


“Who Moved My Cheese” - Enhanced Auditing for JD Edwards EnterpriseOne



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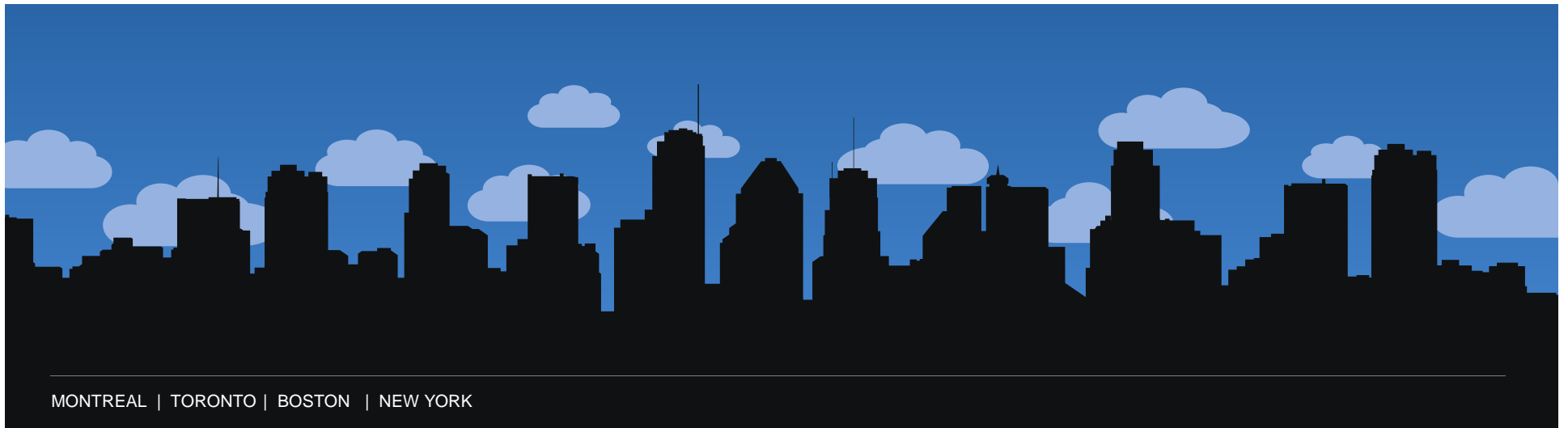
Presentation Abstract

- EnterpriseOne supports FDA and Government Regulatory Compliance through the use of enhanced audit trails and electronic signature capture through the CFR Part 11 tool (aka Data Change Tracker).
- These tools/features are NOT on by default but can also be used to satisfy internal audit requirements and increase the visibility into change control.
- In this session we will review real customer case scenarios to increase auditing on the address book, item master, bank files business unit master and other key system areas. We will also dissect the technology configuration and consider multi-environment configurations and overall administration including environment refreshes and Software Change Management implications.
- During this session we will actually go through some sample configurations of the enhanced auditing.

Agenda

- About Enersource
- Auditing Overview
- EnterpriseOne Auditing Options
- Enersource Implementation & Planning
- Enersource's Auditing Implementation
- Enersource's Auditing Next Steps
- Questions & Answers

About Enersouce



About Enersource

- Founded in 1917
- A Diversified Energy and Technologies Company
 - Regulated electricity utility serving the City of Mississauga
 - 3rd largest by demand of 80 municipally-owned utilities in Ontario
 - 200,000 customers
 - Leads all Ontario hydro utilities in reliability
 - Non Regulated Business:
 - Energy Services
 - Street Lighting for Mississauga and Brampton
- 400 Employees
- 90% owned by the City of Mississauga
- 10% owned by Borealis (an OMERS Company)

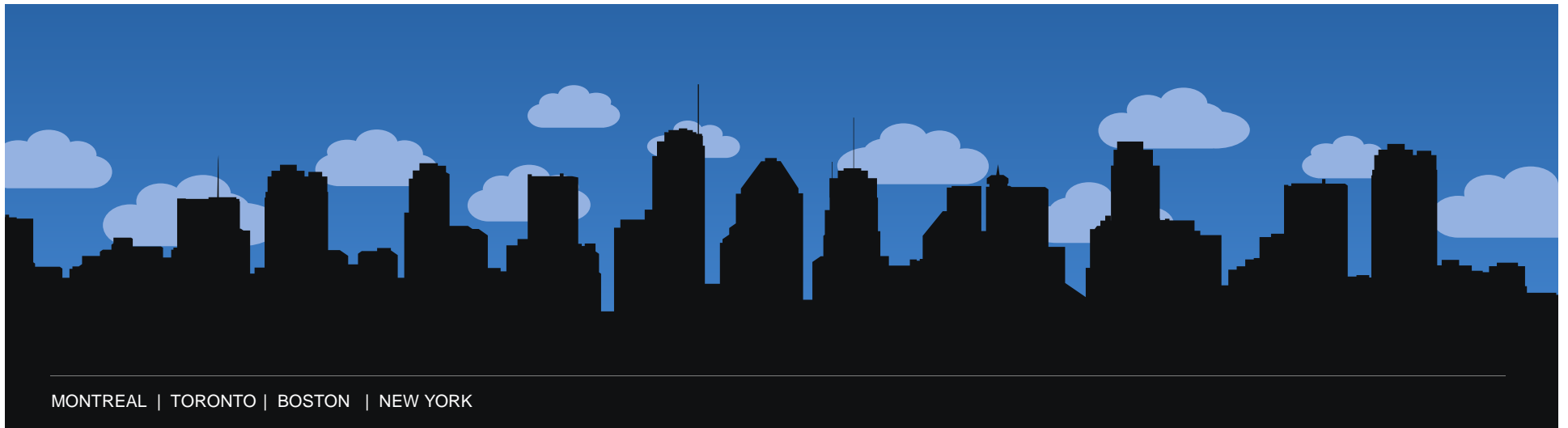
JD Edwards at Enersource

- **Financials**
 - G/L, A/P, A/R, Fixed Assets
- **Operations**
 - Service Orders, Case Management, Time Entry
- **Distribution and Logistics**
 - Inventory, Procurement
- **Human Resources Management**

JD Edwards at Enersource

DATE	ACTIVITY
October 2003	Go-Live on OneWorld Xe on AS400
July 2005	Upgrade to JDE 8.10 (Syntax) Web Client on WAS 6.0 (Intel) Auditing Implementation
Nov 2011	Upgrade to EnterpriseOne 9.0.2/8.98.4.2 (Syntax) Migration from AS400 to <u>Highly-Available</u> Windows 2008-R2 & Oracle RAC on VMWare & WAS 7.0.11 Auditing Implementation Expansion
May 2014	Go-Live on EnterpriseOne Tools Release 9.1.4.2 (Syntax) Patch WAS to 7.0.29

EnterpriseOne Auditing



Auditing Requirement

- Any company is accountable for the data it stores. So any modification that is done to the data impacting the company financially or legally should be traceable to its source.

EnterpriseOne Standard Audit Trail

- Records the following:
 - User Id, Program Id, Workstation Id, Date and Time
- Change history is not retained by default in most functional areas
 - ie Add record then change the record – detail of who initially added the record not retained
 - ie Add record, change then delete the record – no details retained
- Lacks the ability to capture who did what, when, where, and why.

EnterpriseOne Enhanced Auditing

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EnterpriseOne 21 CFR Part 11 Tool

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EnterpriseOne Data Change Tracker

3 Different Names for exactly the same thing

EnterpriseOne Enhanced Auditing

Table and transaction level auditing

General purpose tool for tracking changes to JD Edwards EnterpriseOne data. The JD Edwards EnterpriseOne auditing tool can be configured to track changes when designated columns change on designated JD Edwards EnterpriseOne tables. It will also correlate changes made to multiple tables as part of a single transaction. Originally designed for JD Edwards EnterpriseOne customers that are required to comply with the Food and Drug Administration's (FDA) 21CFR part 11 regulation for tracking changes to key business data, this is a general purpose tool used by customers in all industries.

Change: Added in Release Tools 8.92 (or Xe/8.0 SP21)

Notes: Minimum applications release is 8.9 (or Xe/8.0 SP21)



What is 21 CFR Part 11?

21 CFR Part 11 became law on 20 August 1997. The regulation outlines its criteria for acceptance of electronic records, electronic signatures, and handwritten signatures. It allows electronic records to be considered equivalent to paper records and handwritten signatures.

Code of Federal Regulations (CFR)



EnterpriseOne Enhanced Auditing

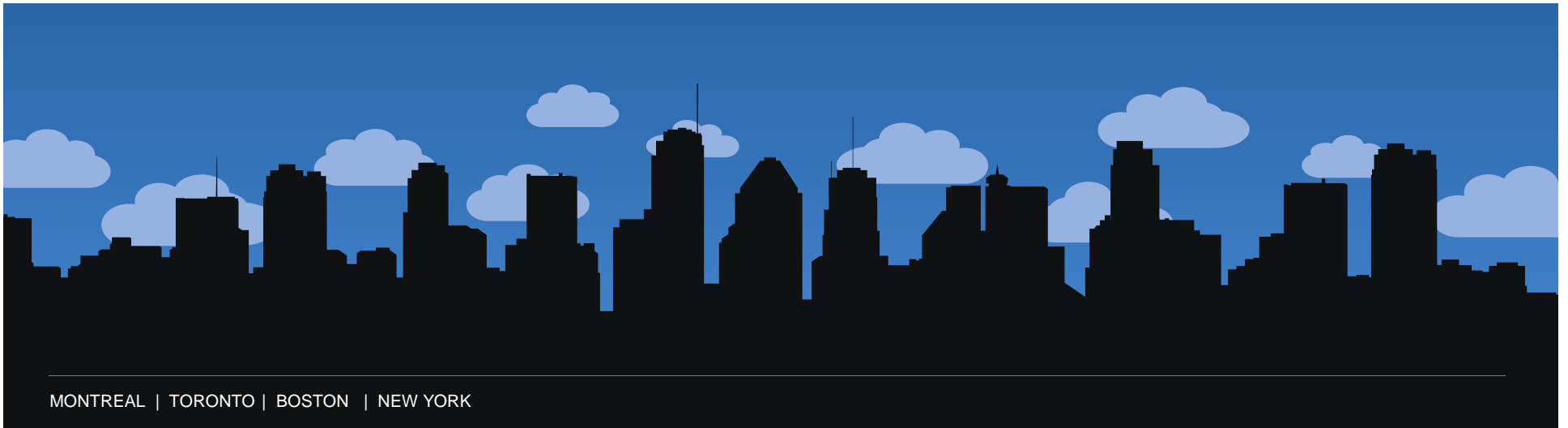
Enhanced auditing

This project enhances existing functionality within JD Edwards EnterpriseOne auditing capabilities, which includes features that help companies comply with the FDA 21 CFR part 11 regulation. First, multiple JD Edwards EnterpriseOne users can simultaneously view 21 CFR audit information from a web browser-based client within a JD Edwards EnterpriseOne web environment. Second, JD Edwards EnterpriseOne users who track 21 CFR audit changes can run a batch job to remove uncommitted audit records within the application. Finally, JD Edwards EnterpriseOne users who use 21CFR auditing can attach media objects within the signature application.

Change: Added in Release Tools 8.96

Notes: Minimum applications release is 8.12

Enhanced EnterpriseOne Auditing at Enersource



EnterpriseOne Auditing at Enersource

- Initially implemented on EnterpriseOne 8.10 on the IBM System i due to internal auditor and other business owner concerns.

Table Name	Table Description
F0401	Supplier Master
F060116	Employee Master Information
F0901	Account Master
F4102	Item Branch File
F4801	Work Order Master File

EnterpriseOne Auditing at Enersource

- Additional tables added after upgrading to EnterpriseOne 9.0.2 and migrating to an Oracle Database.
- IFRS Requirements

Table Name	Table Description
F1201	Asset Master File
F12002	Default Accounting Constants
F12003	Default Depreciation Constants
F12851	Depreciation Rules
F12853	Depreciation Formulas
F1301	Equipment Rates
F3111	Work Order Parts List
F4104	Item Cross Reference File
F554101T	Inventory Item Master Tag Table
F554843	Work Order Tag Table

Enersource use Case #1

- Assist with troubleshooting Work Order application.
- Investigated incidents of some fields not updating on the Work Order file in certain situations.
- Who/When changed the start date of the work order?

Enersource use Case #2

- Some account master configuration changes in F0901 were unexpected
- The CFR auditing was used to determine who changed the particular fields
- Allows assistance with the troubleshooting, root cause analysis and corrective actions.

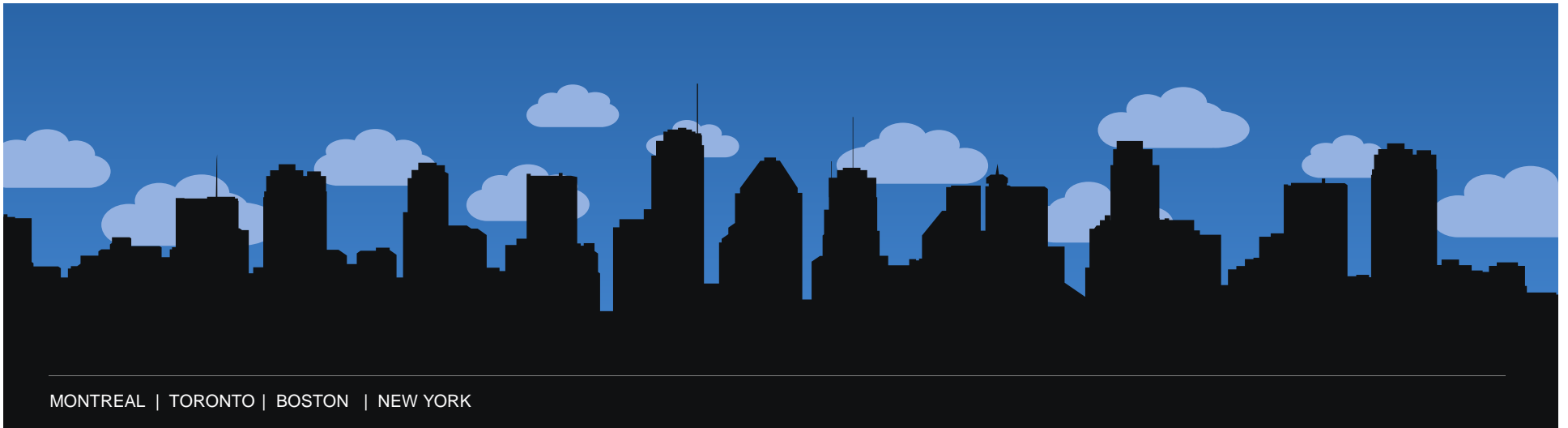
Enersource use Case #3

- EnterpriseOne does not allow you to go back in time to track the various changes on a work order parts list.
 - The system only tracks the current state.
 - Thus, it's not possible to see when things were actually being added to the parts list.
 - Therefore it's not possible to do an analysis to gauge the root cause of a material shortage.

Enersource use Case #3...

- Business inquiry as to why some materials were not ready for use at the appropriate time.
 - Investigation as to when certain items were ordered on the work order parts list to match up as to when they should have been ordered.
- Using the auditing feature it was possible to determine the specific material demand at a point in time to see if the Enersource ordering process was effective

Enhanced Auditing Technical Overview and Configuration



Audit Trail Records - Overview

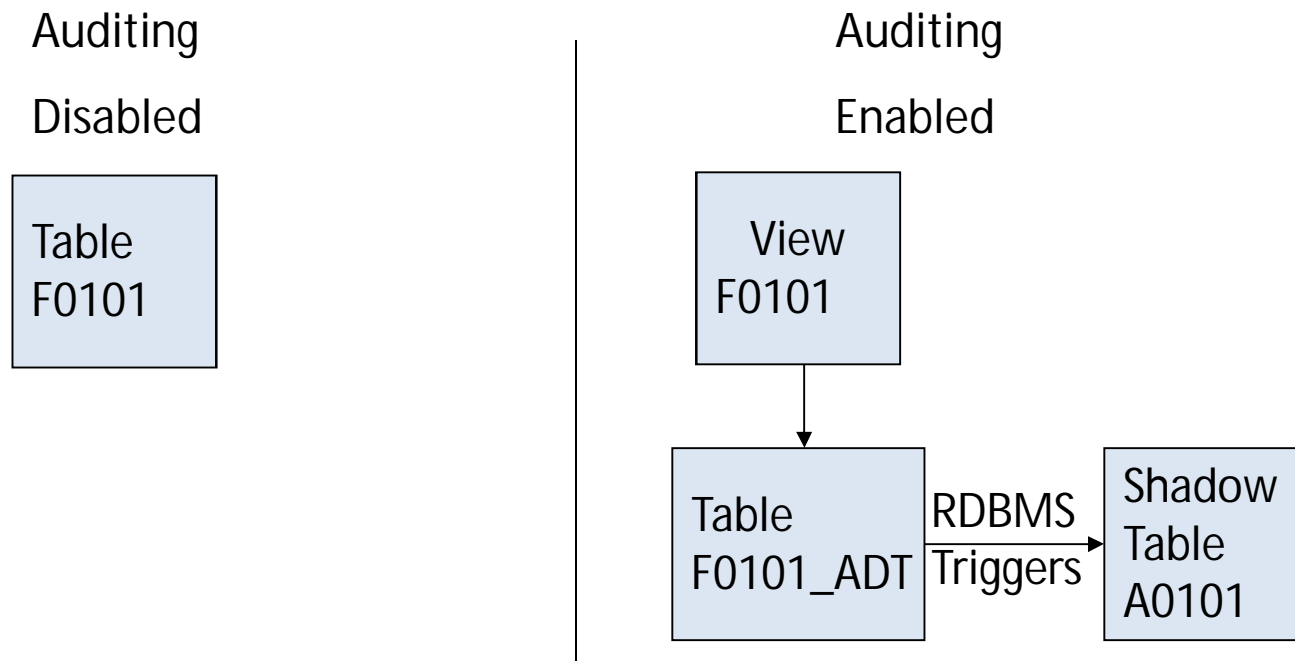
- Audit records contain:
 - User ID, Address Book Number, Full Name
 - (Signed on user, not the Database proxy)
 - Unique transaction ID to link all table changes
 - Time Stamp (Single source = DB where System Table is at)
 - Before and after images (captured as separate records)
 - Identification of source of change
 - Machine, User, Application, Version

Audit Trail Records - Overview

- Can turn on/off by path code
- Flexible configuration
 - Specify which columns of a table which triggers the audit (but ALL records in the table are written to the audit table)

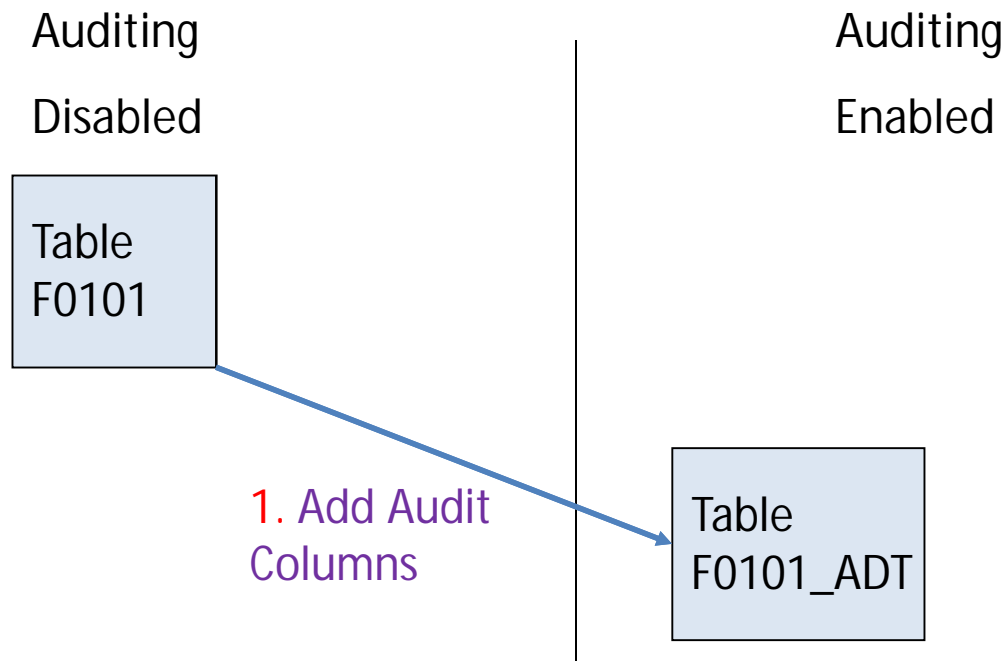
Audit Trail – Overview (Shadow table)

Implementation of auditing on a business data table:



Audit Trail – Overview (Shadow table)

Implementation of auditing on a business data table:



Audit Trail – Overview (Shadow table)

Implementation of auditing on a business data table:

Auditing

Disabled

Table
F0101

Auditing

Enabled

2. Create DBMS
Triggers (Insert,
Update, Delete)

Table
F0101_ADT

RDBMS
Triggers

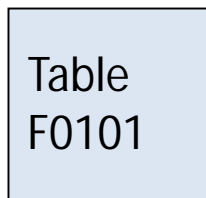
Shadow
Table
A0101

Audit Trail – Overview (Shadow table)

Implementation of auditing on a business data table:

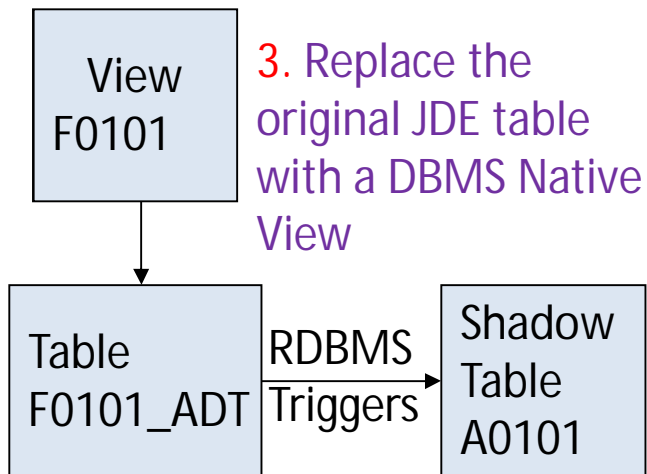
Auditing

Disabled



Auditing

Enabled



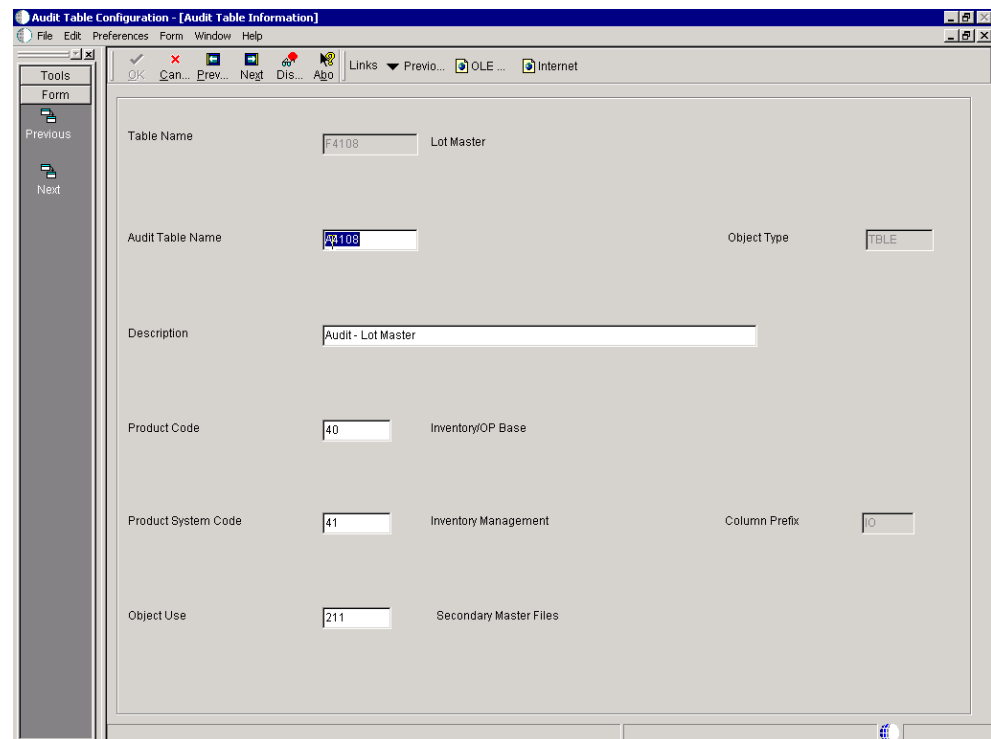
Audit Trail - Deployment Model

Interactive Applications

- P9500001 Configuration Application
- P9500003 Object & Table Configuration
- P9500005 View Audit Information
- Batch Applications
 - R9500005 Print Audit Information

Audit Trail – Audit Table Config

- CNC skills required to set up 'non-Julian' data sources
 - Set up multiples and map via OCM to support multiple path codes.
- Must configure for all environments on the path code

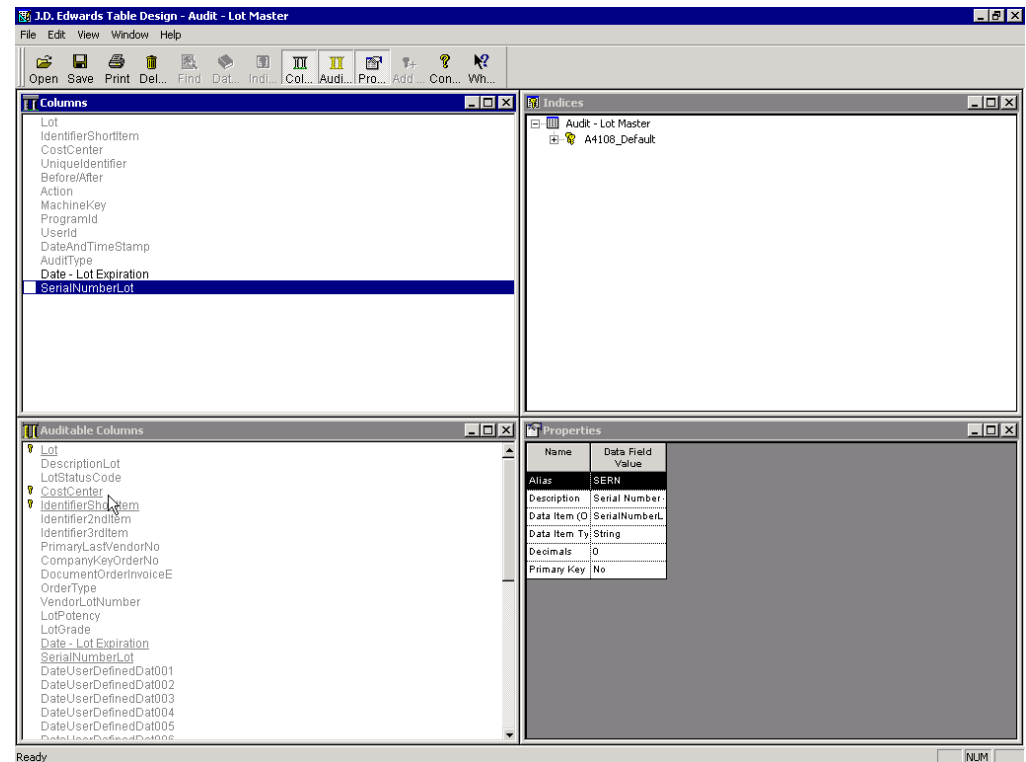


The screenshot shows the 'Audit Table Configuration - [Audit Table Information]' window. The window has a menu bar (File, Edit, Preferences, Form, Window, Help) and a toolbar with buttons for OK, Cancel, Previous, Next, Dismiss, and Abort. A left sidebar contains 'Tools' and 'Form' sections, with 'Previous' and 'Next' buttons. The main area contains the following fields:

Field	Value	Description/Label
Table Name	F4108	Lot Master
Audit Table Name	A4108	
Object Type	TBL	
Description	Audit - Lot Master	
Product Code	40	Inventory/OP Base
Product System Code	41	Inventory Management
Column Prefix	IO	
Object Use	211	Secondary Master Files

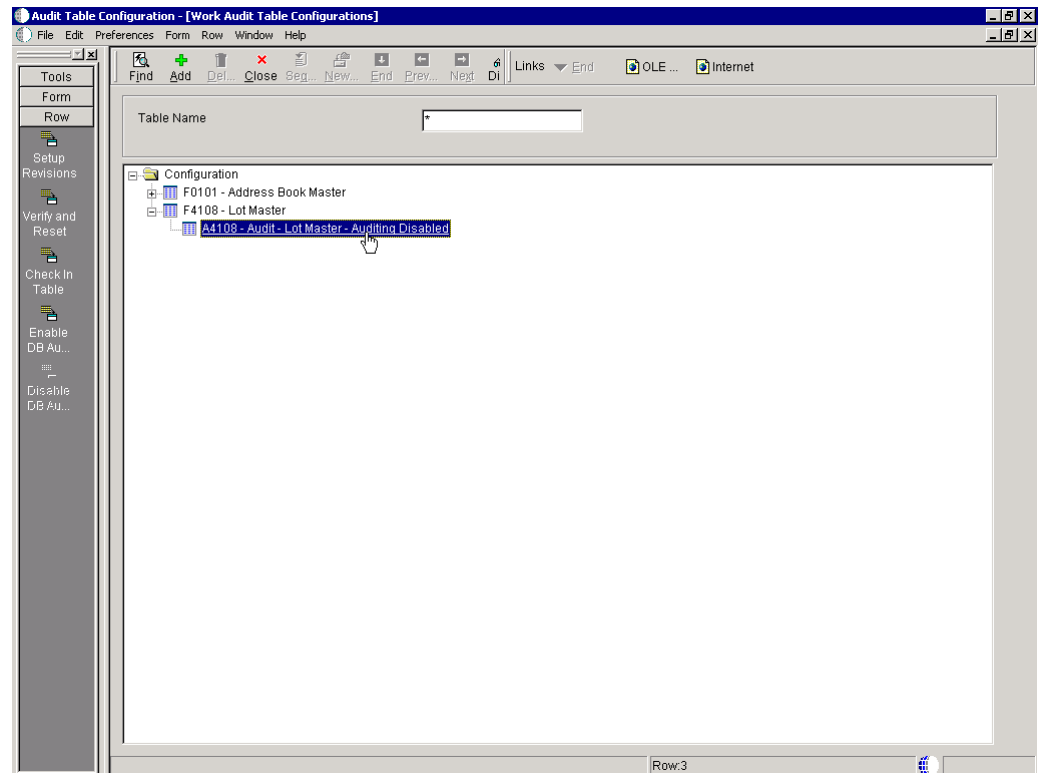
Audit Trail – Table Design Aid

- Developer skills required to select columns on which to trigger auditing in Table Design Aid (TDA)
- Updated objects must be promoted to the path code where you intend for auditing to be activated.



Audit Trail – Audit Table Config

- Requires activation for the 'J' and 'non-J' environments



Audit Trail - Inquiry

21 CFR Reporting - [Work with Audit Detail Information]

File Edit Preferences Report Window Help

Find Close Seg... New... Dis... Abo Links Print... OLE... Internet

Tools
Report
Print Data

Table Name

Audit Table Name

Column

Unique Identifier	Audit Type	Audit Type Description	Action	Action Description	Table Name	Audit Table Name
F6FC714F-F8B0-4988-A666-15EDF5C61			1		F4108	A4108
F6FC714F-F8B0-4988-A666-15EDF5C61			1		F4108	A4108
F6FC714F-F8B0-4988-A666-15EDF5C61			1		F4108	A4108
F6FC714F-F8B0-4988-A666-15EDF5C61			1		F4108	A4108
F6FC714F-F8B0-4988-A666-15EDF5C61			1		F4108	A4108

Error: Invalid Parameters 1 Error - 0 Warnings

21 CFR Reporting - [Work with Audit Detail Information]

File Edit Preferences Report Window Help

Find Close Seg... New... Dis... Abo Links Print... OLE... Internet

Tools
Report
Print Data

Table Name

Audit Table Name

Column

Table Name	Audit Table Name	Column	Column Description	Is In Key	Before Data	After Data
F4108	A4108	LOTN	Lot/Serial Number	Yes		462392
F4108	A4108	ITM	Item Number - Short	Yes		700074
F4108	A4108	MCU	Business Unit	Yes		M3
F4108	A4108	MMEJ	Date - Lot Expiration	No		7/15/2003
F4108	A4108	SERN	Serial Number - Lot	No		

Error: Invalid Parameters 1 Error - 0 Warnings

Audit Trail - Report

Acrobat Reader - [R9500005_XJDE0001_D1020503_T085408586.pdf]

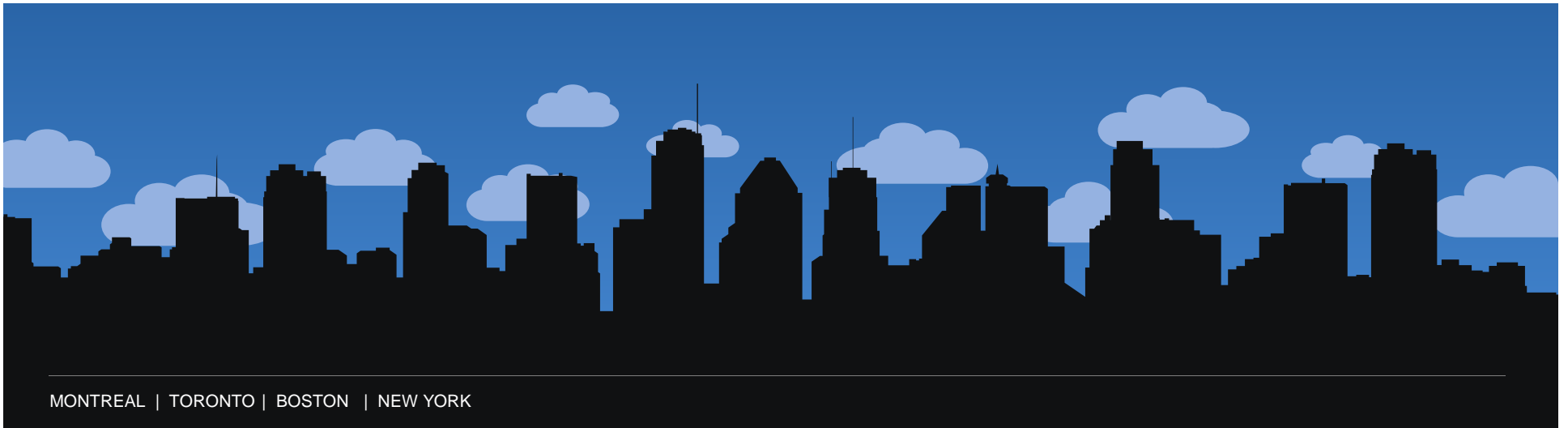
File Edit Document View Window Help

R9500005 J.D. Edwards & Company 5/3/2002 8:54:12
Print Audit Information Page - 1

Unique Identifier	User ID	Full Name	Address Number	Date and Time Stamp	Machine Key	Program ID	Audit Type
123456	TL5735532	King, Tammy	5735532	05/03/02 12:01:01	DEN-TL5735532	P92001	
Action Type	Object Name	Column Description	Is In Key	Before Data			After Data
1	F0092	DATS	Data Source	0 1	10		
1	OWTP		Data Type - OneWorld	0 1	2		

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Enhanced Auditing Implementation Considerations



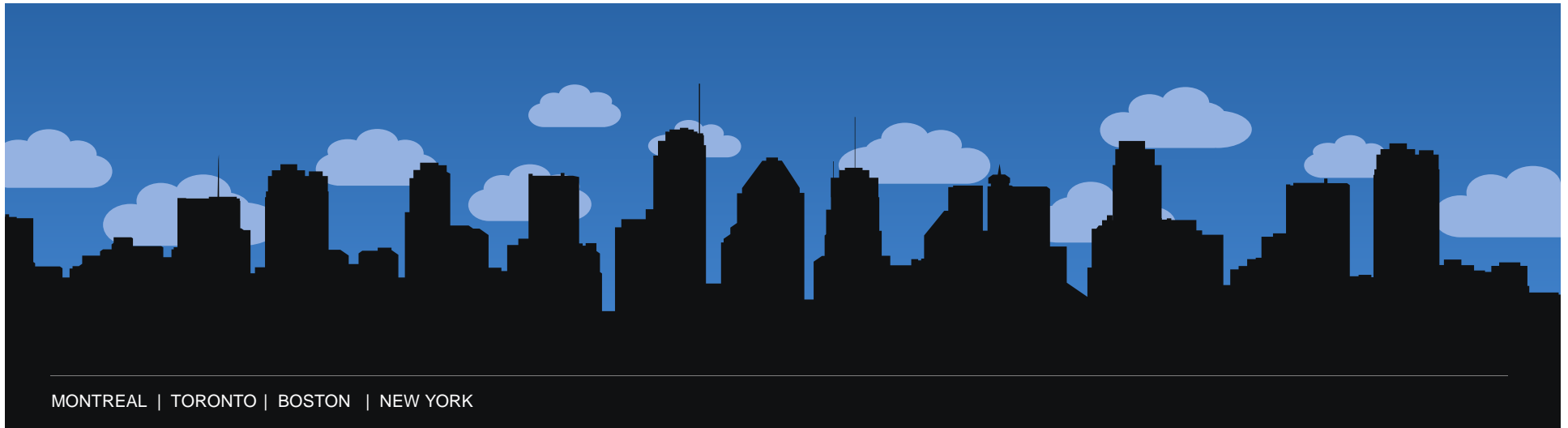
Implementation Considerations

- Data Size
 - The more you audit, the more space you need.
 - Can archive off auditing tables since no applications using this data.
 - DO NOT Audit Major Transactional Tables
 - Large size increase
 - Shouldn't be able to delete history through the application regardless

Implementation Considerations

- System Performance
 - Native Database Triggers leveraged for best performance
 - Any field being audited that is changed will cause an audit trail with all records.
 - Cannot specify by value (ie in address book can not audit just vendor records)
 - Cannot have fields be added to trail that in themselves do not cause a trigger event.
 - UBE performance impacted more than interactive (try not to do this!)

Enhanced Auditing aka CFR Part 11 aka Data Change Tracker Limitations



CFR Challenges

- Can not audit “boot strap” tables
 - F0092, F0093, F0094, F98DRENV, F98DRPUB, F98DRSUB, F98OWSEC, F00165, F00921, F00922, F00924, F00925, F00926, F00941, F00942, F00945, F00948, F00960, F9200, F9202, F9203, F9207, F9210, F9211, F9312, F9650, F9860, F9861, F9862, F9863, F9865, F9885, F9886, F9887, F9888, F9889, F95921, F98101, F98611, F98613, F98710, F98712, F98713, F98720, F98740, F98741, F98743, F98745, F98750, F98751, F98752, F98753, F98760, F98761, F98762, F98891, F98950, F983051, F986101, F986110, F986111.
- Some tables can not be audited as they already have a column conflict with a new field that auditing would add (ie duplicate column name)

CFR Challenges

- Software Change Management requires that auditing is disabled
 - Upgrade require auditing off
 - ESUs and ASUs that affect the audited table (rare occurrence) require auditing to be off
 - Need to save configuration, use tools to deactivate triggers, upgrade or apply the ESU/ASU, and re-configure

CFR Challenges

- Auditing activation does not “flag” the objects as modified on the system and will not show up on the Impact Analysis report
 - Can manually flag the tables on the system
- Auditing can only be activated/deactivated when no one is on the system and the tables are not locked by any process

CFR Challenges

- Officially supported in one “path code” only
- All environments that share a path code are also enabled for auditing
- Special configuration required to support multiple path codes

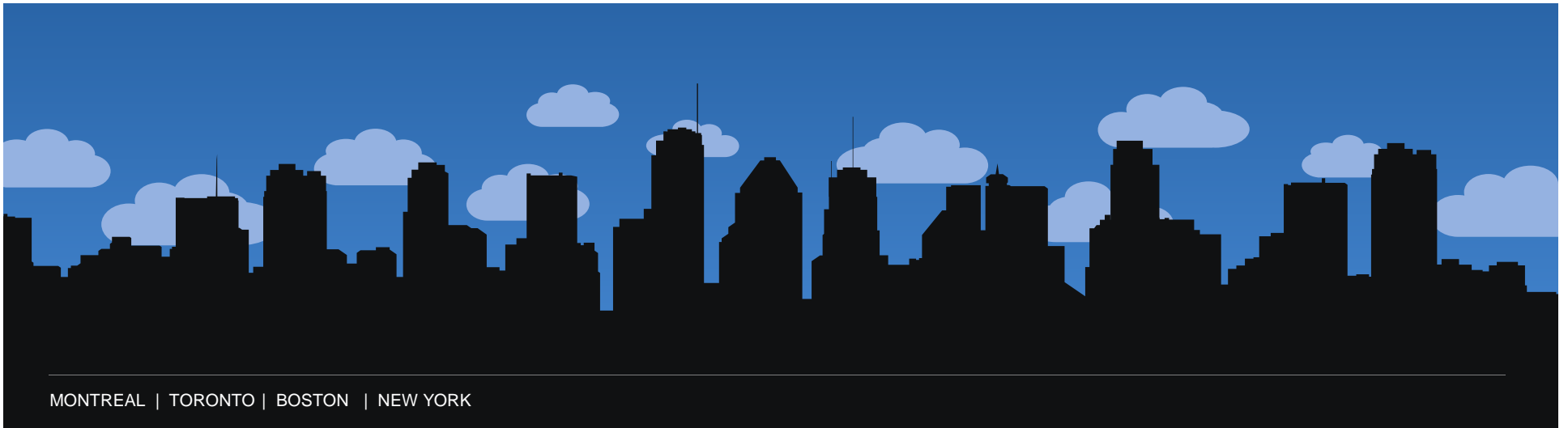
CFR Challenges

- Data Refreshes may require custom post refresh scripts
 - Refresh from an environment **with** auditing on the path code to a environment **without** auditing on the path code
 - Refresh from an environment **with** auditing on the path code to a environment **with** auditing on the path code does not require special scripts
 - Small exception for some possible triggers updates on some DBMS

CFR Challenges

- Implementation of Auditing requires an individual skilled in CNC who also knows basic EnterpriseOne Development
- Addition of additional tables or additional columns to existing audited tables requires CNC and Development skills and system downtime
- Implementation can be done in 32 – 48 hours
 - Planning, pre-requisites, CNC config changes, custom refresh scripts and documentation, training, implementation of up to 10 tables in 2 path codes

Enersource's impressions on Enhanced Auditing



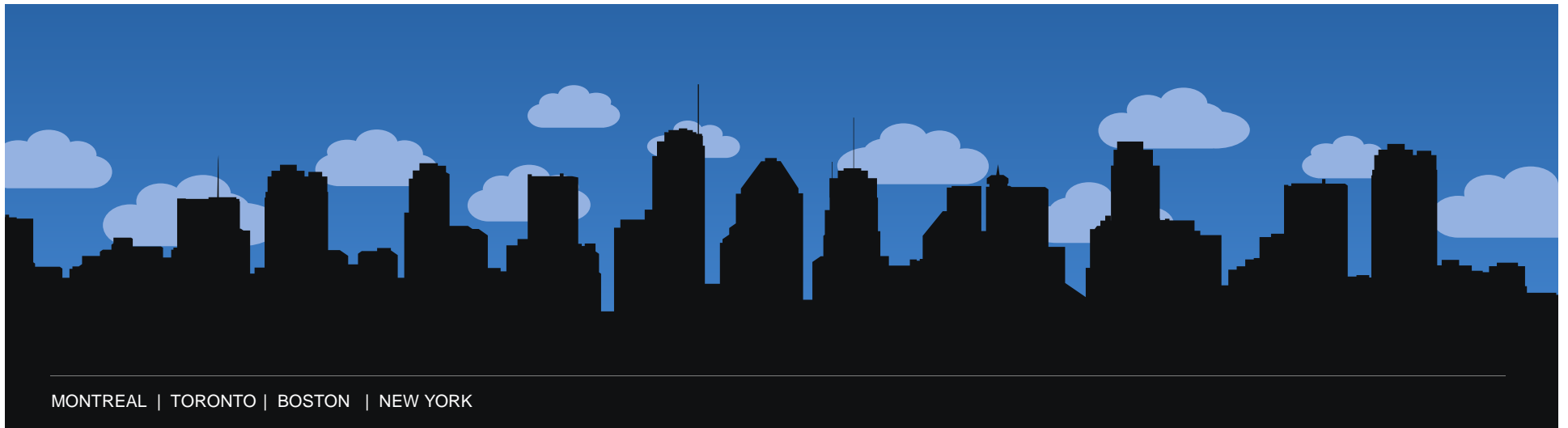
Enersource Impressions

- Enhanced auditing is not just to discover “who done it” but can be used to assist in the identifying business process improvement opportunities.
 - Assist in the analysis of the Enersource material planning process
- No current standard reporting is a limitation

Enersource Impressions

- Most usage of the Enhanced auditing reporting is by request only
 - No periodic reporting currently in place
- Internal Auditors and Finance team like the fact that the system is tracking it
- External Auditors like to see that controls are in place on the financial process

Enersource Next Steps



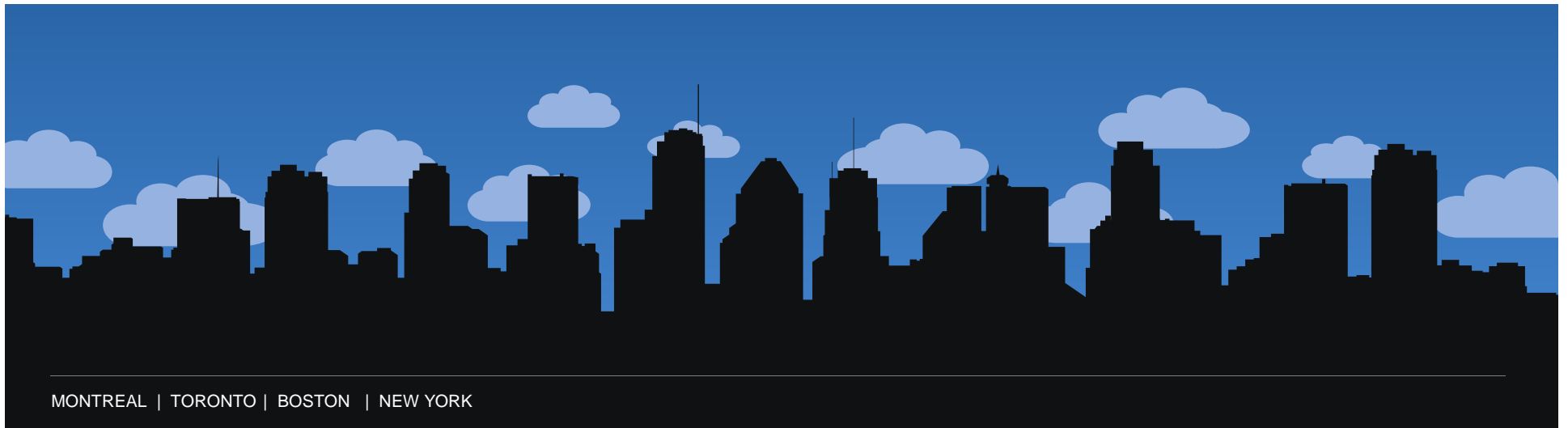
Enersource Next Steps for Auditing

- Potentially add a few additional tables for auditing:
 - F0006 – Business Unit Master
 - F0010 – Company Constants
- Develop additional specific auditing reports

Questions?



About Syntax



Who we are...

- Founded in 1972
- 40+ years of ERP experience
- Complete solution provider
- Over 400 customers across North America
- 100 Professionals – more than 80 dedicated to JD Edwards
- Offices in the U.S. & Canada

Awards and Recognition

- #1 Cloud provider for Oracle JD Edwards
- Top 3 Worldwide Oracle JD Edwards partner.
- Top 2 North American Oracle JD Edwards partner.
- Go-to Partner for Oracle JD Edwards.
- Certified by IBM and Oracle as Managed Services and Software as a Service (SaaS) provider.



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- Upgrades & Migrations
- Technology & Infrastructure Services
- Application & Development Services
- Oracle Approved Training Partner
- EnterpriseCloud and Managed Services
- IBM Premier Business Partner
- IBM Server Infrastructure: Hardware & Middleware



- 70 Net New Implementations
- 75 Upgrades
- 300 JD Edwards Customers



Oracle Accelerate



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JD Edwards EnterpriseOne
Configurable Network
Computing

ORACLE® Platinum Partner

Specialized
JD Edwards EnterpriseOne
Projects

ORACLE® Platinum Partner

Specialized
Oracle Accelerate for Midsize
Companies

ORACLE® Platinum Partner

ORACLE® Platinum Partner

Specialized
Wholesale Distribution
Industry

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JD Edwards EnterpriseOne
Financial Management

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Specialized
JD Edwards EnterpriseOne
Manufacturing

ORACLE® Platinum Partner

Specialized
JD Edwards EnterpriseOne
Distribution

Cloud Choices for JD Edwards EnterpriseOne

Range of options for JD Edwards customers on the Syntax Enterprise Cloud

	On Premise Customer Managed	On Premise Syntax Remote Managed	Syntax Enterprise Cloud (IaaS) Syntax Managed	Syntax Enterprise Cloud (SaaS)	Syntax Enterprise Cloud (SaaS)
JD Edwards Complete ERP Suite	Yes	Yes	Yes	Yes - BPS	Yes - BPS
CNC Management	Customer				
Hosting Location	Customer	Customer			
Software License	Customer	Customer	Customer		
Change Control	Customer	Customer	Customer	Customer	
Application Management	Customer	Customer	Customer	Customer	
					

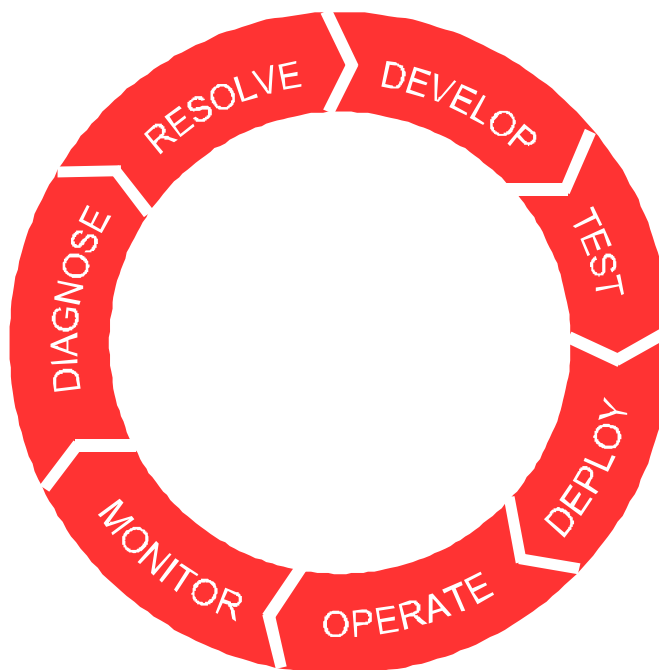
EnterpriseOne System Administration Lifecycle Management

Manage

- JD Edwards EnterpriseOne Server Manager
- Oracle Enterprise Manager Application Management Pack for JD Edwards EnterpriseOne
- Oracle Real User Experience Insight (REUI) with JD Edwards EnterpriseOne Accelerator
- Oracle Database Diagnostics and Tuning Pack



SYNTAX
EnterpriseCare



Implement

- Oracle Application Testing Suite (OATS)
 - Functional Testing
 - Load Testing
 - Test Management
- Real Application Testing
- Data Masking
- Oracle User Productivity Kit (UPK)

Deploy

- JD Edwards EnterpriseOne Change Assistant
- Change Management

The Syntax Advantage



Our People – The best, most experienced consultants and project leaders

Our Processes – Proven Methodologies to transition Customers from today into tomorrow

Our Experience – Over 40 years working with customers optimizing their technology and applications

Our Reputation – JD Edwards Platinum Partner with outstanding customer references.

Thank you!

