Upgrading OBIEE to Power Analytics with OAS

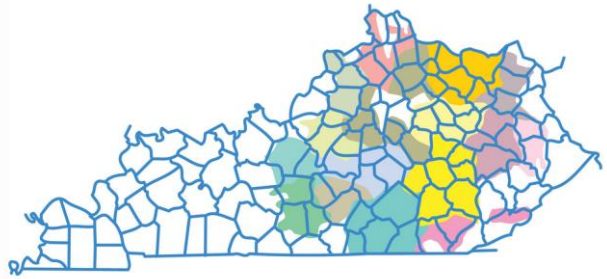
AnDOUC TechCast Days - February 18, 2021

Darrell Sandfoss, BI Architect at East Kentucky Power Coop
James Binkley, Database Analyst at East Kentucky Power Coop
Dan Vlamis, President at Vlamis Software Solutions

Copyright © 2021, Vlamis Software Solutions, Inc.

EAST KENTUCKY POWER COOPERATIVE

A Touchstone Energy® Cooperative



- Not-For-Profit generation and transmission electric utility serving 16 member-owned co-ops
- Provides electricity to more than 1.2 million Kentuckians in 87 counties
- *BI has historically been used to look at financial data in a 'descriptive' manner (i.e. hindsight … what happened?).*
- *To date, a majority of the dashboards focus on financial data, and in particular ledger actual spend vs budgeted dollars.*
- *BI is primarily intended for use by managers to stay within budget, analyze costs, and compare the two across time.*
- *BI is also a tool often used to research questions by accounting and related departments.*

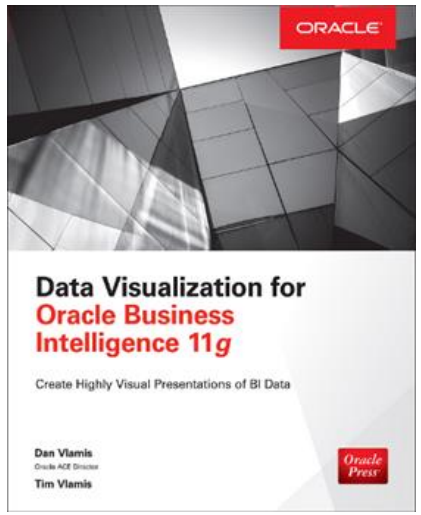
Vlamis Software Solutions

- Vlamis Software founded in 1992 in Kansas City, Missouri
- Developed 400+ Oracle BI and analytics systems
- Specializes in Oracle-based:
  - Enterprise Business Intelligence & Analytics
  - Analytic Warehousing
  - Machine Learning and Predictive Analytics
  - Data Visualization
  - ETL and data integration

ORACLE | Service Partner

Expertise in
Oracle Cloud Platform
Business Analytics
in North America

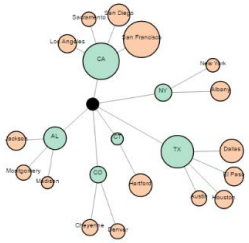
Expertise in
Oracle Cloud Platform
Data Management
in North America



ORACLE ACE Director

ORACLE ACE Director

- Multiple Oracle ACEs, consultants average 15+ years
- Creators of the Force Directed Graph Plugin on Oracle Analytics Library
- www.vlamis.com (blog, papers, newsletters, services)
- Co-authors of book “Data Visualization for OBI 11g”
- Co-authors of book “Essbase and Oracle OLAP”



Copyright © 2021, Vlamis Software Solutions, Inc.

vlamis™
SOFTWARE SOLUTIONS

EKPC Background

- Situation at EKPC
  - Large legacy OBIEE system
  - Had a series of OBIEE dashboards. Move forward or not?
  - Visualization of OBIEE -> OAS vs Tableau for adhoc access?
  - Consider cloud
  - Dropped support for 11g BI / ODI environment several years ago
    - Stuck at older database version due to BI compatibility
- Business goals - EKPC bought OBIEE for a reason
  - Goal to improve centralized reporting
  - Consolidated reporting – believed in consistent truth source
  - Best solution was to stay with Oracle and get current and use new features
  - Continued stability of data and interface
  - Rework foundation to allow for support and future consideration of enhanced reporting methods
- Cloud vs not cloud – OAS vs OAC
  - Was not on-prem solution for Oracle Analytics
  - Waited for non-cloud solution
  - Vlamis helped position Oracle Analytics as a non-cloud solution

Copyright © 2021, Vlamis Software Solutions, Inc.

Approach for Project – High level

- Migrated entire OBIEE application
  - Didn't really consider BI Apps content separate from customizations. All is just data.
  - Migrate all dashboards – don't change anything
- Kept Oracle 12.1 on-prem DB exactly the same
- Opted to upgrade front end before backend
  - 1. Migrated OBIEE -> OAS first
  - 2. BI Apps / ODI migration
- Wanted demo of DV capabilities to management
- Had project plan – Vlamis did most of work

Copyright © 2021, Vlamis Software Solutions, Inc.

Results

- Completed on time and under budget
- Went very smoothly – EKPC was able to move quickly
- Upgrade was pretty painless
- Vlamis answered questions throughout project
- Able to re-use old dashboards, so easy to migrate users
  - Run in parallel with OBIEE
- Demoed to users. No formal training needed since update is transparent to users if don't use new features

Copyright © 2021, Vlamis Software Solutions, Inc.

Background on OBIEE -> OAS/OAC

- Background on OAS/OAC vs OBIEE.
  - DV included in OAS now. Not hard to move. Worth it.
- If using BI Apps can move to BI Apps 10.3
  - Technology upgrade – moves to Weblogic 12c, ODI 12c
  - Runs on OBIEE 12.2.1.4, OAC or OAS
  - No significant change to BI Apps itself
- EKPC move No complications from automated agents or significant customizations

Copyright © 2021, Vlamis Software Solutions, Inc.

OAS Catches Up to OAC Once a Year

May 2018	OAC 4	OBIEE 12.2.1.4
Sep 2018	OAC 5	
Jan 2019	OAC 19.1.1	
Feb 2019	OAC 105.2	
Jun 2019	OAC 105.3	
Oct 2019	OAC 105.4	
Feb 2020	OAC 5.5	OAS 5.5
May 2020	OAC 5.6	
Jul 2020	OAC 5.7	
Sep 2020	OAC 5.8	
Jan 2021/Mar 2021*	OAC 5.9	OAS 5.9

* This is a planned ETA by Oracle Product Management and not confirmed for general availability

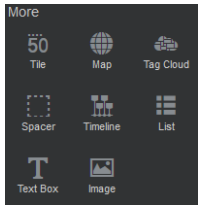
Copyright © 2021, Vlamis Software Solutions, Inc.

vlamis™
SOFTWARE SOLUTIONS

OAS & OAC Minimal Differences

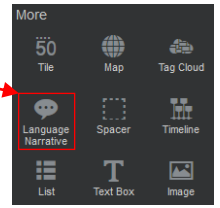
OAS

- Runs on premise
  - Run in data center or “in the cloud”
  - Customer administers
- ~~Pay extra for~~ includes DV interface
- Data modeling same (RPD, XSA)
- Pay for license and support
- Sold by license sales force
- Annual releases
- Can change configuration files



OAC

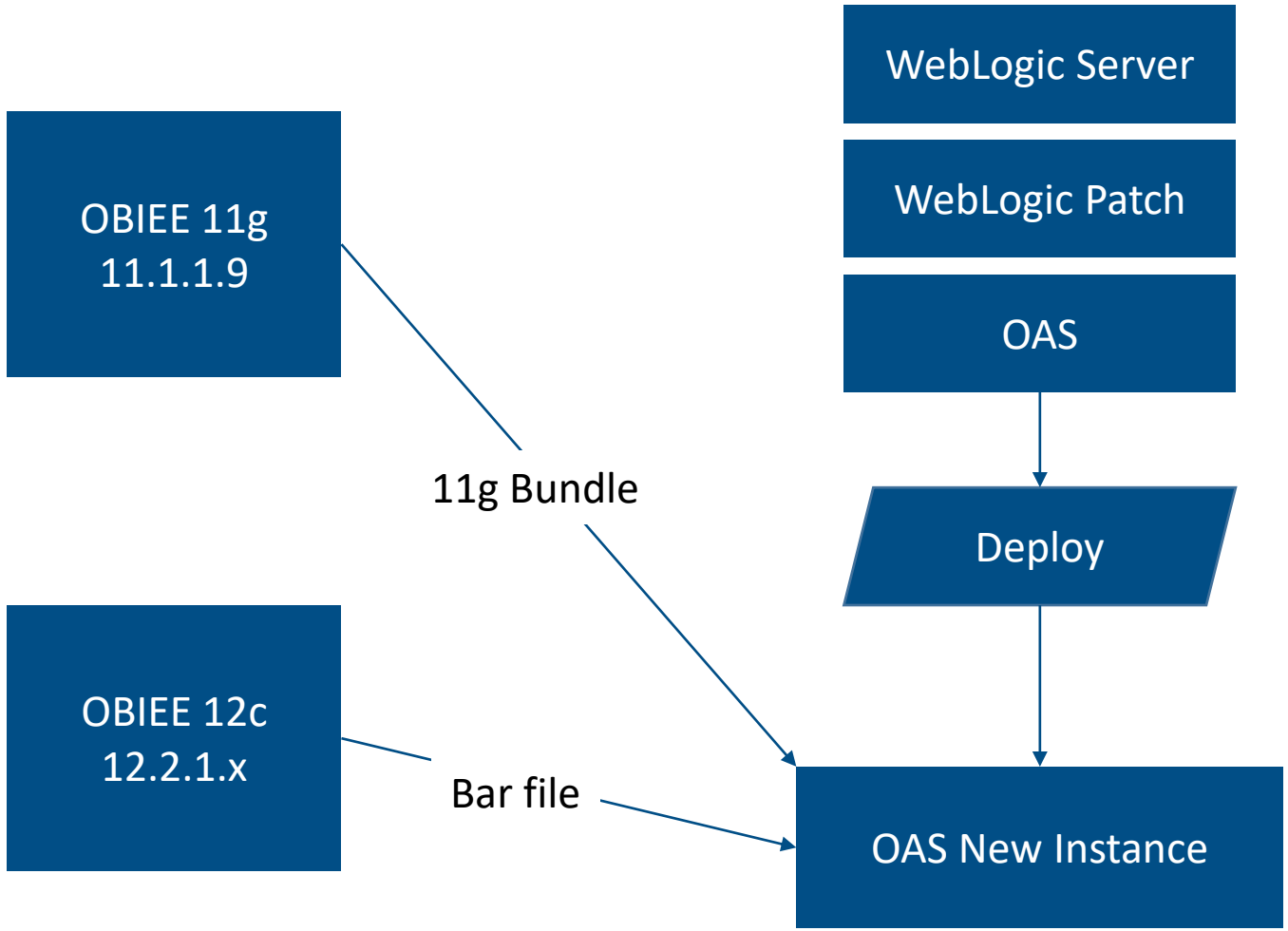
- Runs on Oracle Cloud
  - Can run on “cloud at customer”
  - Have private instance (unlike BICS)
- Includes DV interface
- Data modeling same (RPD, XSA)
- Pay by the hour or month
- Sold by cloud sales force
- Monthly/Quarterly releases
- Includes Day by Day for mobile, Language Narrative Viz
- Data Replication



Copyright © 2021, Vlamis Software Solutions, Inc.

vlamis™
SOFTWARE SOLUTIONS

OBI -> OAS Migration Process Overview



[Webinar on migrating from OBIEE to OAS]

Copyright © 2021, Vlamis Software Solutions, Inc.

vlamis™
SOFTWARE SOLUTIONS

Project Details - Process

- Entire project done remotely
  - During COVID time
  - Install done via Linux login
- Basically exported – imported
  - EKPC was on OBIEE 11.1.1.9
  - Generated export bundle from OBIEE 11.1.1.9
  - Followed the steps in documentation
  - Used command line per documentation
  - Personal reports came over as well
- Vlamis did most of work
  - Used with MS Teams. Instant messages back and forth.
  - Weekly project reports. Status report with hours.

Copyright © 2021, Vlamis Software Solutions, Inc.

Project Details – Back End

- Biggest issue was a bunch of warnings in RPD file – lots of warnings. 11g allowed, but in 12c were warnings. Much replication in BI Apps. LOTS of warnings. Your mileage may vary.
- External authentication needed no changes, security migrated with the export bundle
- Set Weblogic to use external authentication. Uses SSO.
- Implemented SSL with SSO. Signons are now encrypted from BI Server to LDAP server. Easier In 12 than in 11 OBIEE.

Copyright © 2021, Vlamis Software Solutions, Inc.

Warnings in RPD file – mostly from OBIEE

	OAS	Number	Count	Example
2	Yes 2	[39028]	22	The features in Database 'CRM_OLTP'do not match the defaults. This can cause query problems.
3	Yes all	[39097]	1296	Logical lookup column "Core"."Dim - Absence Type / Reason"."Absence Category Description"has no descriptor id column set. This will cause slower query performance.
4	Yes all	[39099]	216	Level "Core"."Activity"."Activity Attributes"has at least one display key that contains multiple columns. Only the first column of a display key is displayed when drilling.
5	Yes all	[39098]	106	Level "Core"."All Contact"."Detail"has more than one level key selected as a display key.
6	Yes all	[39100]	11	Logical column "Analytics ODI Repository"."SNP LP Run"."Error Message"has CLOB/BLOB data type but has no sort order column and/or description ID column assigned. This will ca
7	Yes all	[39011]	8	Key "Analytics ODI Repository"."SNP LP Run"."SNP_LPI_RUN_Key" in logical table "Analytics ODI Repository"."SNP LP Run"is a superset or subset of another key in this table. Any r
8	Yes all	[39048]	2	The variable 'COSTING_CAT_SET'does not have a constant default initializer.
9	Yes all	[38208]	1	Logical column "Core"."Dim - Item Cost Details"."Unit Cost"does not have a valid data type.
10	Yes All	[39105]	1	Missing functional dependency association for column "Core"."Dim - Item Cost Details"."Unit Cost".Missing functional dependency association for column "Core"."Dim - Item Cost
11		[39074]	1072	Logical dimension table 'Dim - Project Contract' has a source 'Dim_W_CONTRACT_LINE_D_ContractLines' with aggregation content set to level 'Detail'. The same dimension has agg
12		[39092]	876	Presentation level "Costing - Inventory Valuation".."Item"."Costing Category Hierarchy"."Costing Hierarchy Top Level"is first under presentation hierarchy, but logical level it is ass
13		[38100]	393	The logical tables '"Core"."Dim - Business Unit"' and '"Core"."Fact - Fins - AP Holds"' connected by logical join '"Dim - Business Unit To Fact - Fins - AP Holds"' have no corresponding
14		[39009]	204	Logical fact table "Fact - Costing - Inventory Valuation" has an aggregate source "Fact - Costing - Inventory Valuation.Fact_W_CST_INTRAN_ACC_DAILY_F_Month" whose grain is set
15		[39057]	160	There are physical tables mapped in Logical Table Source '"Core"."Dim - Date"."FndCalDay_Crm""that are not used in any column mappings or expressions.
16		[39091]	95	Logical column "Core"."Dim - Absence Type / Reason"."Absence Category"has invalid Description ID column 'Absence Category Code'.
17		[39008]	92	Logical dimension table Dim - Account Geography has a source Dim_W_CTRY_REGN_Dthat does not join to any fact source.
18		[39018]	41	The object "Financials - GL Budget and Expenses".."Project"."Project Classification Category Description"is not available for query by any user due to permission setup.
19		[39090]	39	Logical column "Core"."Dim - HR Period of Placement Band"."Period of Placement Name"has invalid Sort Order column 'Band Sequence'.
20		[39064]	33	The physical column '"Oracle Data Warehouse"."Catalog"."dbo"."W_GEO_COUNTRY_D"."DELETE_FLG"' has property Length set to zero.
21		[39076]	13	Logical level "Core"."Accounting Date"."Week"does not have any key with Use for Display property on.
22		[39001]	7	Logical table Dim - Agreement Header End Datehas no defined key.
23		[39110]	7	Logical column "Core"."Fact - CRM - KPI"."# of New Accounts"has incorrect aggregation rule.
24		[39062]	4	Initialization Block 'INIT_AOL_SESSION_ID_CRM' uses Connection Pool '"oracle.apps.crm.model.analytics.applicationModule.CrmAnalyticsAM_CrmAnalyticsAMLocal"."Connection
25		[39073]	3	Physical column "Oracle Data Warehouse"."Catalog"."dbo"."W_MFG_JOB_DETAIL_SNP_F"."LT_ST_GLOBAL2_OPN_AMT "has unknown type.
26		[38119]	1	The ADF Physical Table '"oracle.apps.fscm.model.analytics.applicationModule.FscmTopModelAM_FscmTopModelAMLocal"... "RCVRECEIPTSAM_GRANDPARENTRECEIVINGRECEIPT
27		[39035]	1	Connection pool :'Essbase' Call interface does not match with the Database :'Oracle BI Applications Essbase'.
28		[39058]	1	This version of Oracle Business Intelligence Enterprise Edition does not support Essbase version 9 or earlier. Please update the database type of database '"Oracle BI Applications E
29		[39093]	1	Presentation level "Financials - AR Overview".."Balancing Segment"."Balancing Segment"."Tree Code And Version"is associated with grand total logical level, but it is not the first
30				
31		Err	Count	New in OAS 5.5
32		38208	1	
33		39028	2	20 are old!

Final Count and Example Errors | OASTabulated | OASTabulated v2 | OASTabulated Counts ... Display Settings 100%

Copyright © 2021, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

Project Details – Front End

- Difference in styles – Fusion FX vs Alta – know it looks different. EKPC ended up using the new Alta style
- Some custom things had to be adjusted
  - Logos on reports didn’t line up
  - Vlamis helped EKPC fix issues
  - Minor spacing issues
  - Couple formulas to be adjusted for treatment of nulls
    - Null dates changed to 1900 date

Copyright © 2021, Vlamis Software Solutions, Inc.

Timeline

- Started Sept 1, 2020 with prep meeting then delayed
- Really started October 3
- Mostly done by October 24
- Documentation and training done November 5
- Most of work done in 3 weeks
- Demo at end
- System in production now

Copyright © 2021, Vlamis Software Solutions, Inc.

Benefits

- Allows to retire old hardware
- Users appreciate updated interface. Cleaner, modern look
- No loss of functionality
- No change to navigation
- Now supported by Oracle
- Performance similar to OBIEE
- Reliability similar
- Adoption similar
- Data visualization now built in

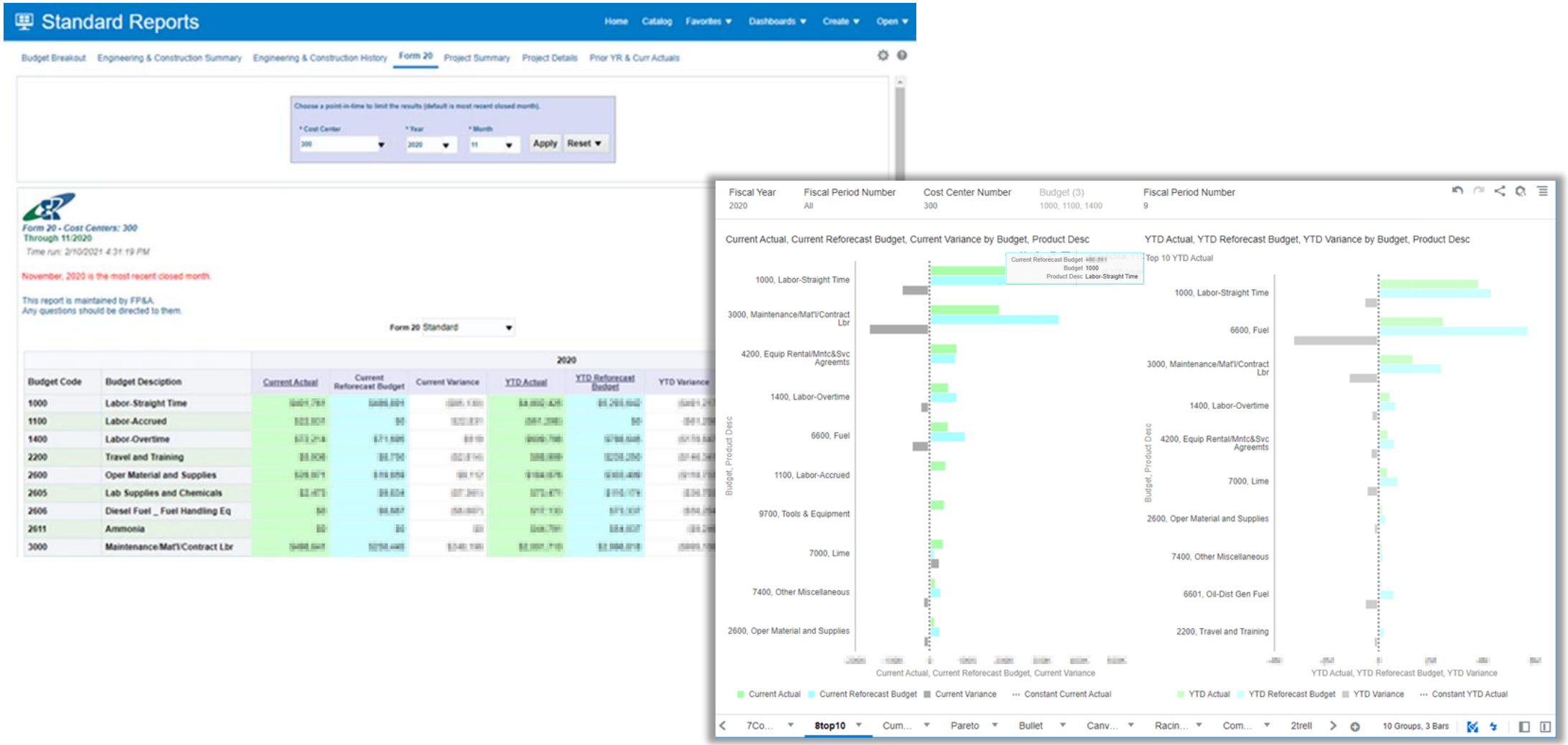
Copyright © 2021, Vlamis Software Solutions, Inc.

The Future

- Now interested in putting formulas in RPD file instead of reports
- Considering new dashboards in DV
- Reconsidering Adhoc capabilities now have data visualization
  - Whole new audience
  - Need to explain measures, dimensions, etc.
- Excited about futures
- Machine learning, mashups, maps, etc.
- There has always been a hope and desire to eventually move toward showing the data in a ‘diagnostic’ and even ‘predictive’ manner.

Copyright © 2021, Vlamis Software Solutions, Inc.

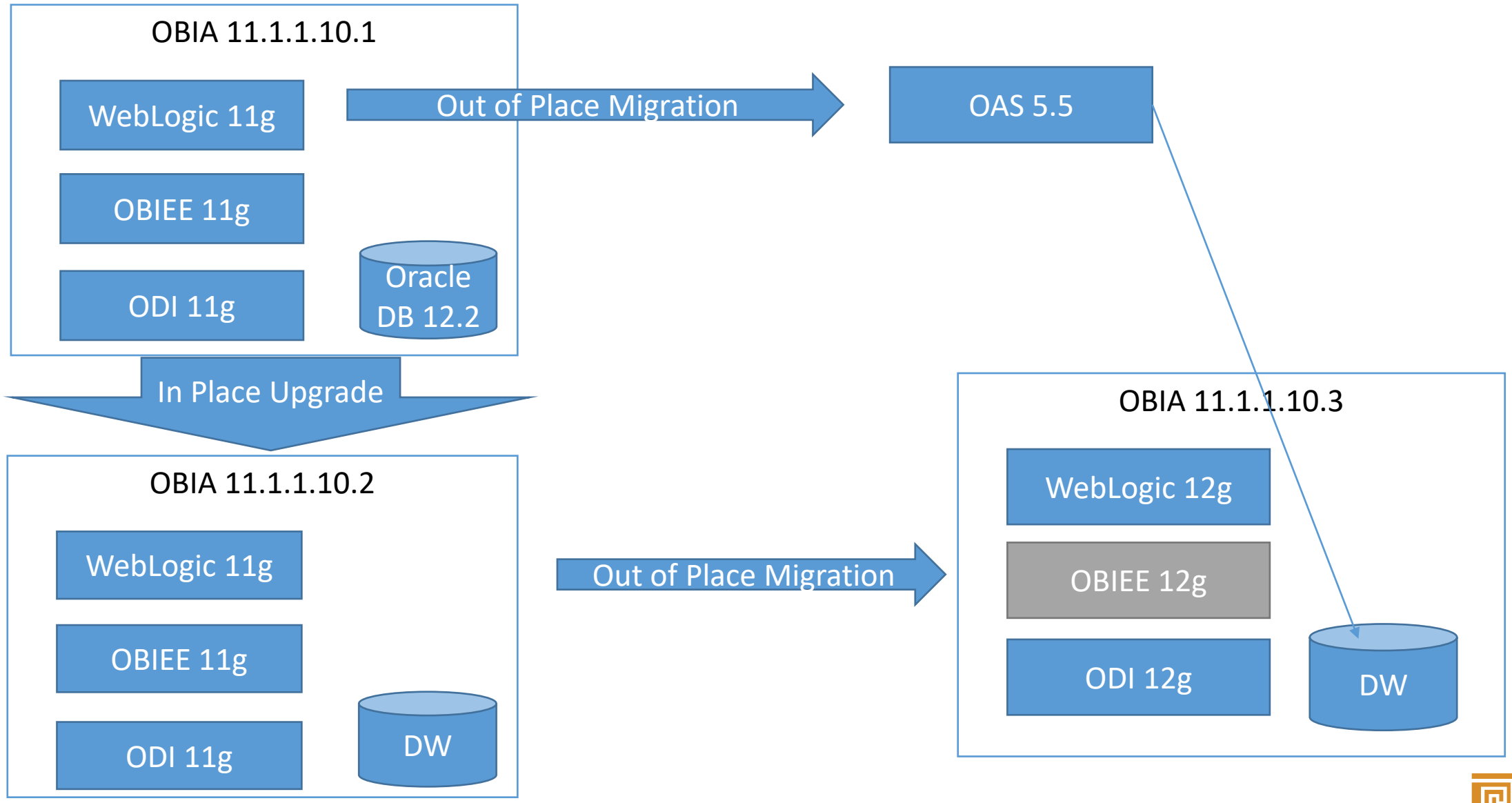
New Possibilities in OAS with DV



Copyright © 2021, Vlamis Software Solutions, Inc.

vlamis™
SOFTWARE SOLUTIONS

Migrate OBIA 10.1 on OBIEE to 10.3 on OAS



Copyright © 2021, Vlamis Software Solutions, Inc.

vlamis™ SOFTWARE SOLUTIONS

Conclusion

- Worth making the move
- Capitalized on existing investments and set up well for the future
- Avoided having to reinvent the wheel

Copyright © 2021, Vlamis Software Solutions, Inc.

Contact Information

- Darrell Sandfoss, darrell.sandfoss@ekpc.coop
- James Binkley, james.binkley@ekpc.coop
- Dan Vlamis, dvlamis@vlamis.com, @dvlamis

- www.ekpc.coop
- www.vlamis.com

Copyright © 2021, Vlamis Software Solutions, Inc.

vlamis™
SOFTWARE SOLUTIONS

Capitalize on Investment in DW, OBIEE

Copyright © 2021, Vlamis Software Solutions, Inc.

vlamis™
SOFTWARE SOLUTIONS