



the **Lawson** Guru **Letter**

Thought-Provoking Commentary for the Lawson Software community

Lawson Mid-Atlantic User Group

Mastering Crystal Reports for Lawson

Prepared by
John Henley
Decision Analytics
September 2004

Mastering Crystal Reports for Lawson - Agenda

- Who Am I?
- Mastering Crystal Reports for Lawson
 - Characteristics of a Effective Reporting Solution
 - What is Crystal Reports?
 - Crystal vs. Lawson Enterprise Reporting
 - The Lawson OLE DB Provider vs. Going Native
 - Let's Go Native:
 - Understanding Table Relationships (Joins)
 - Using Database Views
 - Database Implementation Specifics
 - Tips for efficient, useful Crystal Reports with Lawson
 - Embed DrillArounds into Crystal without Lawson OLE DB
 - Select/Group via SQL Expressions not Formulas
 - Using 'LIKE' SQL operator for wildcard parameters
 - Alternative Crystal Report Deployment Options
- Questions & Discussion



The LawsonGuru Letter



- Monthly Newsletter
 - Read & Subscribe:
<http://www.danalytics.com/guru/letter/>
- Periodic White Papers
 - <http://www.danalytics.com/solutions/>
- E-Mail:
 - <mailto:john.henley@danalytics.com>
- Web:
 - <http://www.danalytics.com>

Lawson Experience

- *Over 15 years of consulting experience in the IT industry*
- *Consulting spans multiple industries:*
 - Professional Services
 - Government Contractors
 - Supply Chain/Distribution
 - Healthcare (Hospitals, PPOs, HMOs, etc.)
- *Dozens of varied clients*
 - Multiple suites/modules
 - Variety of industries/environments/platforms
- *Work w/ Lead Adopters*
- *“Specialized Generalist”*
- *“Relationship Manager”*
- *Breadth vs. Depth*
- *CIO: “I bring John in not only to implement something, I bring him in to tell me WHAT to implement, WHY to implement it, and HOW to implement it.”*

Information Systems Management

- *Architecture Analysis and Planning*
- *Systems Procurement Planning / Execution*
- *Data Conversion*
- *Systems/DBA Services*
- *Database Modeling/Design*
- *Business Analysis / Process Re-Engineering*
- *Disaster Recovery Planning*
- *Project Control and Management*

Specialties/Offerings

- Business Application Development/Lawson Customization
 - Deep knowledge of Lawson applications, business logic, and architectures
 - Lawson Development Environments
 - COBOL, SEA/OCS (HTML & JavaScript/ActiveX)
 - Portal Design Studio
 - Visual Studio/SQL
 - Technical mentoring for developers on Lawson's tools
 - Efficiency analysis/critical process redevelopment
 - Complementary Products:
 - DecisionReporter, DecisionCubeIT, SpeedApplyAR
- Application Integration
 - Lawson Interface Development
 - Inbound/Outbound
 - Realtime/Batch
 - Lawson Business Component Integrator (BCI)
 - Lawson Development Environments
 - VB/COM+/ActiveX/SQL
 - Streamlined VB/COM/ActiveX Components for Lawson integration
- Crystal Reports / Crystal Enterprise
- Formscape (Forms Printing)

Building an Effective Reporting Solution

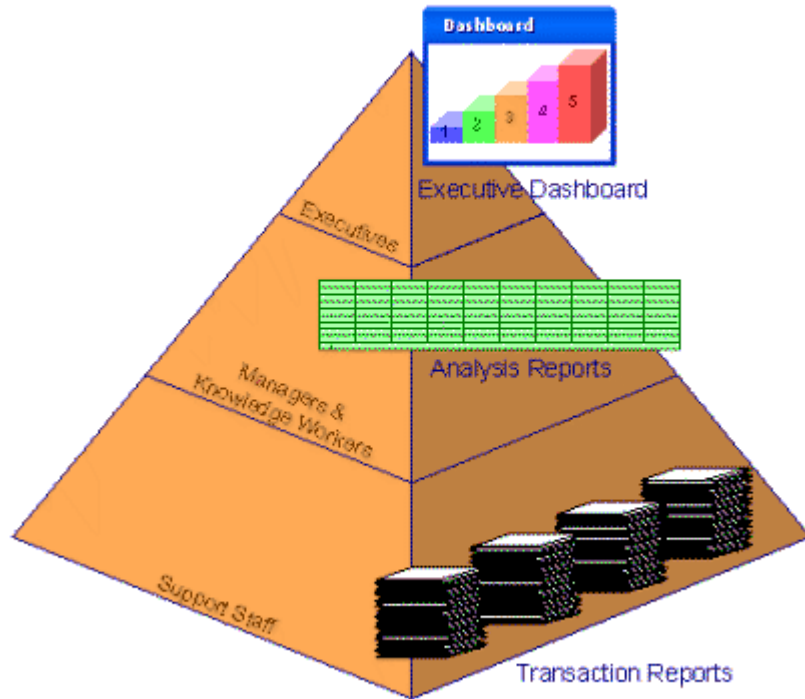
Why do it?

- Higher-performance reporting and business intelligence allow an organization to:
 - Focus on the products and activities that bring the greatest ROI
 - Analyze and react to sales trends and customer needs more quickly
 - Ensure that financial and project performance remains aligned with strategic goals and initiatives
 - Provide a focal point for collaboration with a custom portal
 - Monitor critical business strategy-oriented metrics



Building an Effective Reporting Solution

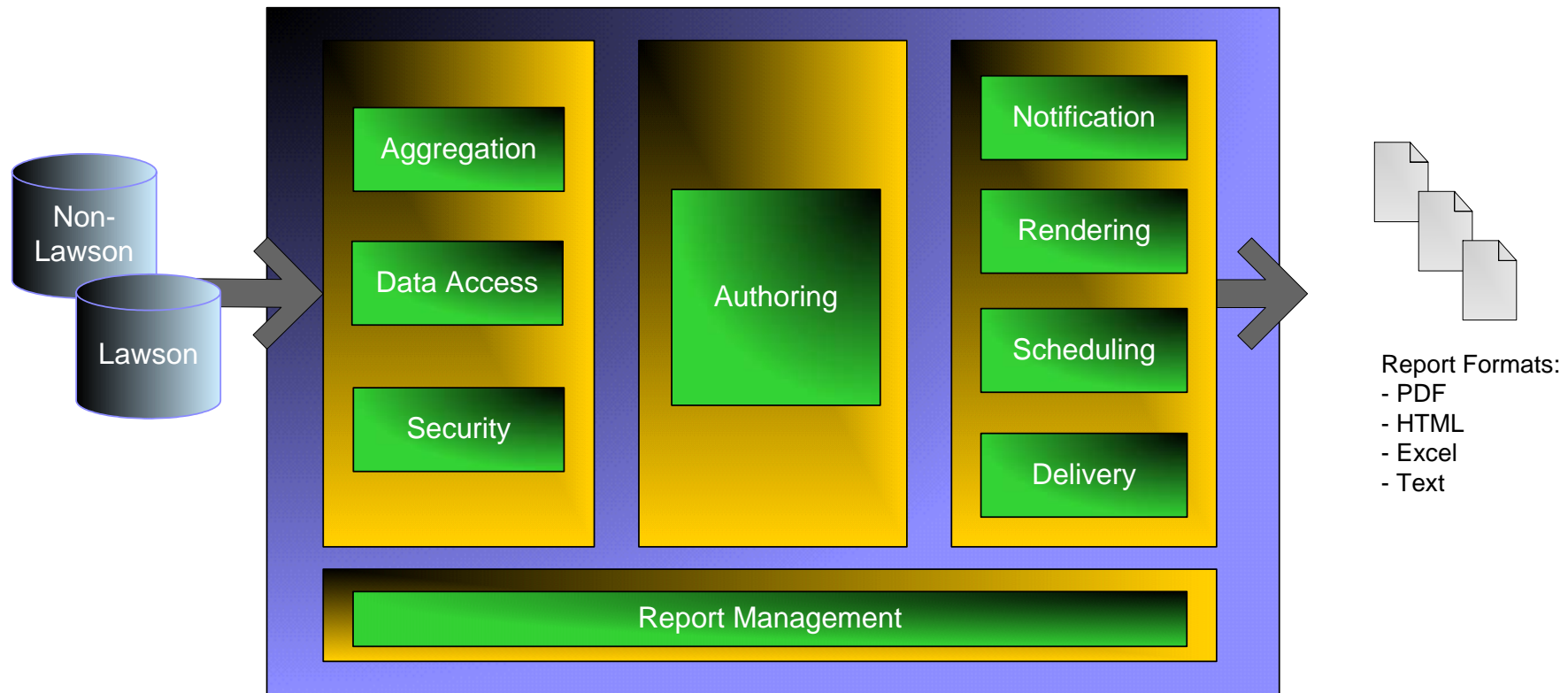
Hierarchy of Reporting Needs



- Batch/Transaction Edit Reports
 - Still the day-to-day lifeblood of our systems.
 - Many are “out-of-the-box” in Lawson applications
 - Some reports are not provided, or that you want to enhance, which have to be generated by other means, be it custom Lawson programs or a 3rd-party reporting solution.
- Analysis reports:
 - Adds value to the basic transaction reports
 - Roll-up summaries, or spreadsheets of quarterly and yearly totals
- Scorecards and Dashboards
 - Tools used by the executives and directors to monitor “the pulse” of the organization.
 - Key Performance Indicators (KPIs),
 - Usually in a graphical format
- Proactive Notifications
 - Not part of the traditional reporting needs pyramid.
 - Used by the “knowledge workers and managers” layer of the pyramid
 - Specialized reports containing targeted content
 - Based on various business conditions, intended to trigger a response by the manager, who can quickly act on the content
 - Think of this as “pro-active exception reporting”

Building an Effective Reporting Solution

Characteristics of a Reporting Solution



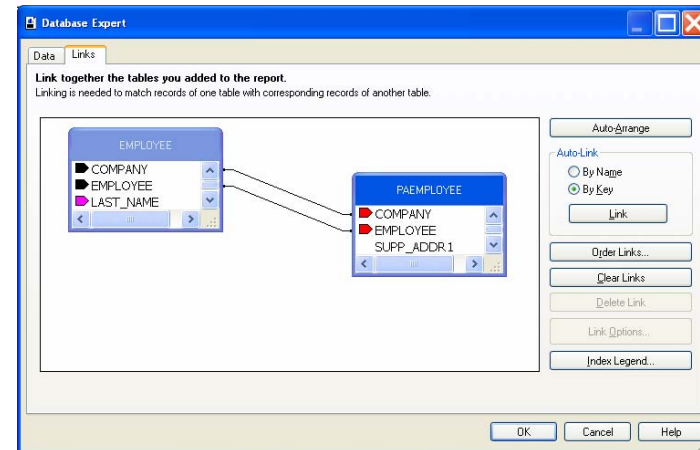
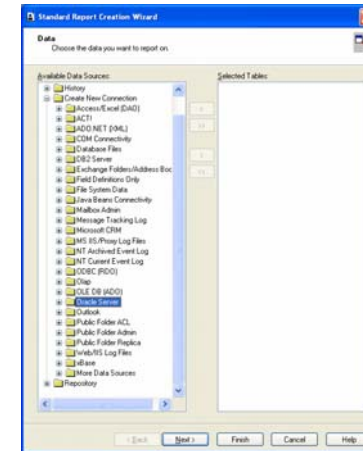
What is Crystal Reports?

- Crystal's reporting solutions are composed of two primary components:
 - Crystal Reports (the report designer)
 - Crystal Enterprise (a web-deployed report viewer/management application)
- Our focus today is Crystal Reports and report/content authoring

What is Crystal Reports?

Report Authoring

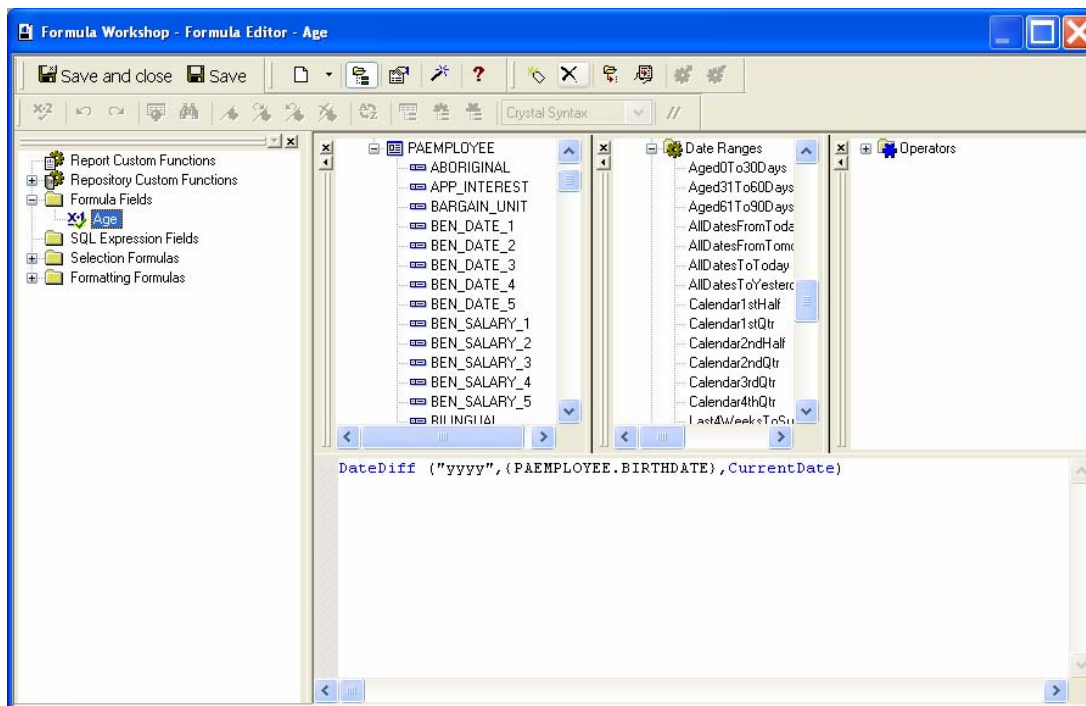
- With some basic training, almost anyone can tackle report creation with Crystal Reports
- The product is packed with wizards, and has almost every feature you'd ever need
- Data Sources Galore:
 - One of Crystal's greatest strengths
 - Include data from multiple data sources on the same reports
 - Connect via OLEDB or ODBC driver, including Oracle, DB2, SQL Server etc.
 - And...Lawson's OLEDB Provider
 - Excel files, Outlook and Exchange Lotus Notes, XML files, IIS Web Server log files, etc.
- Just point-and-click on which tables you want to report



What is Crystal Reports?

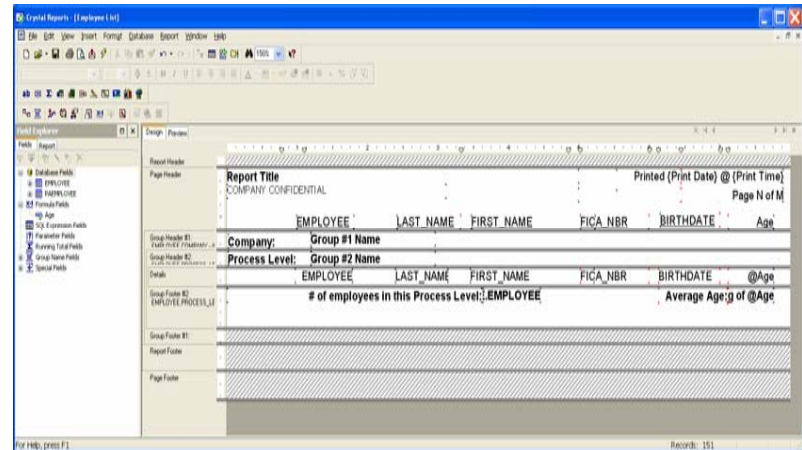
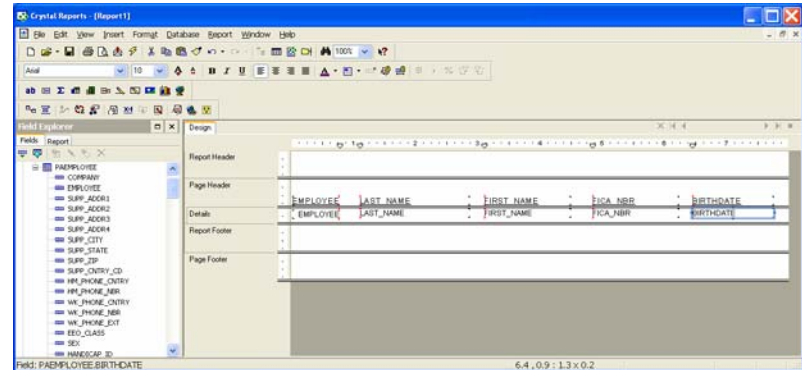
Part of Crystal's power is its formulas

- In addition to reporting data fields from your tables, you can also write your own formula-based fields, using either Visual Basic syntax or Crystal's own macro language:



What is Crystal Reports?

- Insert some fields from your selected tables and your formulas:
- Apply some grouping and formatting



What is Crystal Reports?

- And, voila, you have a report!

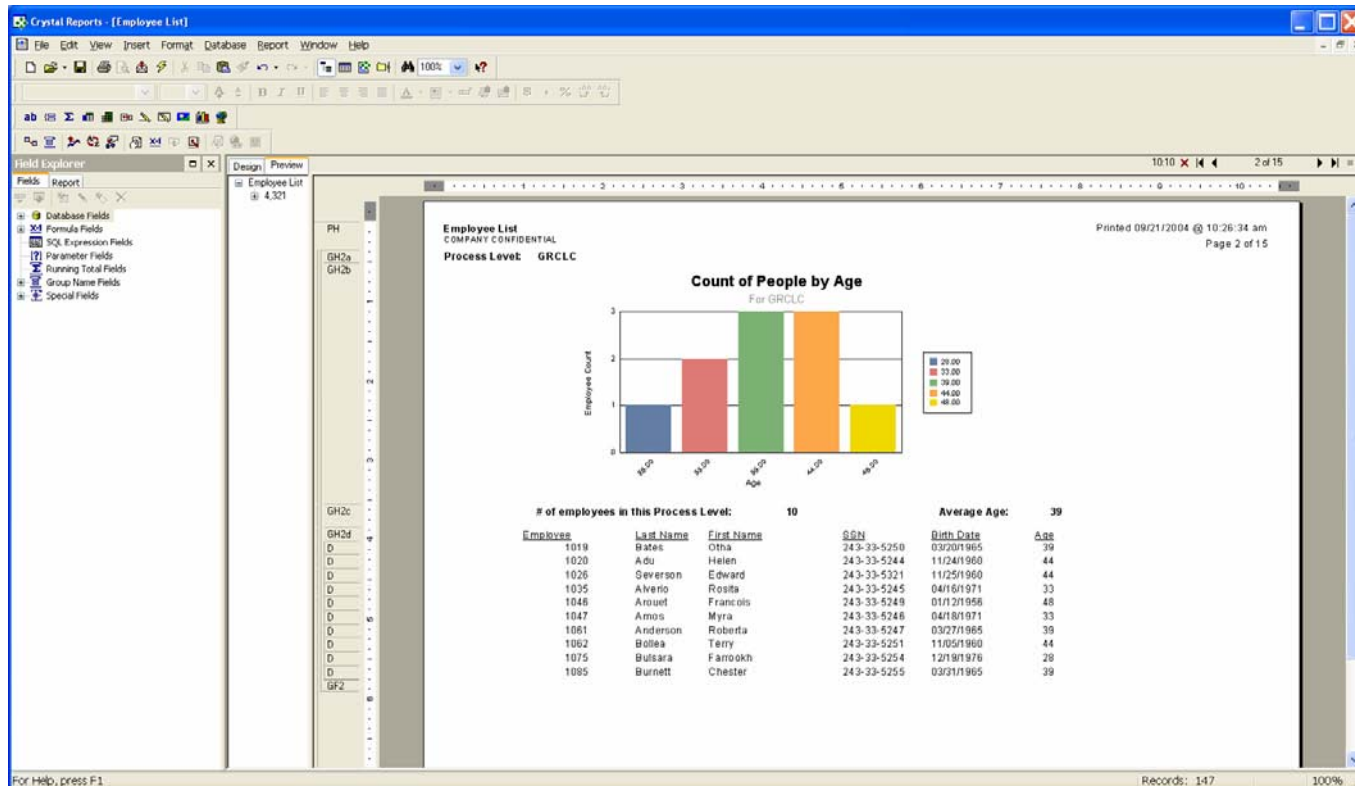
The screenshot shows the Crystal Reports interface with a report titled "Employee List" displayed in the main window. The report includes a table of employee data and summary statistics. The table has columns for EMPLOYEE, LAST_NAME, FIRST_NAME, FICA_NBR, BIRTHDATE, and Age. The data is grouped by Process Level (GRCLC and GRH). Summary statistics are provided for each group, including the number of employees and the average age.

EMPLOYEE	LAST_NAME	FIRST_NAME	FICA_NBR	BIRTHDATE	Age
Company: 4321					
Process Level: GRCLC					
1019	Bates	Otha	243-33-5250	03/20/1965	39
1020	Adu	Helen	243-33-5244	11/24/1960	44
1026	Severson	Edward	243-33-5321	11/25/1960	44
1046	Arouet	Francois	243-33-5249	01/12/1956	48
1047	Amos	Myra	243-33-5246	04/18/1971	33
1035	Alvario	Rosita	243-33-5245	04/16/1971	33
1061	Anderson	Roberta	243-33-5247	03/27/1965	39
1062	Bollea	Terry	243-33-5251	11/05/1960	44
1075	Bulsara	Farrookh	243-33-5254	12/19/1976	28
1085	Burnett	Chester	243-33-5255	03/31/1965	39
# of employees in this Process Level:			10	Average Age:	39
Process Level: GRH					
1072	Garcia-Mene	Andres	243-33-5271	08/24/1964	40
1073	Chan	Kong-Sang	243-33-5257	03/29/1965	39
1074	Aranga	Doroteo	243-33-5248	11/07/1960	44
1081	Young	Andre	243-33-5334	12/20/1976	28
1089	d'Abruzzo	Alphonse	243-33-5263	04/25/1971	33
1090	Chase	Cornelius	243-33-5258	08/27/1964	40
1084	Gearge	Rebecca	243-33-5273	08/26/1964	40
3011	Moe	Arthur	477-11-0160	10/29/1965	39
1076	Gasslon	Edith	243-33-5272	01/17/1956	48
1058	Guynes	Demetria	243-33-5277	01/14/1956	48
1059	Evans	Ernest	243-33-5267	04/20/1971	33
1060	Clapp	Eric	243-33-5259	08/22/1964	40
1069	Woffard	Chloe	243-33-5331	12/18/1976	28
1063	Driver	Phyllis	243-33-5266	12/17/1976	28
1036	Cansino	Margaret	243-33-5256	08/18/1964	40
1037	Deutschendi	Henry	243-33-5265	03/23/1965	39
1042	Wright	Erica	243-33-5332	08/19/1964	40
1045	Day	Ellen	243-33-5264	12/14/1976	28
1048	Collins	Mary	243-33-5262	06/20/1964	40
1017	Griscorn	Elizabeth	243-33-5274	04/13/1971	33
1018	Collev	Sarah	243-33-5261	08/15/1964	40



What is Crystal Reports?

- Add some charting, and away you go!
- Example/Demo?



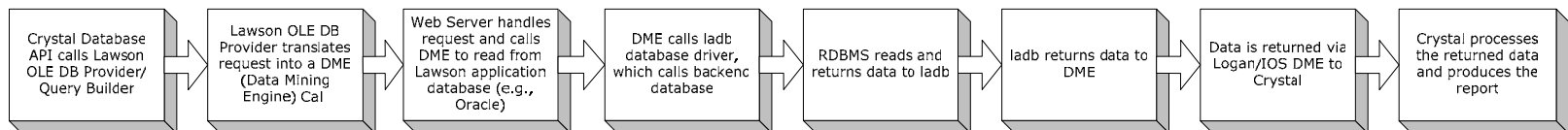
Crystal vs. Lawson Enterprise Reporting

- A Crystal-based solution requires two major components: report design, and report deployment.
- Part of designing and deploying a report involves selecting your data source(s).
- Before the Lawson OLE DB Provider arrived on the scene, we used other methods, such as the native OLE DB provider or ODBC driver provided by the vendor of the backend database, e.g., Oracle, or SQL Server, or DB2, etc.
- Now that we have Lawson OLE DB, should you use anything else?

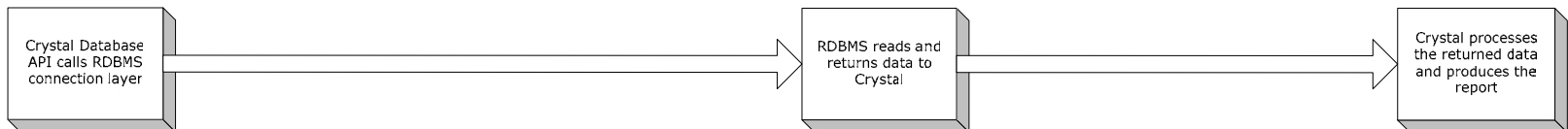
The Lawson OLE DB Provider

- In a nutshell, Crystal calls the Lawson OLE DB Provider which calls upon various LOGAN/IOS and underlying Environment services to return the data to Crystal:

The benefits provided by using the Lawson OLE DB Provider have significant processing costs:



... When compared to Crystal connecting directly to the database:



Lawson OLE DB vs. "Going Native"

- The key advantages to using the Lawson OLE DB Provider instead of the database vendor's OLE DB provider are:
 - Lawson's OLE DB Provider applies Lawson security to your report
 - If you use a native database provider, you have to build the security and table relationships into the report yourself
 - Lawson's OLE DB Provider understands more about how Lawson stores its data, in particular the relationships between Lawson tables
 - Lawson data is available regardless of which database is used to store the Lawson data. However, since most organizations stick to a standard across the enterprise, this is typically not an issue
- Let's look at the pros and cons in a little more detail...

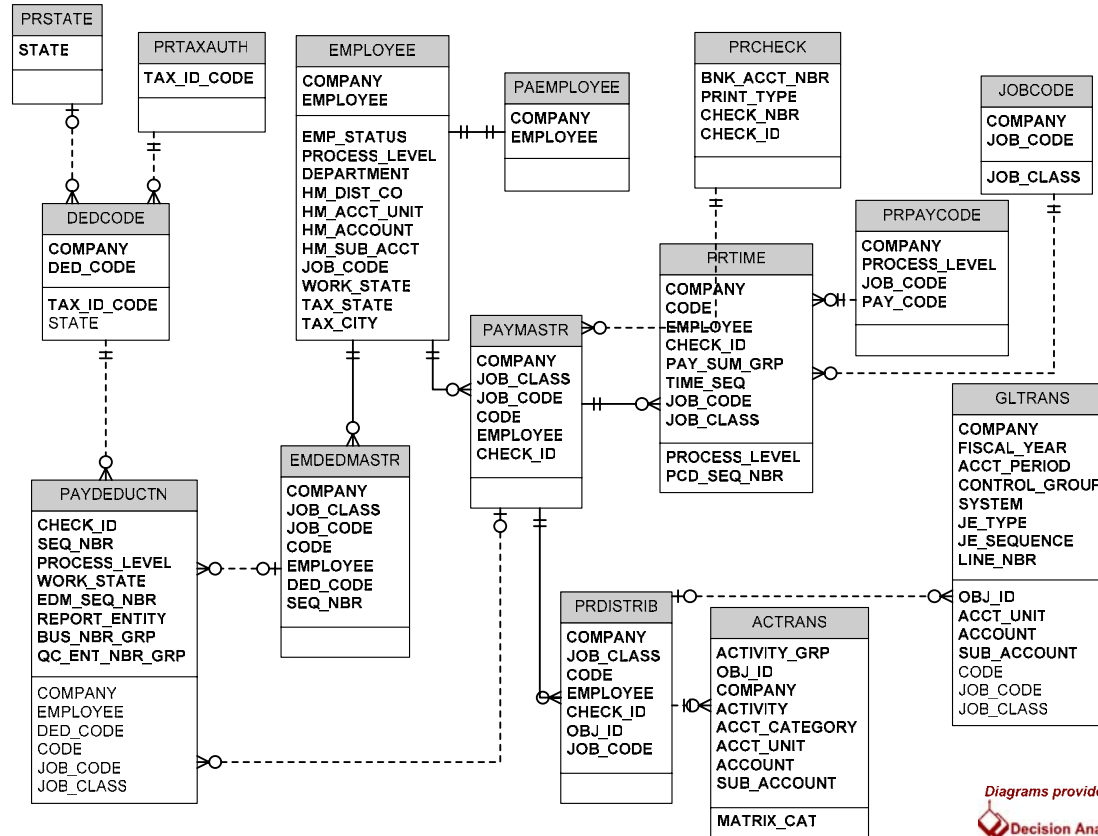
Lawson OLEDB vs. "Going Native"

	Lawson OLE DB	Native RDMBS OLE DB Provider
Security/ Deployment	<ul style="list-style-type: none"> • Uses the built-in application security classes to limit data access, which probably the #1 reason for using this tool • Usually "foolproof" • Database-independent • Operates through the firewall via HTTP 	<ul style="list-style-type: none"> • Uses database-based security, which is typically "wide-open" in Lawson environments, since most organizations use Lawson's application security to manage data access • However, you can use Lawson's database security tools (e.g., bldorasec for Oracle) to implement your Lawson security classes in the database, and use those to implement reporting security • May require maintenance when updating Lawson versions, as queries against updated tables may fail if table/column names are revised • Vendor-specific firewall ports may be blocked
Table Relationships/ Data Dictionary	<ul style="list-style-type: none"> • The architecture of OLE DB depends on the application metadata stored in the Lawson Environment., and the Lawson OLE DB provider is very "application-savvy" and understands the business rules and table relationships that make Lawson such a powerful ERP application. • You can only relate ("JOIN") tables that have a relationship defined in the Lawson application metadata repository. • You can report off of Lawson application forms. • However (and this is A HUGE HOWEVER), the relationships can only be one layer deep. In other words, you can't link from ACTRANS to PRTIME to EMPLOYEE. 	<ul style="list-style-type: none"> • Lawson stores nothing about the application table relationships in the database, but rather, stores all of that knowledge in the GEN repository. • This means that a user must understand the table relationships (including contextual relationships). • However, a Lawson-savvy technology consultant should be able to provide robust, meaningful, and user-friendly views of the Lawson data.
Limited Index Usage	<ul style="list-style-type: none"> • Index filtering applies only to the base table, not to related tables. This requires applying additional selection criteria in Crystal. 	<ul style="list-style-type: none"> • Any table indexes can be used, regardless of whether it's on the base table, or a JOINed table.



Go Native: Understanding Table Relationships (Joins)

lawson.insight 8.0.x Entity-Relationship Diagrams

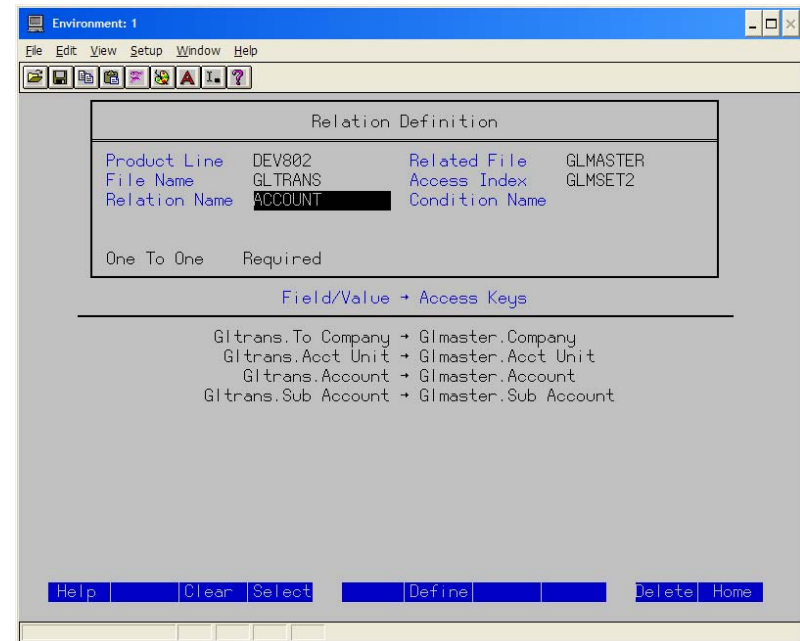


Diagrams provided by:
 Decision Analytics
<http://www.danalytics.com>



Go Native: Understanding Table Relationships (Joins)

- A logical connection between two database files, a.k.a. “join”
- Used to “relate” one or more records from one file, to one or more records in another file, according to a set of rules
- Relationship types:
 - One-to-One
 - One-to-Many
 - Dependent
 - Self Referential
- Lawson Relationships are defined in dbdef



Go Native: Understanding Table Relationships (Joins)

- Relationship metadata is stored in:
 - FILEREL (relationship)
 - FILERELFLD (fields that make up the relation)
- Using *rngdbdump* to get information about a Lawson relation:

```
$ rngdbdump -c GEN FILEREL -v ProductLine=DEV802 FileName=GLTRANS | lashow
```

```
ProductLine,FileName,RelName,RelFile,IndexName,Type,Required,DelRule,DptLvl,CndName,NotUsed,Filler
"DEV802","GLTRANS","ACCOUNT","GLMASTER","GLMSET2",,1,,,,,
"DEV802","GLTRANS","ACTIVITY","ACACTIVITY","ACVSET1",,,,,,
"DEV802","GLTRANS","ACTRANS","ACTRANS","ATNSET14",1,,,,,
"DEV802","GLTRANS","AMTRANS","AMTRANS","AMTSET8",1,,,,,
"DEV802","GLTRANS","APAPDHIST","APAPDHIST","AH2SET5",1,,,,,
.
.
.
```

```
$ rngdbdump -c GEN FILERELFLD -v ProductLine=DEV802 FileName=GLTRANS RelName=ACCOUNT | lashow
```

```
ProductLine,FileName,RelName,FldNbr,FrFldType,FrFileName,FrRelName,FrFldName
"DEV802","GLTRANS","ACCOUNT",,1,"GLTRANS",,"TO-COMPANY"
"DEV802","GLTRANS","ACCOUNT",1,1,"GLTRANS",,"ACCT-UNIT"
"DEV802","GLTRANS","ACCOUNT",2,1,"GLTRANS",,"ACCOUNT"
"DEV802","GLTRANS","ACCOUNT",3,1,"GLTRANS",,"SUB-ACCOUNT"
```

Go Native: Understanding Table Relationships (Joins)

- Using the dbdoc report to get Lawson data dictionary information:

`$ dbdoc DEV802 GL GLTRANS | lashow`

GLTRANS FILE

General Ledger Transactions

The General Ledger Transaction file contains the journal entry detail information to be posted to the Lawson General Ledger system. The transactions are not deleted when posted and GL300 (General Ledger History Delete) should be run to clear out information no longer needed.

GLTRANS FILE INDEX			
REFERENCED BY	NAME	KEY FIELDS	DESCRIPTION /
GL145 GL170 GL240	GLTSET1	COMPANY	
GL285 GL286 GL287		FISCAL-YEAR	
GL41.1 GL41.3 JB240		ACCT-PERIOD	
GL325 GL327 GL235		CONTROL-GROUP	
AC191 AP125 AP126		SYSTEM	
AP27.1 CB10.1 CB191		JE-TYPE	
EE135 EE35.1 EE35.2		JE-SEQUENCE	
FB190 FB211 FB296		LINE-NBR	
FB45.1 FB95.1 FB95.2			
FB95.6 GL165 GL298			
GL94.2 GL94.3 GL94.4			

FIELD NAME	DESCRIPTION/VALID VALUES	UPDATED BY	
GLT-COMPANY Company	Numeric 4 This is the company into which the transactions are to be interfaced. For intercompany processing, this field is considered the originating company. Must be defined in GLSYSTEM.	GL110	GL146
		GL167	GL190
		GL191	GL196
		GL197	GL199
		GL290	GL40.1
		GL40.2	GL40.3
		GL40.6	GL40.7
		GL40.8	GL44.1
		GL45.1	GL500
		IFGT.1	
GLT-FISCAL-YEAR Fiscal Year	Numeric 4 This is the current fiscal year. This field is updated by Period Closing	GL146	GL167
		GL190	GL191
		GL196	GL197

GL40.5	GL40.6
GL40.7	GL40.8
GL41.1	GL41.3
GL44.1	GL45.1
...	
GLTSET2 TO-COMPANY	KeyChange, Subset
FISCAL-YEAR	Where STATUS != 8
ACCT-PERIOD	
GL120	GL135
GL147	GL199
GL256	GL290



Go Native: Understanding Table Relationships (Joins)

- Data Dictionary on Lawson Support

The screenshots illustrate the Lawson Customer Support interface. The top-left window shows the 'Technical Library' with filters for 'AS400', 'NT', and 'UNIX 6.1'. The top-right window shows the 'EMPLOYEE' data dictionary page, which includes a description of the Employee FA Information File and a list of referenced tables. The bottom window shows the 'Human Resources Data File Text' section with a 'FILE LISTING BY NAME' table.

FILE NAME	PREFIX	DESCRIPTION	SYSTEM
ACT_ACCOUNT	AAX	Activity Account Categories	Activity Management
APP_CENTRIS	AAN	Applicant Job History	Personnel
APP_CENTRIS	APL	Applicant	Personnel
ATTENDANCE	ATC	Attendance Code	Time and Attendance
ATTENDANCE	ATN	Employee Attendance History	Time and Attendance
BANK_ACCOUNT	BAC	Bank Account	Payroll
BANK_CODE	BFC	Bank Code	Payroll
BENEFIT	BNF	Employee Benefit	Benefits
BENEFIT_CHANGE	BNH	Benefit Changes	Benefits
BENEFIT_COMPANY	BNP	Benefit Company Parameters	Benefits
BENEFIT_COVERAGE	BNR	Benefit Coverage	Benefits
BENEFIT_COVERAGE_OPTION	BNQ	Benefit Coverage Options	Benefits
BENEFIT_GROUP_CHANGE	BNP	Benefit Group Change	Benefits
BENEFIT_LIMIT	BNL	Benefit Limits	Human Resources
BENEFIT_LIMITS	BNL	Benefit Limits	Human Resources
CHN_DEFERRED_AMOUNT_HISTORY	CDH	Chan/Deferred Amount History	Benefits
EMPLOYEE_CATEGORIZATION_HISTORY	CEH	Employee Categorization History	Benefits
DEDUCTION	DCL	Deduction Class	Payroll
DEDUCTION	DDC	Deduction	Payroll
DEPARTMENT	DPT	Department	Human Resources
EMPLOYEE_ACH_ACCOUNT	EAD	Employee ACH Account	Payroll
EMPLOYEE_DEDUCTION	EDM	Employee Deduction	Payroll
EMPLOYEE_DEPENDENT	EMD	Employee Dependent	Human Resources
EMPLOYEE_DISTRI	DIF	Emp Achn Distribution Override	Payroll
EMPLOYEE_DISTRI	ACD	Employee ACH Distribution	Payroll
EMPLOYEE_AUTOMOBILE	EAT	Employee Automobile	Personnel
EMPLOYEE_CODE	EPC	Emp/Ach Personnel Codes	Personnel
EMPLOYEE_FLEX_DOLLAR	EFD	Employee Flex Dollars	Benefits
EMPLOYEE_FLEX_PERIOD_DOLLAR	EFP	Employee Flex Period Dollars	Benefits
EMPLOYEE_BENEFIT_INVESTMENT	EBI	Emp Benefit Investment Dist	Benefits
EMPLOYEE	EMP	Employee	Human Resources
EMPLOYEE_TRAVEL_AND_LIEN	EMV	Employee Travel and Lien	Personnel
EMPLOYEE_STATUS	EMS	Employee/Applicant Status	Human Resources
EMPLOYEE_STATUS	EMV	Employee/Applicant Status	Human Resources



Go Native: Understanding Table Relationships (Joins)

- <http://lawsonguru.danalytics.com/datadict>

The screenshot displays the Lawson Insight Technical Documentation website. The top navigation bar includes links for ERDs, Tables, Elements, Libraries, and App Forms. Below this, there are three browser windows:

- Top Left:** A navigation menu with links for ERDs, Tables, Elements, Libraries, and App Forms, each with sub-links for versions 7.2.3, 8.0.1, and 8.0.2.
- Bottom Left:** A detailed view of the 'APINVOICE FILE'. It includes a description: 'The Accounts Payable Invoice file contains accounts payable invoice records. Each record has one or more associated records in the Invoice Payment File.' Below this is a list of 'REFERENCED BY' and 'UPDATED BY' tables, and a 'FIELD NAME' table with descriptions and valid values.
- Right:** A complex Entity-Relationship Diagram titled 'lawson. Insight 8.0.x Entity-Relationship Diagrams'. It shows various entities like APVENGROUP, APINVOICE, APBATCH, and others, connected by relationship lines. A 'LAWSON' watermark is visible over the diagram.



Go Native: Understanding Table Relationships (Joins)

- Know the difference between an INNER JOIN and a LEFT OUTER JOIN
- Don't let the wrong JOIN ruin your day
- Example/Demo?

Crystal Reports - [Main: Over 50 or employees with payments > \$2000 in 2002 (Inner Join)]

Printed 09/21/2004 @ 10:49:26 am Page 1 of 1

EMPLOYEE	LAST_NAME	FIRST_NAME	SEX	AGE	2002 GROSS PAY
1019	Bates	Uma	M	39	25,368.95
1021	Cohen	Jacob	M	50	187,288.98
1022	Fowler	Kevin	M	48	13,070.85
1024	Broner	William	M	50	54,500.00
1037	Duchsenhofer	Henry	M	39	19,738.15
1045	Clark	Eliott	F	29	20,143.25
1048	Collins	Mary	F	40	16,719.10
1062	Belva	Terry	M	44	16,383.40
1074	Aranga	Dorinda	F	44	13,942.30
1089	Albraccio	Alphaonse	M	33	22,115.40
1087	Roussouff	Andre	M	45	90,399.96
1099	Agrawalassara	Daniel	M	35	90,399.96
1099	Bachman	Richard	M	44	150,000.00
1100	Hewson	Paul	M	42	89,000.84
1200	Evered	Noah	M	58	4,400.00
1201	Leveshur	Lita	M	58	6,400.00
1202	Wenke	Norman	M	52	10,000.00

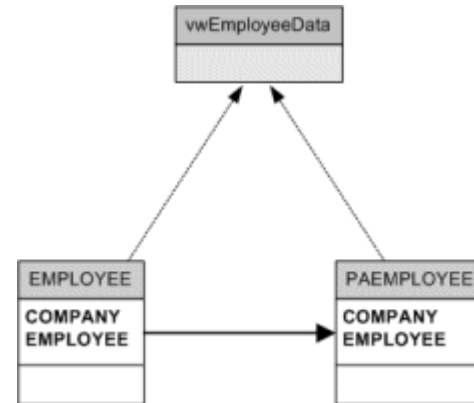
Crystal Reports - [Main: Over 50 or employees with payments > \$2000 in 2002 (Left Join)]

Printed 09/21/2004 @ 10:49:06 am Page 1 of 1

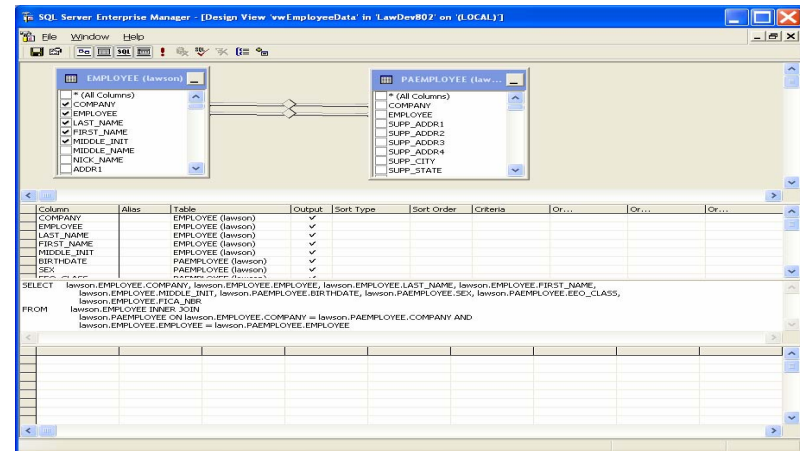
EMPLOYEE	LAST_NAME	FIRST_NAME	SEX	AGE	2002 GROSS PAY
1019	Bates	Uma	M	39	25,368.95
1021	Cohen	Jacob	M	50	187,288.98
1022	Fowler	Kevin	M	48	13,070.85
1024	Broner	William	M	50	54,500.00
1037	Duchsenhofer	Henry	M	39	19,738.15
1045	Clark	Eliott	F	29	20,143.25
1048	Collins	Mary	F	40	16,719.10
1062	Belva	Terry	M	44	16,383.40
1074	Aranga	Dorinda	F	44	13,942.30
1089	Albraccio	Alphaonse	M	33	22,115.40
1087	Roussouff	Andre	M	45	90,399.96
1099	Agrawalassara	Daniel	M	35	90,399.96
1099	Bachman	Richard	M	44	150,000.00
1100	Hewson	Paul	M	42	89,000.84
1200	Evered	Noah	M	58	4,400.00
1201	Leveshur	Lita	M	58	6,400.00
1202	Wenke	Norman	M	52	10,000.00
3003	Koch	Willard	M	52	
3005	LeVey	Steven	M	52	
3026	Broner	Clare	M	52	
3036	Hickman	Harriet	M	52	
6001	Evered	Ramon	M	56	

Go Native: Using Database Views

- Using database views:
 - Hides some of the complexity of the underlying table structures (and associated table joins) when creating your reports
 - In addition to creating reports based on simpler structures, you don't have to worry about creating the proper joins in each and every report
 - Consider CE10 "Business Views"



- Examples:
 - Employee Data
 - GL Master Account List
 - AC Activity Tree Structure
 - GL Balances
 - Header/Details (e.g., Paychecks, Invoices)

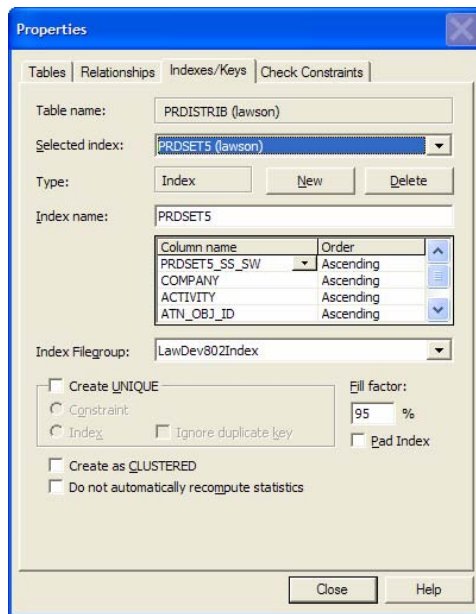


- Underscores, not hyphens
- Reserved Words
 - Certain table names, field names, etc. are “reserved words” in a given database syntax, e.g. STATUS becomes R_STATUS
- Descending values in indexes (one’s complement)
- Array columns (e.g., AMOUNT_01)

Go Native: Database Implementation Specifics

• Subset Switches

- Conditions used to include records in a given “index set” to speed retrieval; records that meet that condition have the flag/switch set “Y”.
- First field in a subset index
- If you use SQL to join tables, make sure you consider SS_SW's (ex. ACTRANS->PRDISTRIB)
- Examples:
 - GLTSET8_SS_SW – Unposted Transactions
 - PRDSET5_SS_SW – Payroll Distribution with an Activity:



```
SELECT ATN.OBJ_ID, PRD.ATN_OBJ_ID
FROM
LawDev802.lawson.ACTRANS ATN,
LawDev802.lawson.PRDISTRIB PRD
where ATN.ACTIVITY = PRD.ACTIVITY
AND ATN.COMPANY = PRD.COMPANY
AND PRD.ATN_OBJ_ID = ATN.OBJ_ID
AND PRD.PRDSET5_SS_SW = 'Y'
```

Caution:

If you ever update the database directly, be sure to use the Lawson *sqlfix* utility to update the _SS_SW columns



Tip: Lawson DrillAround from a Crystal Report

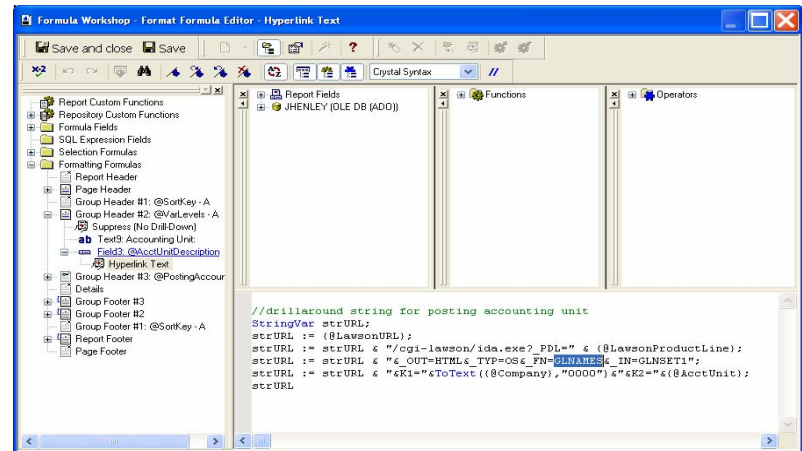
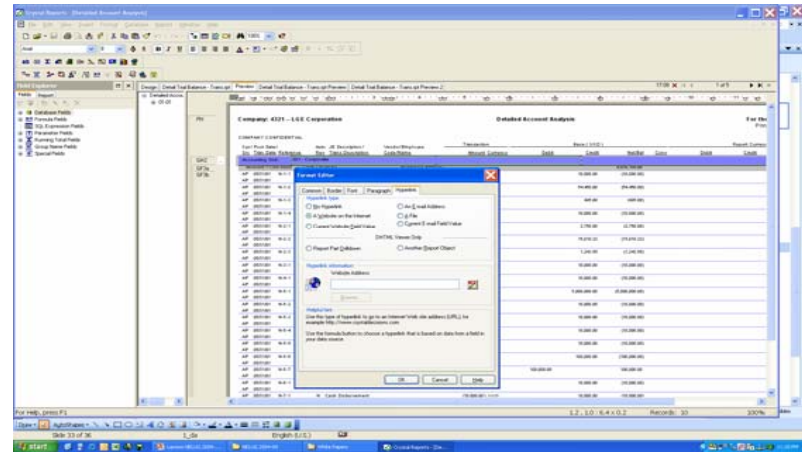
- One of the ways that you can use Crystal formulas is to embed Lawson DrillAround into your reports
- This example report shows detailed transactions from GL, and includes a Lawson DrillAround link on every report detail so that a user viewing the report (shown here as an exported PDF) can then drill into Lawson for more information:

The screenshot displays a 'Detailed Trial Balance' report for the period ending October 31, 2003. The report is organized into sections for different accounting lines, such as 'DATA LINES', 'EQUIPMENT REPAIRS & MAINT', and 'SERVICE CONTRA'. Each section lists transactions with columns for Post Date, Tran Date, Reference, Description, Vendor/Employee Name, Debit, Credit, and Balance. A green circle highlights a specific transaction in the 'EQUIPMENT REPAIRS & MAINT' section: AP AD 10/06/03 09/11/03 74126 AMERICAN BUSINESS TE. A green arrow points from this transaction to a 'Select Detail' window in Microsoft Internet Explorer. This window contains a list of drill-around links: Transaction Detail, Transaction Amounts, Associated Journal Transactions, Journal Header, Account, and Accounts Payable. Another green circle highlights the 'Accounts Payable' link. A second green arrow points from this link to a third window titled 'Accounts Payable' in Microsoft Internet Explorer. This window shows a table of vendor invoices with columns for Vendor, Invoice Amount, and Vendor Name. The data in this window is as follows:

Vendor	Invoice Amount	Vendor Name
80 AMERICAN BUSINESS TECHNOLOGY 74126	95.00	AMERICAN BUSINESS TECHNOLOGY 74126
80 AMERICAN BUSINESS TECHNOLOGY 74051	245.00	AMERICAN BUSINESS TECHNOLOGY 74051
80 AMERICAN BUSINESS TECHNOLOGY 74050	89.95	AMERICAN BUSINESS TECHNOLOGY 74050
80 AMERICAN BUSINESS TECHNOLOGY 74017	510.20	AMERICAN BUSINESS TECHNOLOGY 74017

Tip: Lawson DrillAround from a Crystal Report

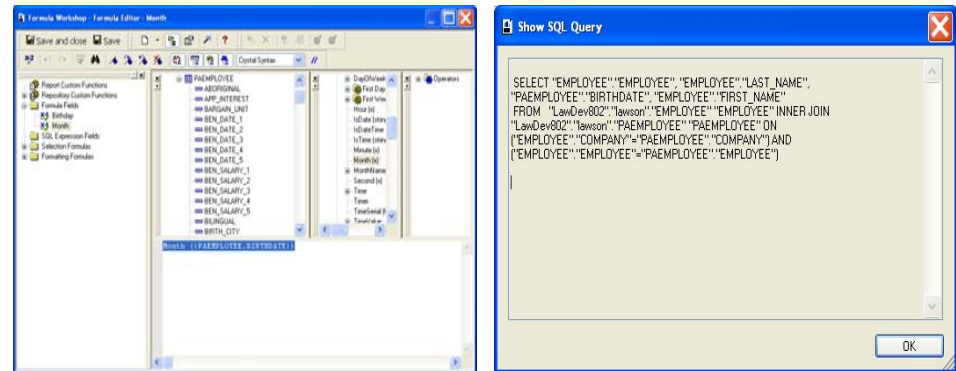
- Format the field, adding a hyperlink
- The hyperlink is based on a formula
- The formula creates a URL string that calls IDA
- You can hard-code the server and product line, but I prefer to use a parameter or formula
- Need to know *what* you're drilling into



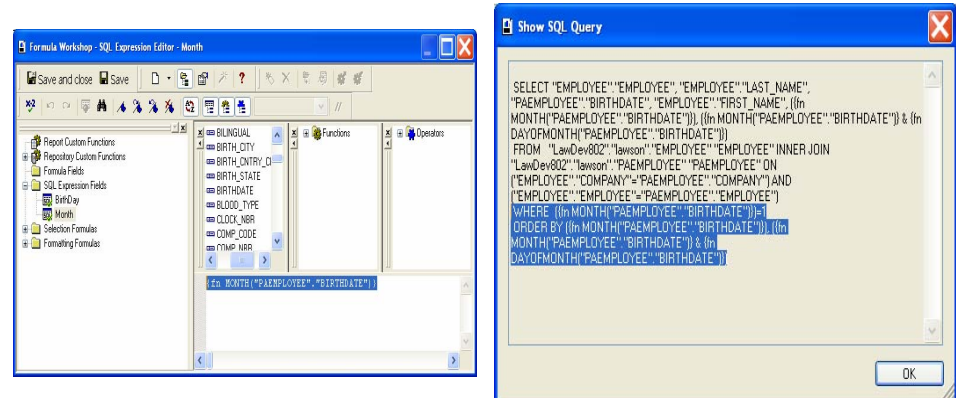
Tip: Select/Group via SQL Expressions not Formulas

- For any database operations, use SQL Expressions, not Formulas
 - WHERE (selection)
 - ORDER BY (grouping/sorting)
- Example/Demo

Slower (Crystal does the work):

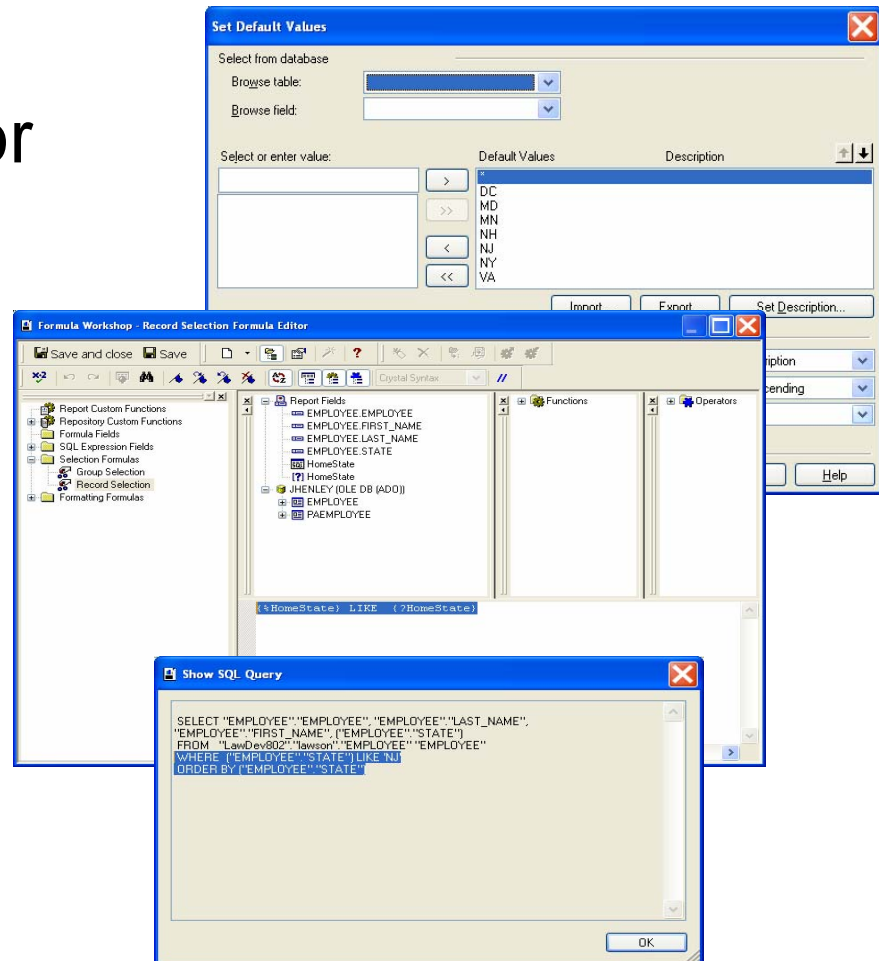


Faster (Database does the work):



Tip: Use 'LIKE' SQL operator for wildcard parameters

- You can use the 'LIKE' SQL operator as a selection wildcard
- However it can not be used for "allow multiple values" parameters
- Example/Demo



Alternative Crystal Report Deployment Options

- Crystal provides the ultimate versatility for deploying reports, in addition to (or, perhaps *instead of*) Crystal Enterprise
- A Crystal report is simply an object that can be run inside a container (e.g. via ActiveX/COM+, Java, etc.), a report can be viewed inside a custom Windows or a web browser
 - (here are two samples I've developed)
- In fact, that's exactly how Lawson Reporting Services works!

The screenshot shows a web browser window displaying a Crystal report titled 'Balance Sheet January 31, 2003'. The report is presented in a table format with columns for 'January 31, 2003' and 'December 31, 2002'. The report is categorized into 'ASSETS' and further divided into 'CURRENT ASSETS', 'PROPERTY AND EQUIPMENT', and 'INTANGIBLE ASSETS'. The total assets for January 31, 2003, are 103,018,867, and for December 31, 2002, they are 105,738,233.

	January 31, 2003	December 31, 2002
ASSETS		
CURRENT ASSETS		
Cash	111,551	(16,302)
Accounts Receivable	3,850,884	4,771,600
Prepaid Expenses	154,189	156,316
Other Current Assets	1,331	1,508
Deferred Income Tax	201,800	201,800
TOTAL CURRENT ASSETS	4,259,555	5,114,924
PROPERTY AND EQUIPMENT		
Property and Equipment	4,817,359	4,571,378
Less: Accumulated Depreciation	(1,989,090)	(1,989,090)
NET PROPERTY AND EQUIPMENT	2,828,269	2,582,287
INTANGIBLE ASSETS		
Intangible Assets	105,124,969	105,124,969
Less: Accumulated Amortization	(8,159,117)	(8,159,117)
NET INTANGIBLE ASSETS	95,965,852	95,965,852
TOTAL OTHER ASSETS	5,070	5,070
TOTAL ASSETS	103,018,867	105,738,233



Mastering Crystal Reports for Lawson

- Questions?
- Open Discussion

The LawsonGuru Letter



- Monthly Newsletter
 - Read: <http://www.danalytics.com/guru/letter/>
 - Subscribe: <mailto:letter-subscribe@lawsonguru.com>
- Periodic White Papers
 - <http://www.danalytics.com/solutions/>
- E-Mail:
 - <mailto:john.henley@danalytics.com>
- Web:
 - <http://www.danalytics.com>