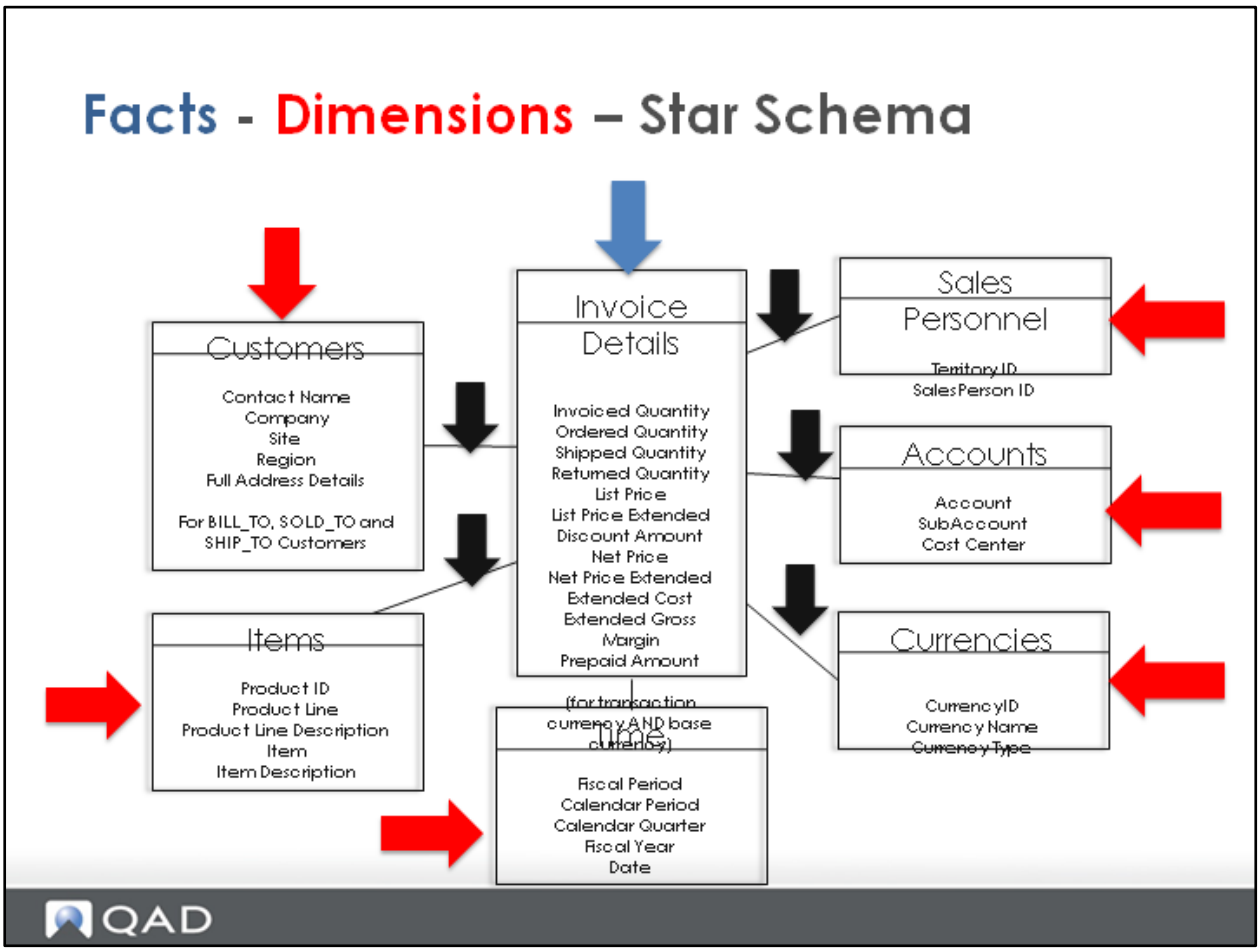
The object *Customers* is an example of a **Dimension** table.

Dimensions



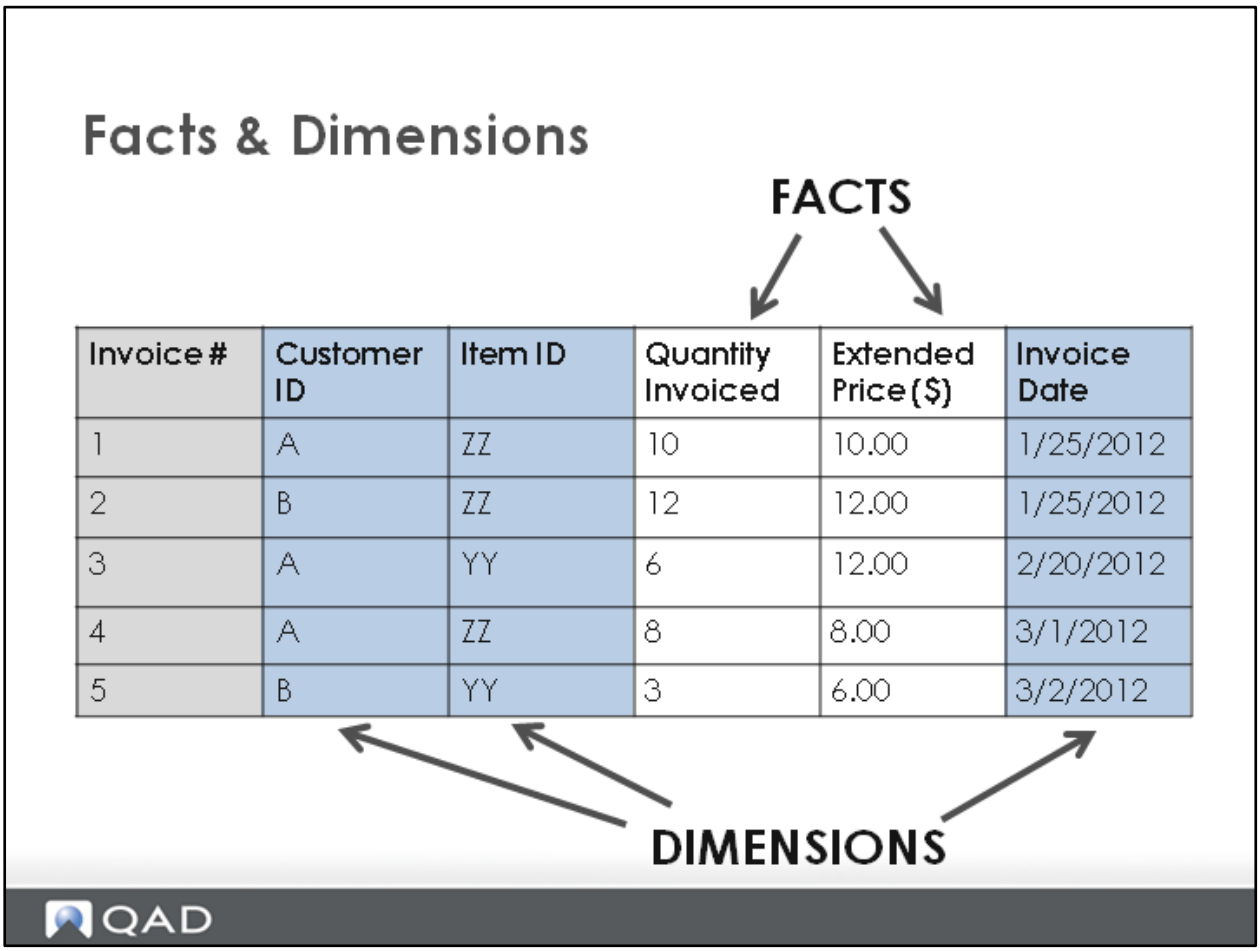
Items is another example of a **dimension** table.

Facts - Dimensions – Star Schema



Here are some other examples of dimension tables related to the fact table *Invoice Details.*

Facts & Dimensions



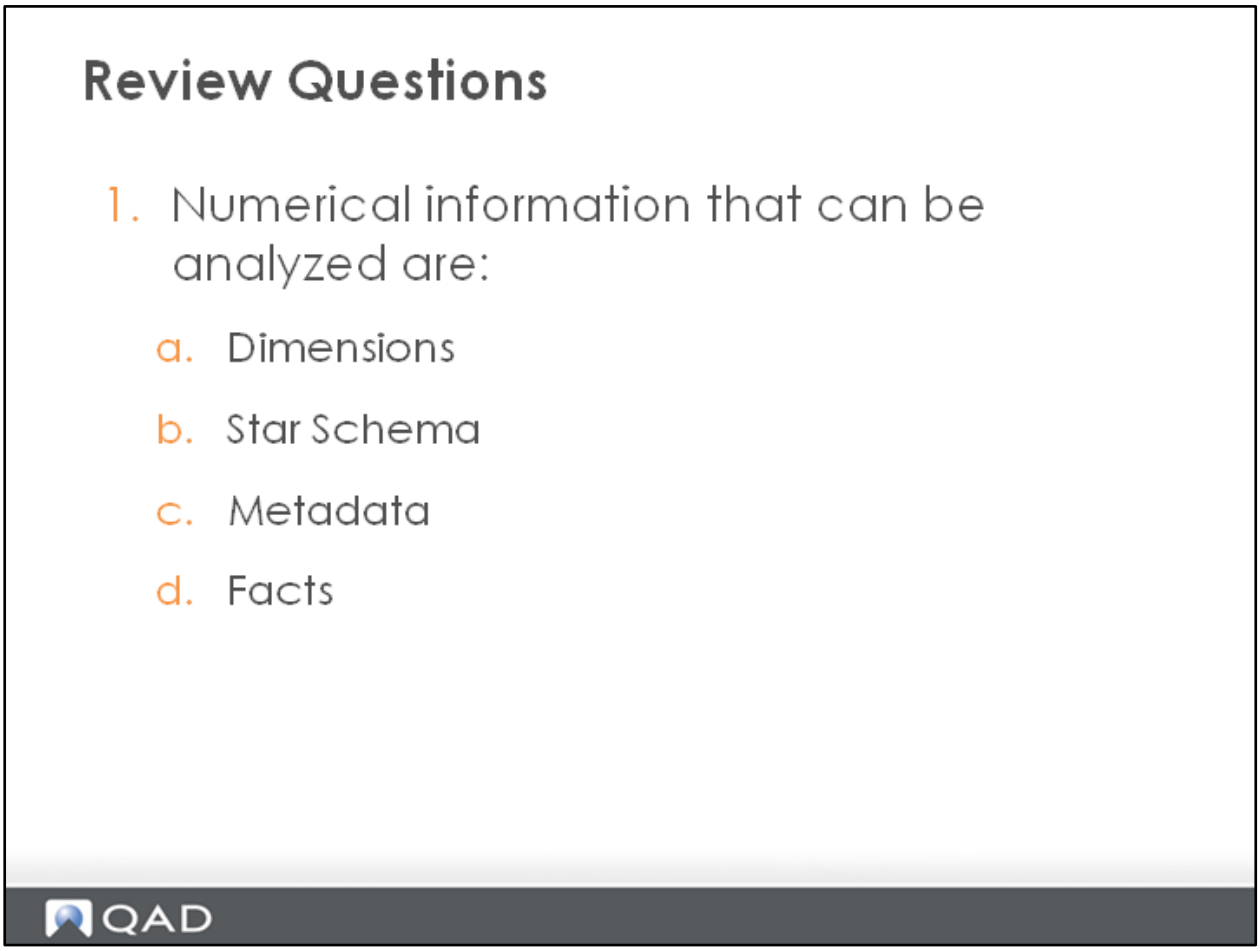
This is a very simple example of rows of data in a Data Warehouse.

The columns *Quantity Invoiced* and *Extended Price* are **Facts** or **Measures.**

The columns *Customer ID, Item Id* and *Invoice Date* are **Dimensions.**

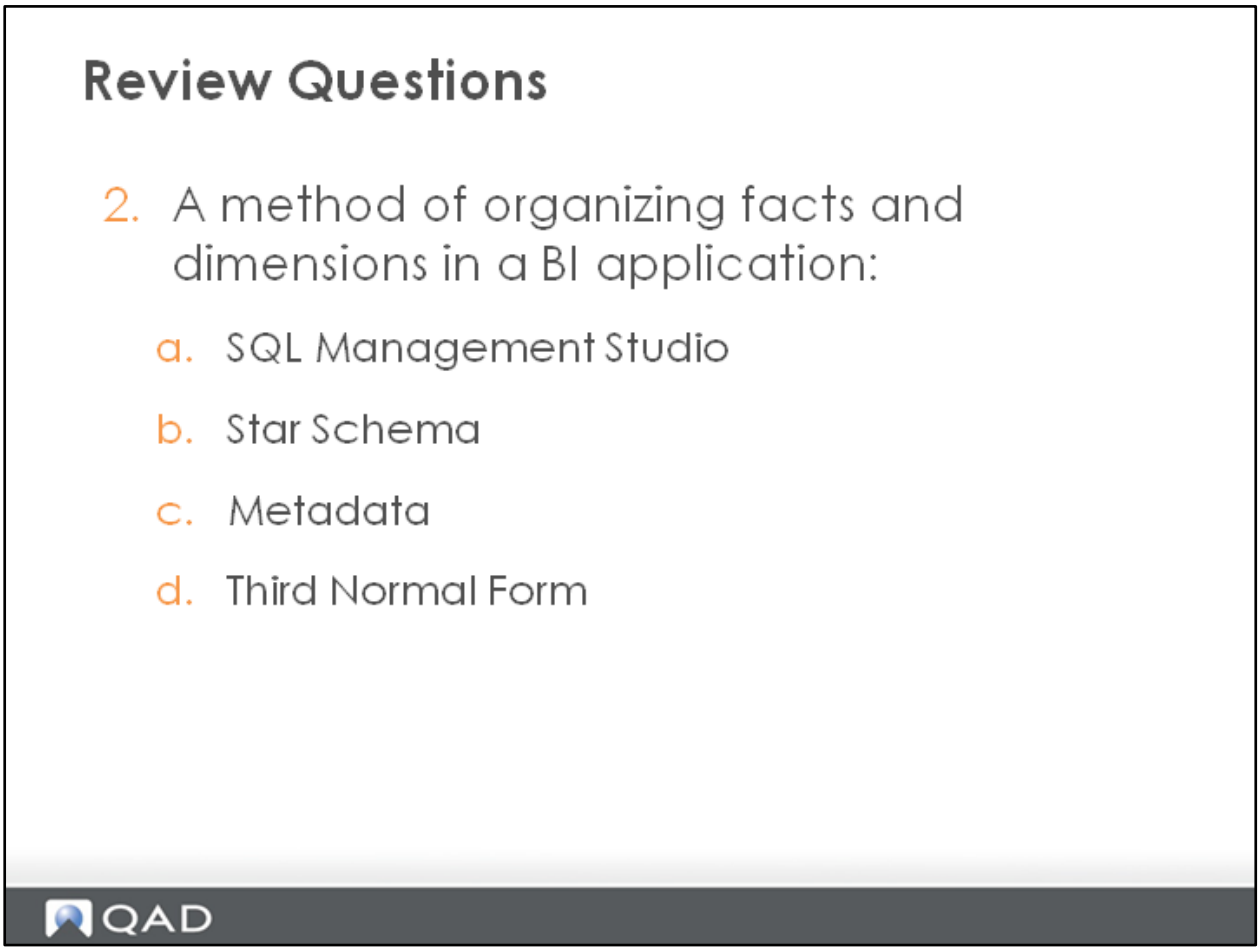
The column *Invoice ID* is an Operational Code. Operational codes are outside the scope of this discussion.

Review Questions



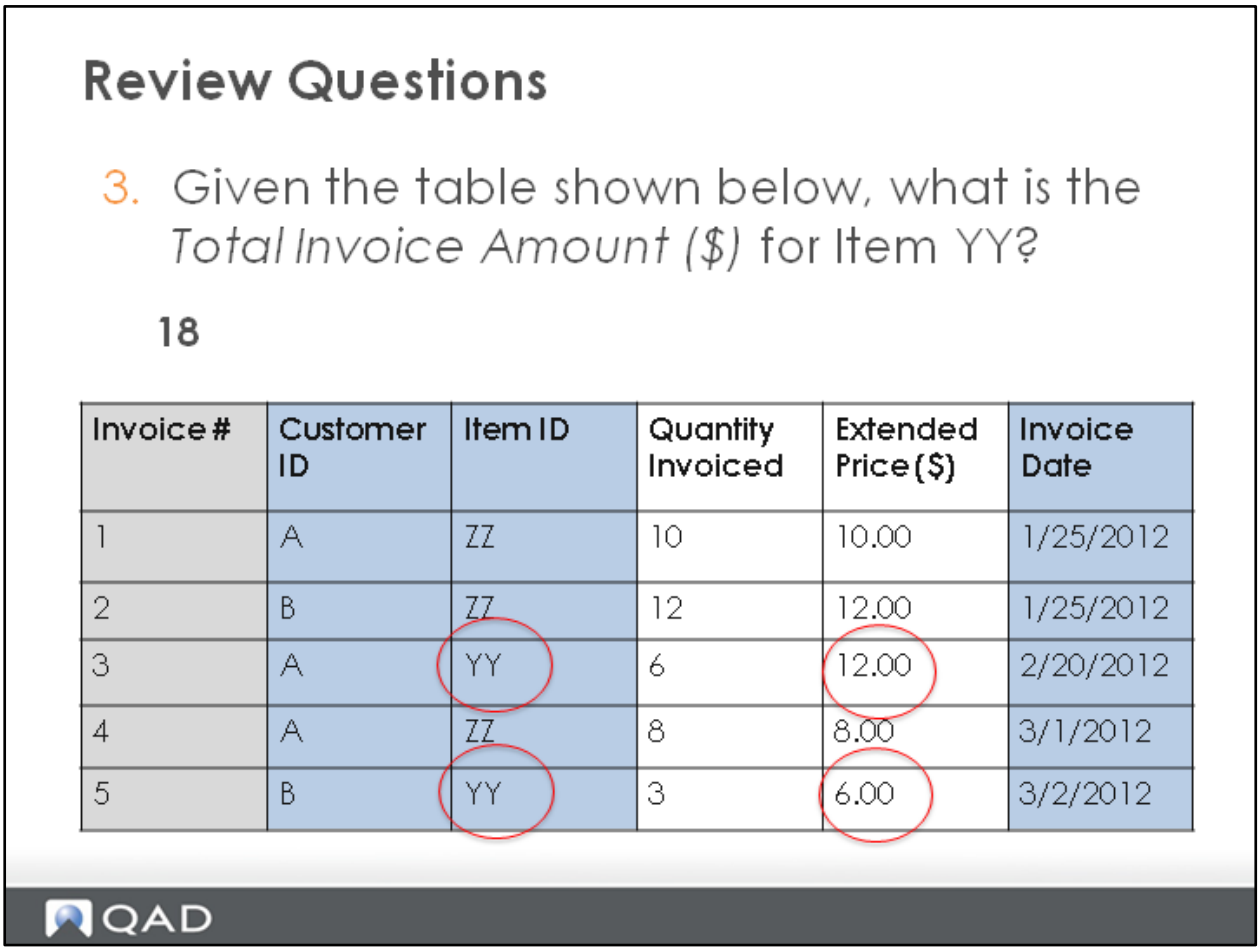
2-d

Review Questions



2-b

Review Questions



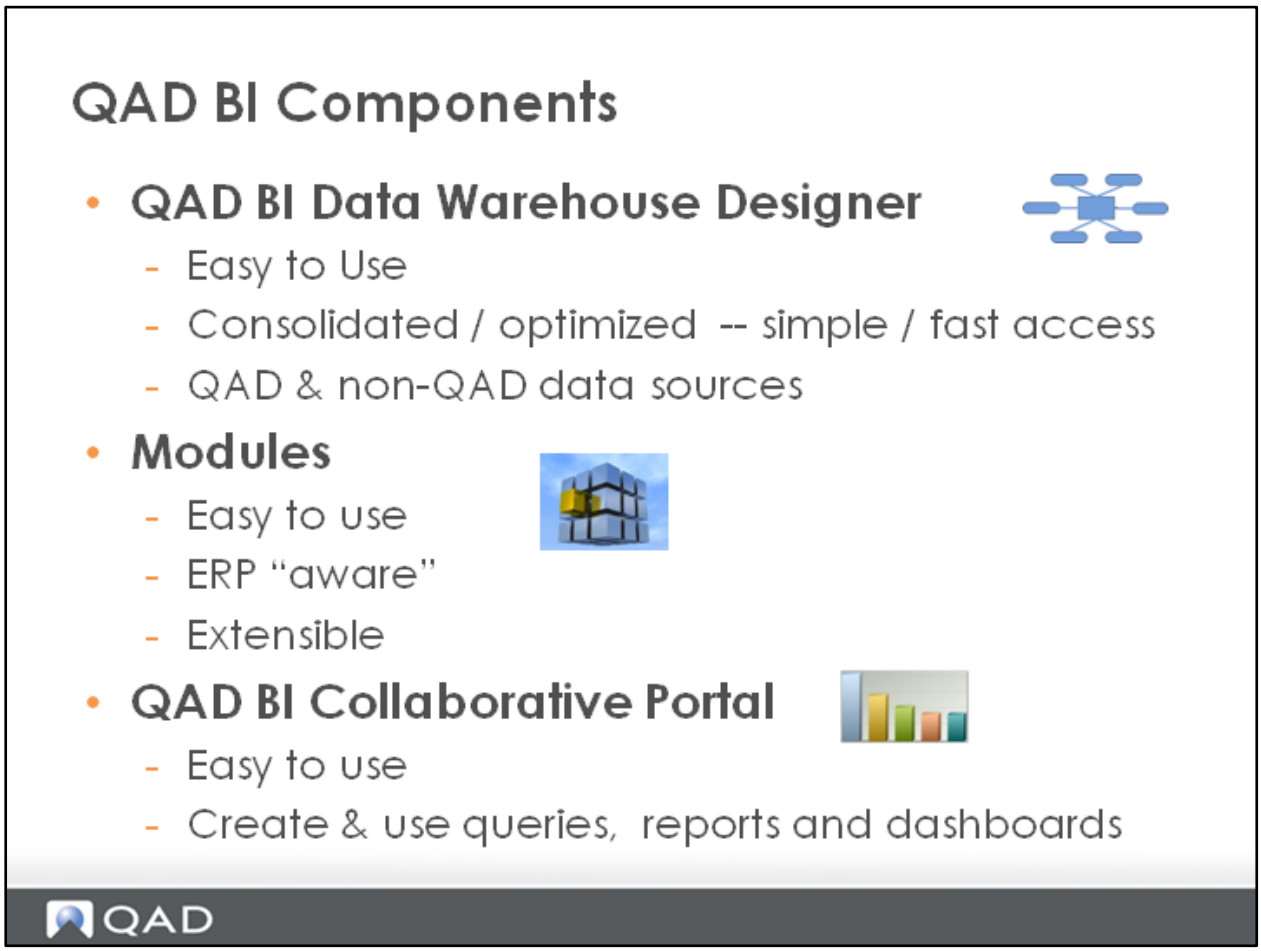
Invoice #	Customer ID	Item ID	Quantity Invoiced	Extended Price ($)	Invoice Date
1	A	ZZ	10	10.00	1/25/2012
2	B	ZZ	12	12.00	1/25/2012
3	A	YY	6	12.00	2/20/2012
4	A	ZZ	8	8.00	3/1/2012
5	B	YY	3	6.00	3/2/2012

The *Total Invoice Amount ($)* is the sum of the rows for Invoice #3 and Invoice #5.

QAD BI Solution Overview



QAD BI Components



Key Concept:

QAD BI Components:

QAD BI Data Warehouse Developer (DWD)

Consolidate into a single warehouse optimized for simple, fast access

QAD and non-QAD data sources

Modules

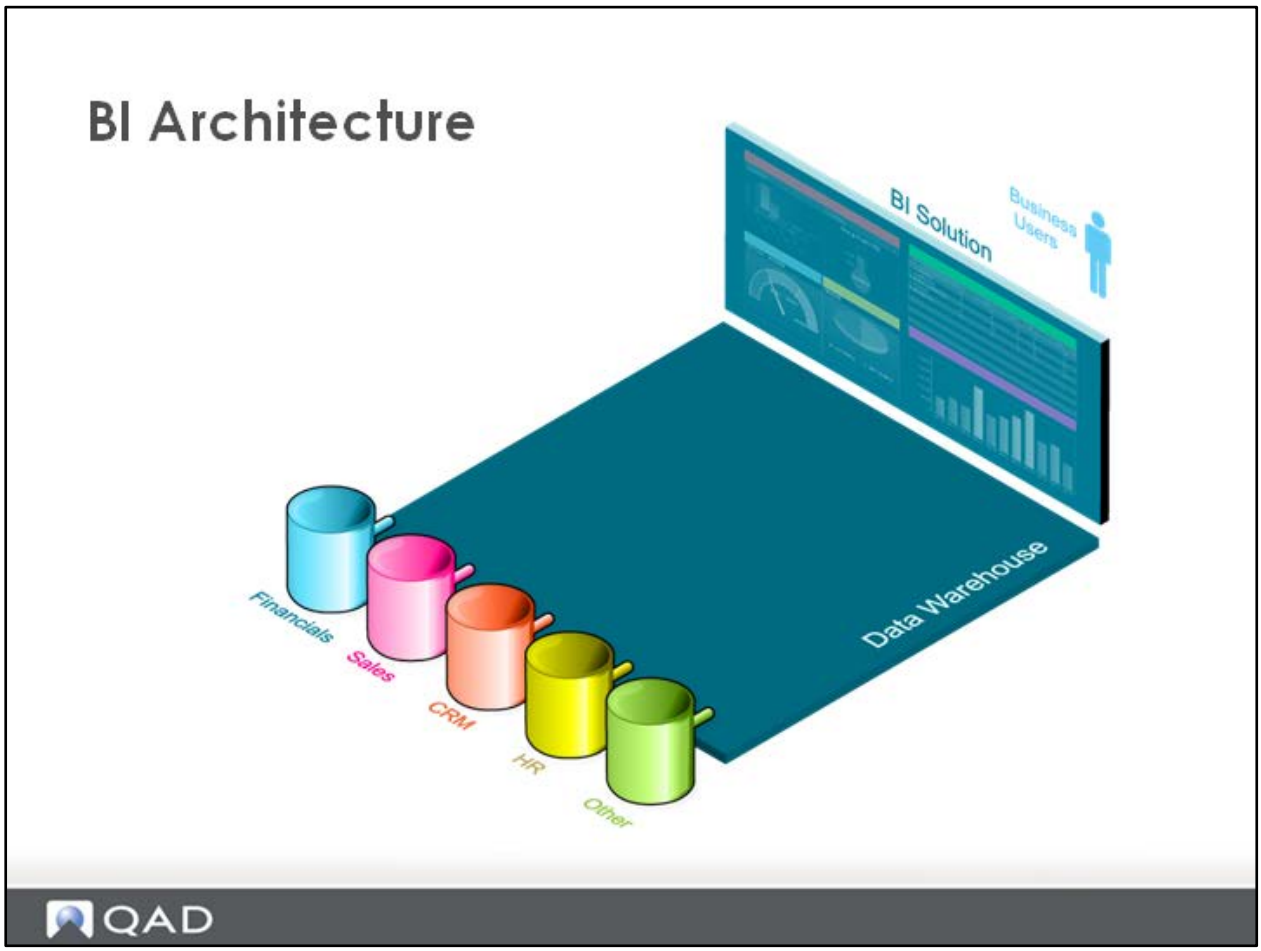
ERP "aware" streamlines access to current and historical QAD ERP data

Extensible to support non-QAD data sources

QAD BI Collaborative Portal

Easy to use and create dashboard and reporting environment

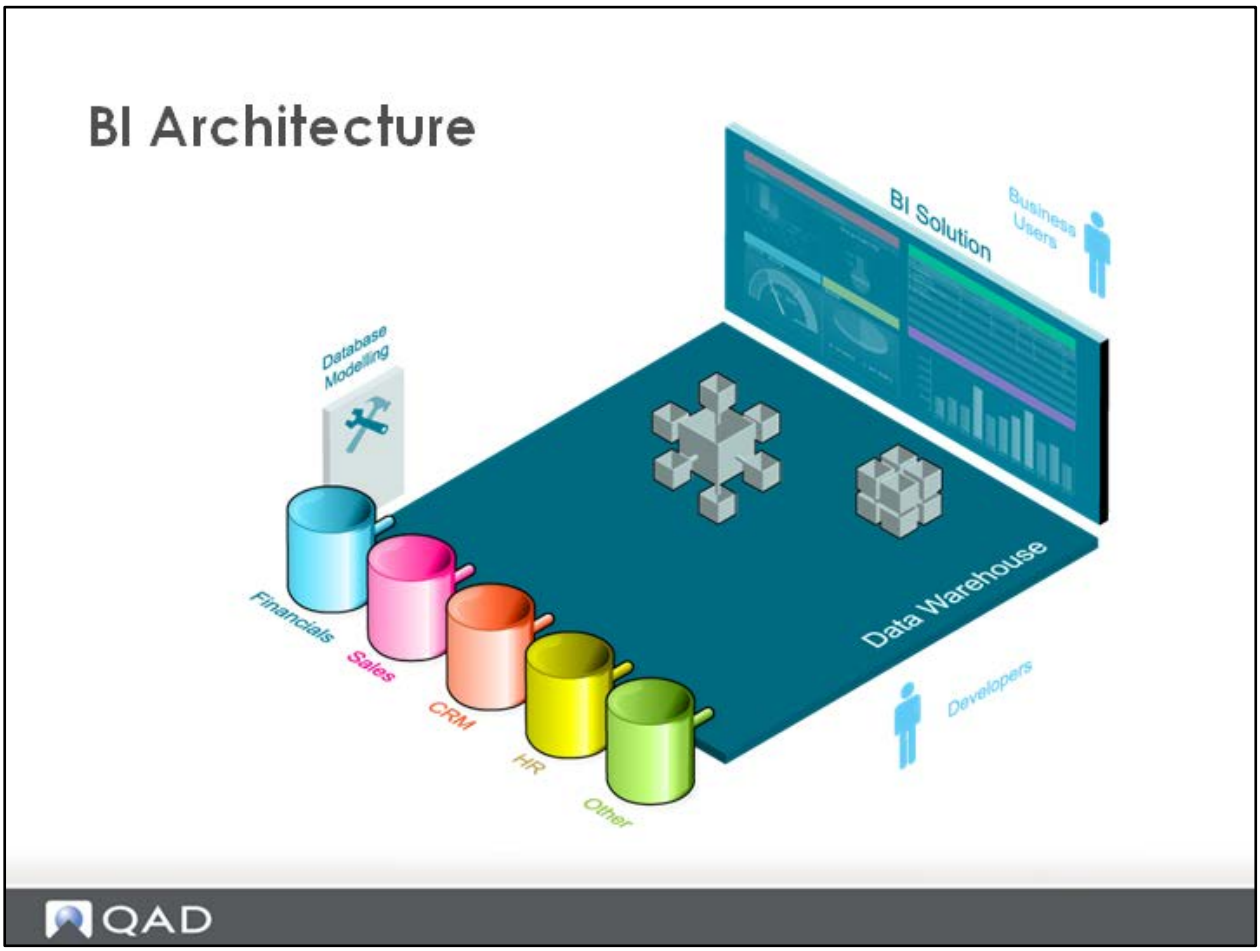
BI Architecture



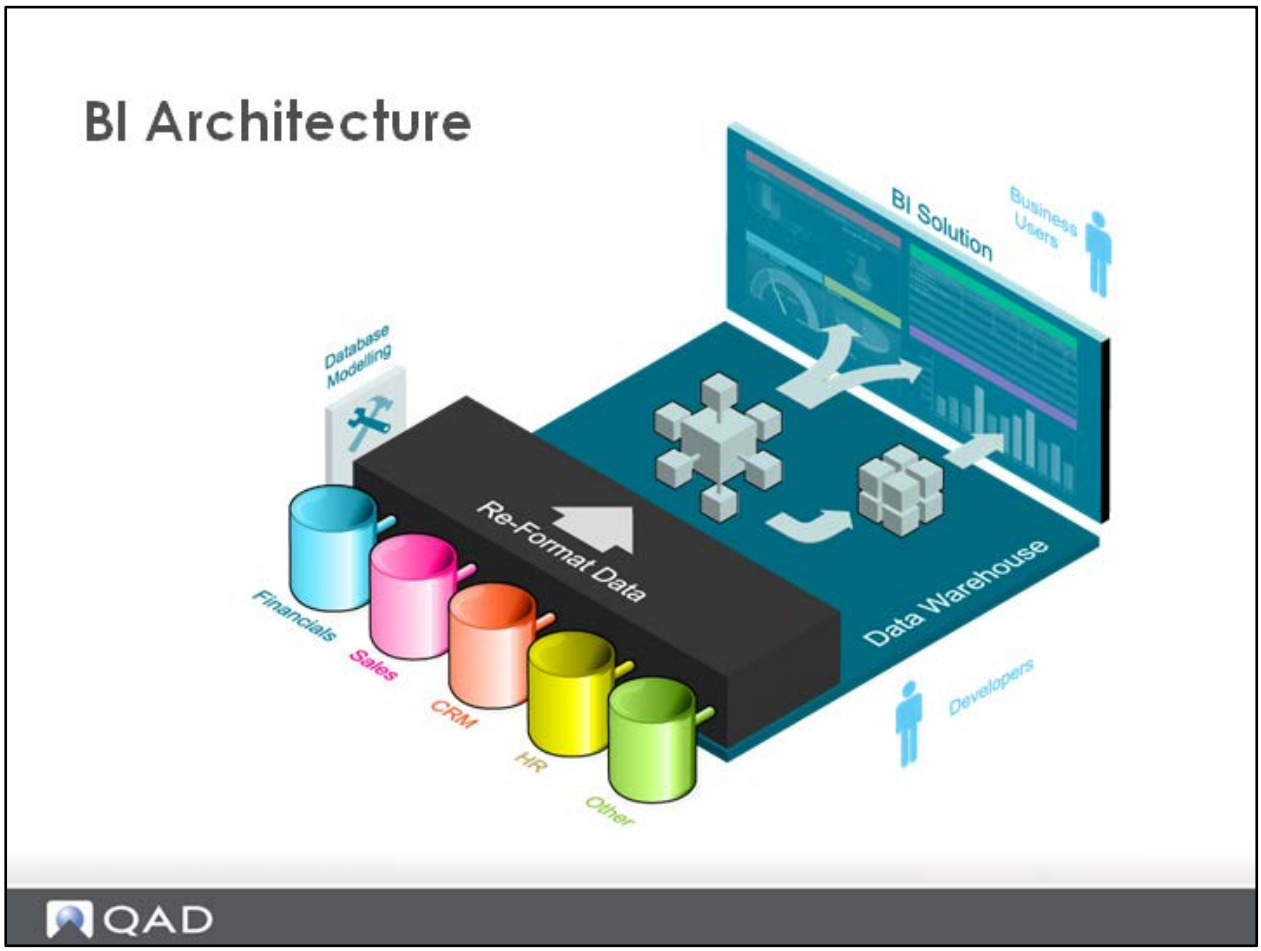
The problem with operational systems (ERP, EAM, etc) is that the data is stored in a format and level that supports the day-to-day business processes of the organization. In addition, this transactional data may be stored in many different systems and formats. Business decision making is improved when consolidated data is available with easy-to-use access.

One solution is to extract the data out of the transactional (i.e. “source”) systems and integrate the data in a data warehouse. The data warehouse is often the only true Enterprise system. QAD BI Data Warehouse Designer (BI DWD) provides all the functionality required to build and manage the blue box, whilst remaining agnostic on the reporting tools. Often people have multiple reporting tools to support external, internal and analyst users.

BI Architecture

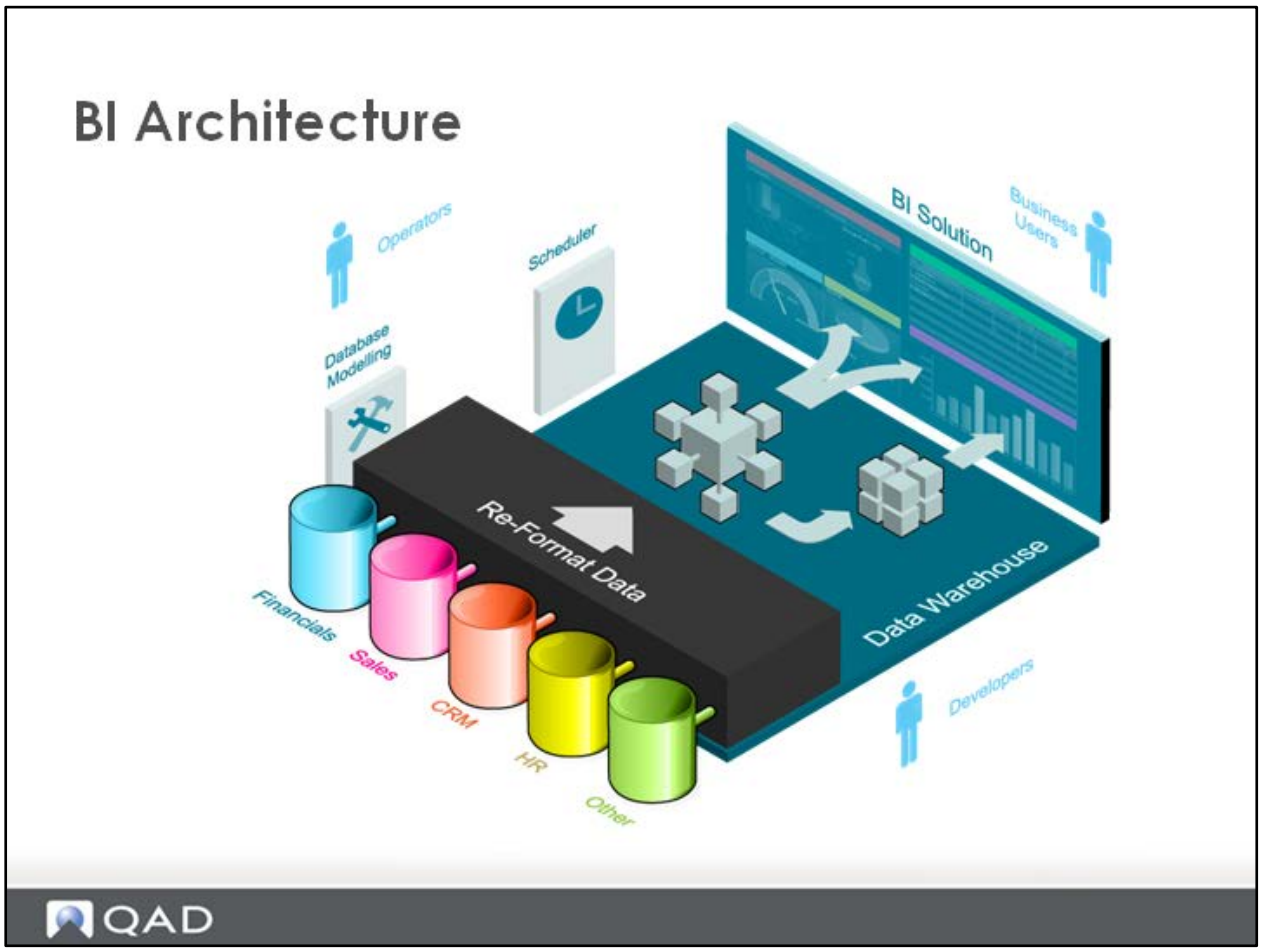


BI Architecture



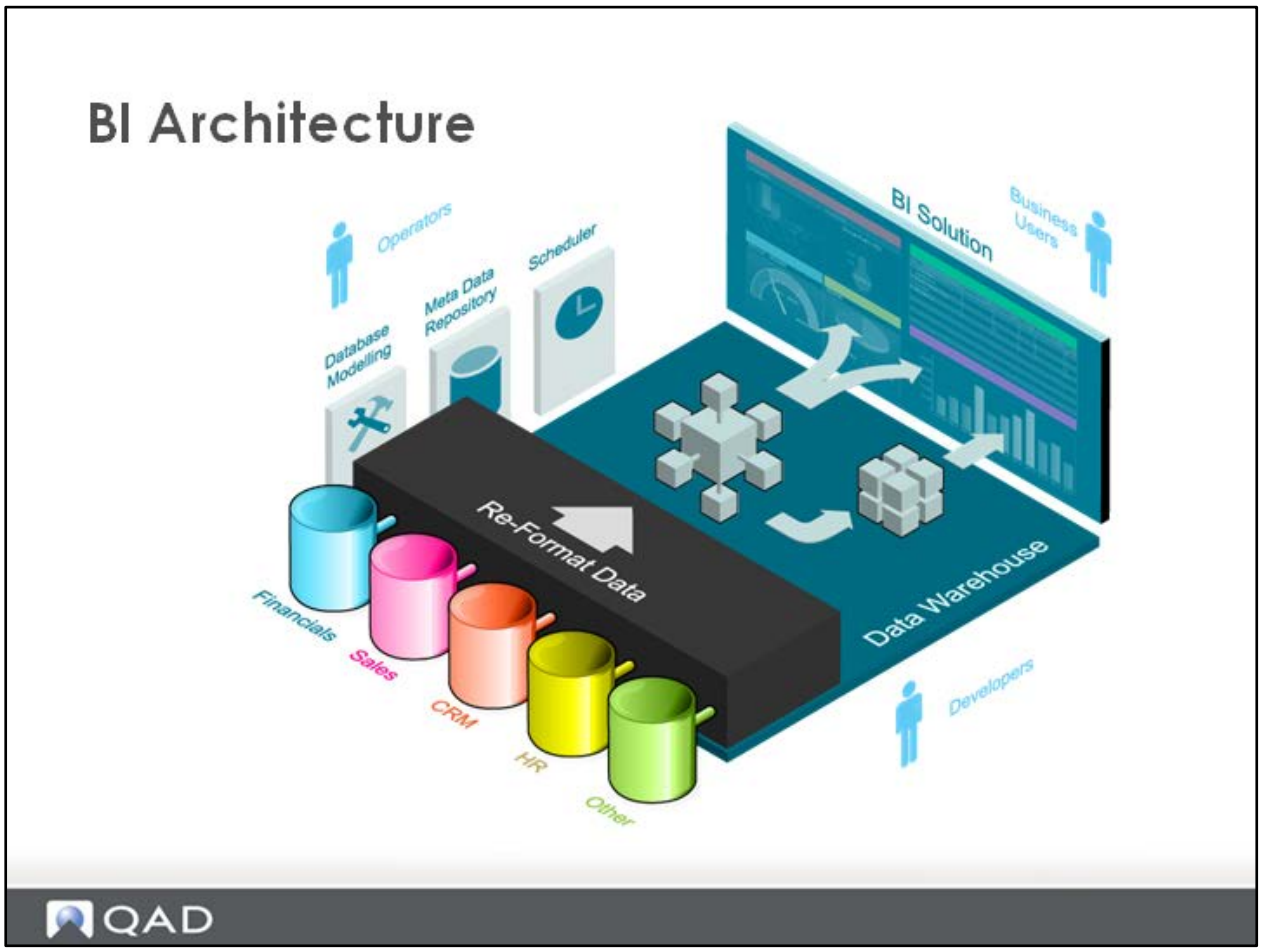
Historically, data warehouses have included Extract, Transform, Load (ETL) tools. In contrast, QAD's Data Warehouse Designer provides a robust Extract, Load, Transform (ELT) capability which allows data to be compiled from a wide range of QAD and non-QAD sources to an SQL database.

BI Architecture



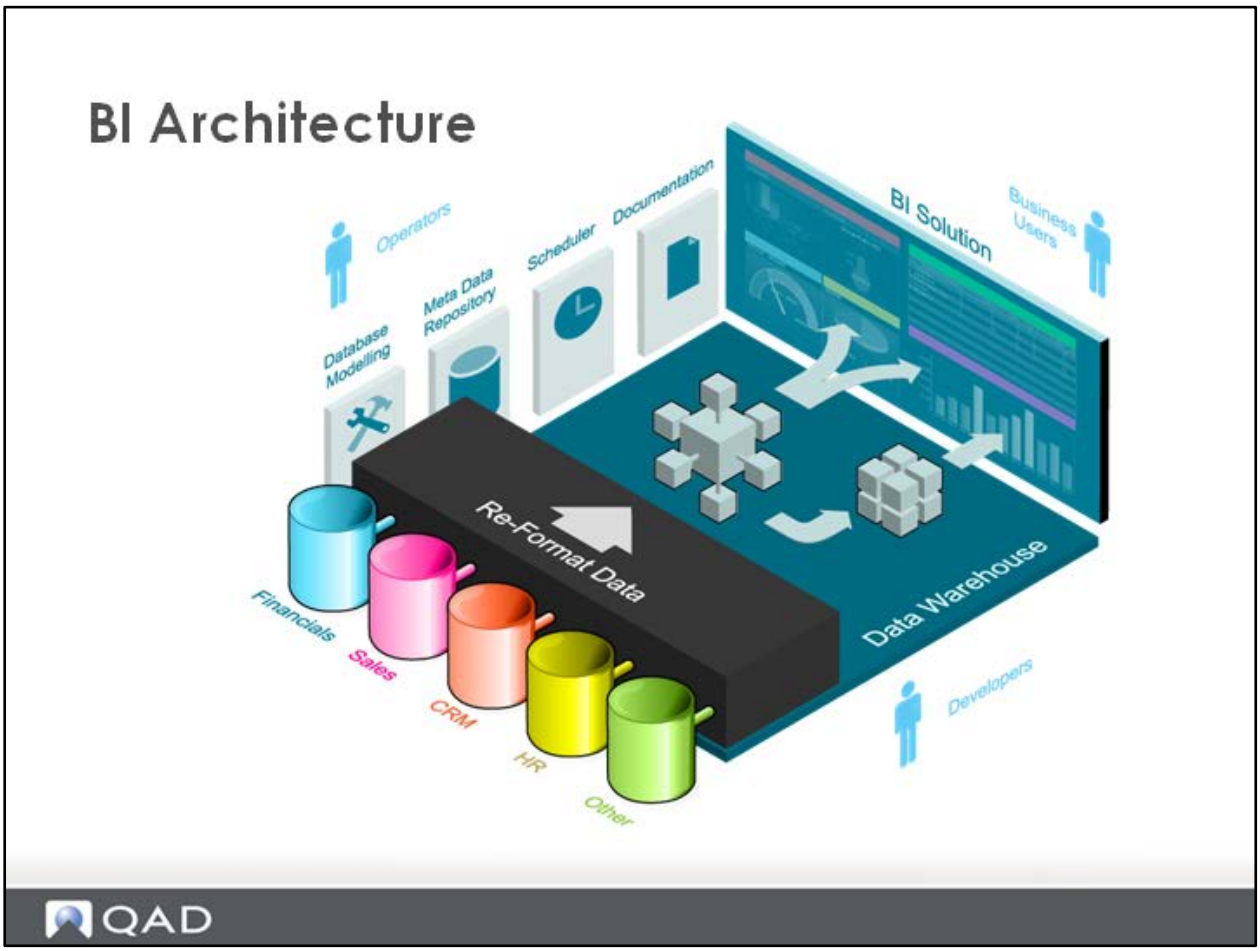
The scheduler determines refresh intervals and routines, documentation and data flows are automatically created saving both development and operations time.

BI Architecture



All the logic needed to transform the source data into a usable Data Warehouse is stored in the BI. This is the Metadata.

BI Architecture

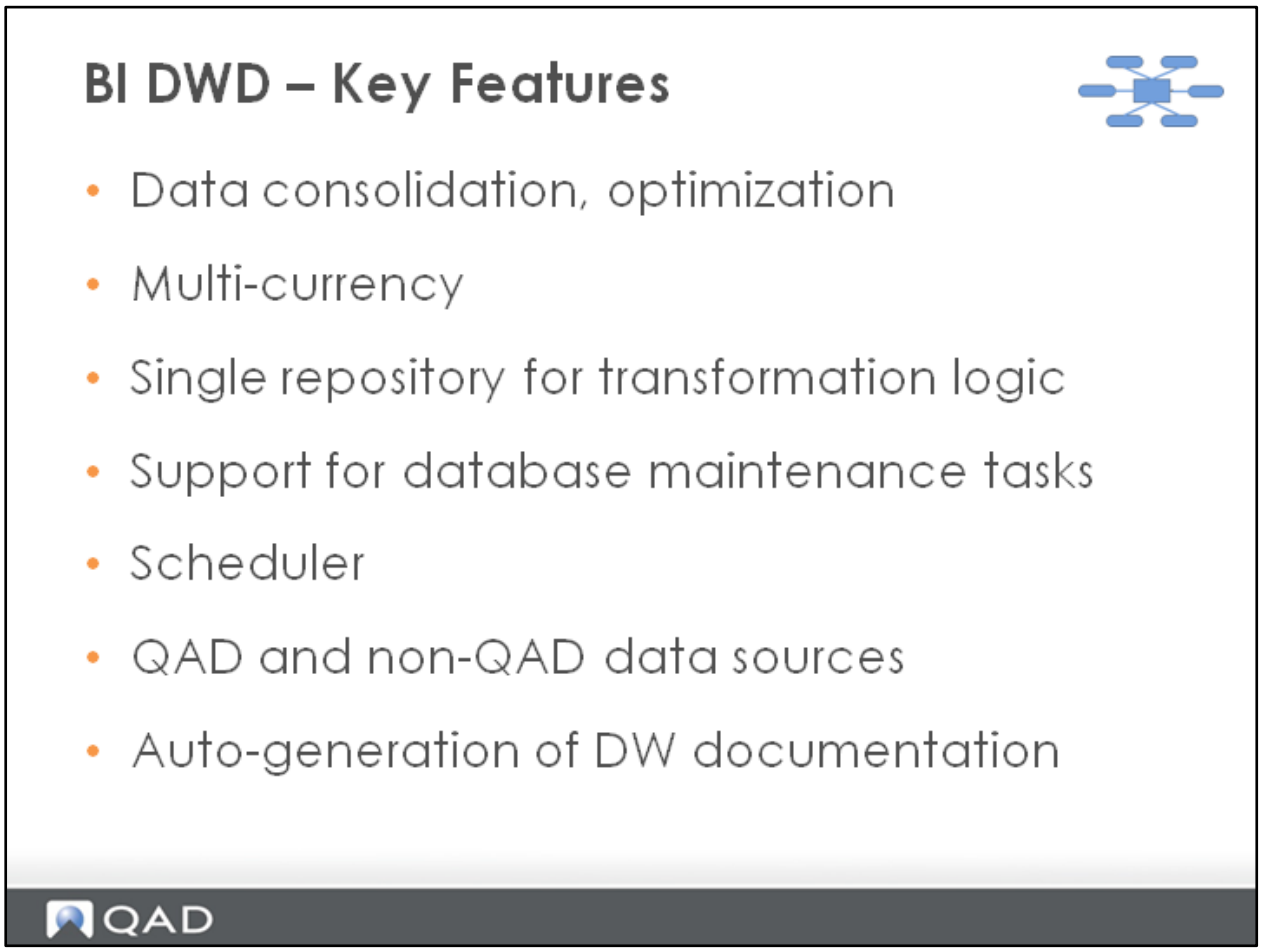


The last piece of the BI puzzle is Documentation. The QAD DWD can automatically generate both technical and end-user documentation.

QAD BI Data Warehouse Designer (DWD)



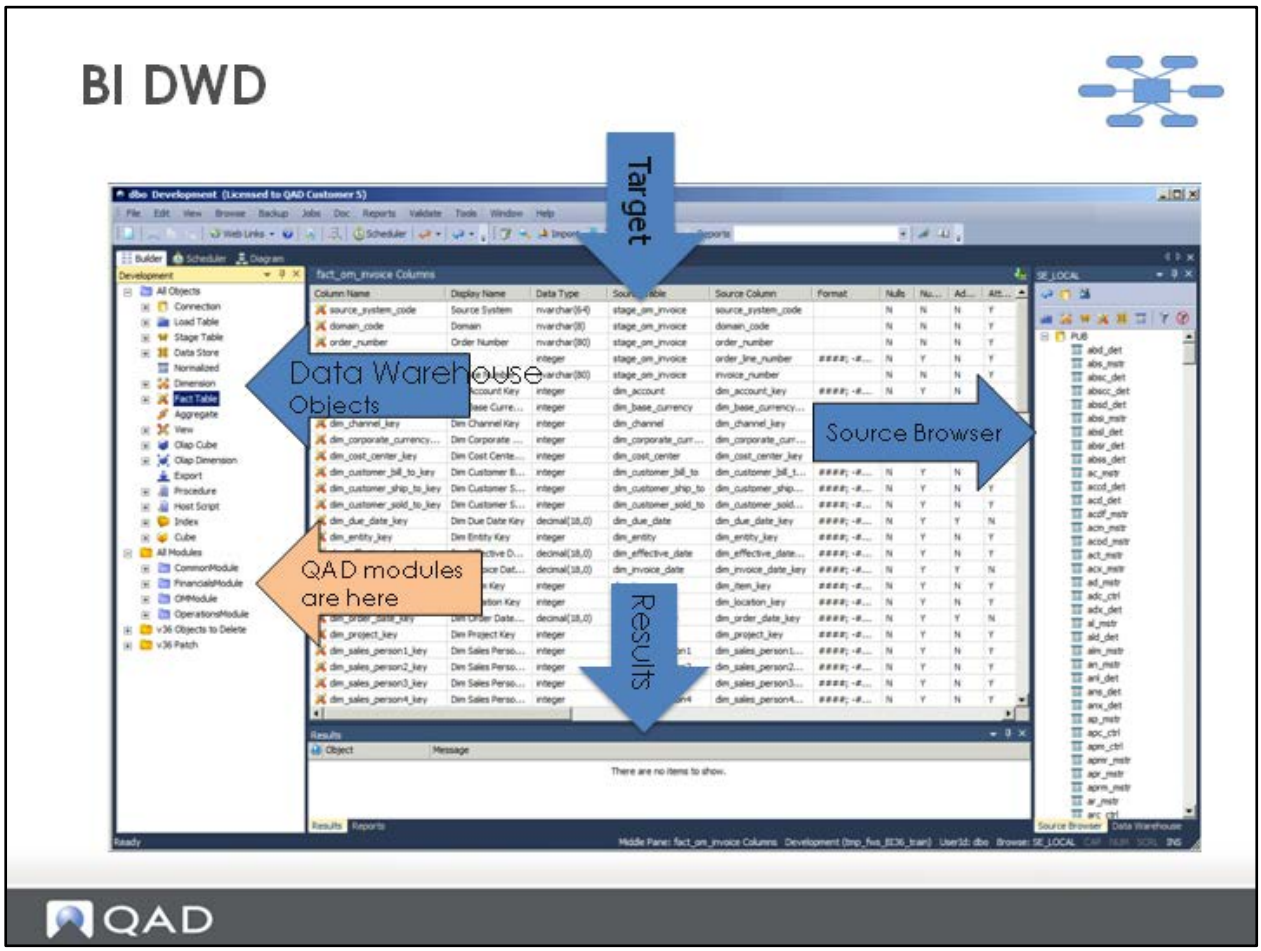
BI DWD – Key Features



The engine to the BI solution is the BI Data Warehouse Designer (DWD). This tool supports not only QAD developed modules, but also provides customers with a robust, easy-to-use tool to add extensions to the QAD BI modules. The extensions may include adding functionality, using both QAD and non-QAD data sources. Users of the DWD are generally IT professionals or technology savvy "super" users.

The BI DWD includes a scheduler. It processes pre-defined jobs, recording the success, failure or otherwise of the job. The scheduler determines refresh intervals and routines, documentation and data flows are automatically created saving development and support time.

BI DWD



Different windows in the DWD provide a view into different DW objects.

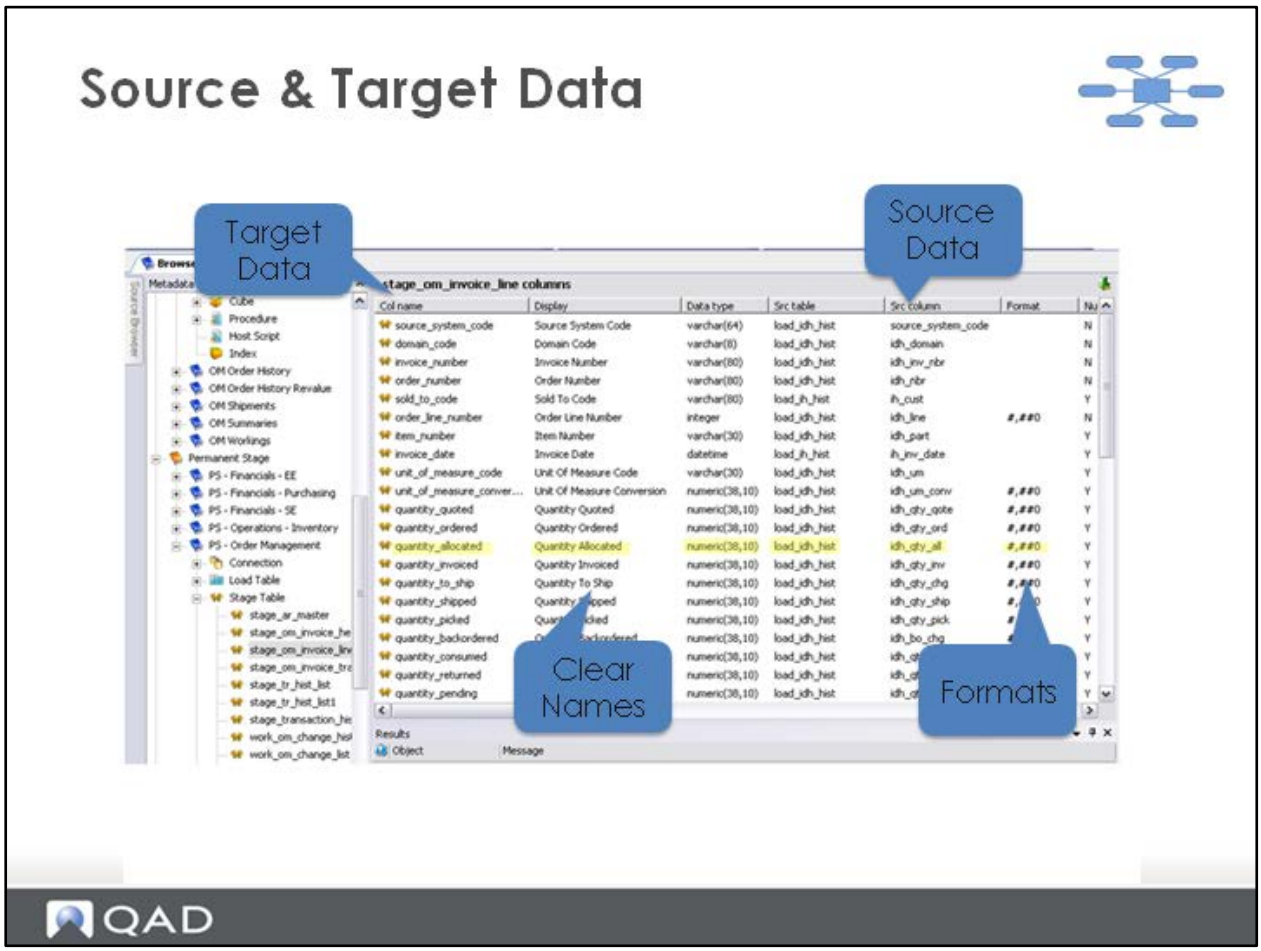
For example:

The left pane shows the DW object builder. This displays all the objects that are present in the current DW. Fact and dimension tables are shown here. As data from source system is loaded and transformed, it moves through a series of interim tables. These include “staging” and “permanent” tables. Tables are organized by Module.

When an object is selected in the left pane, detailed information about that object is shown in the center pane.

The right pane displays the available source tables.

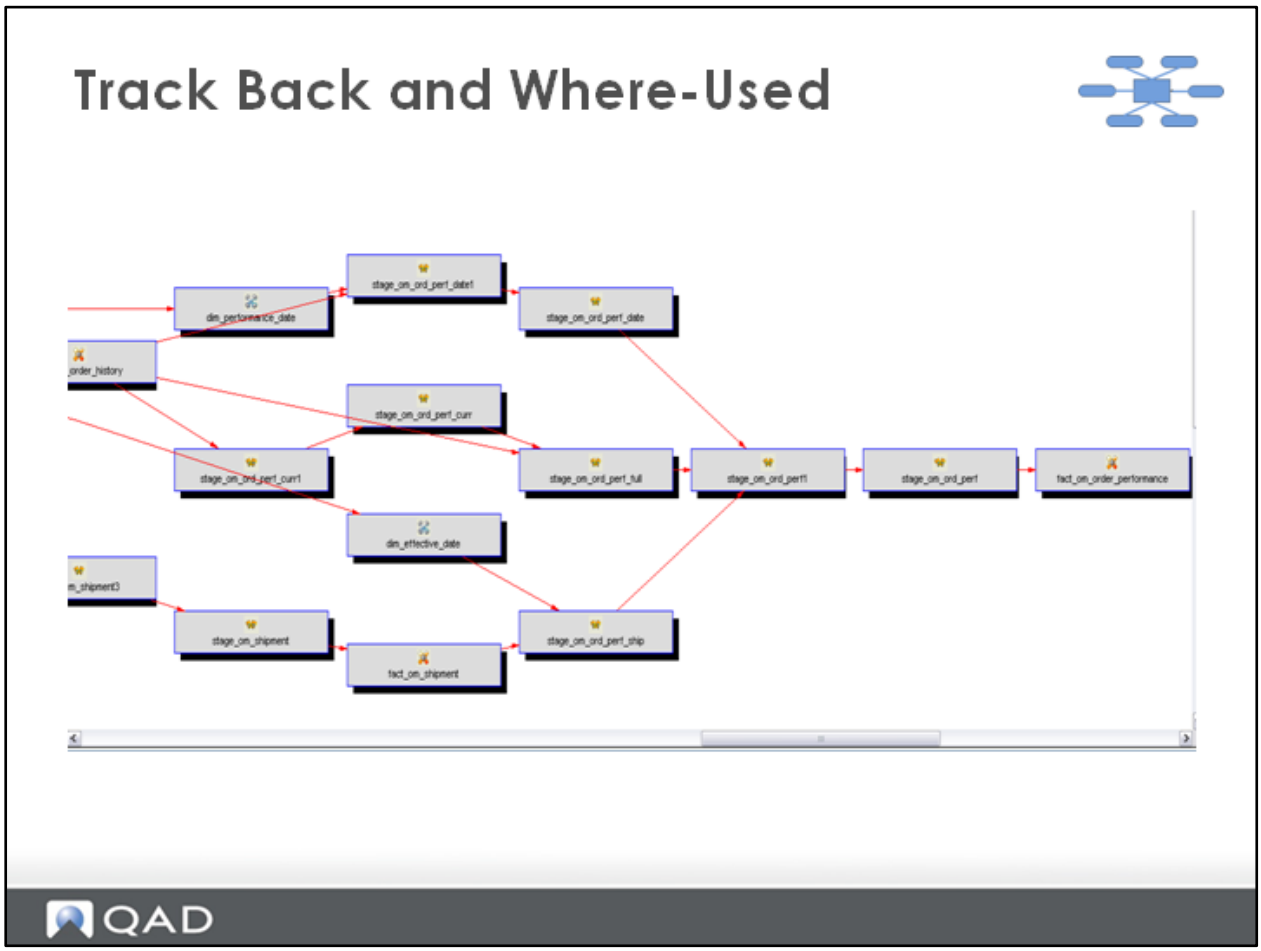
Source & Target Data



The detail pane in the middle displays Source and Target data (file names and field names). The example above shows how ERP field names are translated into more user-friendly column names. *idh_qty_all* is transformed into *Quantity Allocated*.

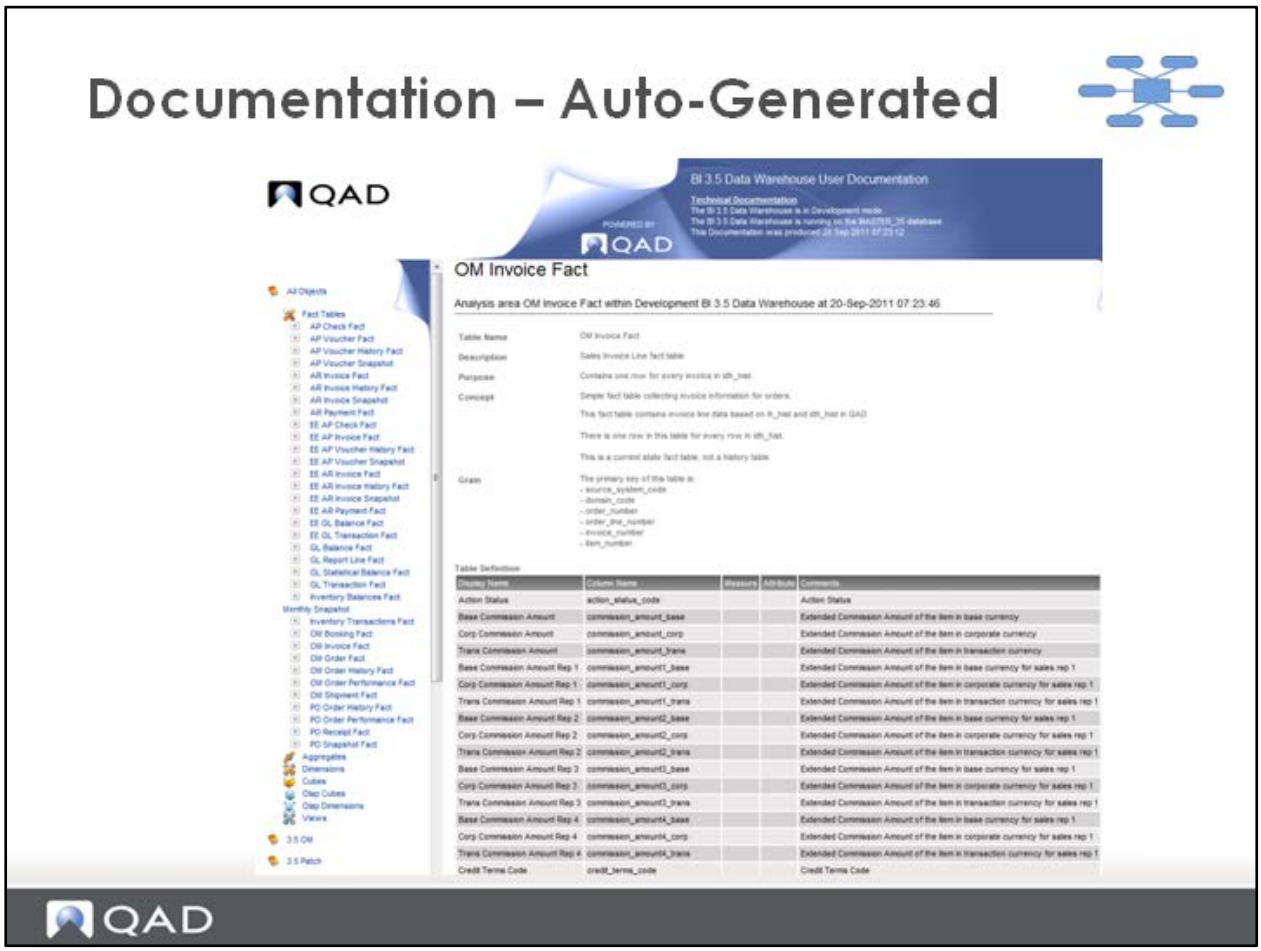
Format options are included in the DWD to make is easier to display data.

Track Back and Where-Used



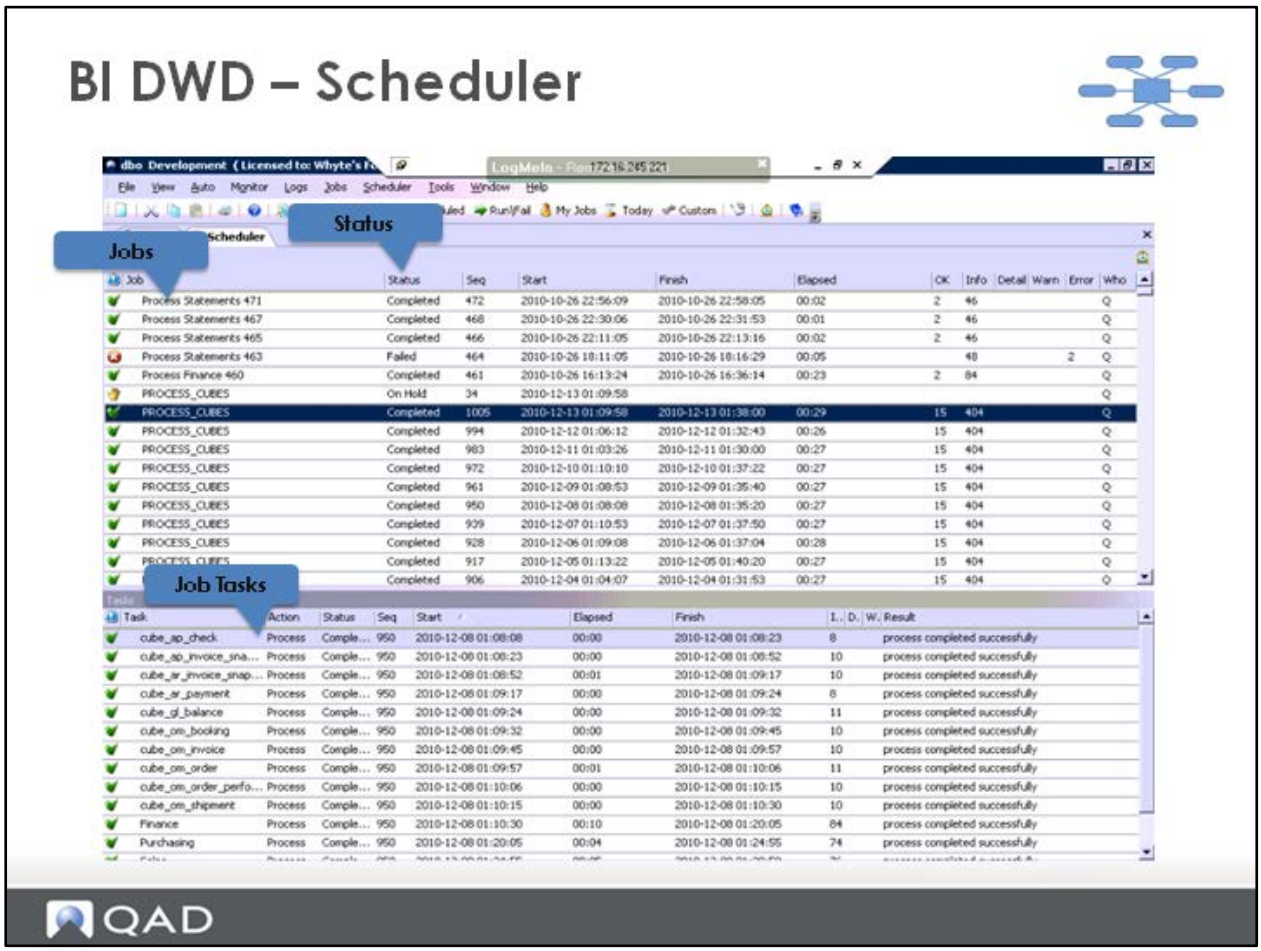
A variety of special tools are available in the DWD. One of these is the *Track Back and Where-Used* diagram. This lets the designer analyze the sources of the various tables.

Documentation – Auto-Generated



Technical and end user documentation – automatically generated.

BI DWD – Scheduler



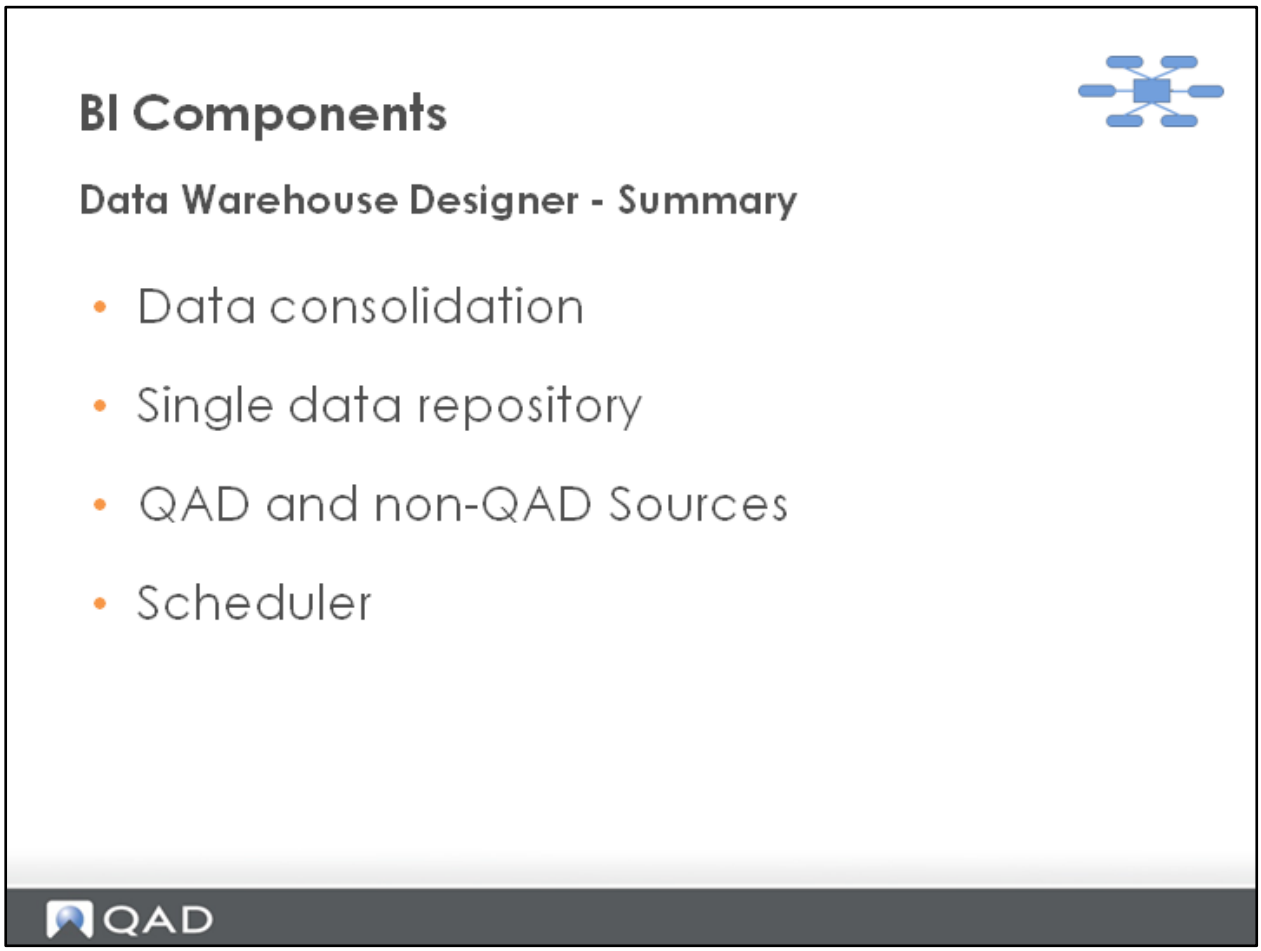
Key Concept:

The DWD Scheduler processes pre-defined jobs, recording the success, failure or otherwise of the job.

Individual job tasks are displayed for the selected job.

The job scheduler is run from within the DWD.

BI Components



In summary, the key features of the Data Warehouse Designer are:

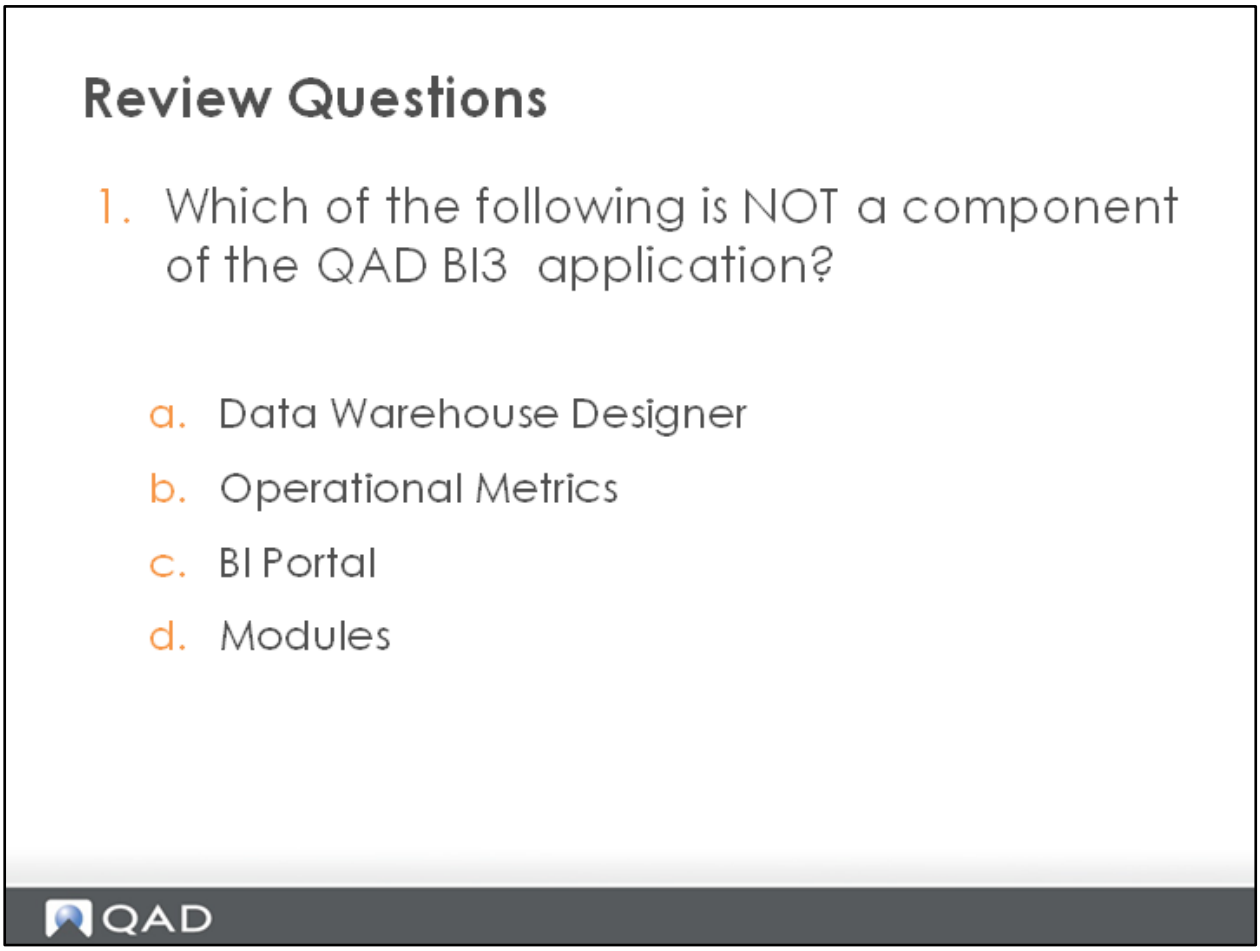
- Data consolidation

- Single data repository

- QAD and non-QAD sources

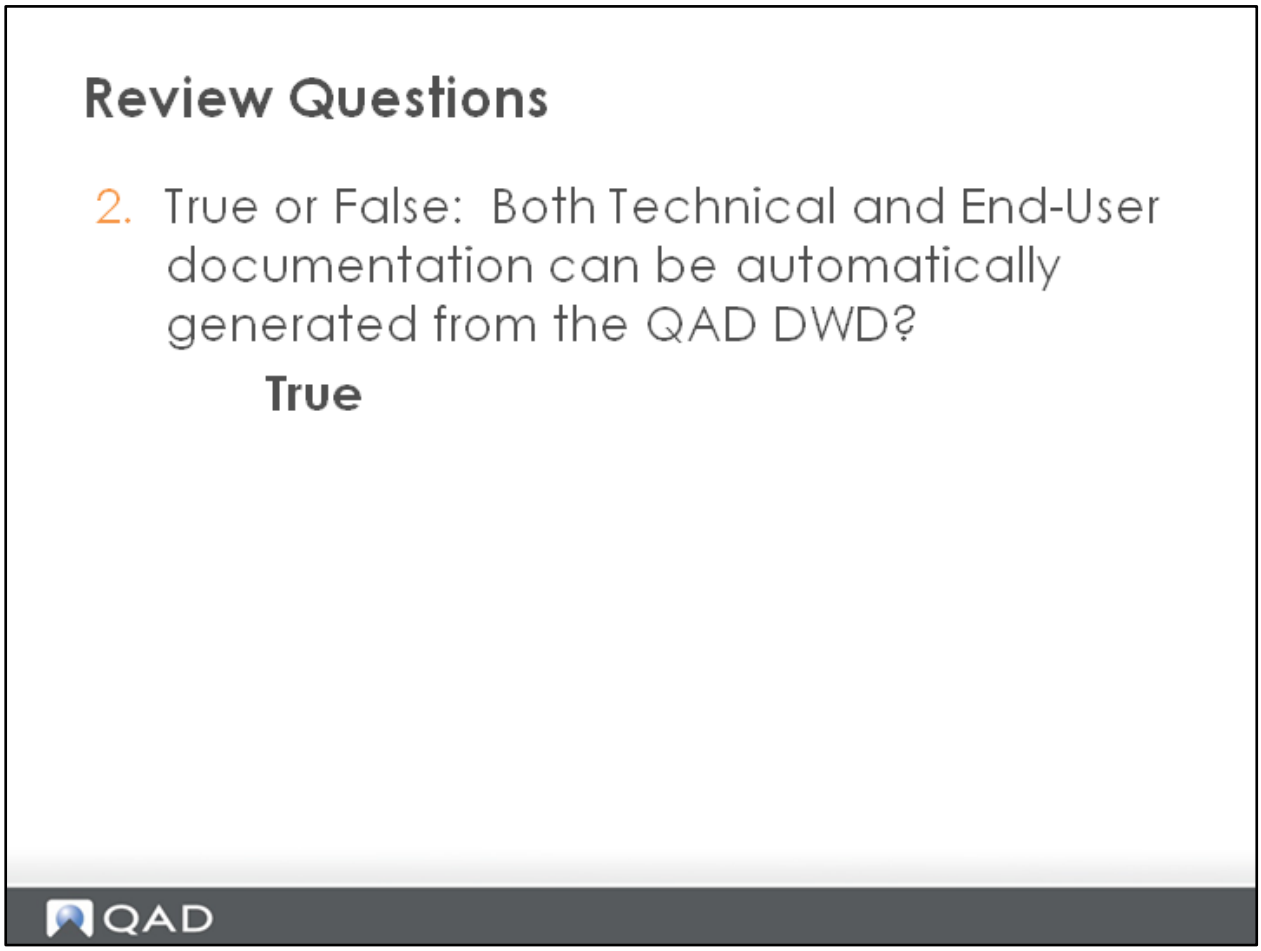
- Scheduler

Review Questions



1. b. Operational metrics are not a component of the BI application.

Review Questions

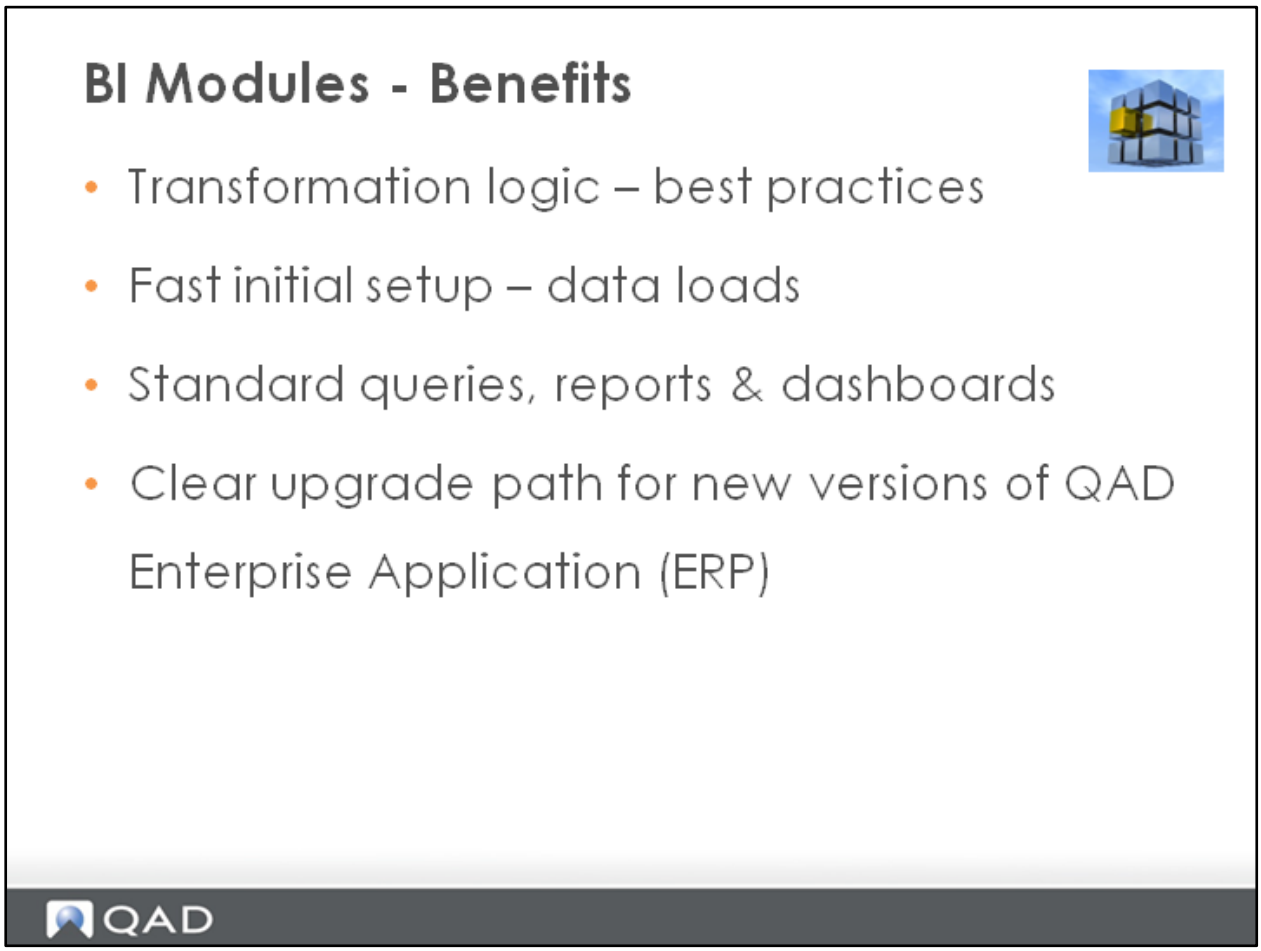


2 - True

QAD BI Modules



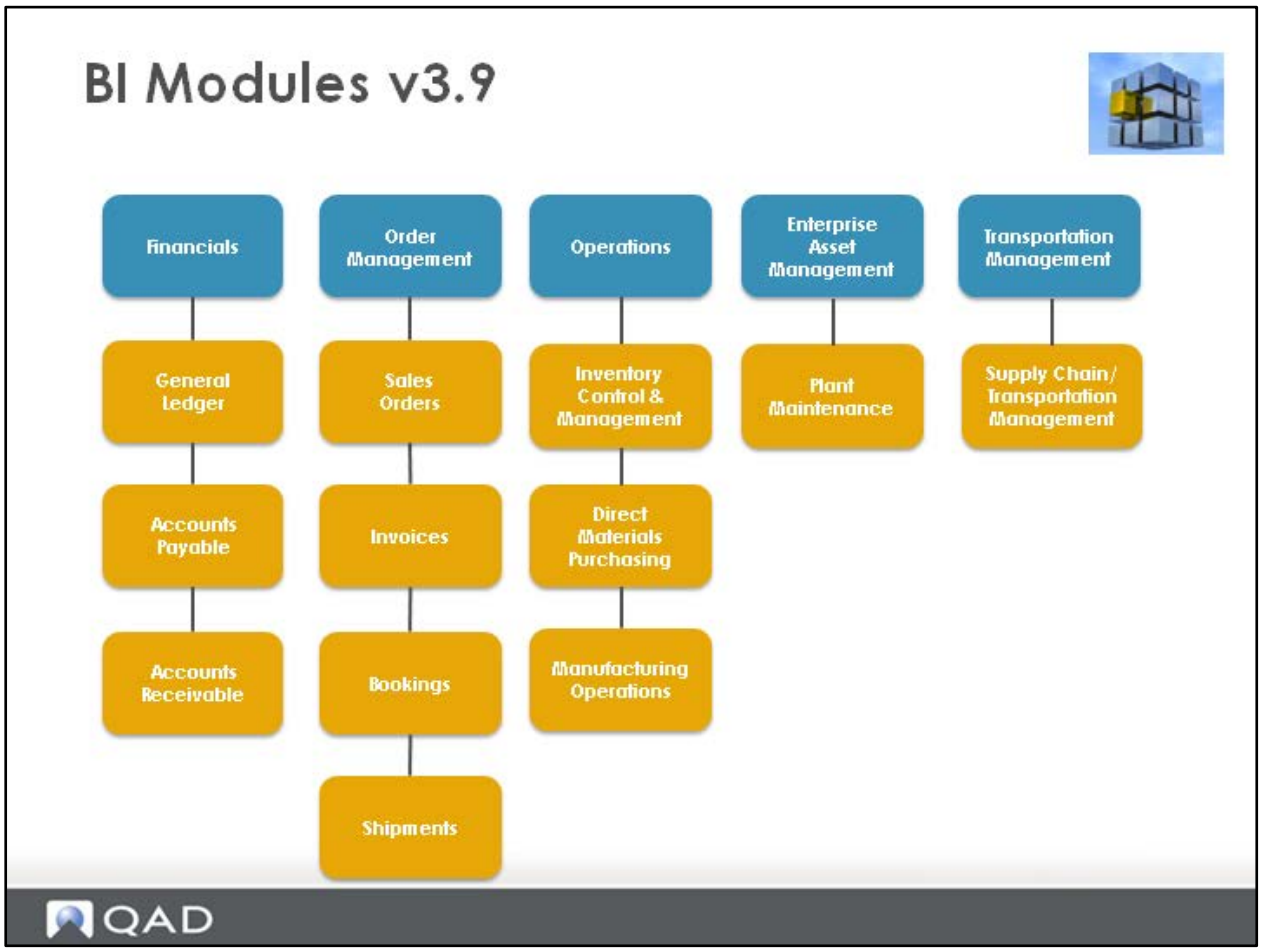
BI Modules - Benefits



Benefits:

- QAD specific transformation logic
- Fast initial setup of the BI, including historical data
- QAD Standard queries, reports, visual items and dashboards
- Clear upgrade path to new versions of QAD ERP.

BI Modules v3.9



Key Concept:

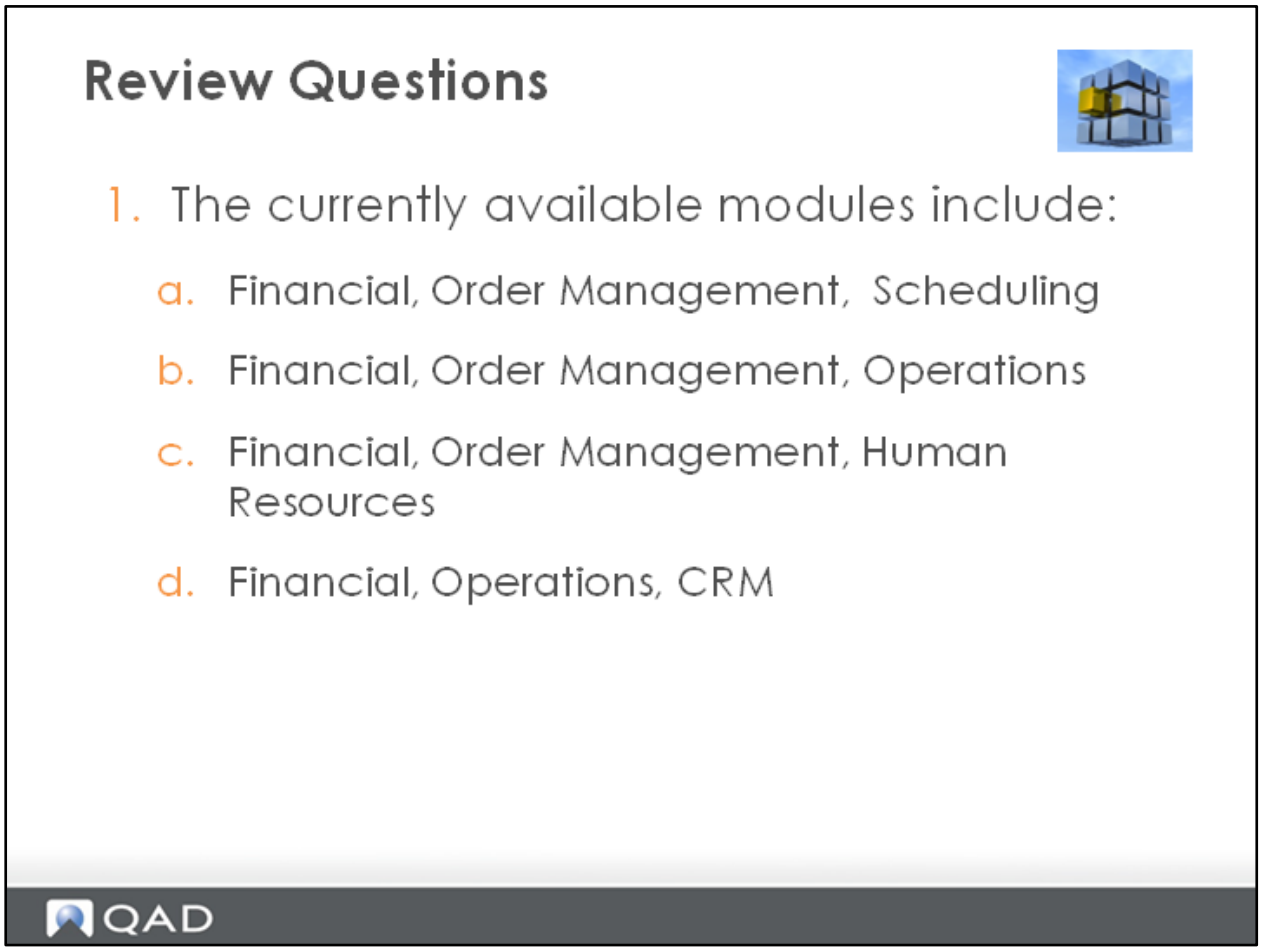
The BI solution provides out-of-the box QAD application “aware” modules. This streamlines access to current and historical QAD source data.

Current modules are as of the BI3.7 release are:

- Financials (SE & EE)
- Order Management
- Operations
- Enterprise Asset Management
- Transportation Management

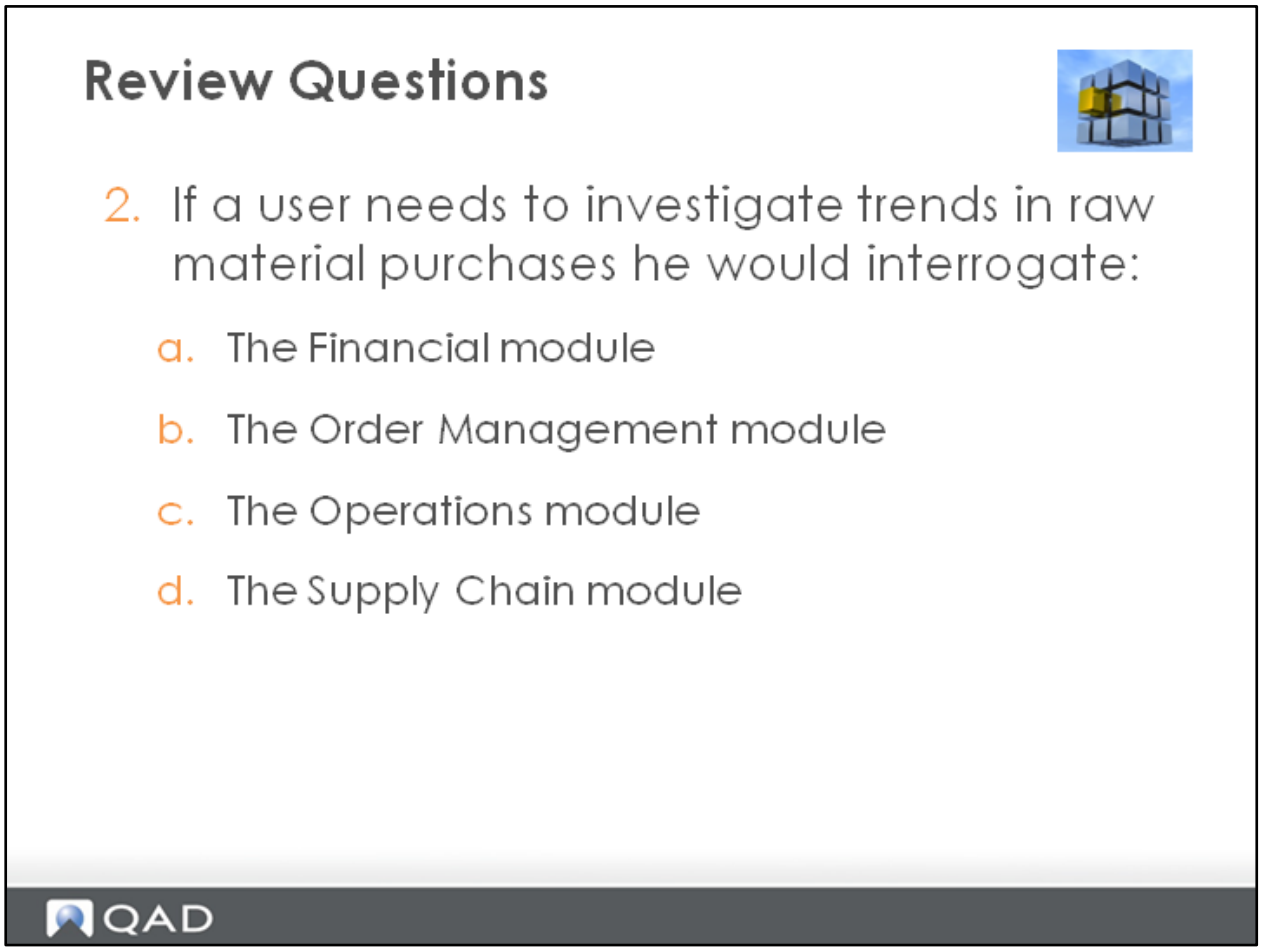
Most modules have 1-4 submodules in the BI v3.9 release. Refer to the most recent Release Qbit for updated module information.

Review Questions



2-b Scheduling, Human Resources, CRM are not current modules in the BI application.

Review Questions

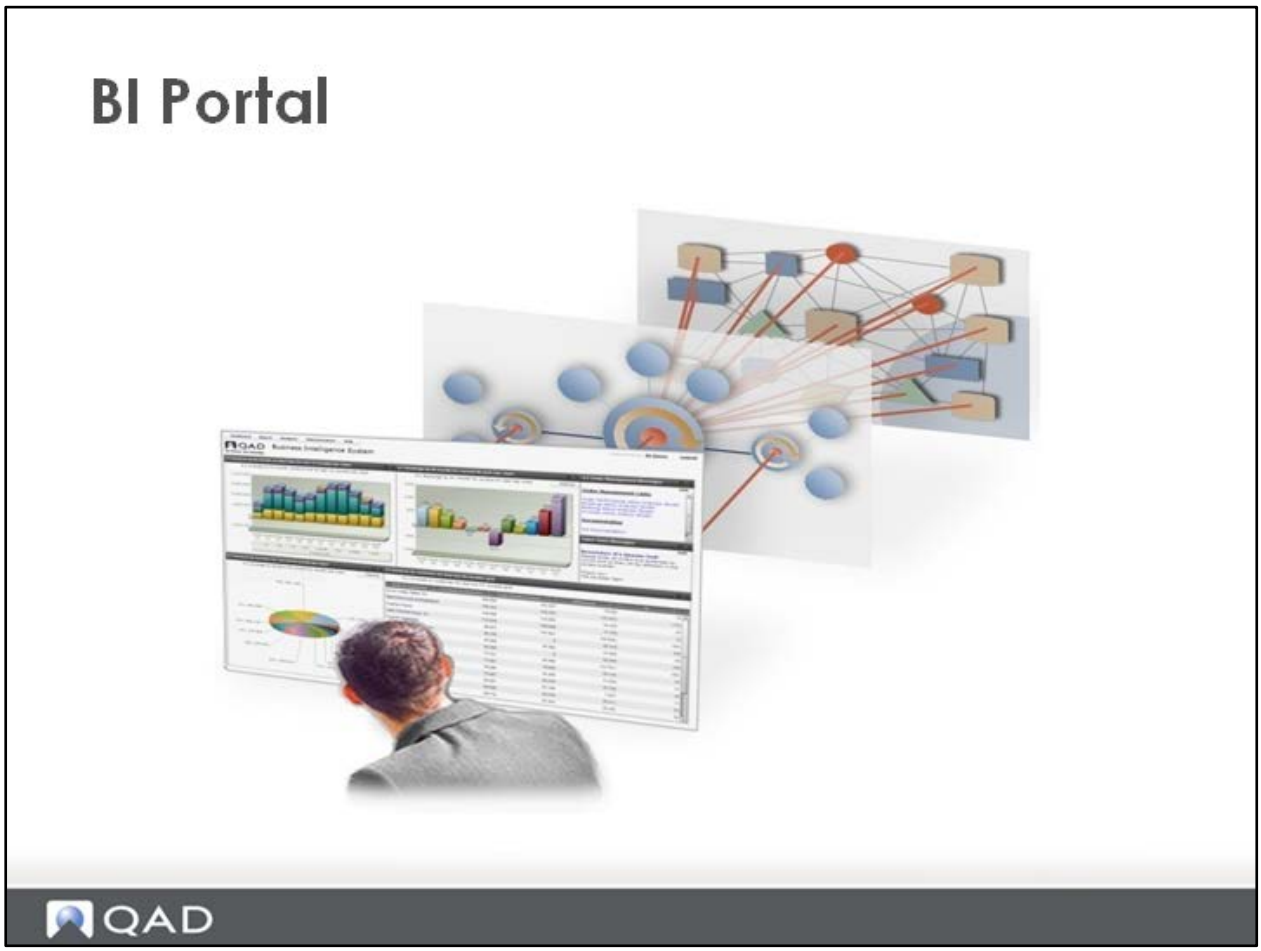


2-c Raw Materials purchasing is a sub module of the Operations module.

QAD BI Collaborative Portal



BI Portal

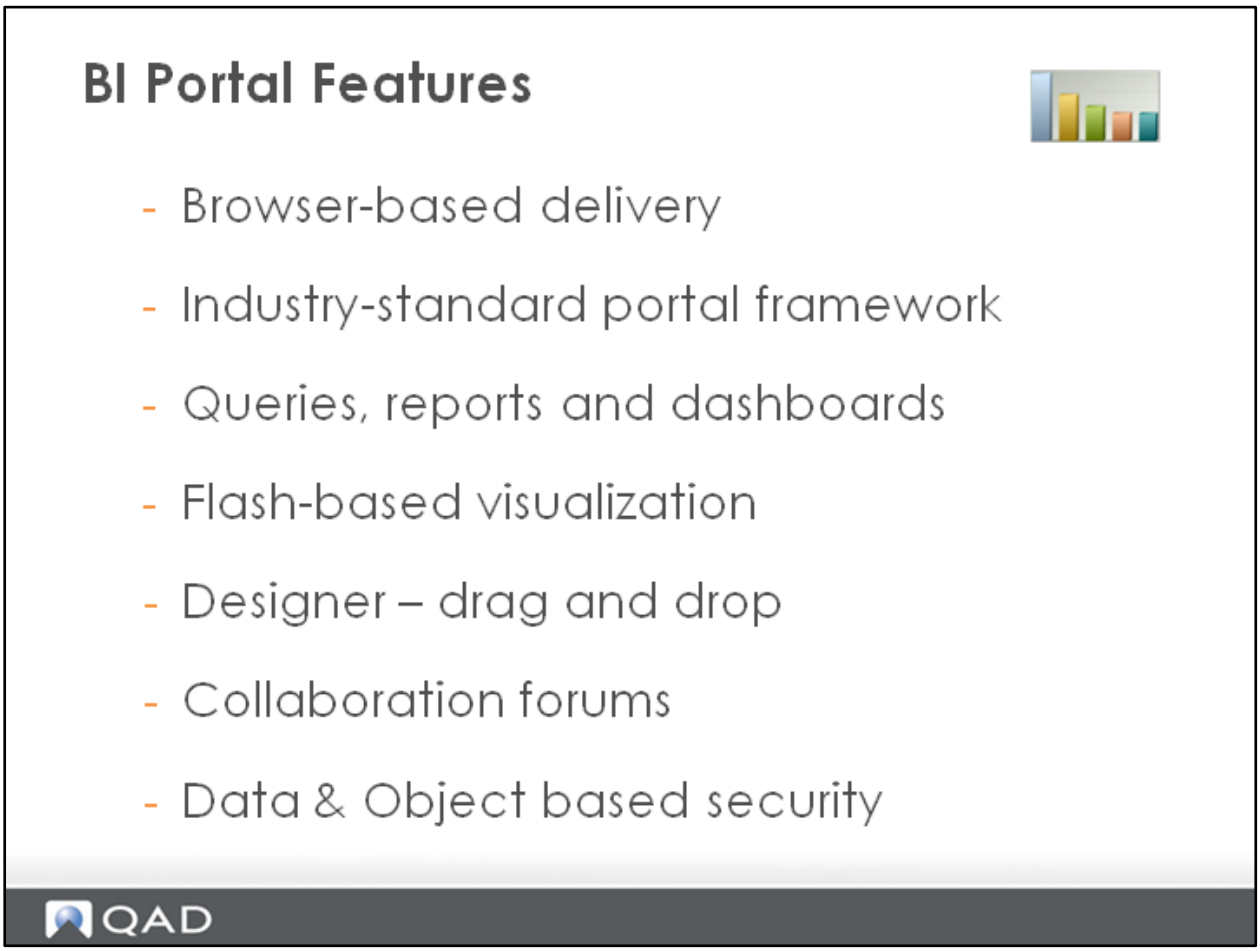


The BI Portal gives managers, analysts and planners information in a quick, at-a-glance format. Dashboards provide visual items to let users see exceptions and trends, and then drill down to more detailed information.

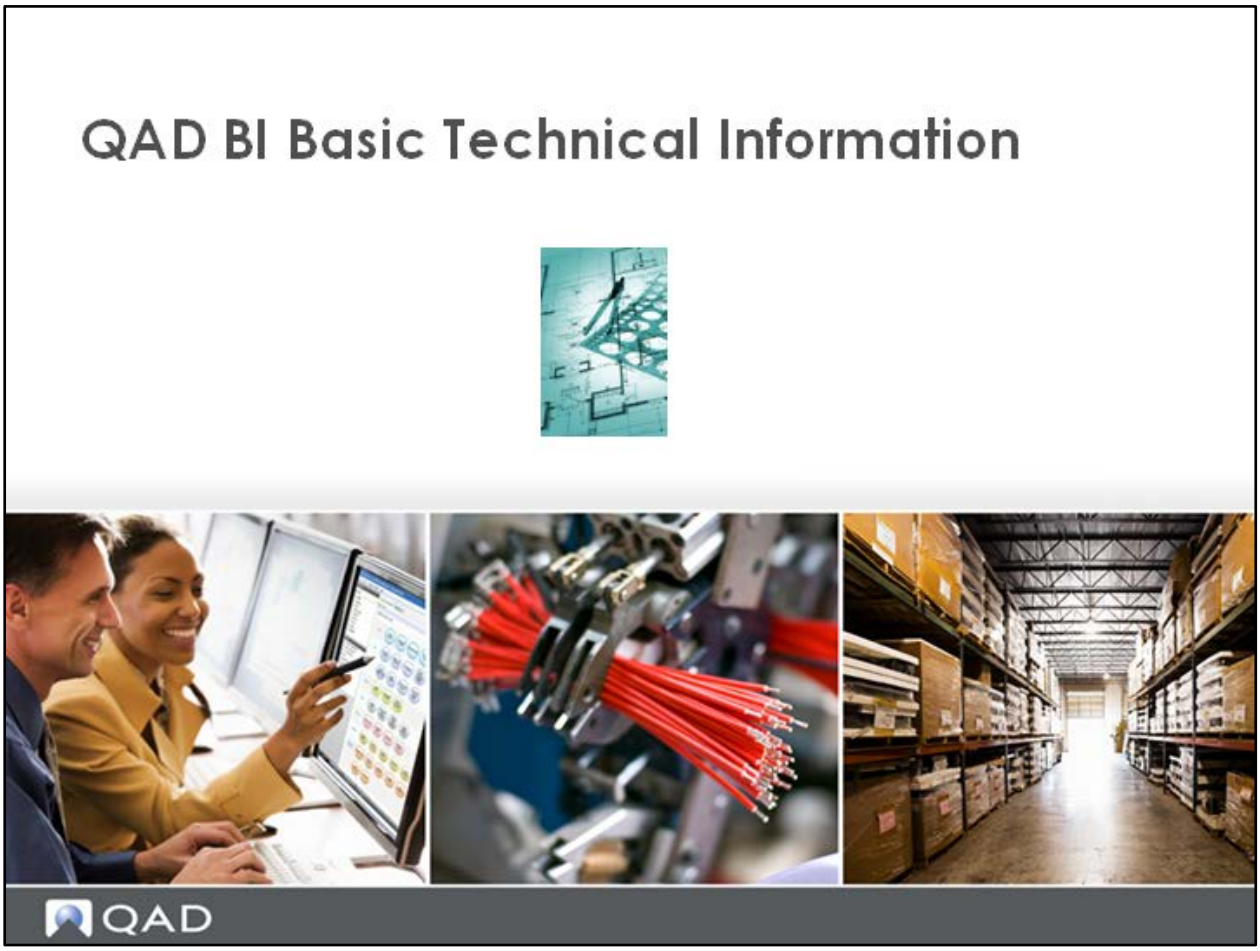
Key Concepts:

The QAD Business Intelligence Portal (BI Portal) gives the user information in a quick, at-a-glance, customizable format.

BI Portal Features



QAD BI Basic Technical Information



Technology and Architecture

Technology and Architecture



- SQL Server 2008
- QAD eB2.1 SP4 and later
  - Earlier versions supported (requires customization work)
- Progress OpenEdge 10.1B03 and later
- Progress OpenEdge ODBC 10.1C
- Client
  - Portal designers and users – web browser
  - DWD designers and administrators – desktop interface

QAD

Technology and Architecture (cont)

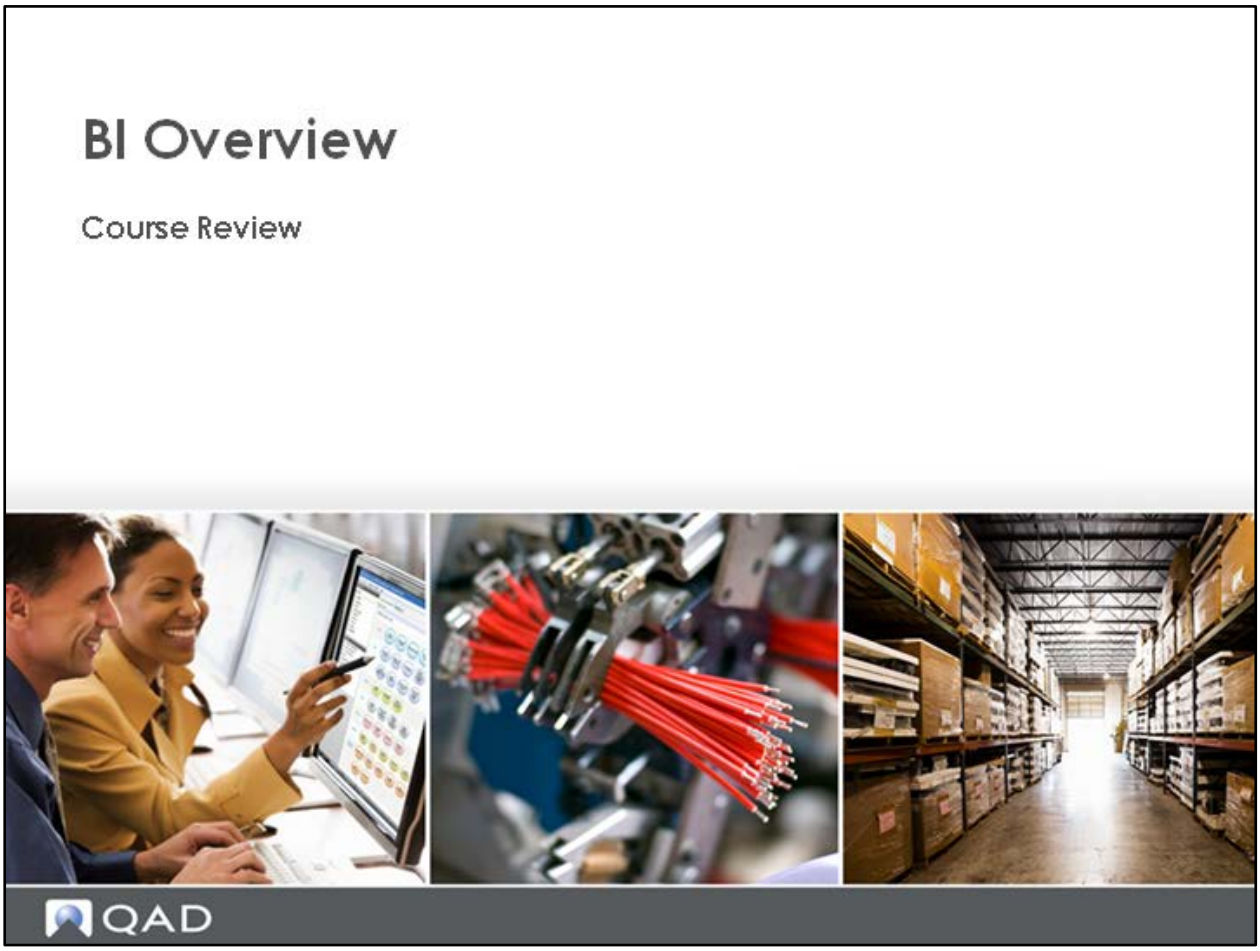
Technology and Architecture (cont)



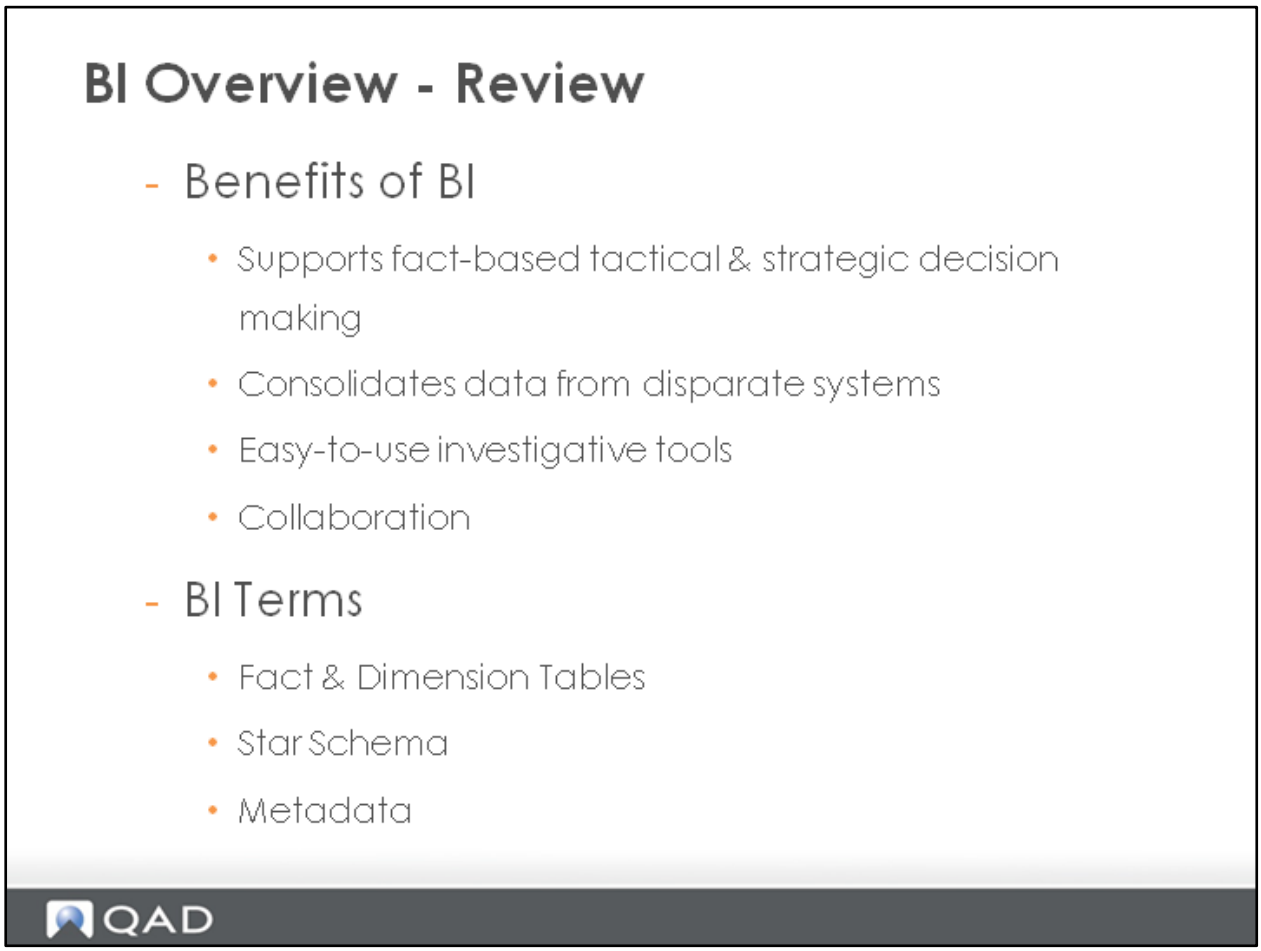
- Production Hardware – Minimum
  - Intel 64-bit
  - CPU - 4 Cores 3.0 GHz
  - RAM - 8GB
  - 4 disks drives – 500GB (after RAID configuration)
  - SAN configurations only if optimized for data warehouse processing
- Operating Systems
  - Windows Server 2003 or 2008
    - Enterprise Edition if more than 4GB of RAM is required
- See Sizing Guidelines in Installation Guide

QAD

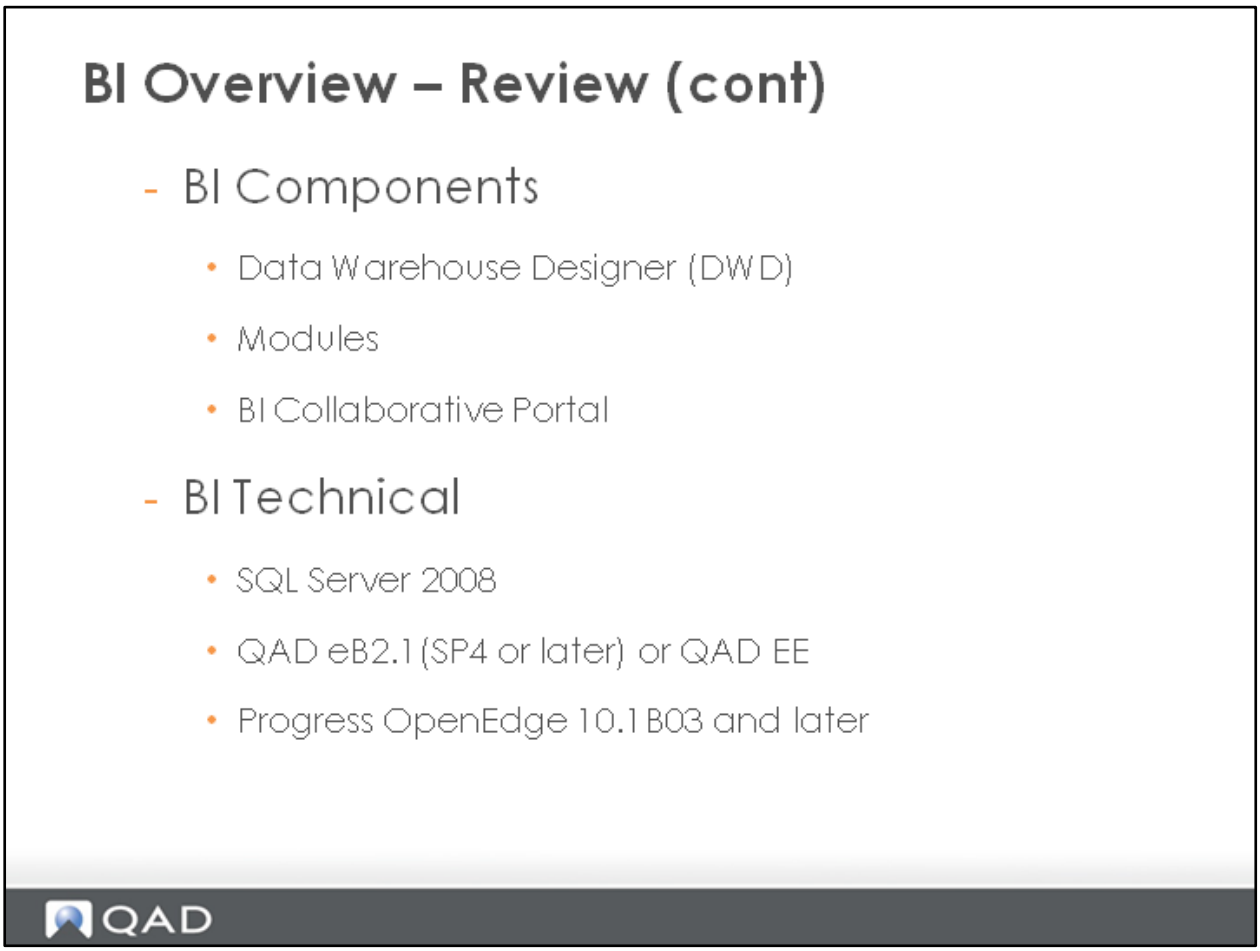
BI Overview



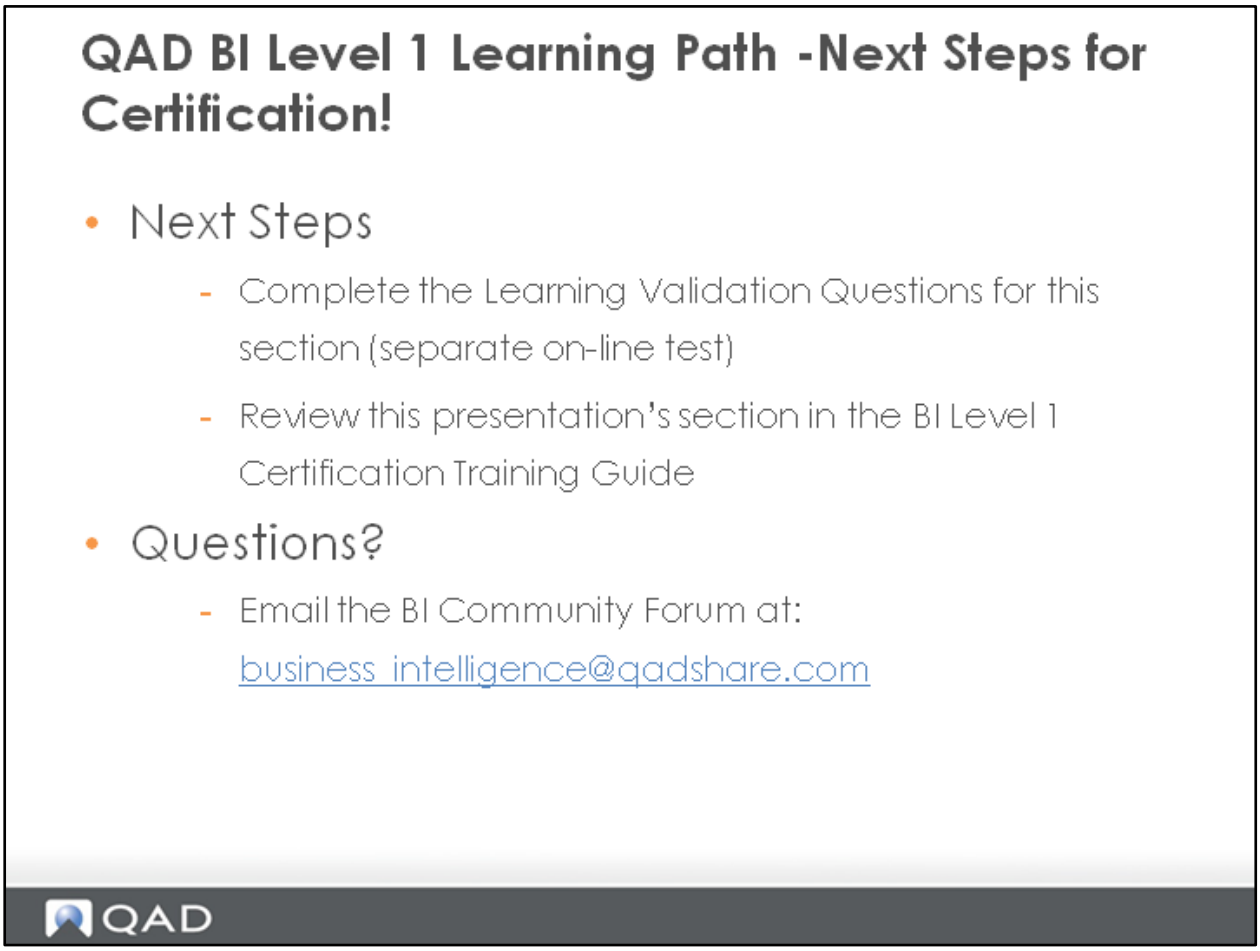
BI Overview - Review



BI Overview – Review (cont)



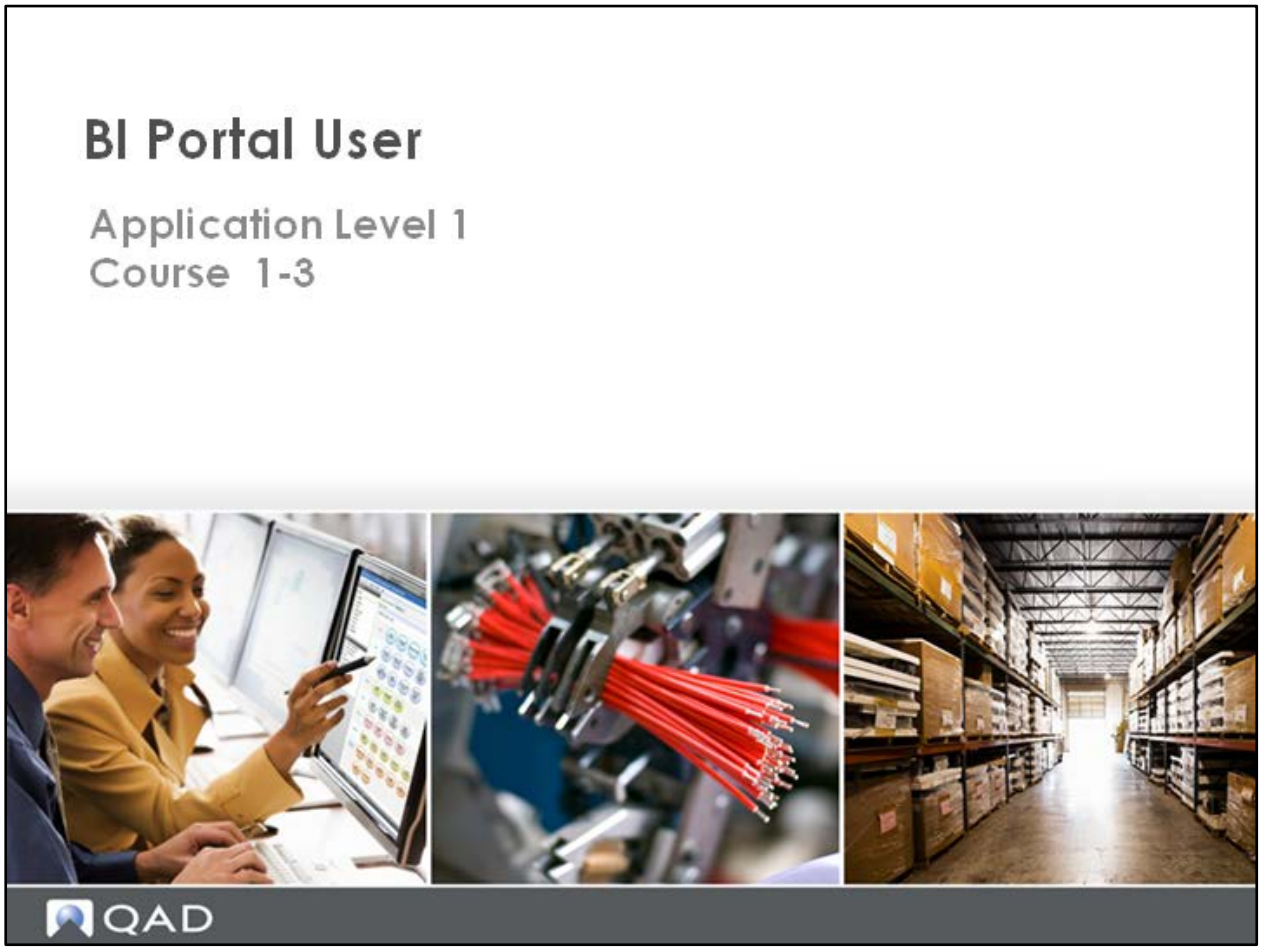
QAD BI Level 1 Learning Path -Next Steps for Certification!



CHAPTER 3

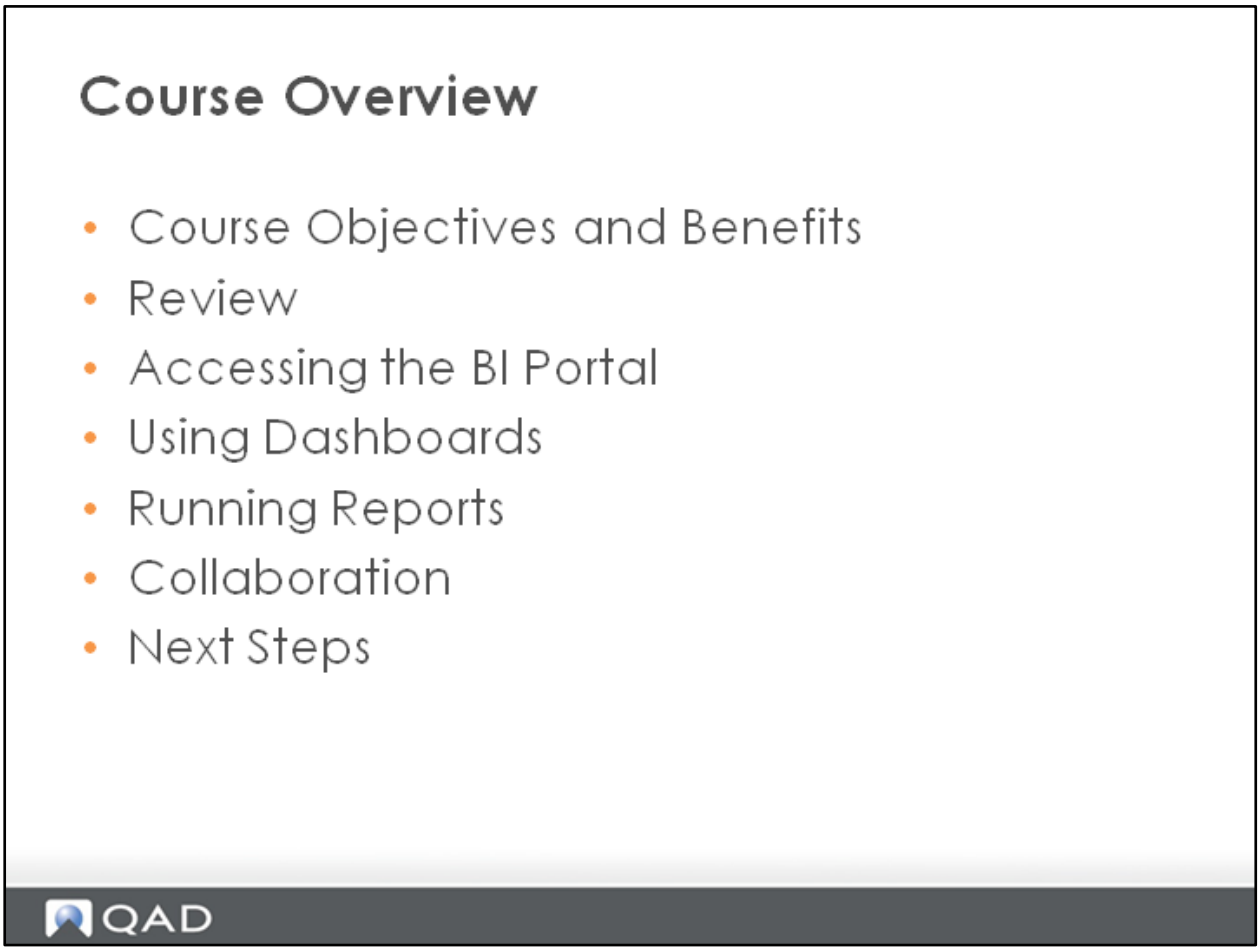
BI Portal User

BI Portal User

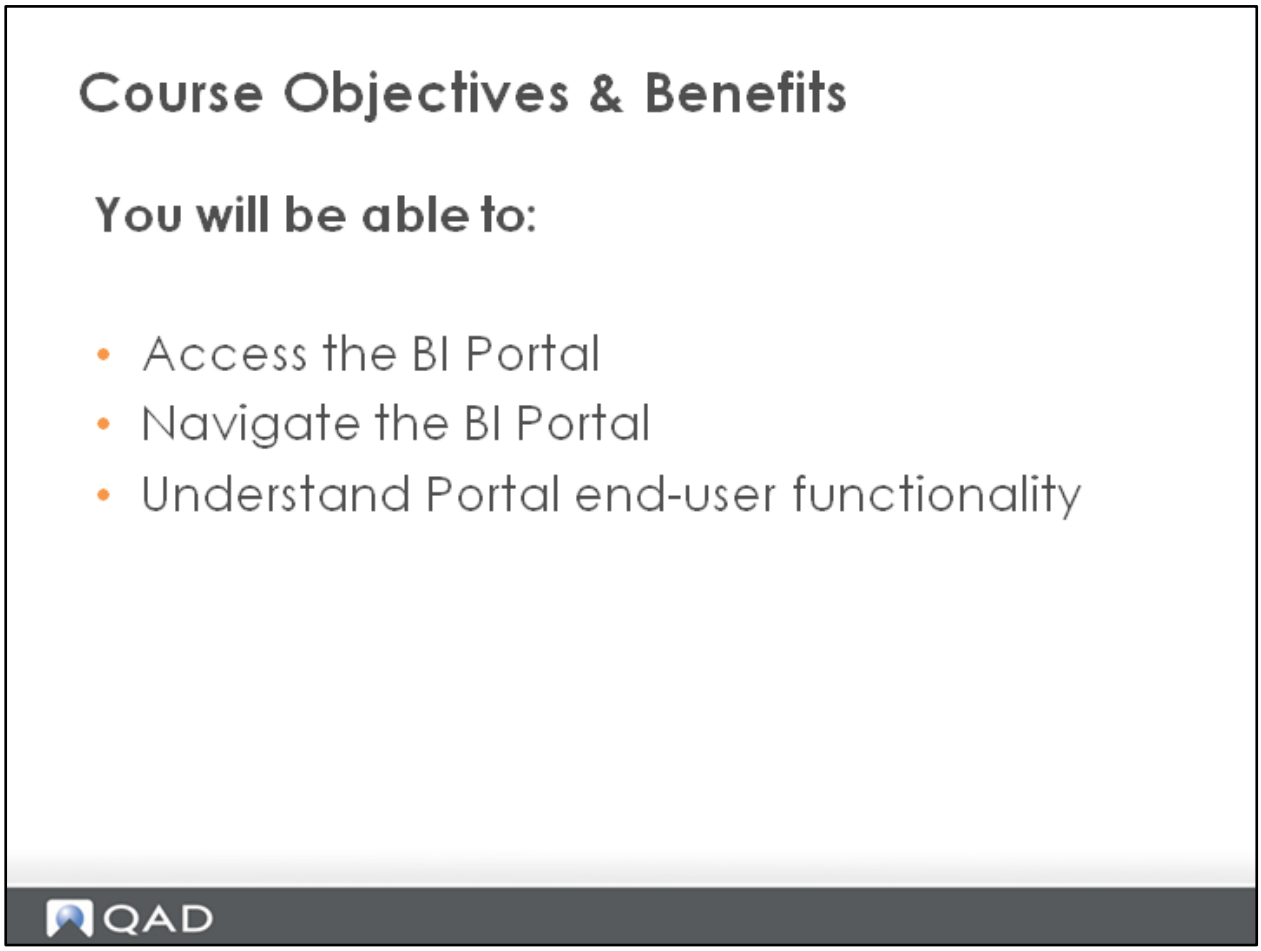


Welcome to the Introduction to the BI Portal.

Course Overview

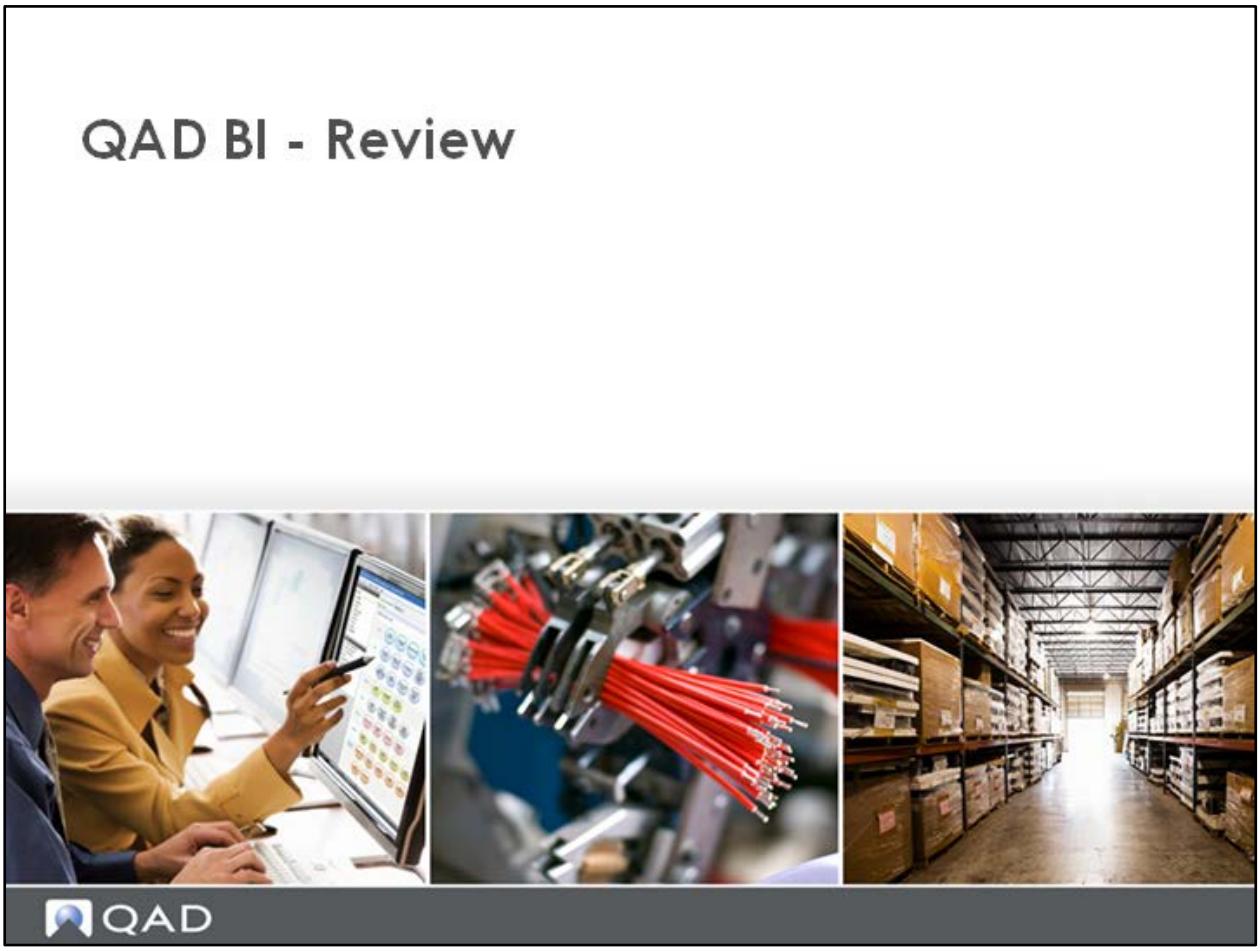


Course Objectives & Benefits

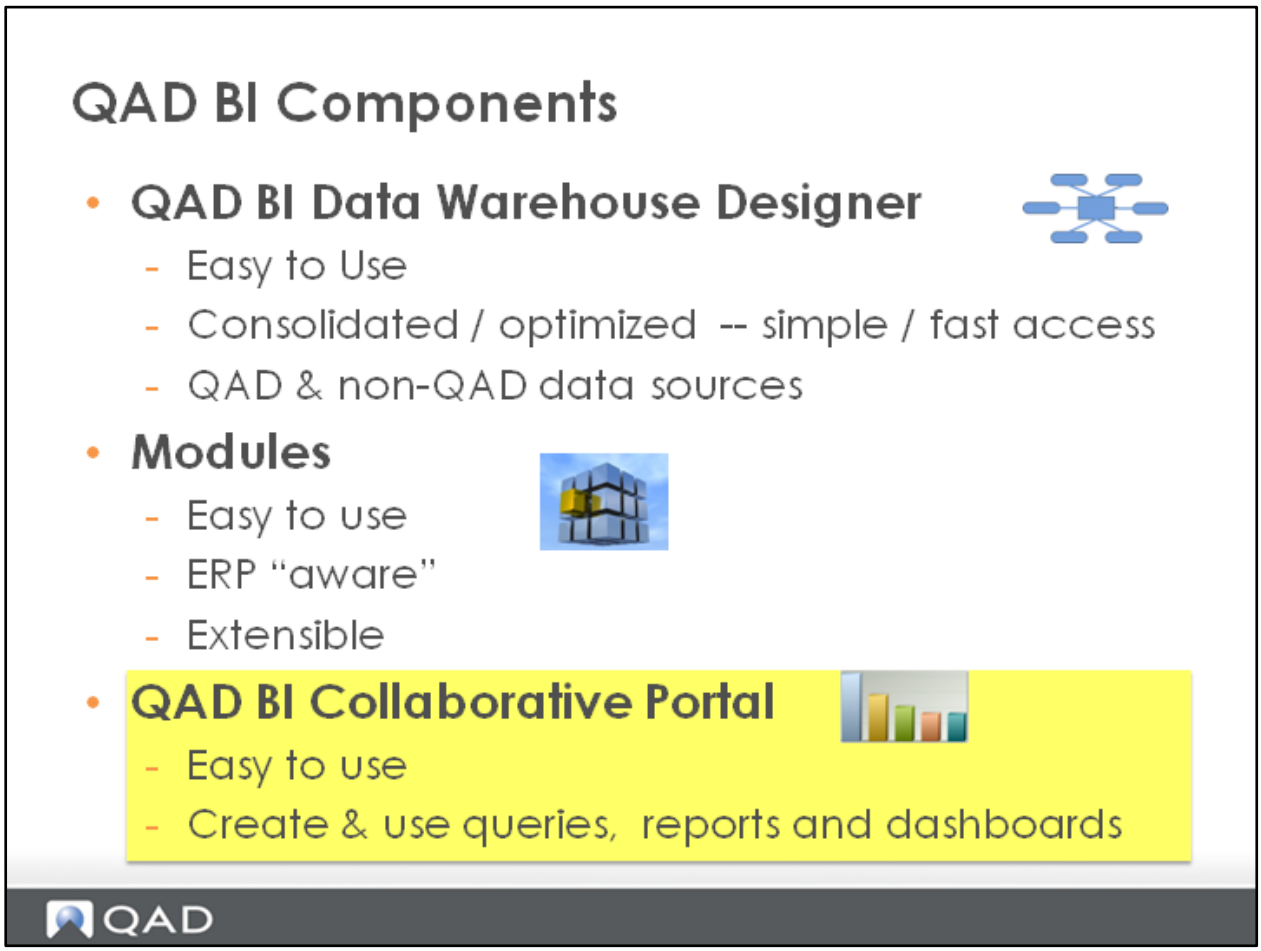


Upon successful completion of this course, you will be able to access and navigate the BI Portal. You will understand key Portal end-user functionality.

QAD BI - Review



QAD BI Components



Key Concept:

QAD BI Components:

QAD BI Data Warehouse Developer (DWD)

Consolidate into a single warehouse optimized for simple, fast access

QAD and non-QAD data sources

Modules

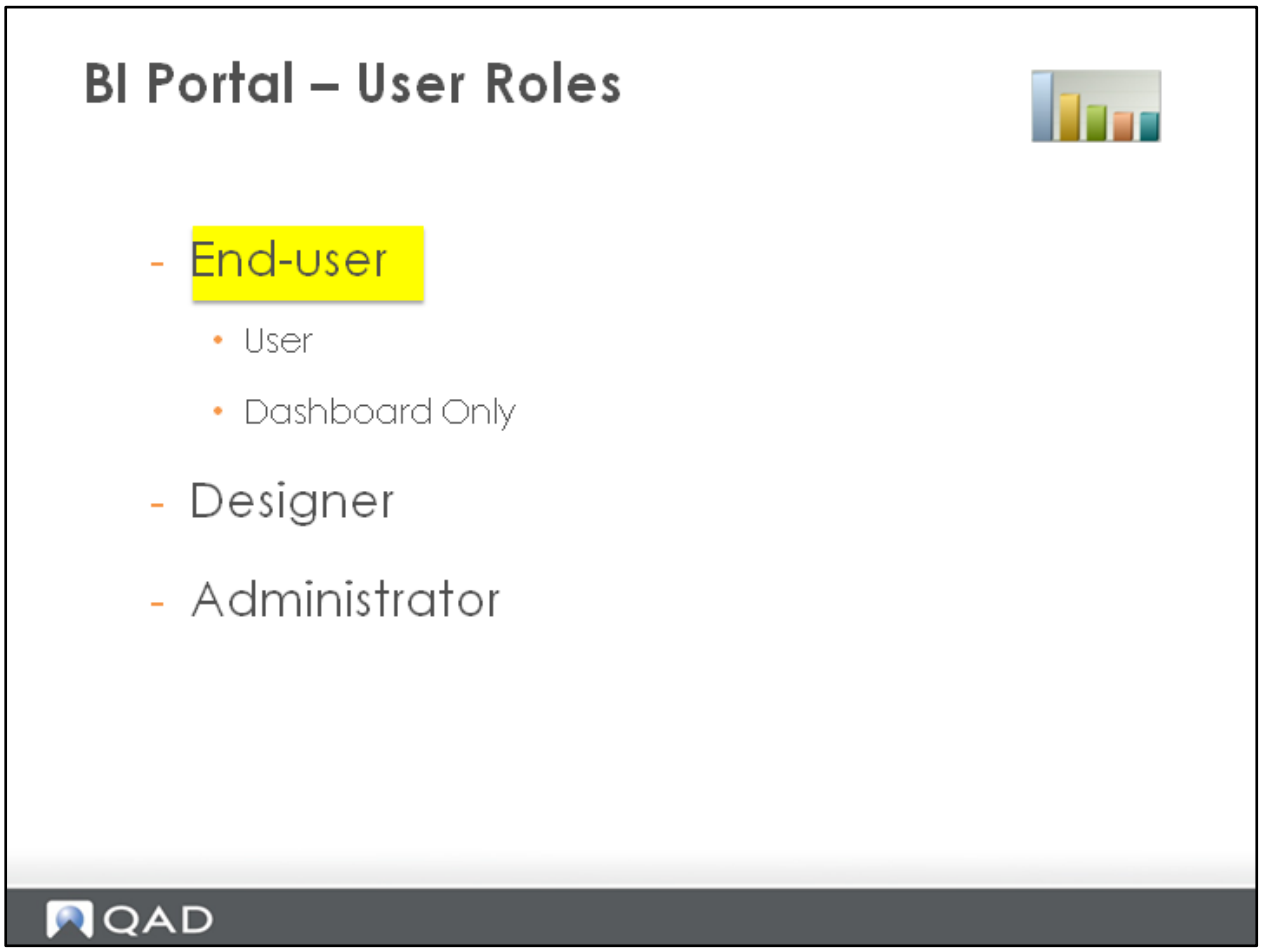
ERP "aware" streamlines access to current and historical QAD ERP data

Extensible to support non-QAD data sources

QAD BI Collaborative Portal

Easy to use and create dashboard and reporting environment

BI Portal – User Roles



Users will experience the BI Portal based on their role.

The BI Portal user roles are:

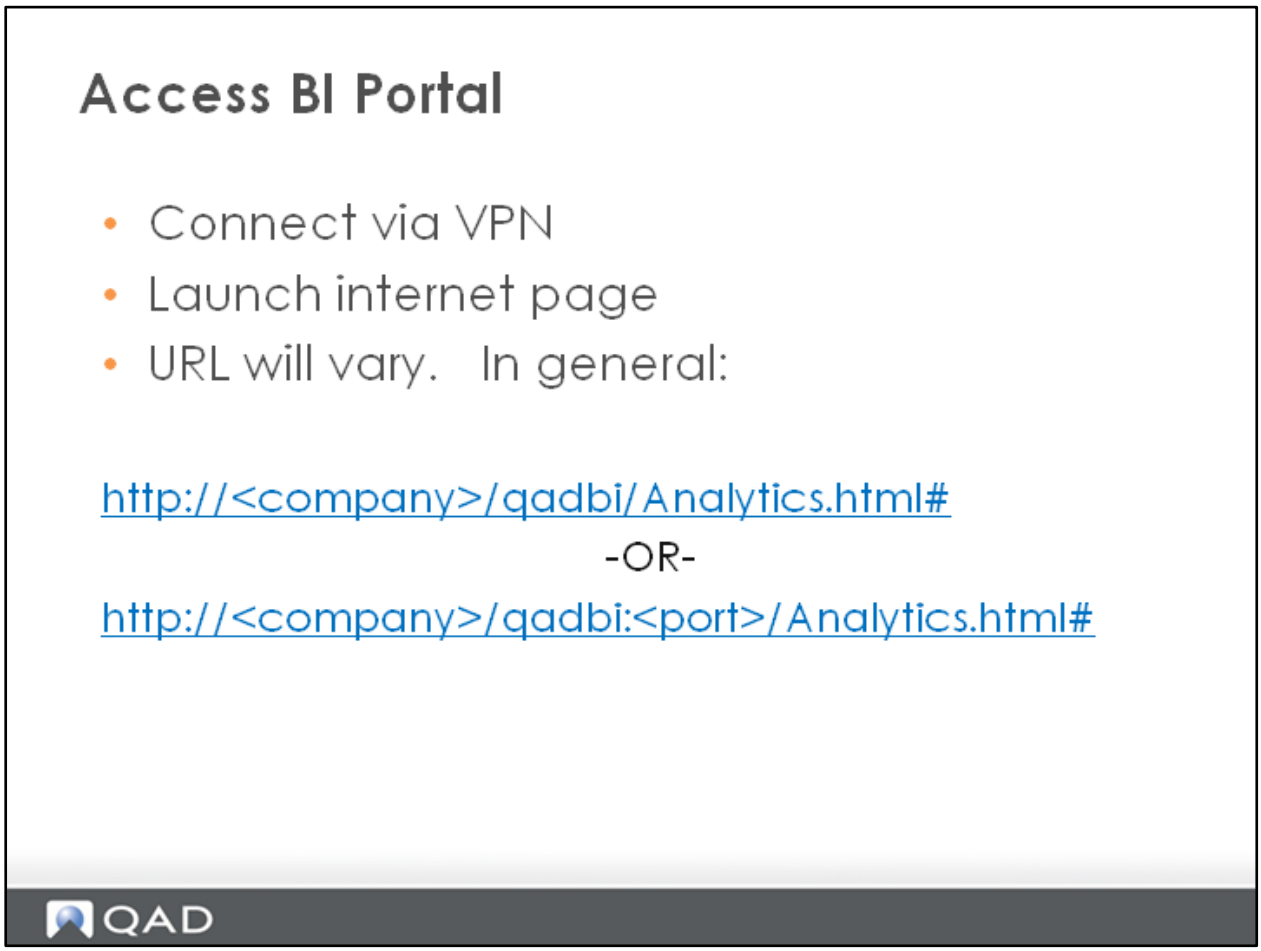
- End-user
- Designer
- Administrator

End-users can be either Dashboard Only users or Users that have access to both Dashboards and Reports.

Logging in to the BI Portal



Access BI Portal



BI Portal is browser based.

For users in a customer environment who are already on a corporate network, access the BI Portal is via an internet browser and a web link.

For QAD Self-study users, there is an environment available in the QAD Learning Center from the *Access Labs* menu option.

Login Screen



The user is presented with a login screen.

Enter username and password and click <login>.

If this is the first login, the user will be prompted to enter a new password.

Using Dashboards

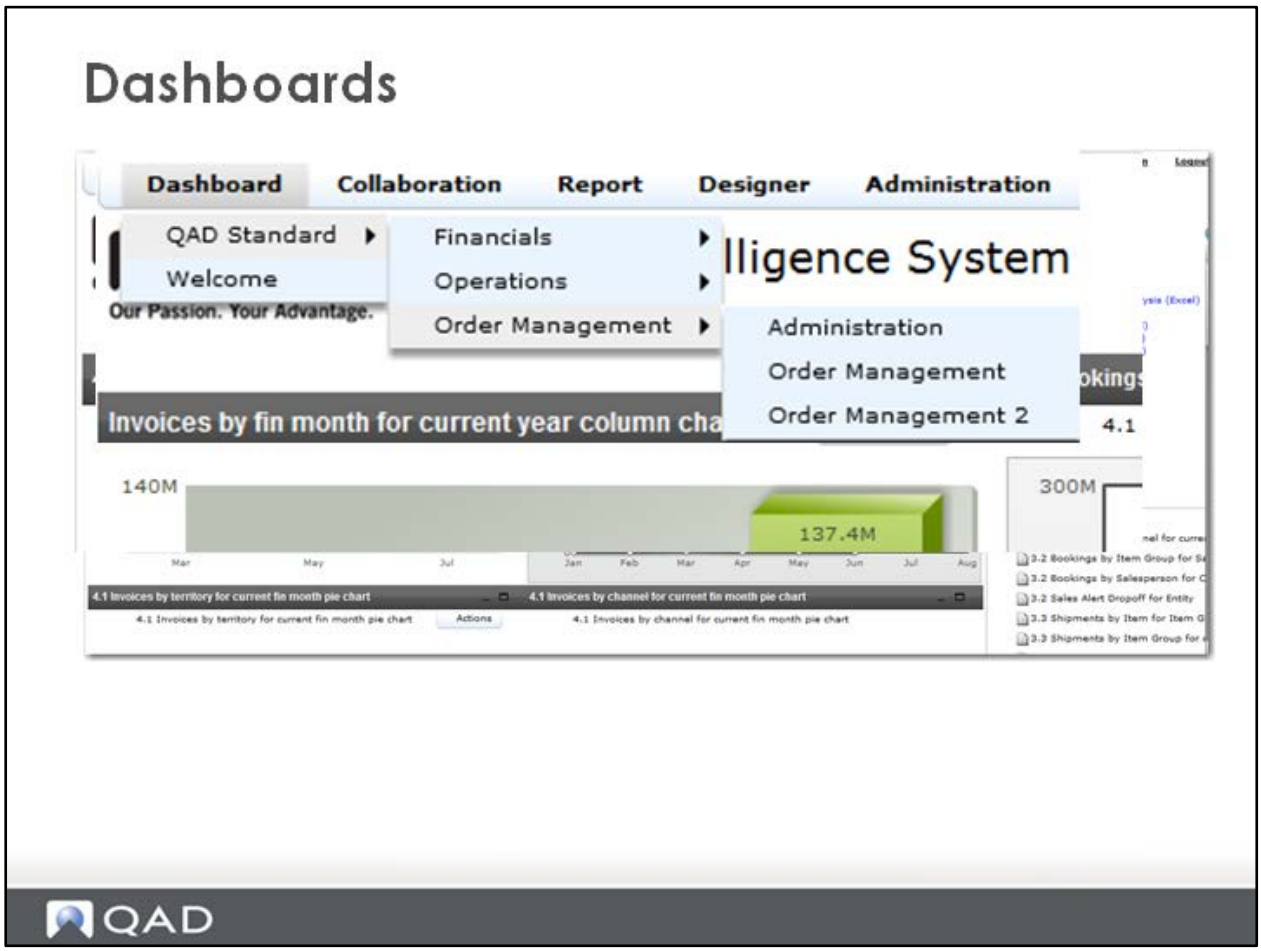


Dashboards



The BI Portal Dashboard is the front page view for the data warehouse analysis. The user sees information in quick, easily analyzed formats for better decision making.

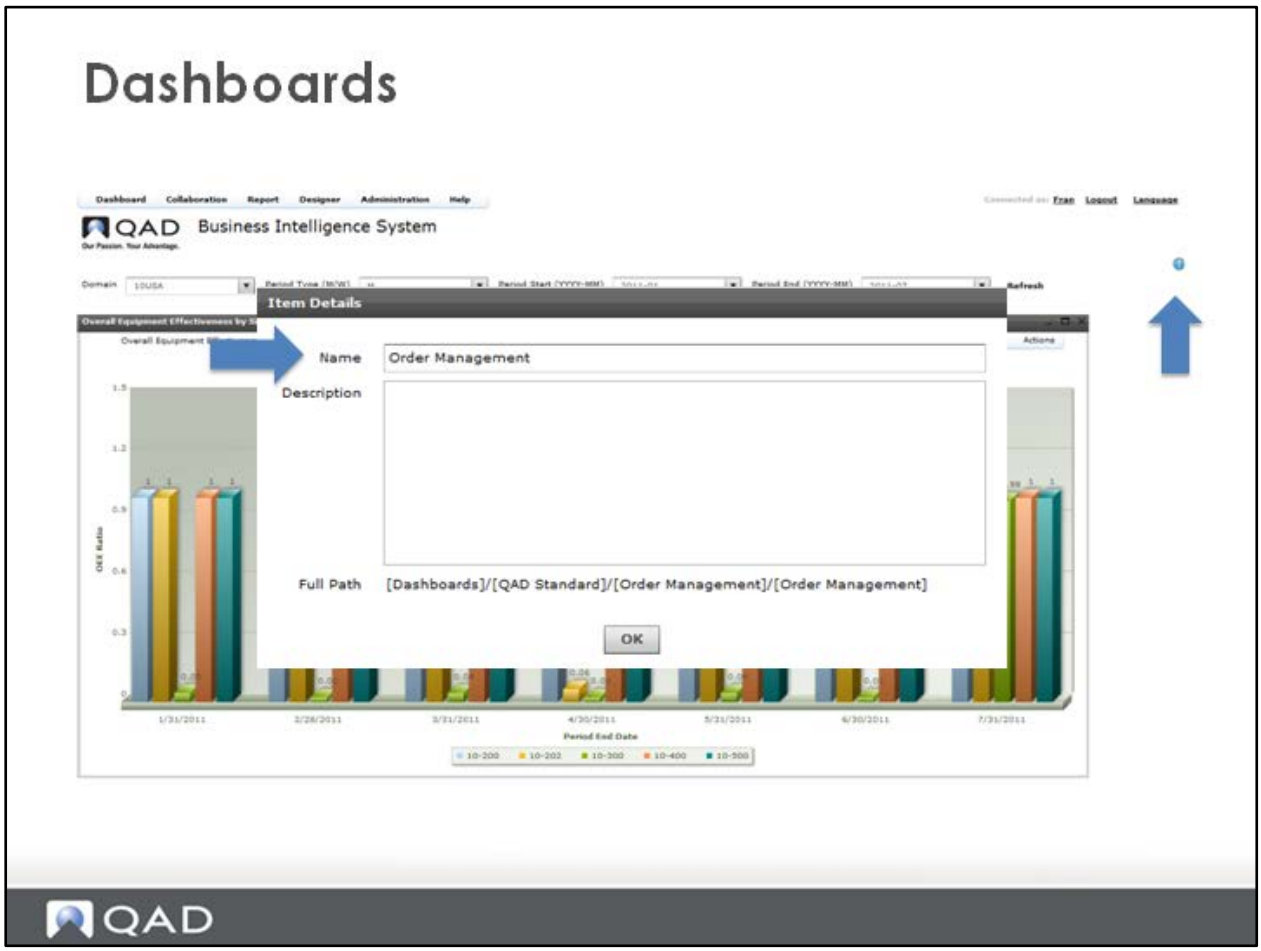
Dashboards



Upon successful login, the system displays the last screen used by this user. For end-users, this will generally be a dashboard.

The menu bar at the top of the window allows the user to select a different dashboard. Use the drop-down list to find the desired dashboard.

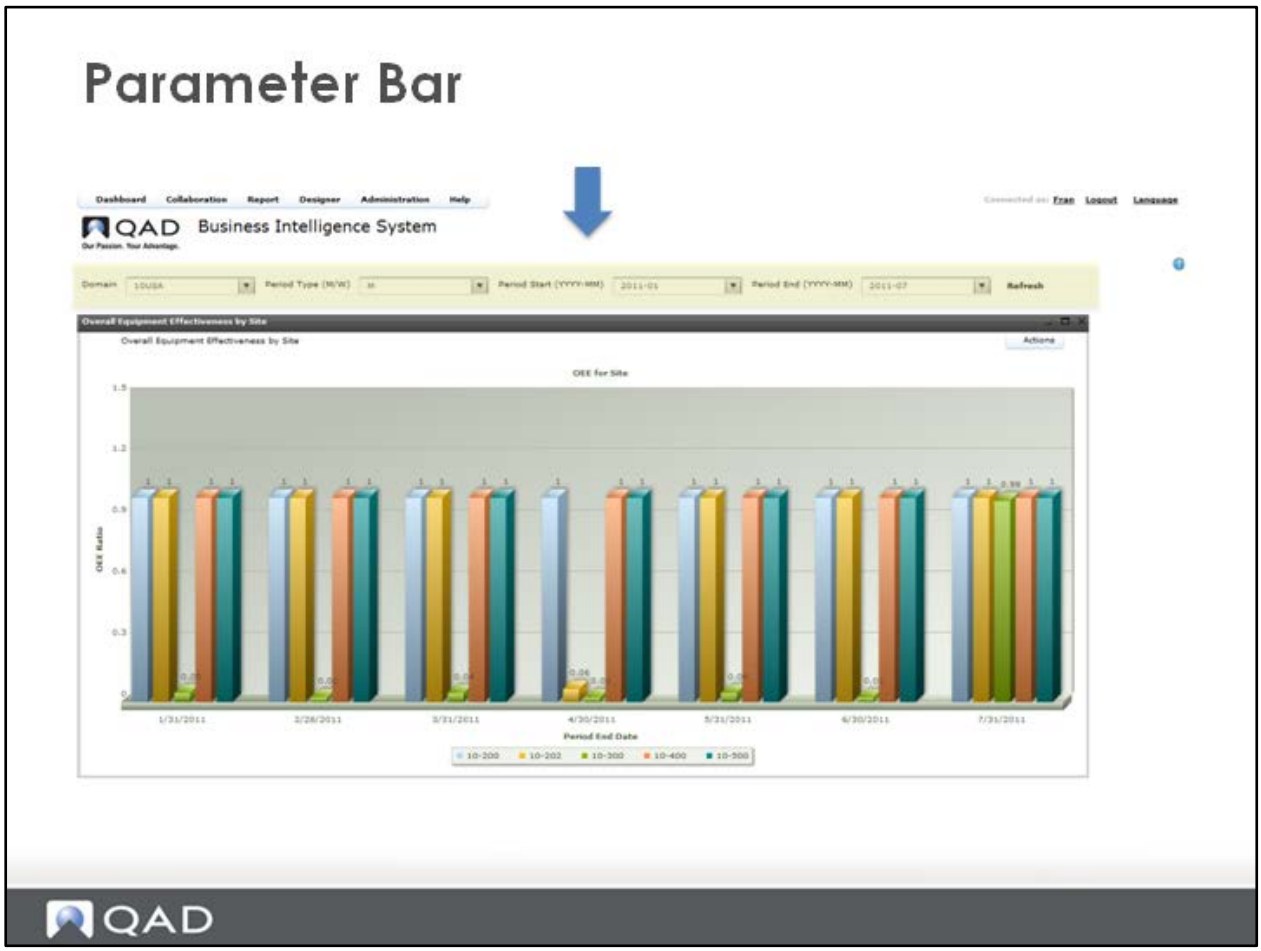
Dashboards



Once a dashboard is displayed, the user can see additional information about the dashboard using the information icon.

This will display the item detail window.

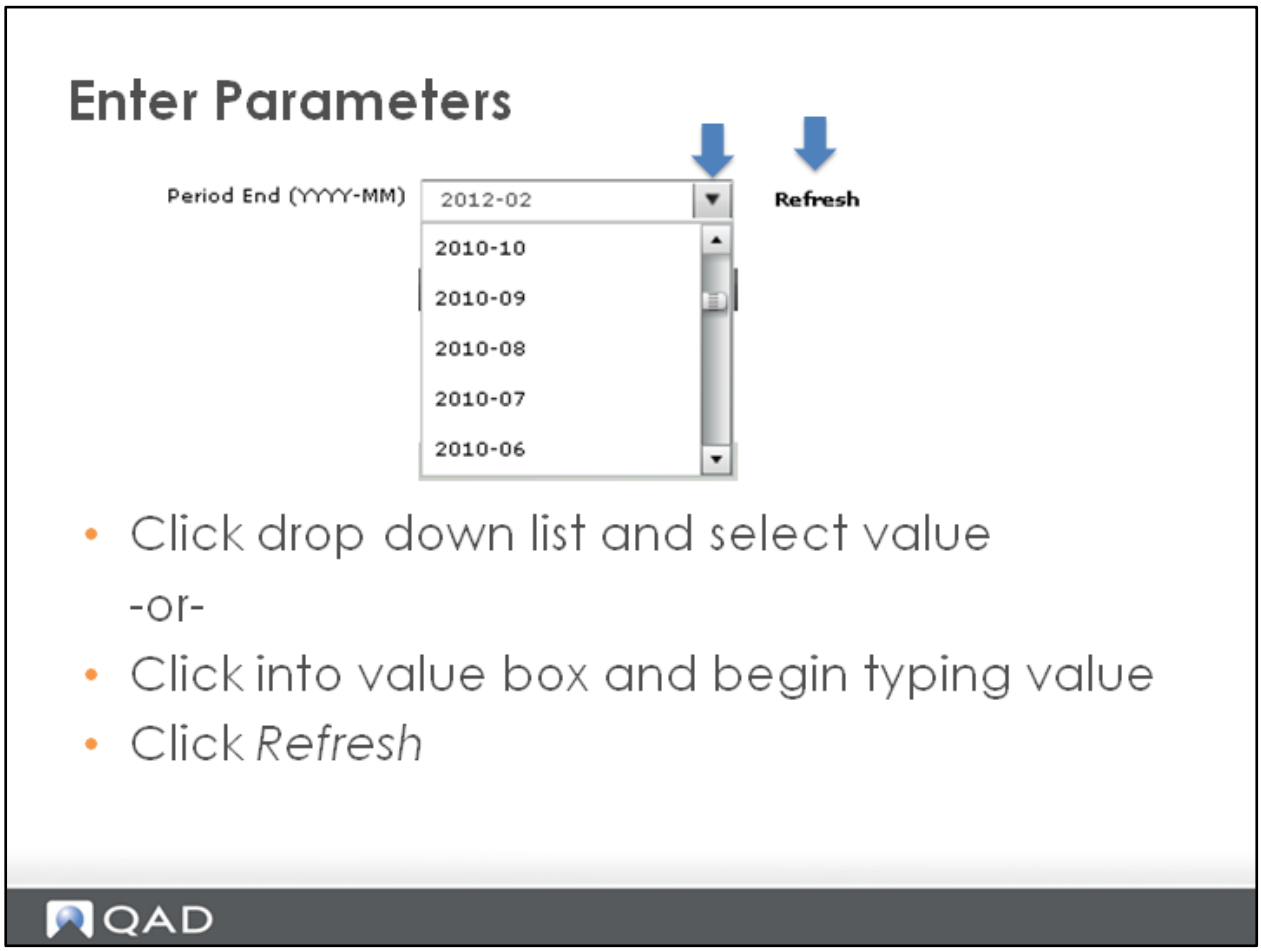
Parameter Bar



Some dashboards contain a parameter bar.

Parameter bars allow users to set values that control the visual items on the dashboard display.

Enter Parameters



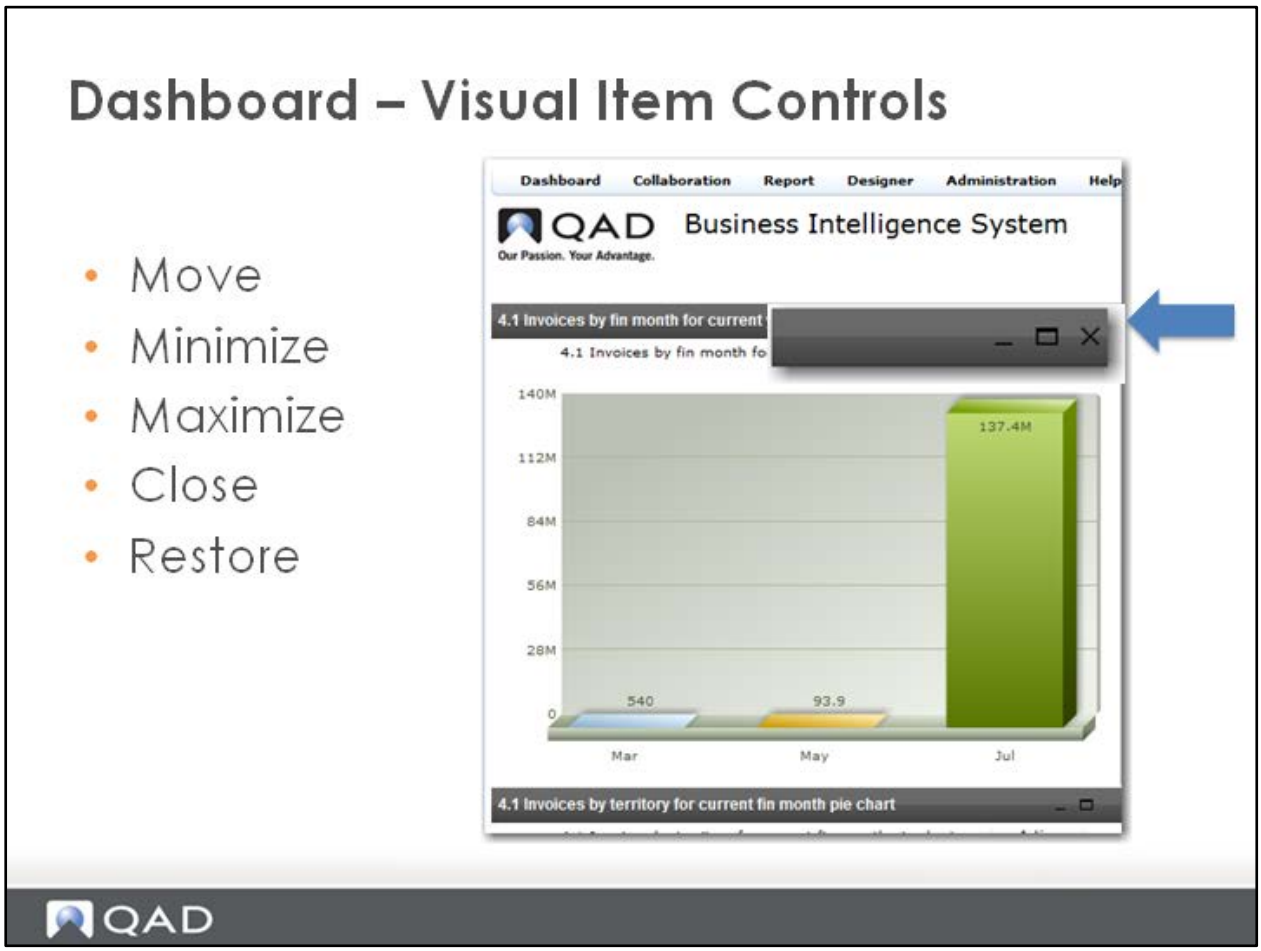
Parameter Bar

Parameter bars, or drop-down options, list various parameters. They allow you to set the subject or parameters that the visual items on that Dashboard display. They can be located anywhere on a dashboard. Click the drop down arrow in the parameter bar to view a list of the available options. You can move your cursor down the list to select the value desired.

An alternate method to enter information in a parameter selection box is to click into the value field and begin typing inside the parameter value bar to find items in the selection list that begin with the characters you have input.

Click Refresh to view changes.

Dashboard – Visual Item Controls



Visual Items

The BI Portal Dashboard consists of various visual items that display information in a number of formats.

Some of these visual items can be moved, minimized, maximized, closed, and restored.

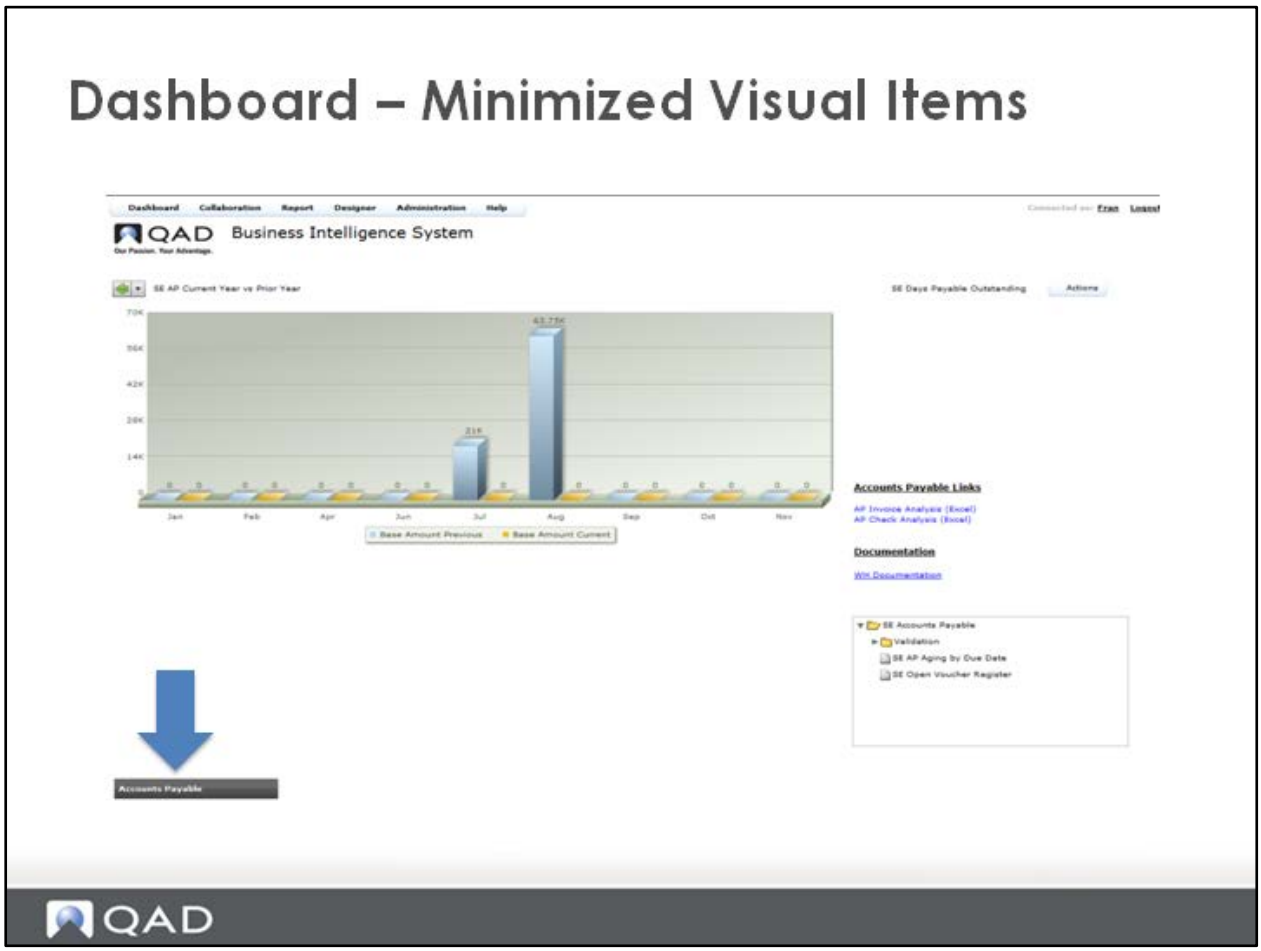
Click, drag and drop to move an item. Use the control buttons at the top left of the item to minimize or close the item.

The actions that can be taken are defined by the dashboard designer.

Note : When a visual item is minimized, the title bar for that item will appear at the bottom of the dashboard. Click the object's title bar to restore the item.

When a visual item is closed on the dashboard, it will only be removed from that session. The item will return in the default area the next time you access the dashboard.

Dashboard – Minimized Visual Items



Visual Items

The BI Portal Dashboard consists of various visual items that display information in a number of formats.

Some of these visual items can be moved, minimized, maximized, closed, and restored.

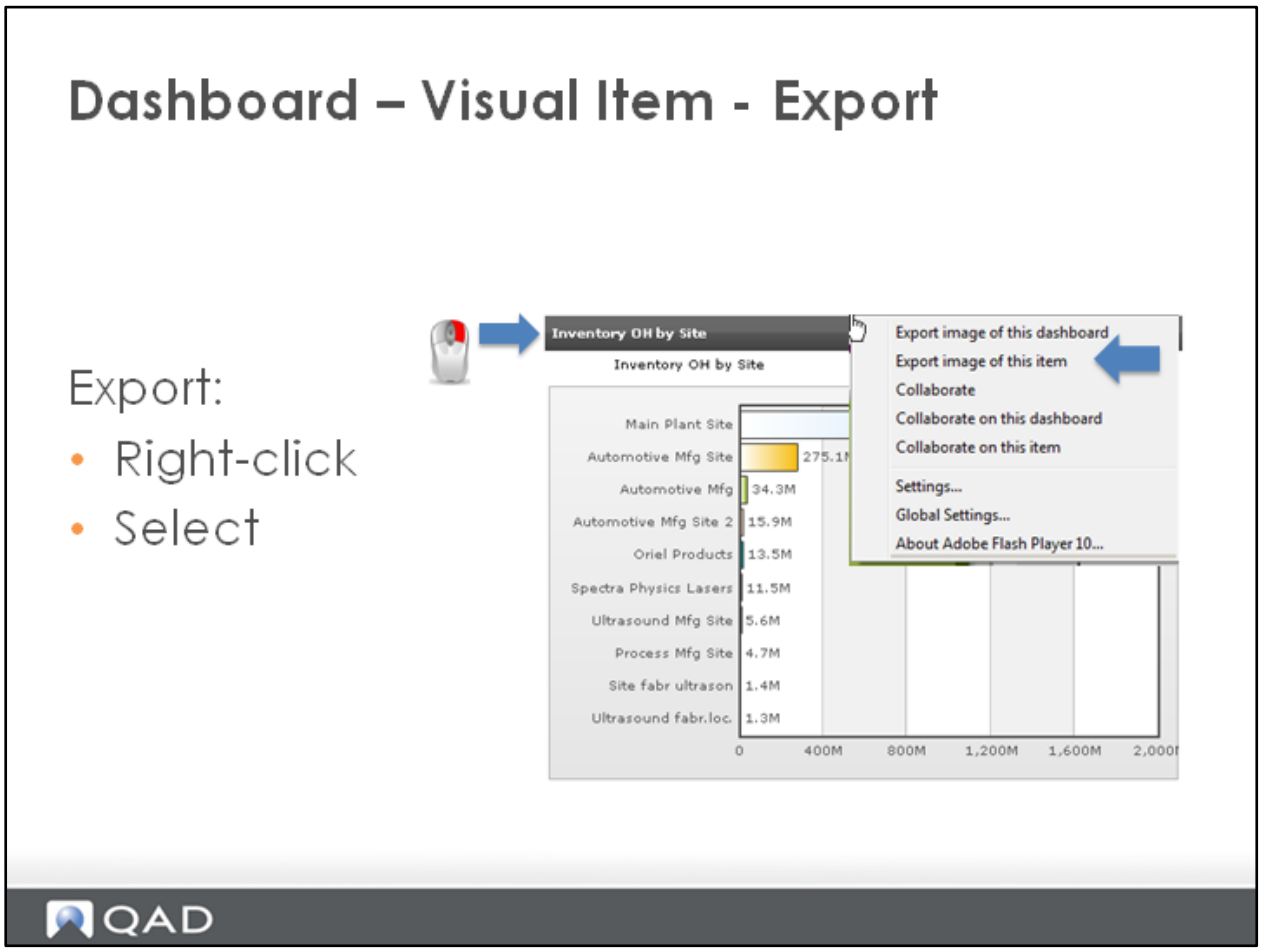
Click, drag and drop to move an item. Use the control buttons at the top left of the item to minimize or close the item.

The actions that can be taken are defined by the dashboard designer.

Note : When a visual item is minimized, the title bar for that item will appear at the bottom of the dashboard. Click the object's title bar to restore the item.

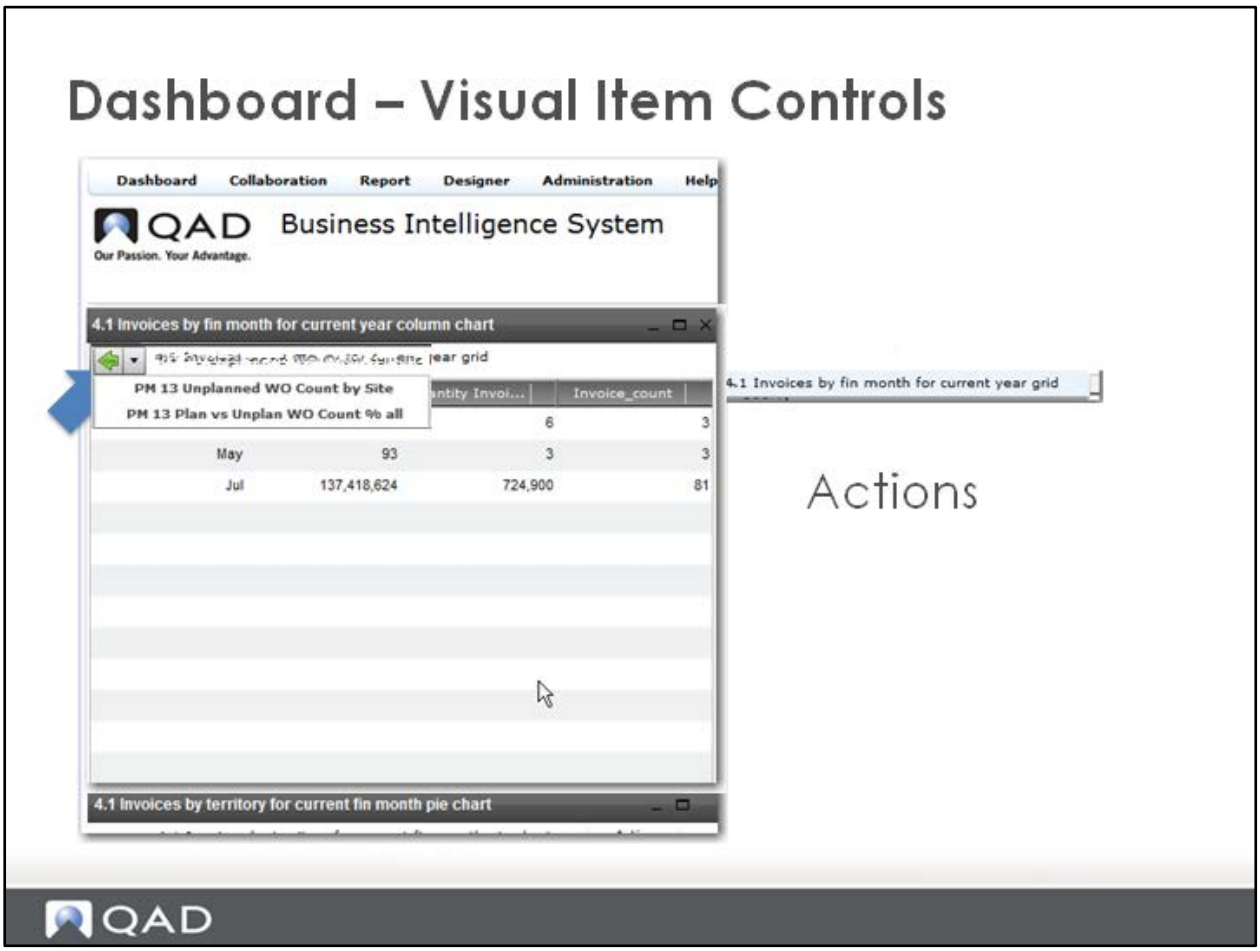
When a visual item is closed on the dashboard, it will only be removed from that session. The item will return in the default area the next time you access the dashboard.

Dashboard – Visual Item - Export



You can **export** an image of any visual item. Right-click on the title bar of a visual item, then select Export image of this item.

Dashboard – Visual Item Controls

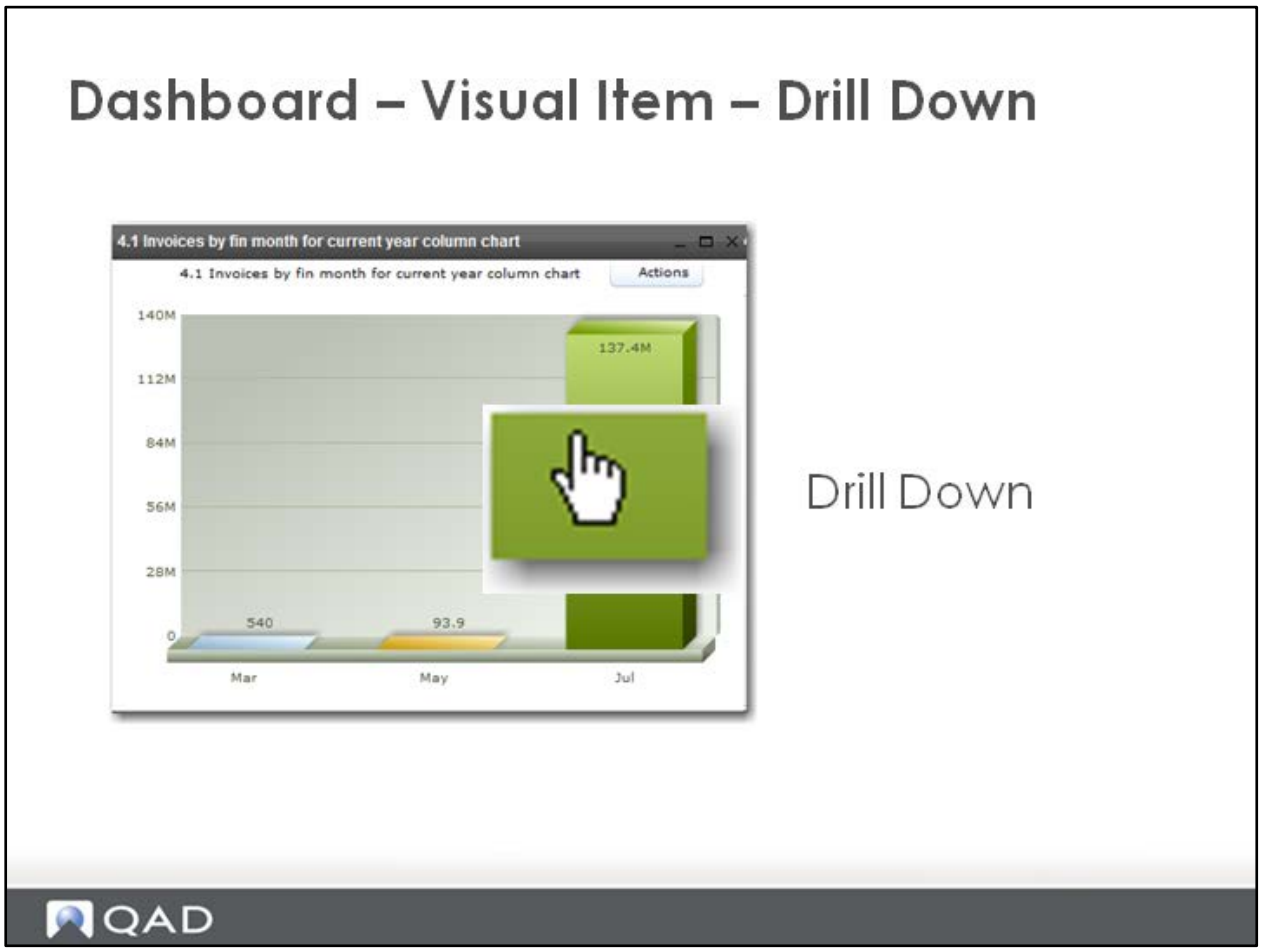


Some visual items have **Action** drop-down options, click Actions to view a list of options.

In this example, a Grid type visual item is available from the Action button.

To return to the previous chart, click the green arrow –or- select an object from the drop down menu (arrow)

Dashboard – Visual Item – Drill Down

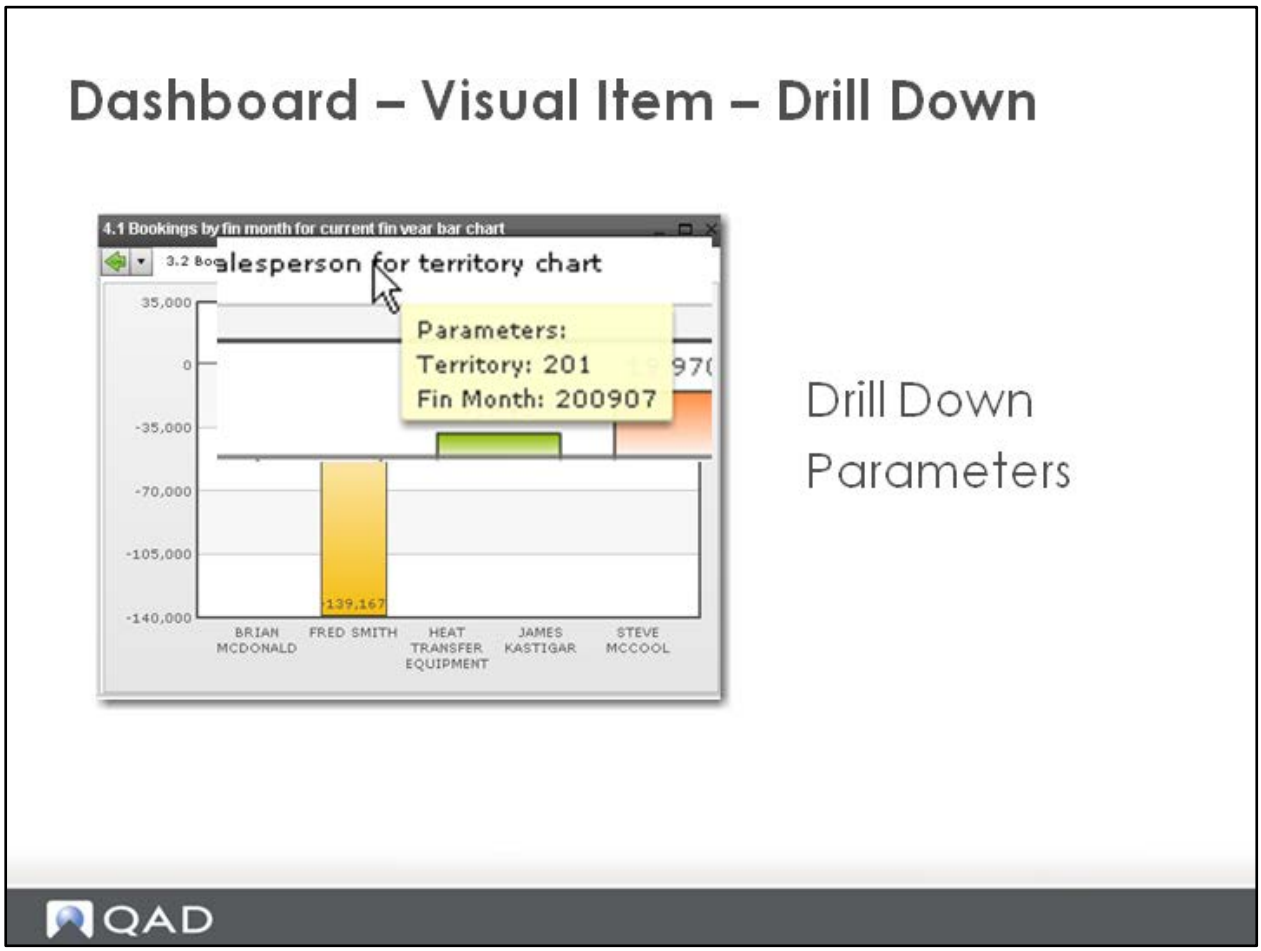


If items on a chart allow for drilling, the cursor changes to indicate a drill is possible.

Drilling into an item brings you to a new visual item or a report.

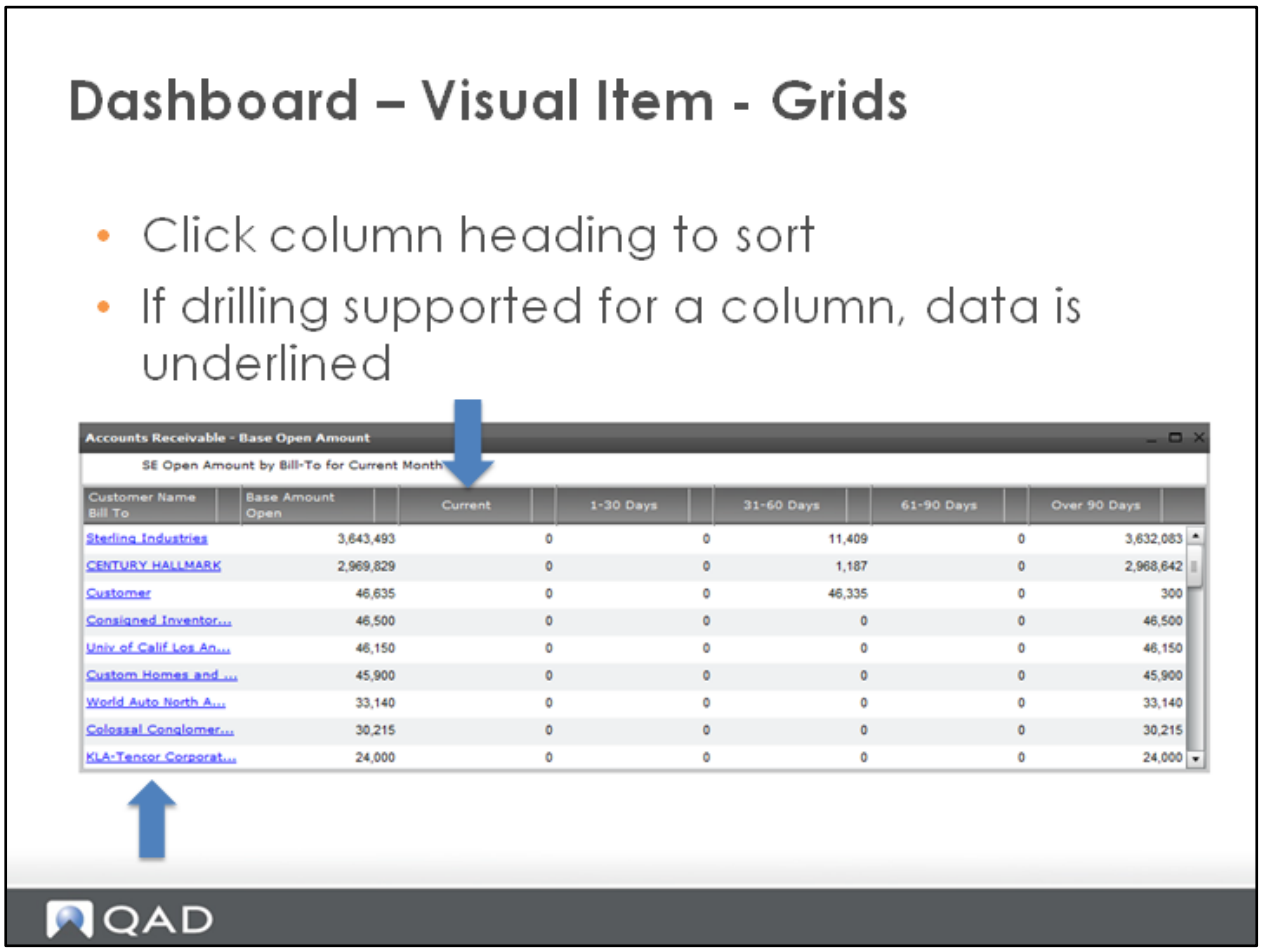
Return to the chart using the back arrow button green at the top of the image frame. An alternate method of returning to a previous visual item is to use the *bread crumb* feature. These are accessed via a drop down (down arrow next to the green back arrow).

Dashboard – Visual Item – Drill Down



If you drill down to a visual item, you can hover your mouse of the title and a pop up will appear. This displays the parameter and related current values.

Dashboard – Visual Item - Grids



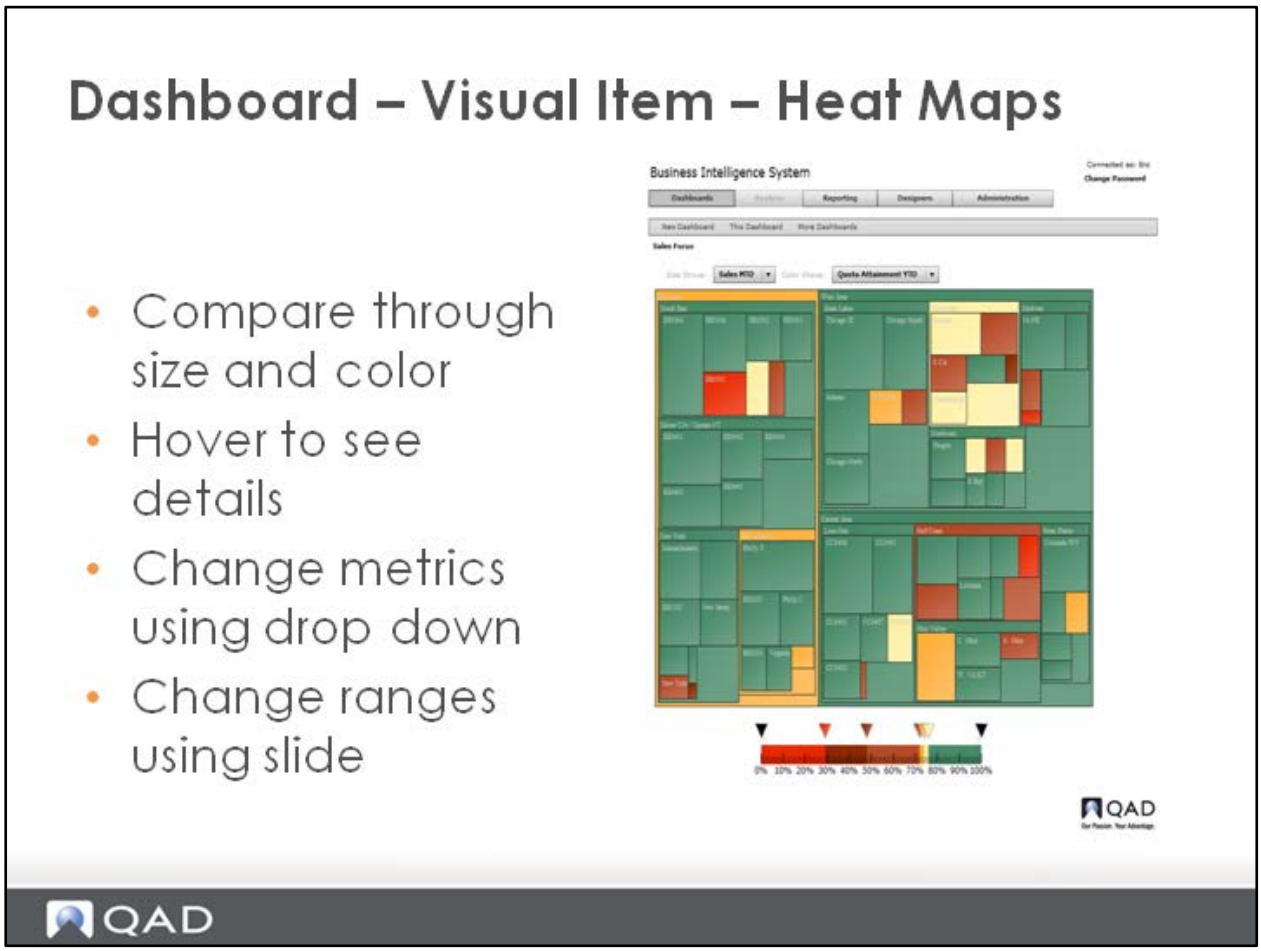
Grids, or tables, allow for a simple, straight-forward arrangement of information in a sorted format. The columns within a grid are sortable, click on the column heading to sort: ascending, descending, and nested sort.

It is also possible to re-arrange columns. Simply click and drag the column heading.

Some grids support drill down. If the item can be drilled into, an underline displays on the data, similar to a link. Click the link to drill into the item to either another visual item or a report. Use the breadcrumbs at the top of the item frame to return to the grid.

Any changes to the grid are not permanent. The grid will return to it's standard format when the user exits the grid.

Dashboard – Visual Item – Heat Maps

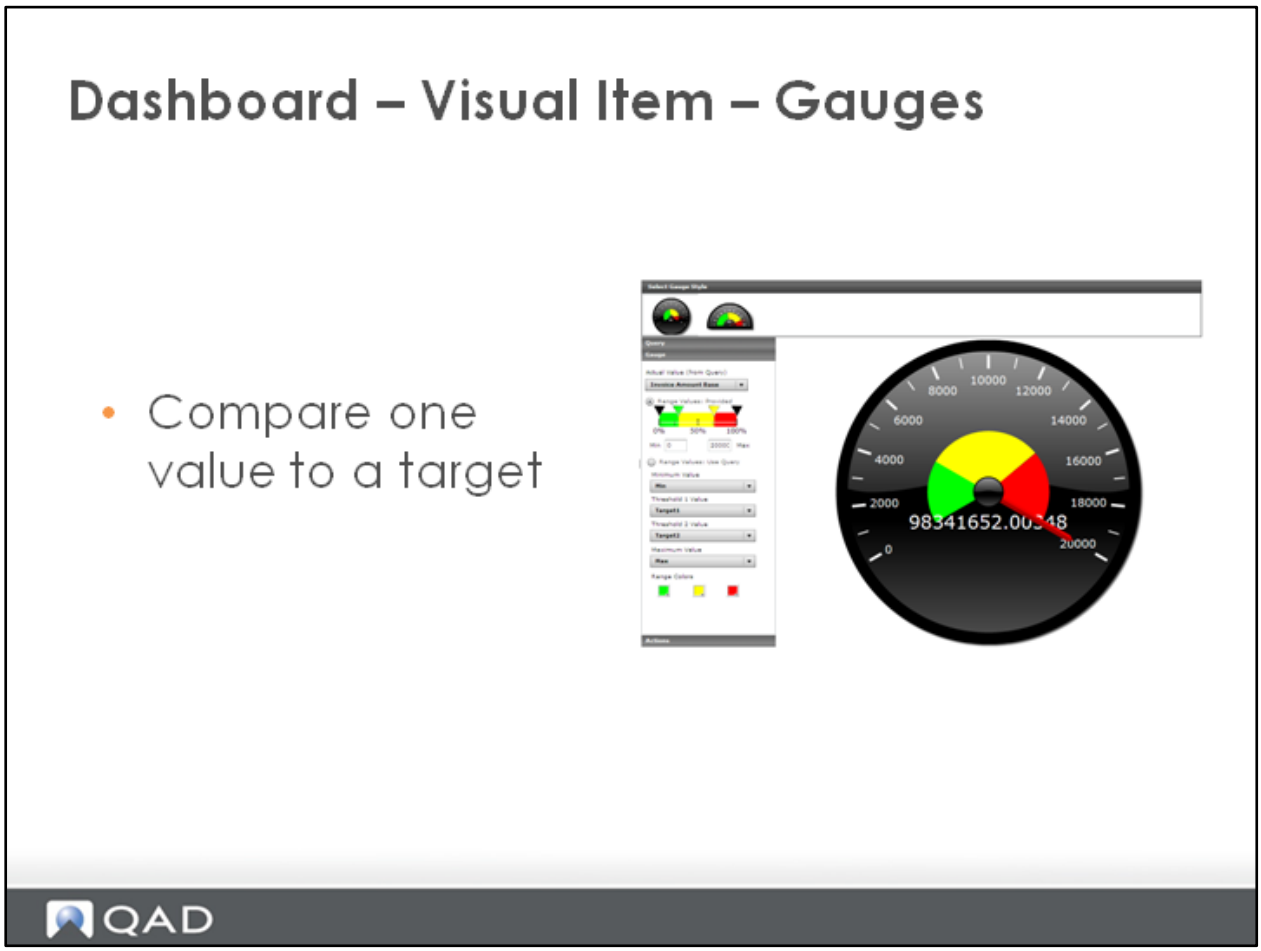


The heat map allows you to compare information displayed through size and color. Hover the cursor over areas to see details about individual rectangles. Change the size and color metrics by using the corresponding drop-down list in the upper part of the window. Change color ranges by using the range slide at the bottom of the window. Click and drag the desired color triangle to the appropriate value.

In the example each rectangle is a sales dollars month-to-date. A large rectangle equals relatively large Total Sales.

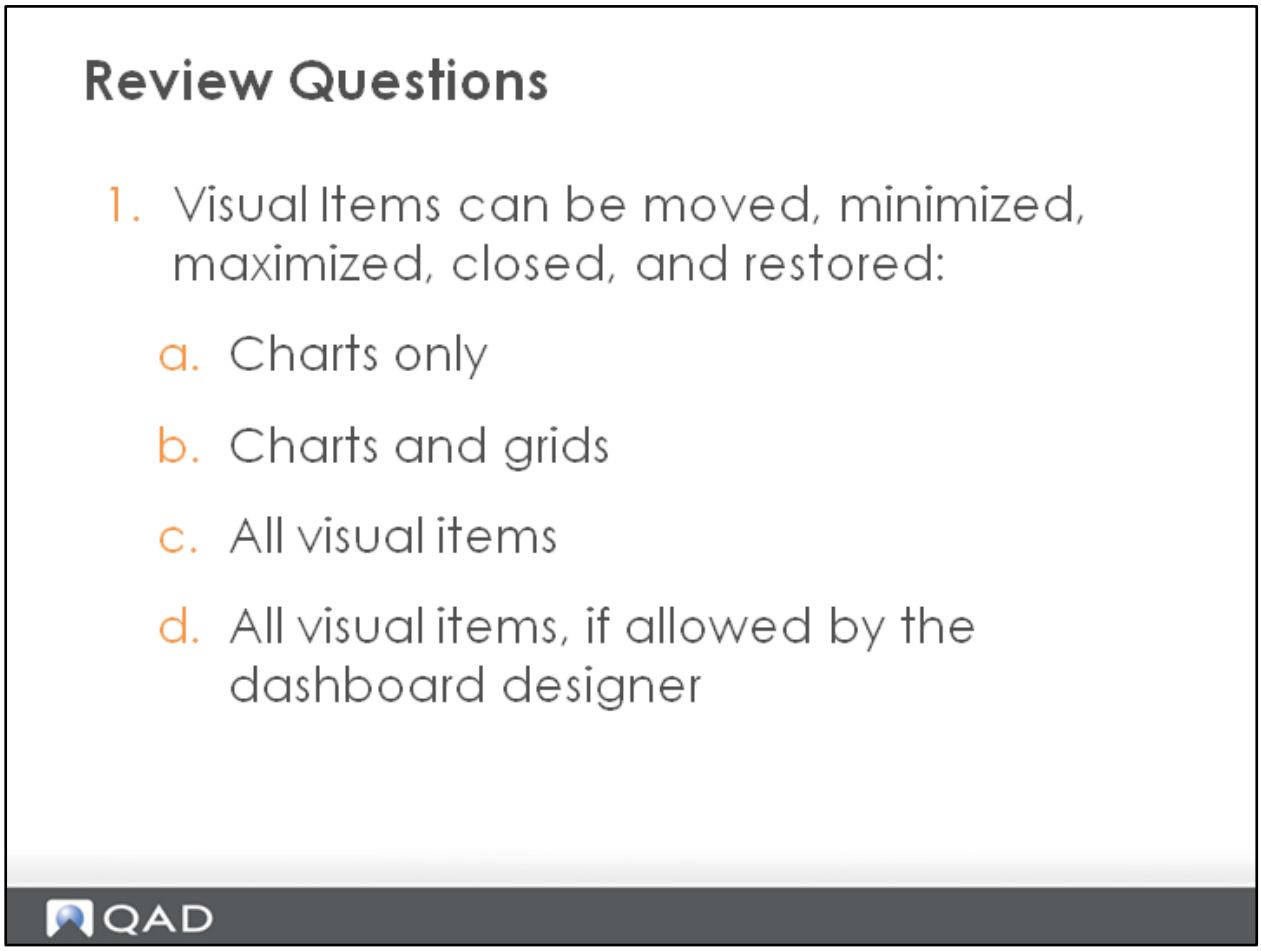
Red rectangles mean the Sales Quota has not been met

Dashboard – Visual Item – Gauges



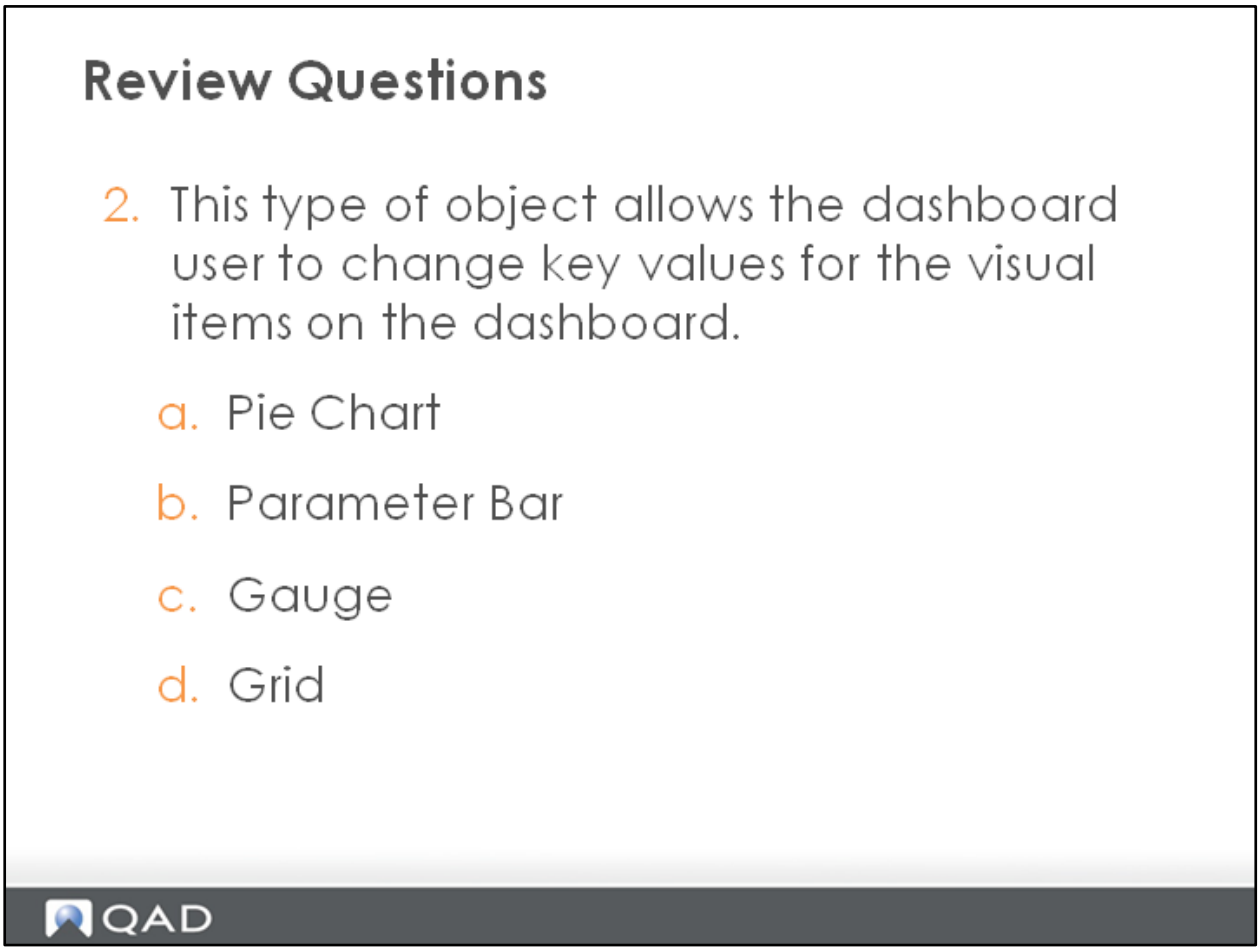
Gauges are a specialized form of visual item. They are used to show some value compared to a target, for example, sales to forecast, or actual to budget.

Review Questions



2-d

Review Questions

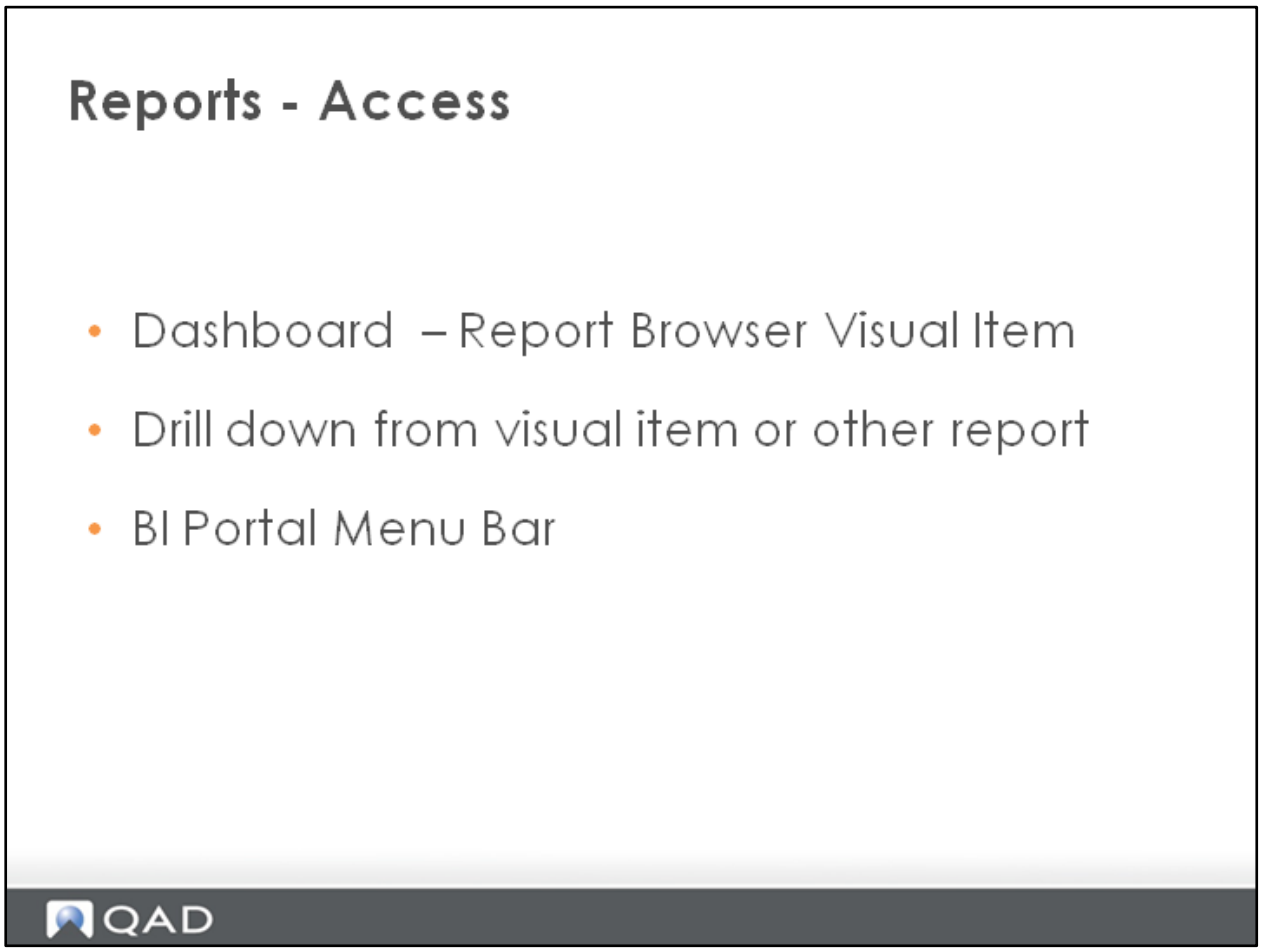


2-b

Running Reports



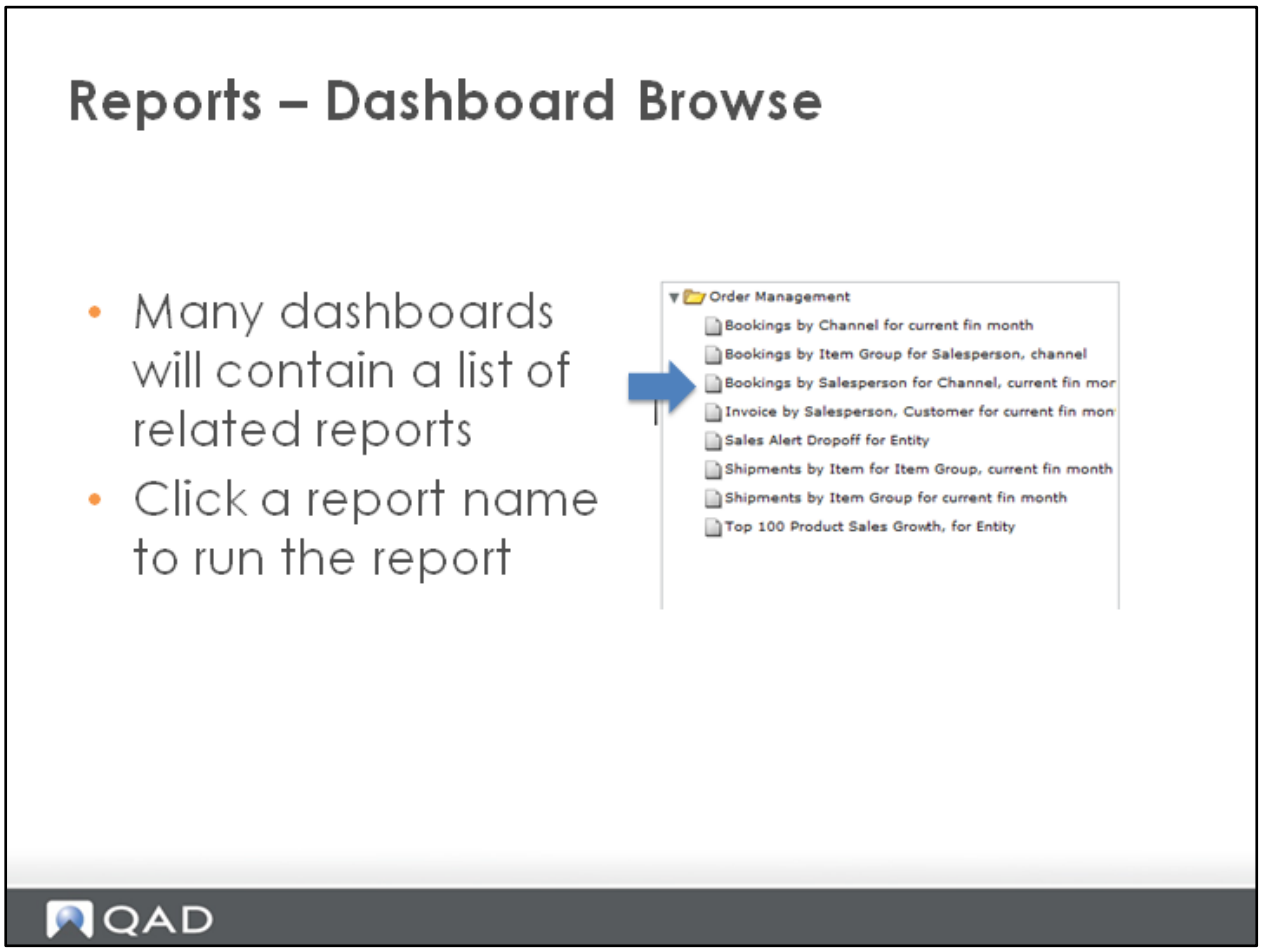
Reports - Access



Reports within the BI Portal may be executed from 3 places:

- Report Browser on Dashboard
- As a drill down from within a visual item or other report
- BI Portal Menu Bar

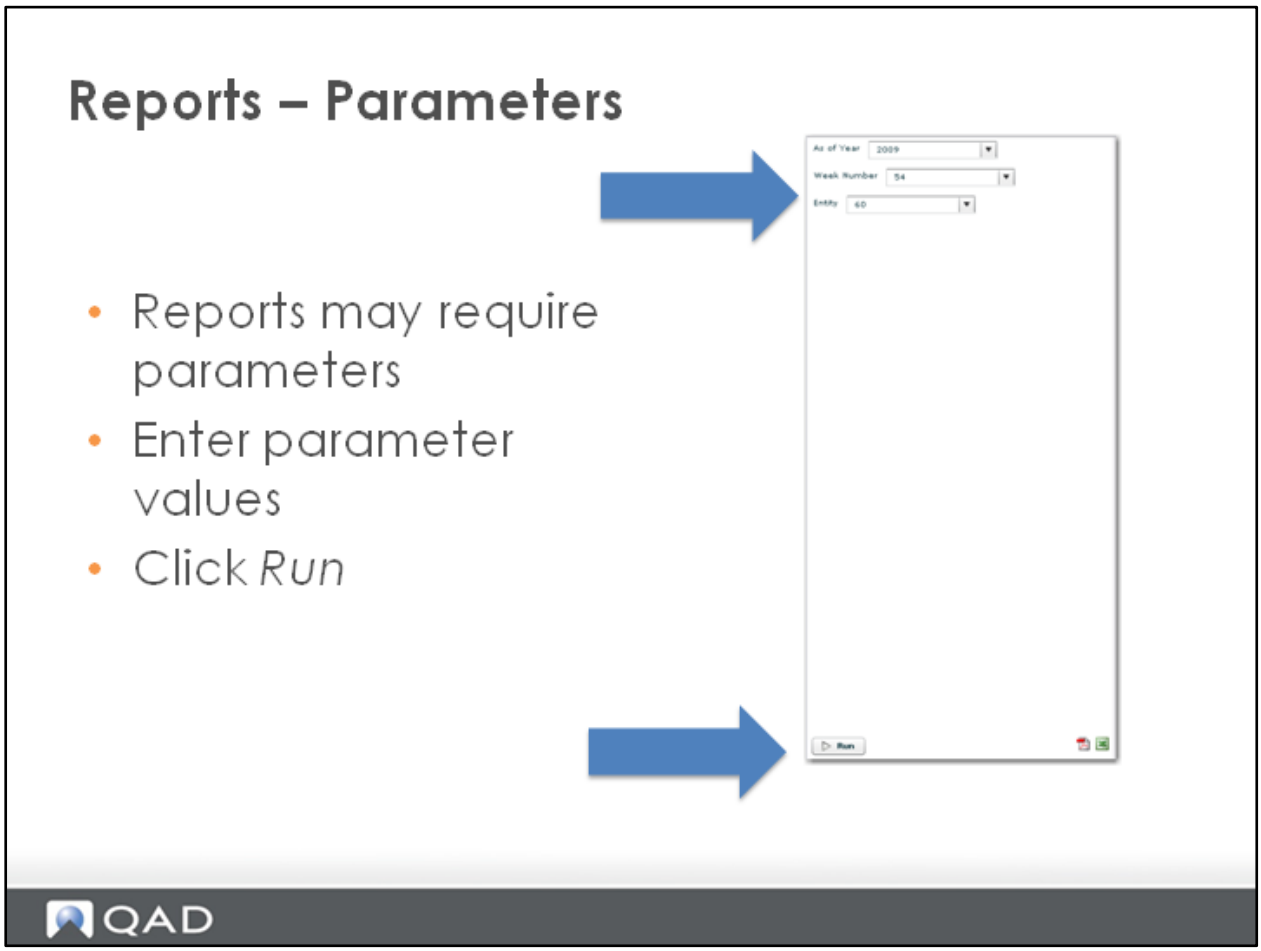
Reports – Dashboard Browse



This is an example of a Reports Browser on a Dashboard.

To select a report, click the report name.

Reports – Parameters



Many reports require the user to set parameters.

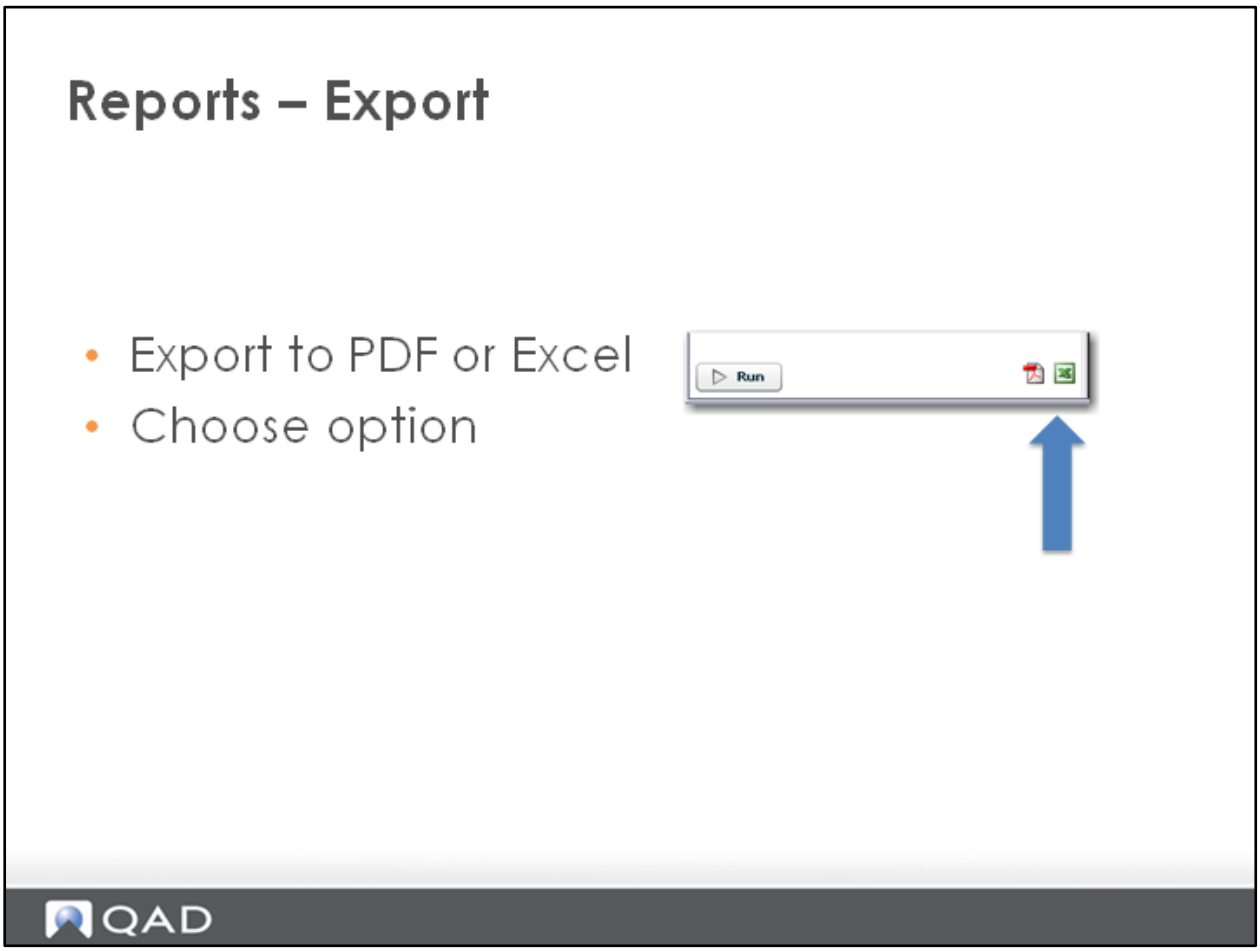
The parameters that control the report will be shown in a box to the left of the report. Default parameter values will usually be shown.

As with parameter bars, click the drop down arrow in the parameter bar to view a list of the available options. You can move your cursor down the list to select the value desired.

An alternate method to enter information in a parameter selection box is to click into the value field and begin typing inside the parameter value bar to find items in the selection list that begin with the characters you have input.

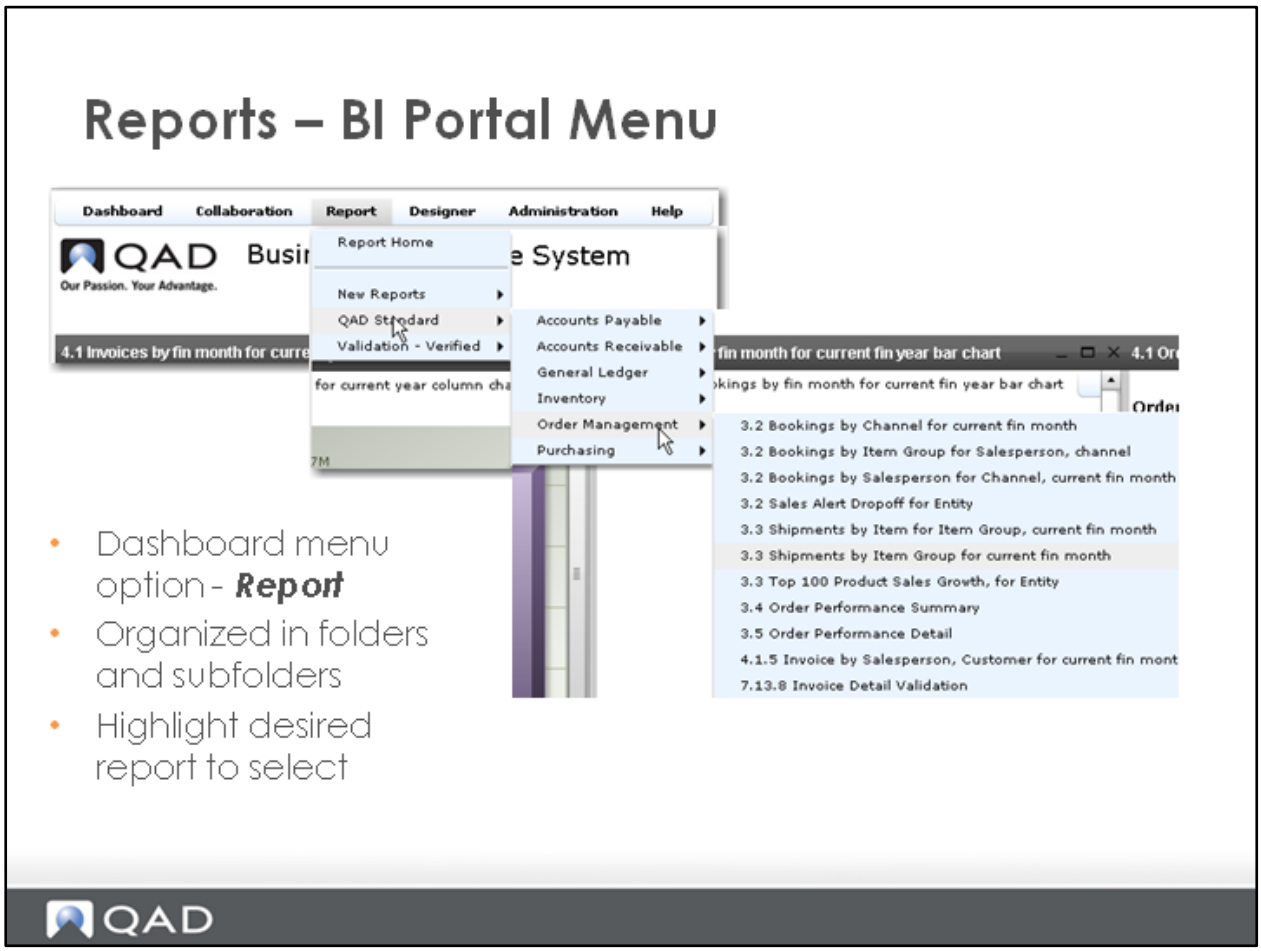
When you have entered the parameters values, click the ***RUN*** button**.**

Reports – Export



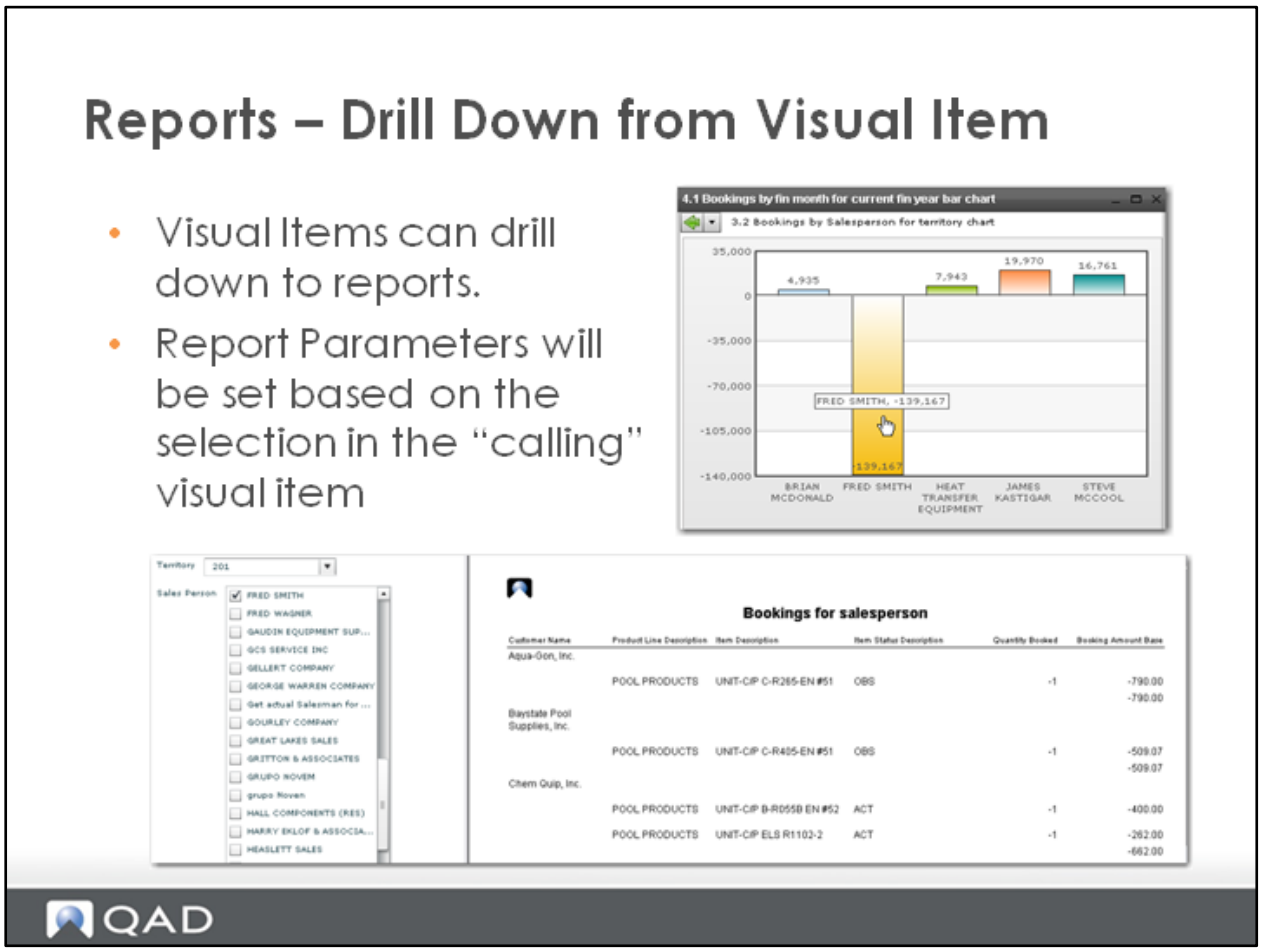
You can export the report in PDF or Excel. Click the PDF button and choose PDF or Excel, then click Export.

Reports – BI Portal Menu



Reports can be executed from the main BI Portal menu. The reports are organized into folders and subfolders.

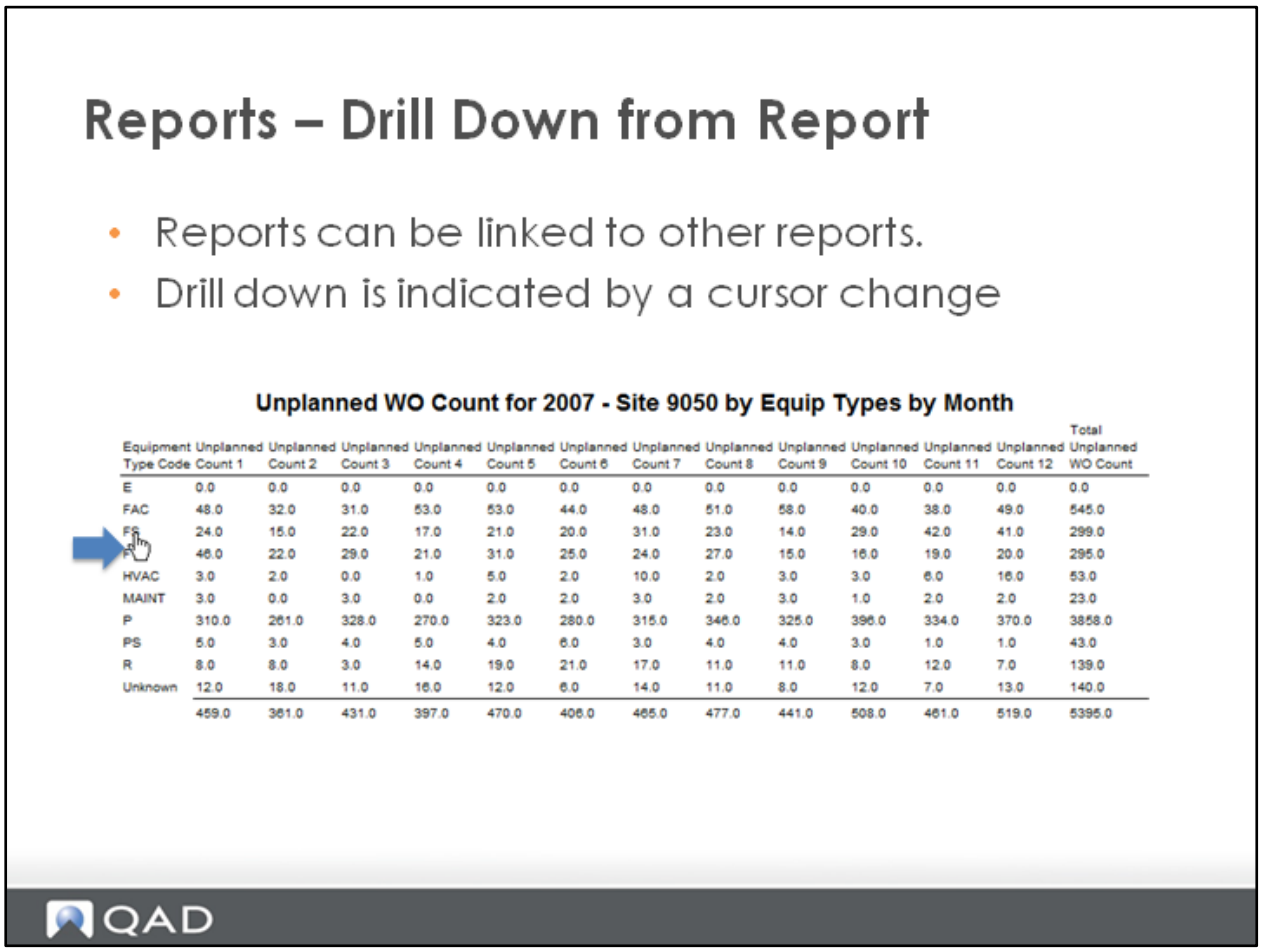
Reports – Drill Down from Visual Item



Reports may also be executed as a drill through from a visual item on a dashboard.

Any parameters required by the report are passed based on the visual item that opened the report.

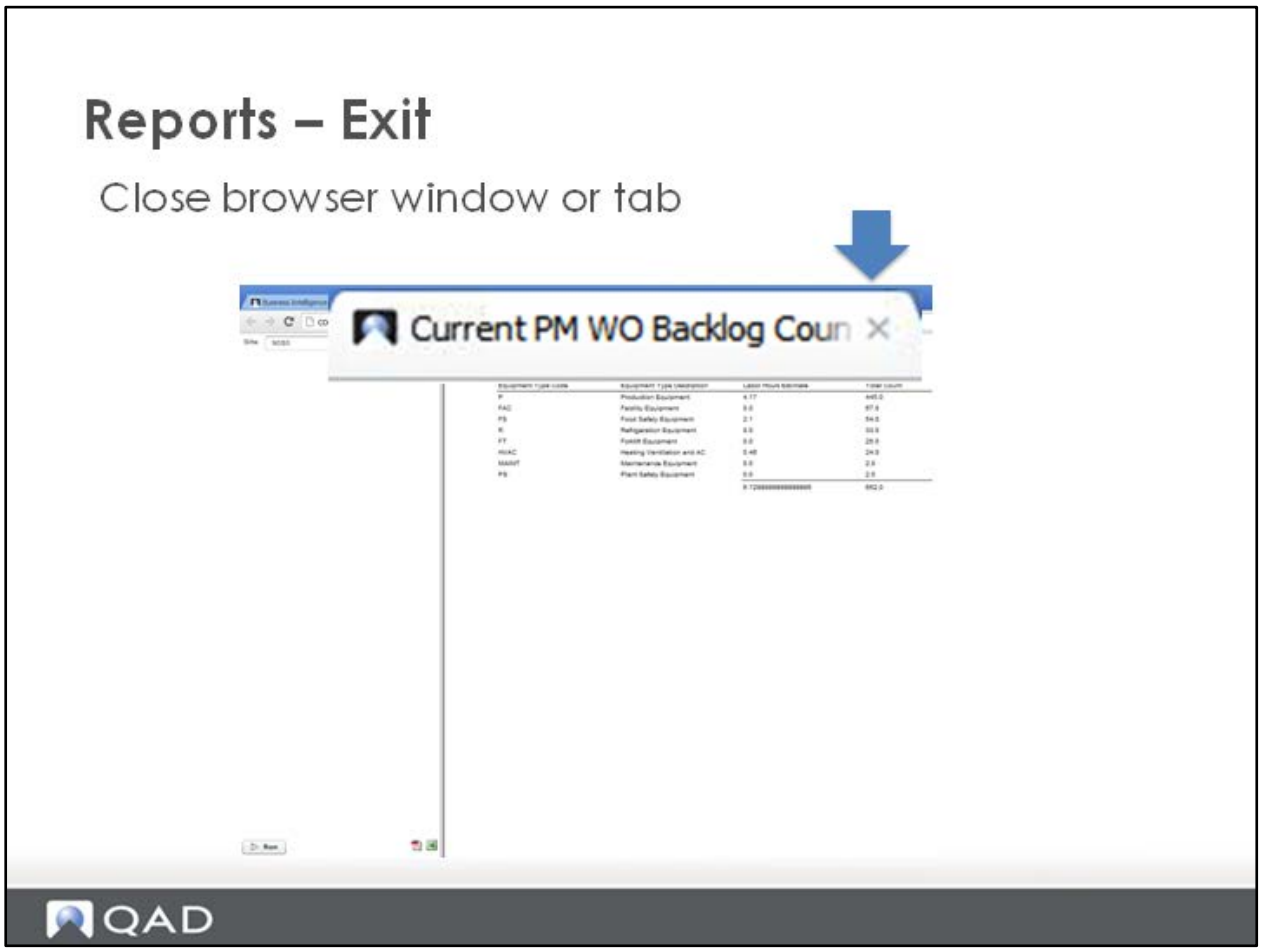
Reports – Drill Down from Report



Reports can also be linked from other reports.

An available drill down is indicated by a cursor change.

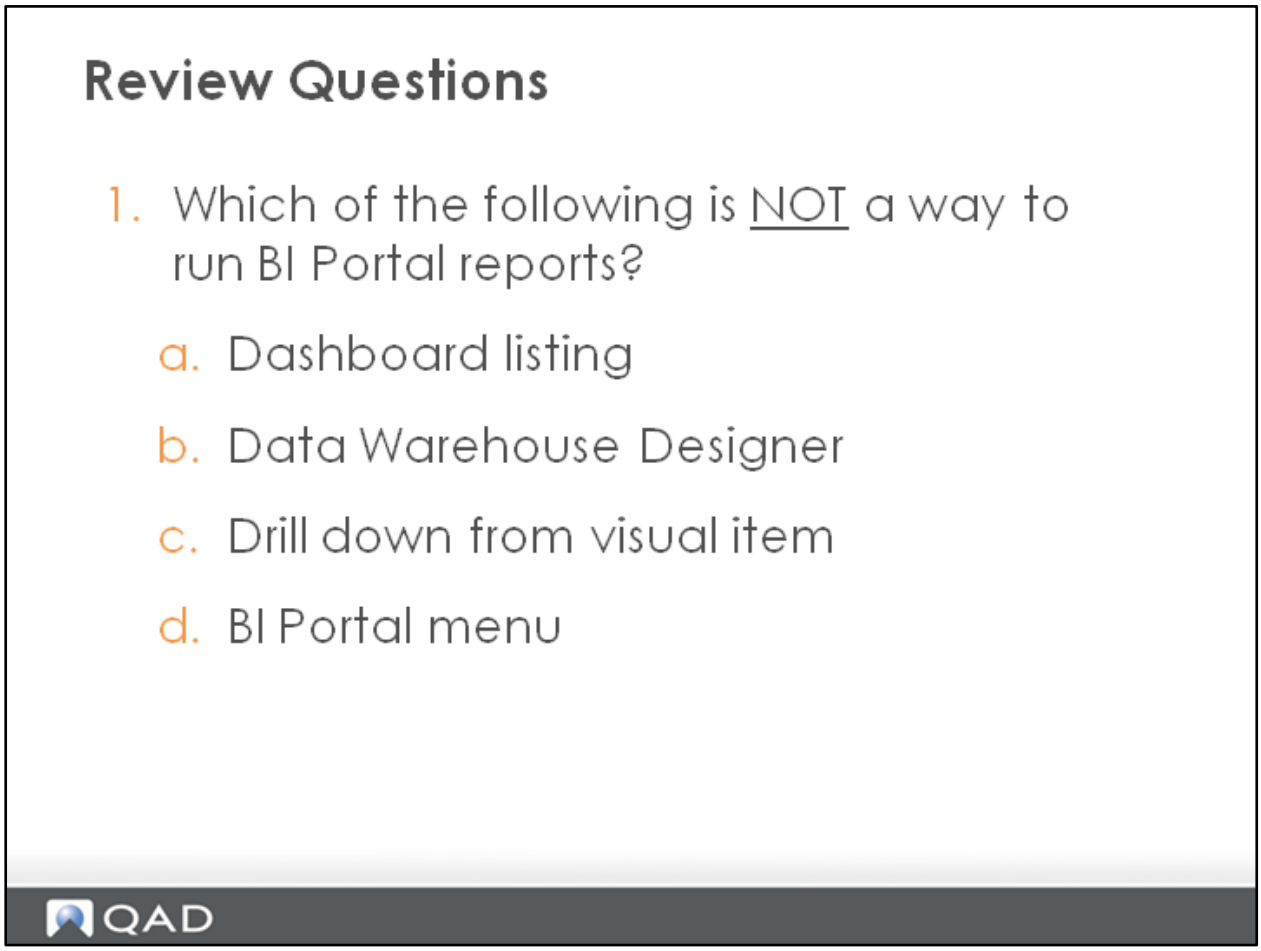
Reports – Exit



Reports can also be linked from other reports.

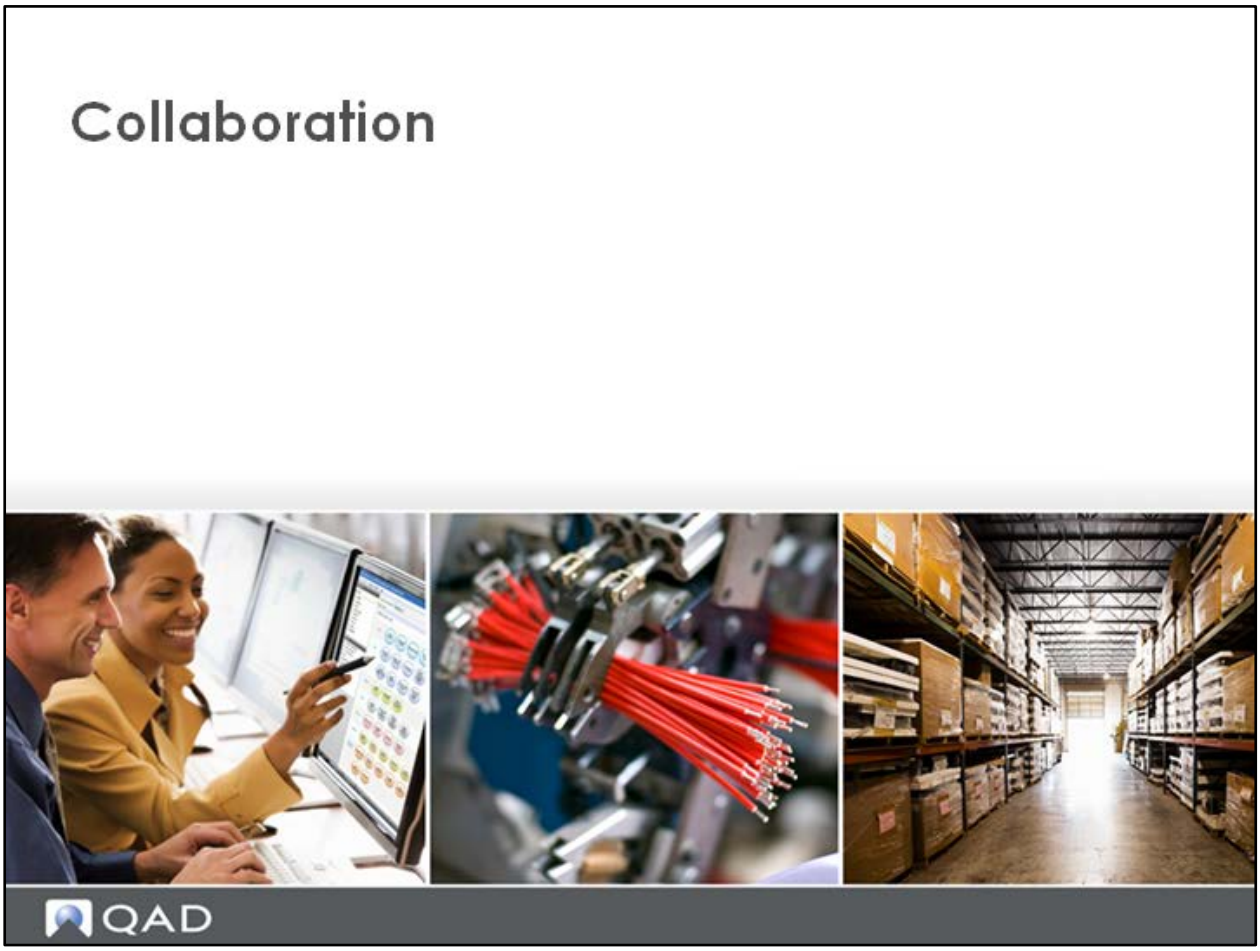
An available drill down is indicated by a cursor change.

Review Questions



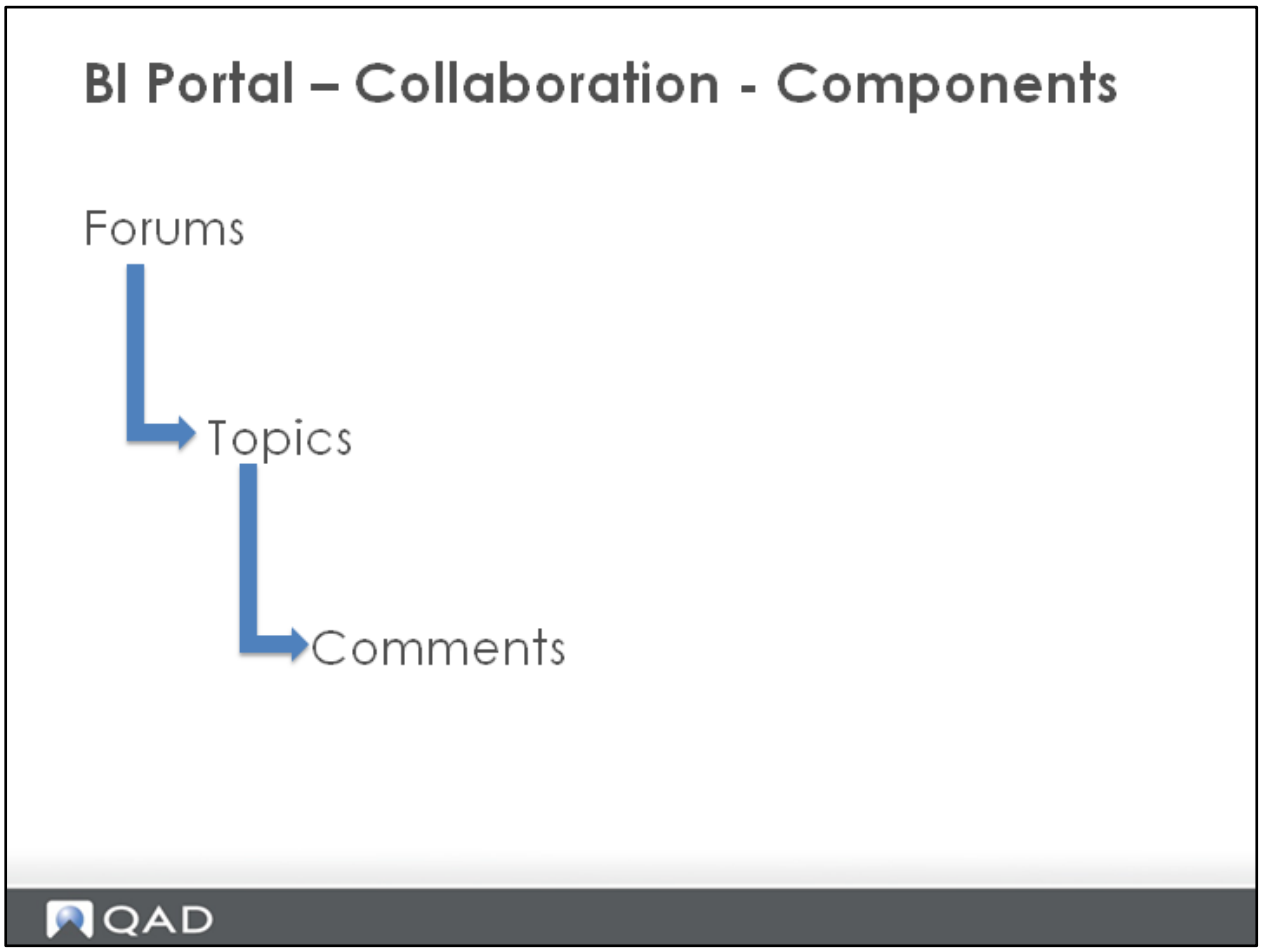
2-b

Collaboration



The BI Portal Collaboration is a tool that allows users to collaborate and share information with other users throughout the portal.

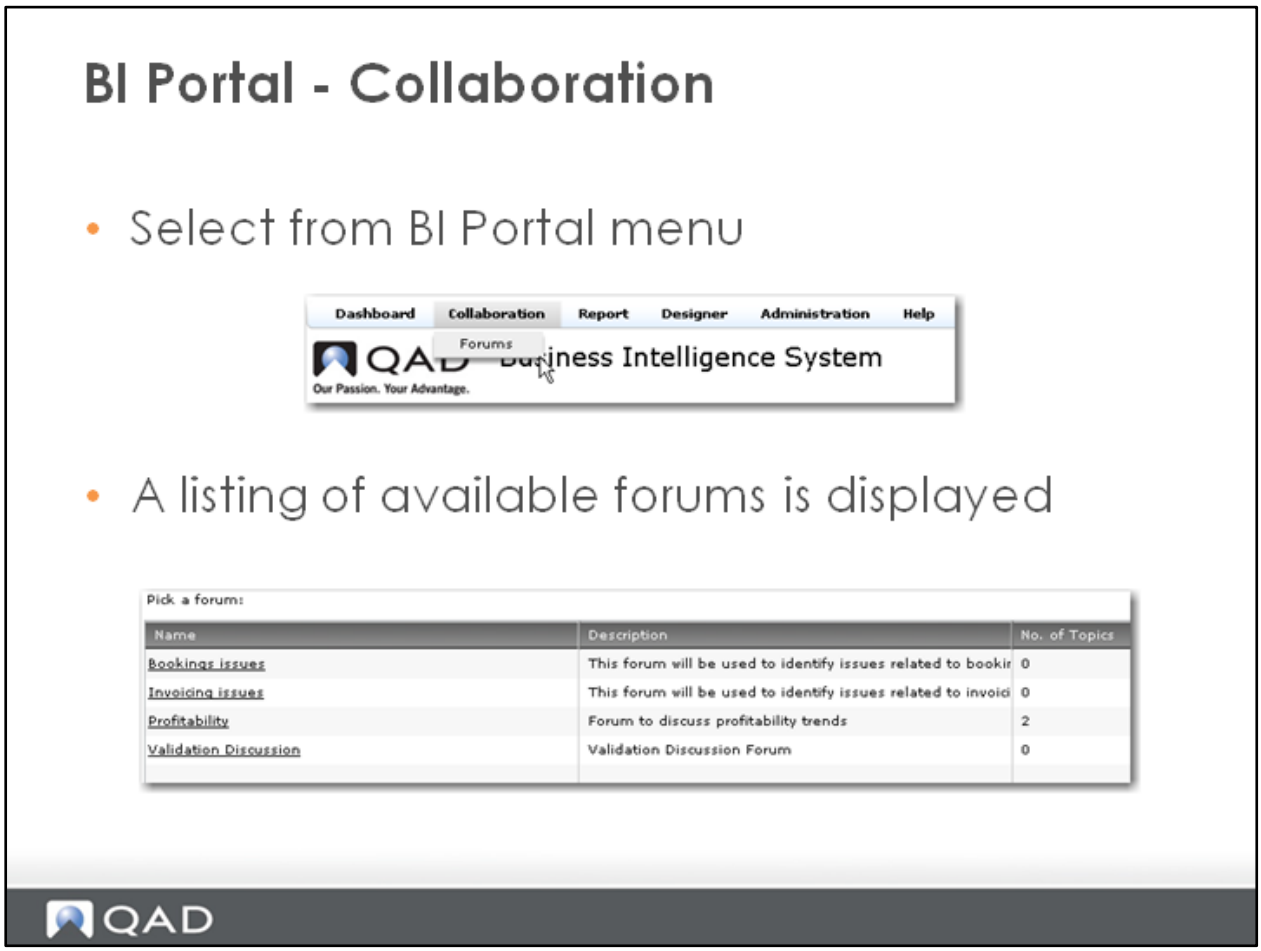
BI Portal – Collaboration - Components



The 3 building blocks of BI Collaboration are:

- Forums
- Topics
- Comments

BI Portal - Collaboration



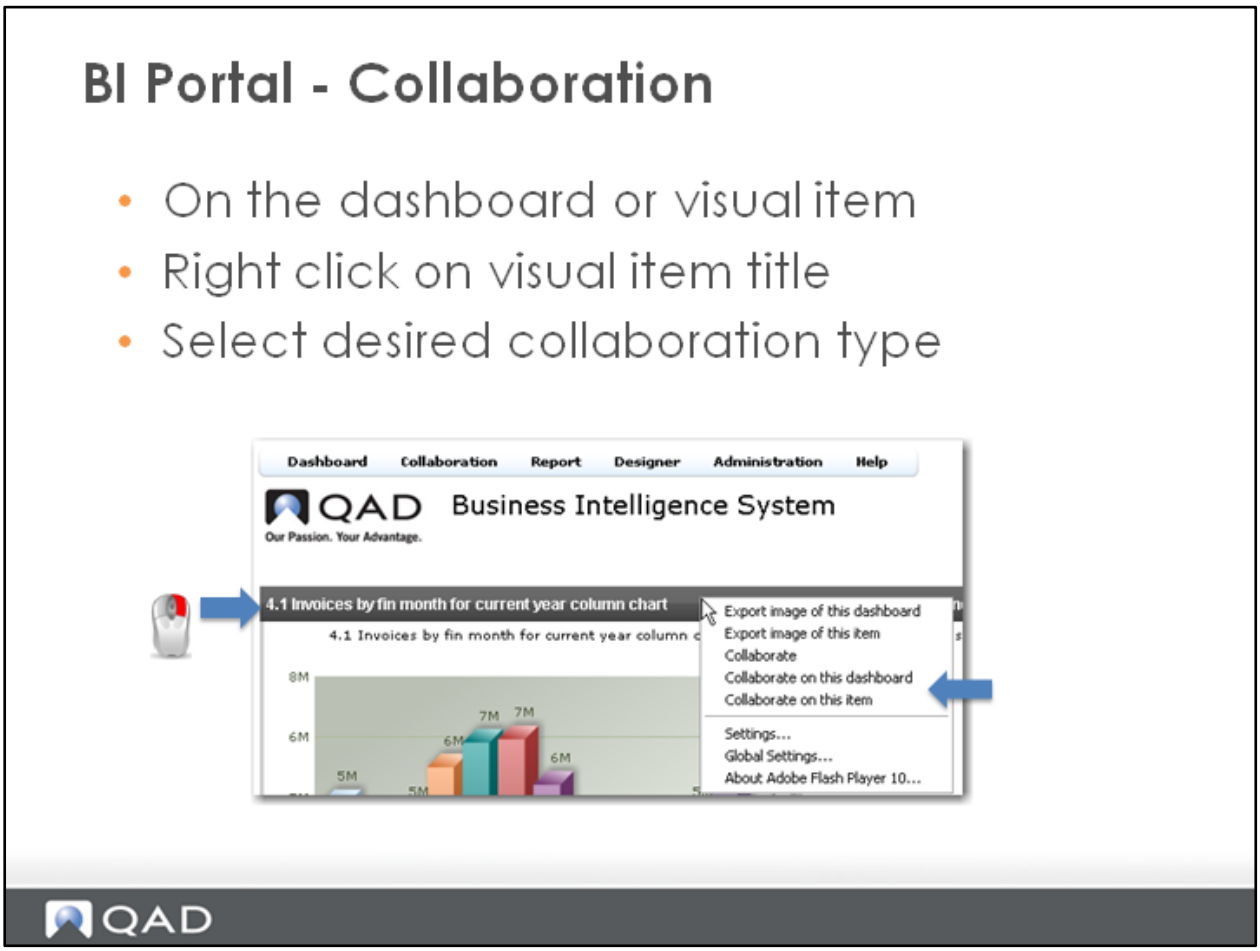
Collaboration ***Forums*** are defined by the BI System Administrator.

They can be accessed from the BI Portal menu or from drop down menus on dashboards and visual items.

To select from the Dashboard menu, click on *Collaboration* → *Forums.*

A listing of available forums will be displayed.

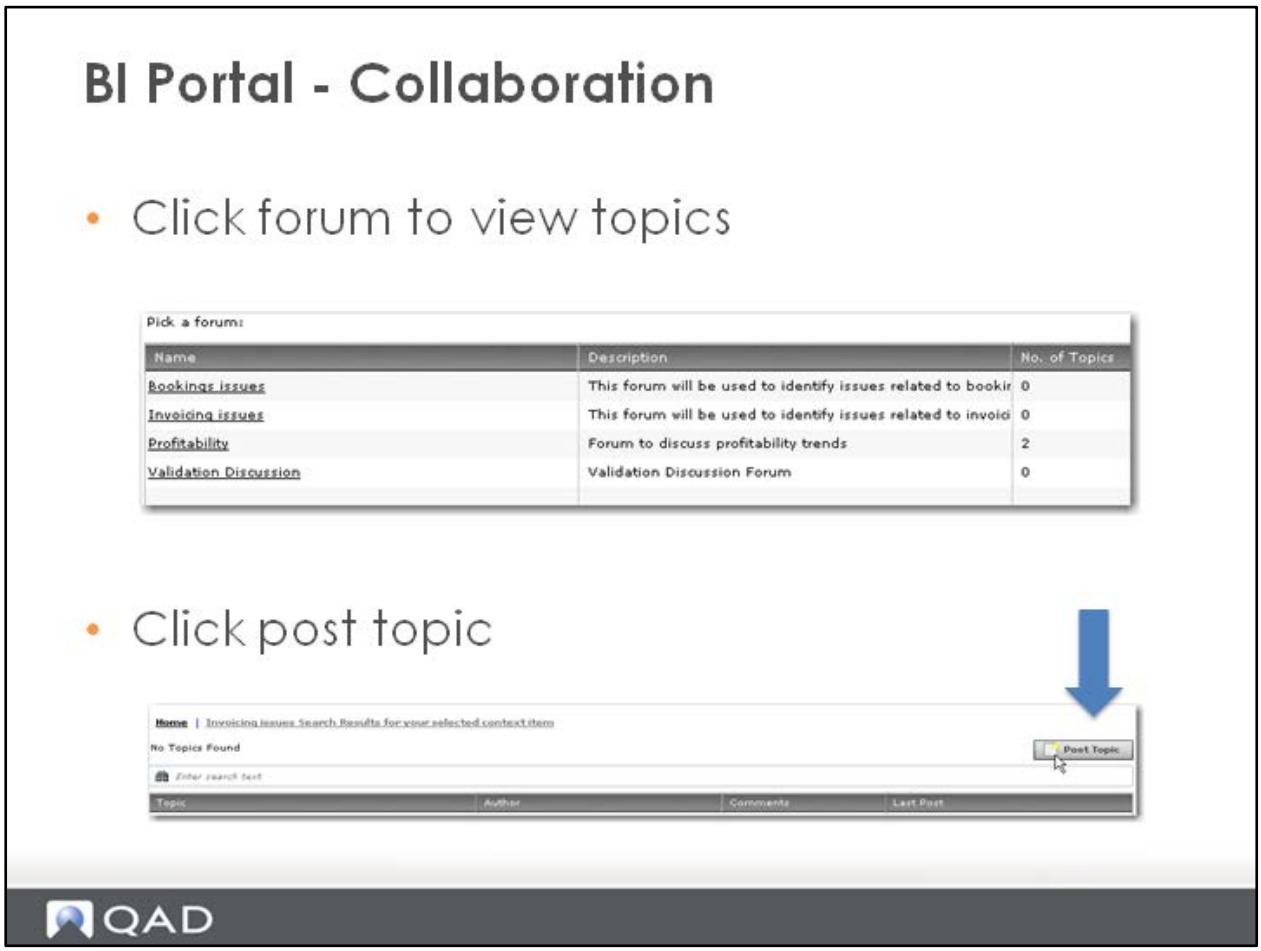
BI Portal - Collaboration



The Collaboration forums can also be accessed “in context” from within a Dashboard or Visual Item.

- Select from dashboard or visual item
- Right click on visual item title
- Select desired collaboration type

BI Portal - Collaboration

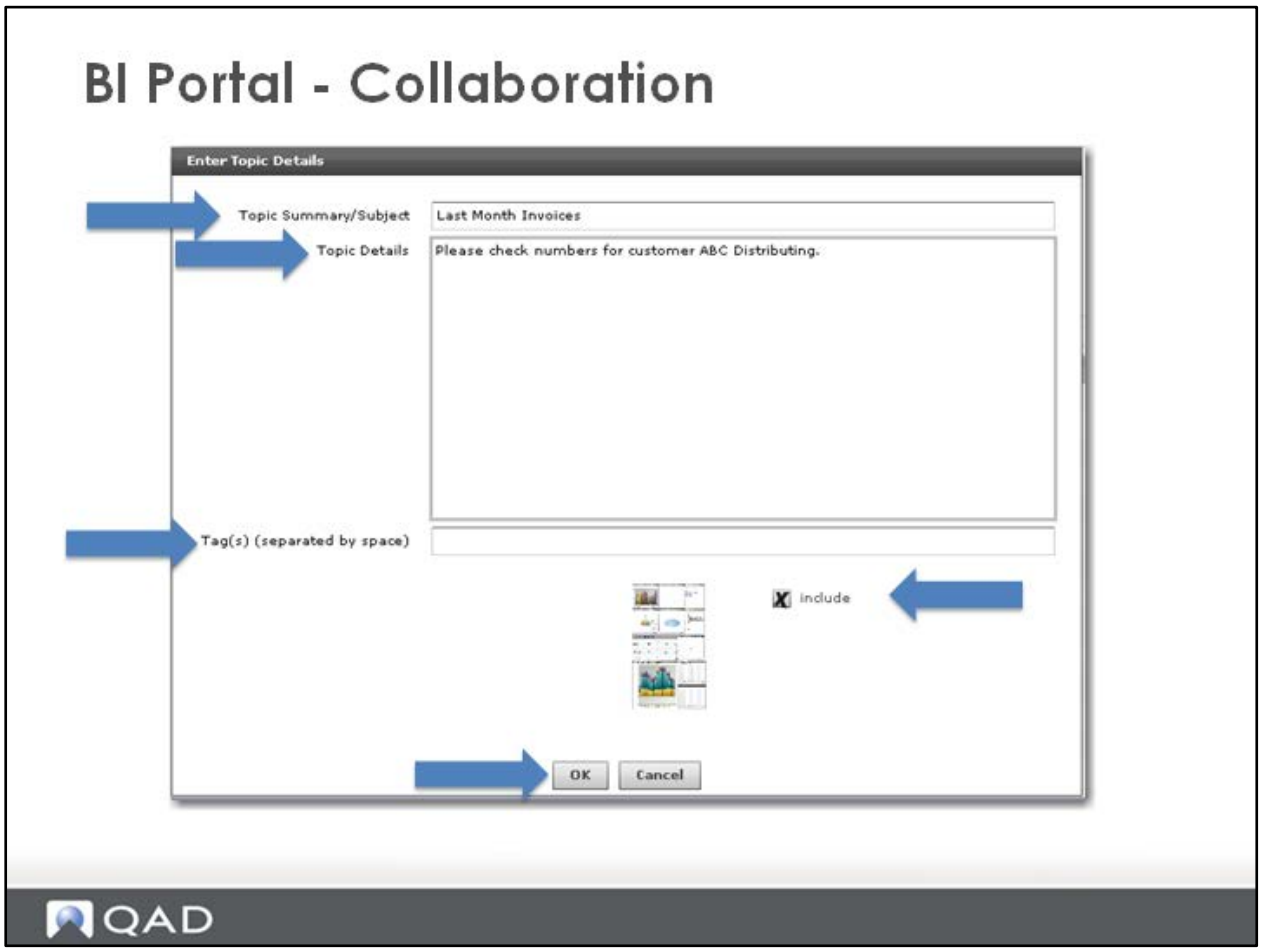


Click the header bar to sort the forums by name, description or number of topics.

Click a forum to view a list of topics for that forum.

To add a topic to the forum click ***post topic***.

BI Portal - Collaboration



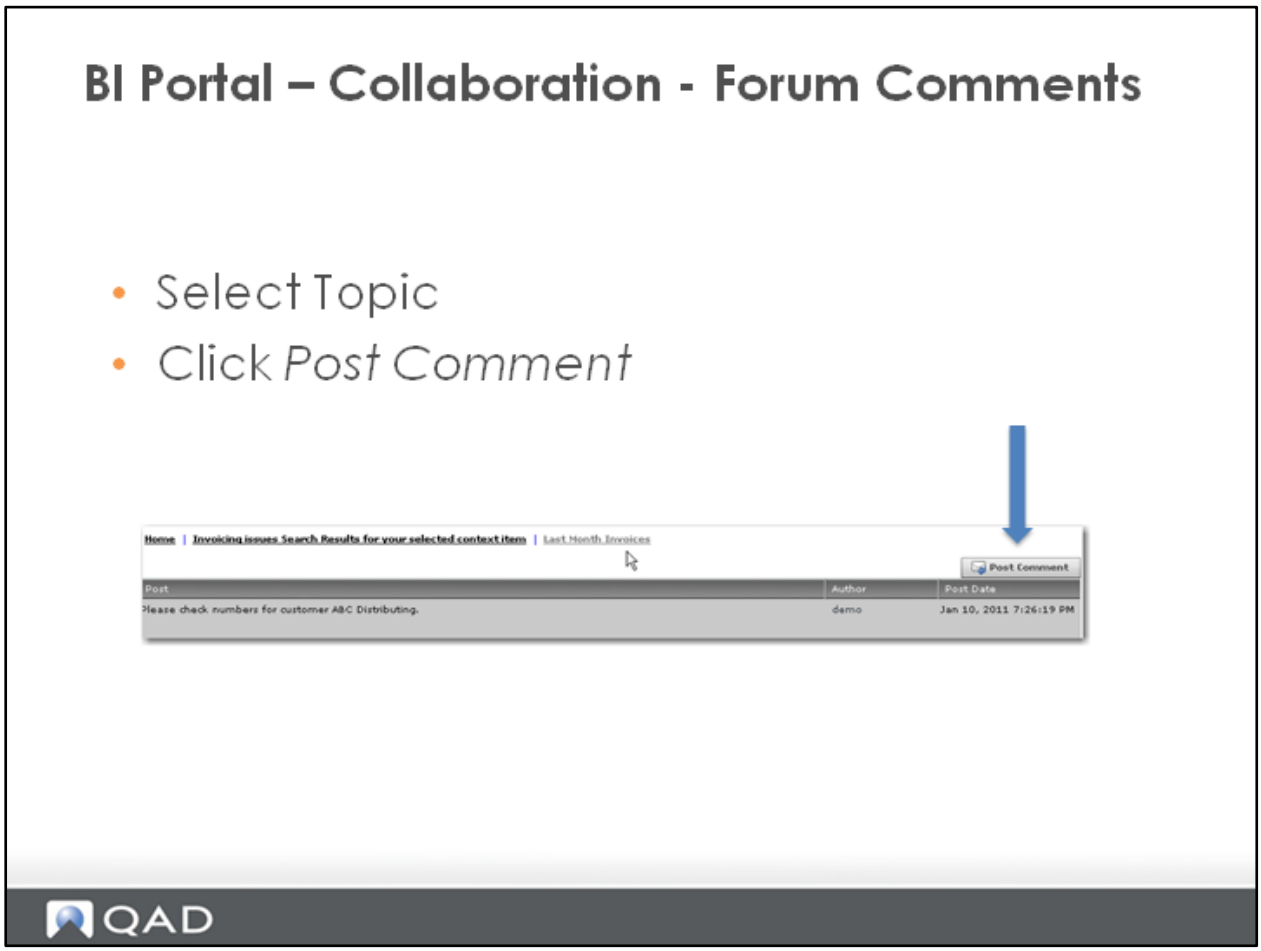
Enter a topic summary or subject, topic details and any tags separated by spaces.

If you have chosen to collaborate on a dashboard or visual item, thumbnails images of the dashboard or visual item will be displayed. Click the checkbox next to the image to include it in the post.

Note: This functionality makes it possible for all collaborators to comment on the same version of the dashboard, even when updates to the Data Warehouse result in changes to the standard dashboard.

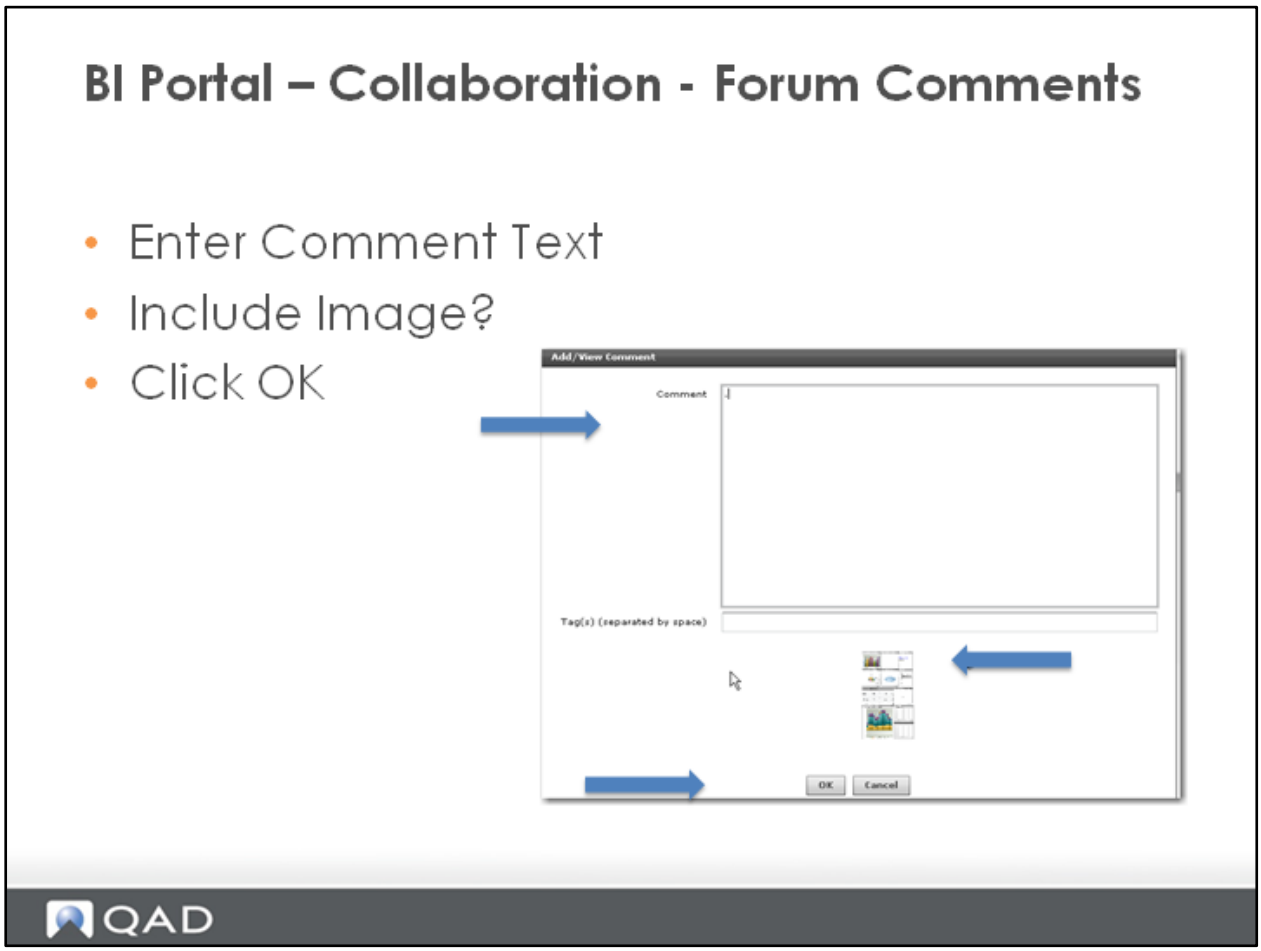
When finished click OK.

BI Portal – Collaboration - Forum Comments



To comment on a topic, select the topic from the list, and click ***Post Comment.***

BI Portal – Collaboration - Forum Comments

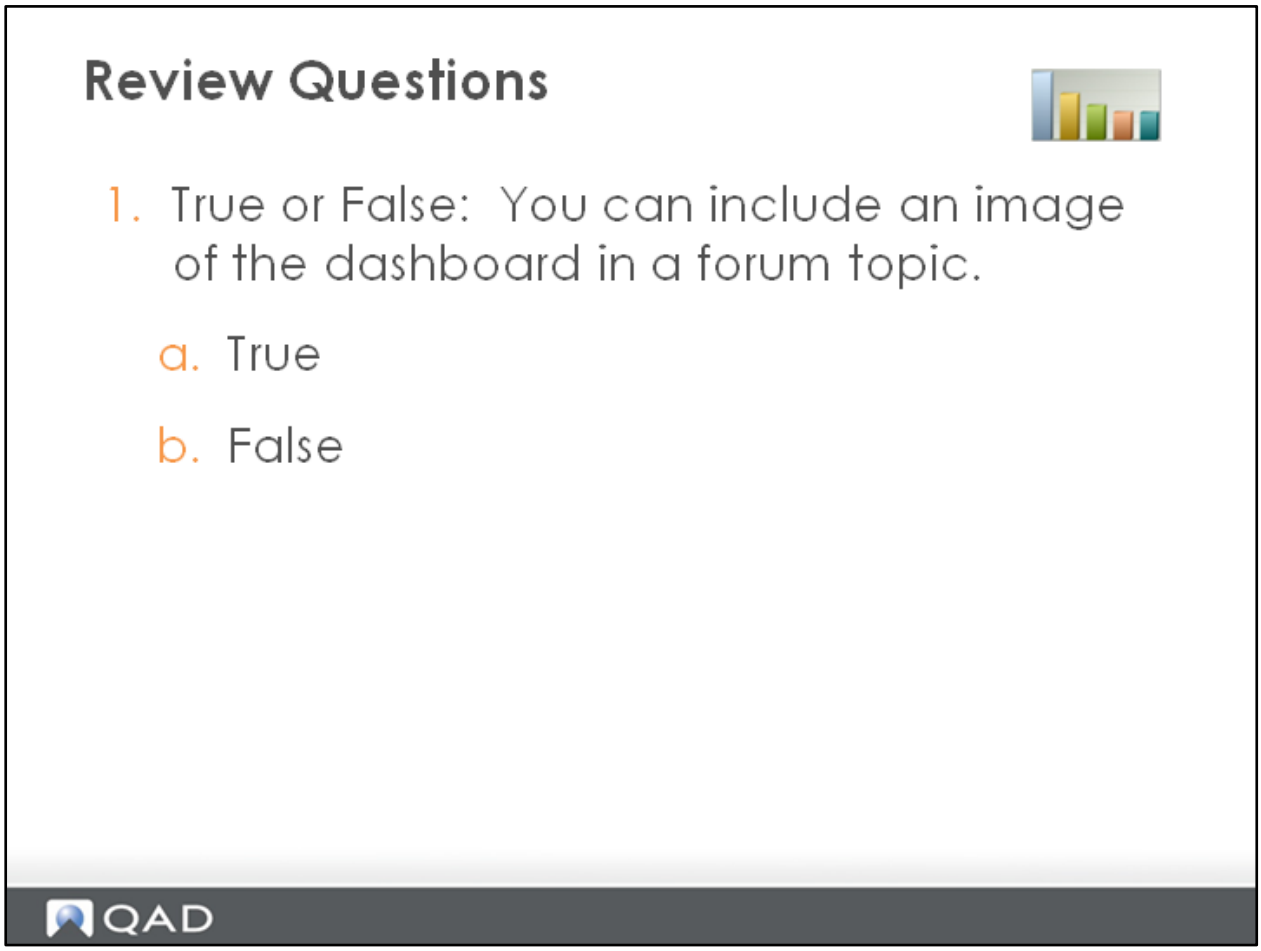


Enter the comments text.

Select include image, if desired.

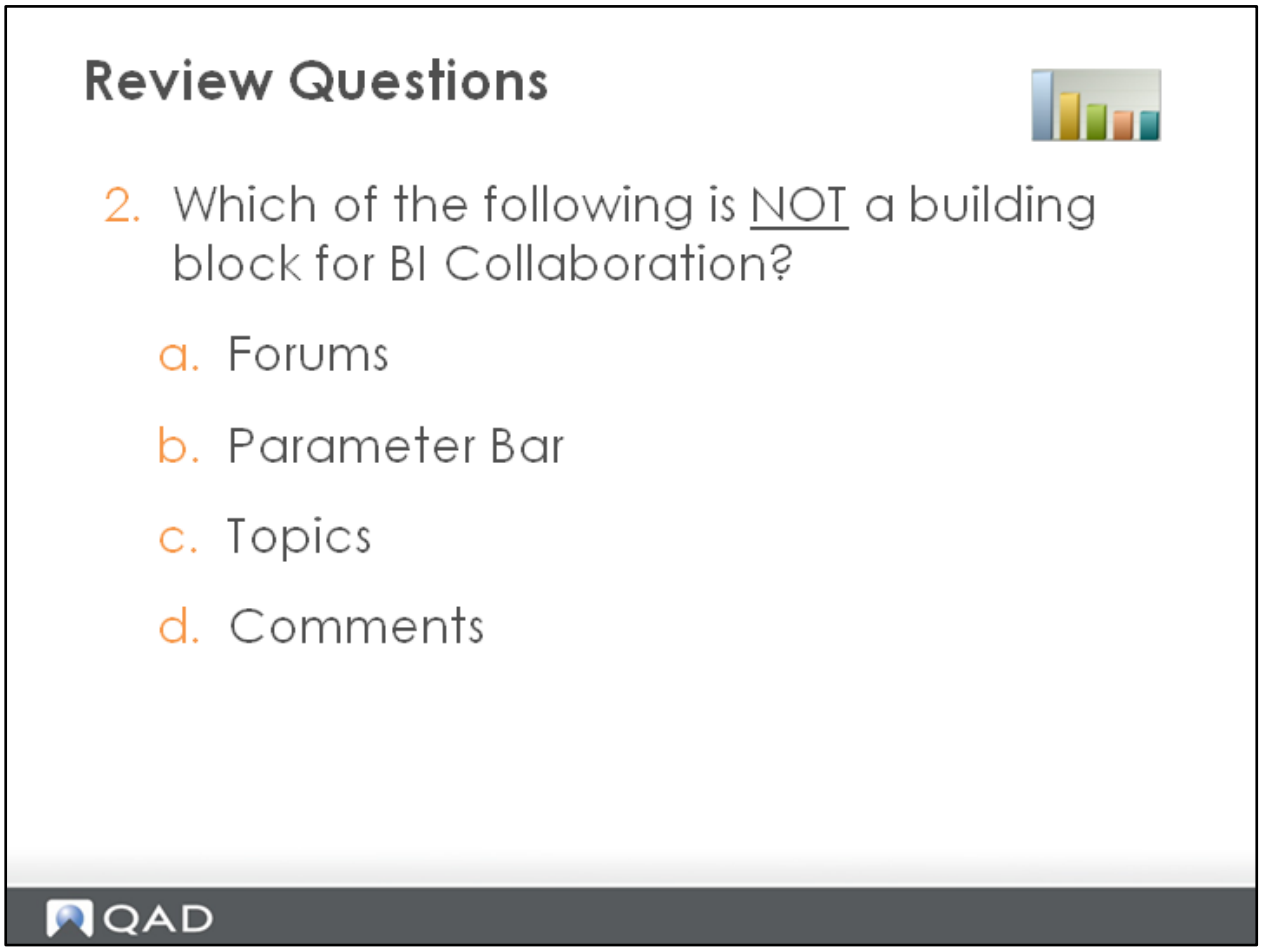
Click OK.

Review Questions



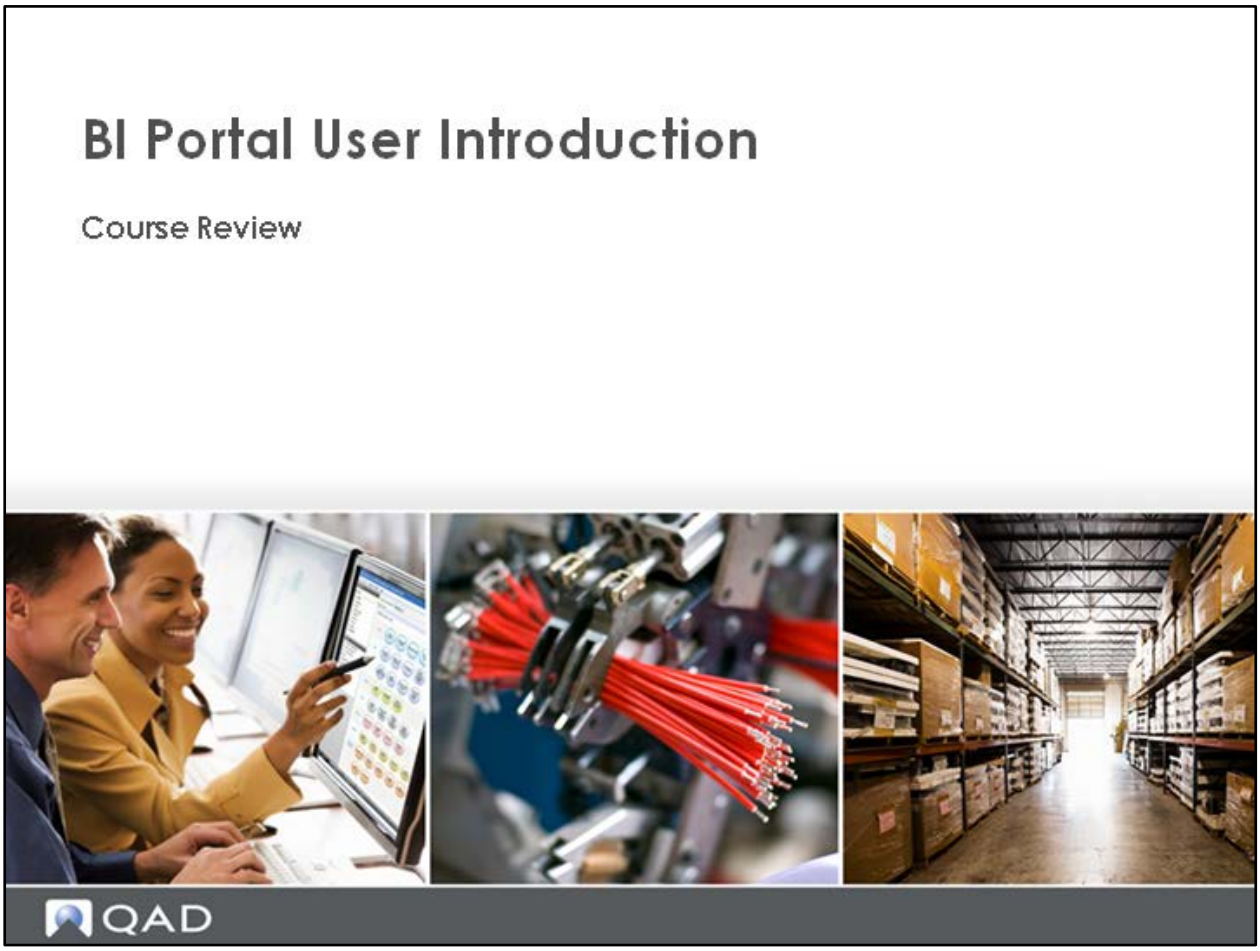
2-a

Review Questions

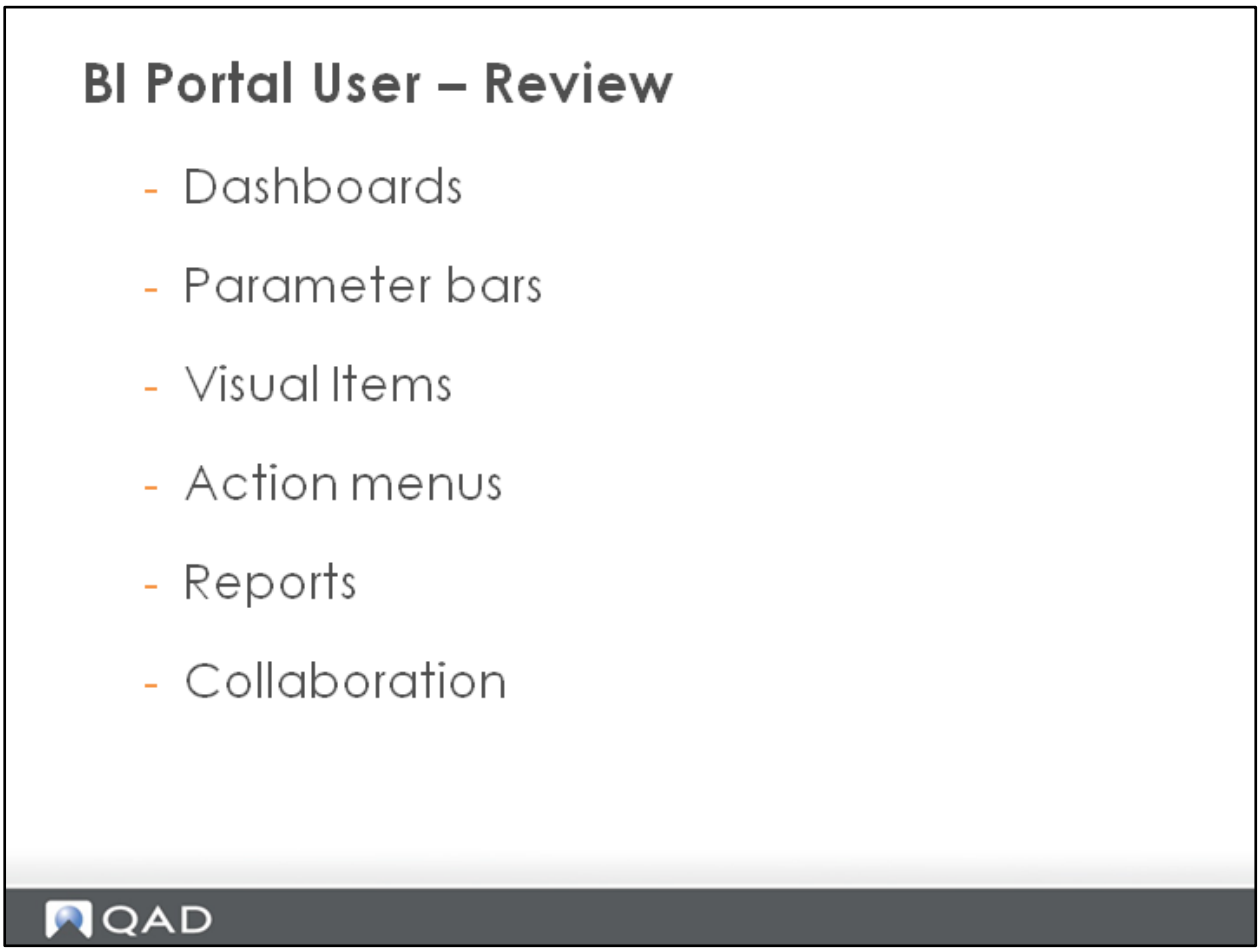


2-b

BI Portal User Introduction



BI Portal User – Review



The BI Portal Dashboard is the front page view for the data warehouse analysis. The user sees information in quick, easily analyzed formats for better decision making.

Parameter bars, or drop-down options, list various parameters. They allow you to set the subject or parameters that the visual items on that Dashboard display.

The BI Portal Dashboard consists of various visual items that display information in a number of formats.

Some of these visual items can be moved, minimized, maximized, closed, and restored.

You can **export** an image of any visual item.

Some visual items have **Action** drop-down options, click Actions to view a list of options.

Reports within the BI Portal may be executed from 3 places:

- Report Listing on Dashboard
- As a drill down from within a visual item

- From the Dashboard menu

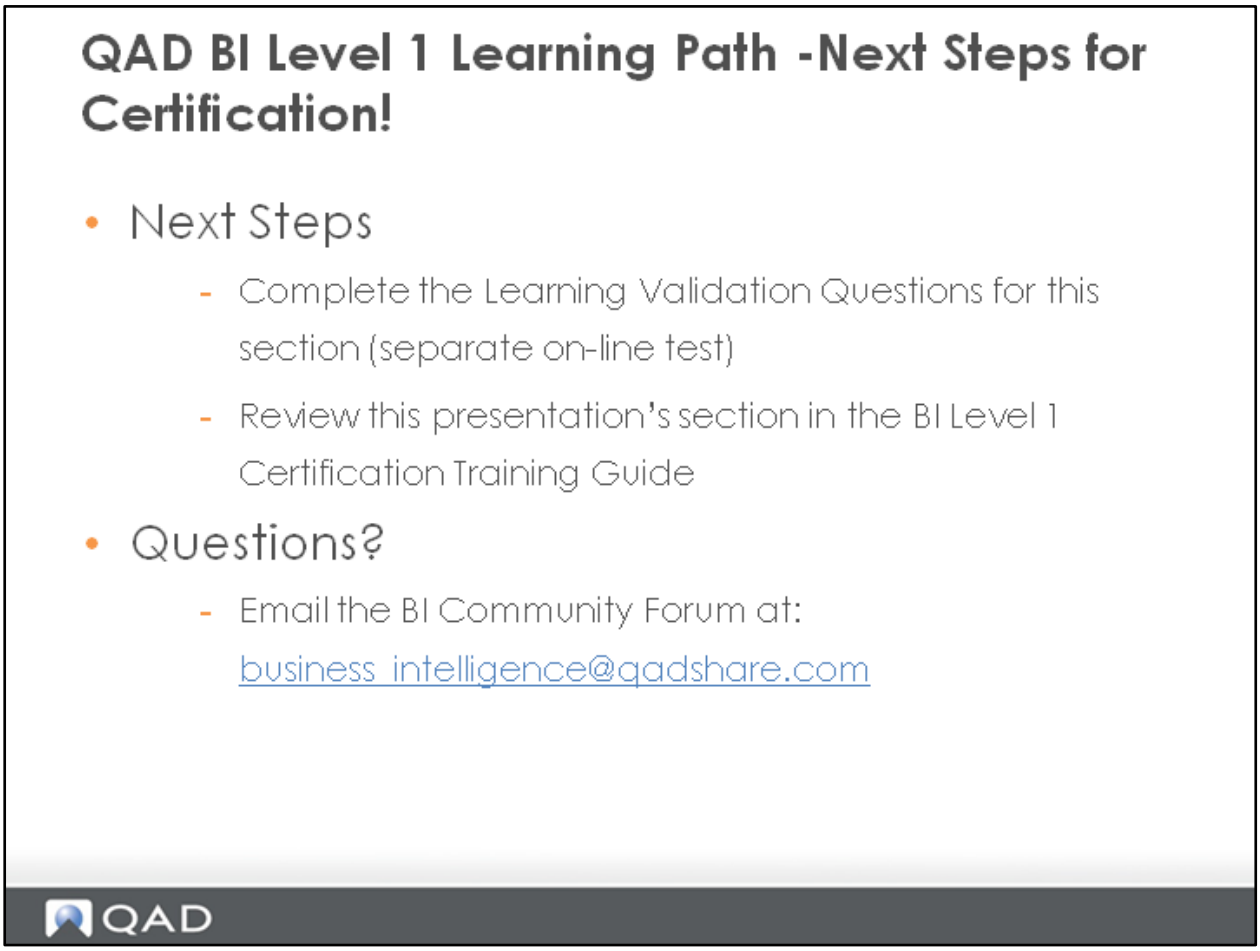
You can export the report in PDF or Excel.

The 3 building blocks of BI Collaboration are:

- Forums
- Topics
- Comments

When collaborating on a dashboard or visual item, a copy of the current image can be stored with the topic or comment.

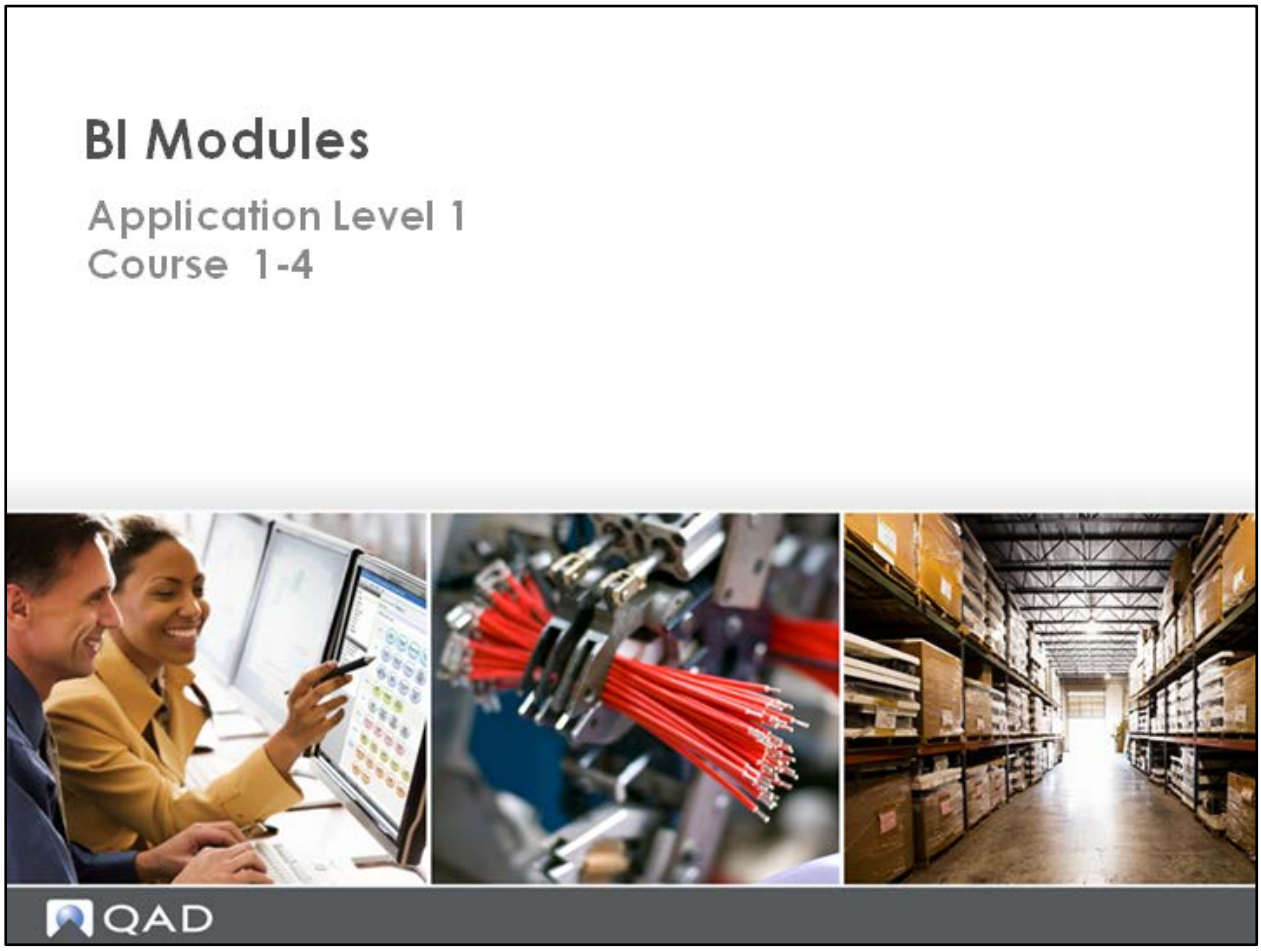
QAD BI Level 1 Learning Path -Next Steps for Certification!



CHAPTER 4

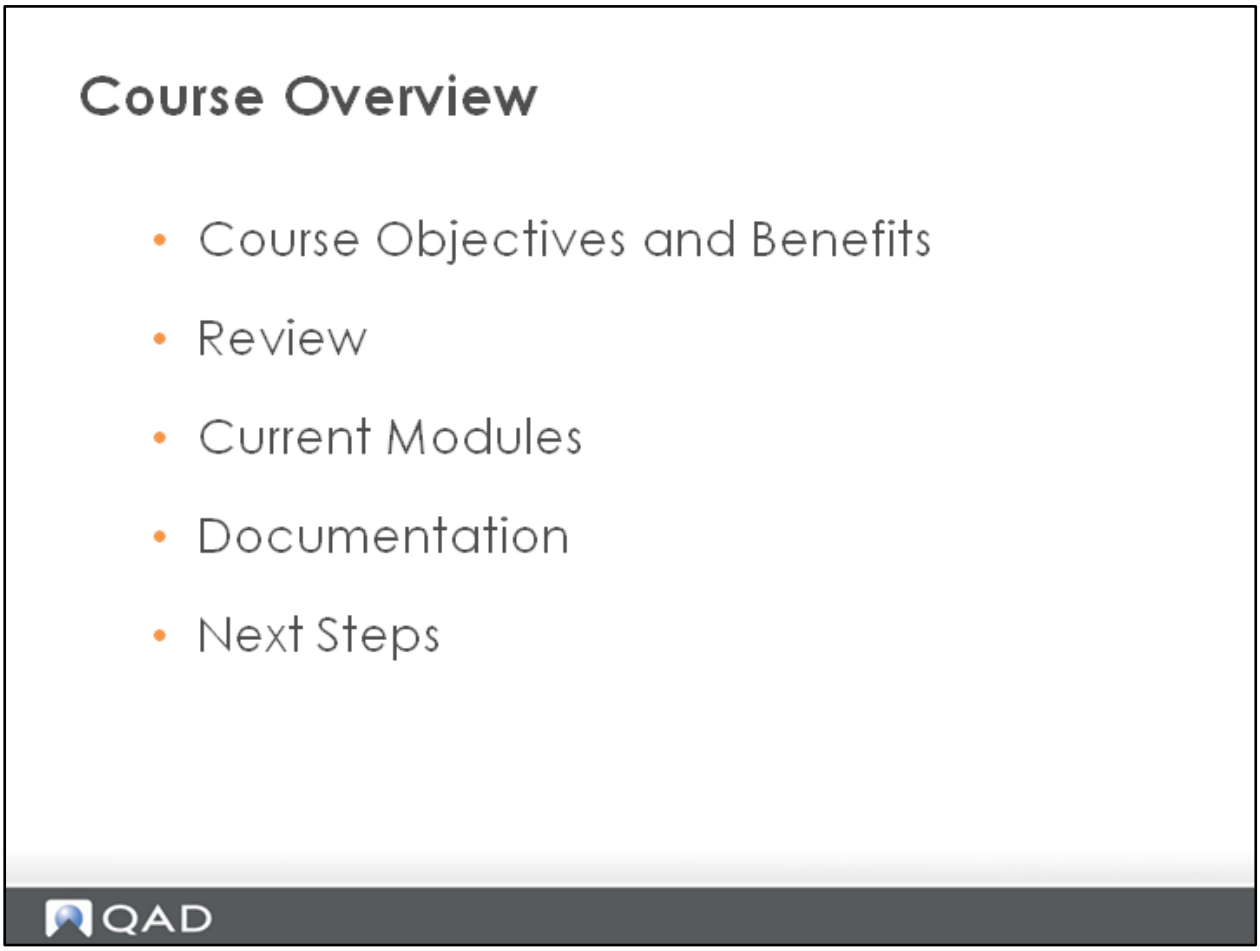
BI Modules

BI Modules



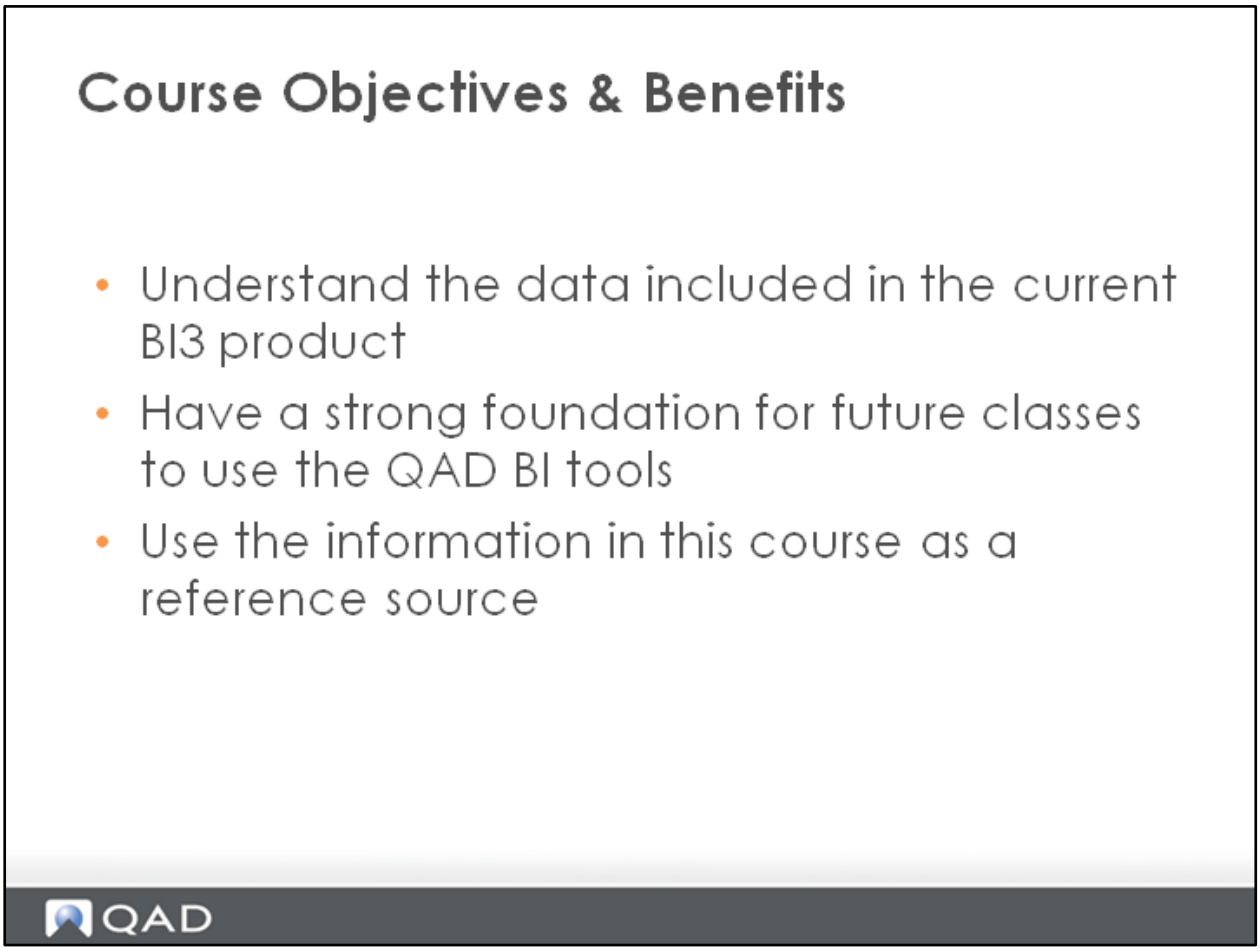
Welcome to the Business Intelligence 1-4 BI Modules class.

Course Overview

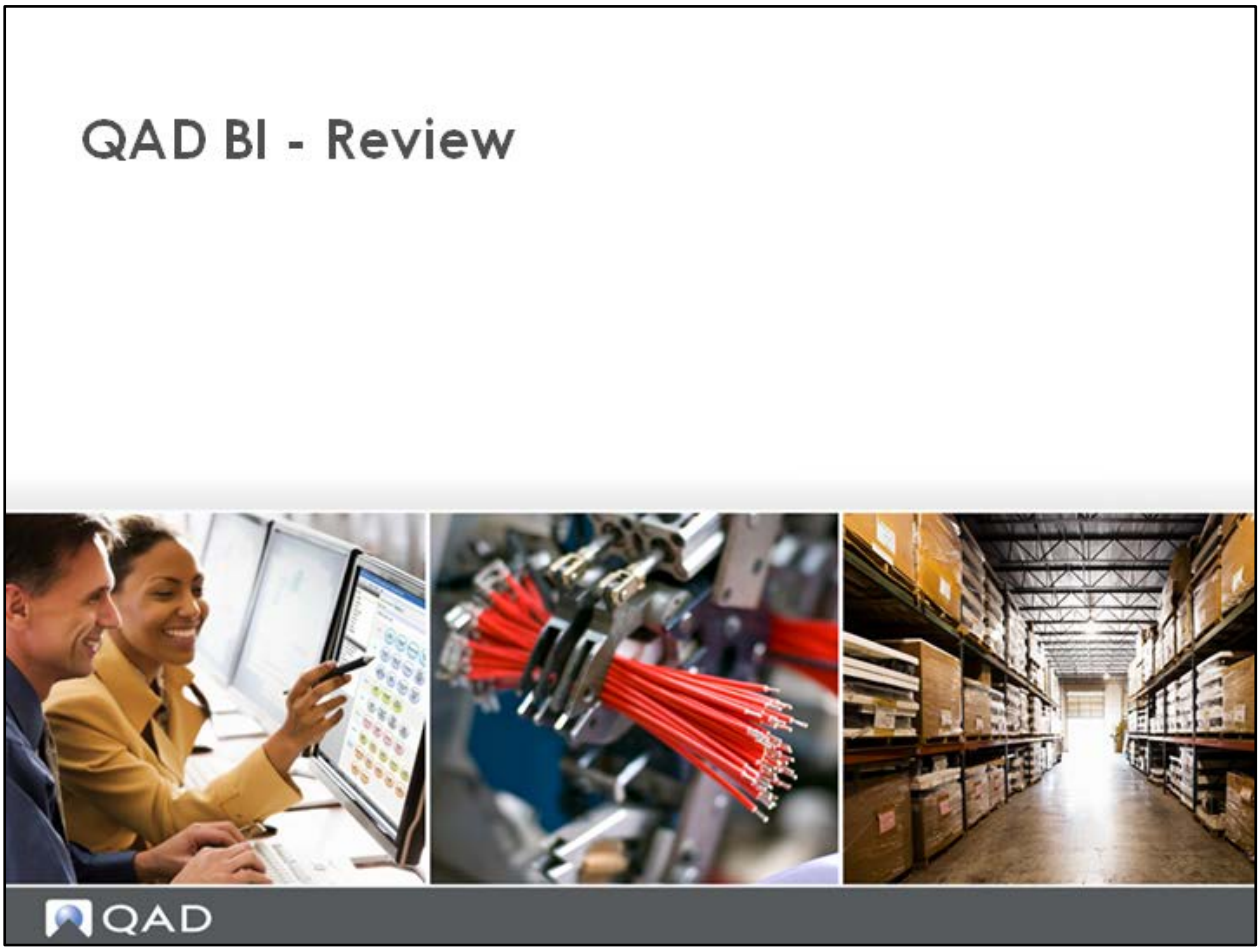


This course covers all the current BI3 modules in some detail. The material covered here forms the basis for remaining classes.

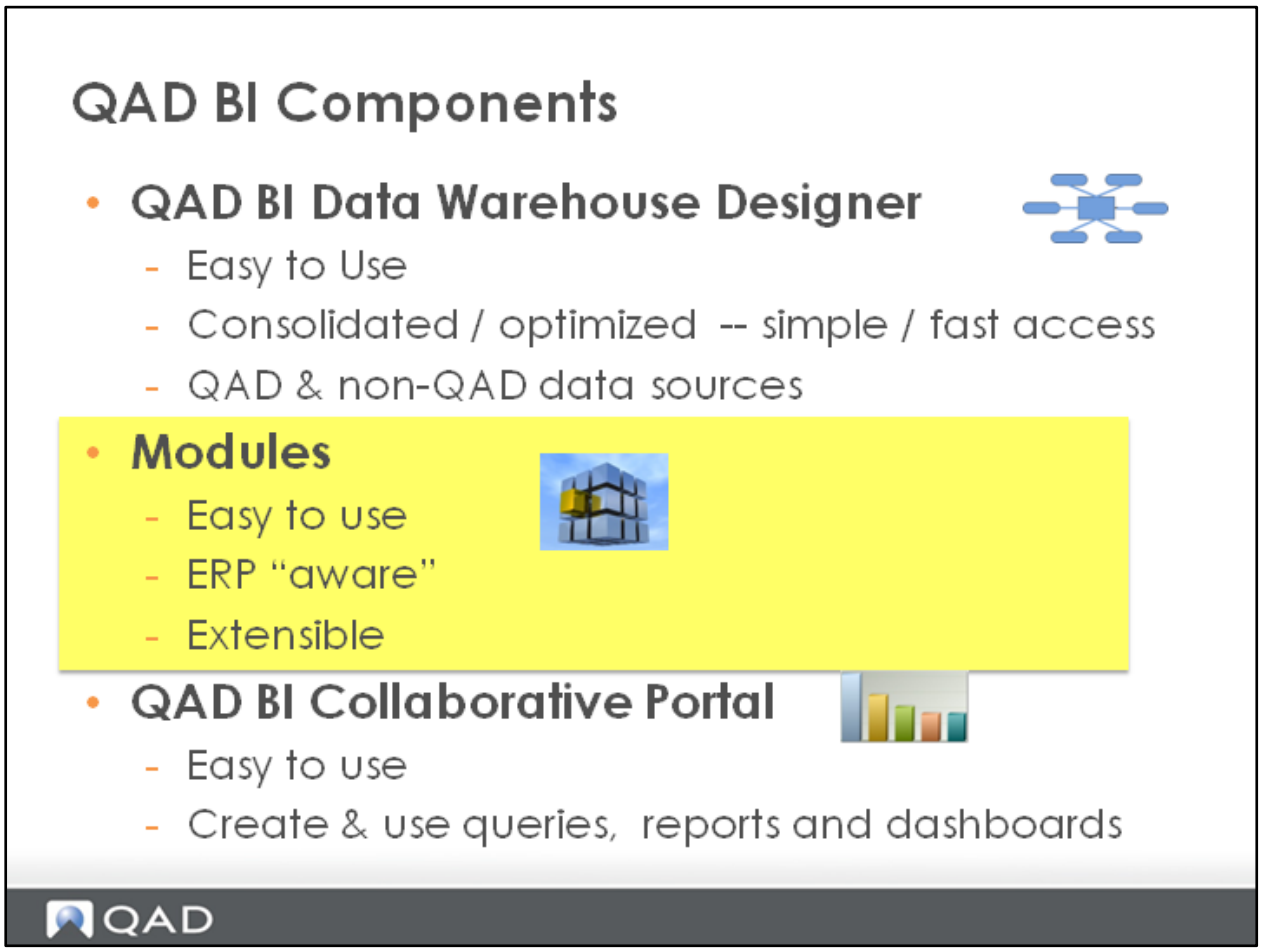
Course Objectives & Benefits



QAD BI - Review



QAD BI Components



Key Concept:

QAD BI Components:

QAD BI Data Warehouse Developer (DWD)

Consolidate into a single warehouse optimized for simple, fast access

QAD and non-QAD data sources

Modules

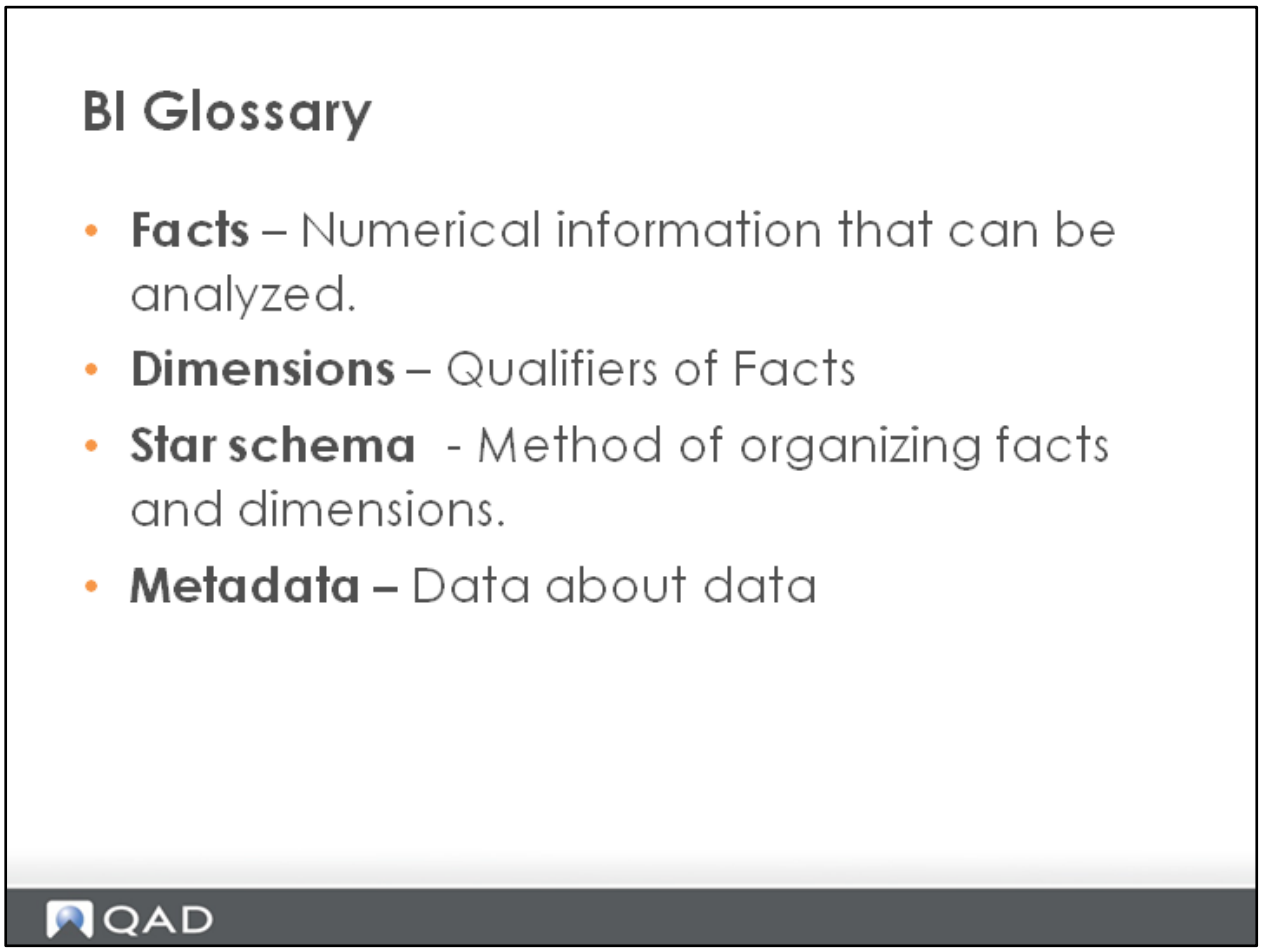
ERP "aware" streamlines access to current and historical QAD ERP data

Extensible to support non-QAD data sources

QAD BI Collaborative Portal

Easy to use and create dashboard and reporting environment

BI Glossary



Glossary:

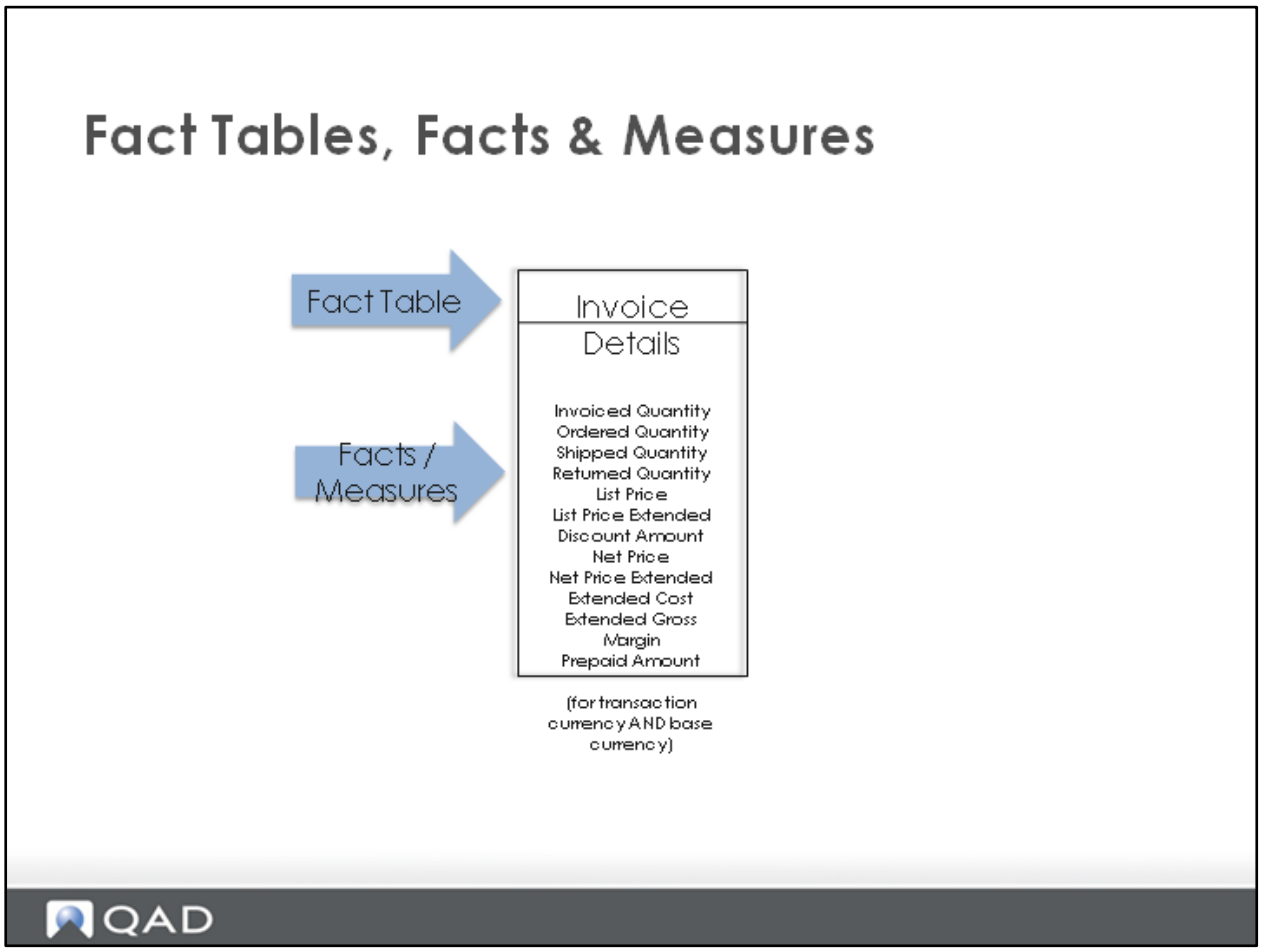
Facts – Numerical information that can be analyzed by BI applications. E.g. total quantity sold, total sales dollars

Dimensions – Qualifiers of Facts. E.g. Transaction date, Customer name, Sales territory

Star schema - Method of organizing facts and dimensions for BI purposes. Star schemas can be deployed into Relational databases (in our case SQL Server) and into proprietary Cubes . Examples of the latter are Microsoft's Analysis Services cubes or Cognos' cubes.

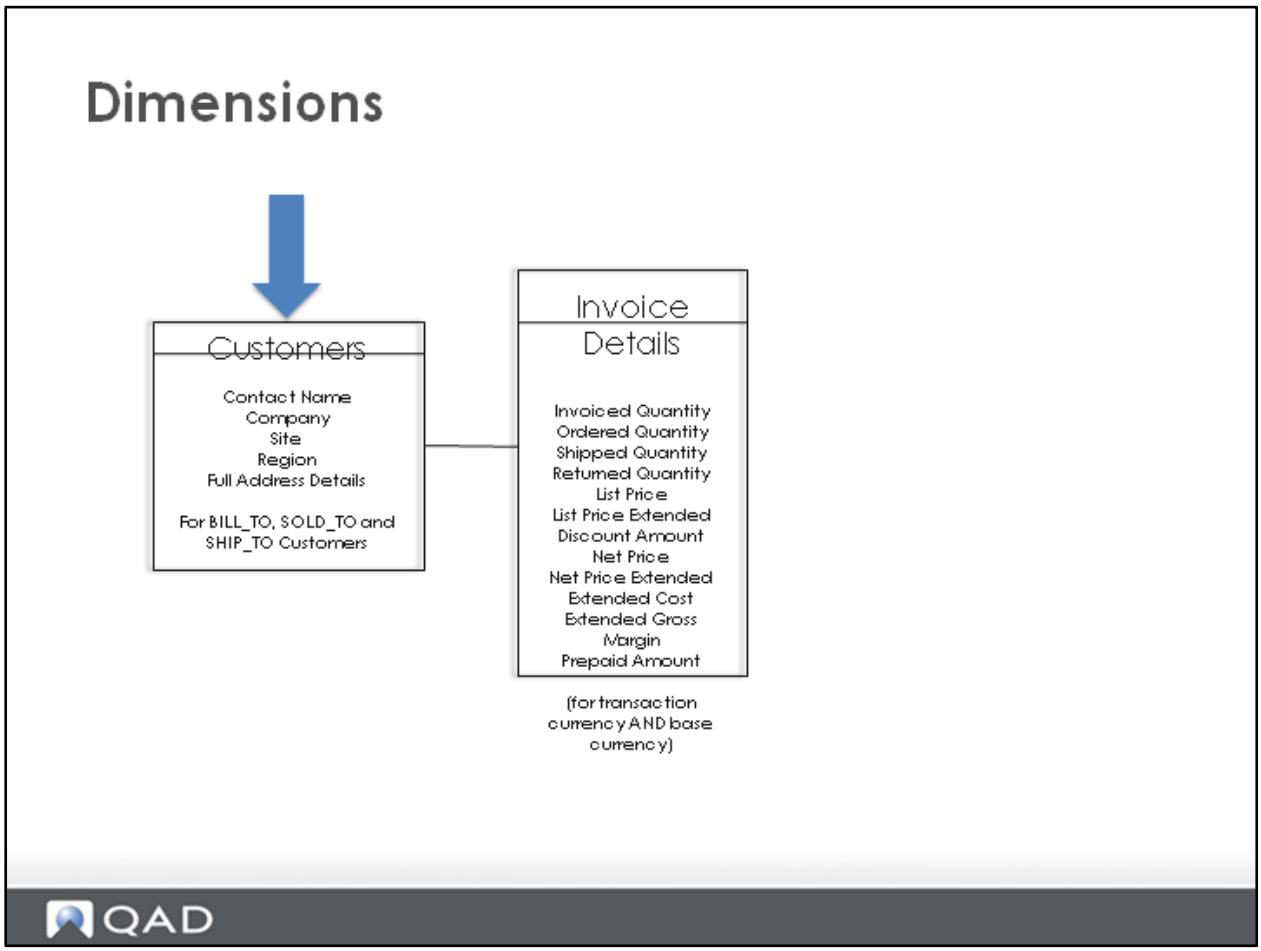
Metadata – Data about data. For example: Columns in a fact table. Column names and formats.

Fact Tables, Facts & Measures



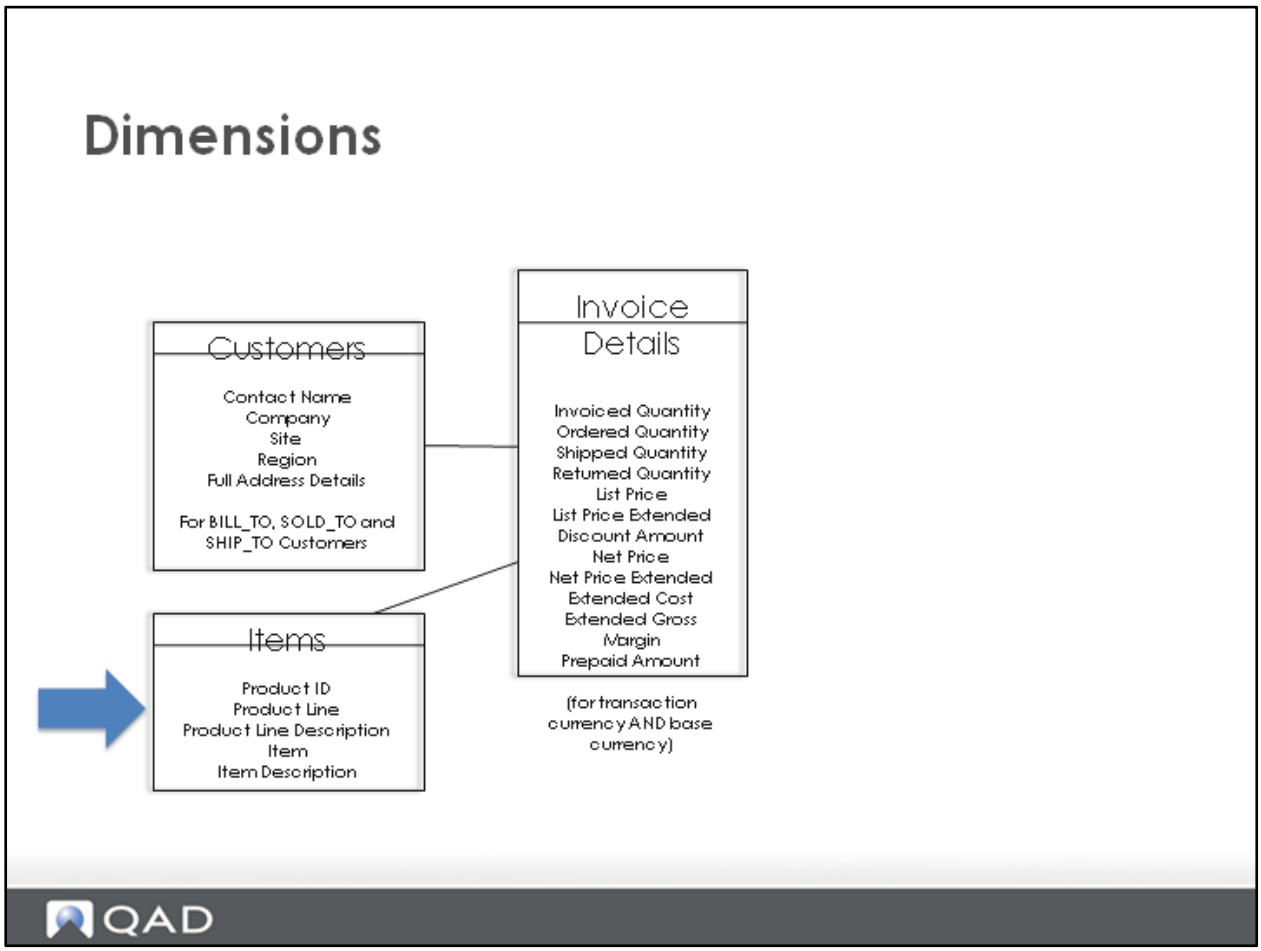
The object *Invoice Details* is an example of a **Fact** table.

Dimensions



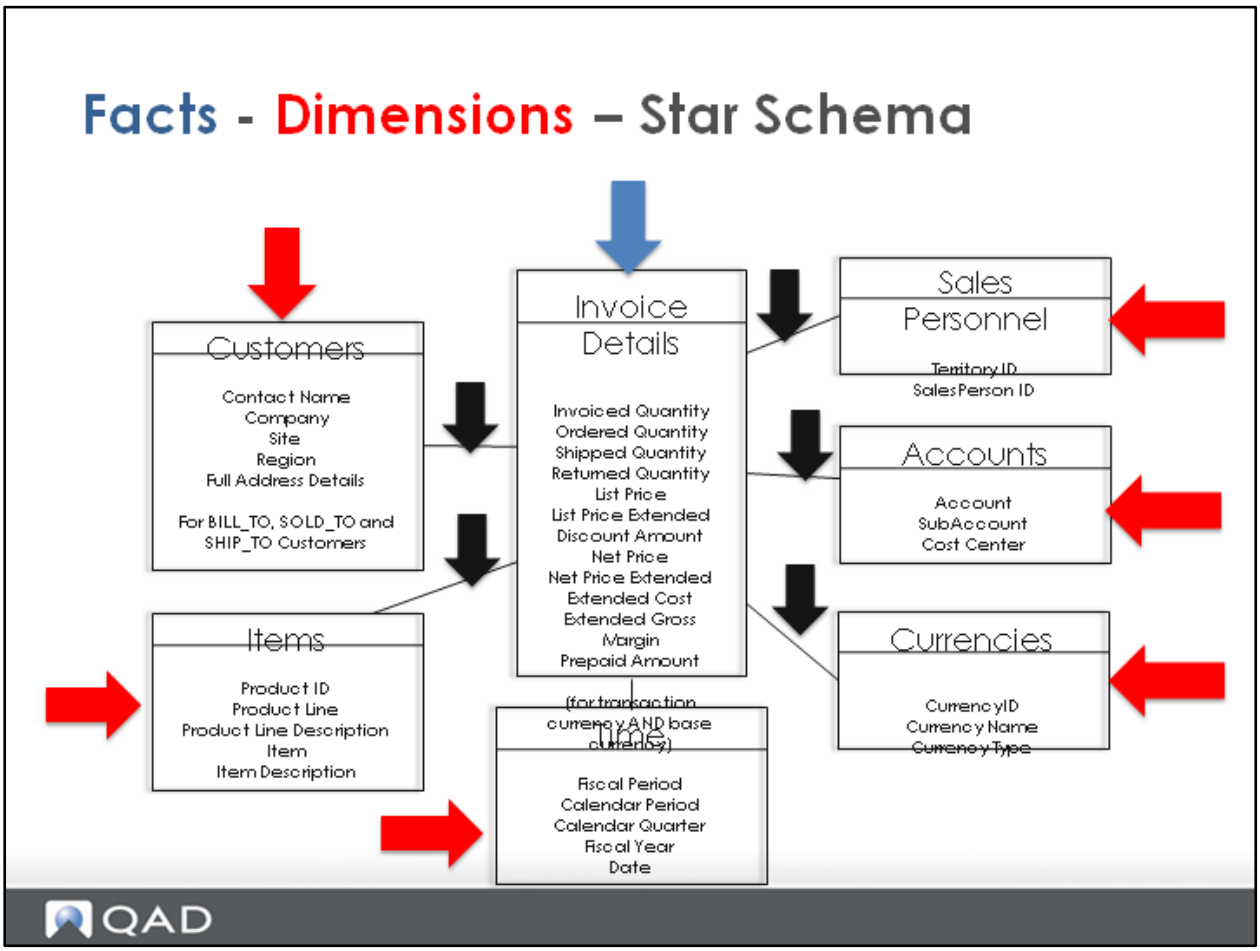
The object *Customers* is an example of a **Dimension** table.

Dimensions



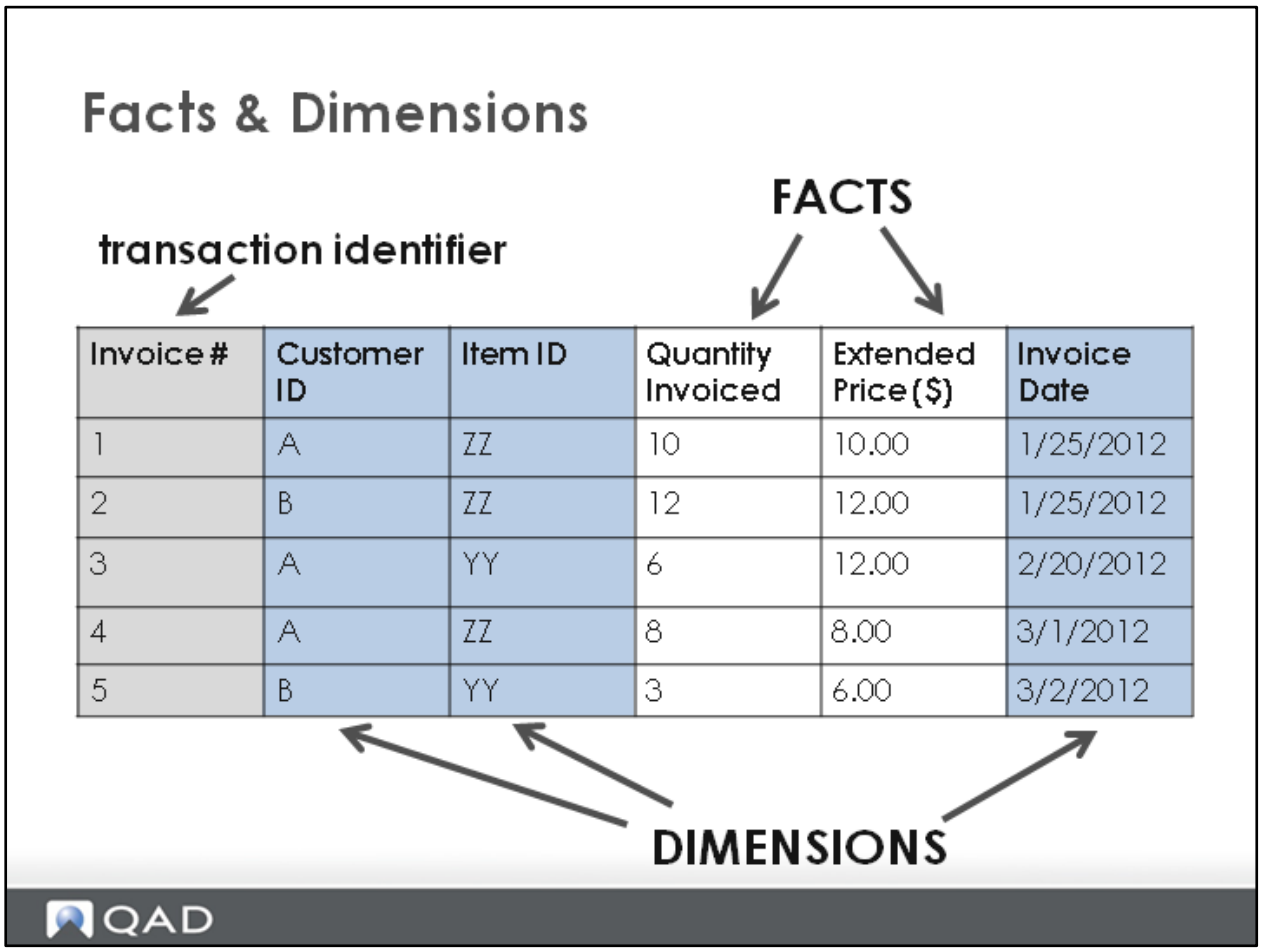
Items is another example of a **dimension** table.

Facts - Dimensions – Star Schema



Here are some other examples of dimension tables related to the fact table *Invoice Details.*

Facts & Dimensions



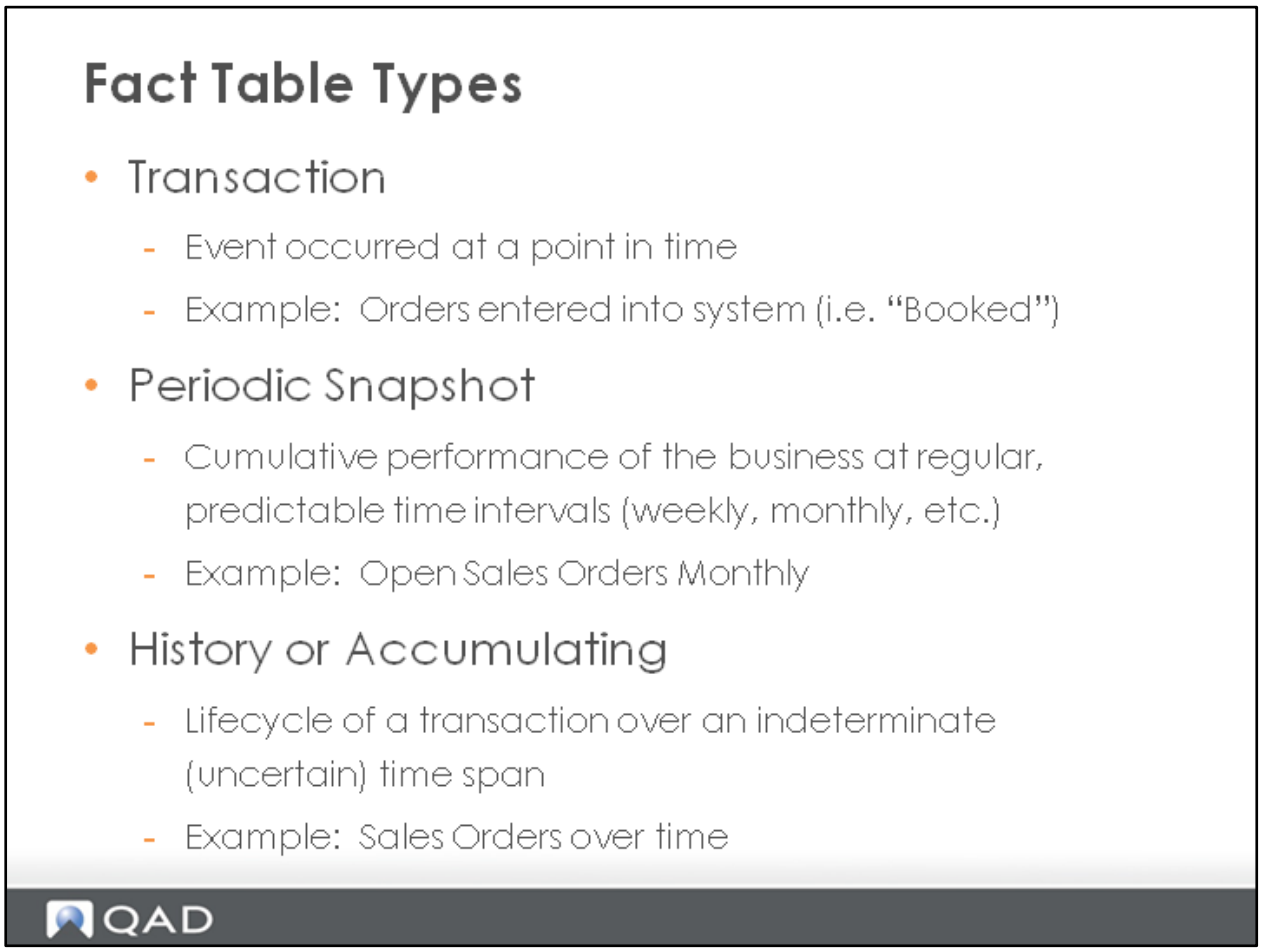
This is a very simple example of rows of data in a Data Warehouse.

The columns *Quantity Invoiced* and *Extended Price* are **Facts** or **Measures.**

The columns *Customer ID, Item Id* and *Invoice Date* are **Dimensions.**

The column *Invoice ID* is an transaction identifier. It is used during the Transformation of data from the source system to the BI tables. It is generally stored as an attribute in any related fact tables.

Fact Table Types

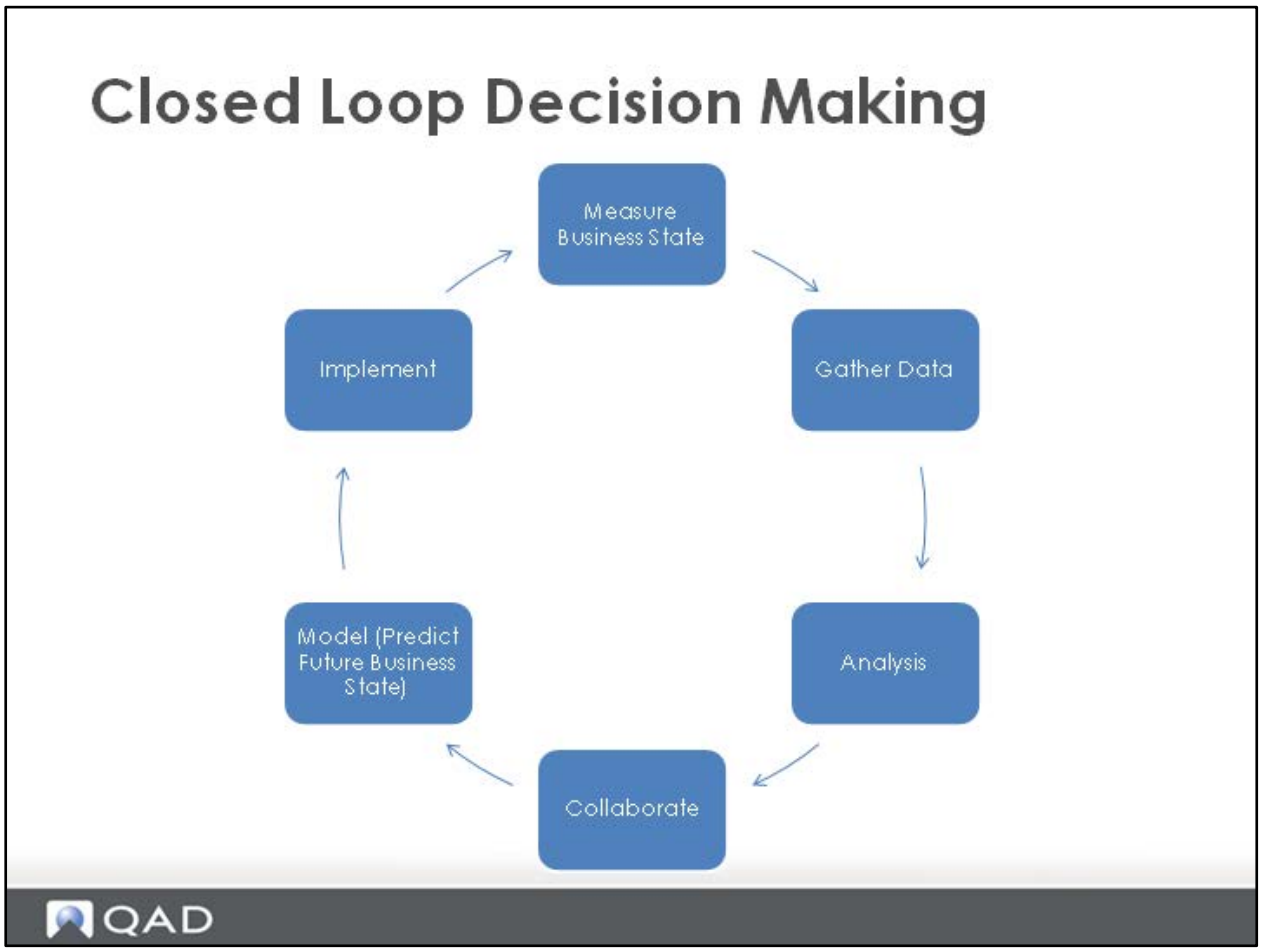


Transaction fact tables are the most fundamental view of the business's operations. This type of table represents an event that occurred at an instantaneous point in time. A row is added to the table for each event occurrence. For example, when an order is entered into the ERP system (or "booked"), there will be an Order Booking transaction for each order line.

Periodic Snapshots are required to see the cumulative performance of the business at regular, predictable time intervals, weekly or monthly for example. A picture (i.e. "Snapshot") is taken at the specified interval. For example, we may want to know our Open Order amounts at the end of each month.

History Fact Tables, or Accumulating tables, cover the complete life of a transaction. They represent an indeterminate time span. These types of tables always have multiple date and time stamps. An example of an accumulating table is a Sales Order history table that has a row for each change in the "life" of an order line. An order is placed (booked), shipped, invoiced, etc.

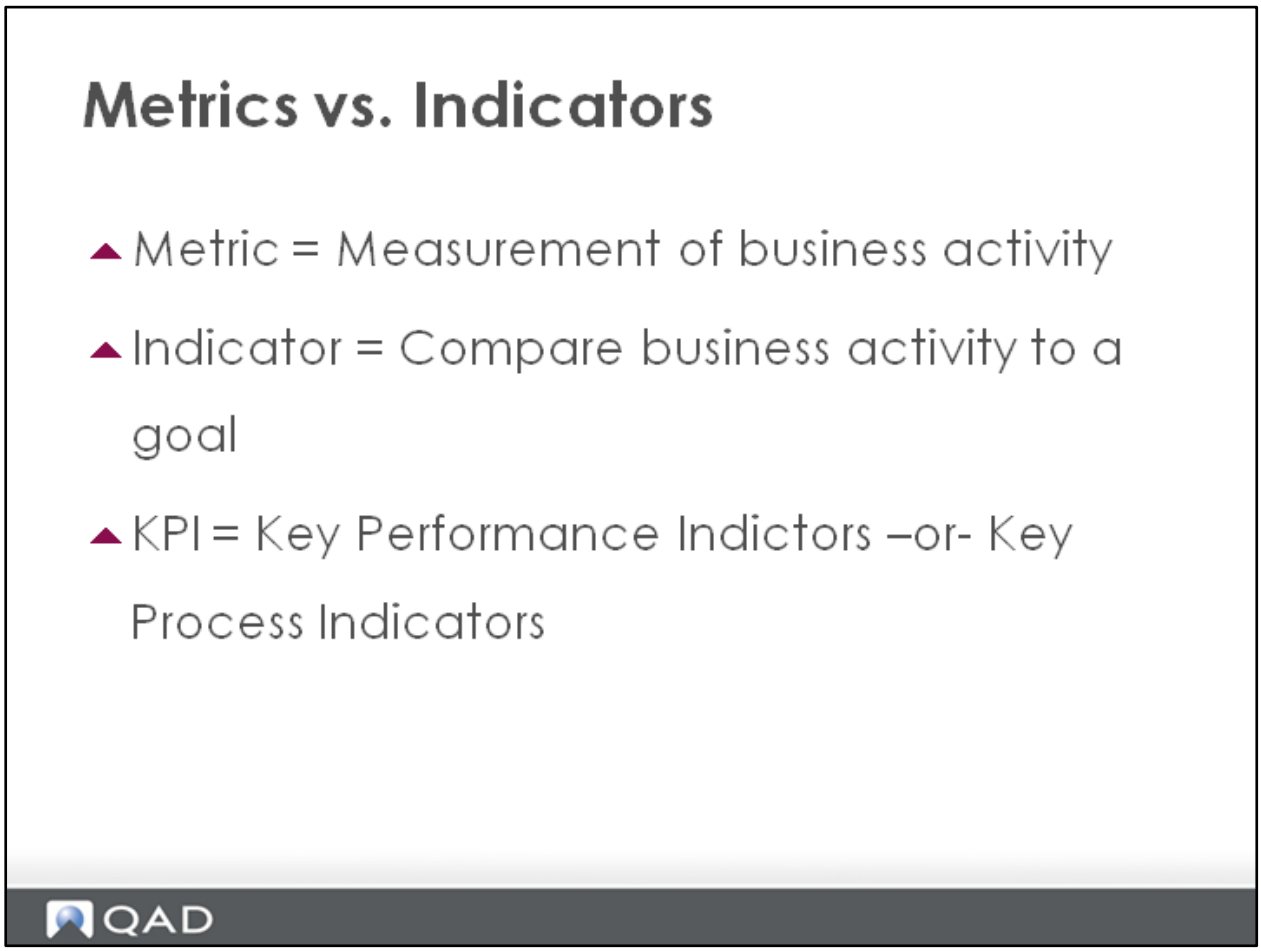
Closed Loop Decision Making



The modules are the place where the technical components like Facts and Dimensions mesh with the Business Processes and Metrics.

Remember, a key benefit of a Business Intelligence application is the support of *Closed Loop Decision Making*.

Metrics vs. Indicators



Metrics are a measurement of a specific business activity.

An *indicator* compares the business activity to a stated goal.

KPI are Key Performance/Process Indicators used to measure the performance of an organization.

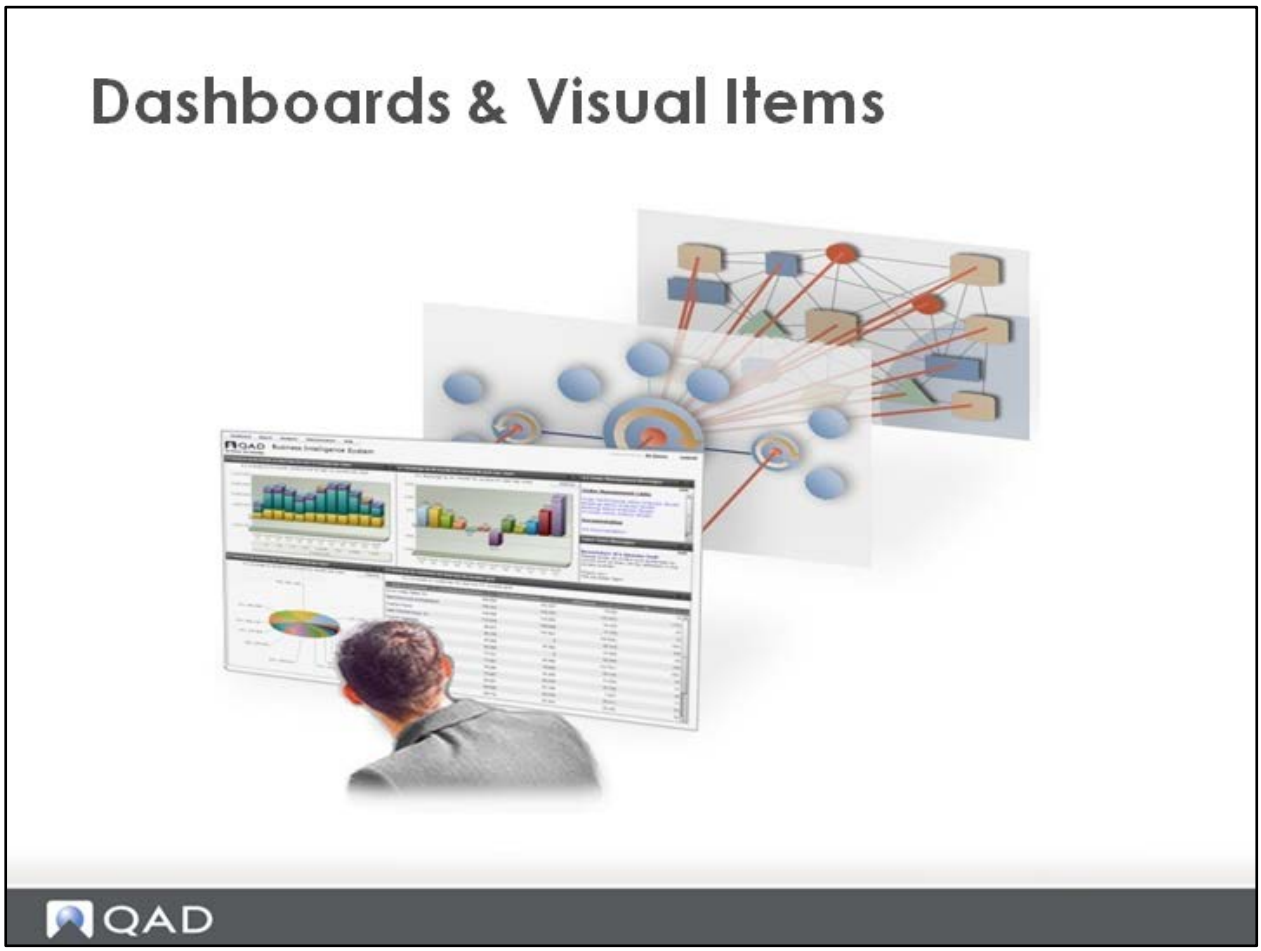
KPI Characteristics



Key metrics will vary for each organization. However, they share come common characteristics.

Effective metrics are aligned with strategic goals. It should be recognized that metrics will drive outcomes. Organizations need to make sure that they are driving the desired outcomes.

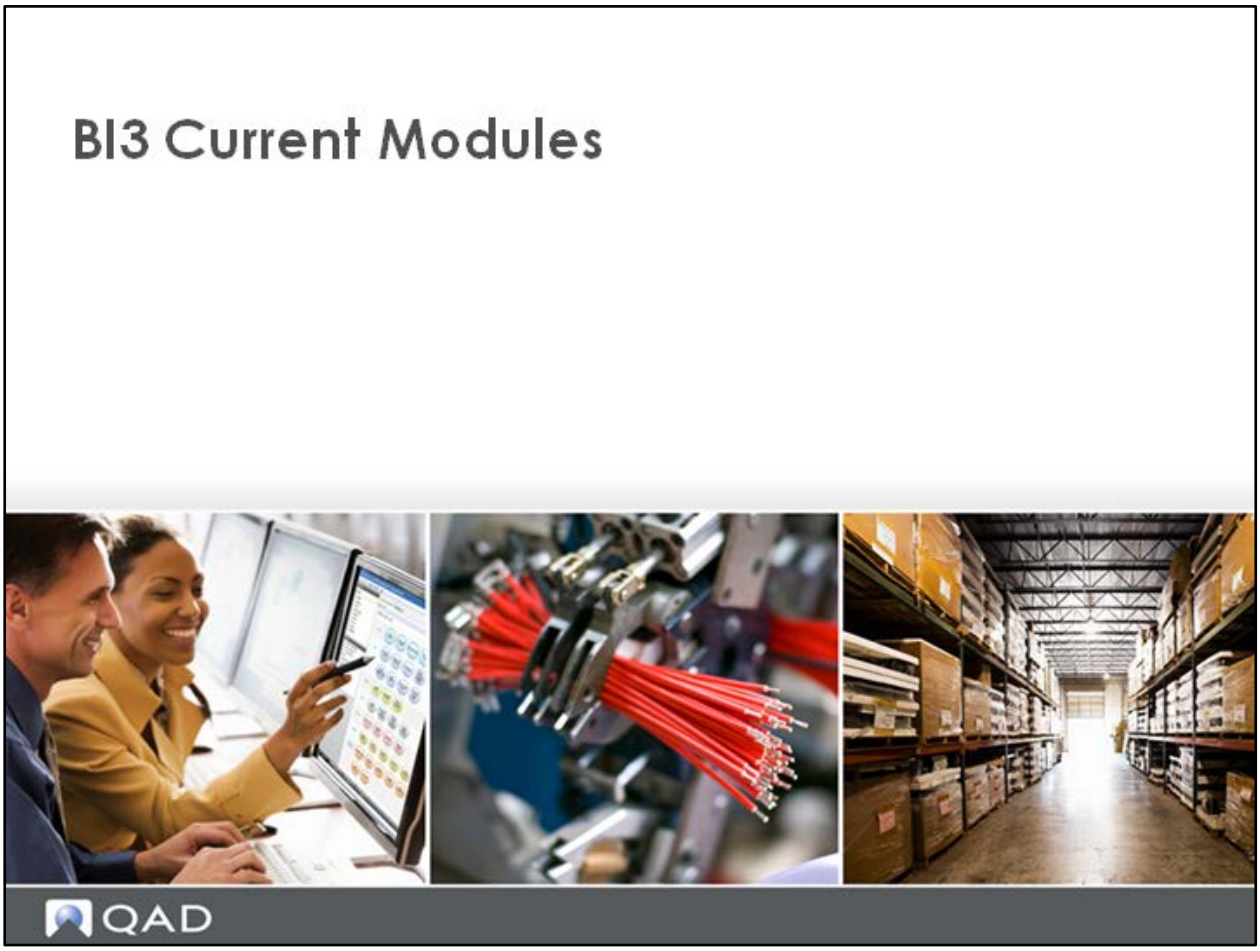
Dashboards & Visual Items



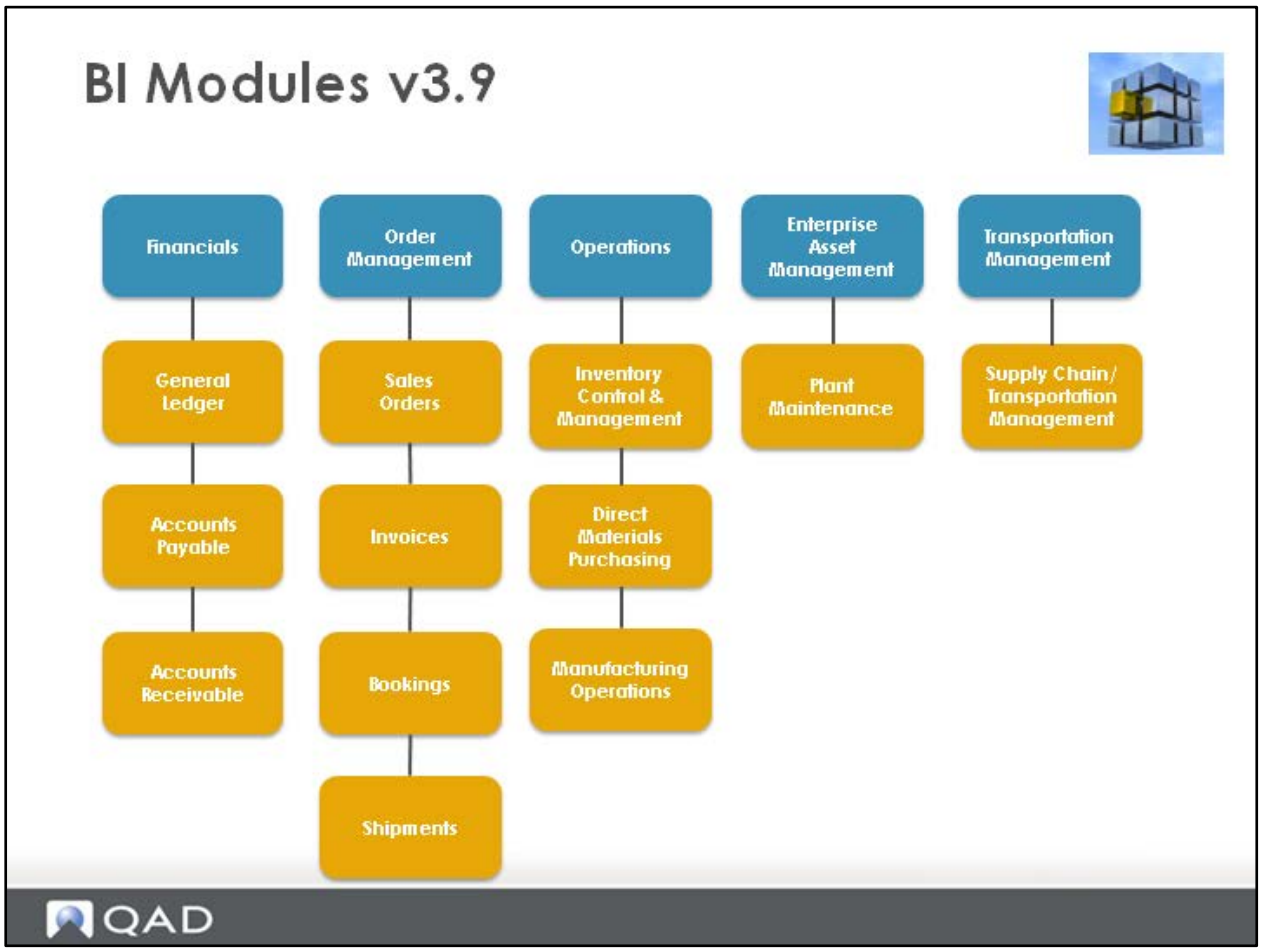
Dashboards provide a way for all participants in the decision loop to view current status of Key metrics, identify exceptions or areas for more investigation, analyze the data and collaborate on that analysis.

Dashboards present data in visual format, and allow users to drill down to increasingly granular information for root-cause analysis.

BI3 Current Modules



BI Modules v3.9



Key Concept:

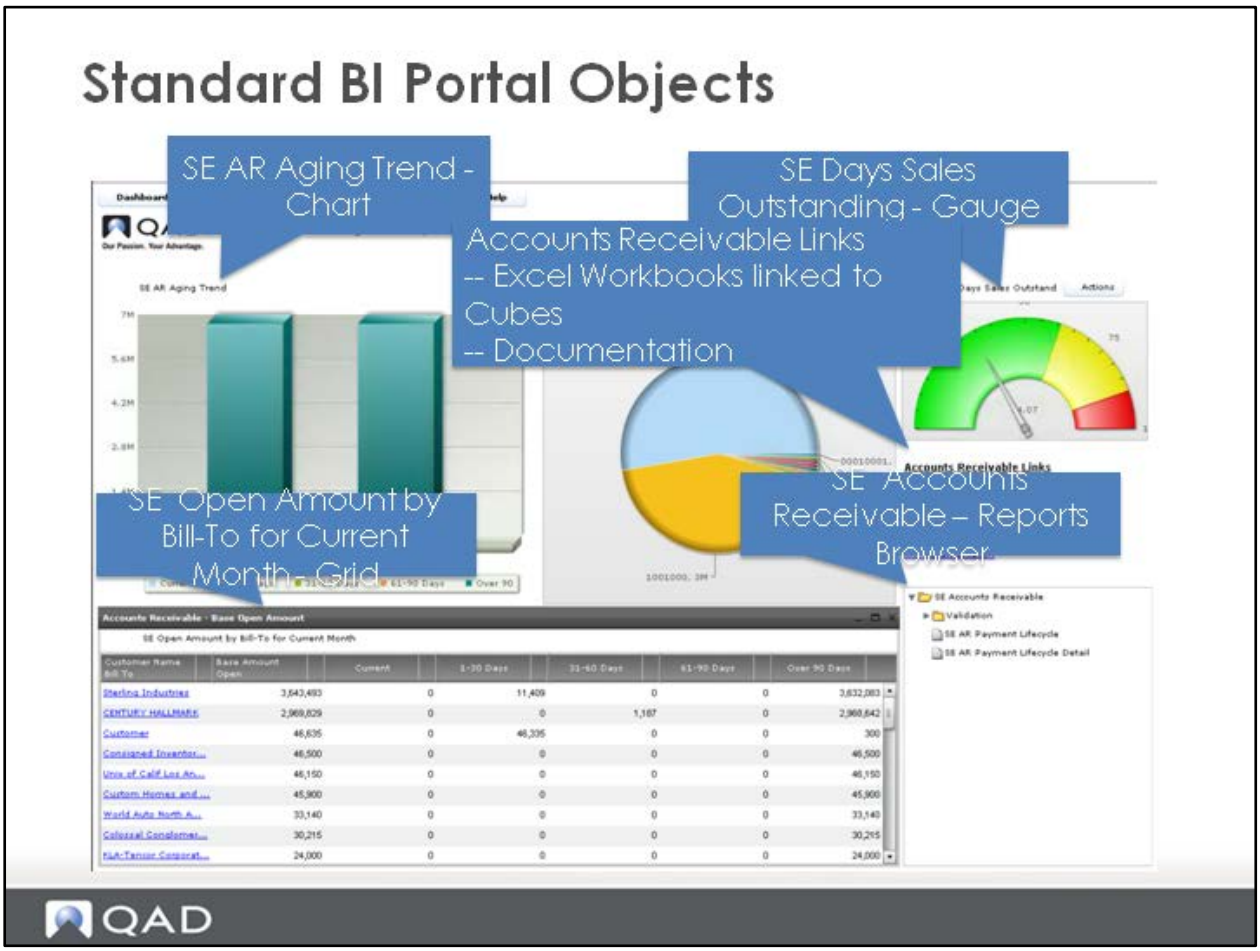
The BI solution provides out-of-the box QAD application “aware” modules. This streamlines access to current and historical QAD source data.

Current modules are as of the BI 3.9 release are:

- Financials (SE & EE)
- Order Management
- Operations
- Enterprise Asset Management
- Transportation Management

Most modules have 1-4 submodules in the BI v3.7 release. Refer to the most recent Release Qbit for updated module information.

Standard BI Portal Objects



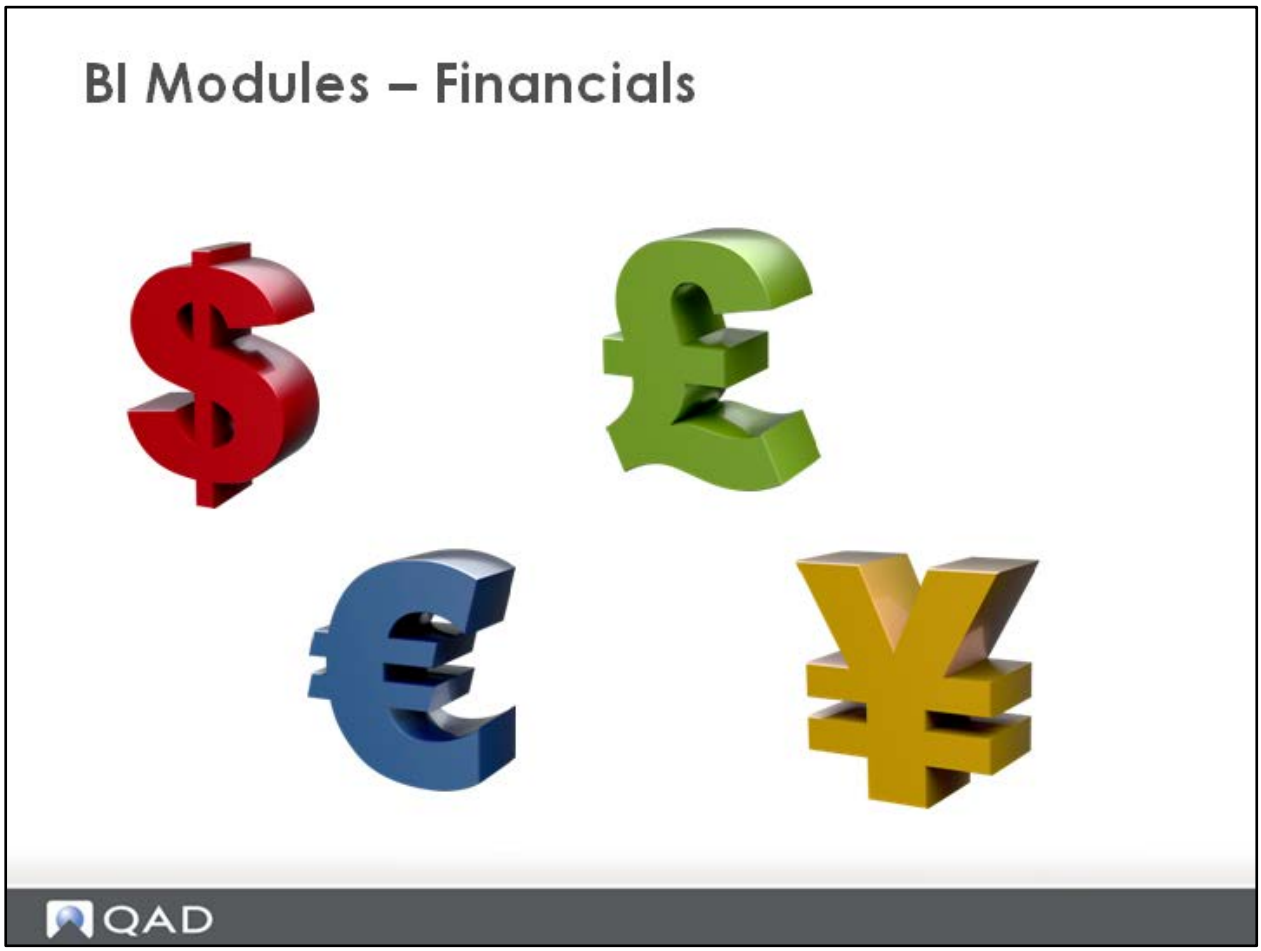
Every module includes QAD Standard BI objects, including Dashboards, Visual Items and Reports. The QAD Standard objects will change over time.

This slide shows one of the standard dashboards available in BI3.7. It illustrates a variety of visual item types.

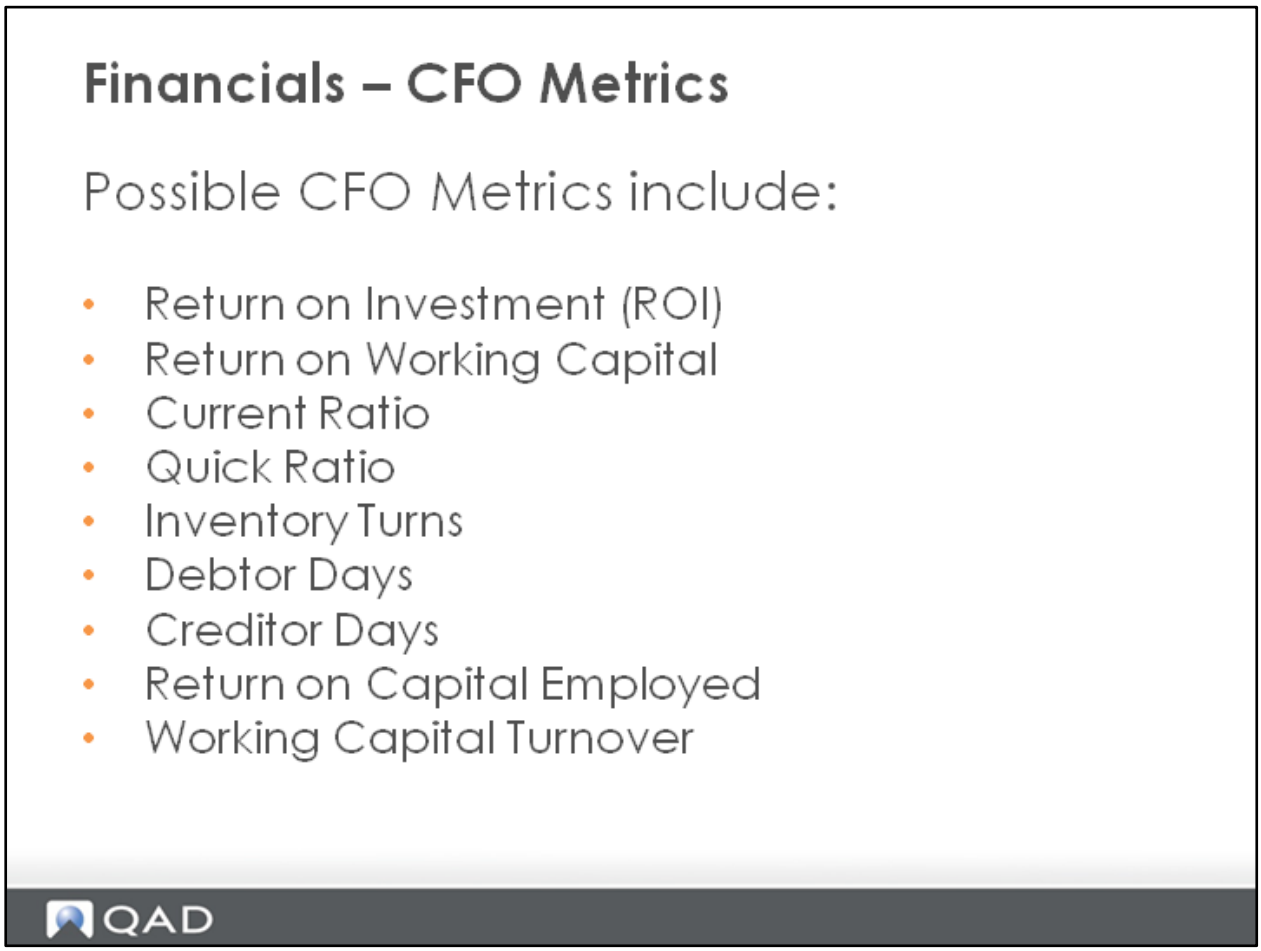
We see a chart, a gauge and a grid.

Also shown is an example of a “link” type visual item with links to Excel workbooks. These workbooks include real-time links to the BI. The last element is a report browser element.

BI Modules – Financials



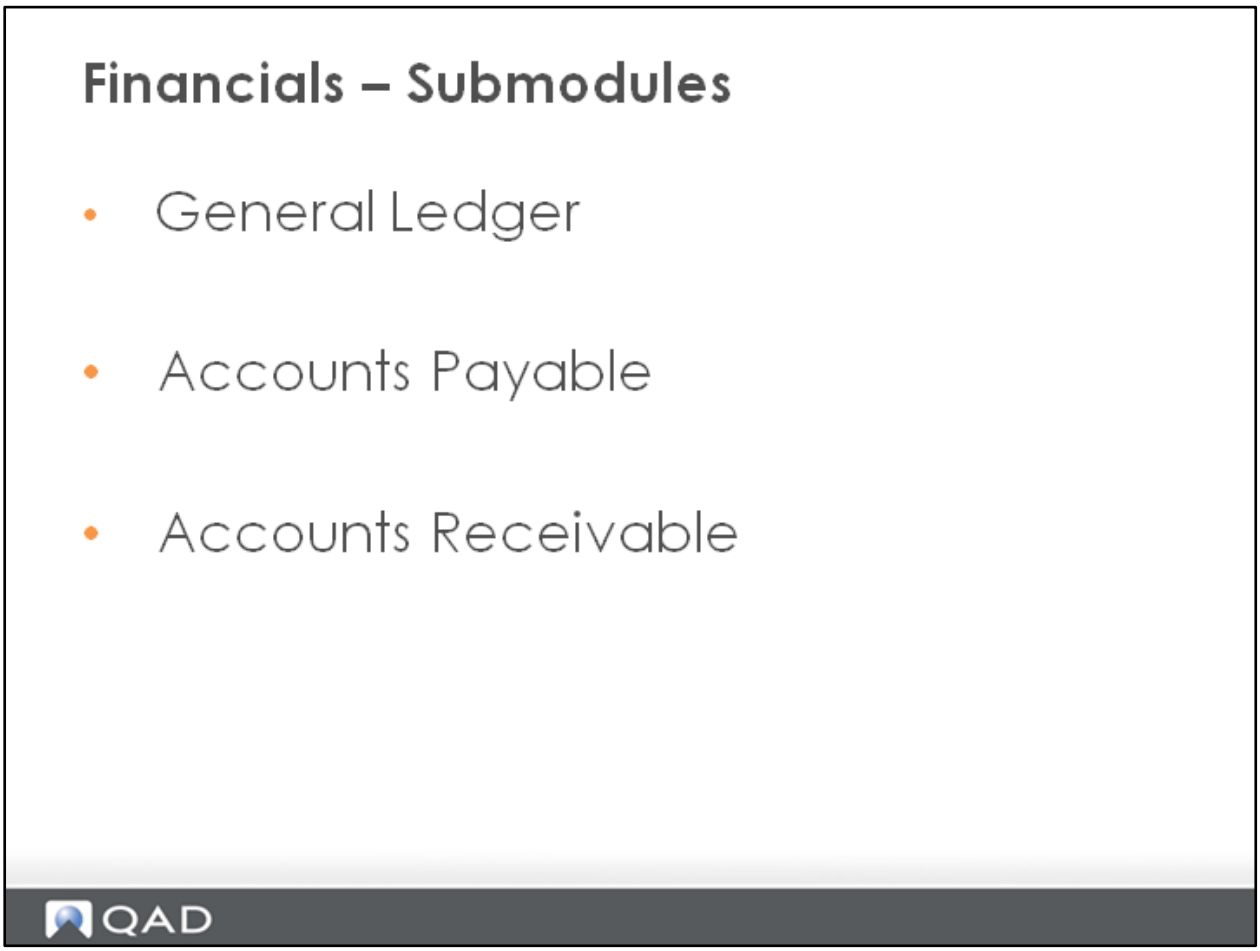
Financials – CFO Metrics



Here are some key financial metrics. We'll discuss the BI Financial module that supports Analysis of these metrics in the next slides.

The QAD BI application provides a method to implement company specific definitions for this type of metric. For example, which GL accounts represent working capital? This will be discussed in detail in a future class.

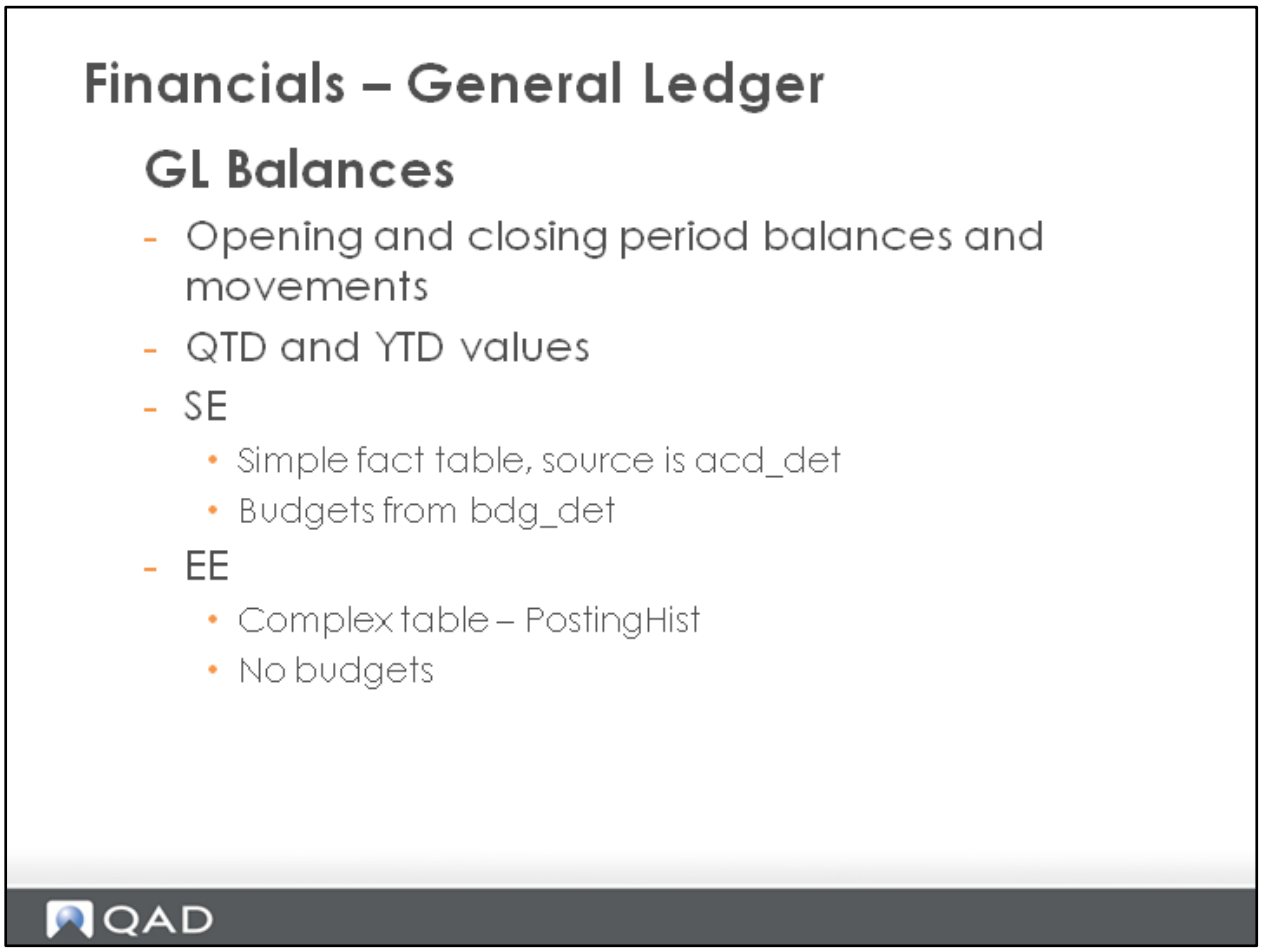
Financials – Submodules



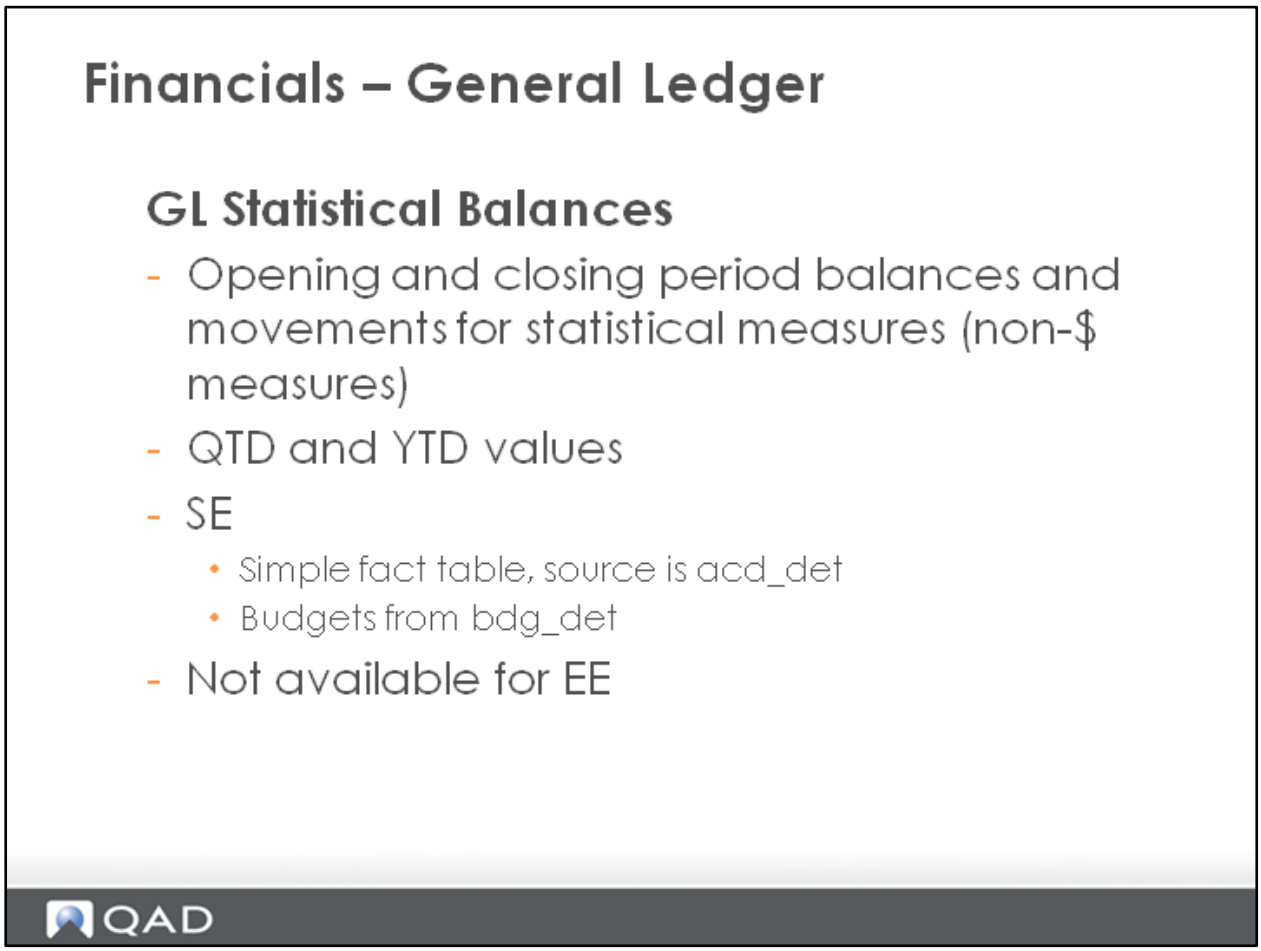
The Financials module includes 3 sub-modules.

- General Ledger
- Accounts Payable
- Accounts Receivable

Financials – General Ledger

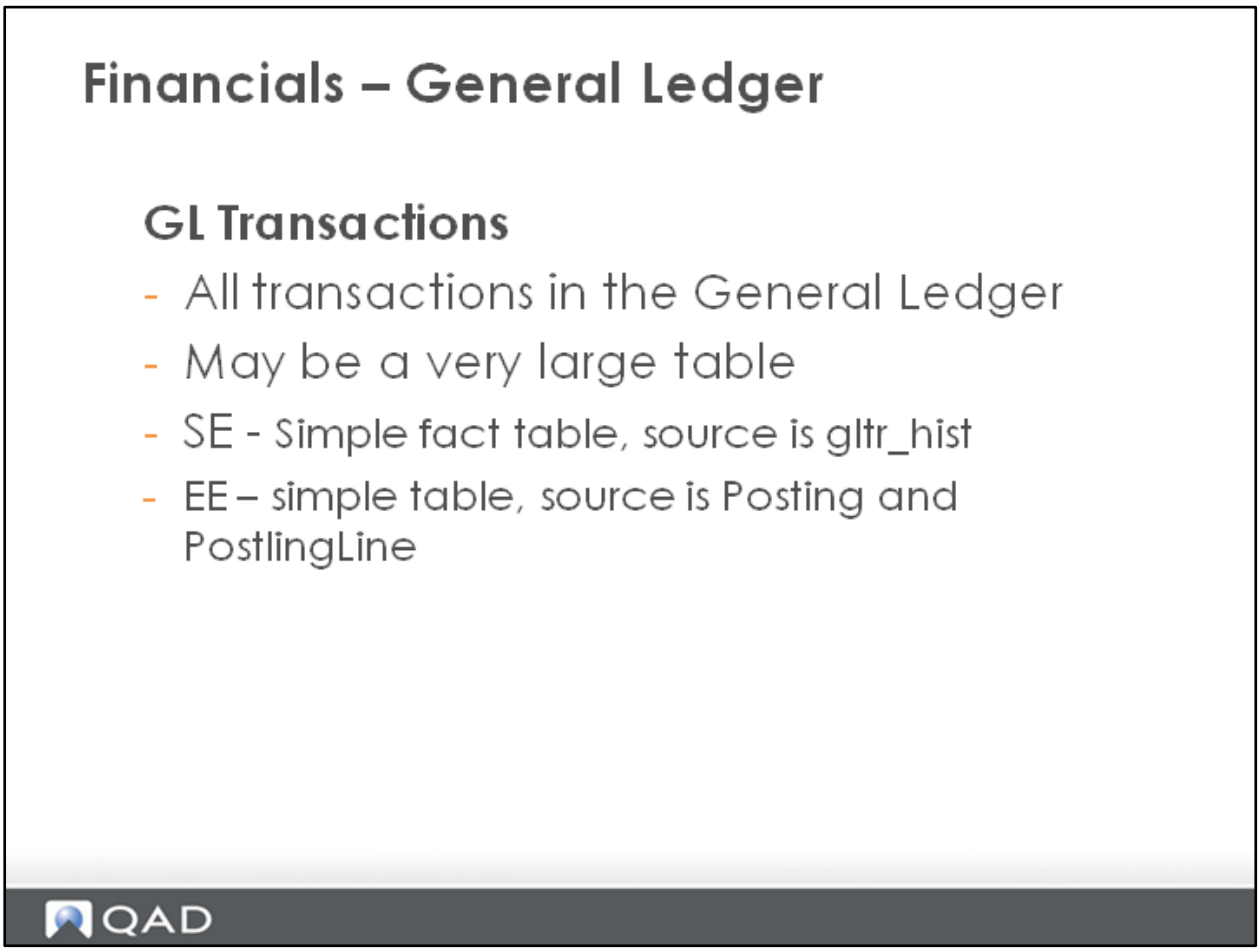


Financials – General Ledger



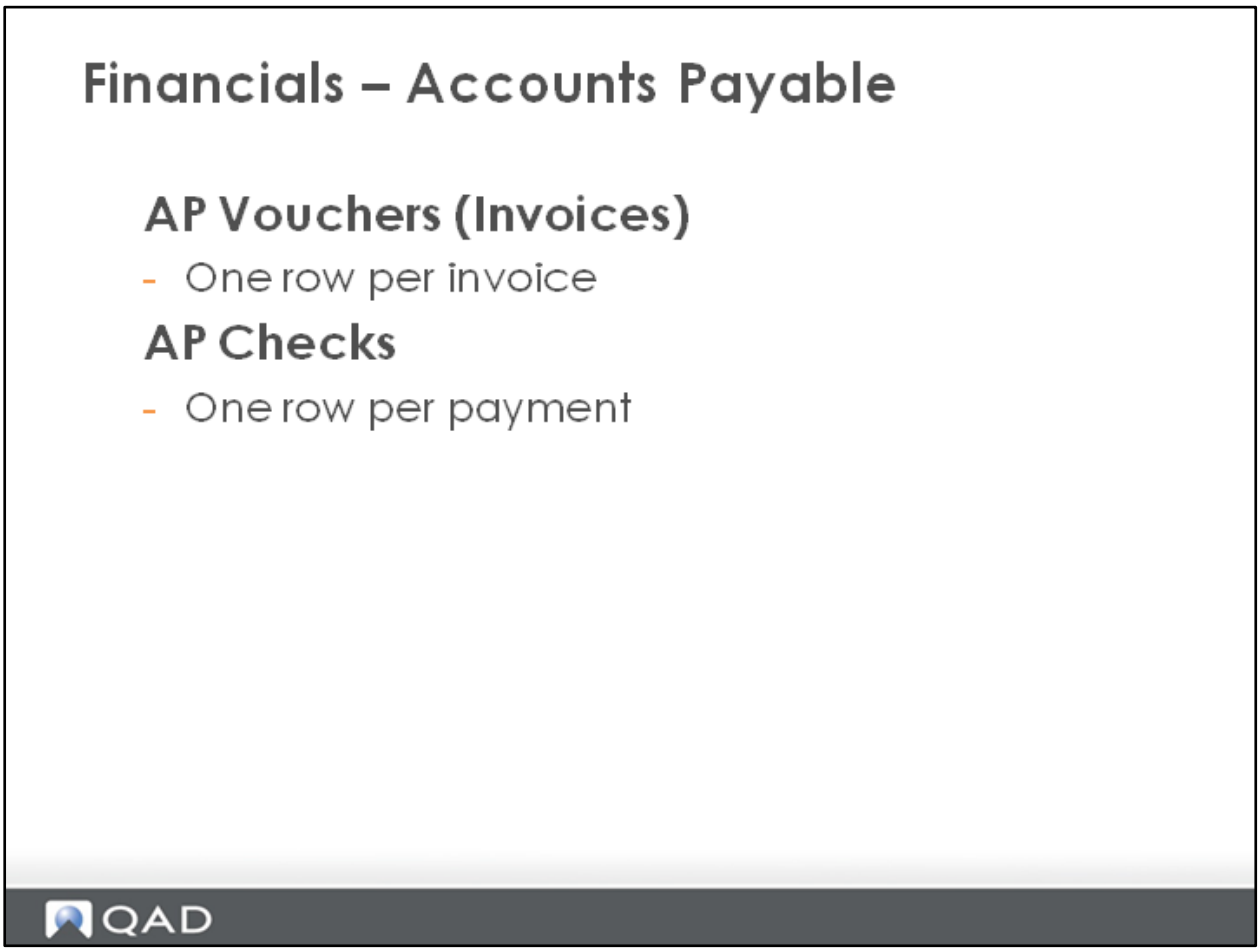
The GL Statistical Balances Fact table is similar to the GL Balances table. It includes data for statistical values are generally used only for Intrastat reporting.

Financials – General Ledger

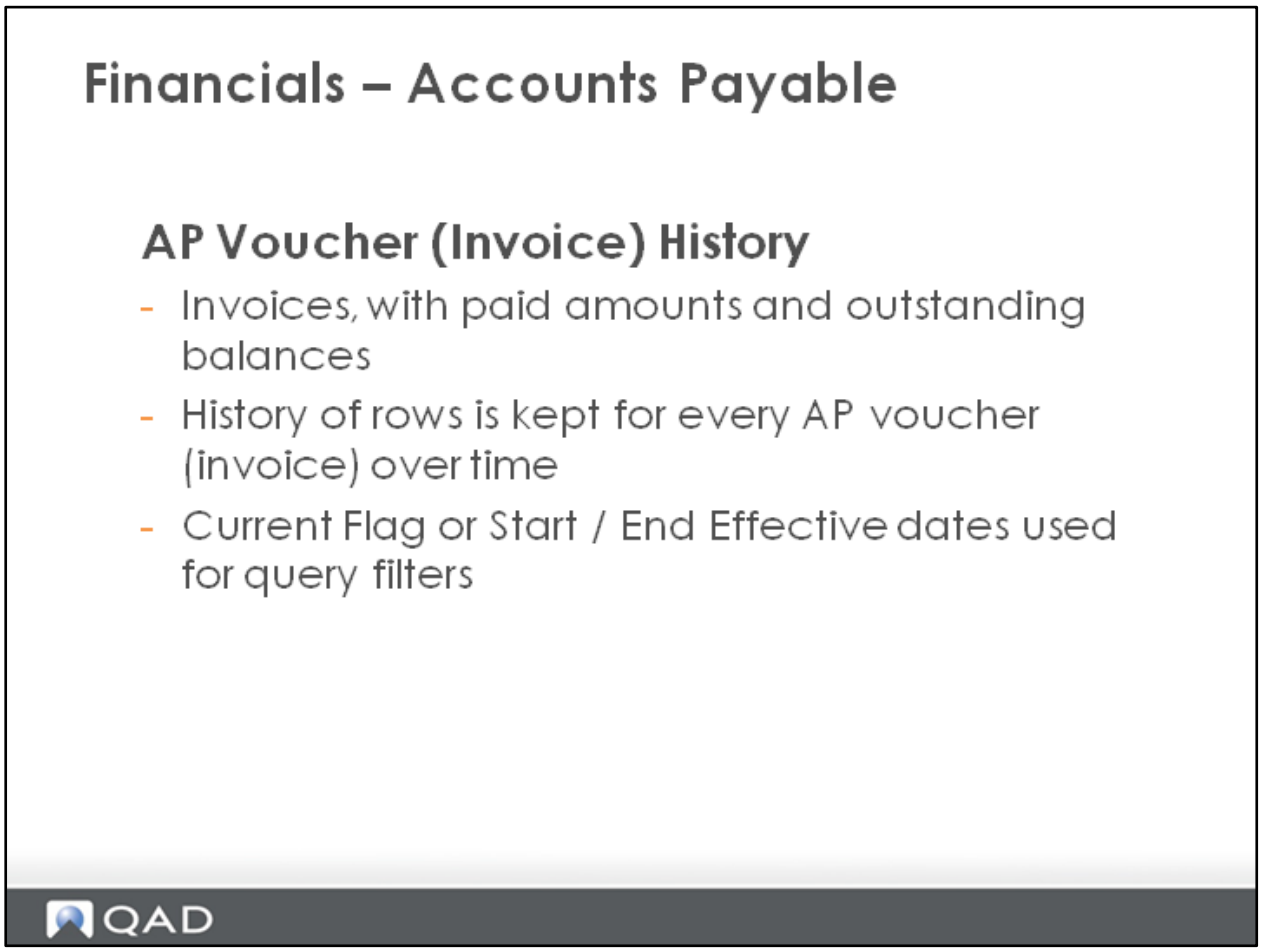


This table contains all transactions found in the General Ledger. This table is generally used for to create drill-down queries from within a summary visual item. This lets BI portal users do root cause analysis.

Financials – Accounts Payable



Financials – Accounts Payable



This is an example of an *Accumulating History* table. It contains invoices, with paid amounts and outstanding balances including monthly aging buckets.

This is not a simple fact table.

A history of rows is kept for every invoice over time.

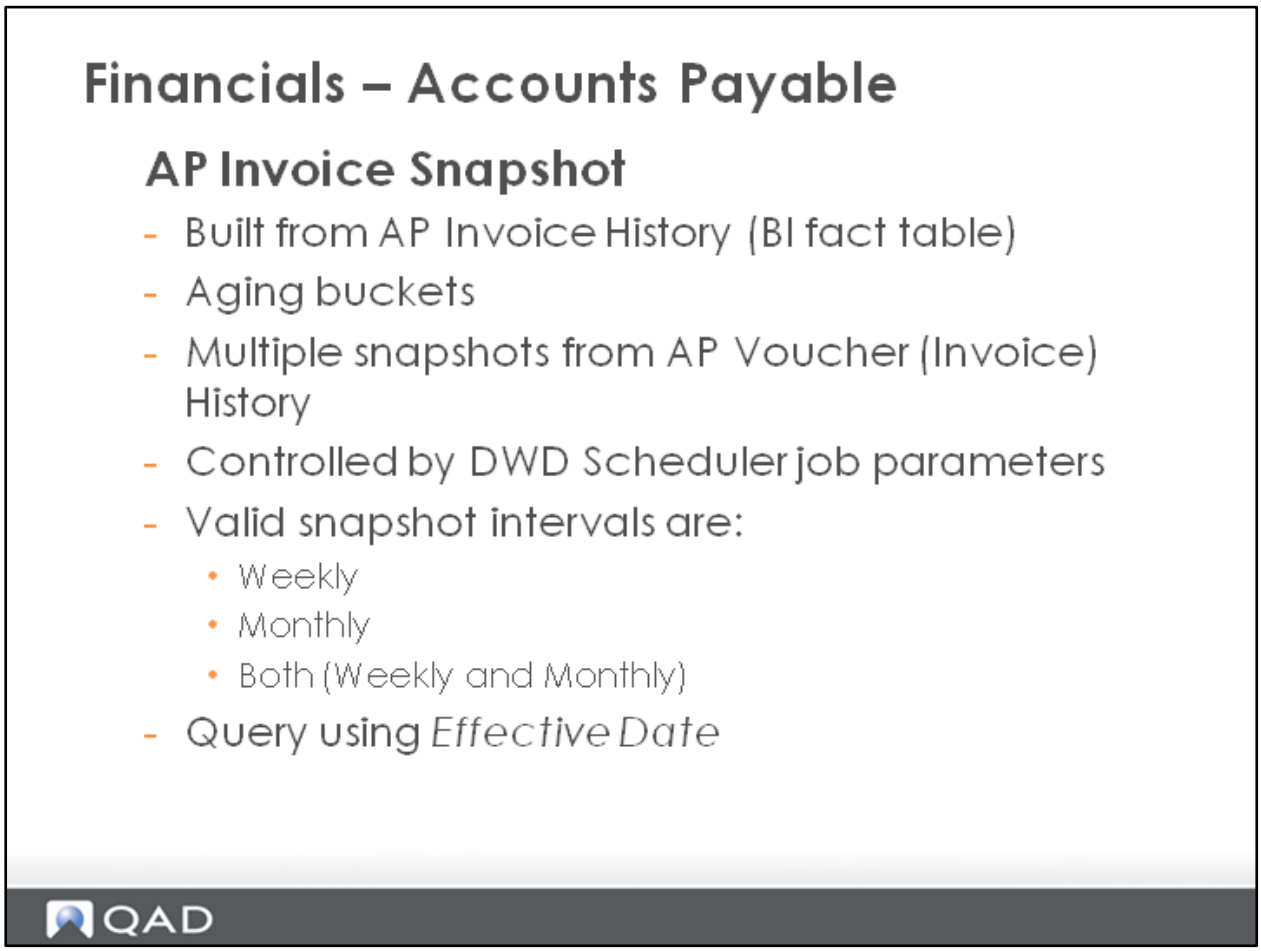
Each time a row changes, including outstanding amounts aging into the next aging bucket, the old row is end dated with the previous days' date

The new row has a start date of the current date.

The Current Flag can be used to filter only current records.

Key point: On a given day, an aged trail balance report can be found by returning all current versions of invoice rows.

Financials – Accounts Payable



The AP Invoice Snapshot fact table is an example of a *Periodic* or Summary fact table. The primary source of data for this table is another BI table (AP Invoice History).

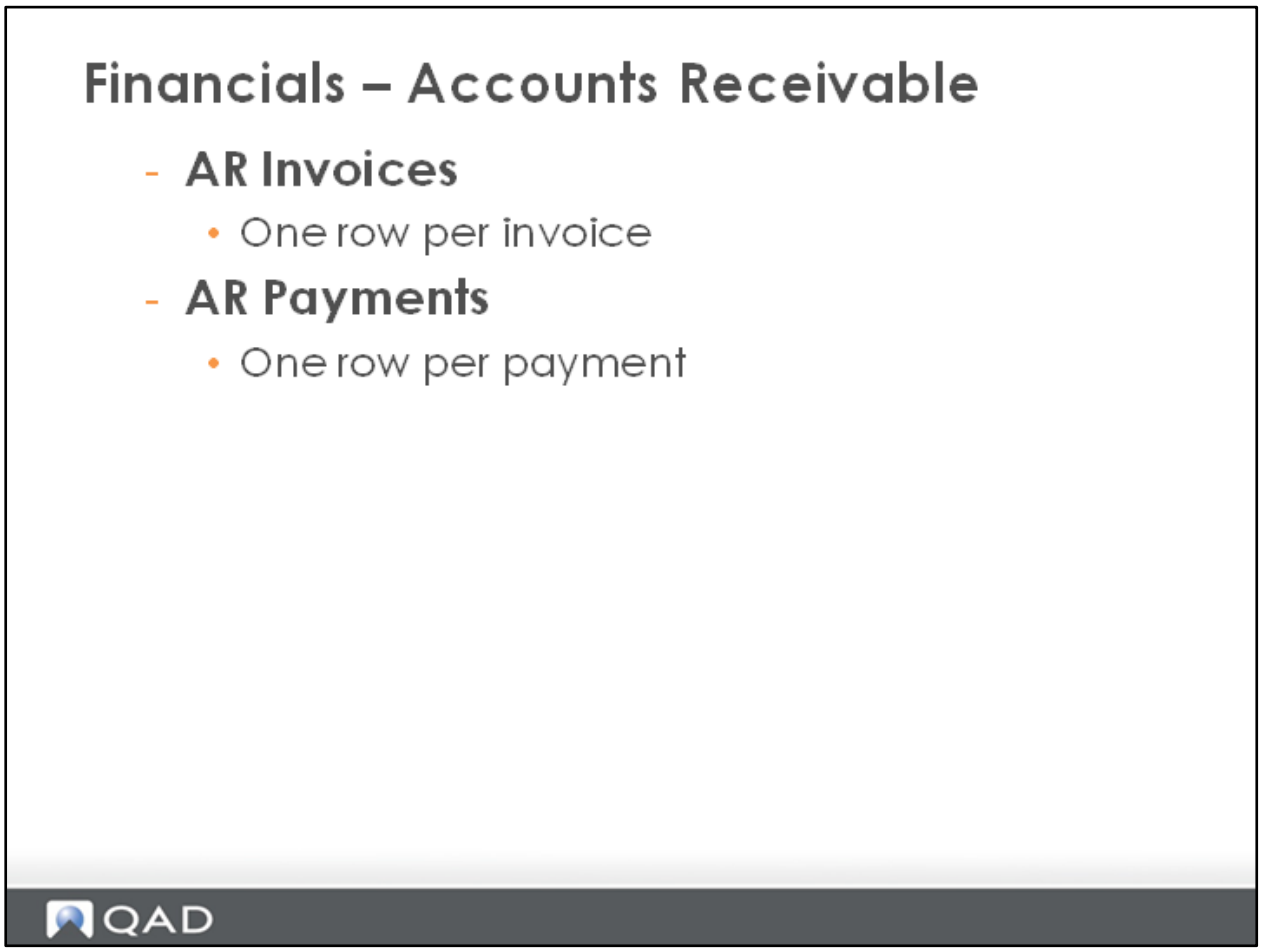
The interval for the Snapshot is determined by a parameter setting used by a batch job.

Valid snapshot intervals are:

- Weekly
- Monthly
- Both (Weekly and Monthly)

To Query this table, we would generally use the Effective Date dimension.

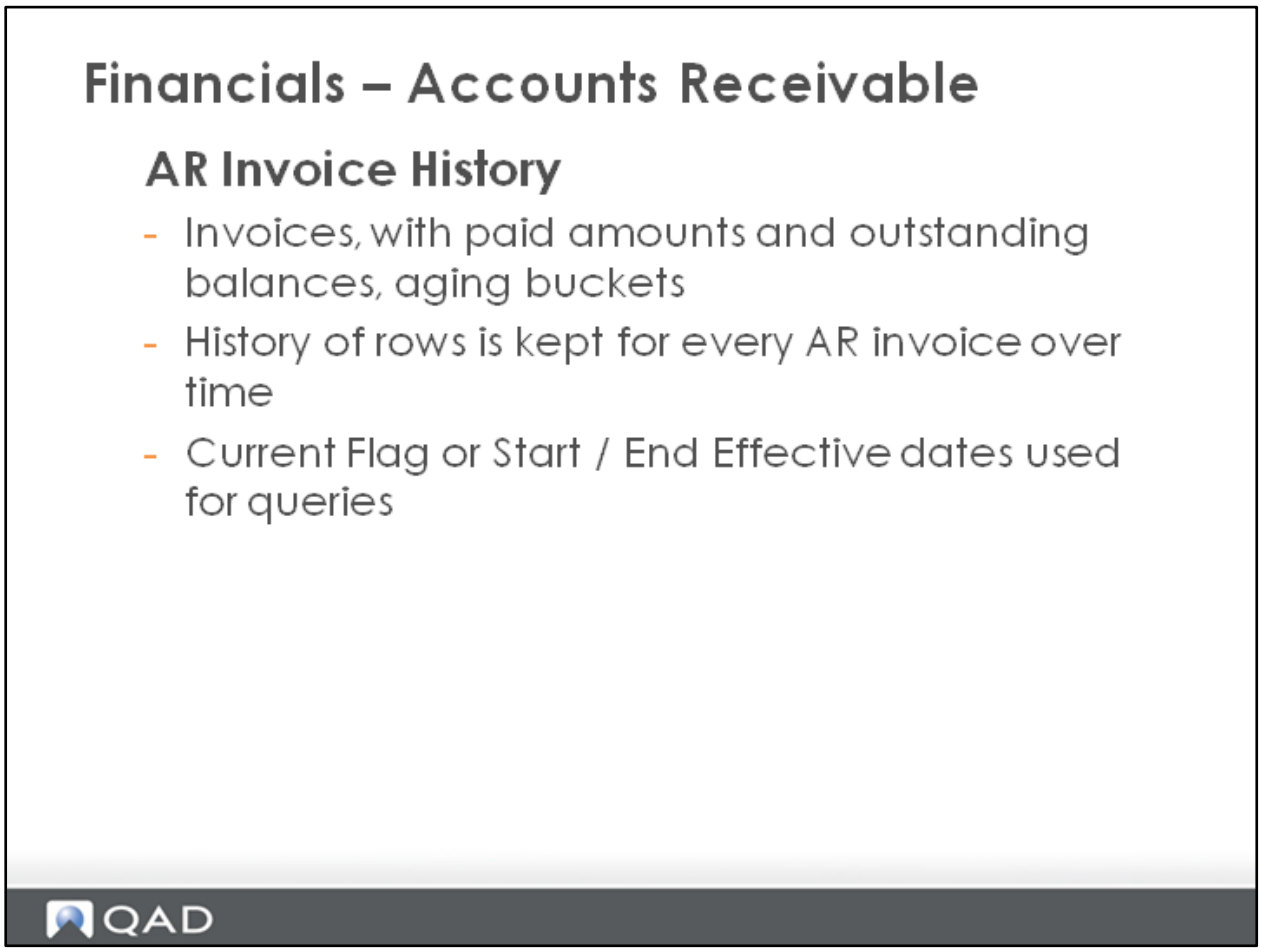
Financials – Accounts Receivable



AR Transaction tables include:

- AR Invoices
- AR Payments

Financials – Accounts Receivable



This table contains invoices, with paid amounts and outstanding balances.

This is not a simple fact table.

A history of rows is kept for every invoice over time.

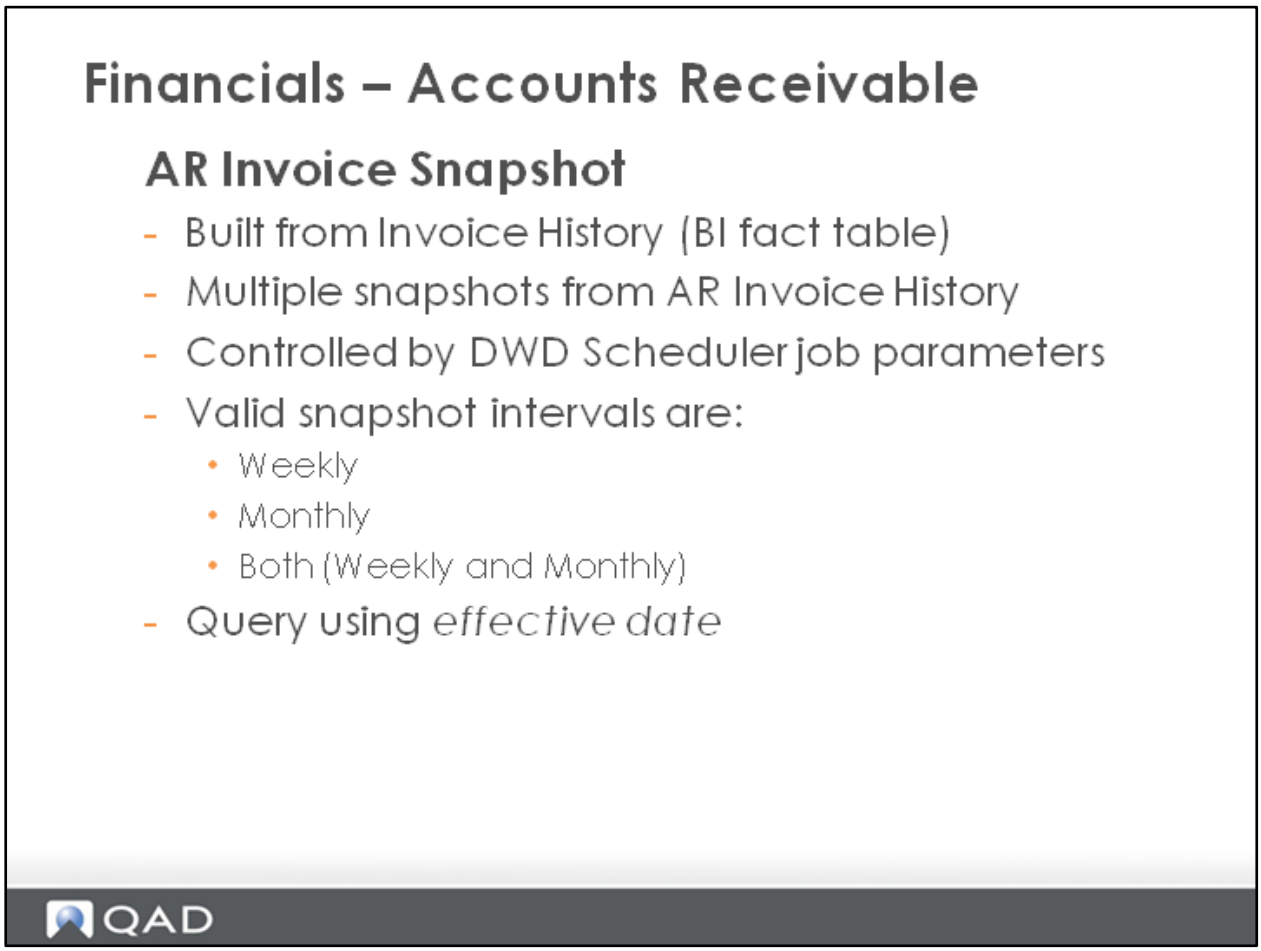
Each time a row changes, including outstanding amounts aging into the next aging bucket, the old row is end dated with the previous days' date

The new row has a start date of the current date.

To retrieve the current records, filter on *Current Flag* = Y.

Key point: On a given day, an aged trail balance report can be found by returning all current versions of invoice rows.

Financials – Accounts Receivable



The AP Invoice Snapshot fact table is an example of a *Periodic* or Summary fact table. The primary source of data for this table is another BI table (AP Vouchers / Invoices).

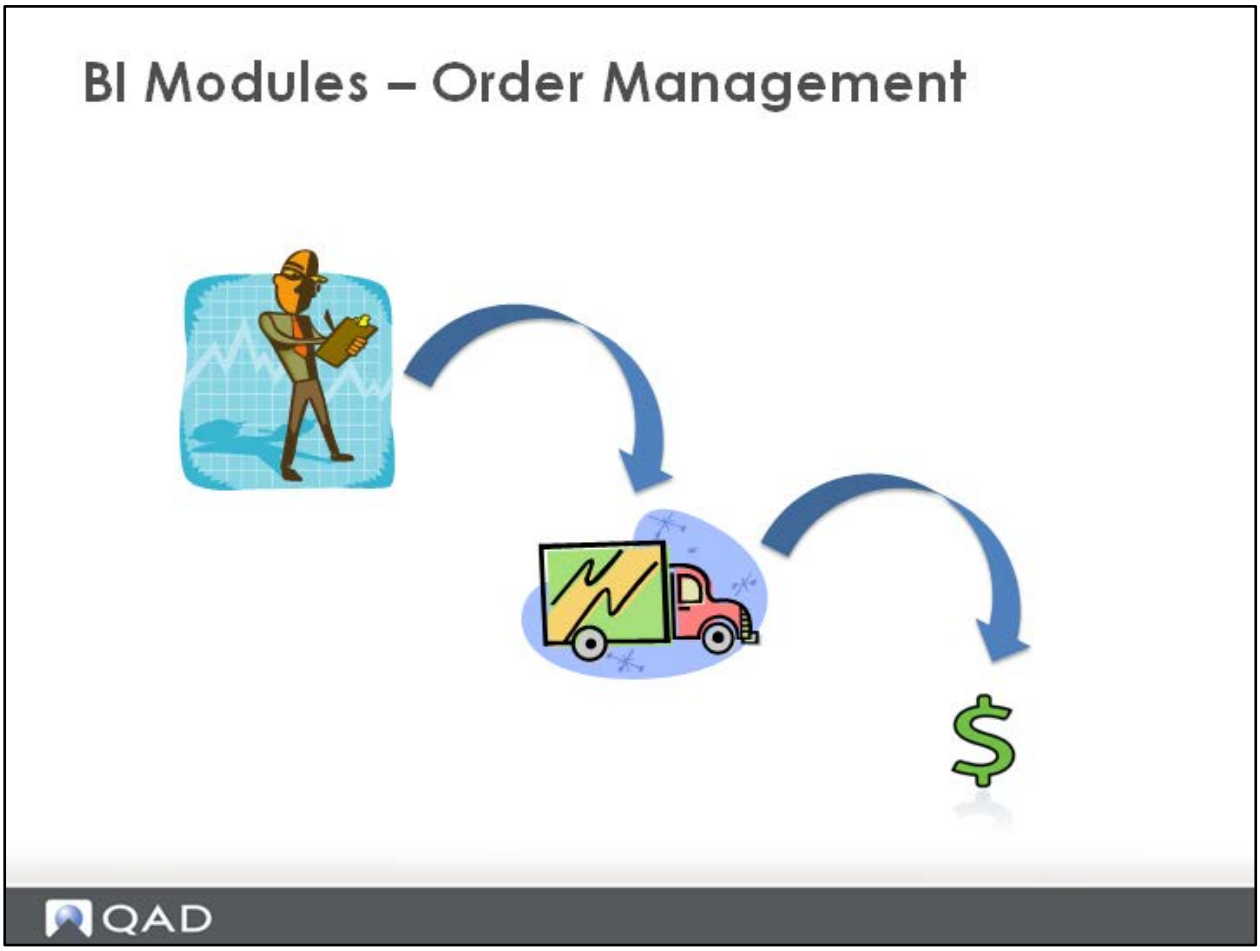
The interval for the Snapshot is determined by a parameter setting used by a batch job.

Valid snapshot intervals are:

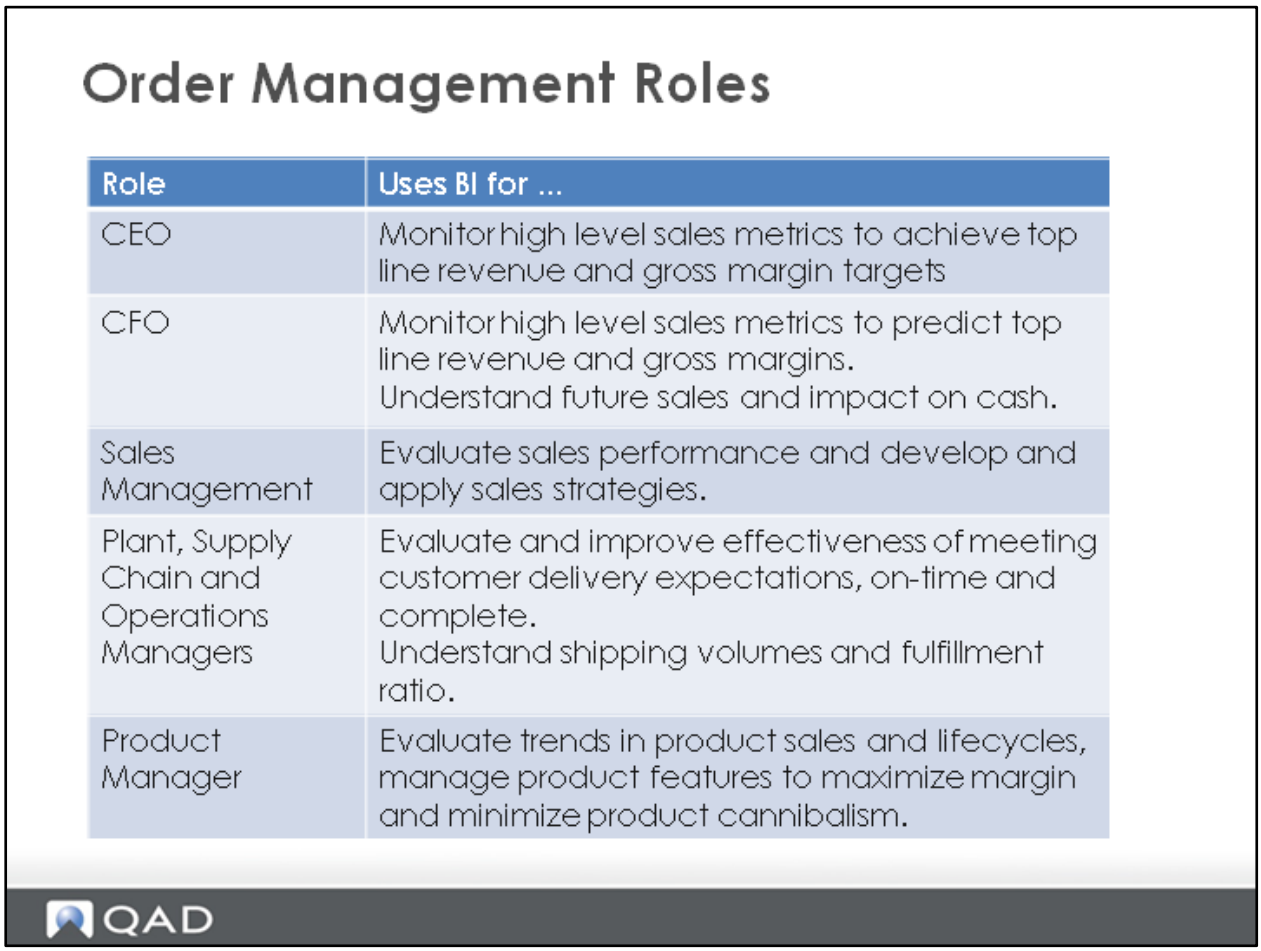
- Weekly
- Monthly
- Both (Weekly and Monthly)

To Query this table, we would generally use the Effective Date dimension.

BI Modules – Order Management

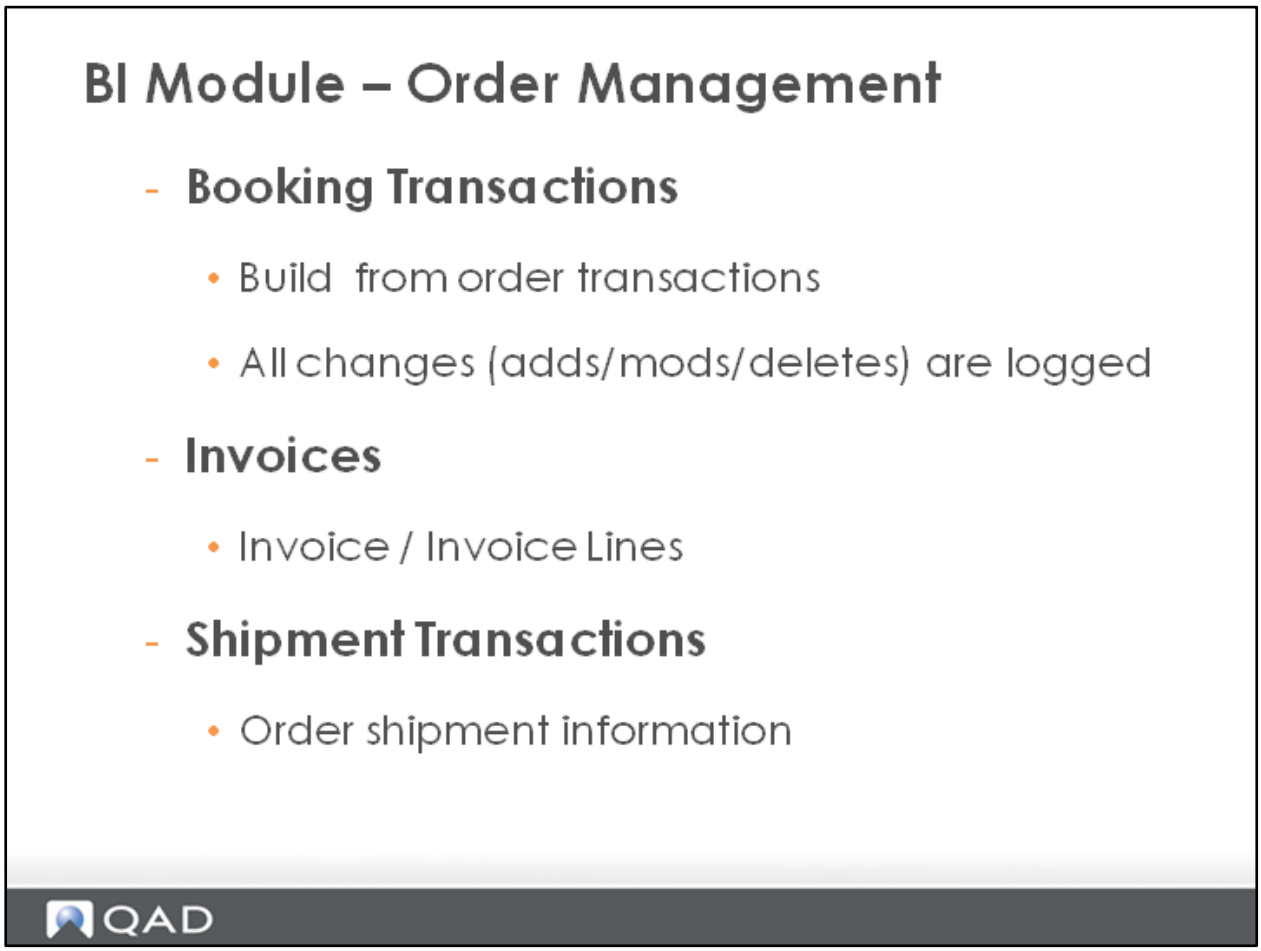


Order Management Roles



Consider the various business roles that will be interested in Order Management information. The table on this slide gives you an idea of one way to consider these roles. Of course, the information requirements for a role varies greatly by industry, company and even individual.

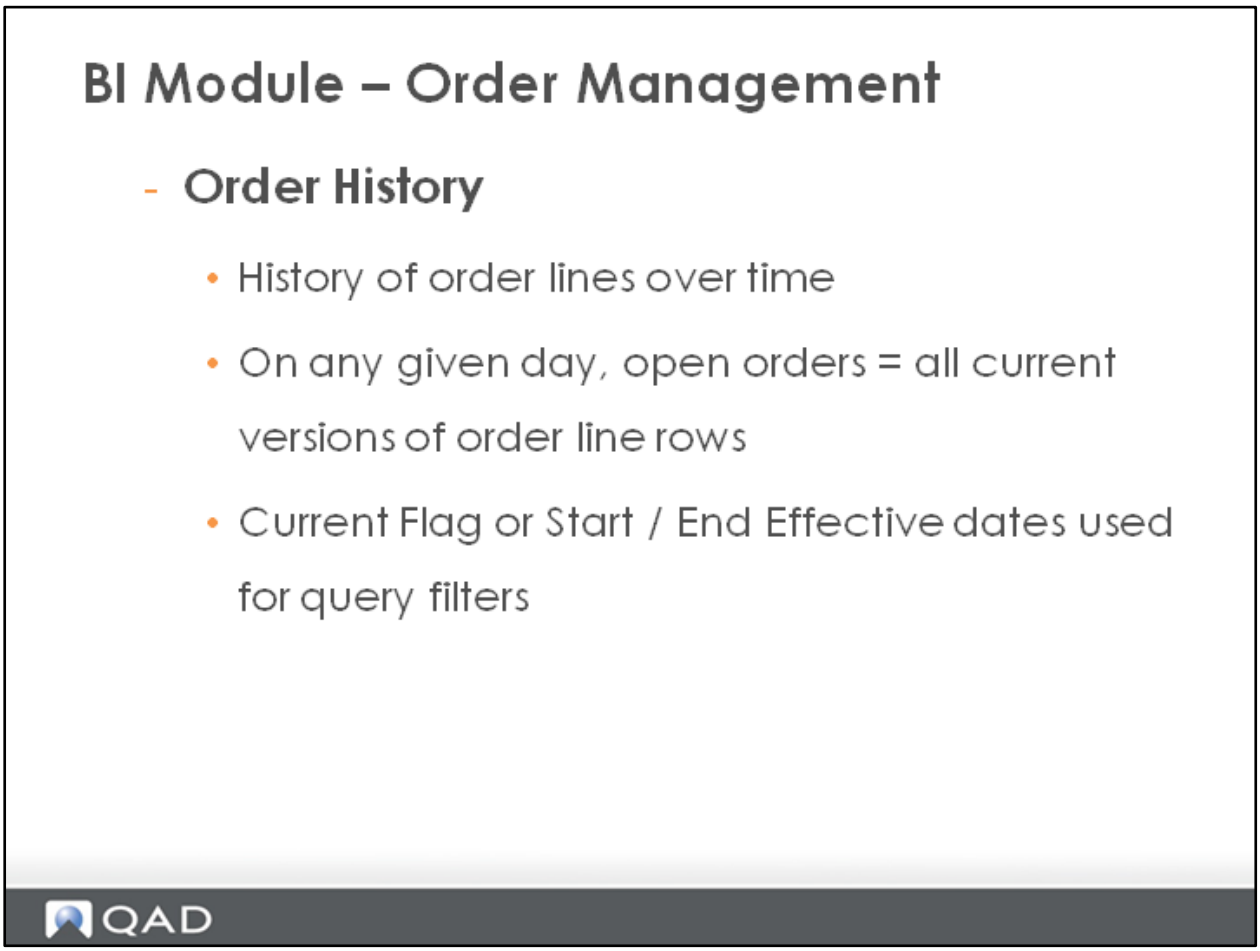
BI Module – Order Management



There are 3 transaction type fact tables available in the Order Management modules. They are:

- Booking Transactions
- Invoices
- Shipment transactions

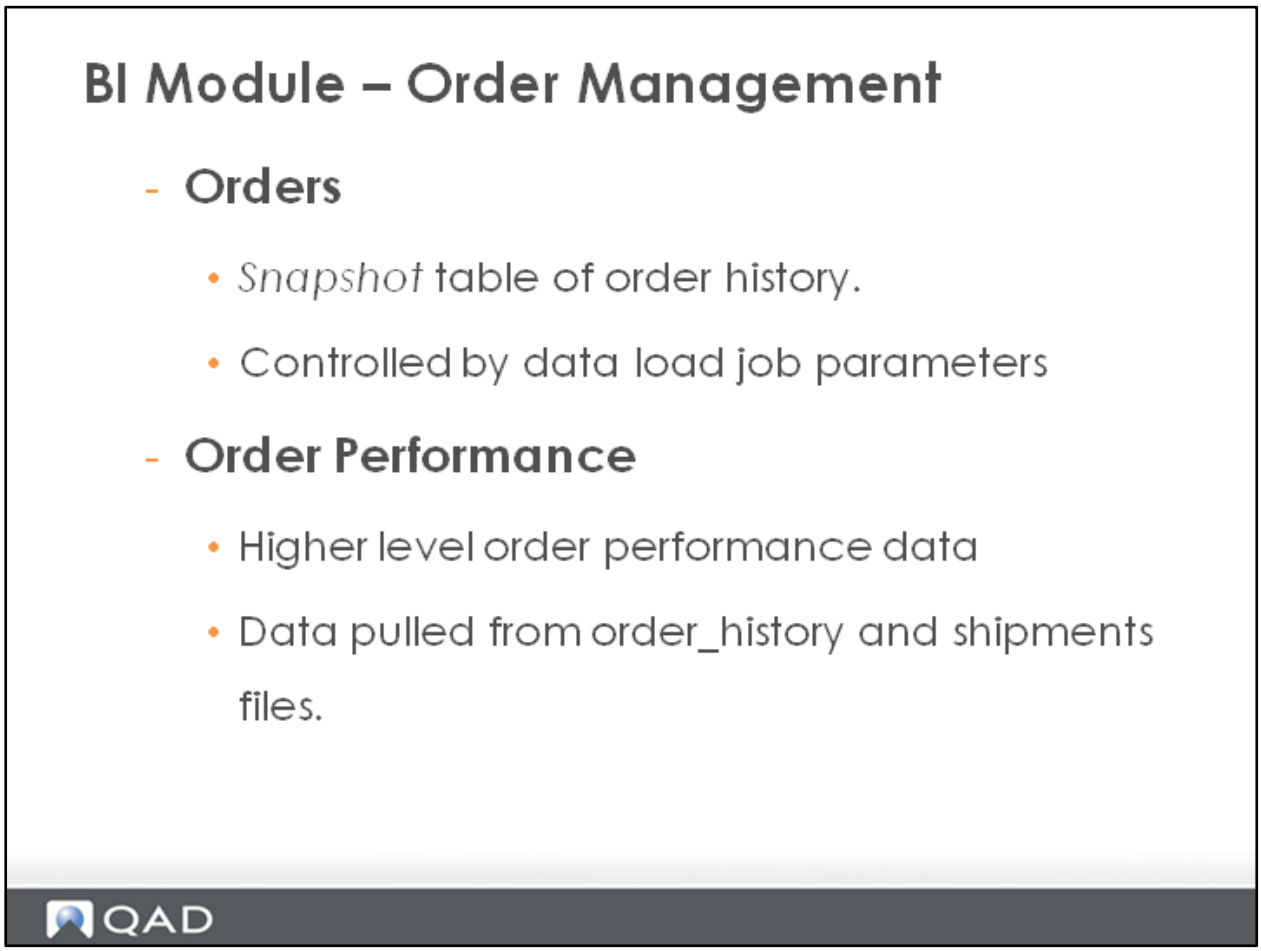
BI Module – Order Management



The Order History fact table is a Summary or Accumulating table. This table shows a history of order lines over time. Each time a row changes, the "old" row is end dated with the previous days date and a new row is added with a start date of the current date.

The *Current Flag* should be used to filter this table.

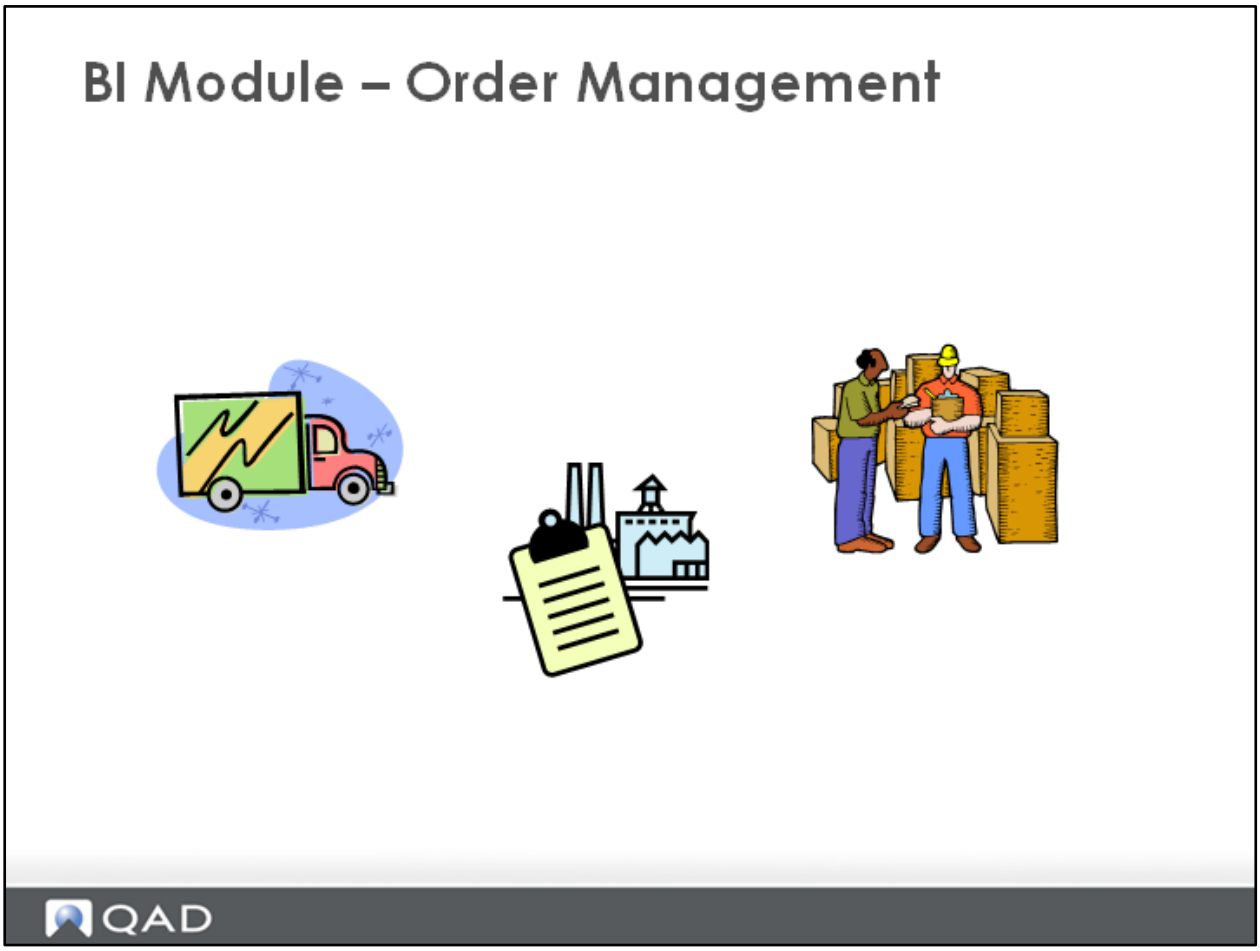
BI Module – Order Management



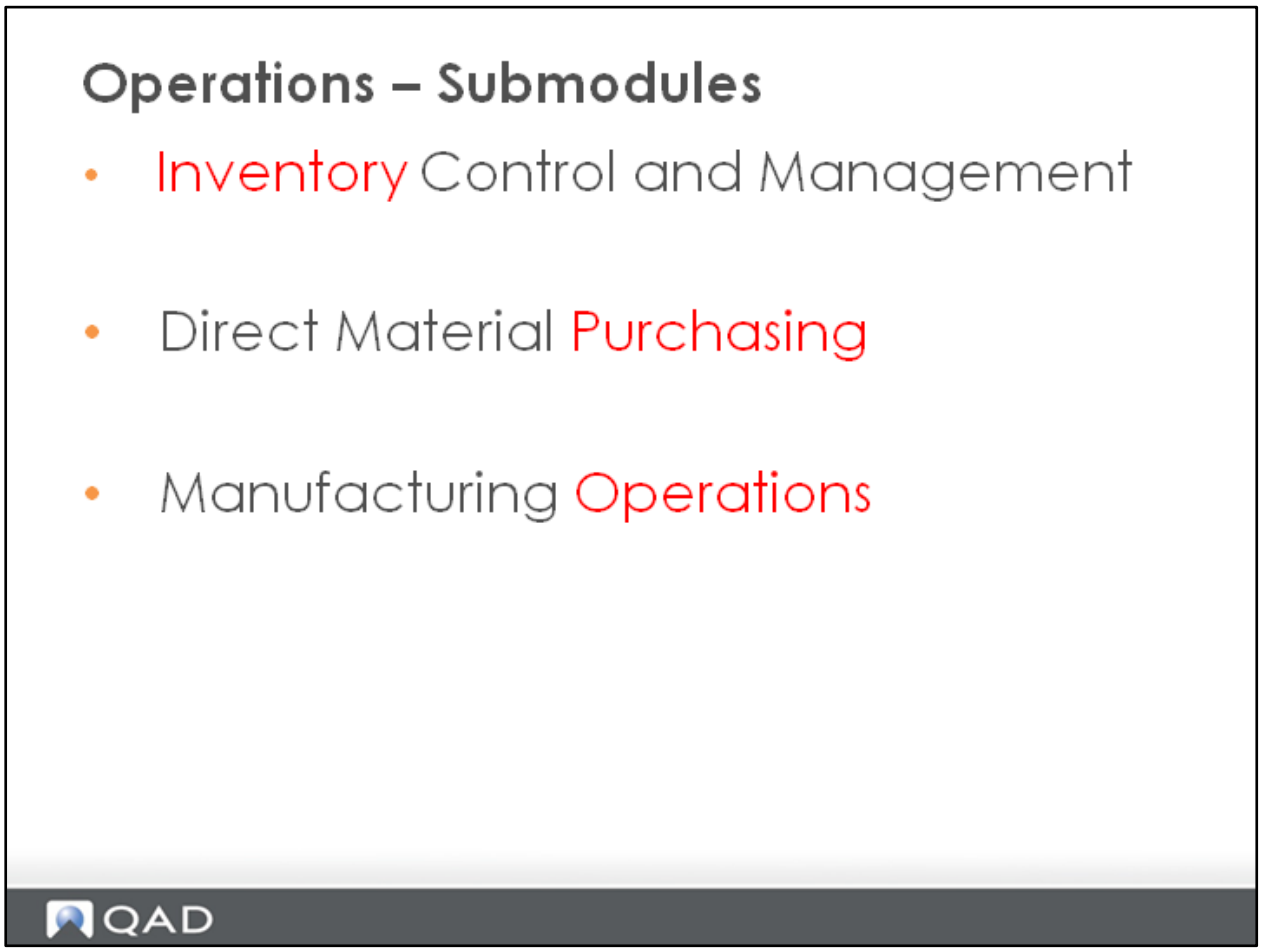
The Orders fact table is an Snapshot table. It is based on the Order History table. As with other snapshot tables, the interval is controlled by a System parameter.

The Order Performance Fact table contains a higher level of performance data. This table summarizes data from a number of other Fact tables, including Order History and the Shipments tables.

BI Module – Order Management



Operations – Submodules

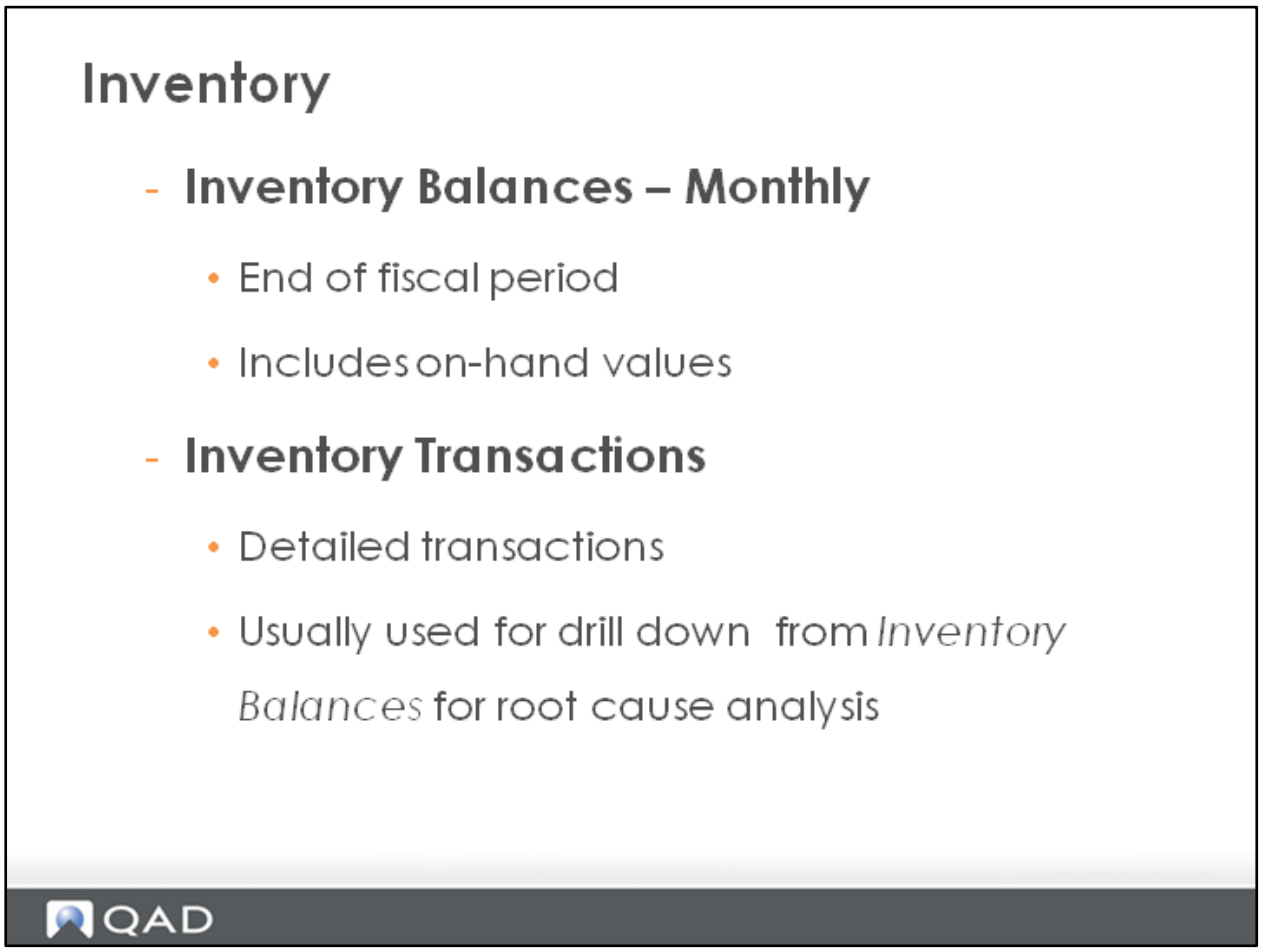


The Operations module includes 3 sub-modules.

- Inventory Control and Management
- Direct Material Purchasing
- Manufacturing Operations

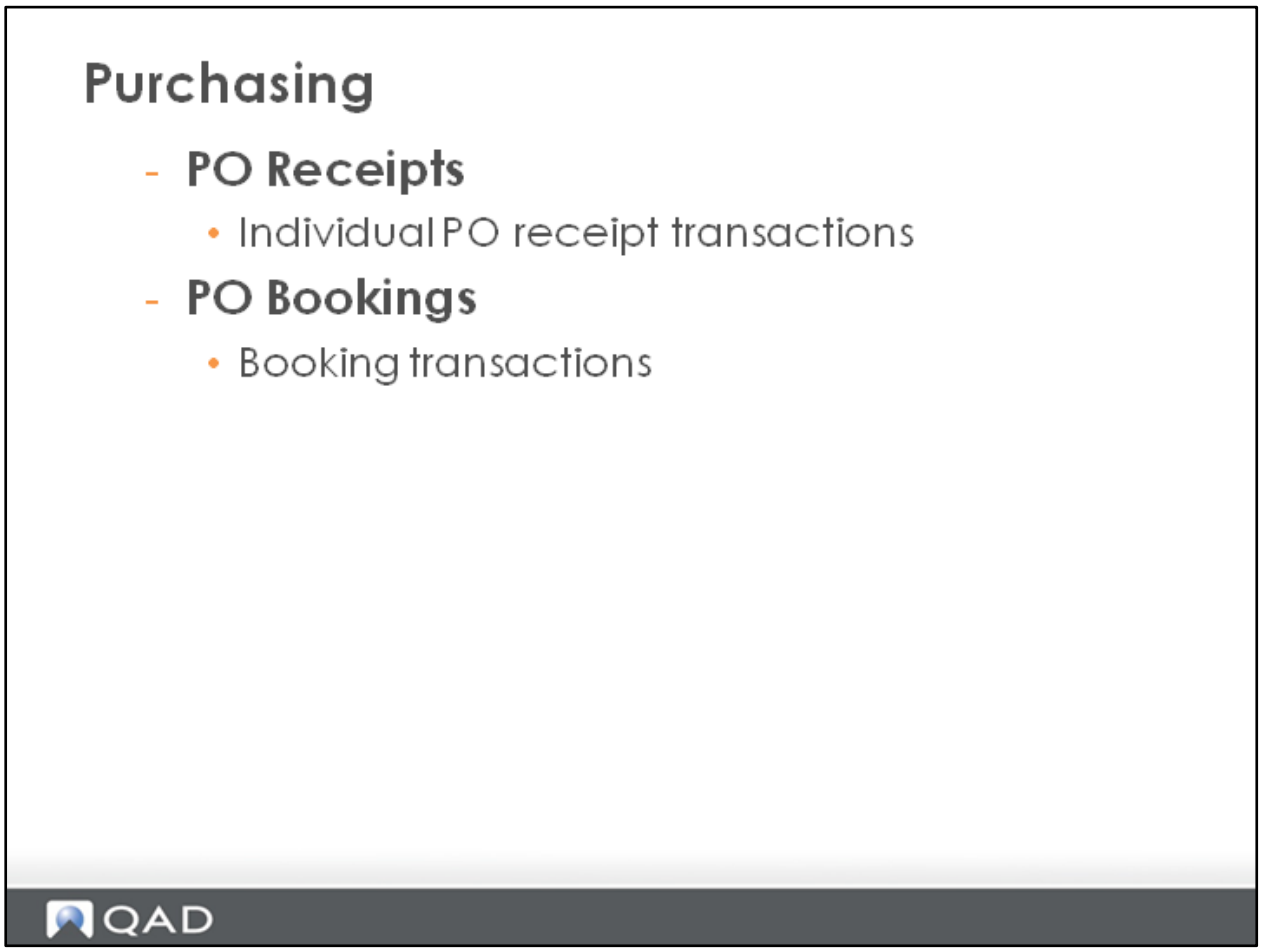
The items in red are the common names for these submodules within the BI.

Inventory



The Inventory sub-module contains 2 fact tables. The main table is the Monthly Inventory Balances fact table. The Inventory Transactions table is generally used for drill down from the Inventory Balances in support of root cause analysis.

Purchasing



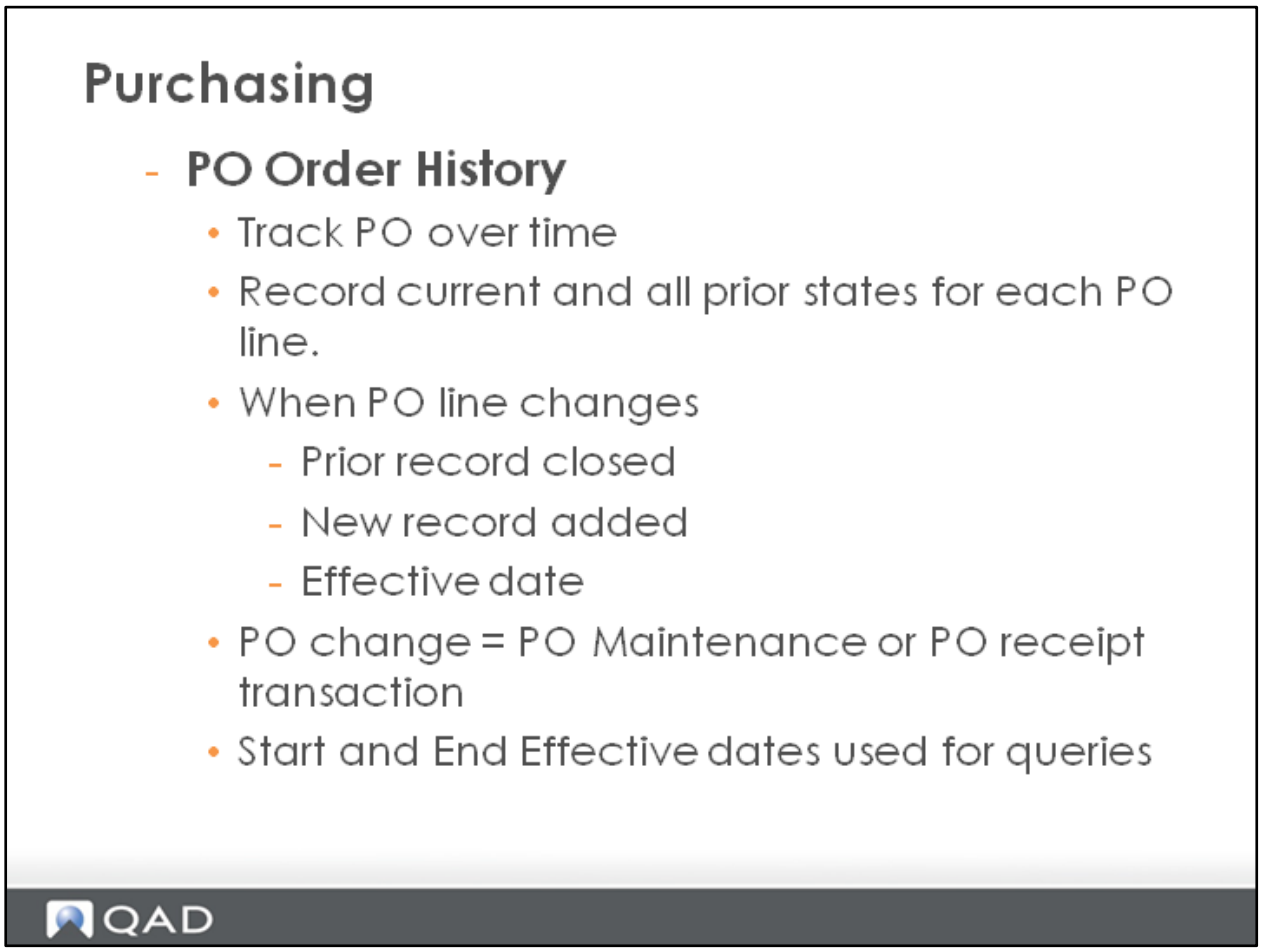
Both the PO Receipts and the PO Bookings file are transactional type fact tables.

The PO Receipts fact table contains individual PO receipts

The PO Bookings fact table contains Purchase Order booking transactions.

The source of both files is the tr_hist table.

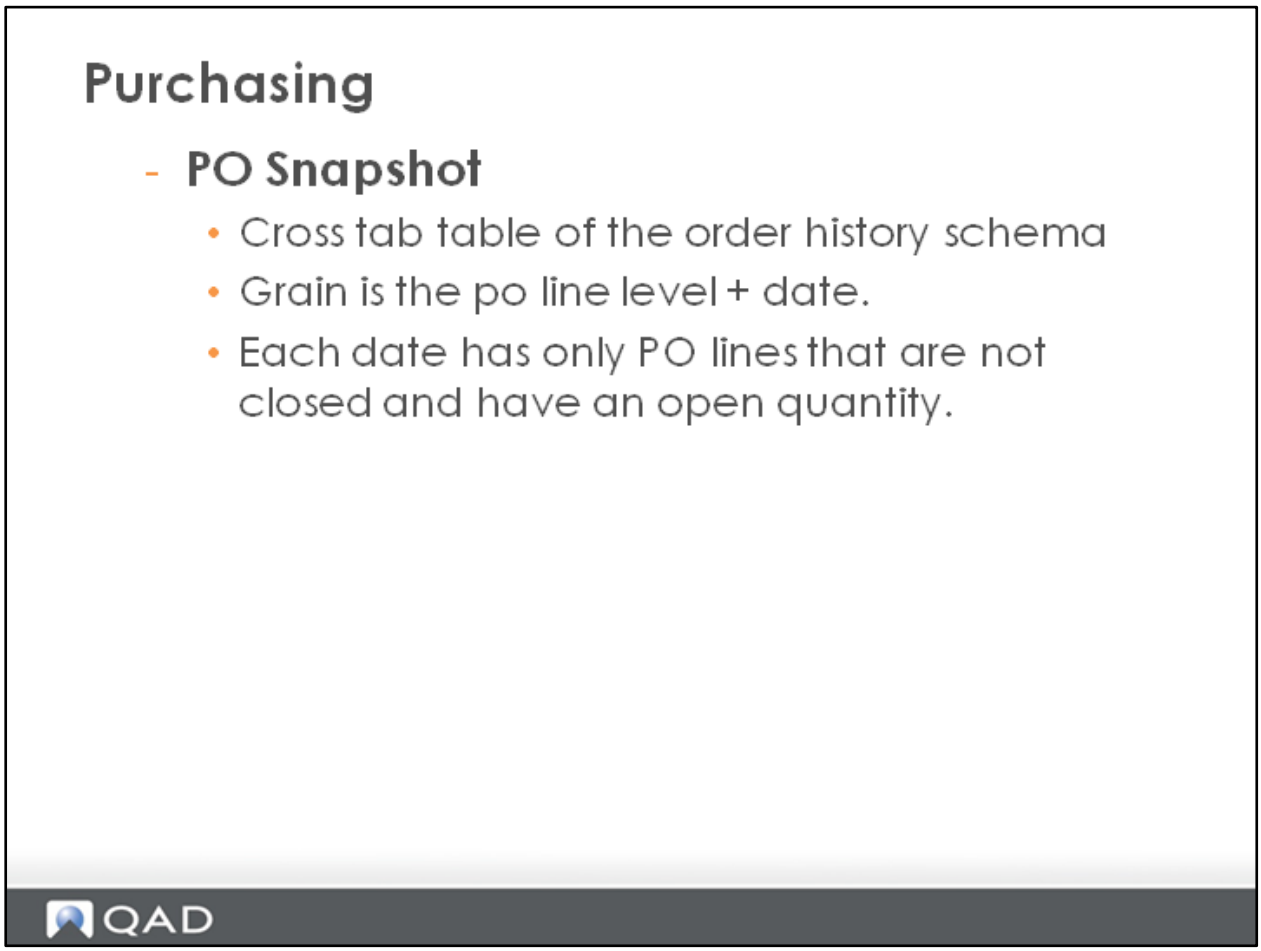
Purchasing



The PO Order History table tracks Purchase Orders over time. That is, it is a record of current and all prior states for each PO line. To clarify, a PO "changes" using either the PO Maintenance function or via a PO Receipt.

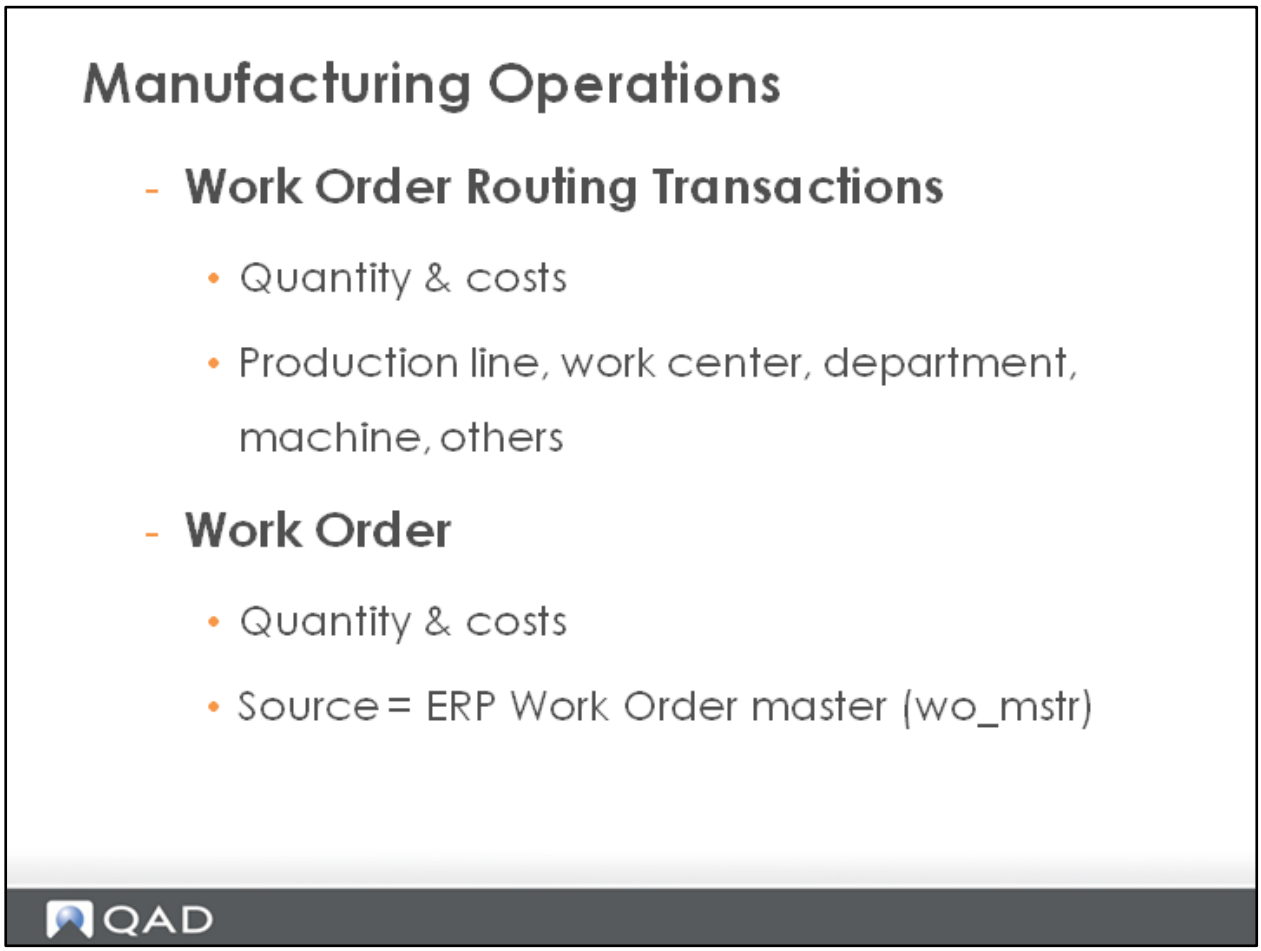
This is an Accumulating type Fact Table. Each row will contain and effective start date and effective end date column.

Purchasing



The PO Snapshot fact table is based on the Order History fact table. For any given effective date, only PO lines that are not open and have an open quantity are included. As with other snapshot tables, the interval (daily, weekly or monthly) is controlled by a system parameter.

Manufacturing Operations

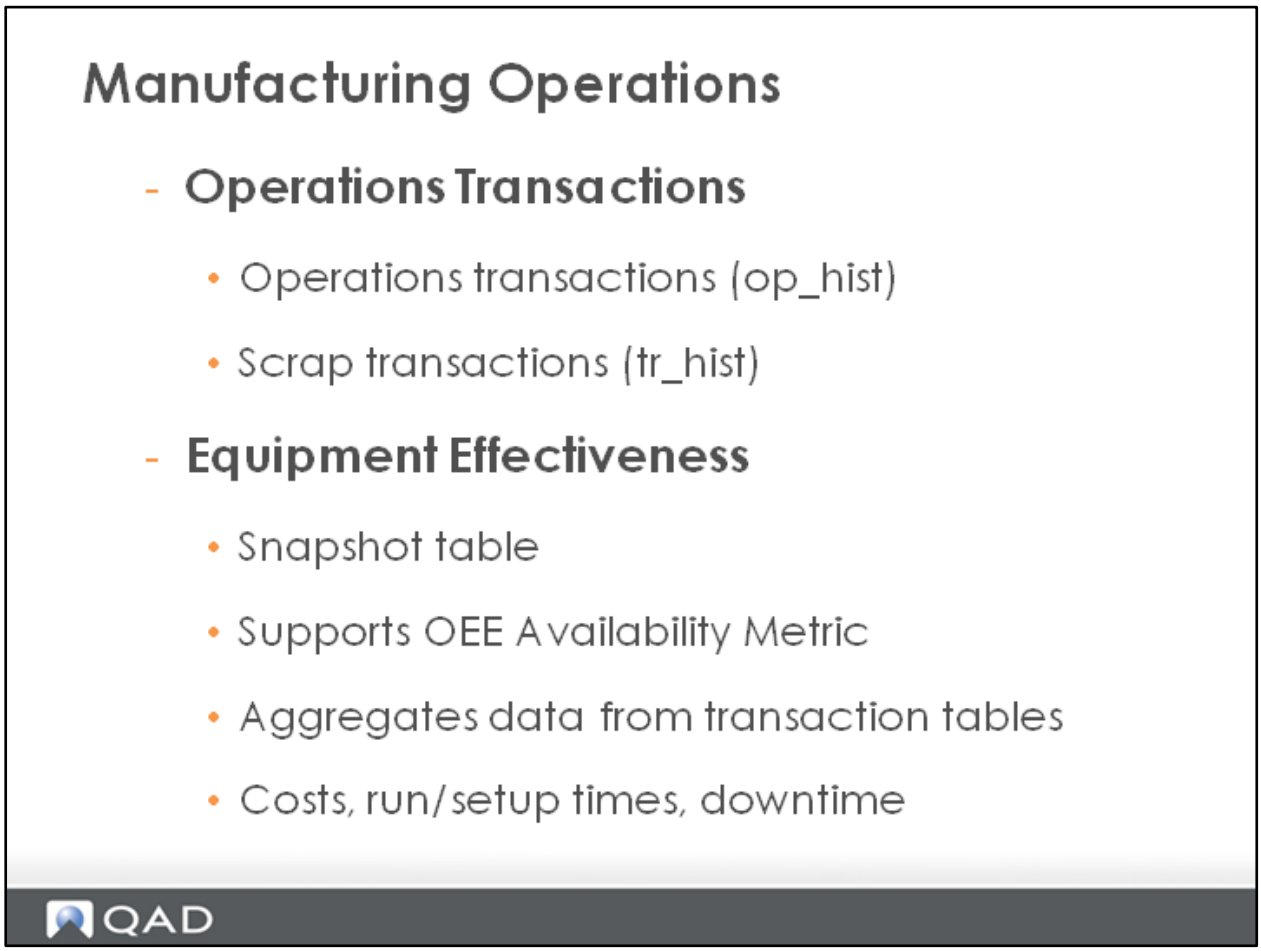


Manufacturing operations supports 3 primary metrics:

- OEE Availability
- OEE Quality
- OEE Performance

Transaction files include Work Order Routing Transactions and Work Order.

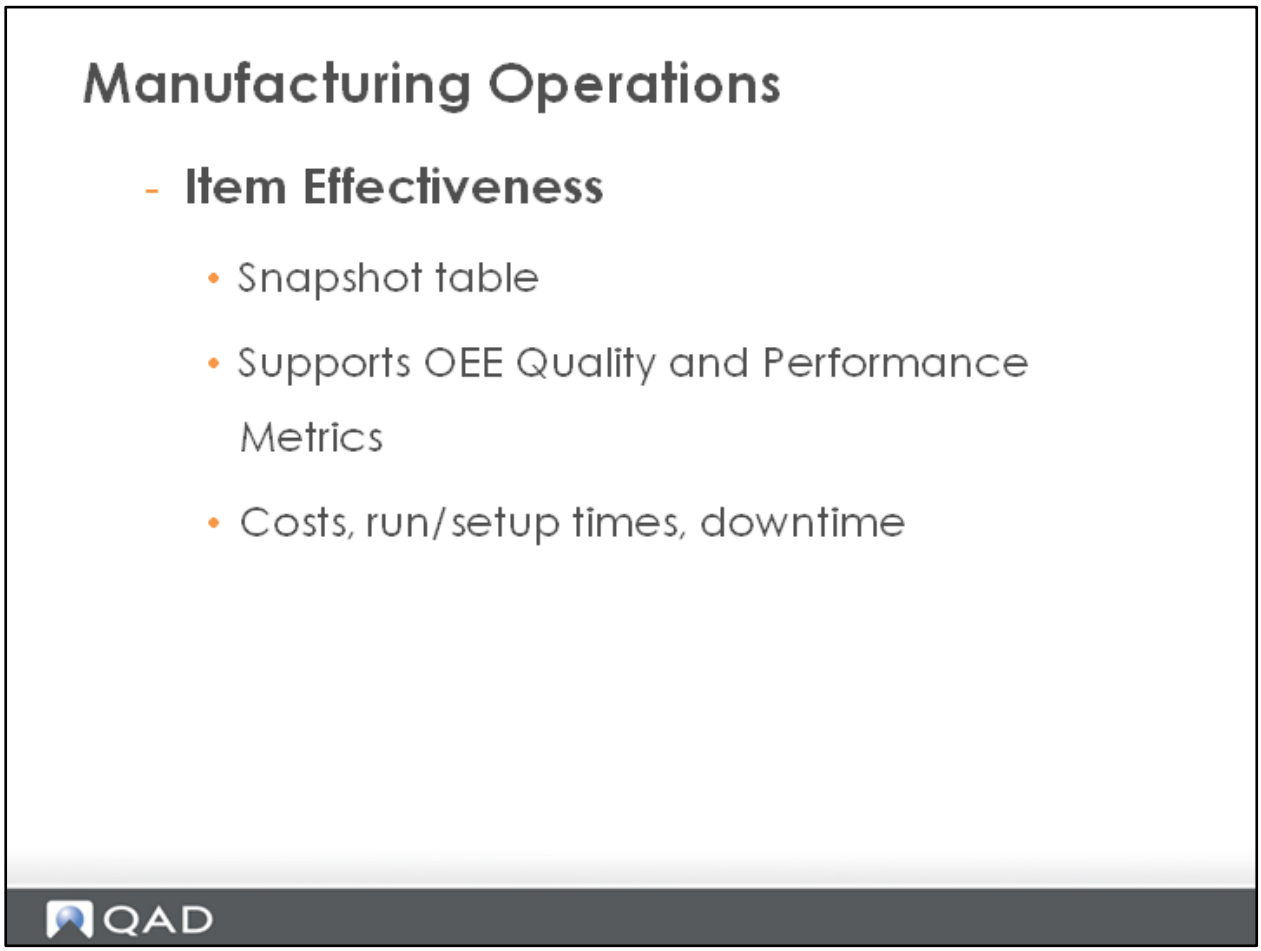
Manufacturing Operations



Operations history transactions (op_hist) records. It also includes scrap transactions from the tr_hist file.

Equipment Effectiveness is a snapshot table that supports the OEE Availability Metric.

Manufacturing Operations



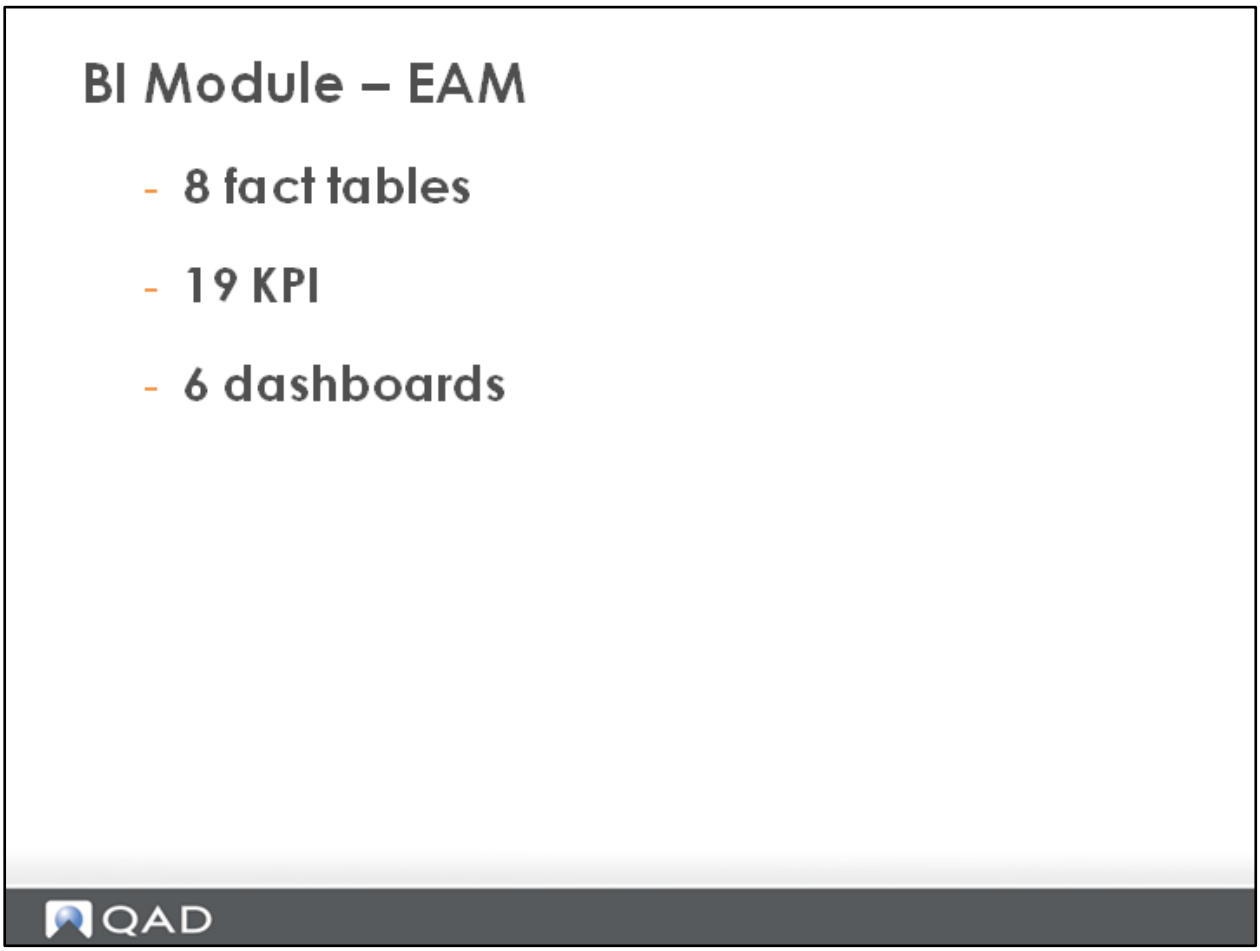
The Item Effectiveness snapshot table supports 2 metrics: The OEE Quality and Performance metrics.

BI Modules – Enterprise Asset Management (EAM)



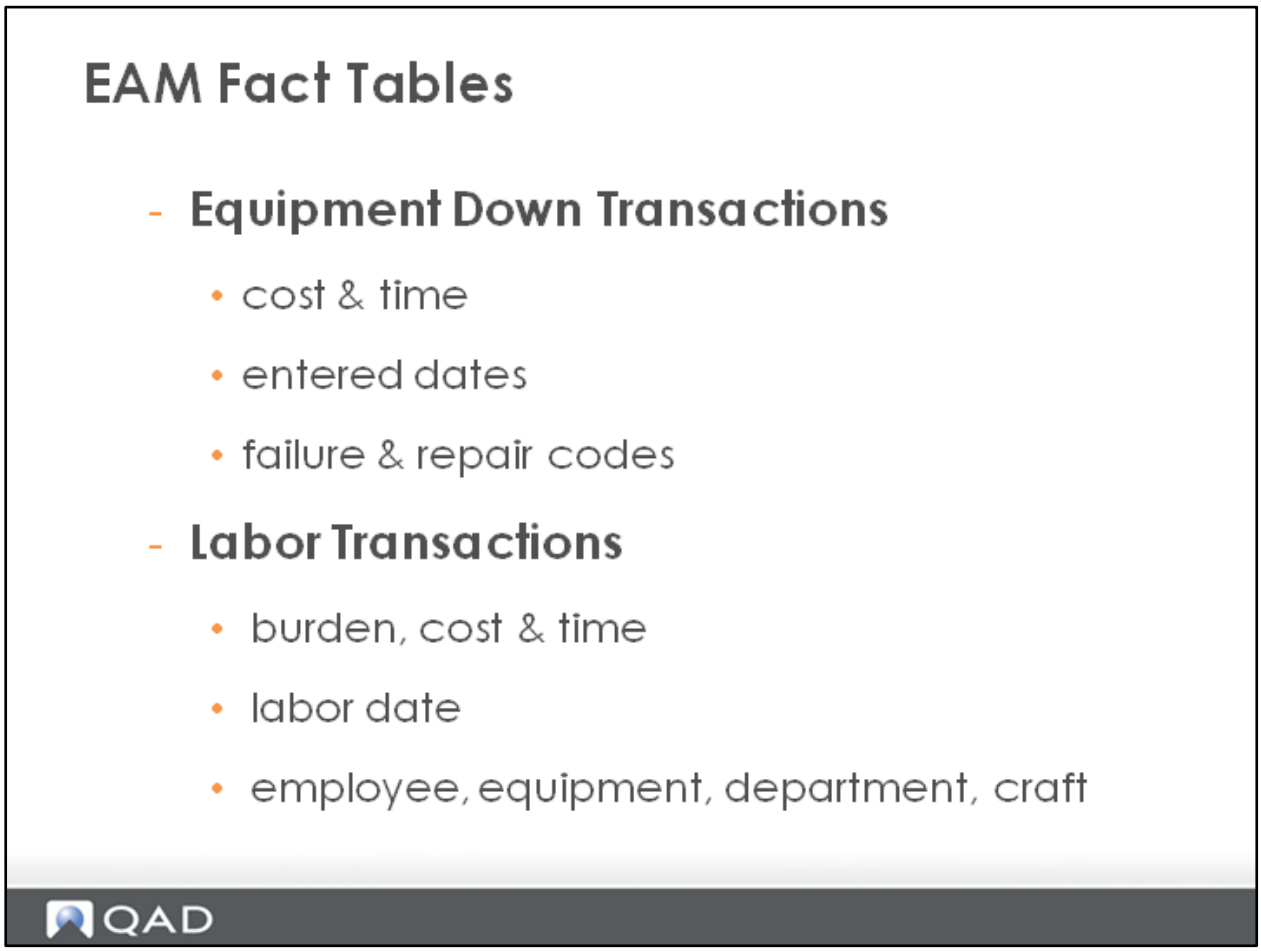
The EAM Module is new in BI3.7.

BI Module – EAM



The first sub module to be included in BI is Plant Maintenance. Plant maintenance includes 8 fact tables. These support 19 KPI. There are 6 QAD Standard Dashboards available.

EAM Fact Tables

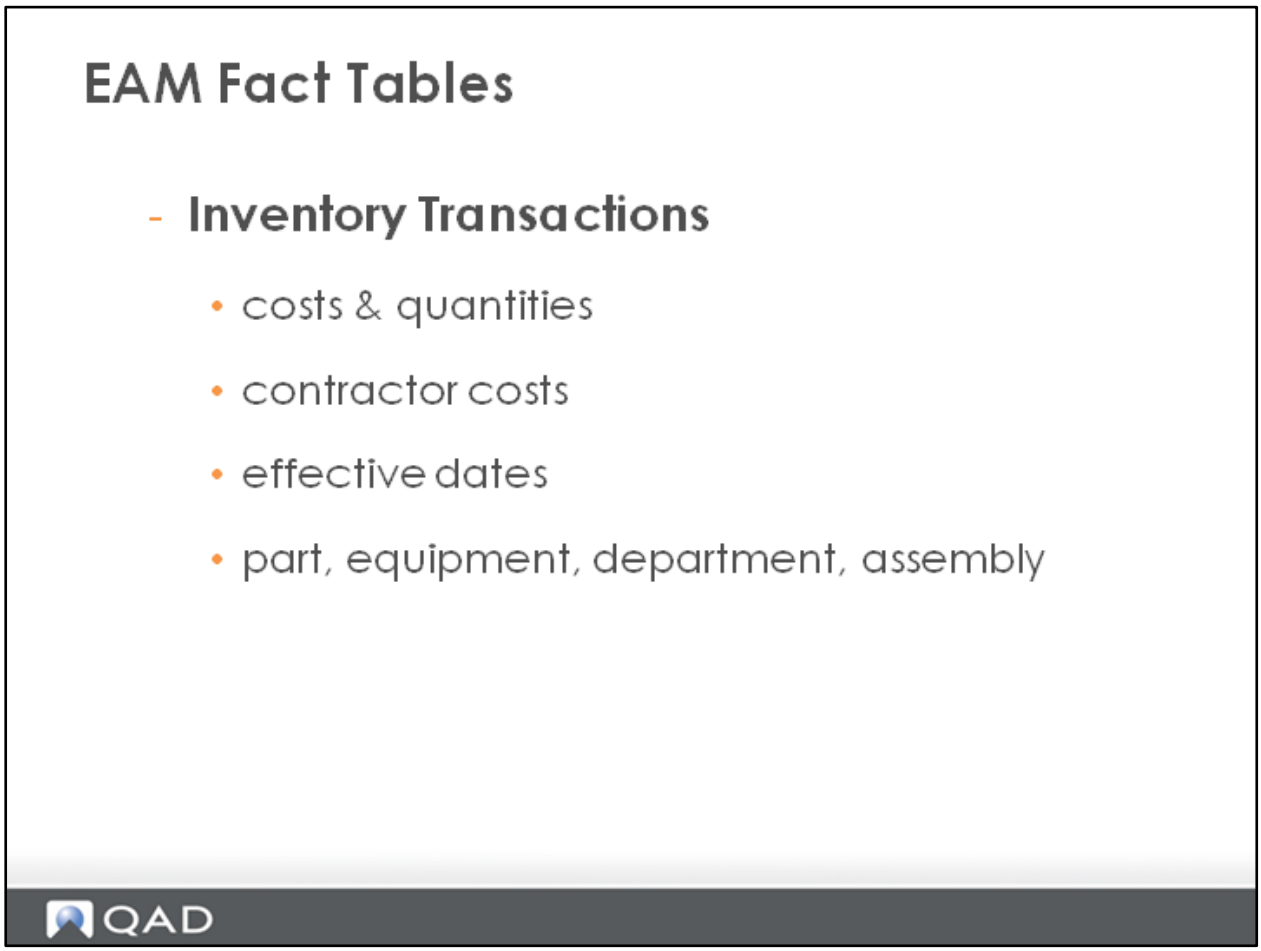


- Equipment Down Transactions

Includes the down time and the cost associated to the down time. Dimensions include Entered date and failure and repair codes.

- Labor Transactions
    - Includes burden, cost and time. Dimensions include employee, equipment, department, craft

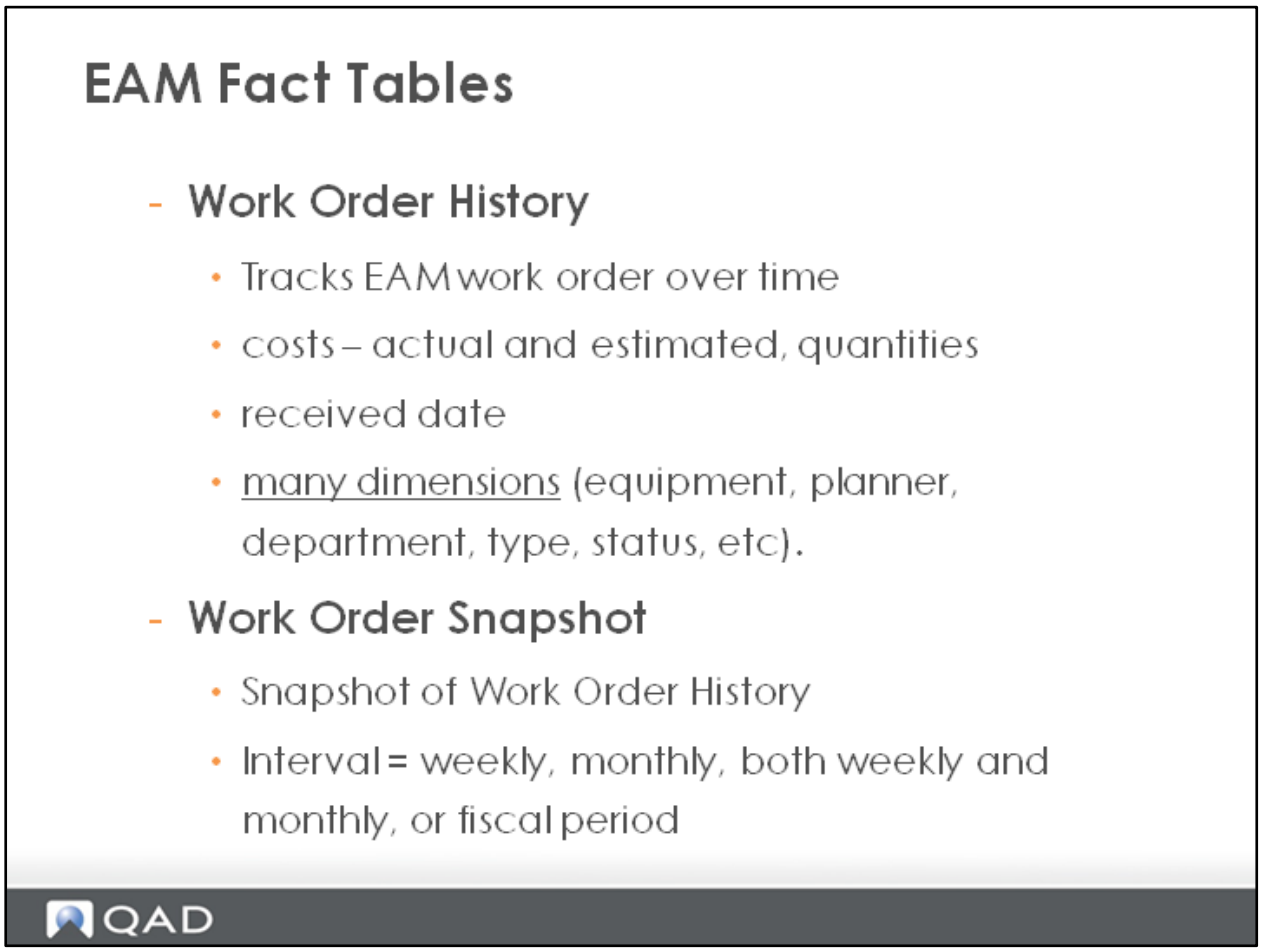
EAM Fact Tables



- Inventory Transactions

Includes costs and quantities. Source is EAM parts_status table.

EAM Fact Tables

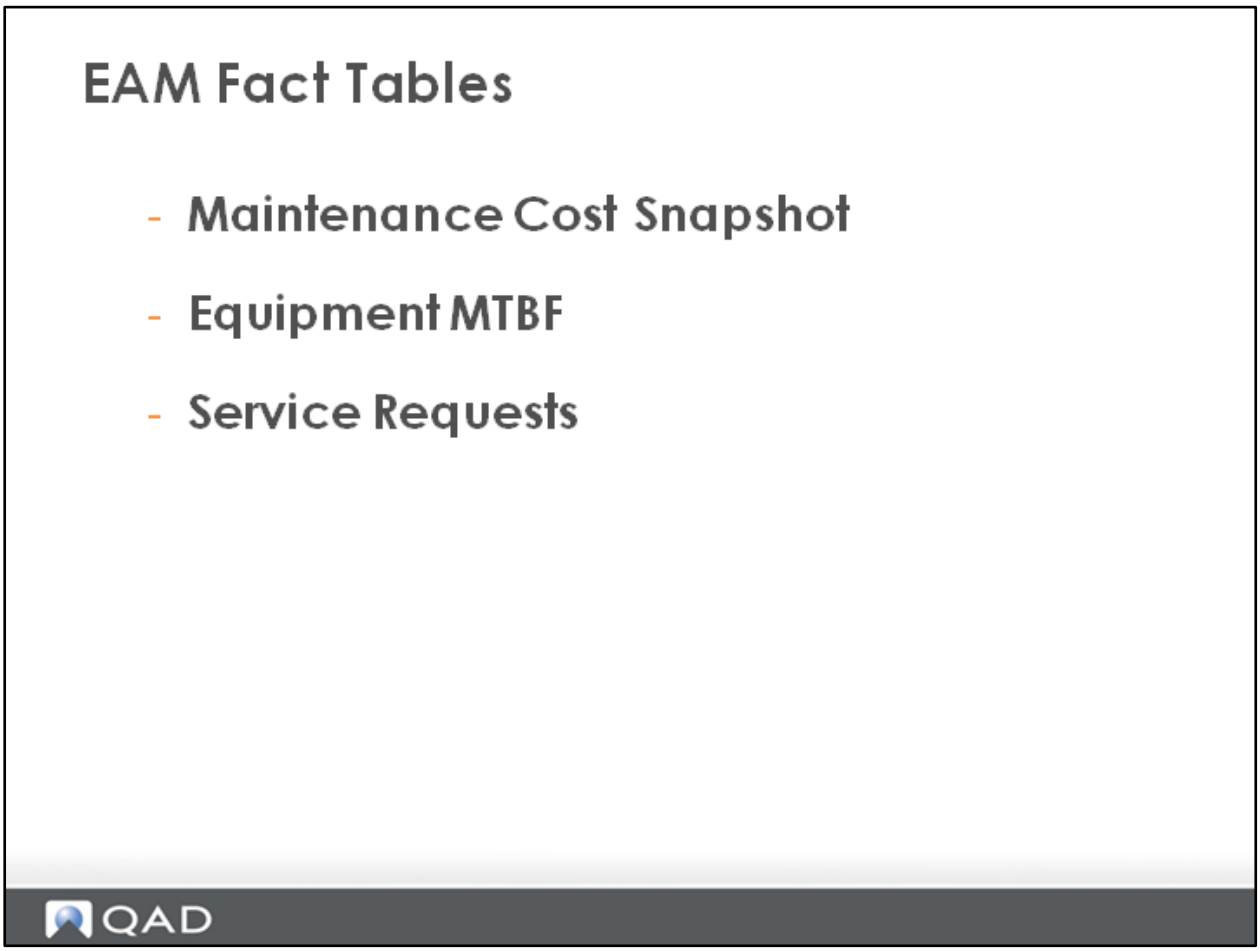


- Work Order History Table

This is the primary table used for many of the EAM KPI's

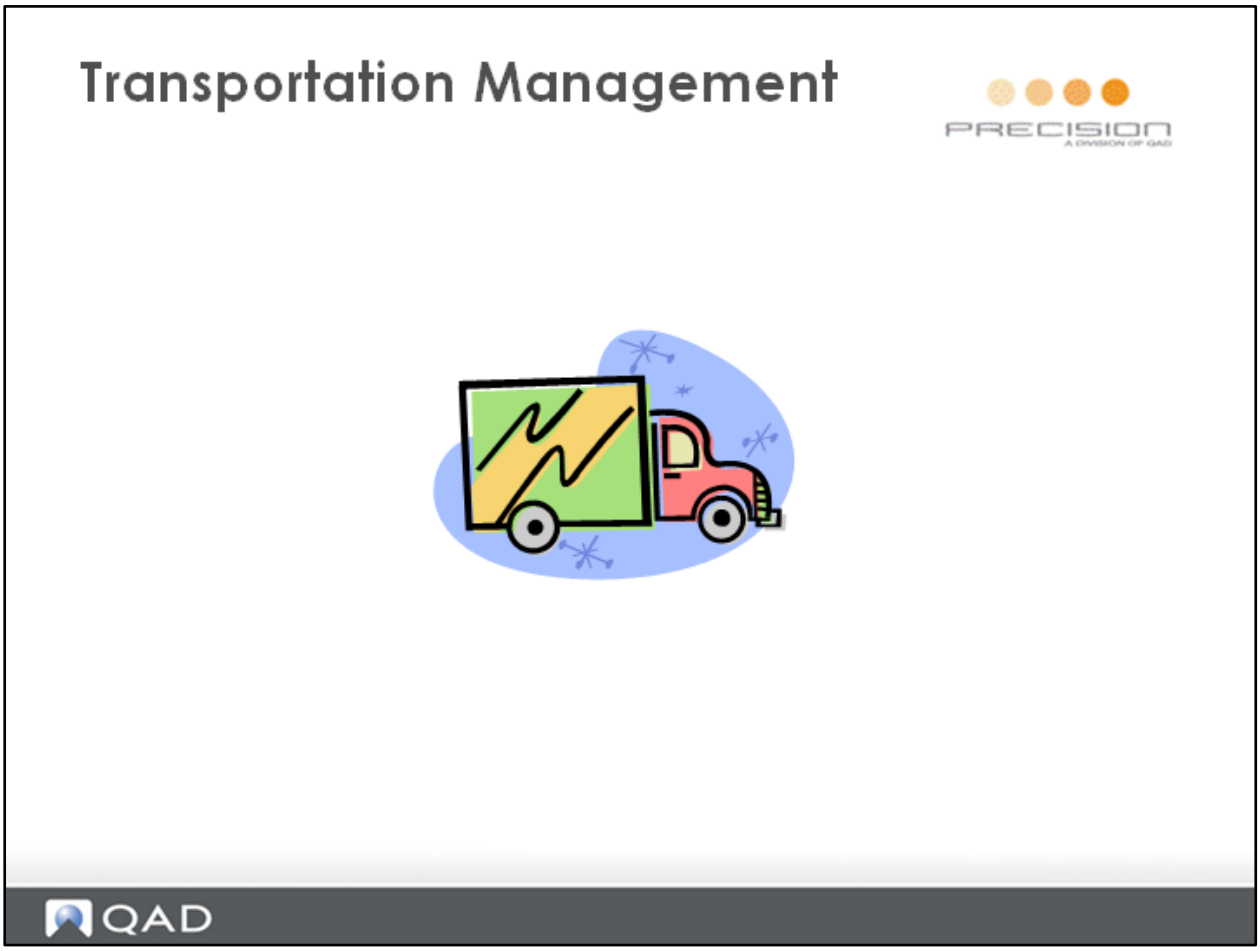
- Work Order Snapshot table

EAM Fact Tables



- Maintenance Cost Snapshot accumulates all plant maintenance cost, regardless of whether they are associated to a work order or not.
- The Equipment MTBF file contains the annualized MTBF by equipment number.
- The Service Request file contains a single row per service request, updated as needed.

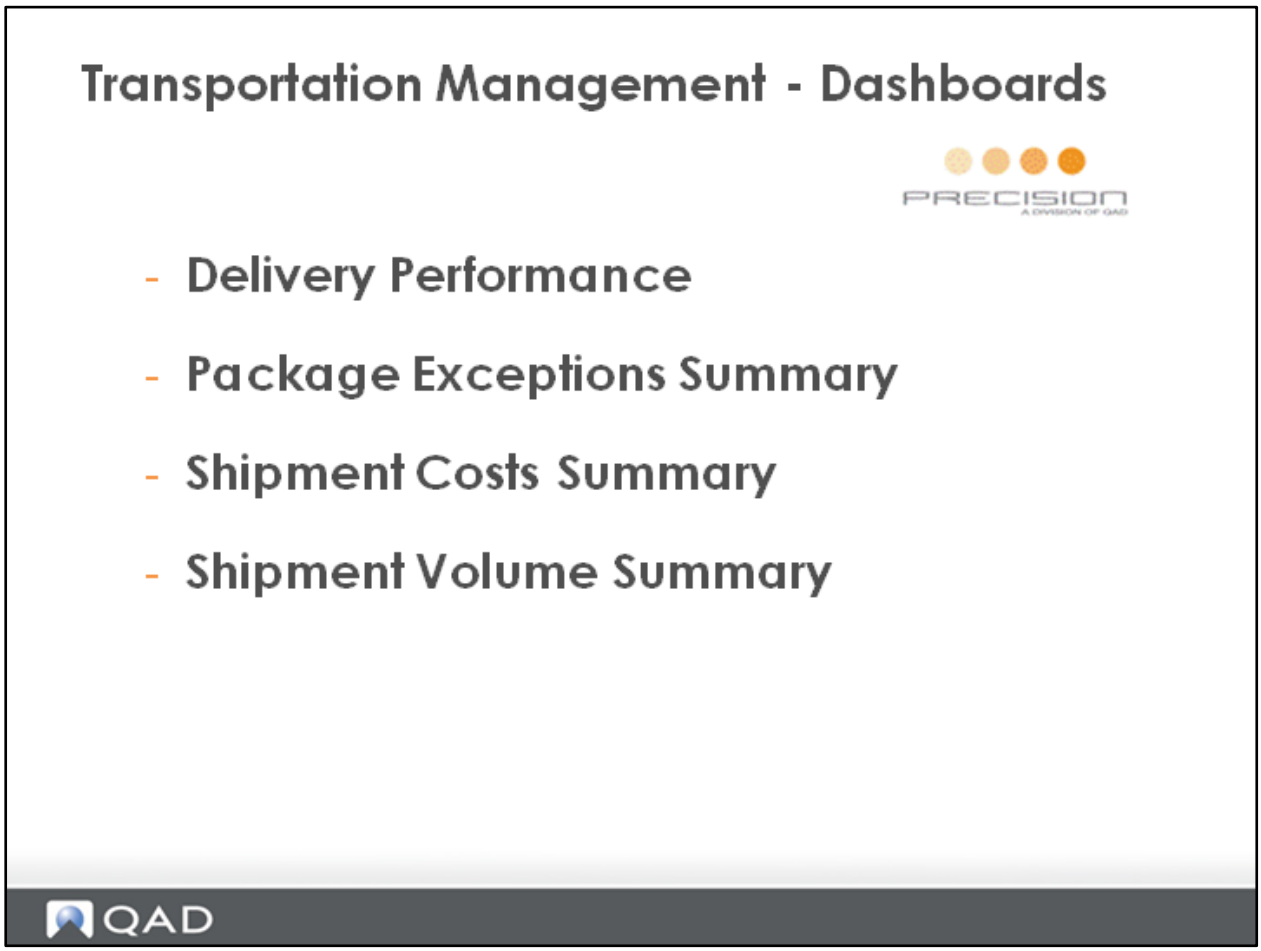
Transportation Management



Transportation Management was introduced in September, 2012 with release 3.7.

This module can also be installed as a standalone application under the Precision brand.

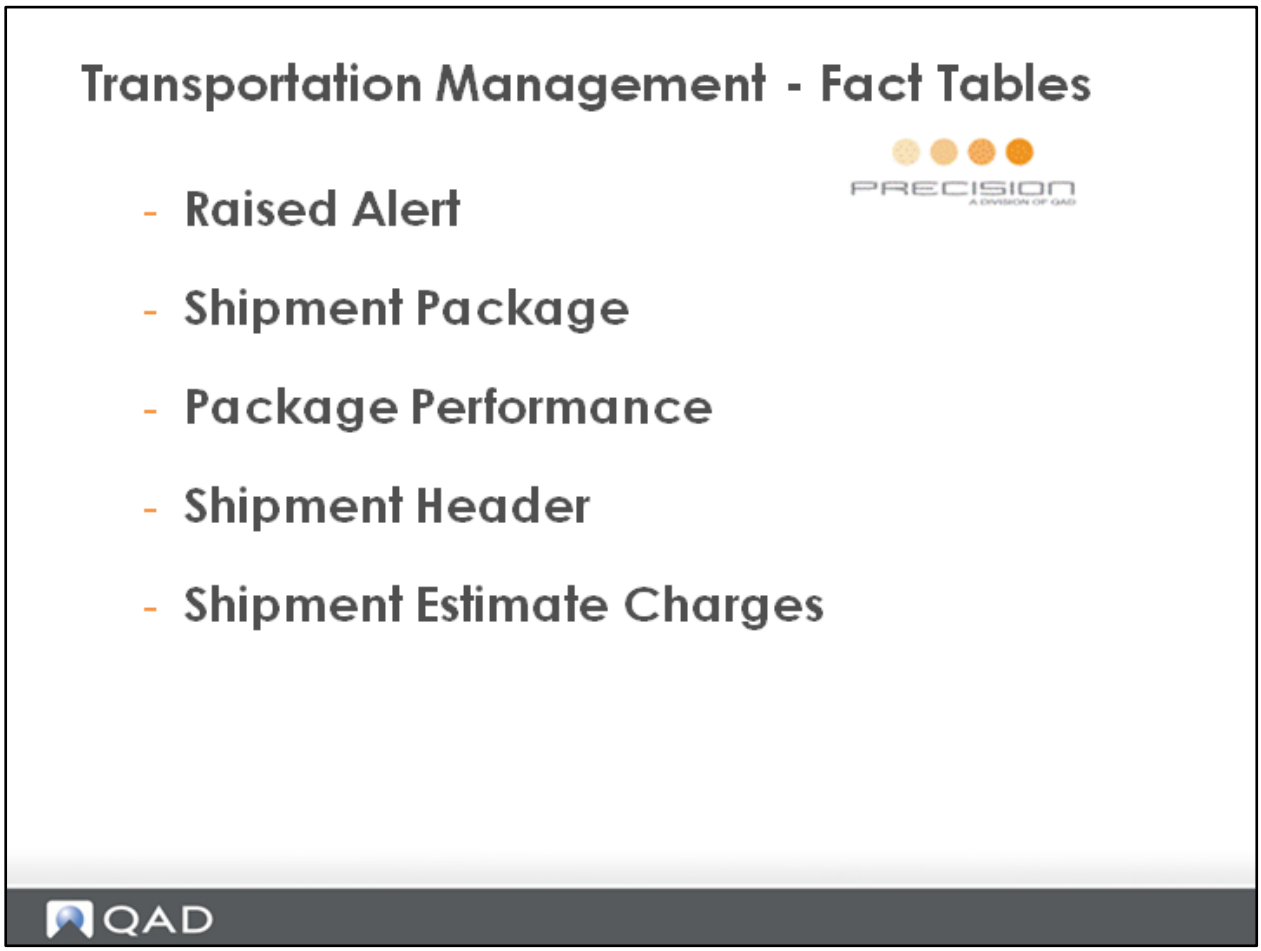
Transportation Management - Dashboards



There are currently 4 dashboards in the Transportation Management modules. They are:

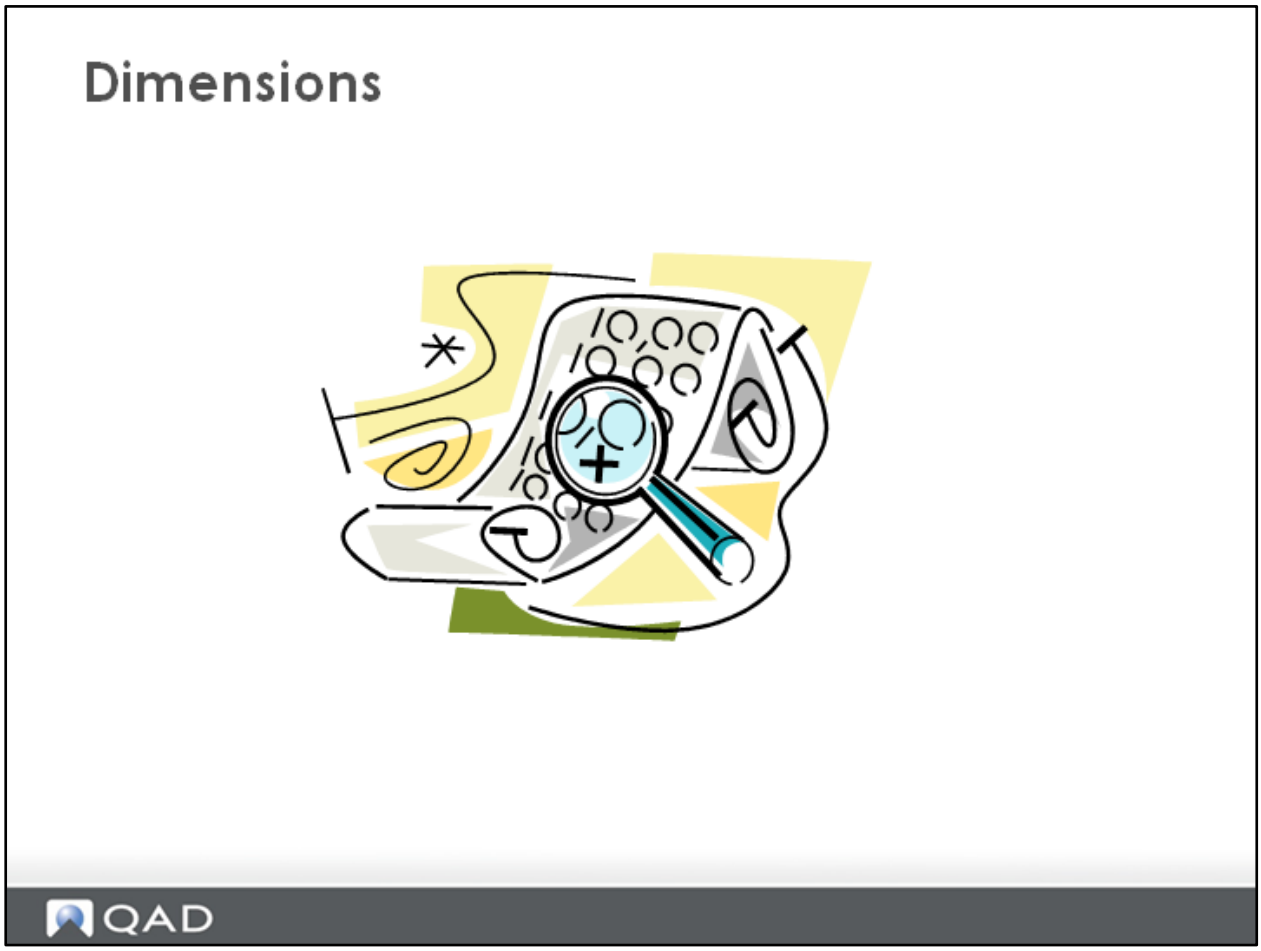
- Delivery Performance
- Package Exceptions Summary
- Shipment Costs Summary
- Shipment Volume Summary

Transportation Management - Fact Tables



The four dashboards are supported by 5 fact tables.

Dimensions

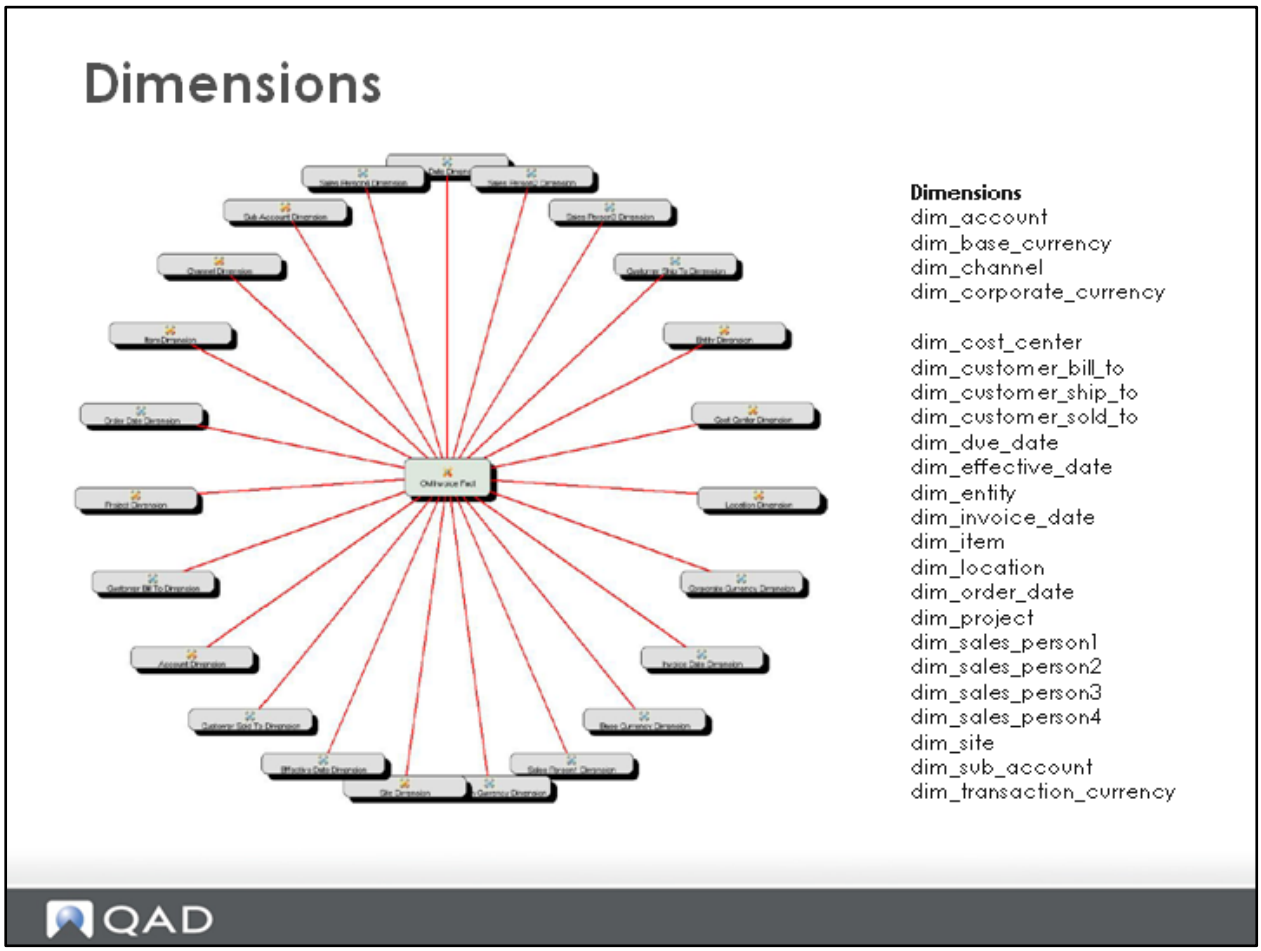


A fact table will include many thousands (or perhaps millions) or rows.

In order to access the fact tables we will use dimensions. Remember, Dimensions are qualifiers of facts.

Each fact table will be linked to multiple dimension tables. Also, a single dimension table may be linked to multiple fact tables.

Dimensions

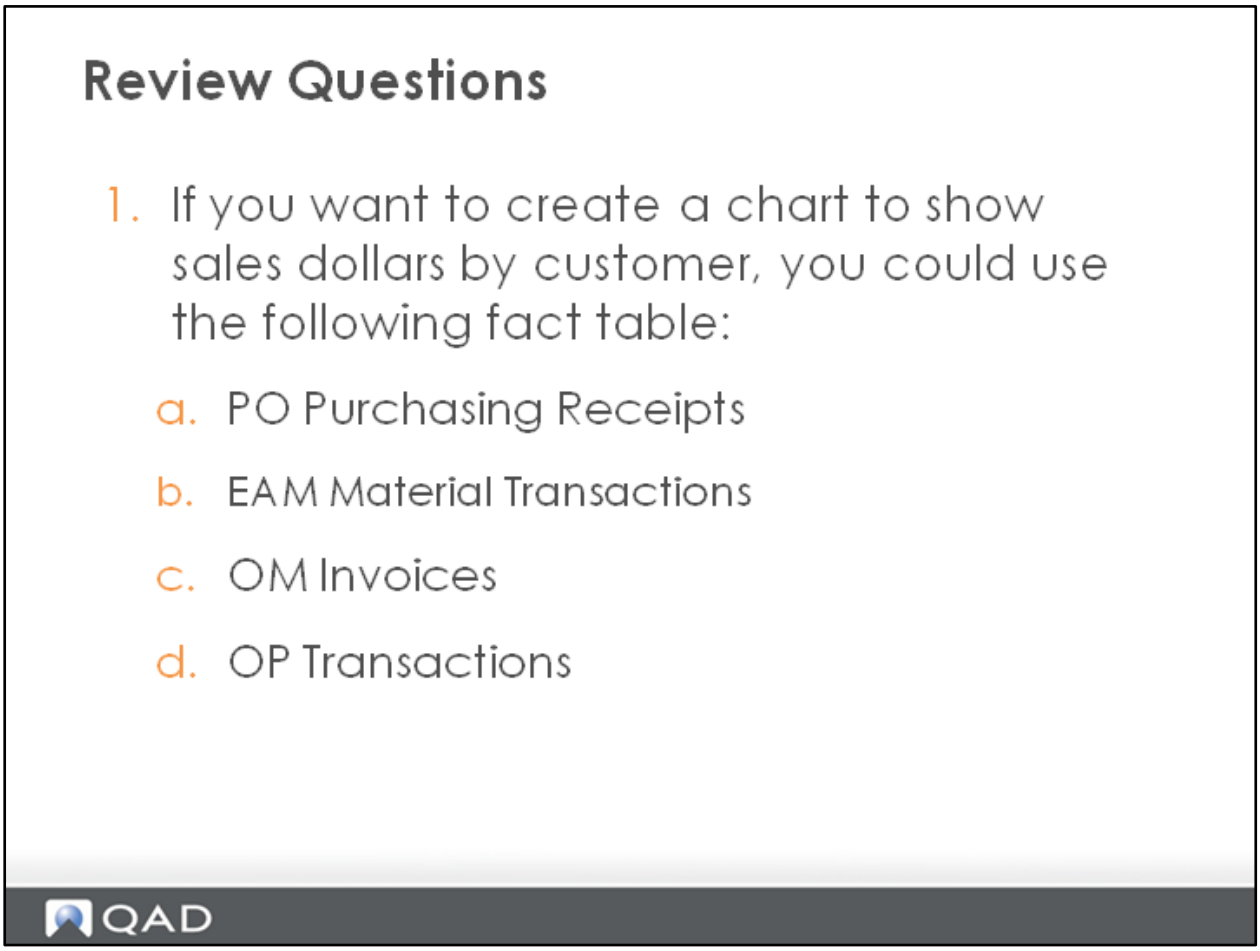


This diagram was produced using the QAD Data Warehouse Designer and one of the standard tools.

It is the fact_om_invoice and all the related dimensions.

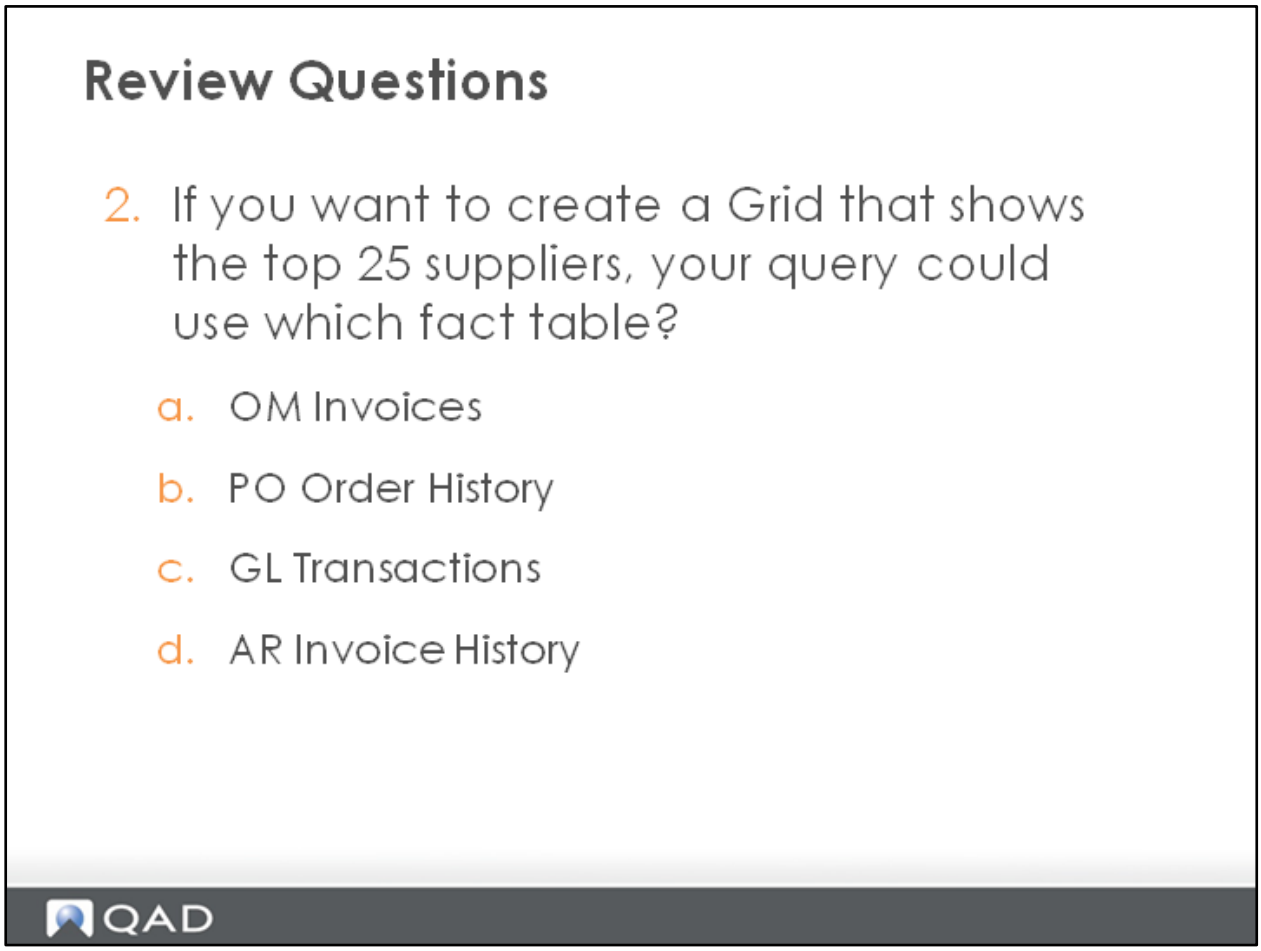
It is not important that you know which dimensions are available for each fact table. For standard QAD functionality, any dimension you need will generally be available.

Review Questions



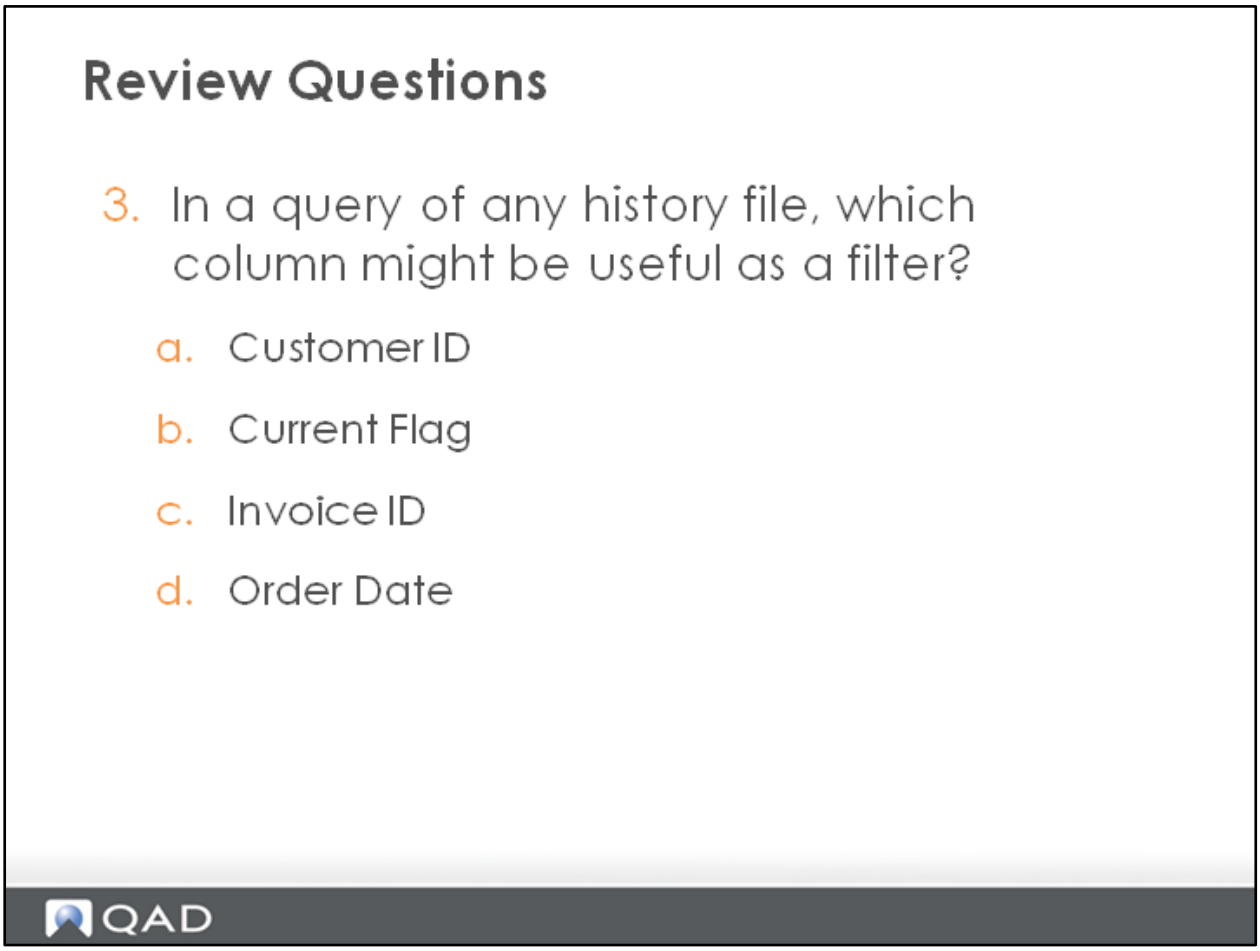
1-c

Review Questions



2-b

Review Questions

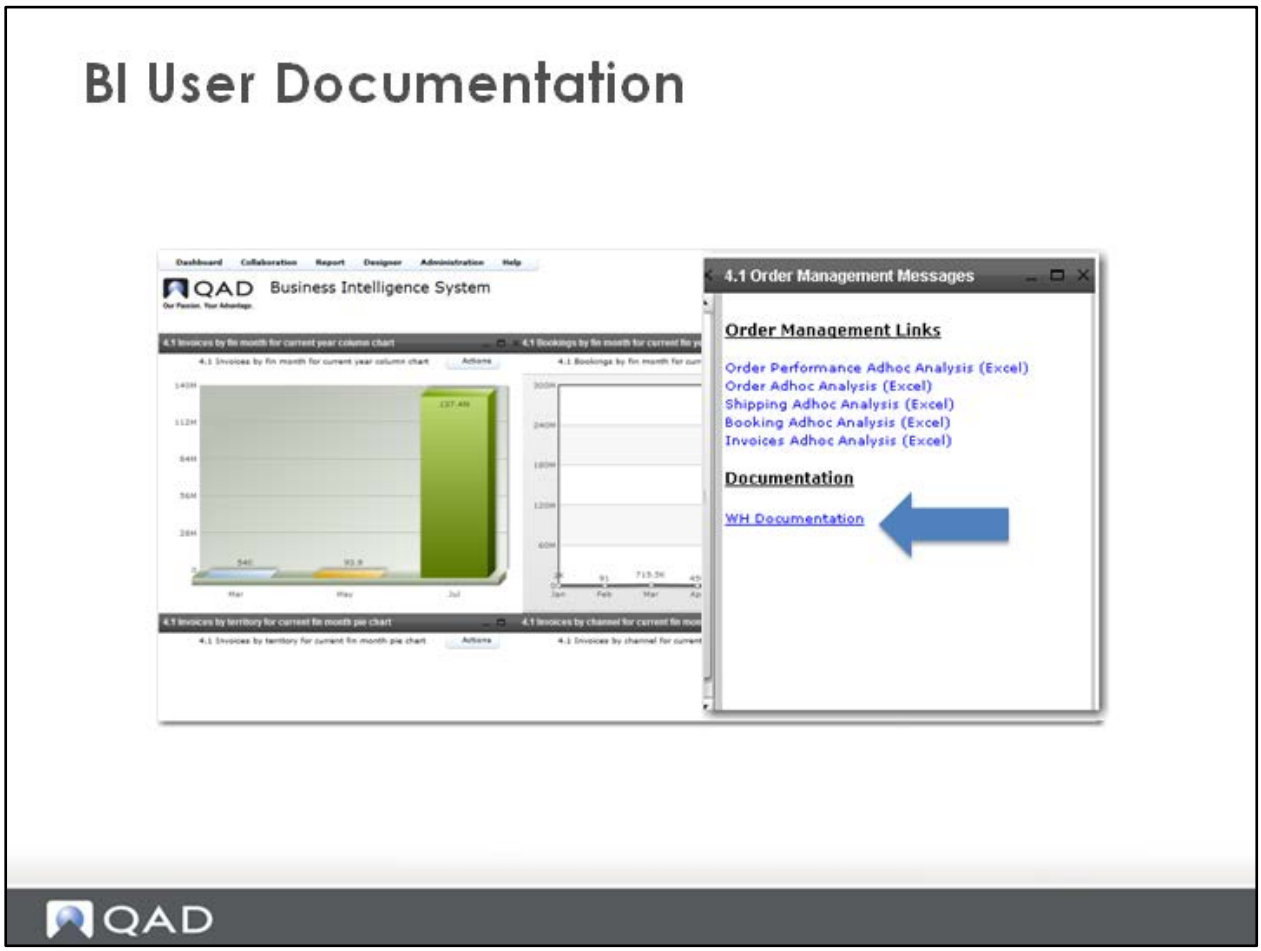


3-b

BI3 Modules - Documentation

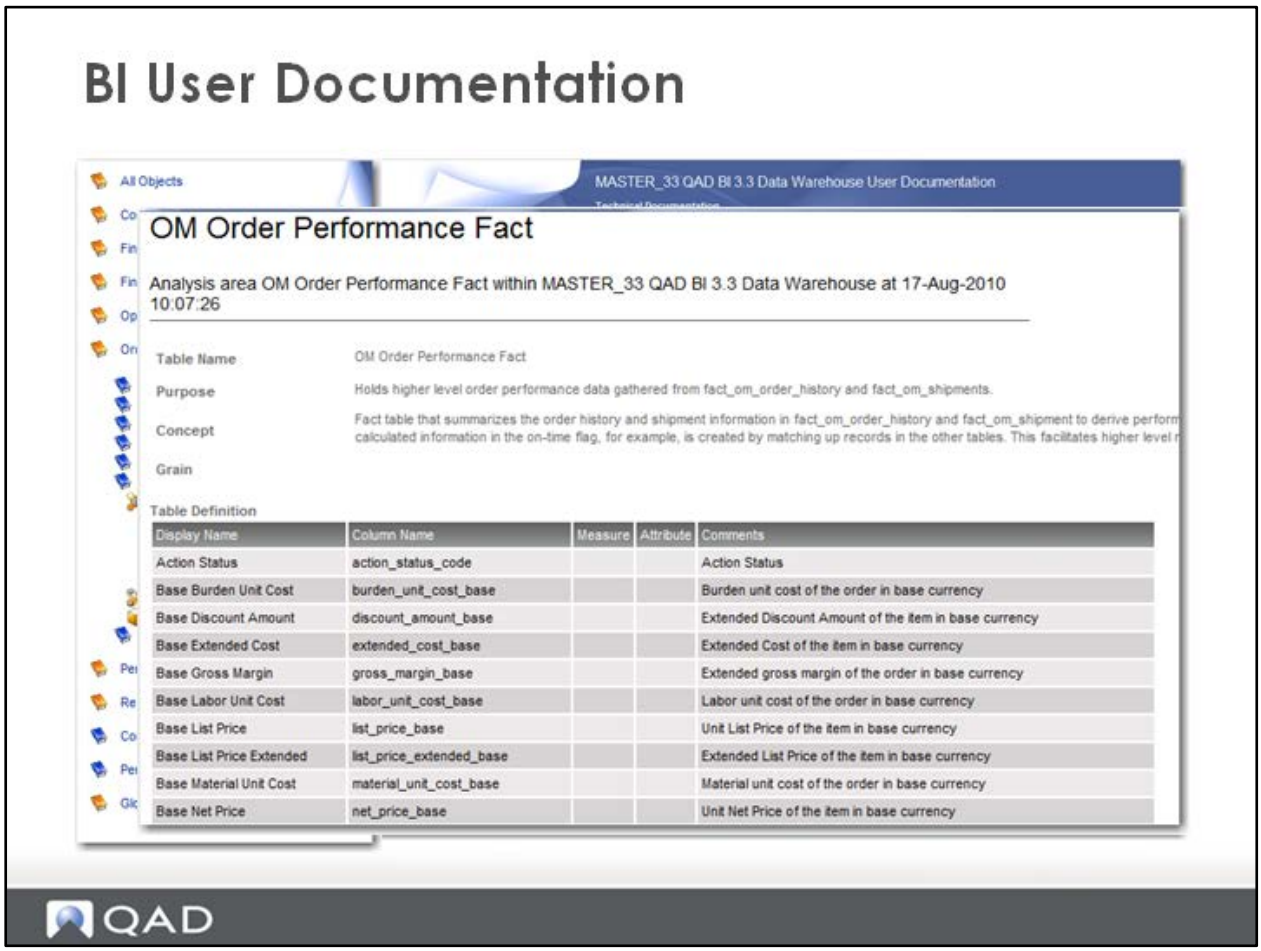


BI User Documentation



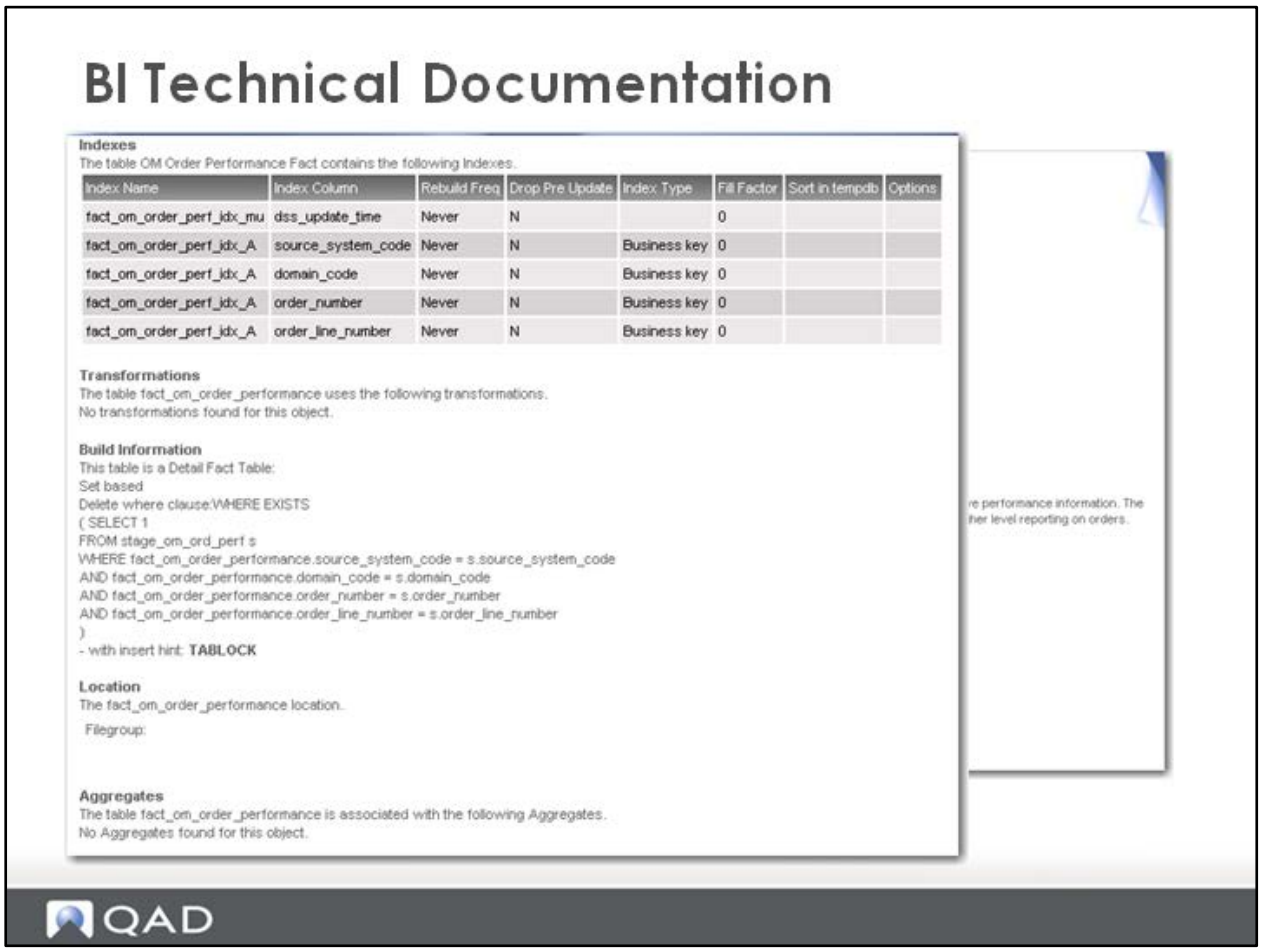
User Documentation is available via URL links on Dashboards. If the dashboard designer has not included a link on their dashboard, the user can access the *Welcome* Dashboard, and a link exists there.

BI User Documentation



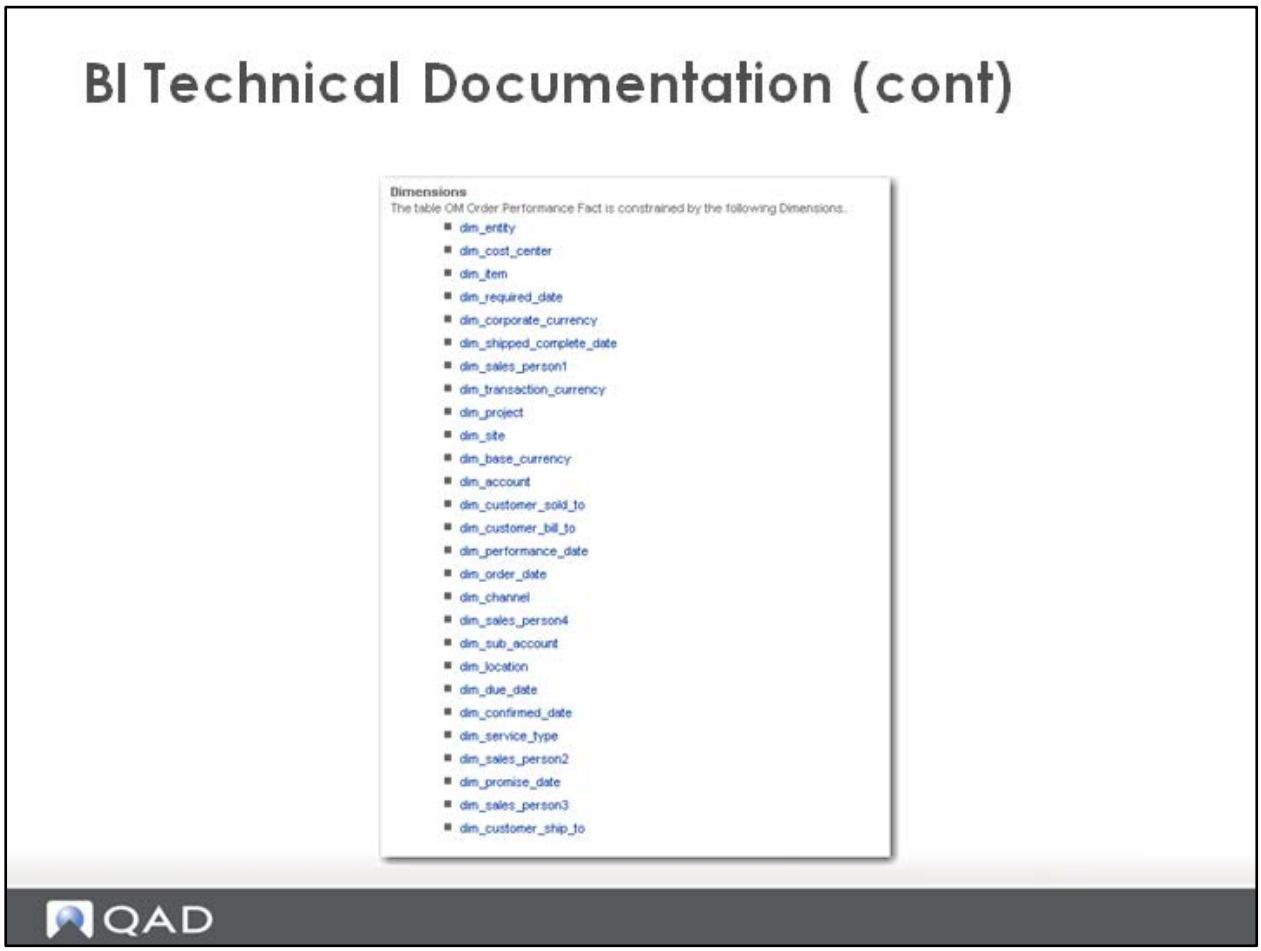
This is an example of a detailed User Documentation window. It shows all the columns in the selected table, in this case, OM Order Performance Fact.

BI Technical Documentation



This is an example of BI Technical Documentation.

BI Technical Documentation (cont)

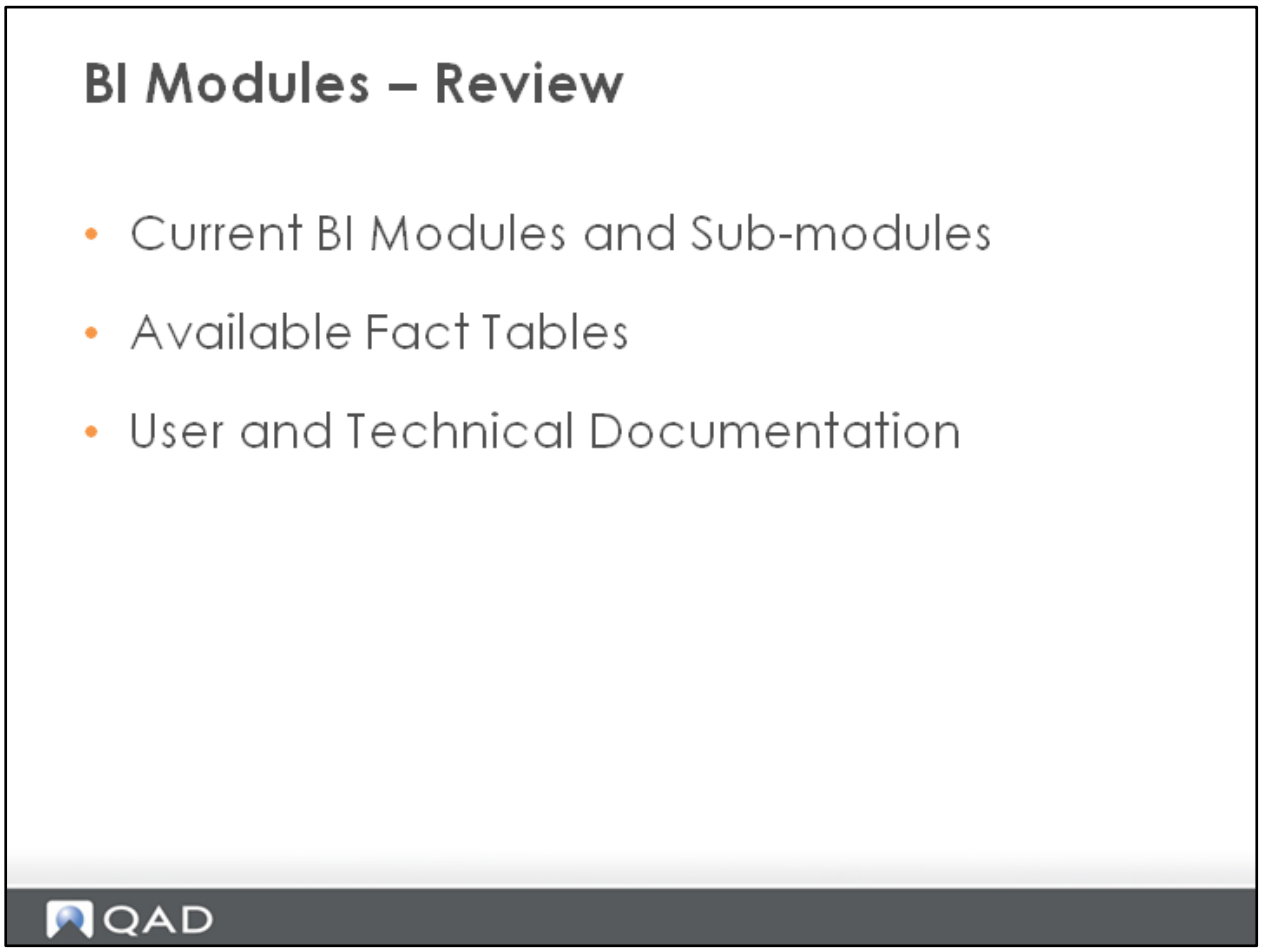


Within both the User and Technical documentation, the user can drill down through links to more detailed information. This screen shows all the dimension tables linked to the OM Order Performance Fact table. If the user wanted more detailed information about any of the dimension tables, they would click on the dimension table name.

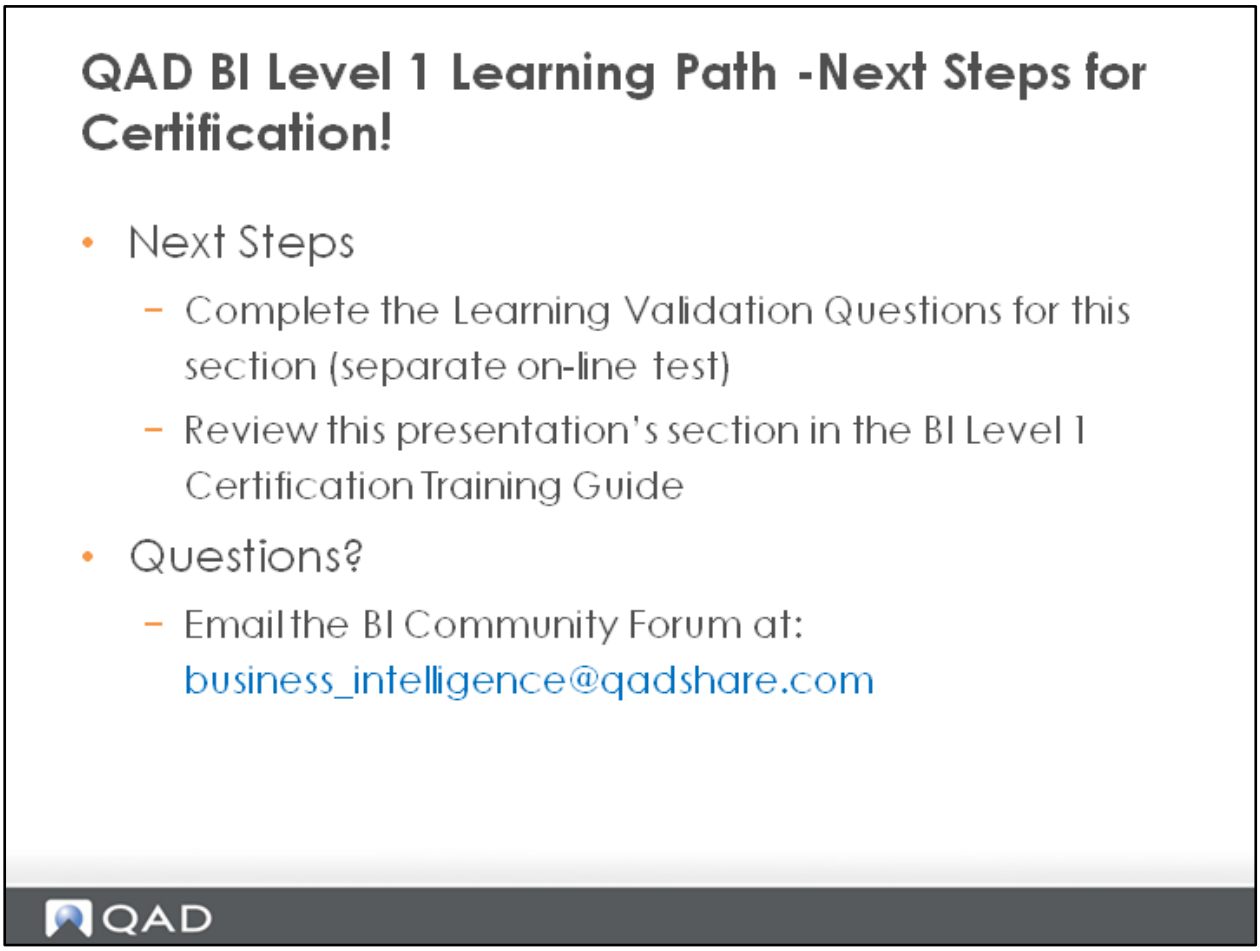
QAD BI Level 1 Learning Path - Course Summary



BI Modules – Review



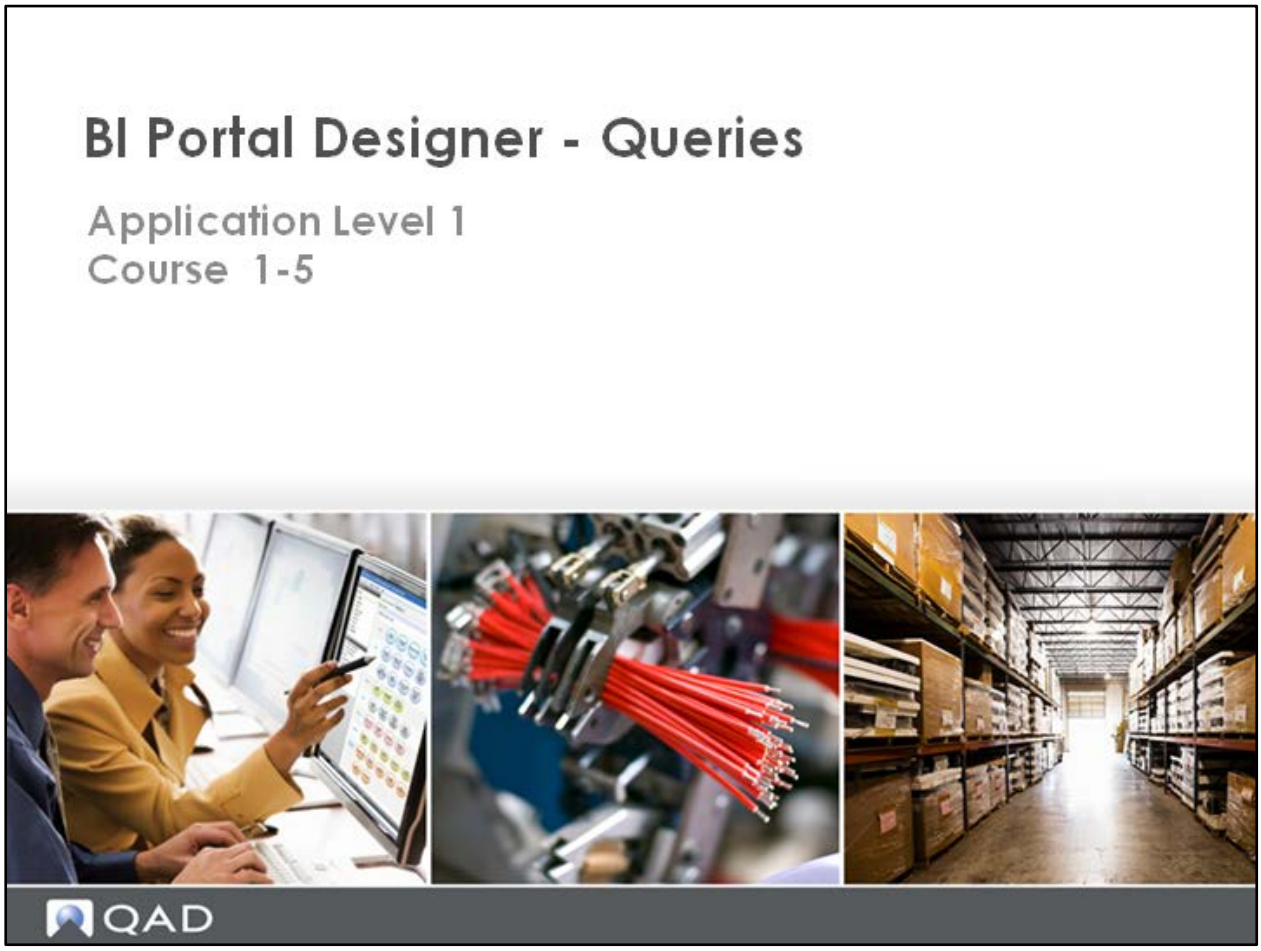
QAD BI Level 1 Learning Path -Next Steps for Certification!



CHAPTER 5

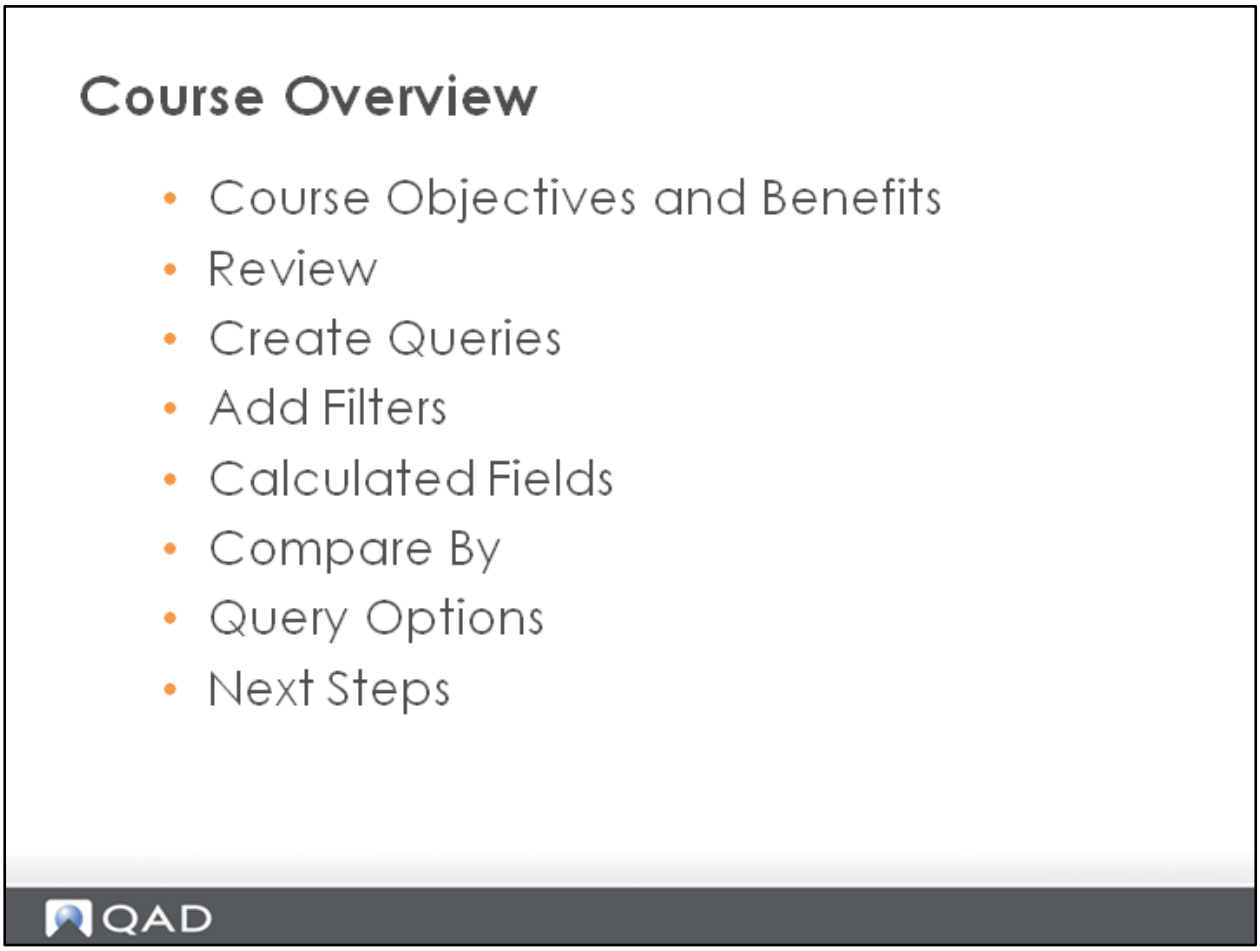
BI Portal Designer - Queries

BI Portal Designer - Queries



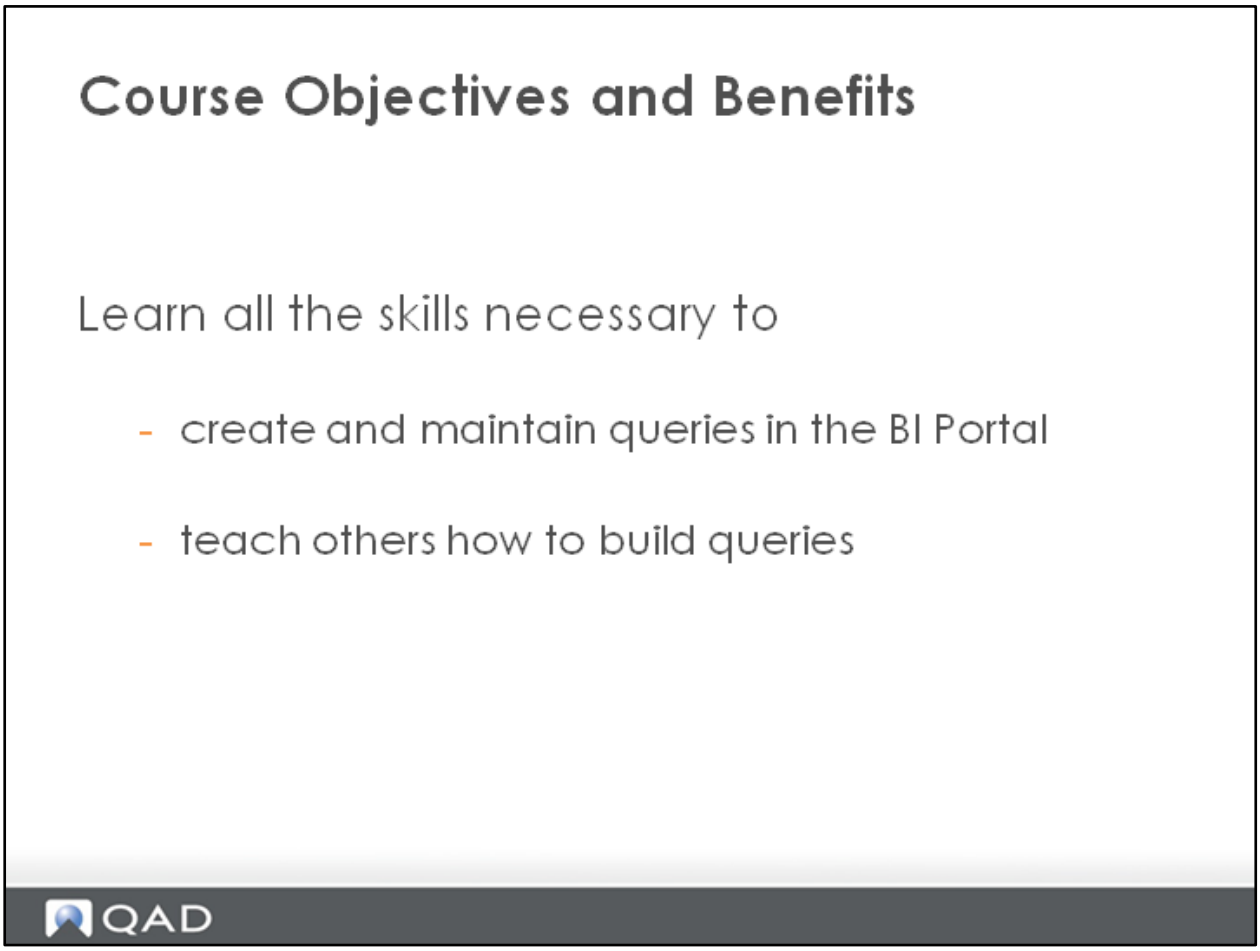
Welcome to the Business Intelligence 1-5 BI Portal Designer – Queries.

Course Overview



This covers the query designer functionality in the BI Portal.

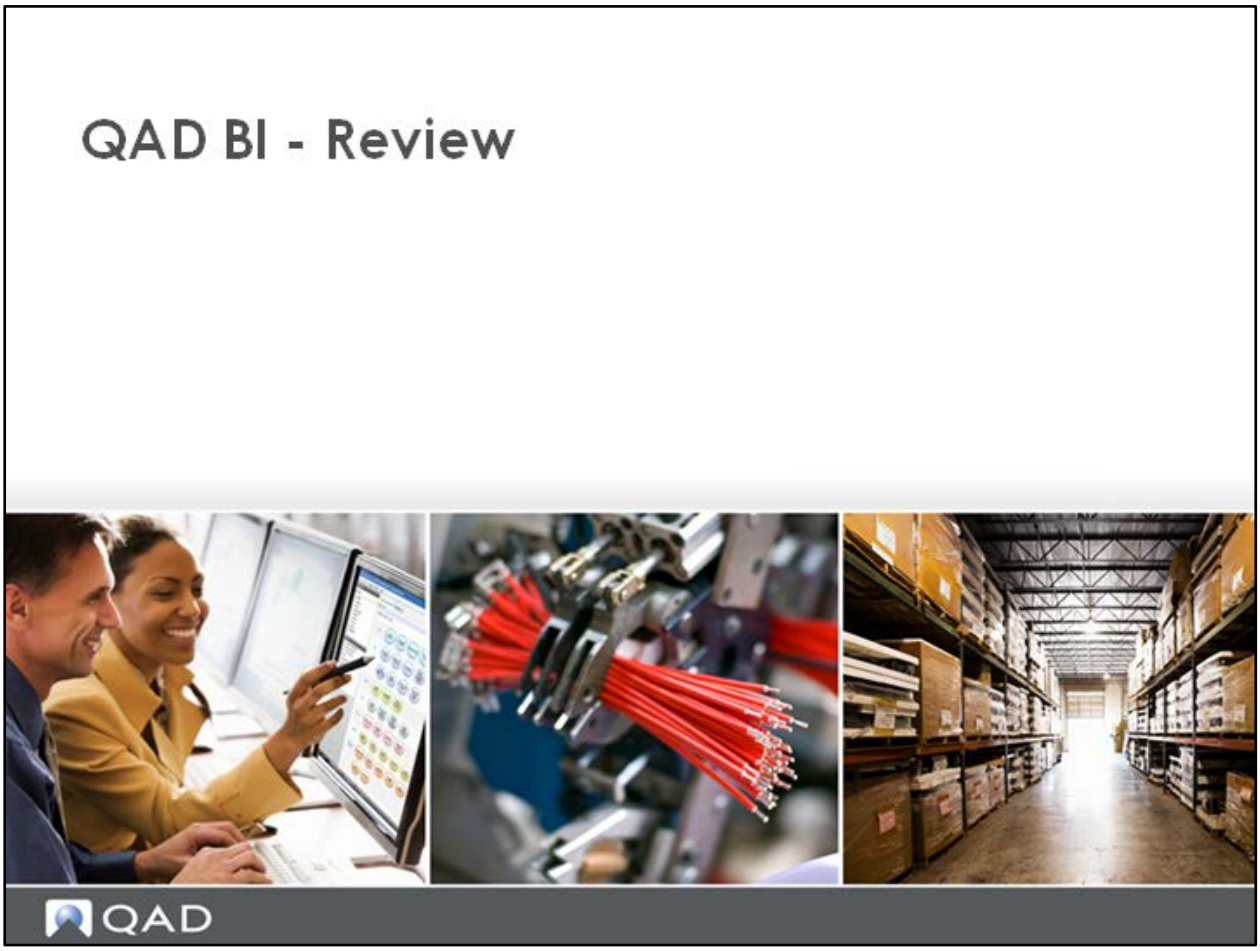
Course Objectives and Benefits



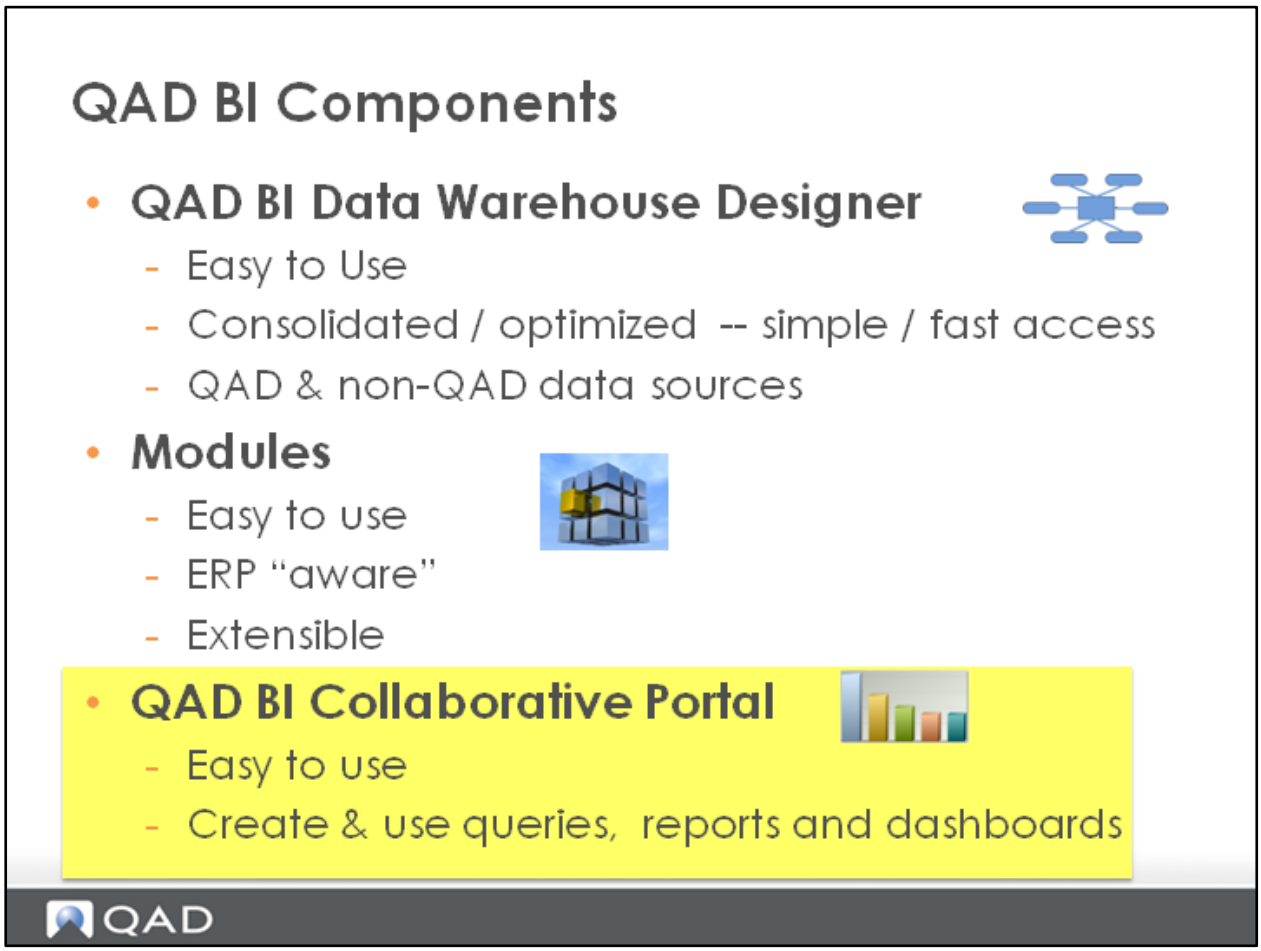
Upon successful completion of this course, you will be able create queries of virtually any type using the BI Portal Query Designer.

The information you obtain in this class, in conjunction with hands-on training activities, will give you confidence in your ability to work with Customers to create these primary building block of the BI Portal.

QAD BI - Review



QAD BI Components



Key Concept:

QAD BI Components:

QAD BI Data Warehouse Developer (DWD)

Consolidate into a single warehouse optimized for simple, fast access

QAD and non-QAD data sources

Modules

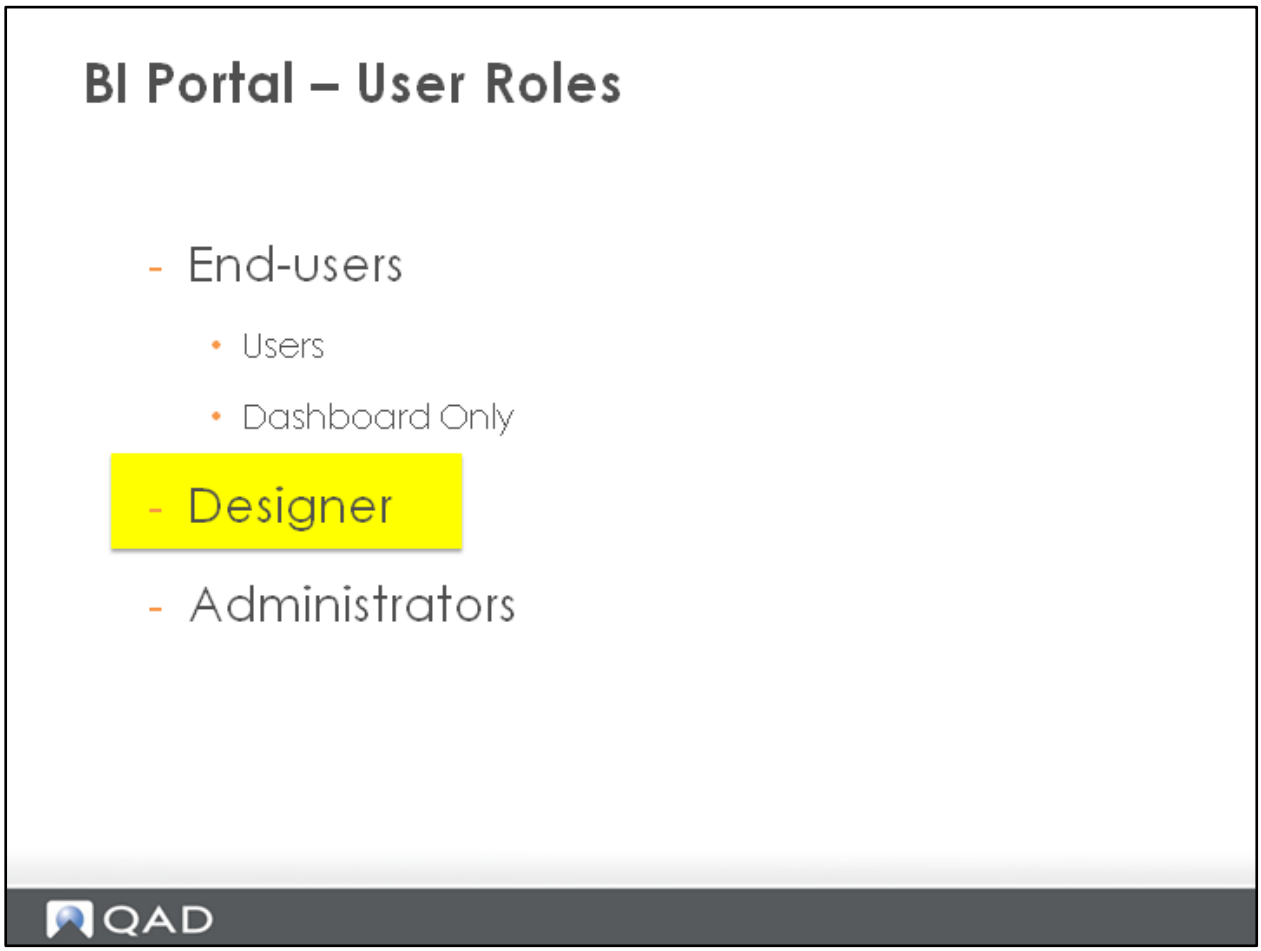
ERP "aware" streamlines access to current and historical QAD ERP data

Extensible to support non-QAD data sources

QAD BI Collaborative Portal

Easy to use and create dashboard and reporting environment

BI Portal – User Roles



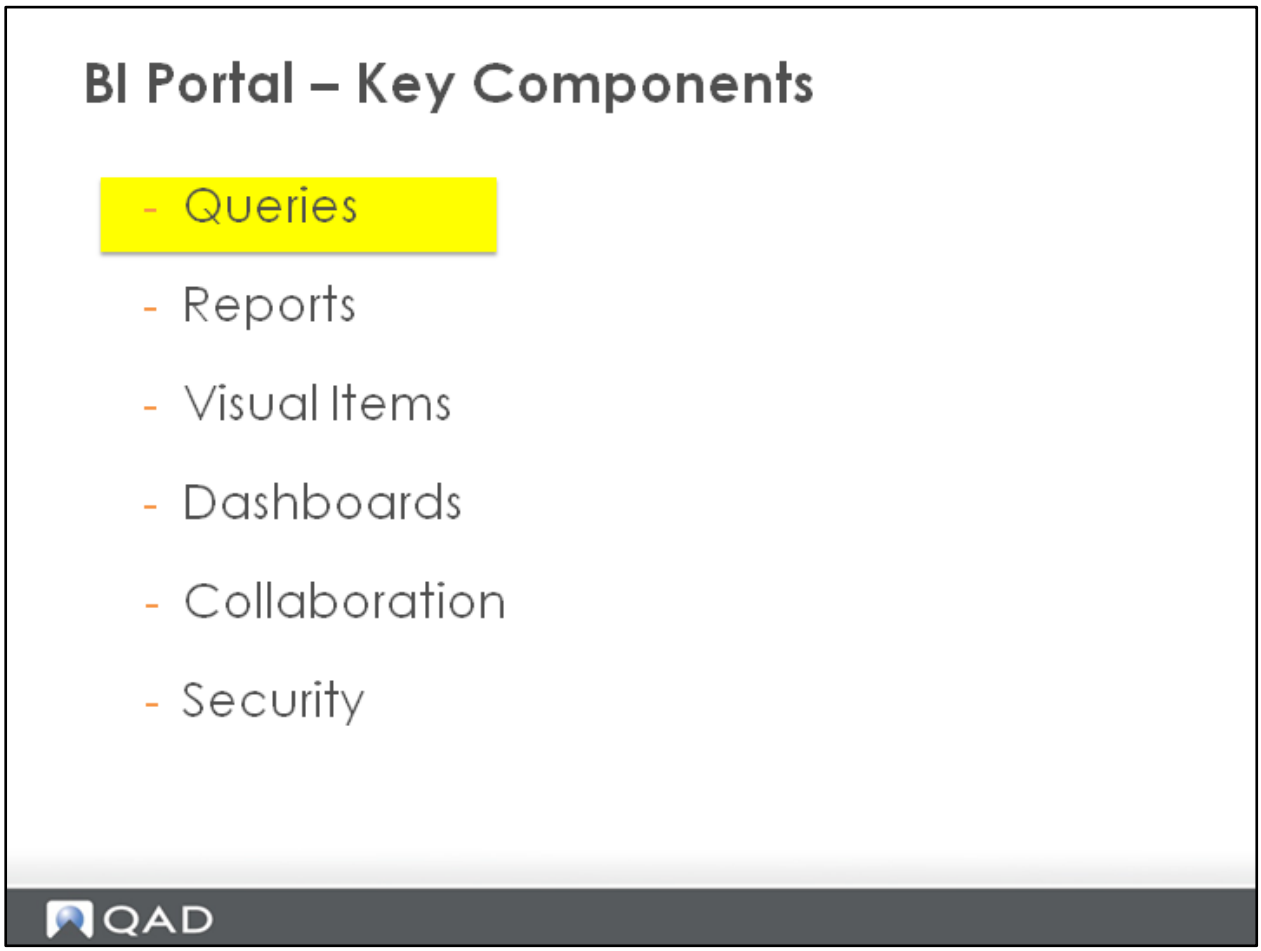
Users will experience the BI Portal based on their role.

The BI Portal user roles are:

- End-user
    -- User
    -- Dashboard Only
- Designer
- Administrator

This is the first in a series of courses describing the Designer role within the BI Portal.

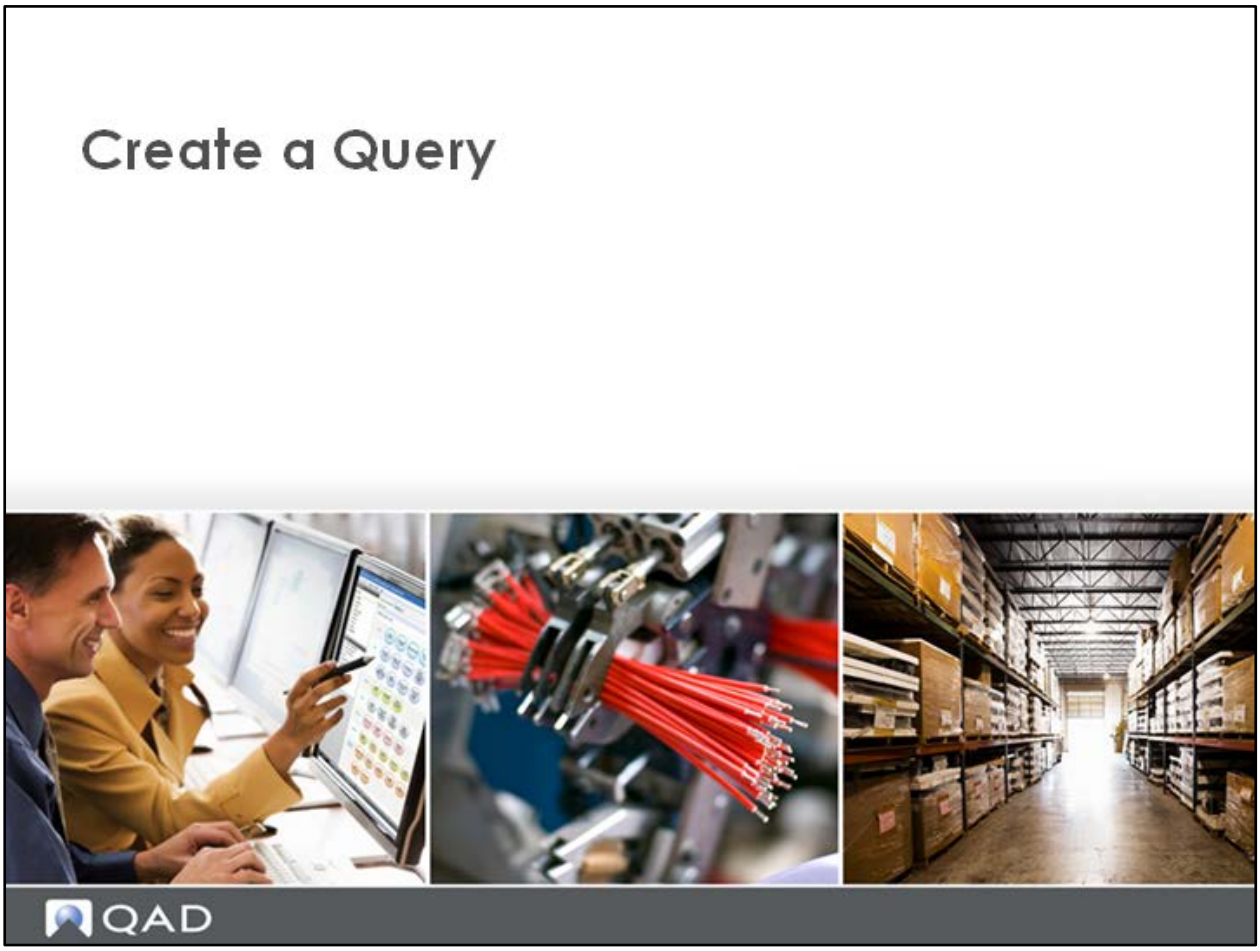
BI Portal – Key Components



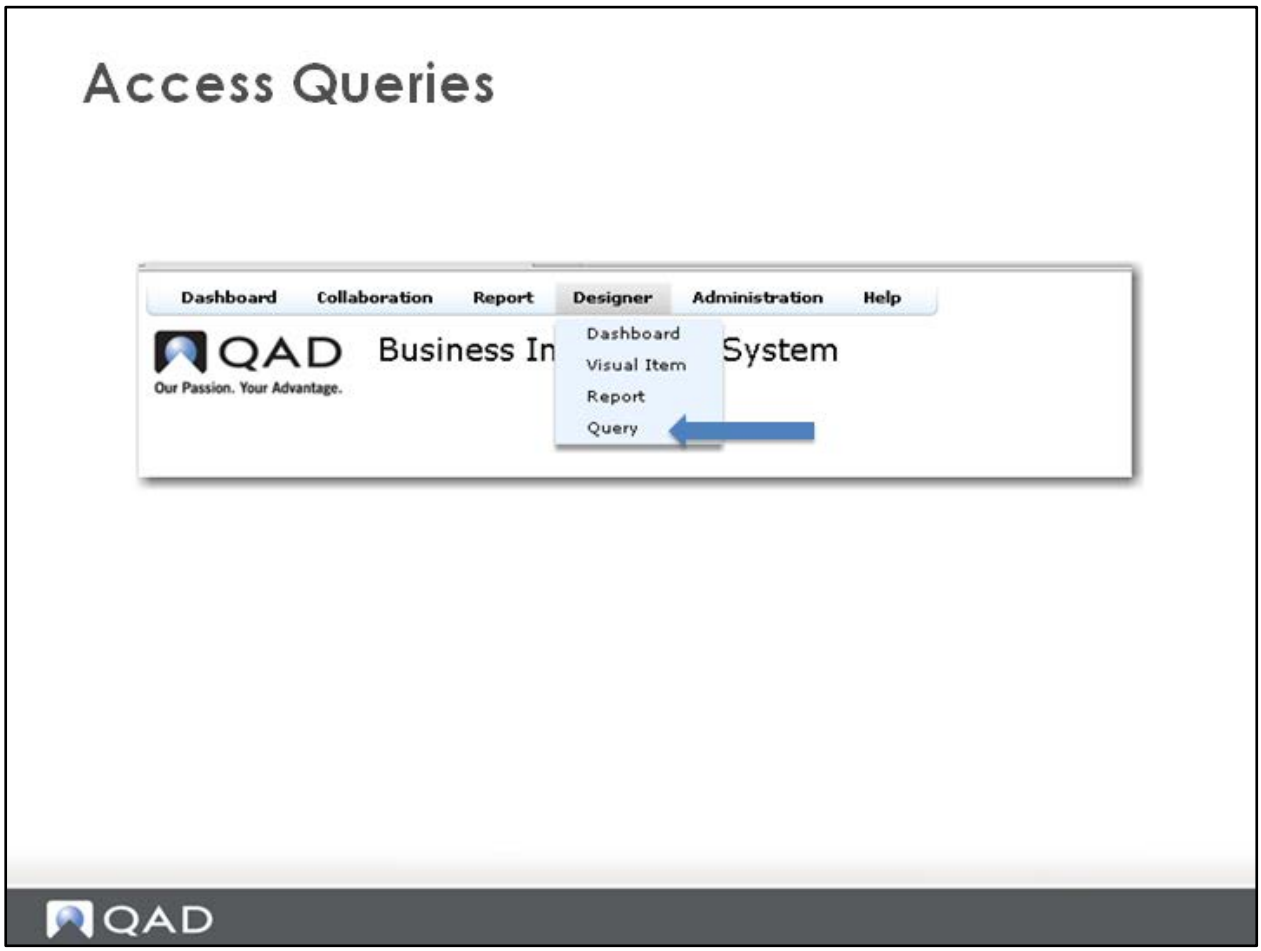
Key Concept:

Queries are the primary building block of the BI Portal. Reports, Visual Items and Dashboards are all based on queries.

Create a Query

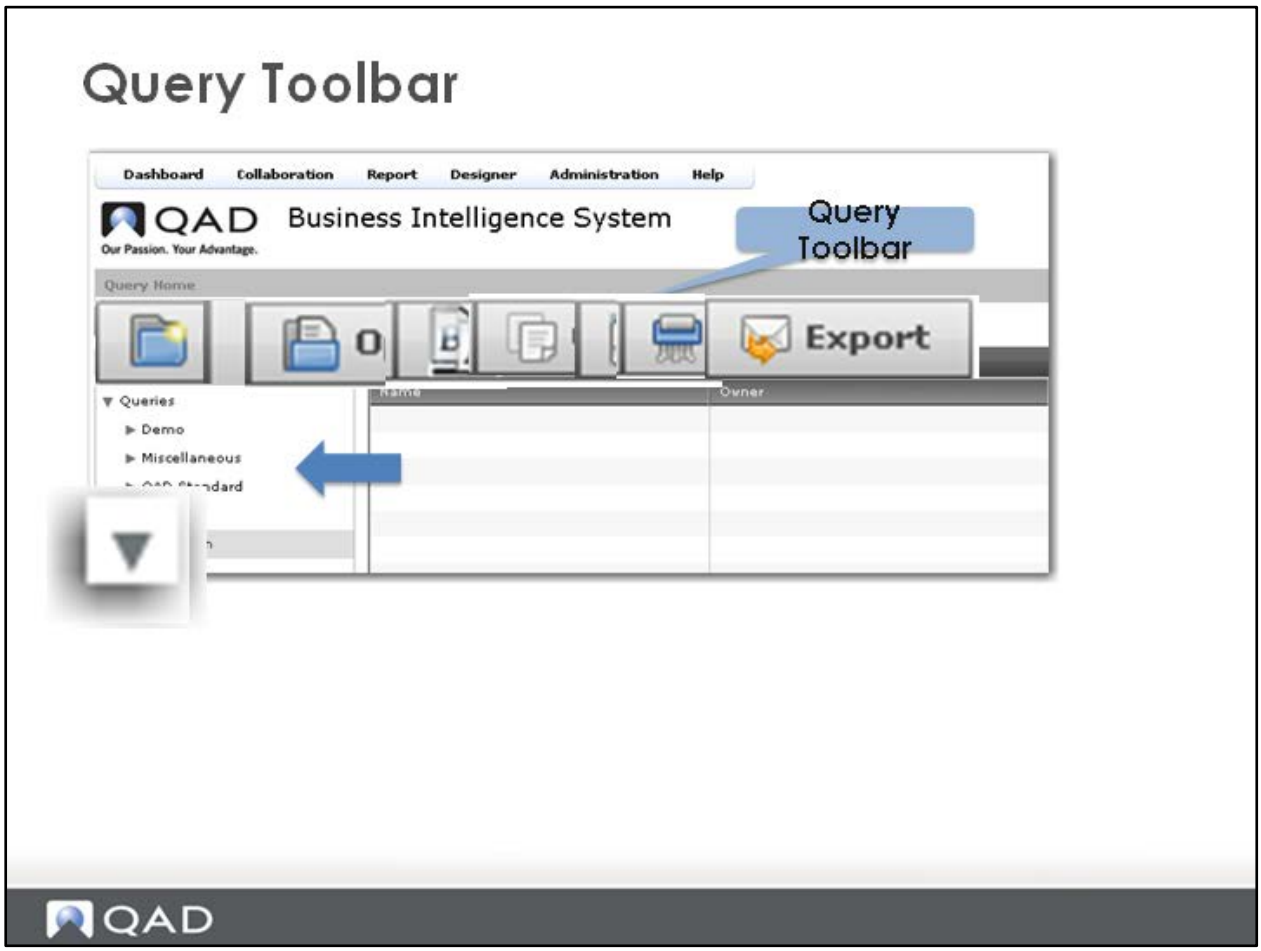


Access Queries



To access the query designer, click *Query* from the drop-down list under the *Designer* button on the menu bar.

Query Toolbar



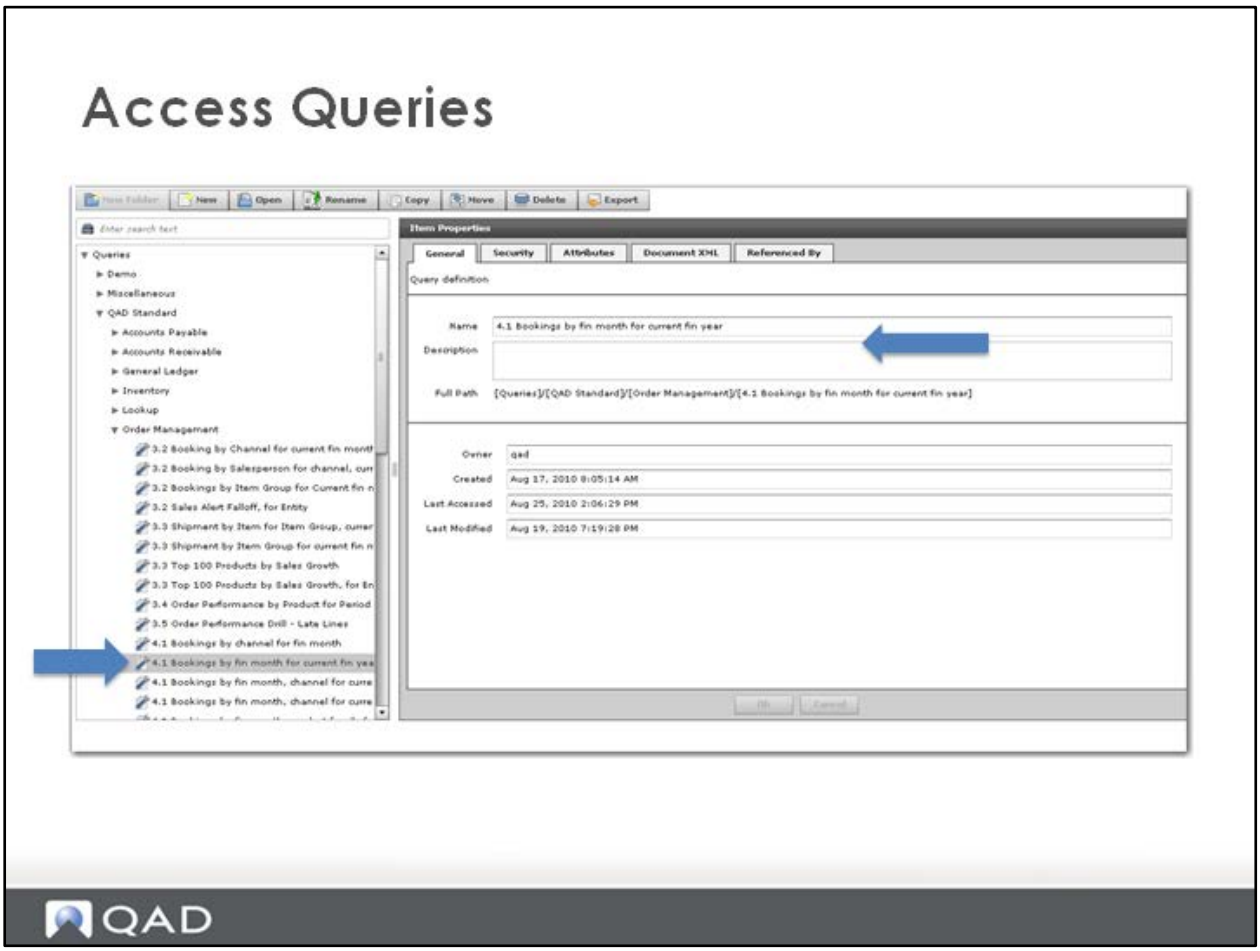
From the query toolbar you can:

- Create a new folder
- Create a new query
- Open, rename, copy, move, delete or export an existing query

To expand a folder in the browser pane on the left, click the twistie.

Hint: Sometimes while you are working in the designer, especially after the first save of a Portal object (Query, Report, Visual Item or Dashboard), you will not immediately see the object you just added. Simply click the twistie to close the listing, then click the twistie again to re-expand the listing.

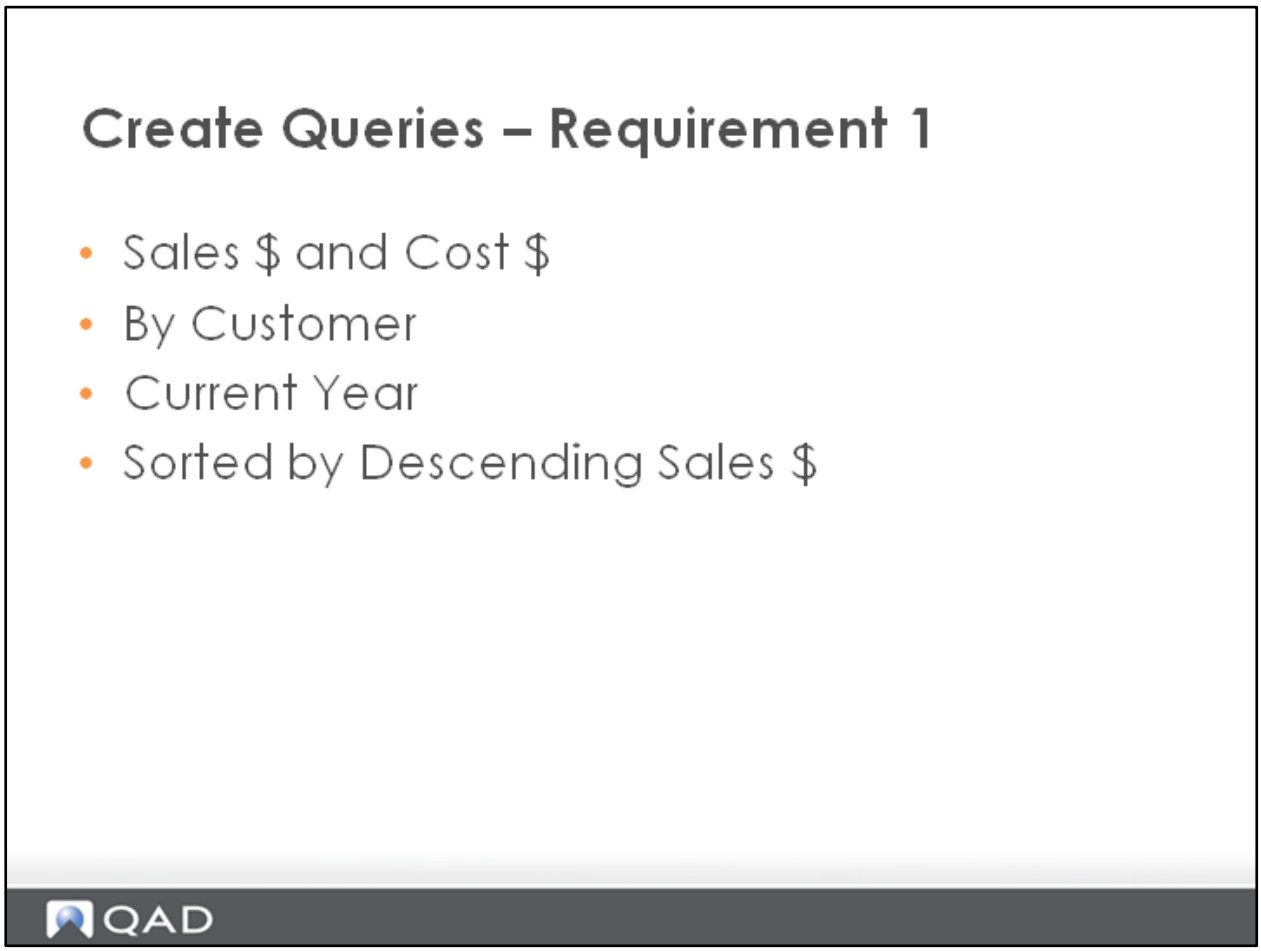
Access Queries



To view detailed information about a query, click on the query name.

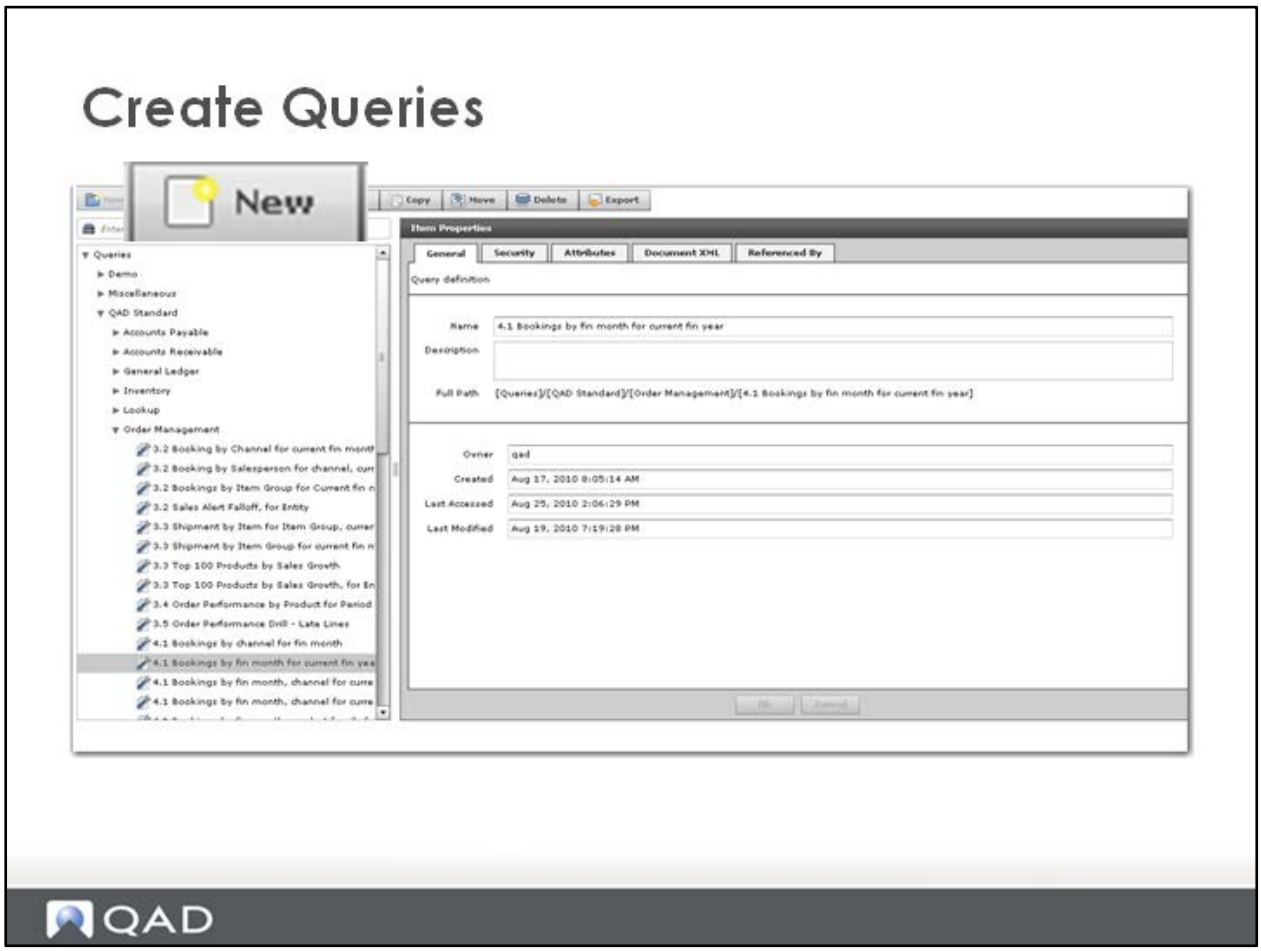
Information displayed includes name, description, date created and date modified.

Create Queries – Requirement 1



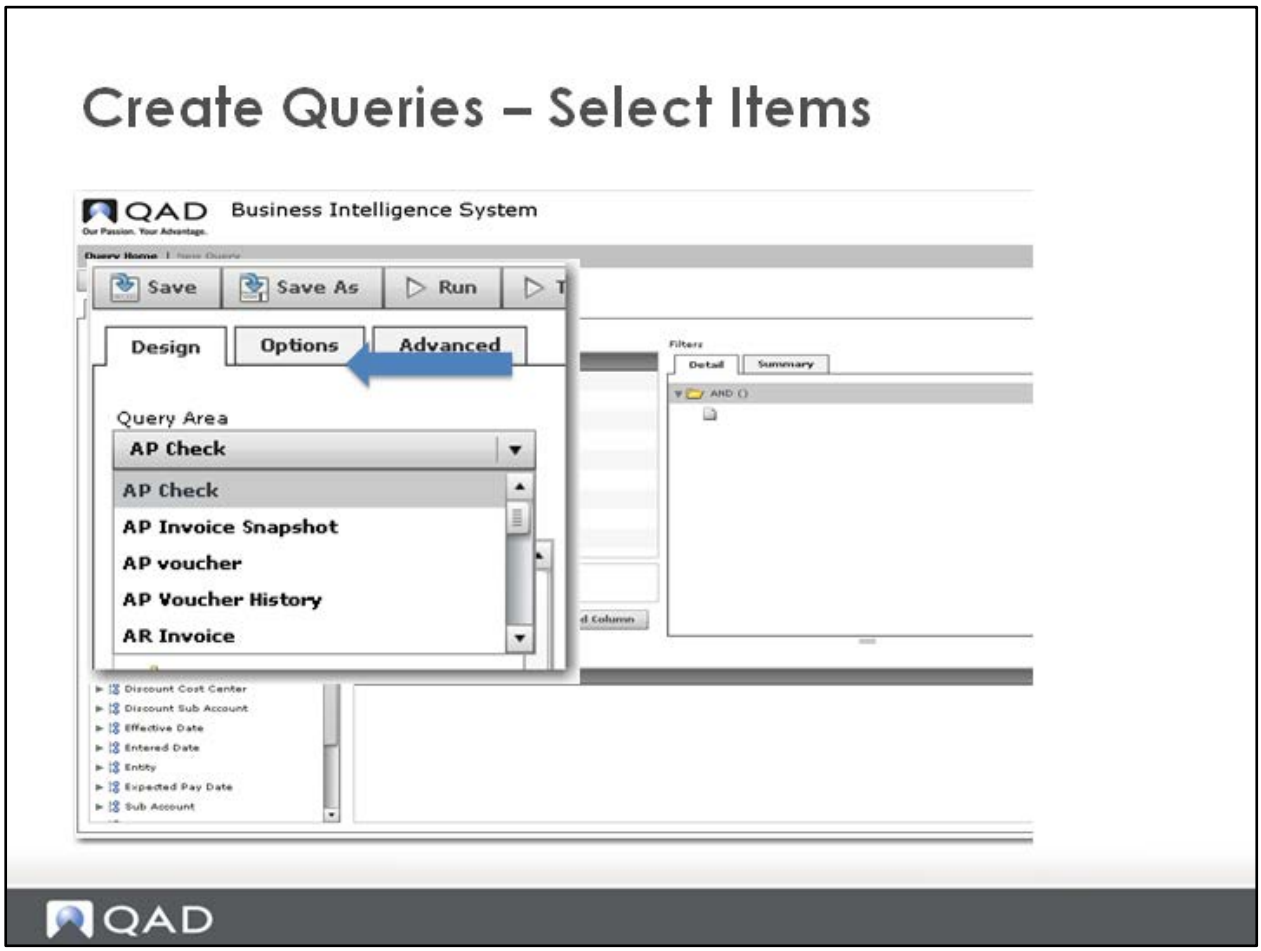
Here are the business requirements for our first query example.

Create Queries



To create a new query, click NEW in the Query Home toolbar.

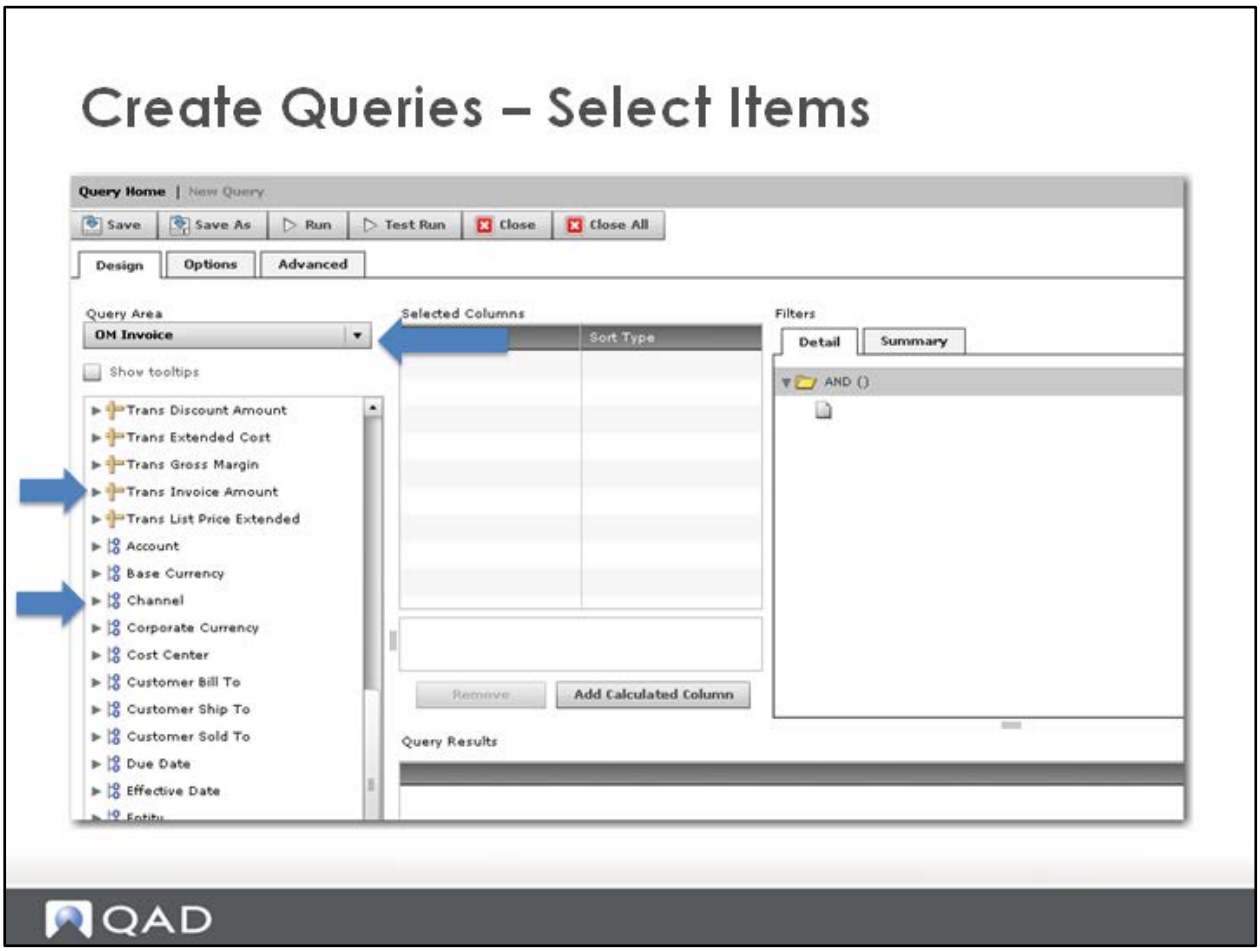
Create Queries – Select Items



After selecting new query, the Query Builder is displayed.

First, select a Query Area. This is a fact table. Use the drop down list to select the desired query area.

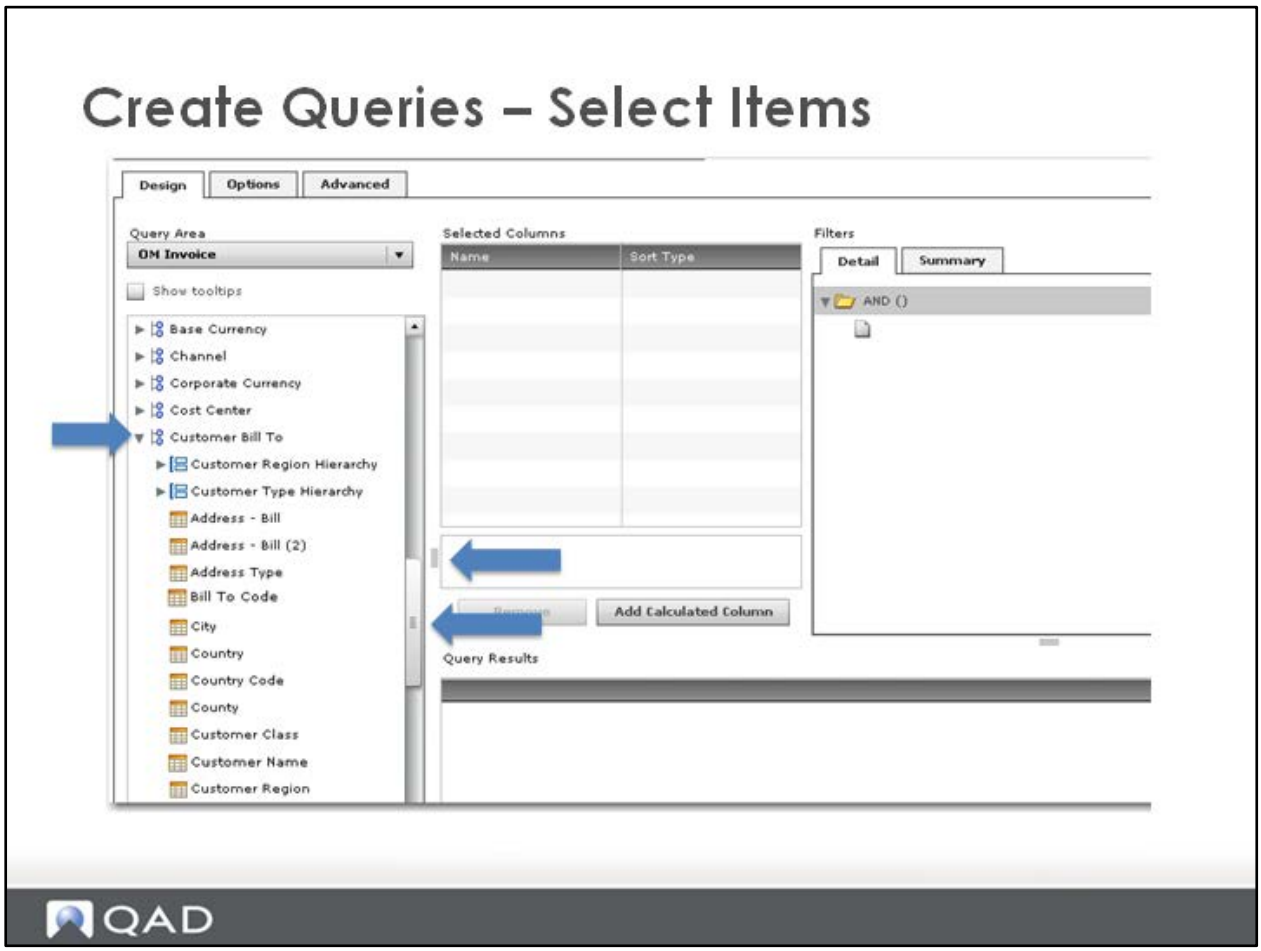
Create Queries – Select Items



In this example, we have selected OM Invoice.

The list of items to the left include Measures and Facts.

Create Queries – Select Items



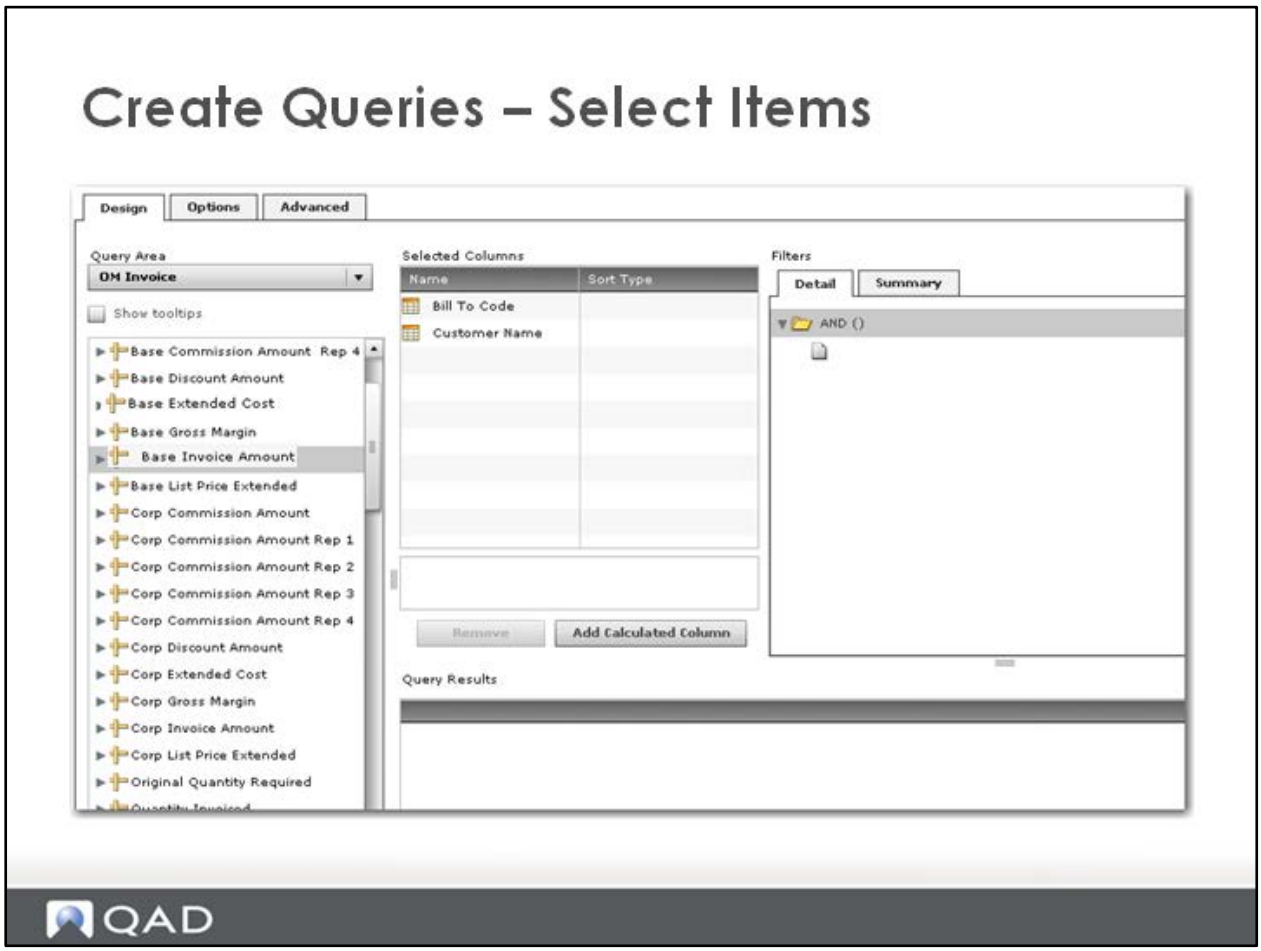
Use the drag bar to view additional items on the list.

Change the width of the pane, using the 3-bar icon.

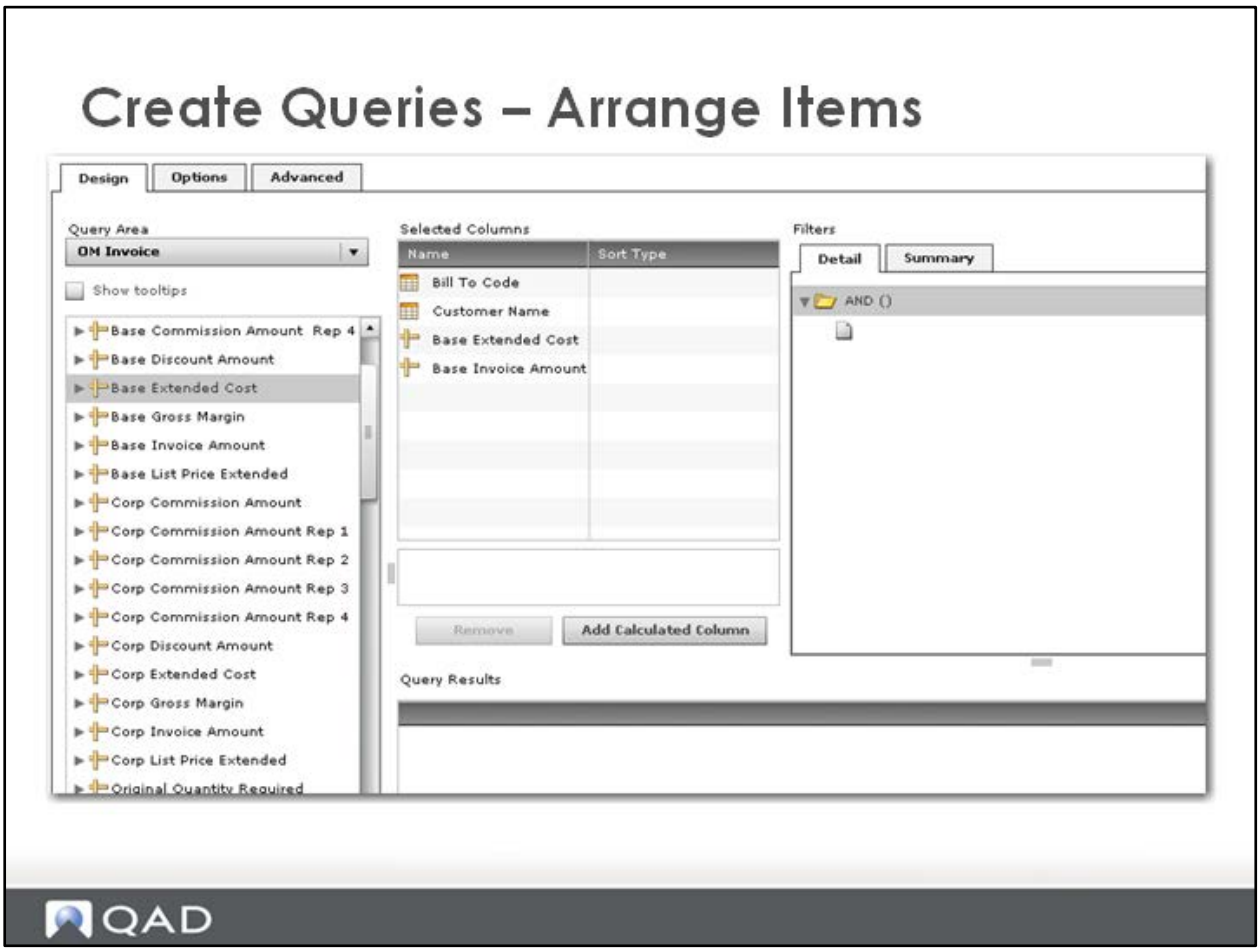
Select columns by dragging and dropping columns from the left to the *Selected Columns* window in the middle.

This example is *Bill To Code* and *Customer Name*. Both columns are Dimensions.

Create Queries – Select Items

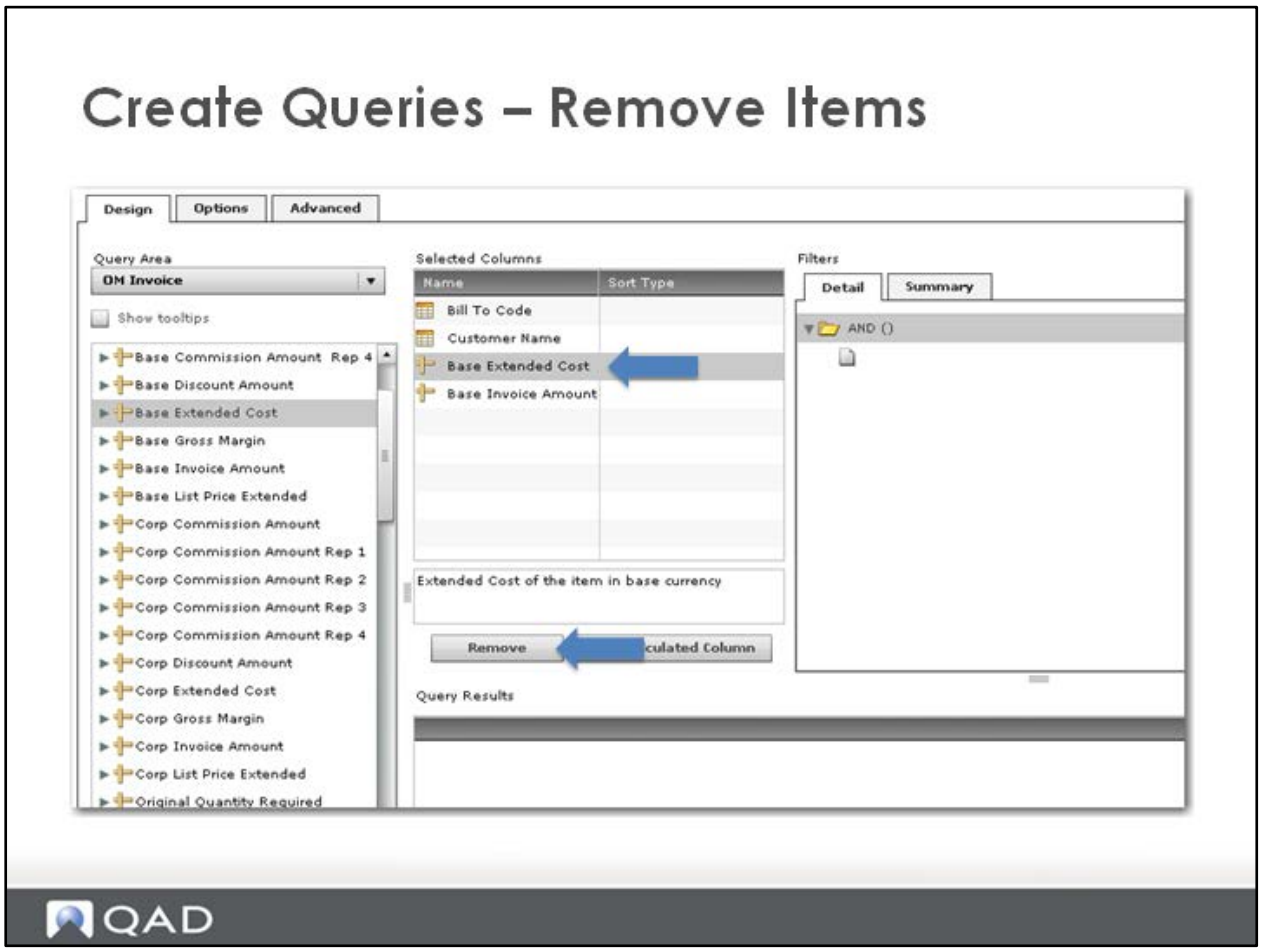


Create Queries – Arrange Items



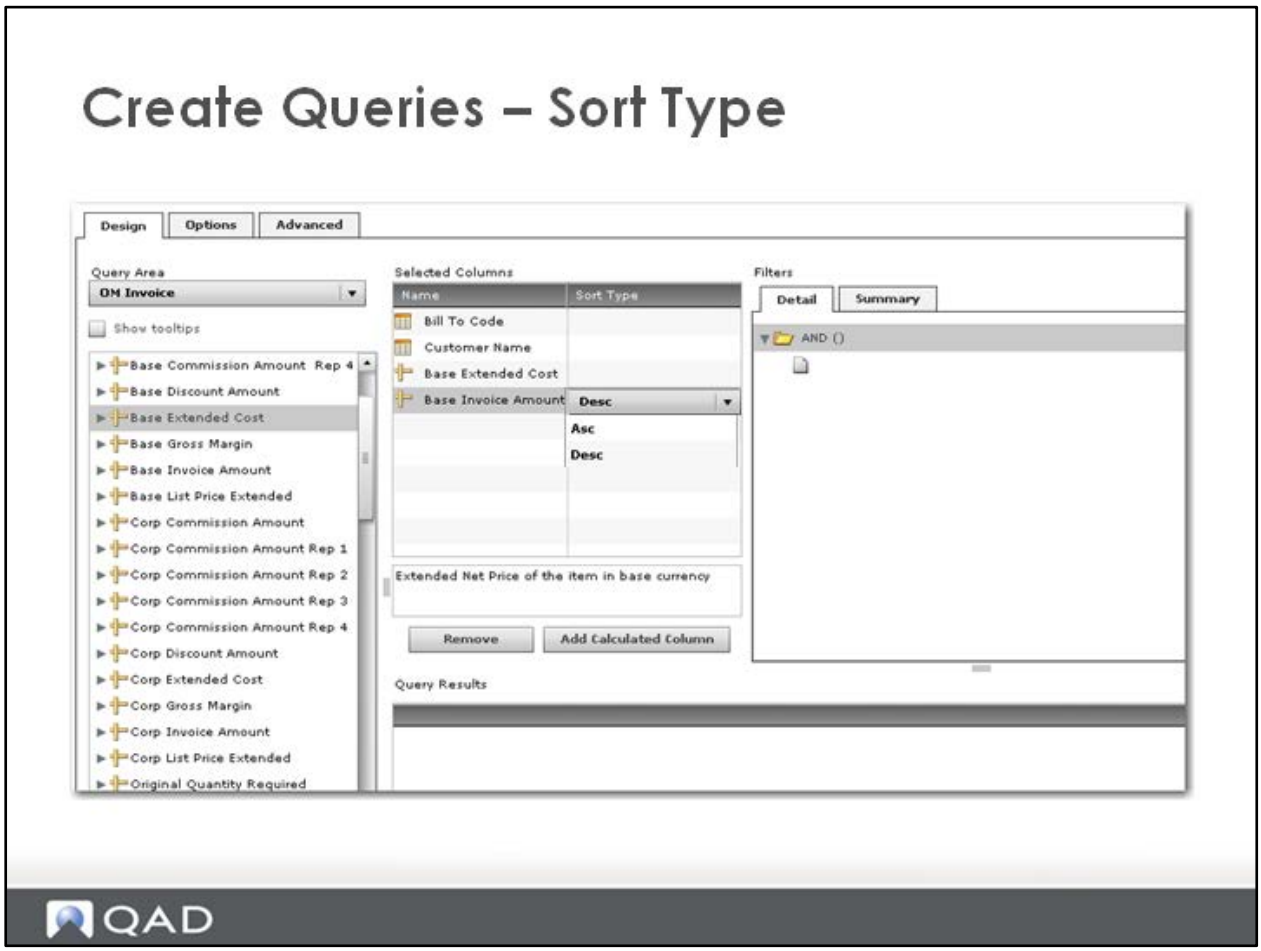
Columns can be rearranged in the column by clicking and dragging the column into position.

Create Queries – Remove Items



To remove a field from the list, highlight the column and click the remove button.

Create Queries – Sort Type

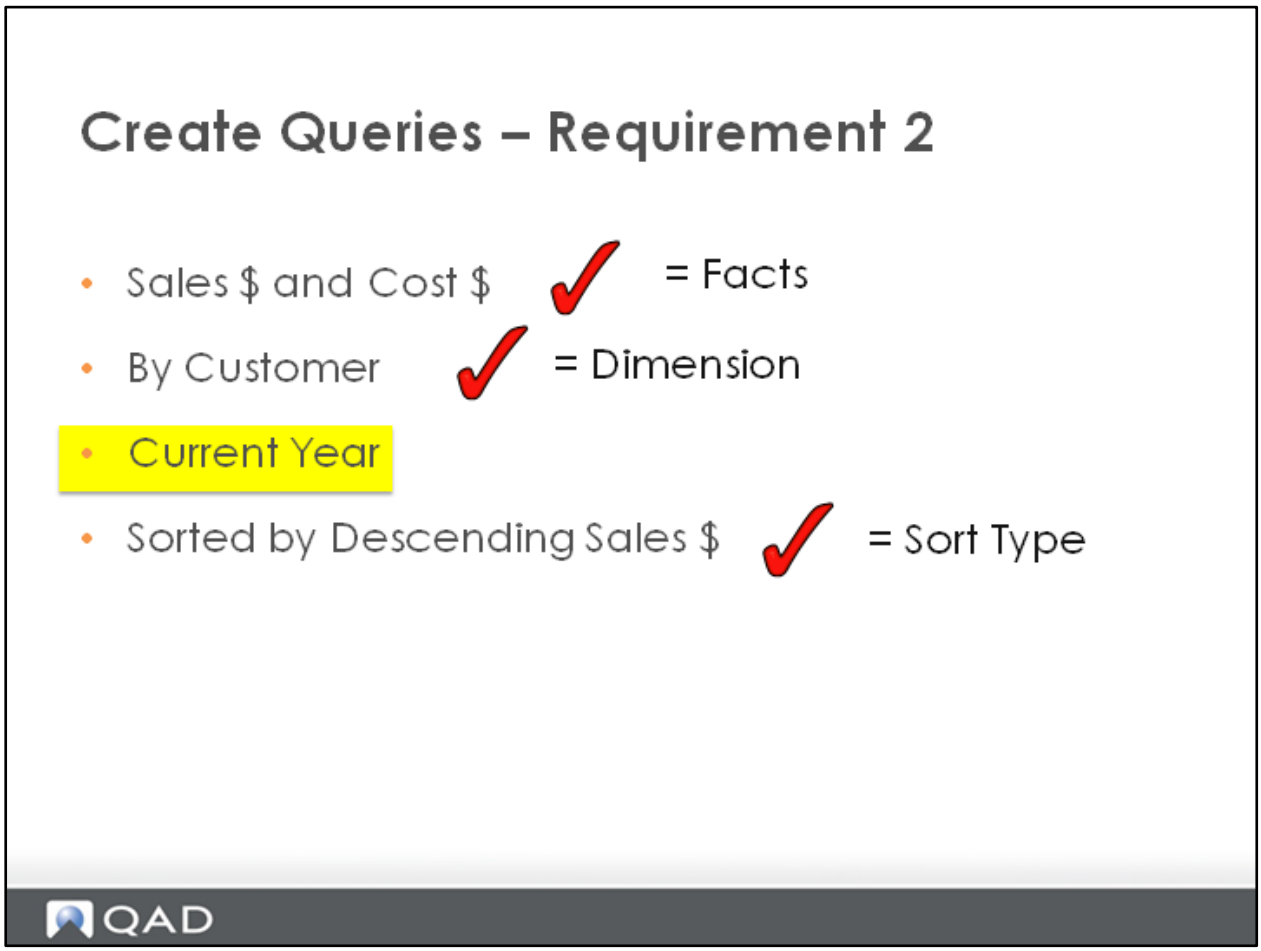


To indicate that the results of the query should be sorted, indicate one or more sort columns.

Click the sort type column to the right of the column name. Our requirements call for a sort on *Base Invoice Amount*. When the drop down list appears, we selected Descending.

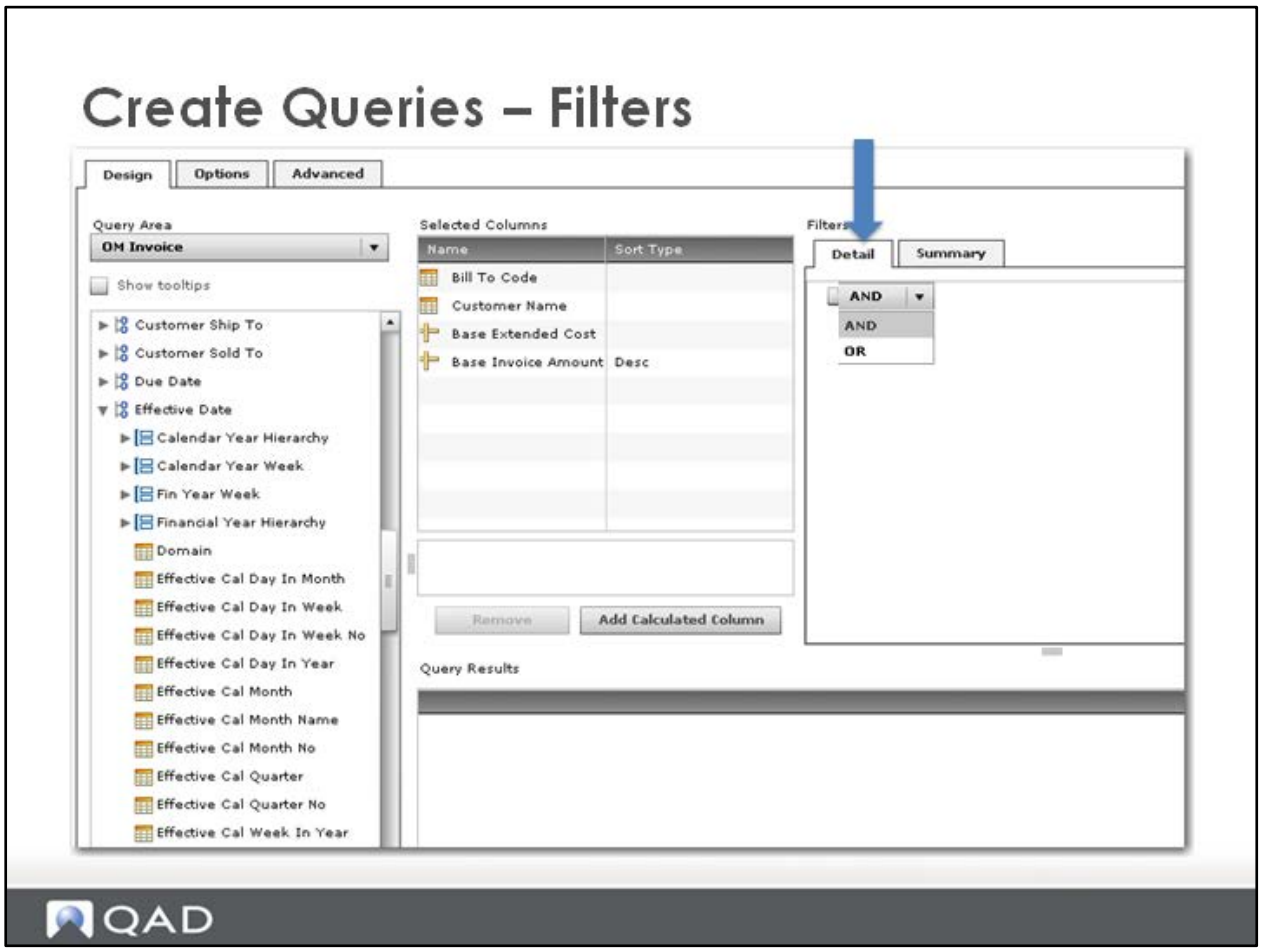
To remove the sort type, click the sort type column and select <blank> from the drop down list.

Create Queries – Requirement 2



We've completed 3 or 4 requirements. We need a filter in order to meet the last requirement – select current year only.

Create Queries – Filters

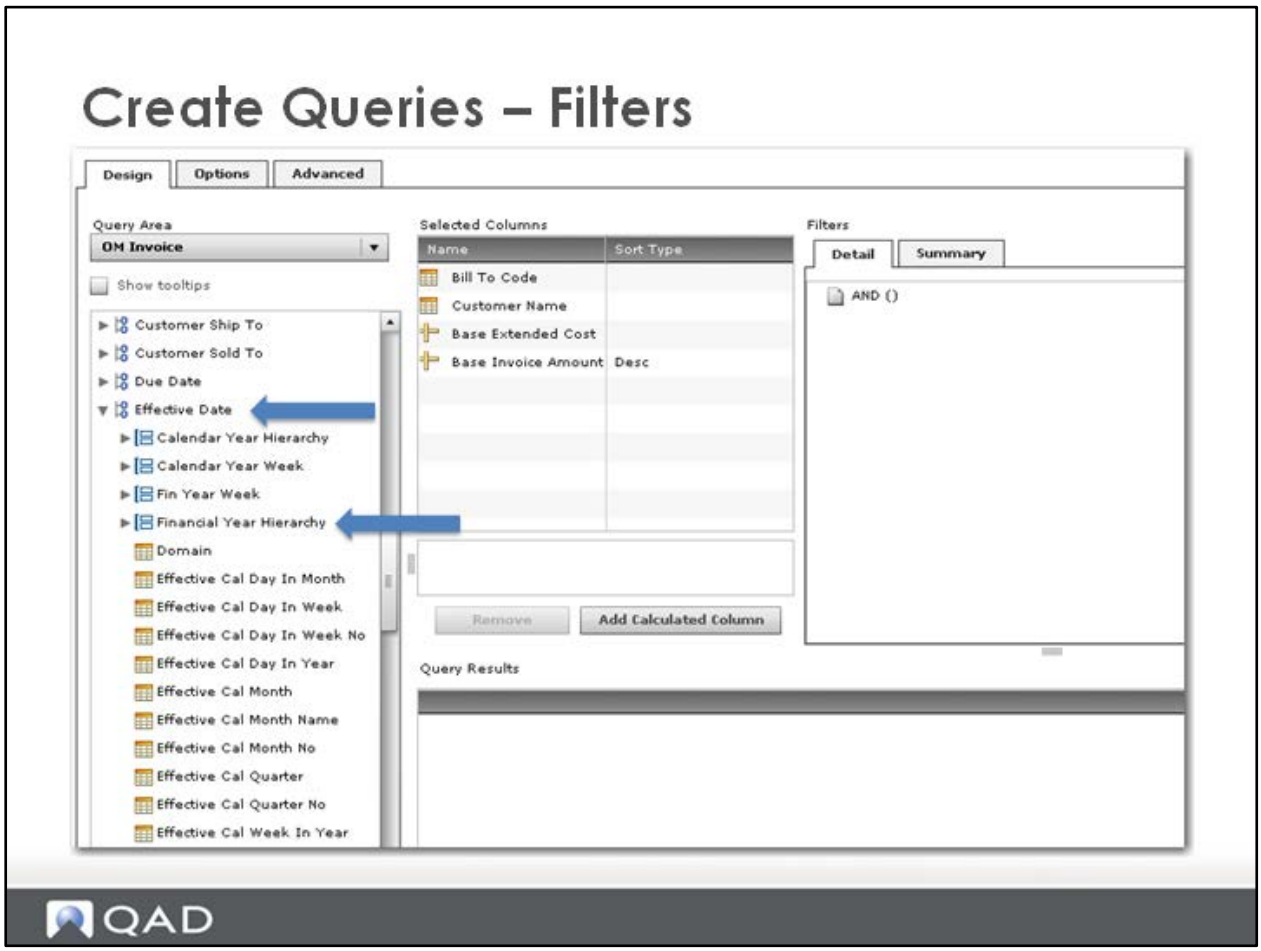


To add a filter, select *Detail* or *Summary* from the filter box on the right.

The *And* folder in the Detail Tab shows the current setting for the Boolean logic to be used to join two or more filters. It defaults to *And*.

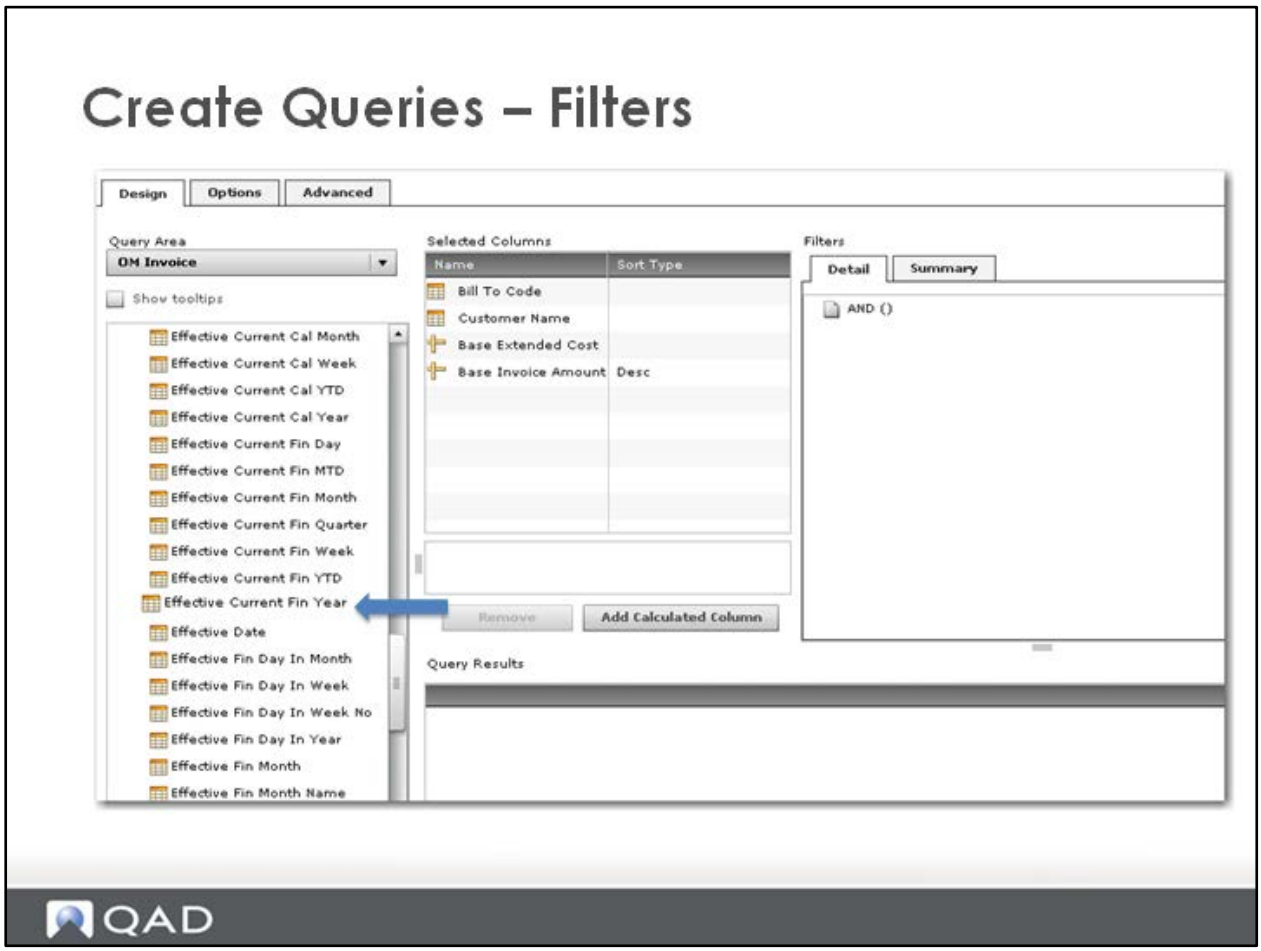
To create multiple filter criteria joined by an *Or*, click the folder and select *Or* from the drop down list.

Create Queries – Filters



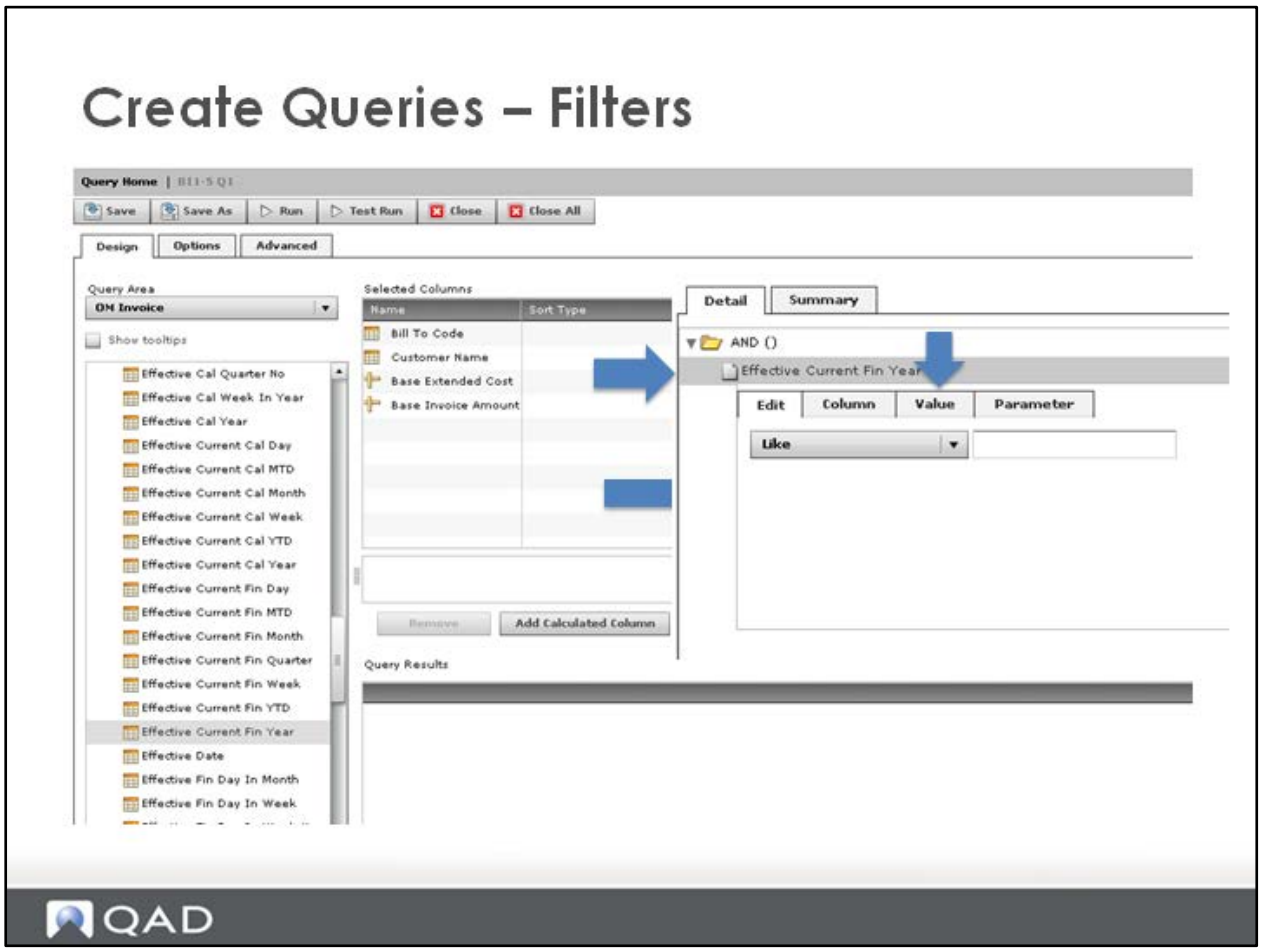
In order to select records in the current financial year, we will use the dimension *Effective Current Fin Year*. This column is found in the Financial Year Hierarchy.

Create Queries – Filters



To add a new filter, click and drag a column from the left window to the Filters window on the right.

Create Queries – Filters



There are 4 filter types:

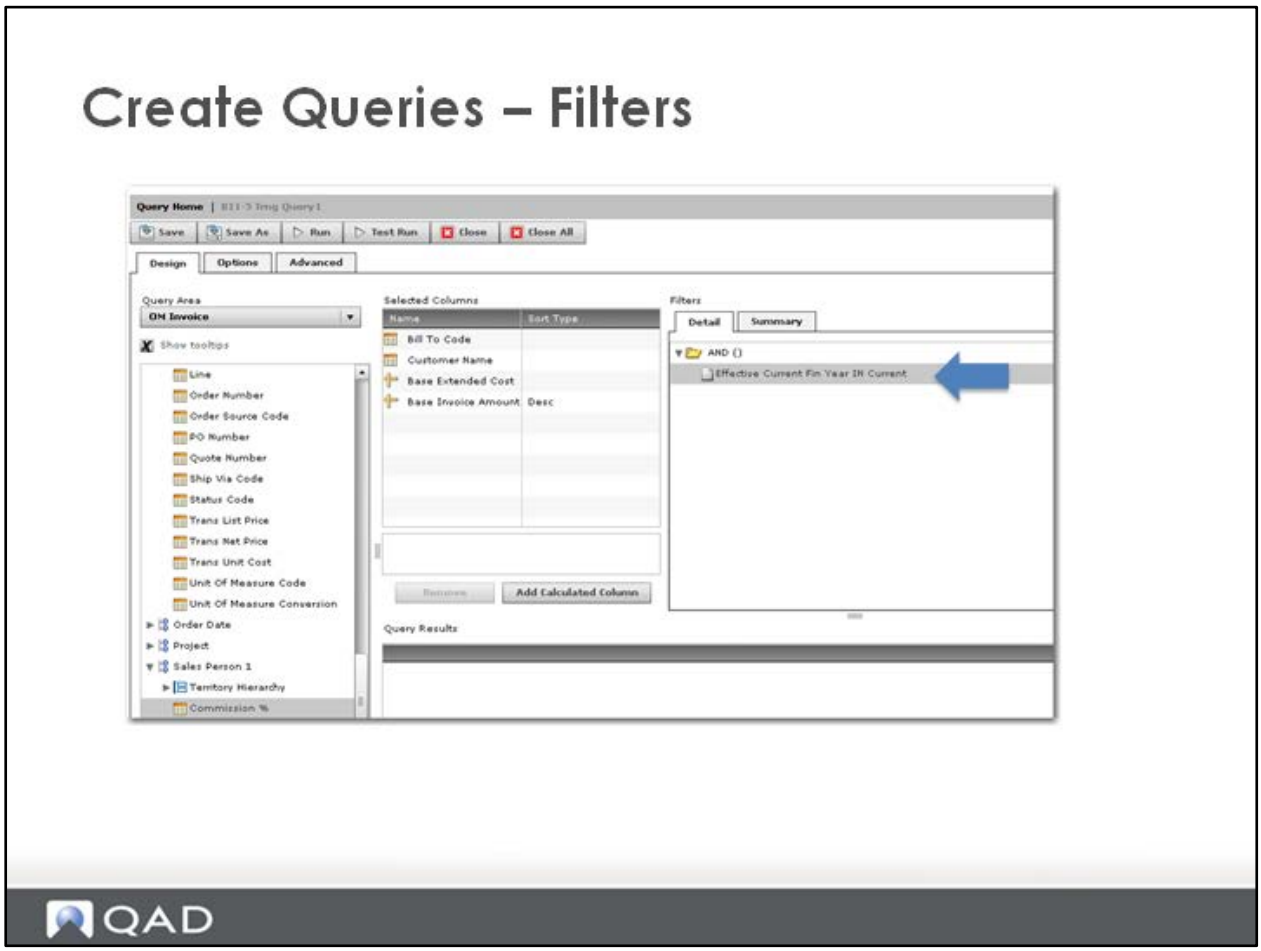
- Edit
- Column
- Value
- Parameter

We want to filter based on Value for our example. Then, we use the drop-down list to select IN.

The *Effective Current Fin Year* column has four possible values: Current, No, Previous and <blank>. Highlight the desired value (Current in this example), and press <Enter>.

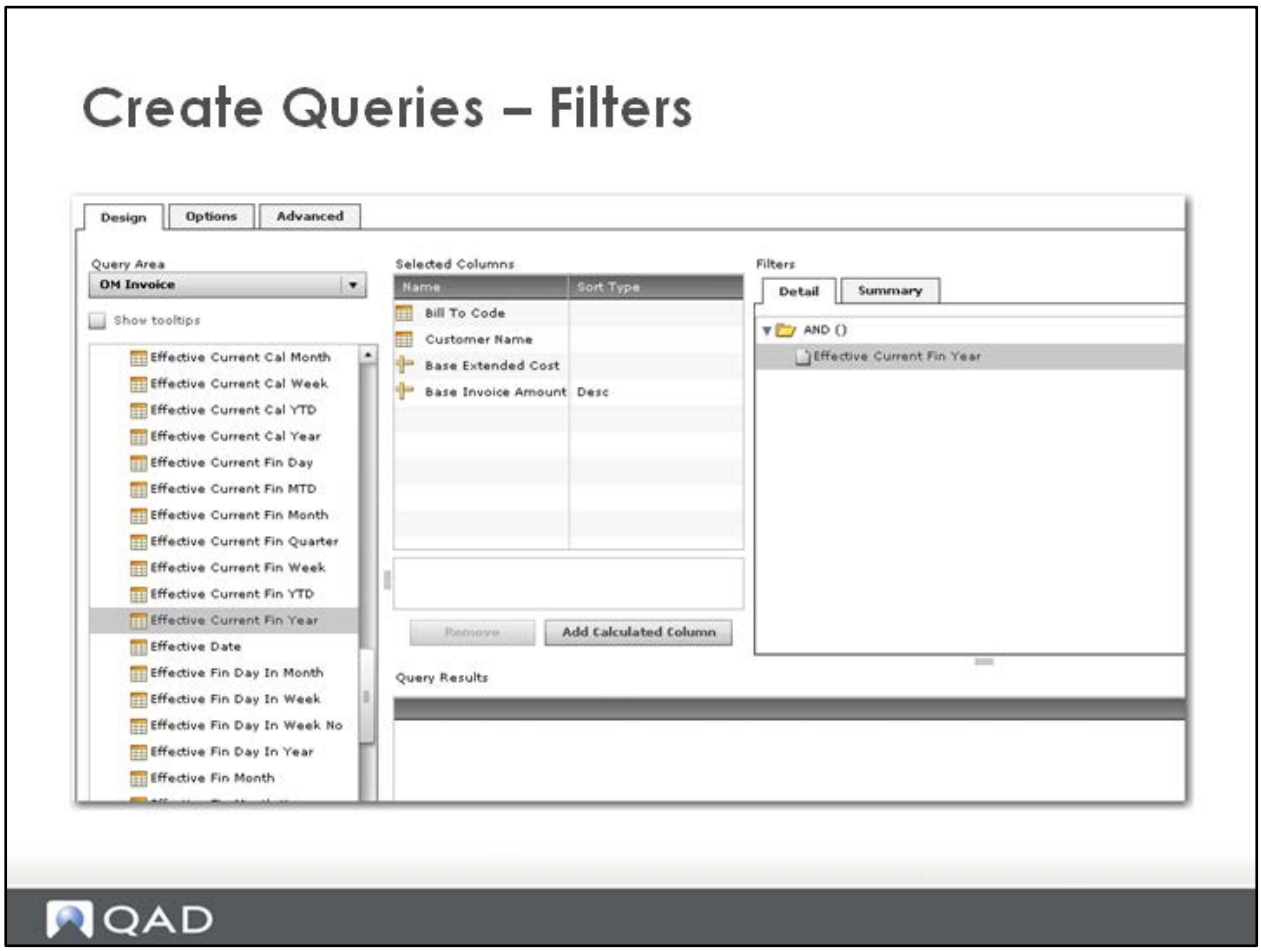
It is possible to select multiple values.

Create Queries – Filters

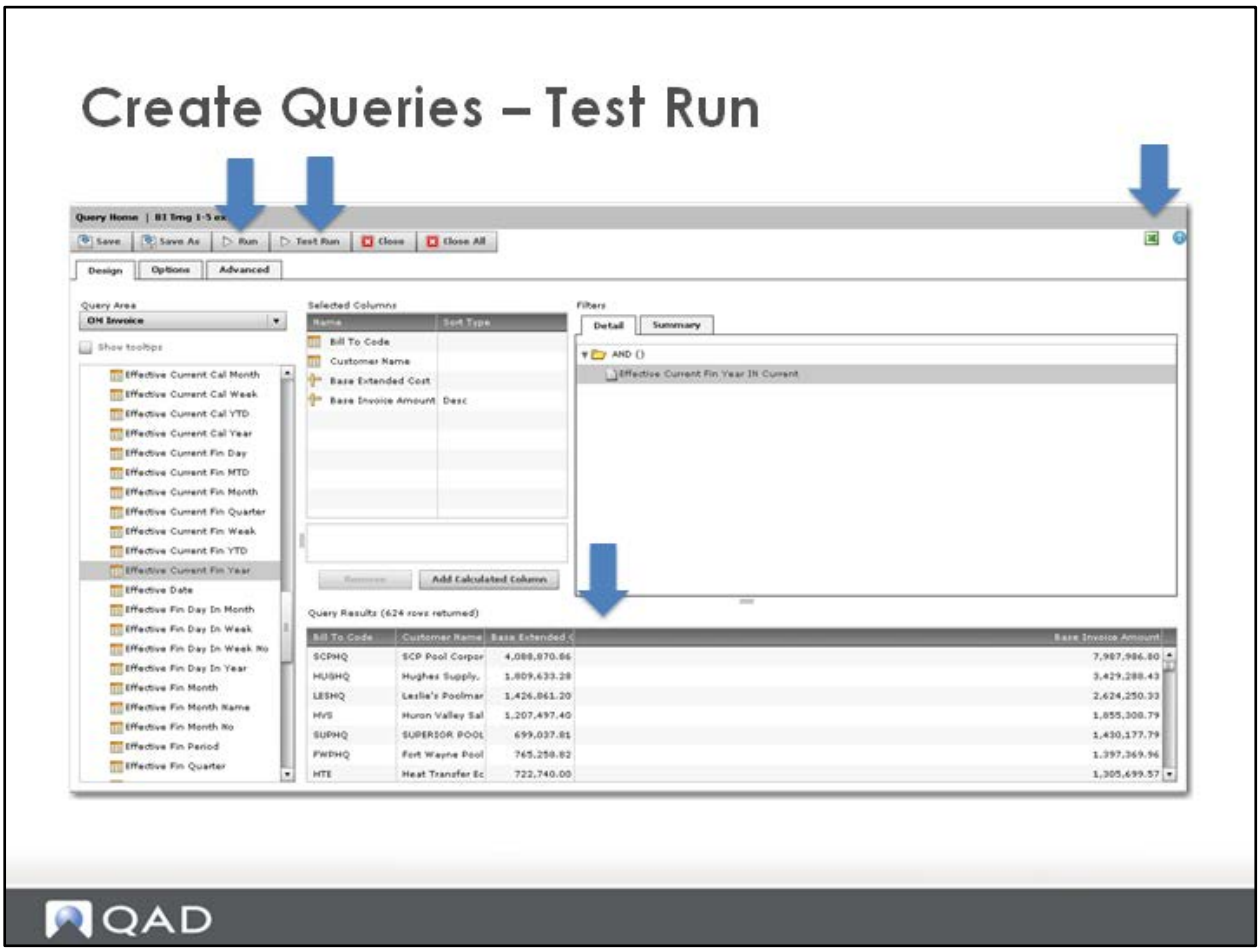


We see that the filter has been added.

Create Queries – Filters



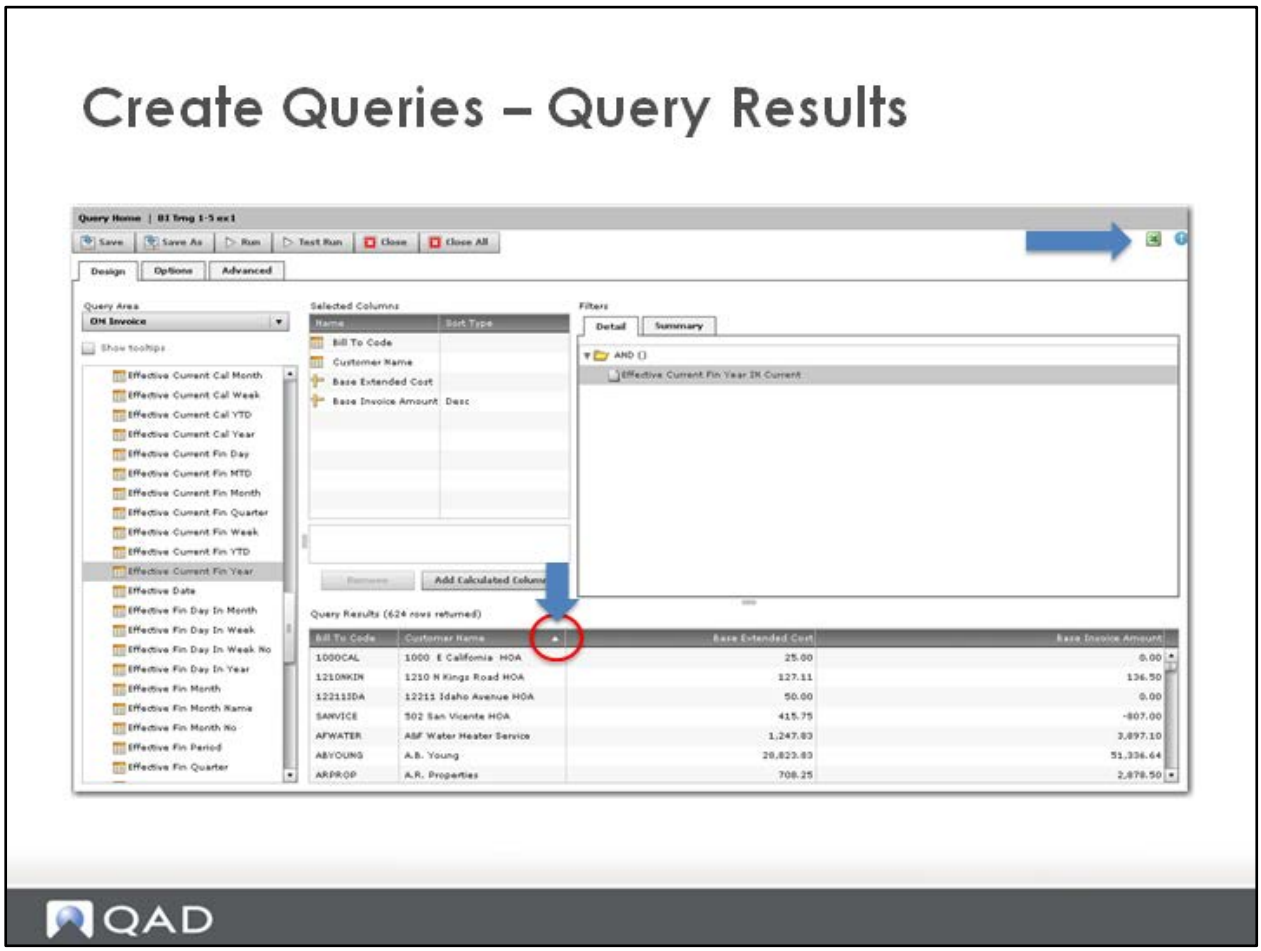
Create Queries – Test Run



Test Run returns 100 records.

Run returns all records.

Create Queries – Query Results



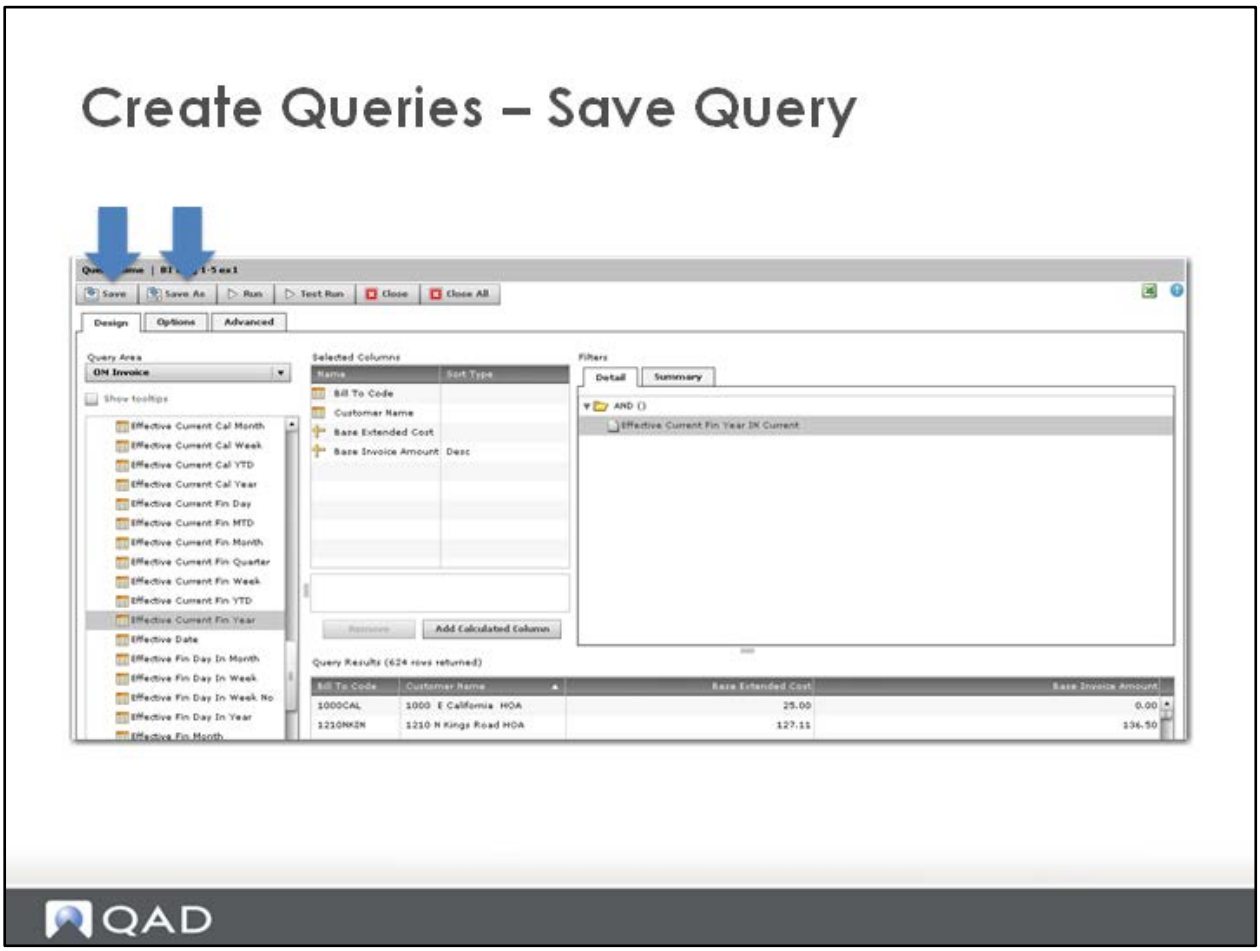
The *Query Results* pane is interactive.

Click the column heading to sort by that column (ascending and descending).

Adjust column widths by hovering over the column heading border until the move icon appears. Then drag the column border as needed.

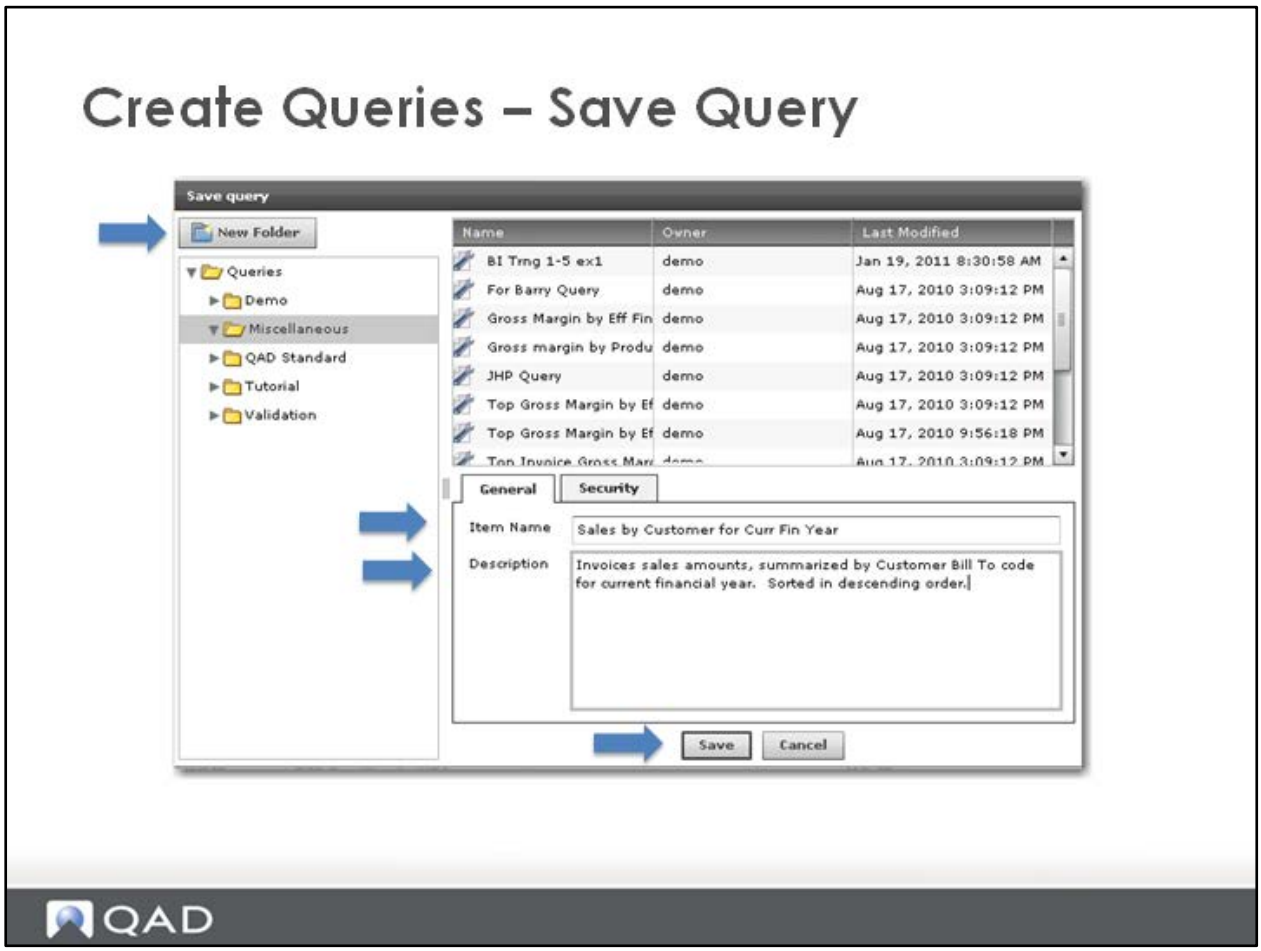
The entire output pane can be dragged using the 3-line icon.

Create Queries – Save Query



Save the query.

Create Queries – Save Query

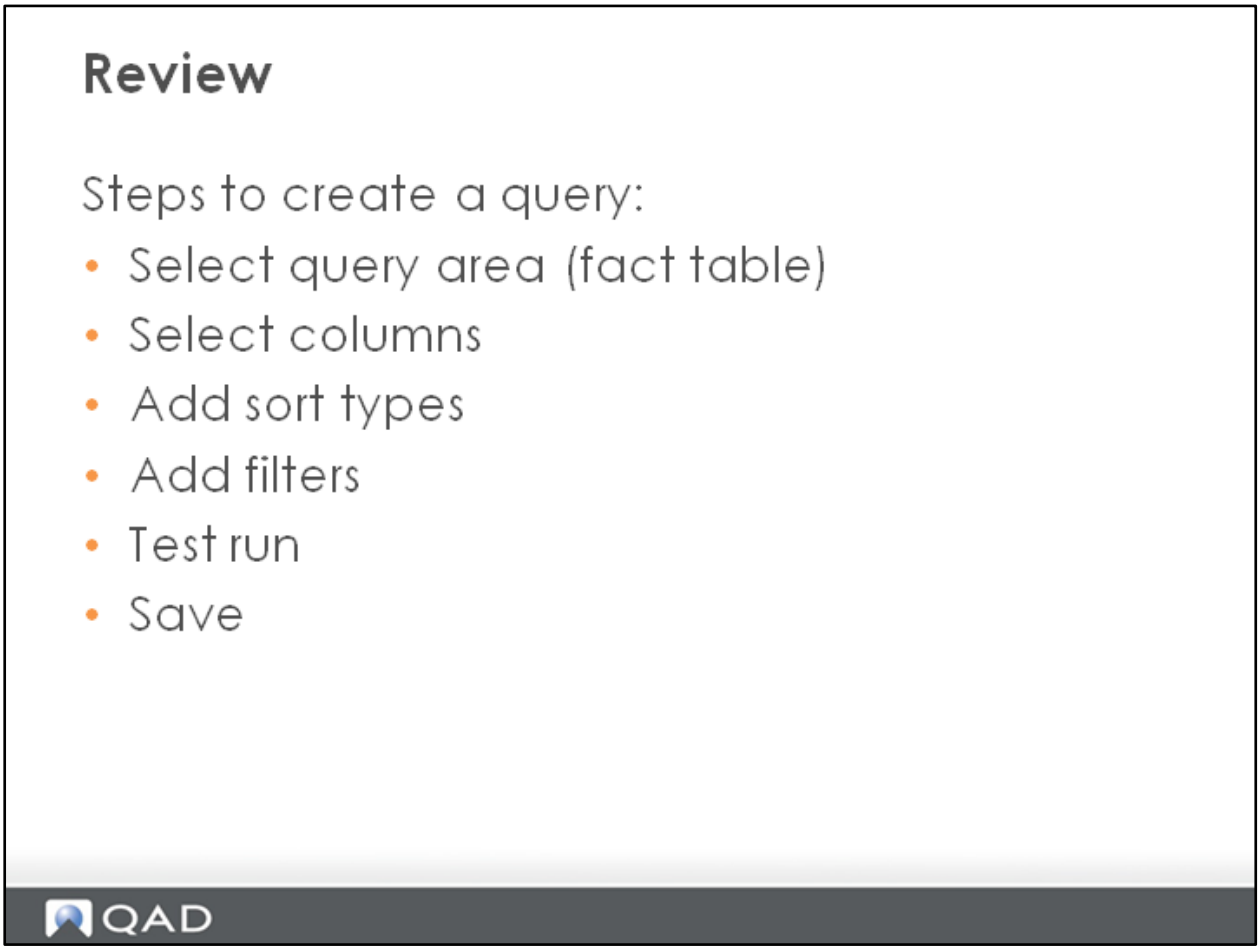


If this is the first time you have saved this query, you will be prompted to select a folder to store the query.

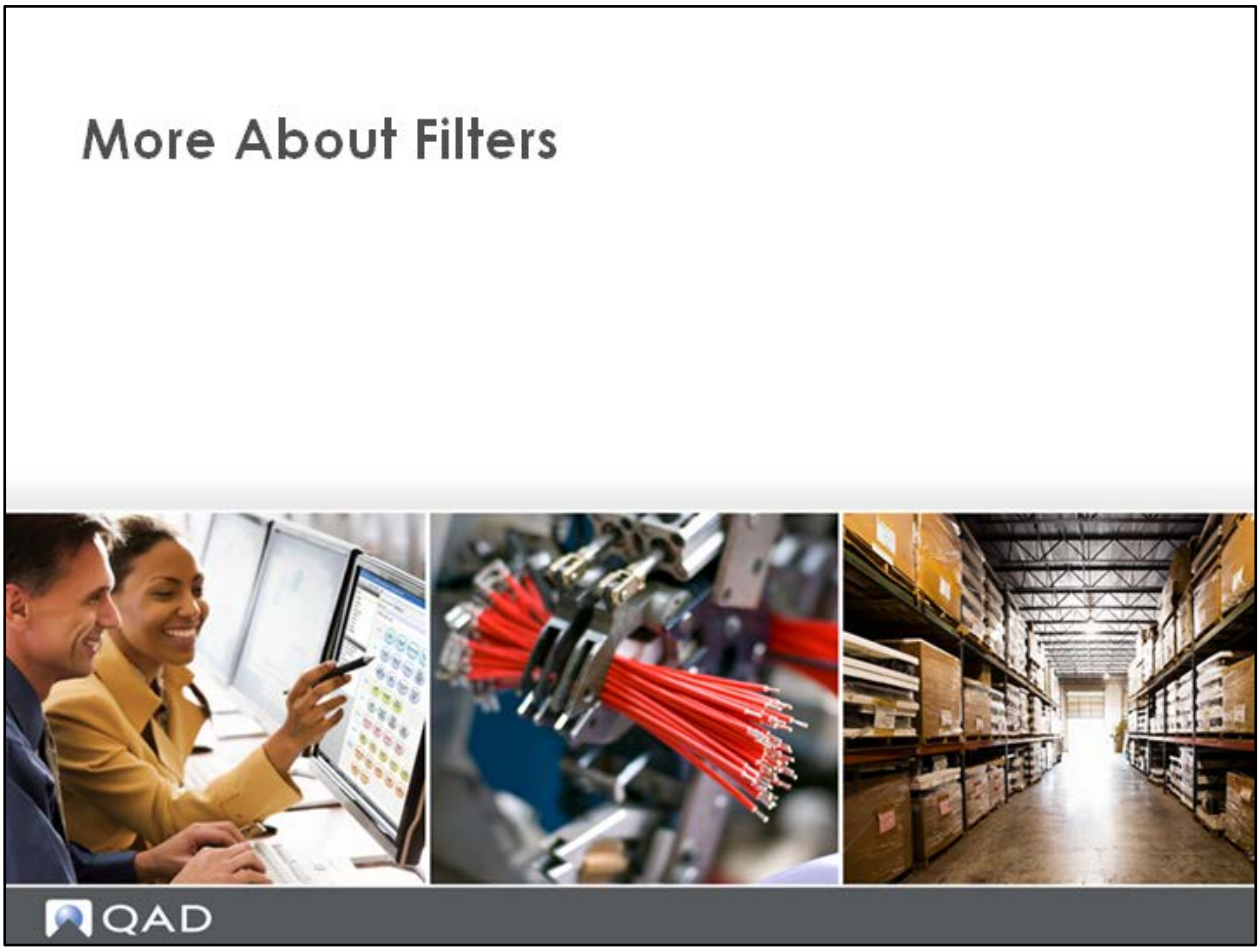
You must also enter an *Item Name.* It is also recommended that you enter a *Description.*

Click the ***Save*** button.

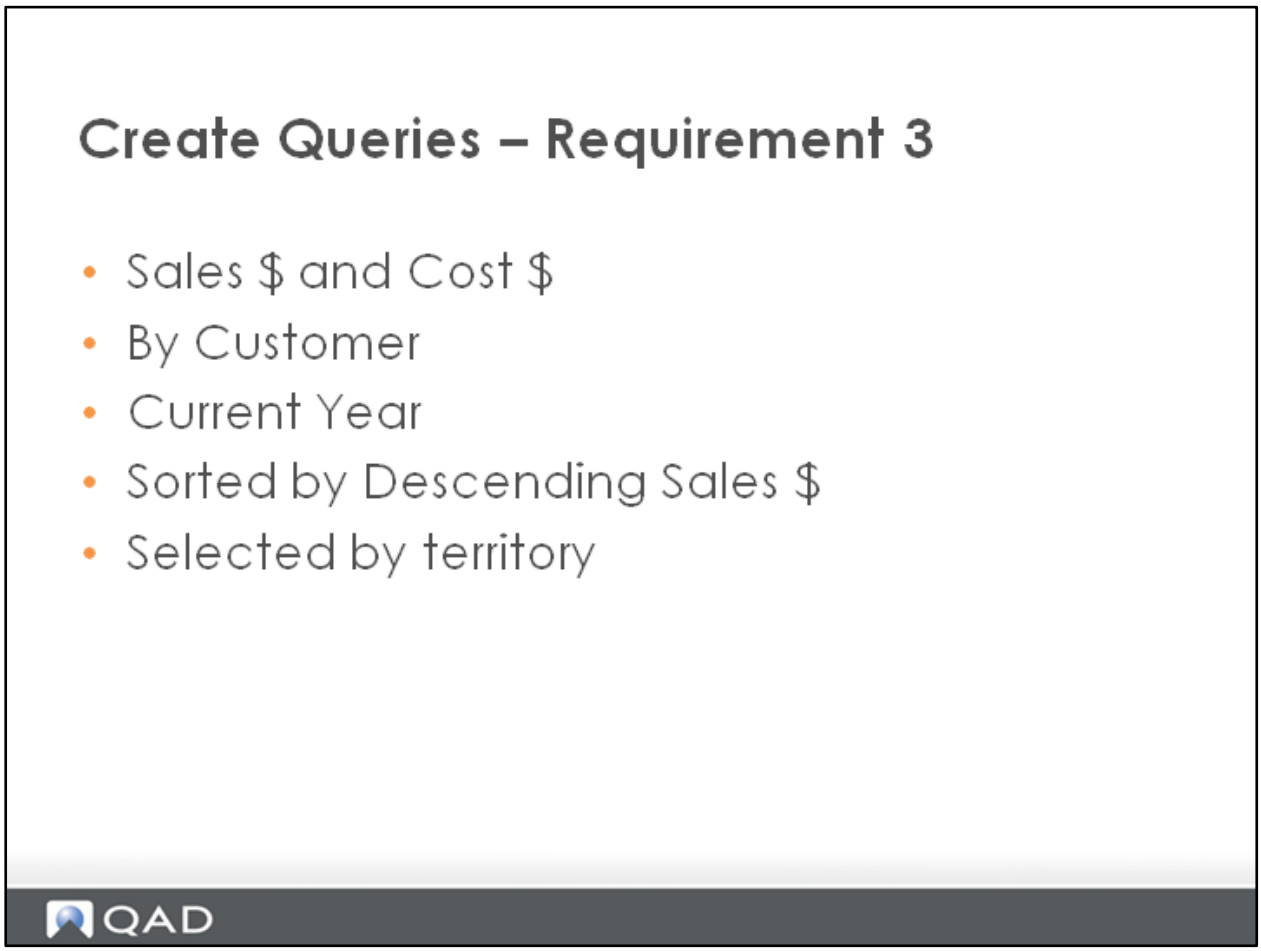
Review


Review
Steps to create a query:
Select query area (fact table)
Select columns
Add sort types
Add filters
Test run
Save
QAD

More About Filters



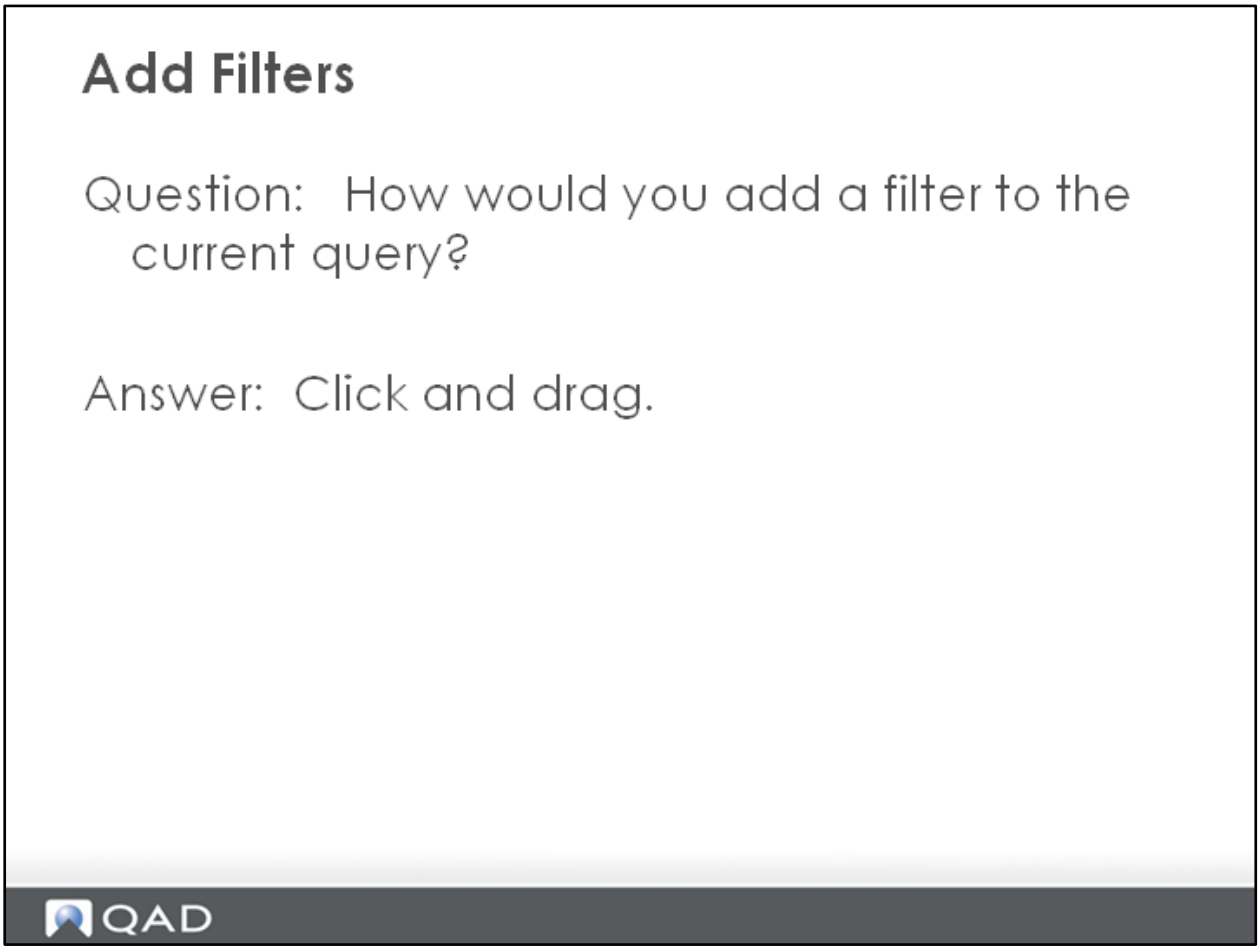
Create Queries – Requirement 3



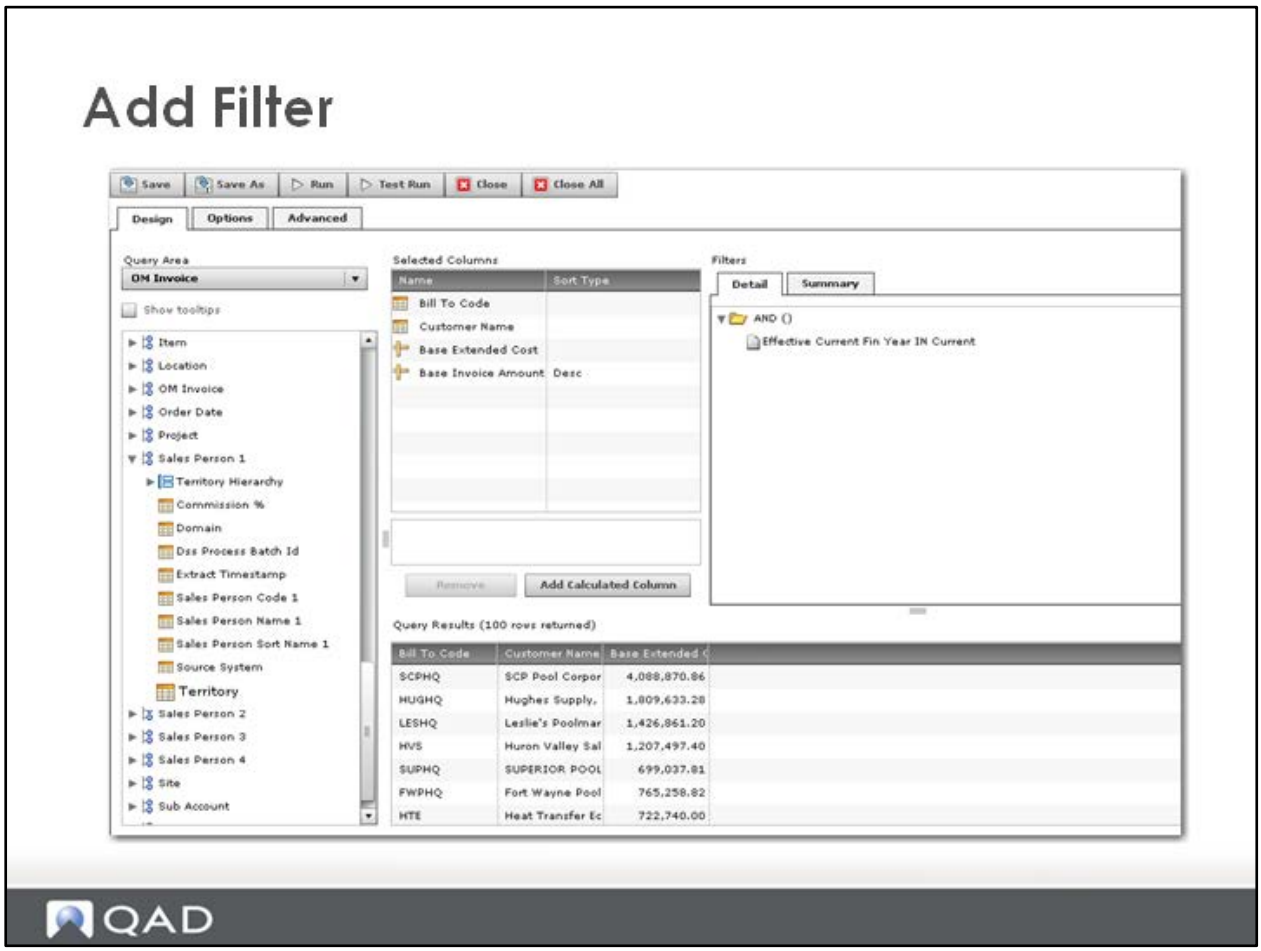
We plan to use this query for a Visual Item on a dashboard. We want to allow the user to select a Territory on a parameter bar, and view the data for that Territory.

As a result, we need to add a filter for Territory to this query.

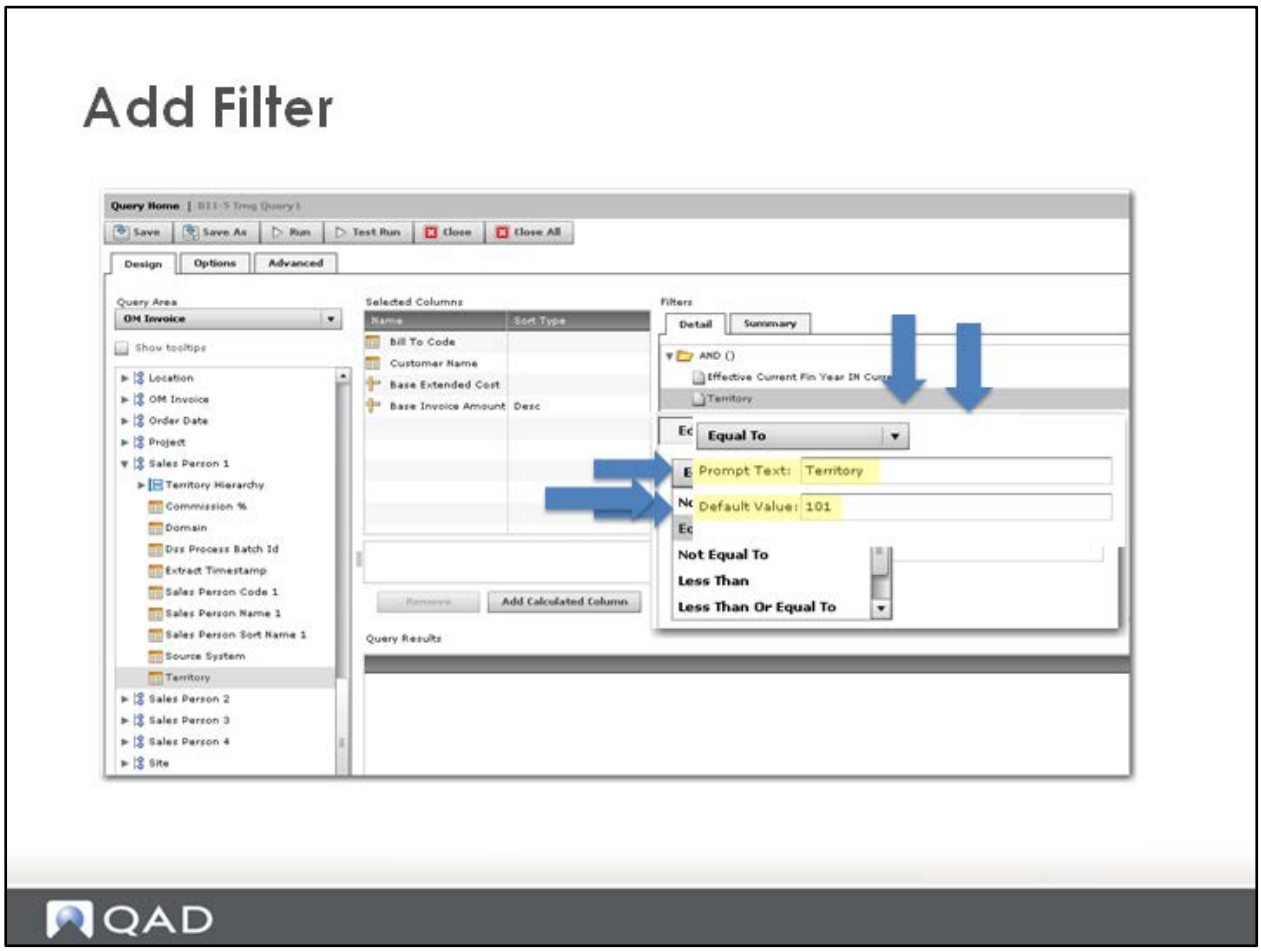
Add Filters


Add Filters
Question: How would you add a filter to the current query?
Answer: Click and drag.
QAD

Add Filter


Add Filter
Save
Save As
Run
Test Run
Close
Close All
Design
Options
Advanced
Query Area
OM Invoice
Show tooltips
Item
Location
OM Invoice
Order Date
Project
Sales Person 1
Territory Hierarchy
Commission %
Domain
Dss Process Batch Id
Extract Timestamp
Sales Person Code 1
Sales Person Name 1
Sales Person Sort Name 1
Source System
Territory
Sales Person 2
Sales Person 3
Sales Person 4
Site
Sub Account
Selected Columns
Name
Sort Type
Bill To Code
Customer Name
Base Extended Cost
Base Invoice Amount
Desc
Remove
Add Calculated Column
Filters
Detail
Summary
AND ()
Effective Current Fin Year IN Current
Query Results (100 rows returned)
Bill To Code
Customer Name
Base Extended
SCPHQ
SCP Pool Corpor
4,088,870.86
HUGHQ
Hughes Supply,
1,809,633.28
LESHQ
Leslie's Poolmar
1,426,861.20
HVS
Huron Valley Sal
1,207,497.40
SUPHQ
SUPERIOR POOL
699,037.81
FWPHQ
Fort Wayne Pool
765,258.82
HTE
Heat Transfer Ec
722,740.00
QAD

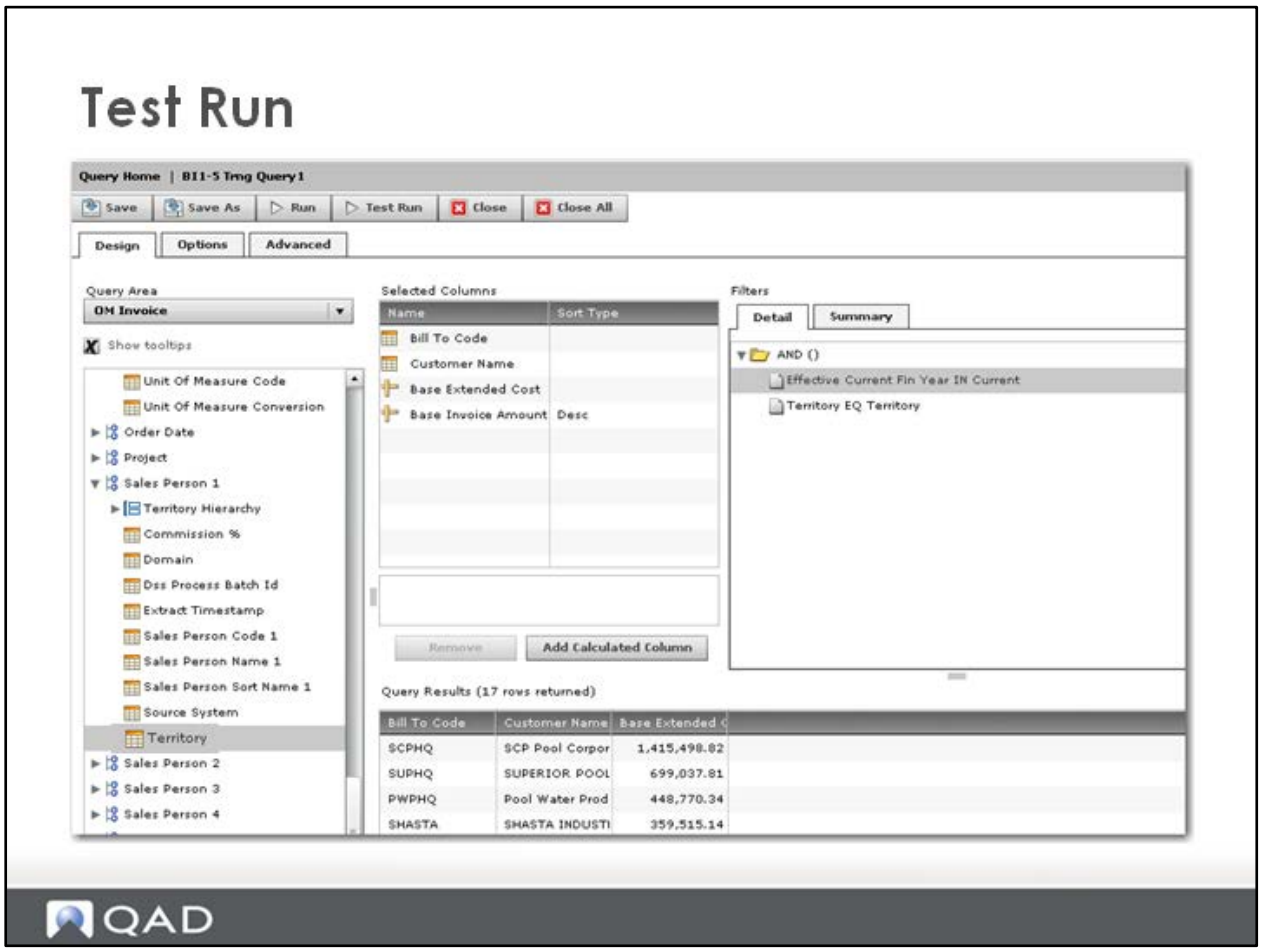
Add Filter



Our second filter is a Parameter type filter.

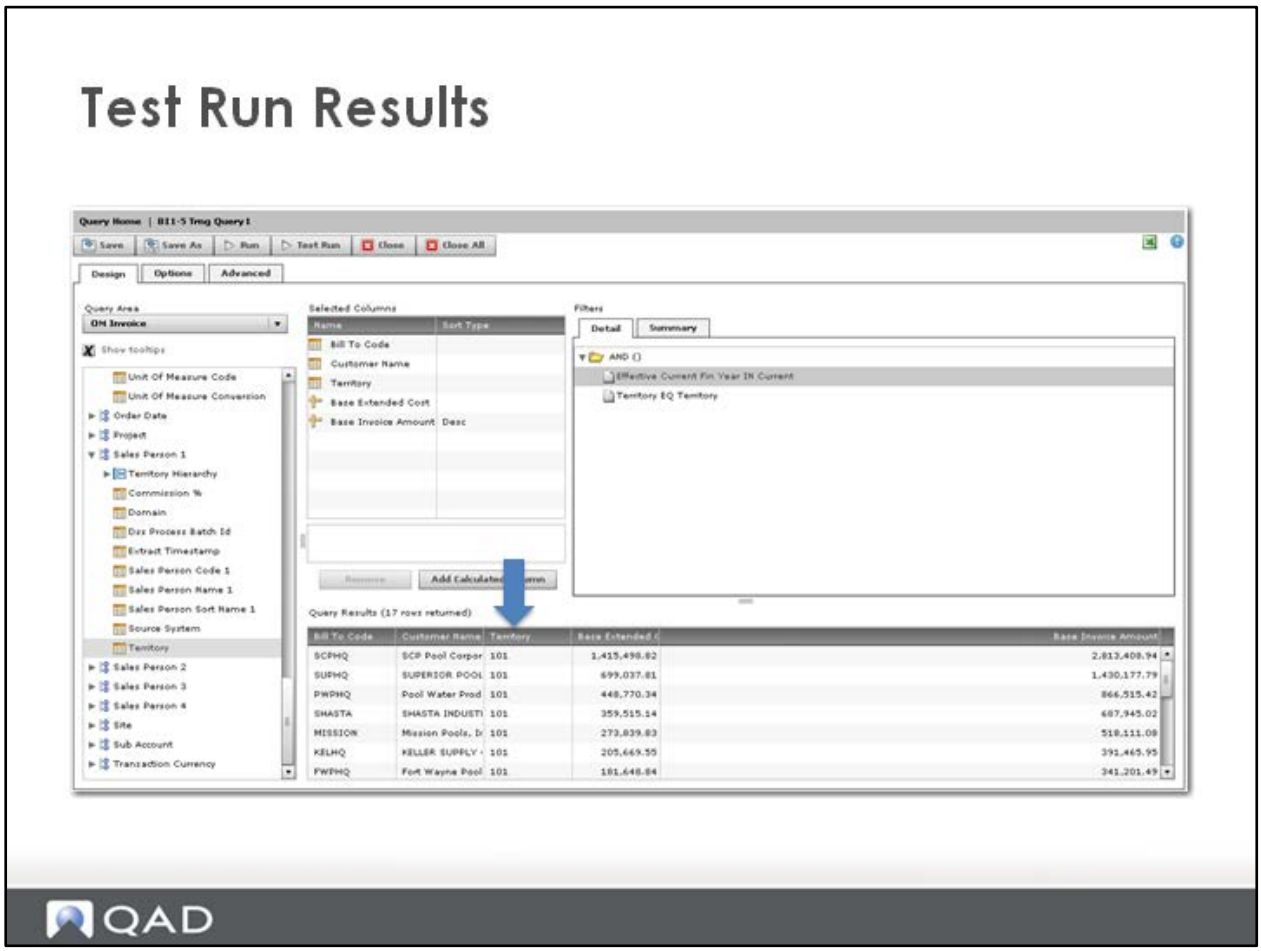
For a parameter field, you should enter a value in the Prompt Text field. If you want to test the query from within the Query Designer, you should also enter a default value.

Test Run



We add the new filter column, Territory, to the Selected Columns window to see the results of the change when we Test Run the query.

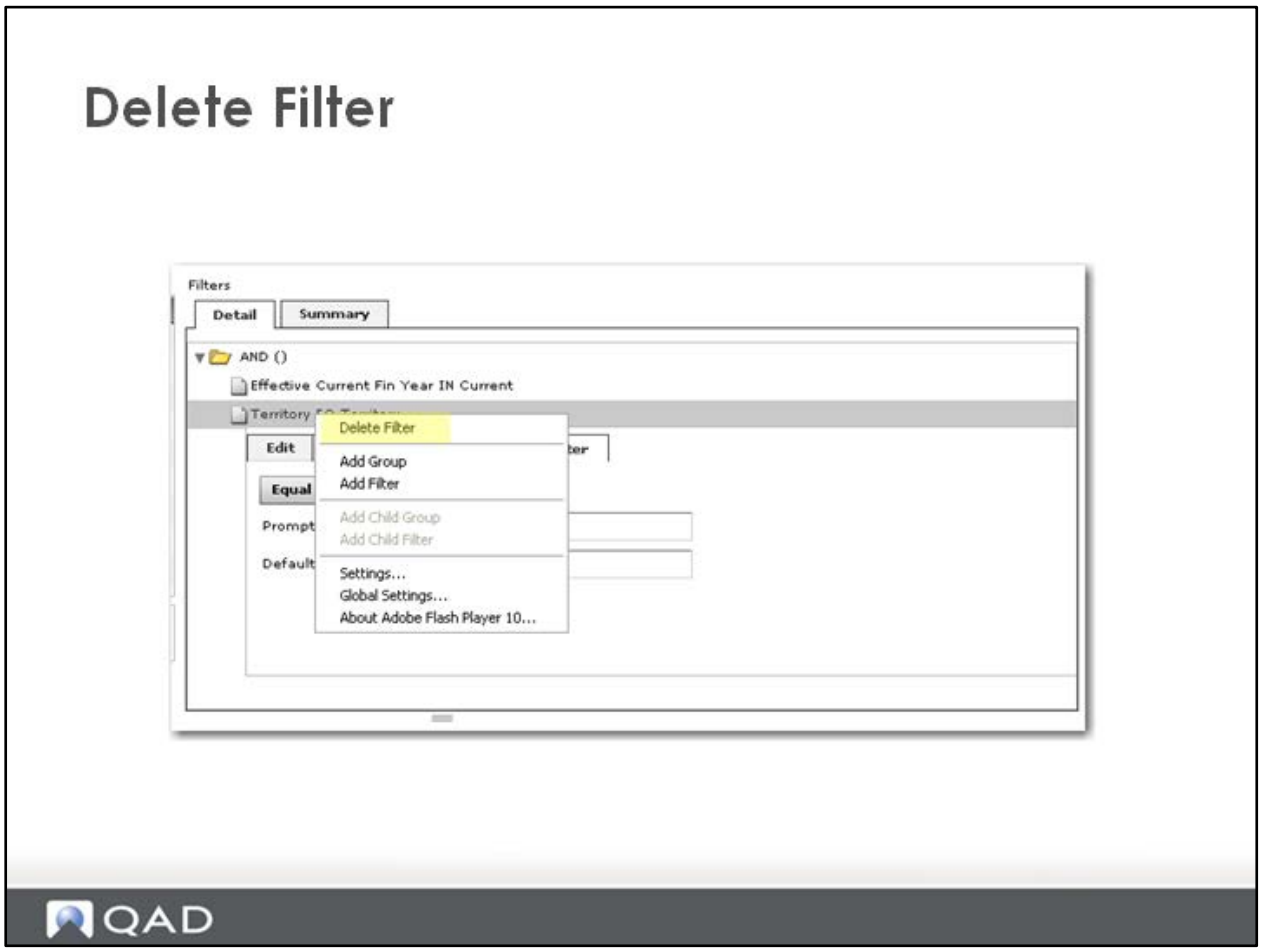
Test Run Results



Delete Filter

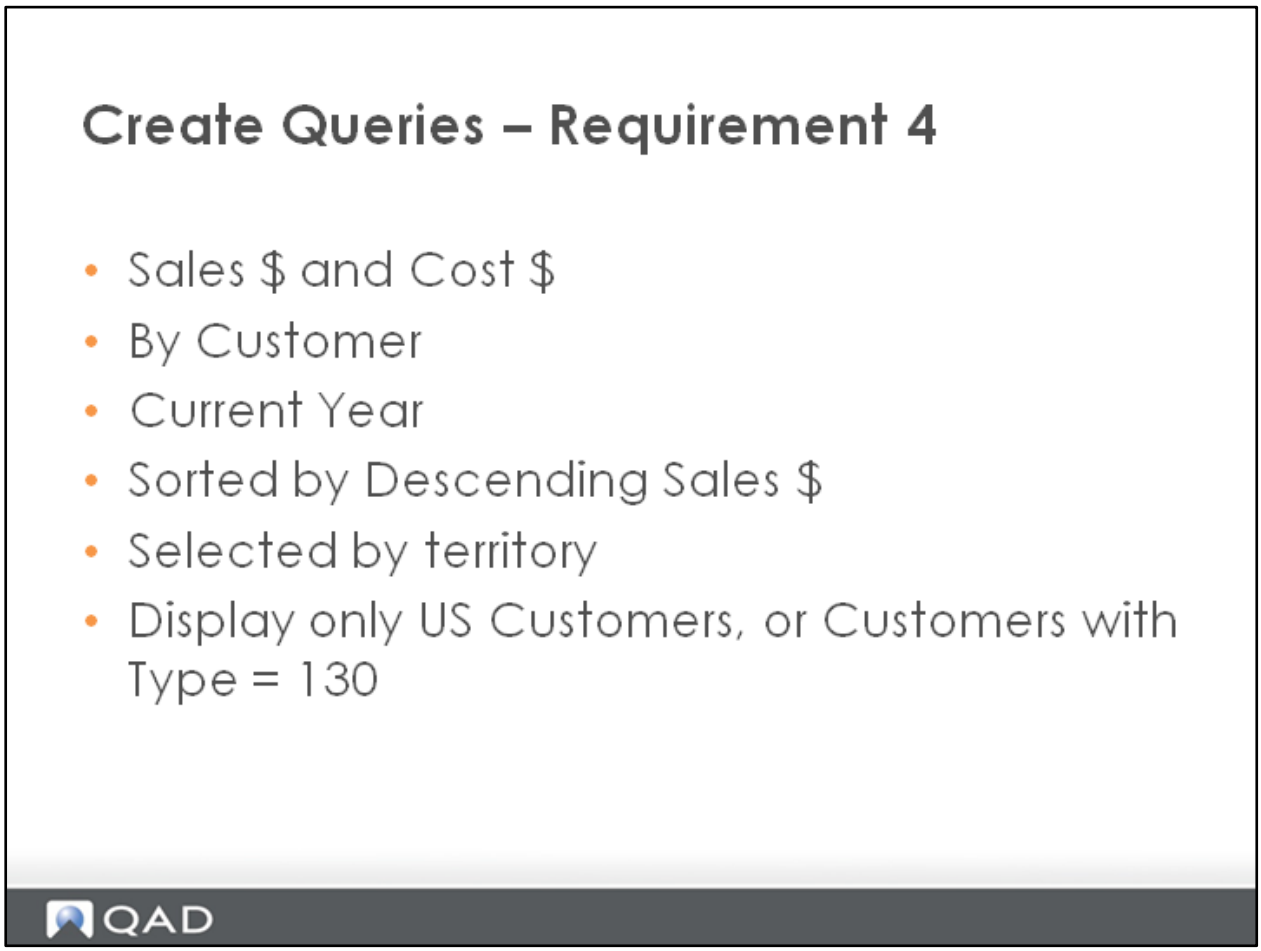


Delete Filter



To delete a filter, right click on the filter name and select *Delete Filter* from the drop down menu.

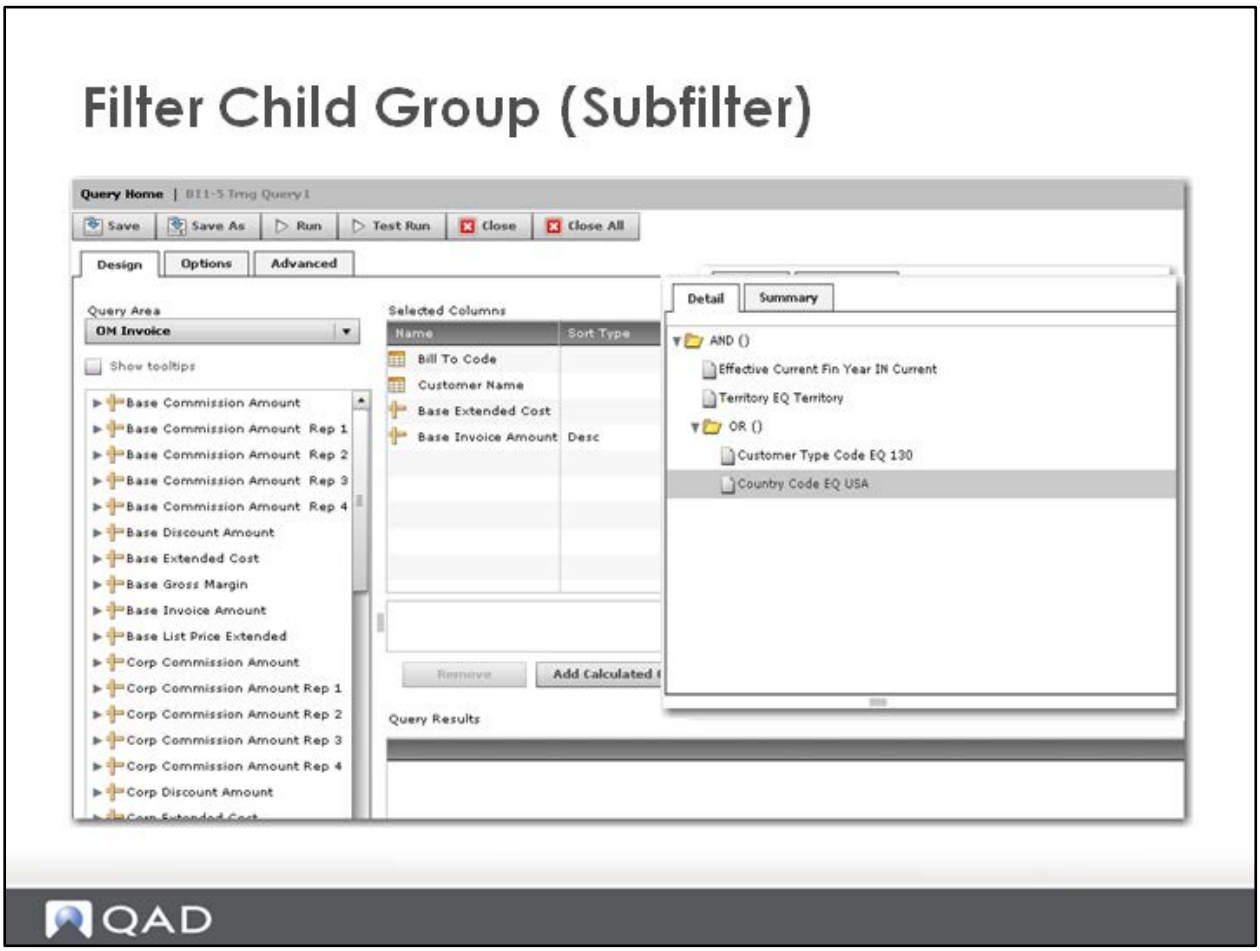
Create Queries – Requirement 4



We’ve added another requirement to our example:

- Display only US Customers OR customers with type = 130

Filter Child Group (Subfilter)

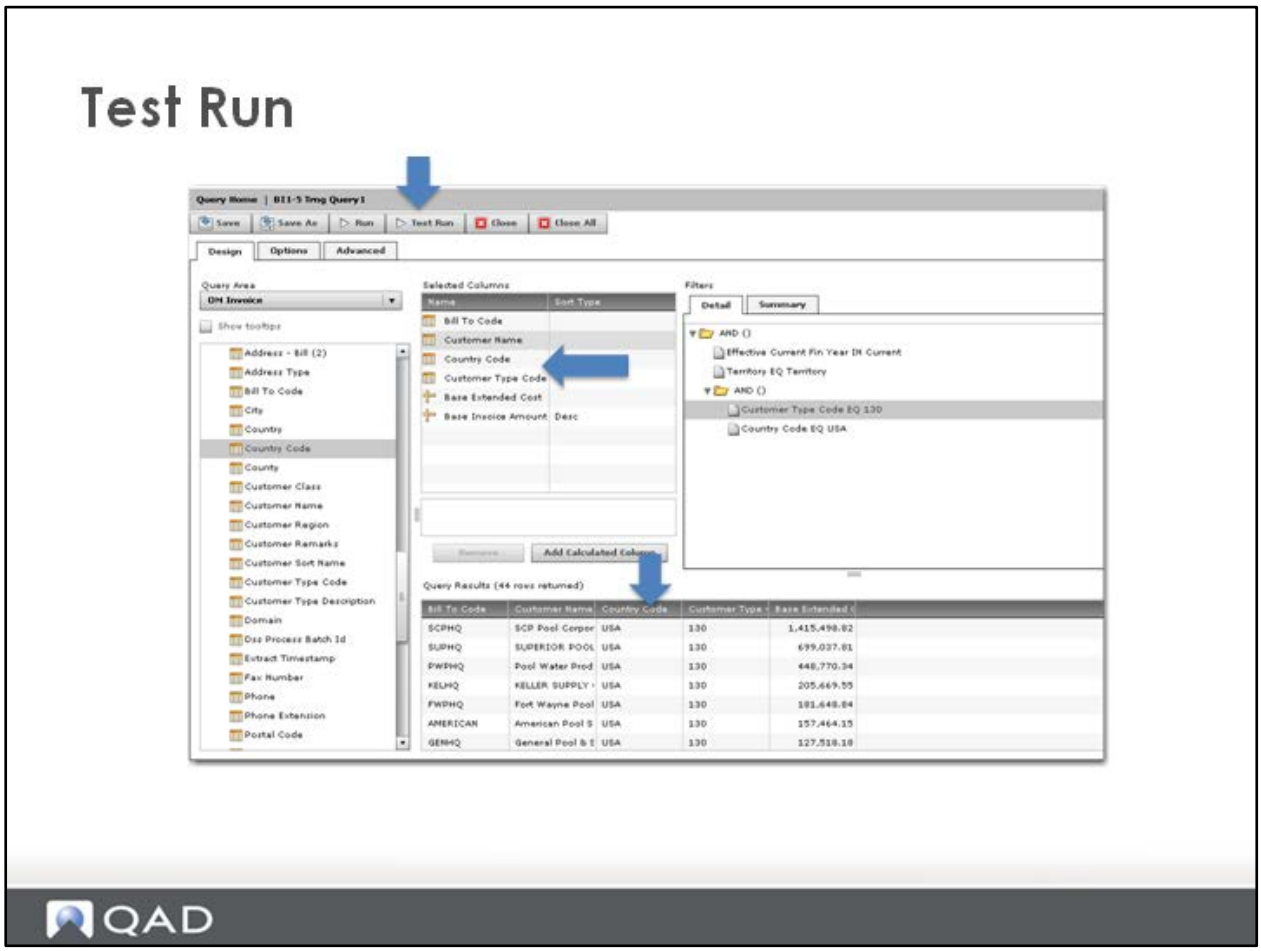


To create a child group – right click on the *Add* folder and select *Add Child Group* from the drop down list.

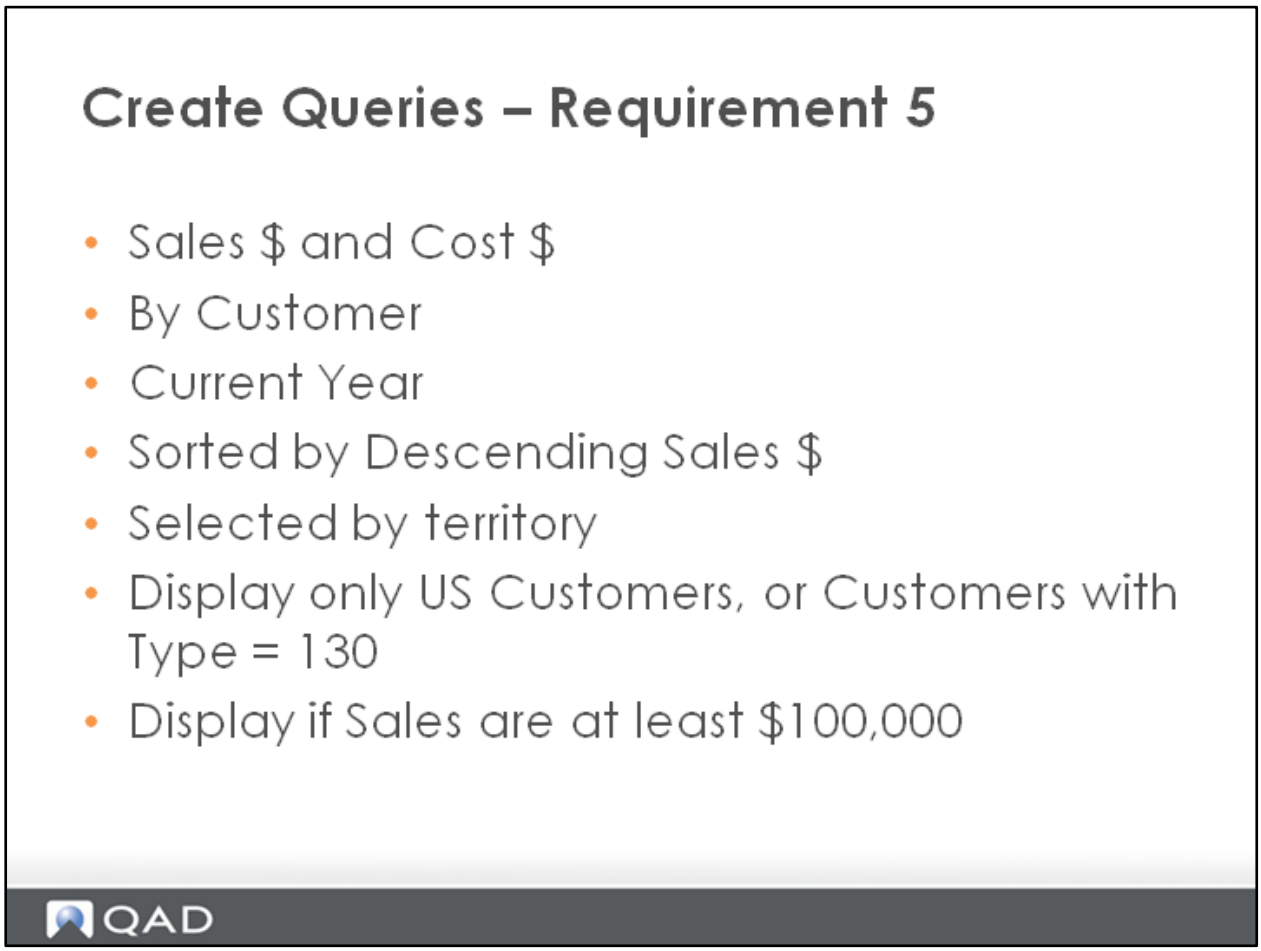
By default, the system add an *And* folder. To change this to *Or*, click the folder and select *Or*.

Click and drag columns and set filter types, as appropriate.

Test Run

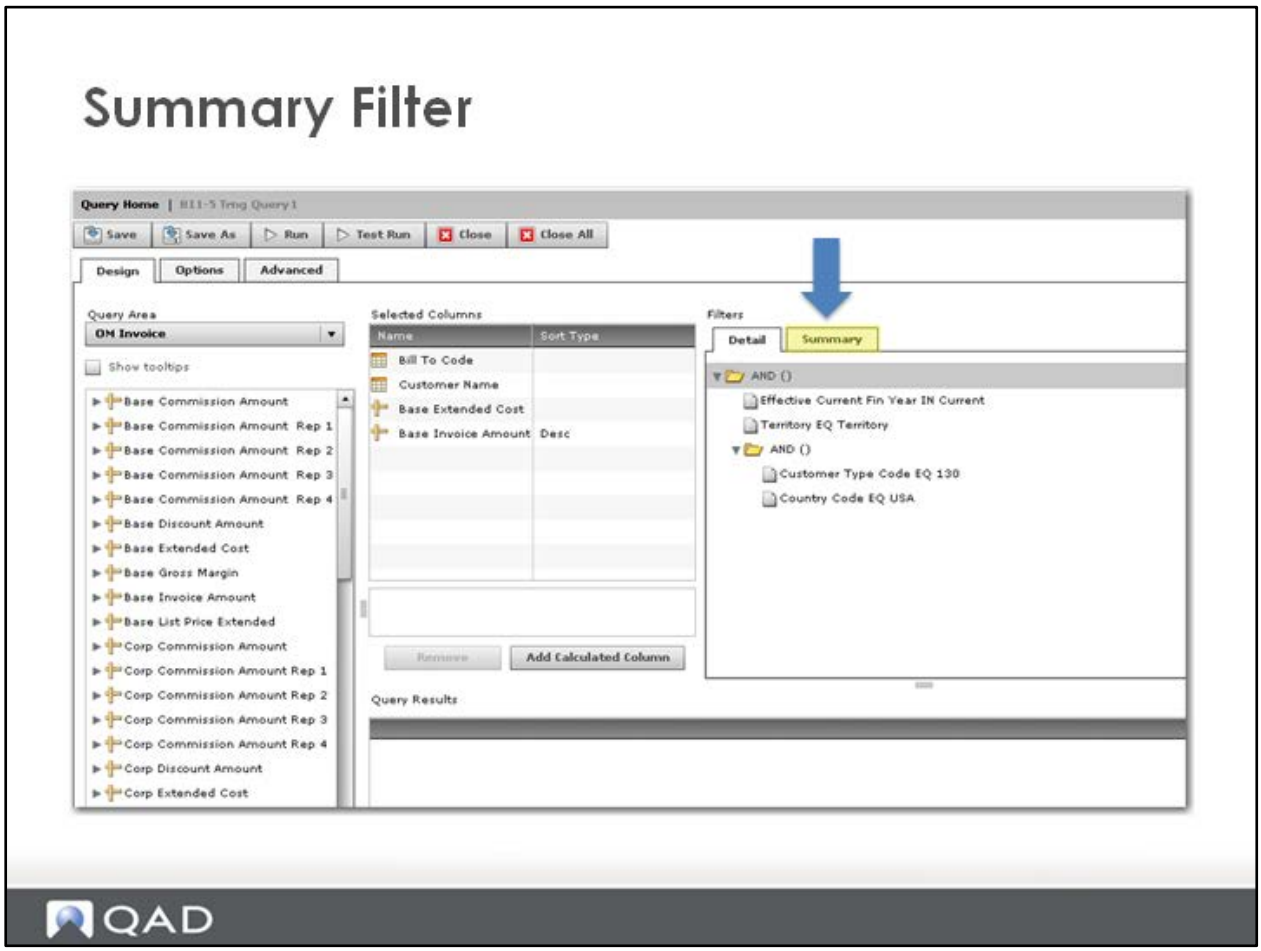

Test Run
Save
Save As
Run
Test Run
Close
Close All
Design
Options
Advanced
Query Area
Selected Columns
Filters
Detail
Summary
Bill To Code
Customer Name
Country Code
Customer Type Code
Base Extended Cost
Base Invoice Amount
Query Results (44 rows returned)
QAD

Create Queries – Requirement 5



Another requirement is now added: Display customer if sales are at least $100,000.

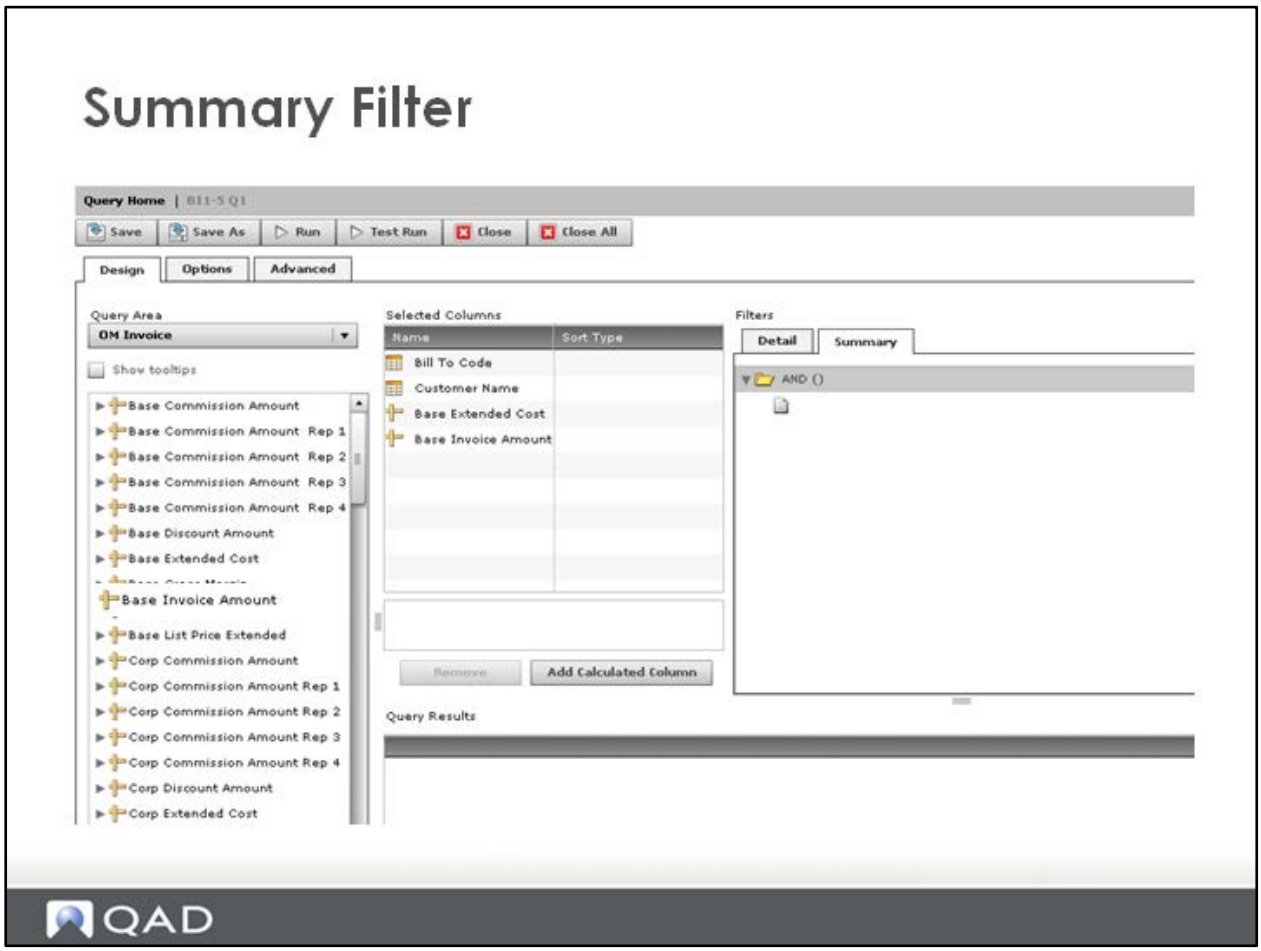
Summary Filter



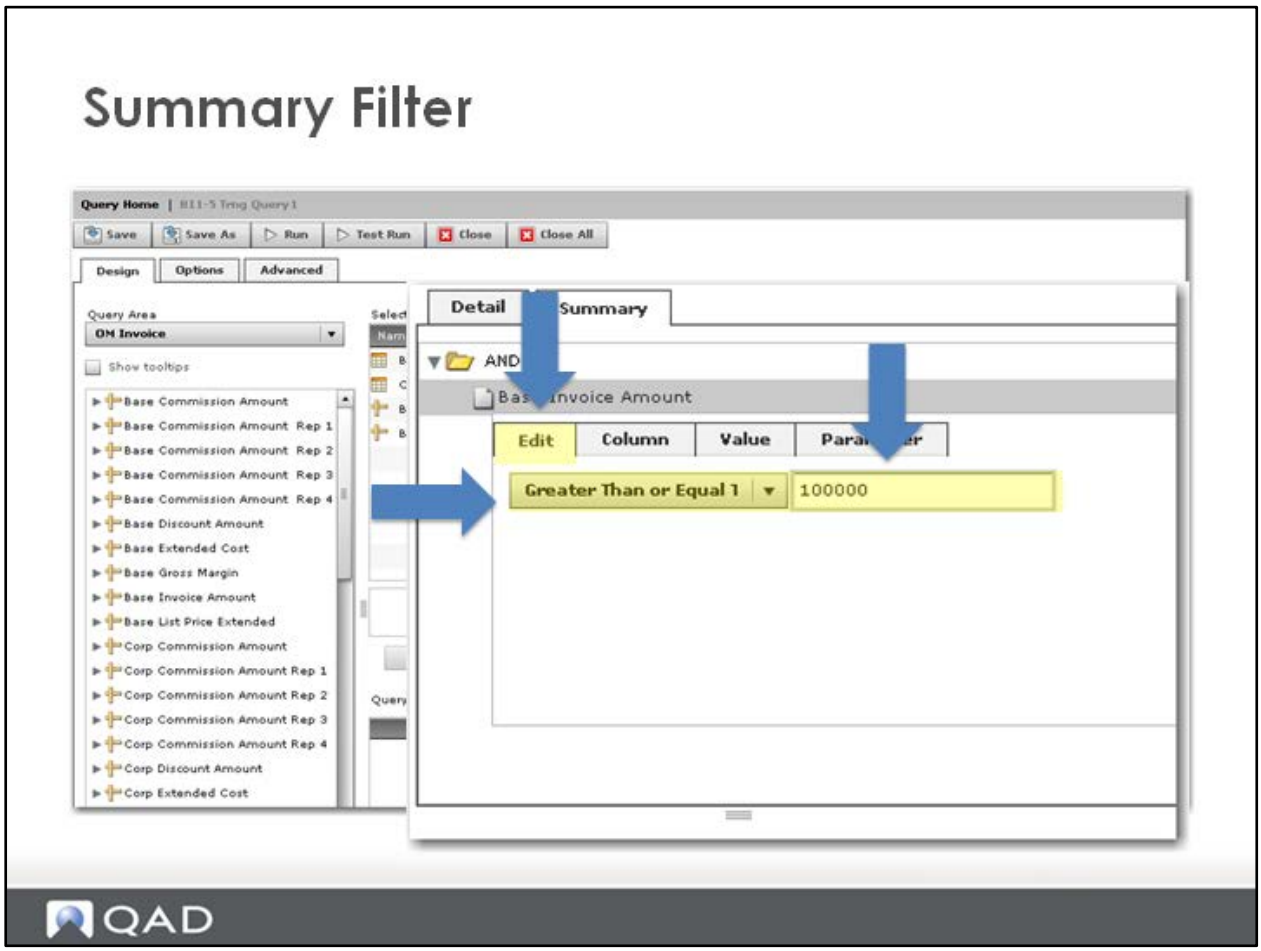
Summary filters are applied after the rows/records are extracted based on the *Detail* Filter. In this example, we only want to display Customer's who have more then $100,000 in <u>total</u> sales for the Current Year.

Detail filters are applied for each row/record.

Summary Filter



Summary Filter



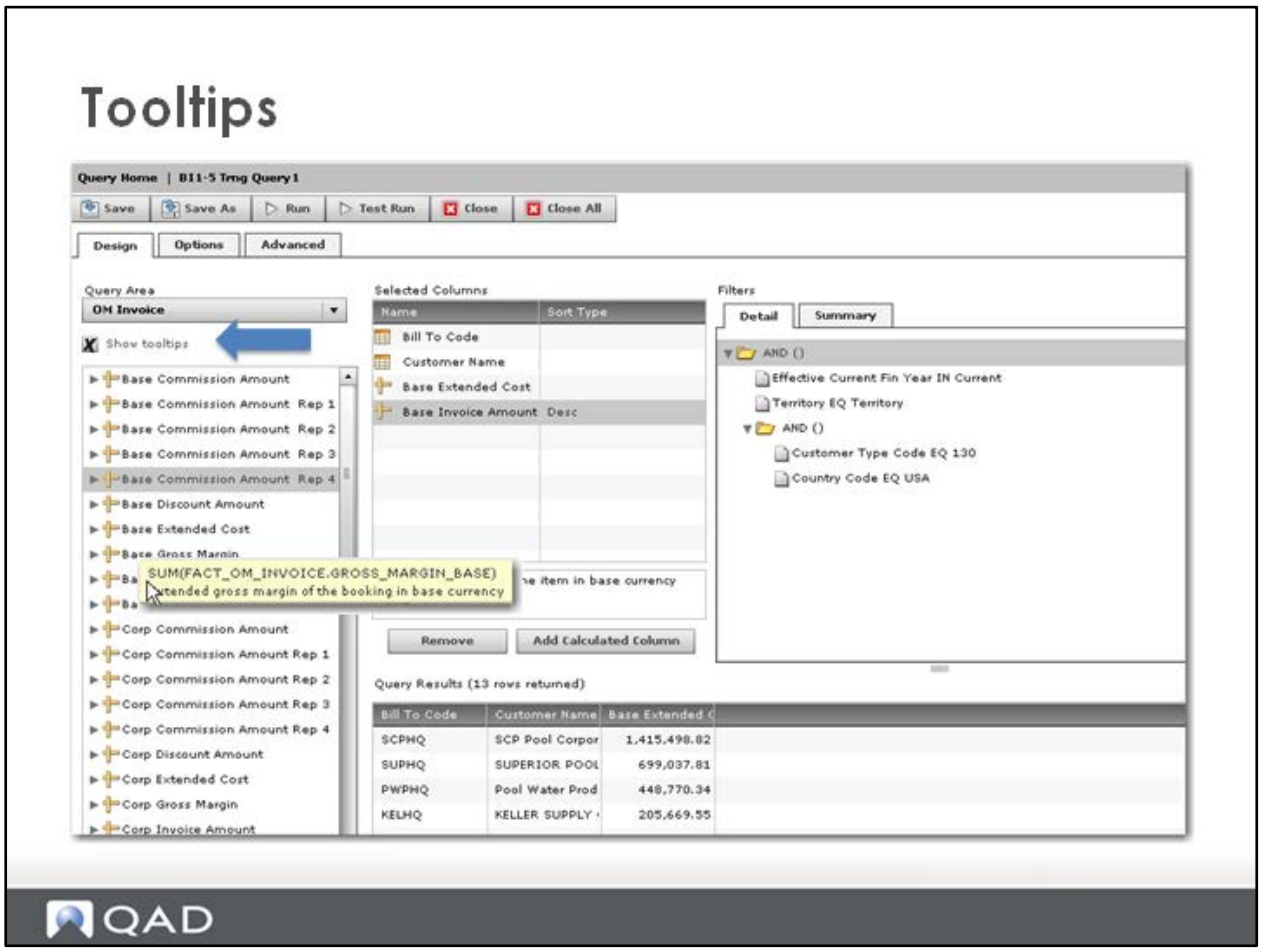
Just like *Detail* filters, click and drag fields to the *Summary* filter window. Then, select a filter type.

This example is column = *Base Invoice Amount* and Filter type = Value is Greater than or Equal to 100,000

Additional Query Capabilities

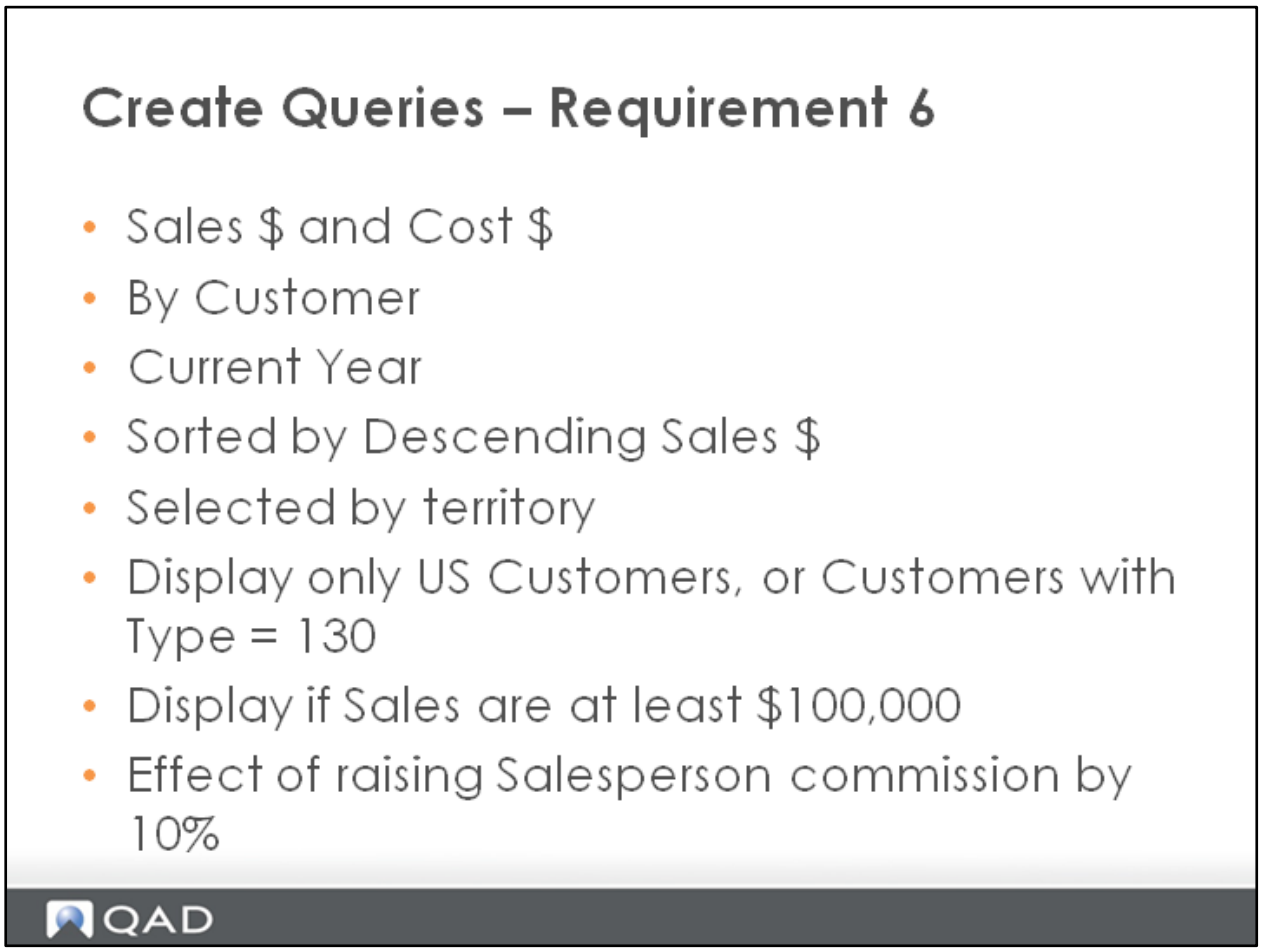


Tooltips



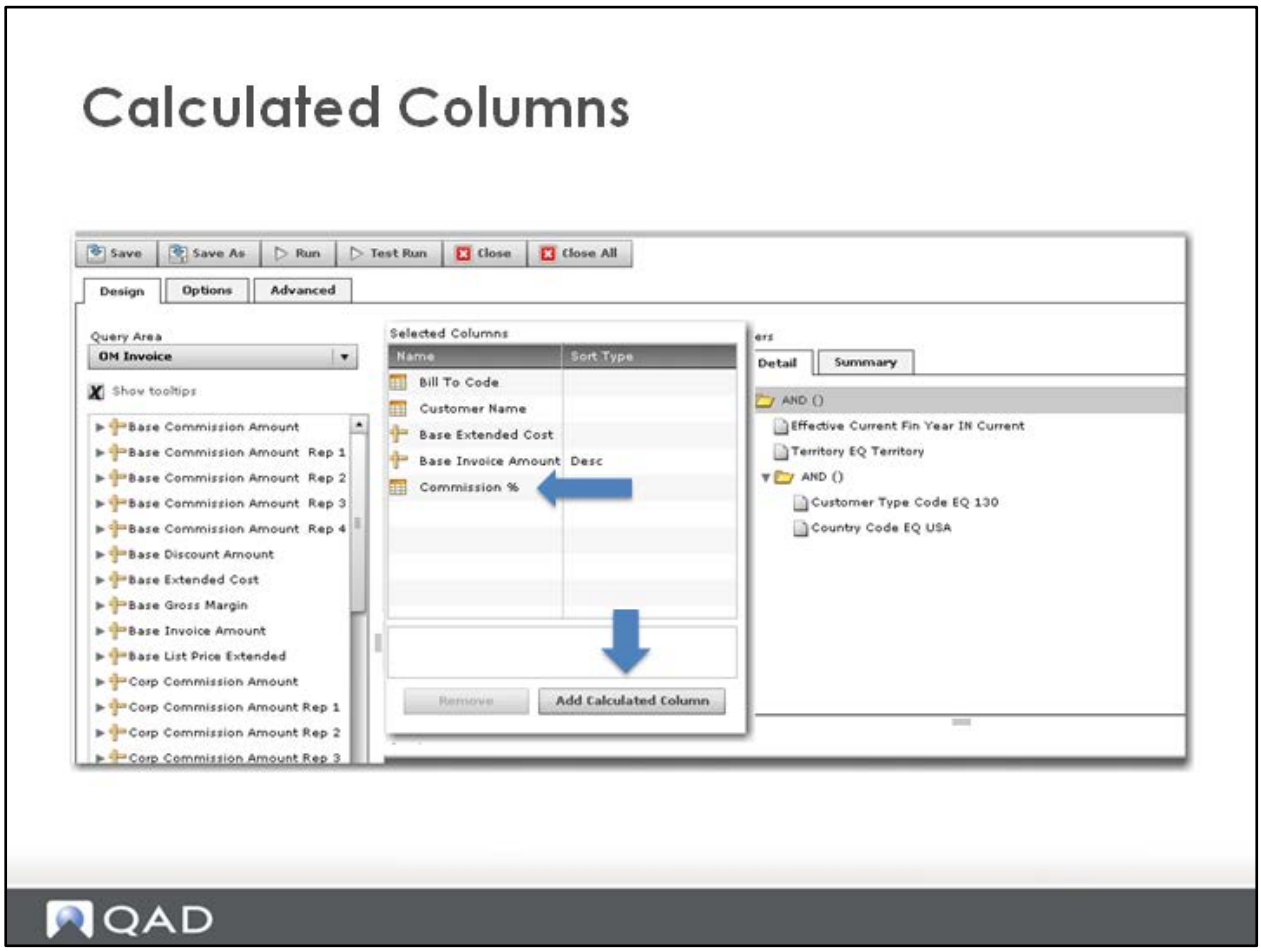
Tooltips display SQL definitions.

Create Queries – Requirement 6



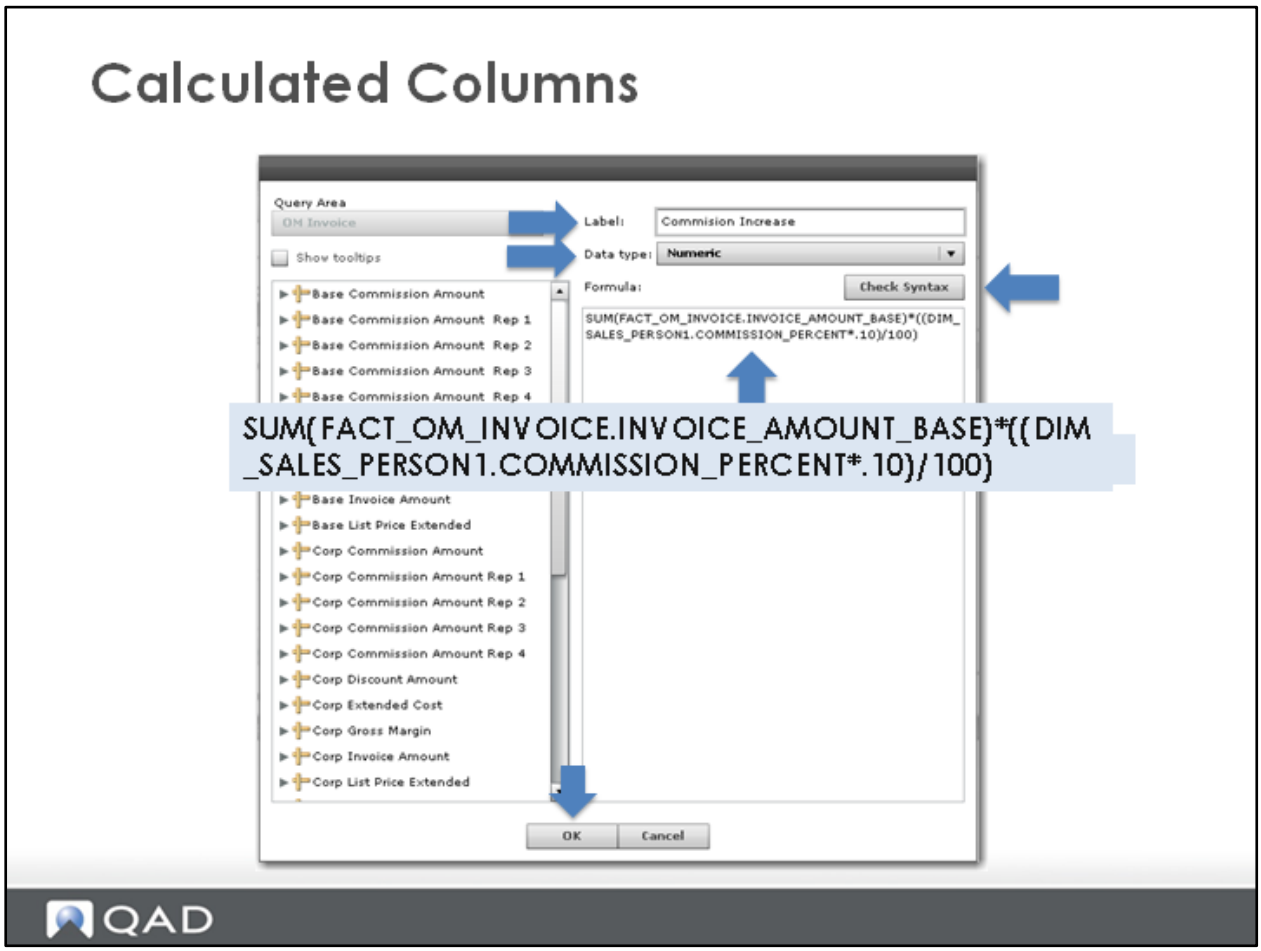
Additional requirement added to our example: Effect of raising Salesperson commission by 10%

Calculated Columns



Calculated columns are added in the *Selected Columns* window.

Calculated Columns



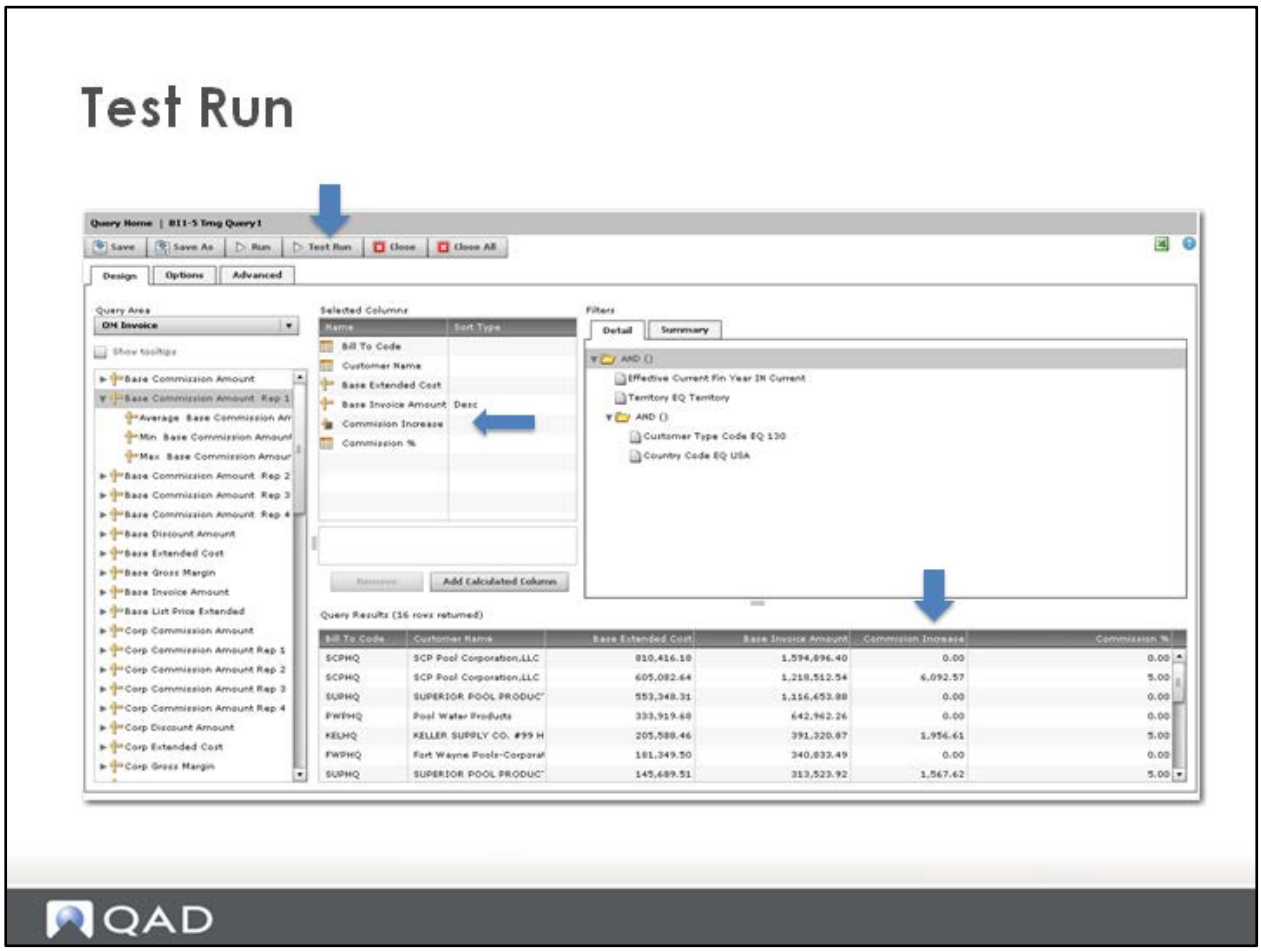
We must add a label to the calculated column.

Data types can be *Numeric* or *Integer*.

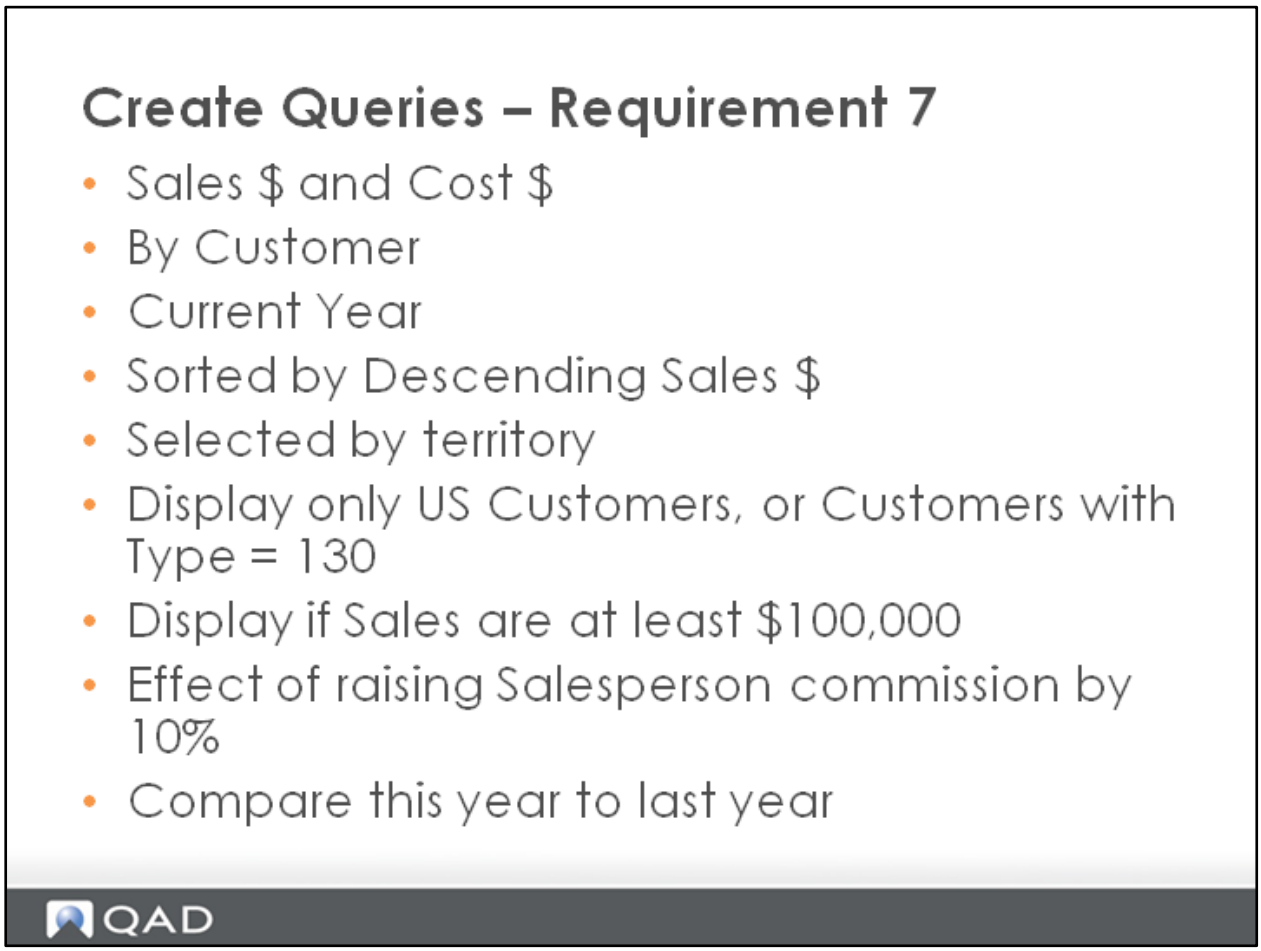
Column names can be dragged from the pane on the left. Mathematical operators (*, +, /,-) and other column names can be typed in. Also, parentheses can be added.

Check syntax before saving (OK).

Test Run

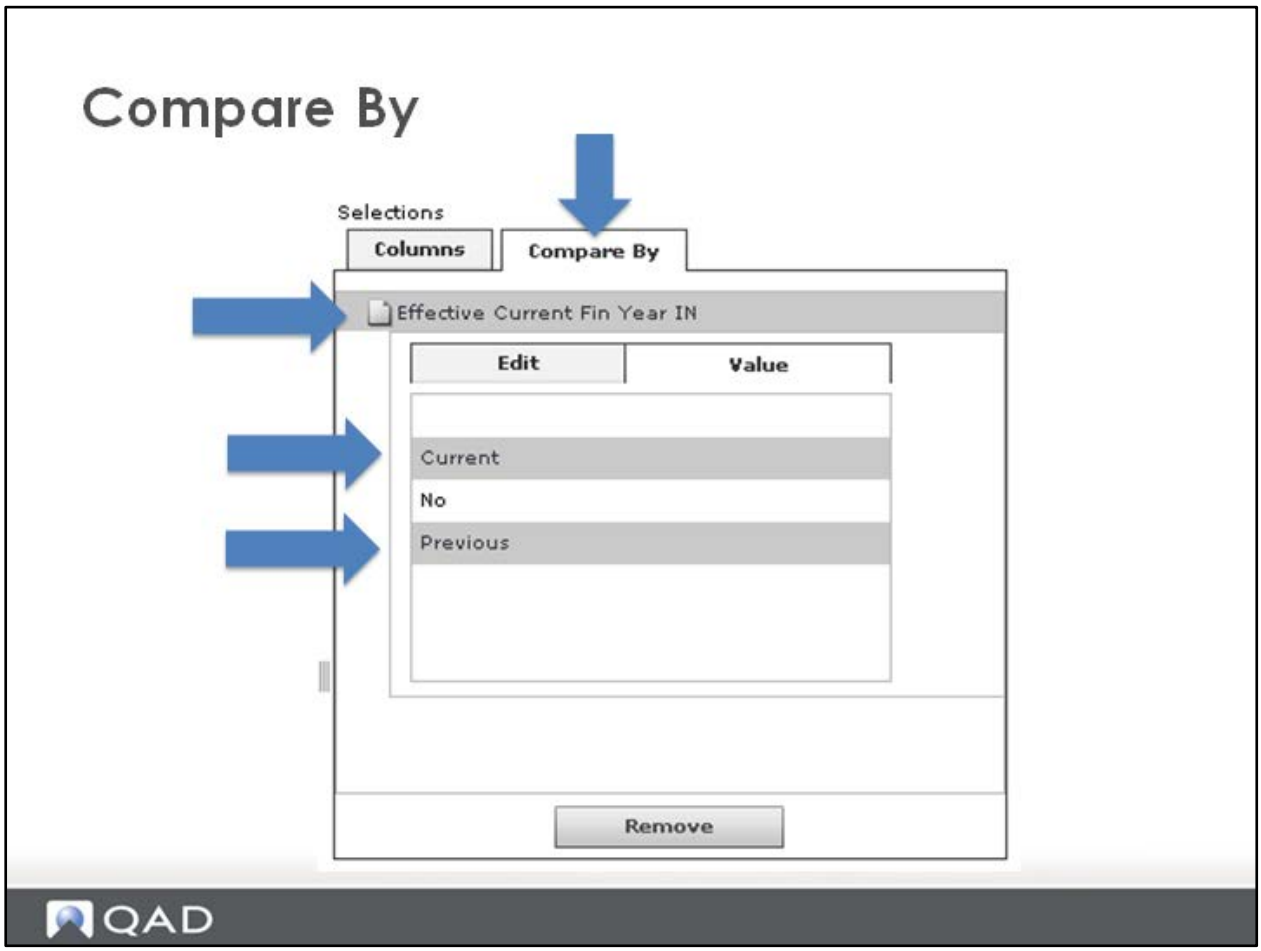

Test Run
Query Home | 811-5 Trng Query1
Save
Save As
Run
Test Run
Close
Close All
Design
Options
Advanced
Query Area
OM Invoice
Selected Columns
Name
Sort Type
Bill To Code
Customer Name
Base Extended Cost
Base Invoice Amount
Desc
Commision Increase
Commission %
Filters
Detail
Summary
AND ()
Effective Current Fin Year IN Current
Territory EQ Territory
AND ()
Customer Type Code EQ 130
Country Code EQ USA
Add Calculated Column
Query Results (16 rows returned)
Bill To Code
Customer Name
Base Extended Cost
Base Invoice Amount
Commision Increase
Commission %
SCPHQ
SCP Pool Corporation,LLC
810,416.10
1,594,896.40
0.00
0.00
SCPHQ
SCP Pool Corporation,LLC
605,082.64
1,218,512.54
6,092.57
5.00
SUPHQ
SUPERIOR POOL PRODUC
553,348.31
1,116,653.88
0.00
0.00
PWPHQ
Pool Water Products
333,919.68
642,962.26
0.00
0.00
KELHQ
KELLER SUPPLY CO. #99 H
205,588.46
391,320.87
1,956.61
5.00
FWPHQ
Fort Wayne Pools-Corporat
181,349.50
340,833.49
0.00
0.00
SUPHQ
SUPERIOR POOL PRODUC
145,689.51
313,523.92
1,567.62
5.00
QAD

Create Queries – Requirement 7



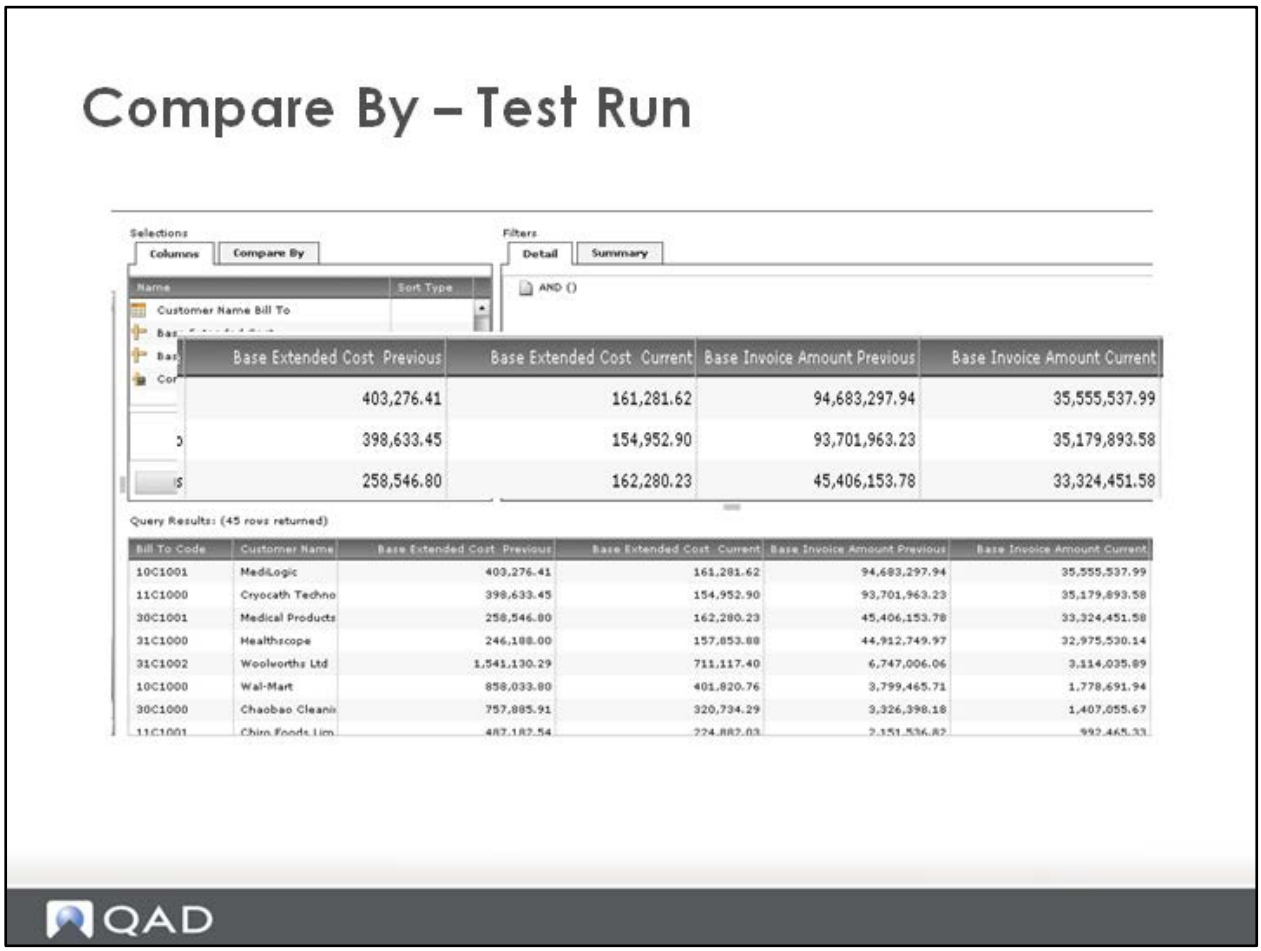
New Compare By functionality. Example: Compare this year to last year.

Compare By



In the Column Selection area of the Query Designer, there is a new *Compare By* tab.

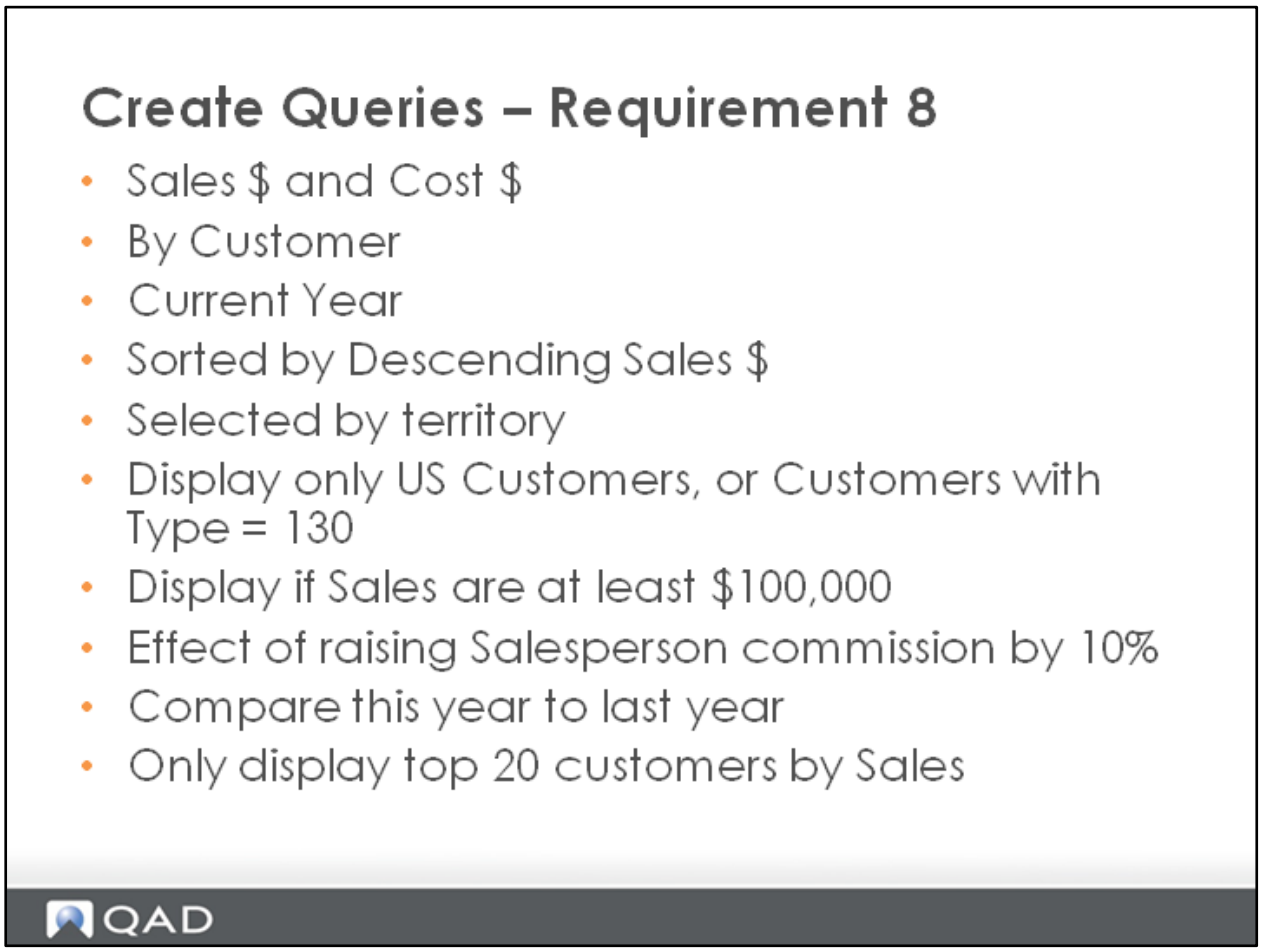
Compare By – Test Run



we now have two columns for each of the Cost and Invoice Amount columns.

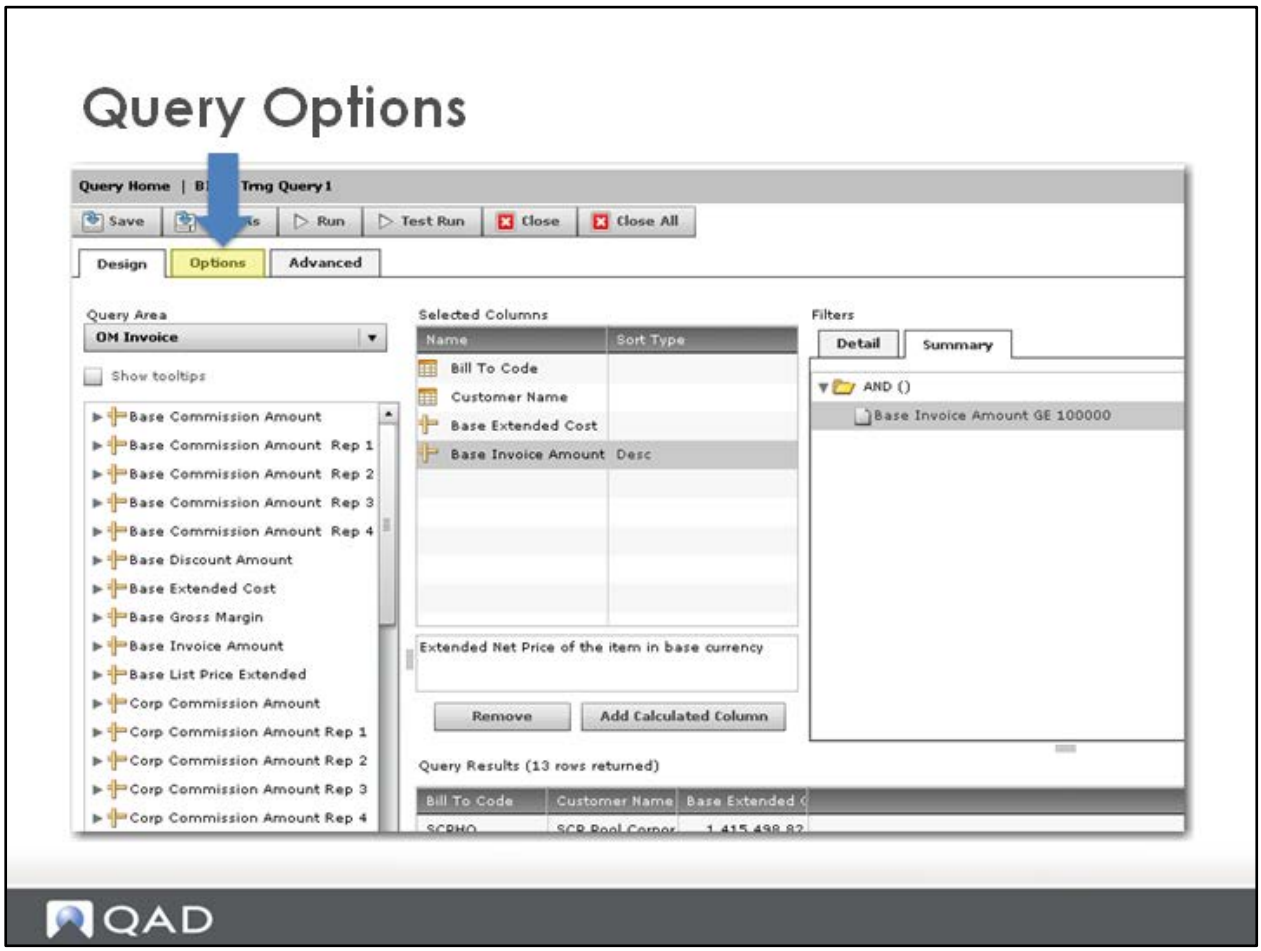
That is, a column for the Previous year, and a second column for the Current year.

Create Queries – Requirement 8

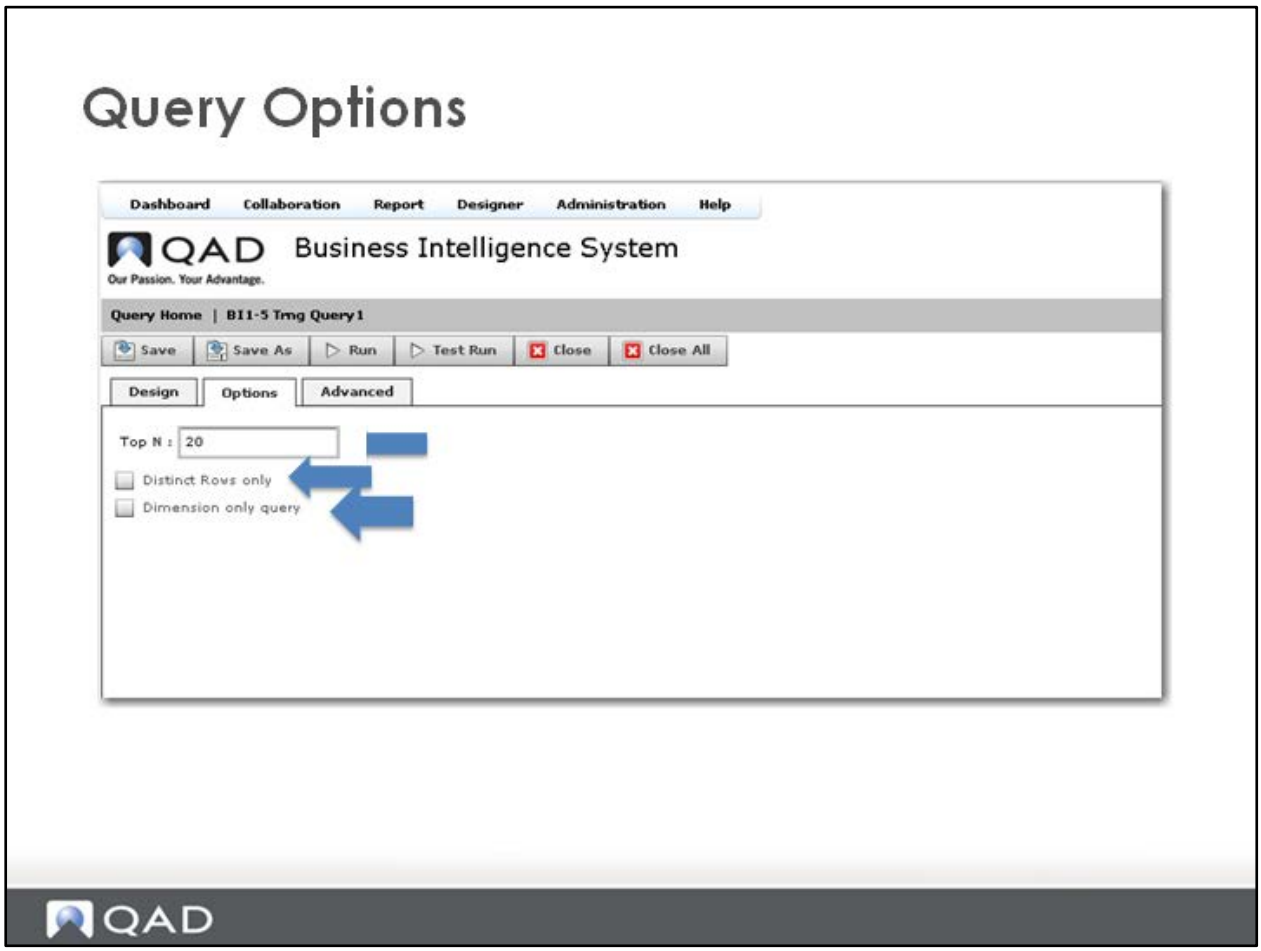


Additional requirement: Only display top 20 customers by Sales

Query Options



Query Options

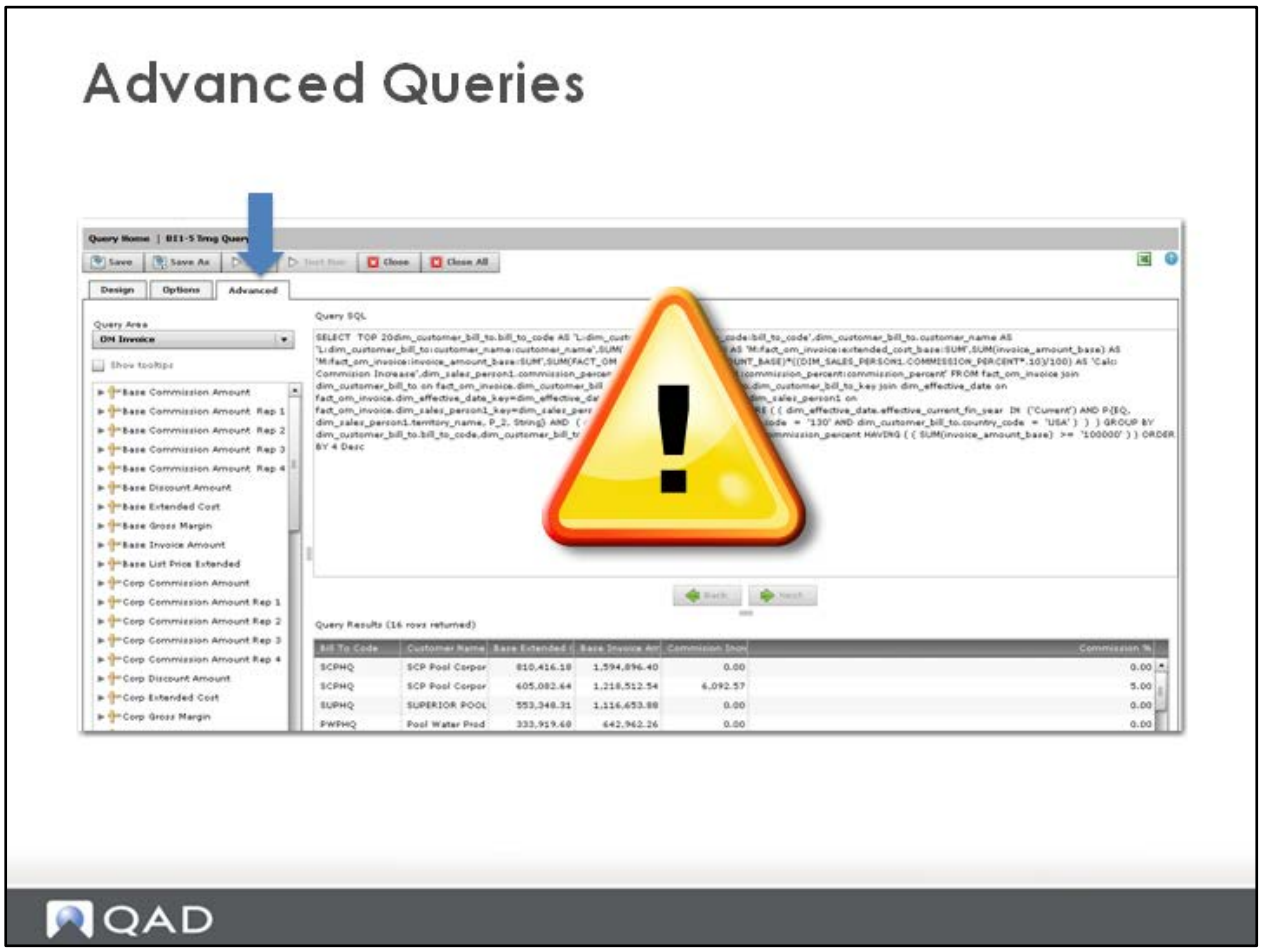


In query options, enter a number in the *Top N* option. Our example is 20.

Distinct Rows Only. Use if dimension(s) used for query result in multiple rows when a single row is needed.

Dimension Only. Use if the information to be displayed does not include any facts. For example: a list of cost centers and their related descriptions.

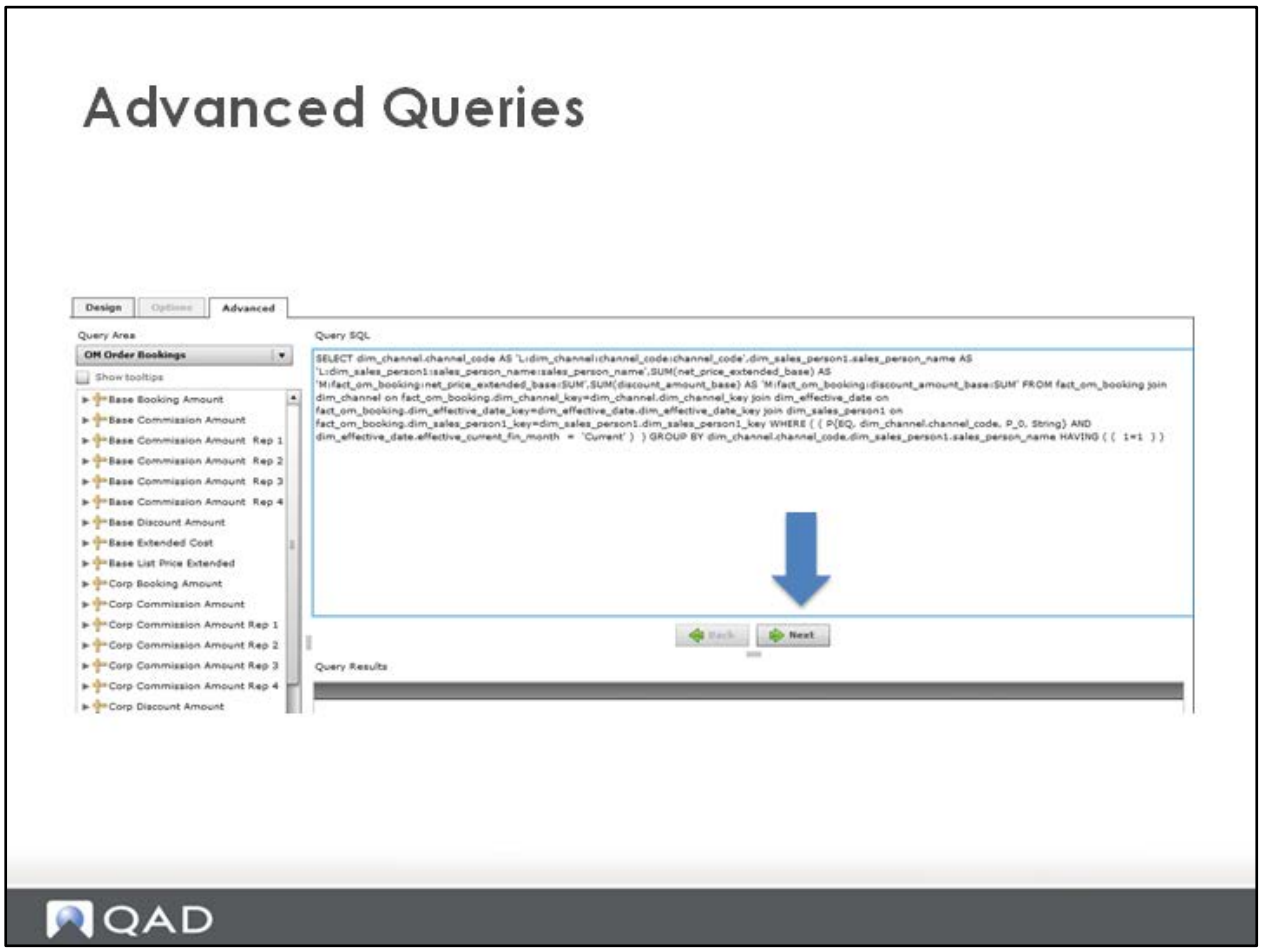
Advanced Queries



You can modify the SQL code that the Query Designer has created.

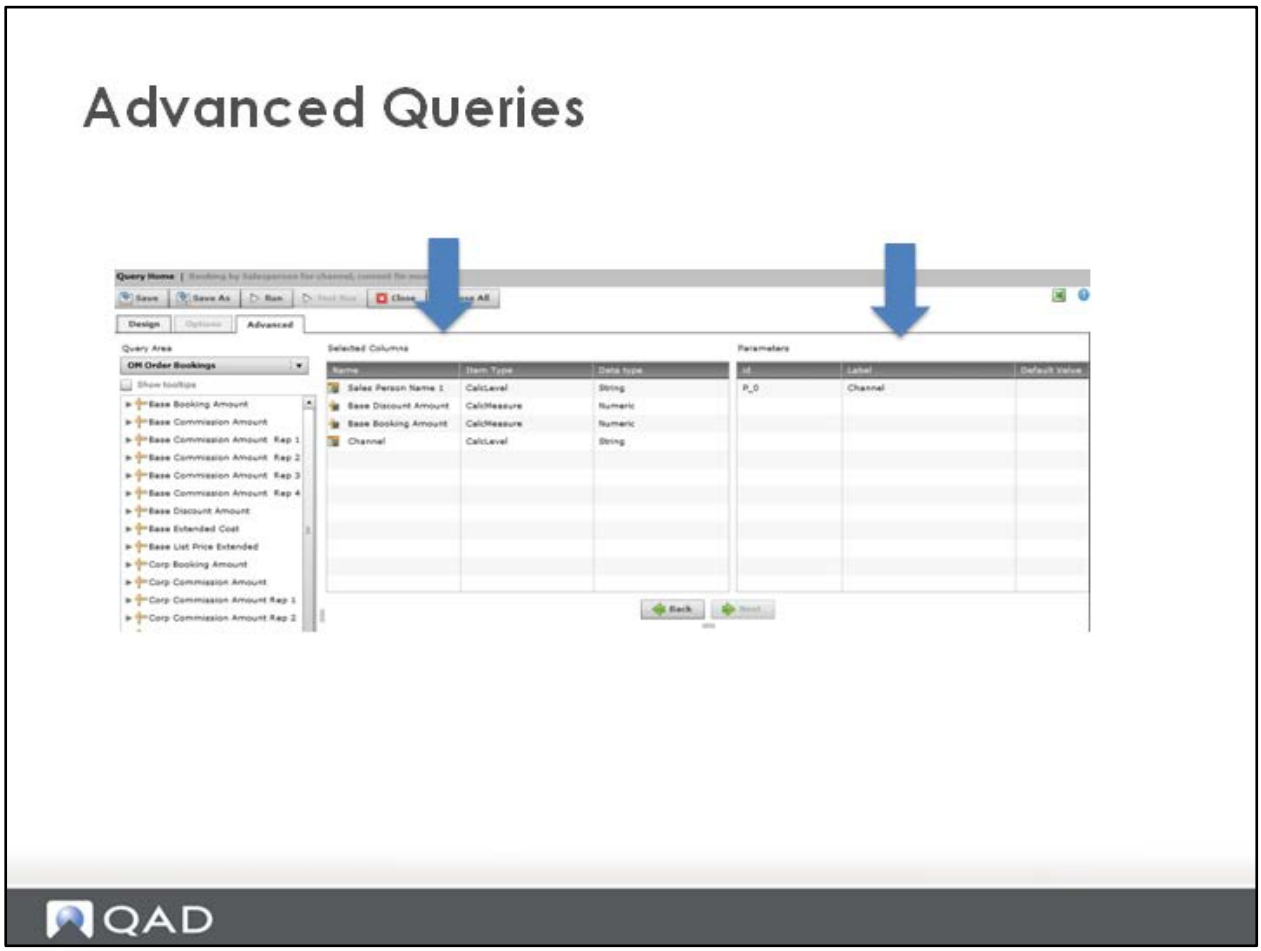
HOWEVER, once you do this, you can not use other the Query Designer functionality to maintain the query. You must maintain the query using the Advanced tab.

Advanced Queries



In the Advanced Tab, after making any change to the SQL code, the “Next” button becomes active.

Advanced Queries

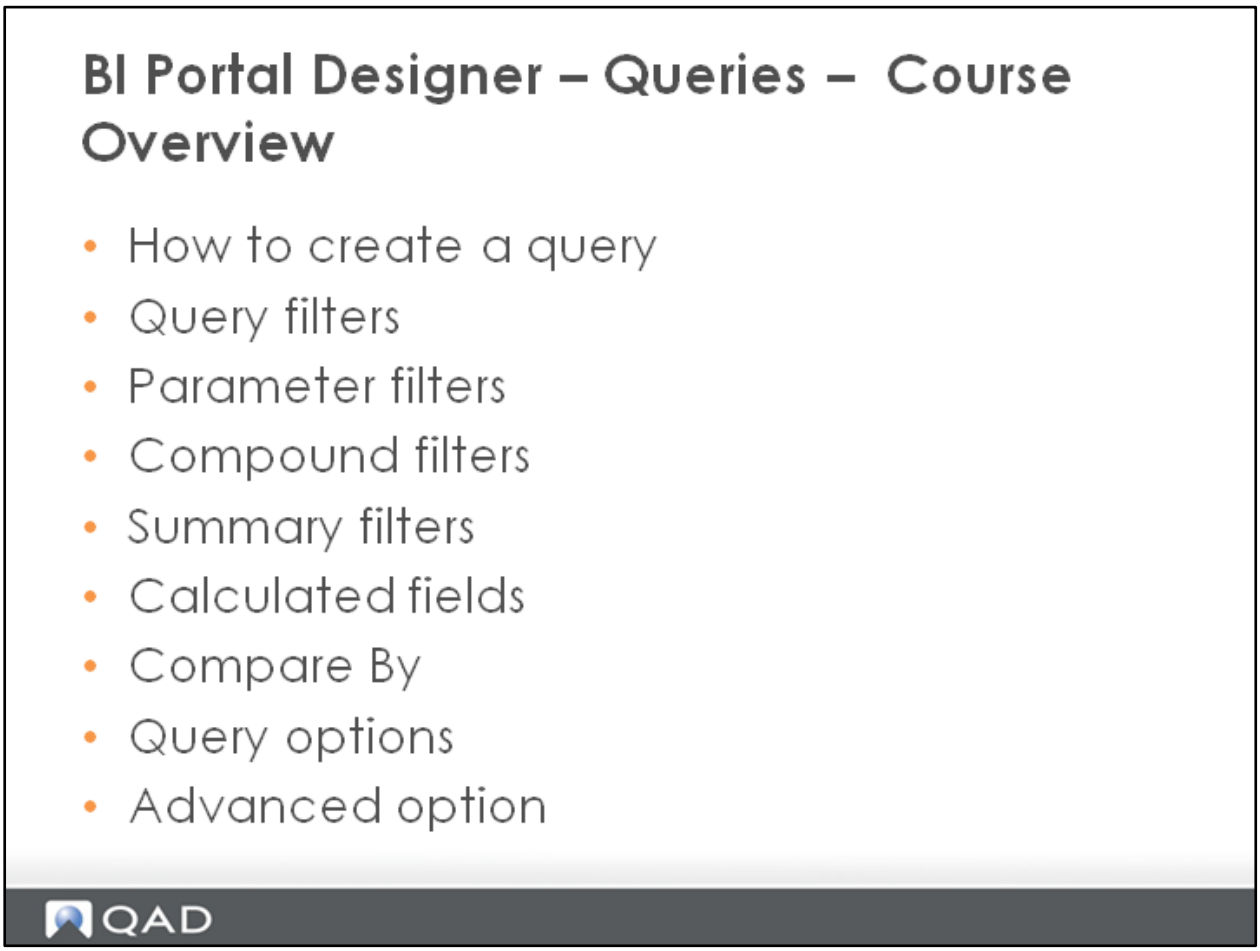


This window allows changes to the data types of the selected columns and the parameter labels and default values.

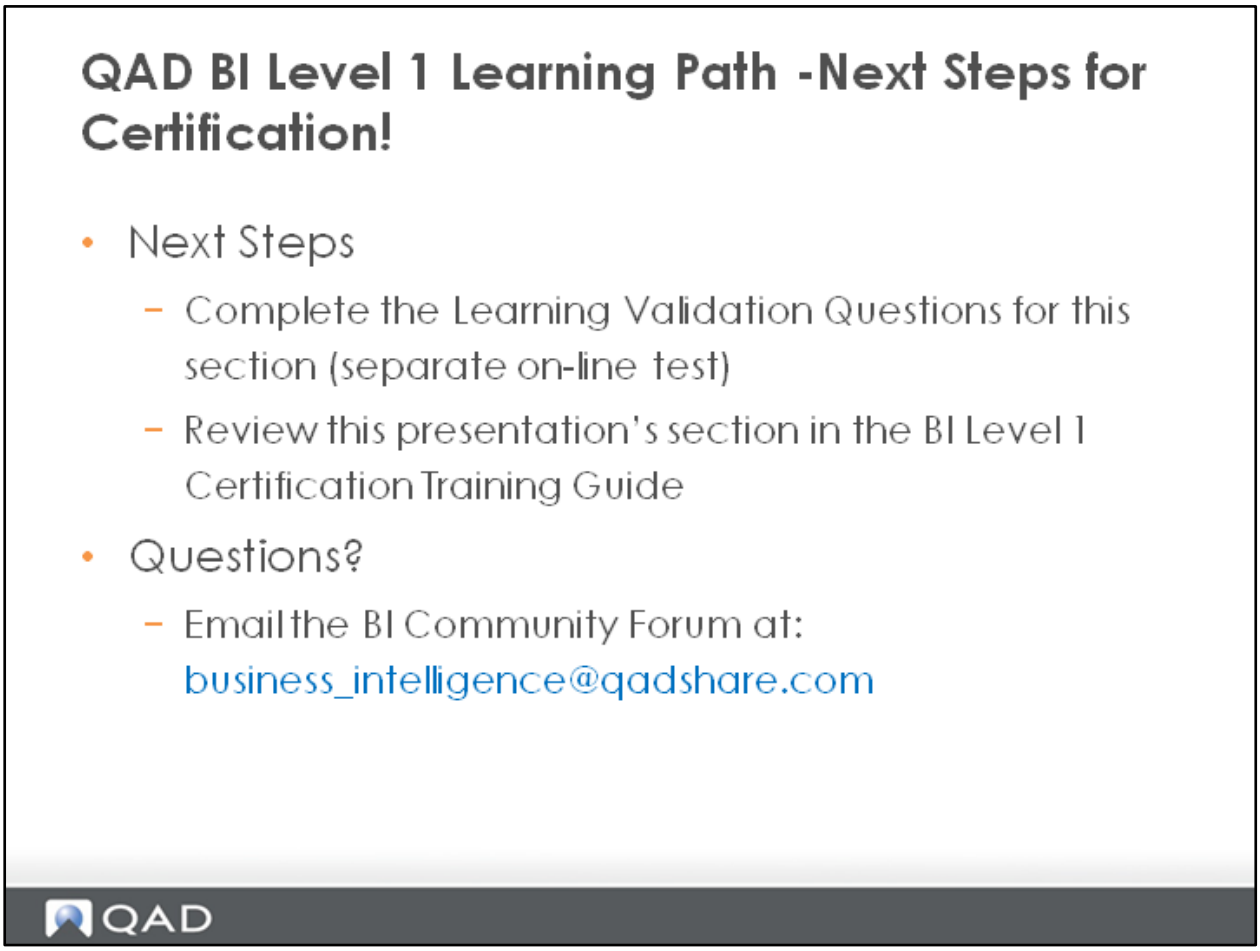
QAD BI Level 1 Learning Path -Course Summary



BI Portal Designer – Queries – Course Overview



QAD BI Level 1 Learning Path -Next Steps for Certification!



CHAPTER 6

BI Portal Designer - Reports

BI Portal Designer - Reports

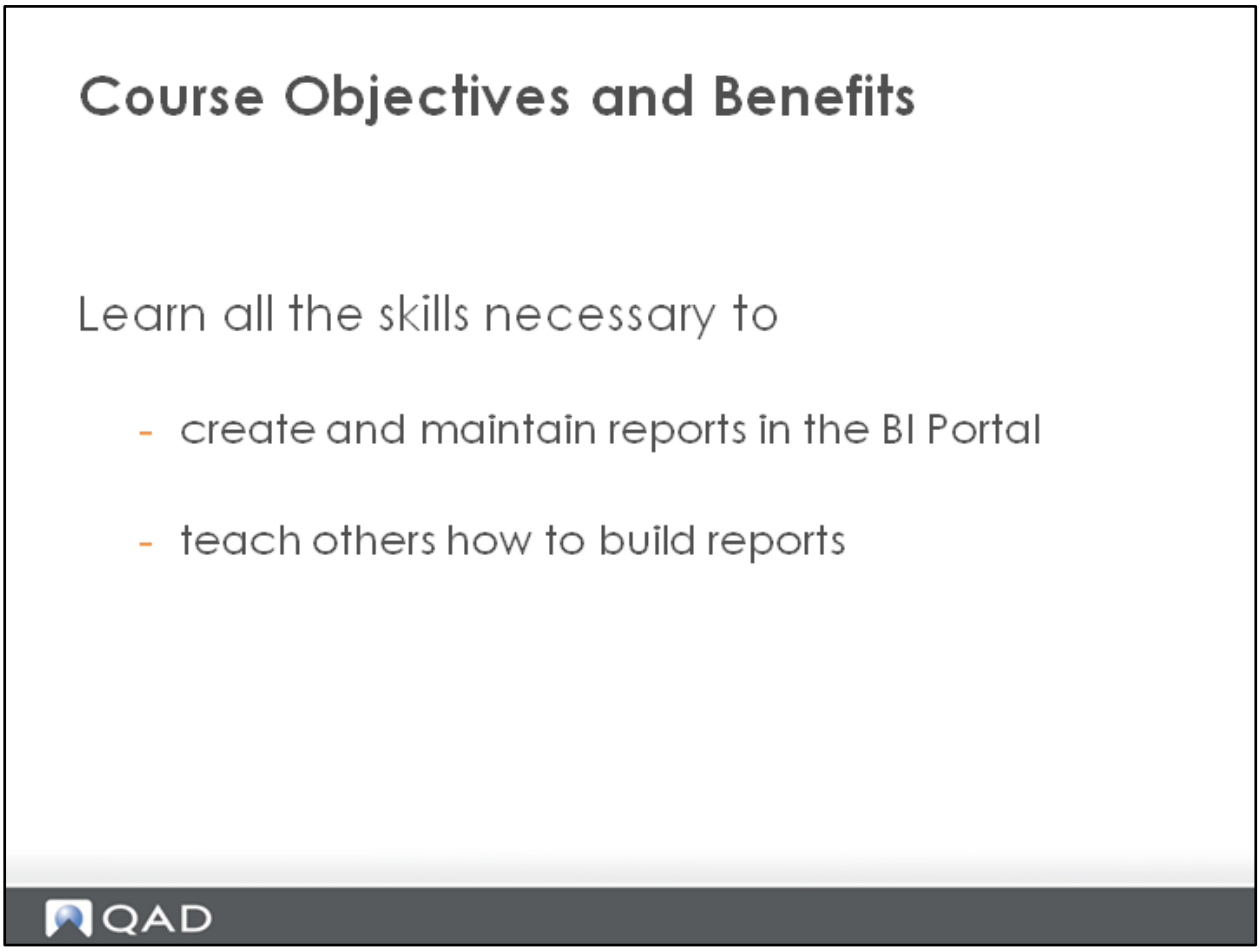


Welcome to the Business Intelligence 1-5 BI Portal Designer – Reports.

Course Overview



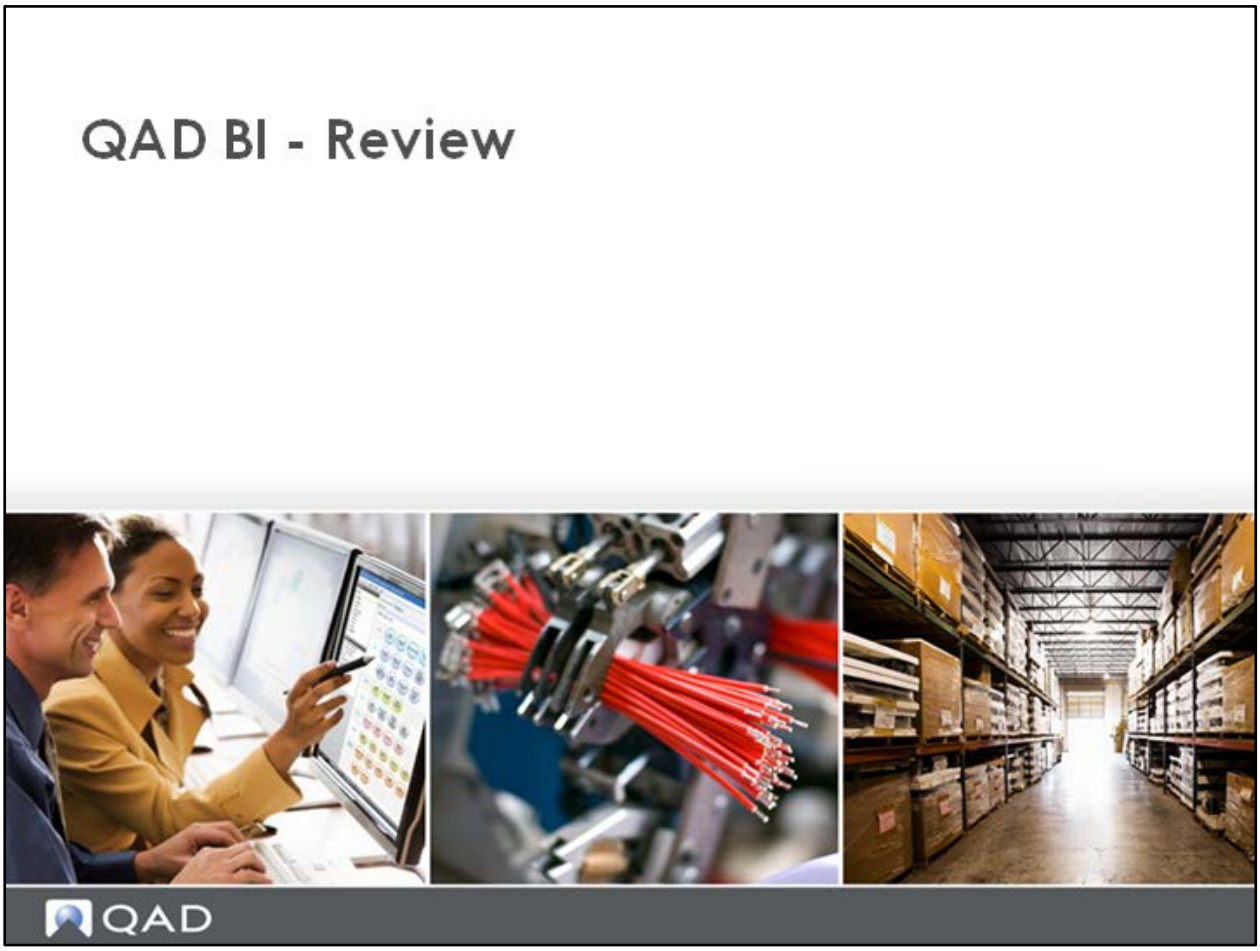
Course Objectives and Benefits



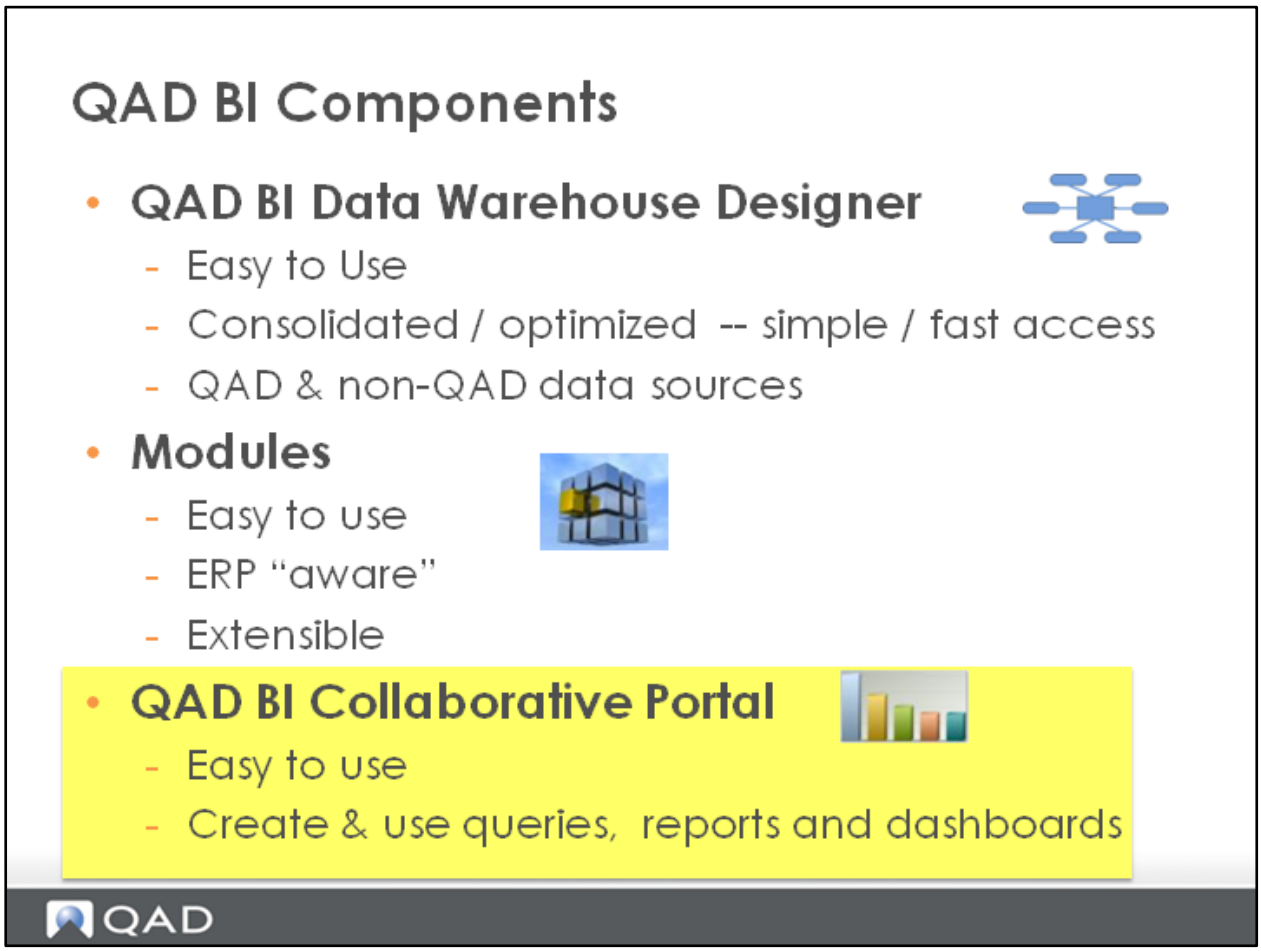
Upon successful completion of this course, you will be able create queries of virtually any type using the BI Portal Query Designer.

The information you obtain in this class, in conjunction with hands-on training activities, will give you confidence in your ability to work with Customers to create these primary building block of the BI Portal.

QAD BI - Review



QAD BI Components



Key Concept:

QAD BI Components:

QAD BI Data Warehouse Developer (DWD)

Consolidate into a single warehouse optimized for simple, fast access

QAD and non-QAD data sources

Modules

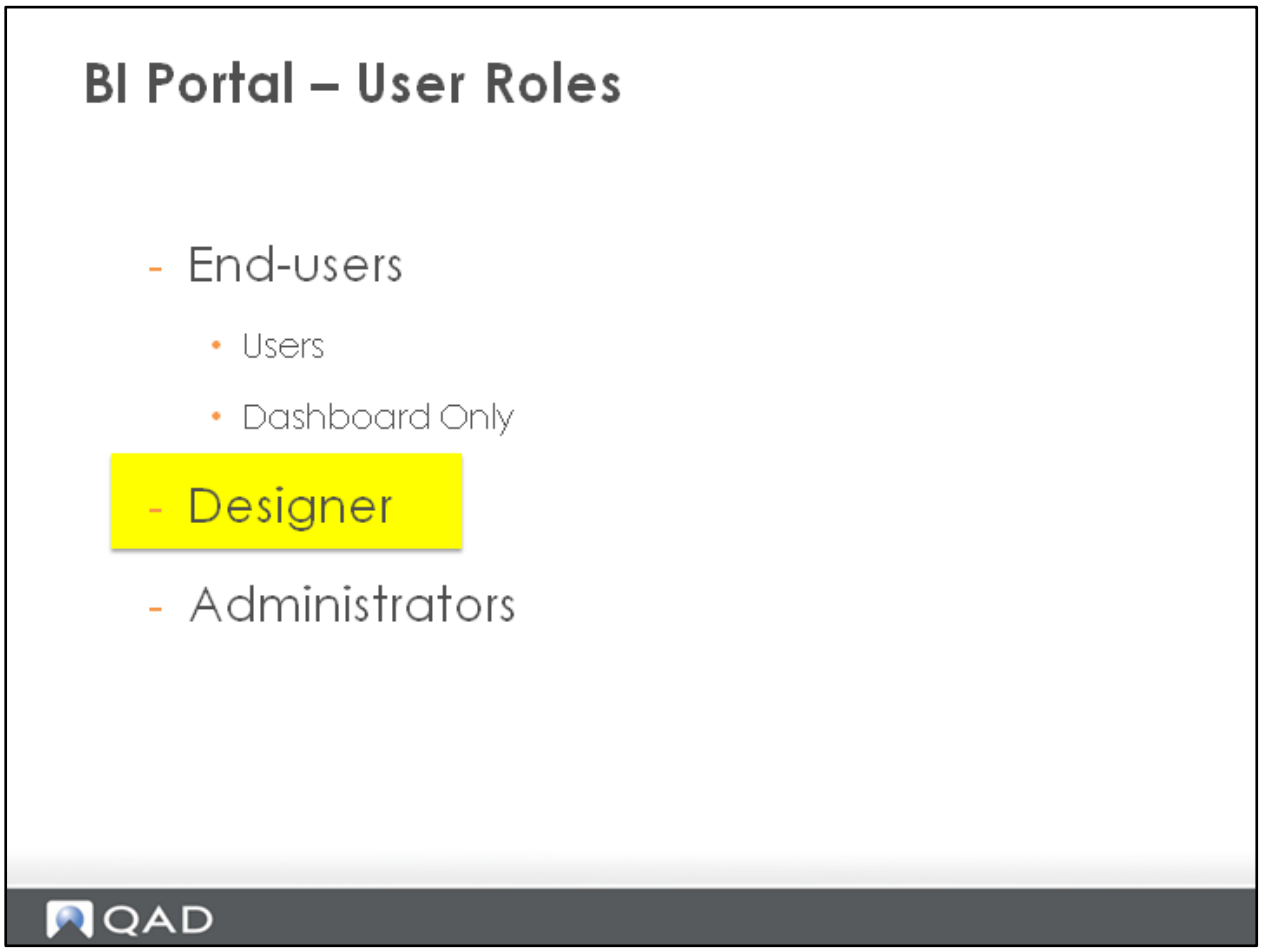
ERP "aware" streamlines access to current and historical QAD ERP data

Extensible to support non-QAD data sources

QAD BI Collaborative Portal

Easy to use and create dashboard and reporting environment

BI Portal – User Roles



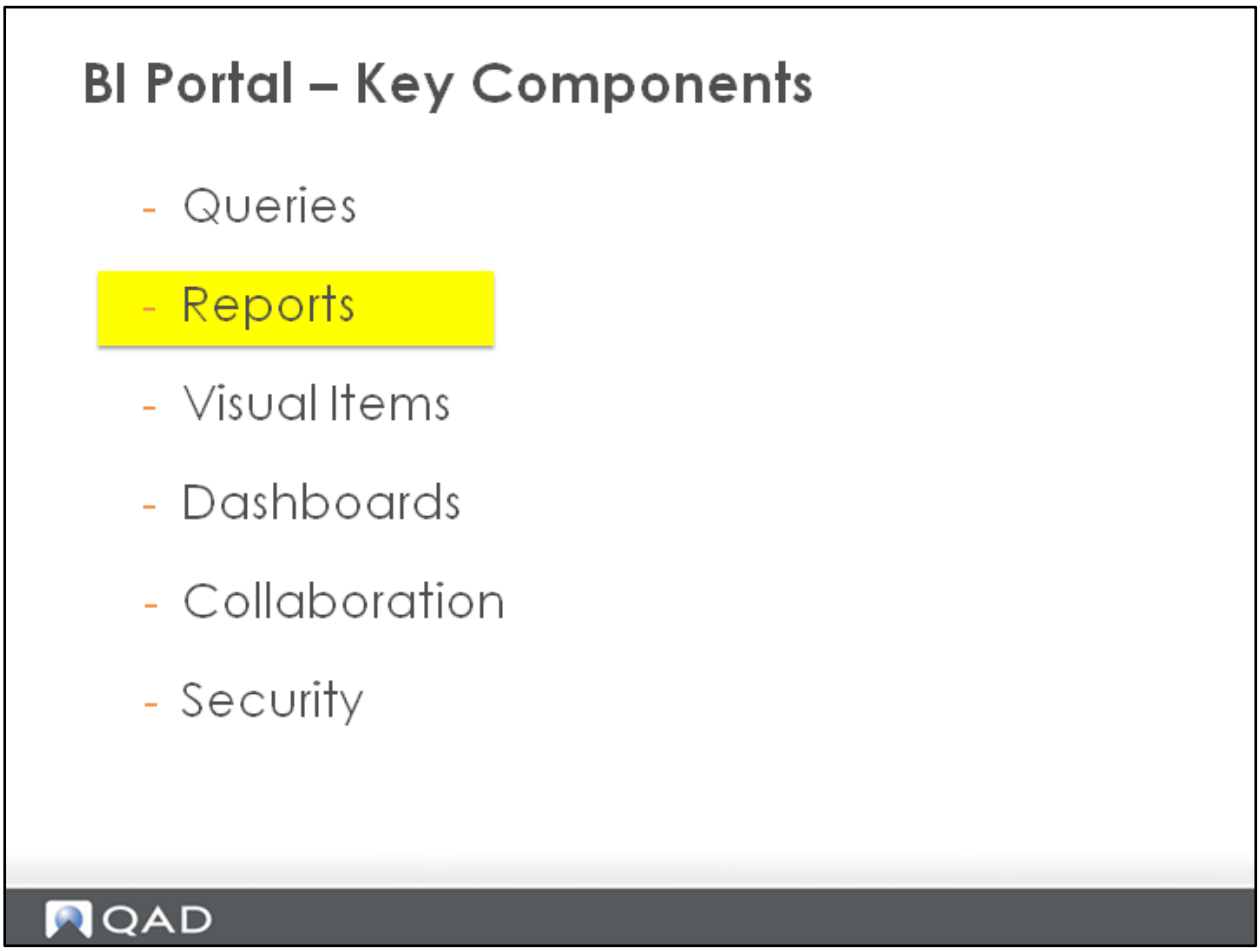
Users will experience the BI Portal based on their role.

The BI Portal user roles are:

- End-user
    -- User
    -- Dashboard Only
- Designer
- Administrator

This is the first in a series of courses describing the Designer role within the BI Portal.

BI Portal – Key Components



Create a Report

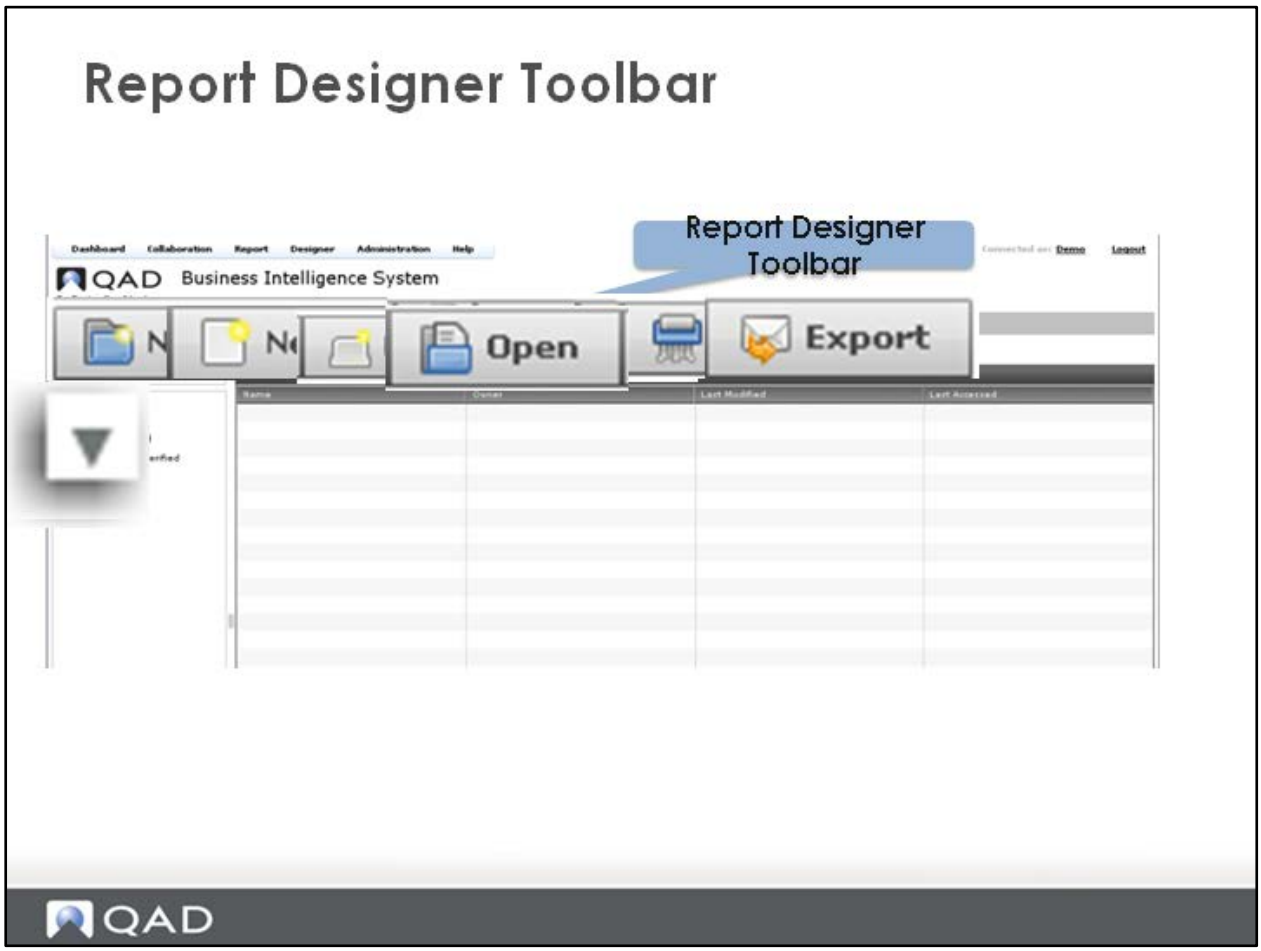


Access Report Designer



To access the *Report* designer, click *Report* from the drop-down list under the *Designer* button on the menu bar.

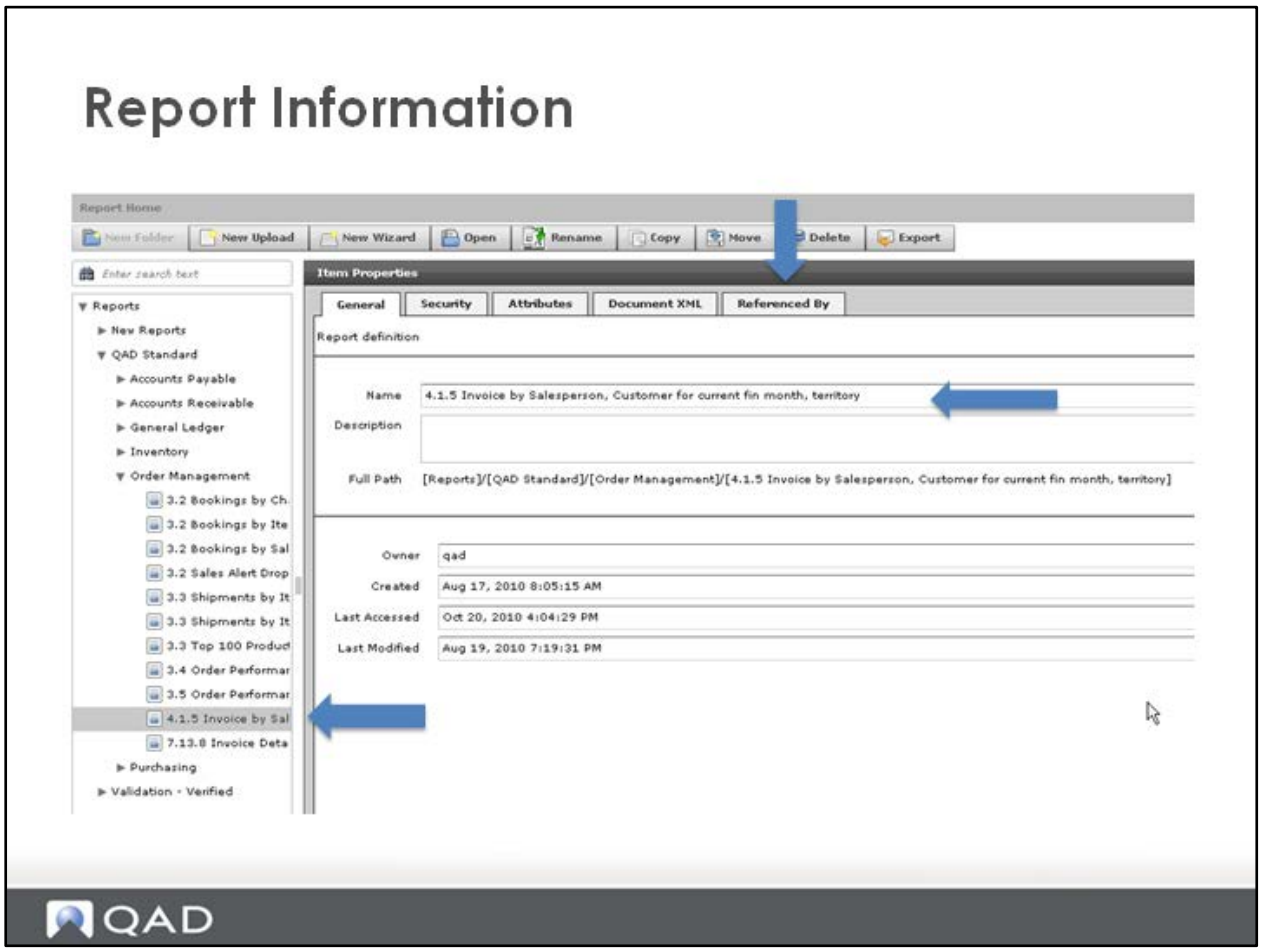
Report Designer Toolbar



Options on the *Report Designer Toolbar* include *Upload*.

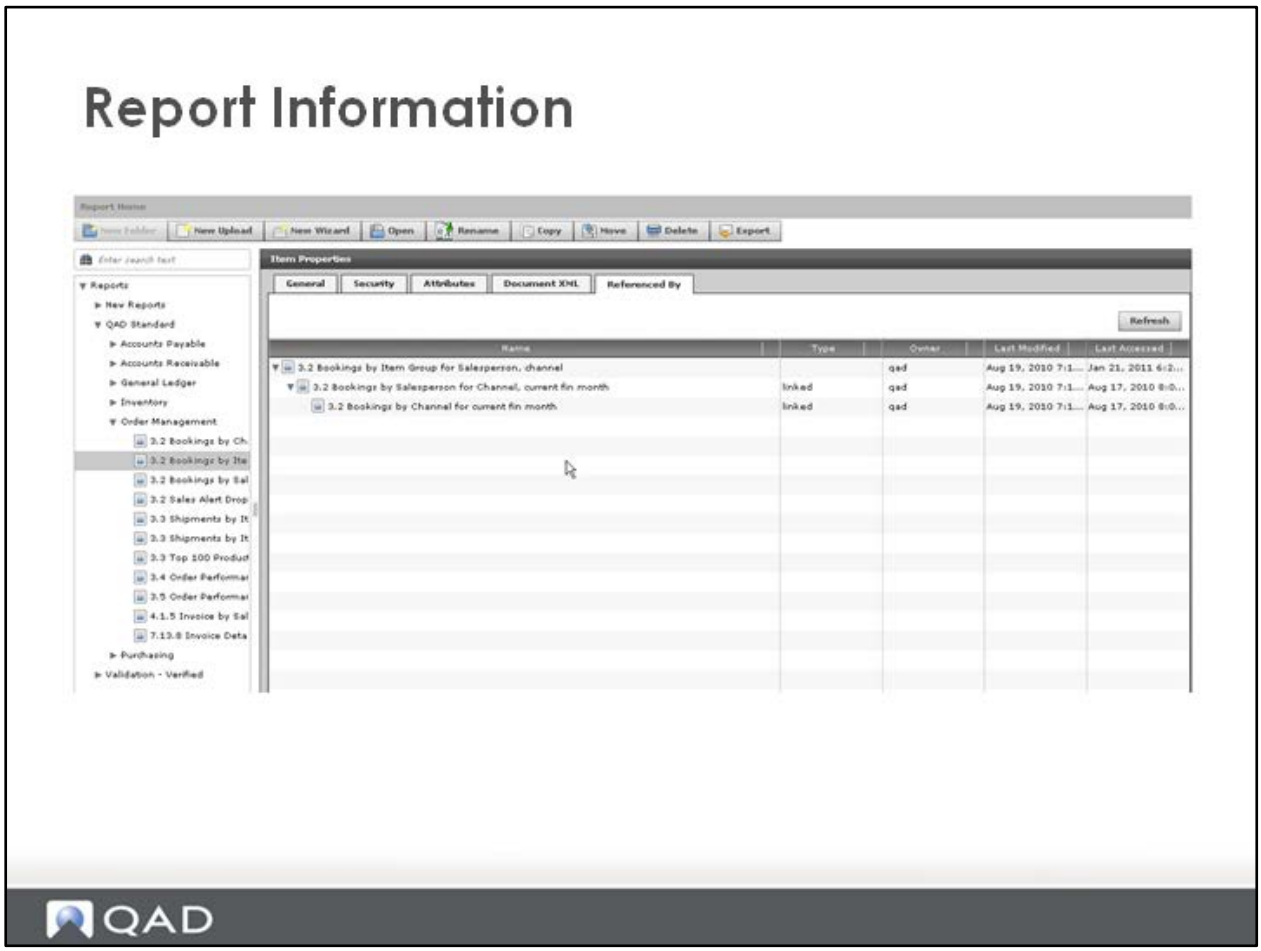
Reports can be created in an outside report writer, such as iReport and uploaded to the BI Portal. Reports must be stored in *jrxml* format. This is *JasperReports* format.

Report Information



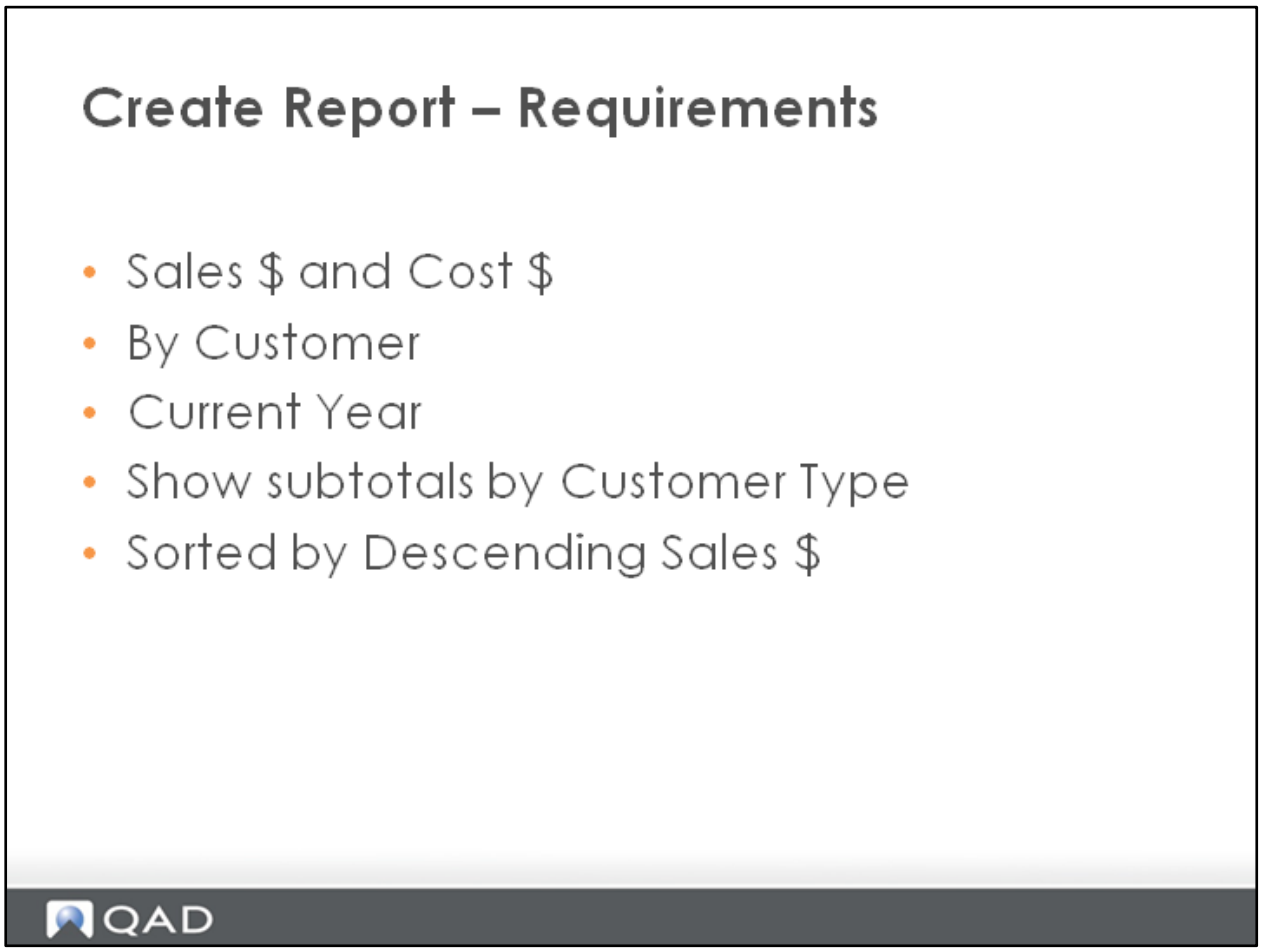
Highlight the report name and various report information is displayed.

Report Information

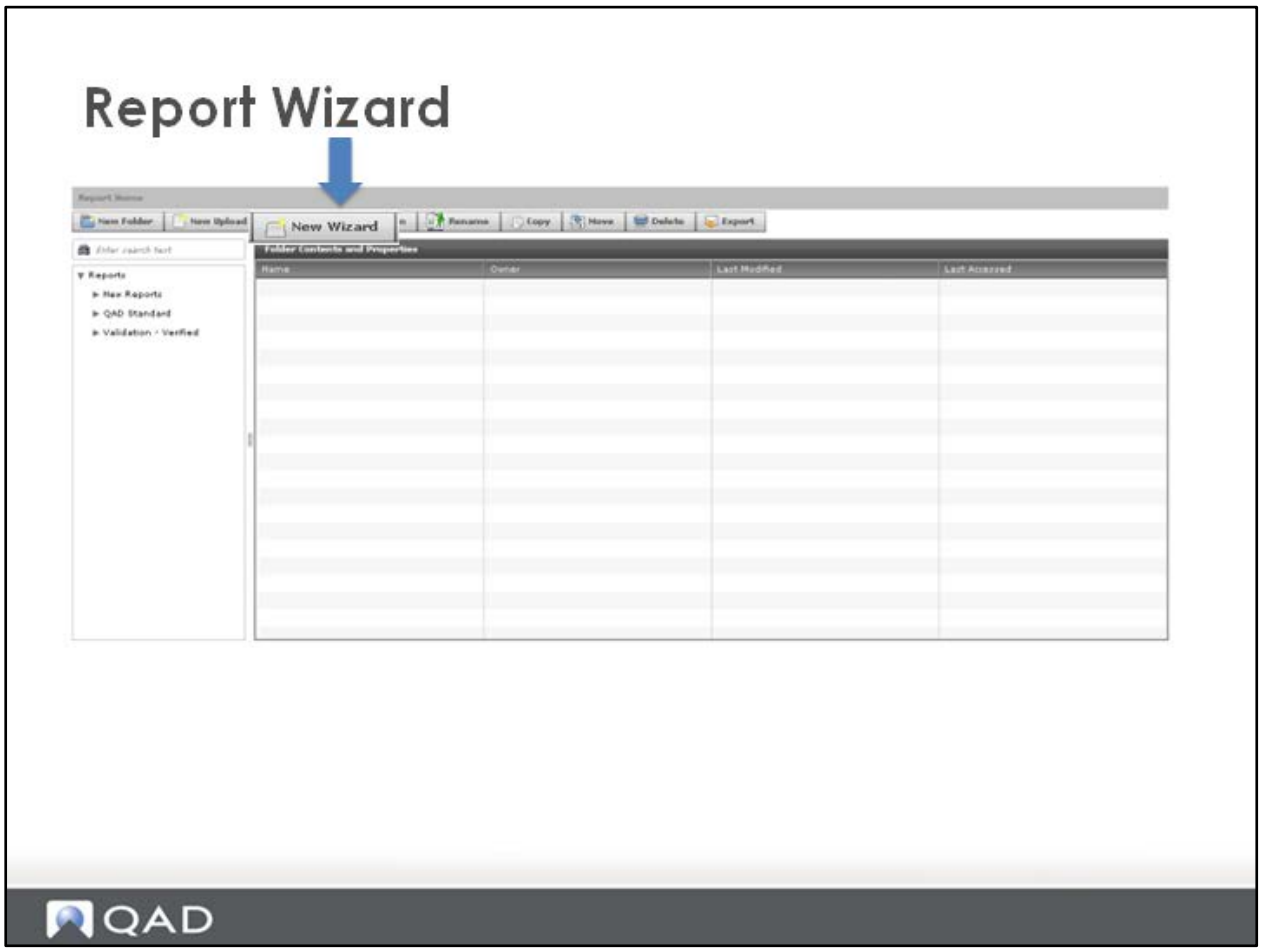


The *Referenced By* tab is available for all Queries, Reports, Visual Items and Dashboards. Designers will find this useful to know how changes to individual items will affect the overall operation of the BI Portal.

Create Report – Requirements

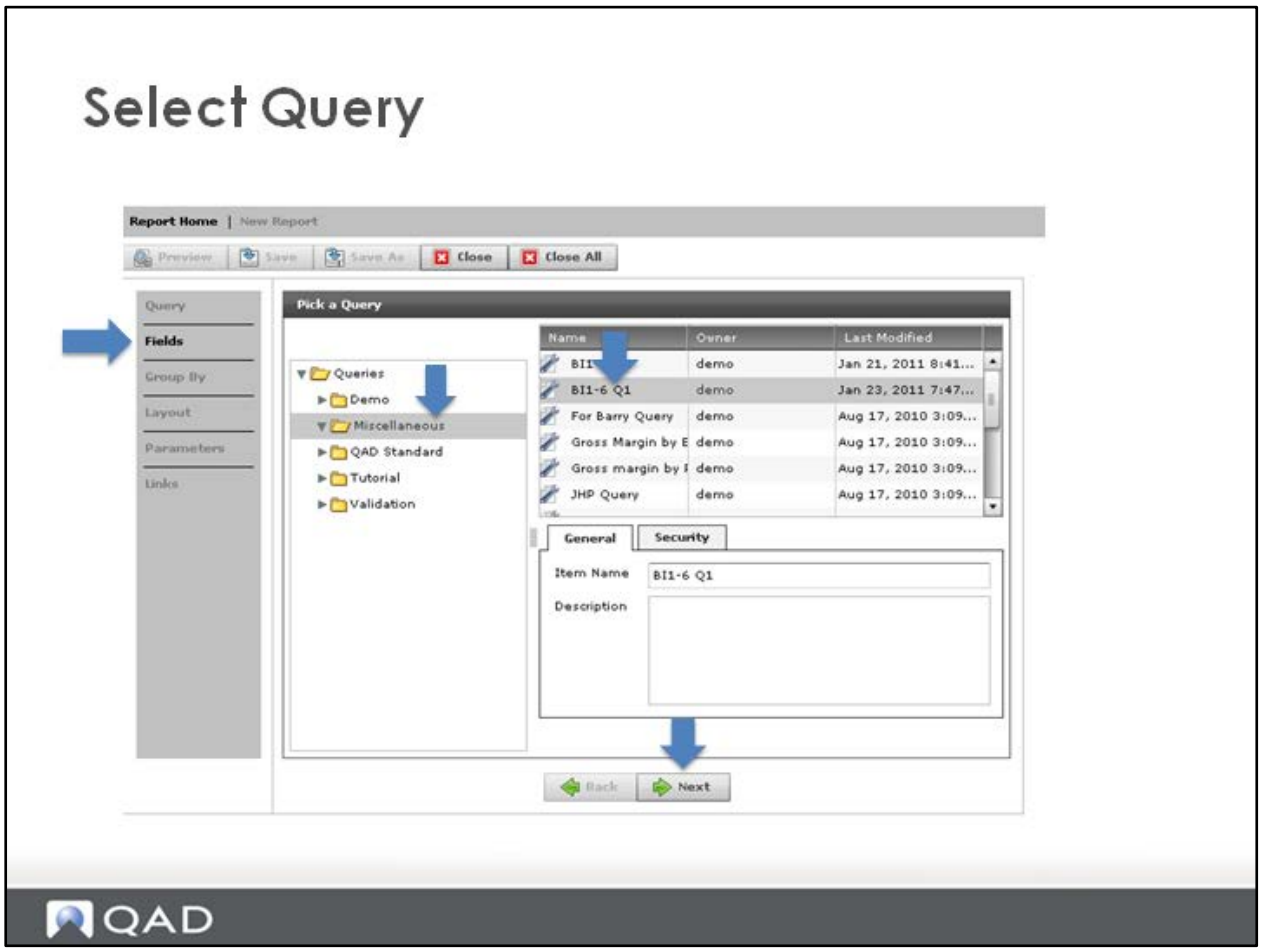


Report Wizard



The Report Wizard is used to create a new Report.

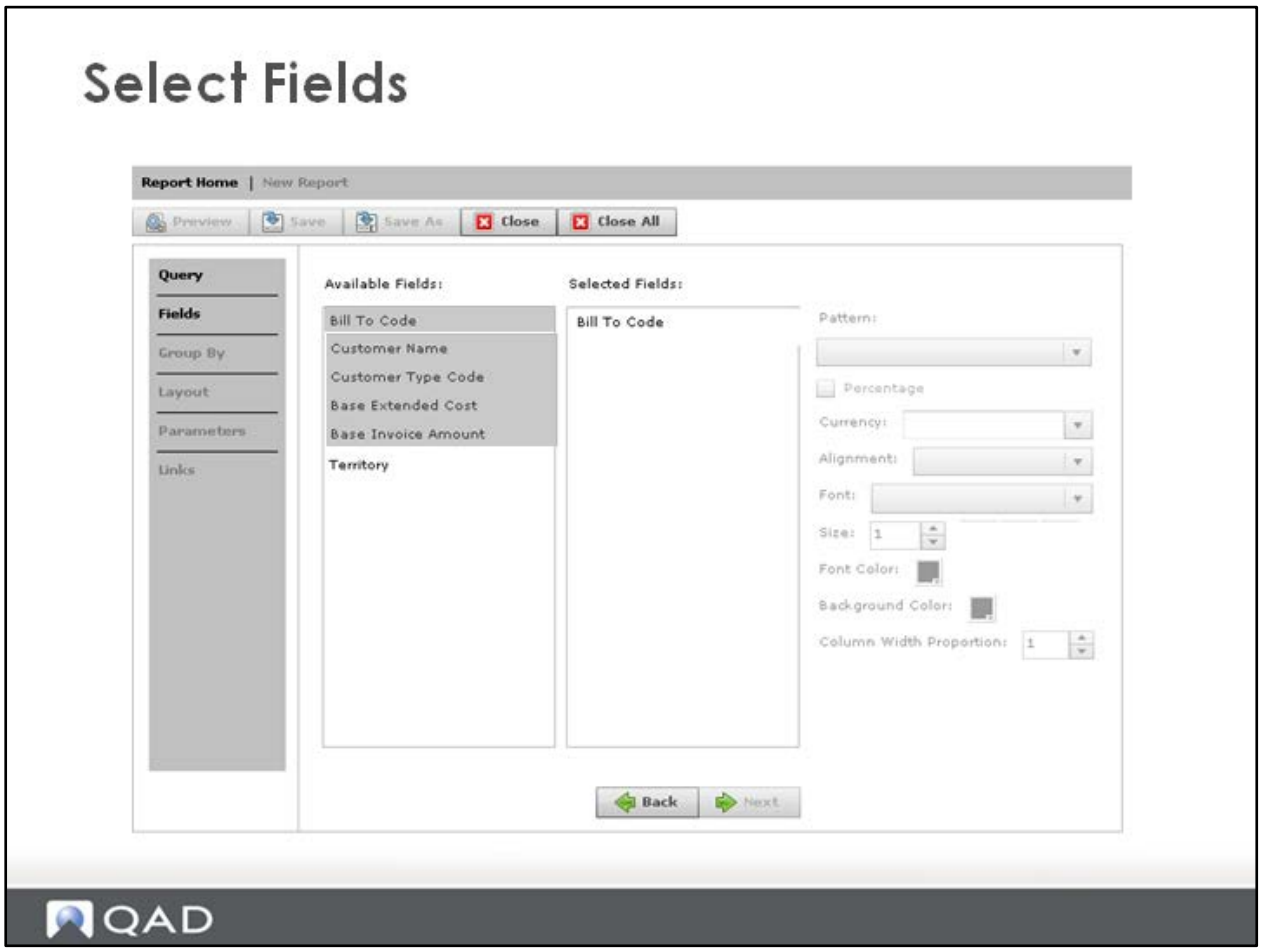
Select Query



Associate a Query to Report. Browse for the query.

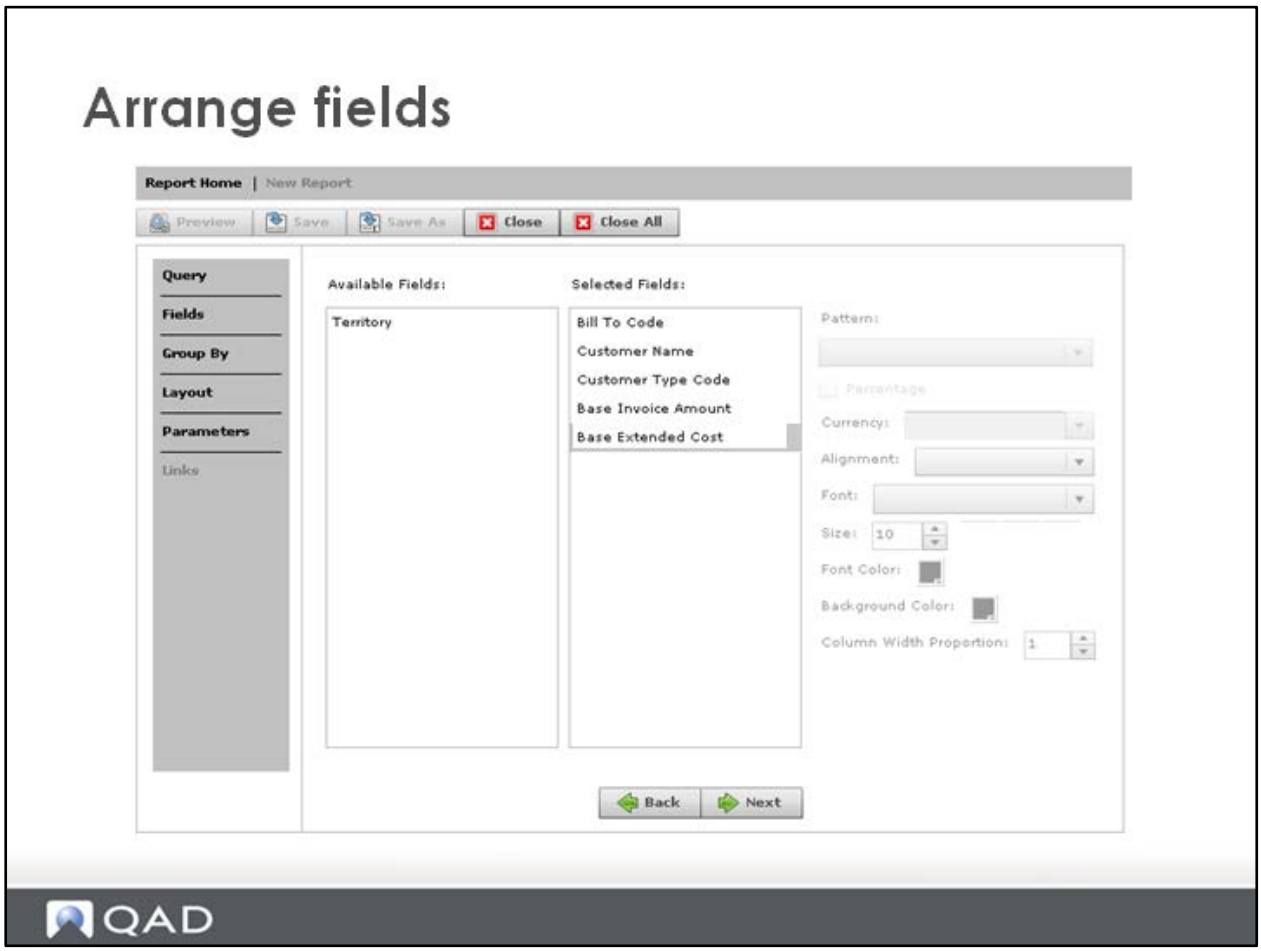
To navigate Wizard, use the *next* button or the navigation menu to the left.

Select Fields



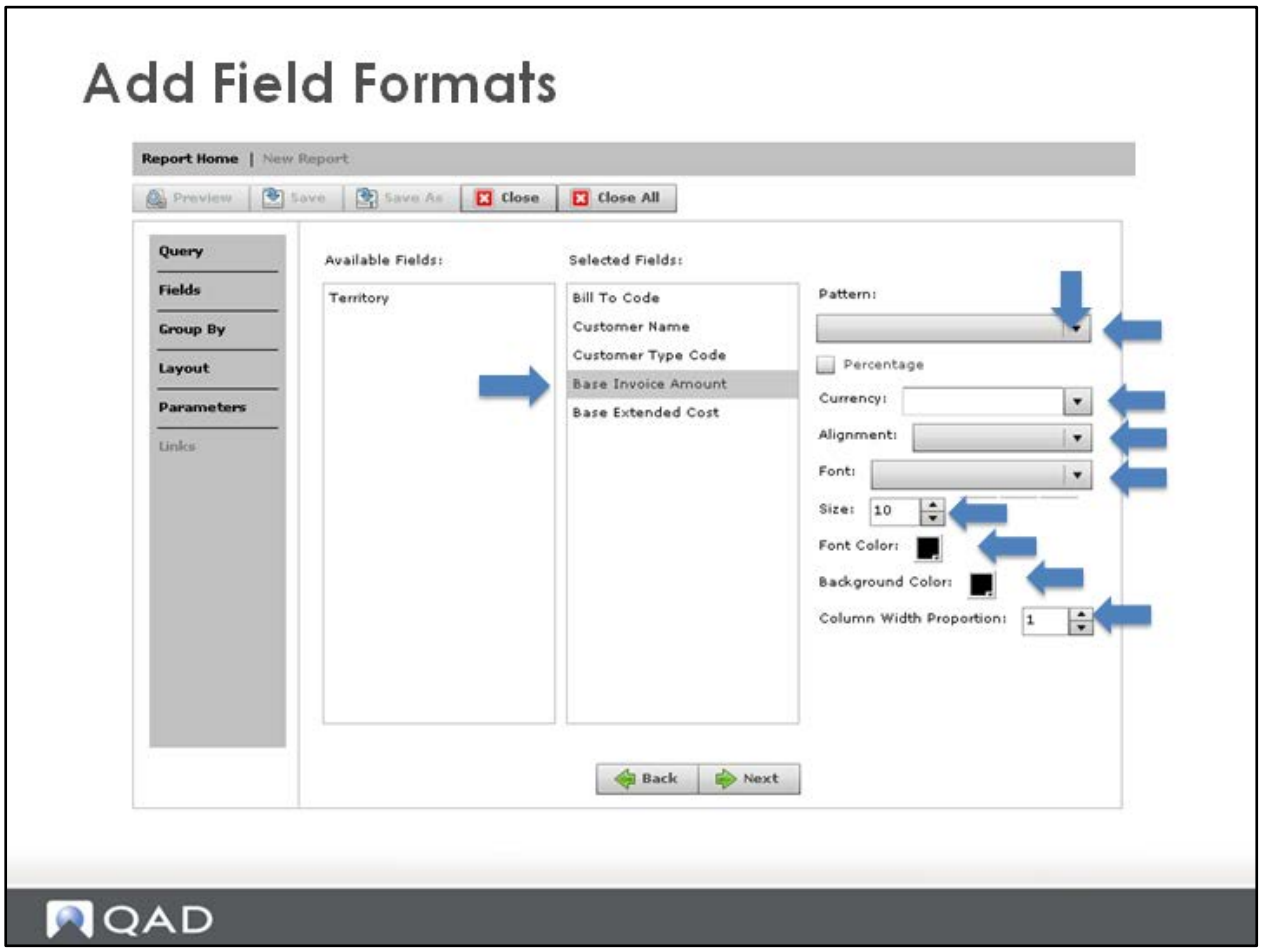
Select fields. Click and drag field names to *Selected Fields* box.

Arrange fields



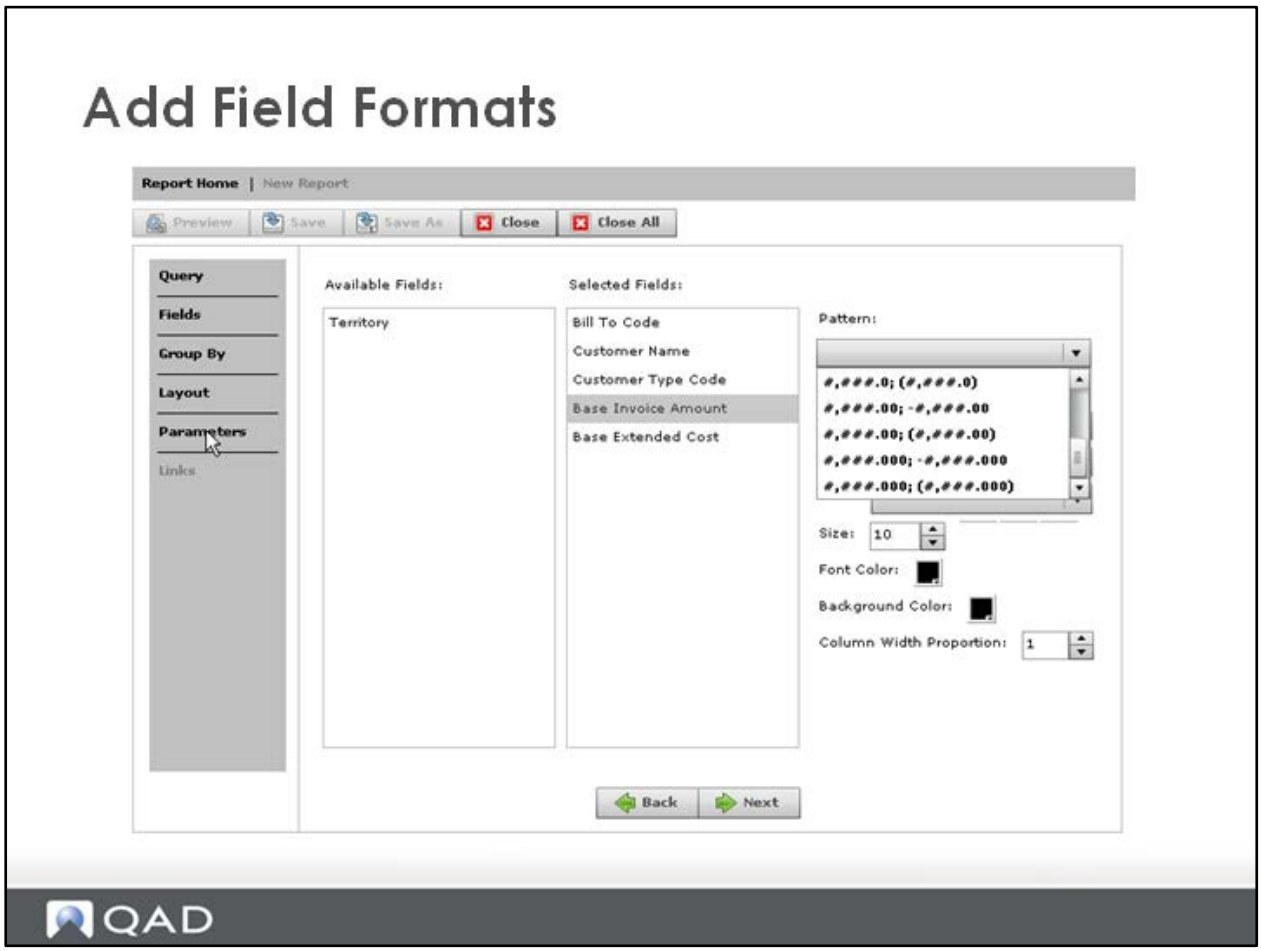
Modify order of fields in *Selected Fields* window by clicking and dragging columns to desired position.

Add Field Formats



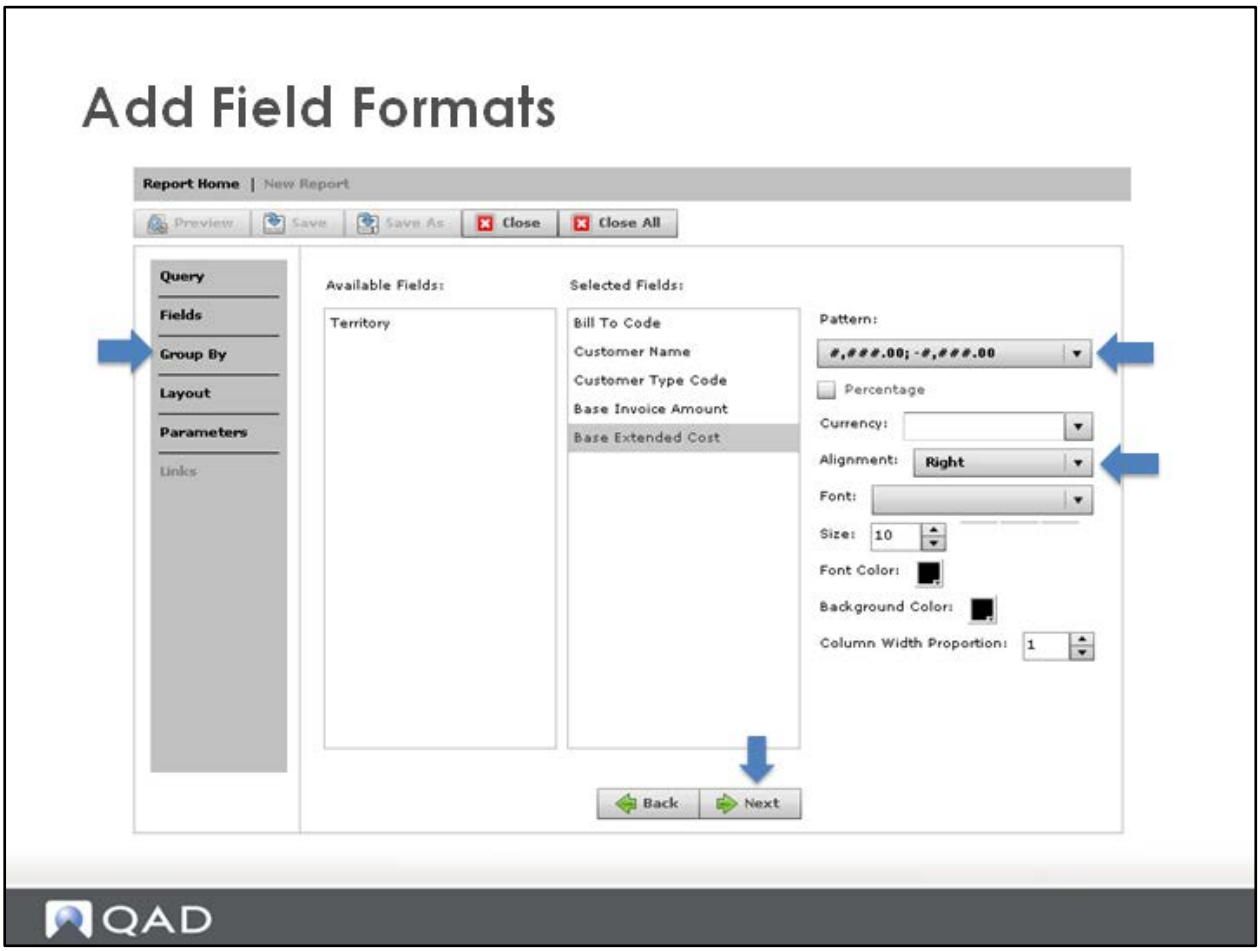
Change default field formats, as needed.

Add Field Formats

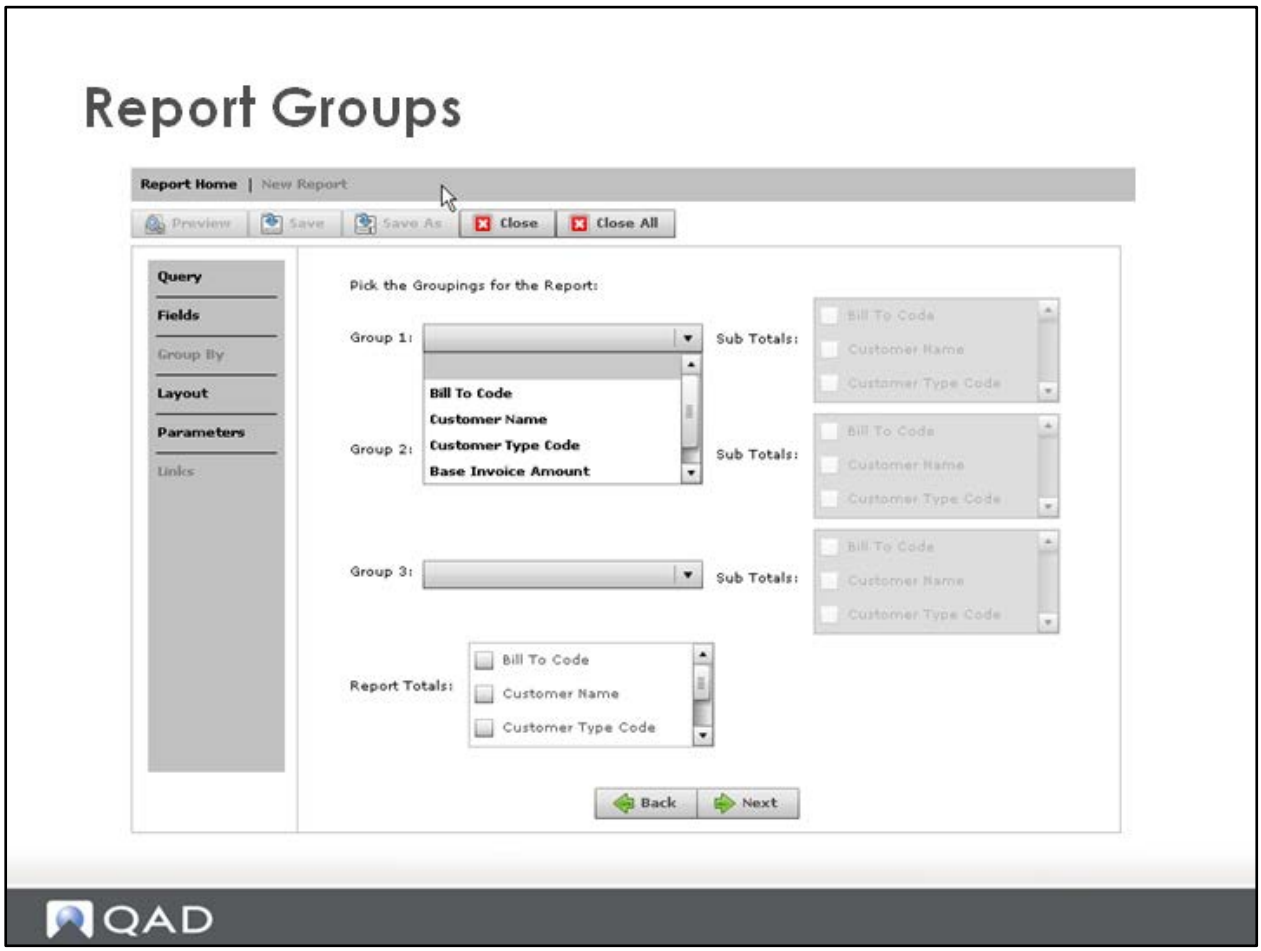


It is generally useful to change the pattern for the numeric fields in the report.

Add Field Formats



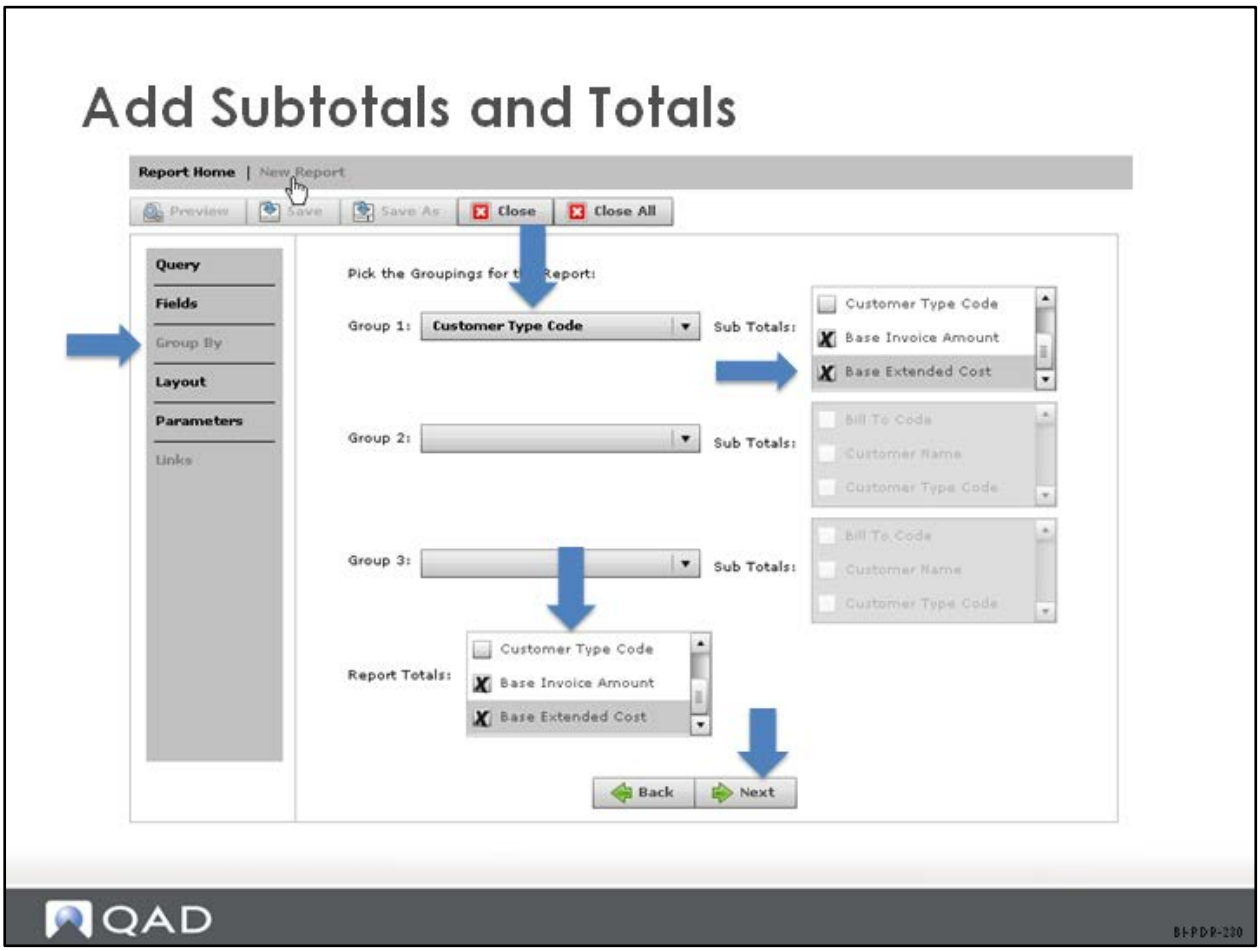
Report Groups



To group by a field, select the field from the drop-down list. Then, select the numeric fields to subtotal. Use the check boxes to the left of the column name.

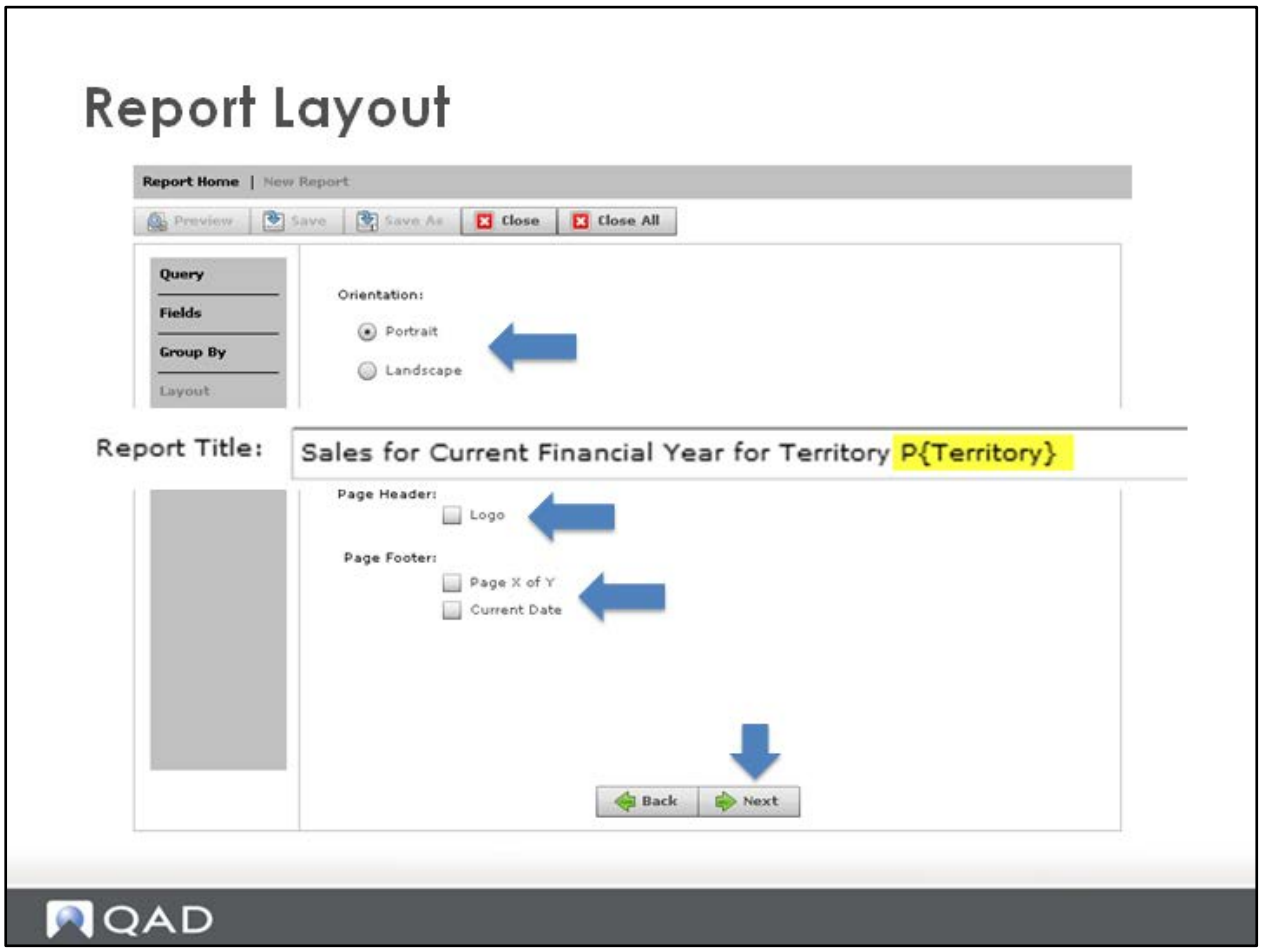
To include report totals, use the box at the bottom of the window.

Add Subtotals and Totals



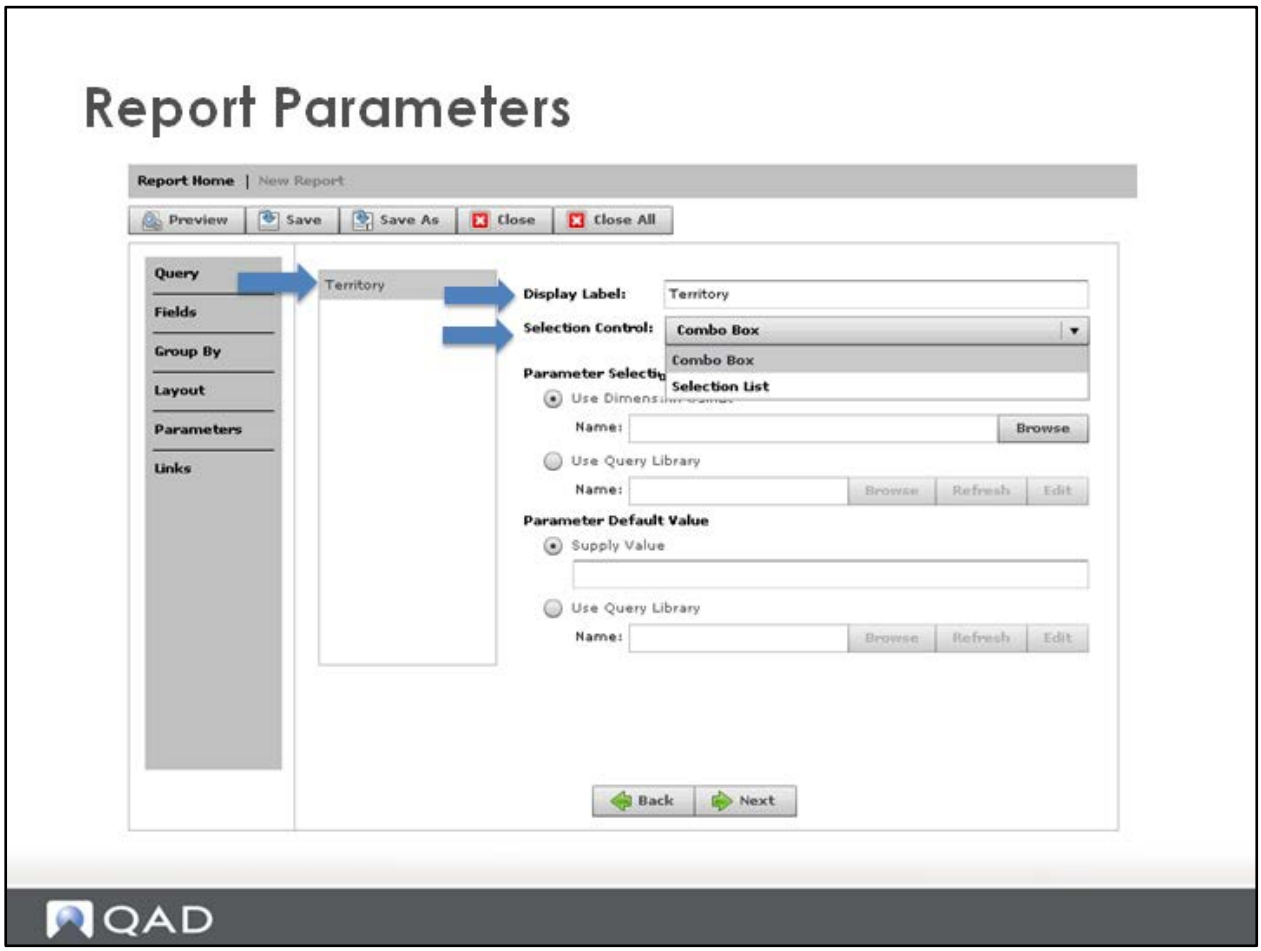
Use the *Group By* area to define report subtotals and totals.

Report Layout



The logo available on the Report Layout screen is system wide and identified when the BI Portal is installed.

Report Parameters



Report Parameters:

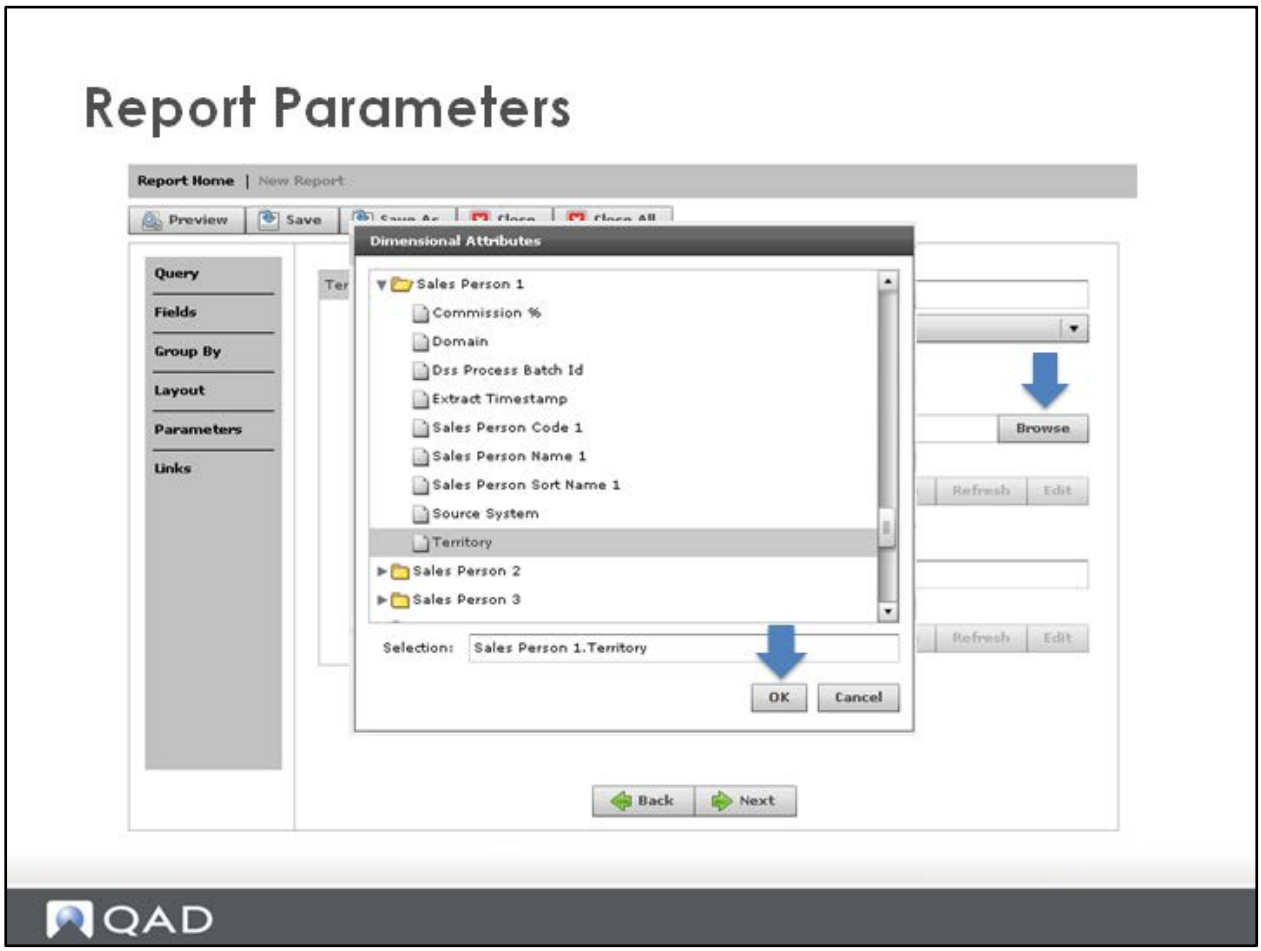
Identify each parameter included in the report, and change qualifying information.

Selection Controls*:*

Combo Box – accepts a single value

***Selection List* –** permits multiple values to be selected.

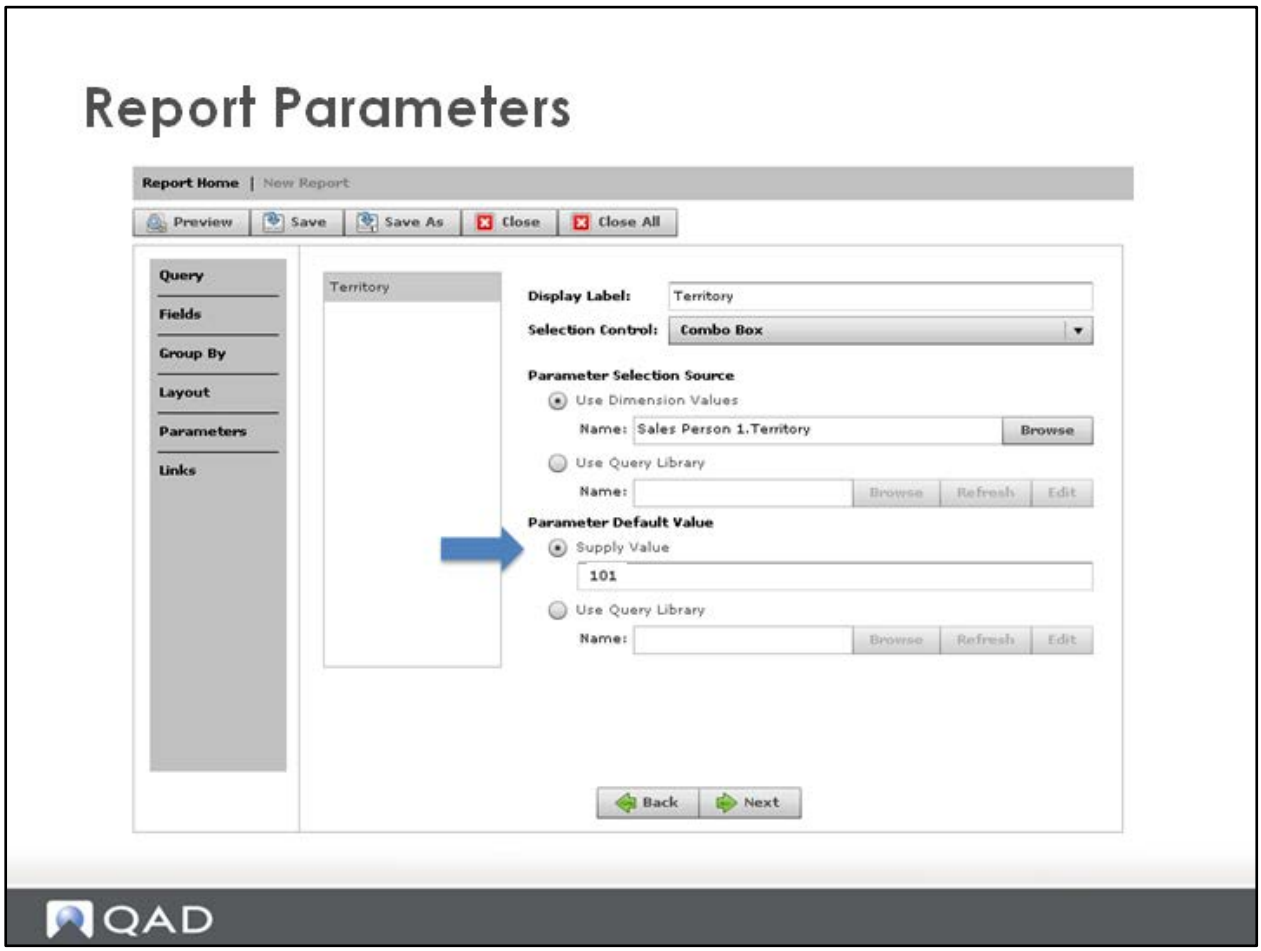
Report Parameters



Parameter Selection Source determines the list of values the Report user can select from.

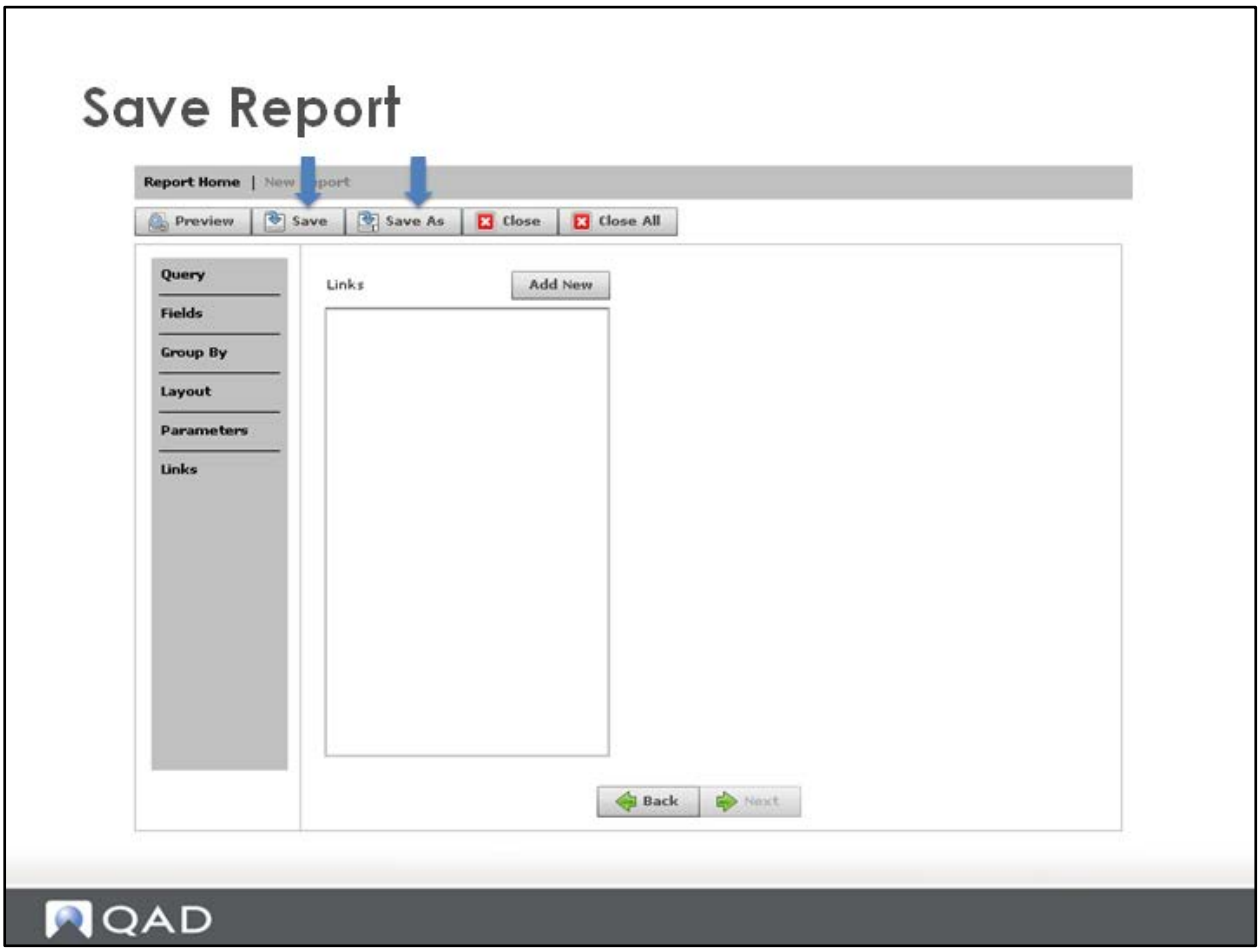
- Dimension Value – identify the dimension to be used.
- Use Query Library – define a query to limit the values displayed to the users.

Report Parameters

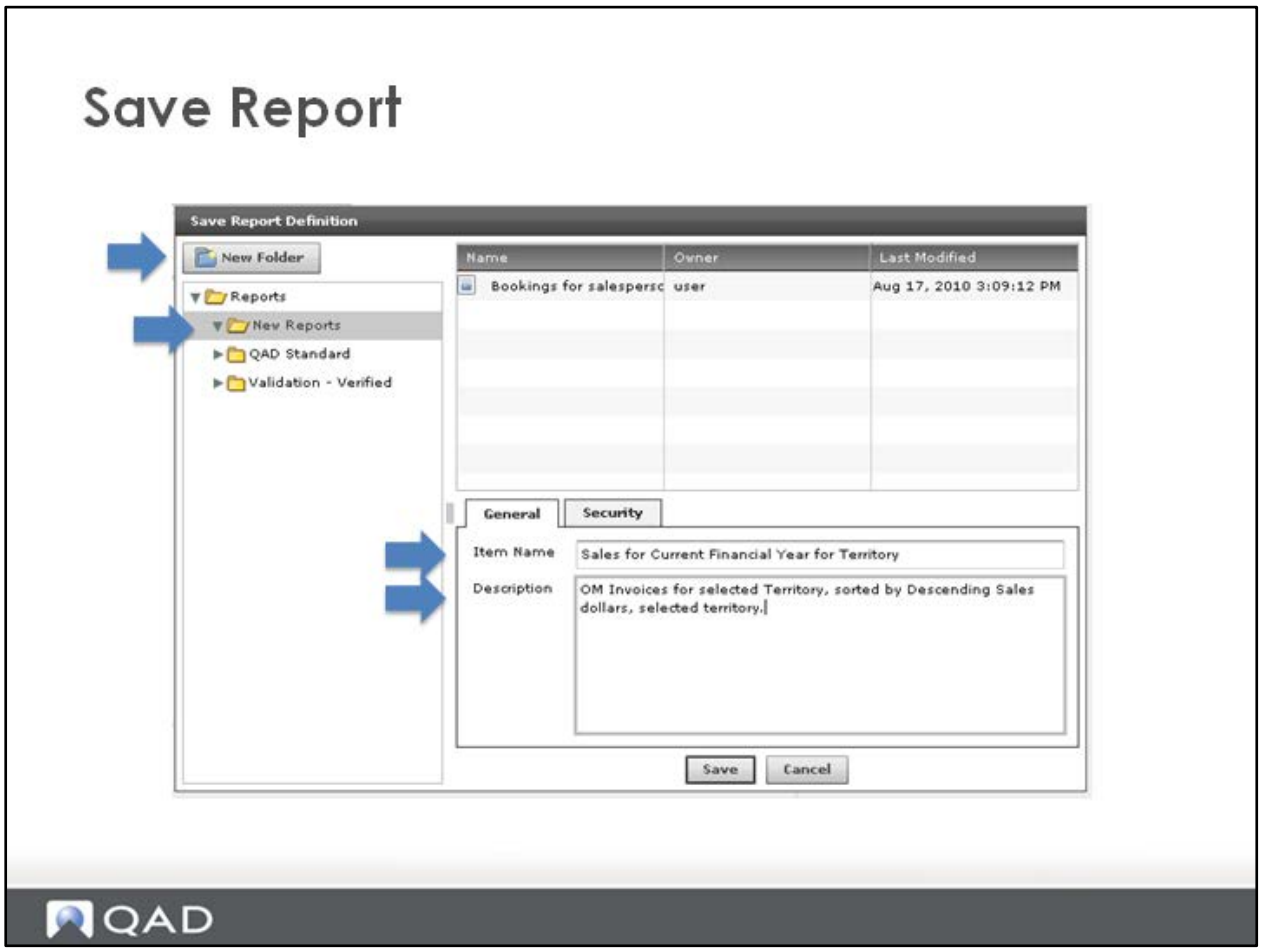


Parameter Default Value is optional. It is generally a good idea to specify a default value.

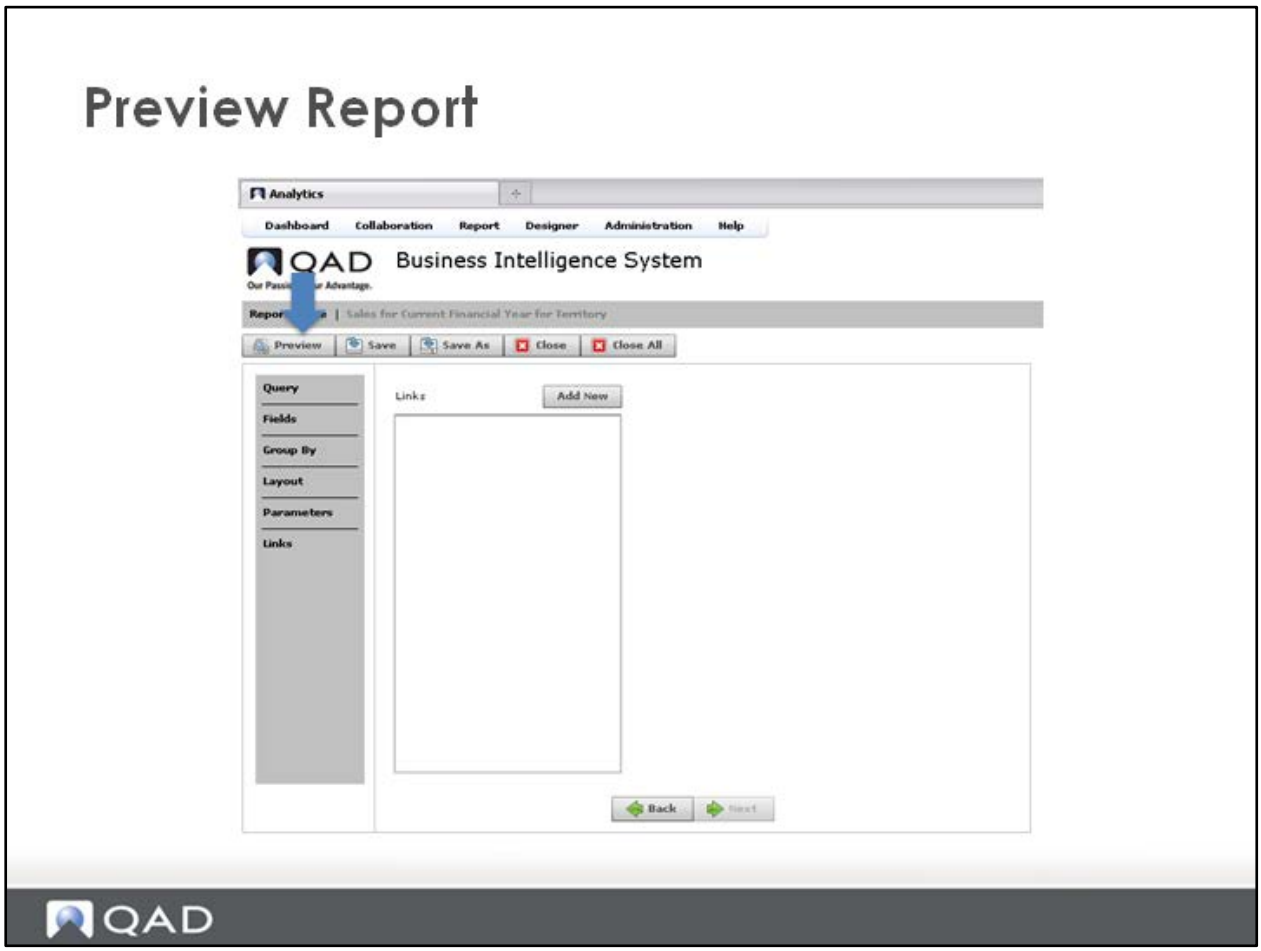
Save Report


Save Report
Report Home
Preview
Save
Save As
Close
Close All
Query
Fields
Group By
Layout
Parameters
Links
Links
Add New
Back
Next
QAD

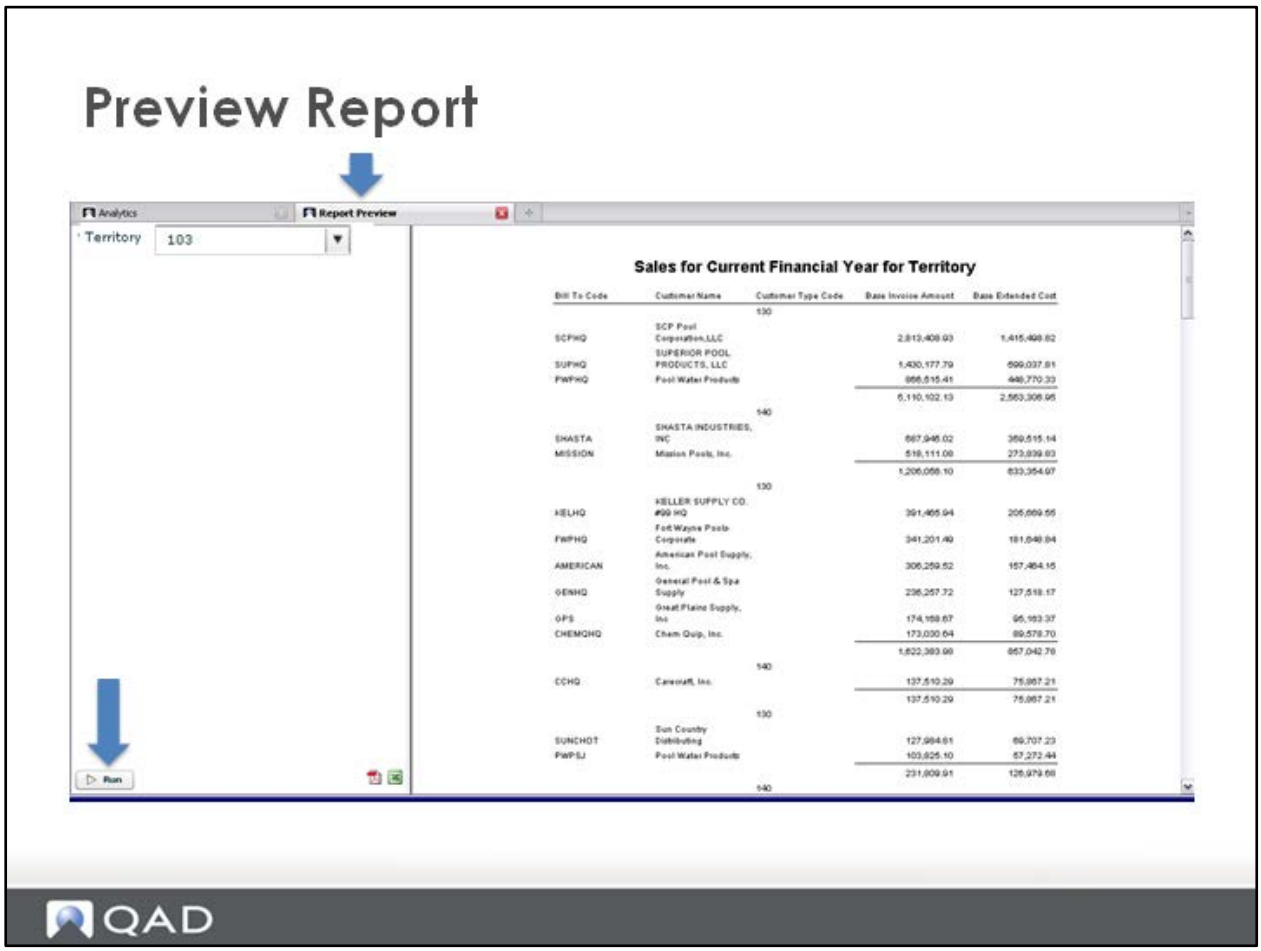
Save Report


Save Report
Save Report Definition
New Folder
Reports
New Reports
QAD Standard
Validation - Verified
Name
Owner
Last Modified
Bookings for salespersc
user
Aug 17, 2010 3:09:12 PM
General
Security
Item Name
Sales for Current Financial Year for Territory
Description
OM Invoices for selected Territory, sorted by Descending Sales dollars, selected territory.
Save
Cancel
QAD

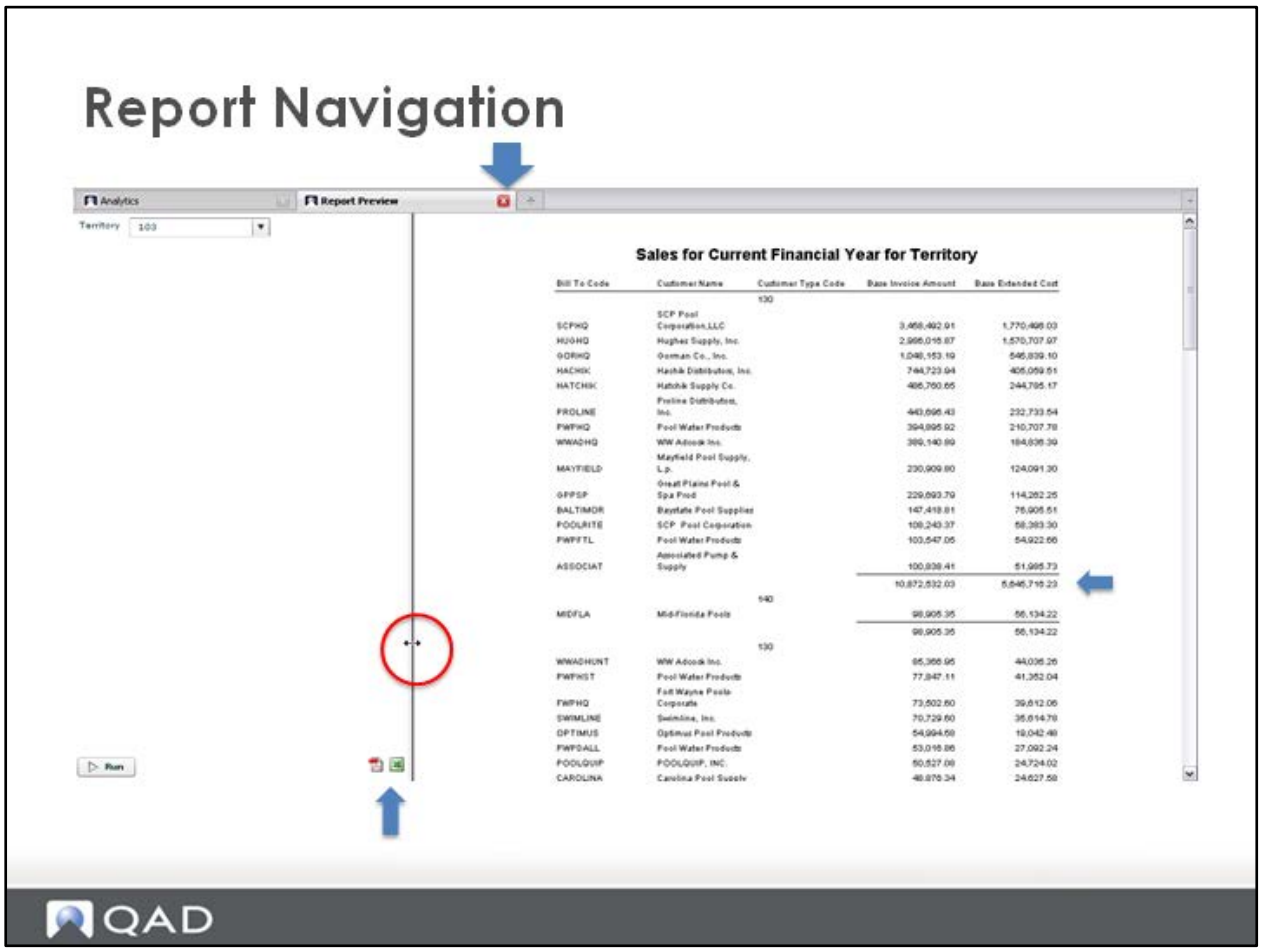
Preview Report



Preview Report



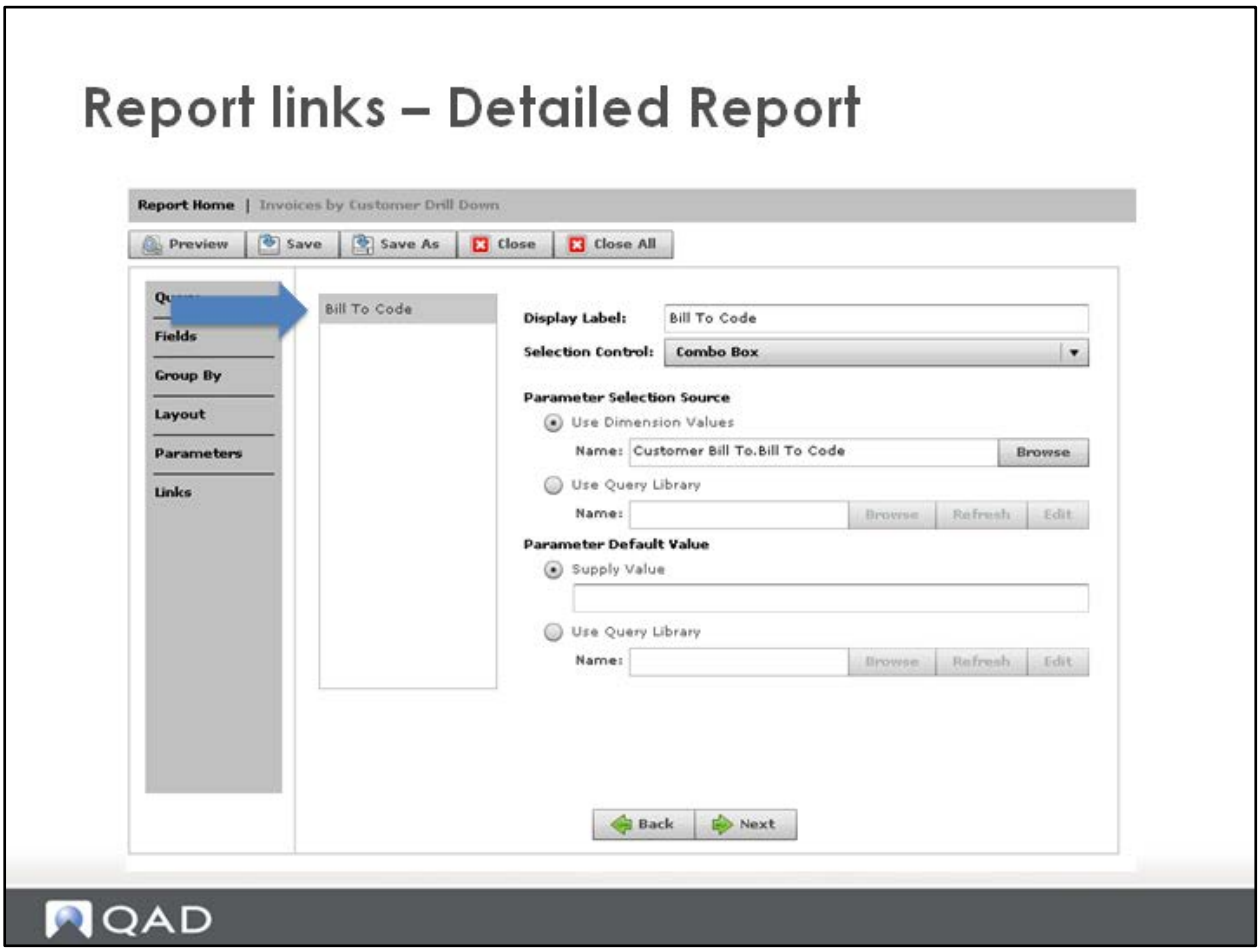
Report Navigation



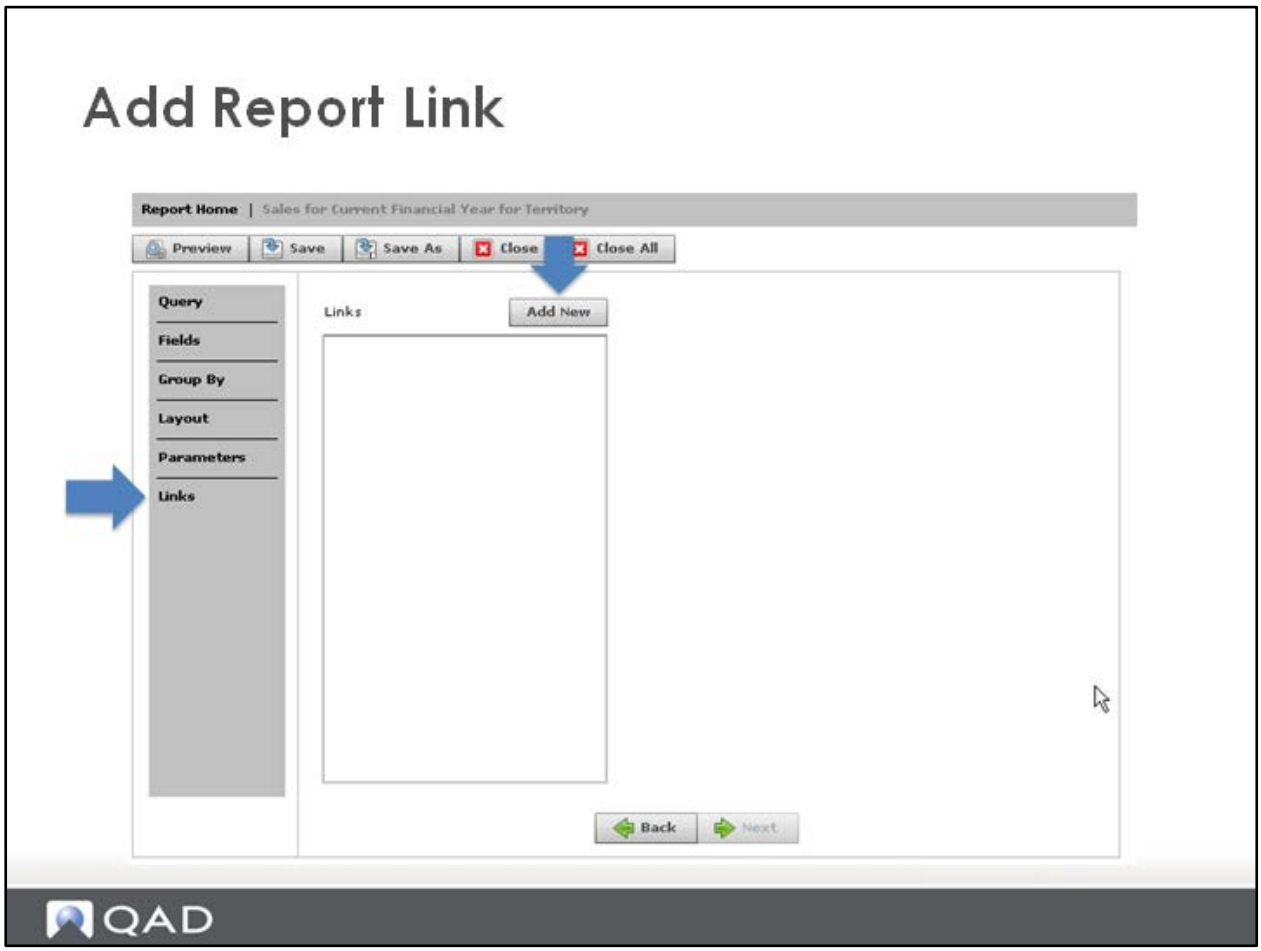
Using the Report Wizard - Review



Report links – Detailed Report

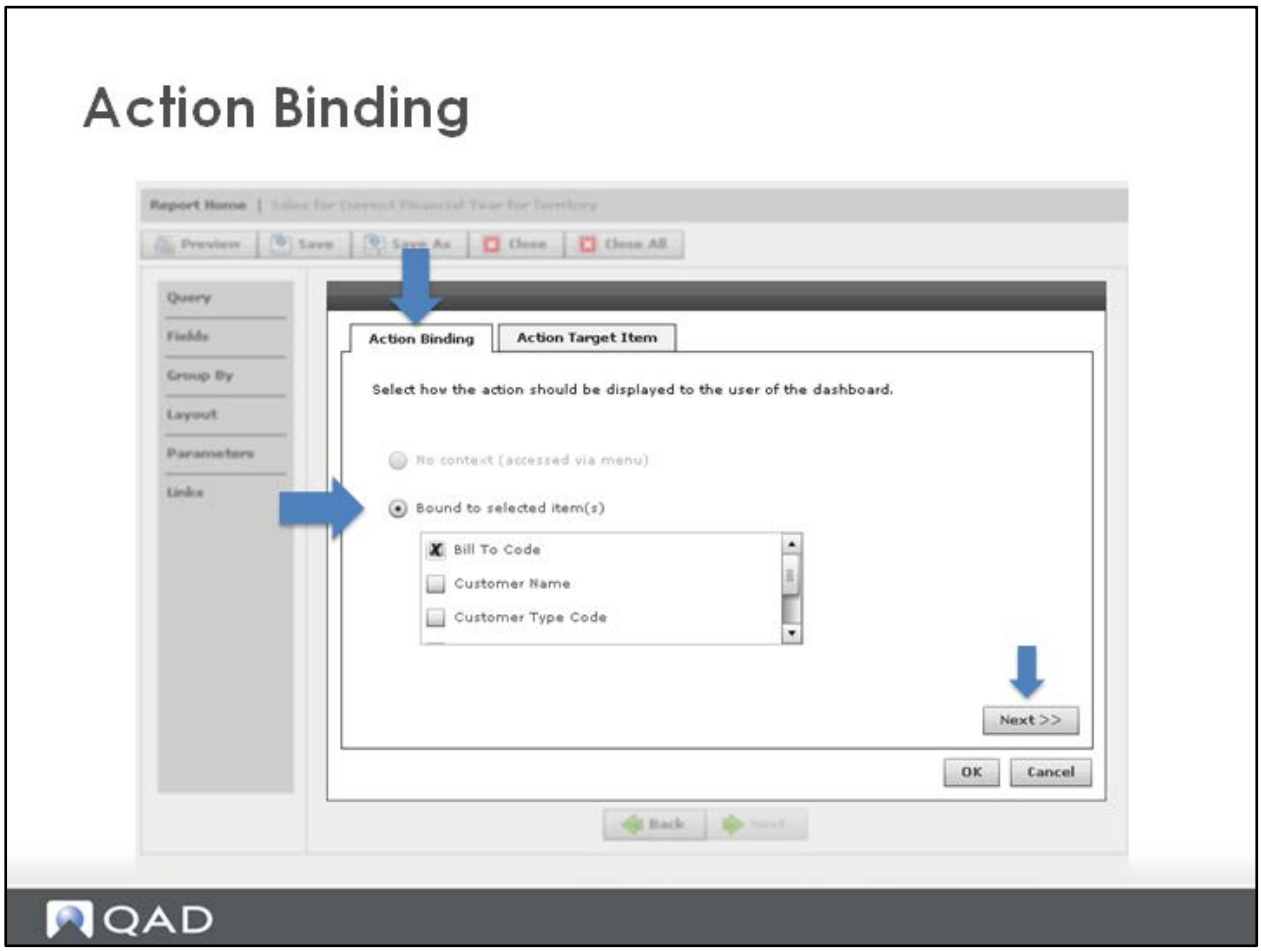


Add Report Link



Links on a report allow the user to drill down from a row on the report down to another, more detailed report. To add a link, open the “From” report and navigate to the *Links* window.

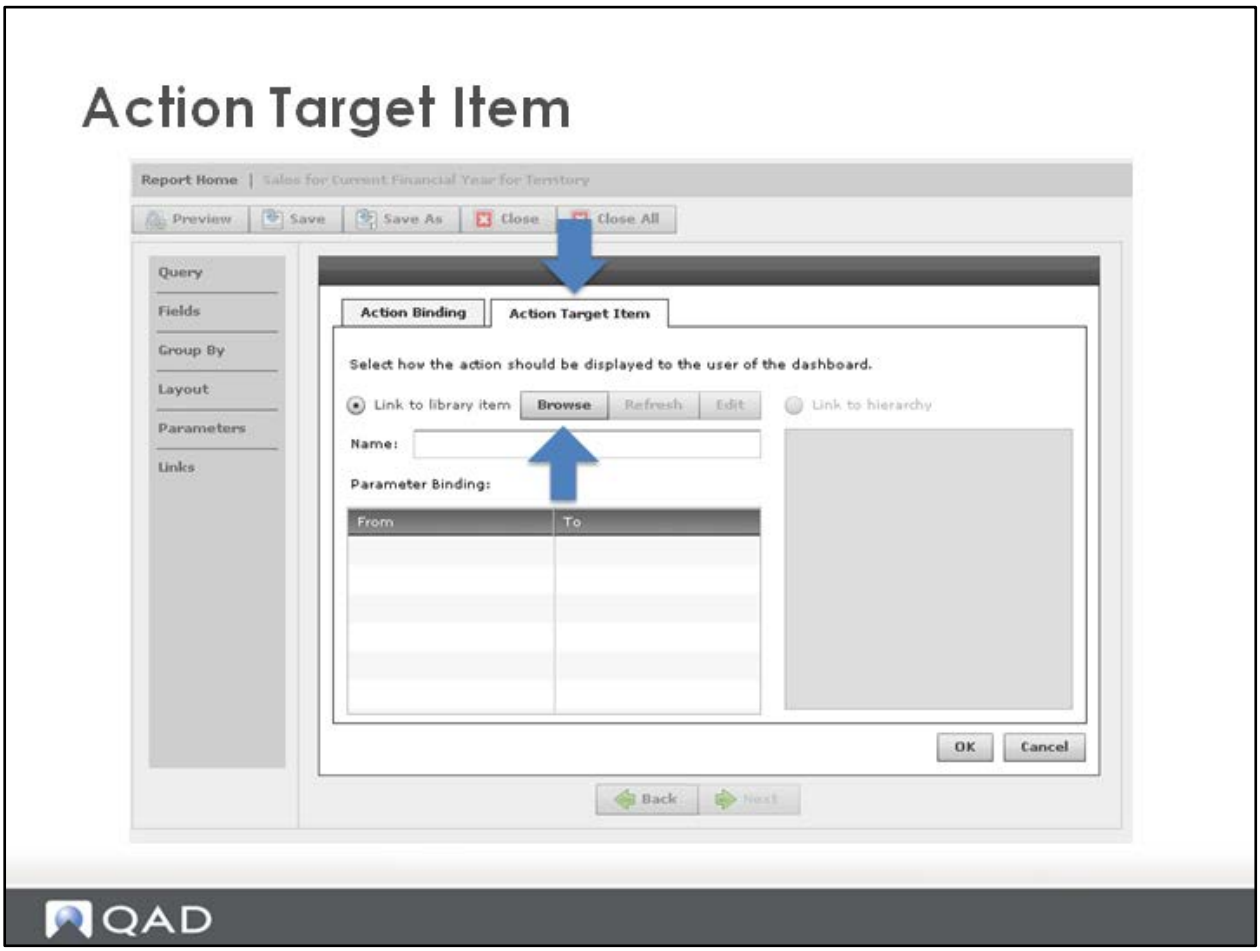
Action Binding



Action Binding determines what items are linked and how those items are linked.

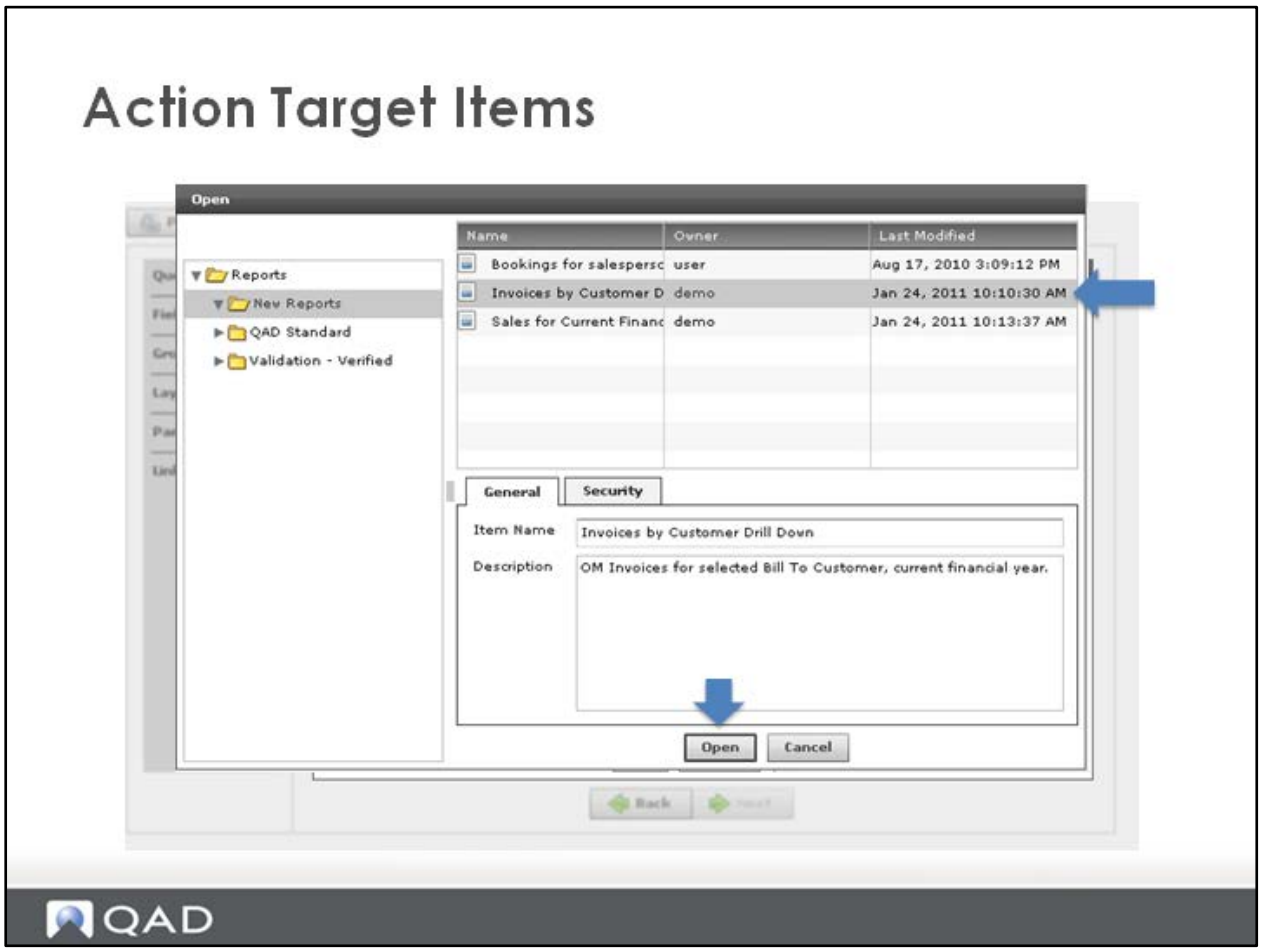
Items can be selected from a menu (no context) or Bound to a selected item.

Action Target Item



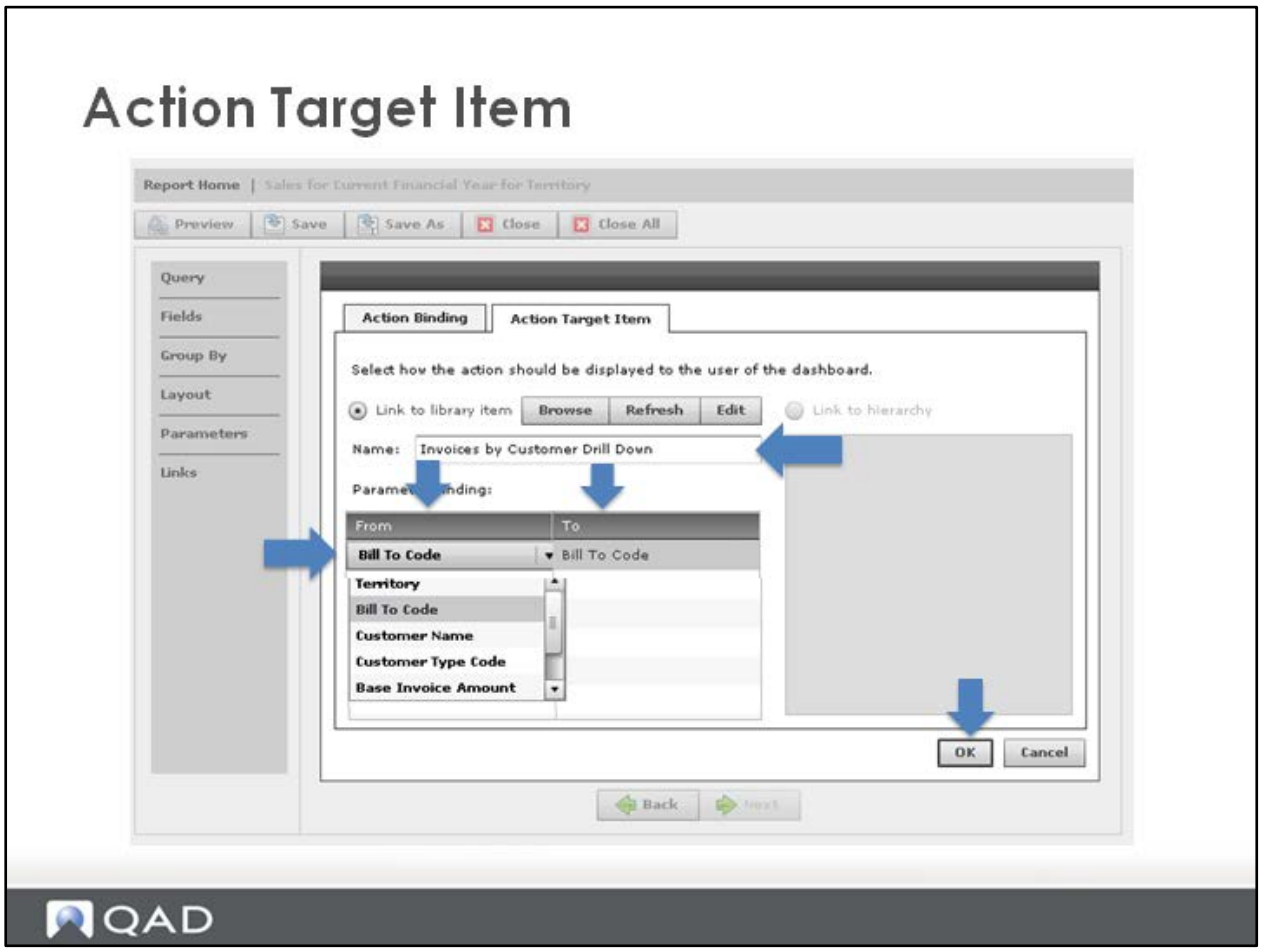
Action Target Item identifies the object to be linked **to**.

Action Target Items



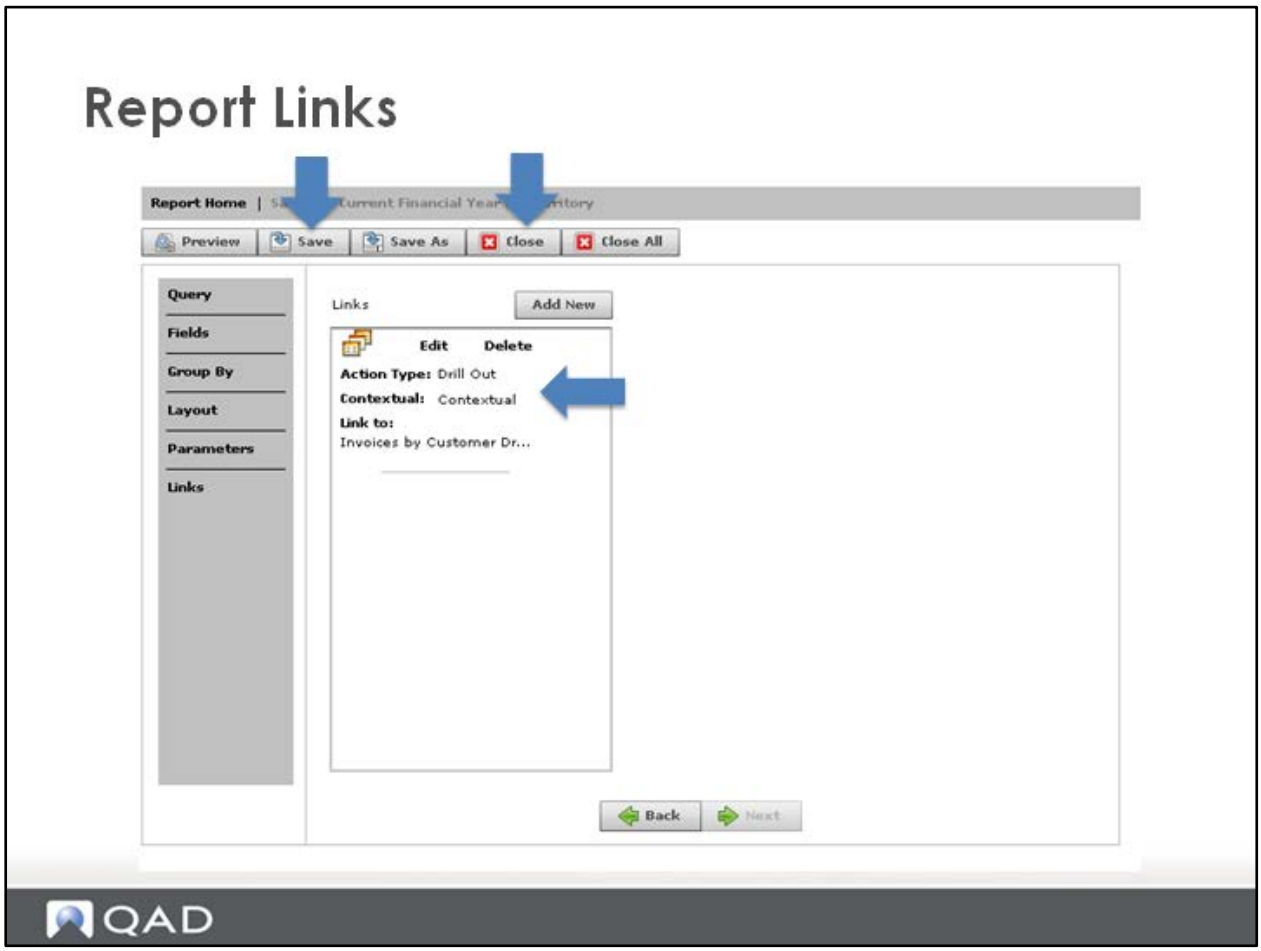
Select an a Target Item by browsing to the item.

Action Target Item

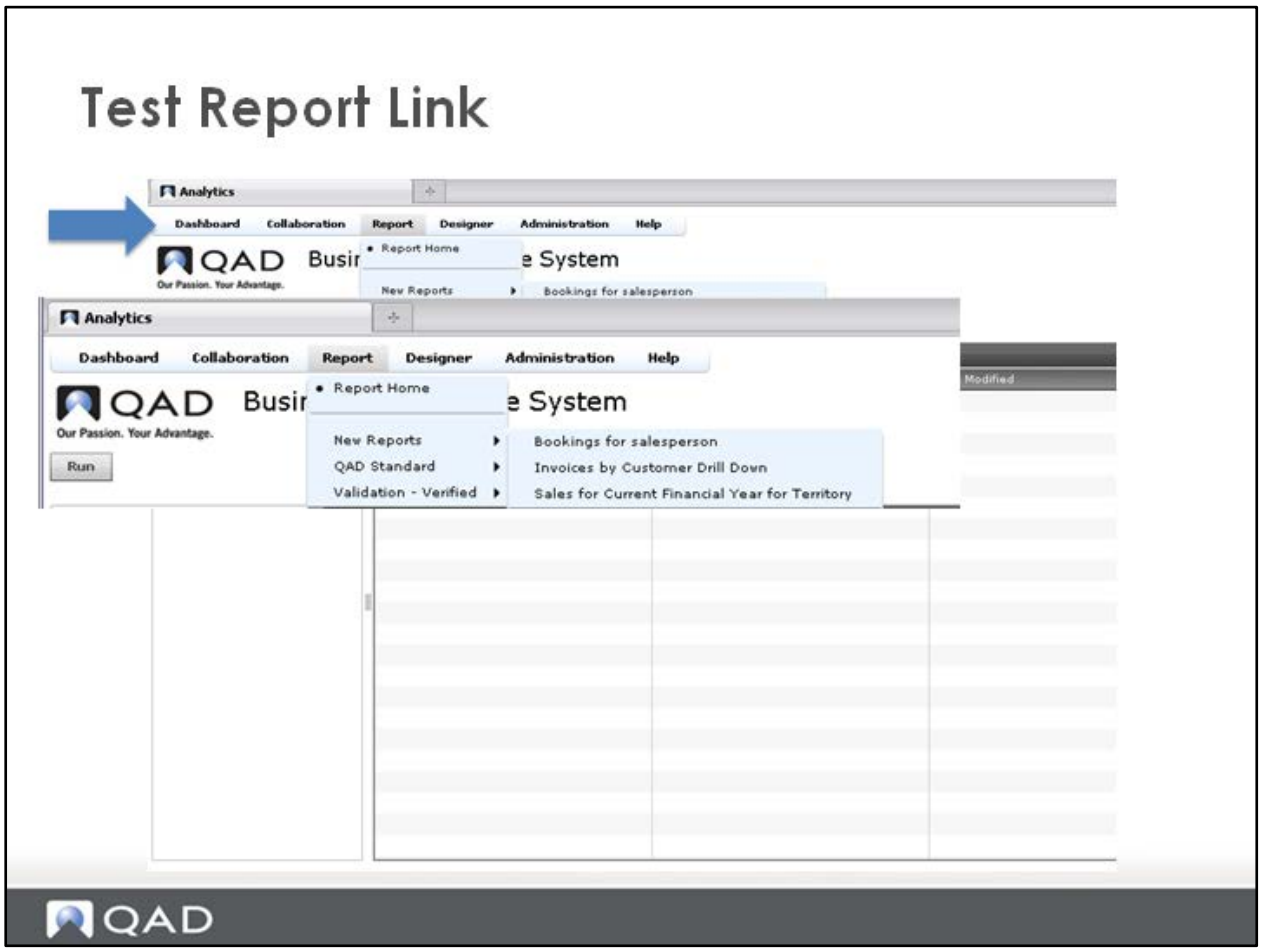


Once the object is selected, we also need to define the parameter binding. This is done by a drop-down menu in the *From* column.

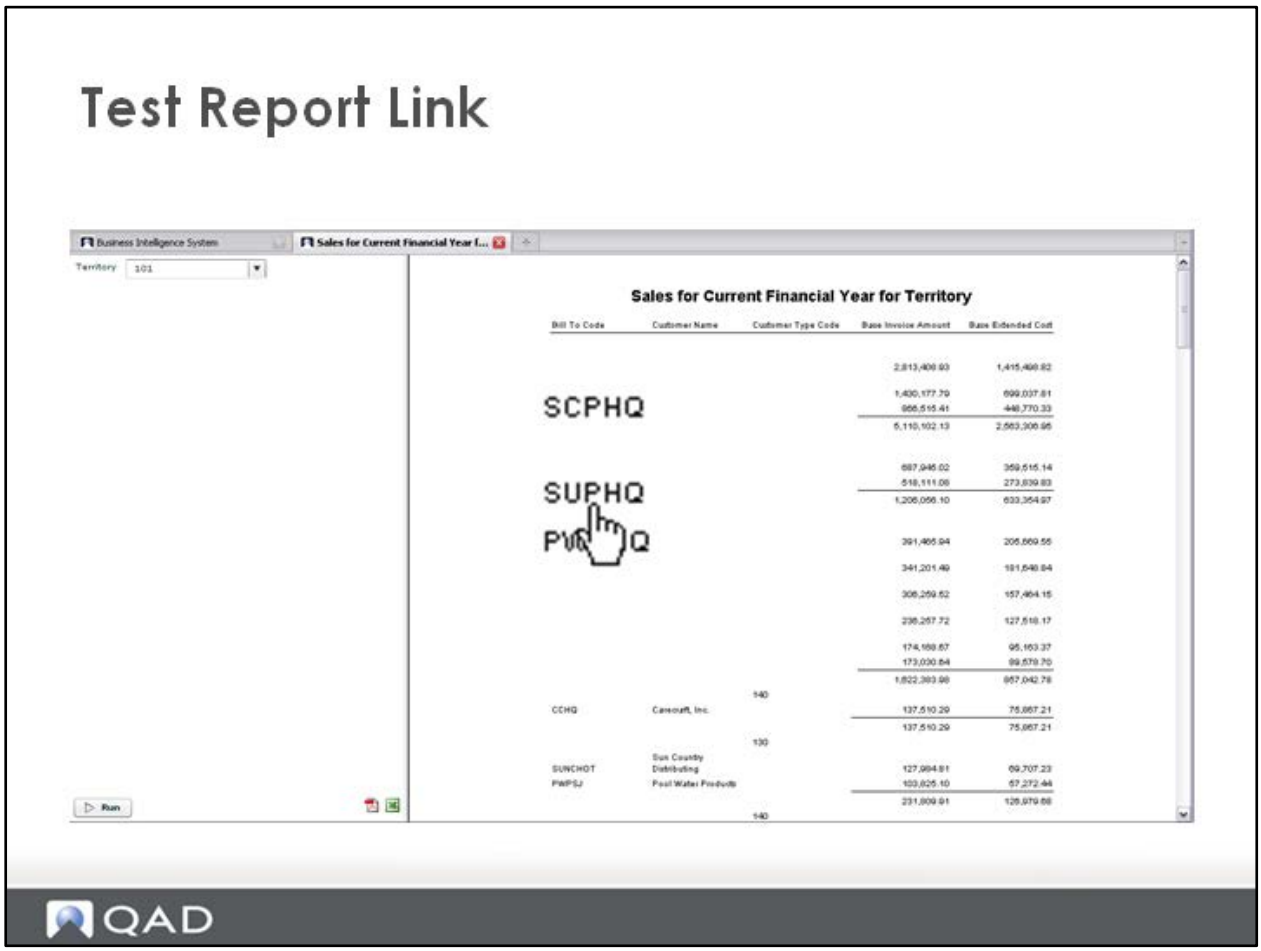
Report Links



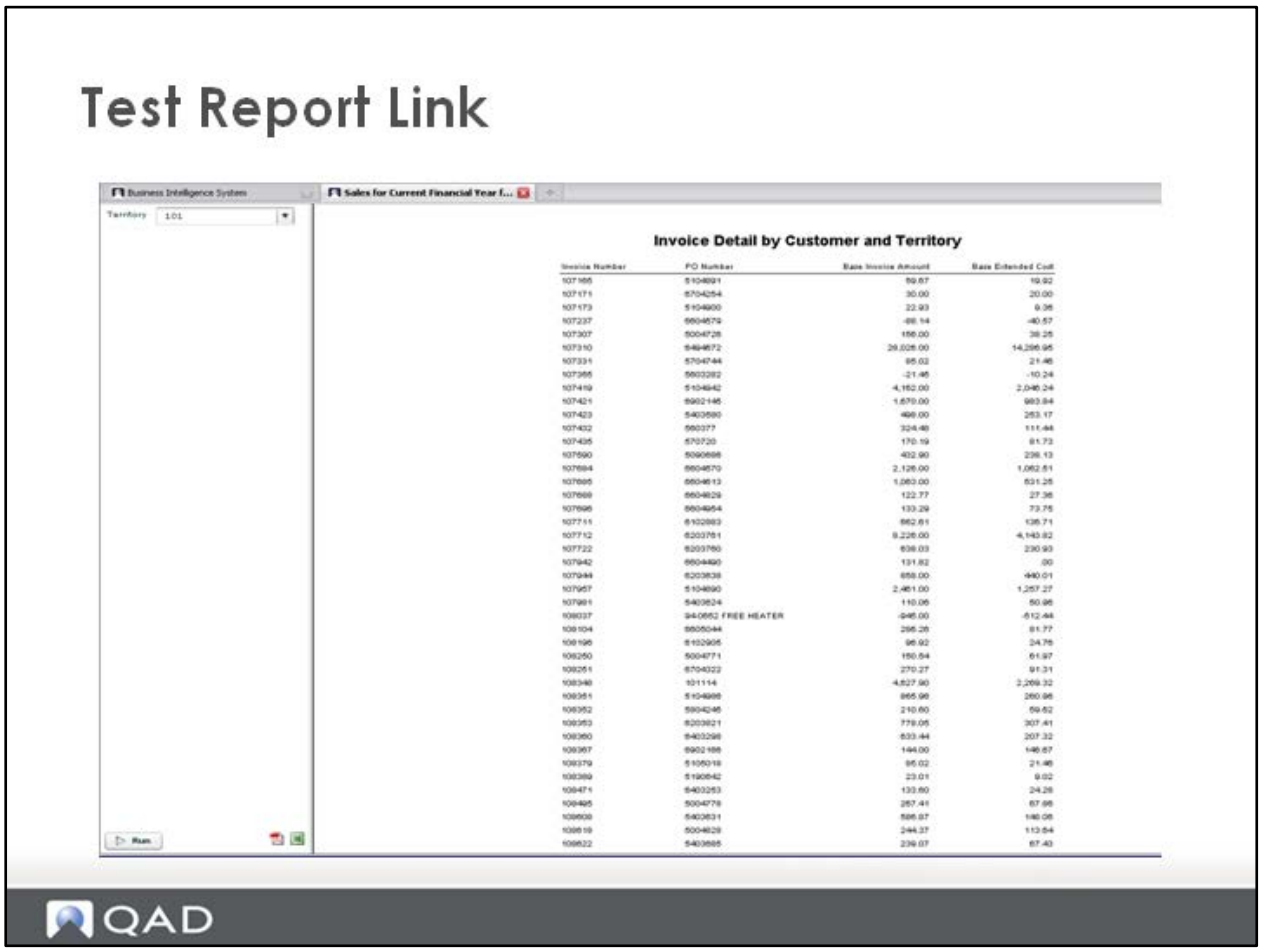
Test Report Link



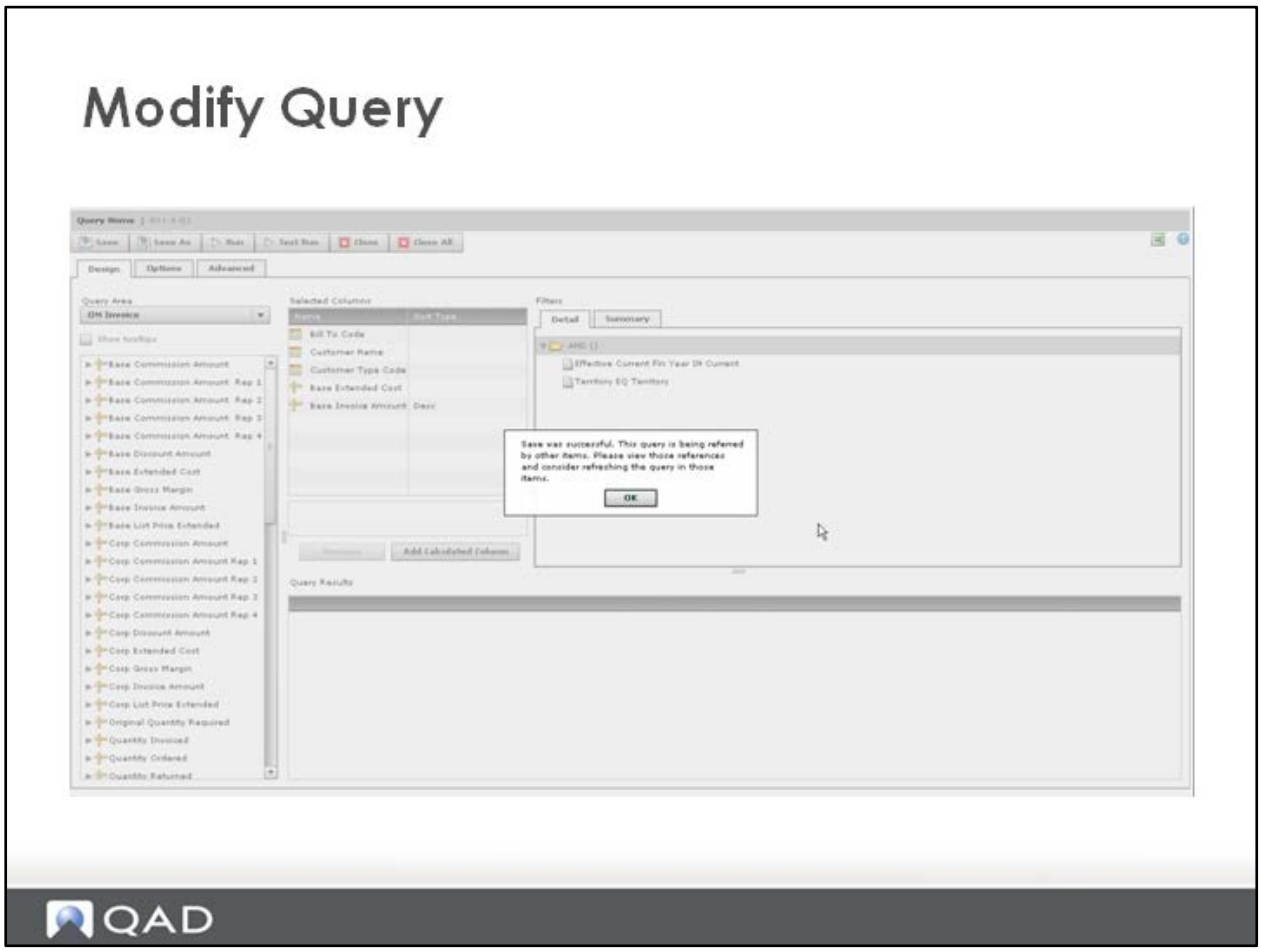
Test Report Link



Test Report Link

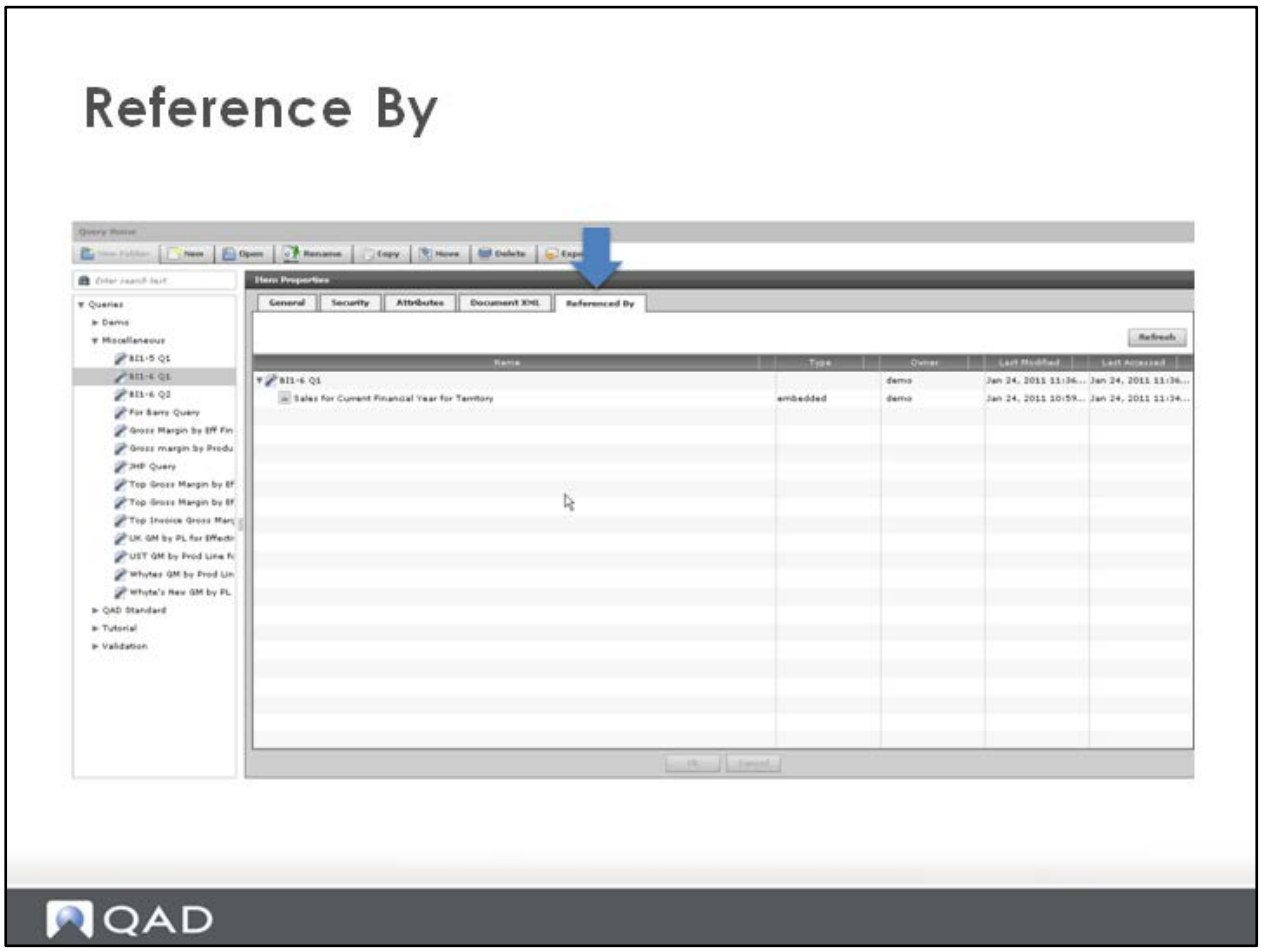


Modify Query



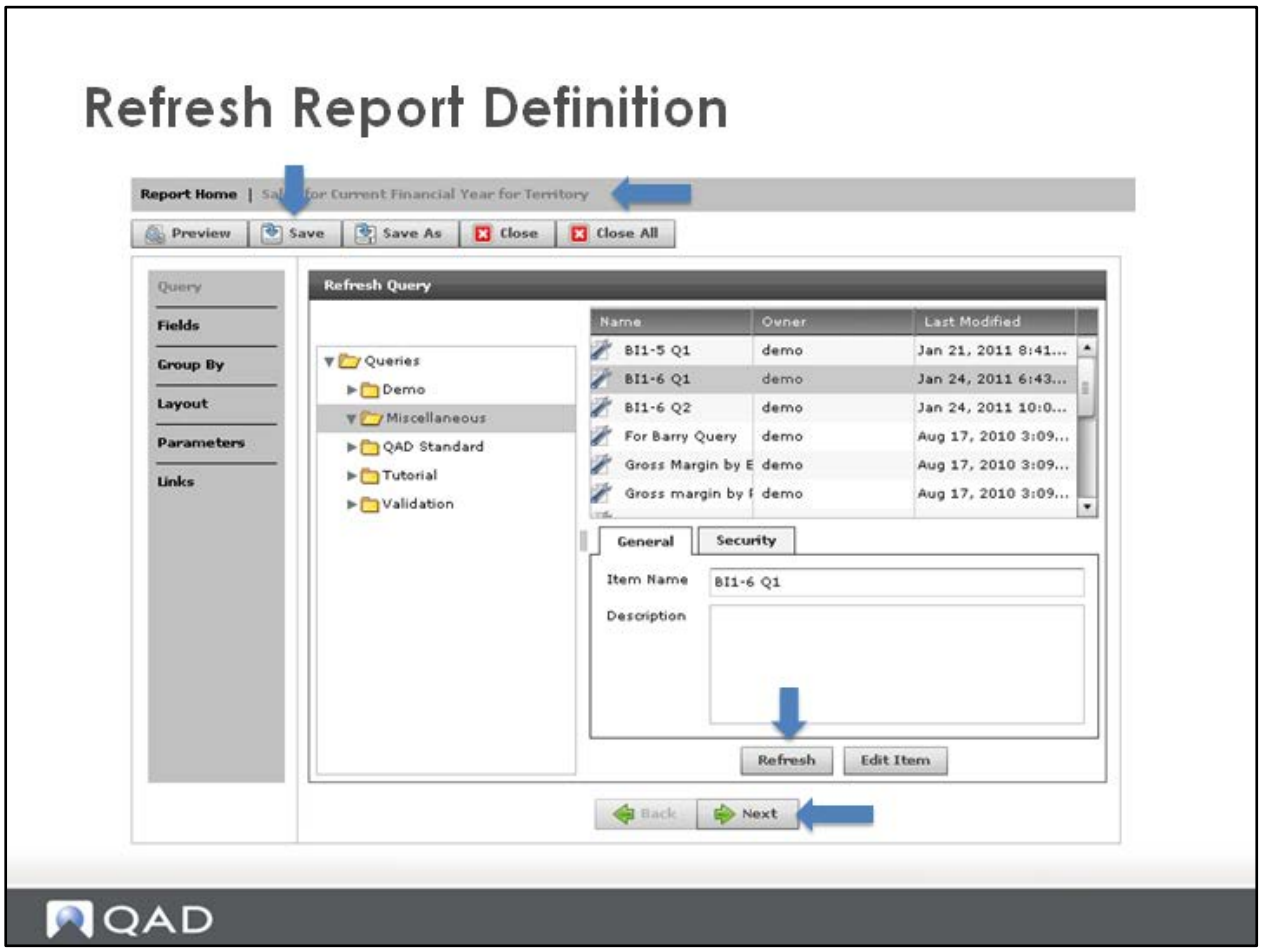
If the designer changes a query that is referenced by a report (or visual item) the system will warn him that he needs to consider the affect of those changes on the related items.

Reference By



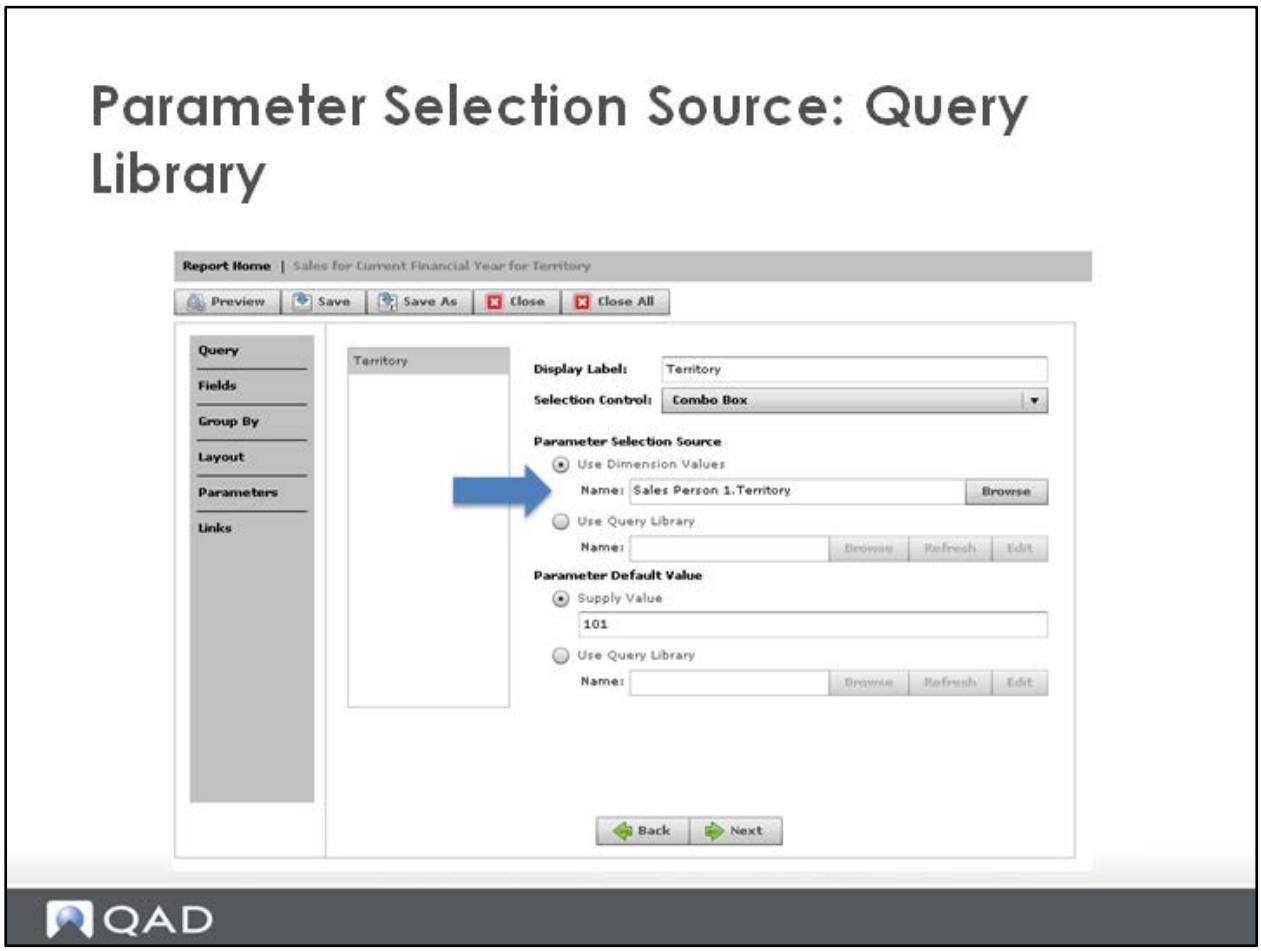
The *Referenced By* tab indicates which Portal objects need to be reviewed as the result of a query modification.

Refresh Report Definition



To update the report with the changed query information, *Open* the report and click the *Refresh* button. Then, click *next* through the report wizard to make sure all queries have been considered.

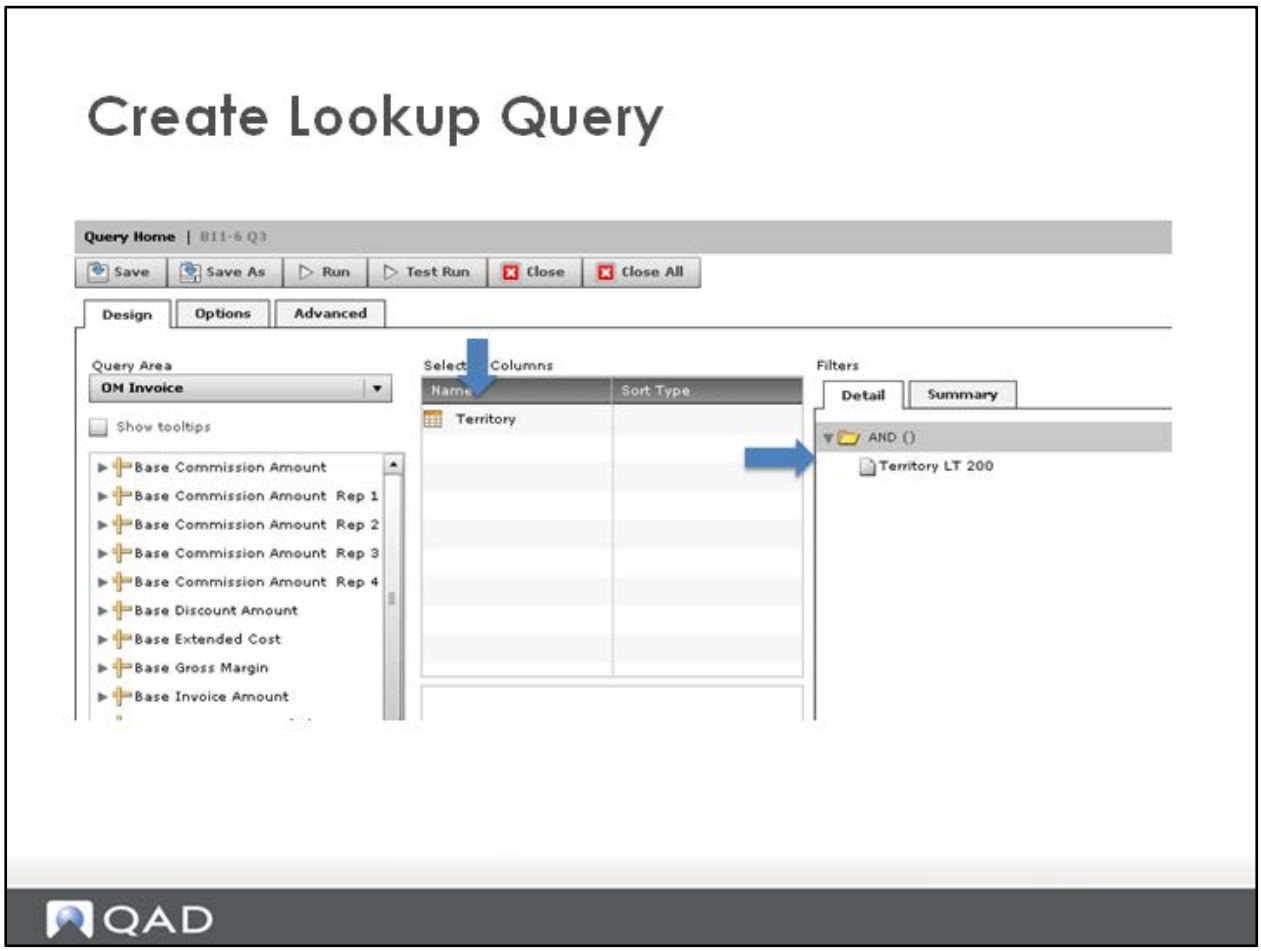
Parameter Selection Source: Query Library



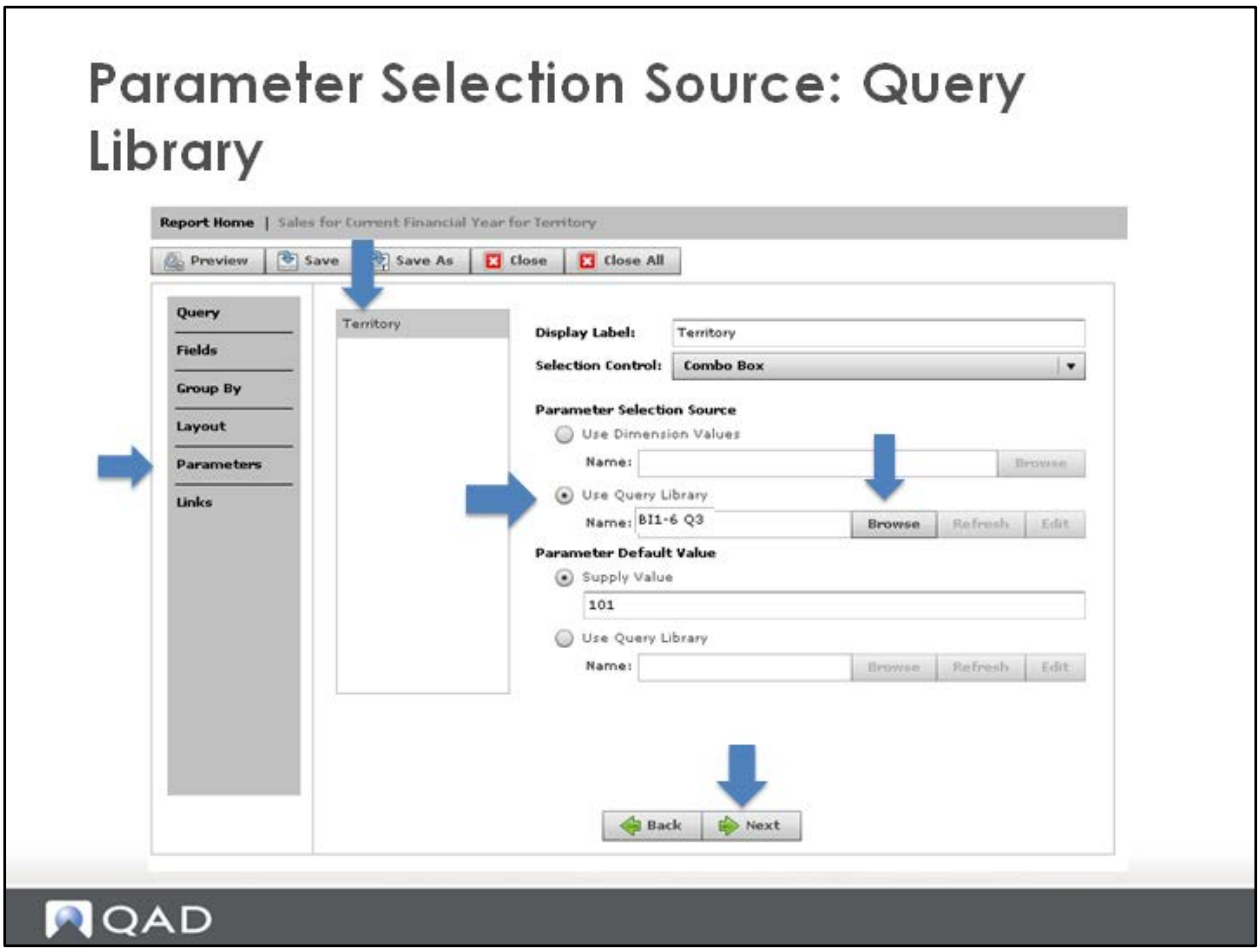
Parameter Selection Source – *Use Query Library*.

Query libraries are used to limit the values the users will see when they run the report.

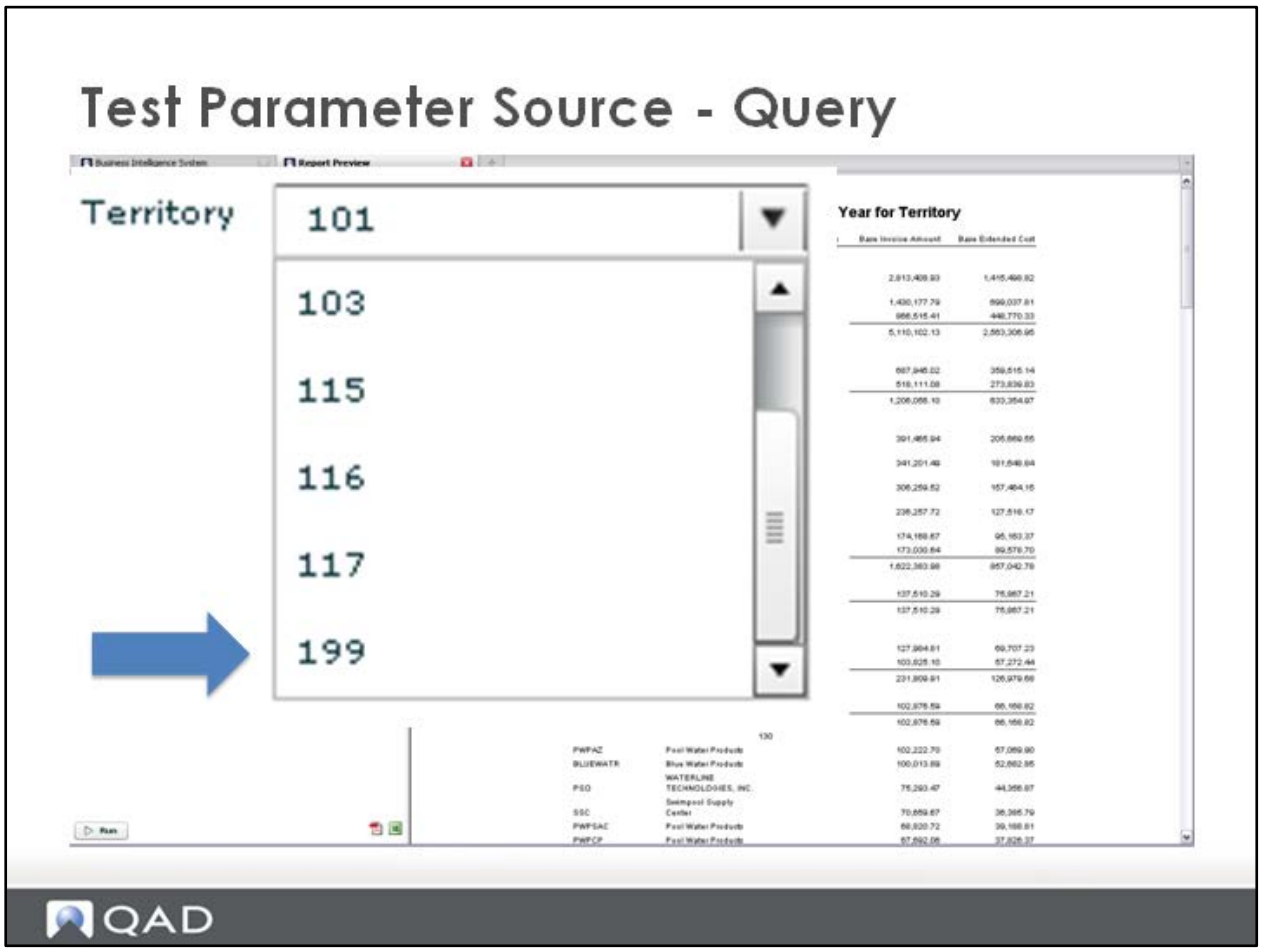
Create Lookup Query



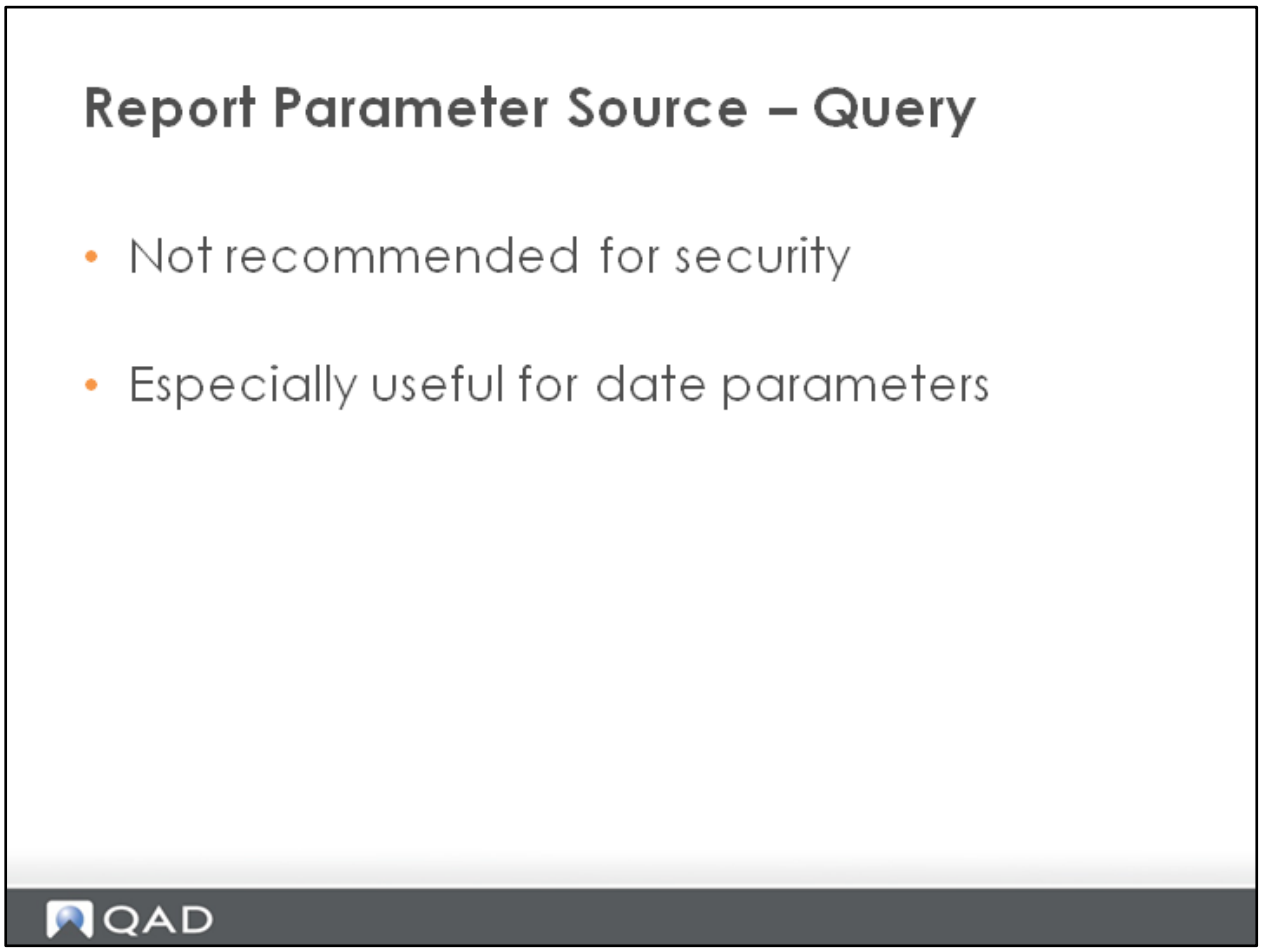
Parameter Selection Source: Query Library



Test Parameter Source - Query



Report Parameter Source – Query



The lookup query is not intended to be used for security purposes. The BI Portal includes security features to control data access, based on users and groups.

A common use for this functionality is to limit the dates that are presented to a user in a parameter value selection. It is good practice to create a general lookup queries to be used in many reports.

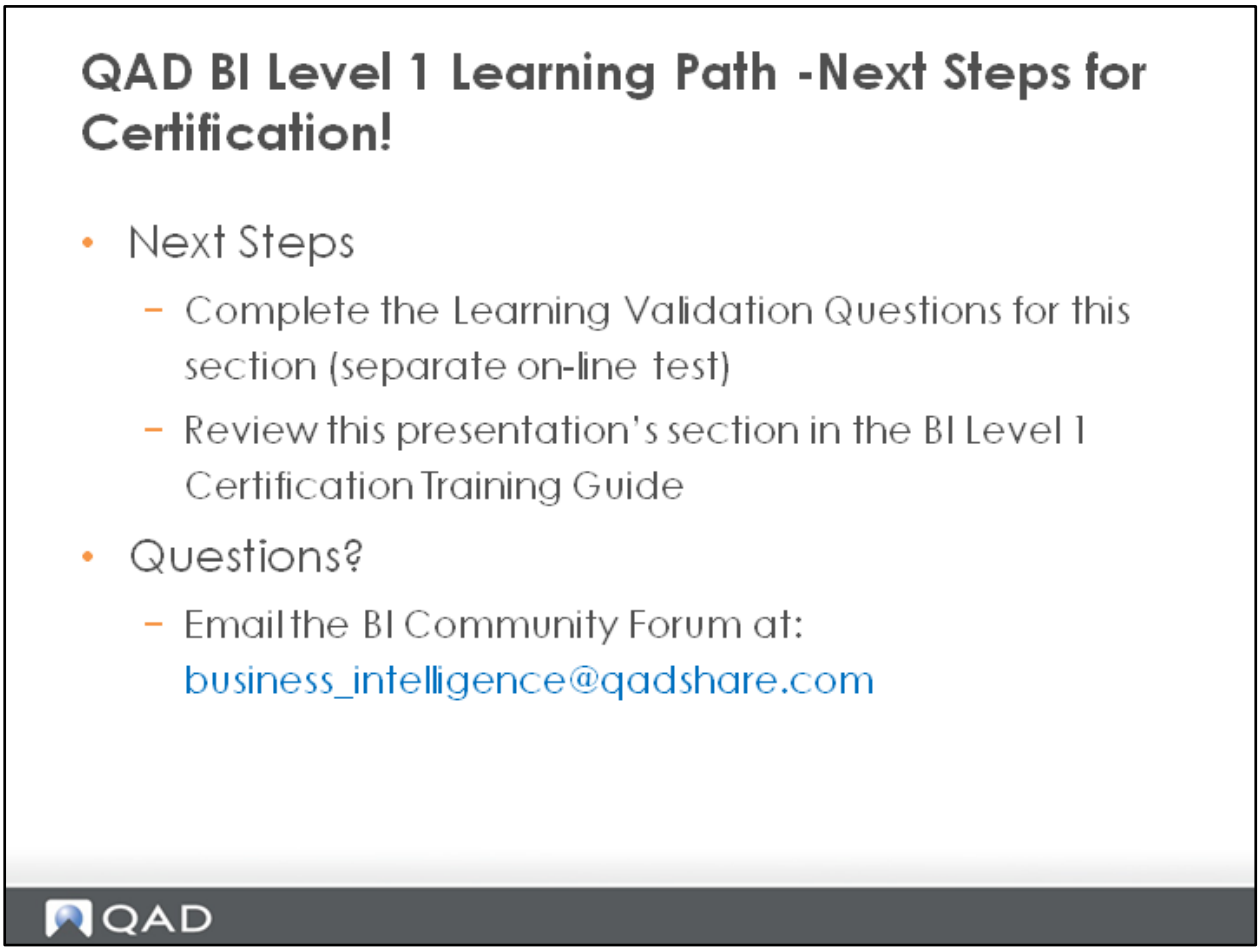
BI Portal – Report Designer – Course Summary



BI Portal – Report Designer



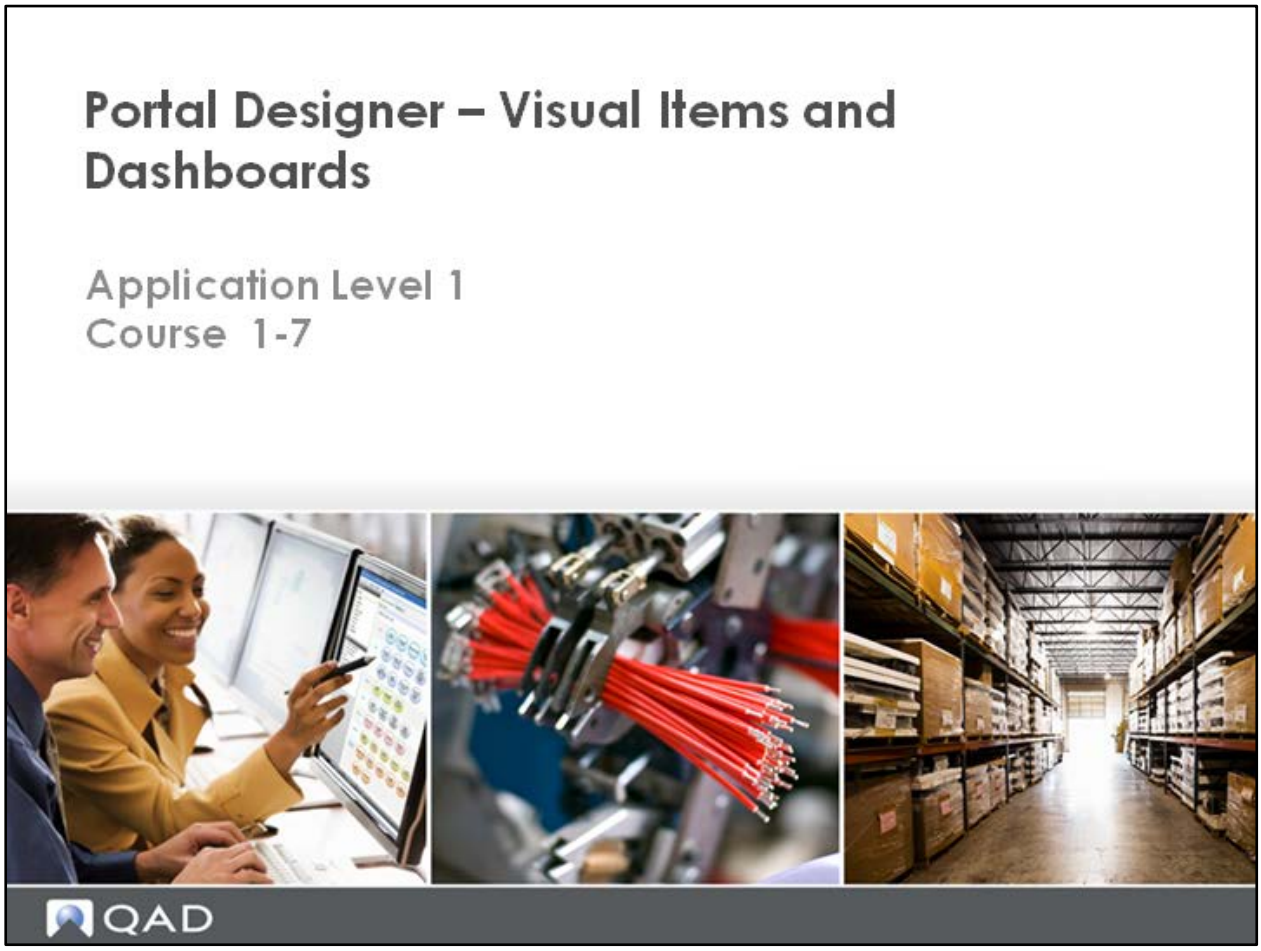
QAD BI Level 1 Learning Path -Next Steps for Certification!



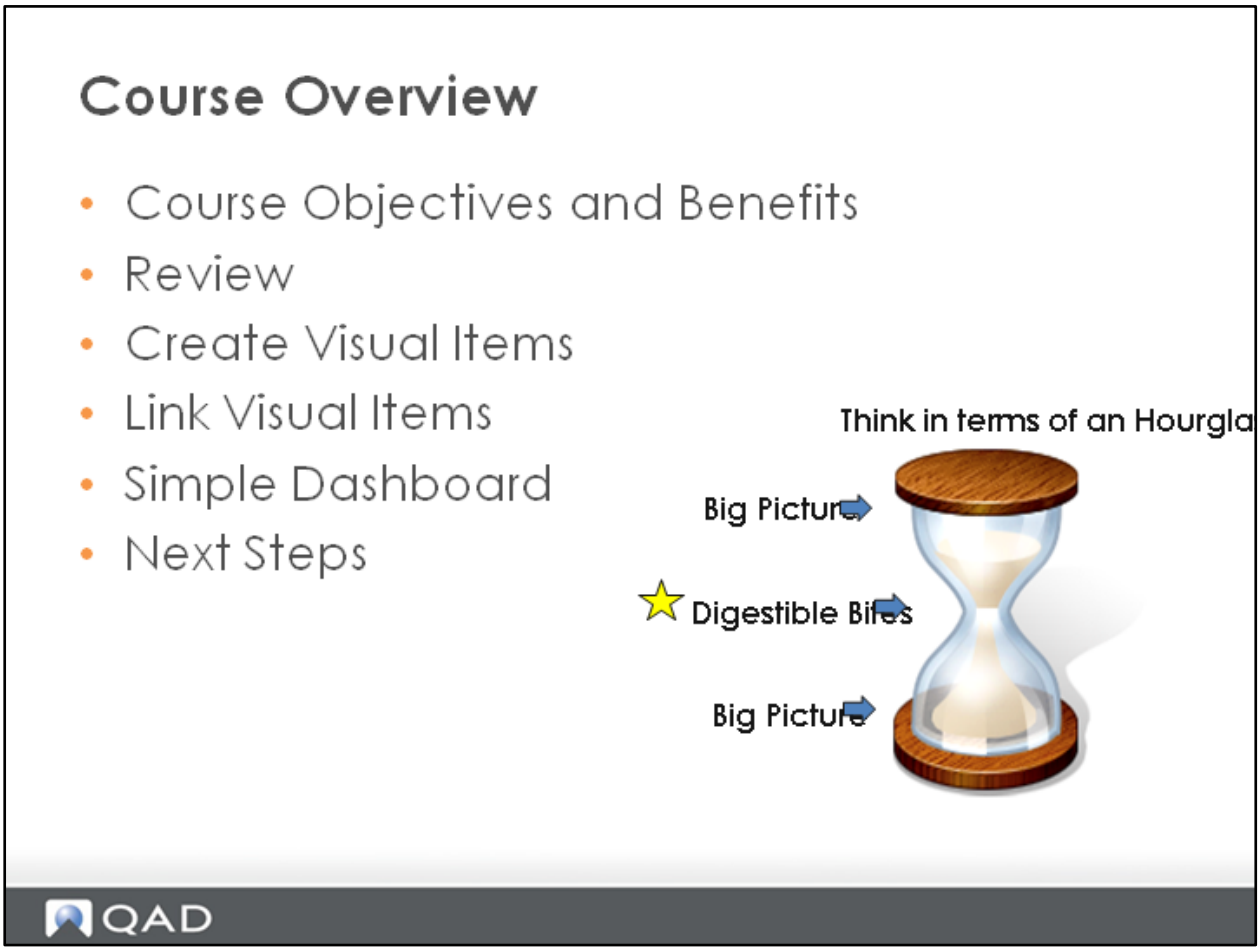
CHAPTER 7

Portal Designer – Visual Items and Dashboards

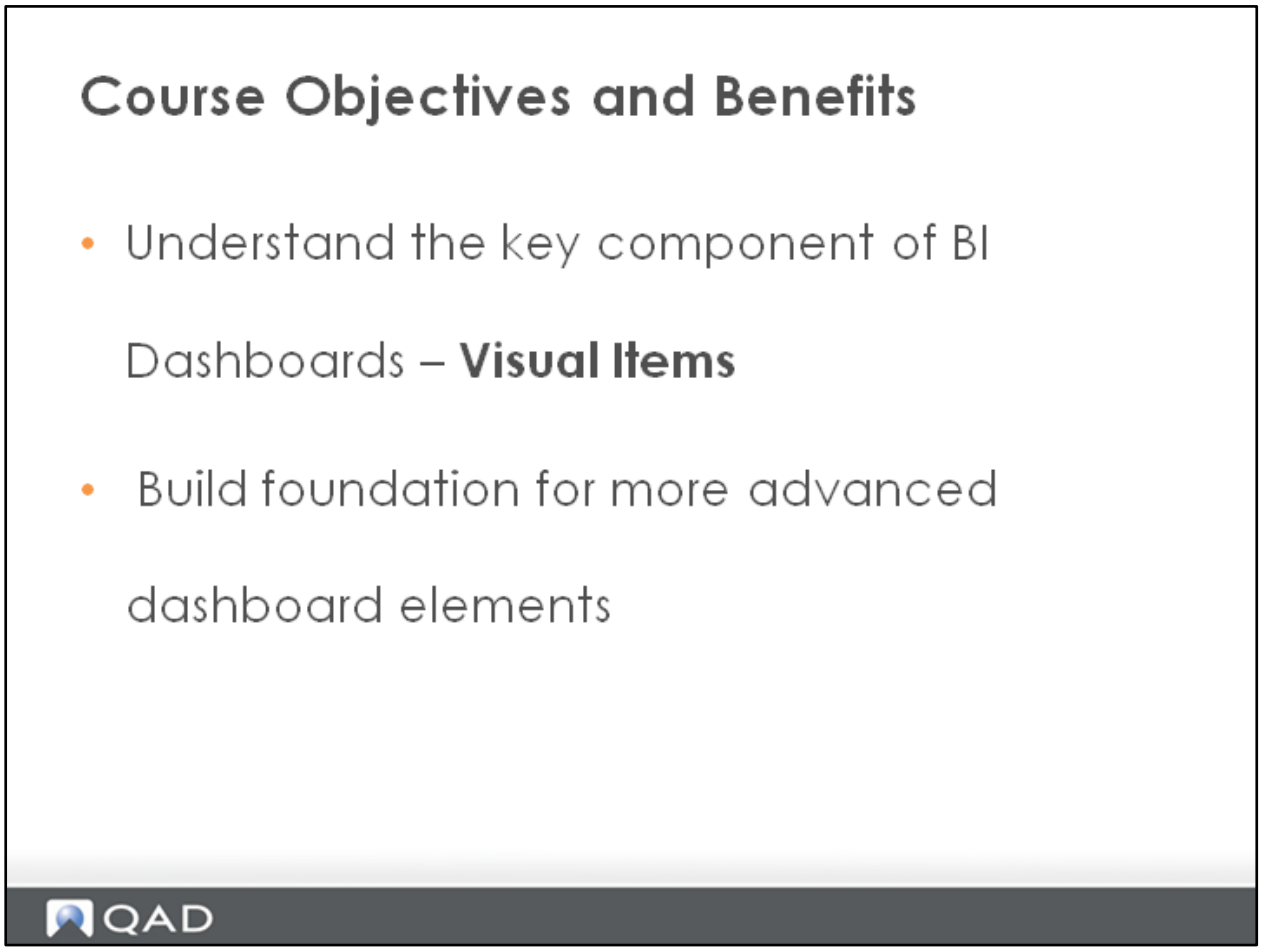
Portal Designer – Visual Items and Dashboards



Course Overview



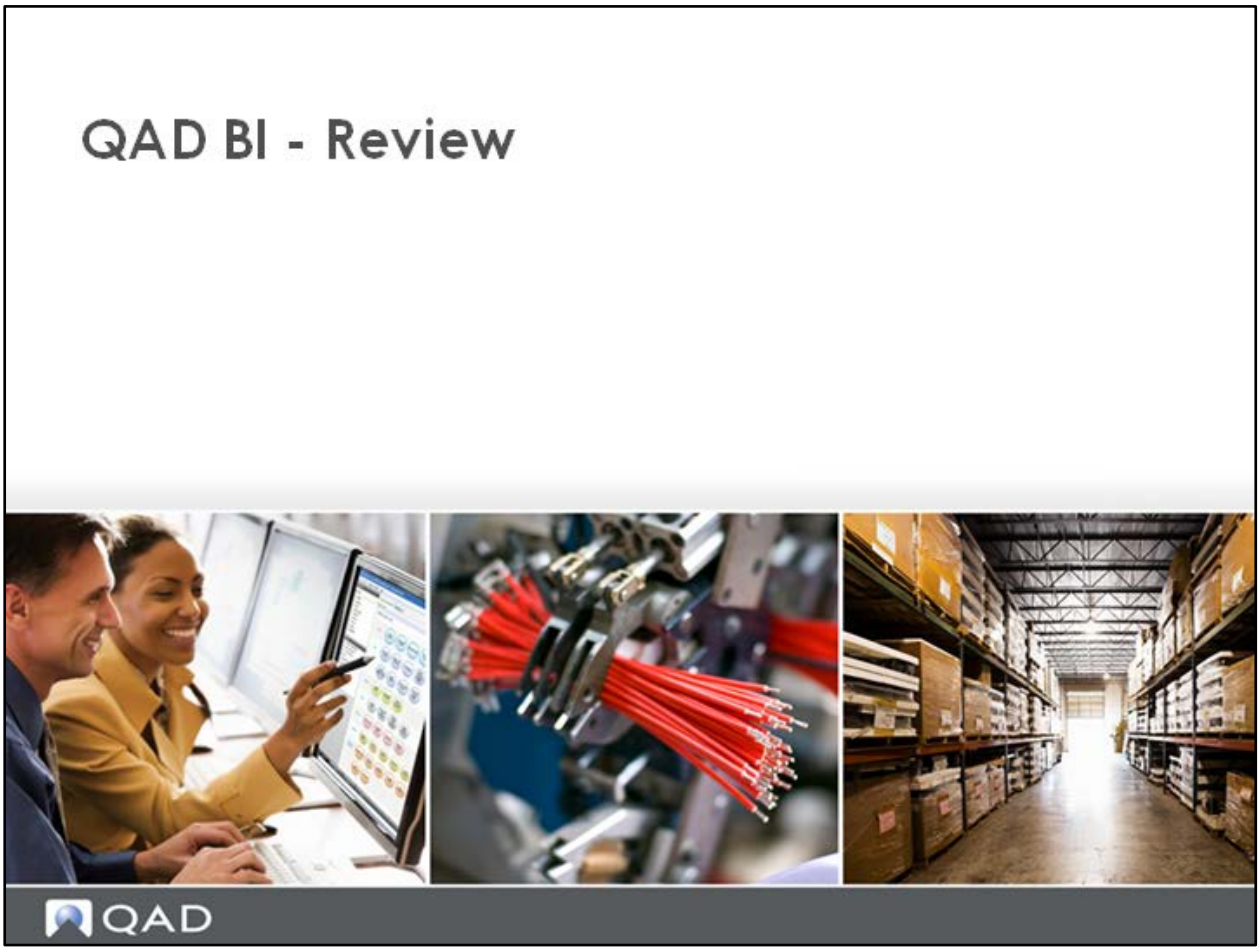
Course Objectives and Benefits



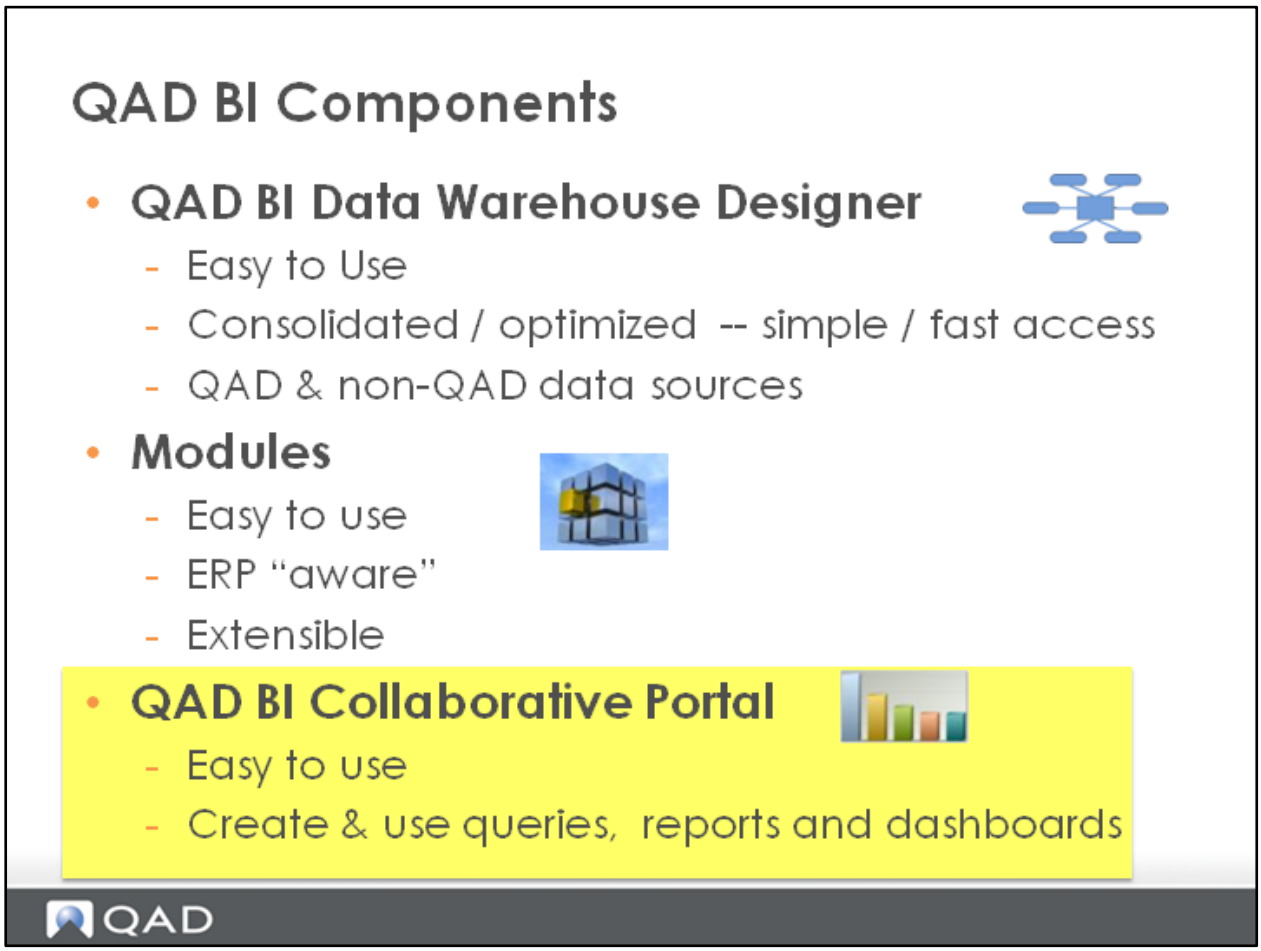
Dashboards are the primary user interface for the BI Portal. Customers at all levels of the organization will access dashboards.

Visual Items are the components of dashboards.

QAD BI - Review



QAD BI Components



Key Concept:

QAD BI Components:

QAD BI Data Warehouse Developer (DWD)

Consolidate into a single warehouse optimized for simple, fast access

QAD and non-QAD data sources

Modules

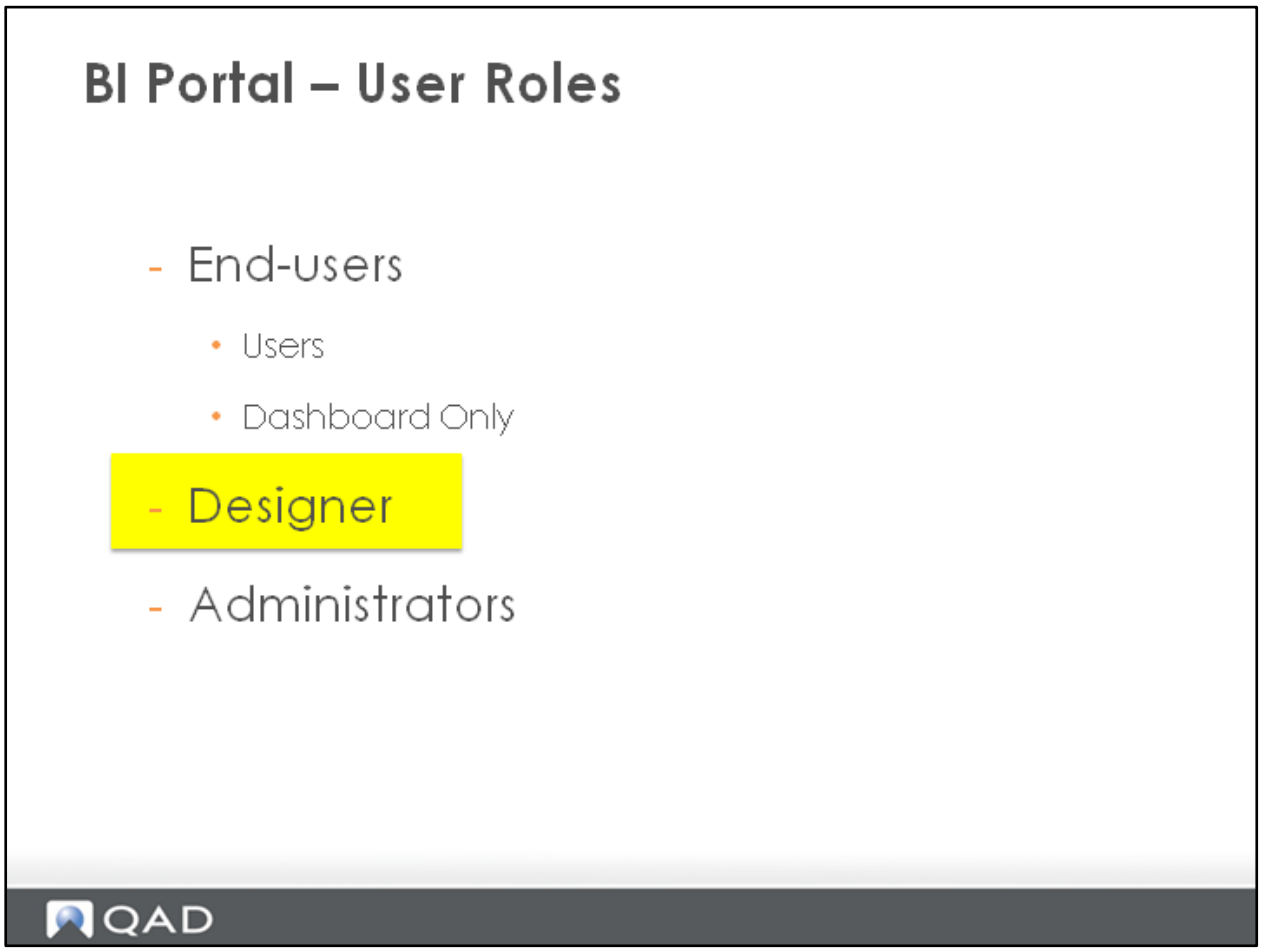
ERP "aware" streamlines access to current and historical QAD ERP data

Extensible to support non-QAD data sources

QAD BI Collaborative Portal

Easy to use and create dashboard and reporting environment

BI Portal – User Roles



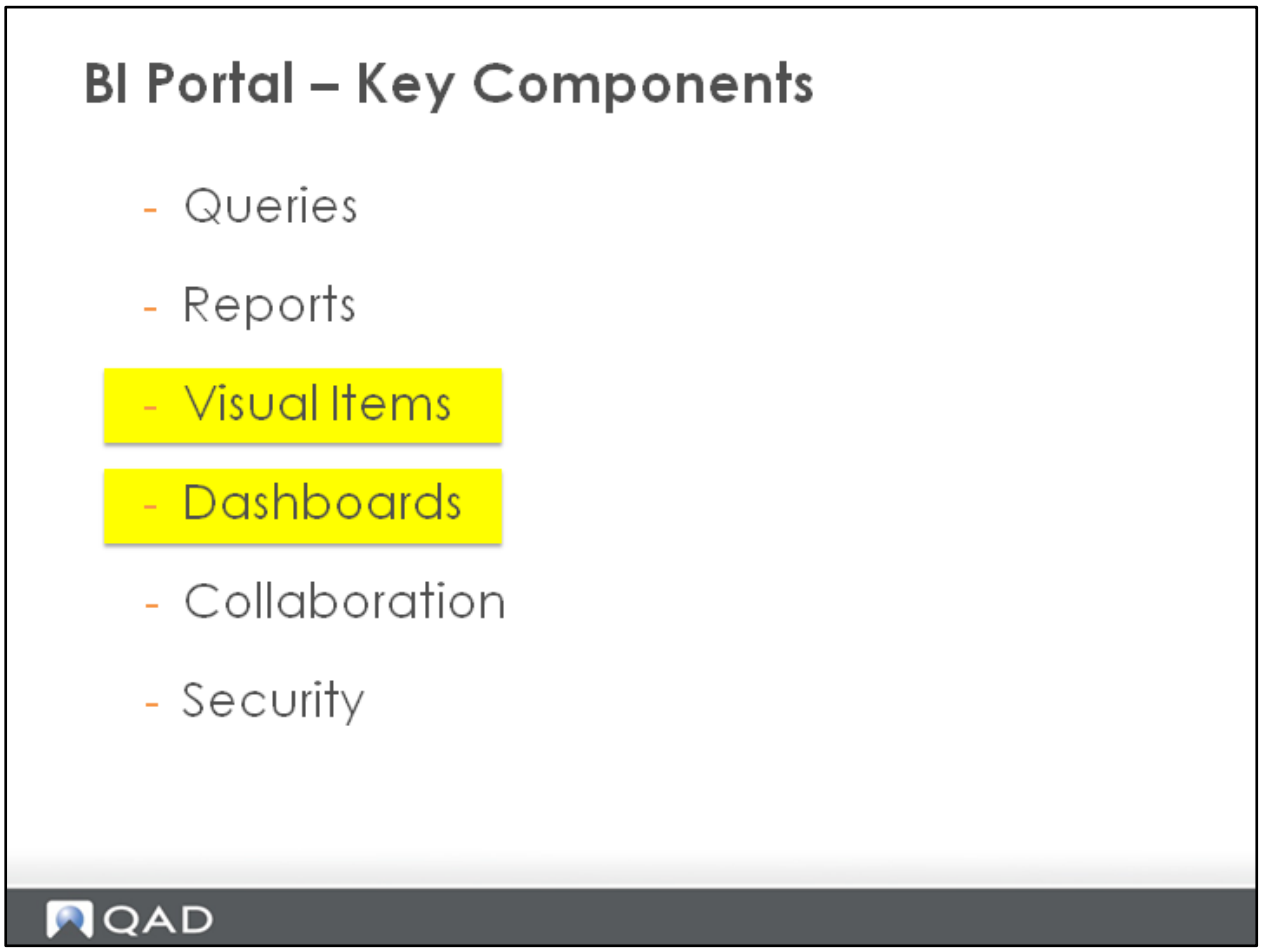
Users will experience the BI Portal based on their role.

The BI Portal user roles are:

- End-user
    - -- User
    - -- Dashboard Only
- Designer
- Administrator

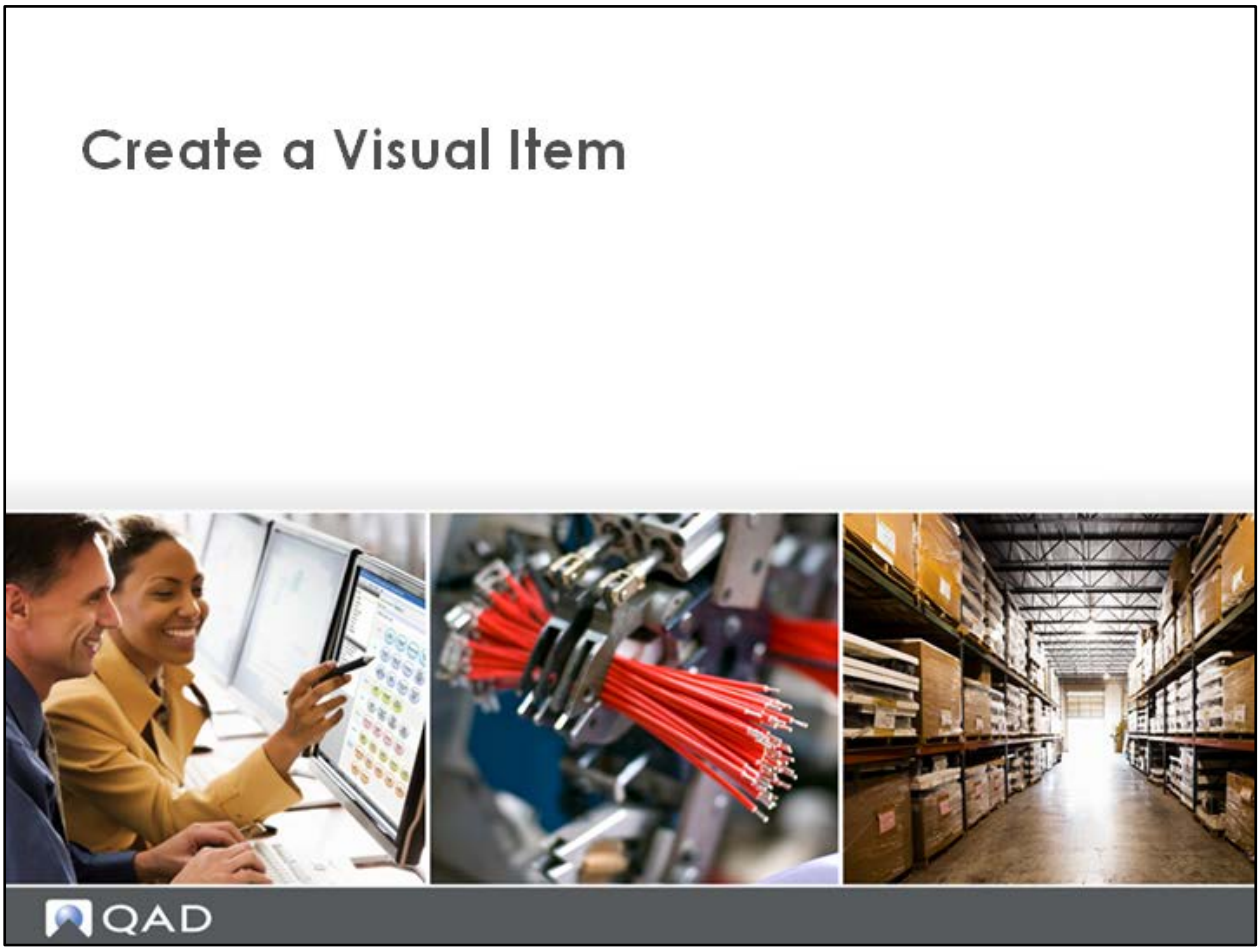
This is the first in a series of courses describing the Designer role within the BI Portal.

BI Portal – Key Components

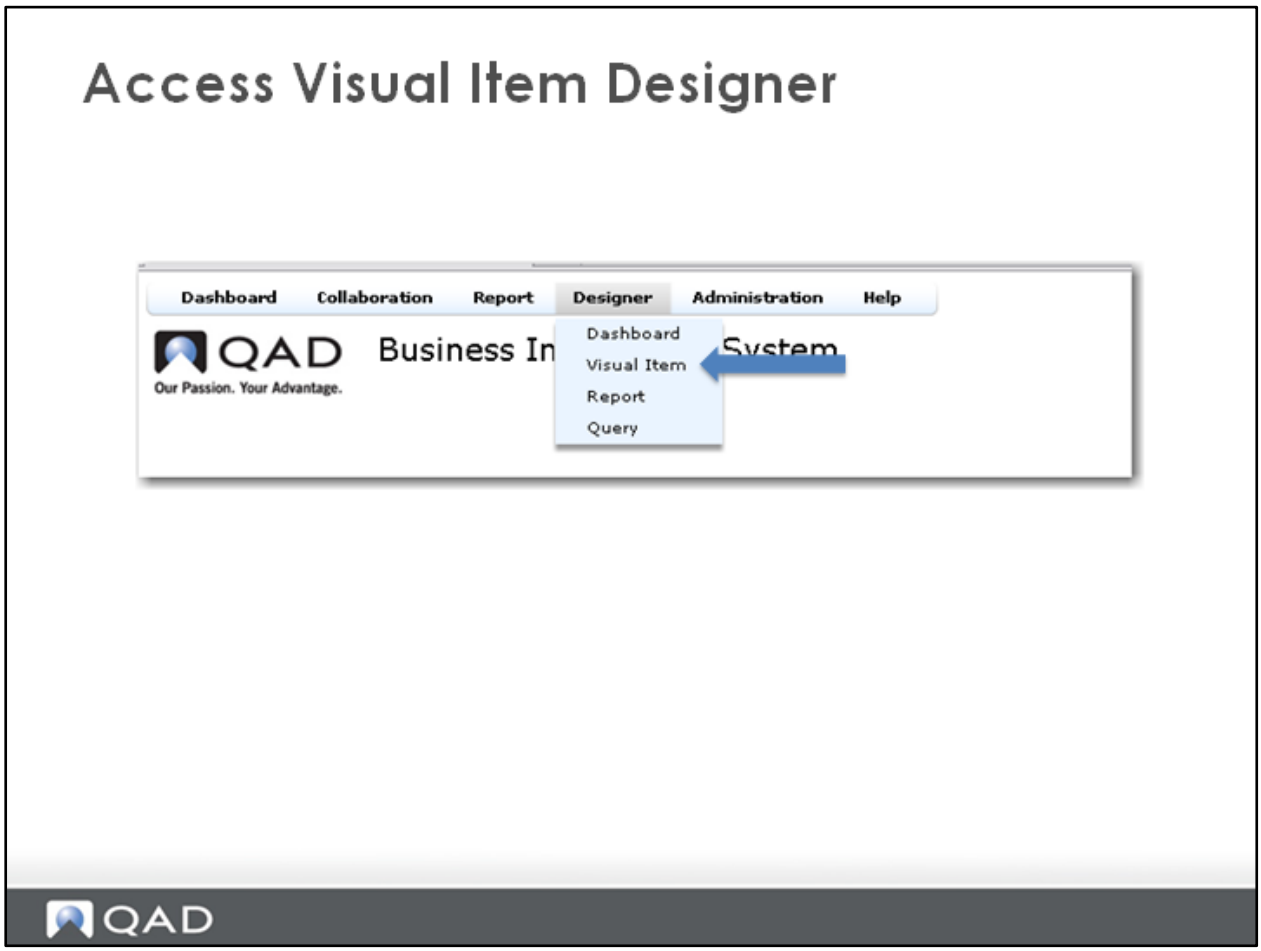


This section is covers Visual Items and Dashboards.

Create a Visual Item

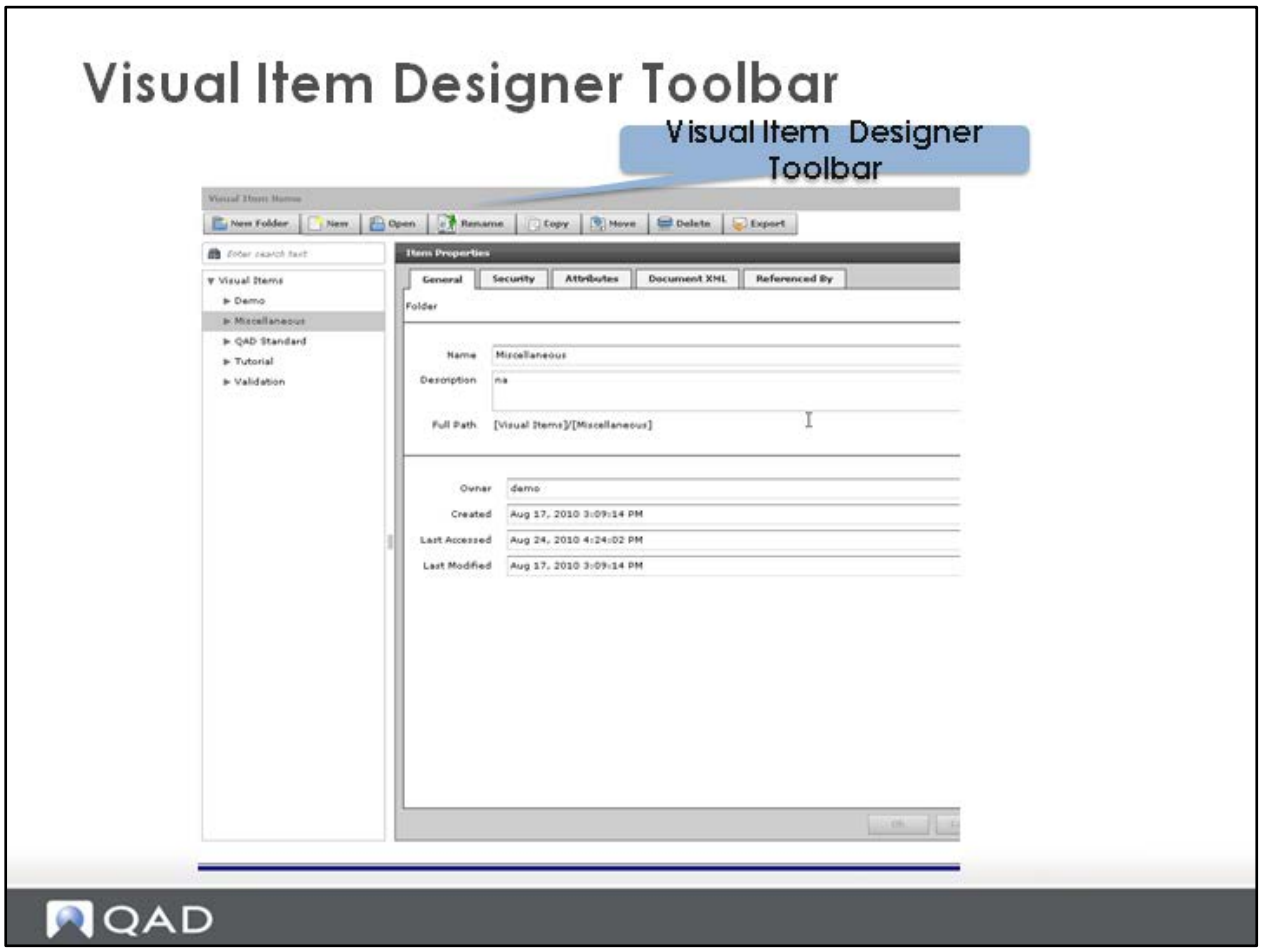


Access Visual Item Designer

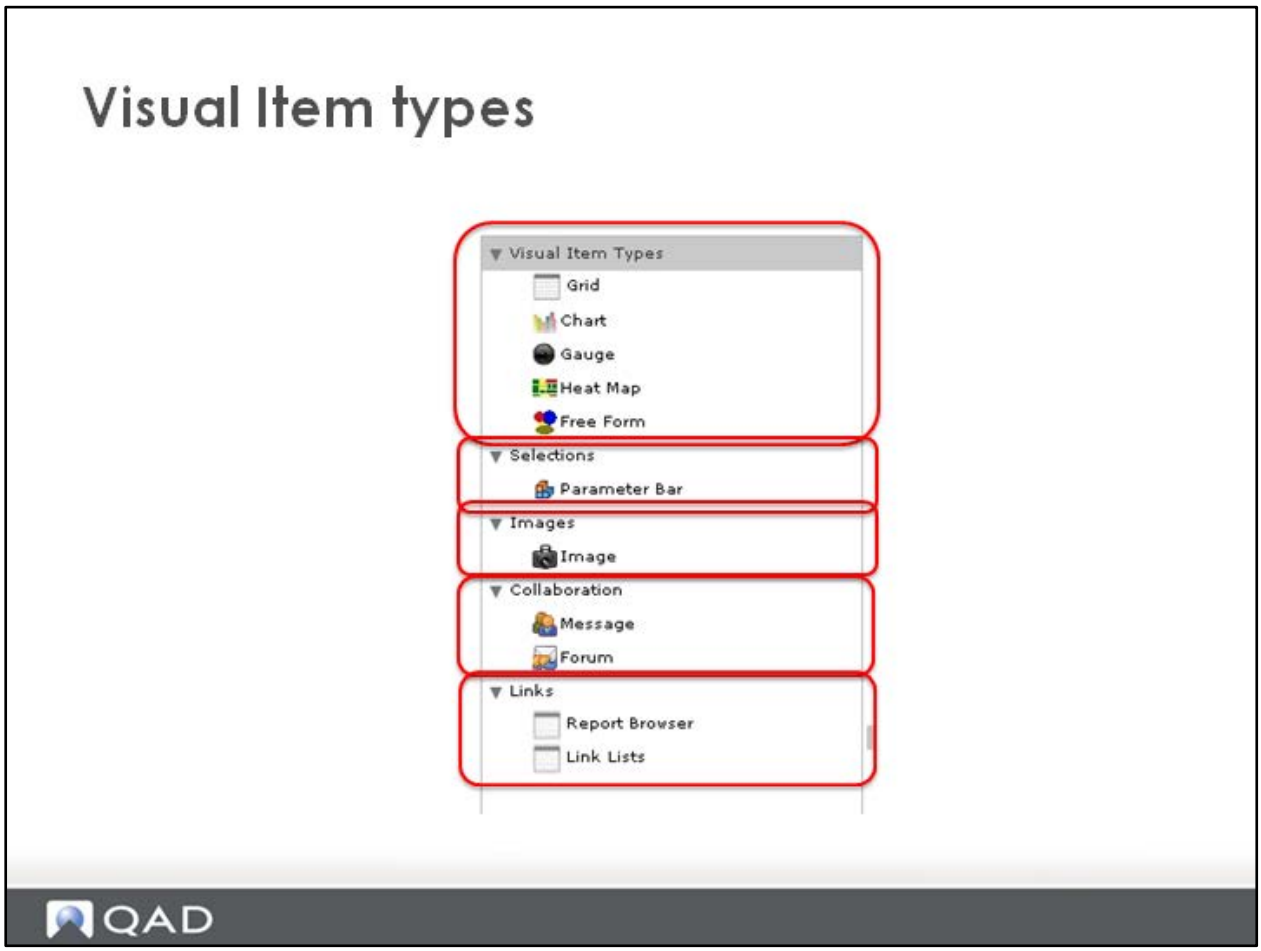


To access the Visual Item designer, click *Visual Item* from the drop-down list under the *Designer* button on the menu bar.

Visual Item Designer Toolbar



Visual Item types



General Visual Item Types:

- Grid
- Chart
- Gauge
- Heat Map
- Free Form

Selections

- Parameter Bar

Images

Collaboration

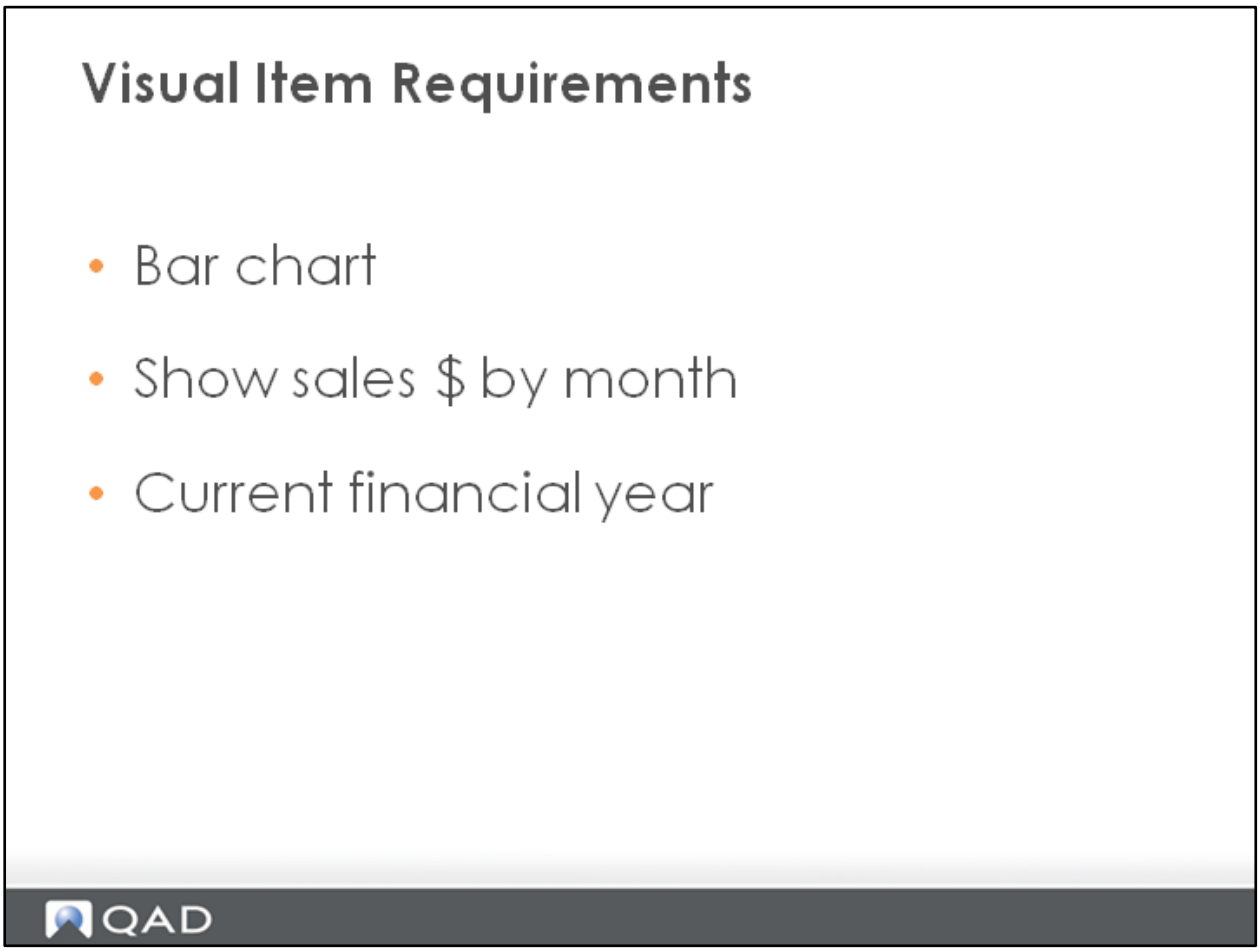
- Message

- Forum

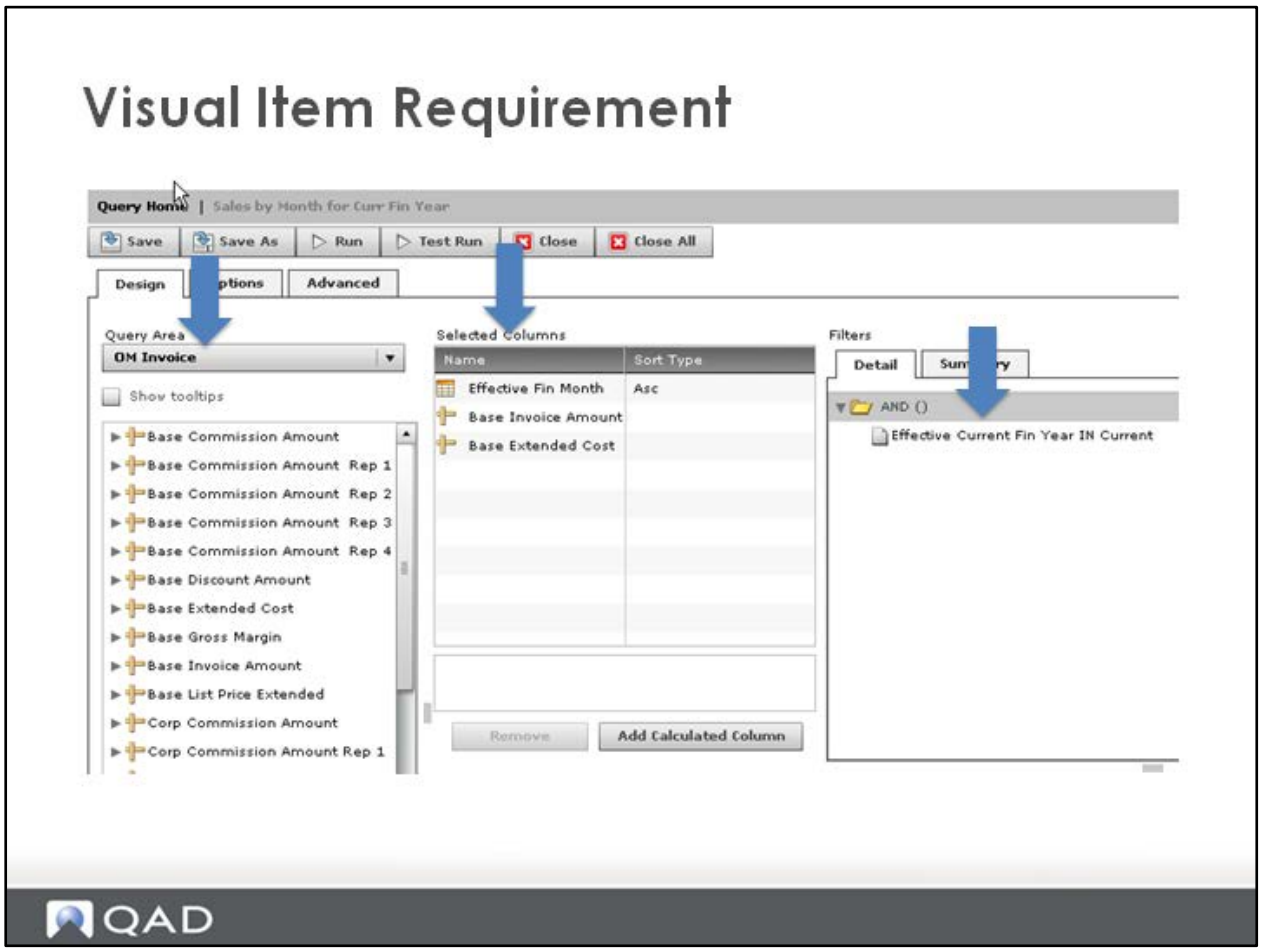
Links

- Report browser
- Link Lists

Visual Item Requirements

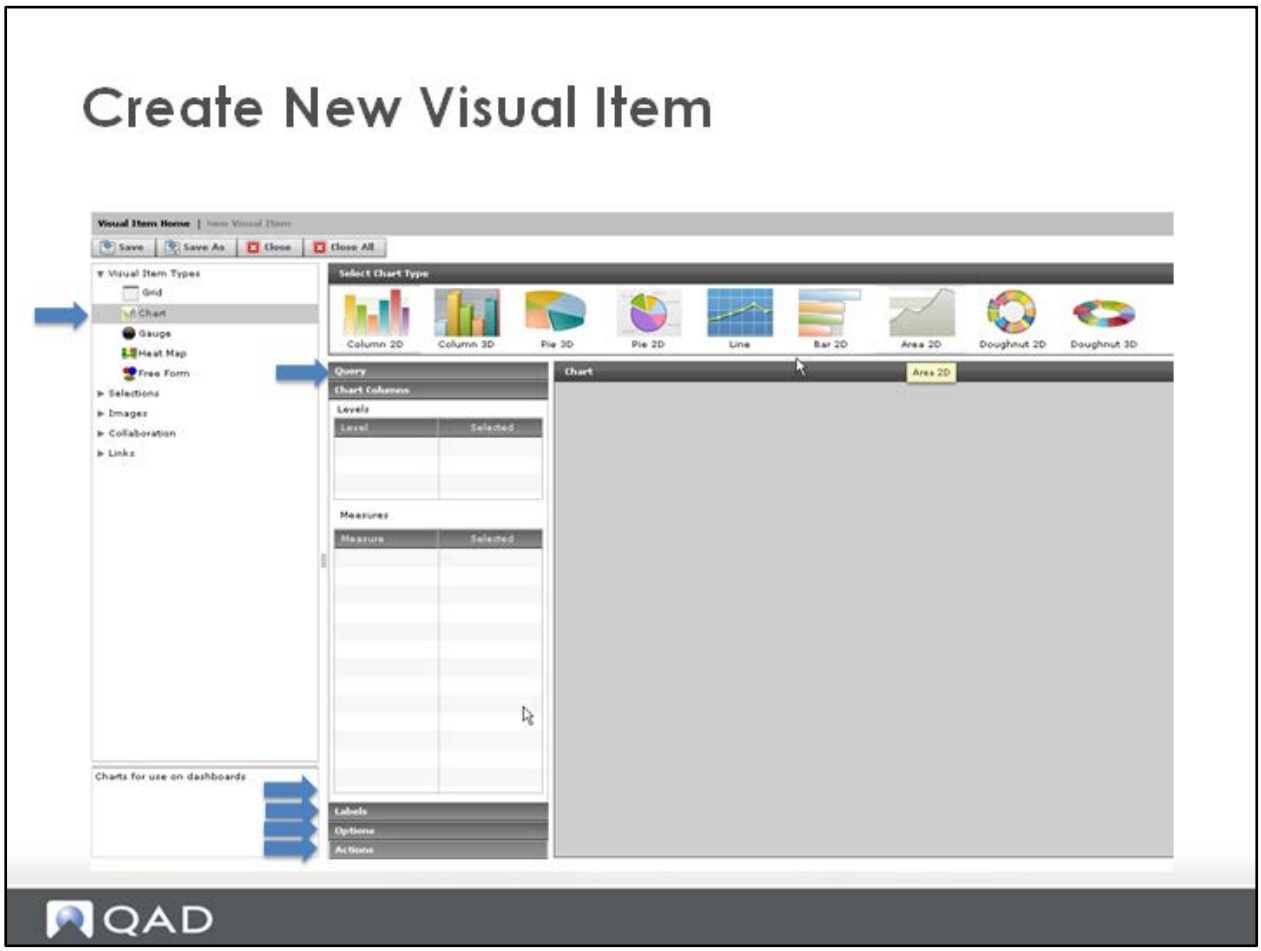


Visual Item Requirement



Queries are the primary building block for **Visual Items.**

Create New Visual Item



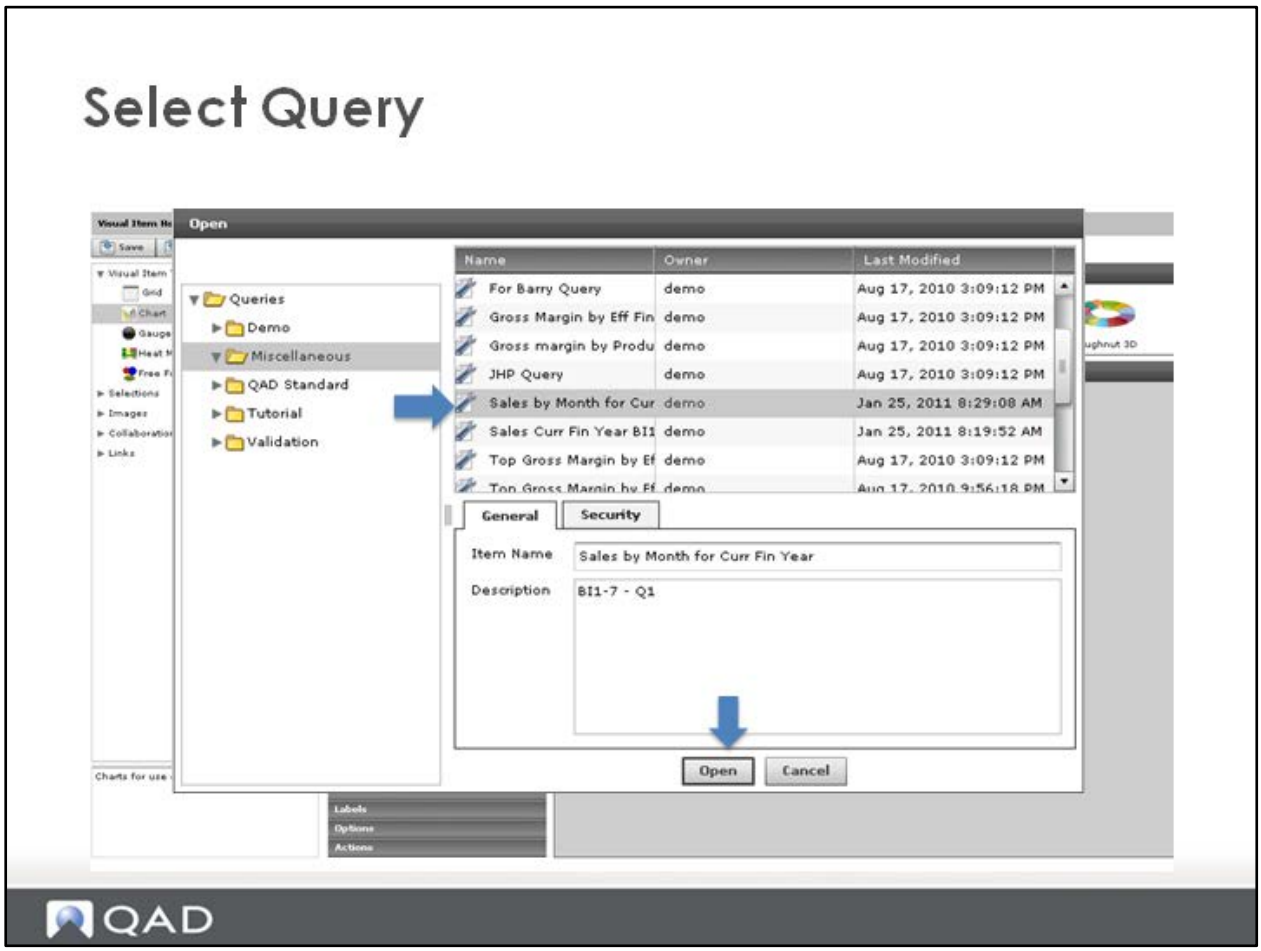
The first step to create a new visual item is to select the Visual Item Type.

Based on the Visual Item type chosen, various sections are displayed in the middle window. To expand the section, click the section heading.

For charts, these sections include:

- Query
- Chart colulmn
- Labels
- Options
- Actions

Select Query



Select a query for the visual item.

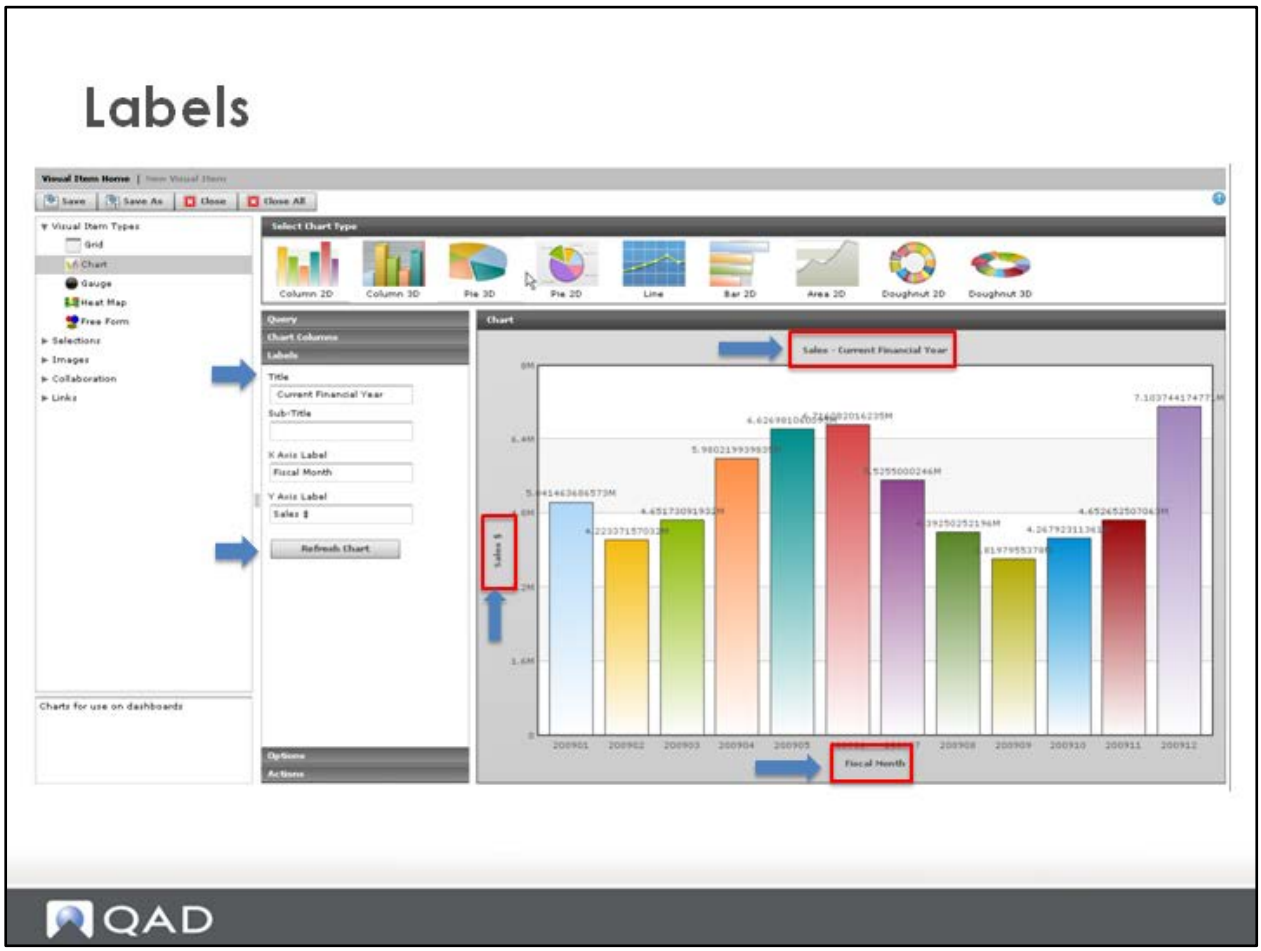
Select Columns



Designer will display visual item.

Select query columns to be included in chart.

Labels



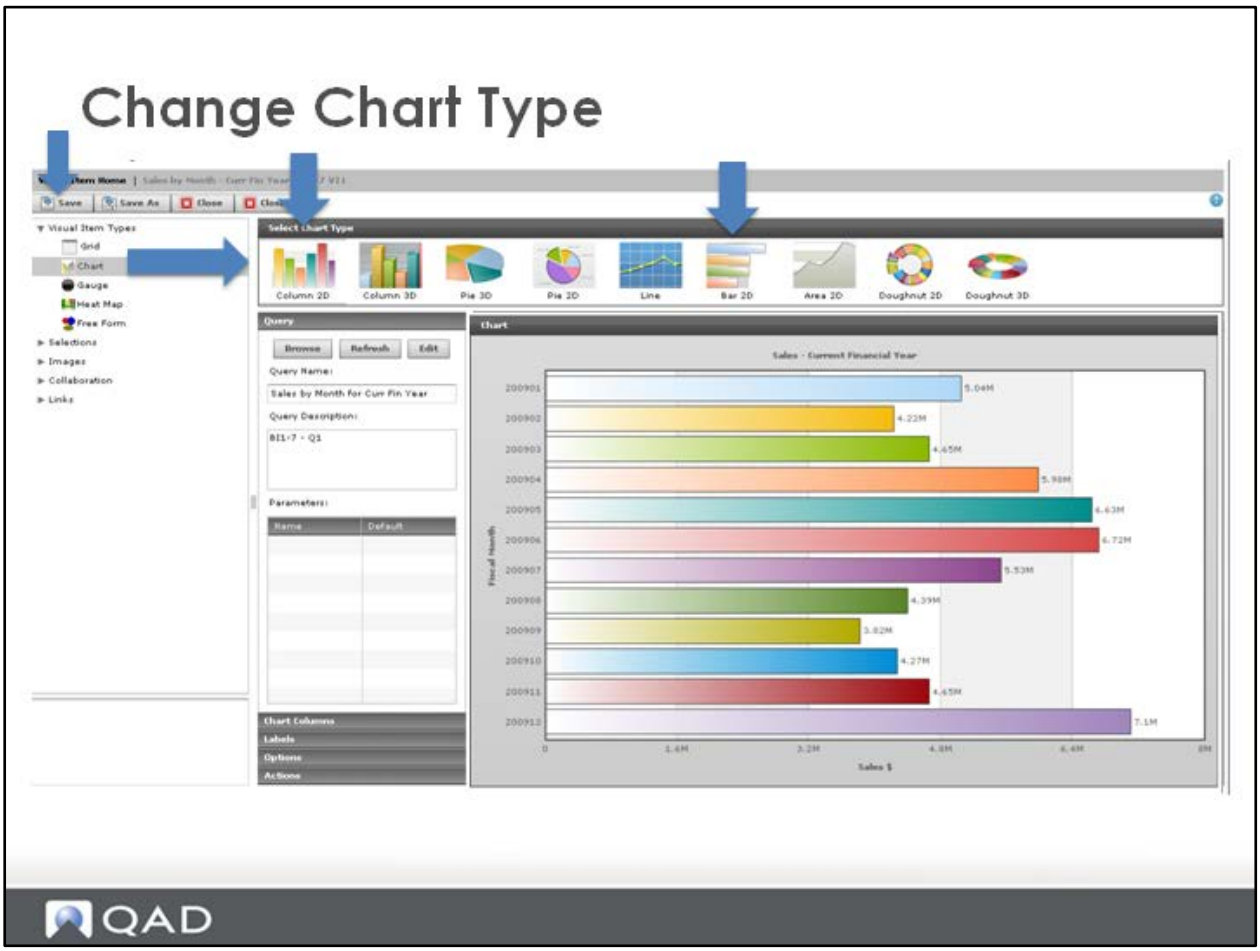
Add labels (optional)

Options



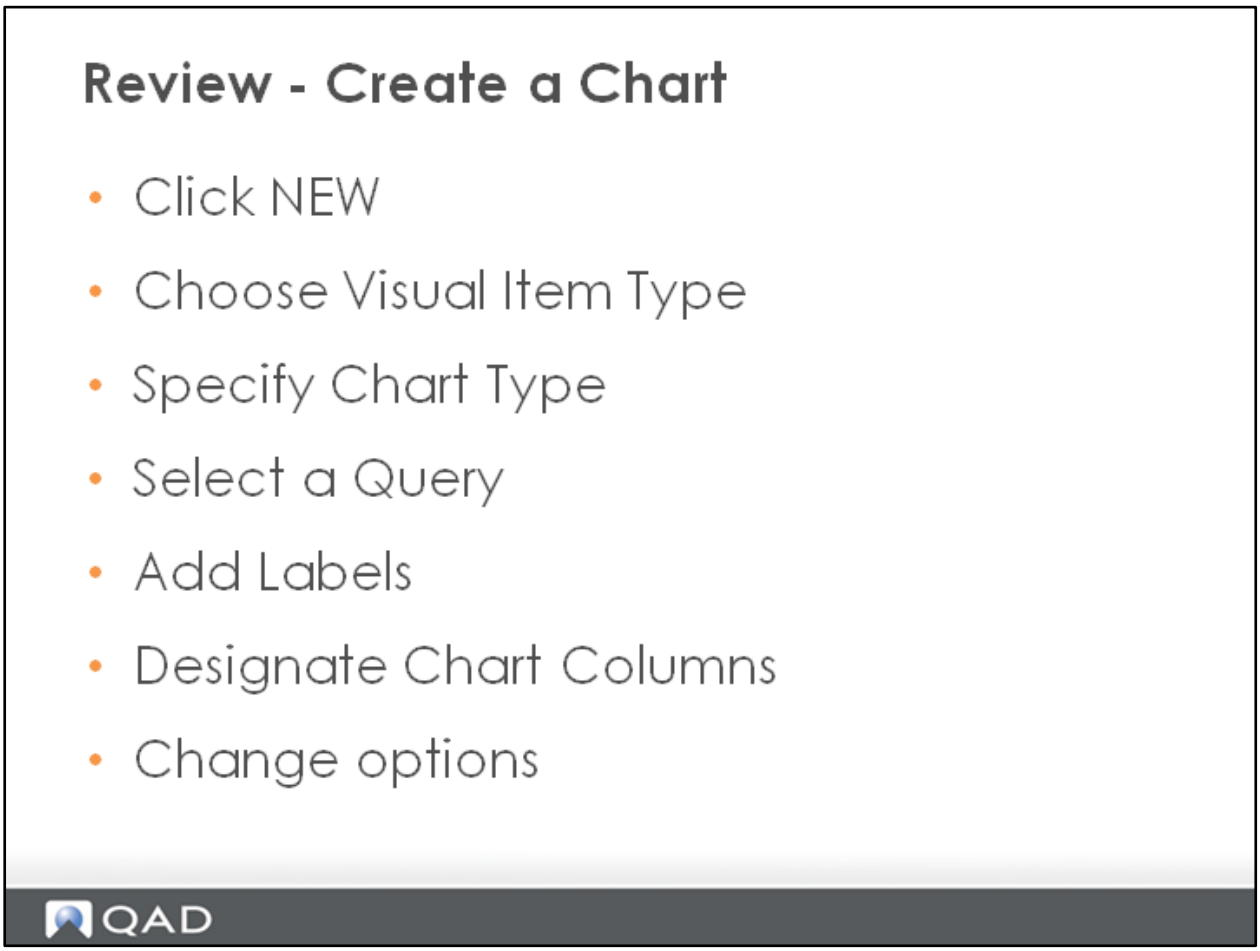
Abbreviate data values, change decimal positions (optional)

Change Chart Type

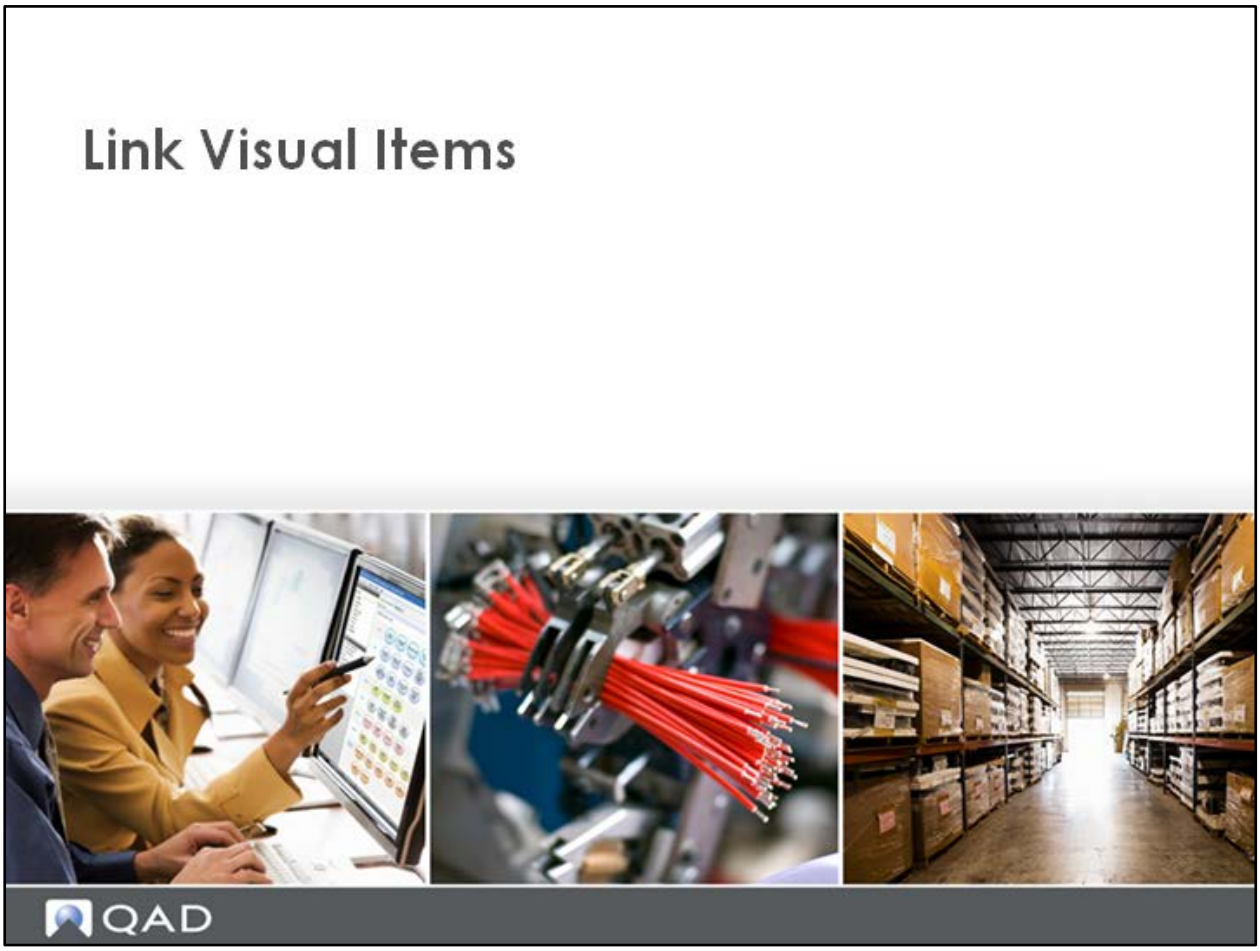


Various chart types can be selected using the Chart Type bar at the top.

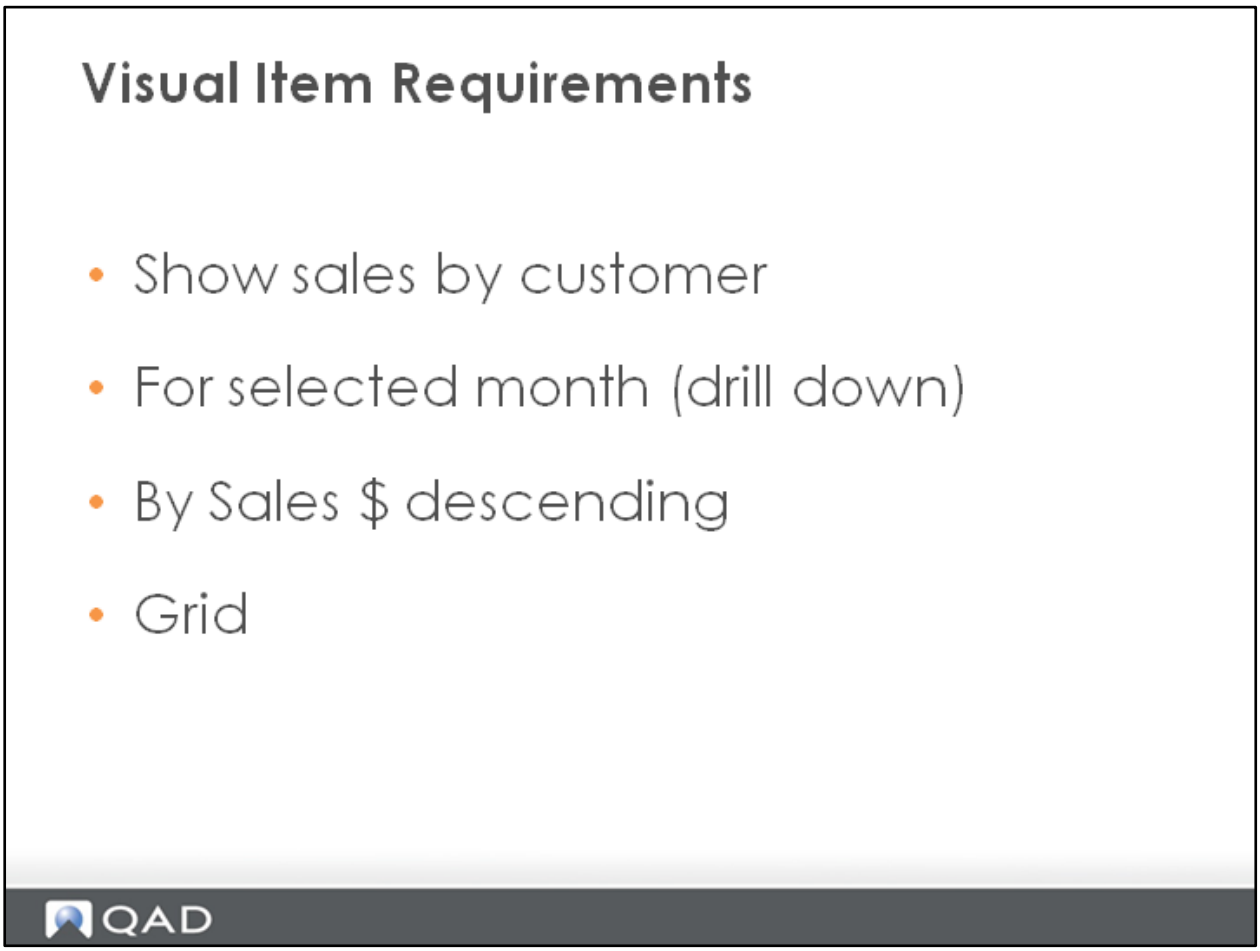
Review - Create a Chart



Link Visual Items



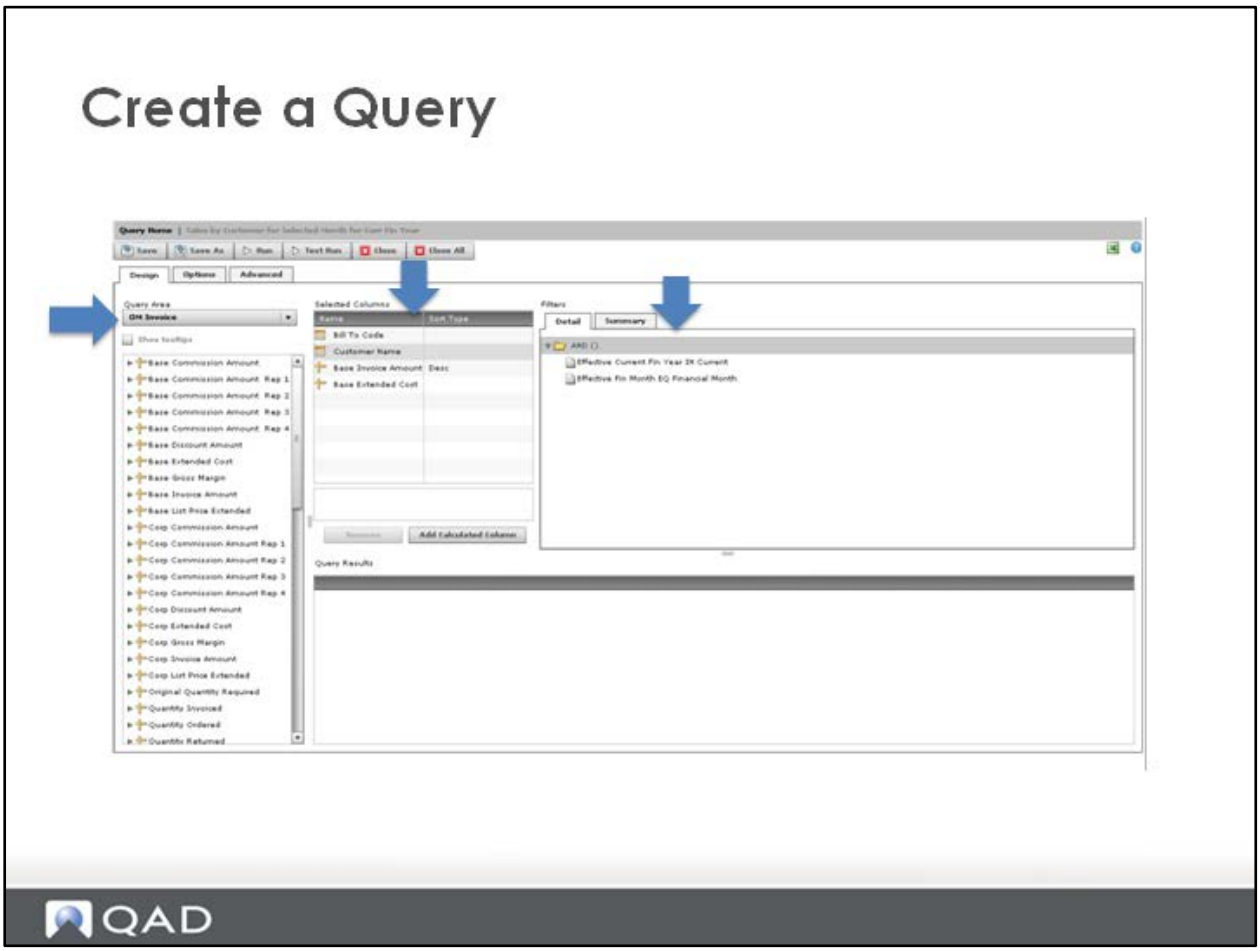
Visual Item Requirements



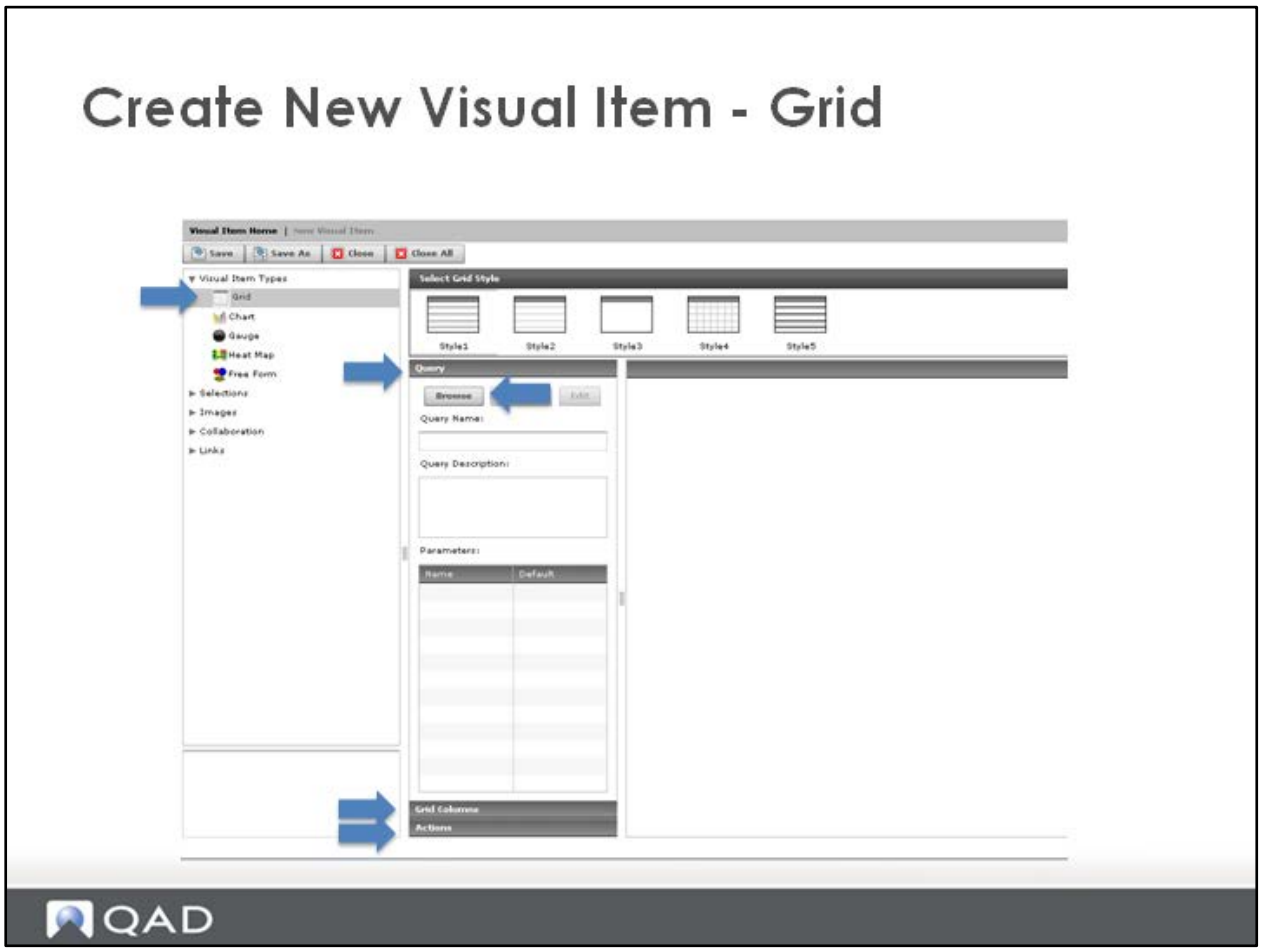
First Step ?



Create a Query



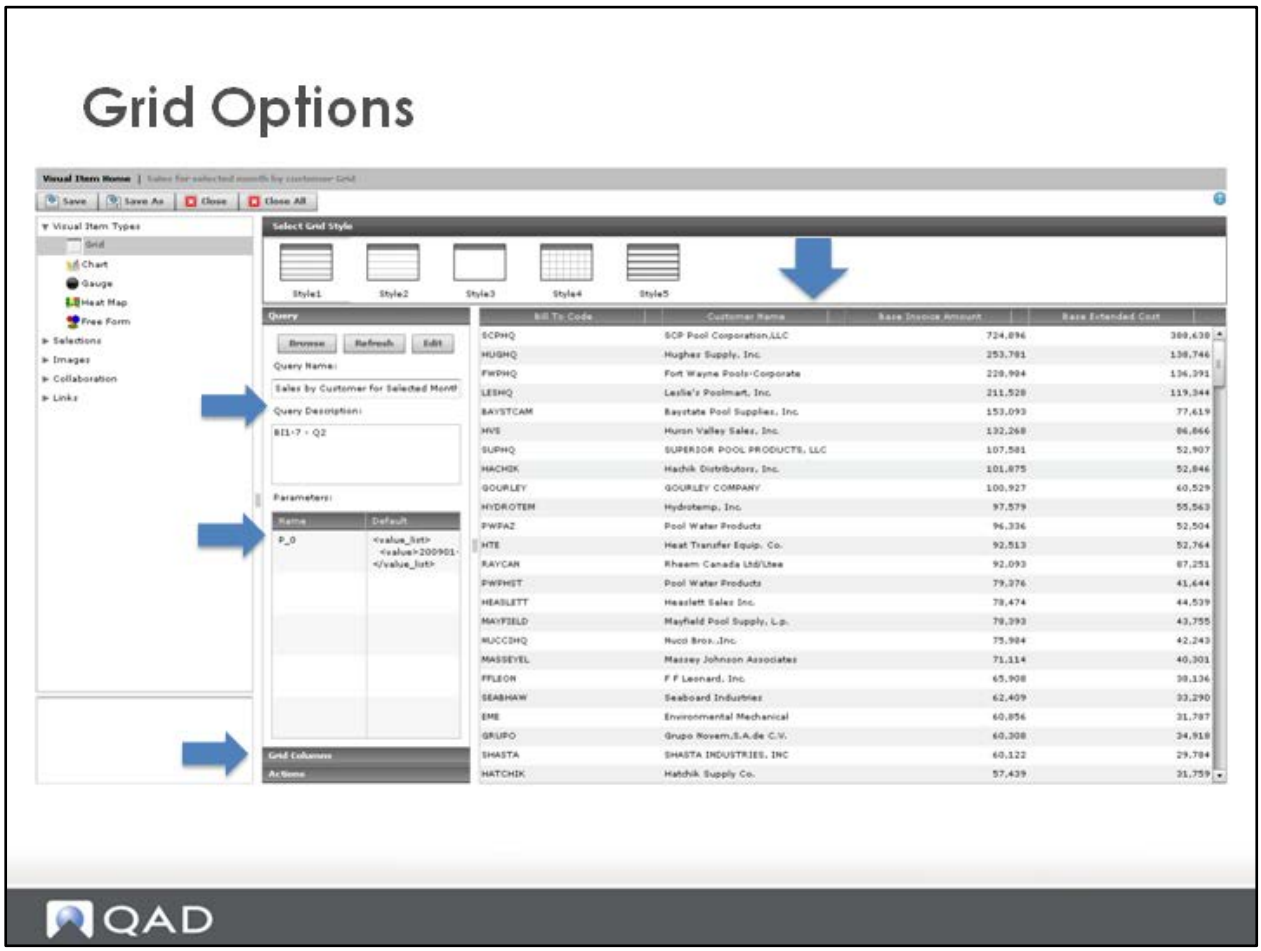
Create New Visual Item - Grid



Grid visual type has 3 sections:

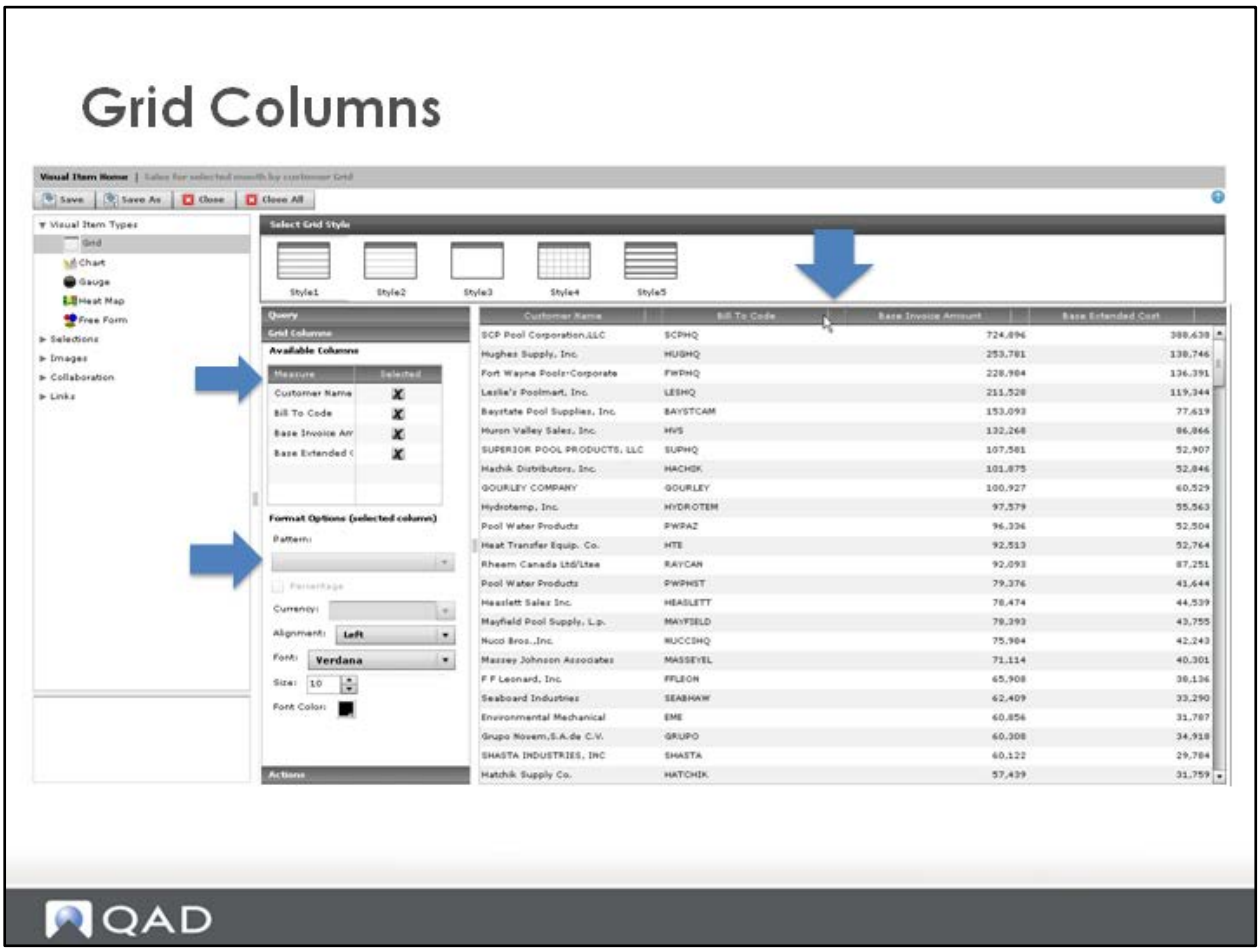
- Query
- Grid column
- Actions

Grid Options



Step one – browse for query.

Grid Columns

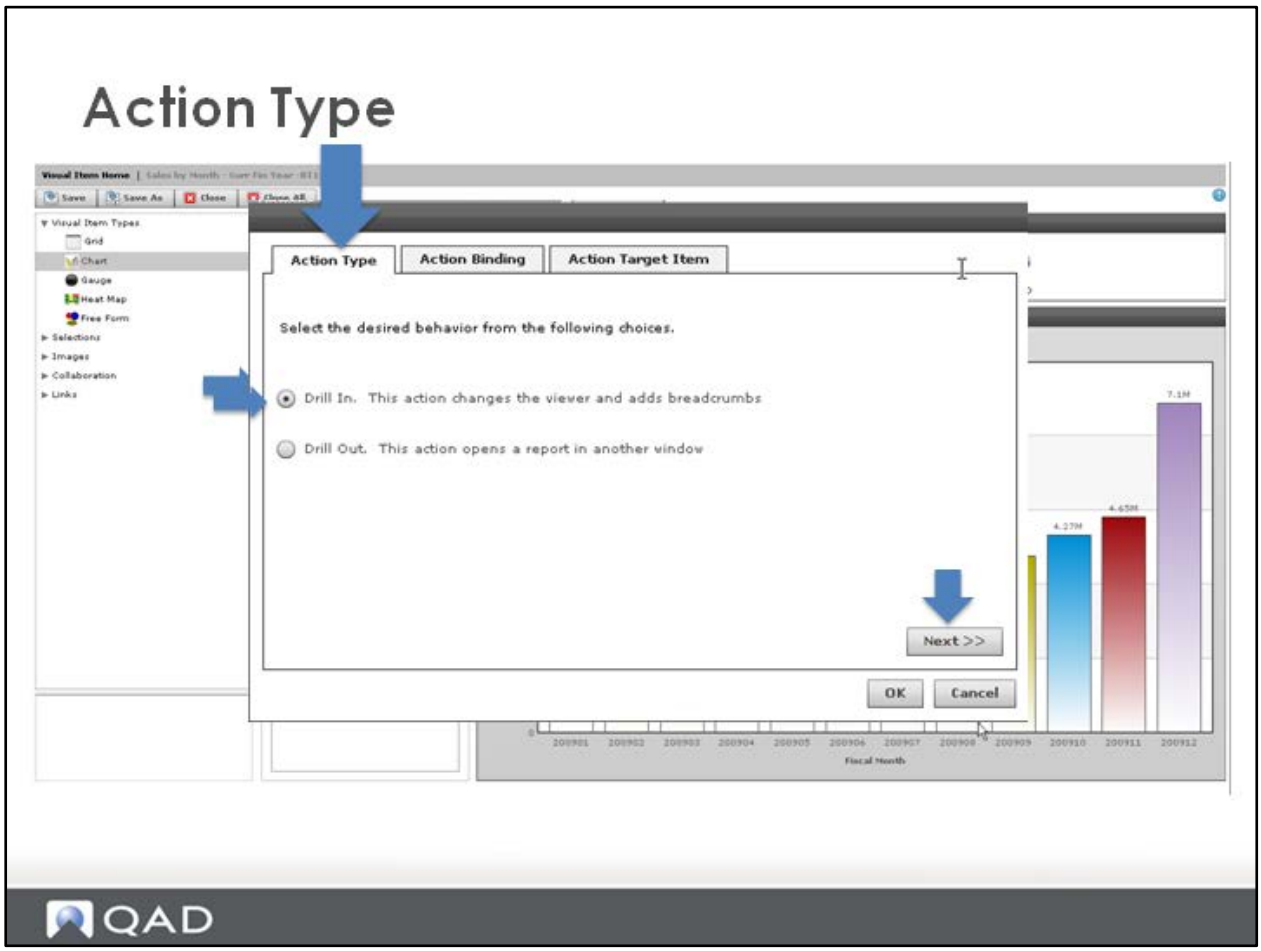


Select query columns to be included.

Re-arrange order of columns, as needed.

Modify column formats, if desired.

Action Type



To add link from one visual item to another.

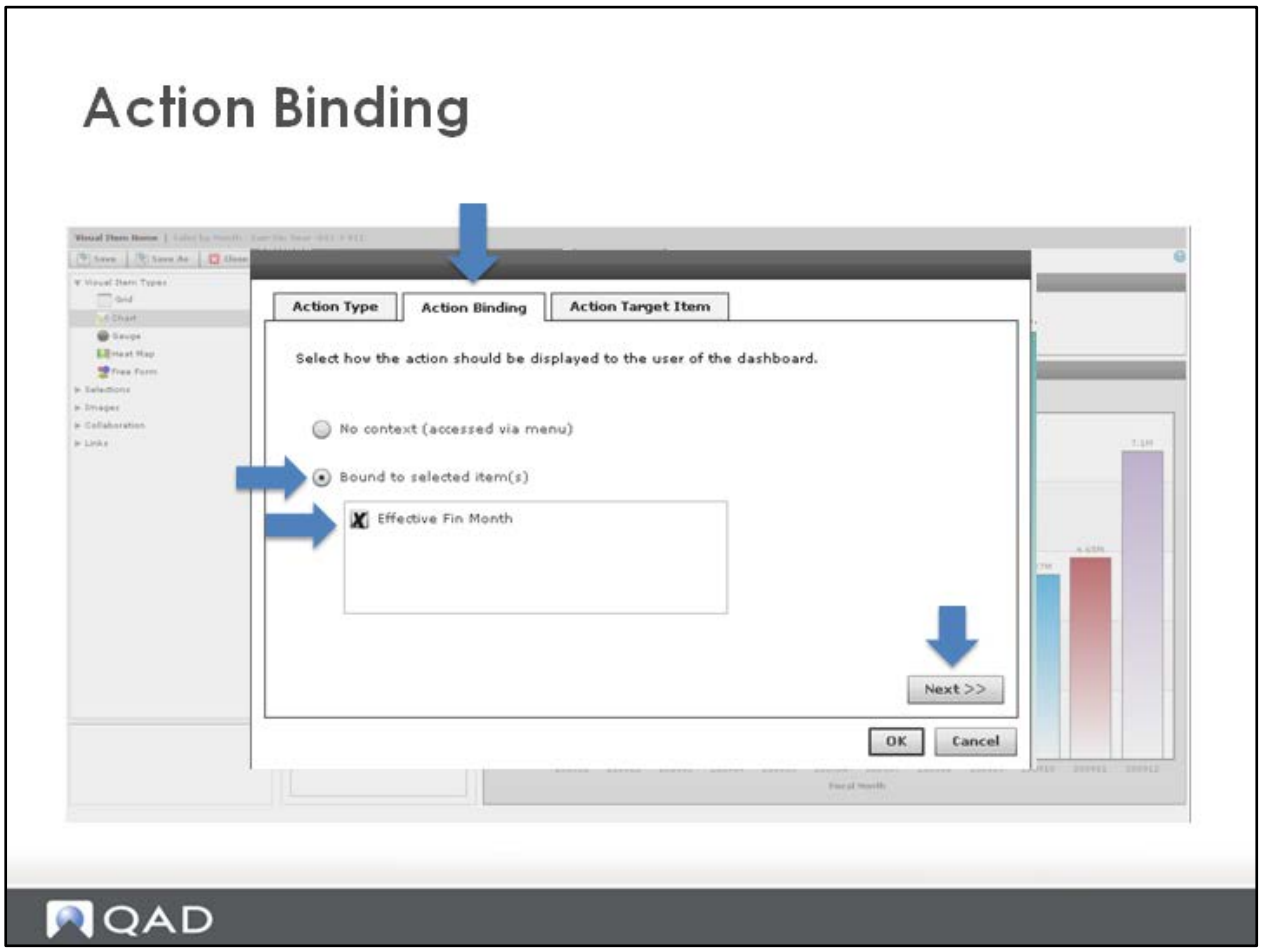
Open the “From” visual item.

Navigate to the **Action Type**

Drill In – Action changes viewer and adds breadcrumbs.

Drill out – Action opens report in another window.

Action Binding

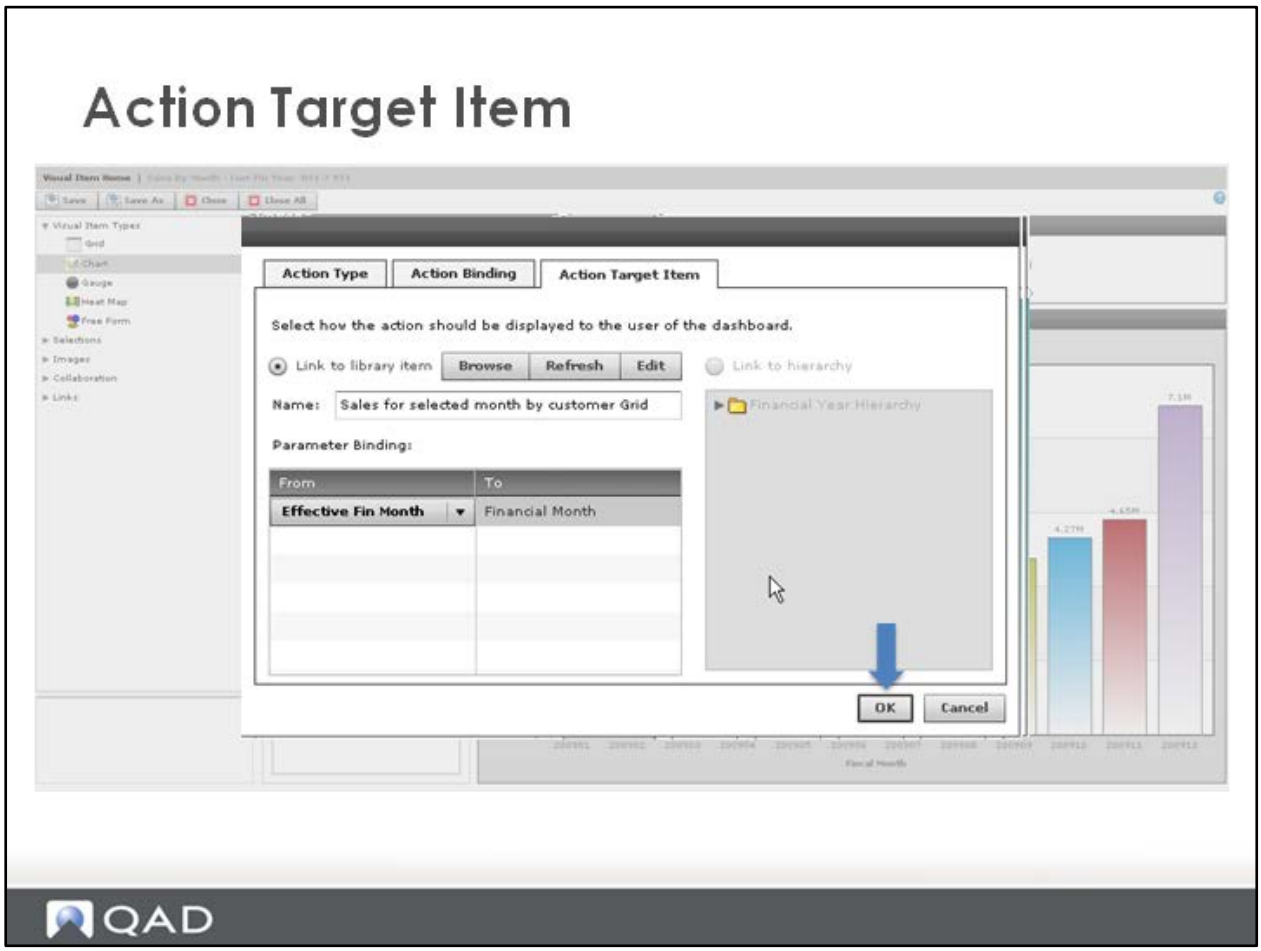


Action Binding

No context – accessed via menu

Bound to selected item(s) – select column in “From” visual item to be bound to “To” visual item.

Action Target Item

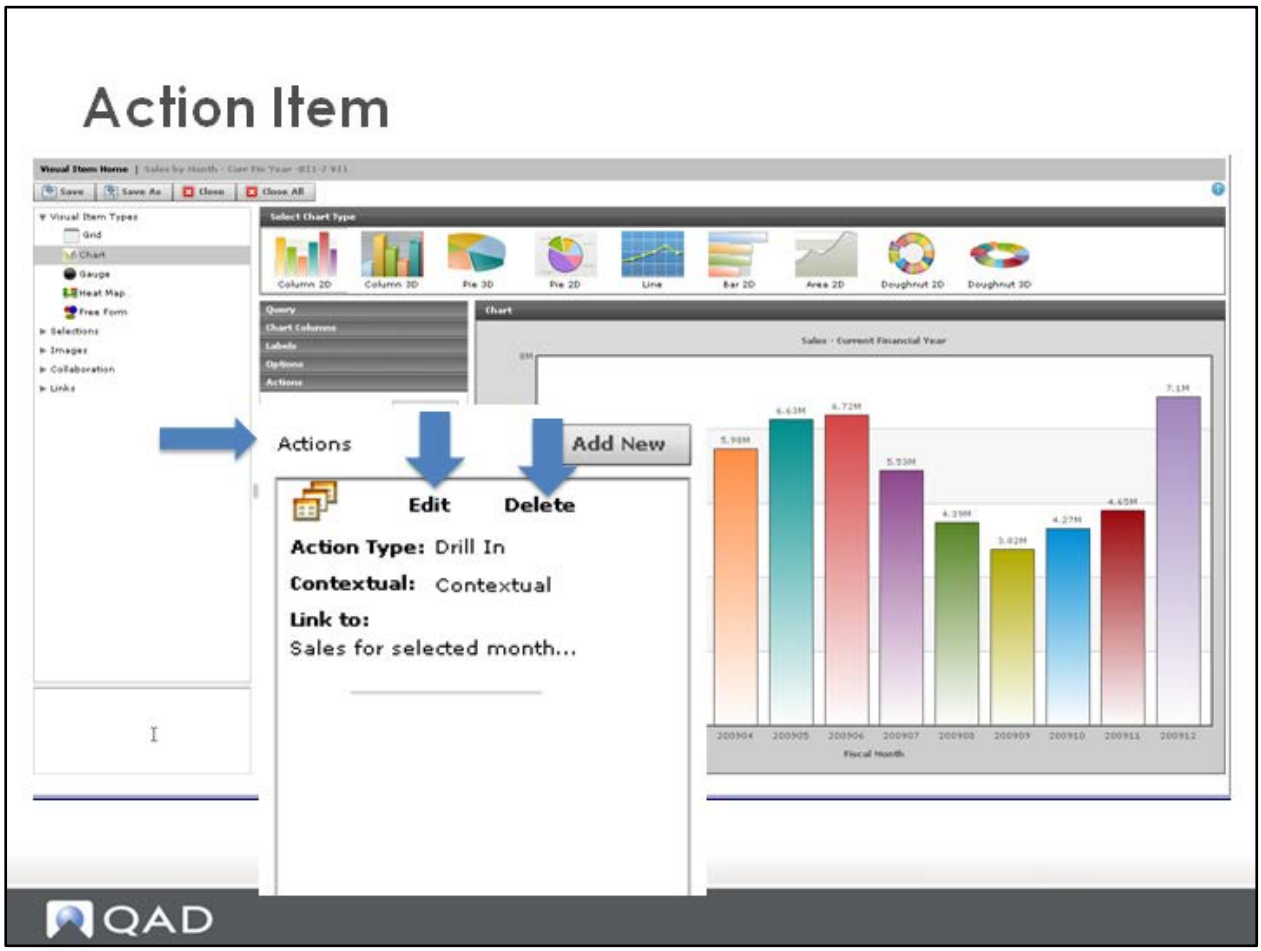


Action Target Item – Item linked “To”.

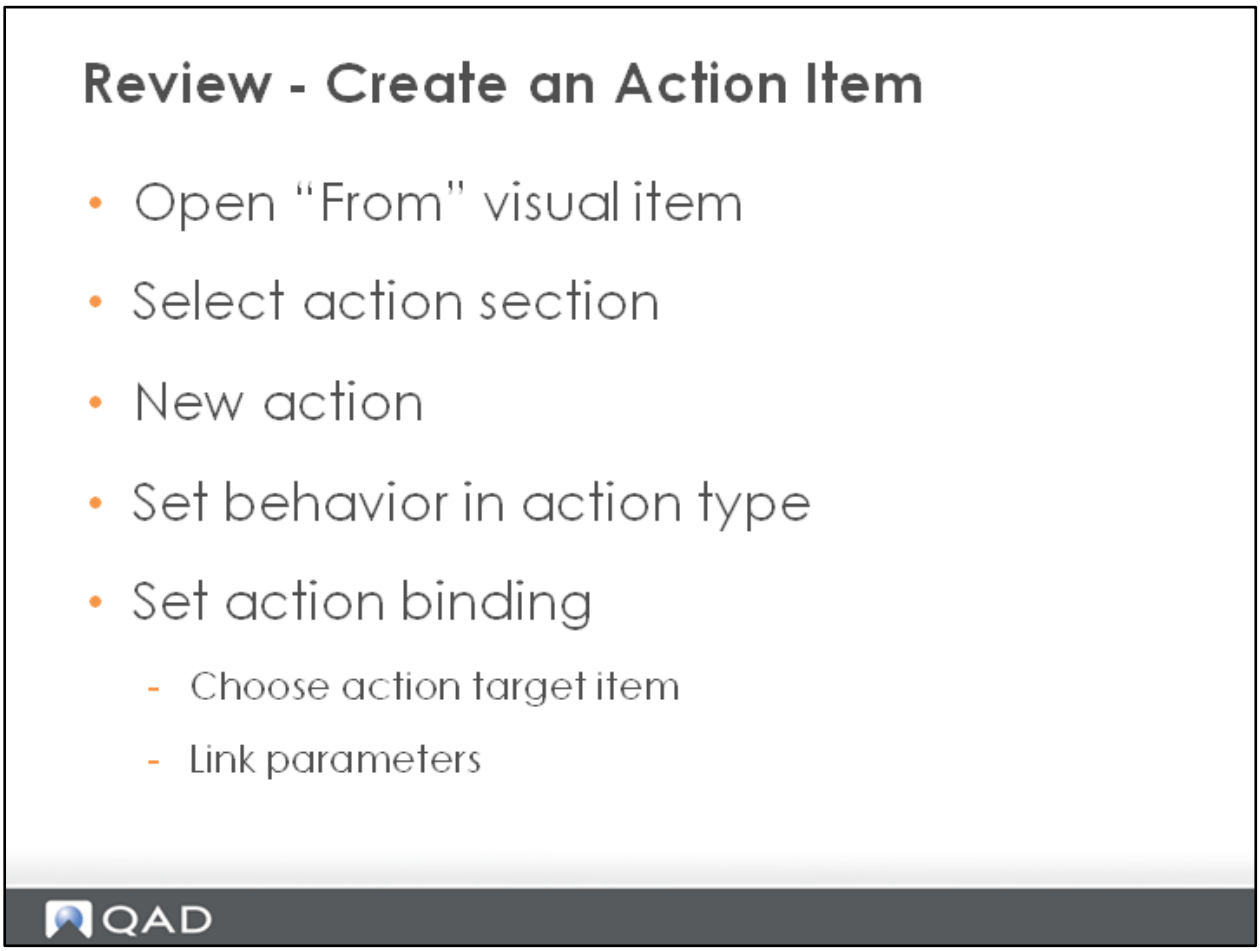
Query for object.

Parameter Binding – To parameter is shown. Use drop down list to select *From* parameter.

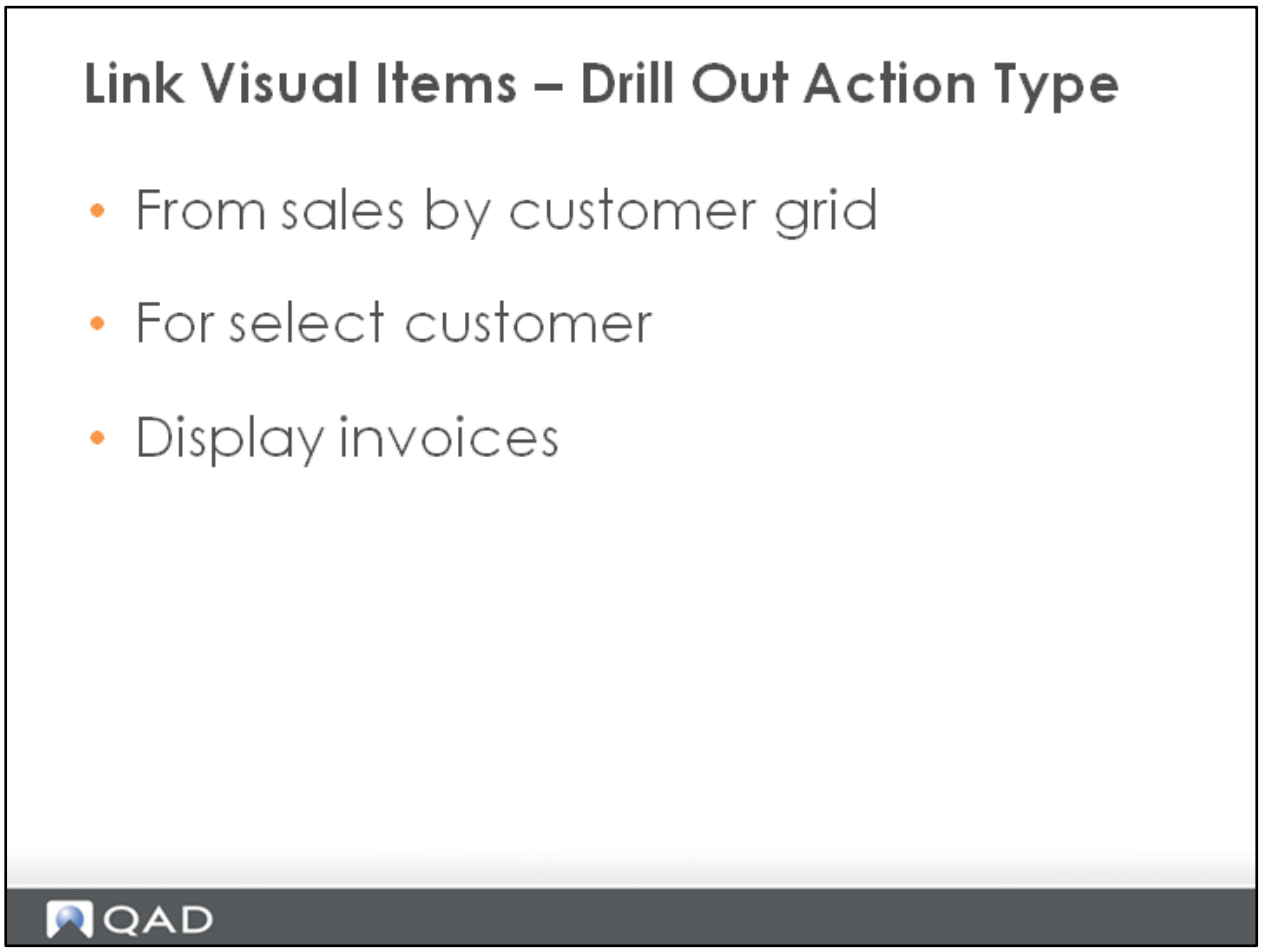
Action Item


Action Item
Actions
Add New
Edit
Delete
Action Type: Drill In
Contextual: Contextual
Link to:
Sales for selected month...
QAD

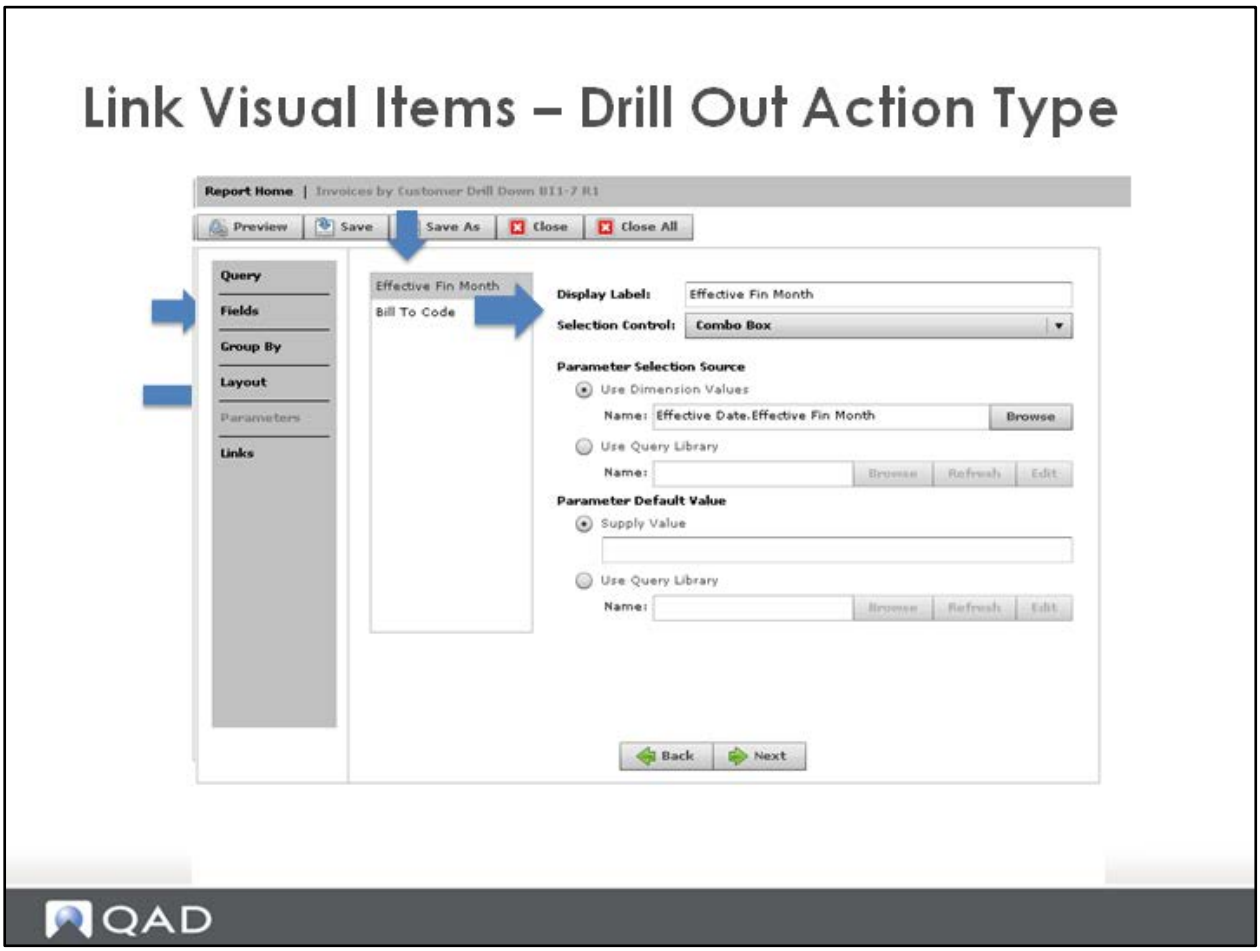
Review - Create an Action Item



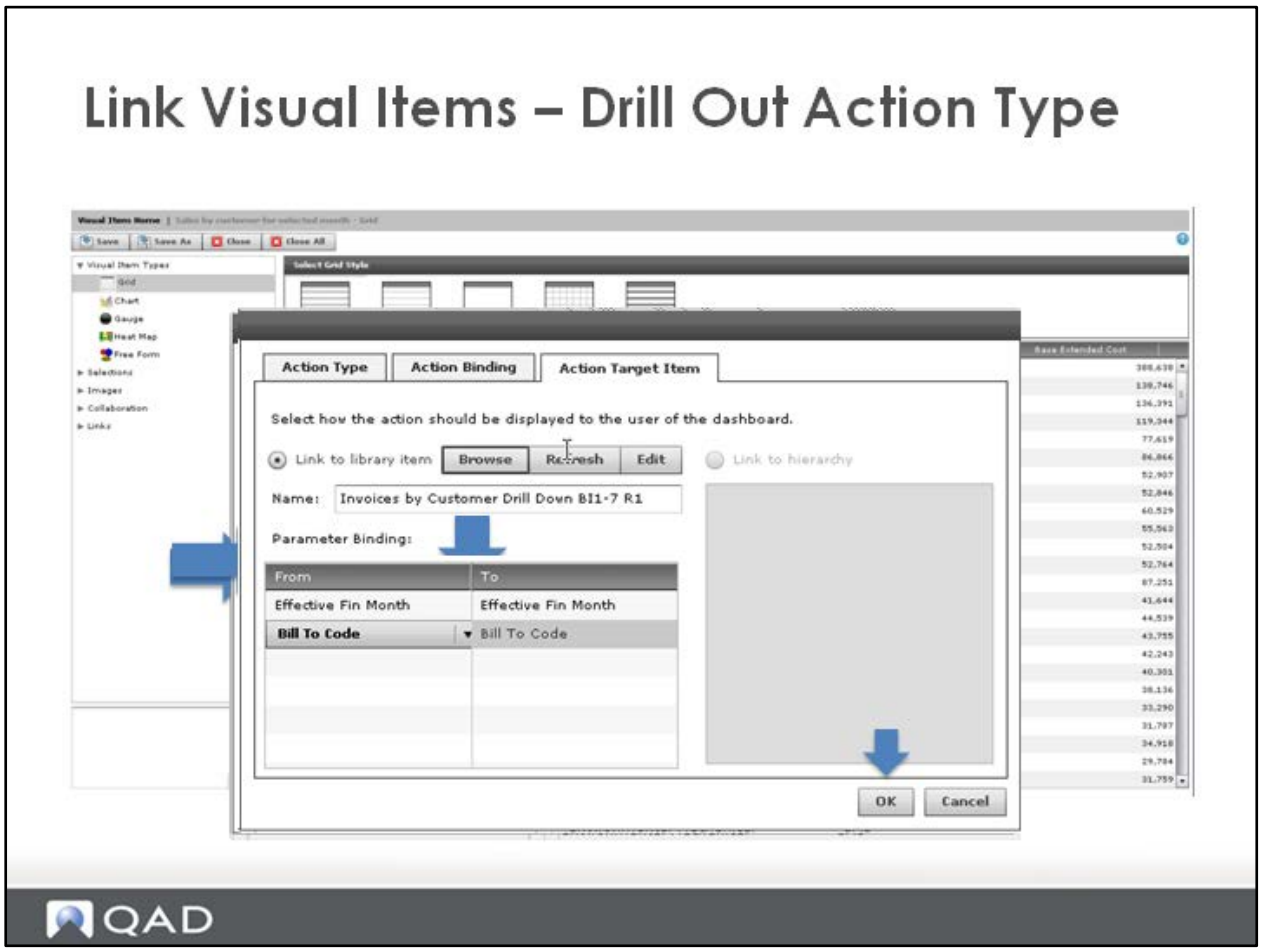
Link Visual Items – Drill Out Action Type



Link Visual Items – Drill Out Action Type



Link Visual Items – Drill Out Action Type



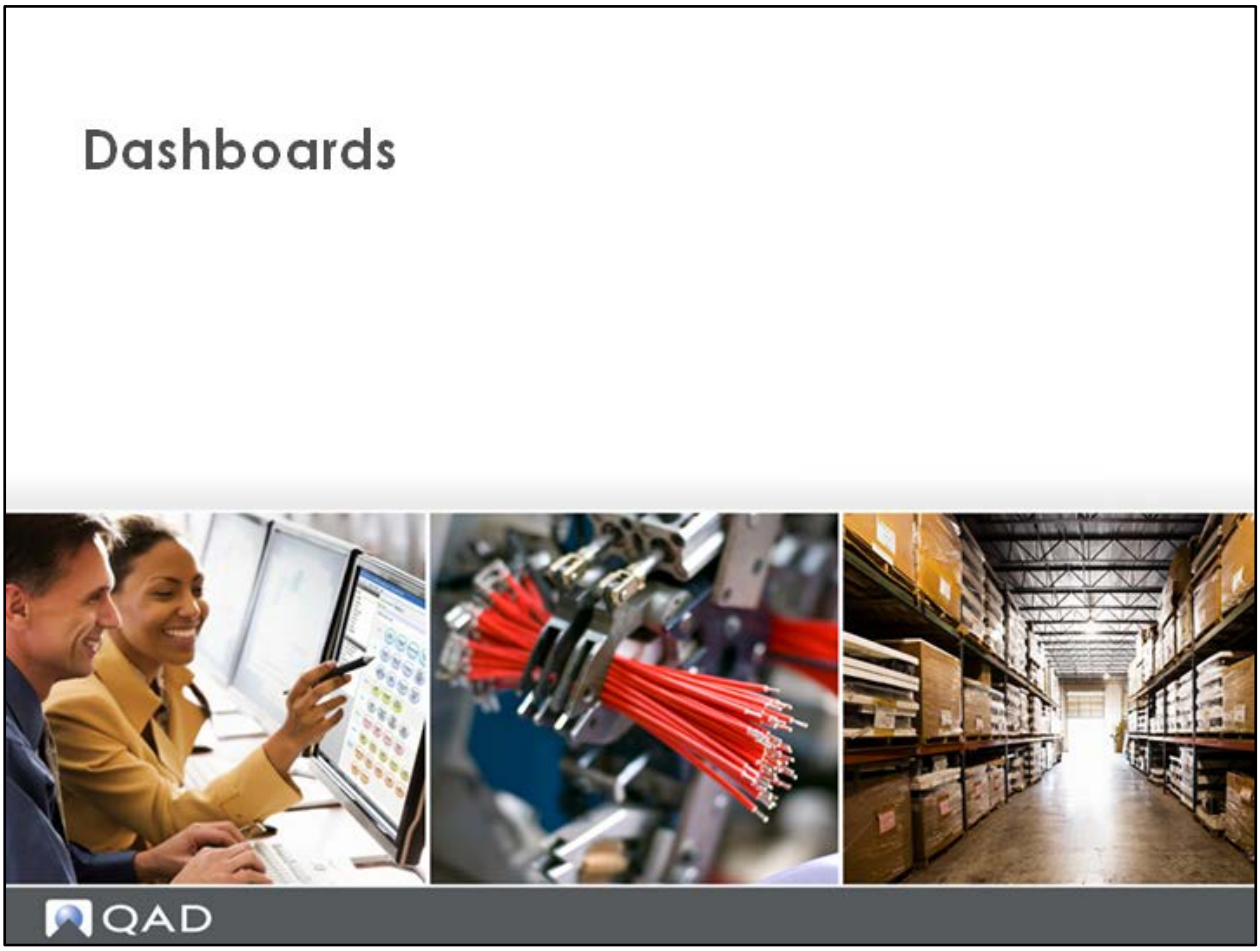
Drill Out to a report.

Parameter Binding

In this example:

- Sales by Month Chart (links to grid via Effective Fin Month)
    - Sales by Customers Grid (links to report via Bill to Code)
        - Invoice Report

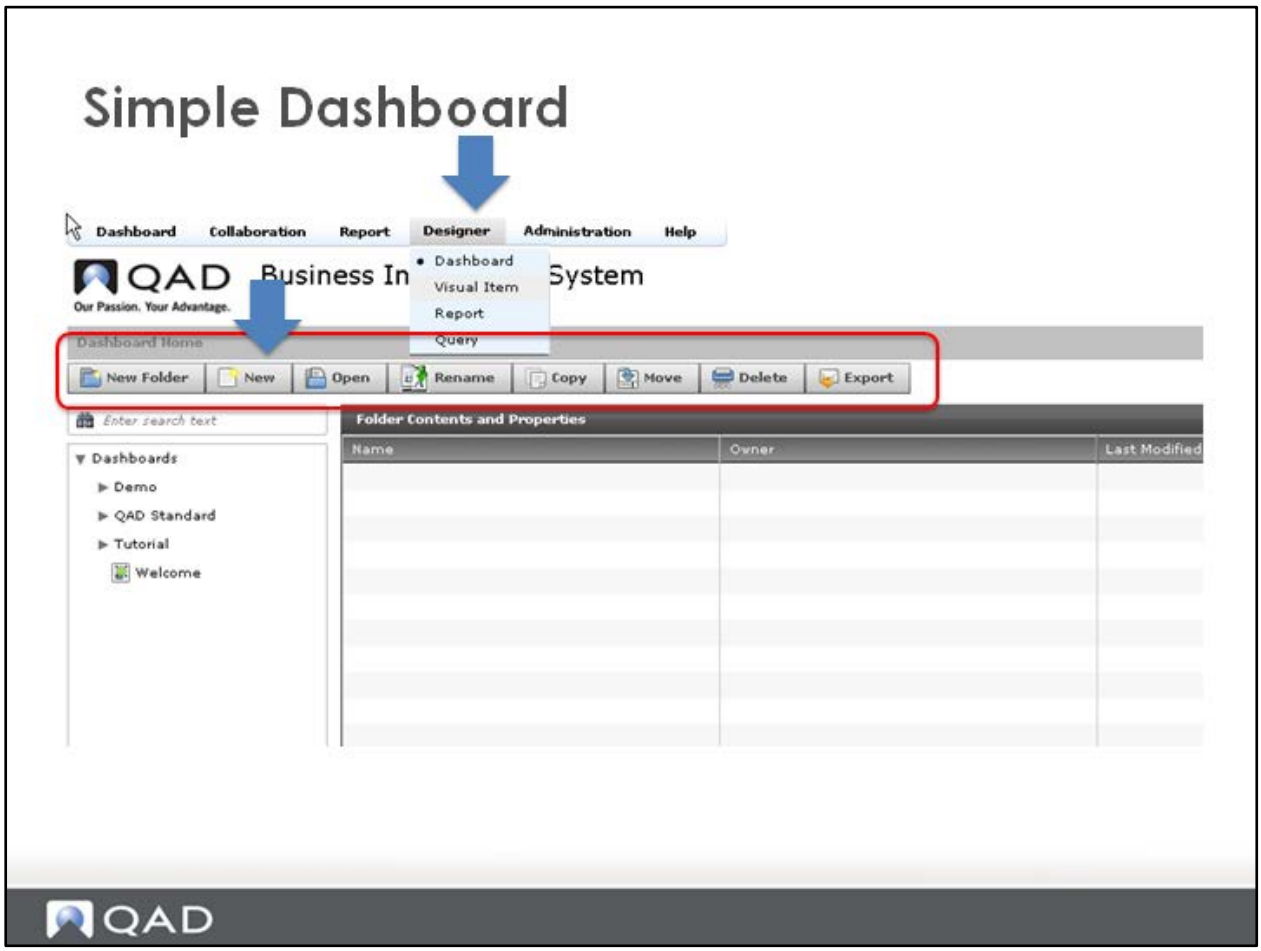
Dashboards



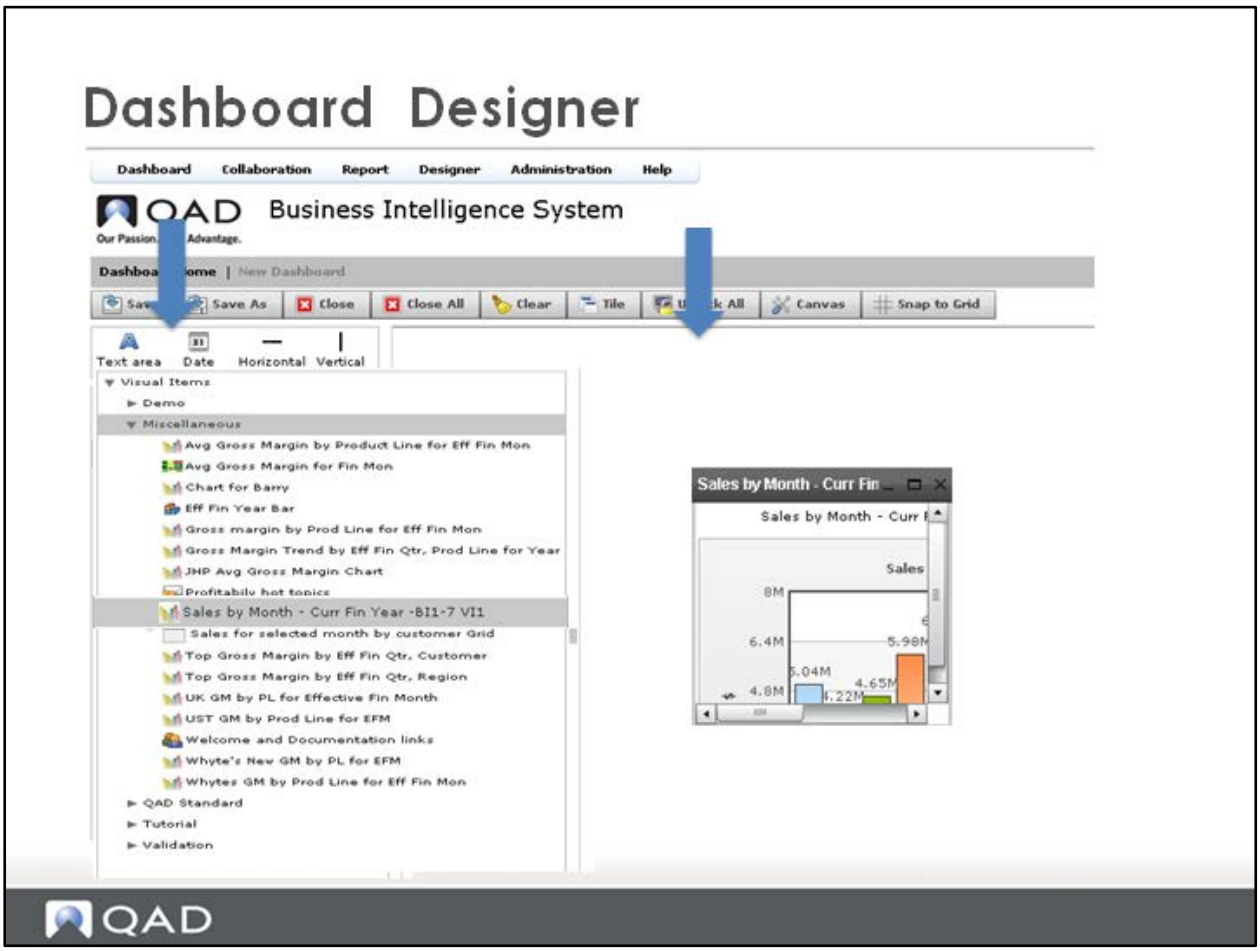
First Steps to create a dashboard ?



Simple Dashboard

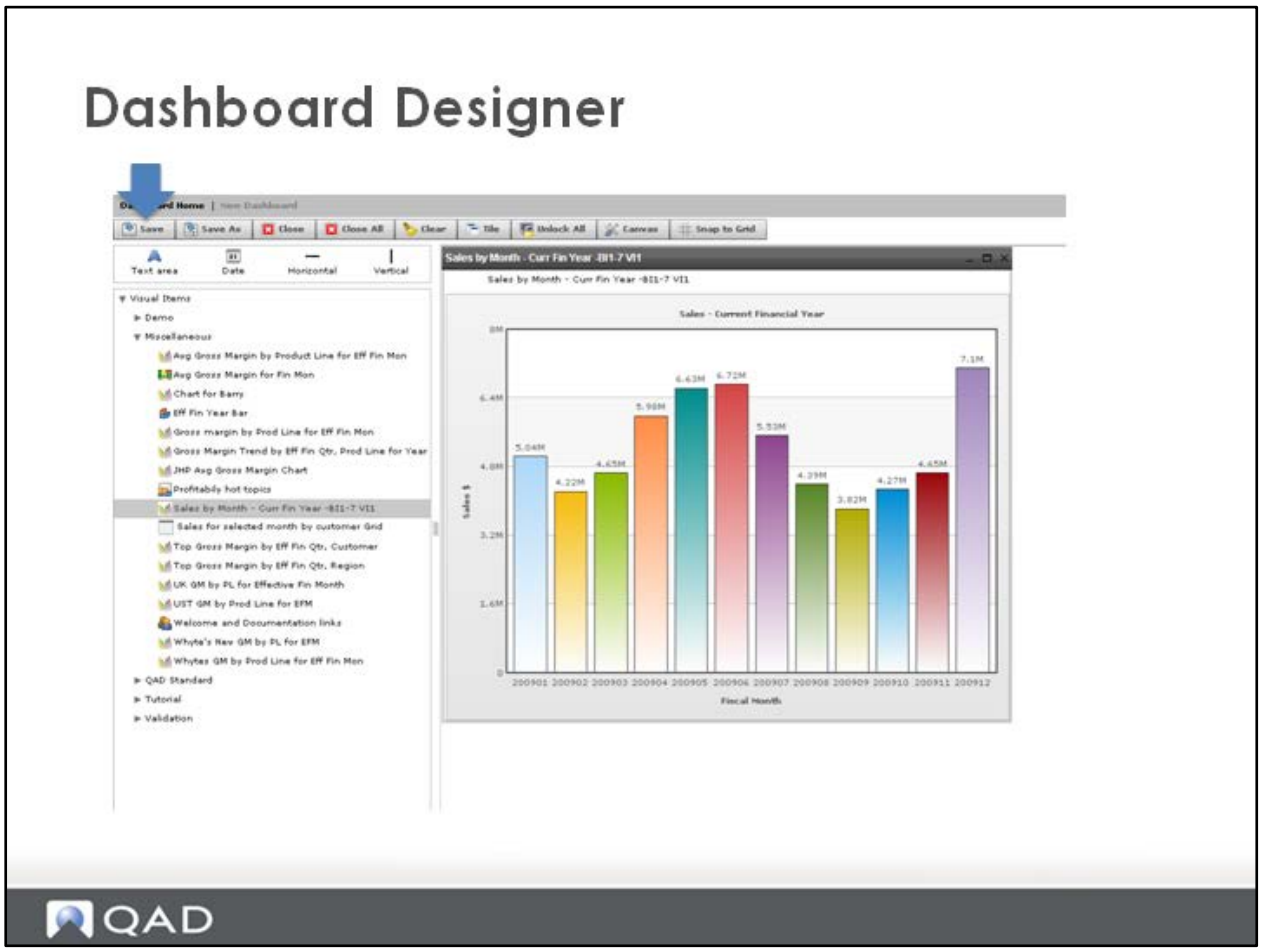


Dashboard Designer

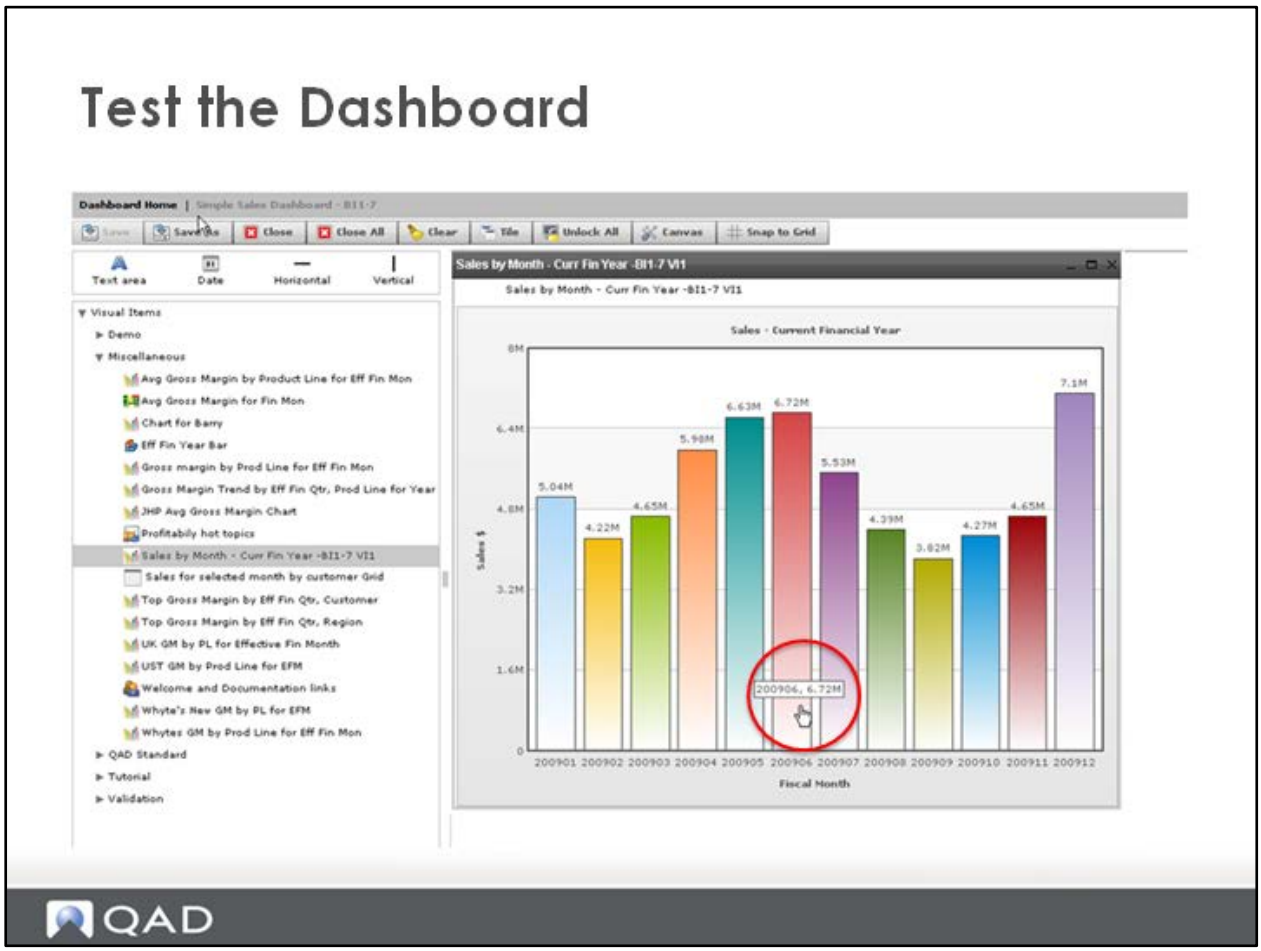


Drag and Drop **visual items** to dashboard **canvas** to create a dashboard.

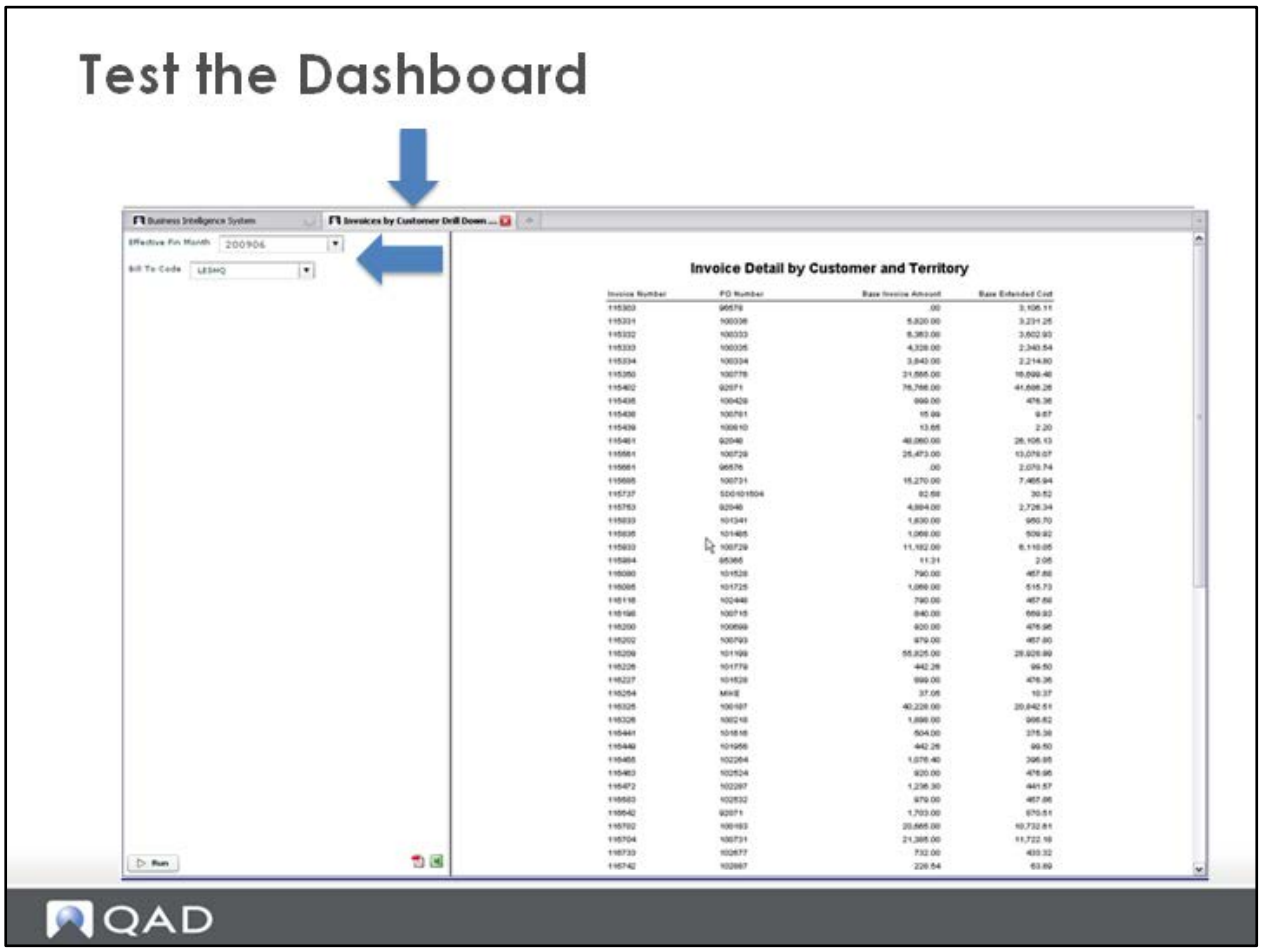
Dashboard Designer



Test the Dashboard



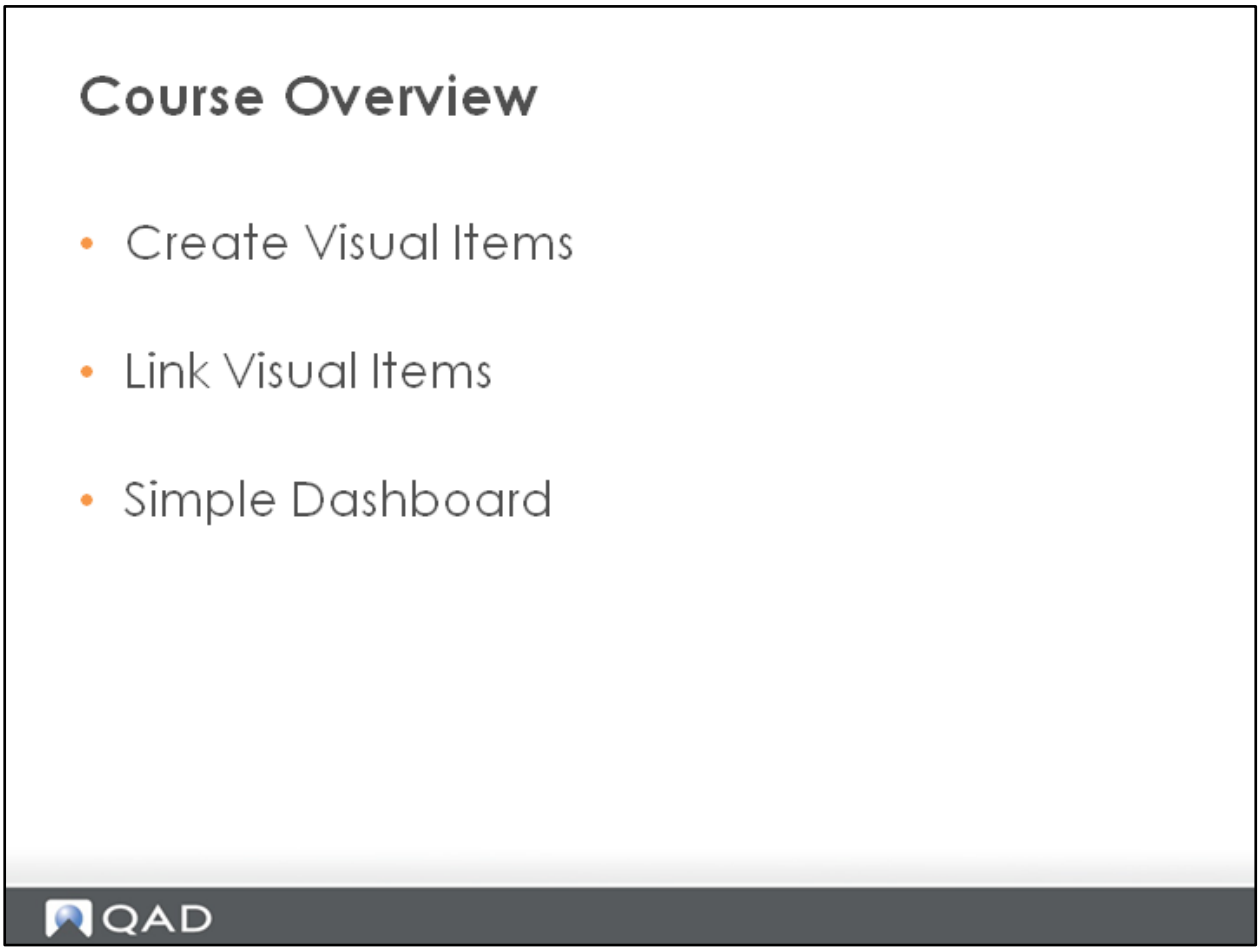
Test the Dashboard



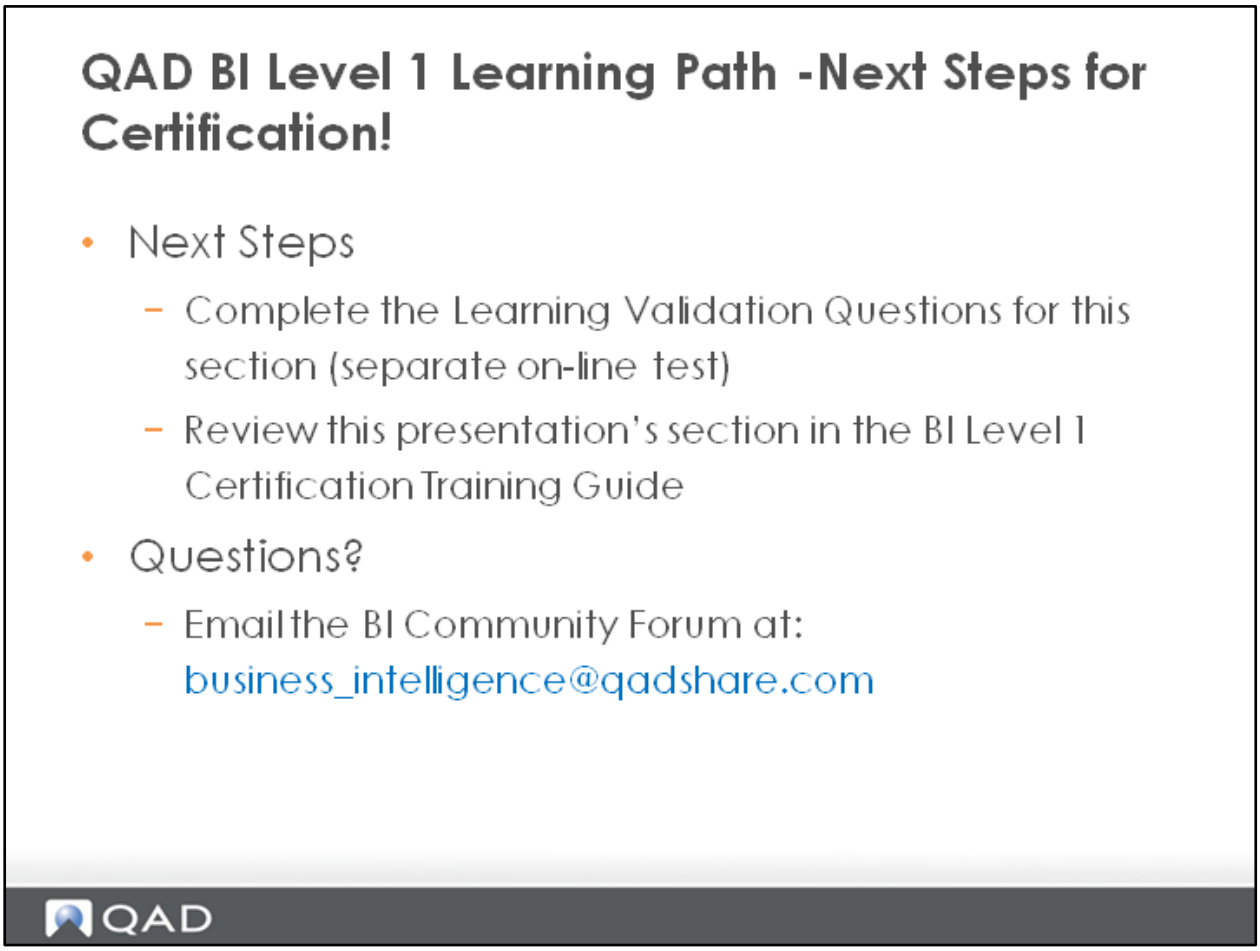
BI Portal Designer – Visual Items and Dashboard – Course Review



Course Overview



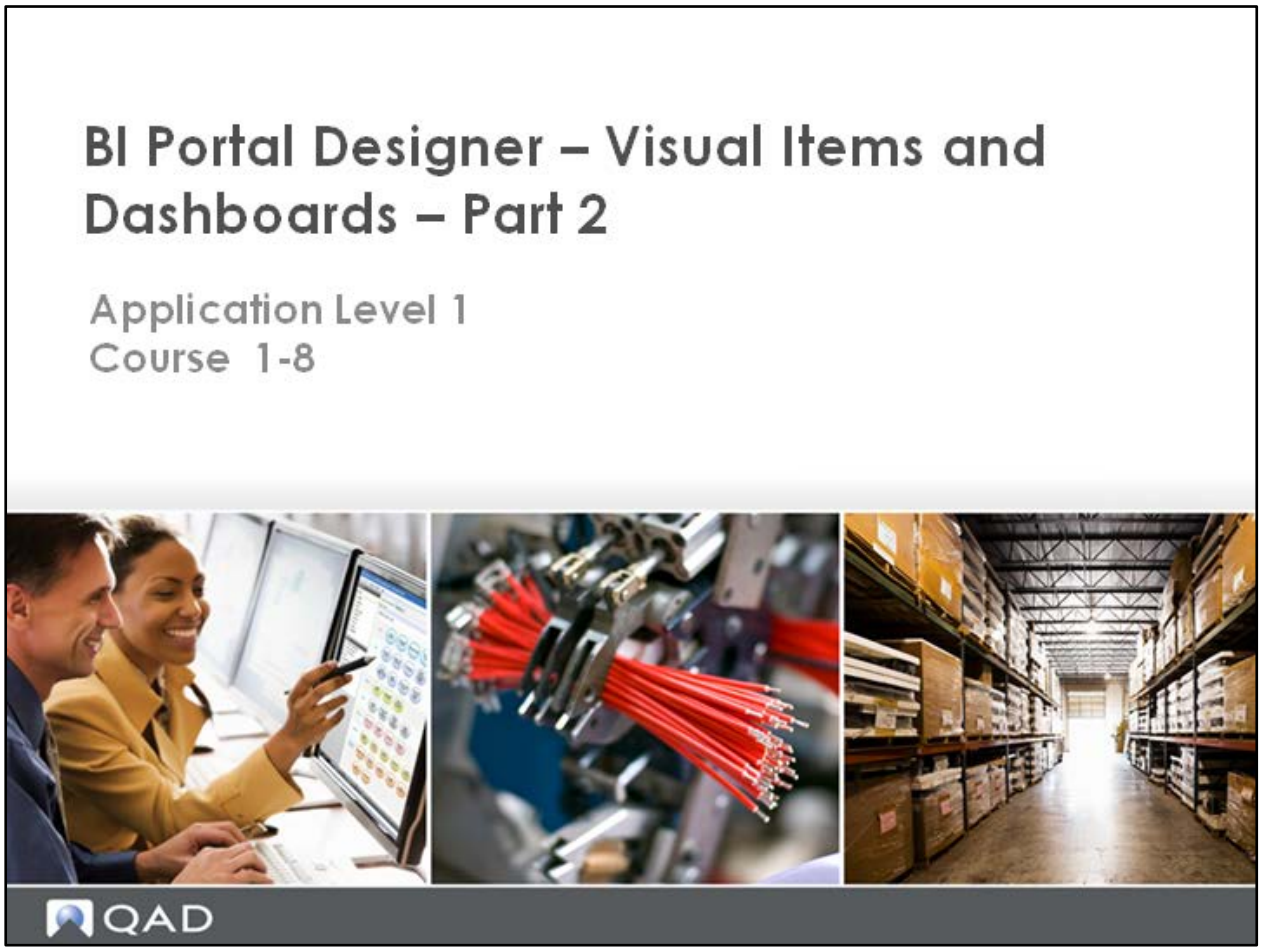
QAD BI Level 1 Learning Path -Next Steps for Certification!



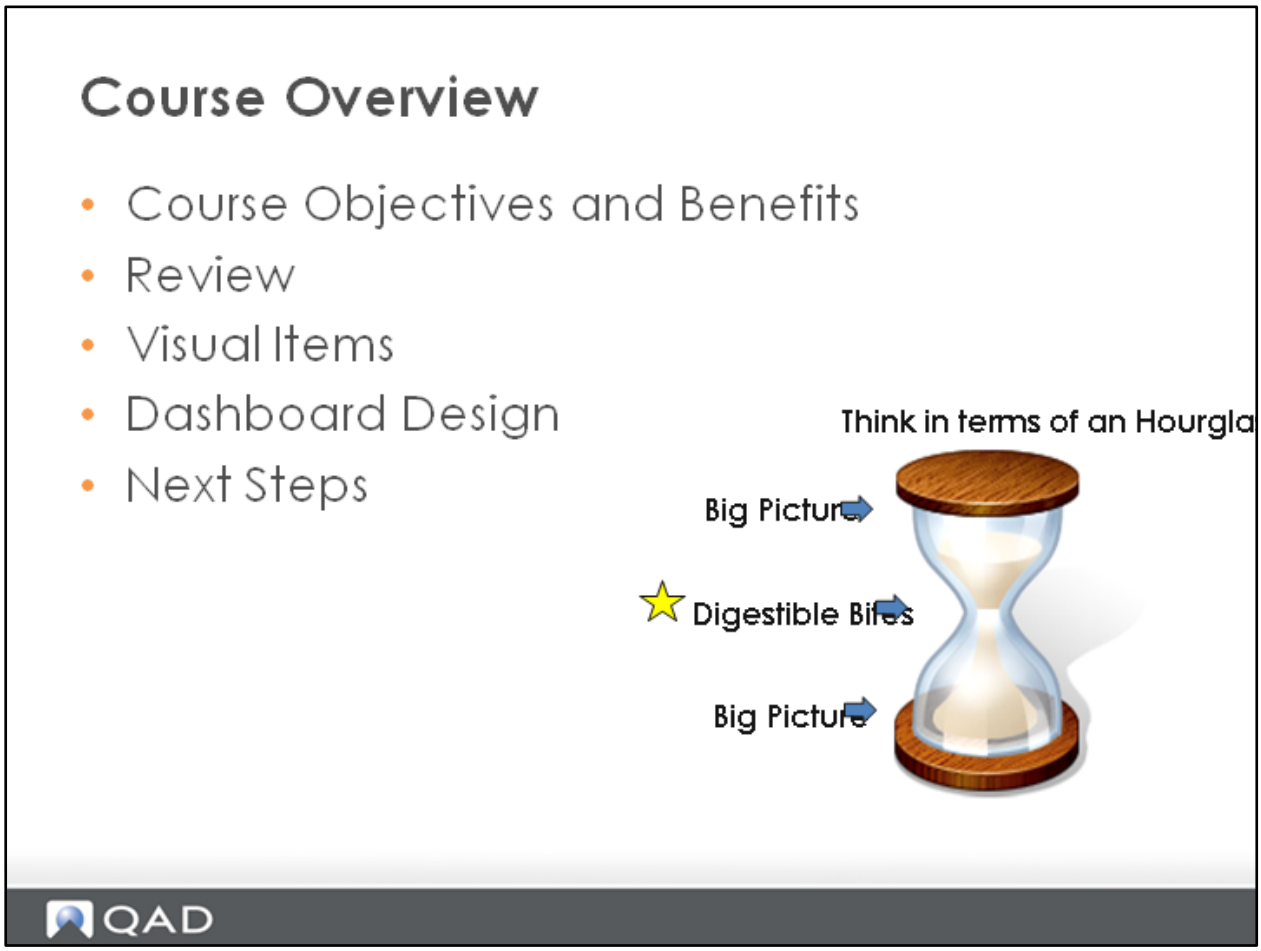
CHAPTER 8

BI Portal Designer – Visual Items and Dashboards – Part 2

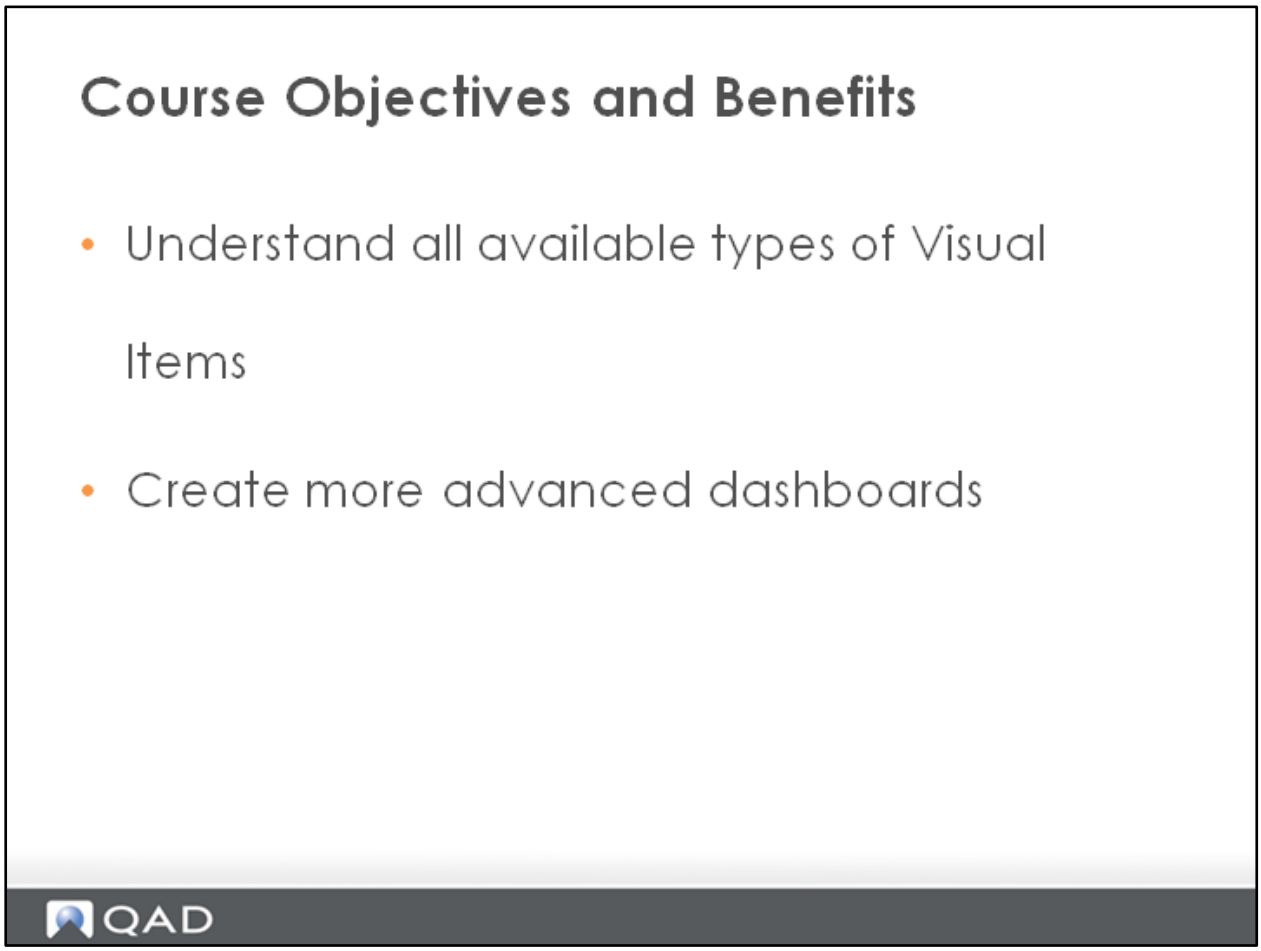
BI Portal Designer – Visual Items and Dashboards – Part 2



Course Overview

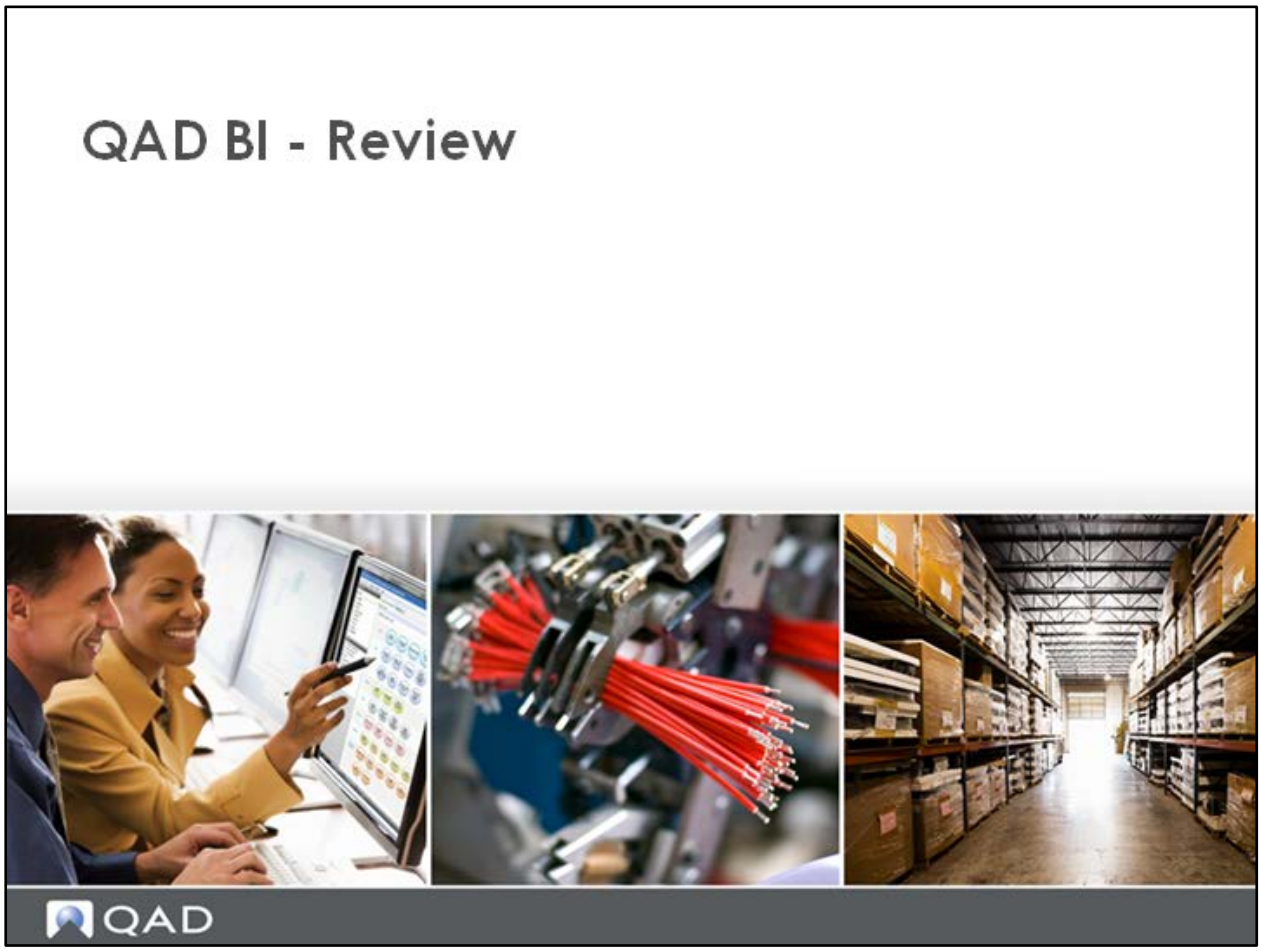


Course Objectives and Benefits

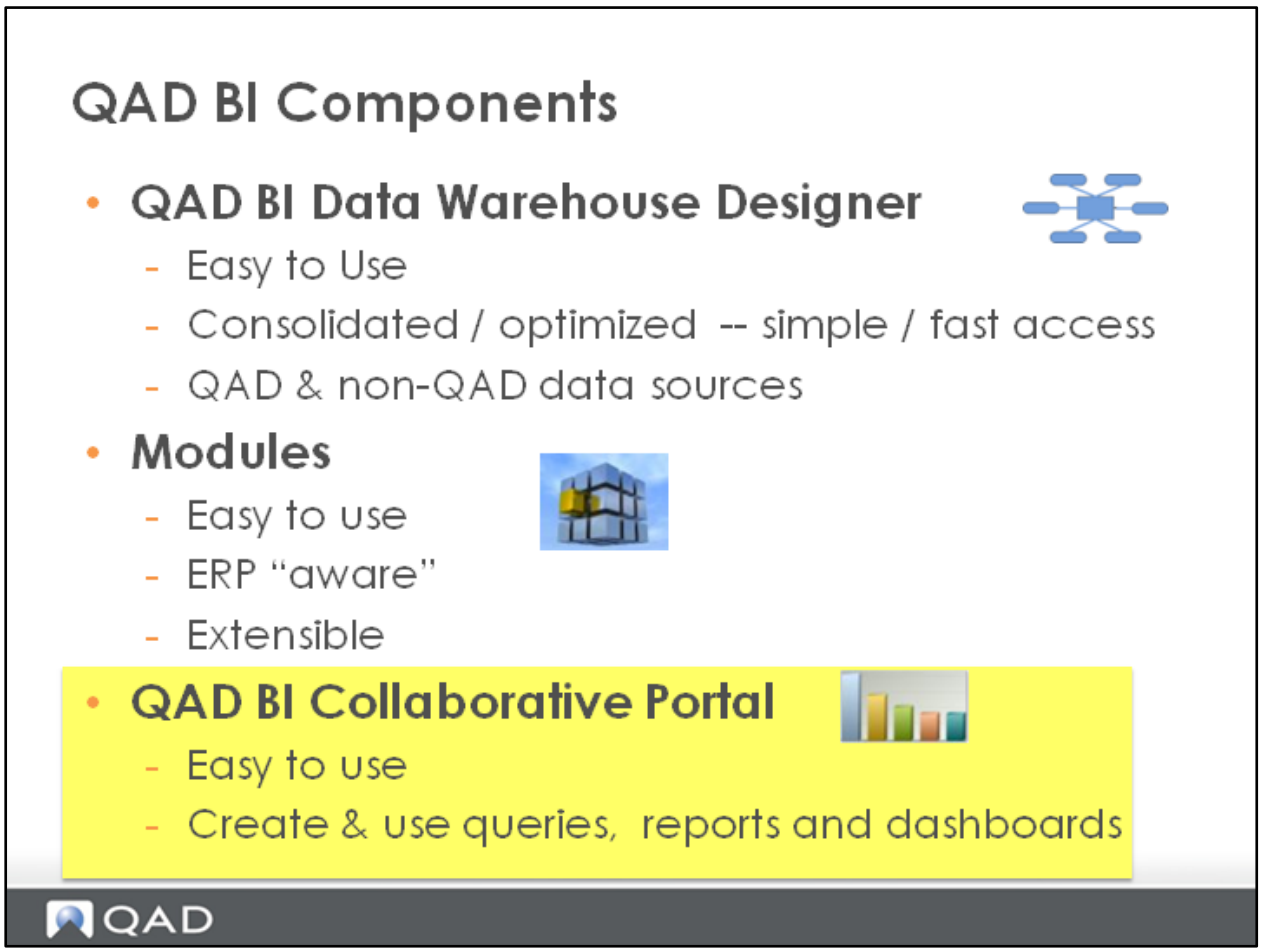


After you have completed this course, and done some on-line self-study work with the BI Portal Designer you will feel confident in working with customers to develop their dashboards.

QAD BI - Review



QAD BI Components



Key Concept:

QAD BI Components:

QAD BI Data Warehouse Developer (DWD)

Consolidate into a single warehouse optimized for simple, fast access

QAD and non-QAD data sources

Modules

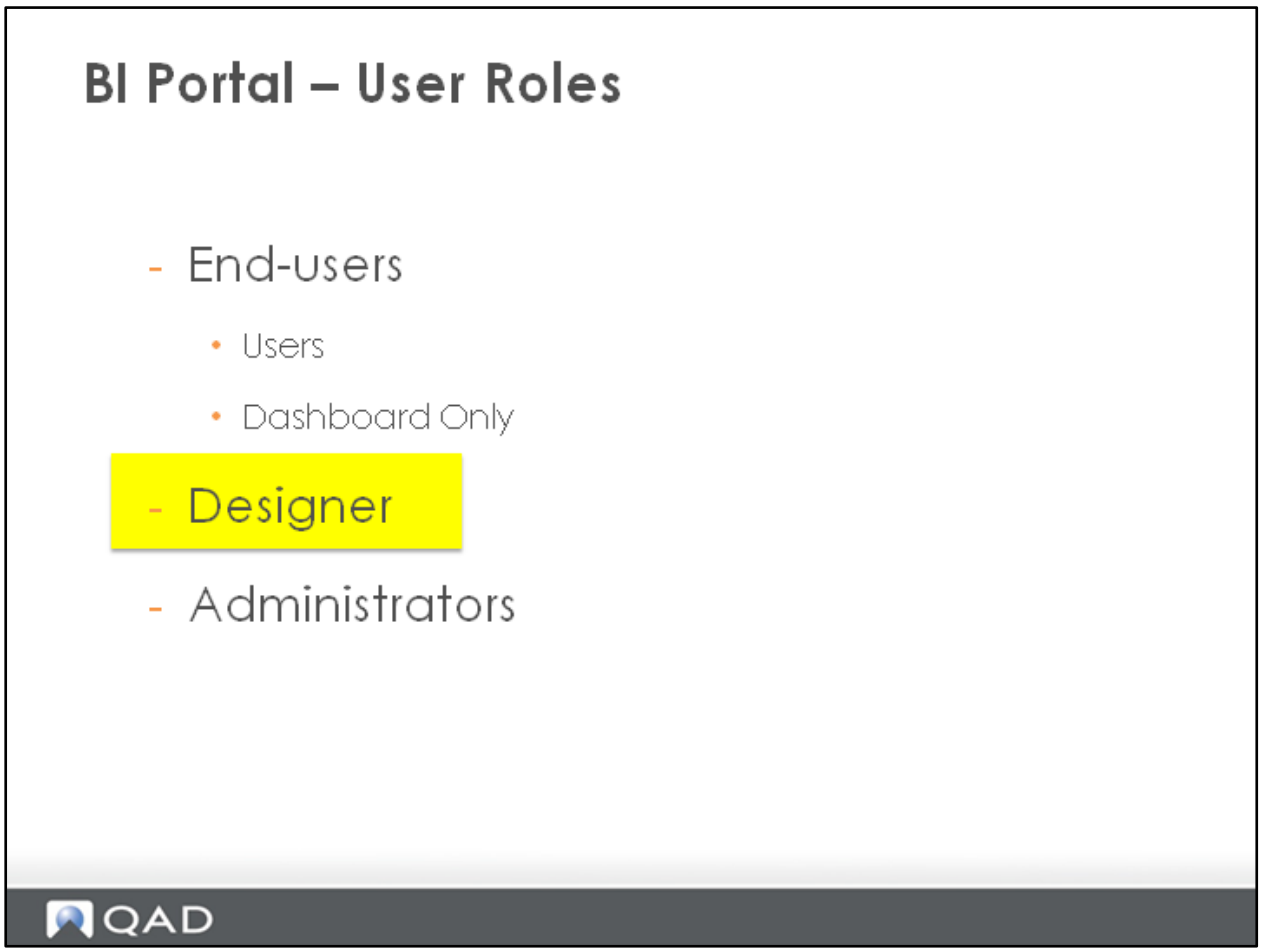
ERP "aware" streamlines access to current and historical QAD ERP data

Extensible to support non-QAD data sources

QAD BI Collaborative Portal

Easy to use and create dashboard and reporting environment Our focus for this course is the 3rd of these components, the BI Portal.

BI Portal – User Roles



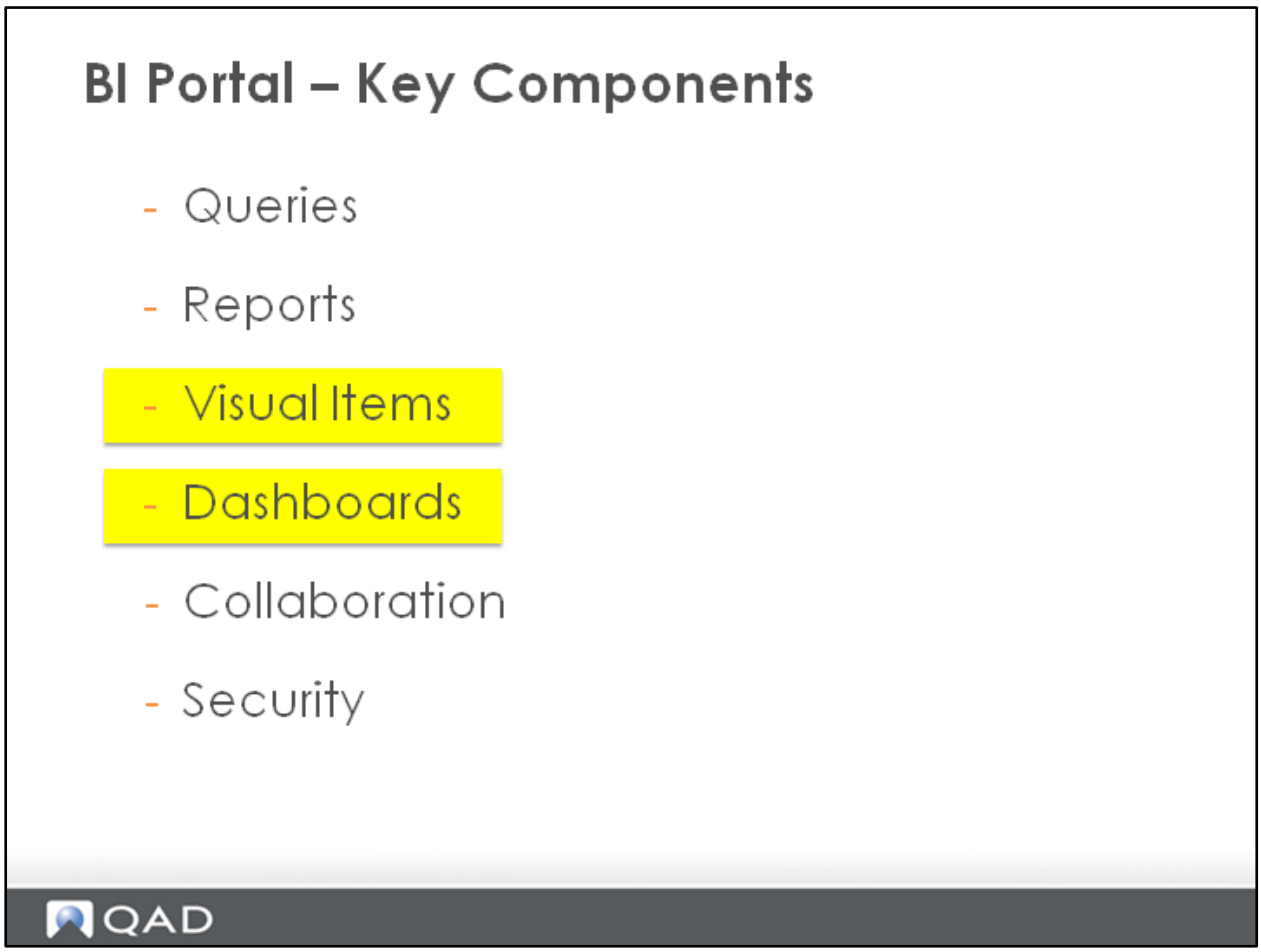
Users will experience the BI Portal based on their role.

The BI Portal user roles are:

- End-user
    - -- User
    - -- Dashboard Only
- Designer
- Administrator

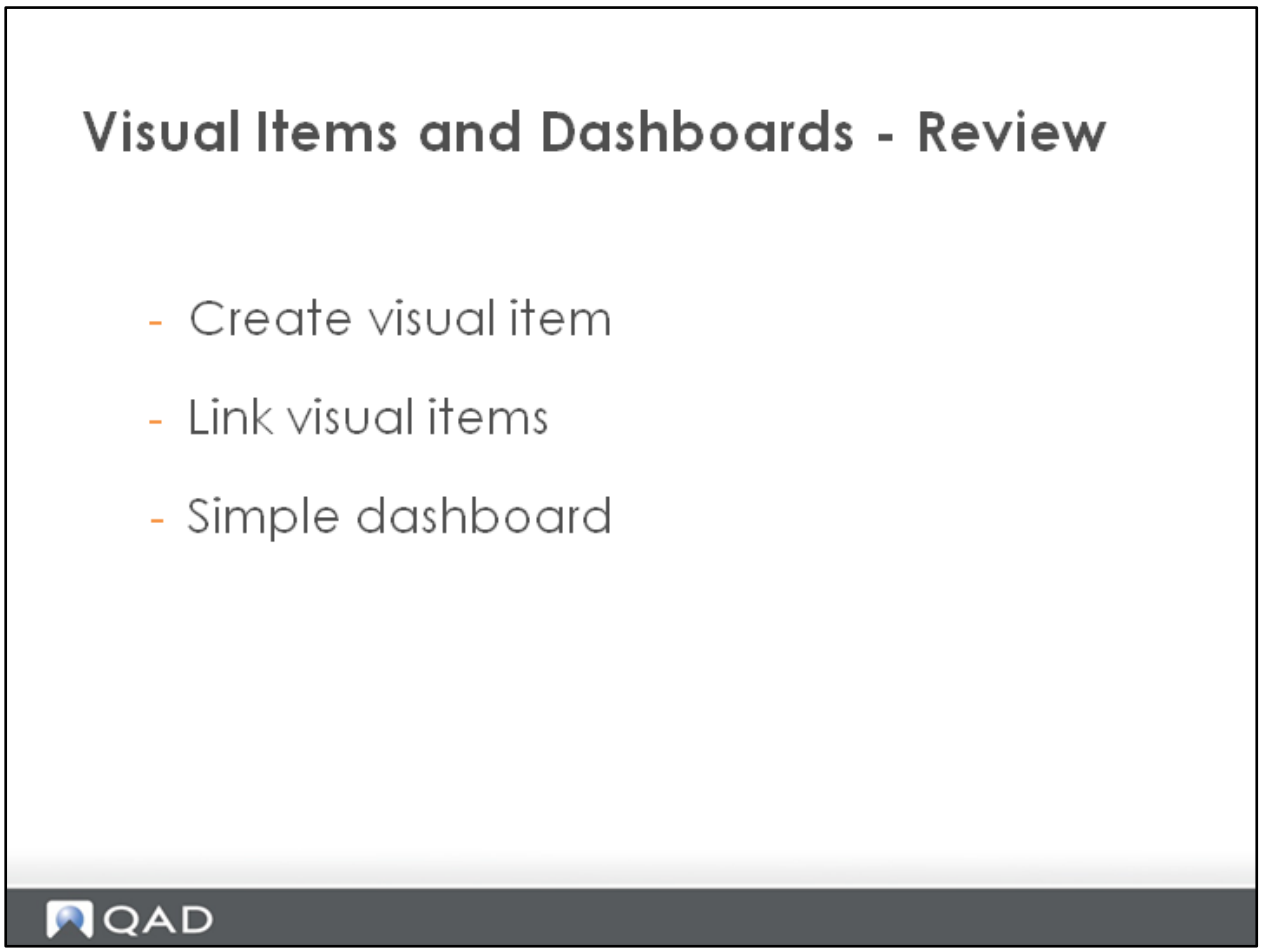
This is the first in a series of courses describing the Designer role within the BI Portal.

BI Portal – Key Components

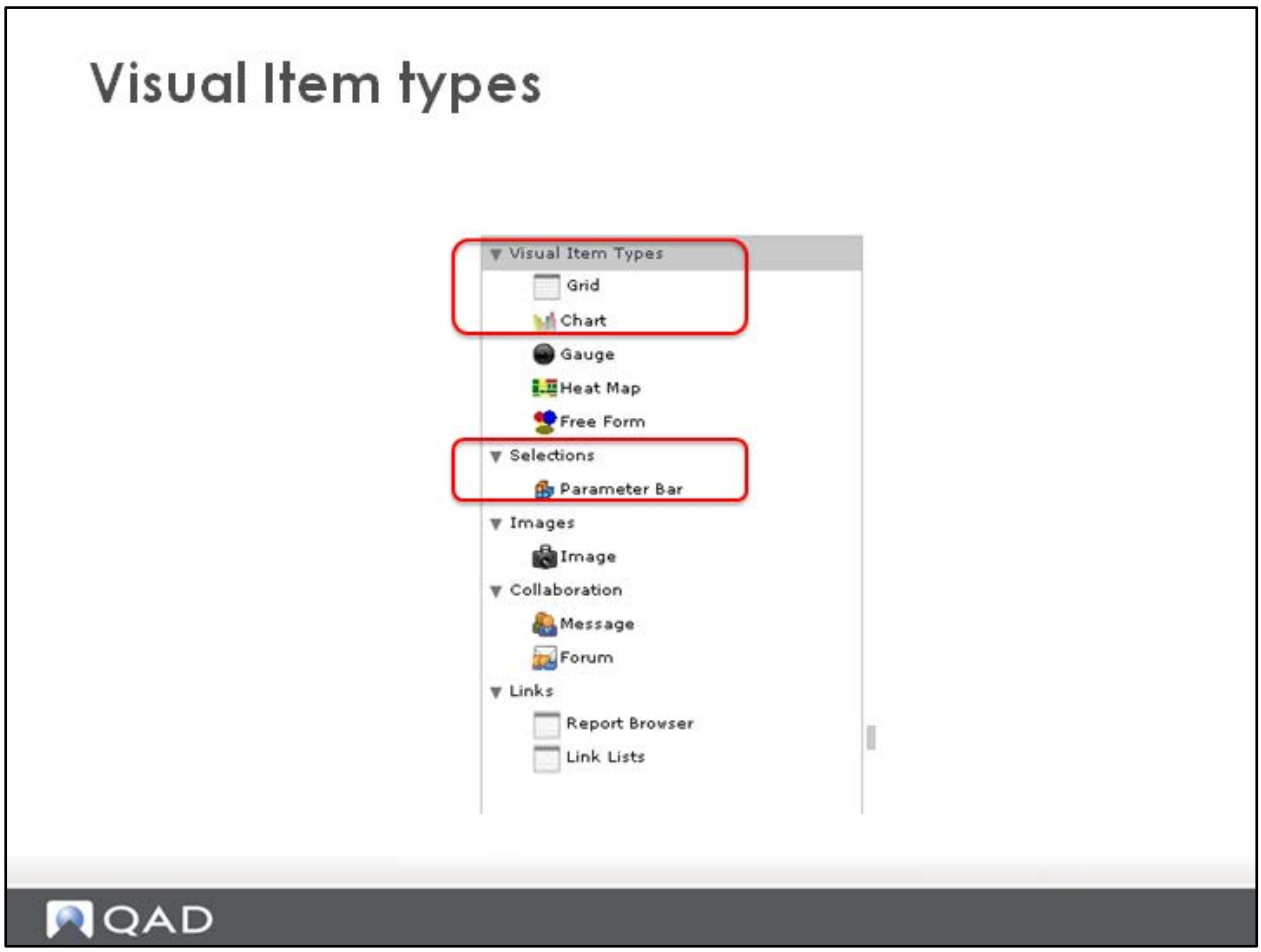


This course expands on Part 1, Visual Items and Dashboards.

Visual Items and Dashboards - Review



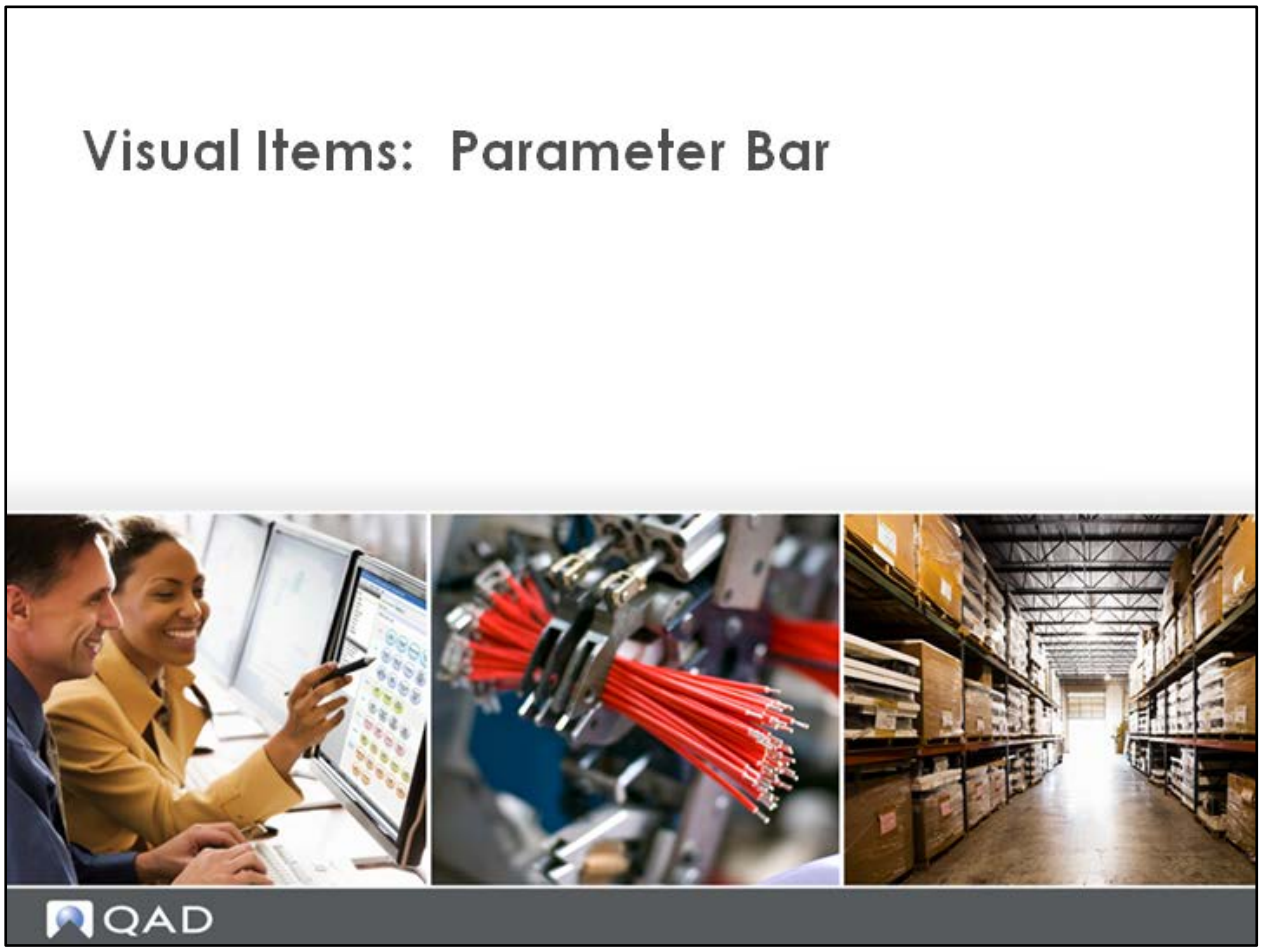
Visual Item types



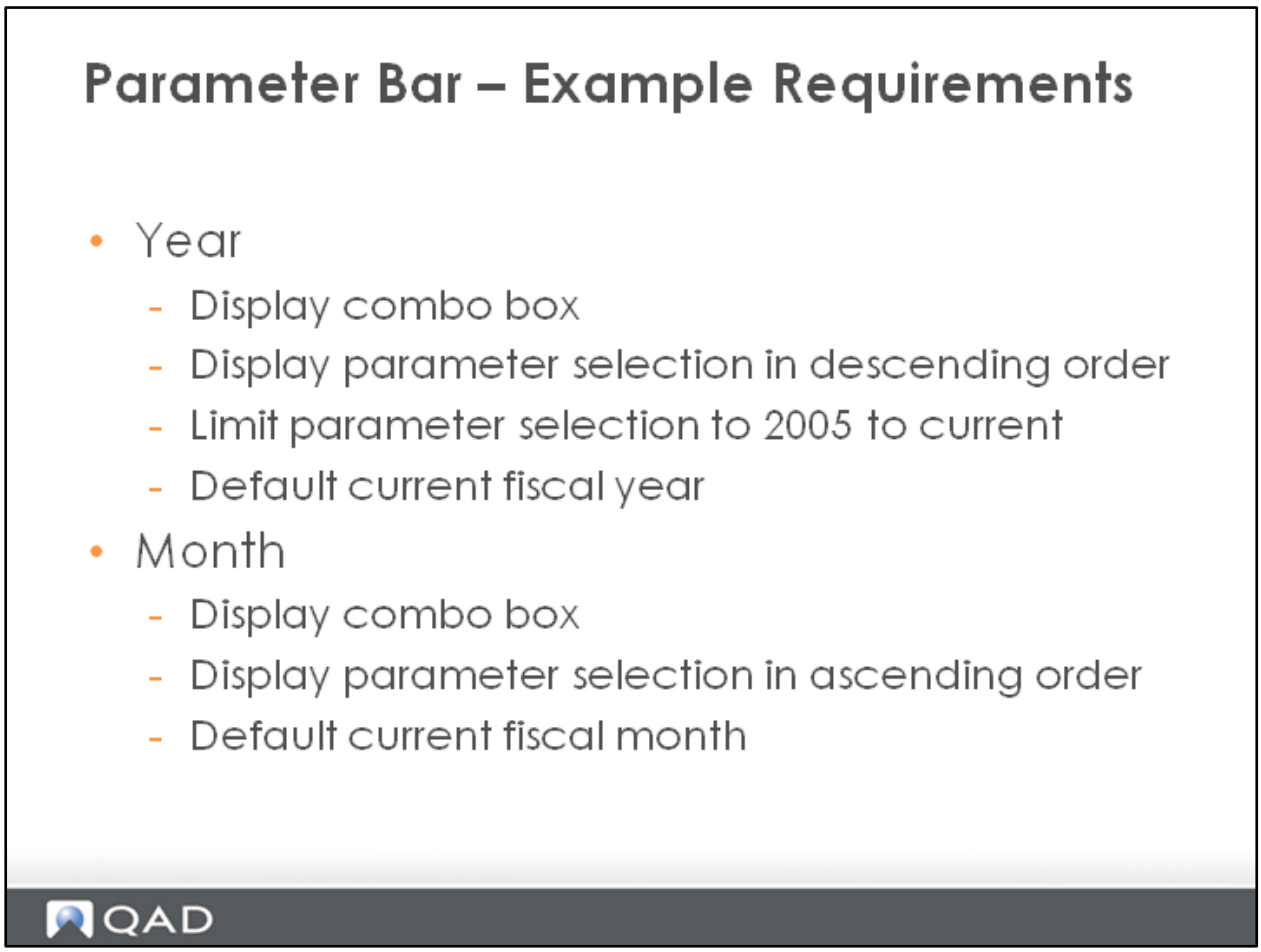
In Part 1 of this course, we discussed charts and grids. In this course, we'll look at some other types of visual items.

First, we'll look at parameter bars.

Visual Items: Parameter Bar



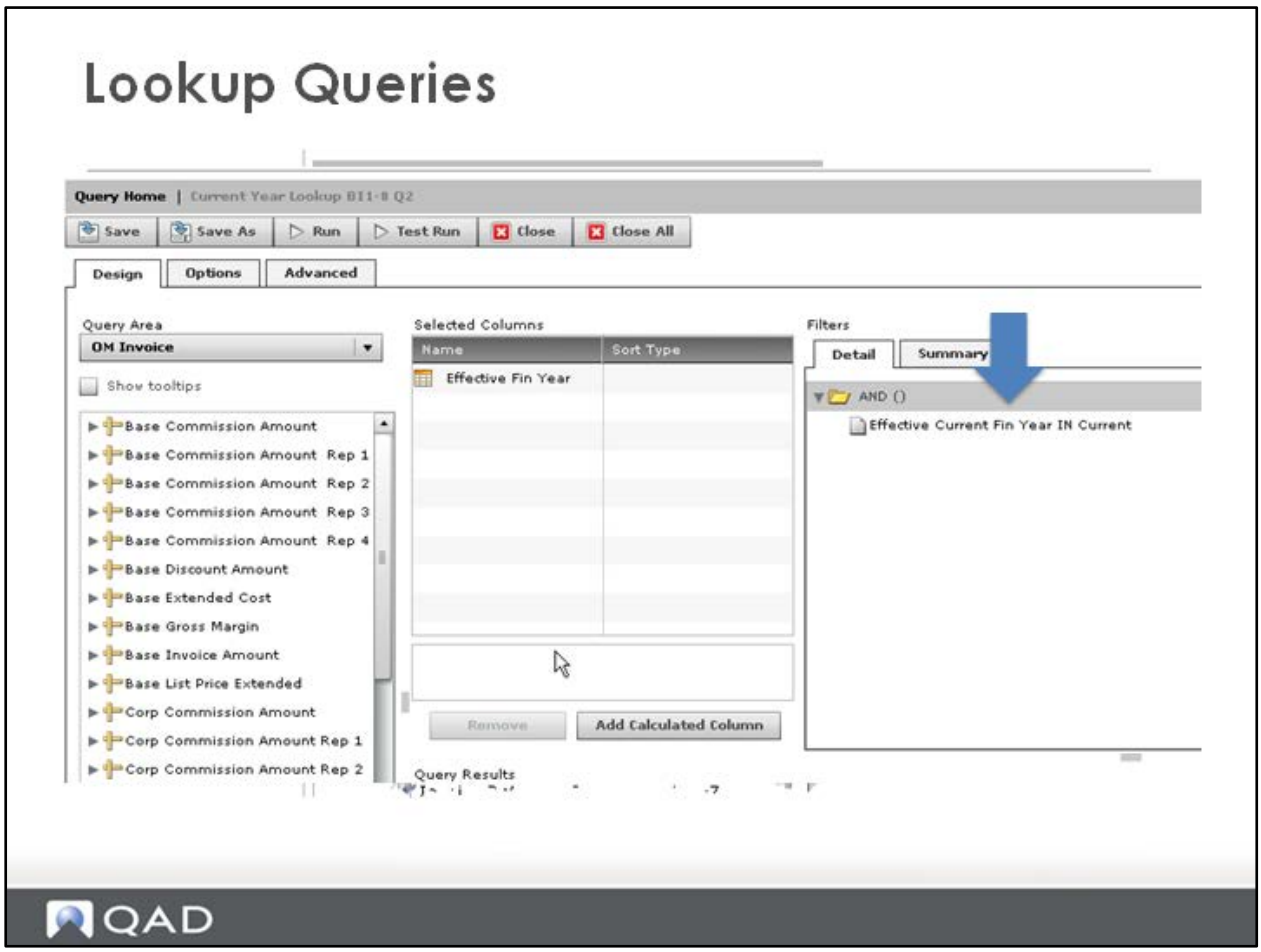
Parameter Bar – Example Requirements



Parameter Bars

Parameter bars can be placed on dashboards to allow users to set the parameters for one or more visual items on a dashboard.

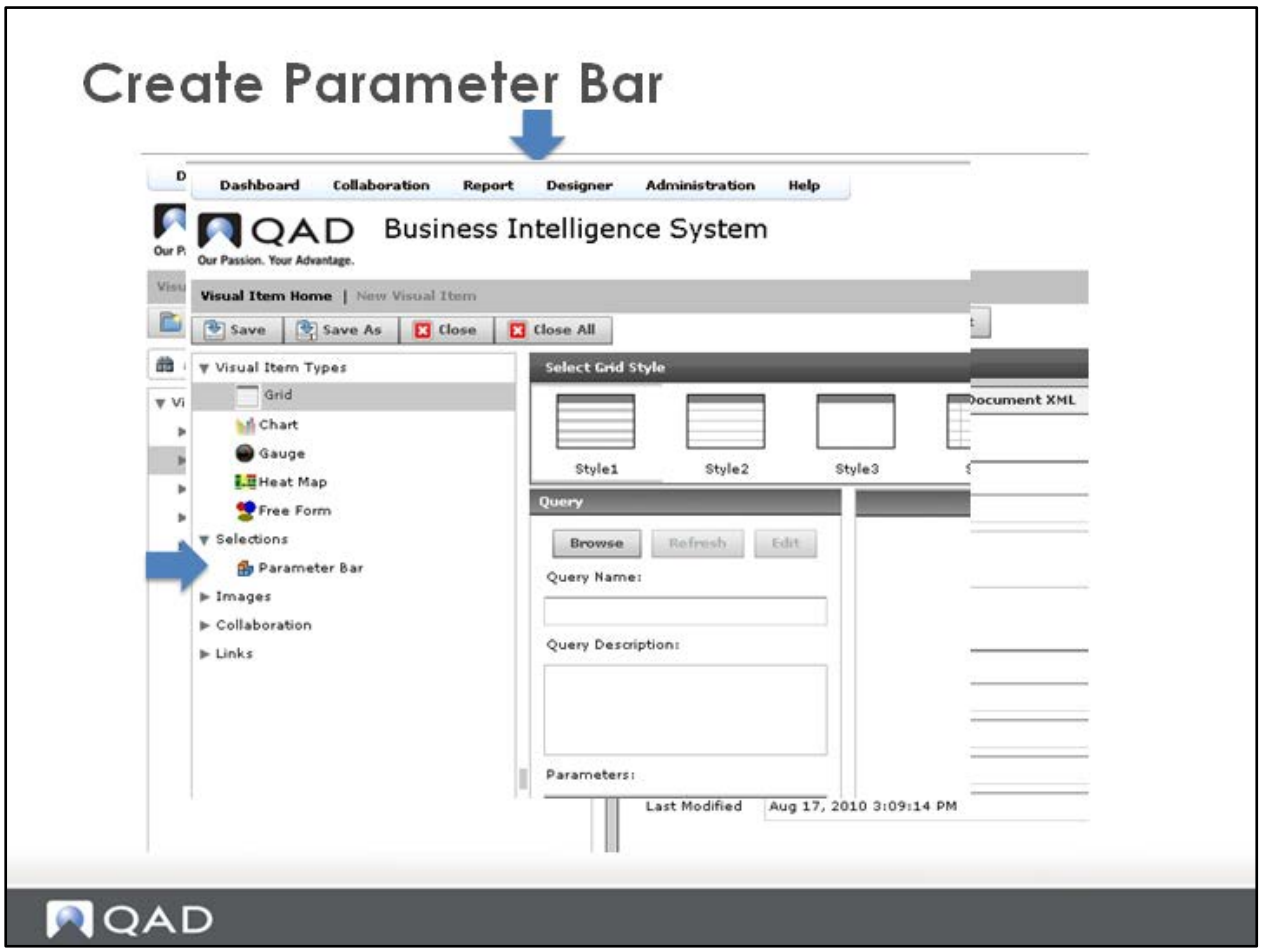
Lookup Queries



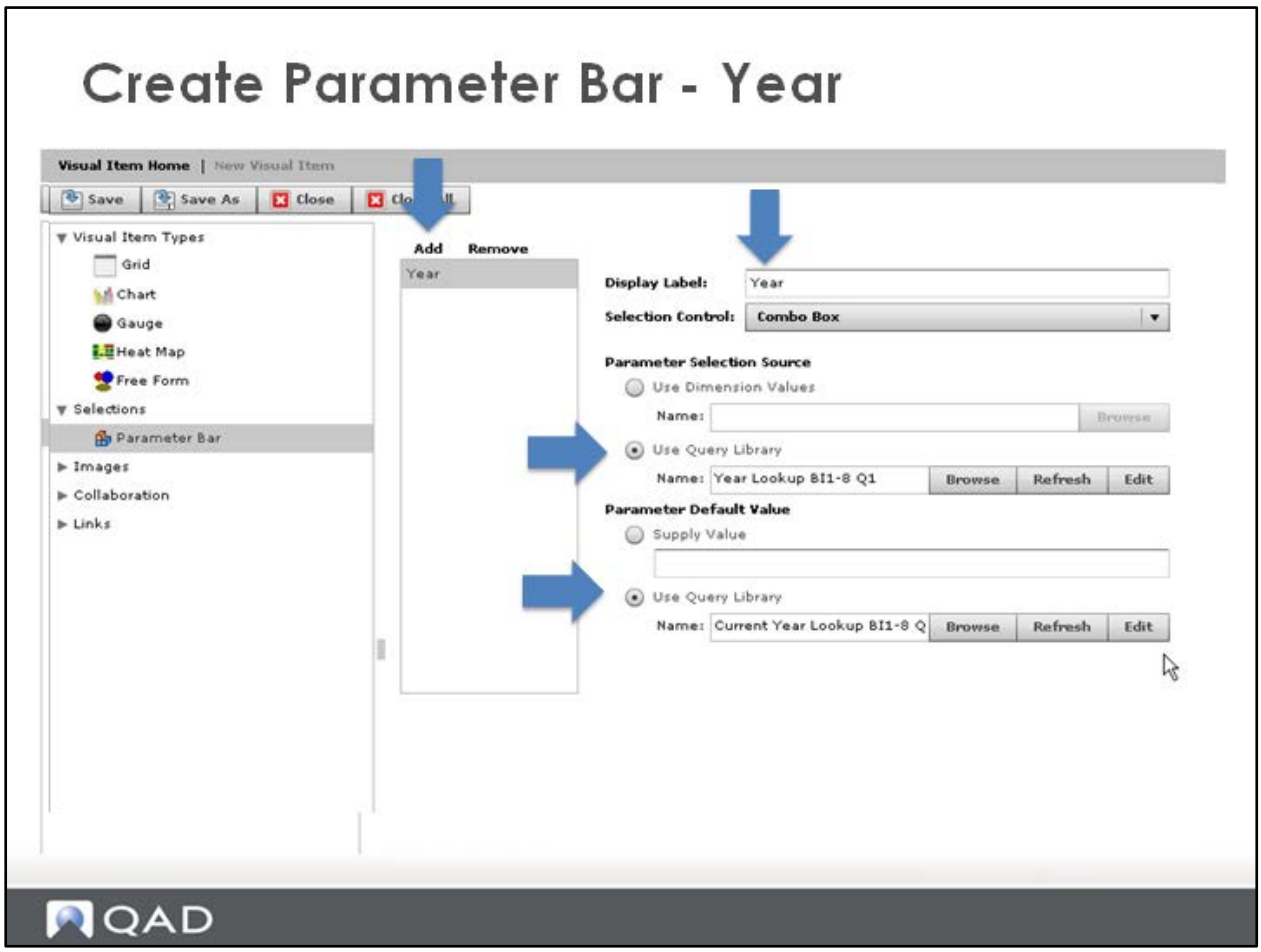
Parameter bars do not require an underying query.

However, we can use queries to control the values a user will see and the default value for the parameter.

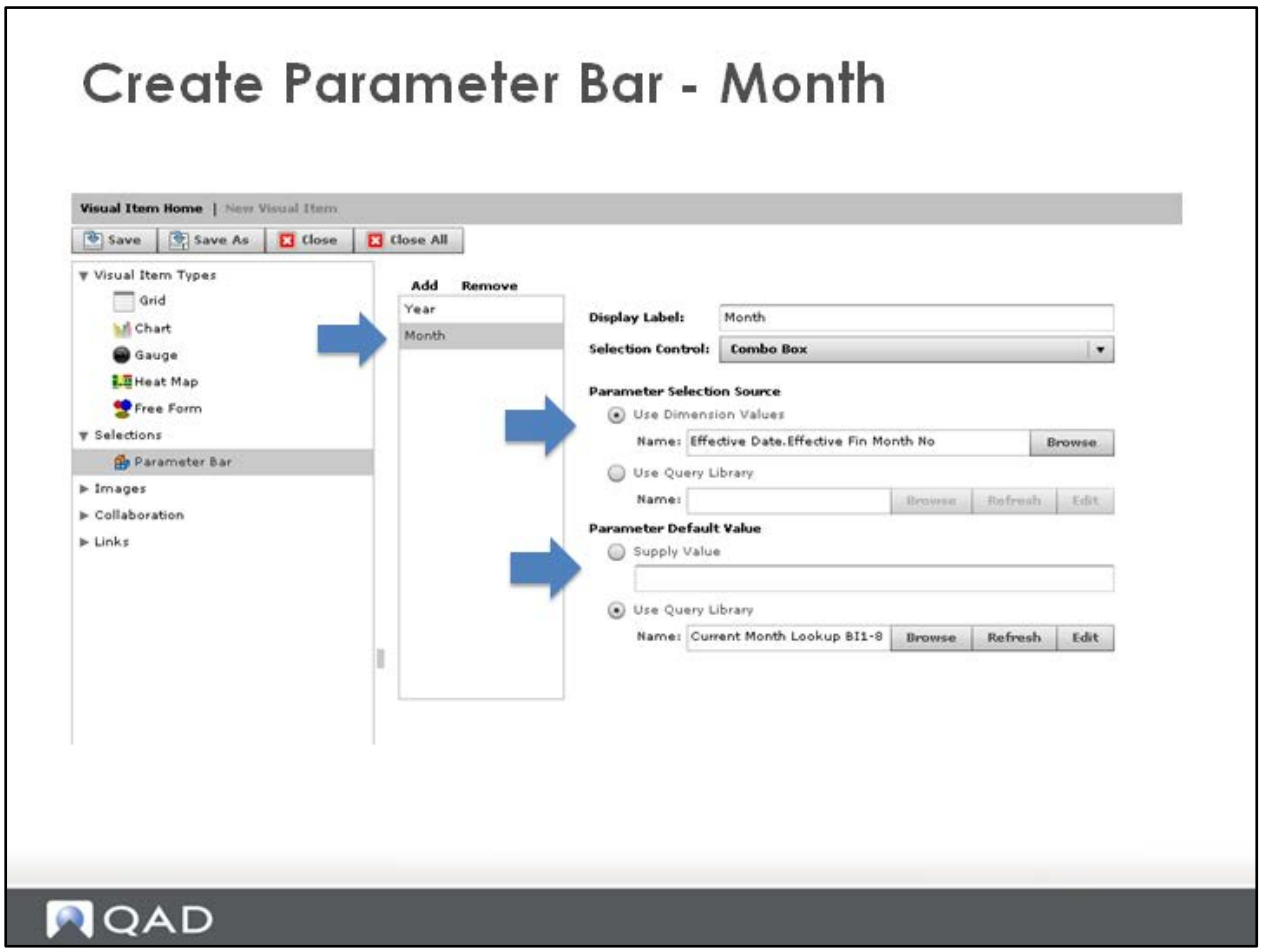
Create Parameter Bar



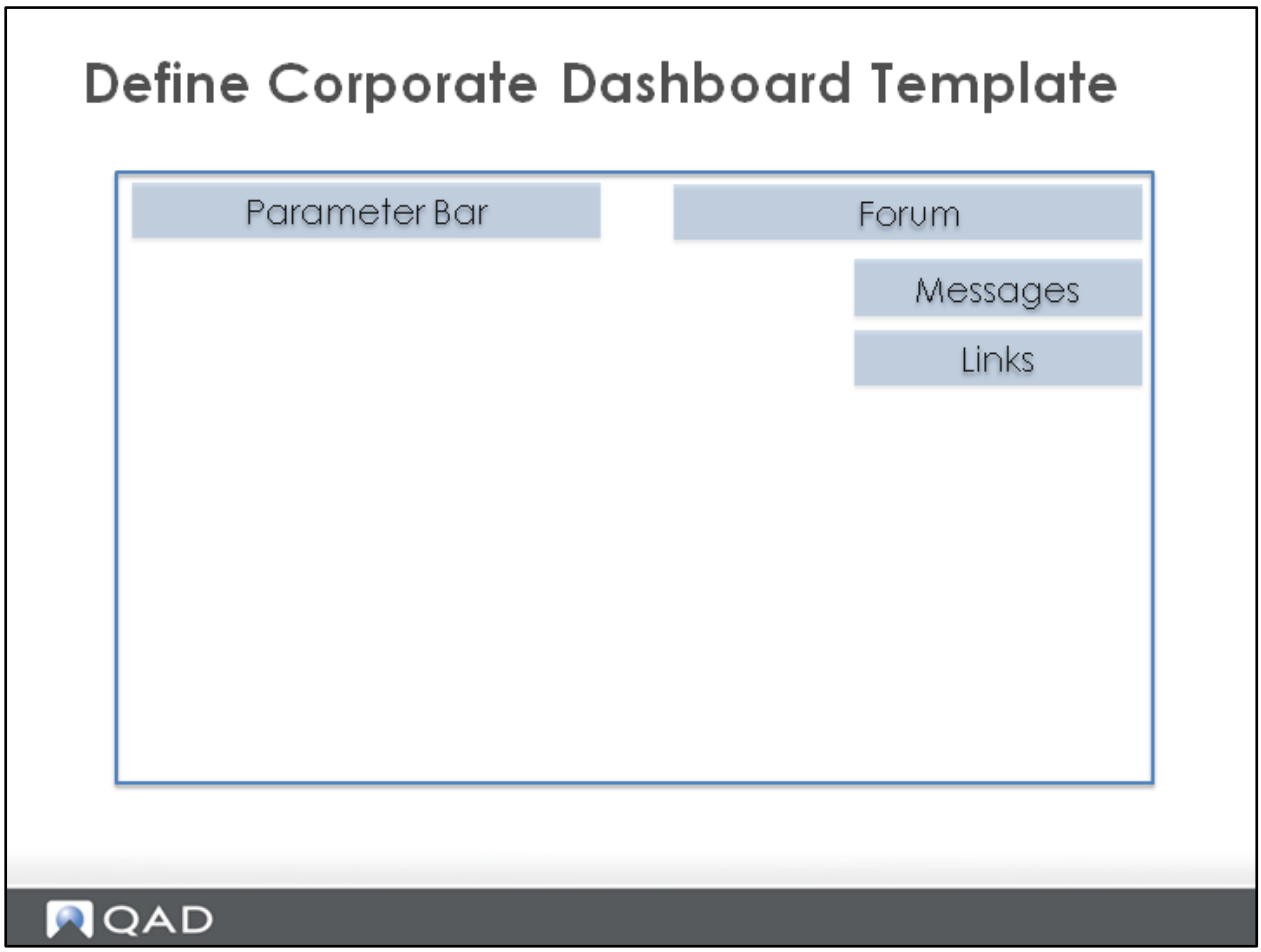
Create Parameter Bar - Year



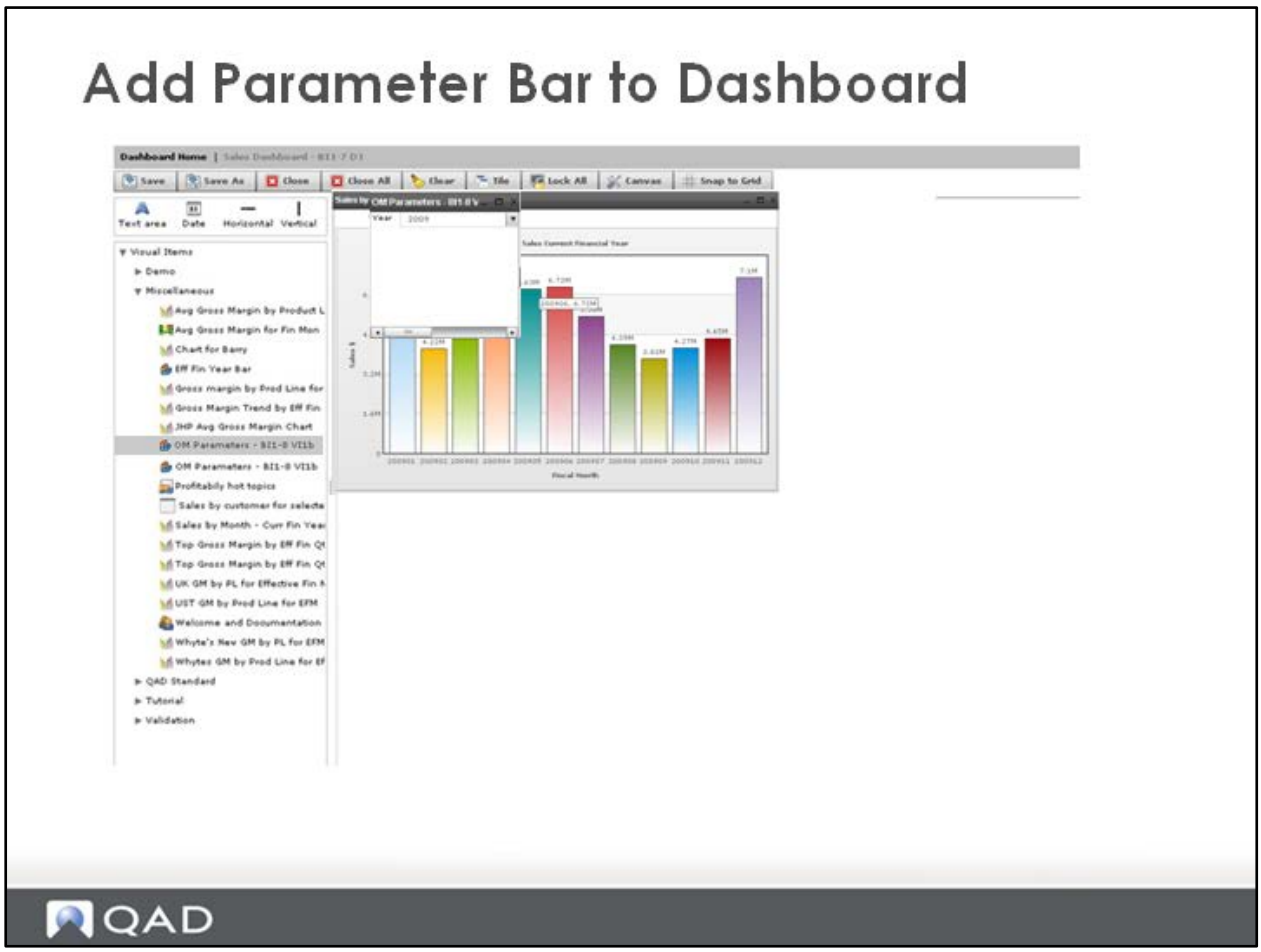
Create Parameter Bar - Month



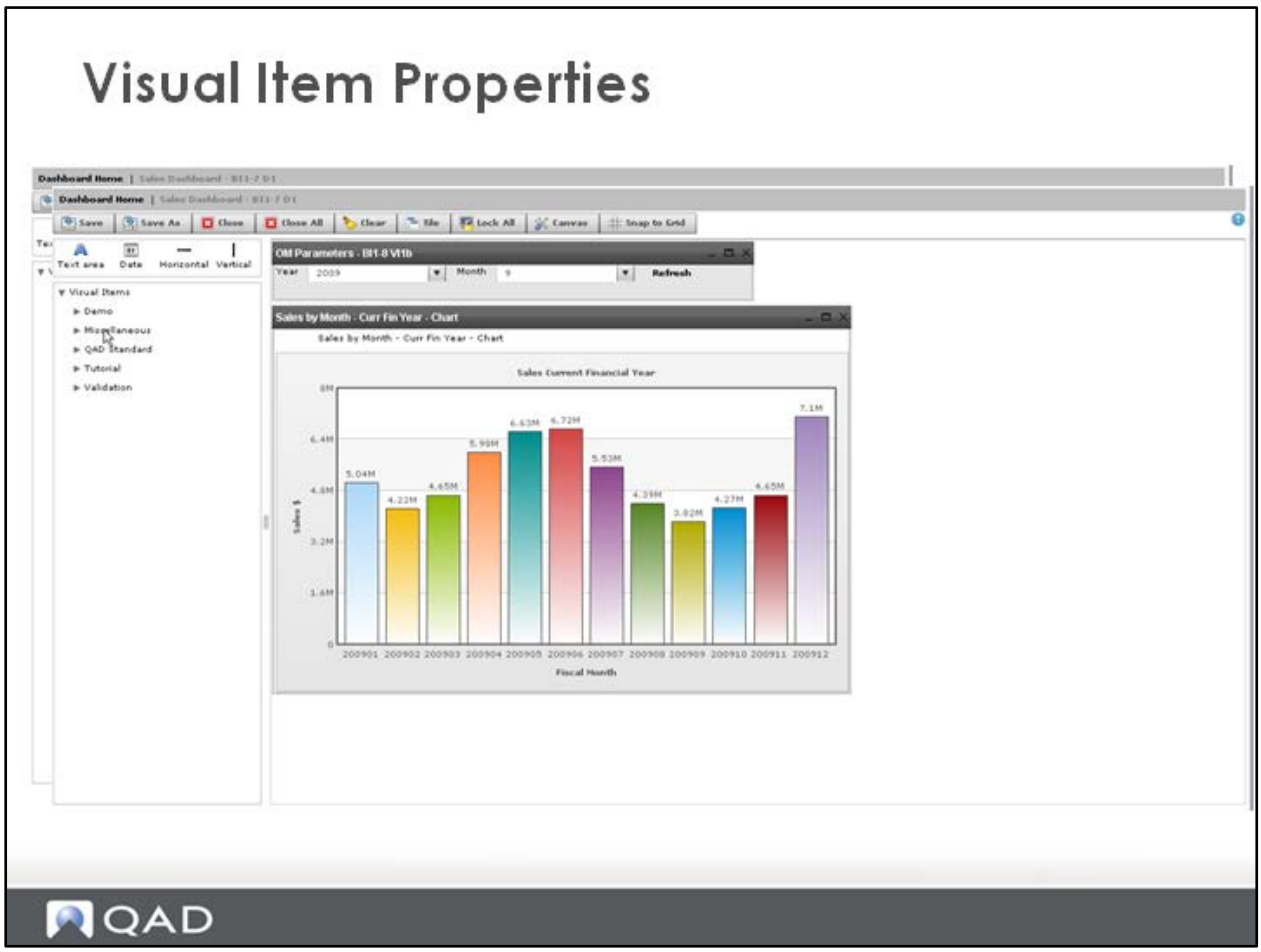
Define Corporate Dashboard Template



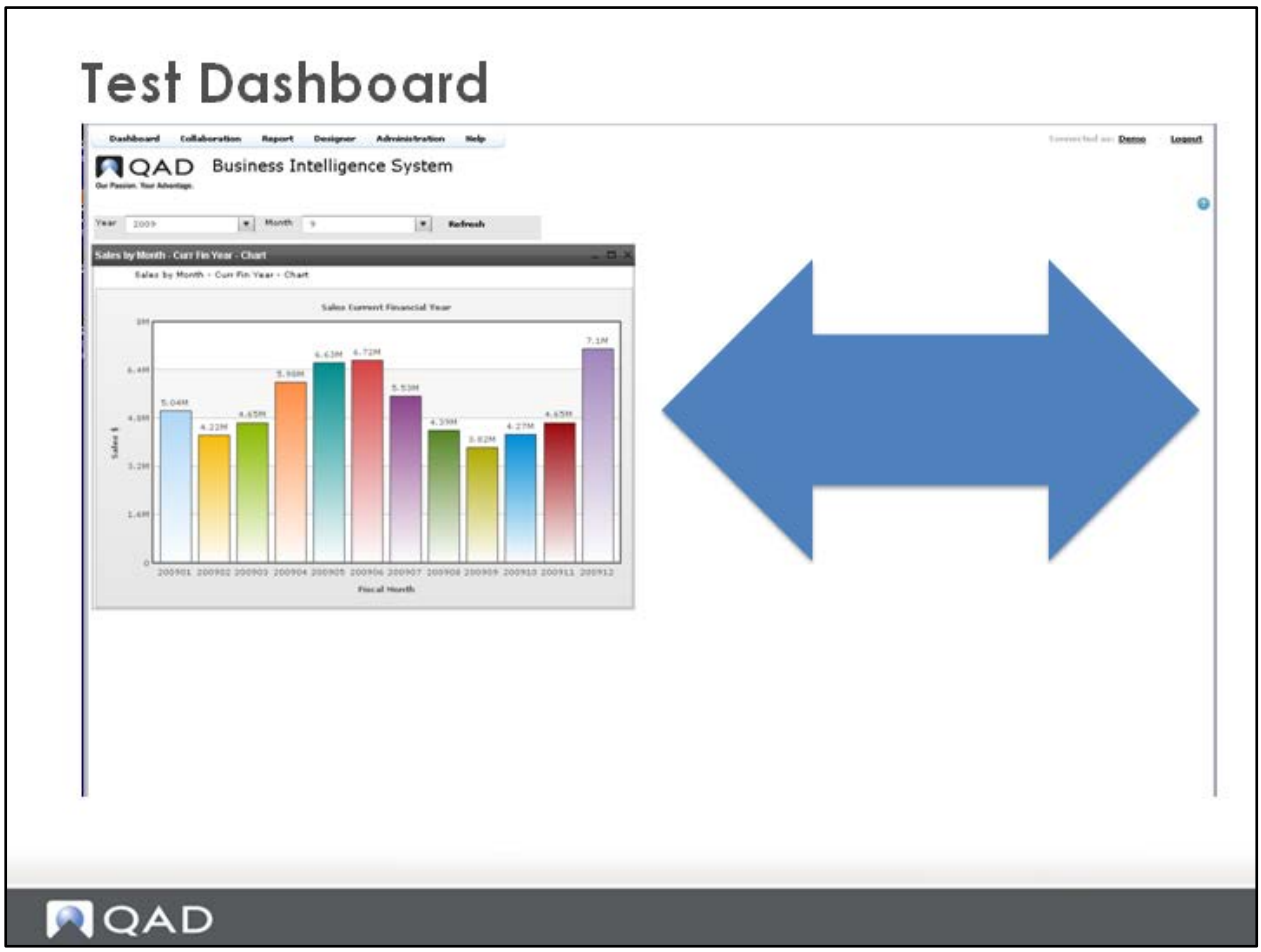
Add Parameter Bar to Dashboard



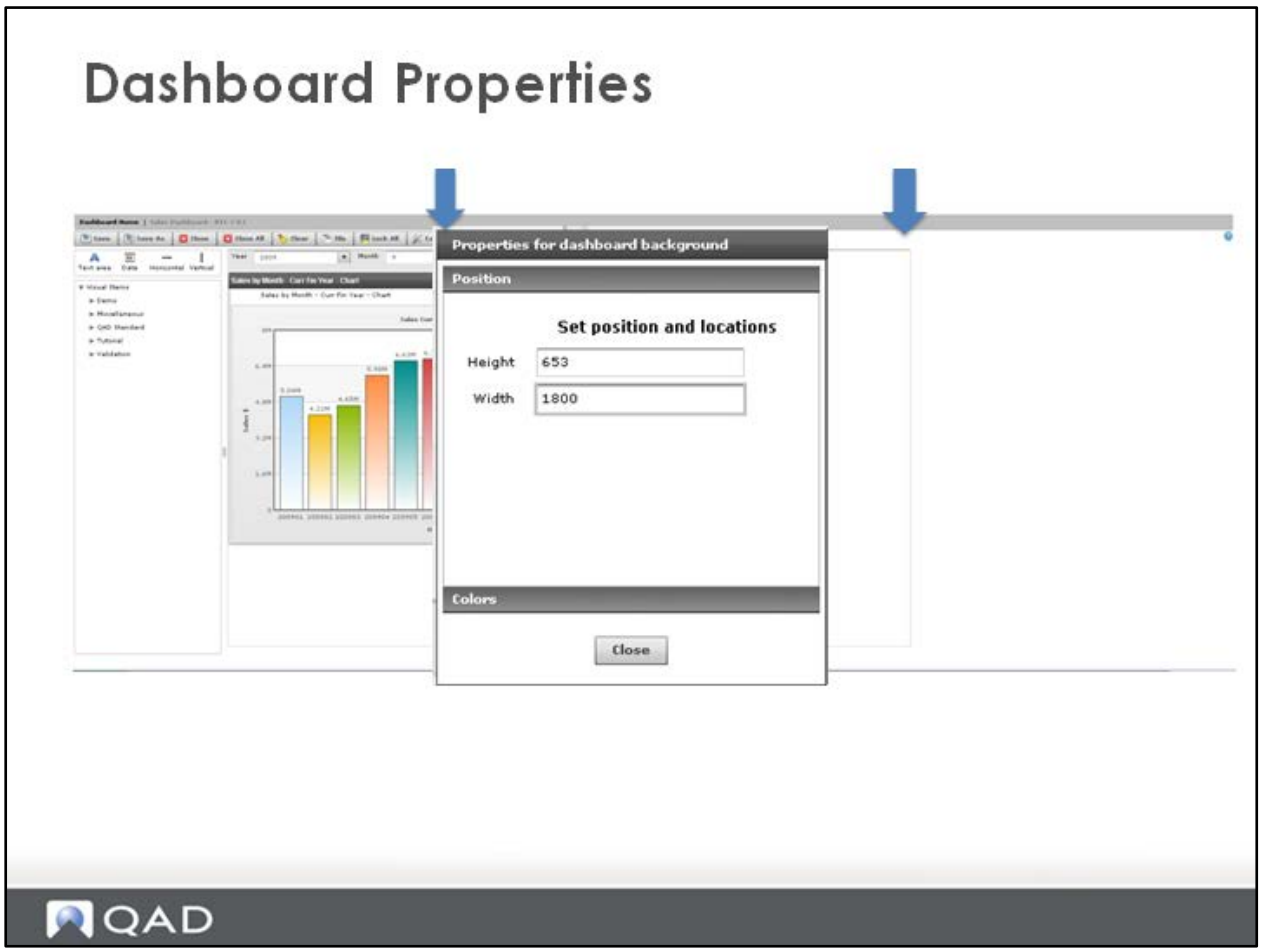
Visual Item Properties



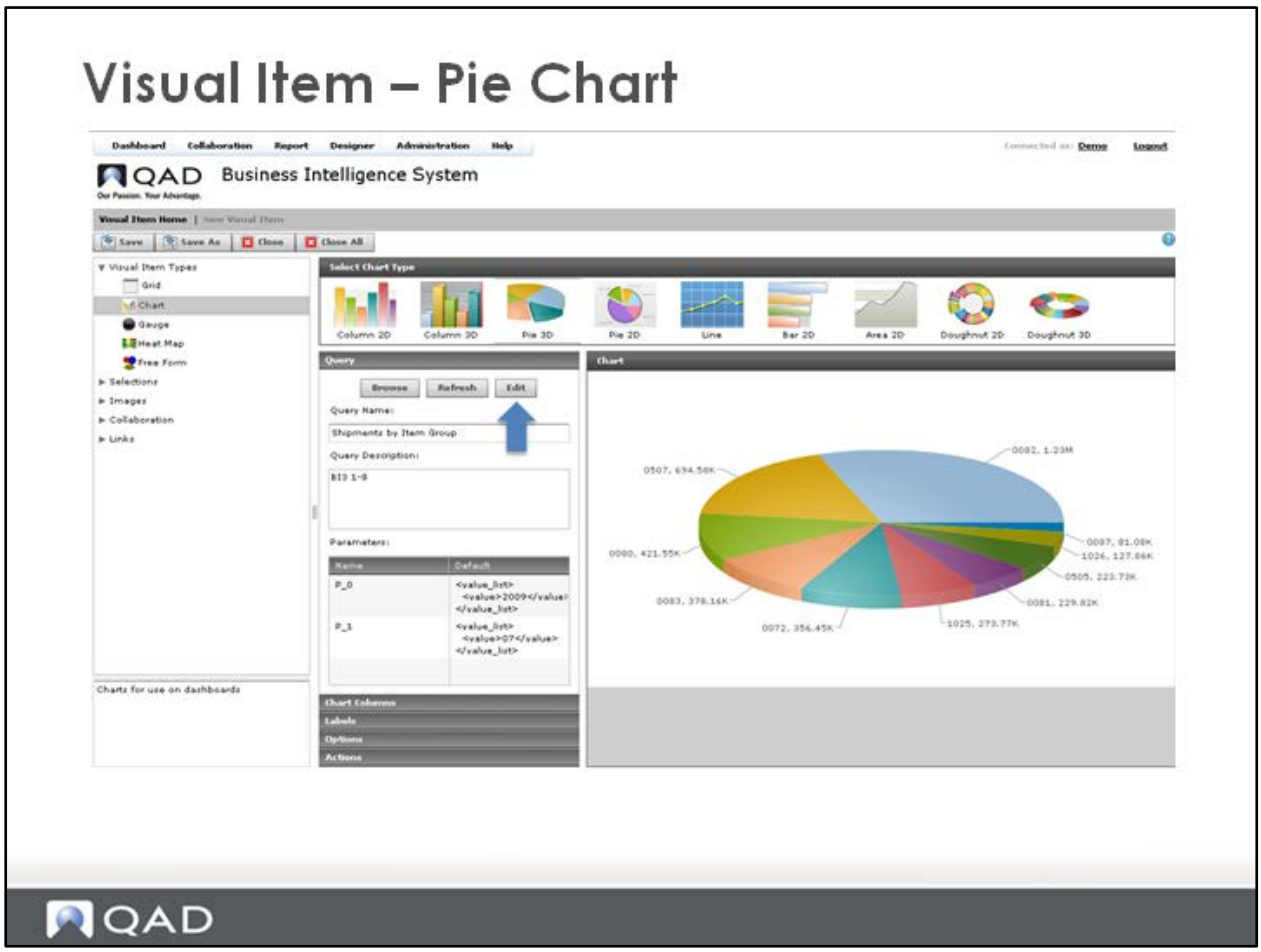
Test Dashboard



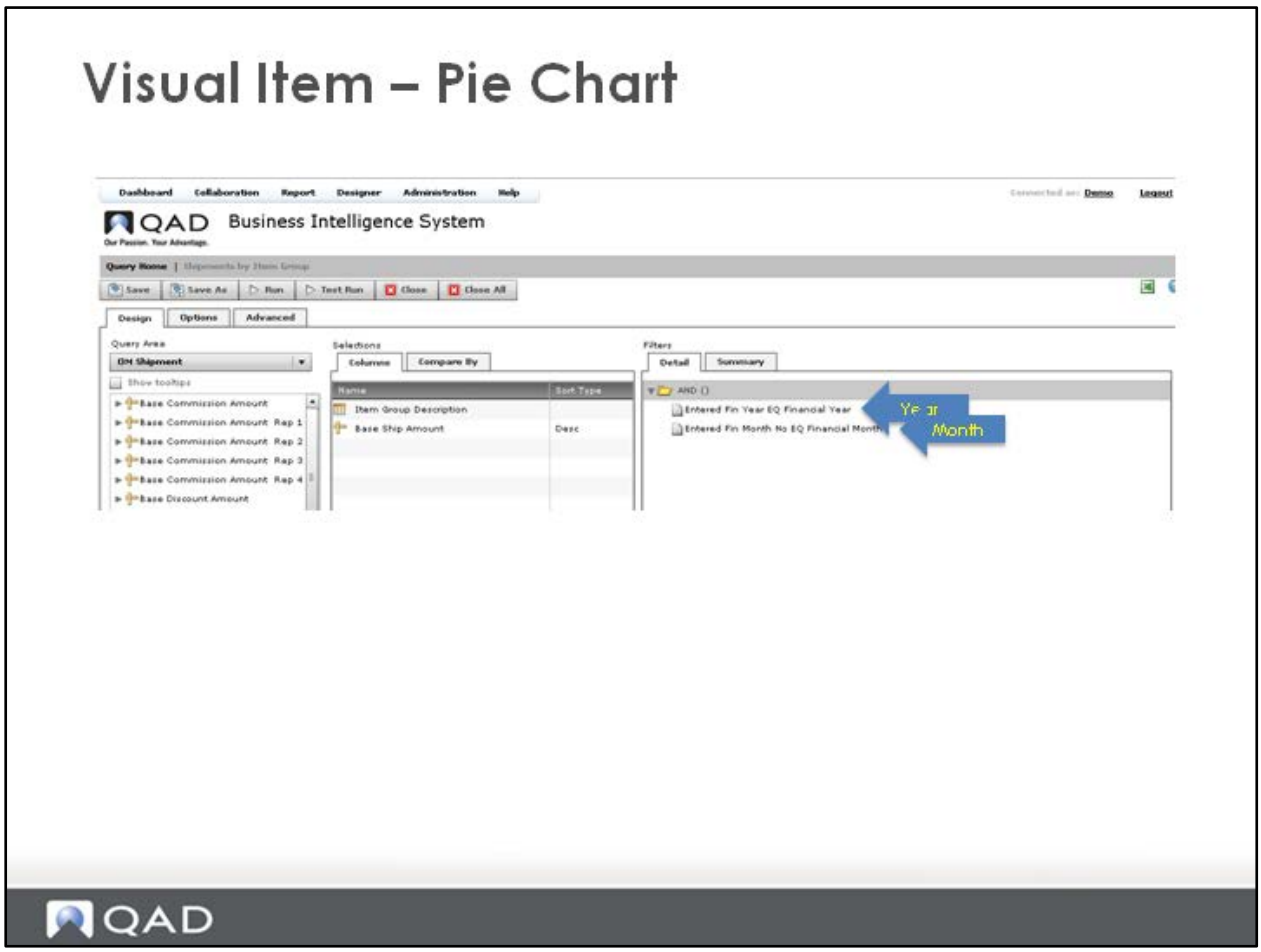
Dashboard Properties



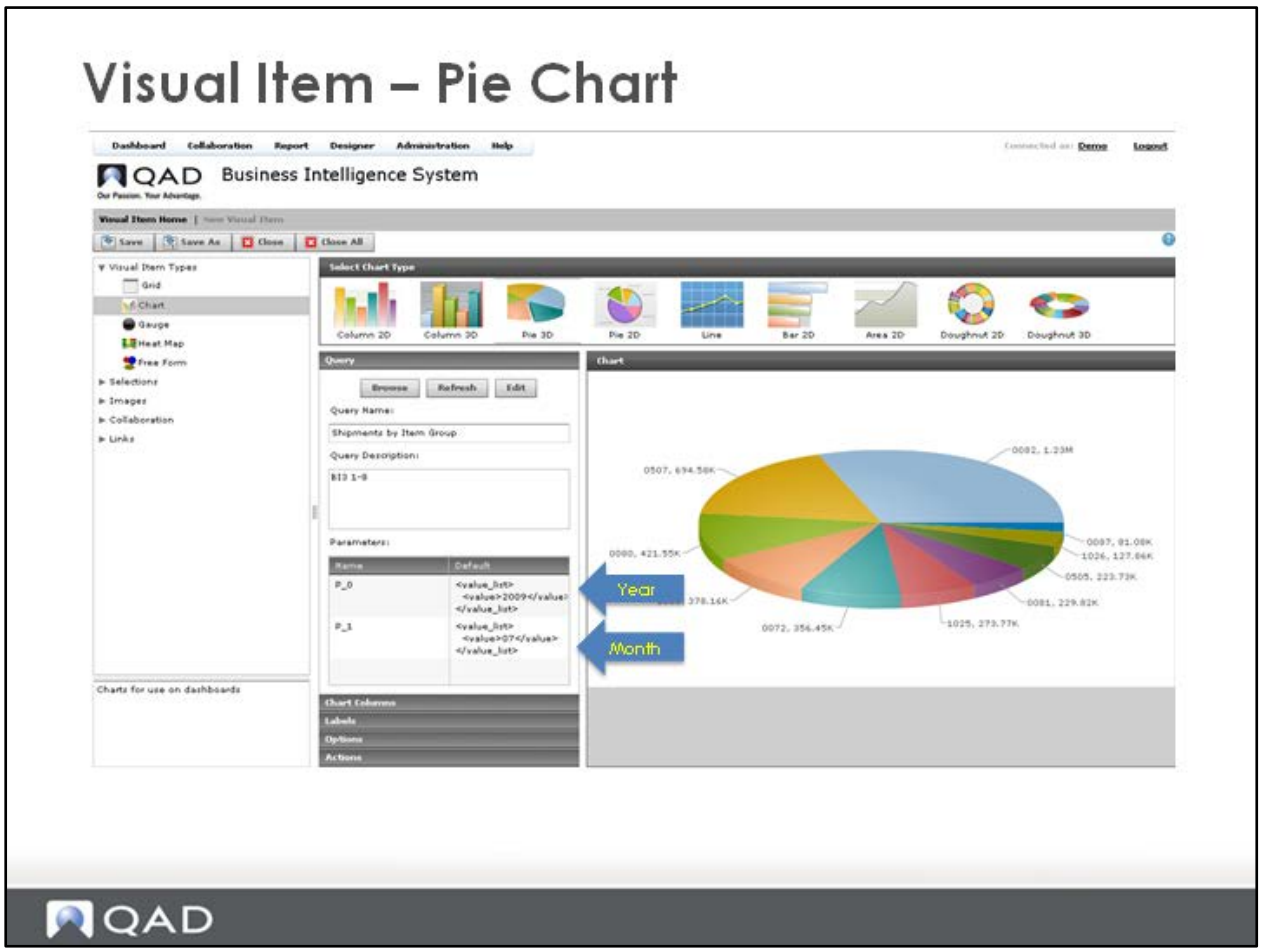
Visual Item – Pie Chart



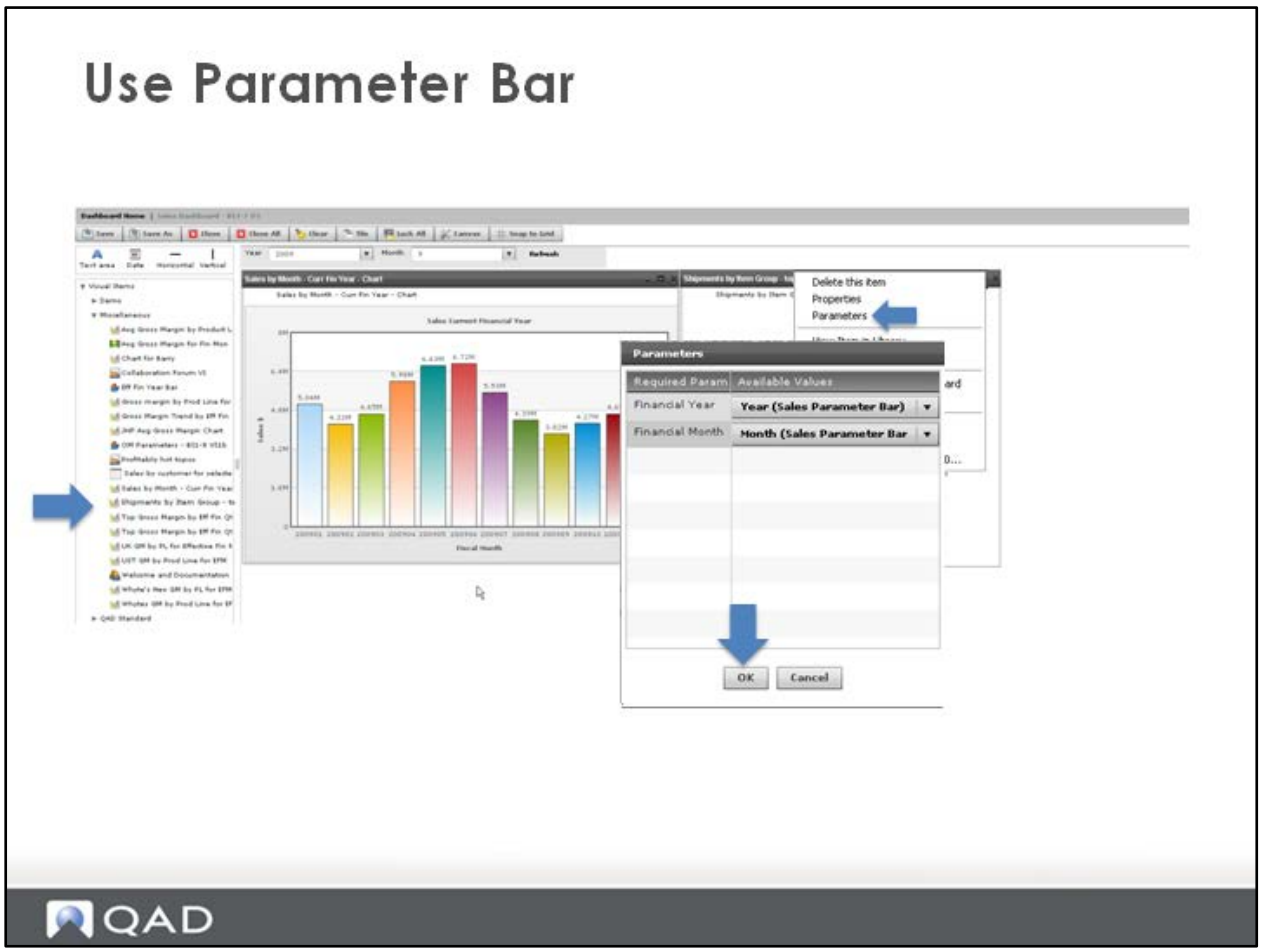
Visual Item – Pie Chart



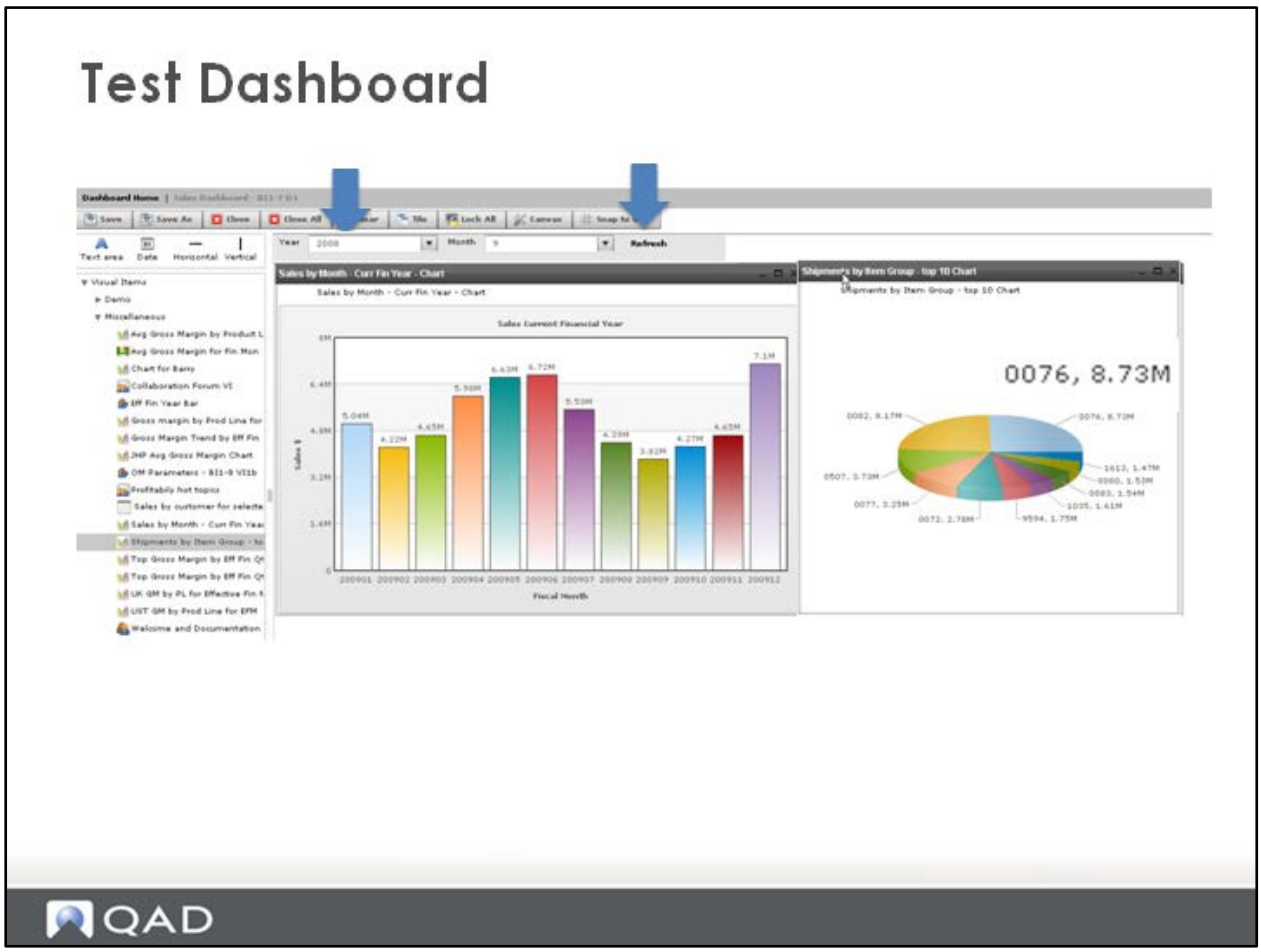
Visual Item – Pie Chart



Use Parameter Bar



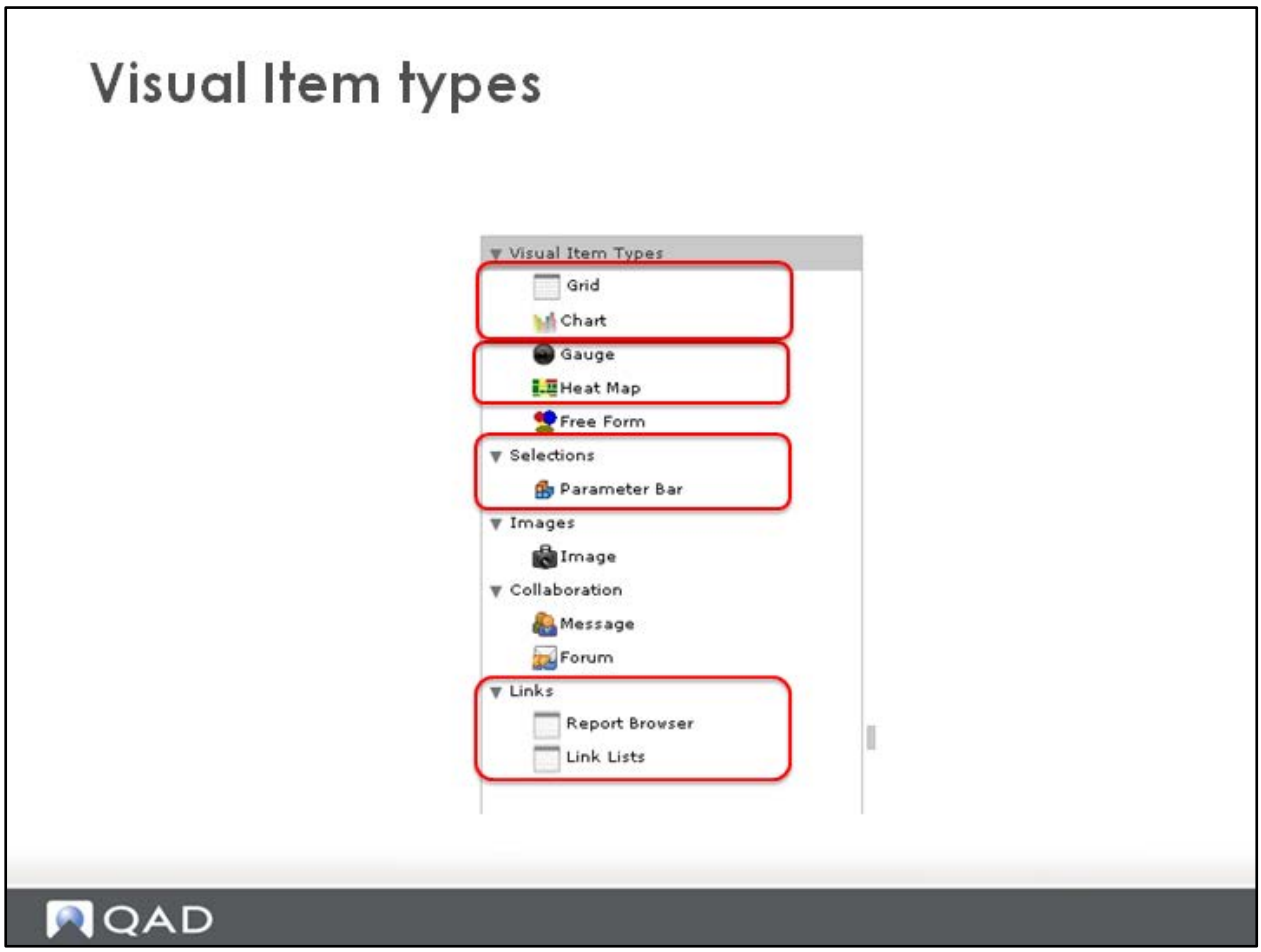
Test Dashboard



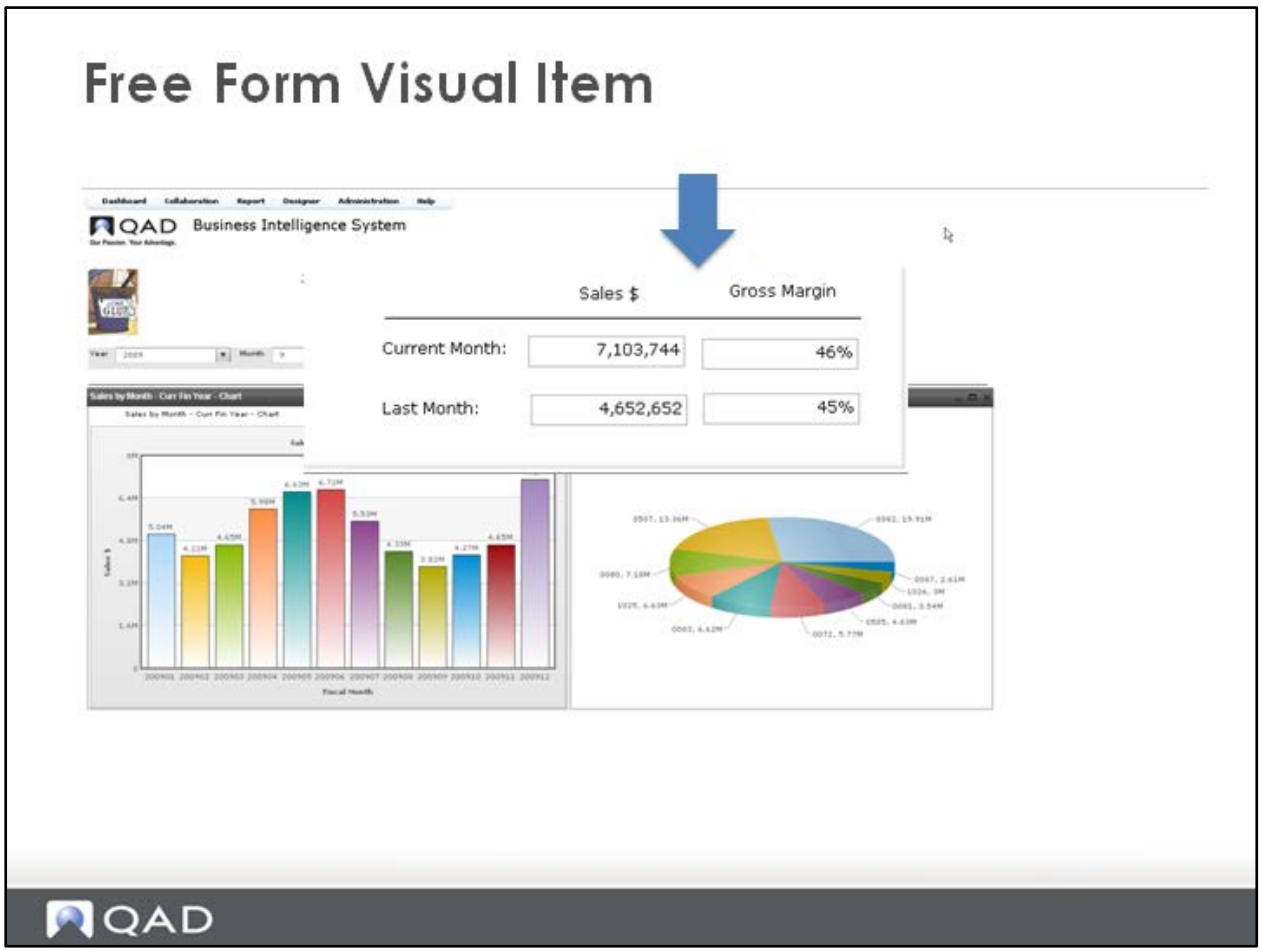
Other Types of Visual Items



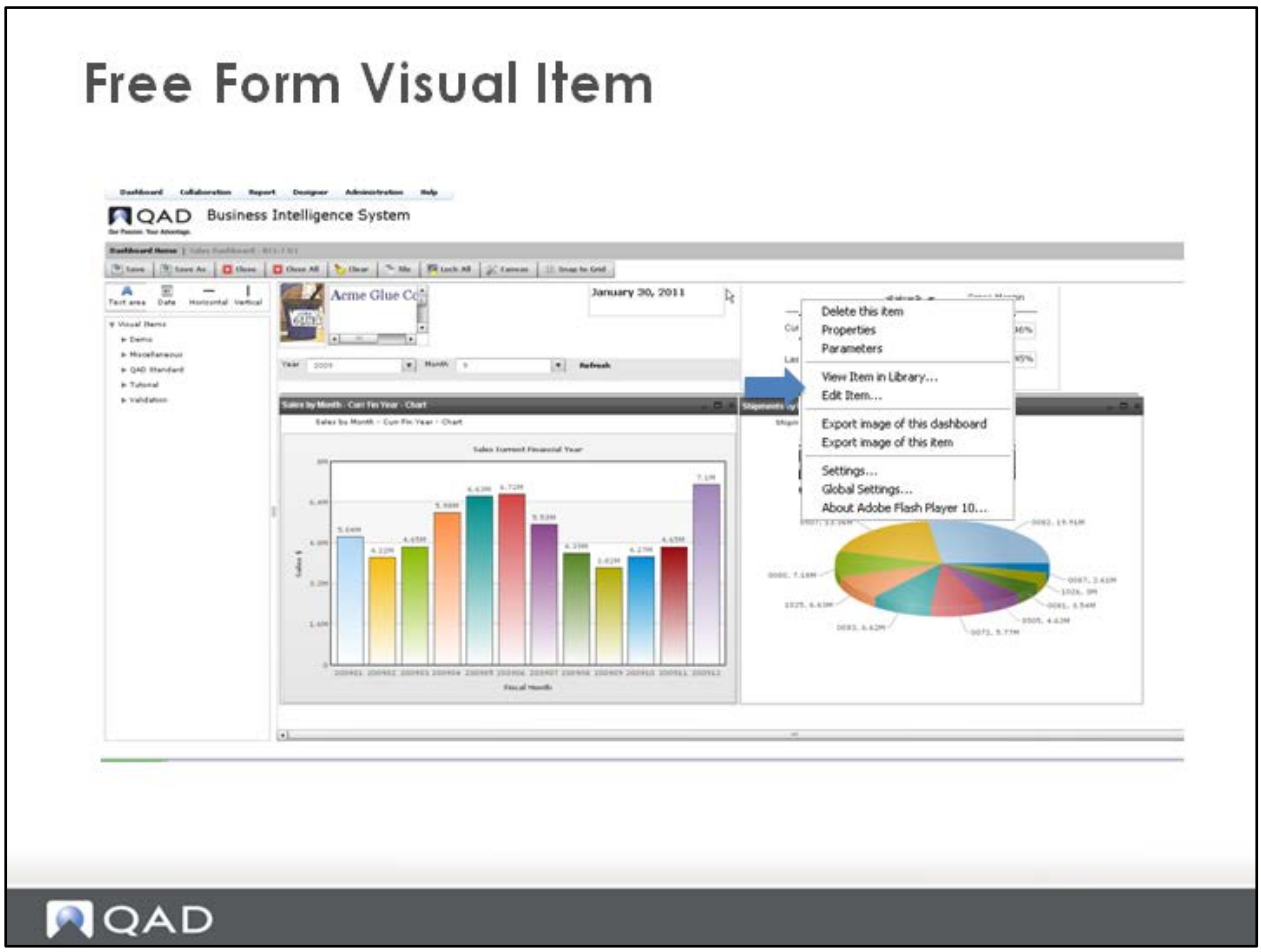
Visual Item types



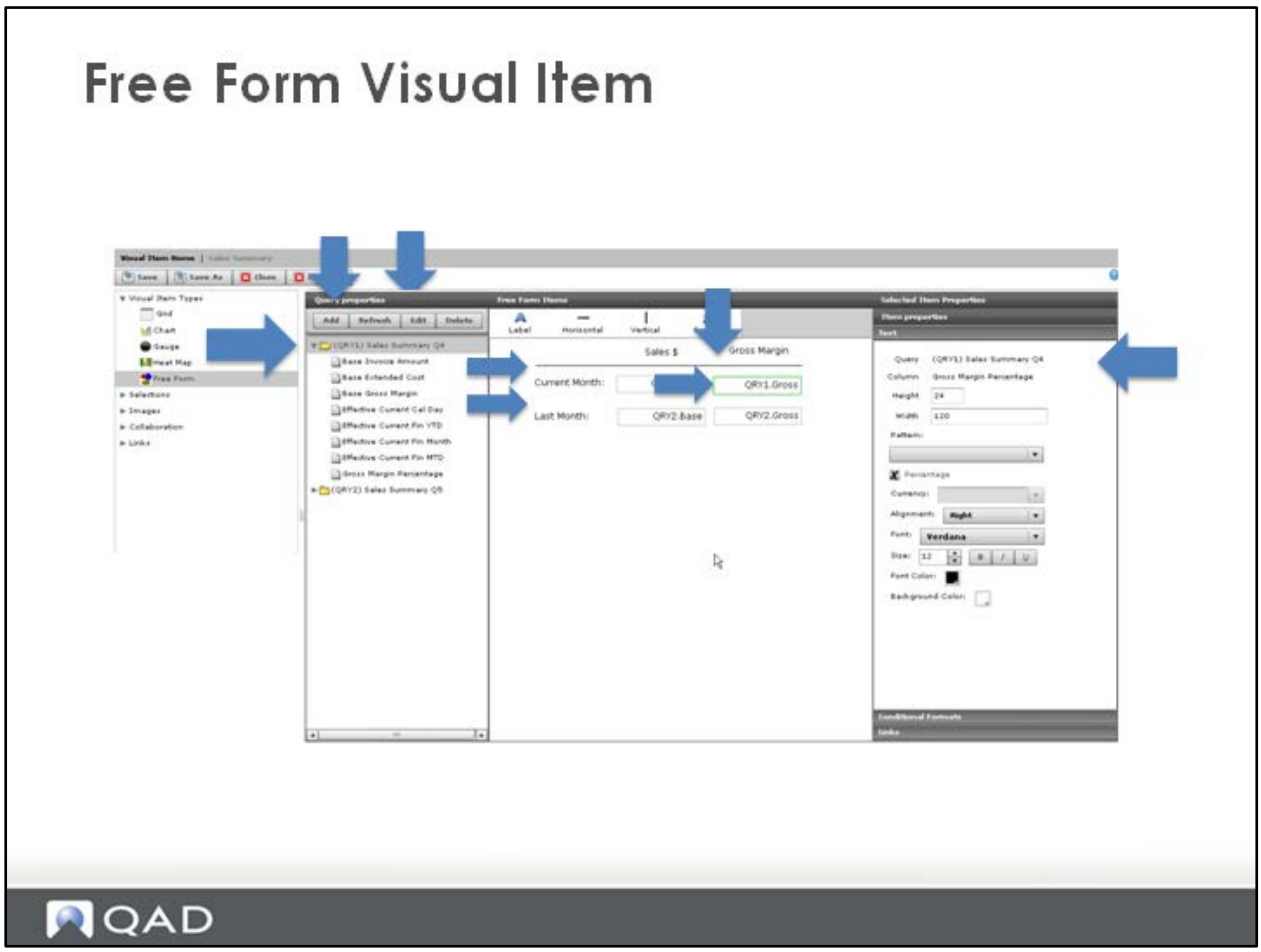
Free Form Visual Item



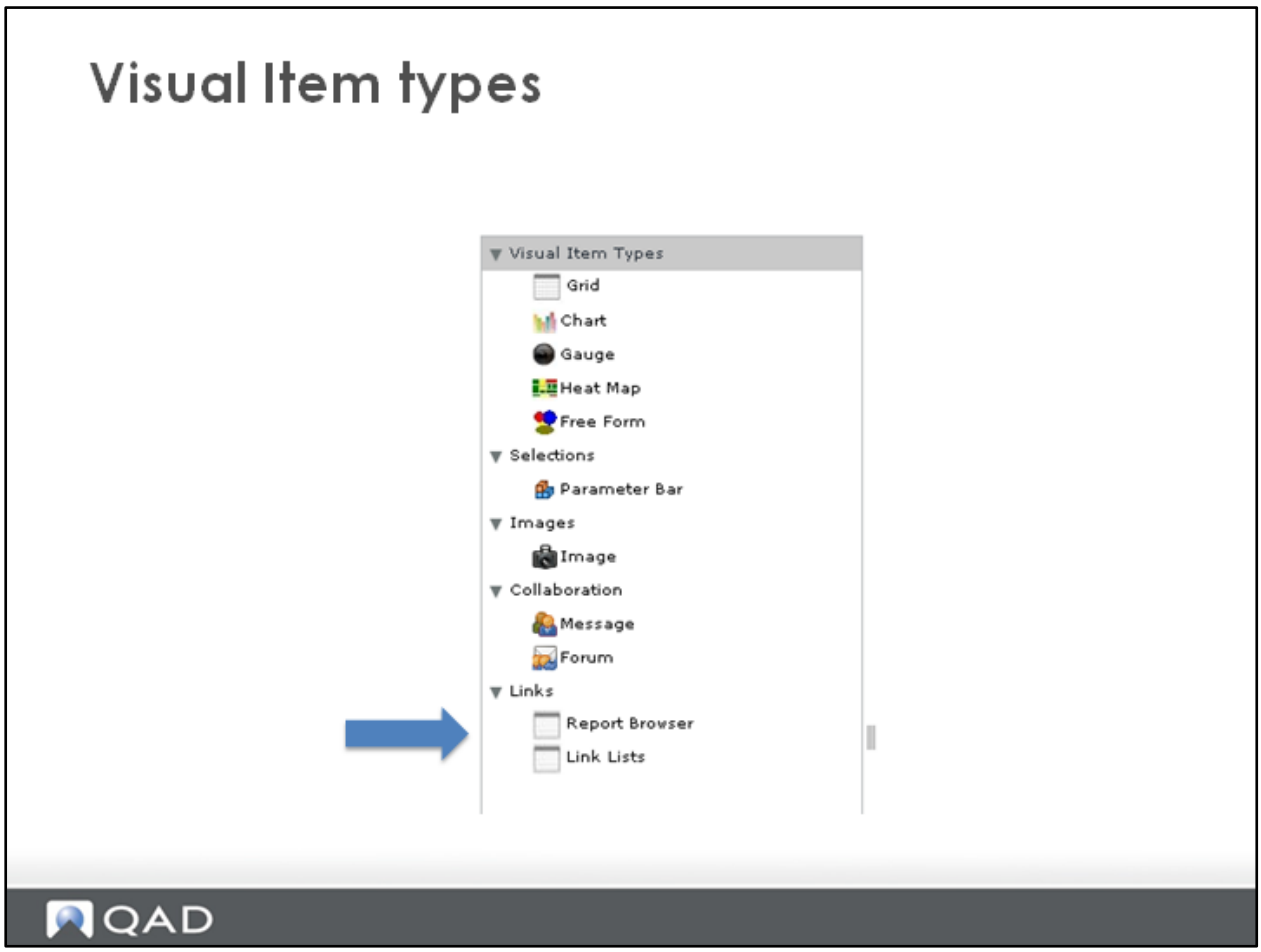
Free Form Visual Item



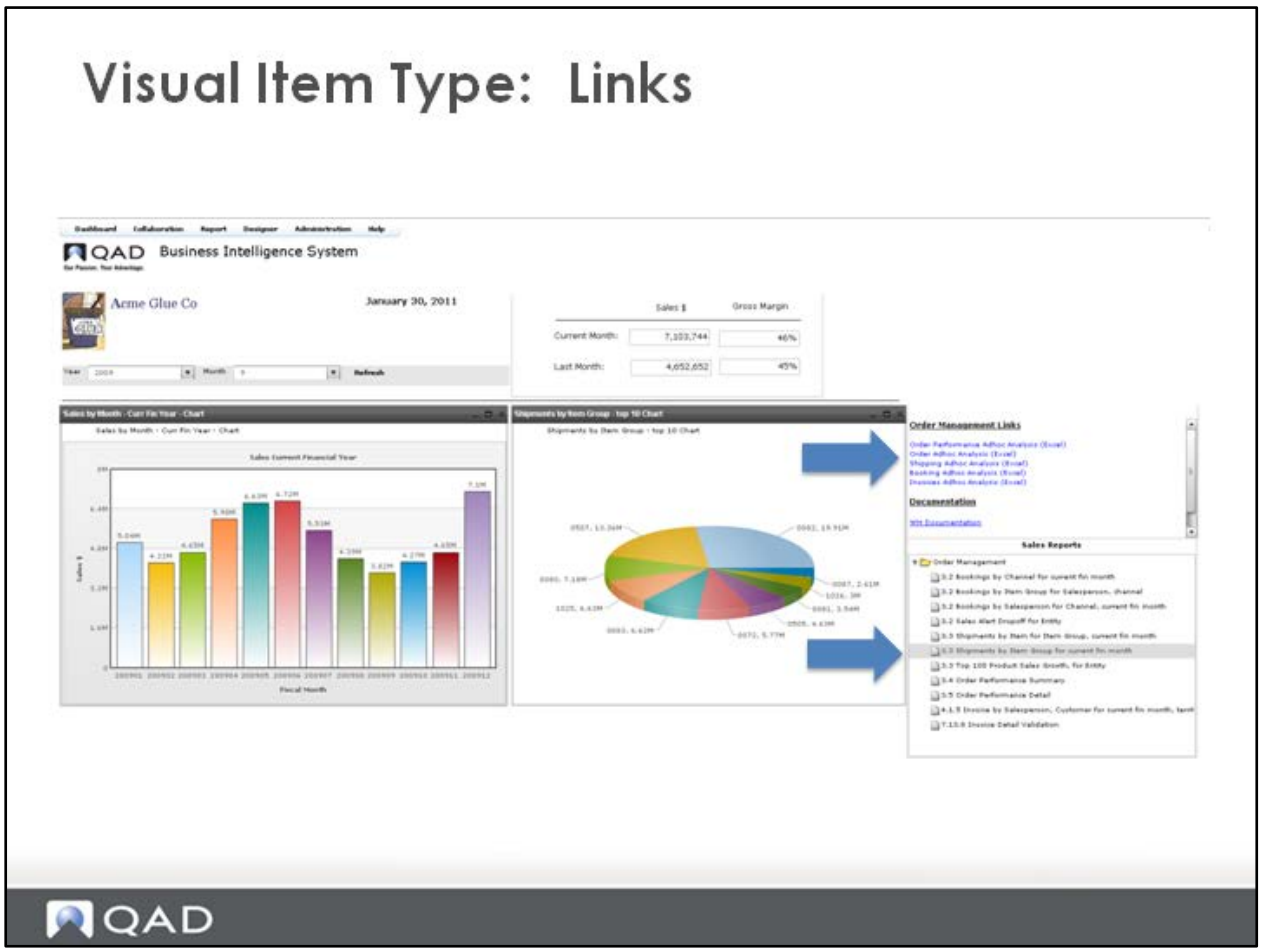
Free Form Visual Item



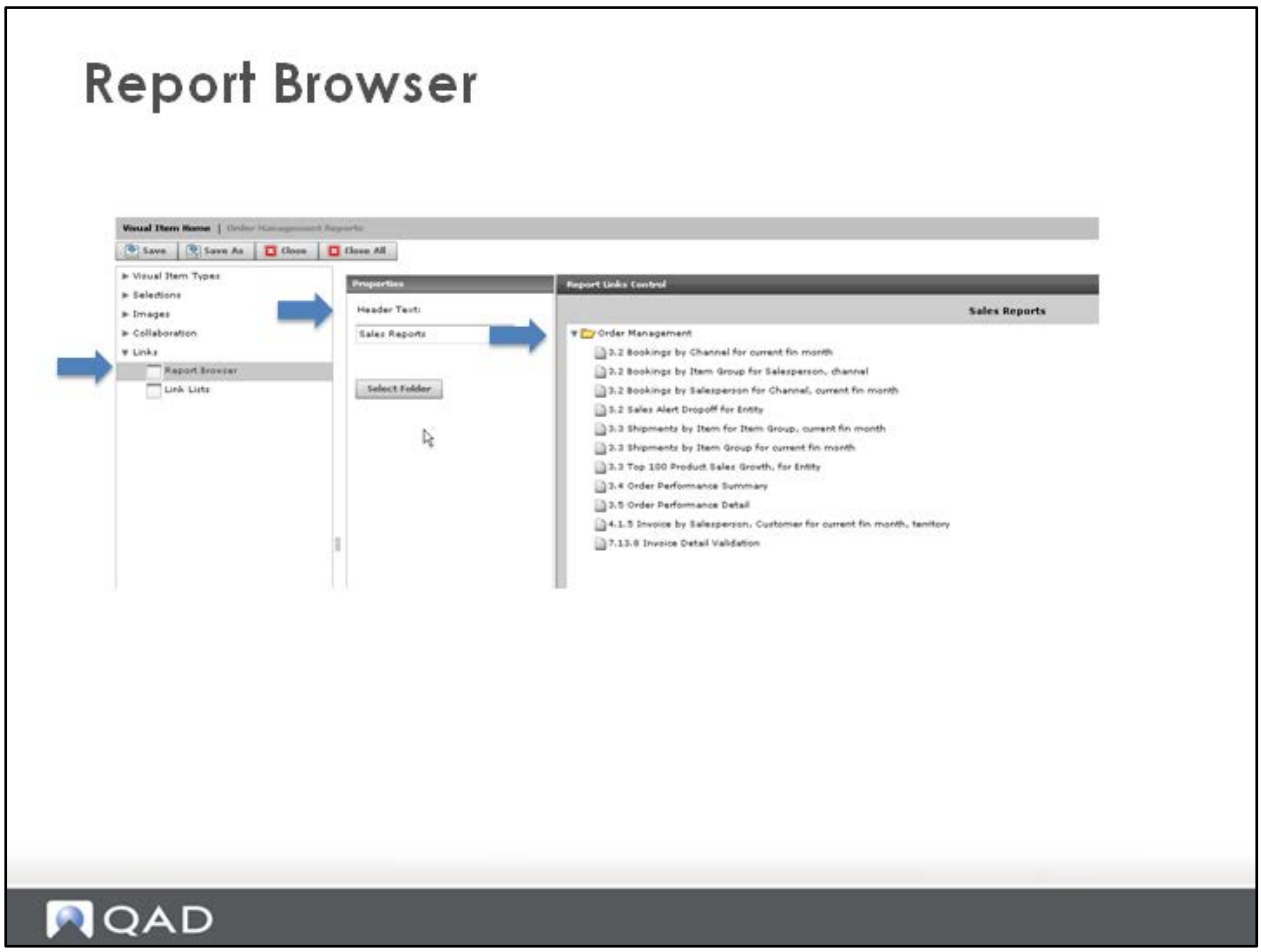
Visual Item types



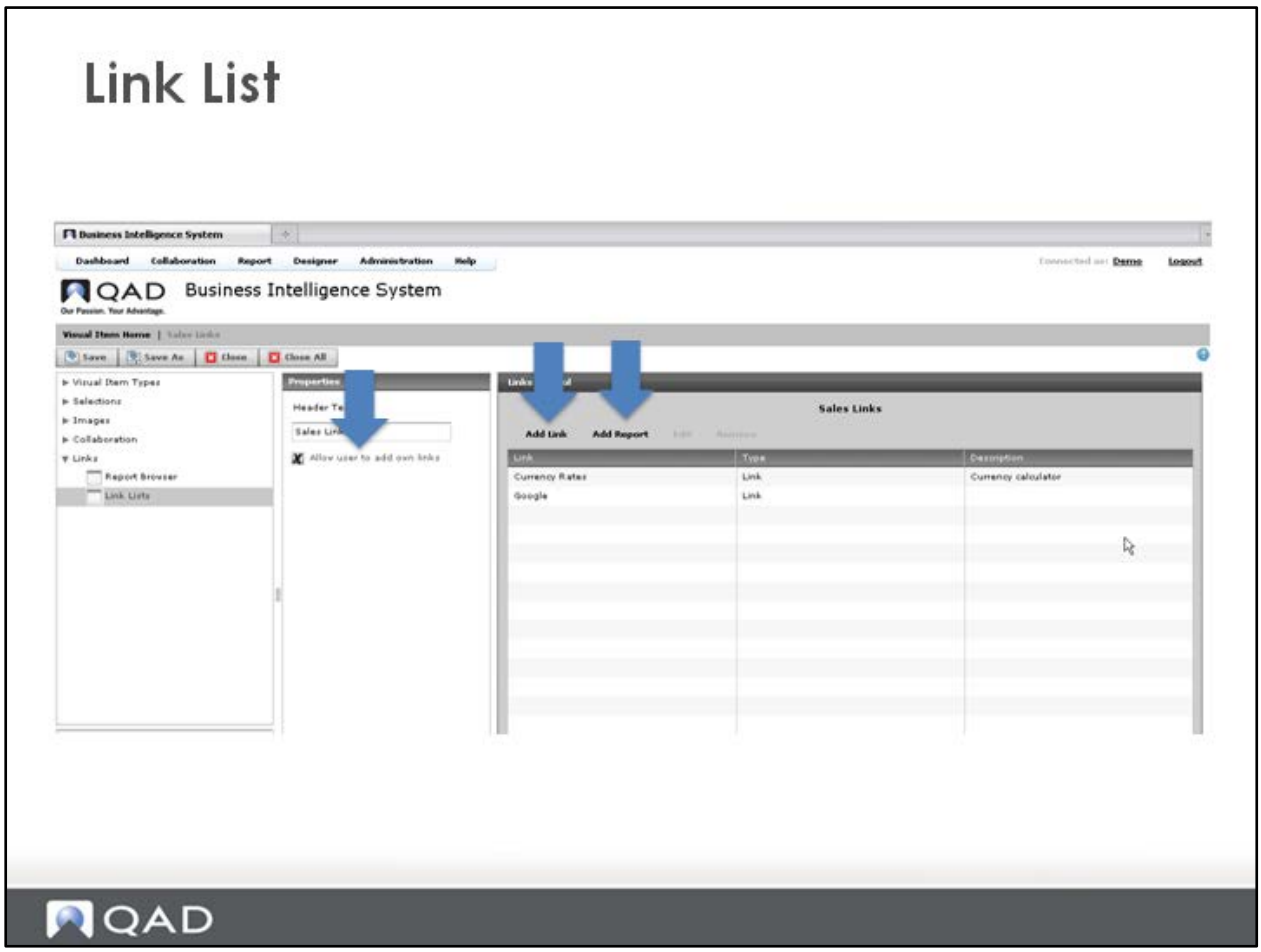
Visual Item Type: Links



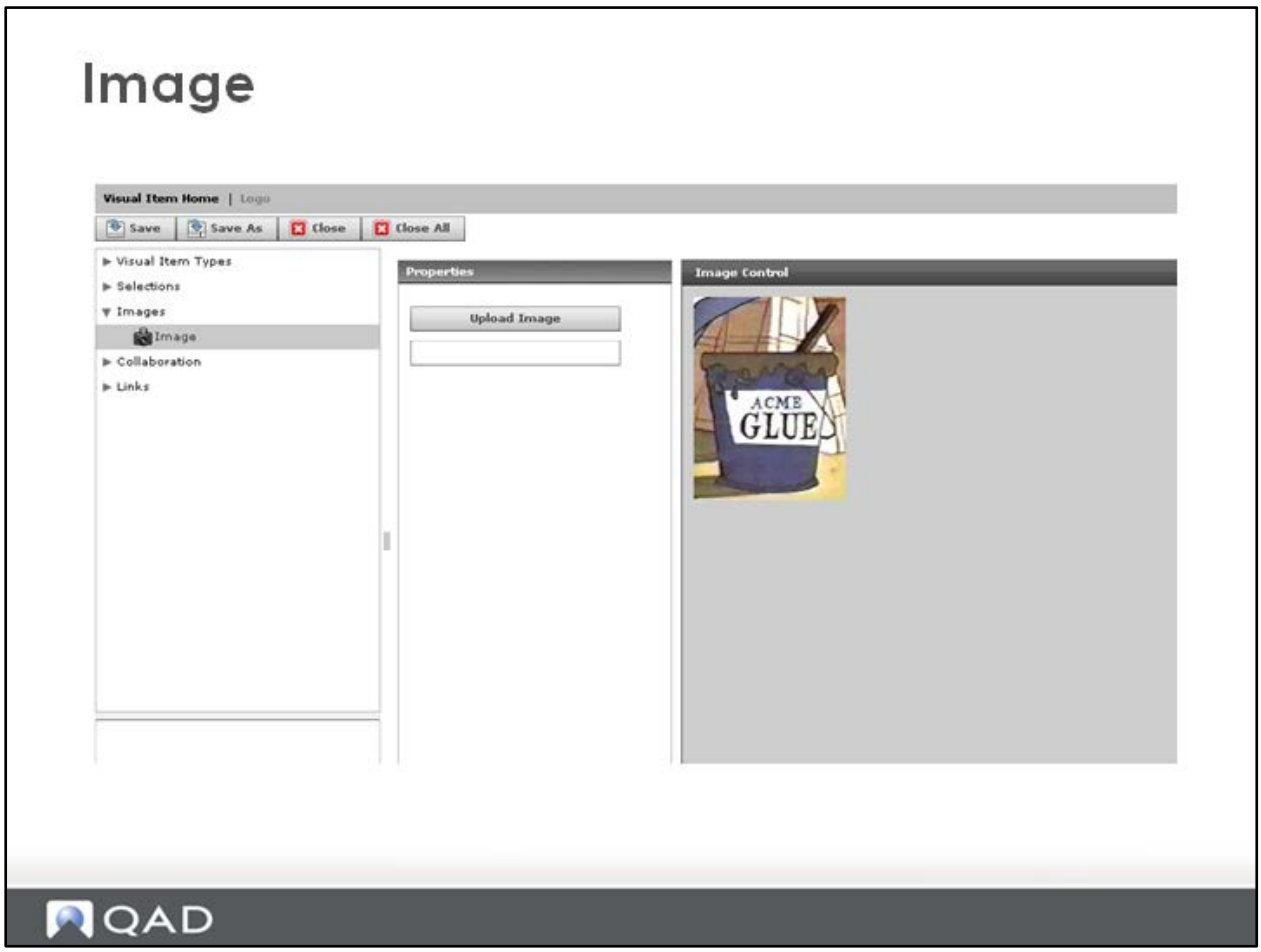
Report Browser



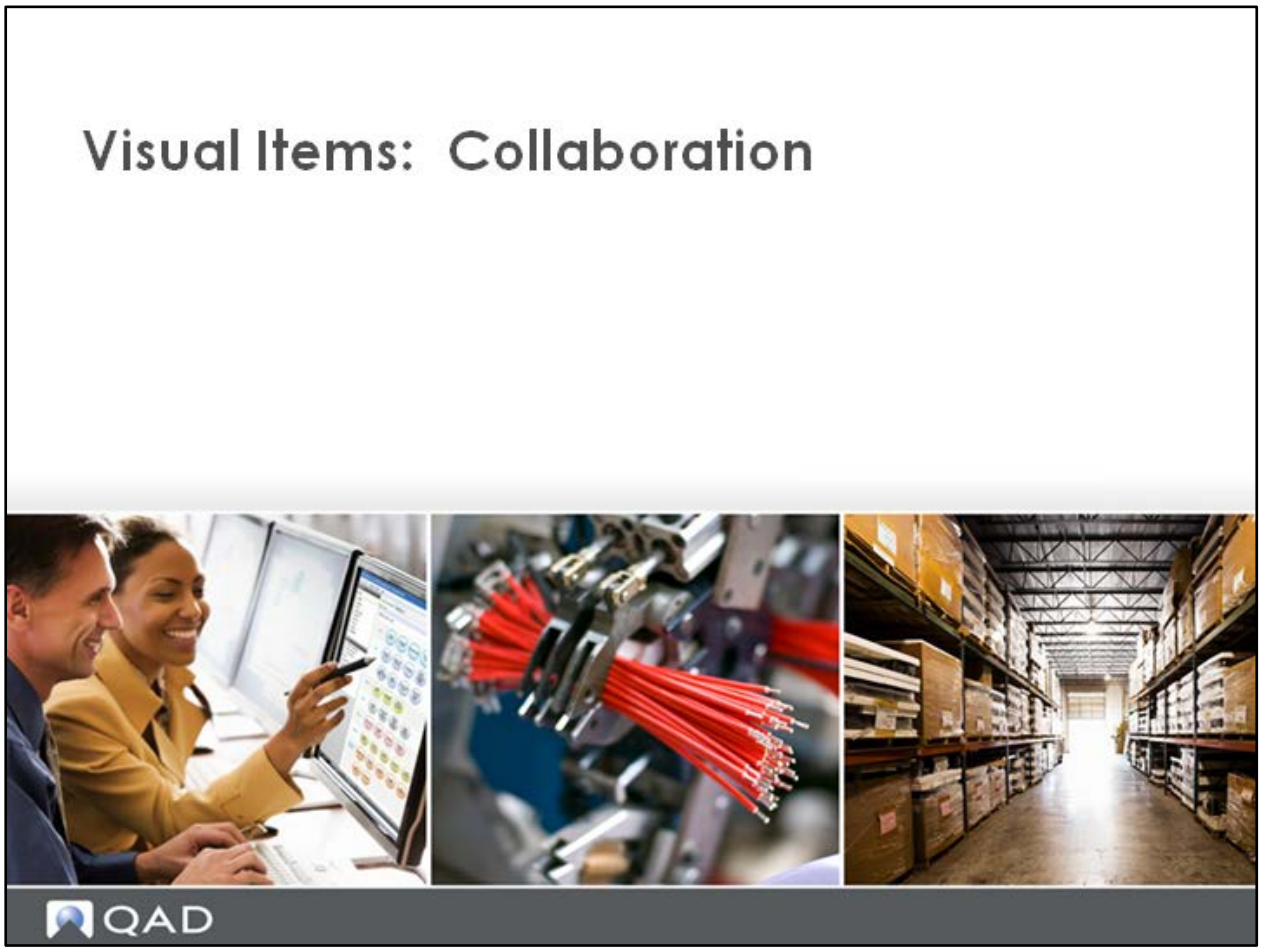
Link List


Link List
Business Intelligence System
Dashboard
Collaboration
Report
Designer
Administration
Help
QAD Business Intelligence System
Save
Save As
Close
Close All
Visual Item Types
Selections
Images
Collaboration
Links
Report Browser
Link Lists
Allow user to add own links
Sales Links
Add Link
Add Report
Link
Type
Description
Currency Rates
Link
Currency calculator
Google
Link
QAD

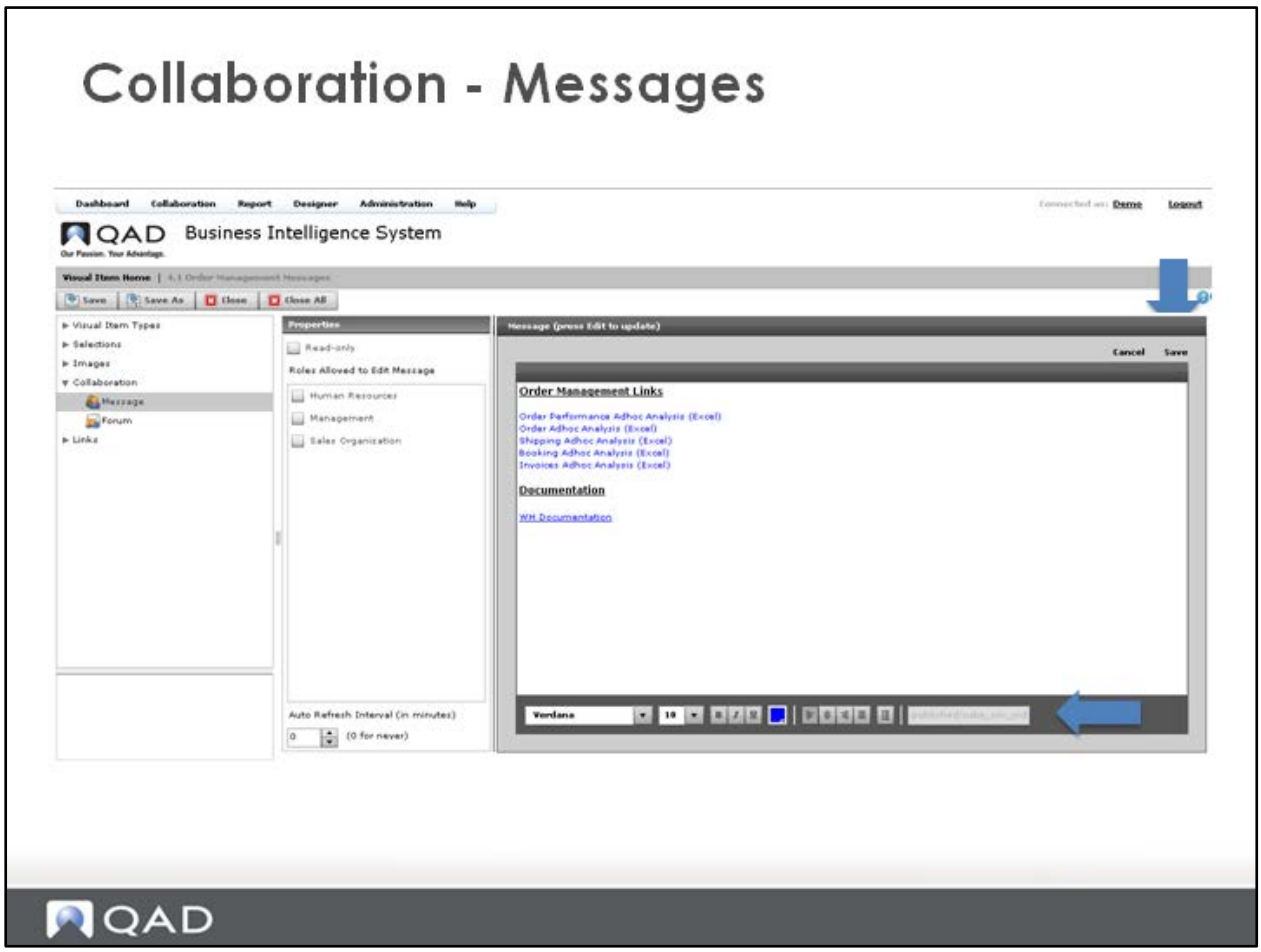
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Save As
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Images
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Collaboration
Links
Properties
Upload Image
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ACME
GLUE
QAD

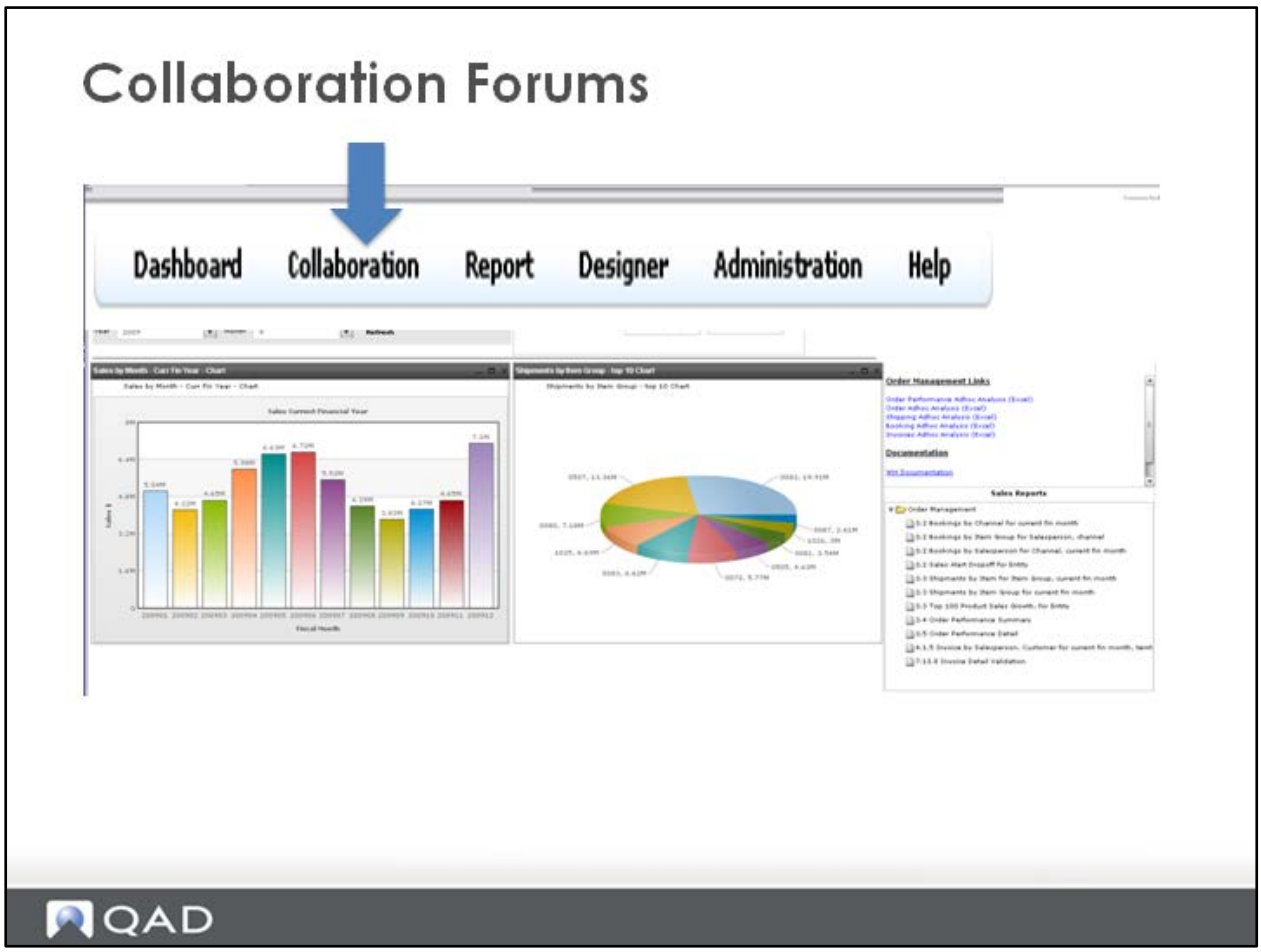
Visual Items: Collaboration



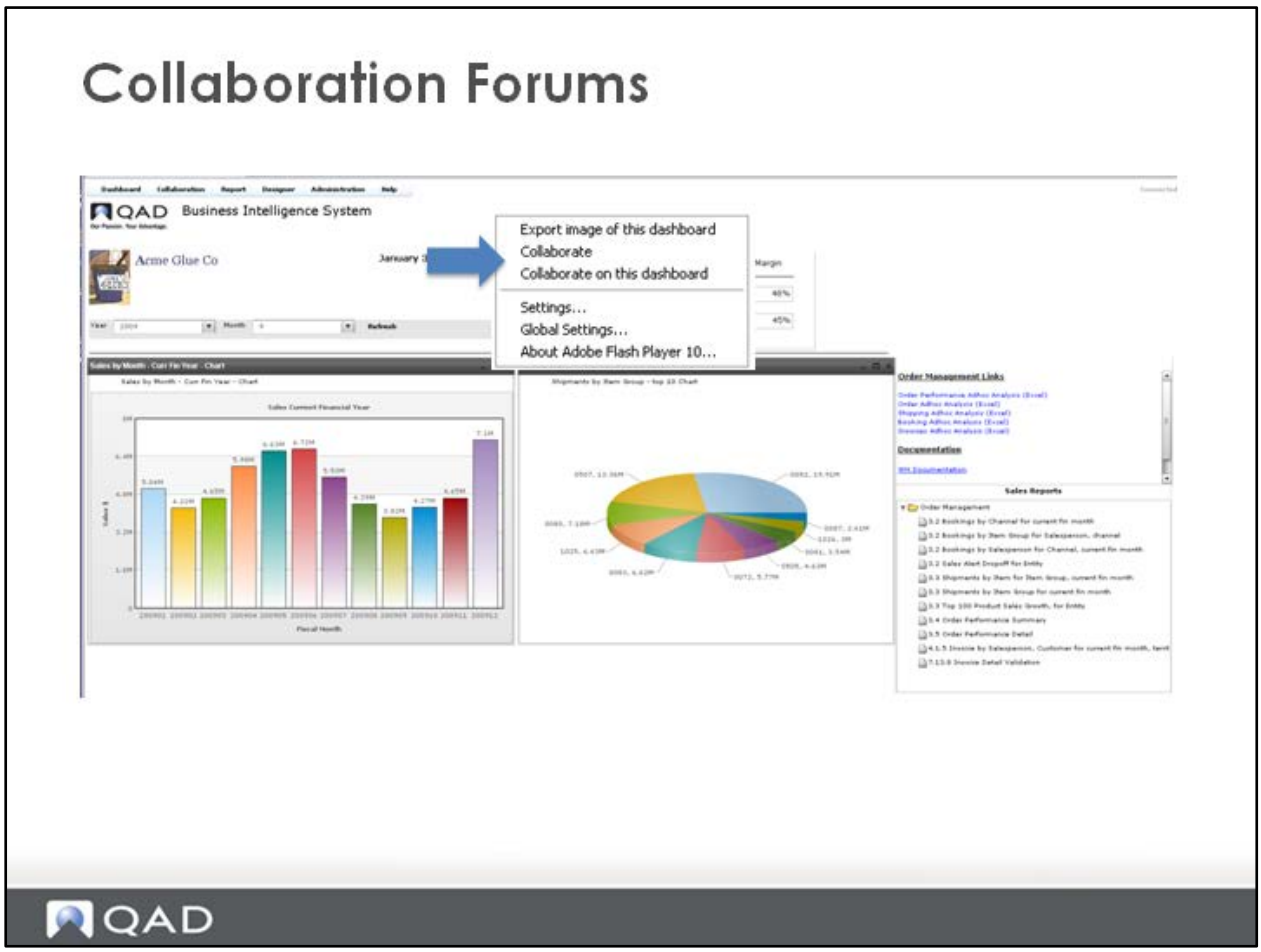
Collaboration - Messages



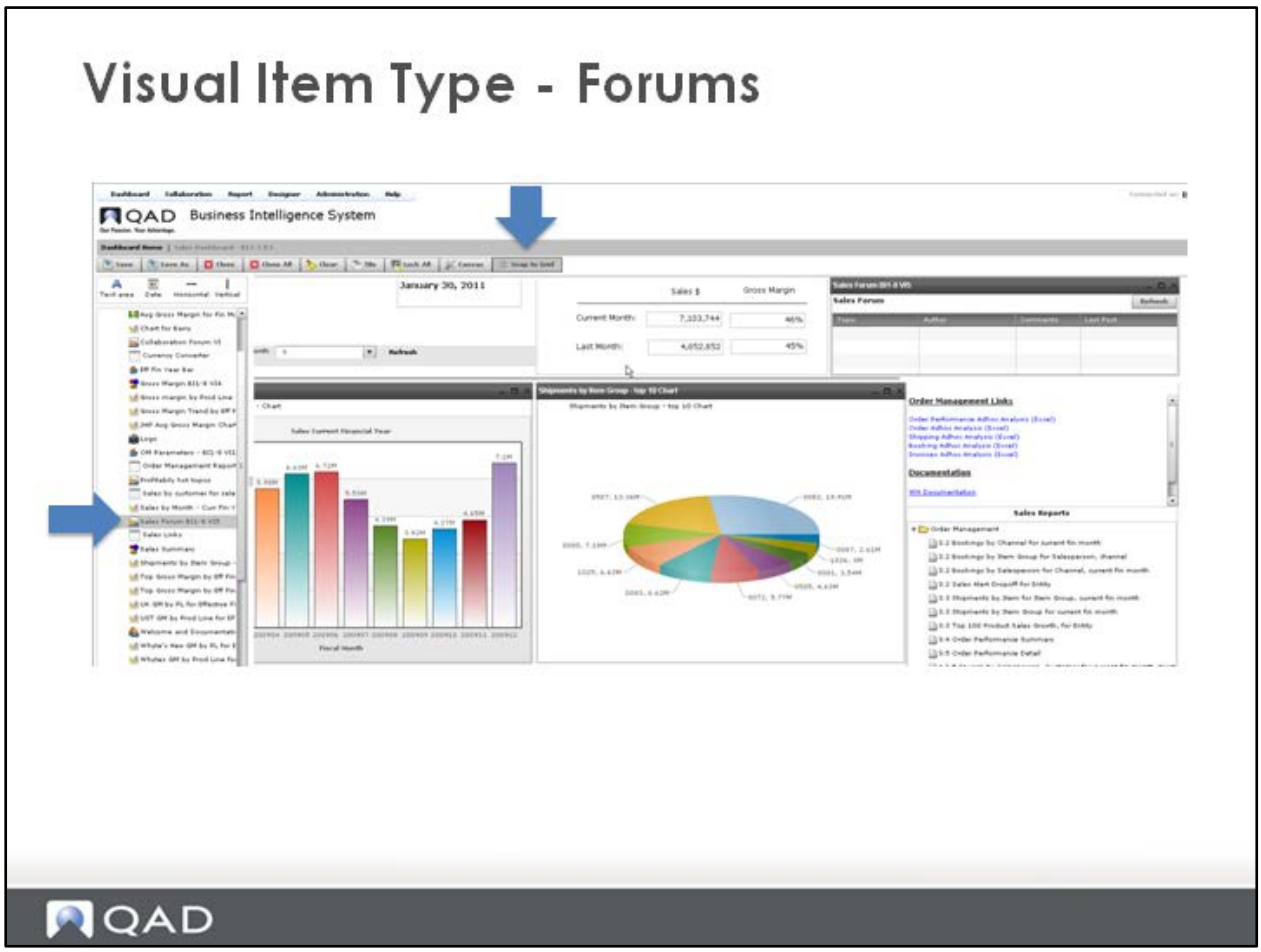
Collaboration Forums



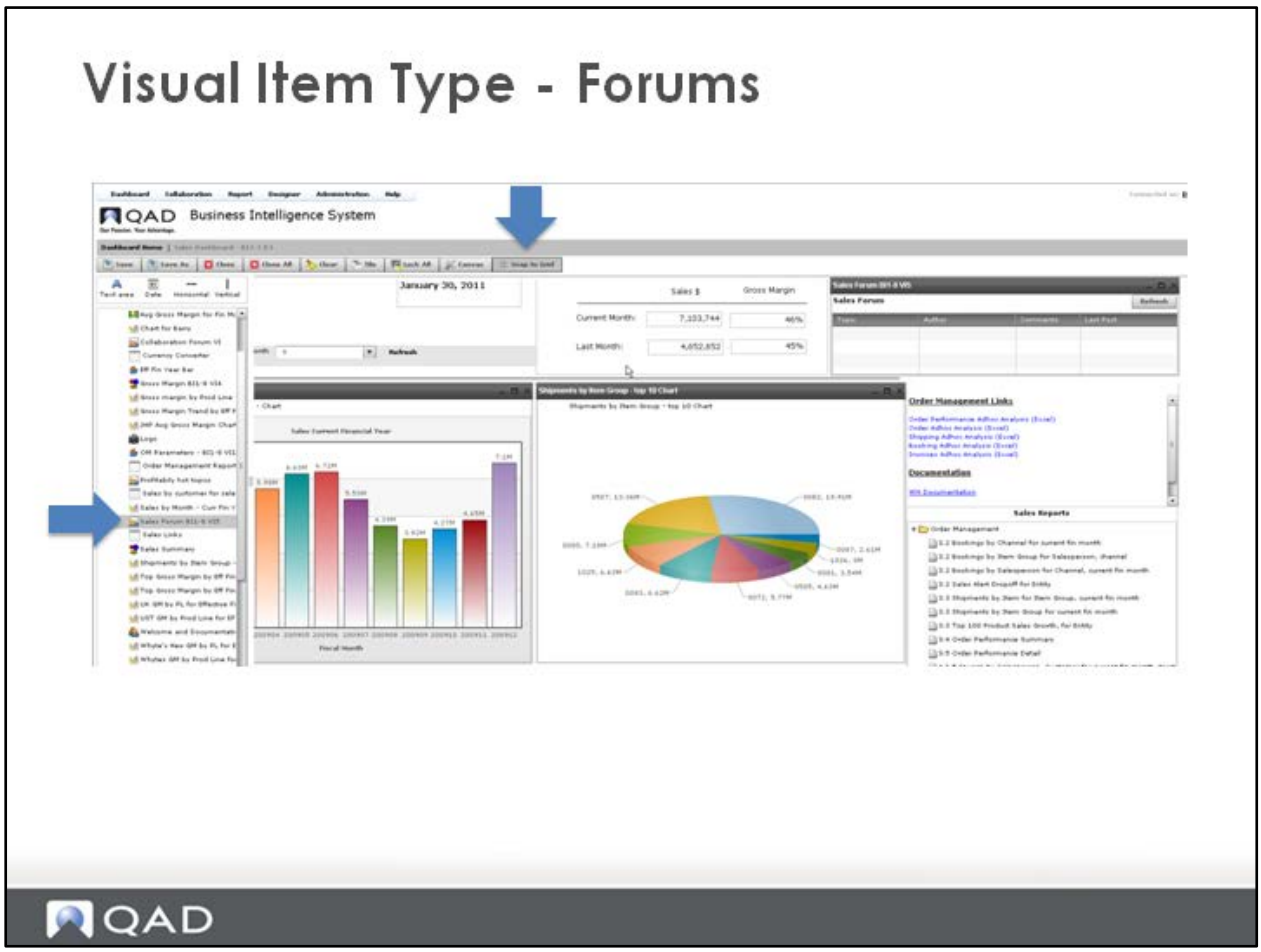
Collaboration Forums



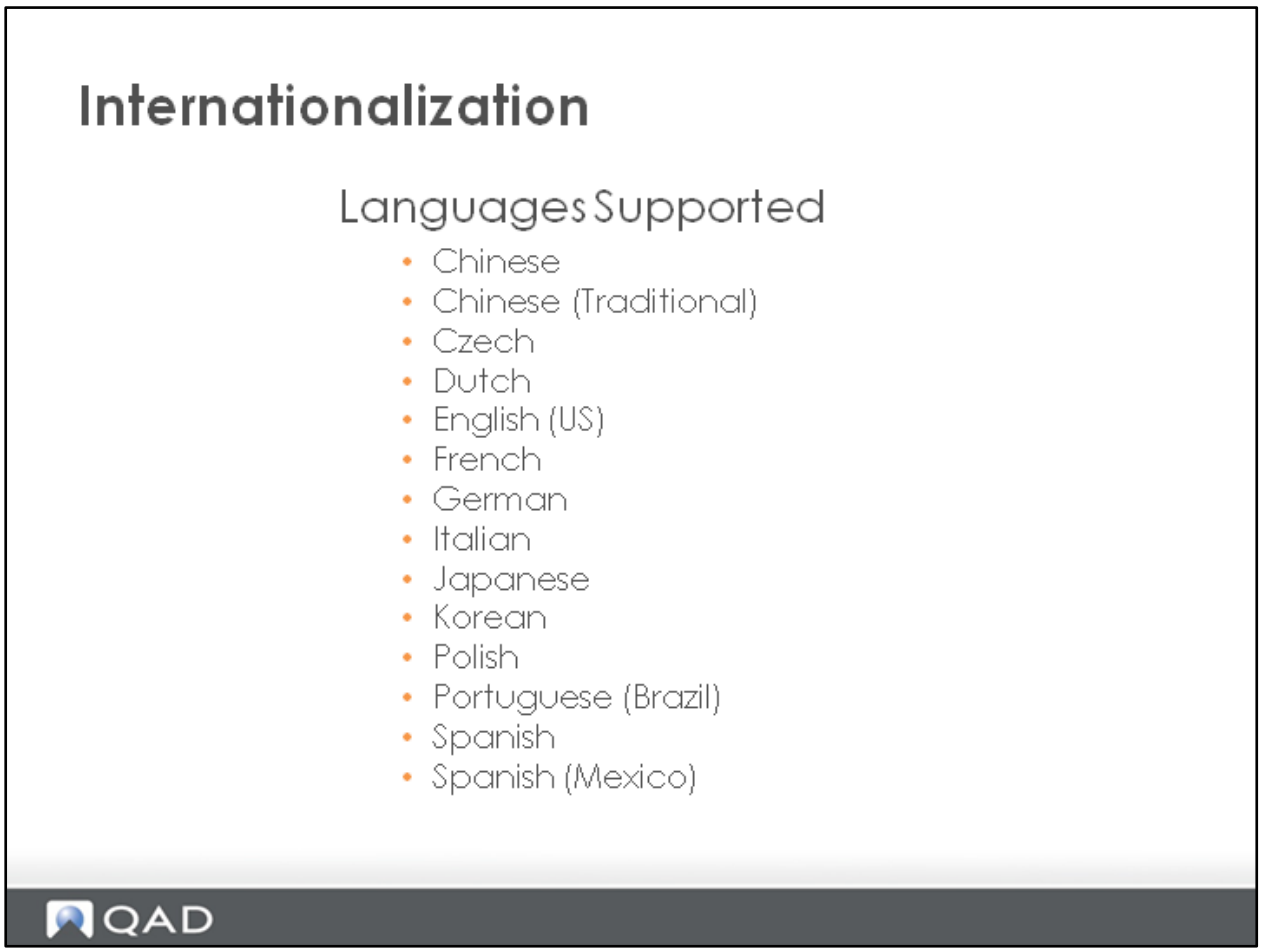
Visual Item Type - Forums



Visual Item Type - Forums

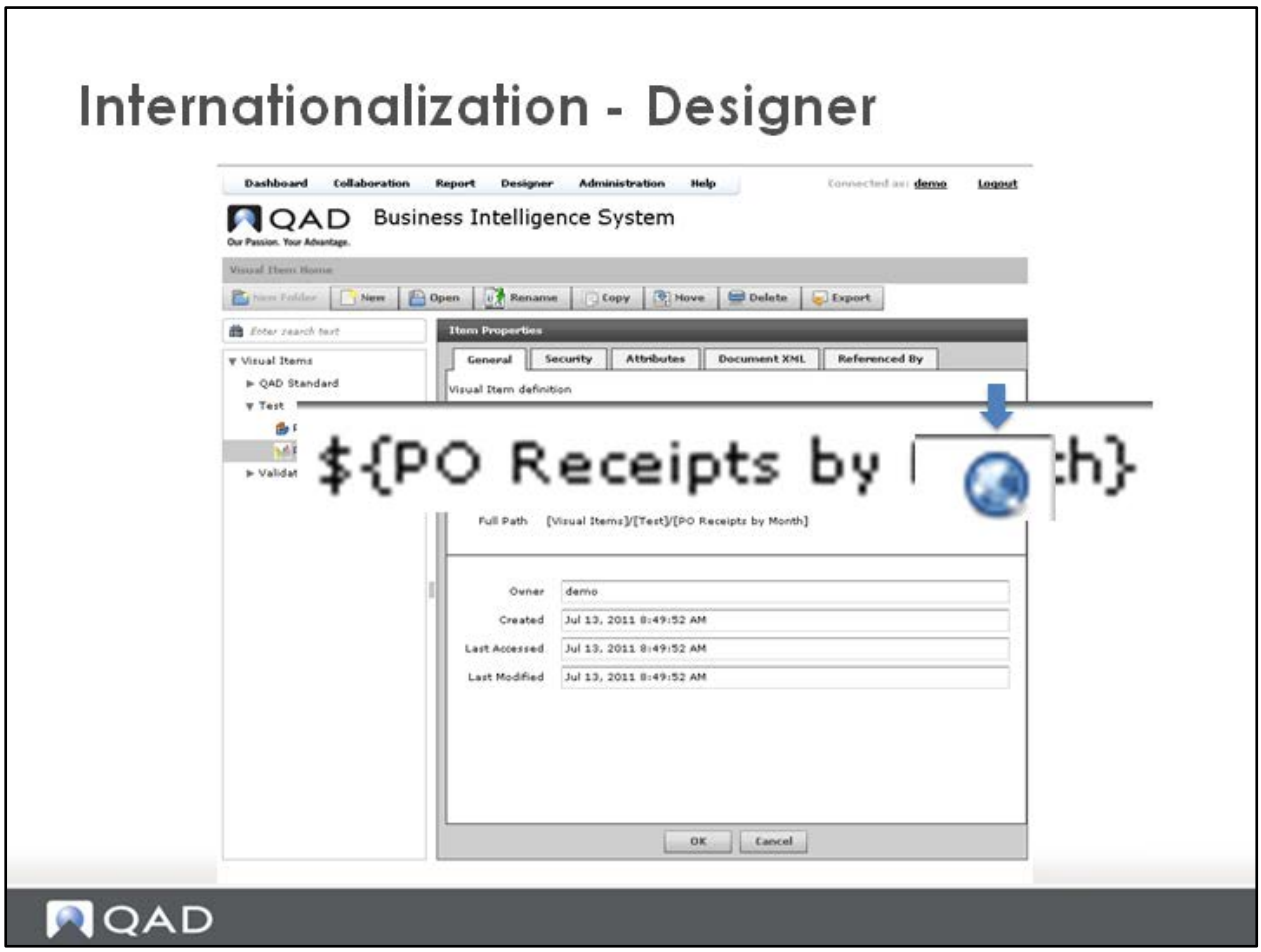


Internationalization



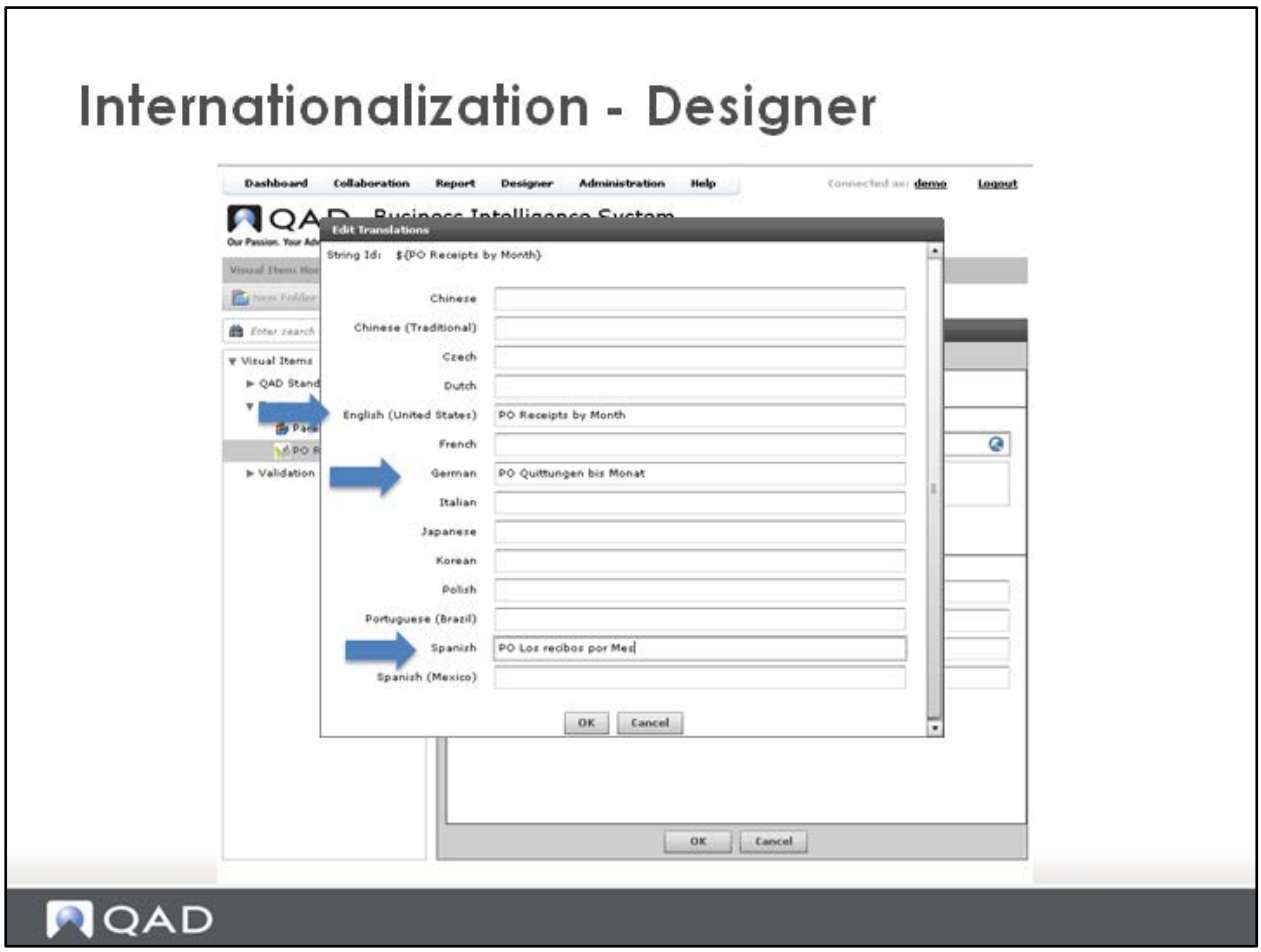
The system supports 14 different languages. Designers can add translations for object names.

Internationalization - Designer



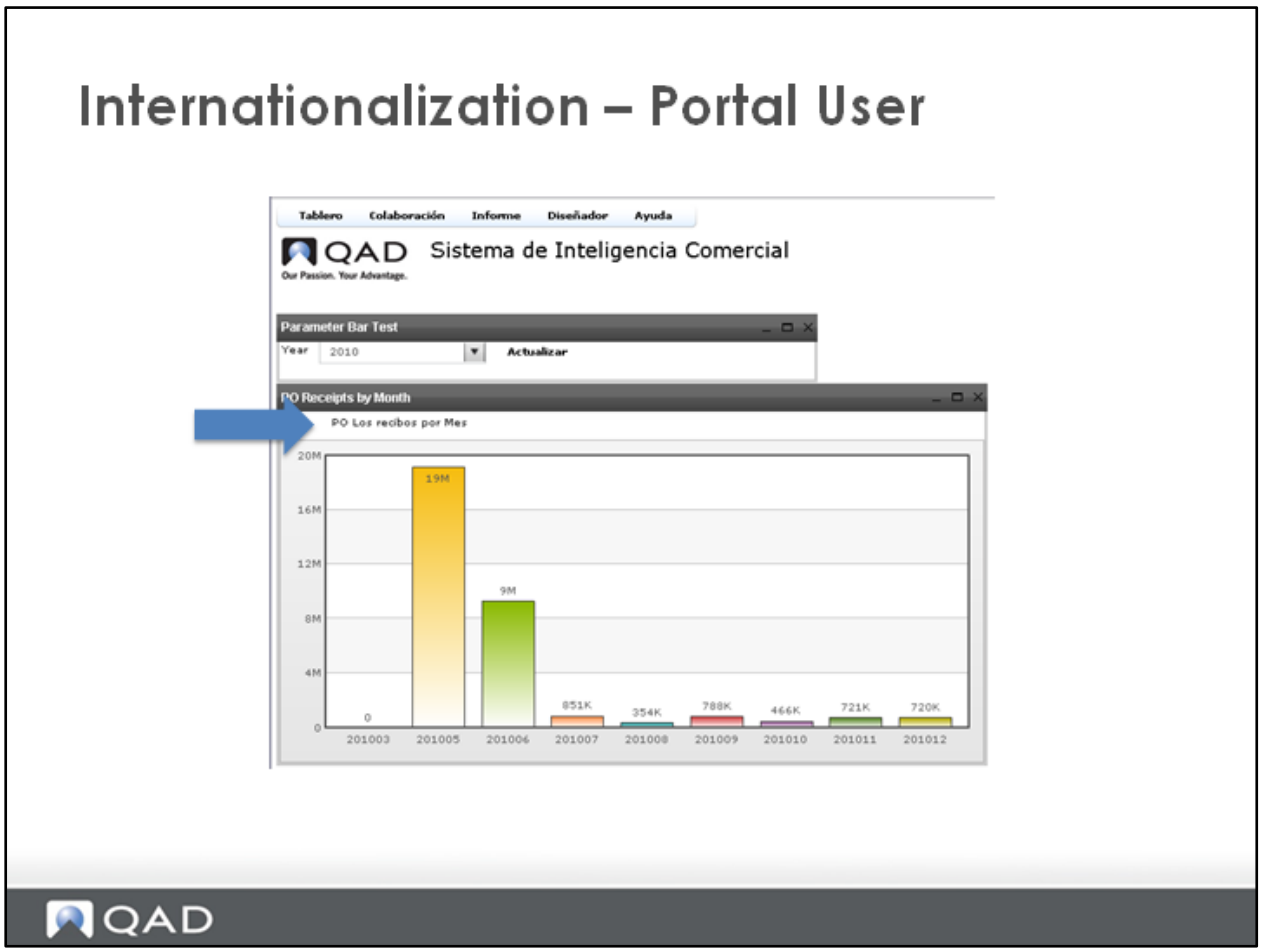
The system supports 14 different languages. Designers can add translations for object names.

Internationalization - Designer



The system supports 14 different languages. Designers can add translations for object names.

Internationalization – Portal User

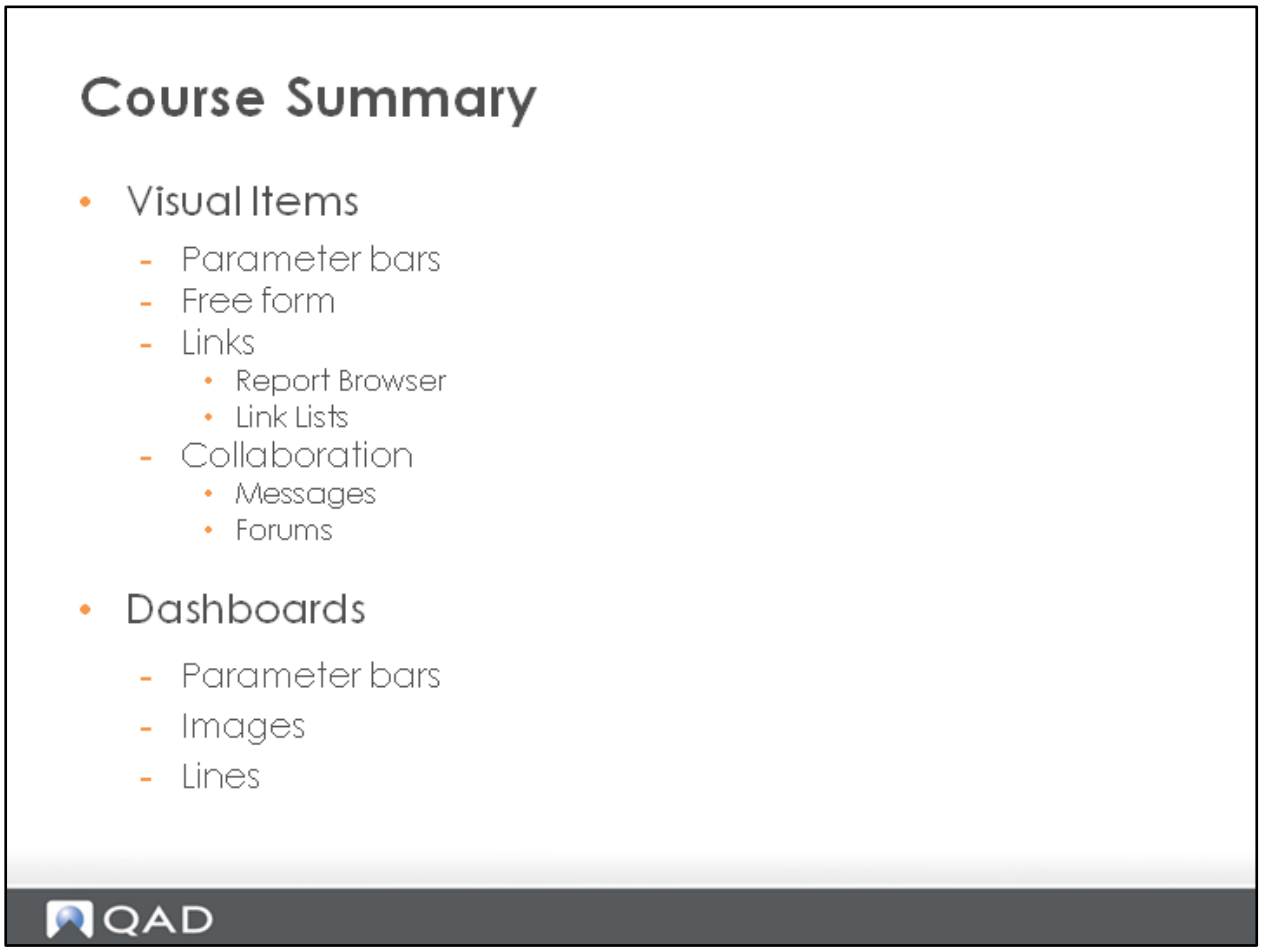


The system supports 14 different languages. Designers can add translations for object names.

BI Portal Designer – Visual Items and Dashboards – Part 2 – Course Review



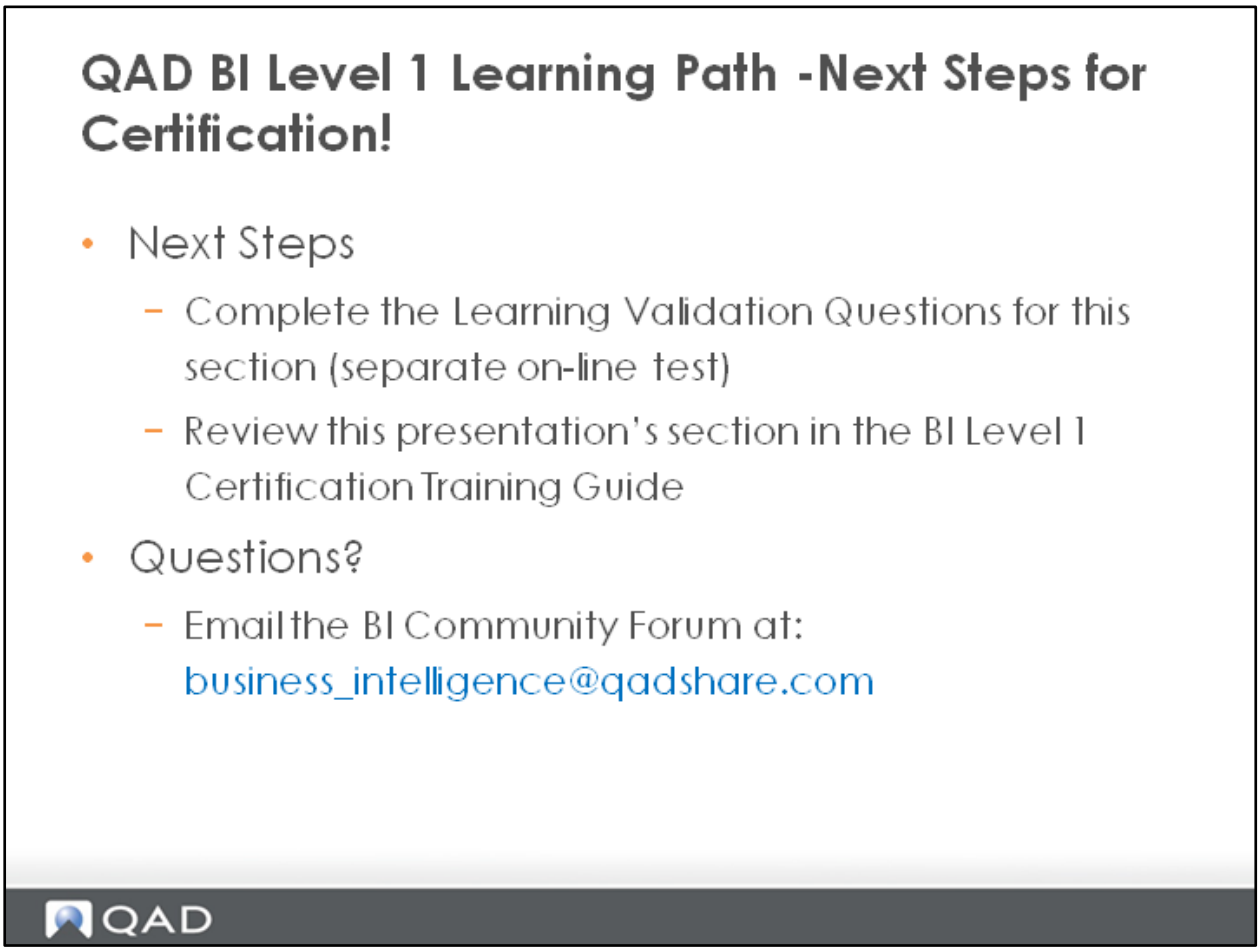
Course Summary



Dashboards are the primary user interface for the BI Portal. Customers at all levels of the organization will access dashboards.

Visual Items are the components of dashboards.

QAD BI Level 1 Learning Path -Next Steps for Certification!



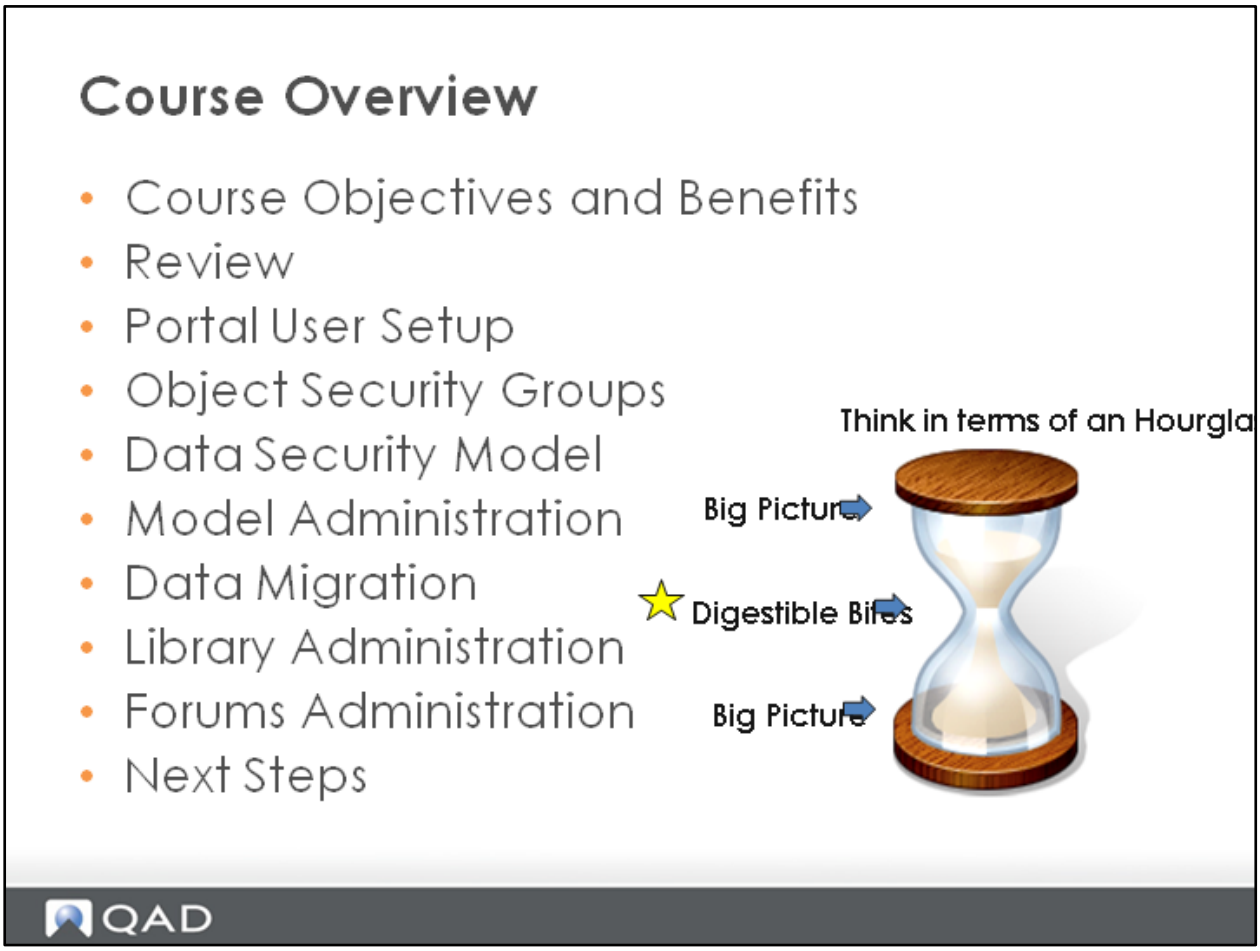
CHAPTER 9

BI Portal Administration

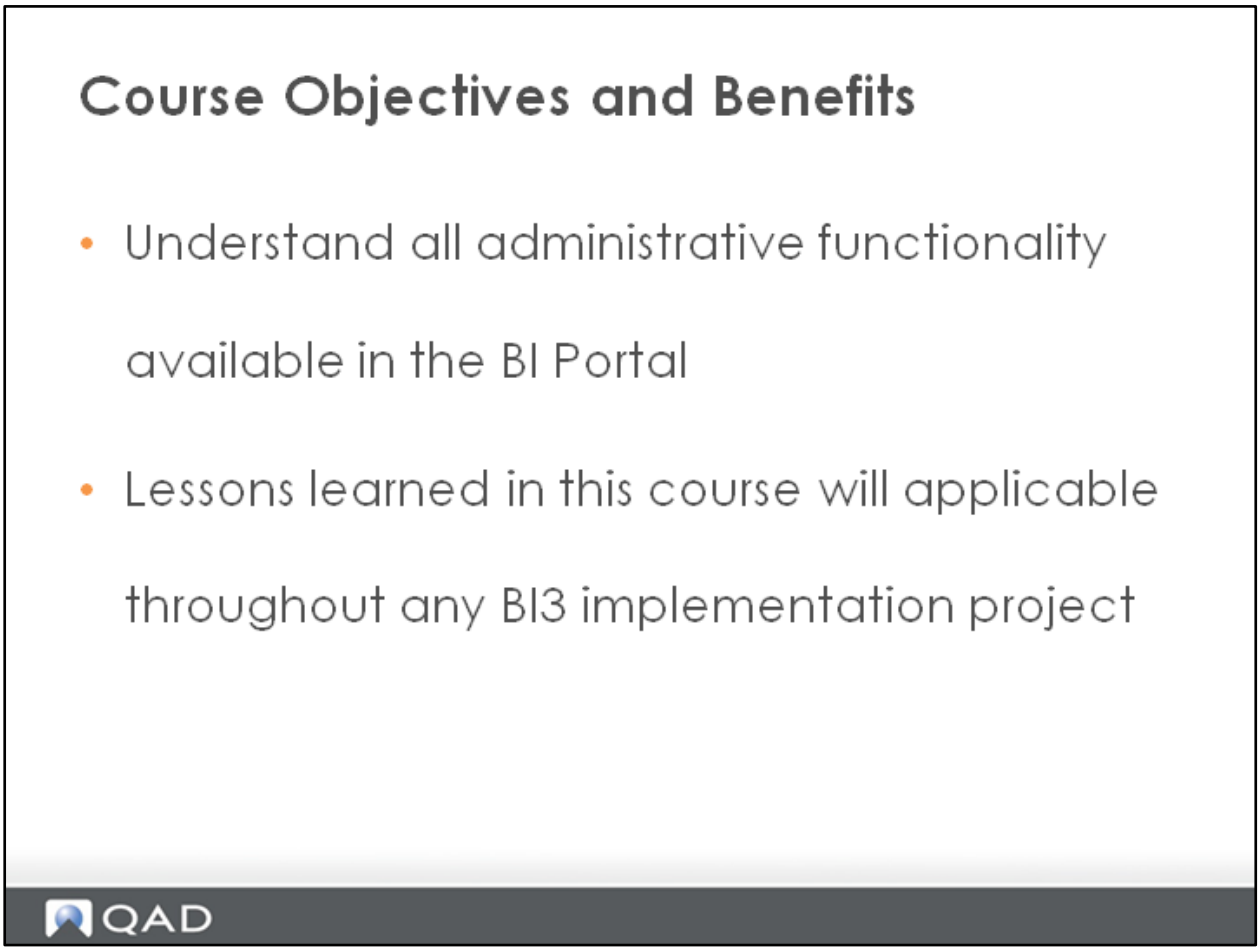
BI Portal Administration



Course Overview



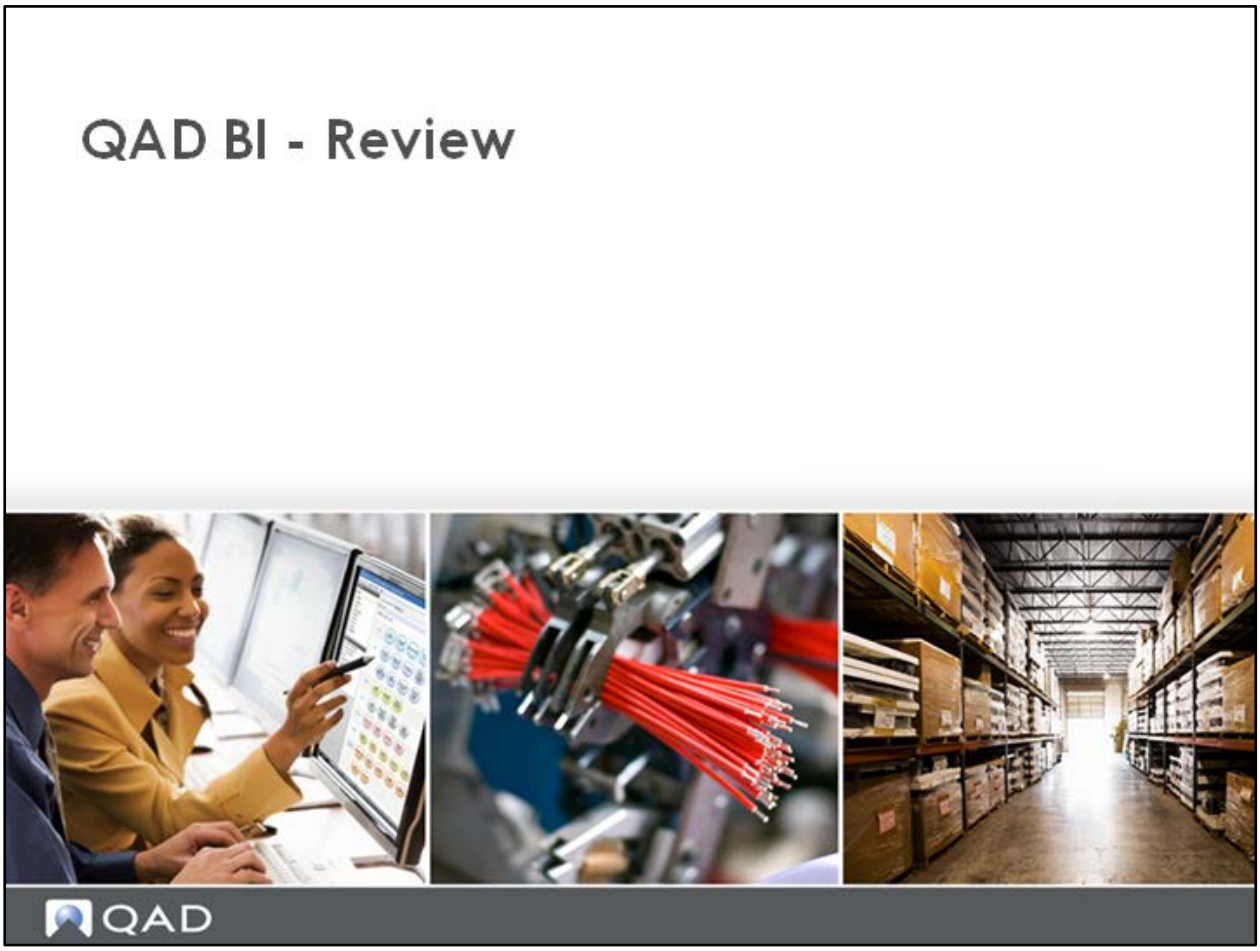
Course Objectives and Benefits



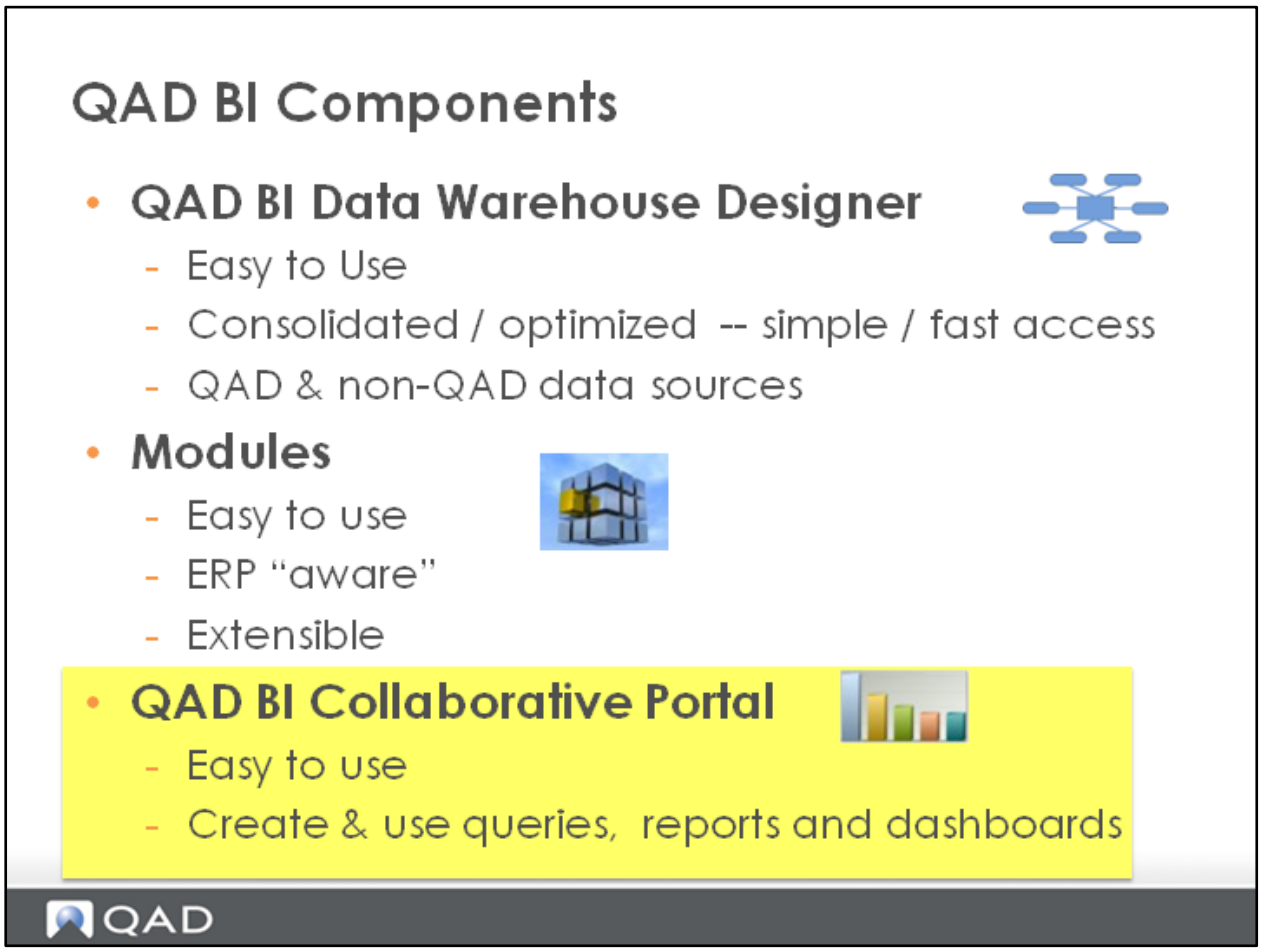
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QAD BI - Review



QAD BI Components



Key Concept:

QAD BI Components:

QAD BI Data Warehouse Developer (DWD)

Consolidate into a single warehouse optimized for simple, fast access

QAD and non-QAD data sources

Modules

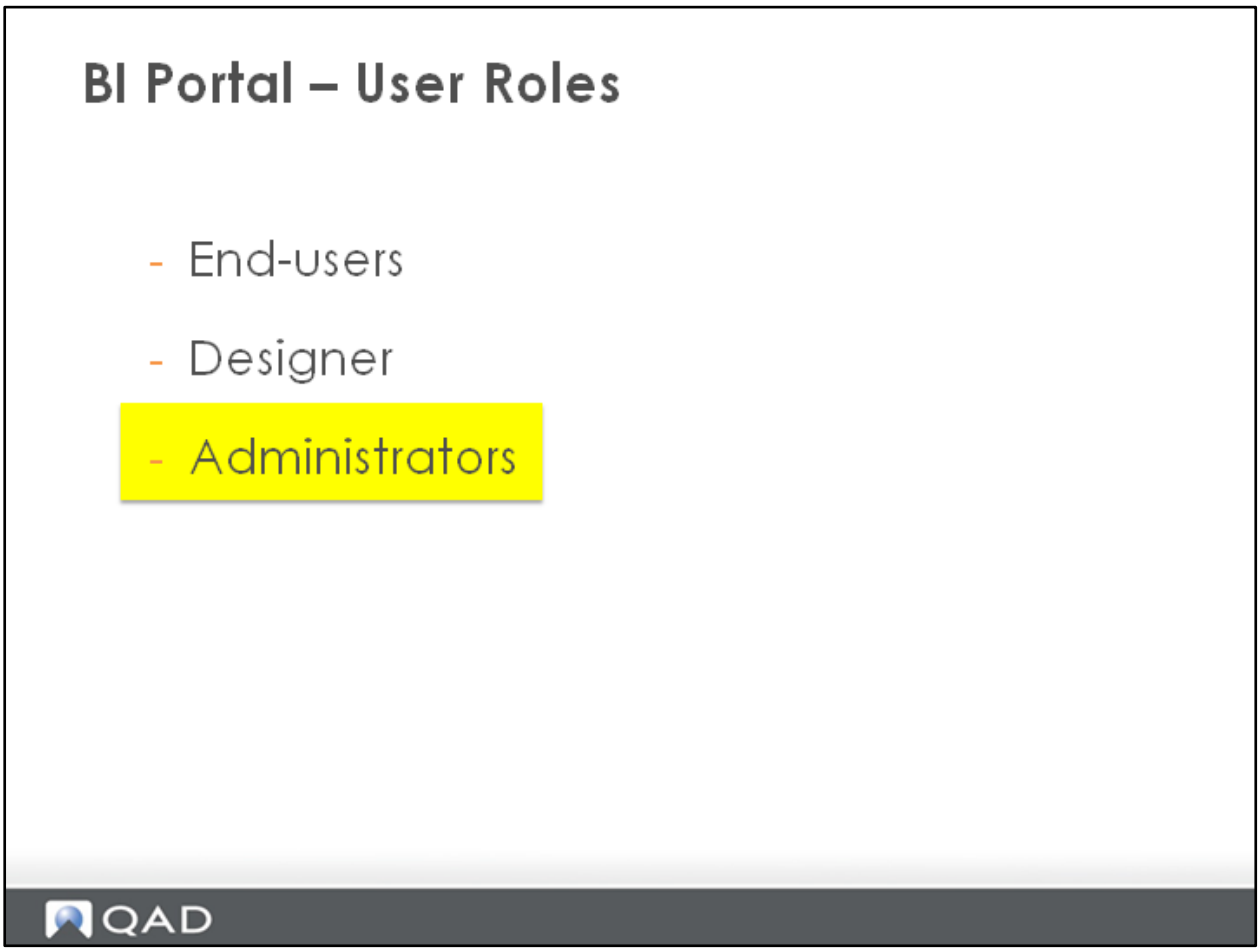
ERP "aware" streamlines access to current and historical QAD ERP data

Extensible to support non-QAD data sources

QAD BI Collaborative Portal

Easy to use and create dashboard and reporting environment

BI Portal – User Roles

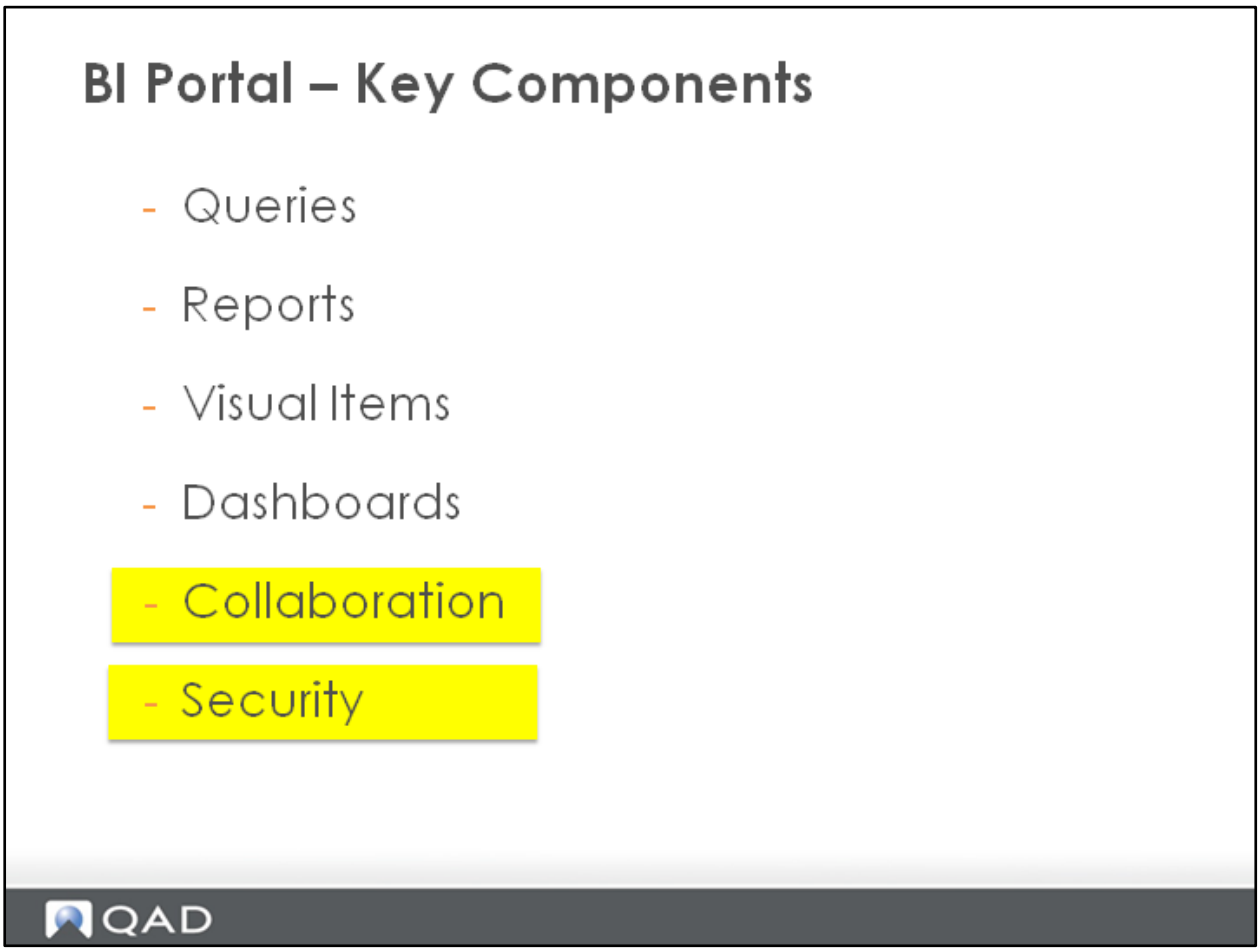


Users will experience the BI Portal based on their role.

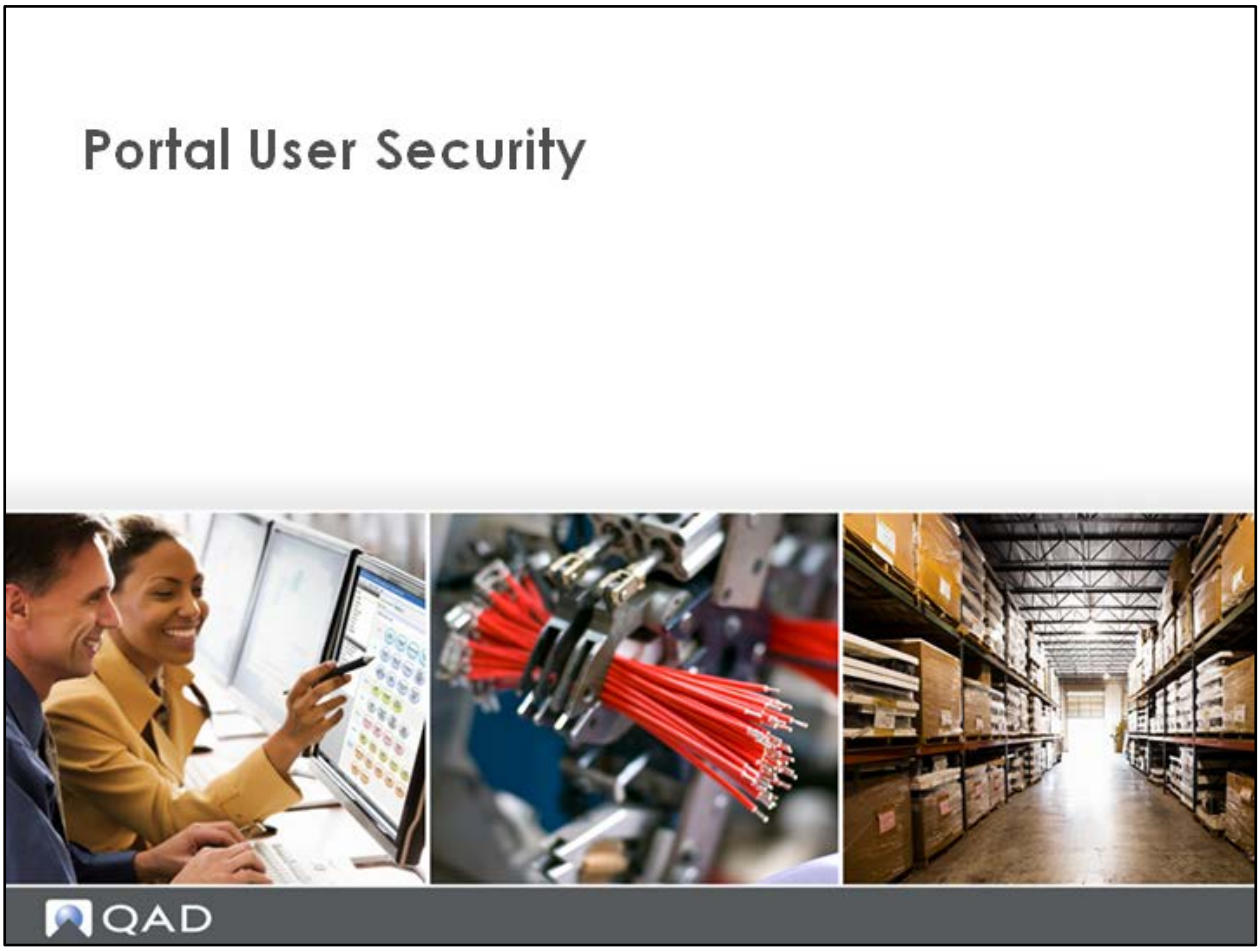
The BI Portal user roles are:

- End-user
- Designer
- Administrator

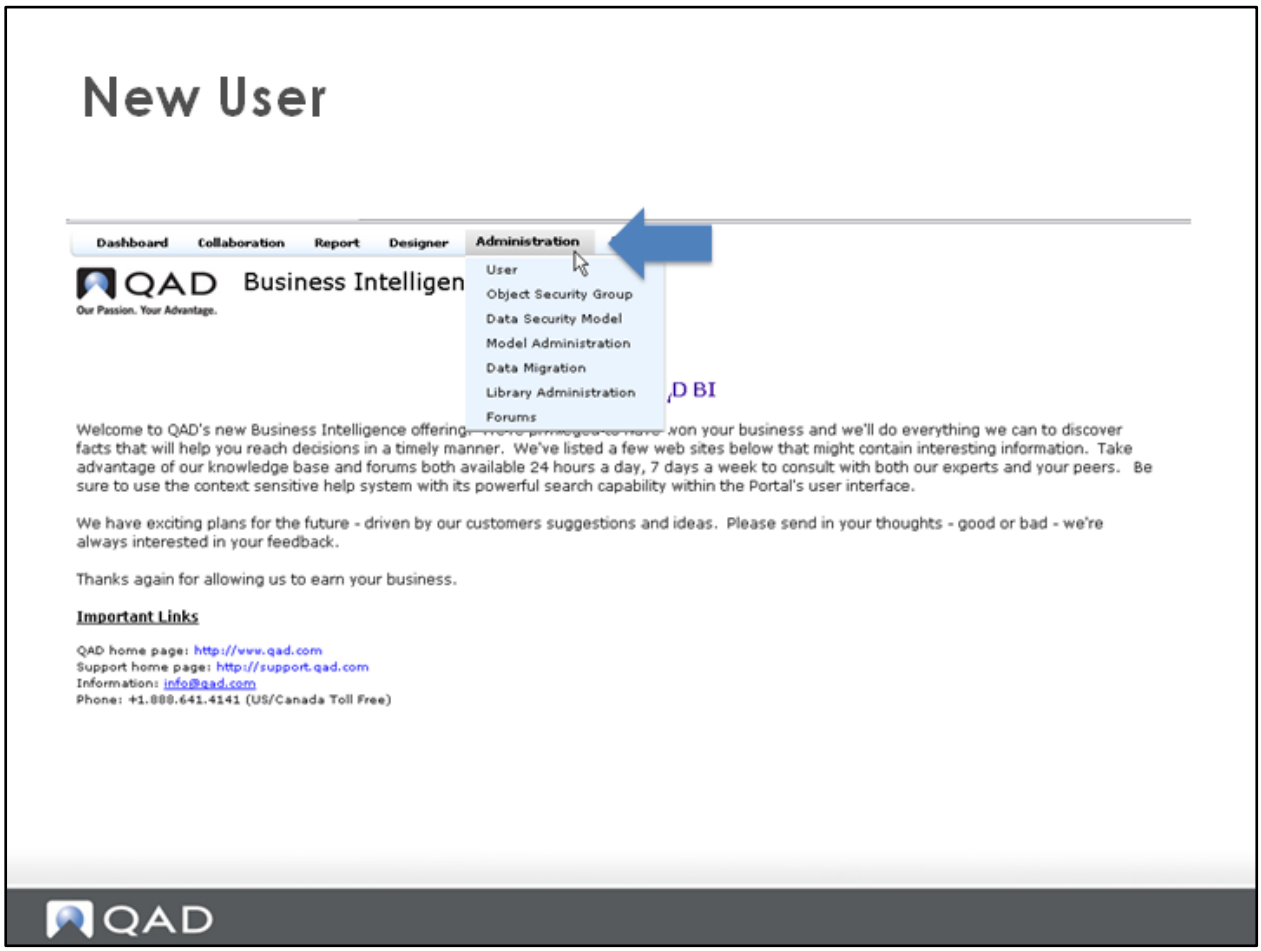
BI Portal – Key Components



Portal User Security



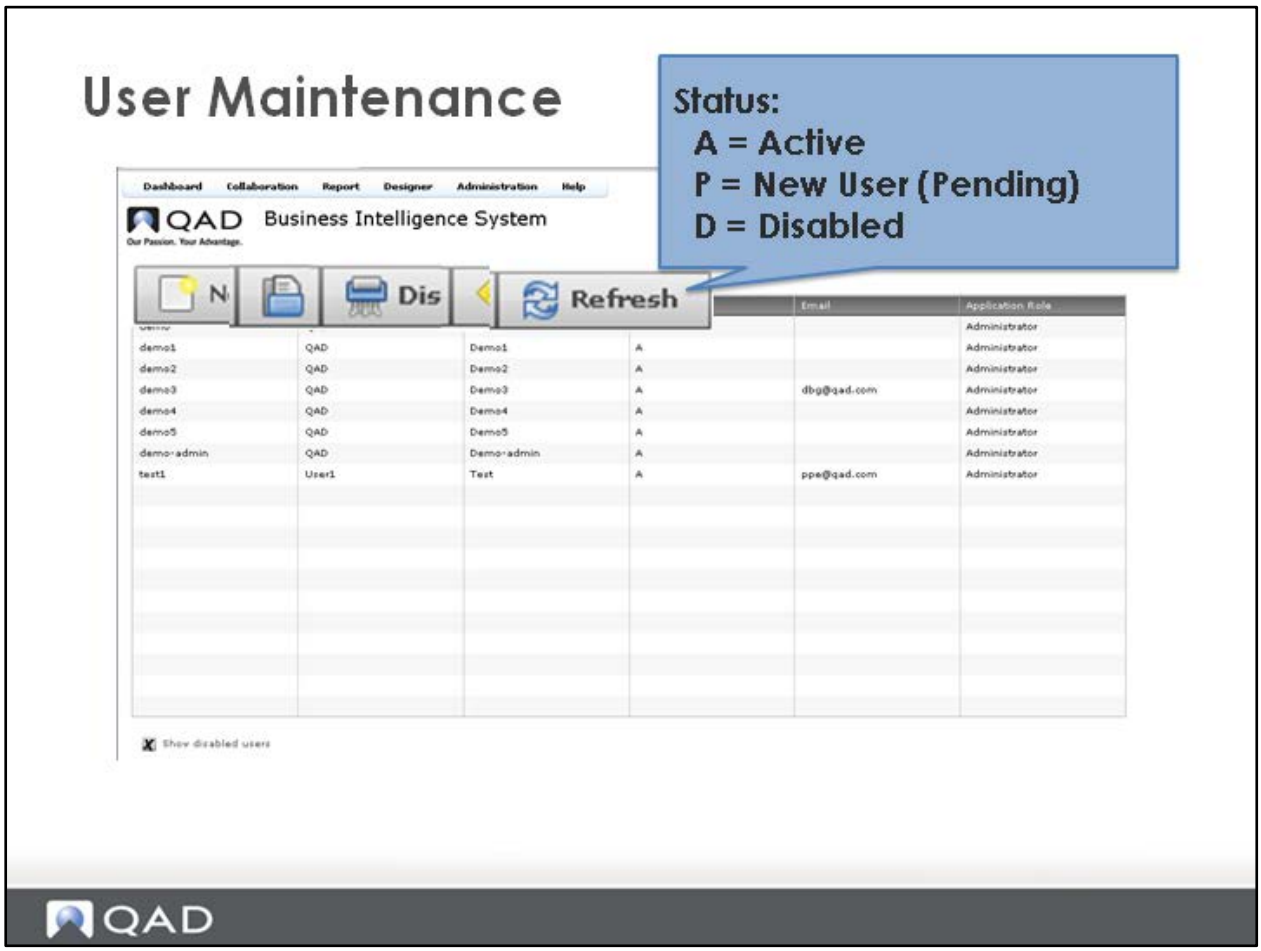
New User



Dashboards are the primary user interface for the BI Portal. Customers at all levels of the organization will access dashboards.

Visual Items are the components of dashboards.

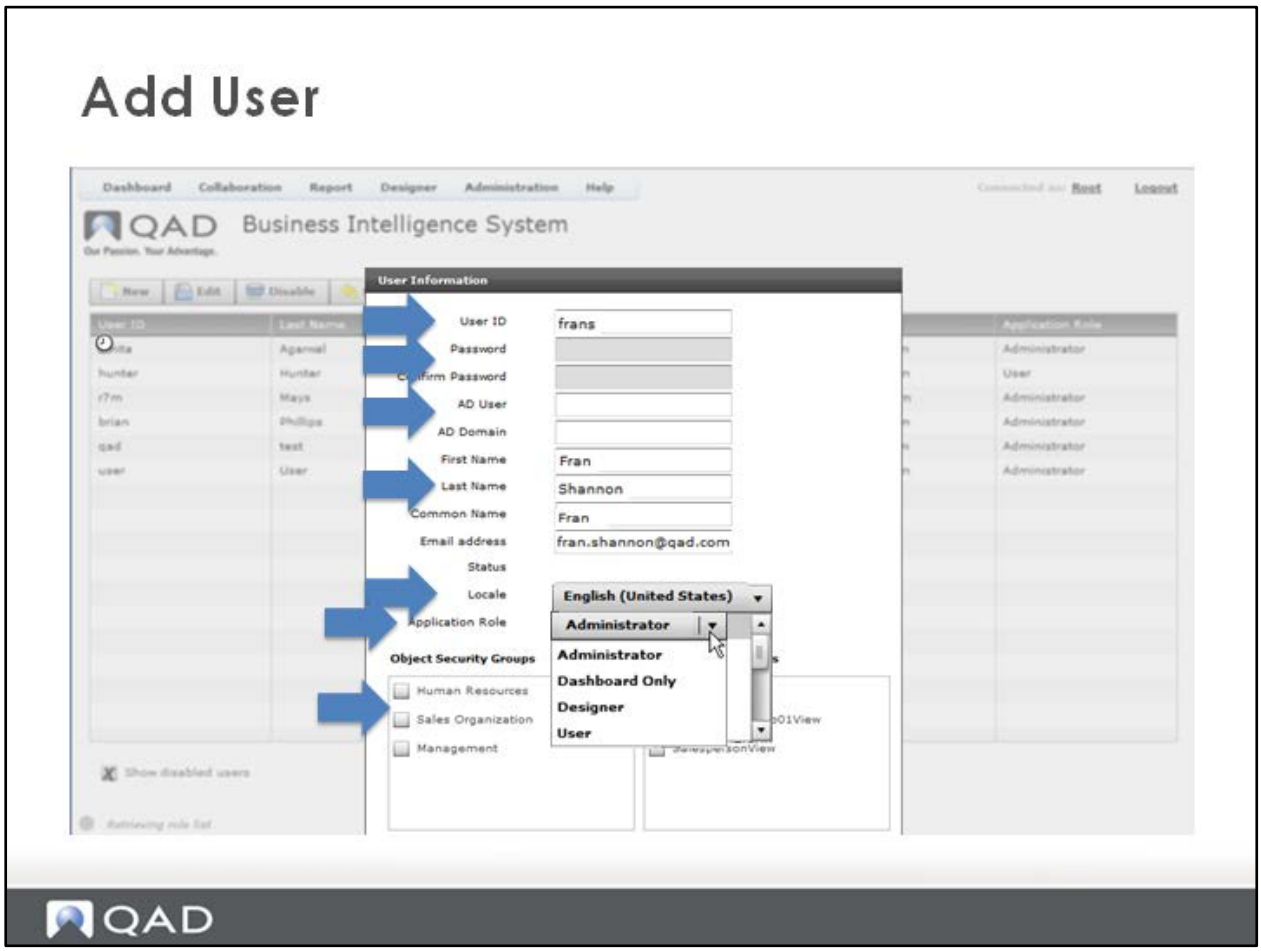
User Maintenance



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Add User



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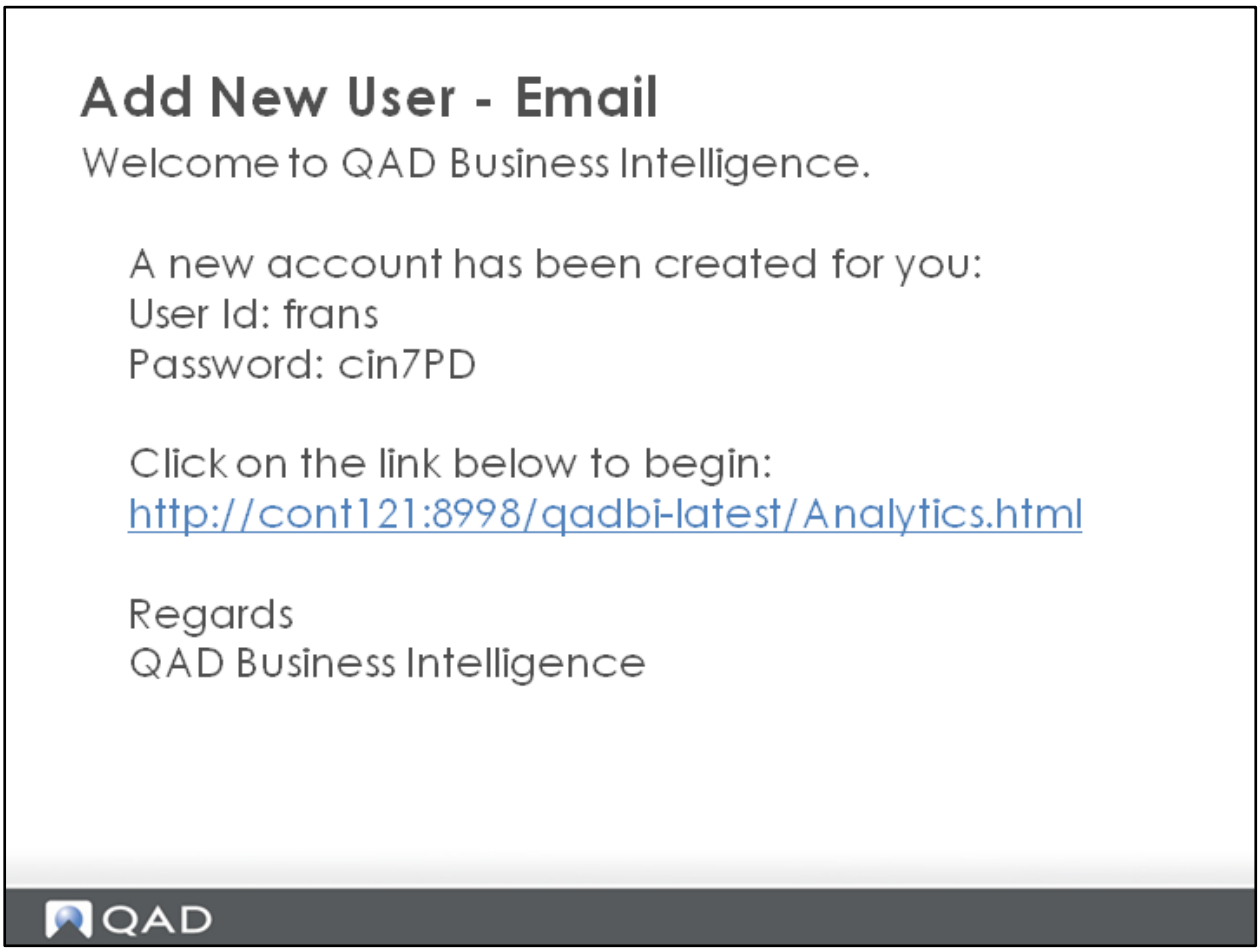
Add New User – Build Security



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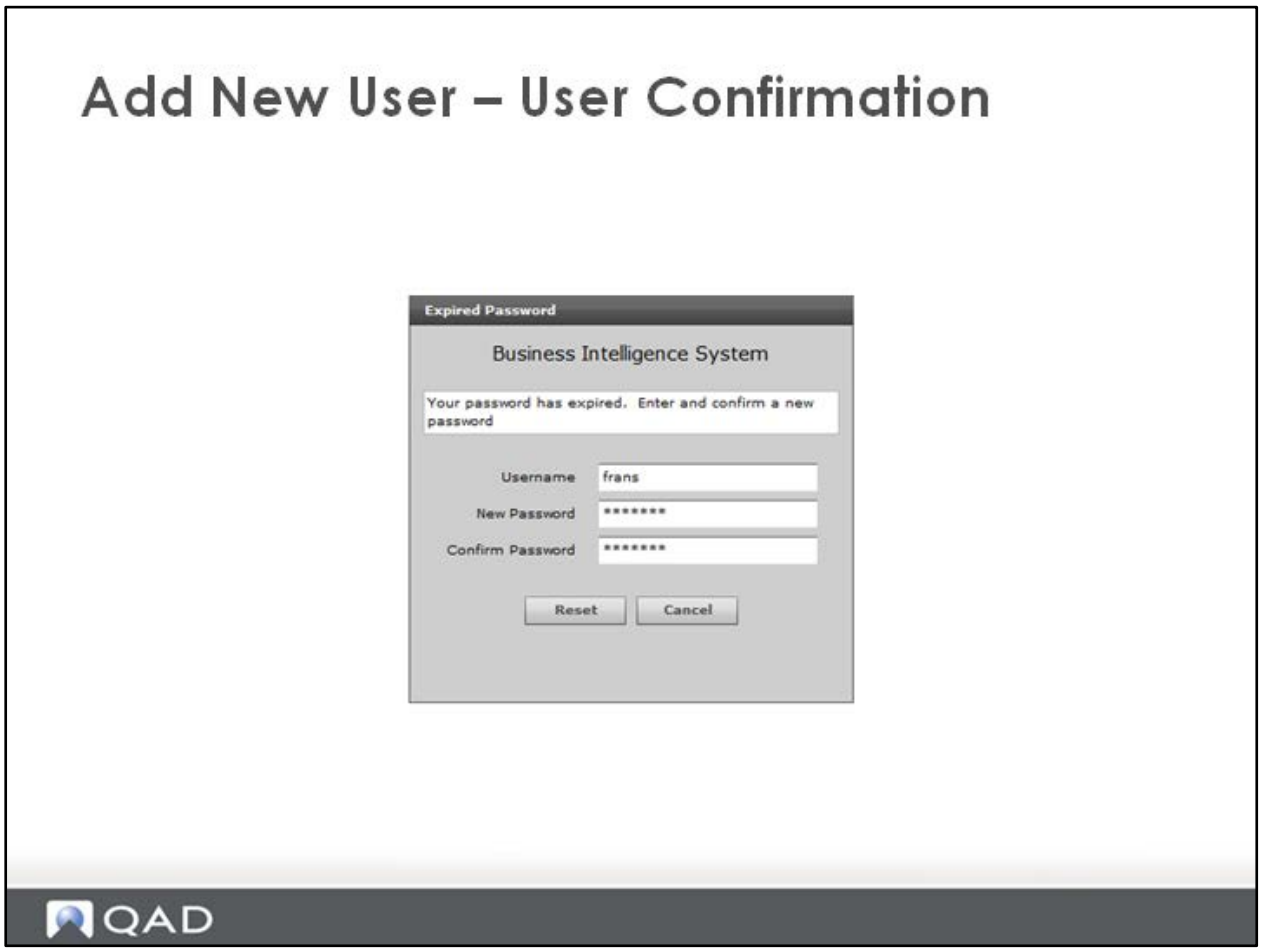
Add New User - Email



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Add New User – User Confirmation



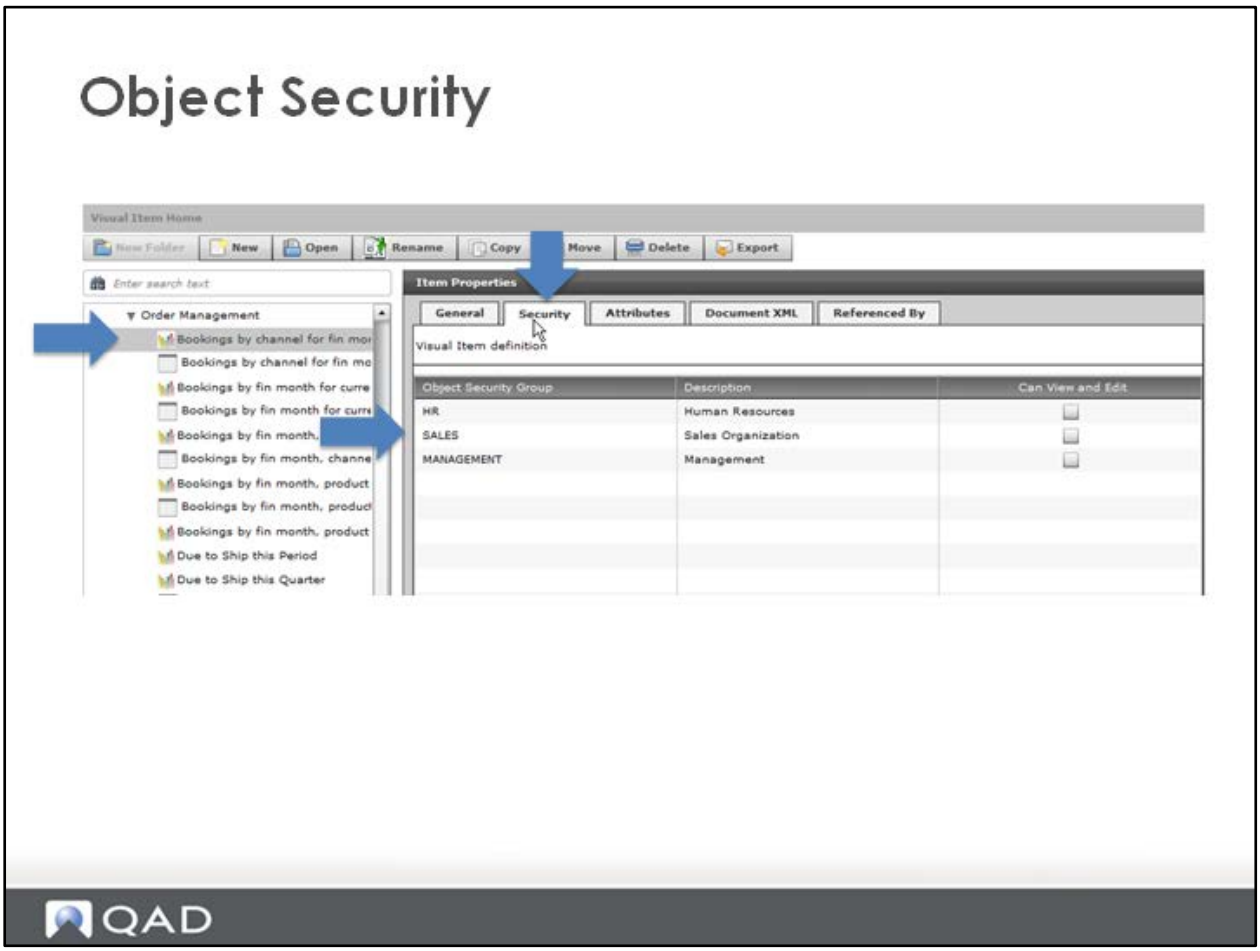
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Object Security Groups



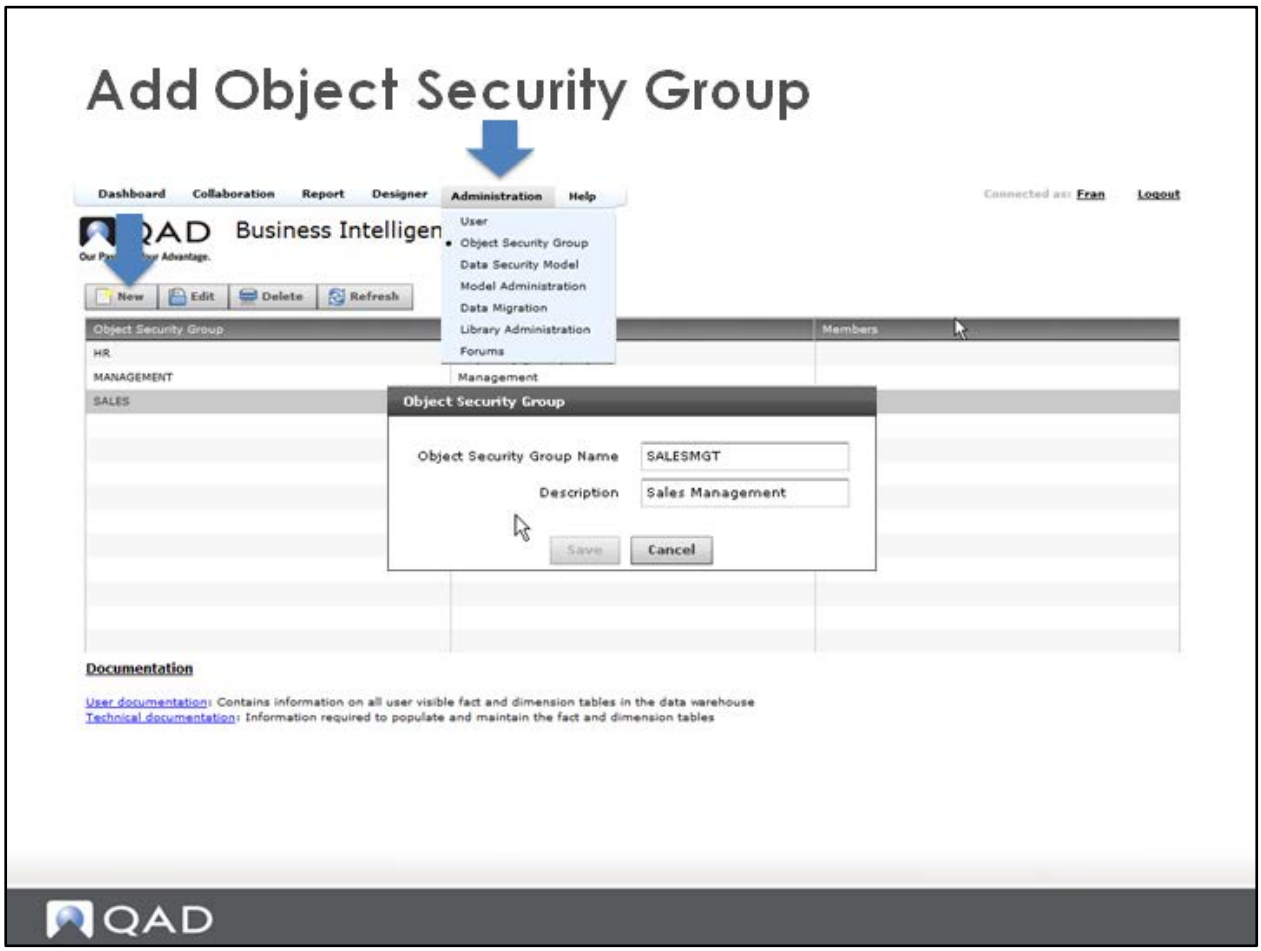
Object Security



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Add Object Security Group



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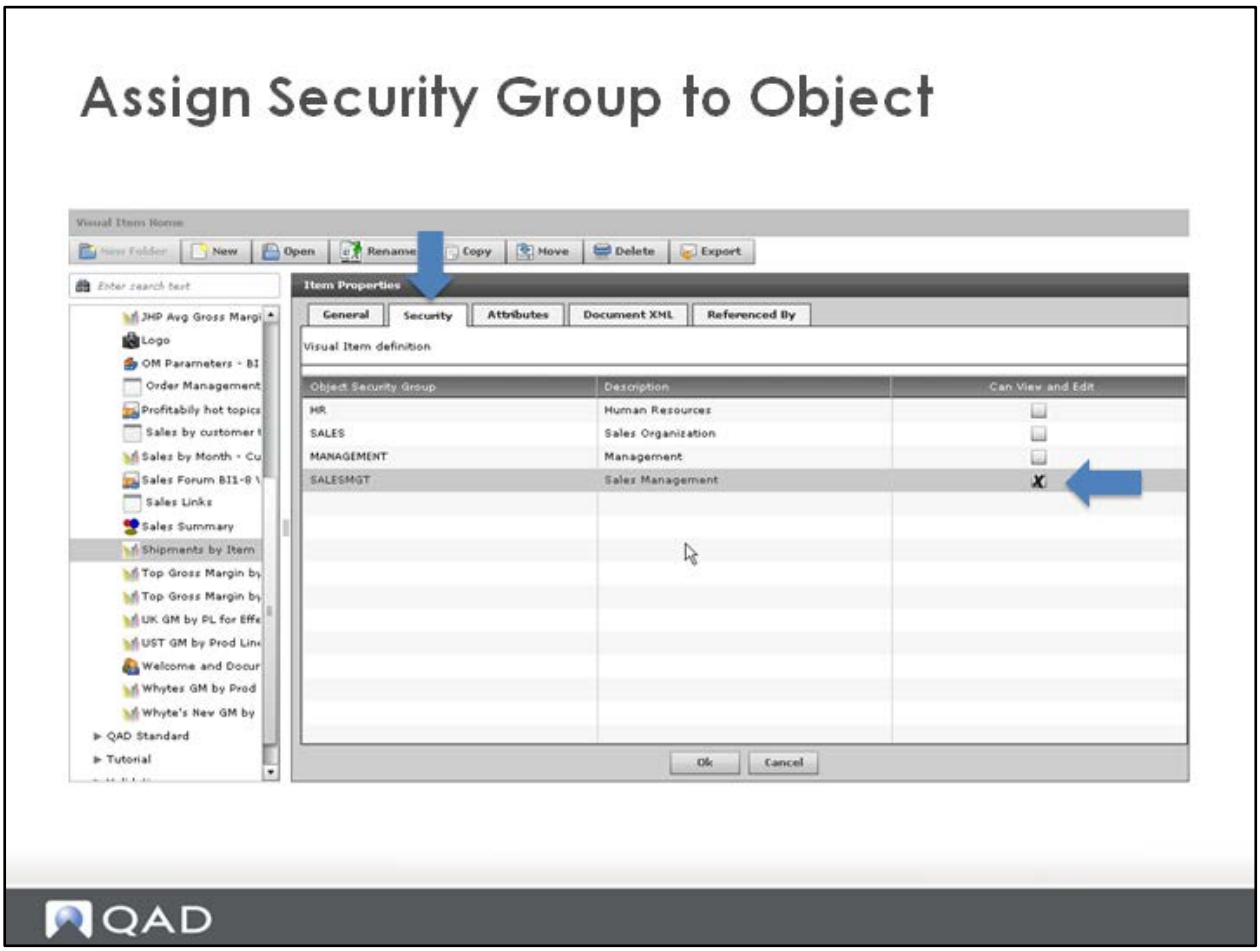
Assign Object Security Group to User



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Assign Security Group to Object



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Test Object Security Group Changes



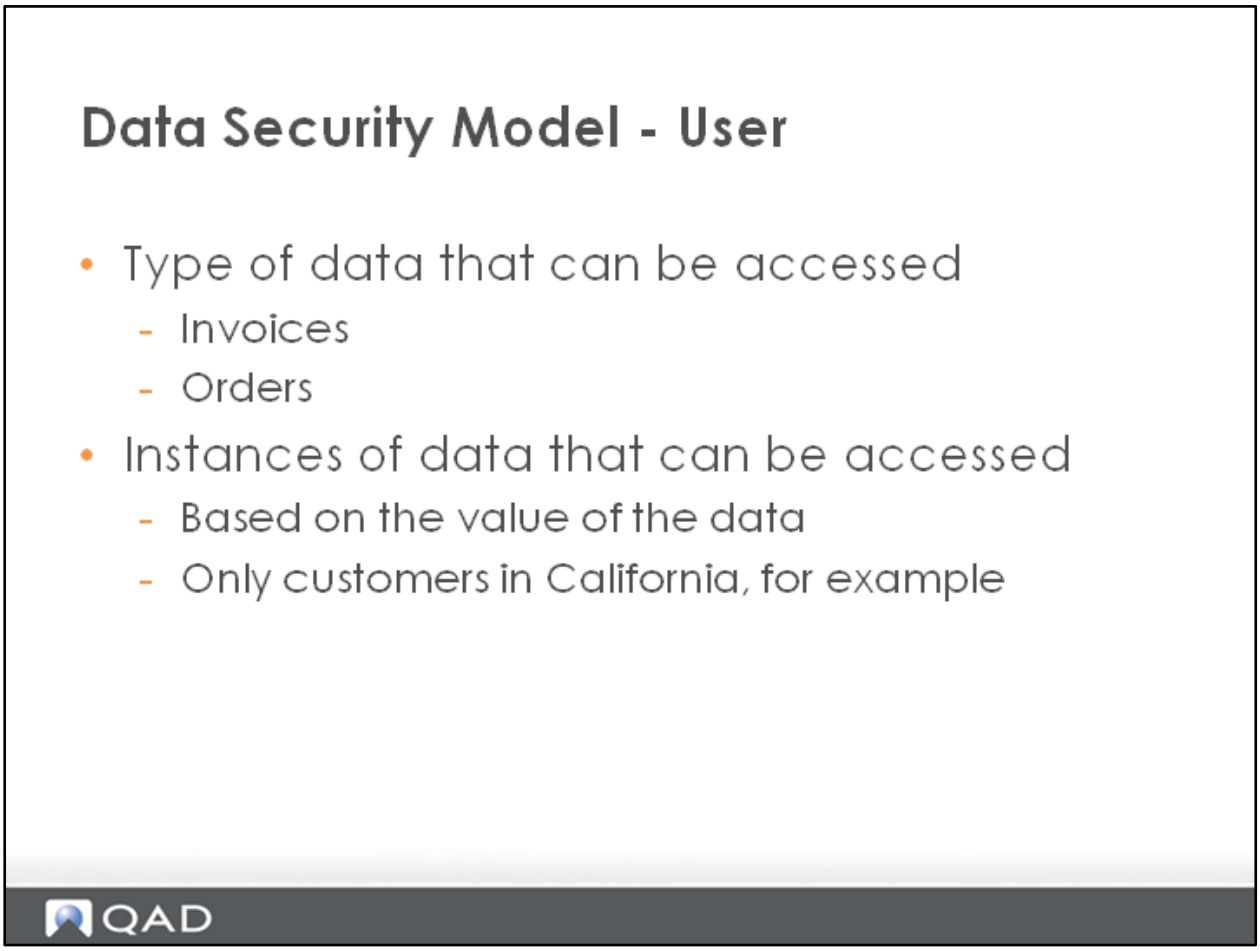
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Data Security Model



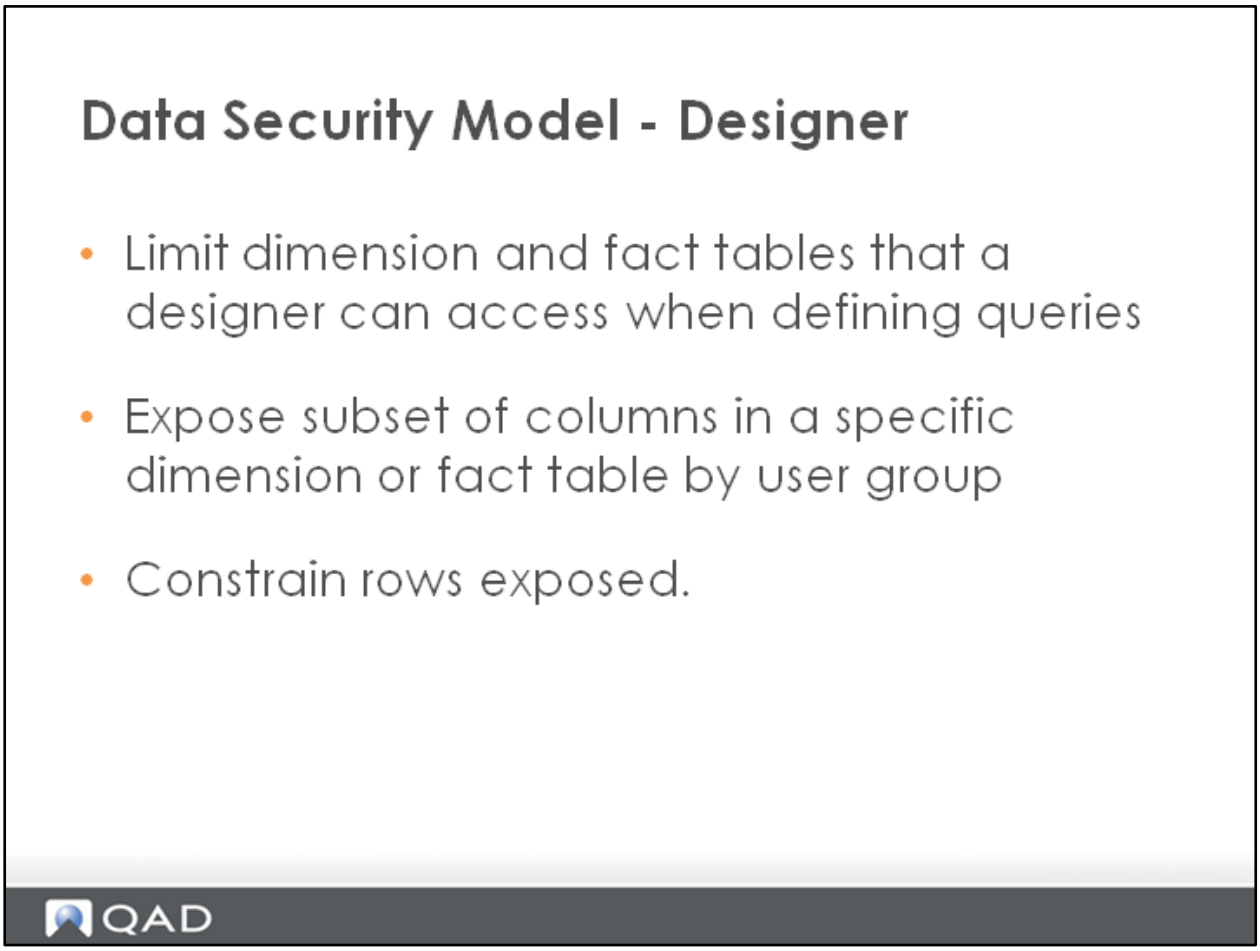
Data Security Model - User



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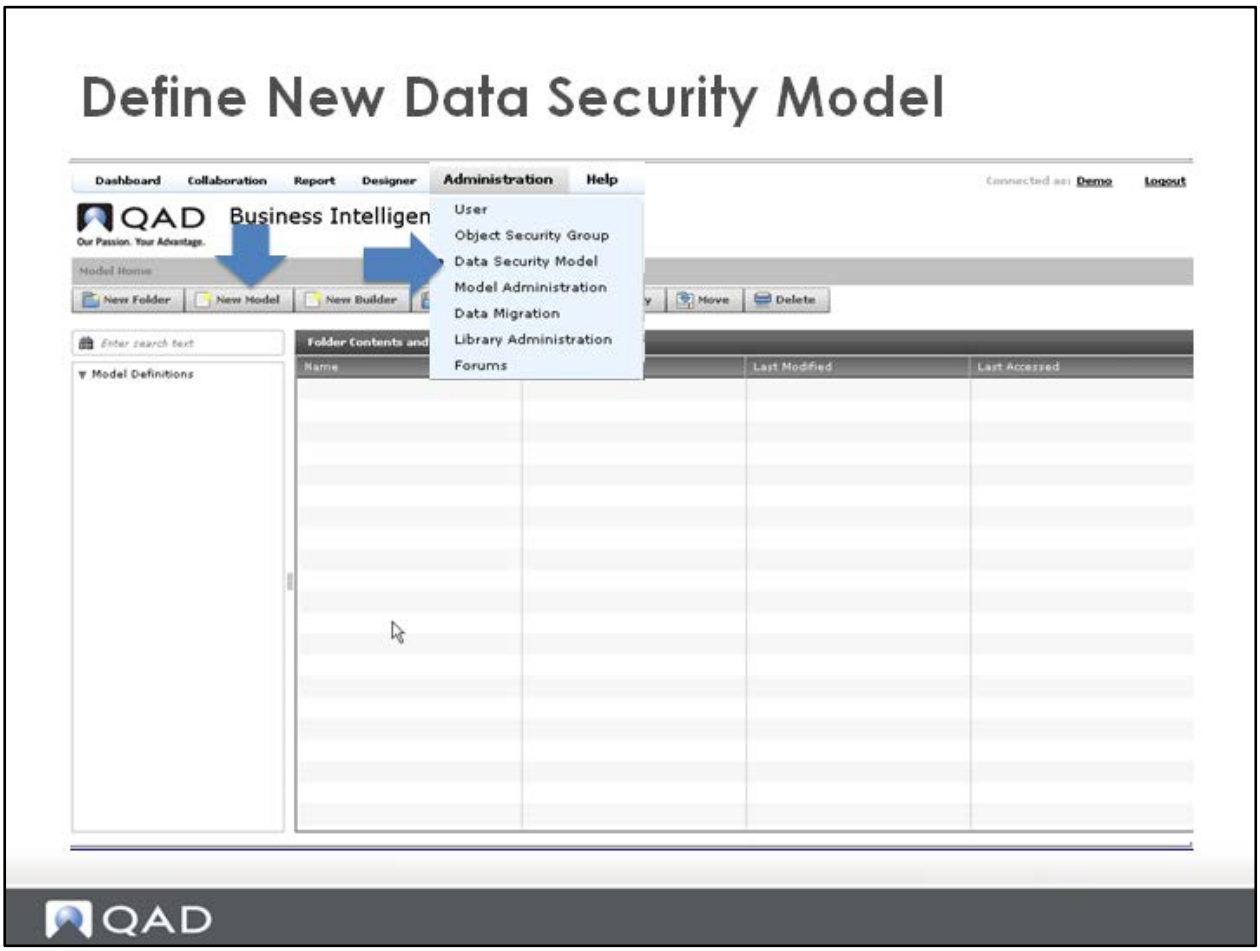
Data Security Model - Designer



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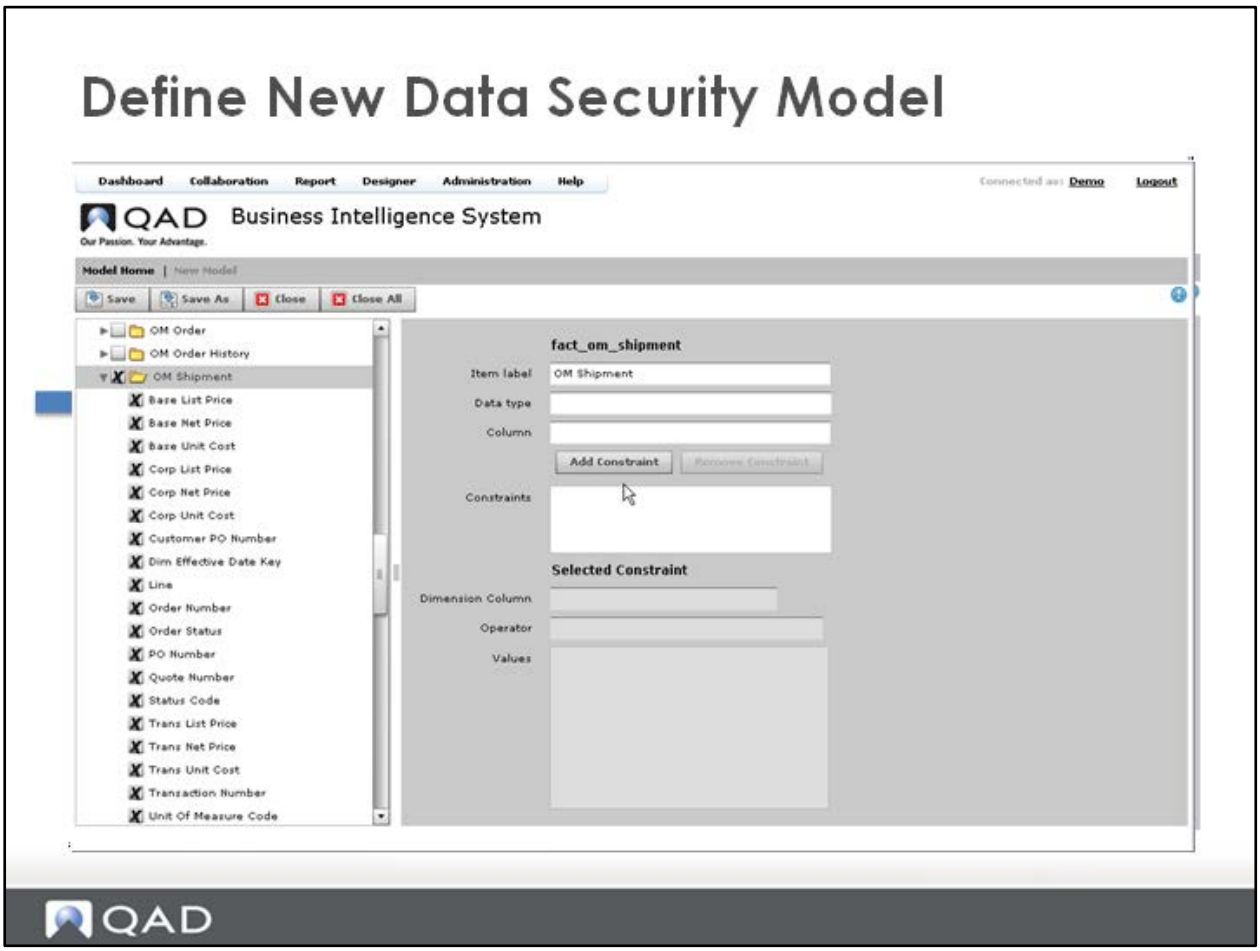
Define New Data Security Model



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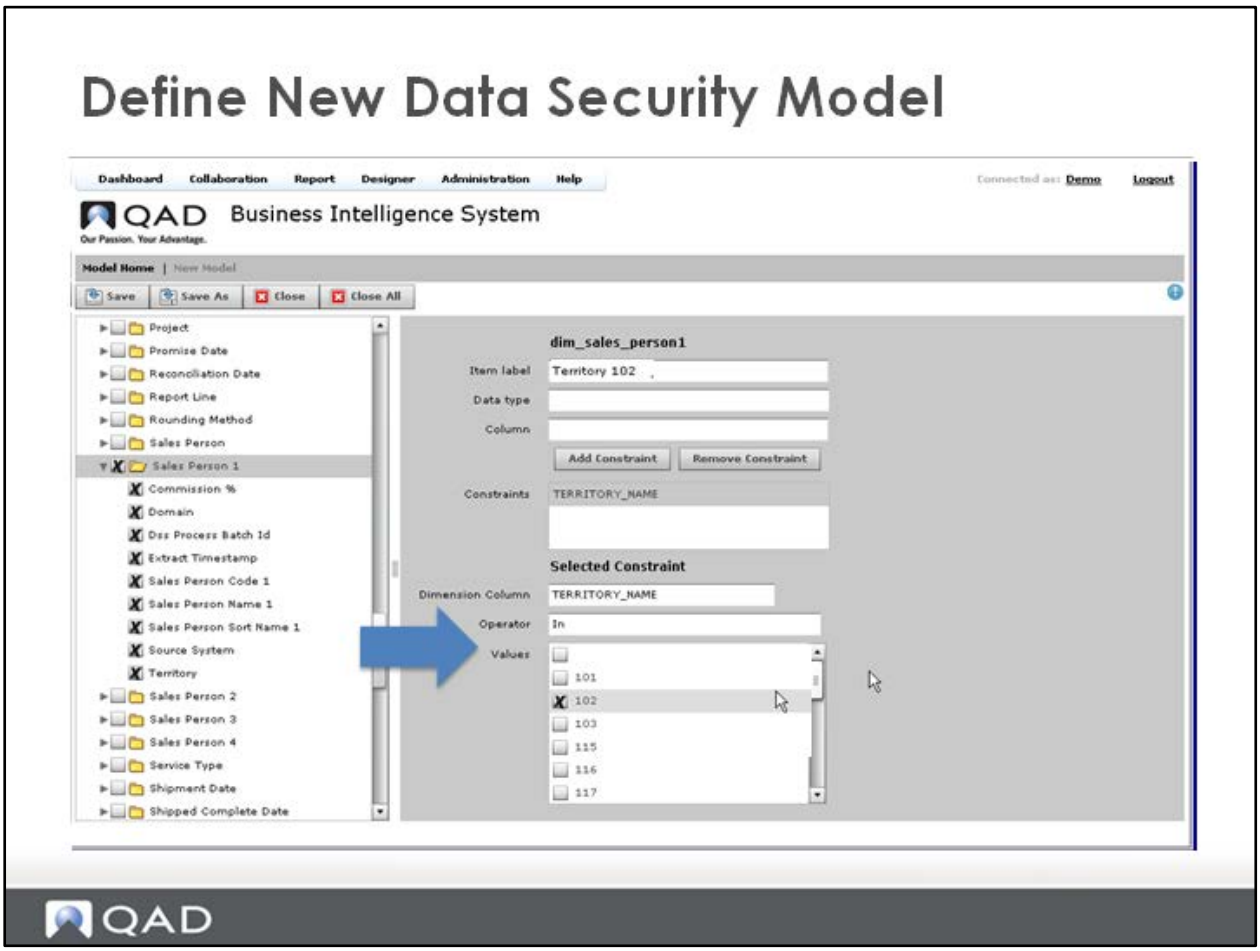
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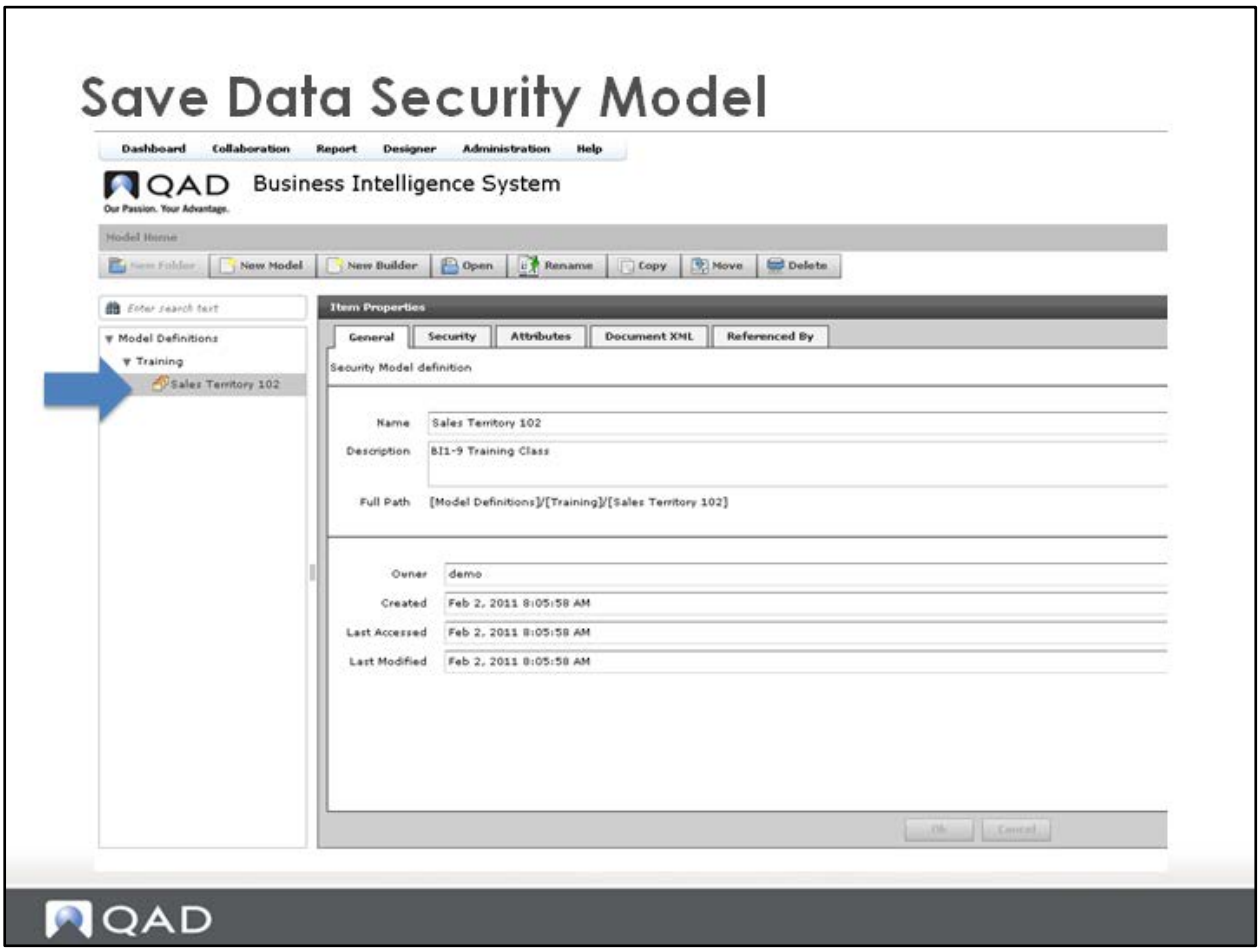
Define New Data Security Model



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Save Data Security Model



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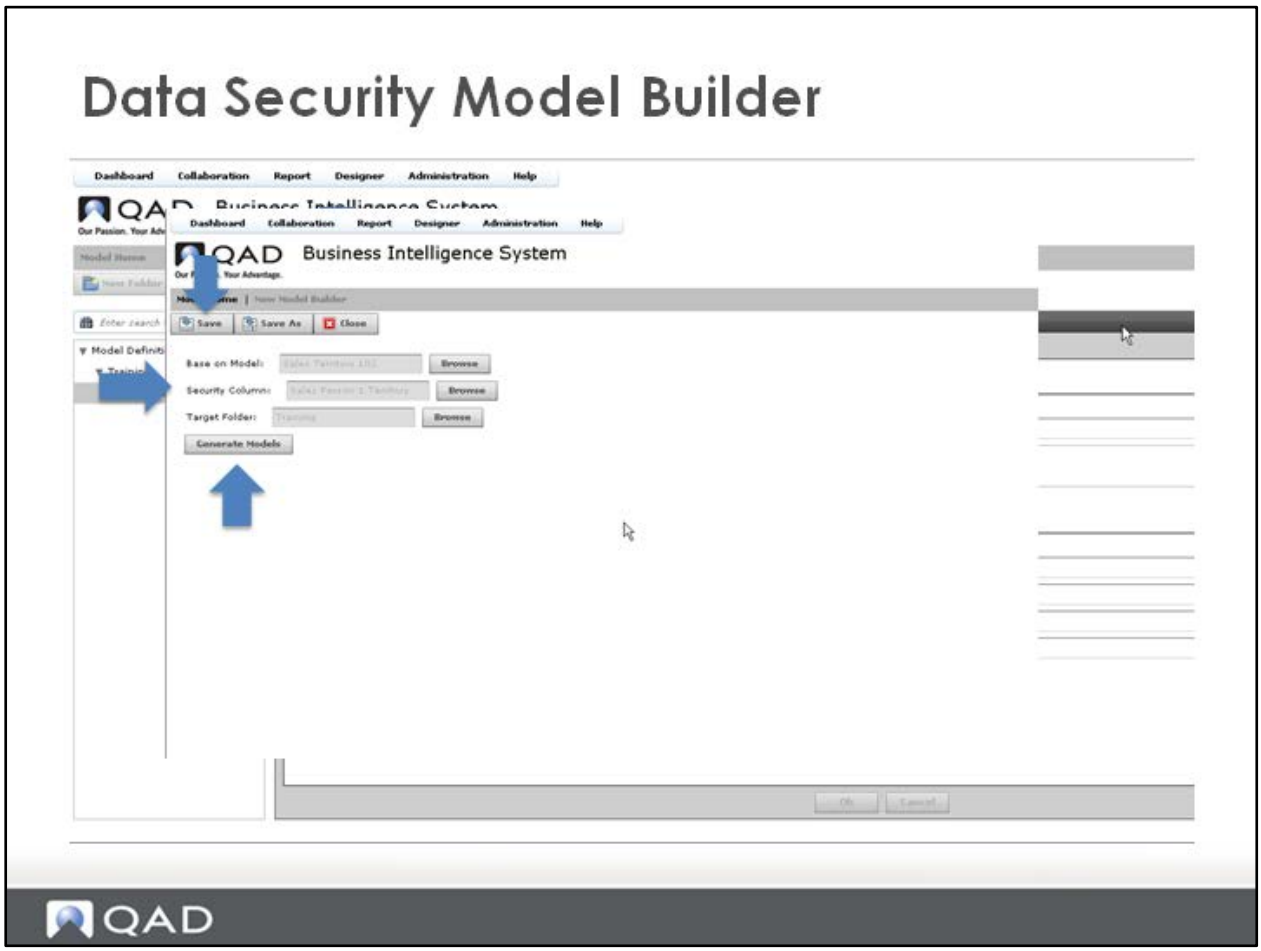
Associate Data Security Model to User



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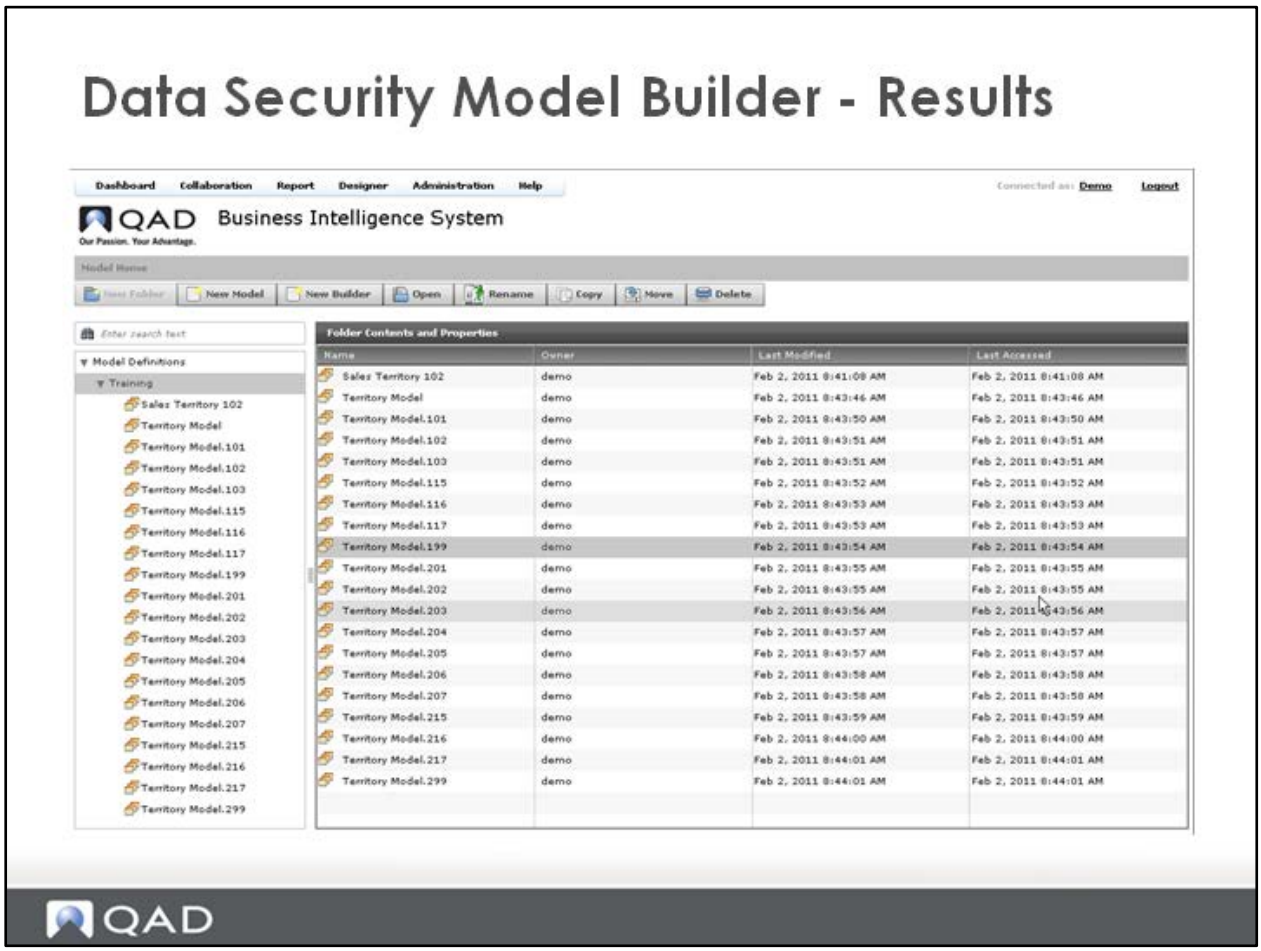
Data Security Model Builder



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Data Security Model Builder - Results



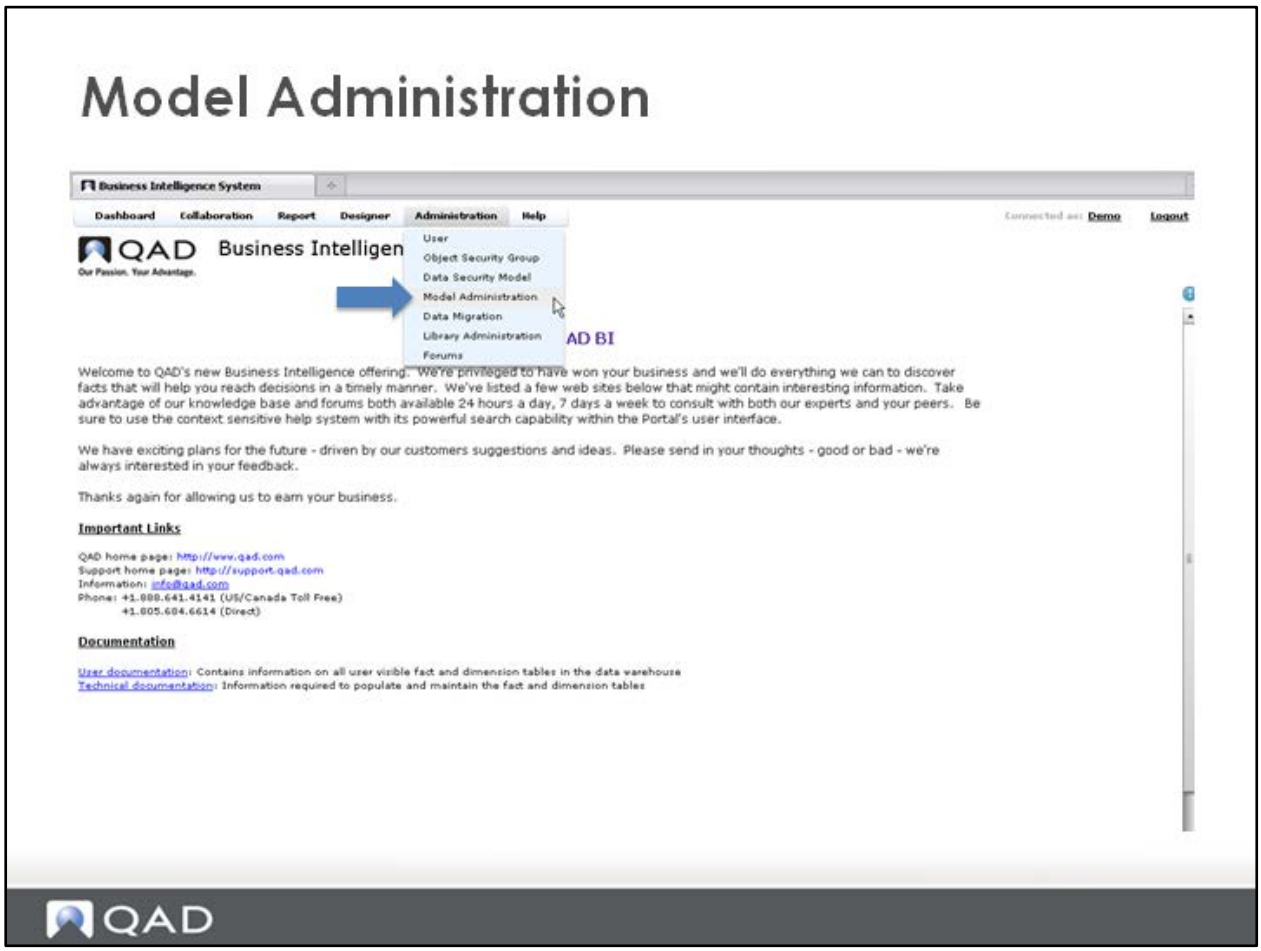
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Model Administration



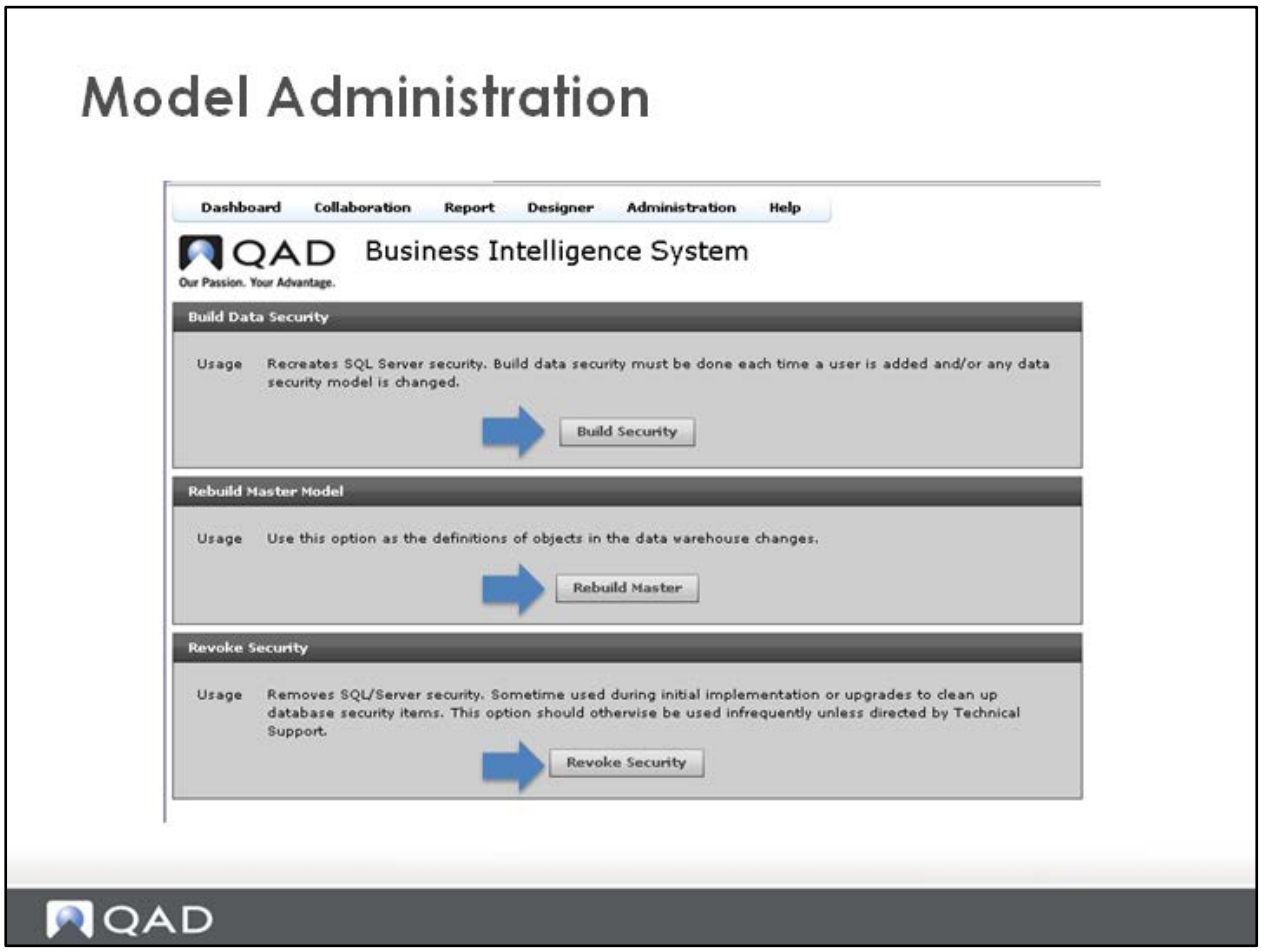
Model Administration



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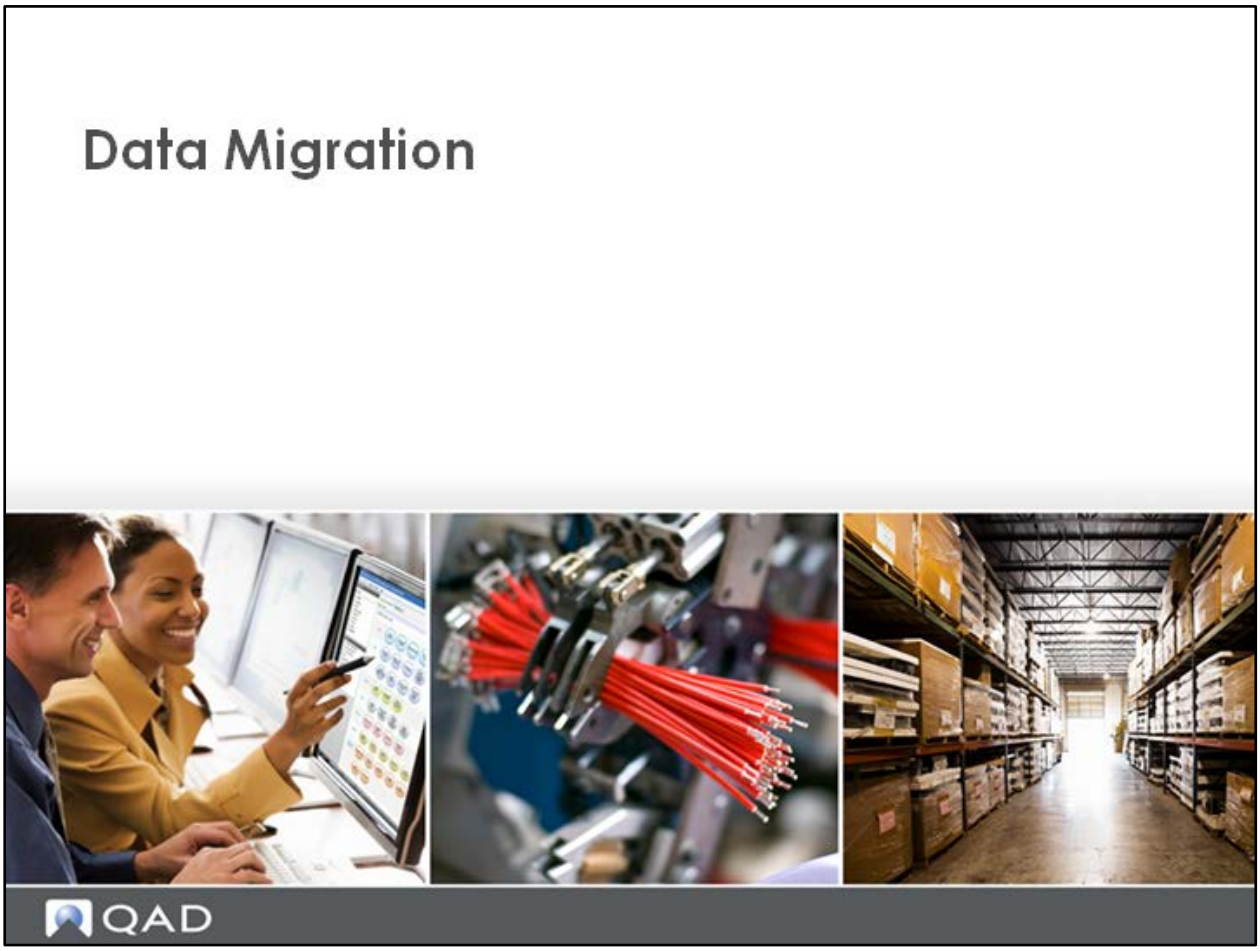
Model Administration



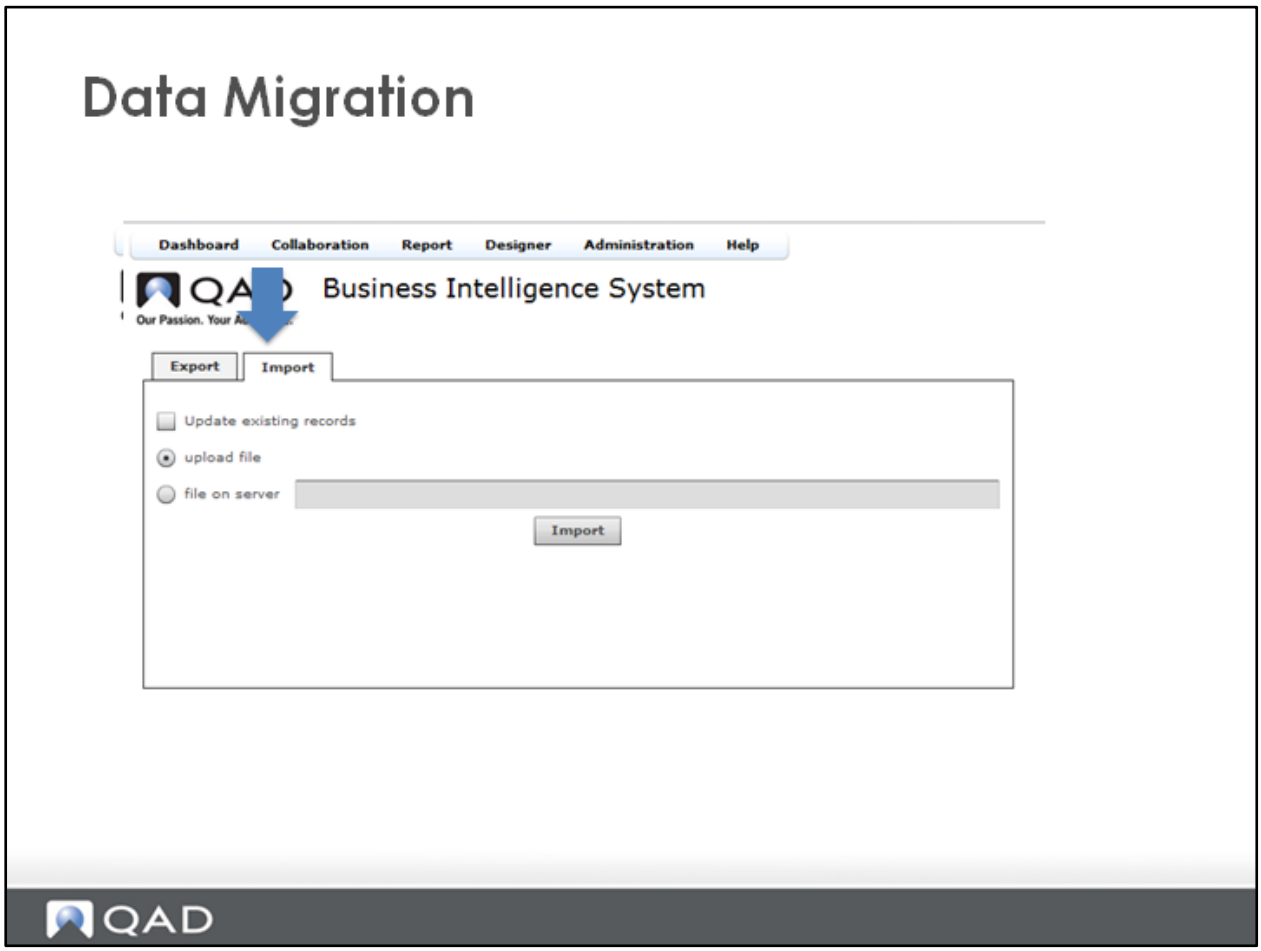
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Data Migration



Data Migration



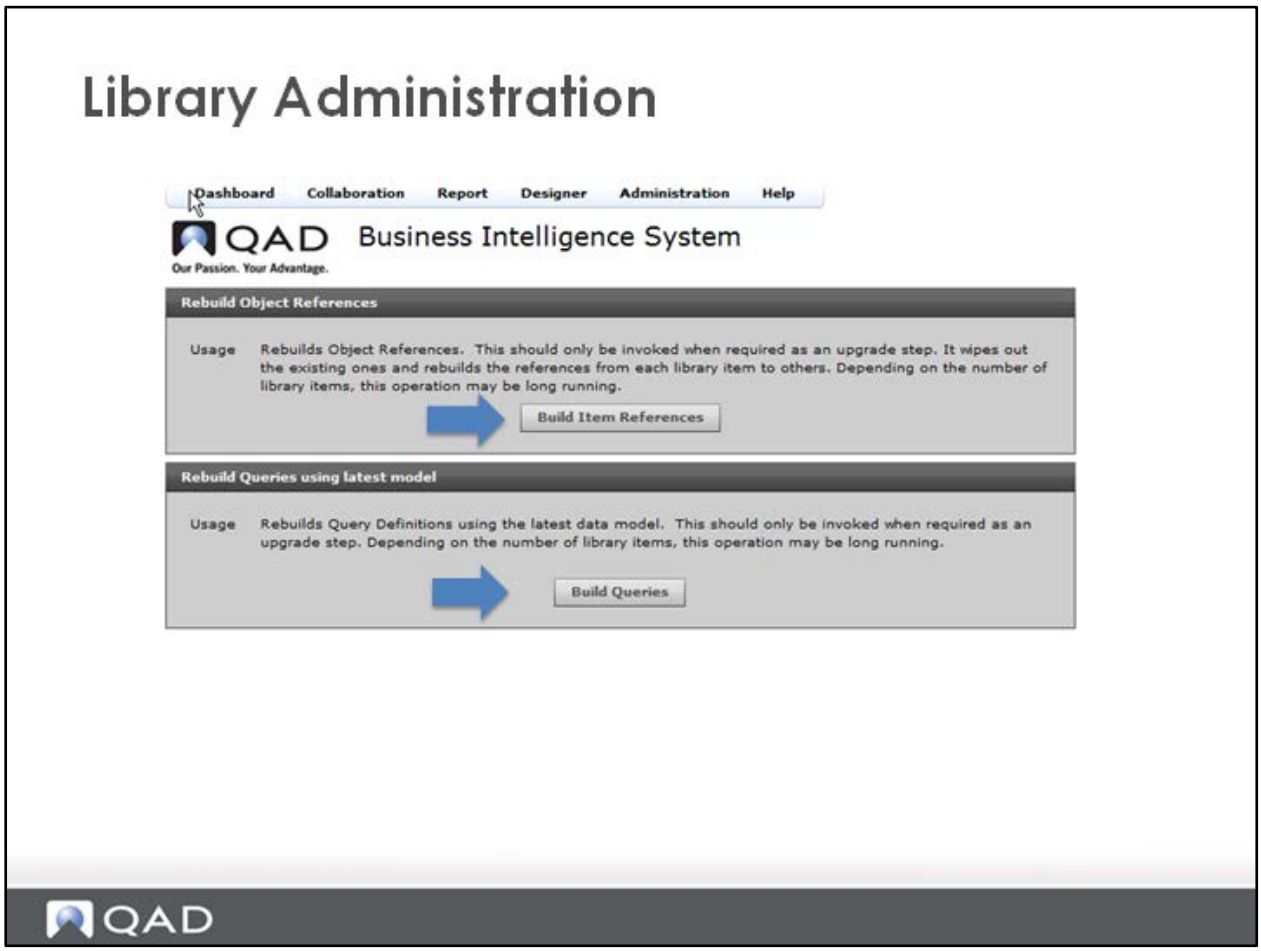
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Library Administration



Library Administration



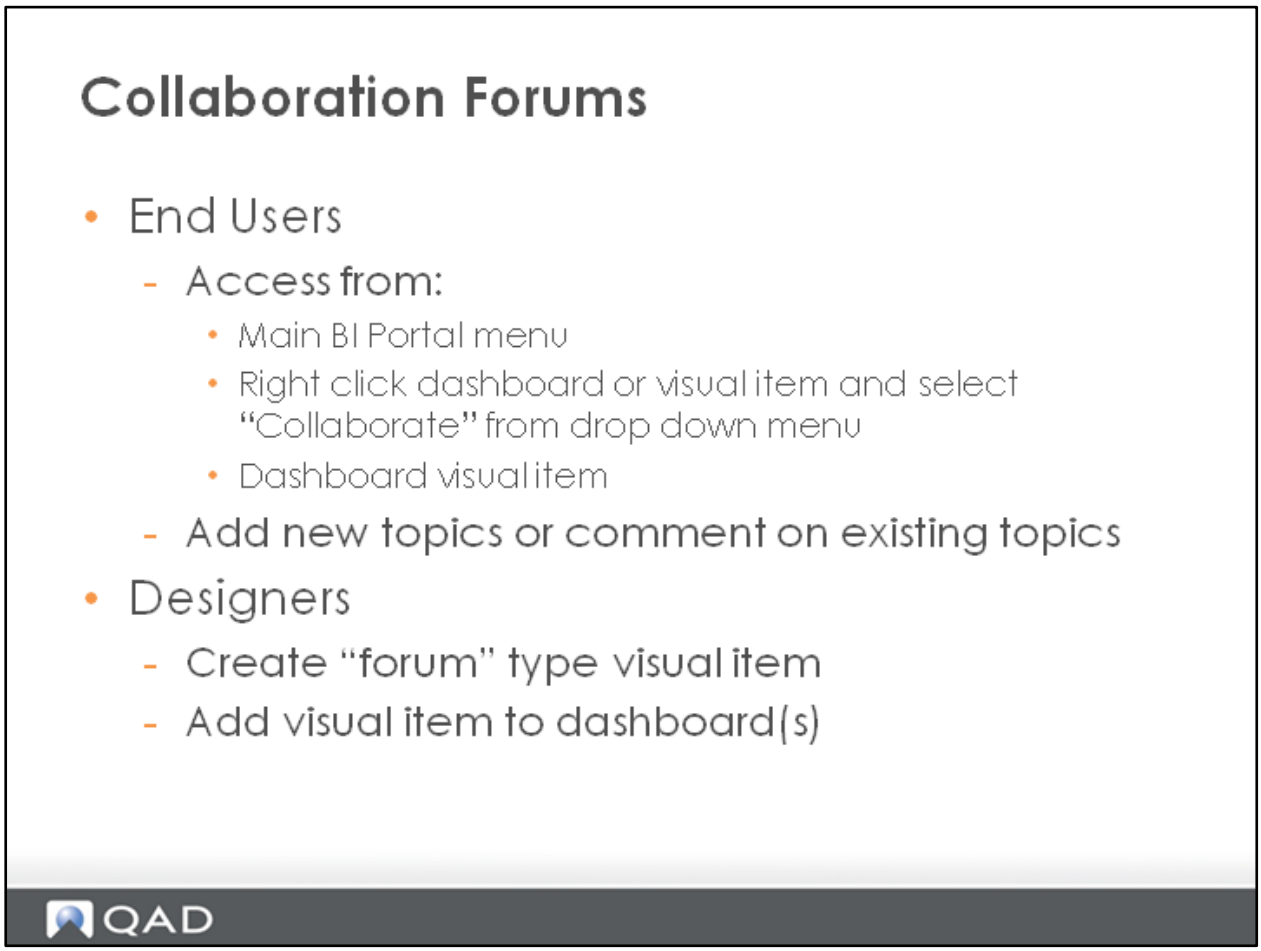
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Forum Administration



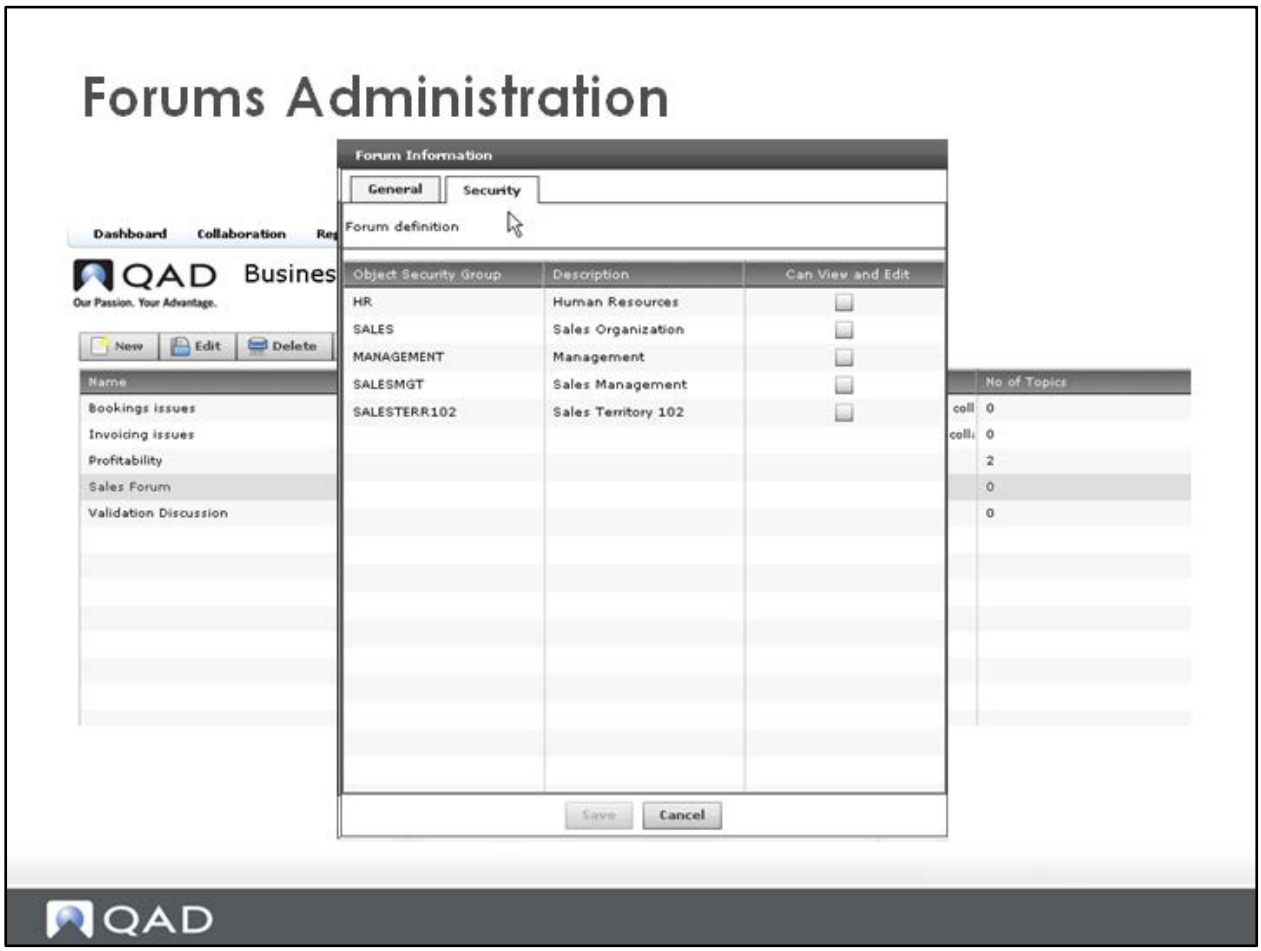
Collaboration Forums



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Forums Administration



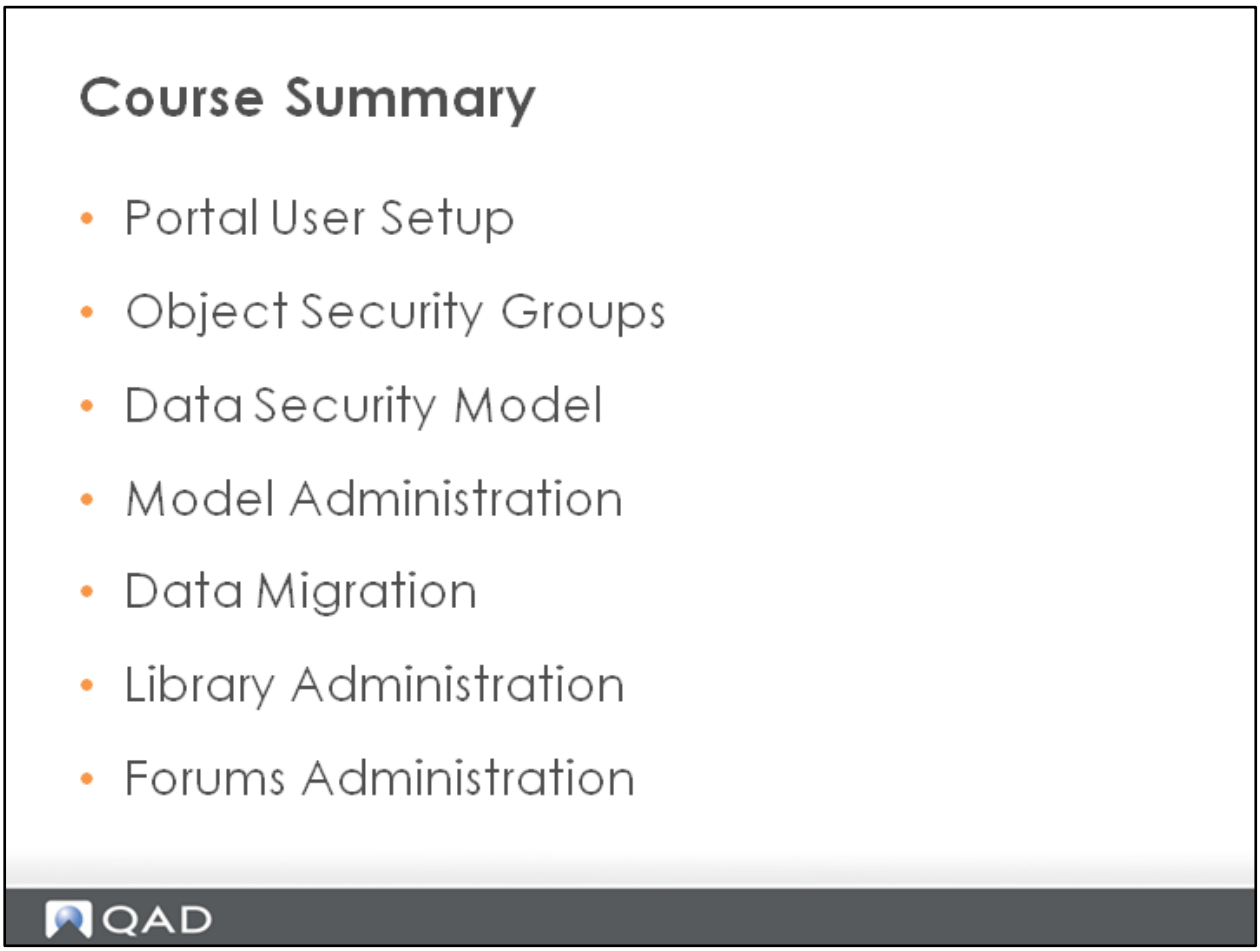
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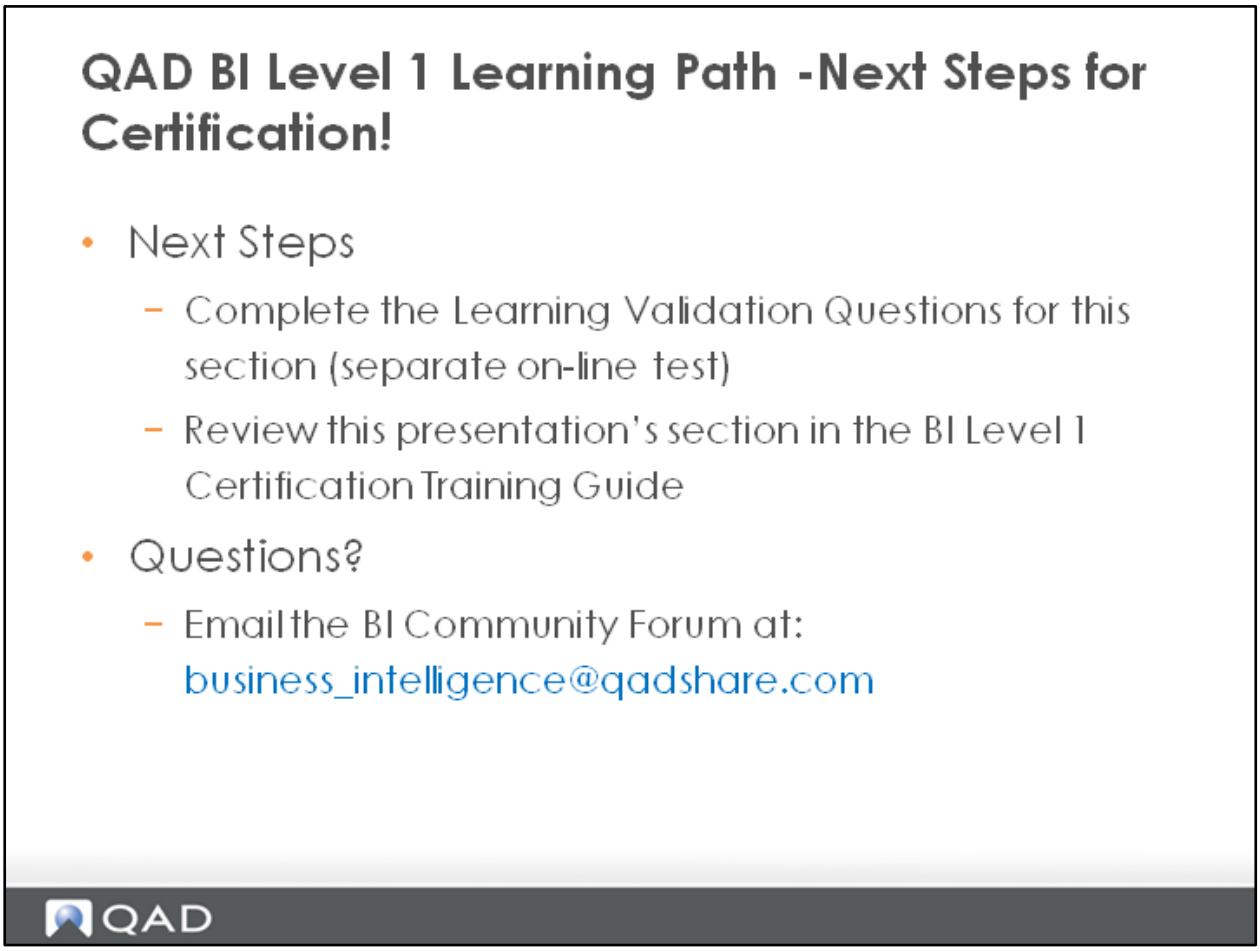
BI Portal Administration - Course Review



Course Summary



QAD BI Level 1 Learning Path -Next Steps for Certification!



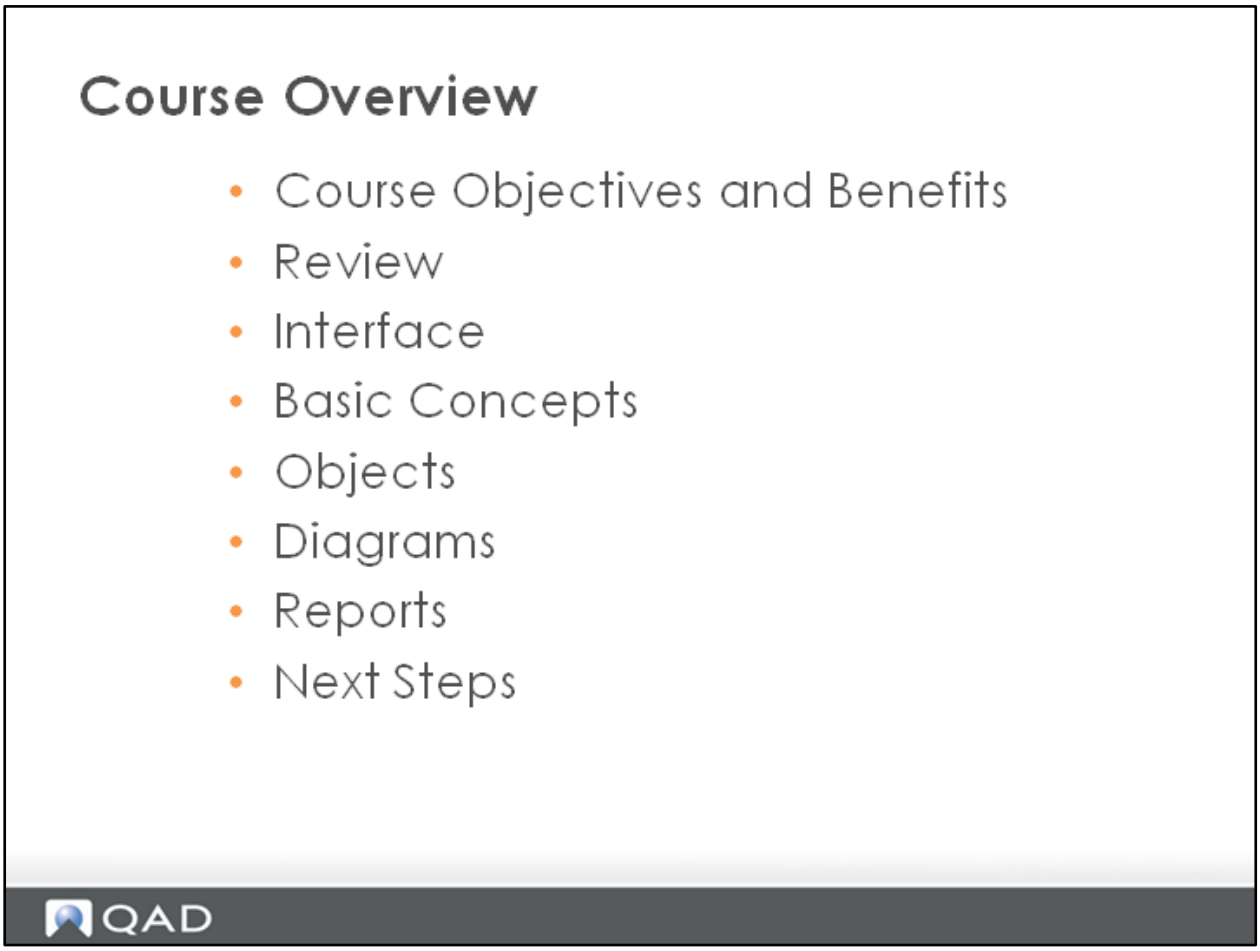
CHAPTER 10

Introduction to Data Warehouse Designer

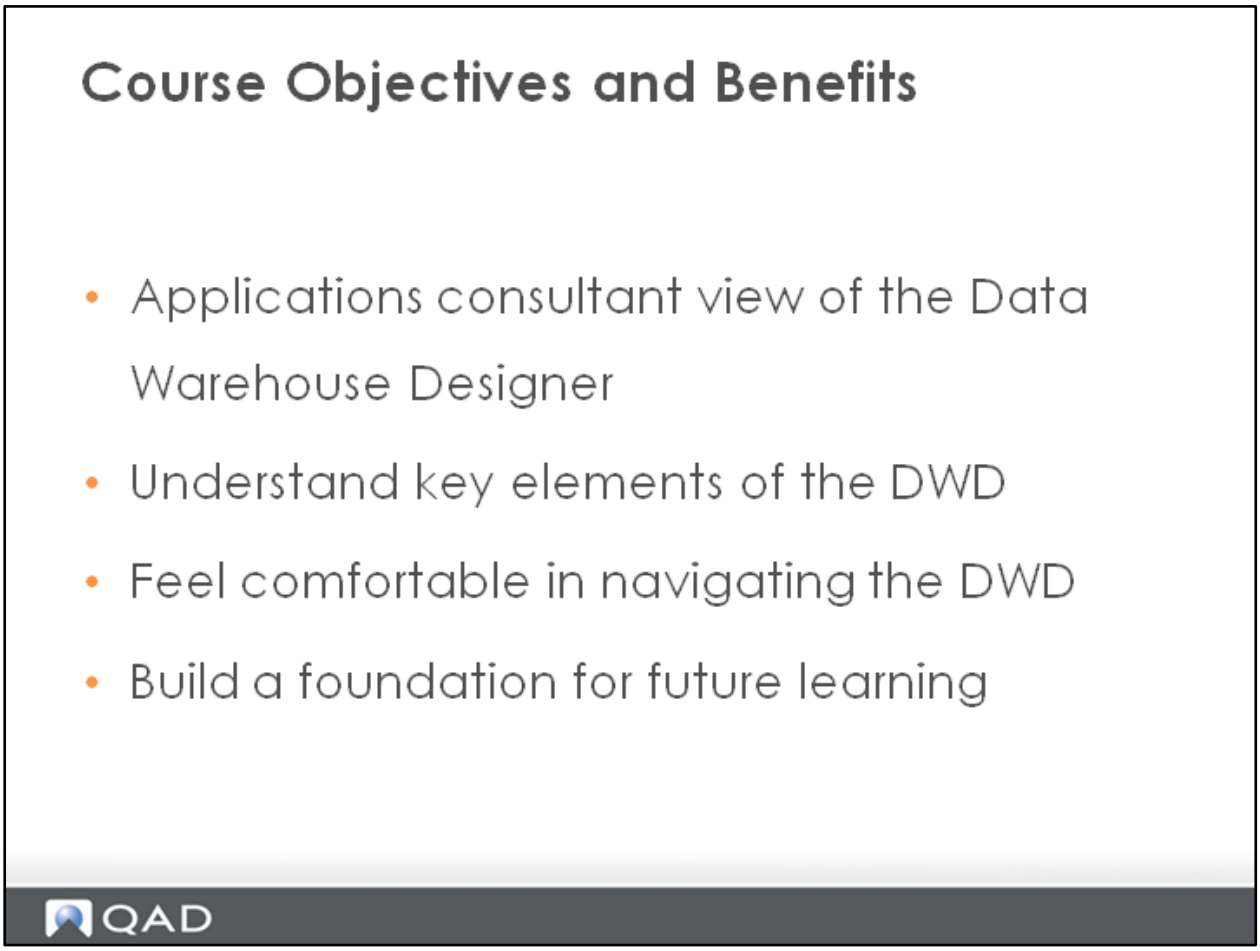
Introduction to Data Warehouse Designer



Course Overview



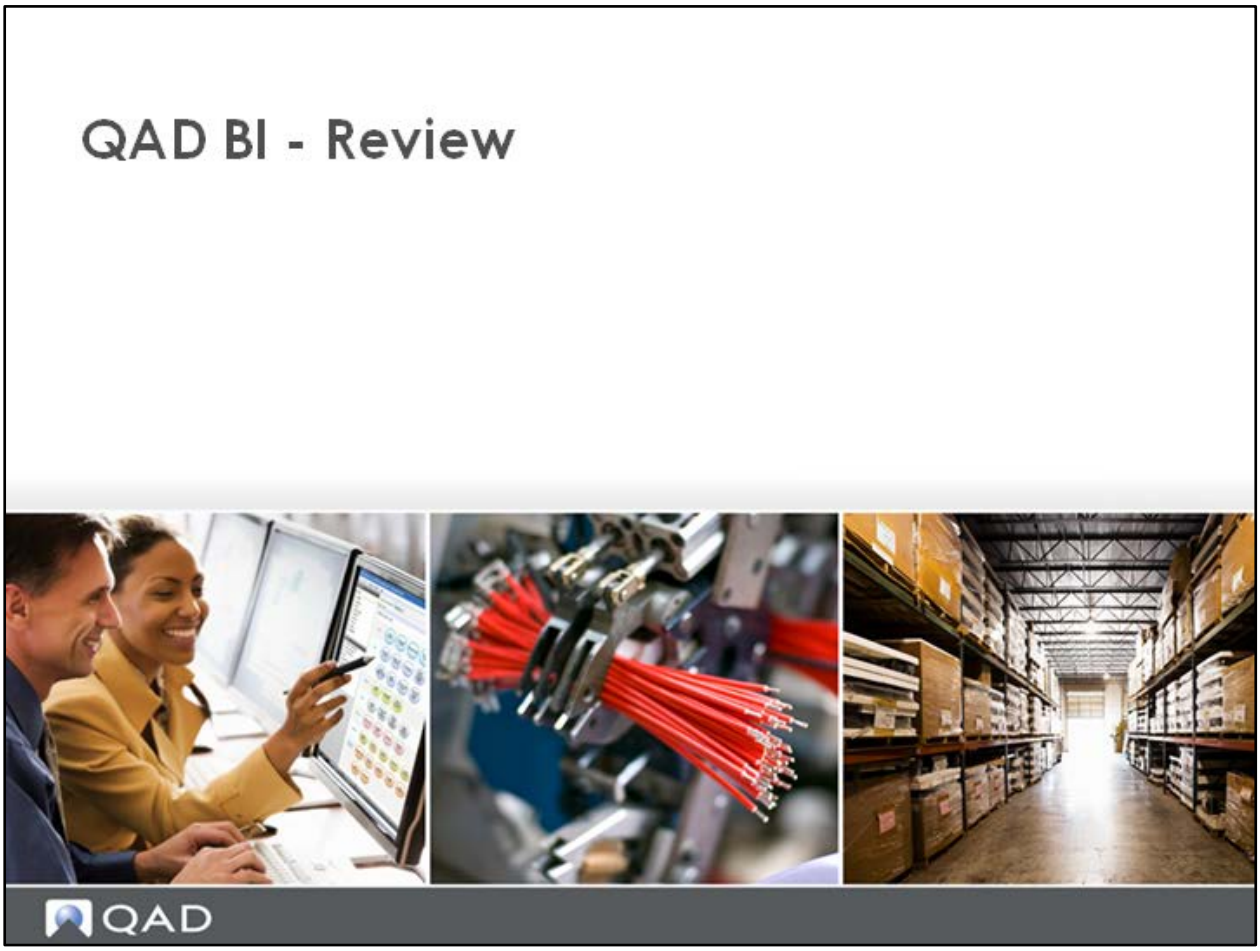
Course Objectives and Benefits



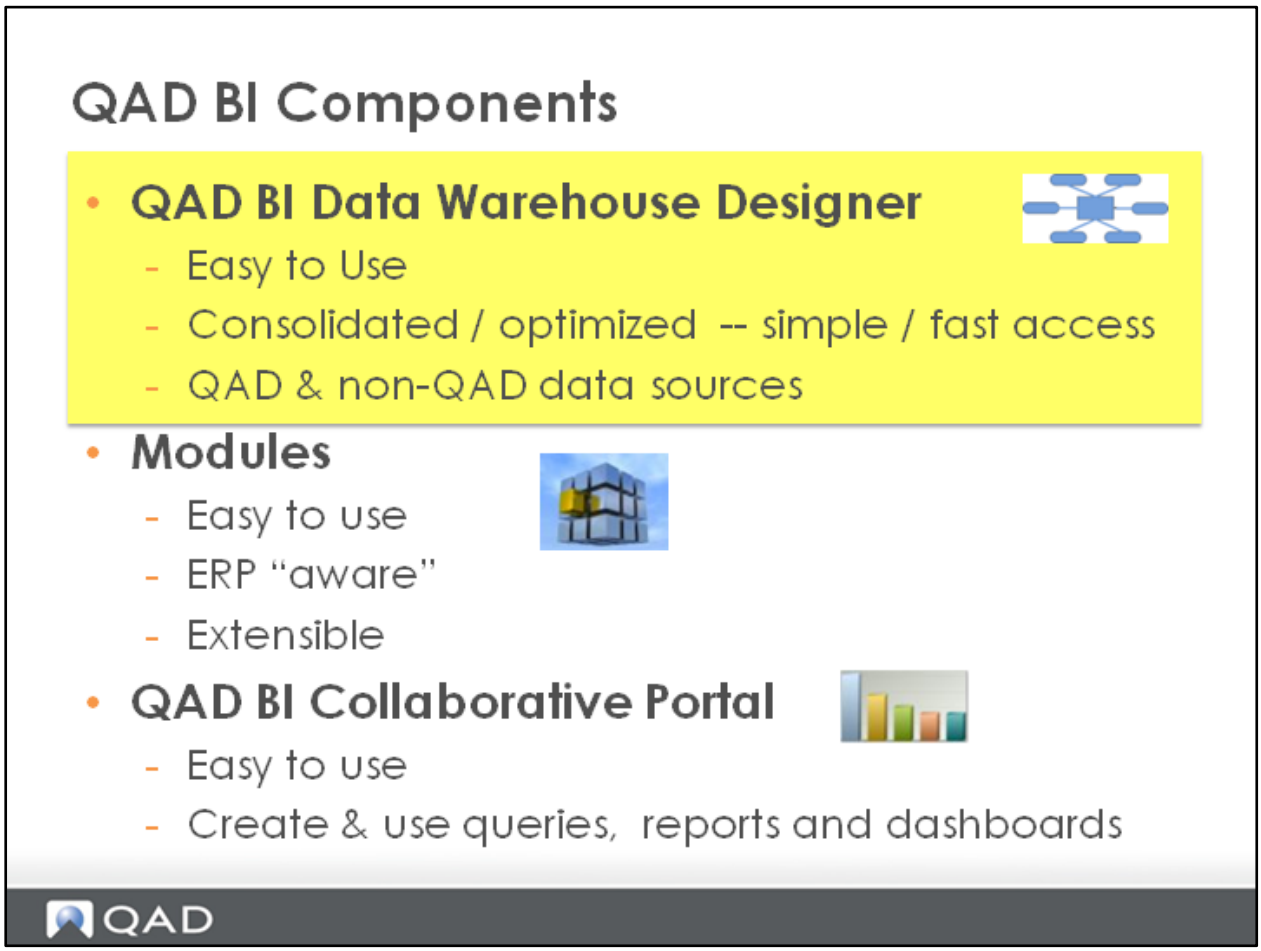
The Data Warehouse Designer is generally a tool used by Developers to create and maintain the data warehouse, and Technicians who customize a data warehouse.

Applications and Support staff will use the DWD to view elements within the data warehouse.

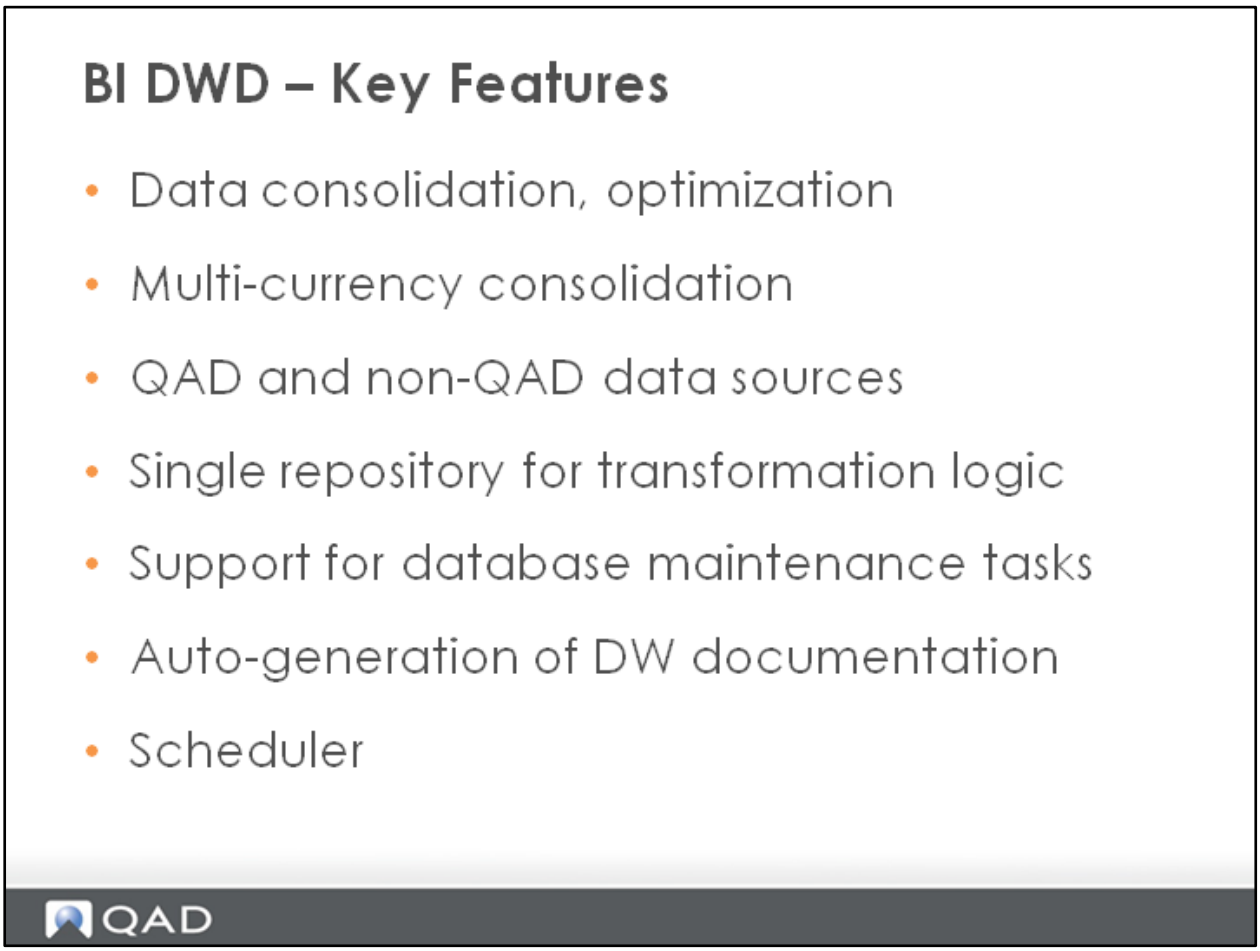
QAD BI - Review



QAD BI Components



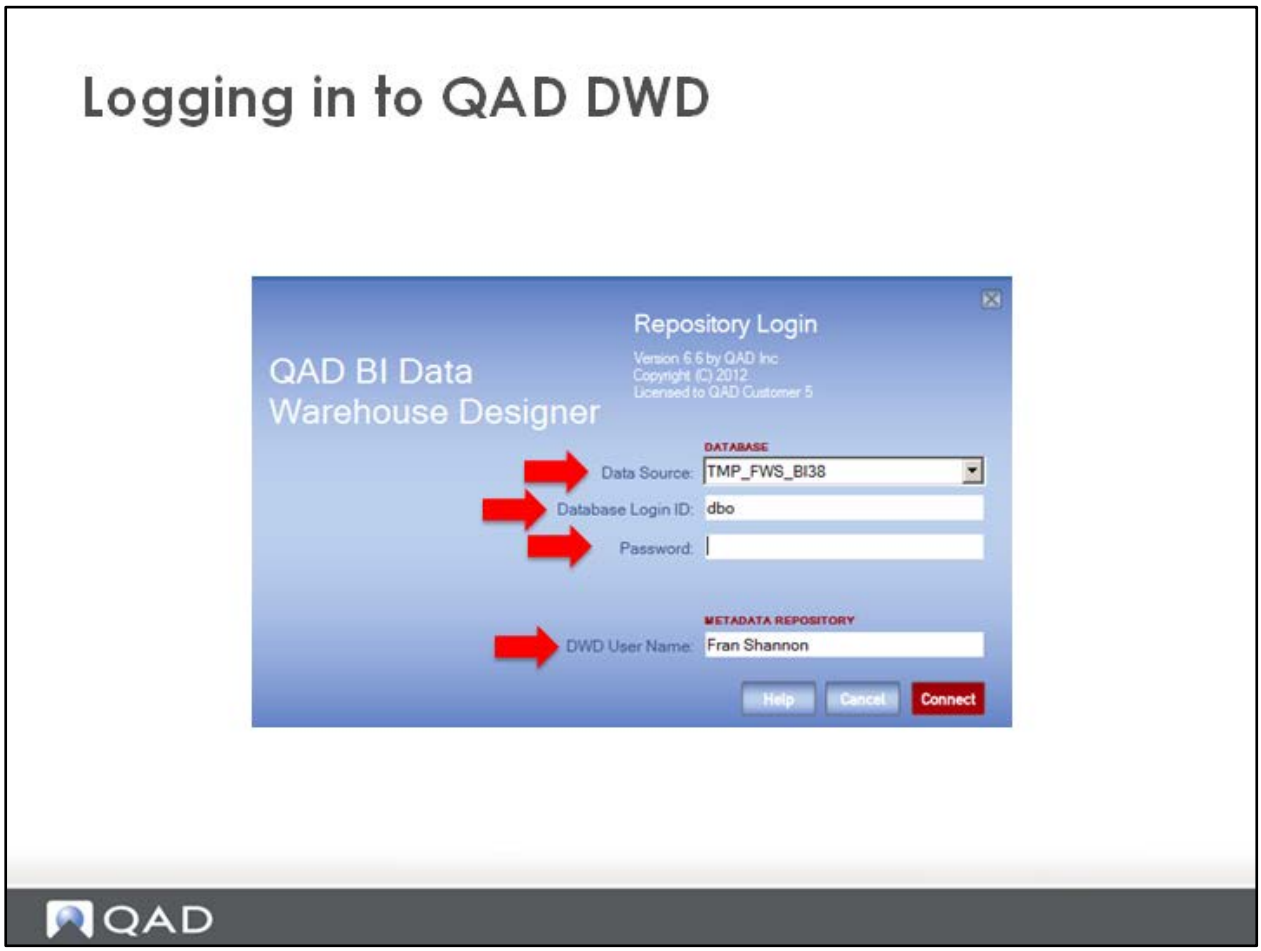
BI DWD – Key Features



DWD Interface



Logging in to QAD DWD



Data Warehouse Repository includes both the Data IN the Data Warehouse and the Metadata.

Metadata is the information that describes the data. That is, the data about the Data.

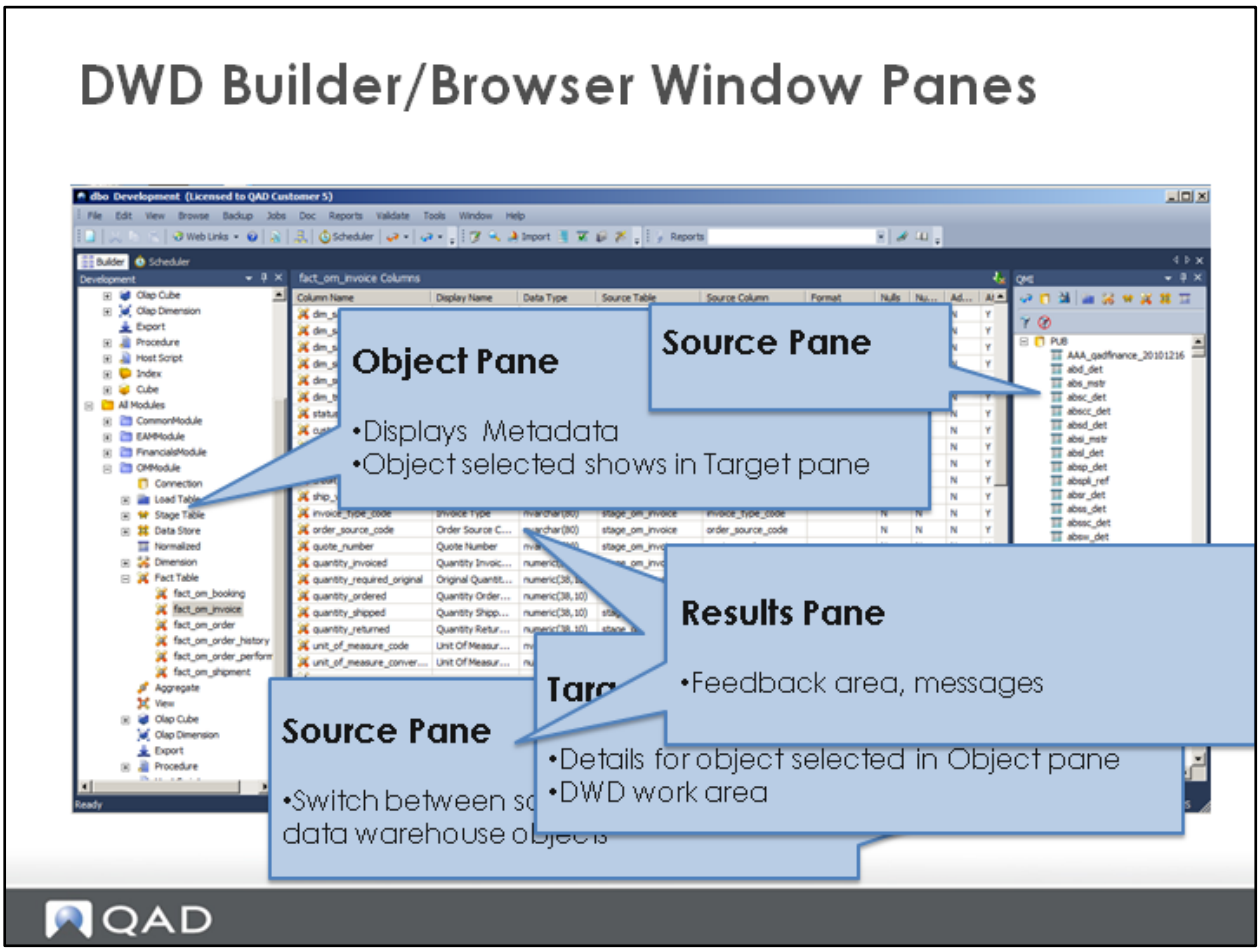
The Repository is a SQL Server database and Is accessed via an ODBC connection.

To login to the DWD:

Select the *Data Source* or ODBC connection to your Data Warehouse from the drop down list. If the environment includes multiple data warehouses, this field will default to the last data warehouse you accessed using the DWD. Enter a valid Database Login ID and password.

The Full User Name is the name that will be associated to any procedures, tables, etc. and scheduled jobs that are created from within the DWD. Normally, you should enter your first and last name.

DWD Builder/Browser Window Panes



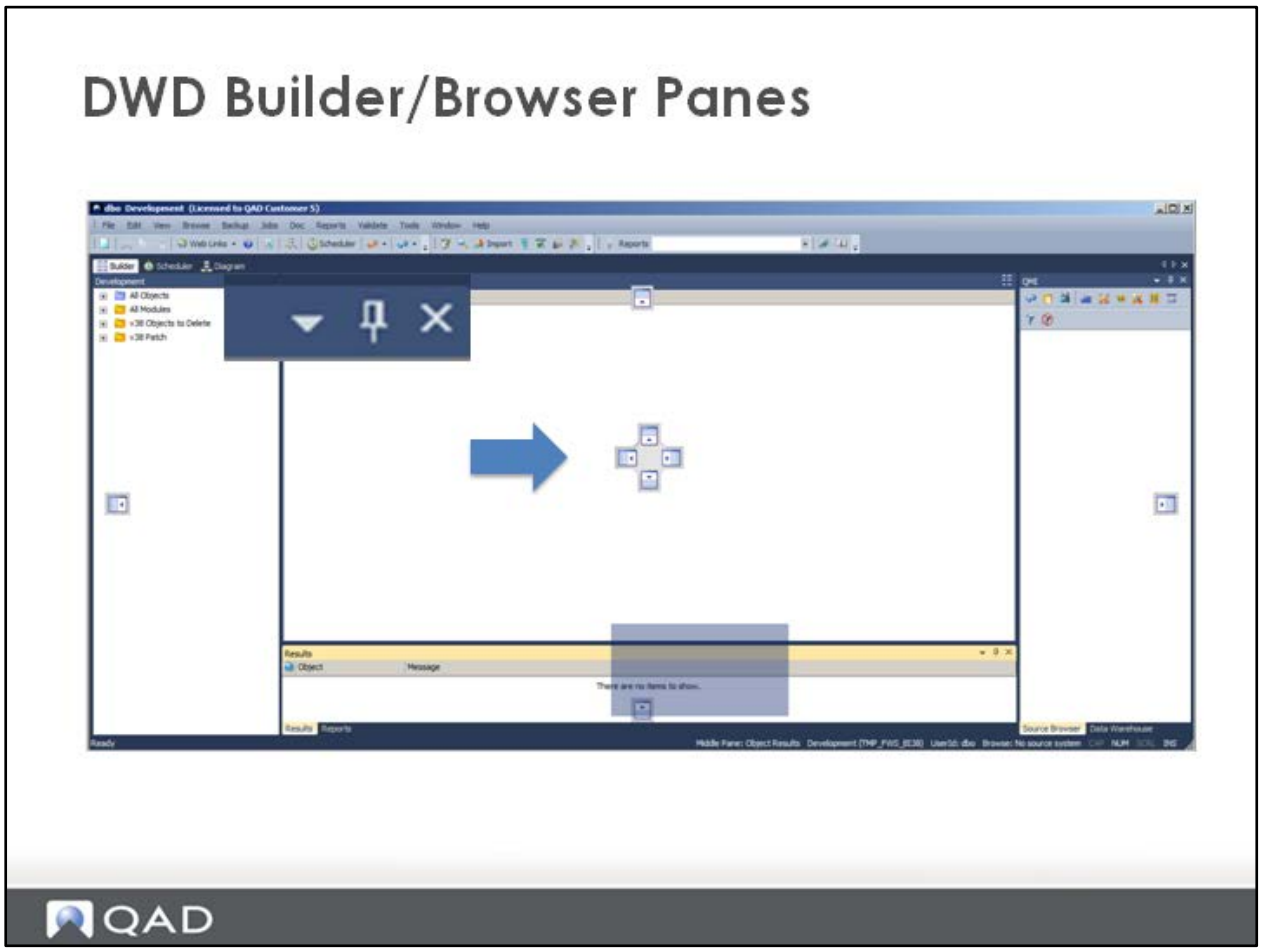
There are 4 main window panes in the DWD:

- Builder (formerly Browser)
- Scheduler
- Diagram
- Procedure Editor

Within each window, there may be multiple panes. In the Builder/Browser Window, there are 4 panes.

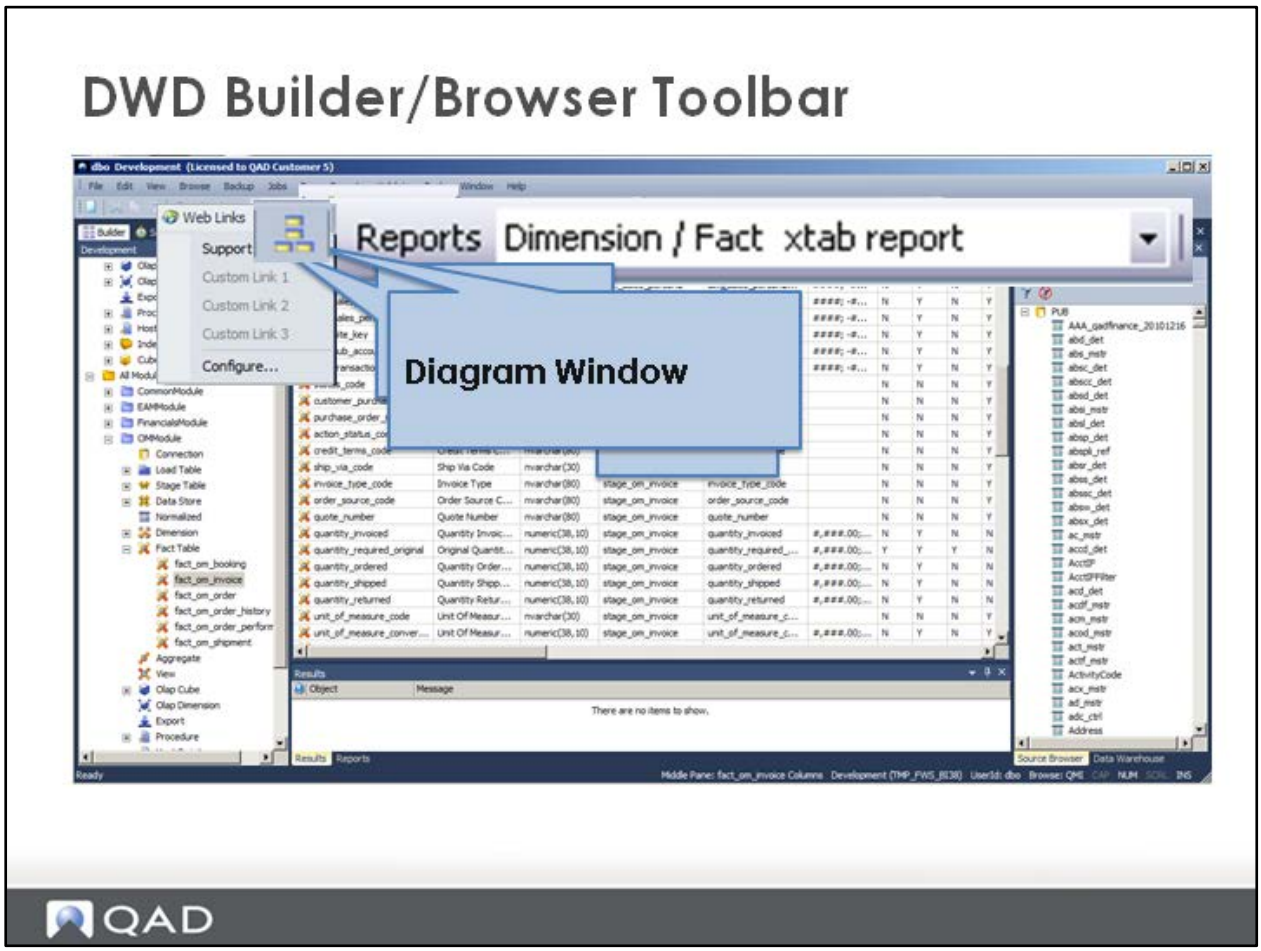
- Object pane – displays the metadata
- Target pane – item selected in the object pane has detailed information shown in the target pane
- Results pane – feedback area
- Source pane – two tabs – Source system and Data Warehouse

DWD Builder/Browser Panes



In the Builder (Browser) the individual panes can be moved, resized and hidden. To move the pane back to the original position, double click on the pane title bar.

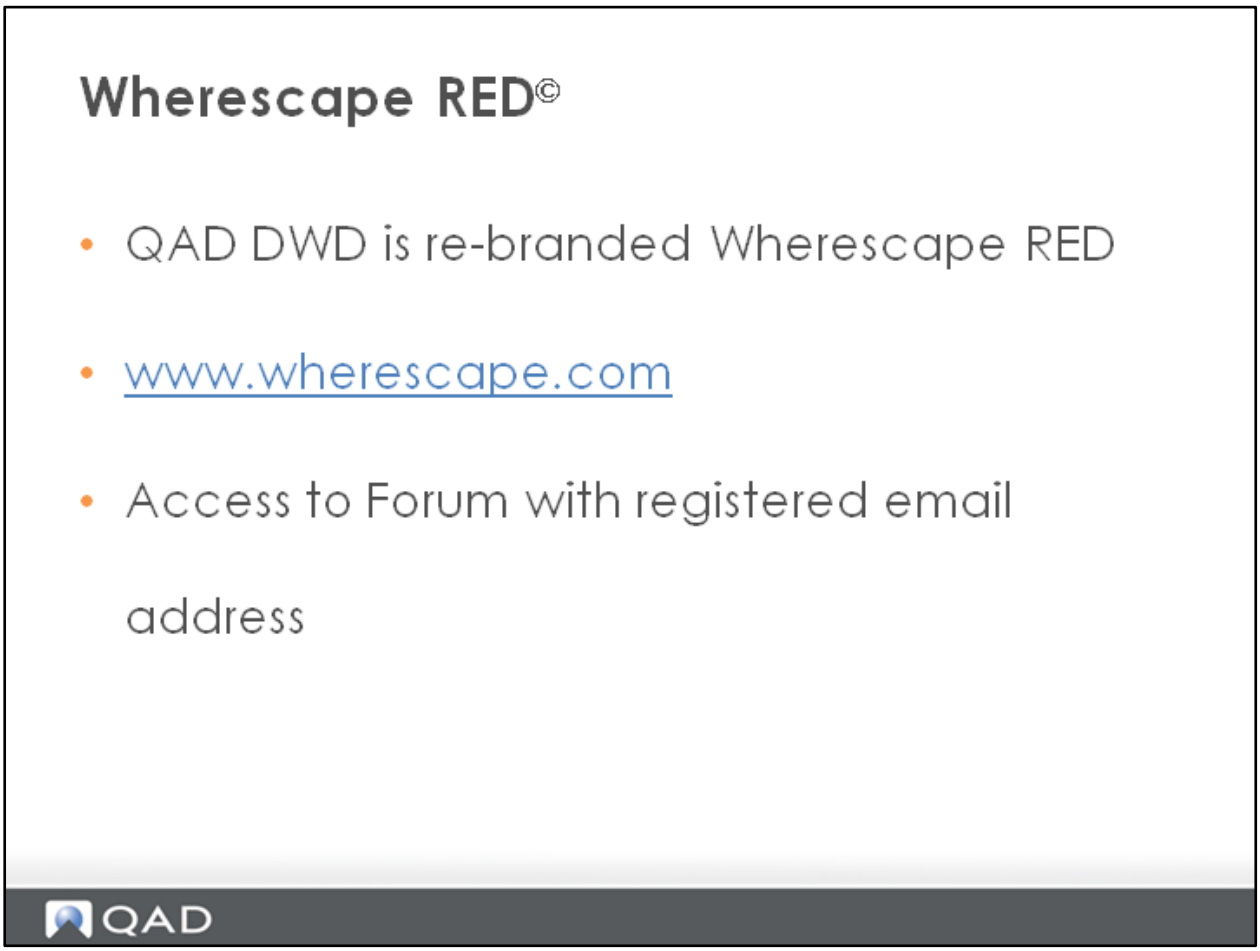
DWD Builder/Browser Toolbar



The Builder (Browser) menu bar provides access to the following:

- QAD Support
- Diagram Window
- Scheduler Window
- Reports

Wherescape RED©

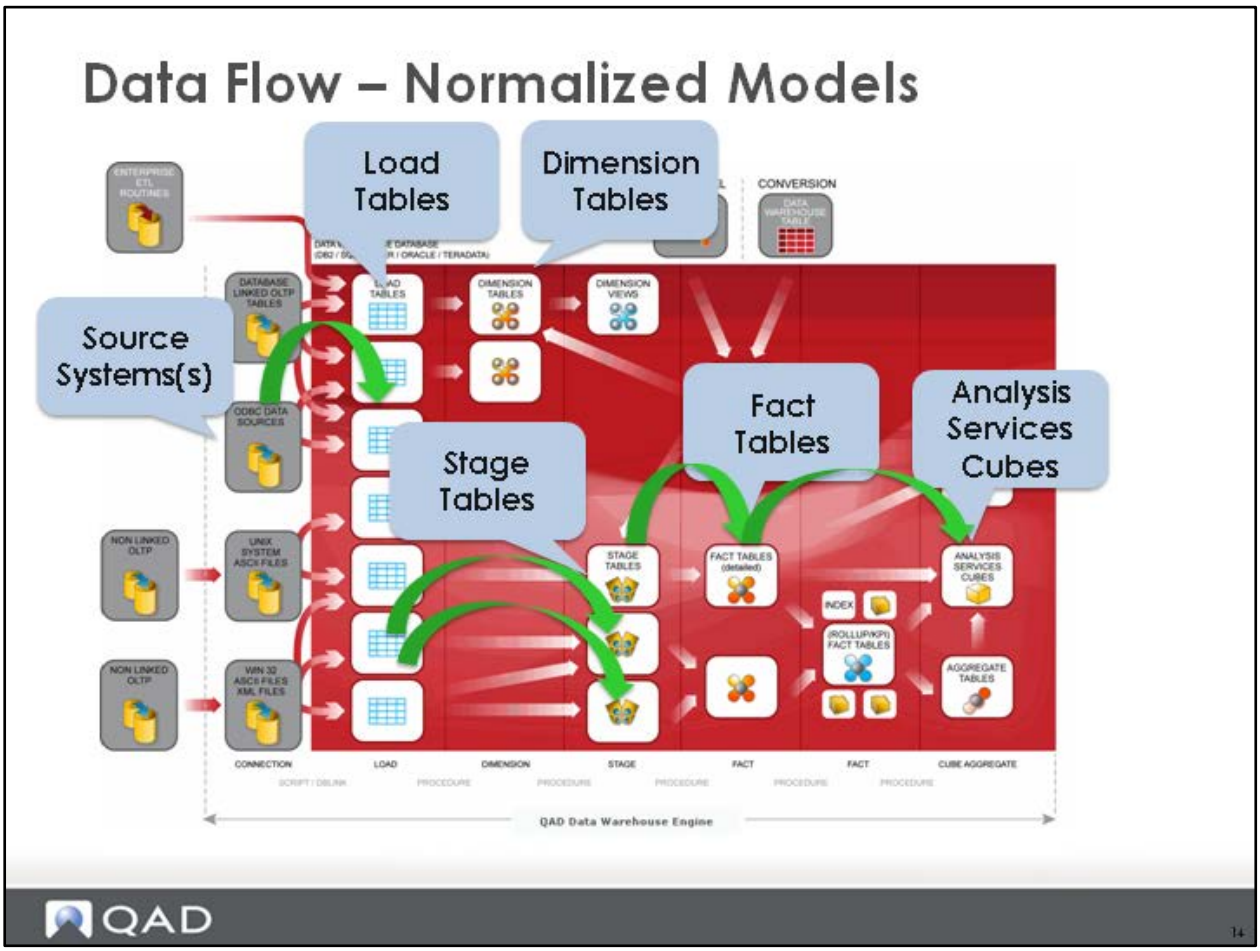


The QAD DWD is a rebranded version of a product from Wherescape Inc. named “Red”.

DWD Concepts



Data Flow – Normalized Models



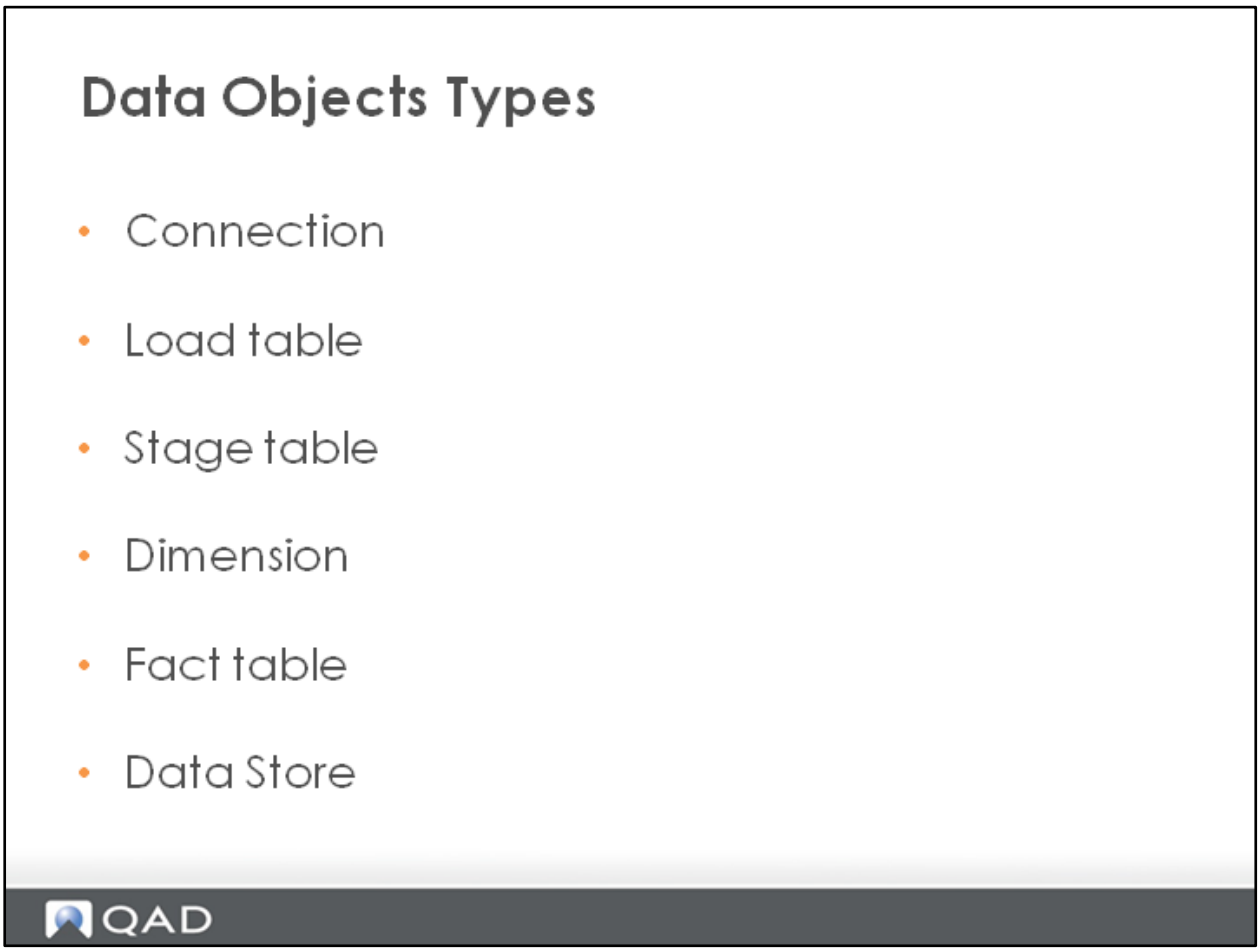
The expected flow of data is as follows:

- Source systems (ERP, EAM, TMS)
- Load tables
- Stage tables
- Dimension & Fact tables
- Microsoft Analysis Services Cubes

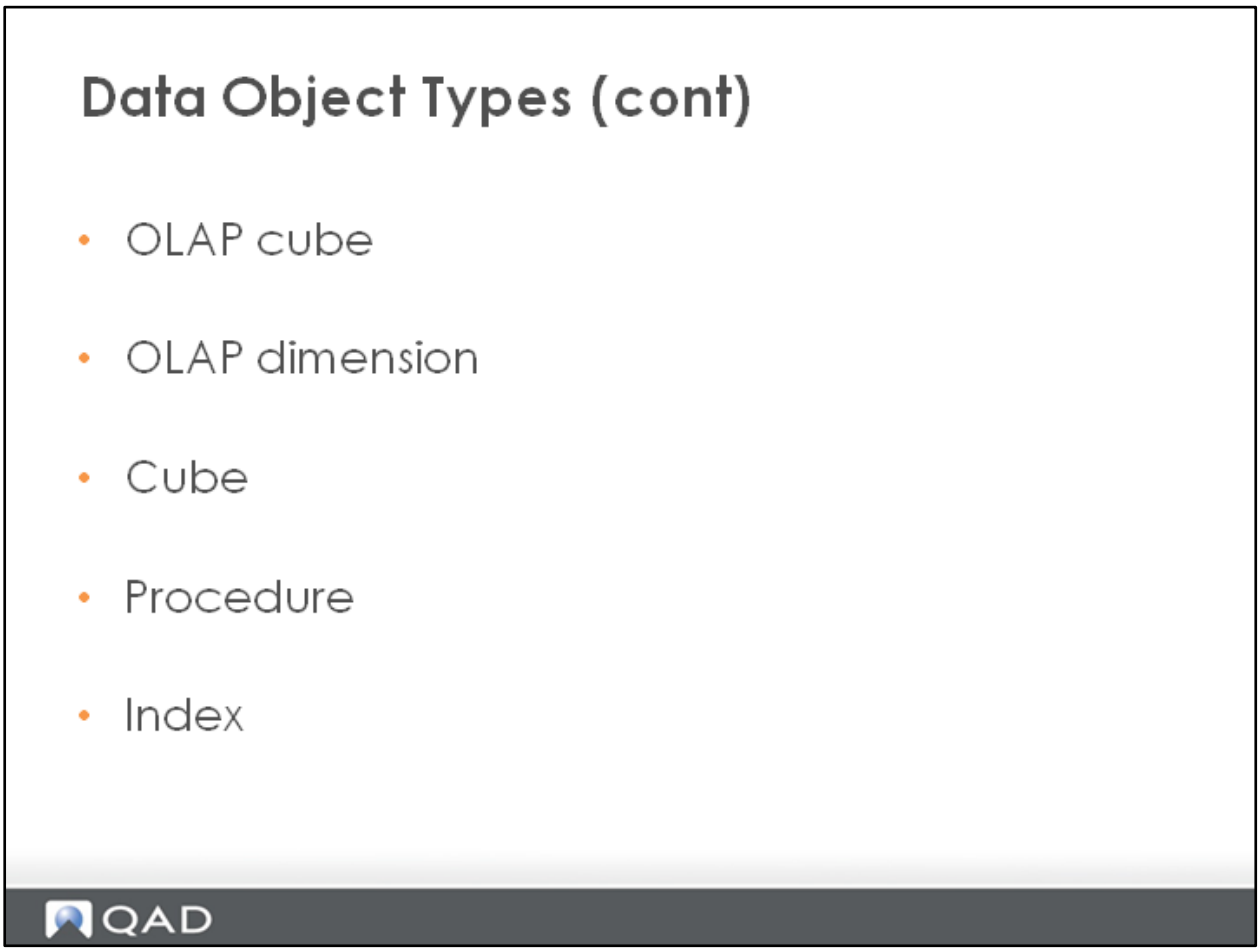
DWD Objects



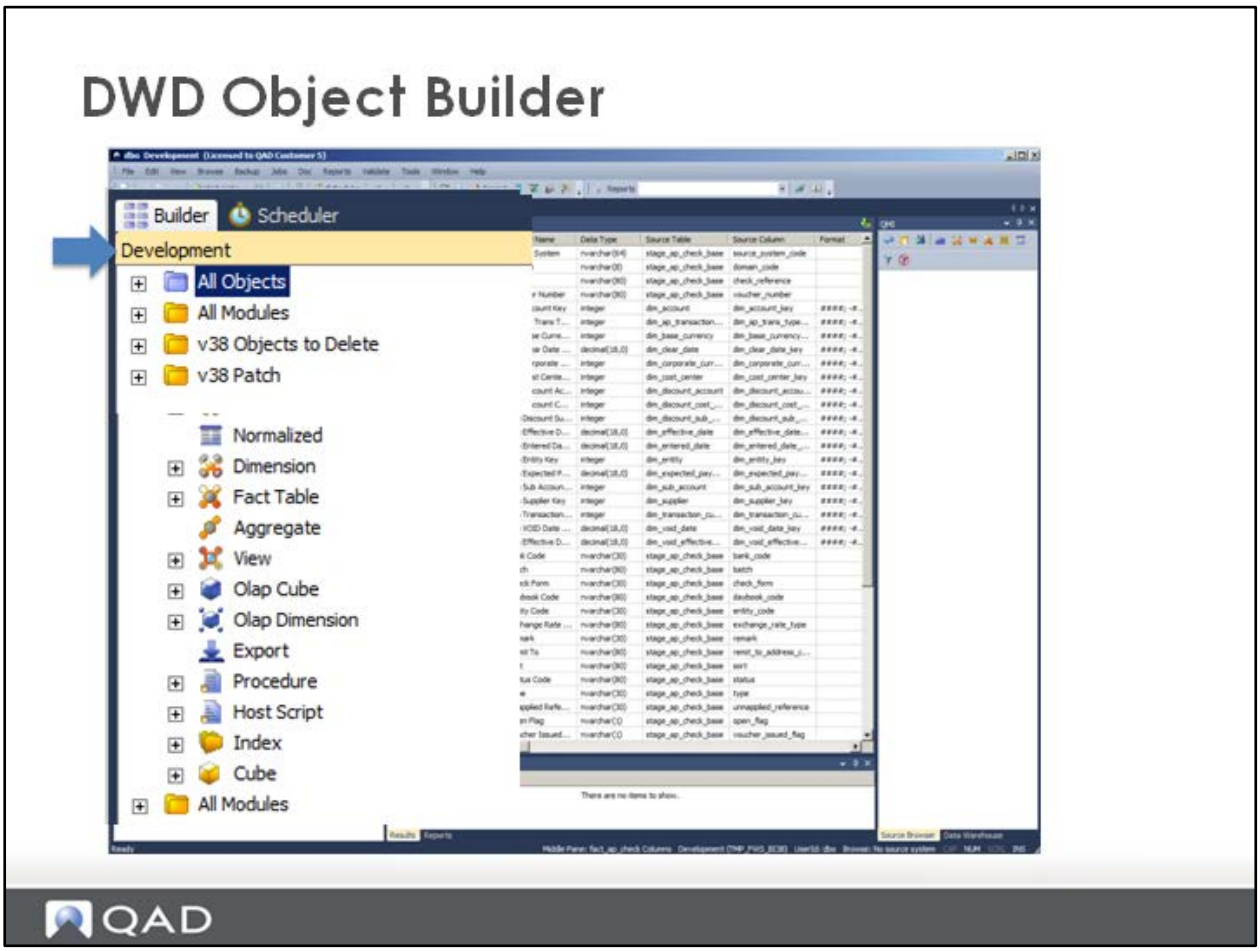
Data Objects Types



Data Object Types (cont)



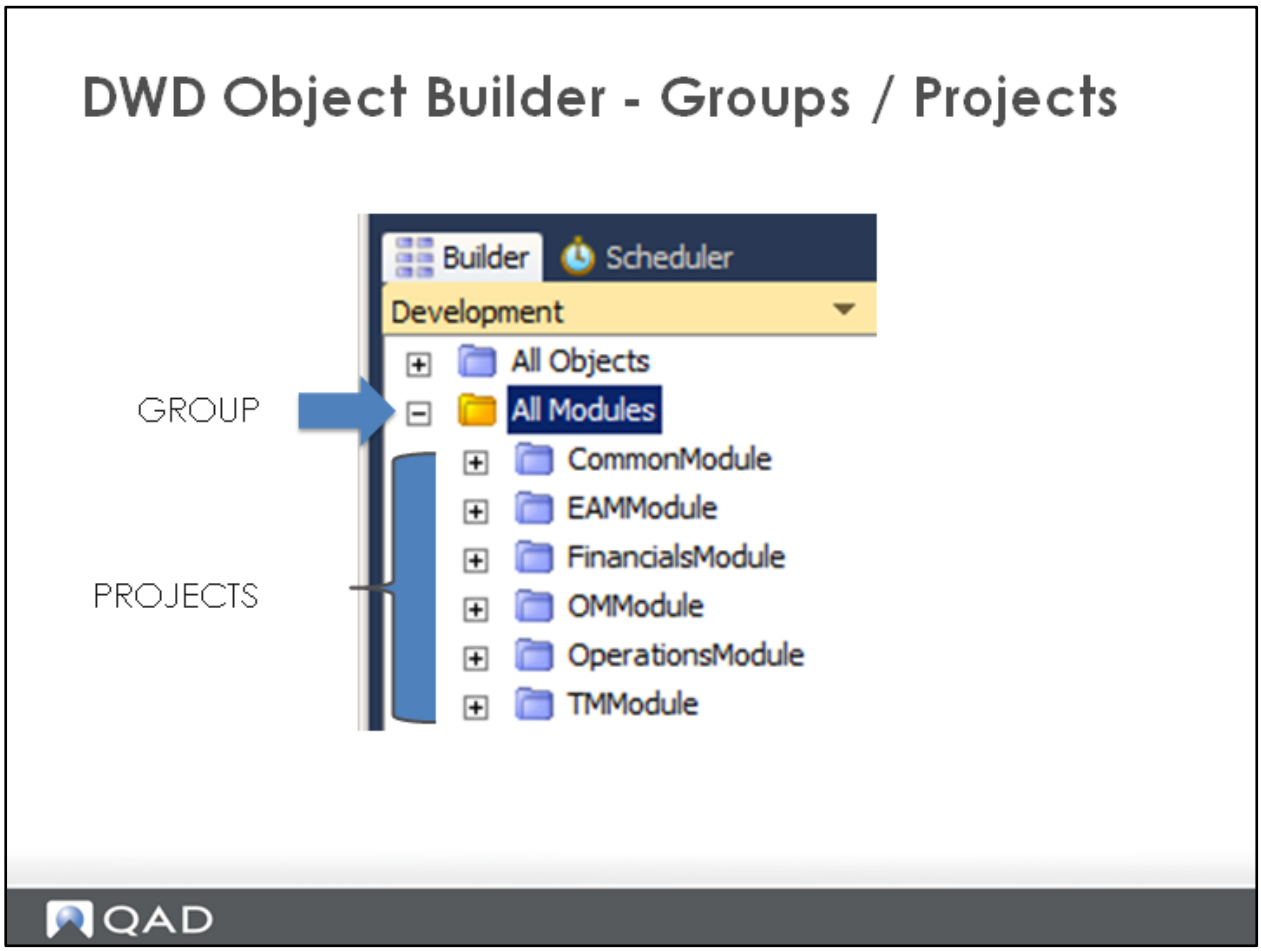
DWD Object Builder



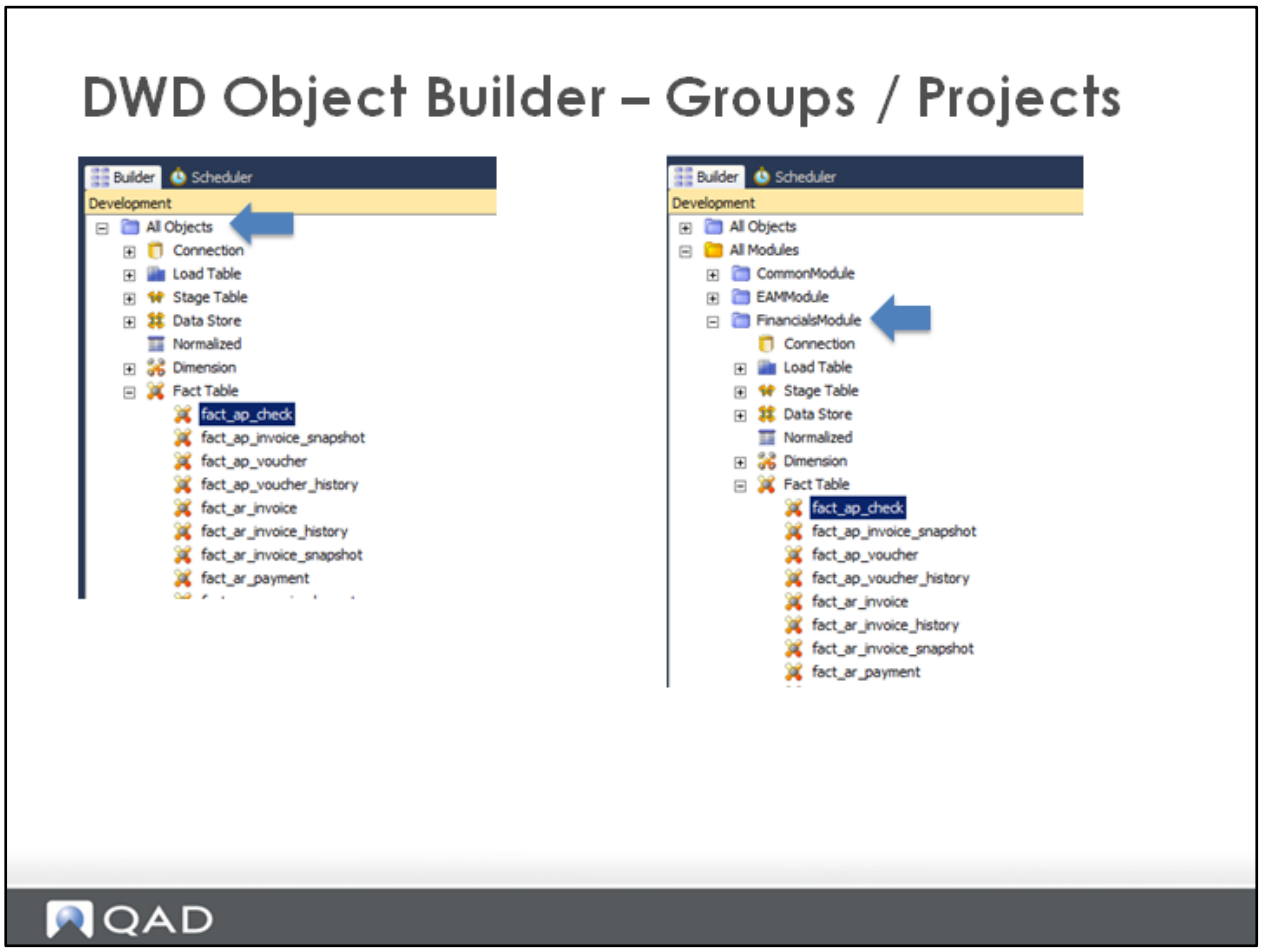
Objects displayed in the object pane are organized into Projects.

A single object can be assigned to more than one project.

DWD Object Builder - Groups / Projects



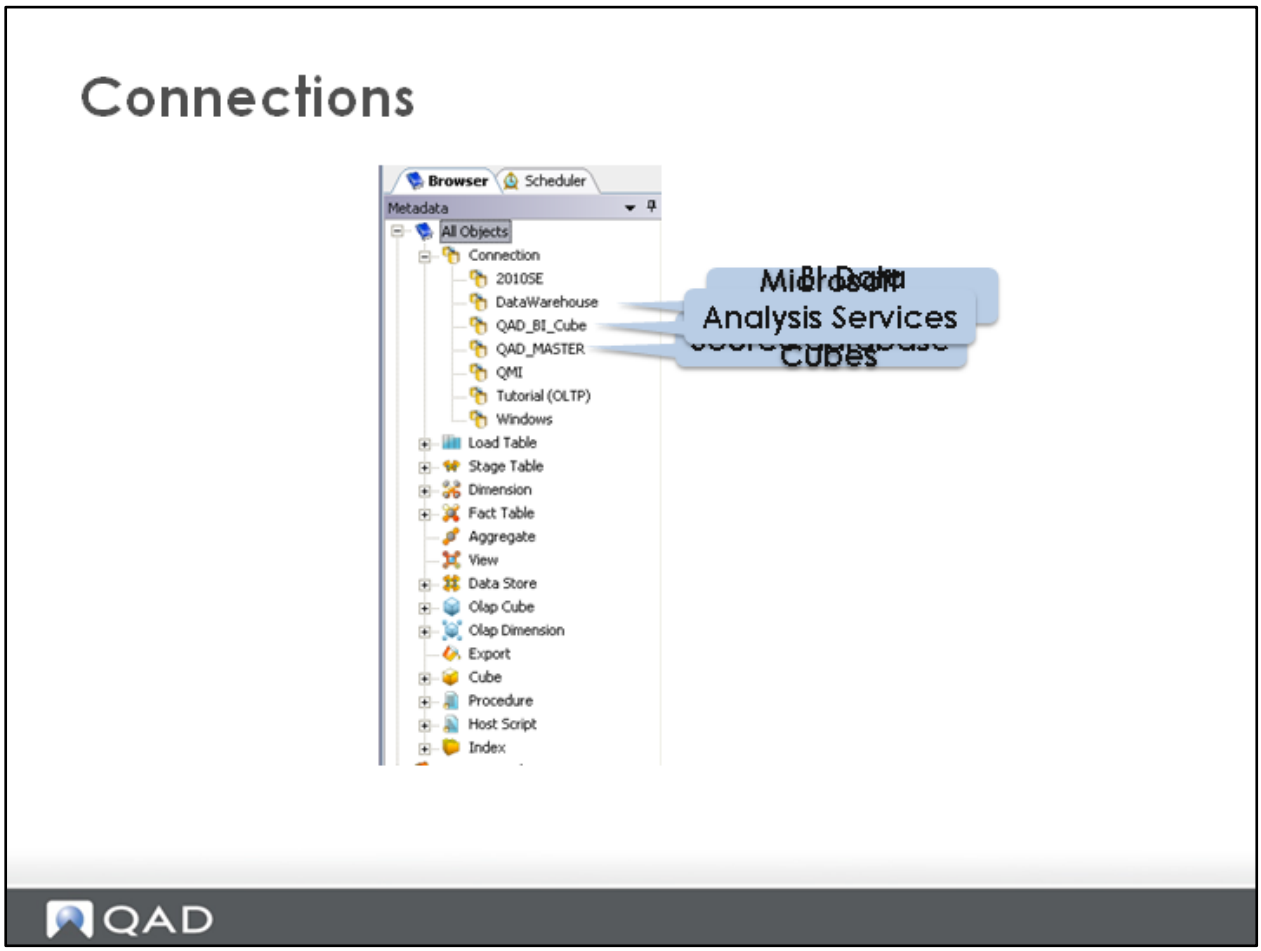
DWD Object Builder – Groups / Projects



The All Objects project contains every object in the data warehouse. To expand the set, click on the plus sign in front of the set name.

Here we see that the object named *fact_ap_check* is linked to both the *All Objects* project, and the *FinancialModules* project. Further, the *FinancialsModules* project is a part of the *All Modules* group.

Connections



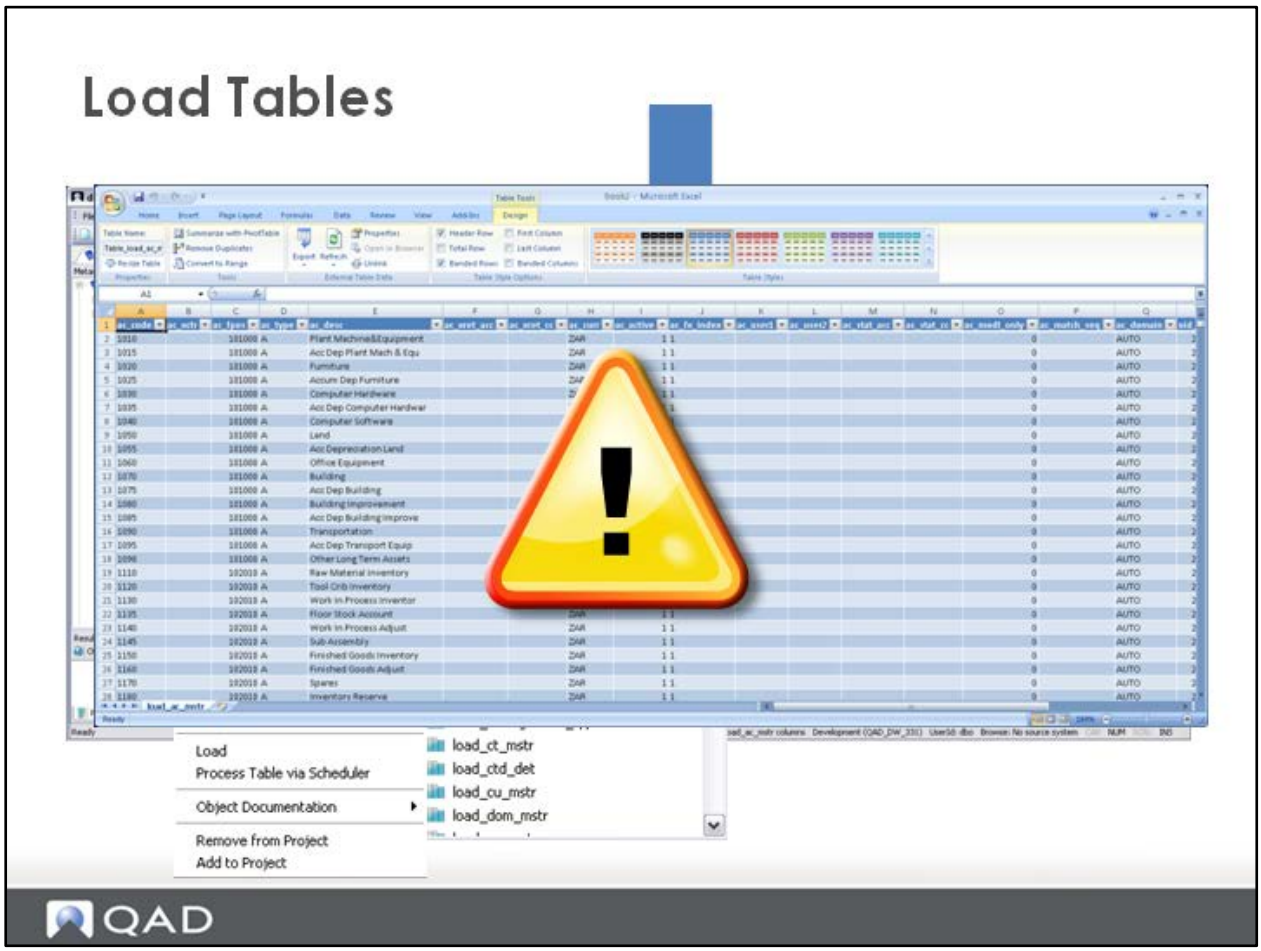
Connections define the path to external objects, such as source data.

Also, a connection is defined to the BI Data Warehouse itself, the SQL database that contains the BI data.

QAD_MASTER is a template connection for Enterprise Application (ERP) and EAM Source systems. The connections named *2010SE* and *QMI* above were defined during the implementation of this specific data warehouse. They are links to 2 different QAD Enterprise Application environments.

There is also a link shown to the Microsoft Analysis Services Cubes (*QAD_BI_Cube)*

Load Tables



Load tables are the first entry point of data into the data repository. They hold the latest set of change data.

Standard QAD modules include Load tables that are ODBC “type”.

Right click on the table name for a drop down list of options. Options include *Display Data* and *Export Data via Excel.*

When using the *Export Data via Excel*, be aware of the potential number of rows to be extracted. You can add a SQL Where clause to the extract, to limit the number of rows extracted.

Load Tables - Properties

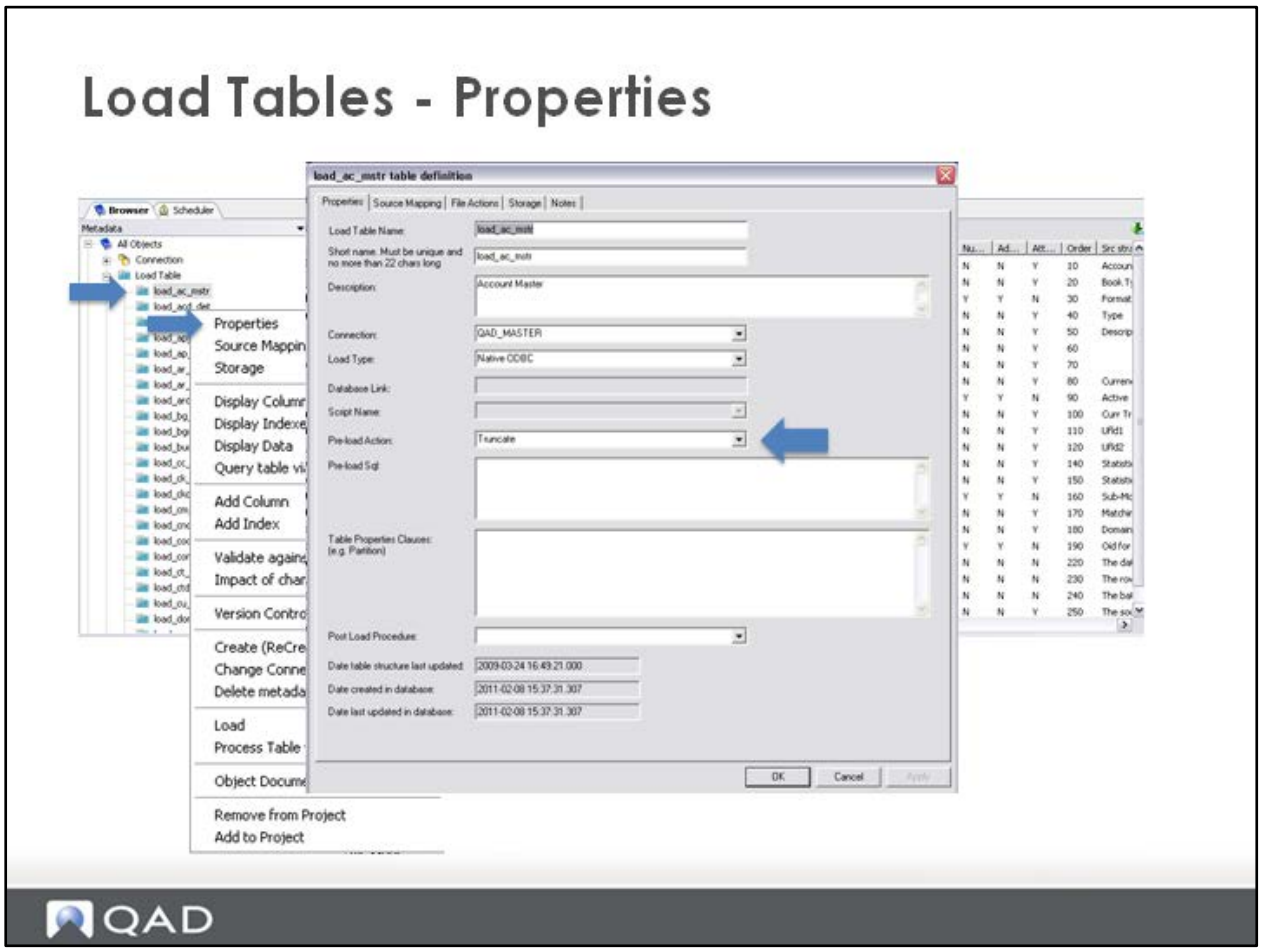
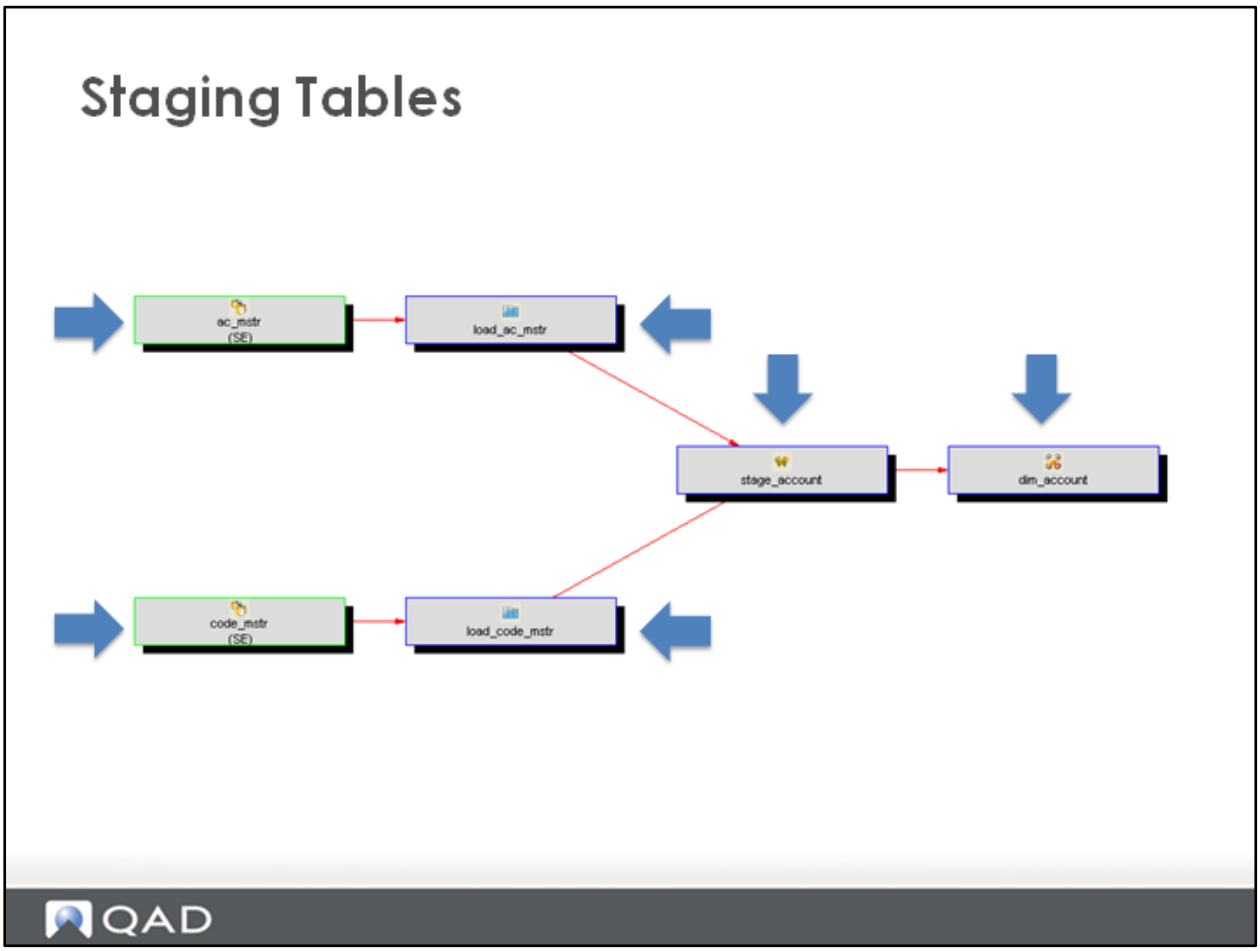


Table *Properties* show key elements related to the table.

Load tables can include pre-load actions. Here we see an example of a *Truncate* pre-load action.

Staging Tables



Staging tables are used in the transformation of raw data into a star schema format. They are **temporary** storage.

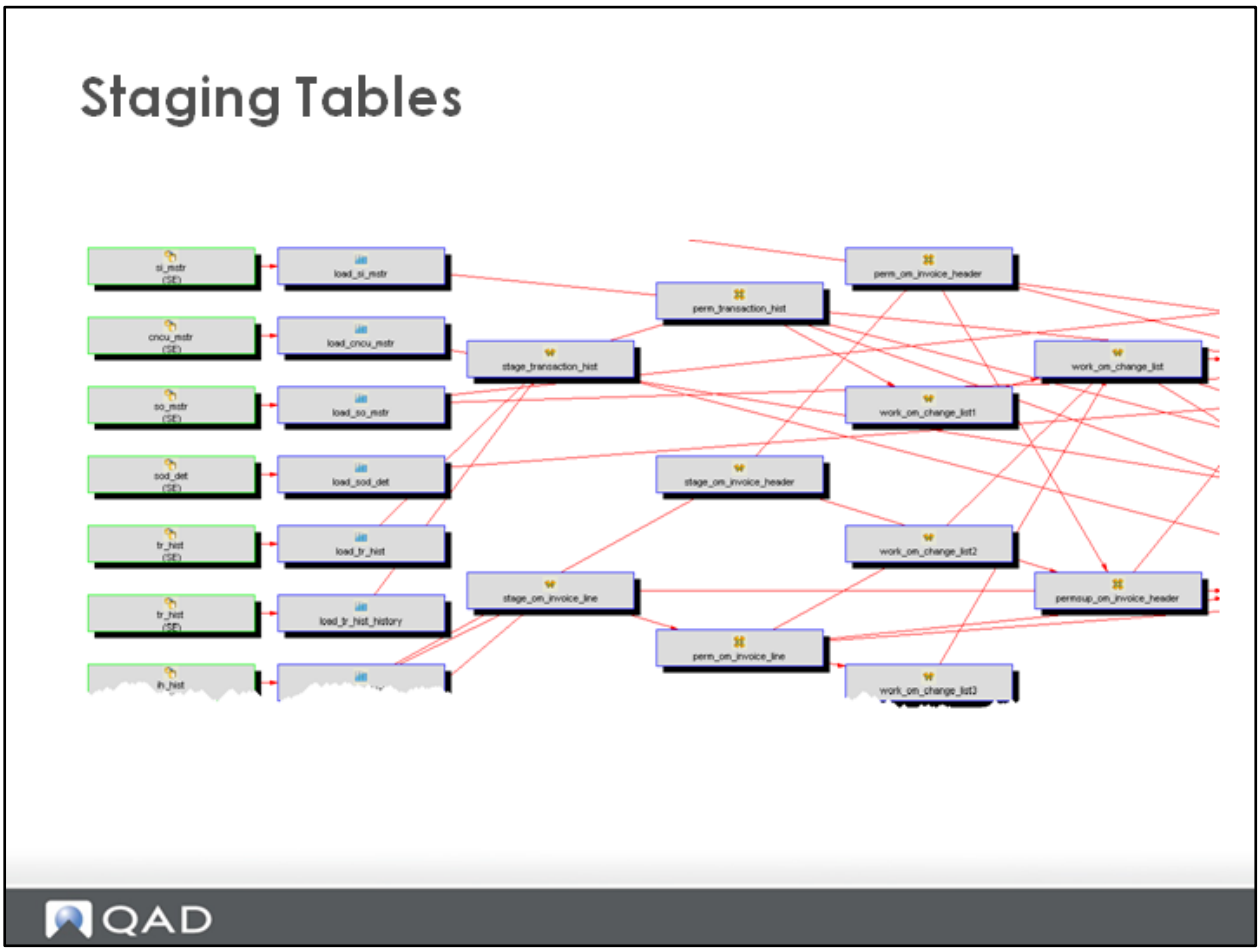
This slide is an examples of a *Track Back Diagram*.

From left to right:

The two source tables shown in this diagram are *ac_mstr* and *code_mstr*. Note that the boxes are in green, there are outside the data Warehouse.

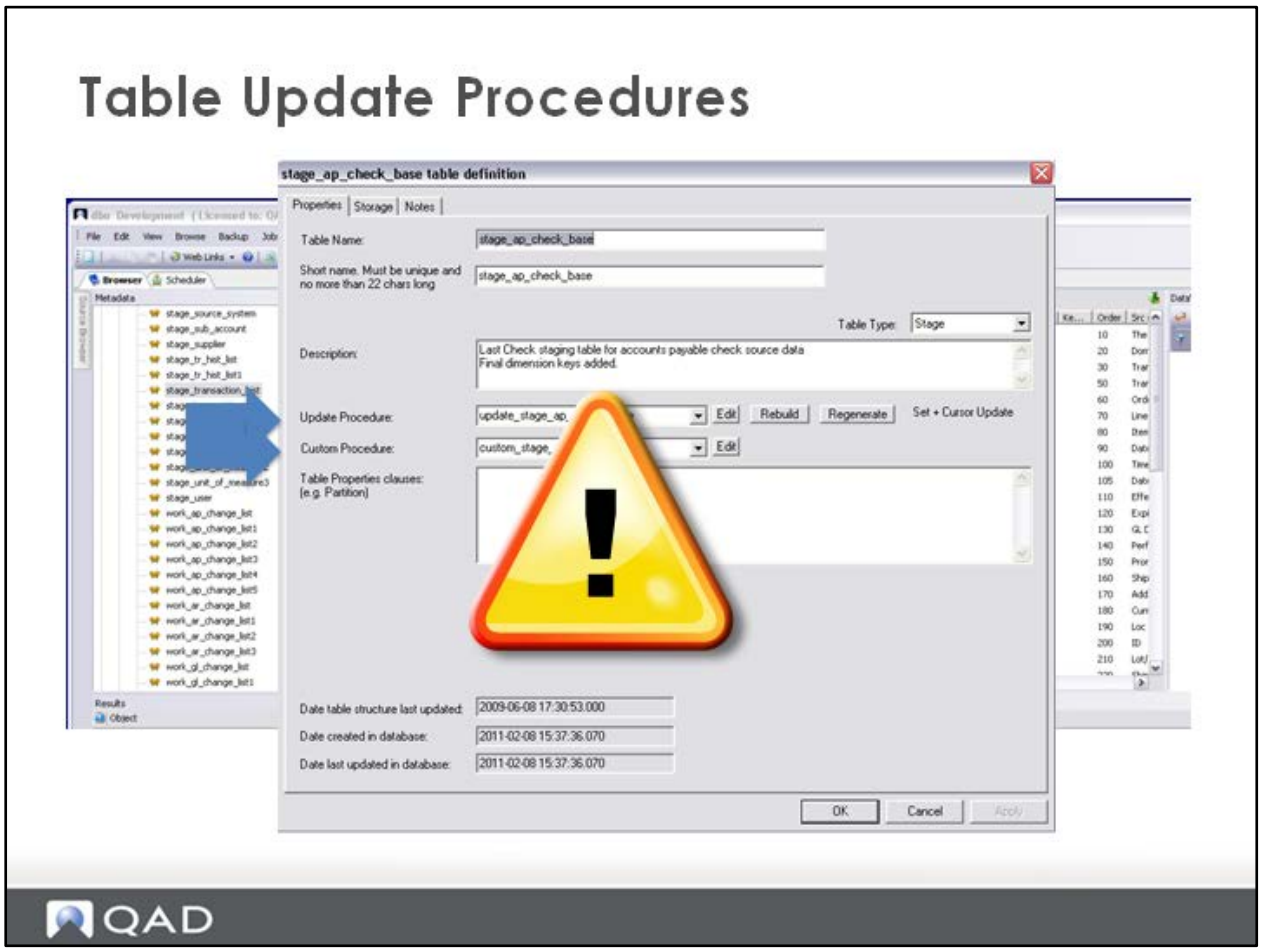
The source tables feed the load tables. The load tables are combined to a single stage table. Finally, we see that the stage table feeds the account dimension table.

Staging Tables



This slide is an example of a portion of a much more complex track-back diagram.

Table Update Procedures

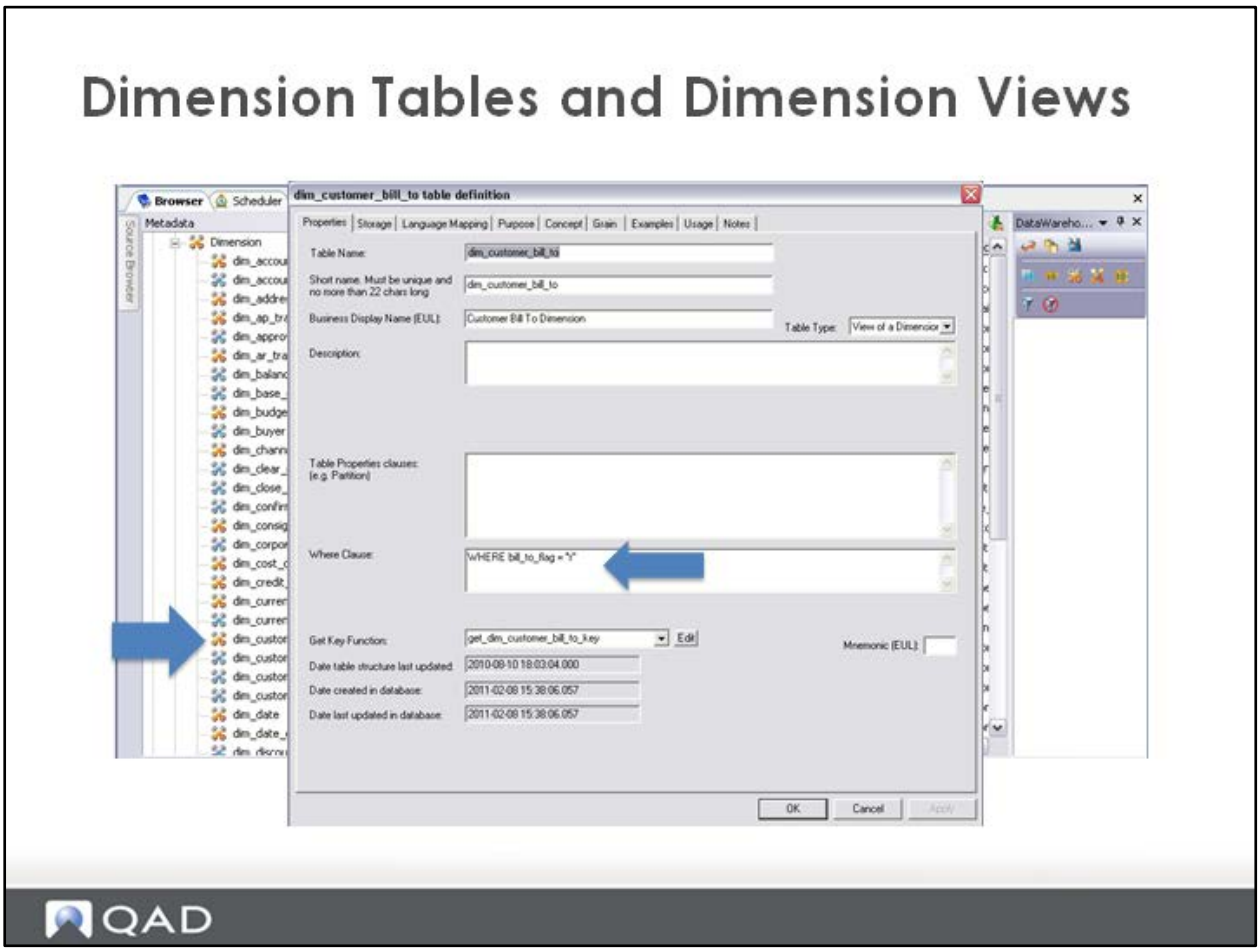


As with other tables within the data warehouse, the processing of data in the staging tables is controlled using procedures.

In this example, we see to procedures: *Update* and *Custom.*

These procedures should NOT be modified, except by trained personnel.

Dimension Tables and Dimension Views



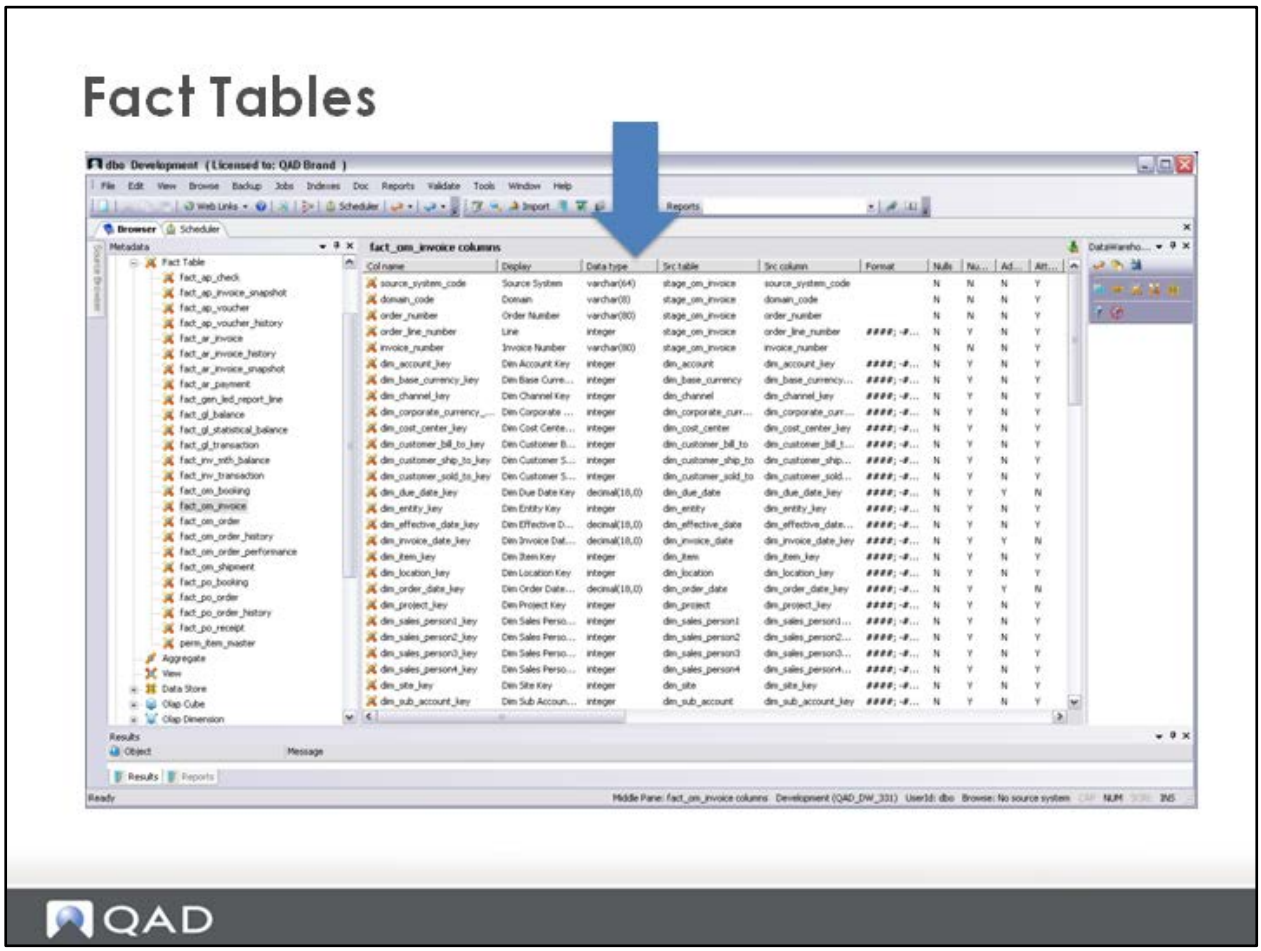
Dimensions are qualifiers of facts.

Views are created from dimensions.

As an example: The dim_customer contains all rows for all customers. There are 3 views for this dimension: bill_to, sold_to and ship_to.

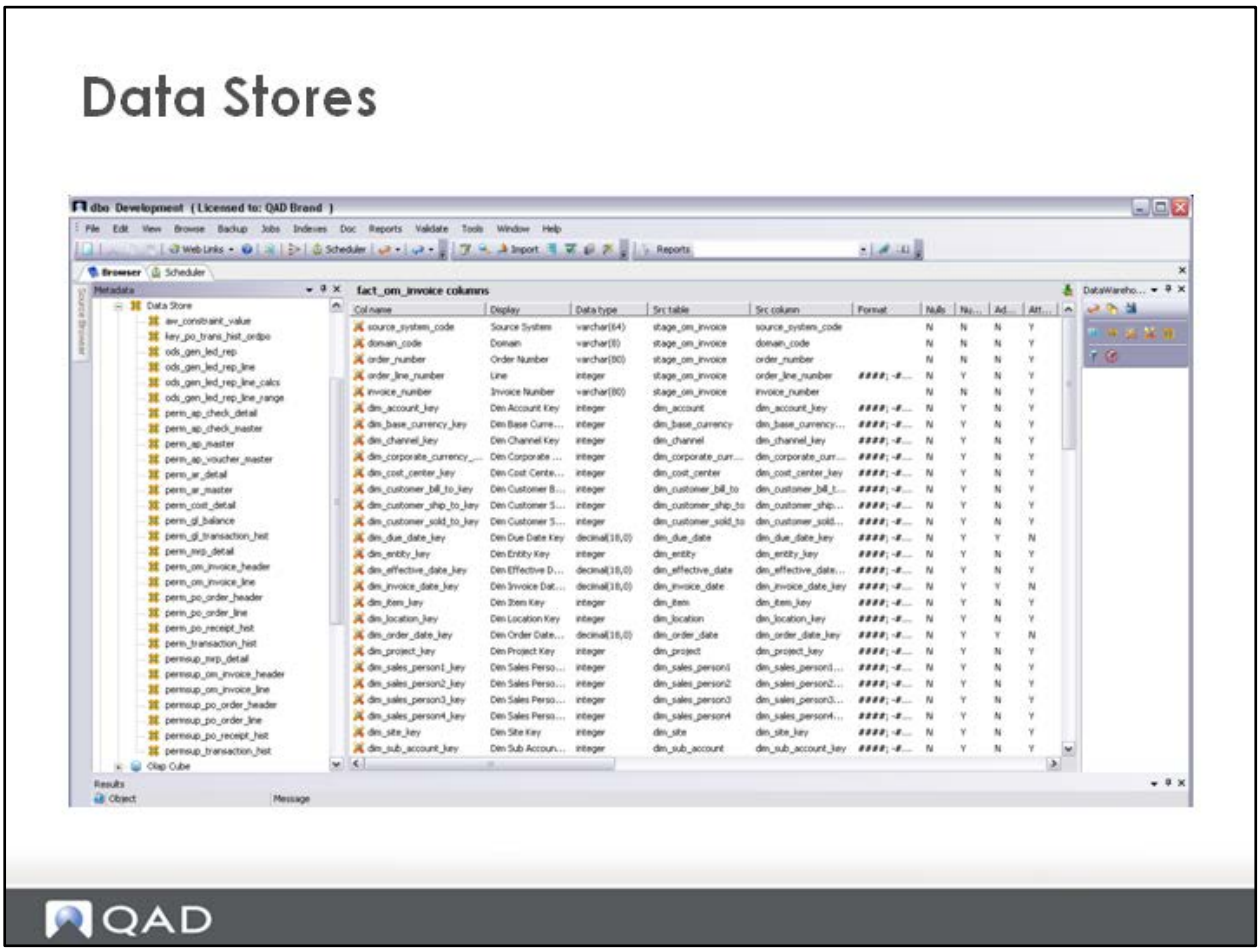
The Bill_to dimension view will select only rows in the customer dimension where the bill-to flag is “Y”.

Fact Tables



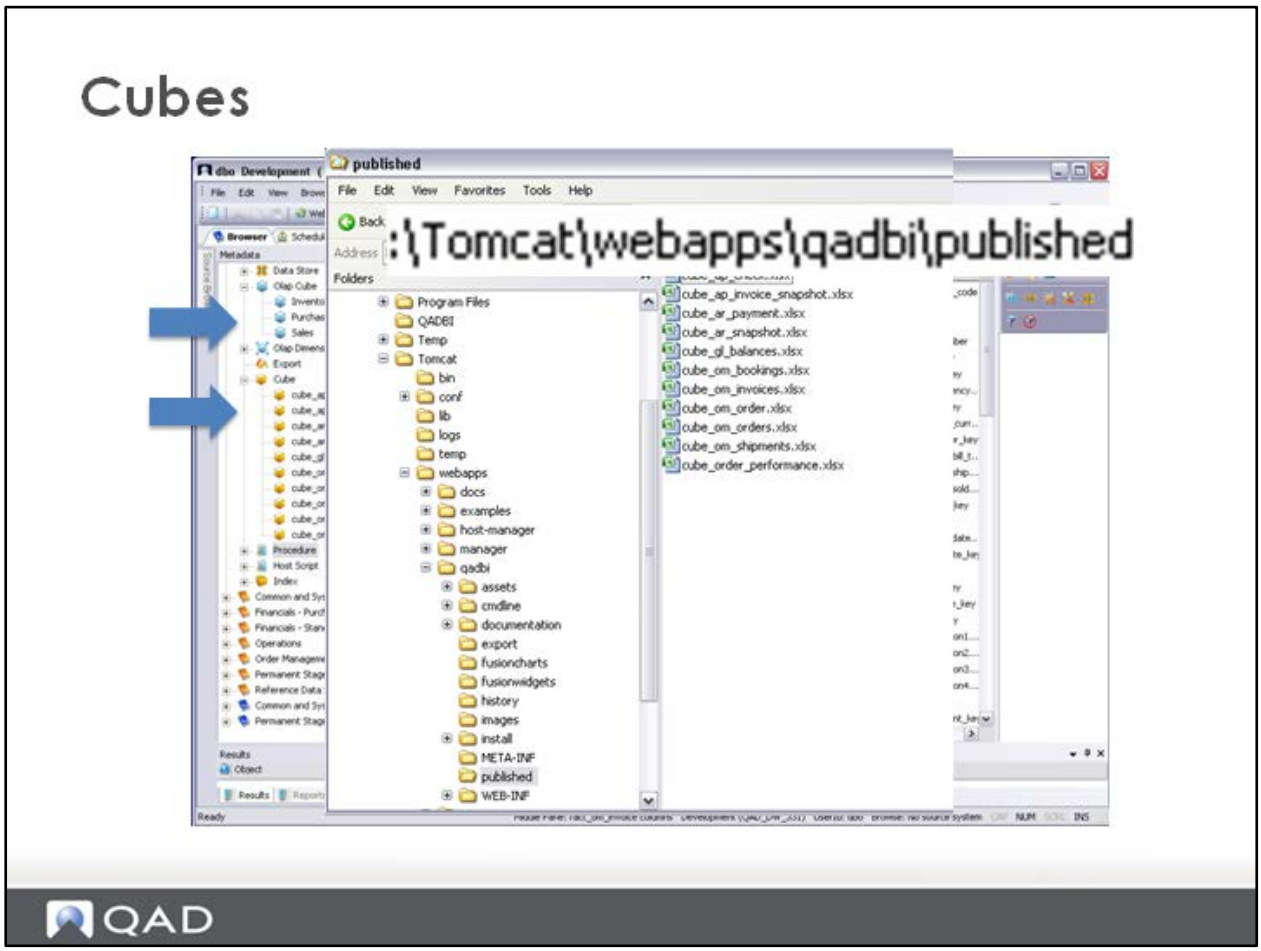
Fact tables are the central table in a star schema design.

Data Stores



Data Stores are permanent tables that are used to support the logic that transforms source data to fact tables.

Cubes



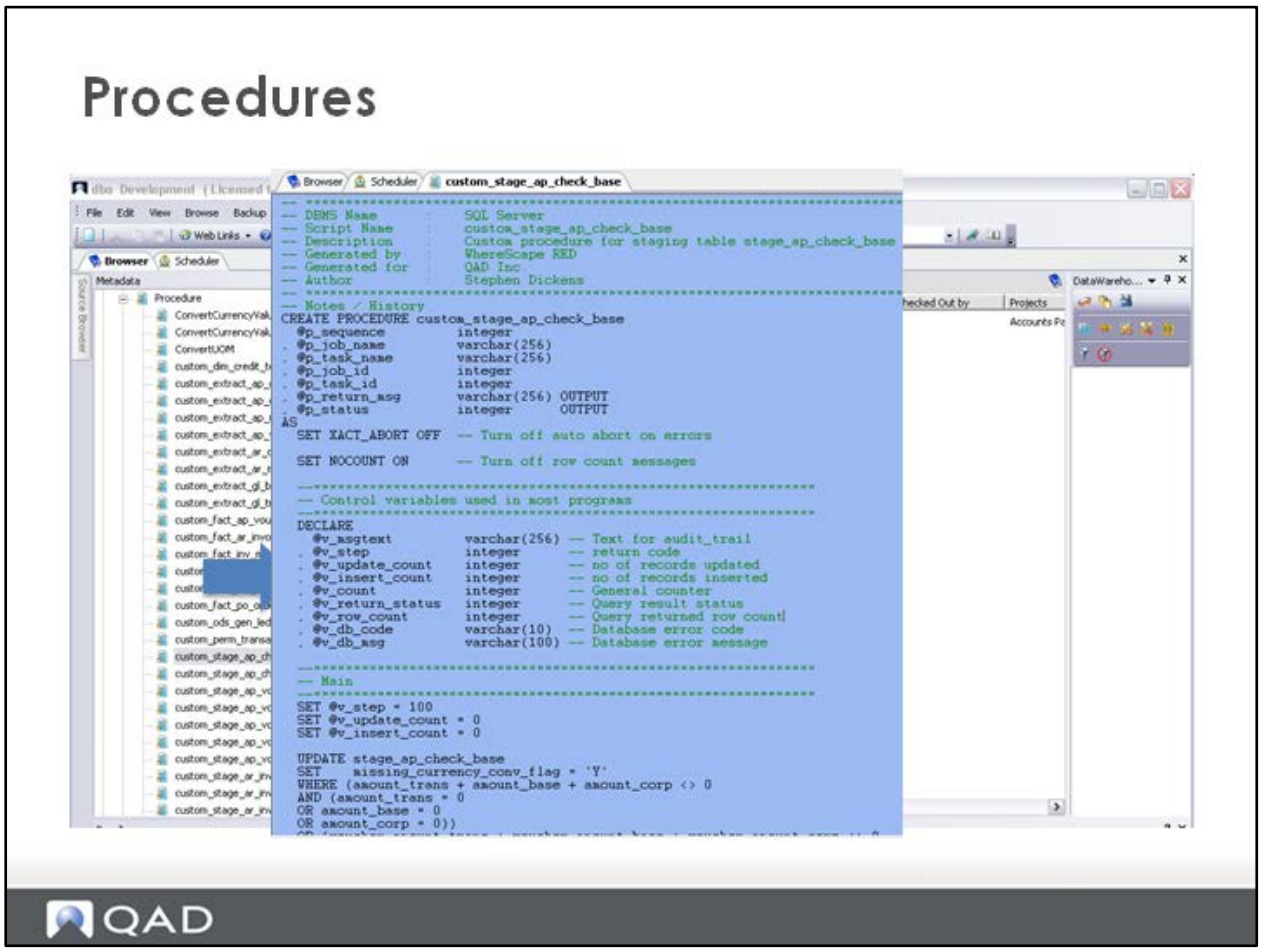
2 types of cube objects in the DWD:

Older type = “Cubes”

Newer type = “OLAP Cubes” and “OLAP Dimensions”.

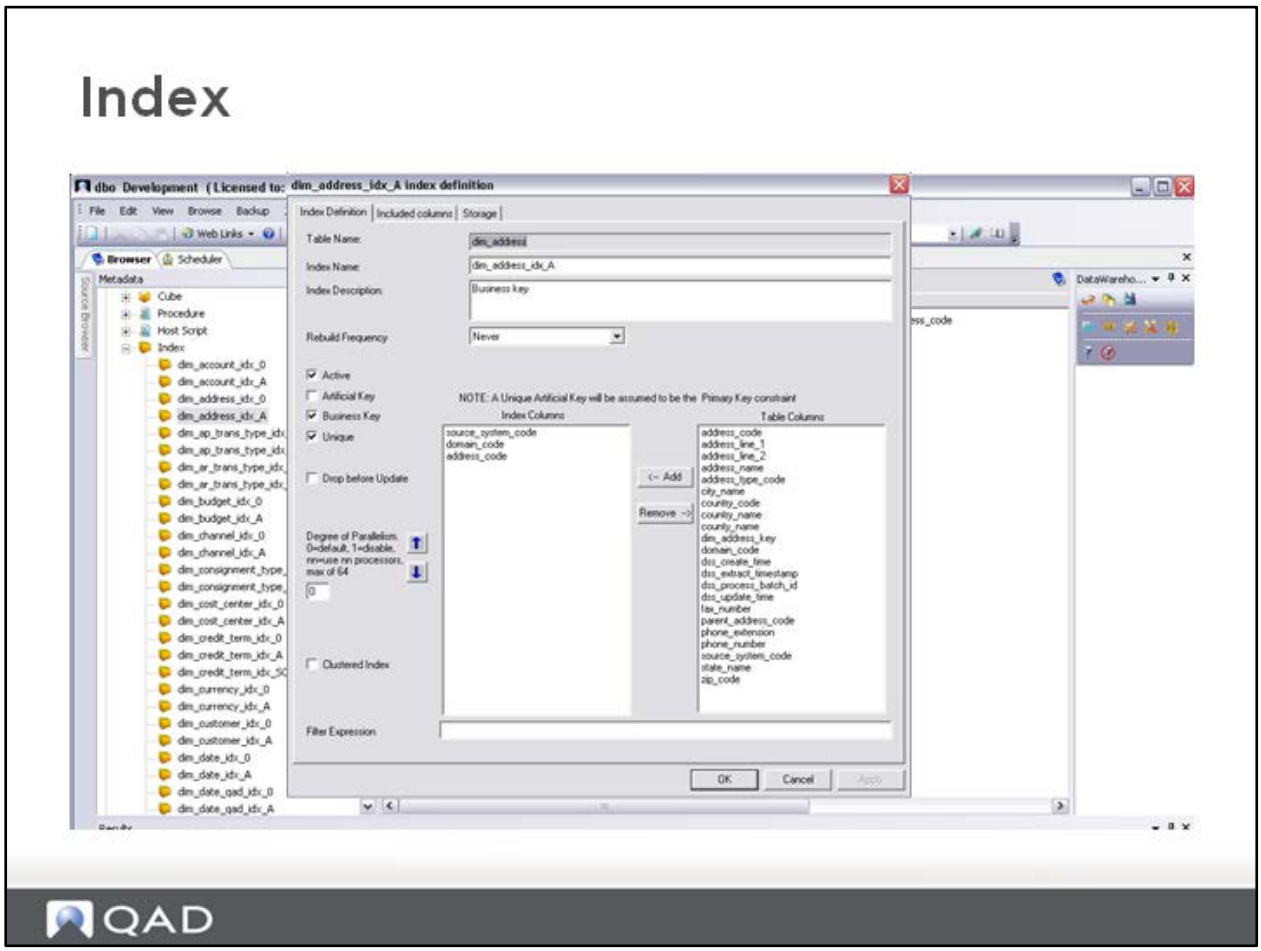
QAD standard provides Excel workbooks that access the older type of cube.

Procedures



Procedures are an object type in the DWD.

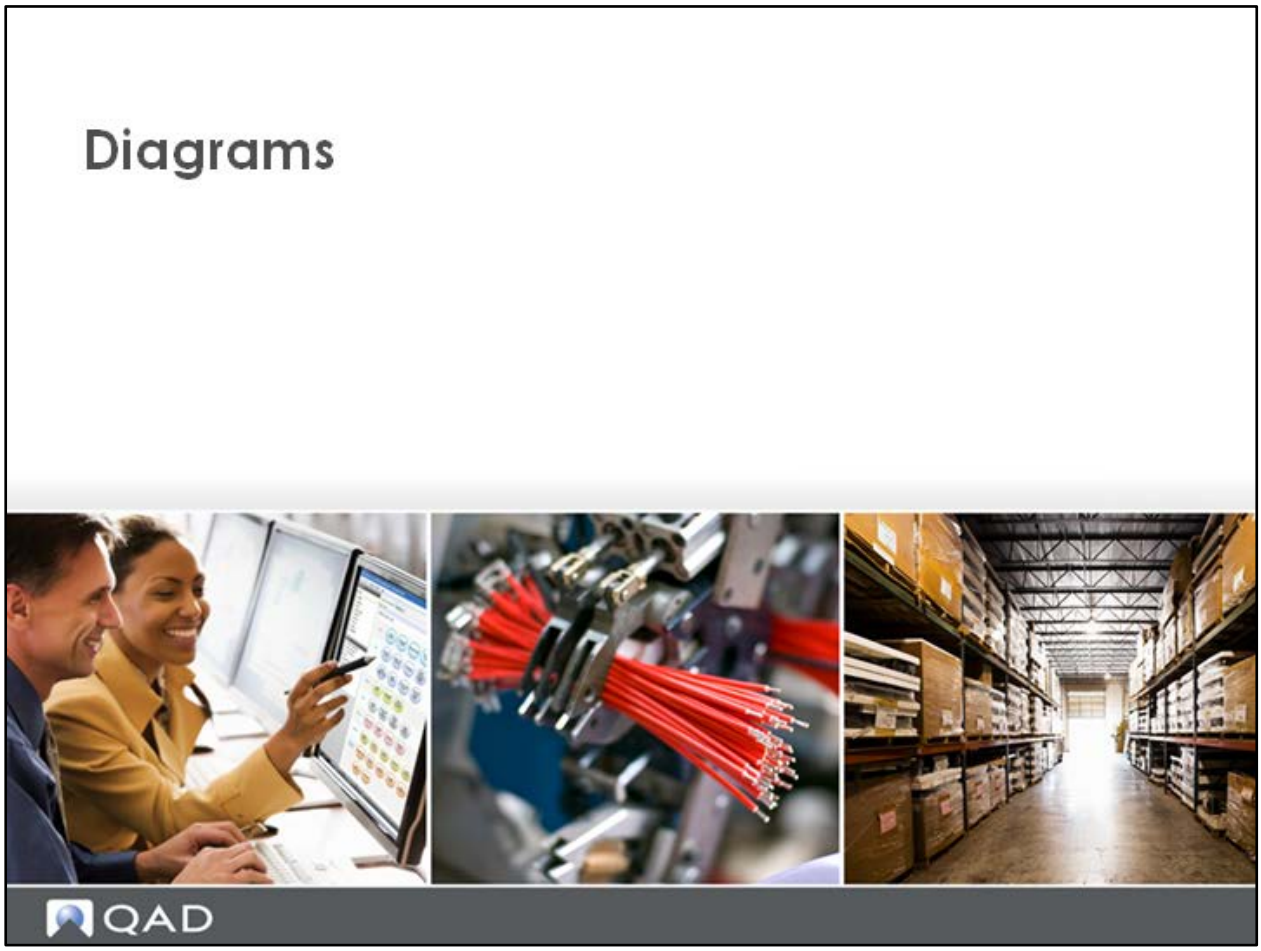
Index



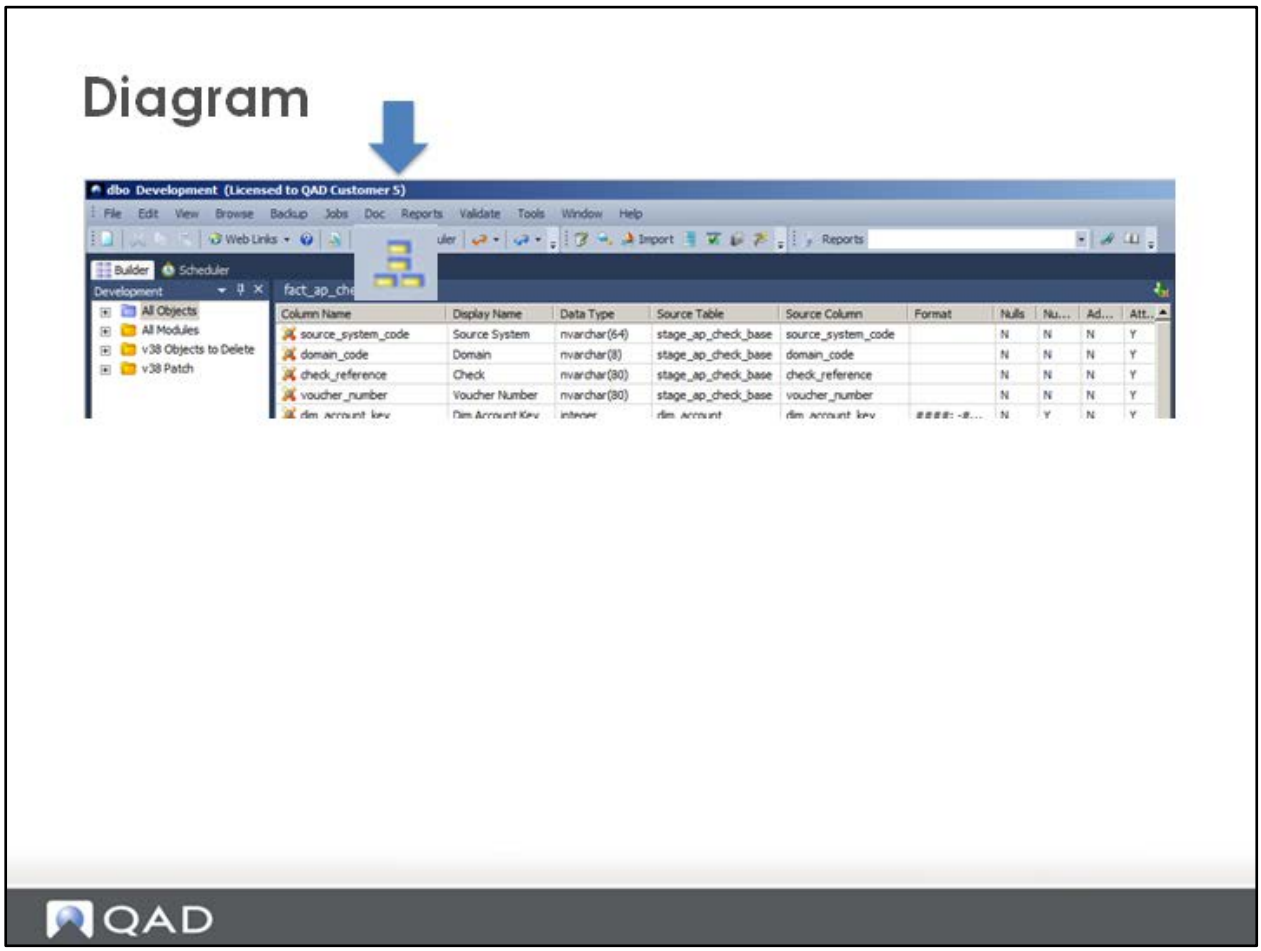
Tables may have indexes.

To see which indexes are defined for a table, right click on the table object and select *Display Indexes*

Diagrams

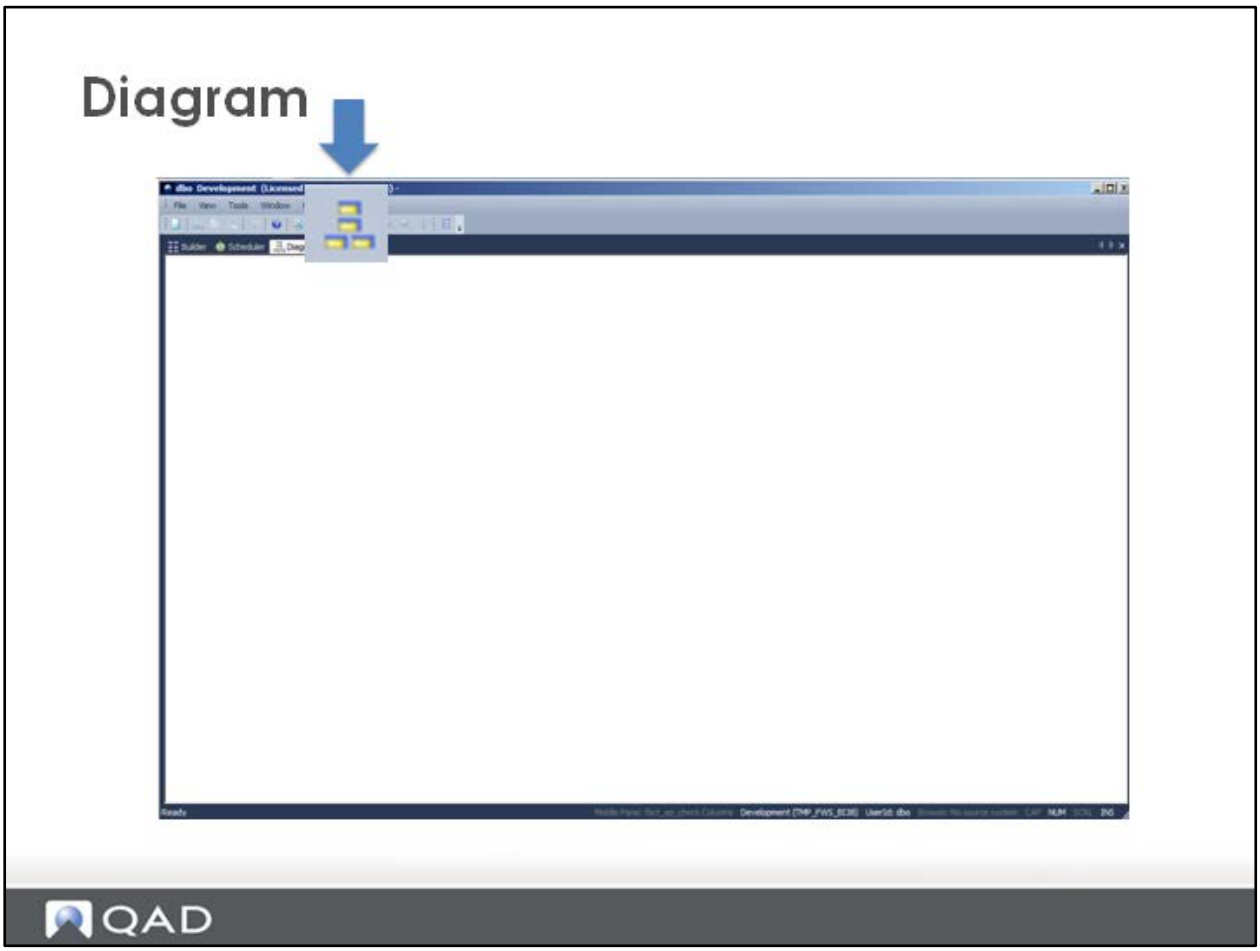


Diagram



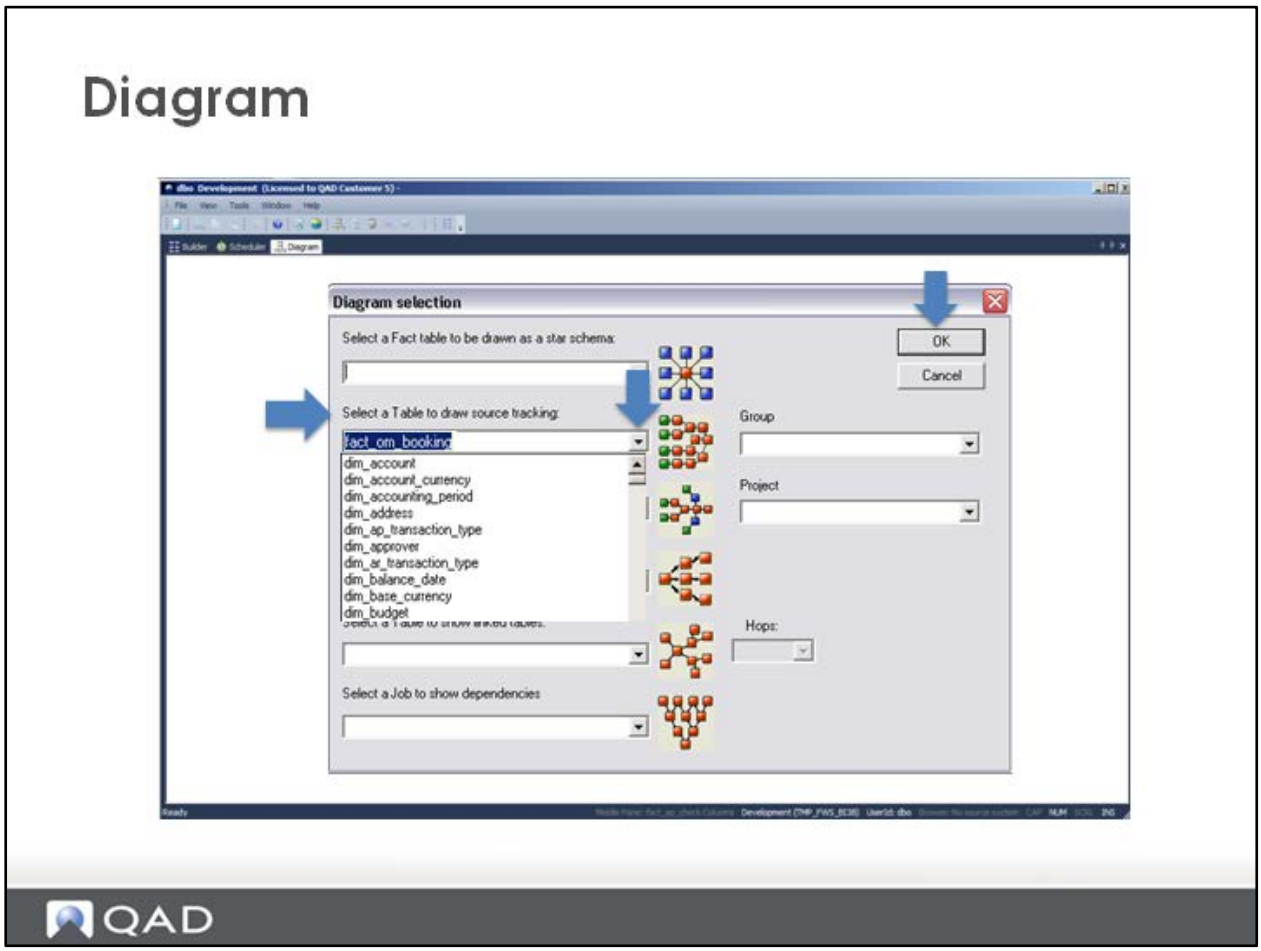
Open the Diagram window by clicking on the Diagram button.

Diagram



When the Diagram window is displayed, click the Diagram button again.

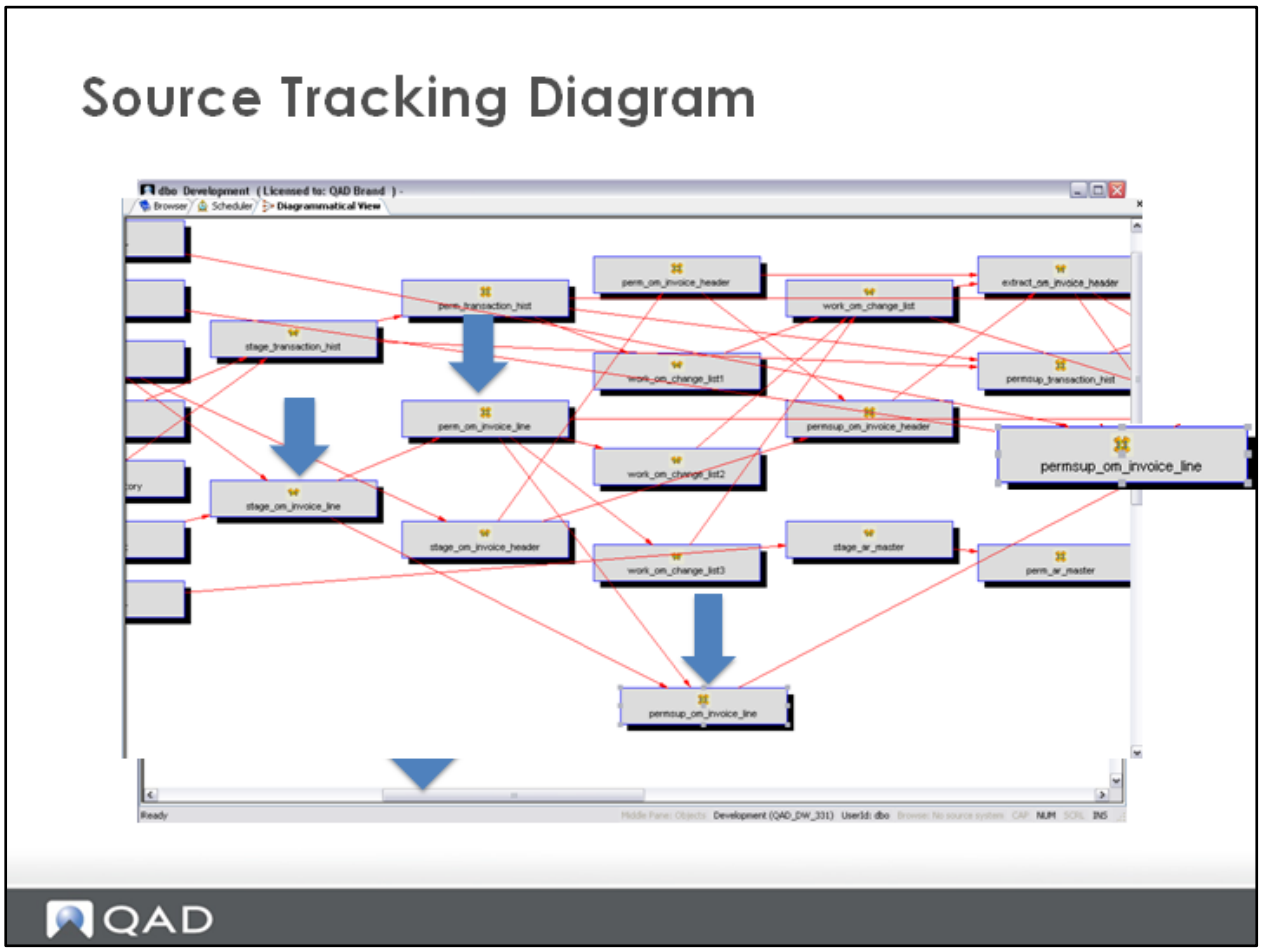
Diagram



The diagram selection window lets the user select the type of diagram and which object to use.

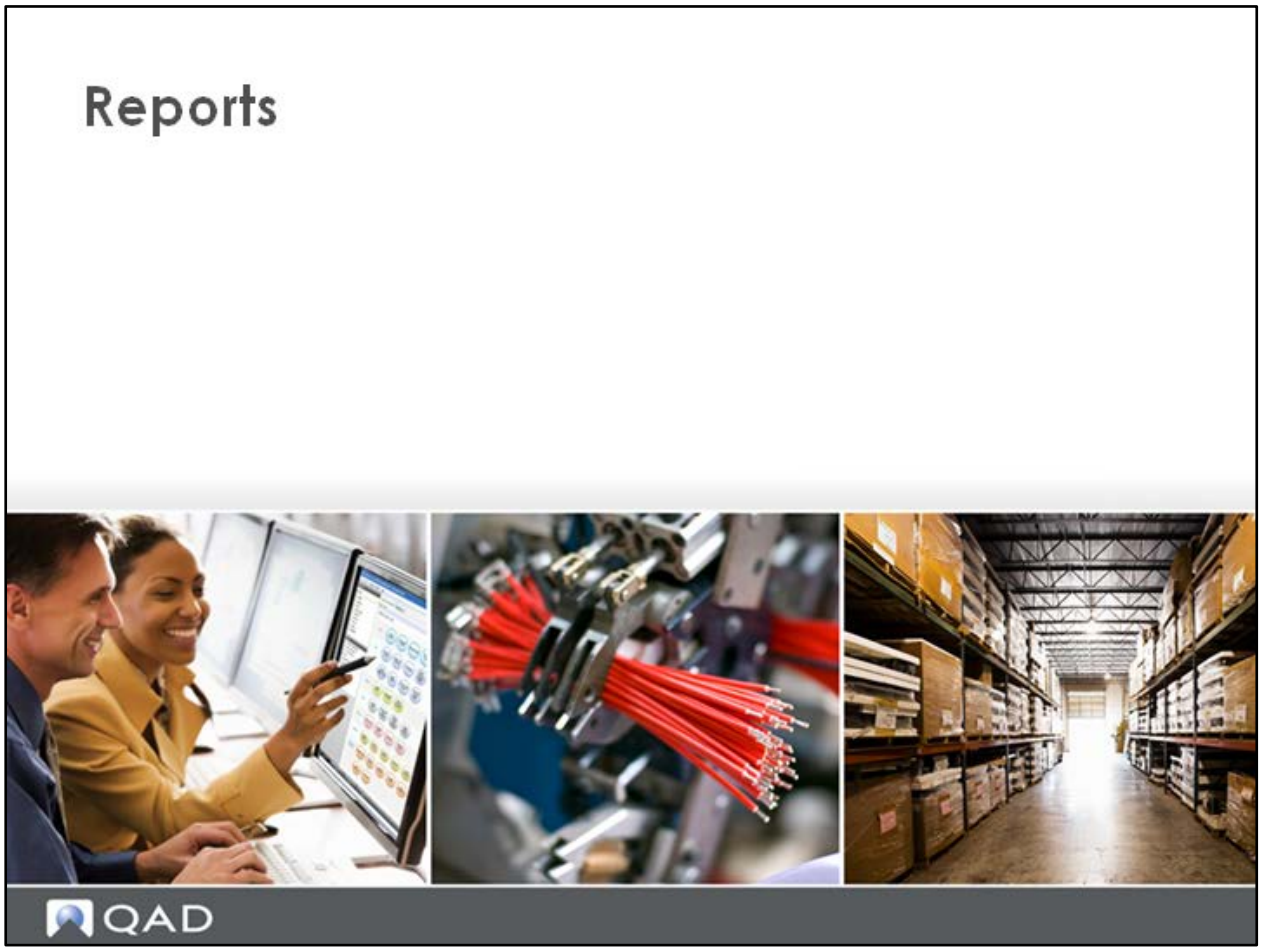
The user MUST select the object from the drop down list.

Source Tracking Diagram

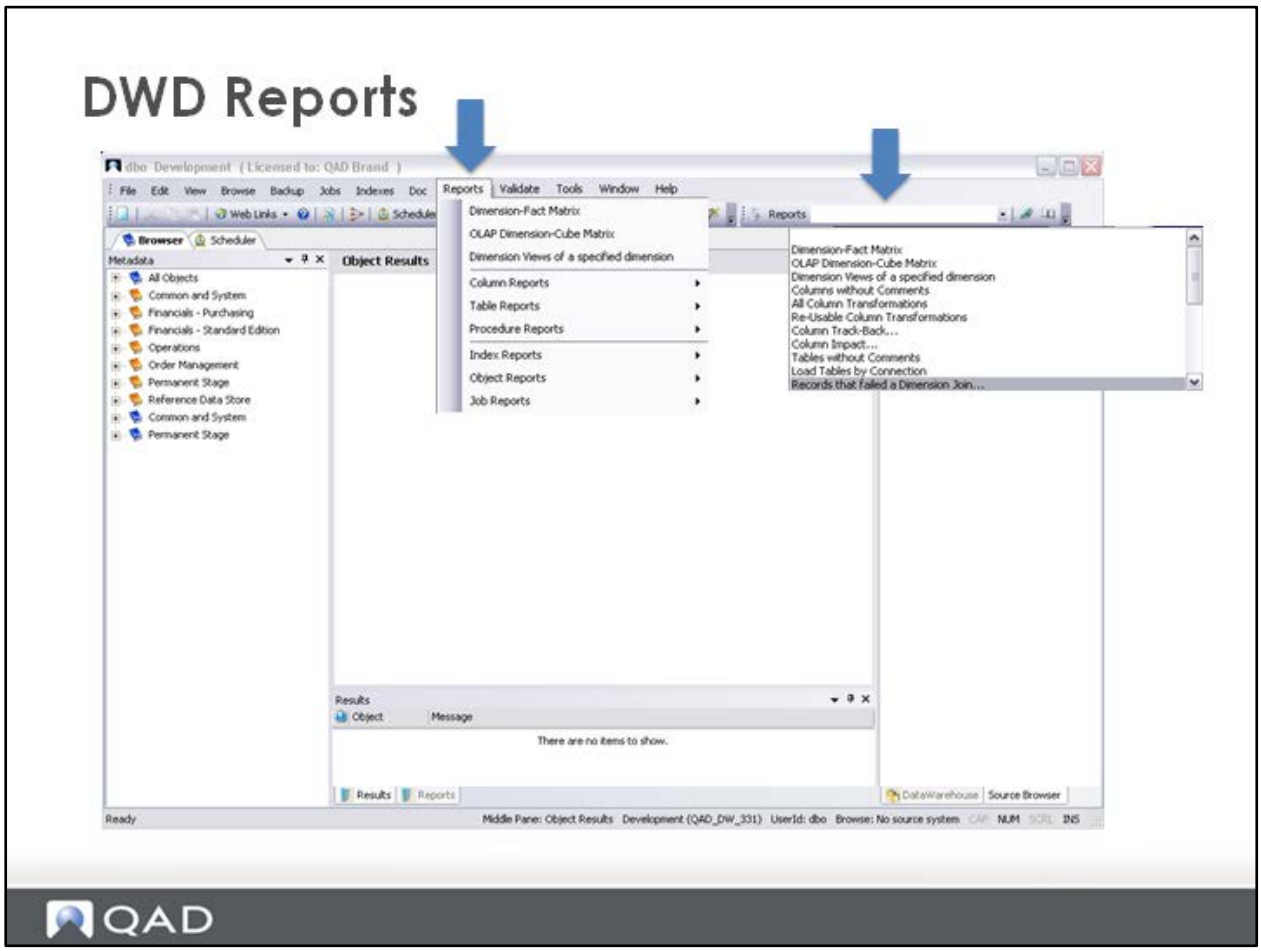


The diagram is interactive. The user can click and drag objects within the window.

Reports



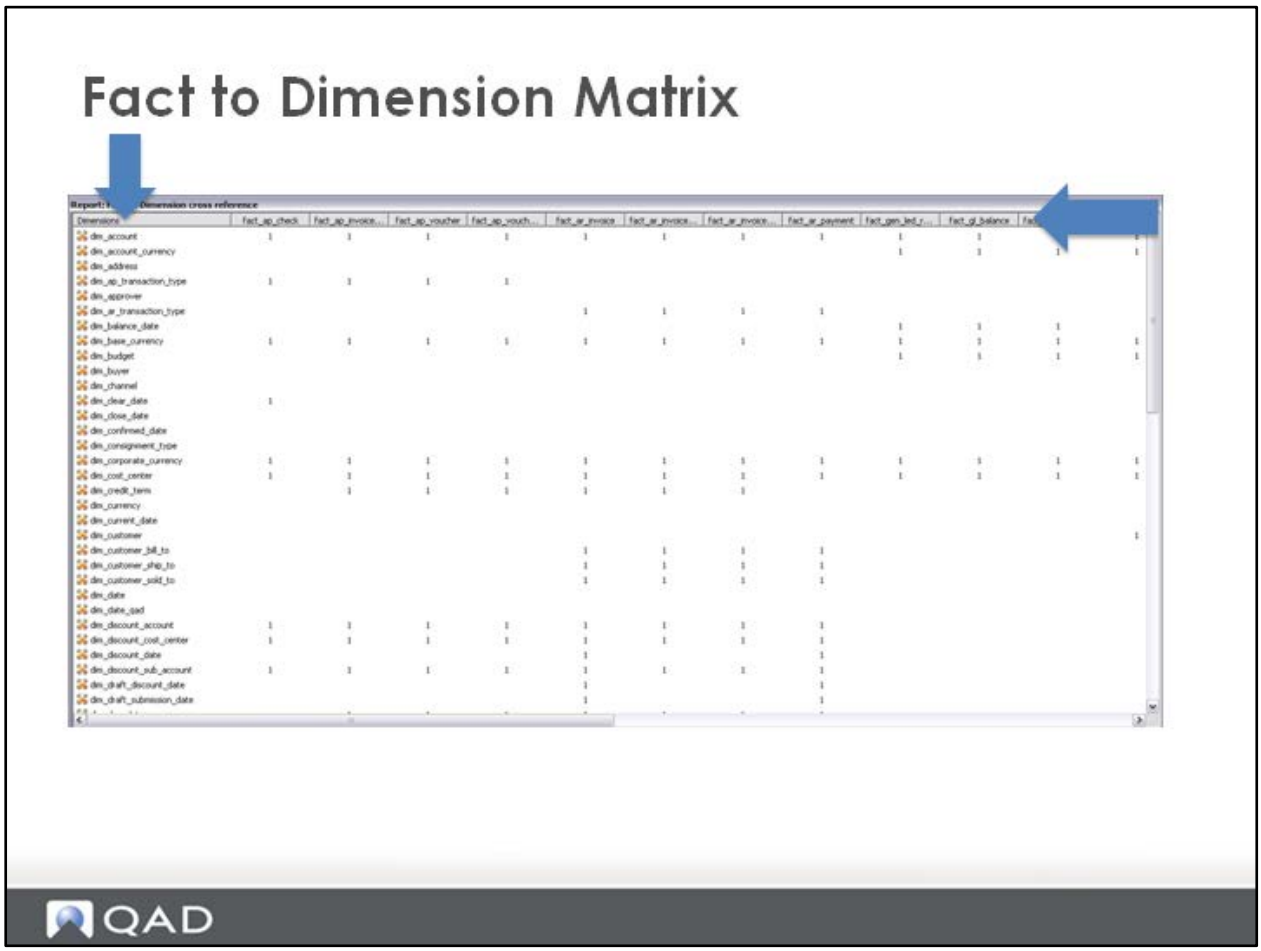
DWD Reports



Reports can be run from a drop down menu available on the main Builder/Browser window.

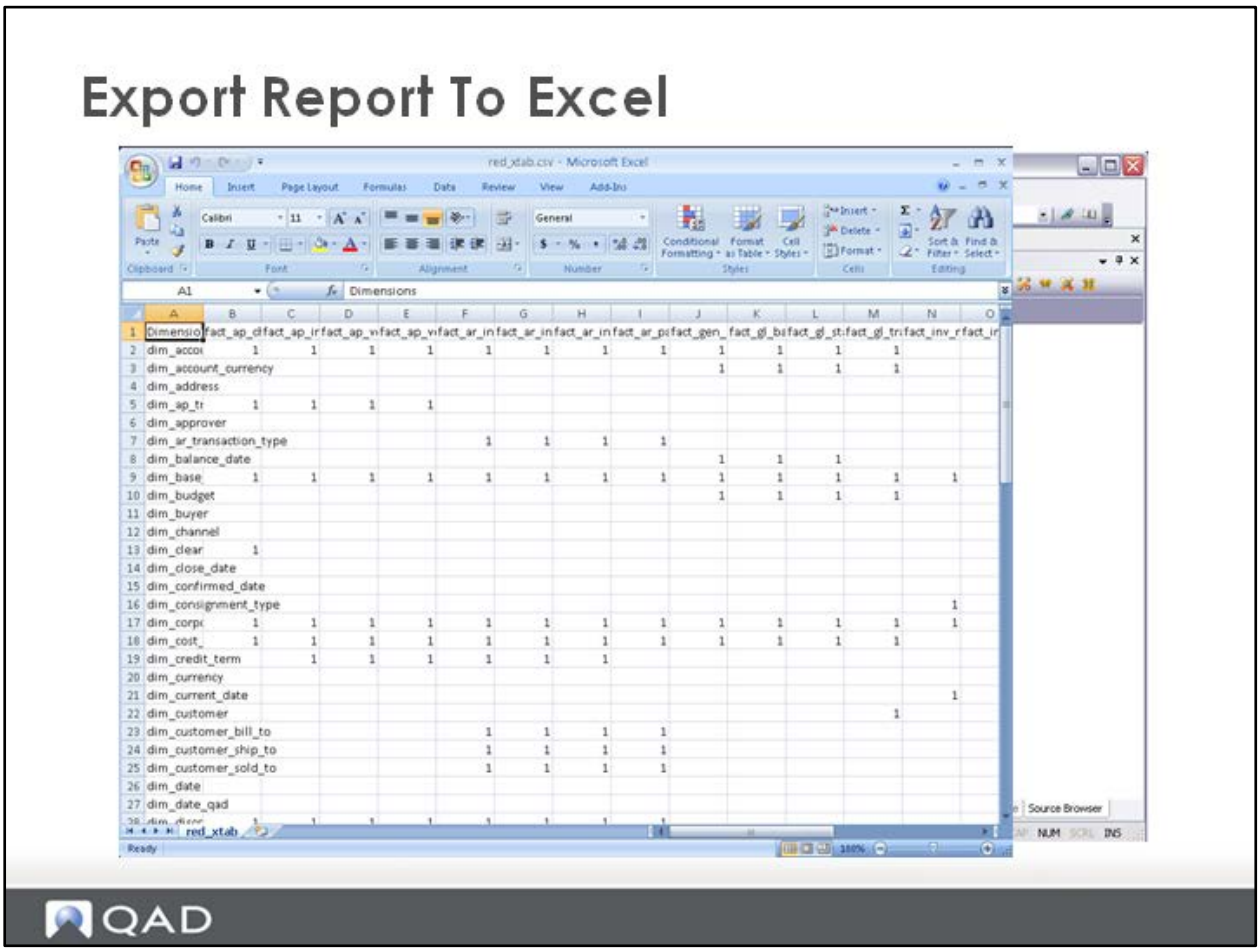
A subset of all the reports is available in the “fast access” bar in the window.

Fact to Dimension Matrix



This is an example of a report – the *Fact to Dimension Matrix*.

Export Report To Excel

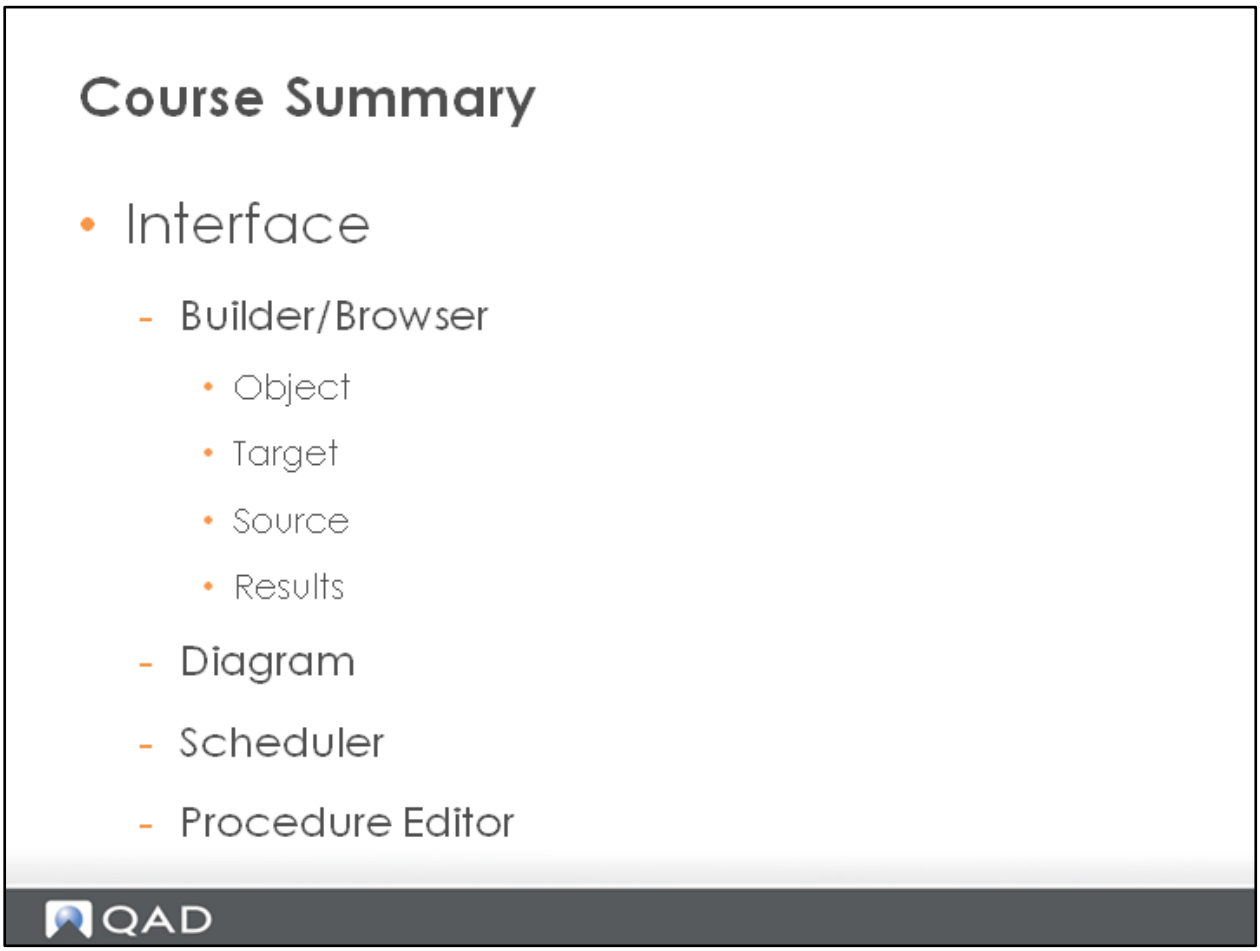


The user can export the report to Excel. Right click within the *Results* and select *Excel It*.

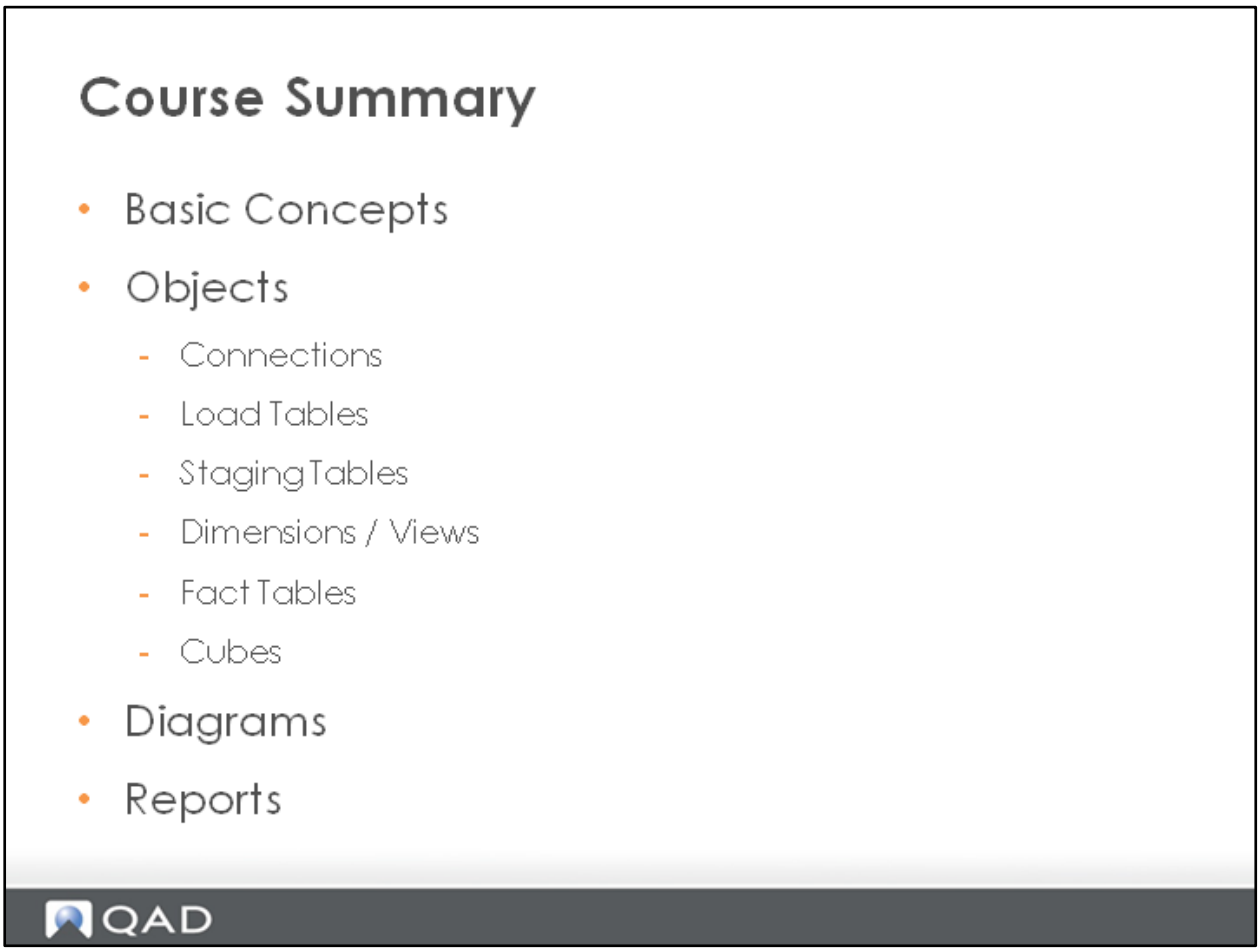
Course Review



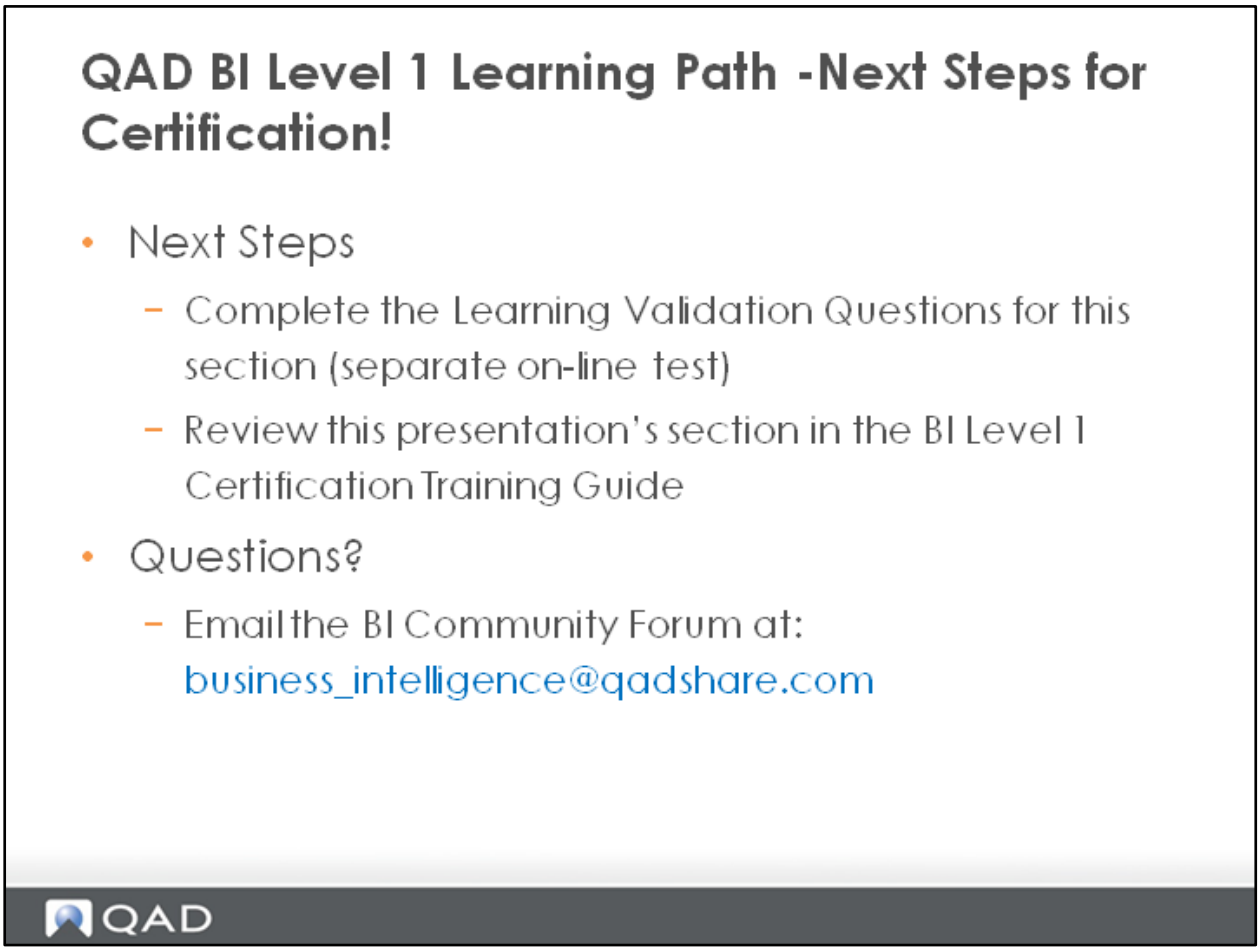
Course Summary



Course Summary



QAD BI Level 1 Learning Path -Next Steps for Certification!



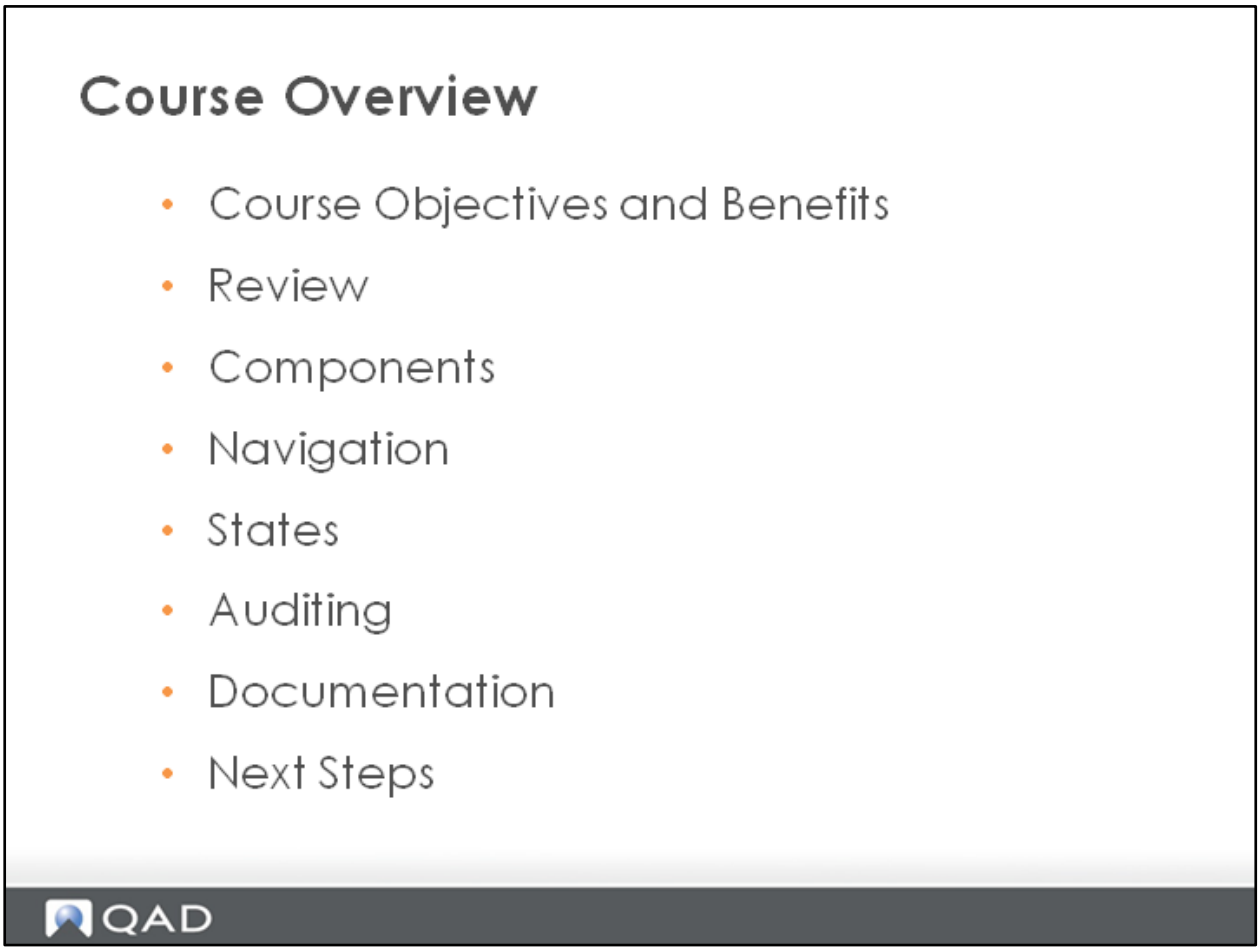
CHAPTER 11

Introduction to Data Warehouse Scheduler

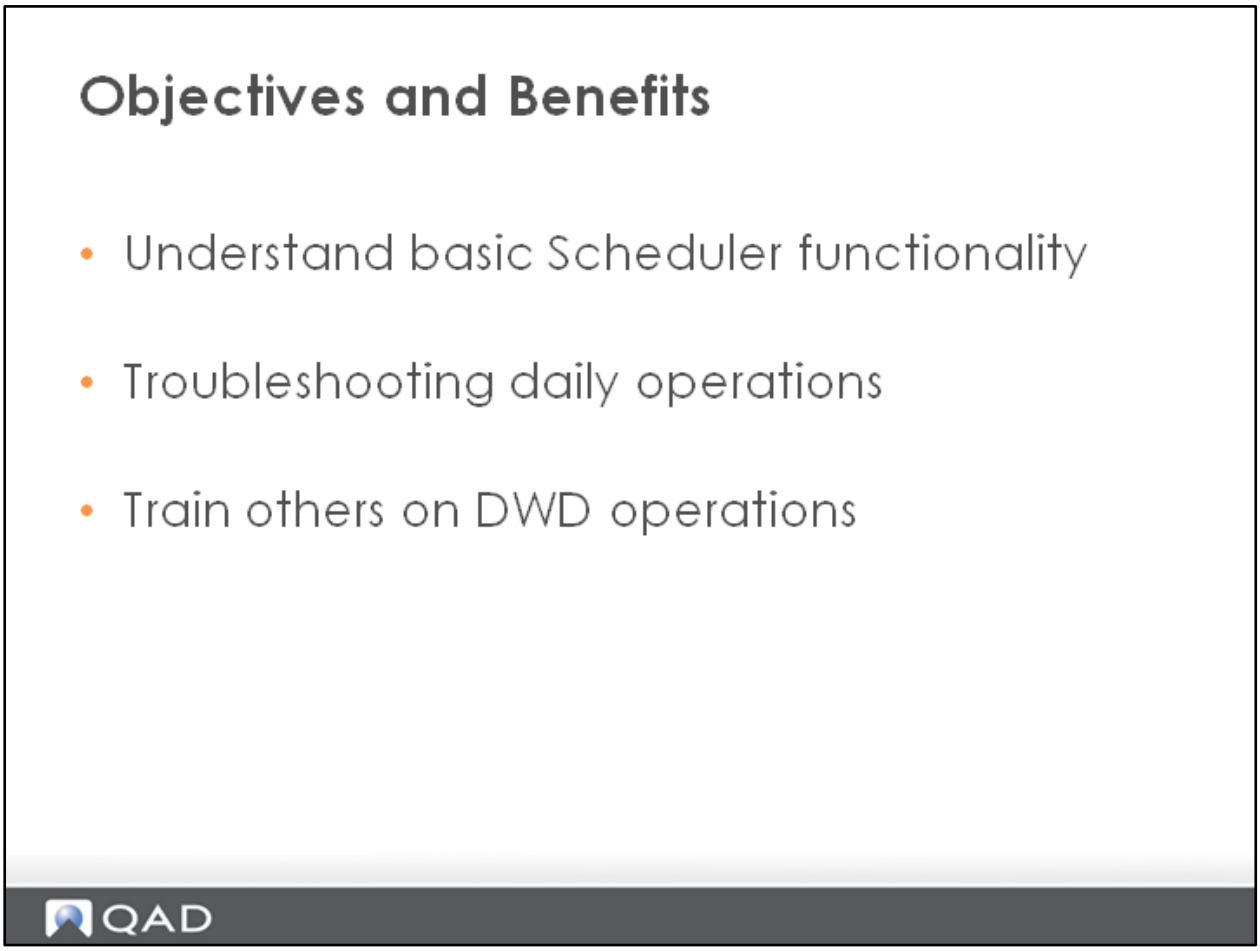
Introduction to Data Warehouse Scheduler



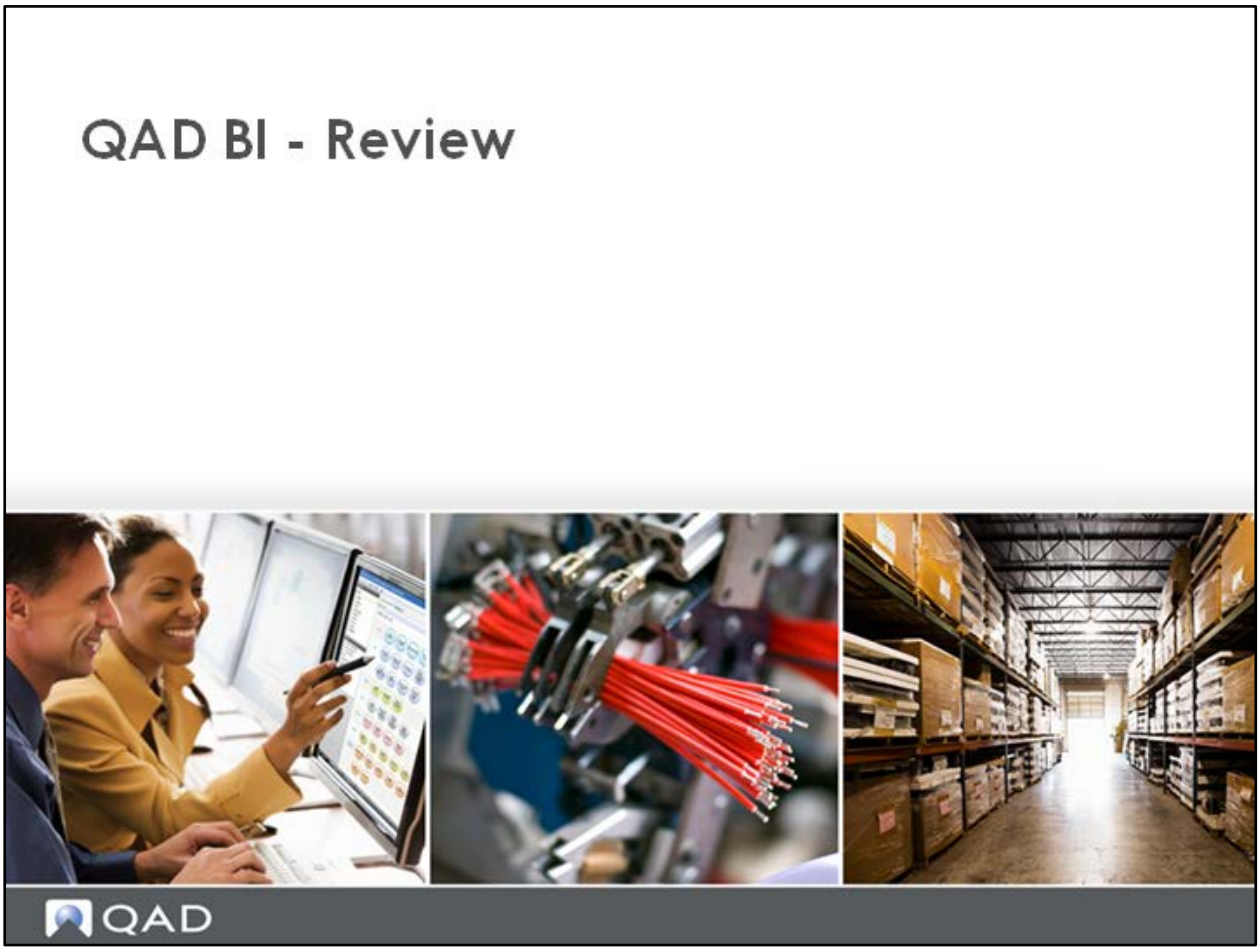
Course Overview



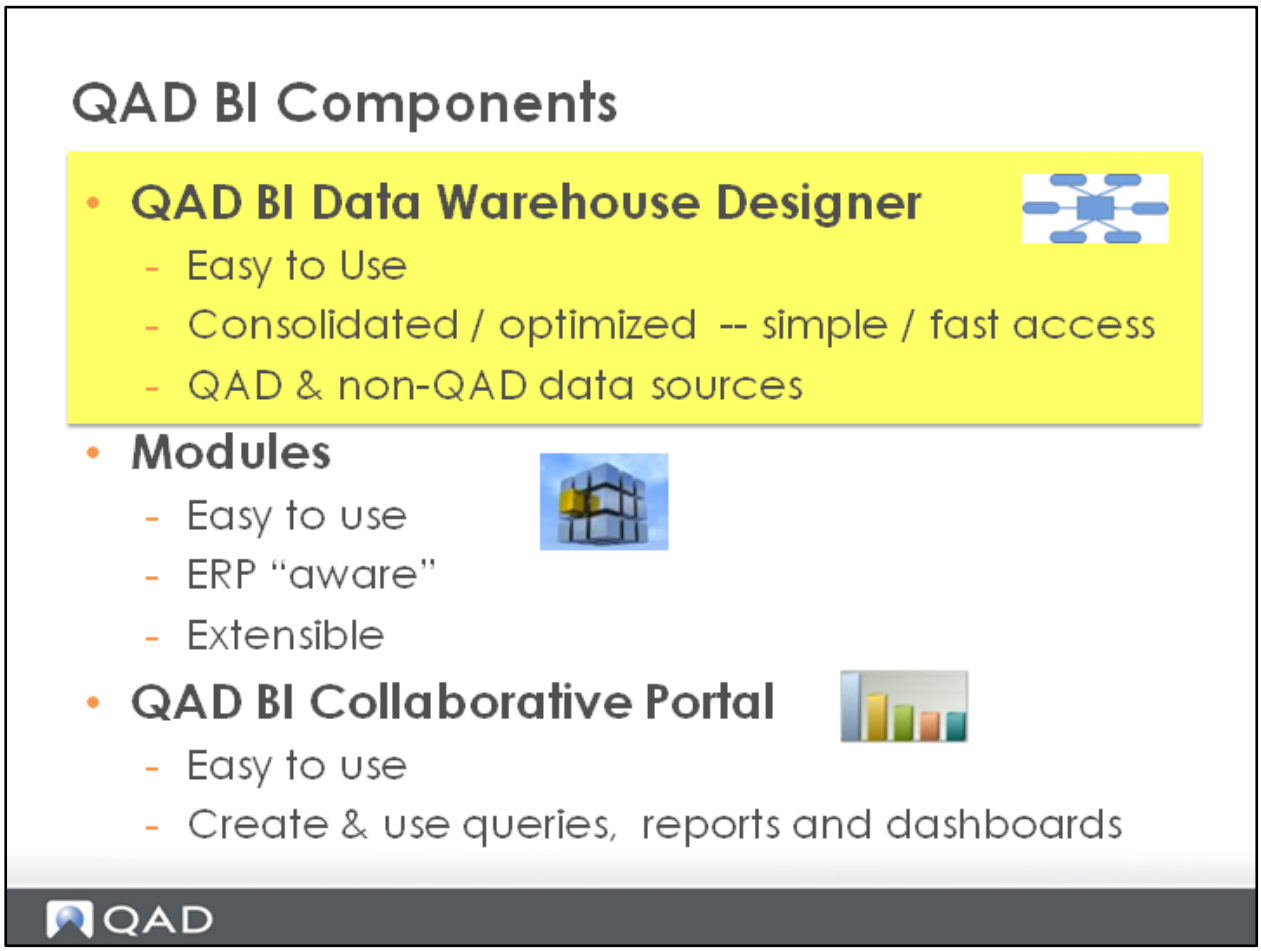
Objectives and Benefits



QAD BI - Review



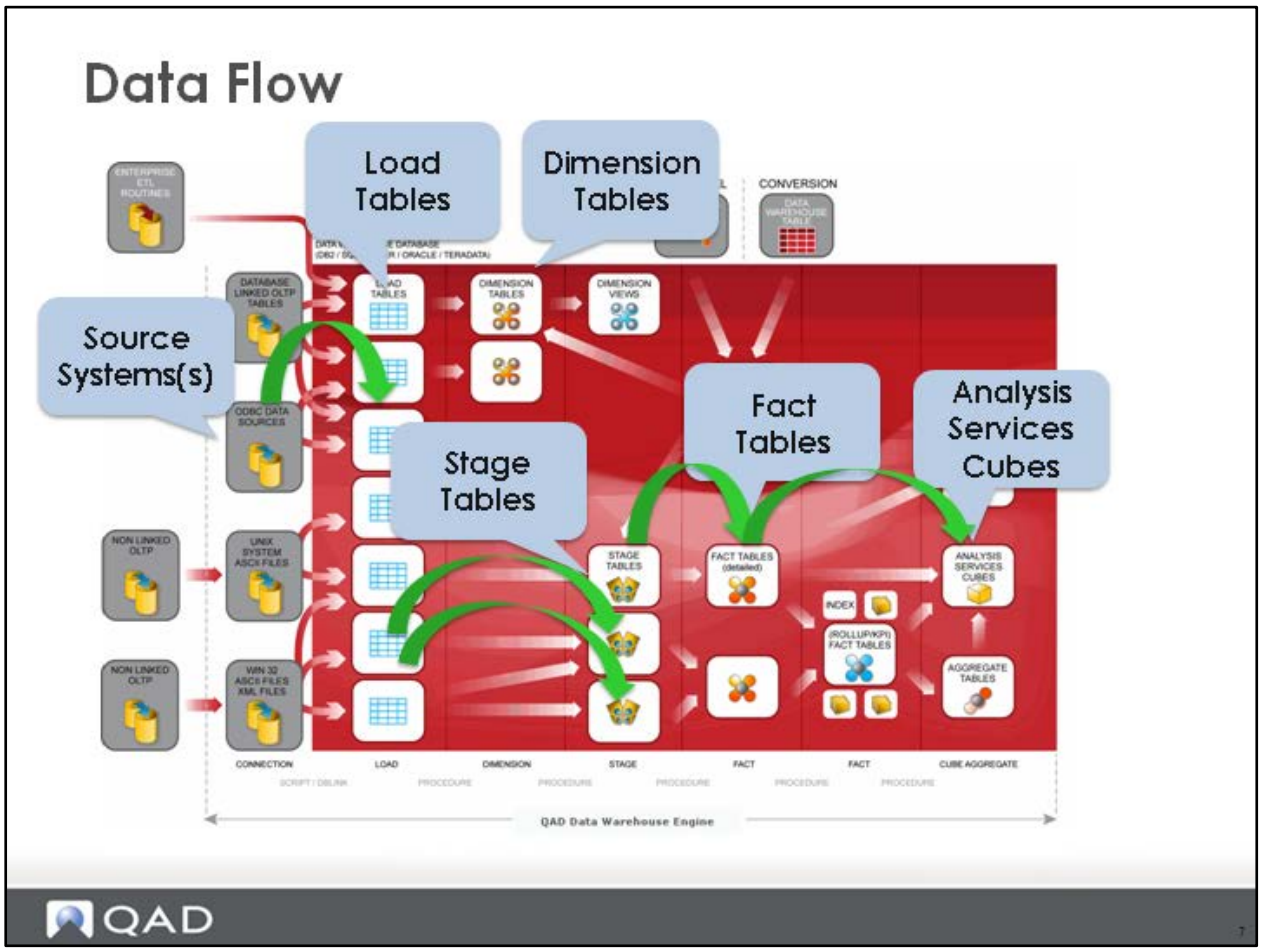
QAD BI Components



Scheduler Components



Data Flow

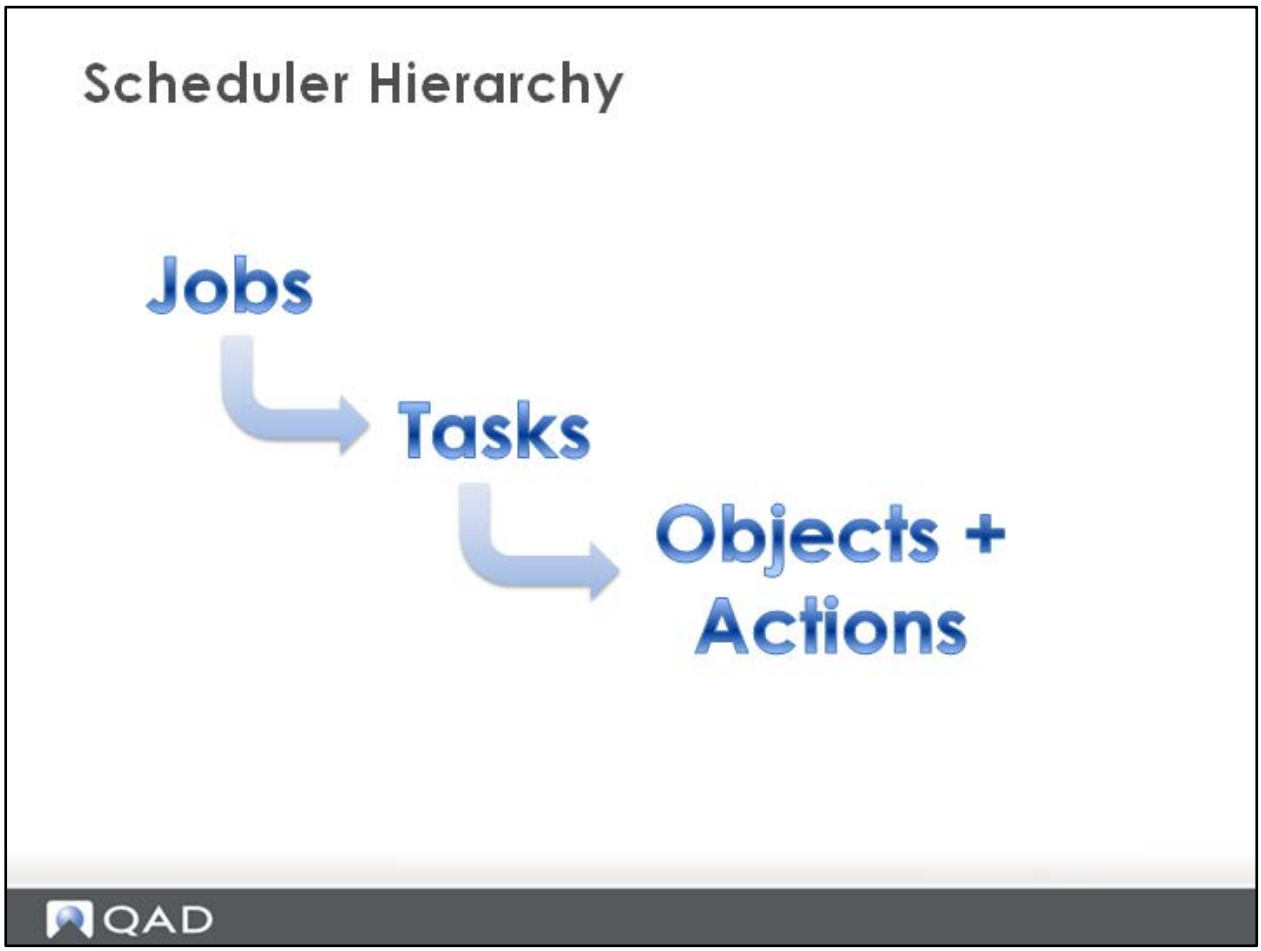


Data objects in the standard data flow include:

- Source systems
- Load tables
- Staging tables
- Dimension tables
- Fact tables

The DWD Scheduler is the mechanism that controls the Extract/Transformation/Load process.

Scheduler Hierarchy



The scheduler component hierarchy:

-- Jobs -- -- Tasks -- -- -- Objects and Actions associated to the object

Common Task Actions



Drop – removes table from SQL data base

Create – creates table in SQL data base

Truncate – deletes all rows (data) in a SQL table

Load – execute standard DWD load procedure and any defined pre and post load procedures

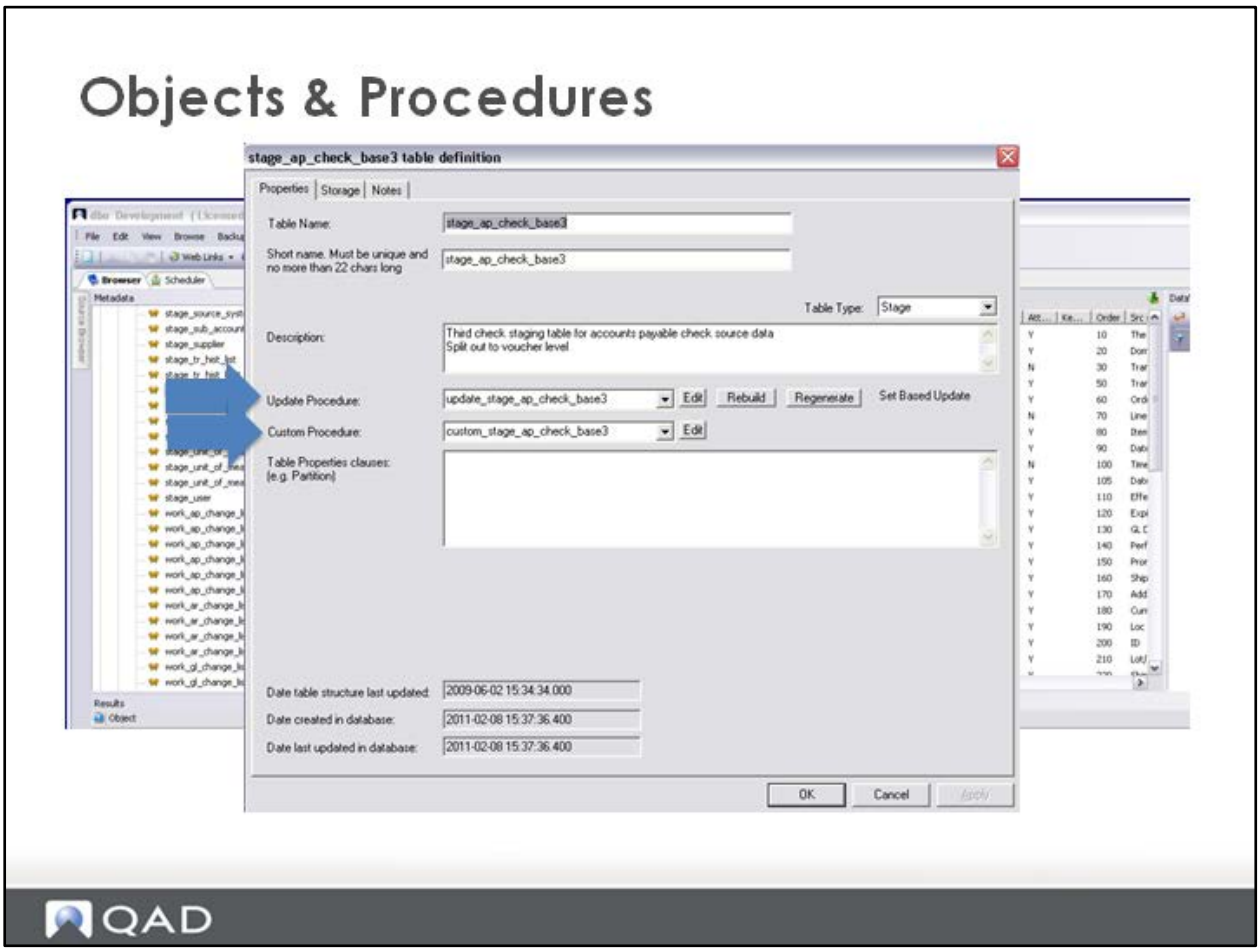
Custom – execute custom procedure associated to table/object

Update – execute update procedure associated to table/object

Execute – execute the procedure or host scripts

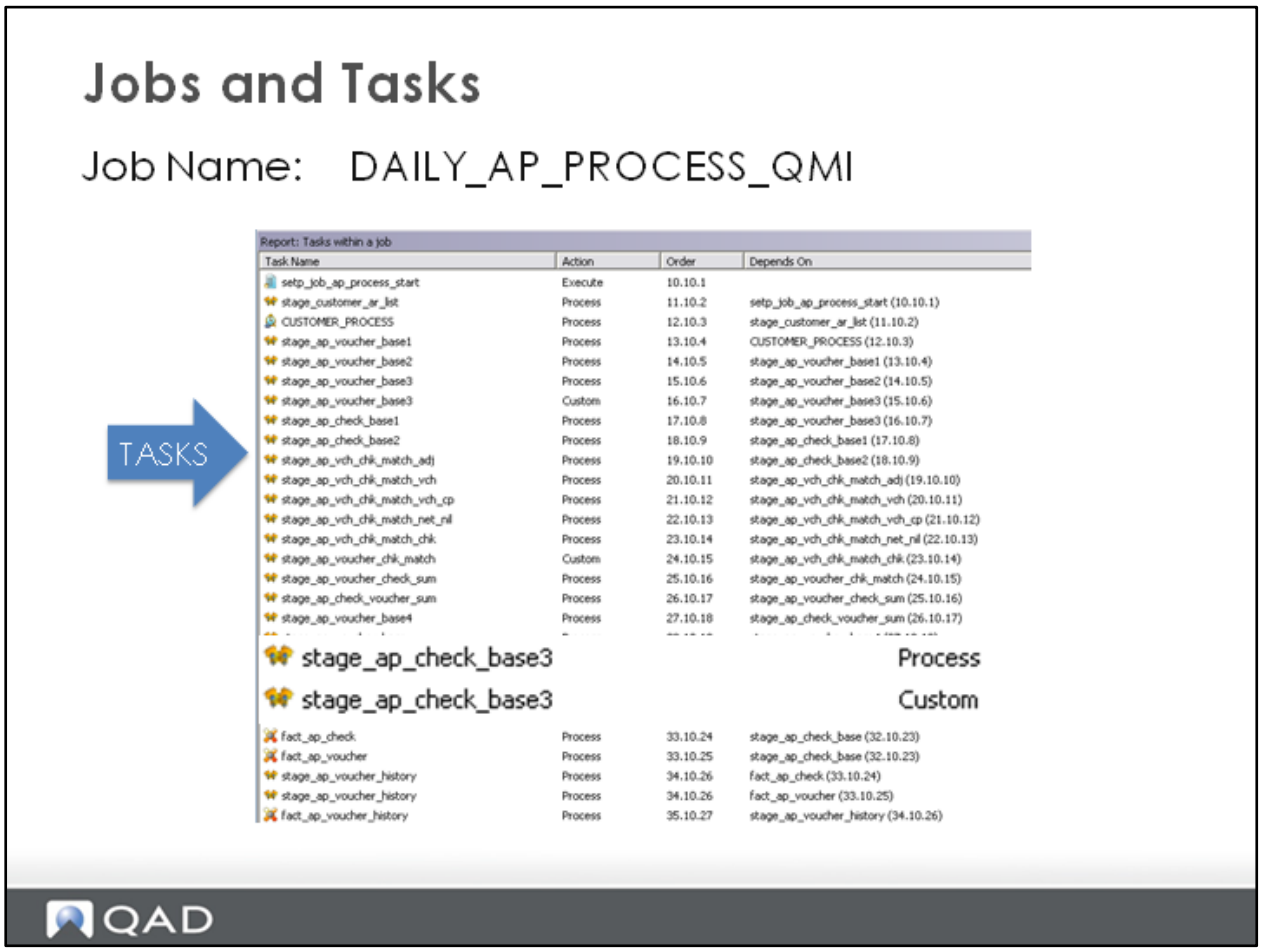
Process – drops all indexes on the table, performs the update procedure and rebuilds the indexes

Objects & Procedures



This is the *Properties* page for a staging table in the system. It has two procedures associated to the table/object. One is the standard Update Procedure, the other is a Custom Procedure.

Jobs and Tasks

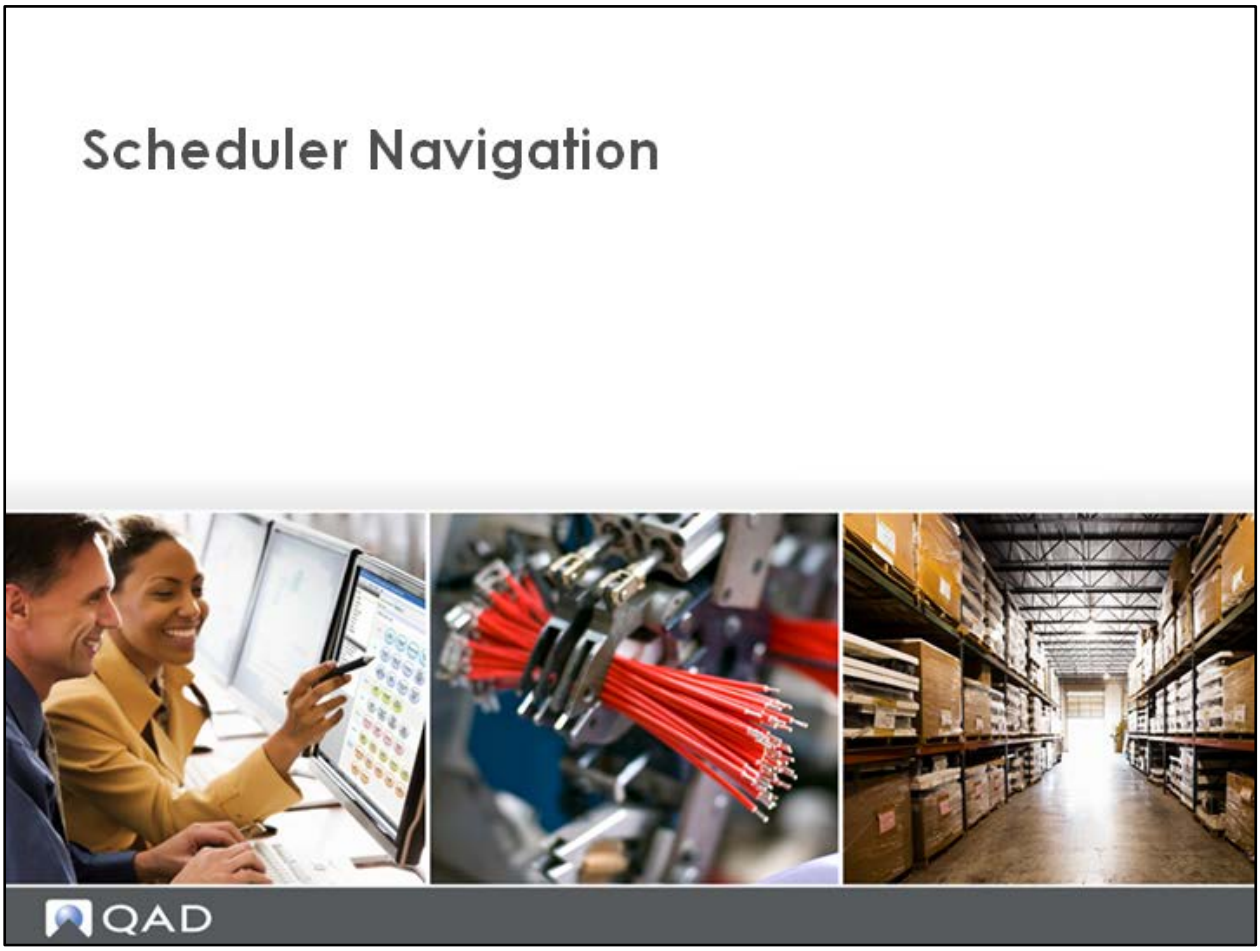


This is one job in the system.

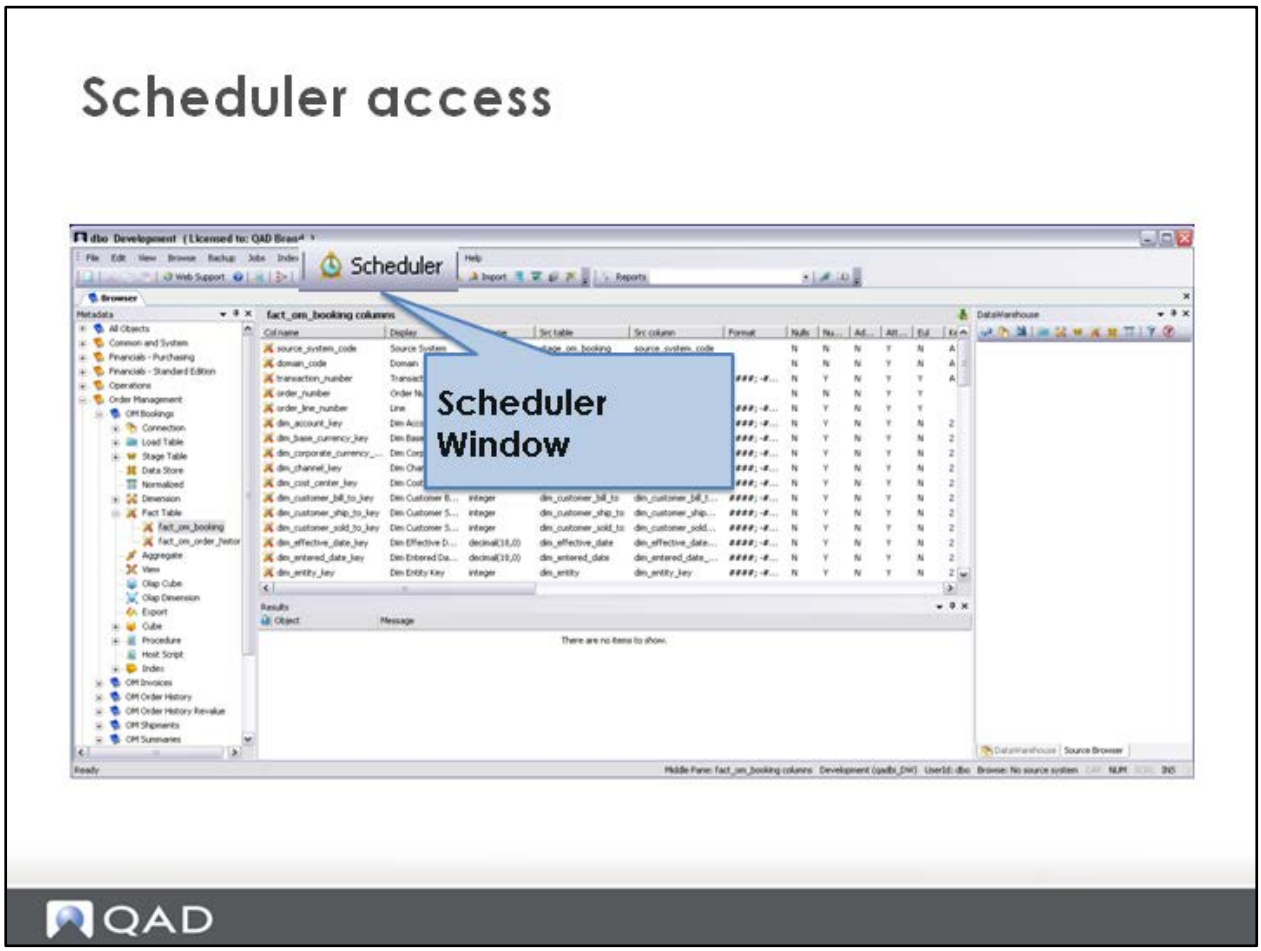
The object and it's related actions are shown here as tasks.

The object is stage_ap_check_base3 and the actions are *Process* and *Custom.*

Scheduler Navigation

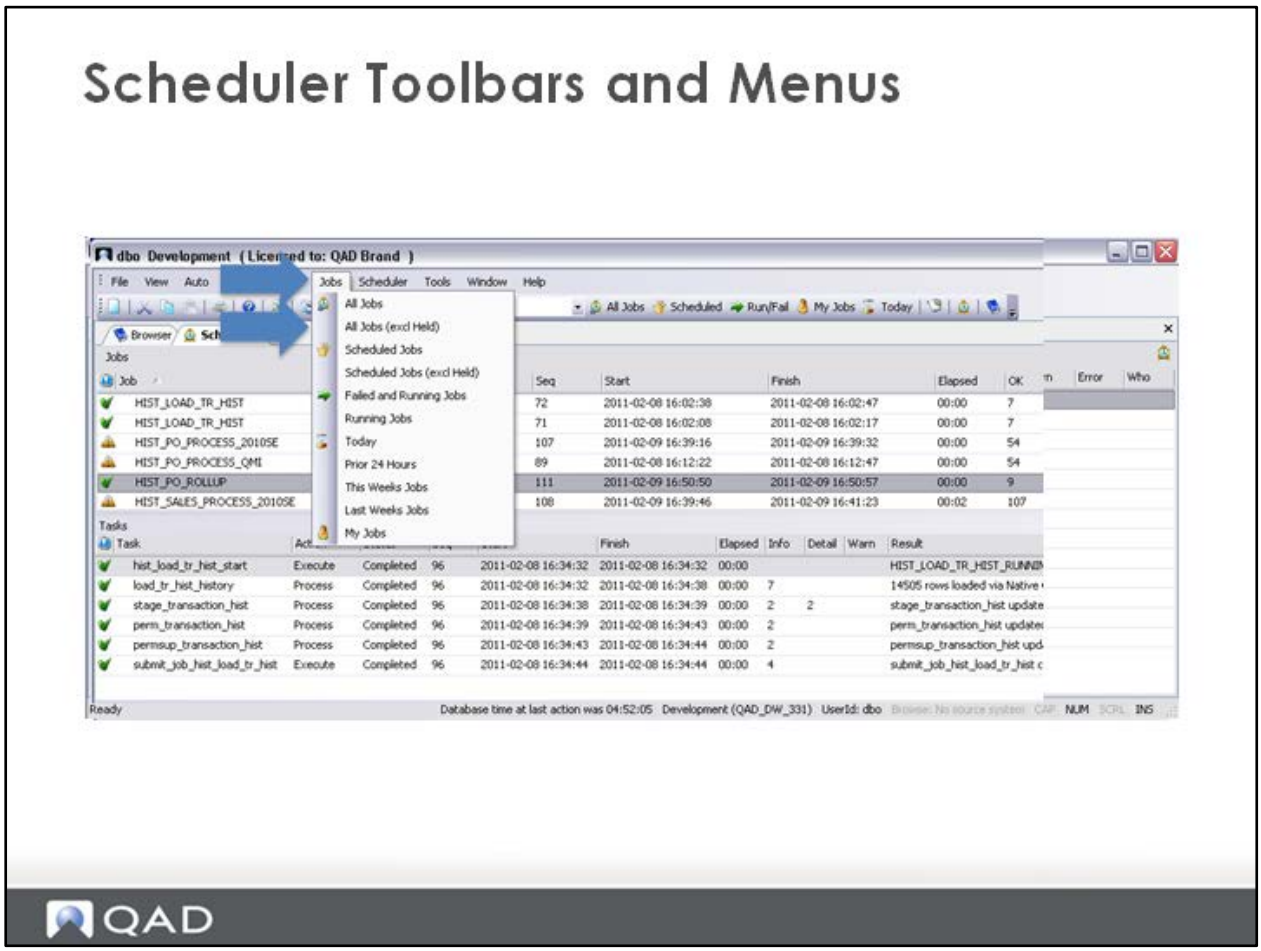


Scheduler access



The scheduler is accessed via a button on the builder/browser toolbar.

Scheduler Toolbars and Menus

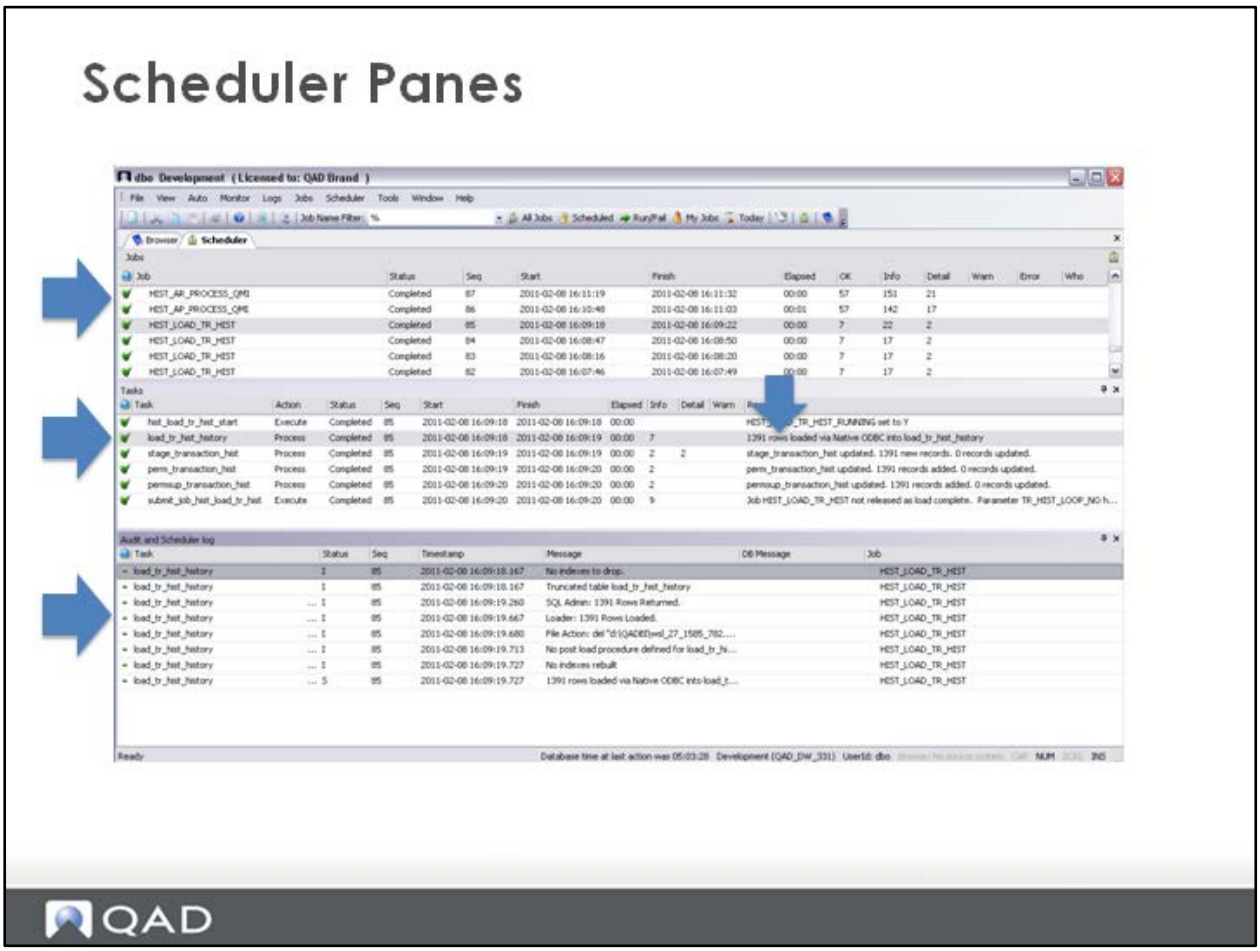


The Scheduler toolbar includes a drop down menu to run various views of the jobs.

Similar functionality is available vie buttons on the toolbar. The user can enter a search string, along with wildcards in the box on the toolbar, prior to running one of the options.

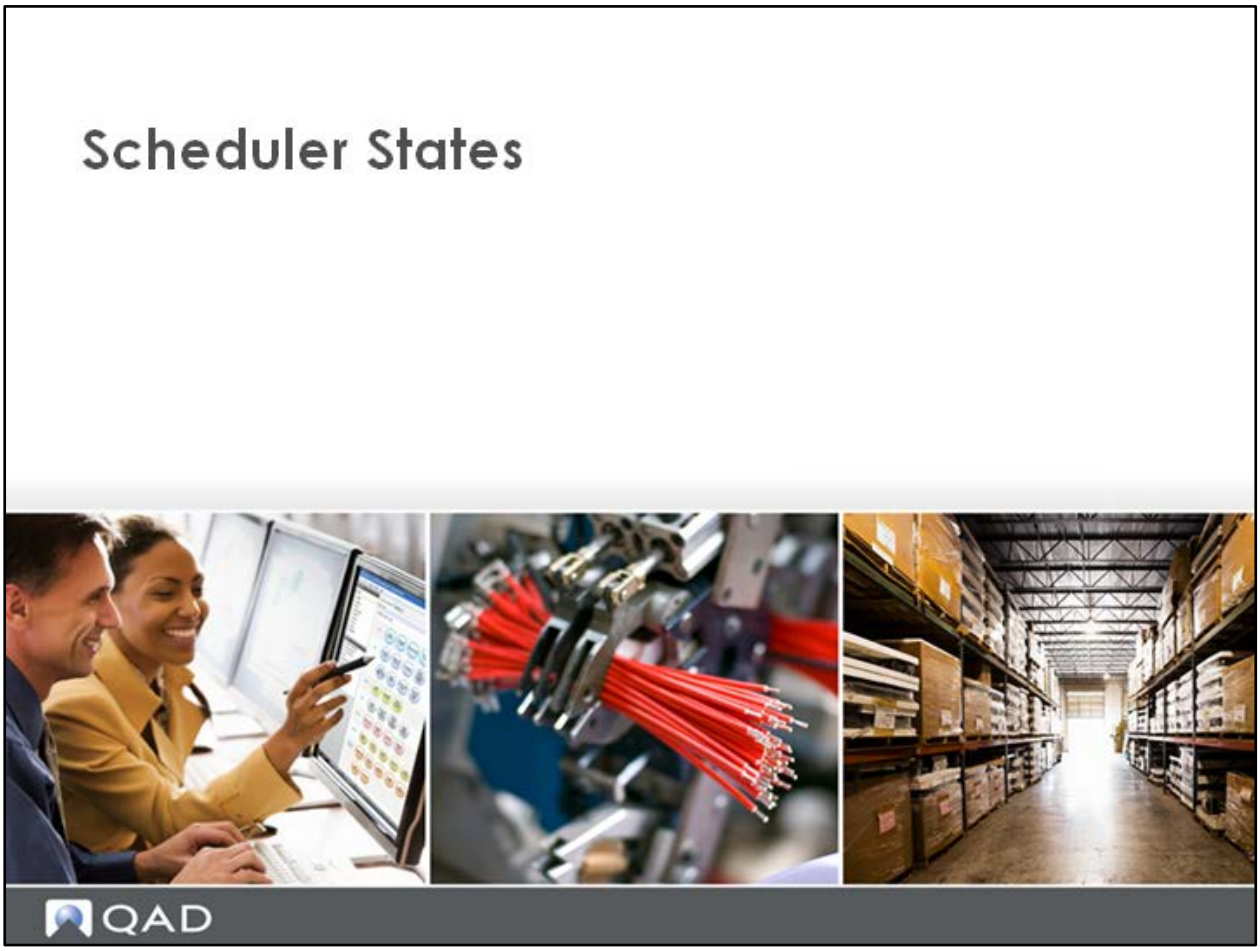
For example, to see all jobs with “start” in the name, the user would enter “%start%” in the search window.

Scheduler Panes



In the standard Scheduler window, the Job pane appears at the top. Followed by Tasks, followed by the auditor/scheduler log.

Scheduler States



Scheduler States - JOBS



Hold – Job is on hold. It can be edited and its state changed in order to release the job.

Waiting – Job is waiting to start, or waiting for it's scheduled time to arrive, or waiting for a scheduler agent to become available.

Blocked – Job is blocked because another instance of the same job is running. When the currently running job completes. This instance of the job will start.

Pending - This is the first stage of a running job. The scheduler has identified the job as ready to start and allocated a thread, or sub task to process the job. A job is in this state until the thread or sub task begins processing. If a job stays in this state, then the scheduler thread has failed for some reason. The logs can be check on which the scheduler is running.

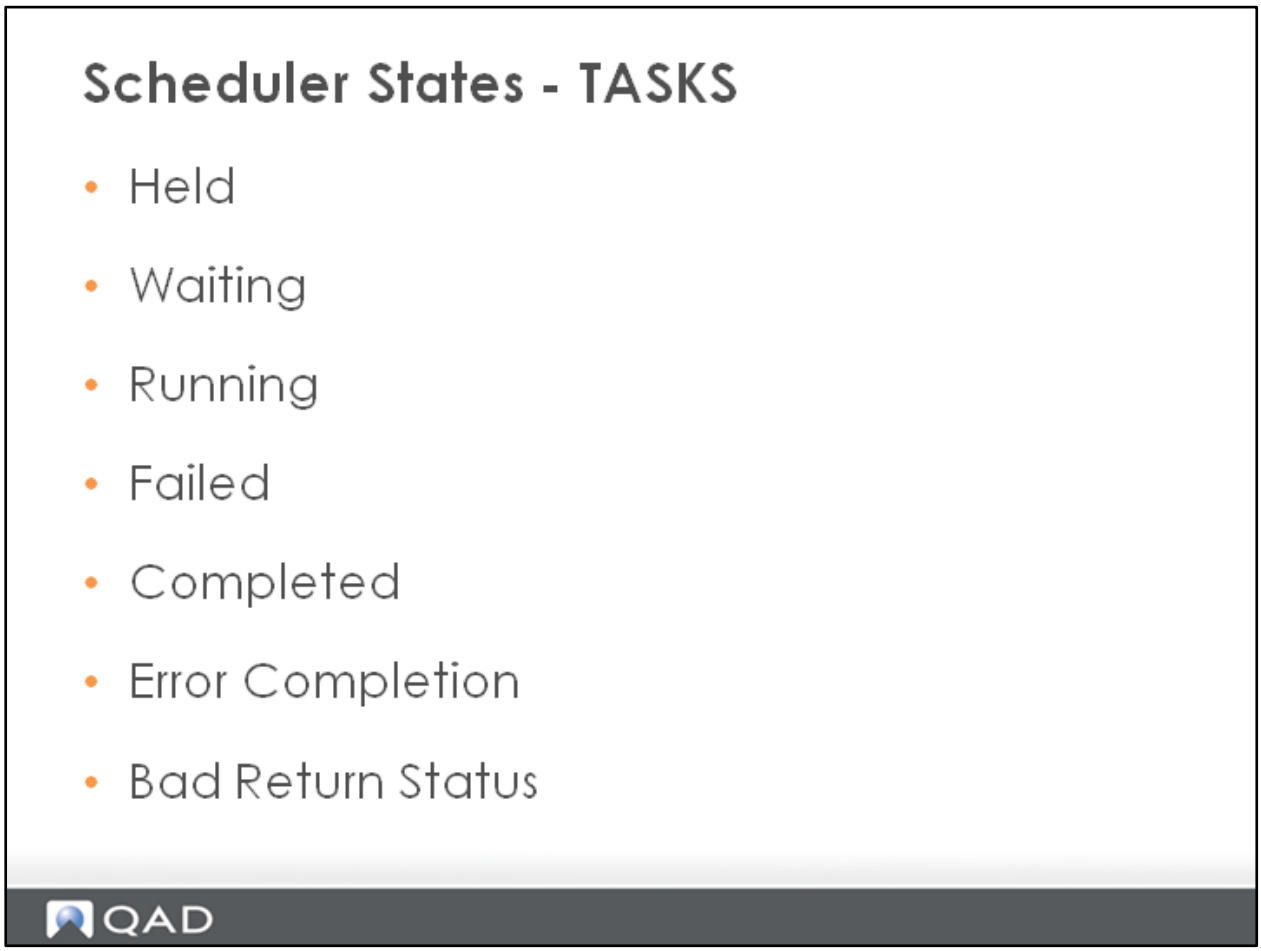
Running – The jobs is currently running. Double click on the job name in the right hand pane to drill down into specific tasks.

Failed – A failed job is one that had a problem. It can be restarted from the point of failure and is considered to be running unless subsequently aborted.

Failed – Aborted – The job has been aborted after having failed. Once in this state, a job cannot be restarted. The job exists only as a log of what occurred and essentially is now not regarded as a job.

Completed – The job has successfully completed, possibly with warnings. Once in this state a job cannot be restarted. The job exists then only as a log of what occurred and essentially is now not regarded as a job.

Scheduler States - TASKS



Tasks also have a status associated to them.

Held – The task has been held due to a prior dependency failure. The problem must be rectified and the job restarted.

Waiting (Blank) – Tasks that are waiting to run either due to a shortage of threads, or prior dependencies normally have a blank status.

Running – The task is currently running.

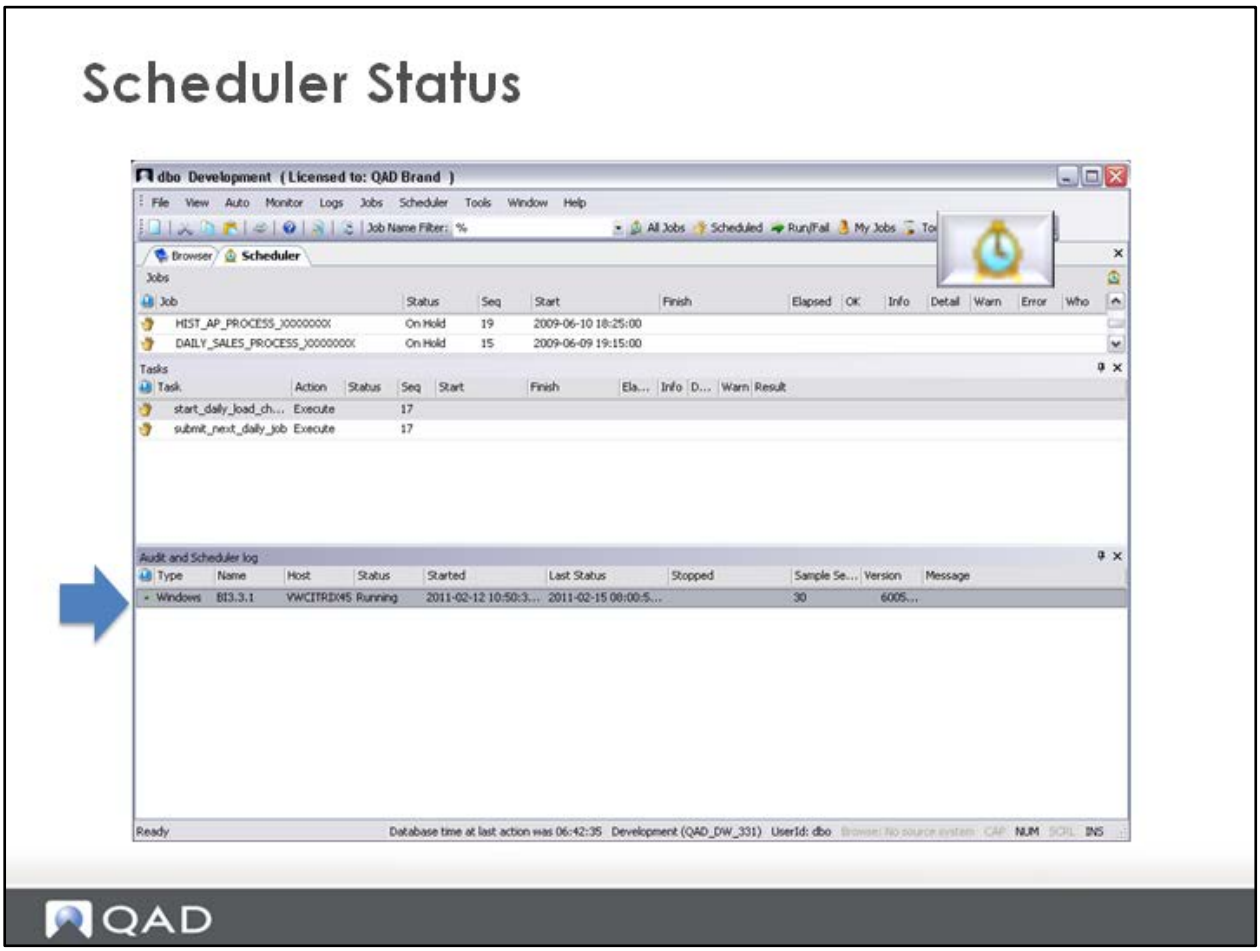
Failed – The task has had a fatal error. Any dependencies on this task will be held. Double click on the task to see more detail error information or review the audit and error/detail log for the job.

Completed – The task has completed successfully.

Error Completion – The task has completed with a handled error. Any dependent tasks will be held, and the job must be restarted when the problem is rectified.

Bad Return Status – The task has returned and unknown status. This normally occurs with script files that produce unexpected information.

Scheduler Status

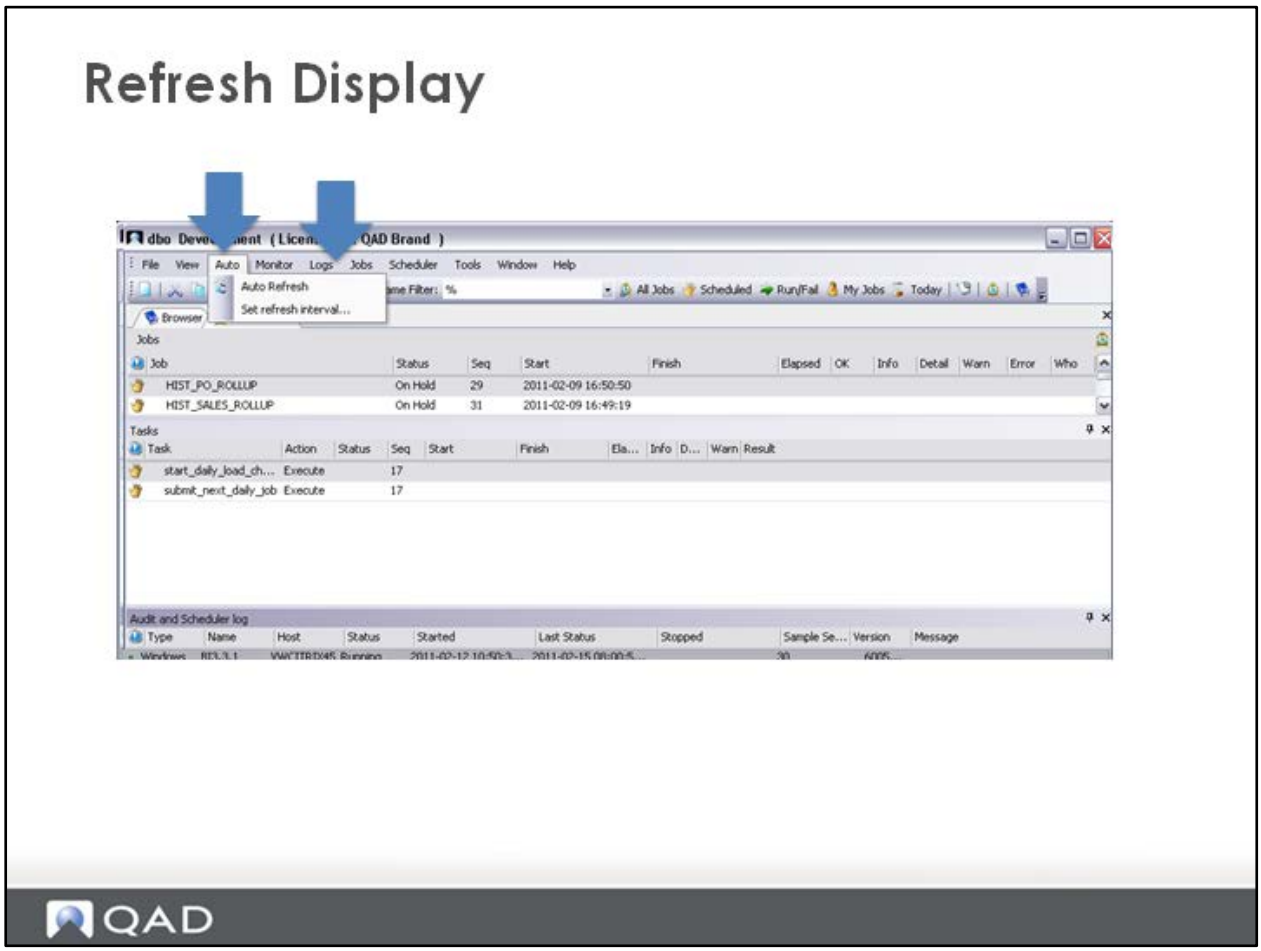


The scheduler itself has a status, that is, the overall process that is executing the scheduler functions.

To see the current status of the Scheduler process, select the Scheduler Status icon, which is this little Clock icon on the Browser toolbar.

The current status is shown in the bottom pane.

Refresh Display



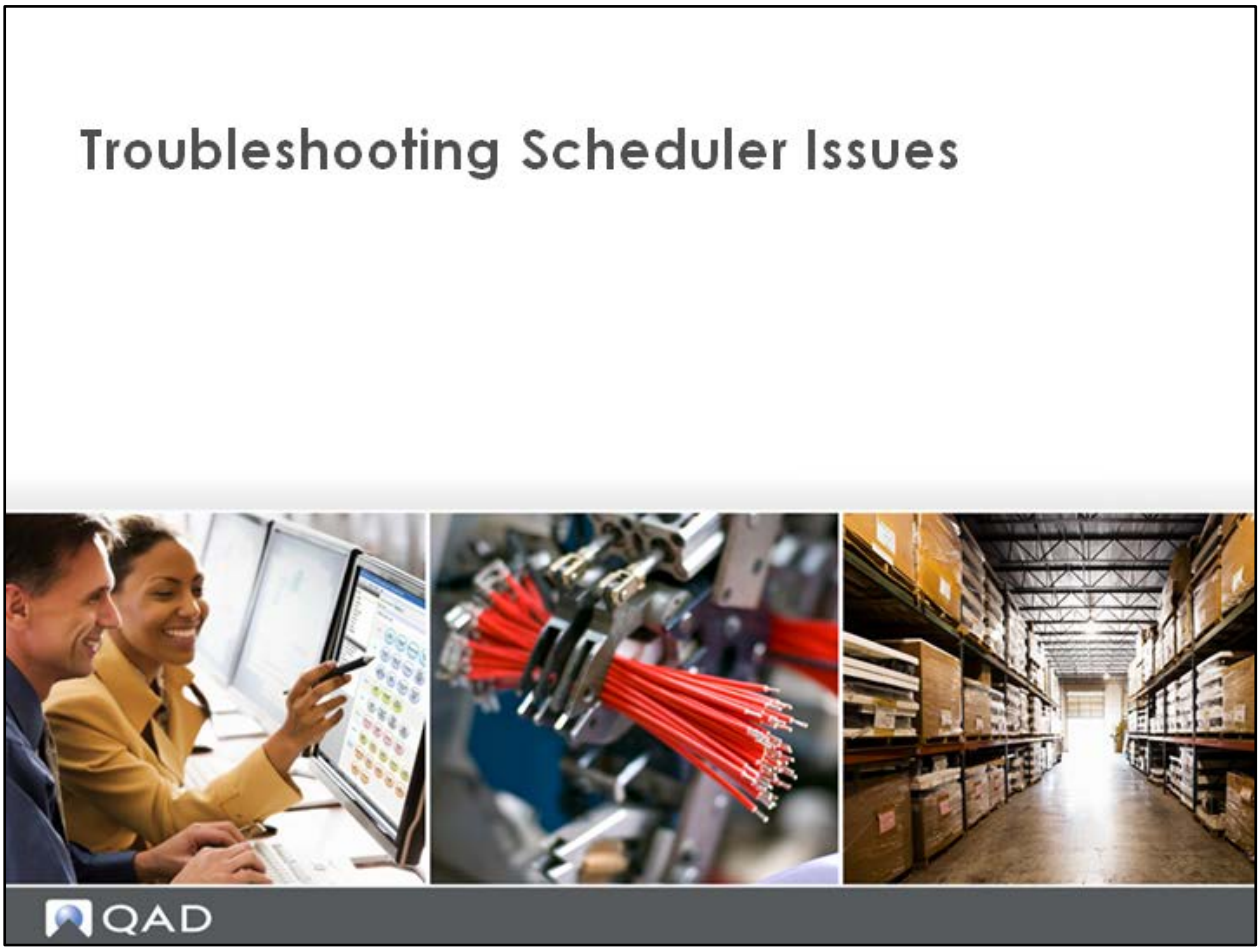
If you are monitoring the jobs using the Scheduler Browser, you will want to refresh the screen from time to time.

Select the Refresh button for a one-time refresh.

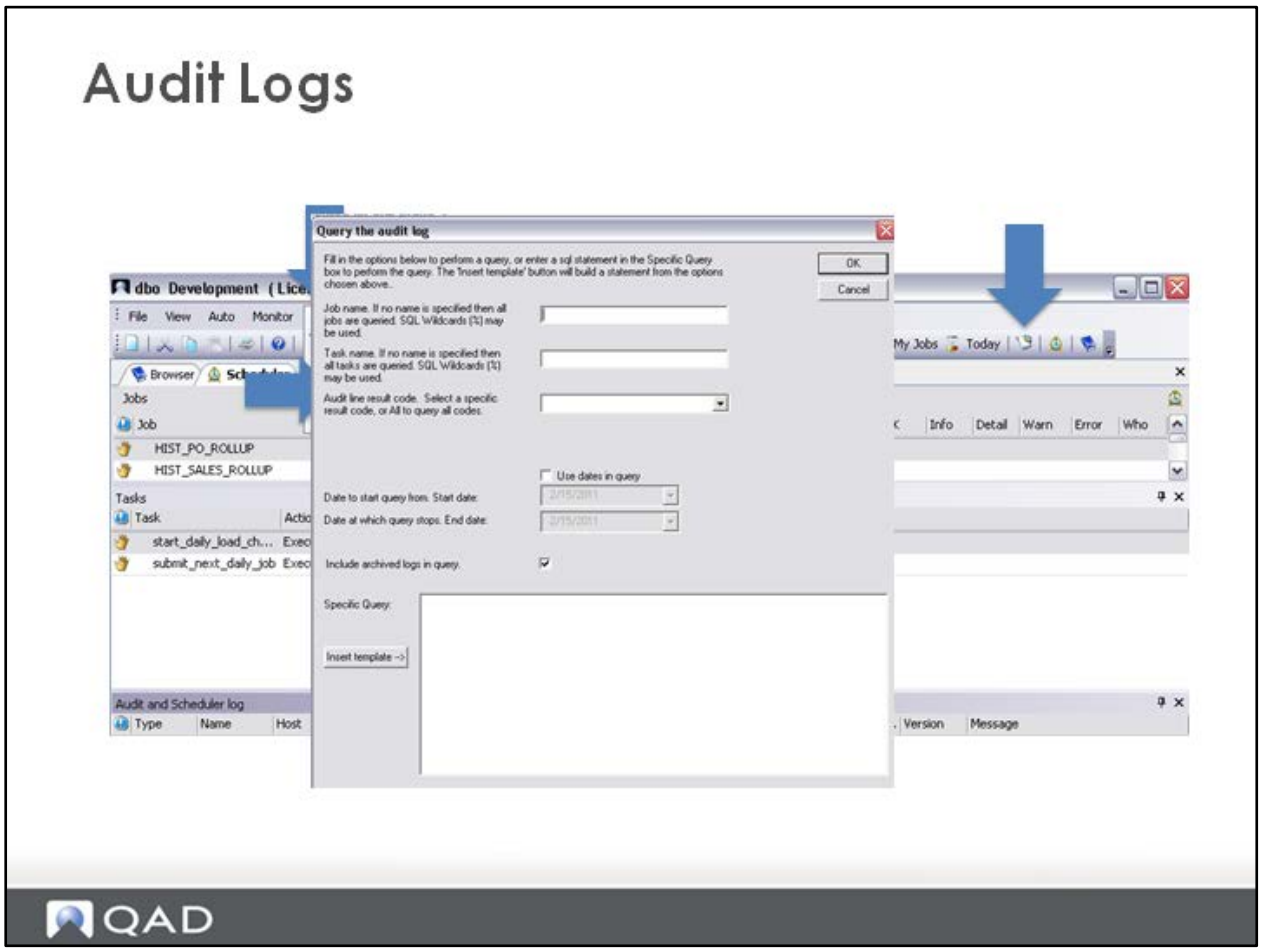
You can also set the screen to refresh automatically

By Selecting Auto on the Menu bar.

Troubleshooting Scheduler Issues

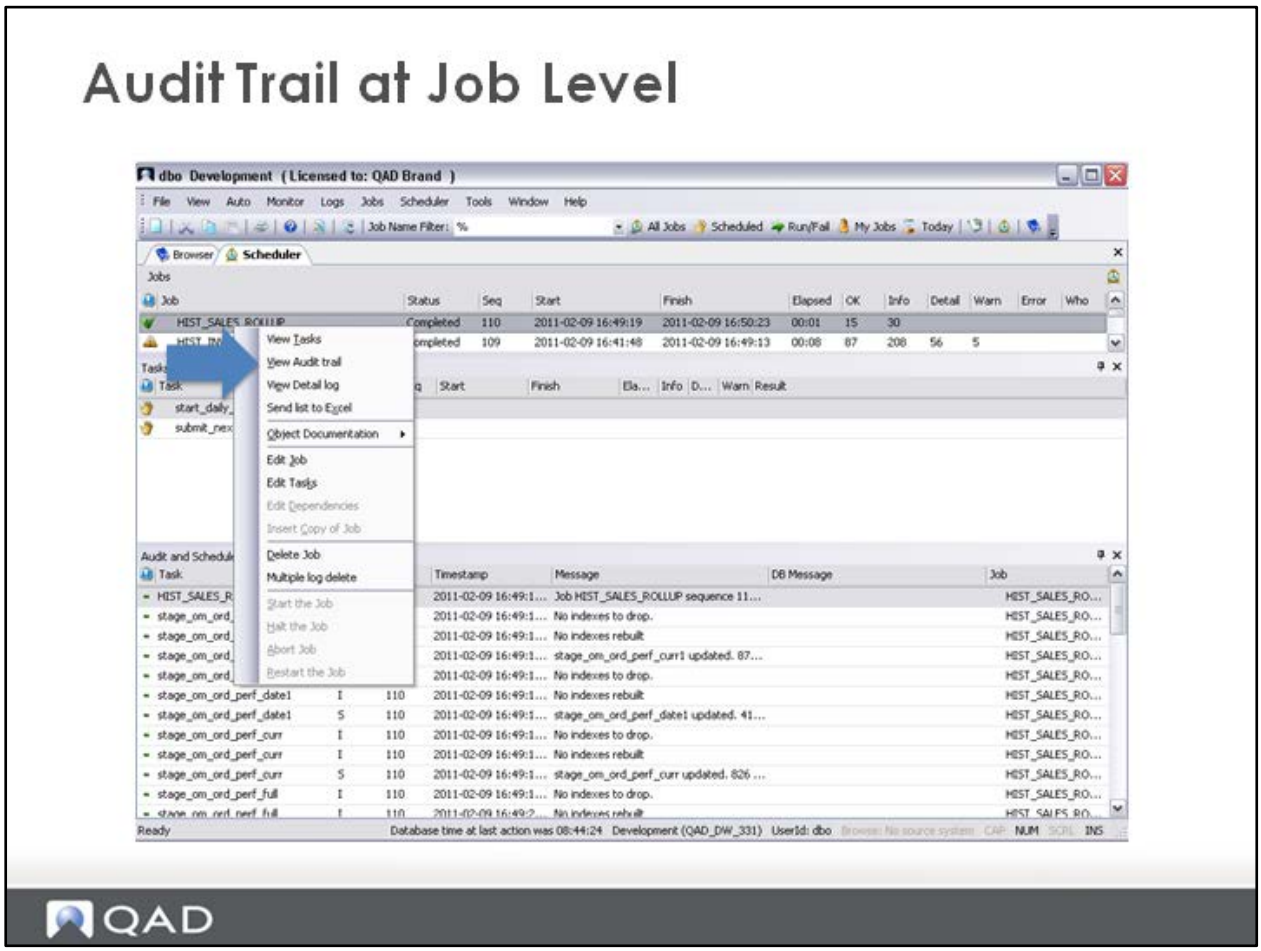


Audit Logs

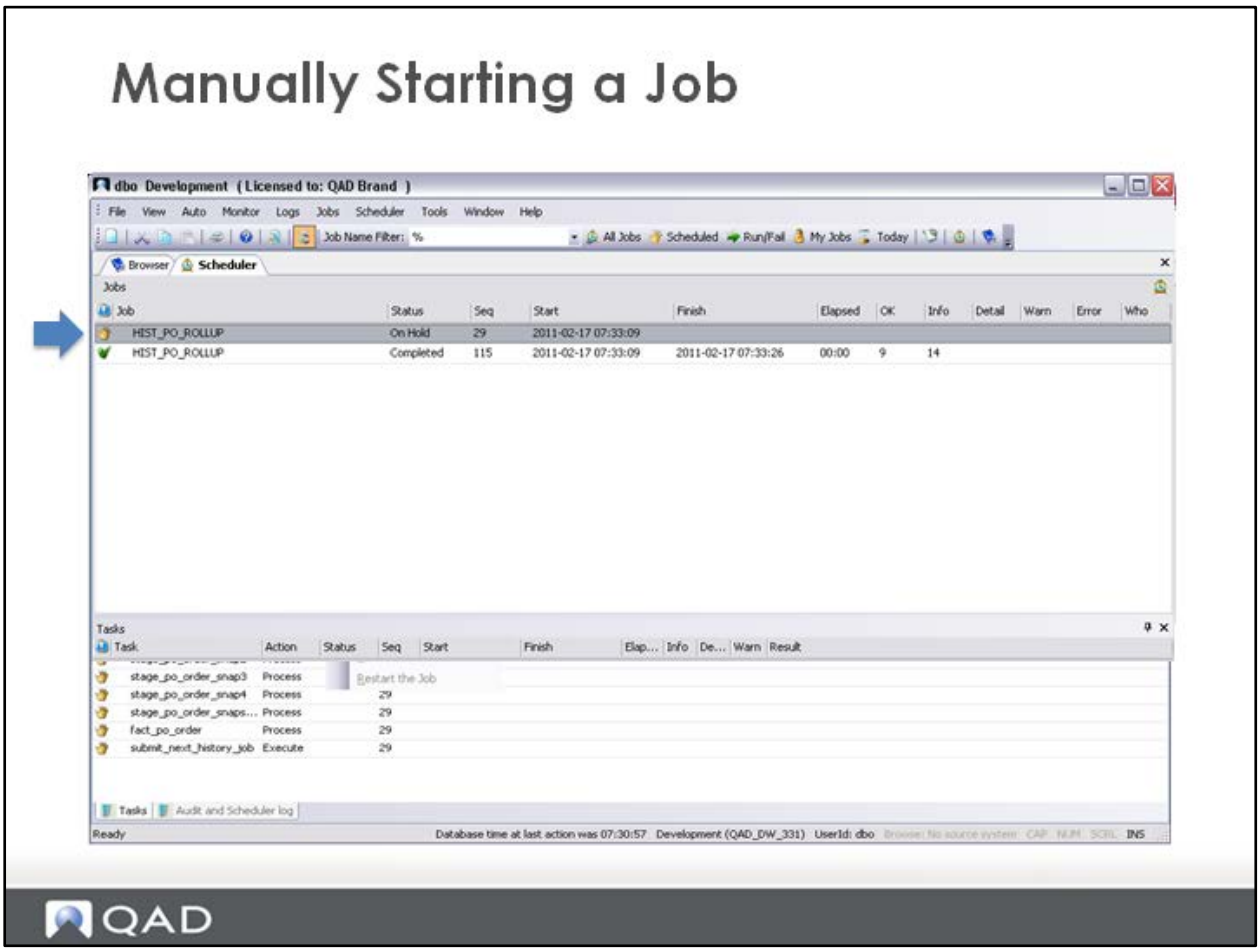


If a job fails and drilling down does not show any errors against the tasks, right click the job and select “View Audit Trail”. The job may have failed because of an error in the JOB level.

Audit Trail at Job Level

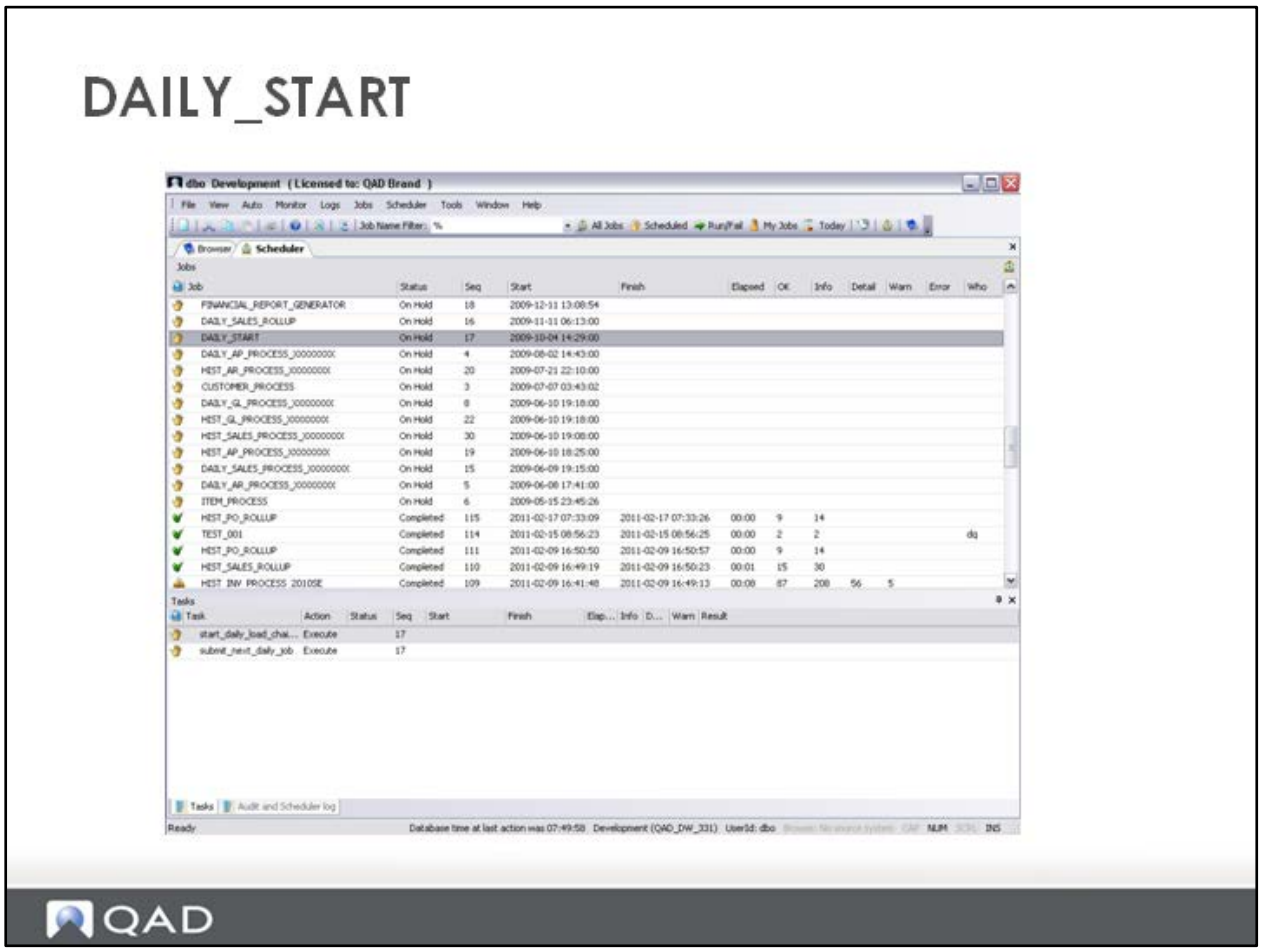


Manually Starting a Job



If during the course of troubleshooting system problems, a job needs to be started, or re-started, the operator would highlight the job, then right click and select *Start the Job.*

DAILY_START



The job that executes all the daily processing of the QAD BI is called DAILY START.

It contains only two tasks:

Stage_daily_load_chained

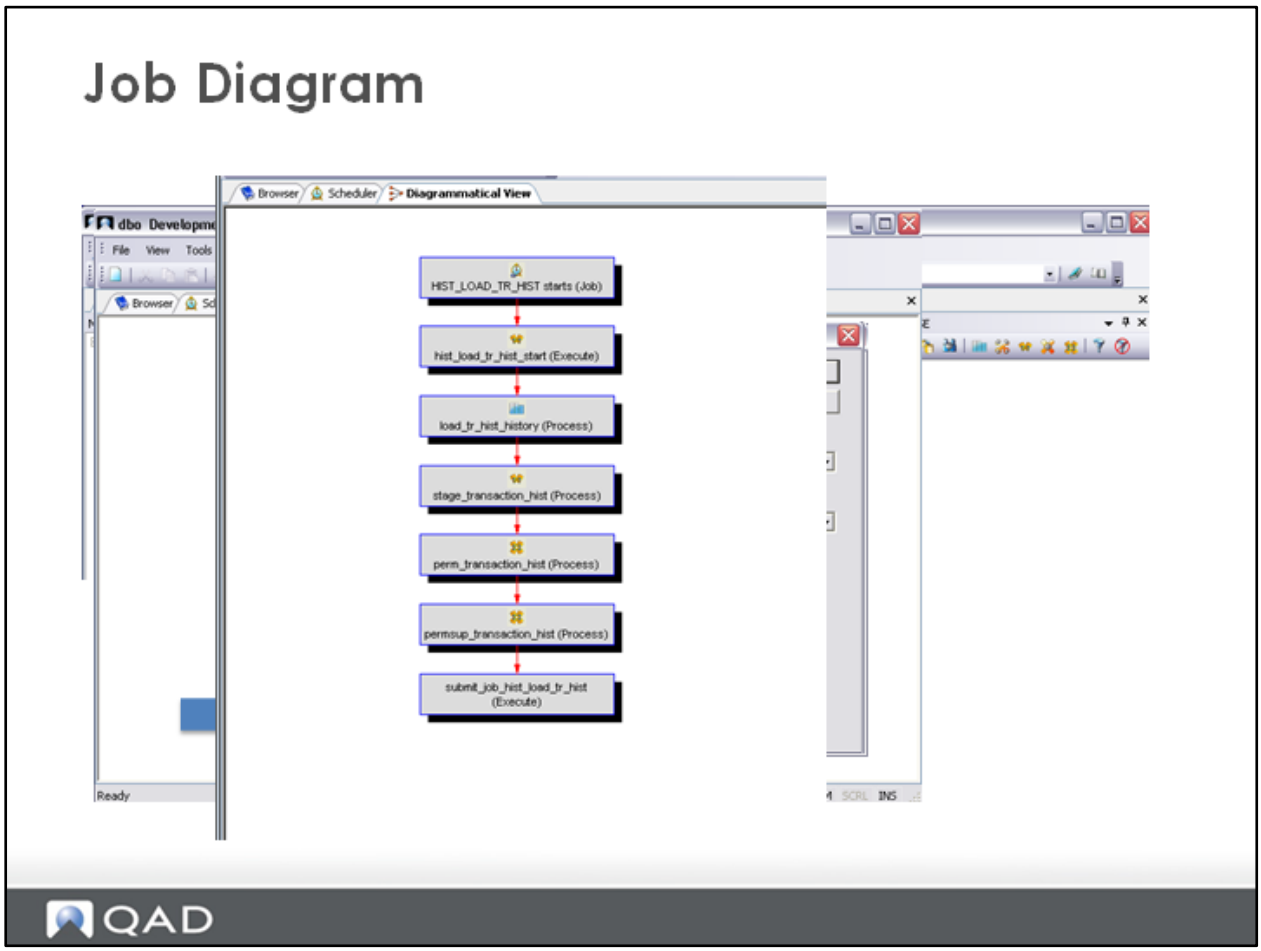
Submit_next_daily_job

Both of these tasks are custom procedures. The Stage Daily Load Chained job will kick off the first job in the string of jobs necessary to Extract, Transform and Load the data.

Scheduler Documentation



Job Diagram

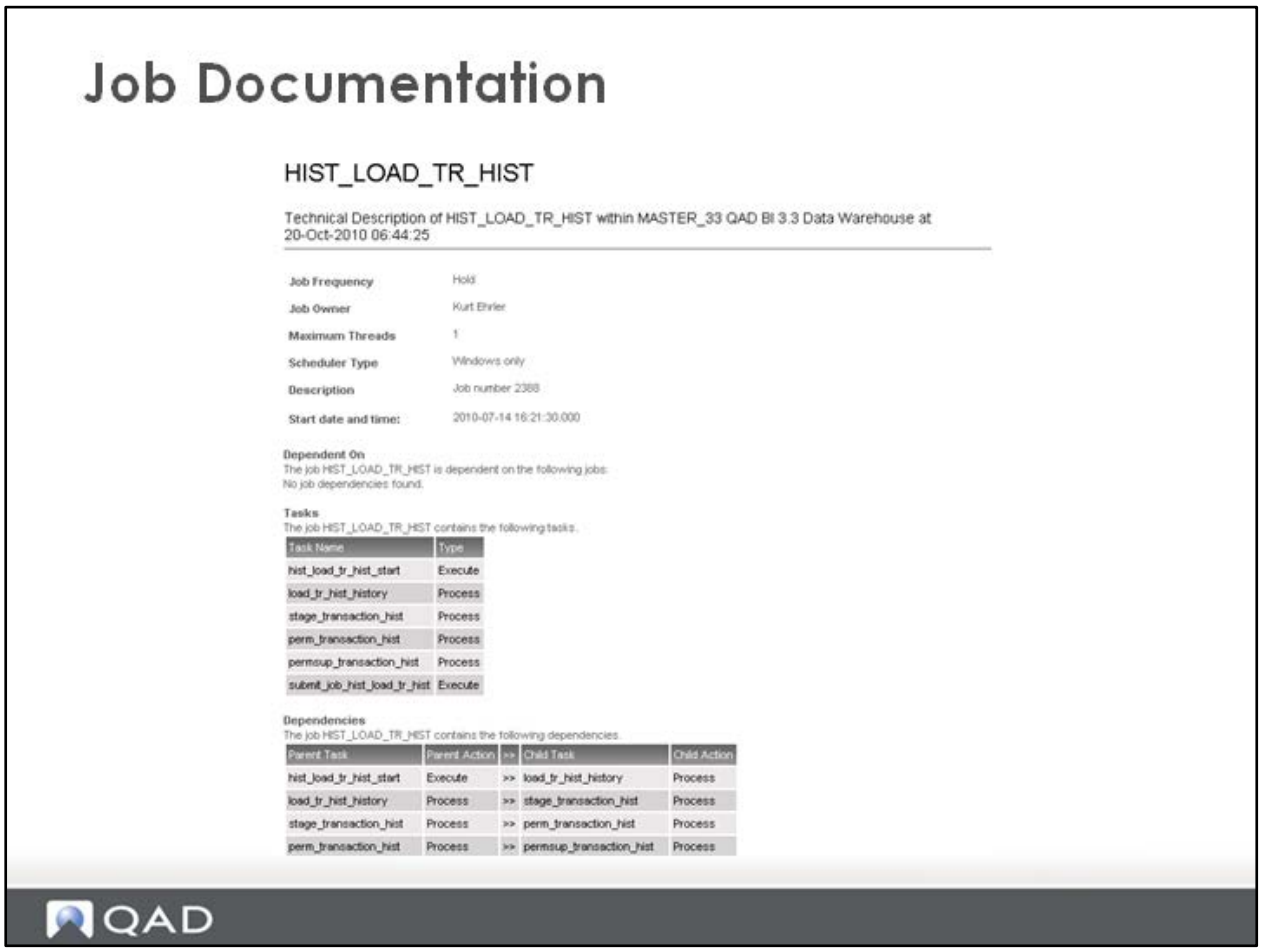


From the main Data Warehouse Designer Browser window, elect Diagrammatical View.

When the Diagram window appears, select the Diagram button again. When the Diagram Selection window appears, one of the options is *Select a Job to show dependencies* Select the job from the drop down list and click *OK*.

A Dependency diagram will be displayed.

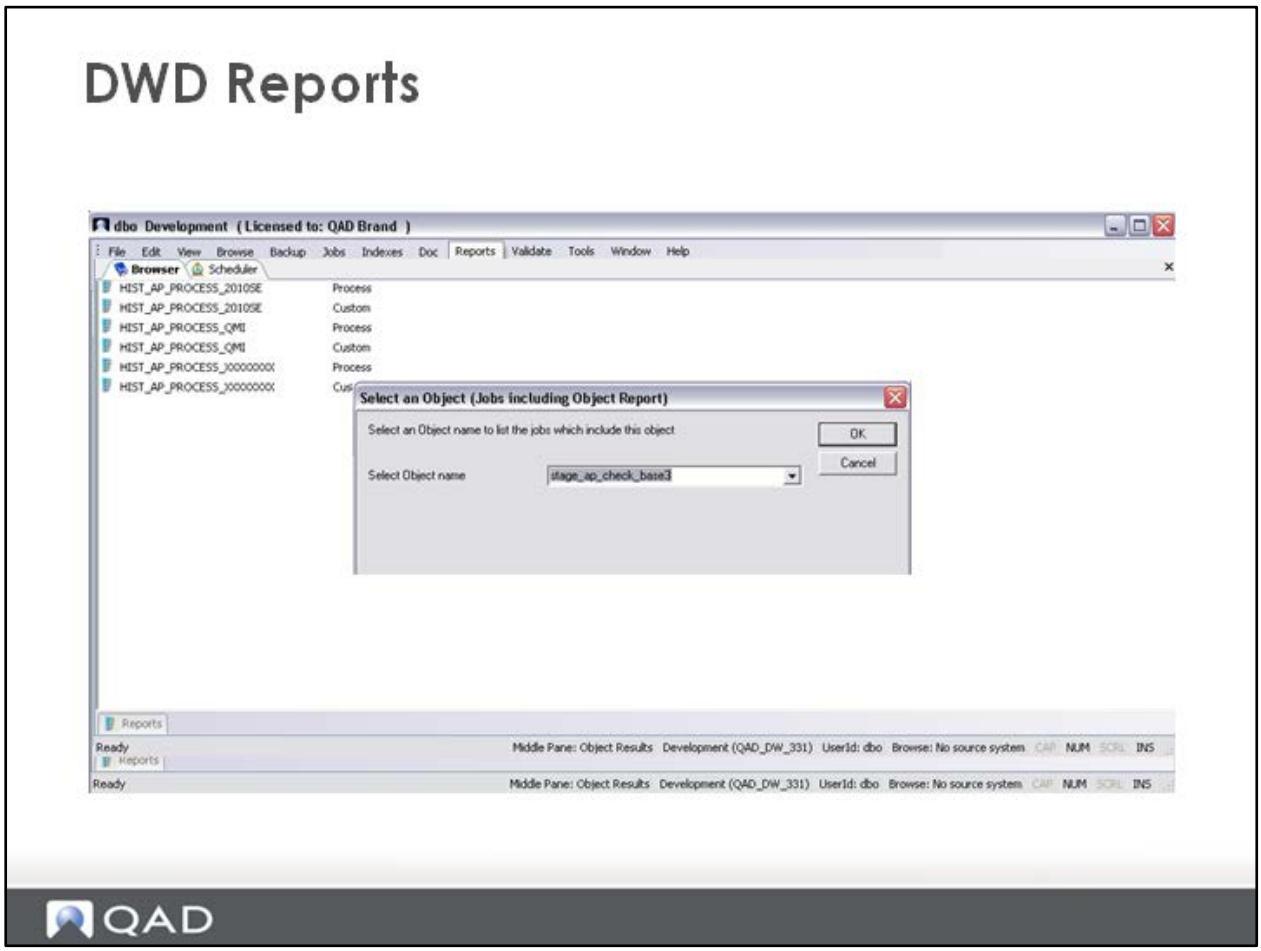
Job Documentation



Another way to see Job Documentation is from within the Technical Documentation, key information about a job is displayed.

This includes the Tasks included in the job and the dependencies for that job.

DWD Reports



Scheduler reports are available in the Builder/Browser Reports menu.

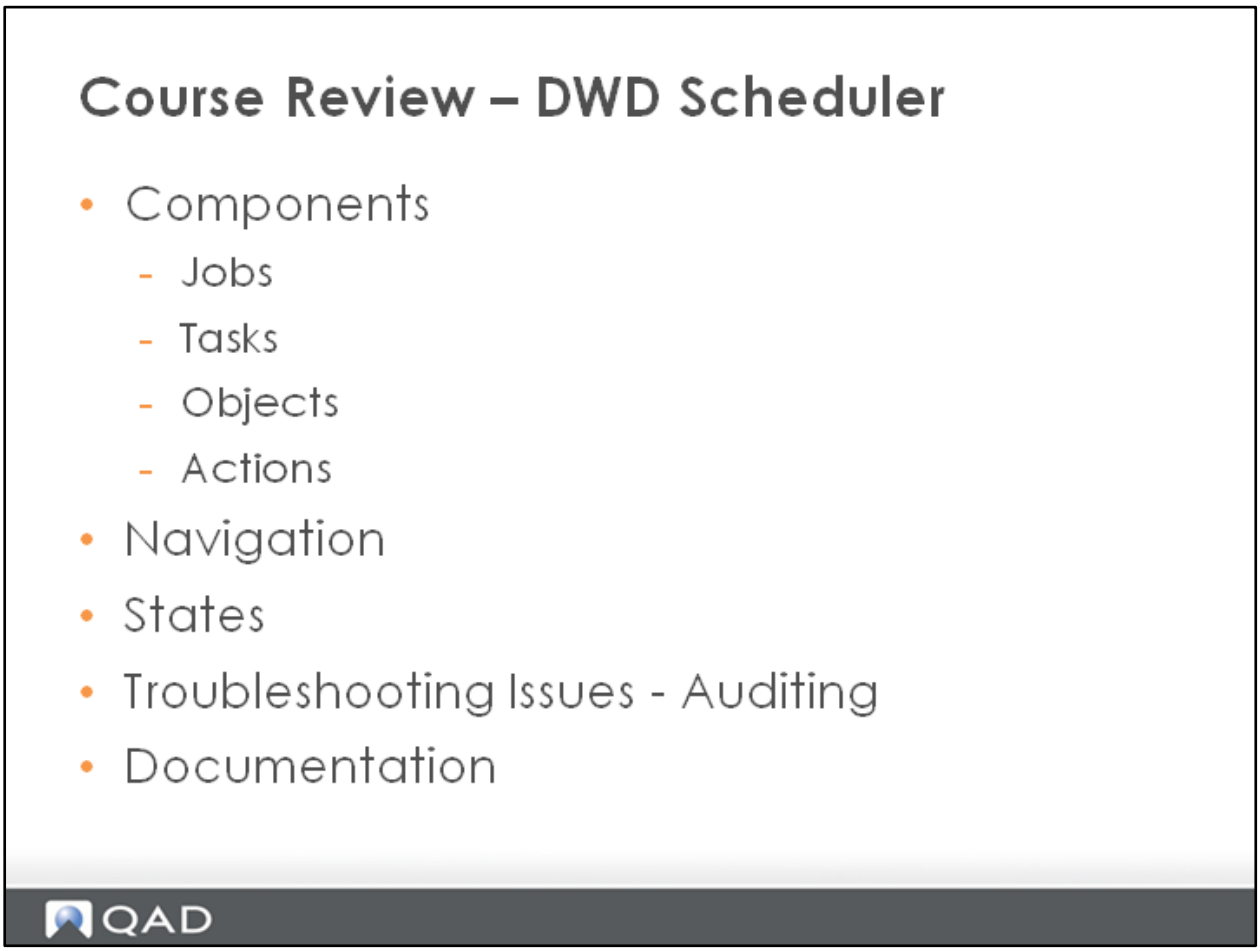
From the DWD Builder/Browser menu bar, select *Reports*.

One of the submenu options is *Job Reports* .

Course Review



Course Review – DWD Scheduler



QAD BI Level 1 Learning Path -Next Steps for Certification!

