



Deloitte Services SAP HANA

**Get the Inside Story on Deloitte's Implementation
of SAP HANA**



Deloitte Services LLP

05/15/2012

Contact and Influence Finder Application

- ✓ Processed structured and unstructured data
- ✓ Processed SAP, non-SAP, and external data
- ✓ Mash-up data in one report using SAP Crystal Reports (without universe)
- ✓ Total of 8 tables used in SAP HANA
- ✓ 120 million rows (largest table “Billable hours”)

The facts



- ✓ 6 weeks from start to finish – 3 weeks to acquire hardware – 3 weeks to build app
- ✓ End-to-end proof of concept (POC); *in the Deloitte U.S. data center!*
- ✓ Successful teamwork demonstrated by extensive knowledge sharing
- ✓ SAP HANA modeling techniques employed exclusively
- ✓ Rank and sort the entire 120-million-row data set in 10 seconds
- ✓ Data for a single customer ranked and sorted in ~500 ms
- ✓ ***~15 minutes to load data into SAP HANA (not using bulk loader API)***

The “WOWs”



Calculated View – Influence_Ranking_GR

STFK - sapserv1a.wdf.sap.corp - Remote Desktop Connection

Information Modeler - SAP HANA Studio

File Edit Navigate Window Help

Navigator

- HWQ (SYSTEM) hana_poc
 - Catalog
 - Content
 - deloittepoc
 - Attribute Views
 - Analytic Views
 - Calculation Views
 - CRYSTALTEST
 - INFLUENCE_RANKING_GR
 - INFLUENCE_RANKING_SCR
 - INFLUENCE_RANKING_SCR2
 - INFLUENCE_TEST
 - LCSP_RANK
 - LEP_AERS_RANK
 - RANKEDCLIENTEMPLDETAIL
 - Analytic Privileges
 - Procedures
 - sap
 - system-local
 - system-local.private
 - testpoc

Quick Launch HWQ HWQ - CNIF.DIM_CLIENT CLIENT(HWQ.deloittepoc) *LCSP_AV(HWQ.deloittepoc) INFLUENCE_RANKING_GR

Tools Palette: Select

deloittepoc.INFLUENCE_RANKING_GR HWQ (SYSTEM) ushdc8555.us.deloitte.com 00

Find Column Please enter...

Details of INFLUENCE_RANKING_GR

Join_8

- LCSP_KEY
- CLIENT_NUM
- CLIENT_NUM
- QUANTITY
- RANK
- PEMAILADD
- PHONEDESK
- EMPLOYEE_TEXTMD: Join_B...

Attributes

- CLIENT_NUM: Join_B.CLIENT_NUM
- EMPL_KEY: Join_B.LCSP_KEY
- PEMAILADD: Join_B.PEMAILLA
- PHONEDESK: Join_B.PHONEDESK
- EMPLOYEE_TEXTMD: Join_B.EM

Measures

- QUANTITY: Join_B.QUANTITY
- RANK: Join_B.RANK

Calculated Measures

INFLUENCE_RANKING_GR

Properties Job Log

General

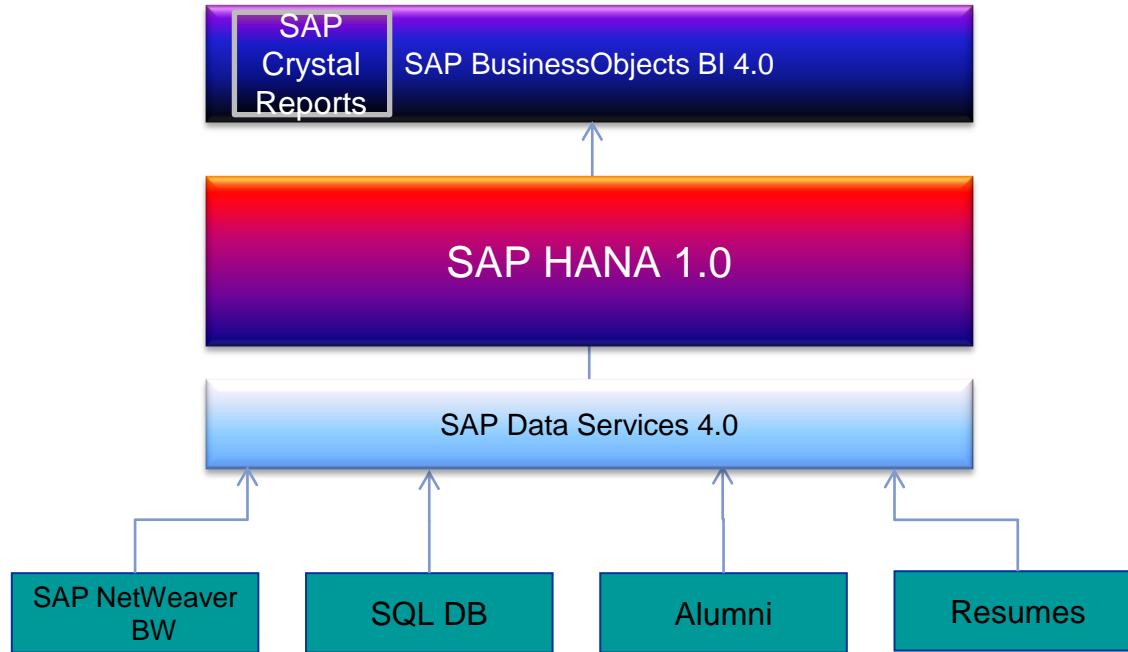
Property	Value

Where-Used list

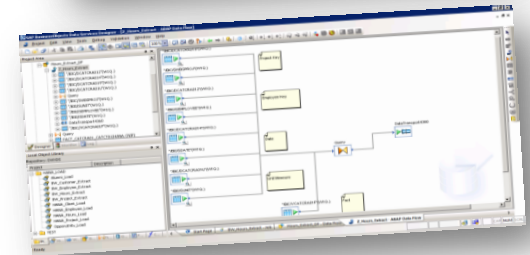
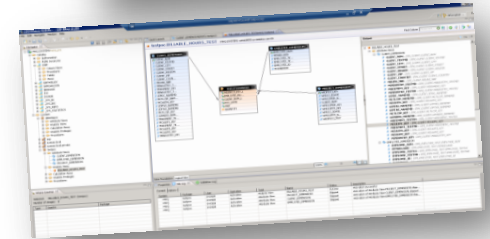
Selected: INFLUENCE_RANKING_GR (deloittepoc);
Number of Usages: 0

T...	Used in	Package

Deloitte SAP HANA Contact and Influence Finder



A screenshot of a SAP Crystal Reports output, titled "Contact and Influence Finder". It displays a table with multiple columns, including names, dates, and various identifiers, representing the results of the data analysis.



Contact and Influence Finder Demo

Client Search

Projects

Opportunities

Alumni



Contact and Influence Finder (Influencers)

Client Name: CABOT CORPORATION

Industry: CIP

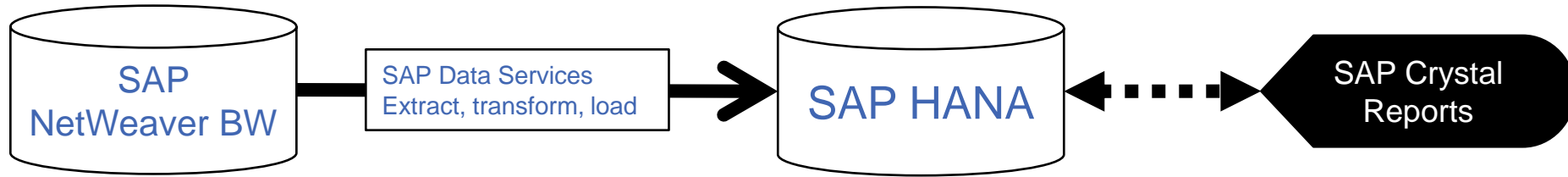
Address: 2 SEAPORT LN STE 1300
BOSTON, MA, 00002210

Sector: P&IP

Employee Name	Phone	Email	Top Client Role	Client Service Hours
Sunderland, Daniel	312-486-5806	DSUNDERLAND@DELOITTE.COM	LCSP	3,724.00
Denham, Keith	617-437-3213	KDENHAM@DELOITTE.COM	LEP-AERS	1,264.00
Berkowitz, Mark	415-783-4333	MBERKOWITZ@DELOITTE.COM	LEP-TAX	95.00
Martin, Jack	215-446-4384	JAMARTIN@DELOITTERETIRED.COM	LEP-DC	0.00
Neczypor, Francis	617-437-2728	FNECZYPOR@DELOITTE.COM	Project Partner	784.00
McAllister, Brian	617-437-2987	BMCALLISTER@DELOITTE.COM	Project Partner	742.00
Campbell-Warner, Brenda	617-437-3615	BRECAMPBELL@DELOITTE.COM	Project Partner	237.00
Conrad, Ann	617-437-2193	ACONRAD@DELOITTE.COM	Project Partner	174.00
Klei, Hugh	617-437-3182	HKLEI@DELOITTE.COM	Project Partner	71.00
Landry, E.J.	617-437-2157	ELANDRY@DELOITTE.COM	Project Partner	3.00
Thomas, Trevear	713-982-4761	TRETHOMAS@DELOITTE.COM	Project Partner	0.00
Gogerty, Sean	973-602-6560	SGOGERTY@DELOITTE.COM	Project Partner	0.00
Durant, Greg	212-436-5311	GDURANT@DELOITTE.COM	Project Partner	0.00
Allen, Rick	617-437-2413	RICKALLEN@DELOITTE.COM	Project Partner	0.00
Ramsey, Karen	617-437-2833	KRAMSEY@DELOITTE.COM	Project Partner	0.00
McGreevy, Lynne	617-437-2908	LMCGREEVY@DELOITTE.COM	Project Manager	7,485.00
Dugas, Eric	617-437-3475	EDUGAS@DELOITTE.COM	Project Manager	3,902.00
Harutunian, Steve	617-437-3519	SHARUTUNIAN@DELOITTE.COM	Project Manager	3,368.00
Levy, Warren	617-437-3231	WLEVY@DELOITTE.COM	Project Manager	3,180.00

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Vendor Analysis on SAP HANA – Architecture



SAP NetWeaver BW data source

- Credit card transactions in data store object ECCD001

SAP HANA

- Created one fact table and loaded 29 million records (2 GB); production has about 50 millions rows
- Built an analytic view in SAP HANA on the fact table

SAP Crystal Reports

- Report has embedded SQL statement that reads analytic view in SAP HANA

Vendor Analysis on SAP HANA – Highlights

SAP HANA query times generally only a couple seconds or less!!!

Other POC highlights

- ✓ Enabled free-form, wild-card text search across multiple fields
- ✓ Enabled multiple search strings at the same time
- ✓ Utilized fast and agile data modeling in SAP HANA
- ✓ Team members cross-trained in SAP Data Services, SAP HANA modeling, and SAP Crystal Reports development

Vendor Analysis on SAP HANA – Demo



Expense Compliance - Vendor Analysis

Vendor Search Text: %
[Wildcard (%)]

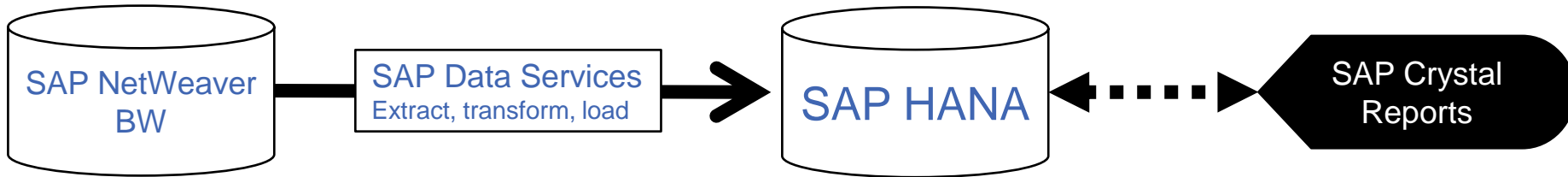
Billing Date: 1/1/1900 - 12/31/2025 **Charge Type:** 'CAR RENTAL'

Transaction Date: 10/1/2011 - 10/31/2011 **Employee:** '%'

Document Number: '%'

CC Document Number	Charge Type	Transaction Date	Billing Date	Employee	Establishment Name	Establishment Name 2	Address 1
000207911313001	CAR RENTAL	10/24/2011	11/10/2011	00212912	GALEN C THEOBALD	CAPITAL AUTO RENTALS	PO BOX 844
001293011274560	CAR RENTAL	10/1/2011	10/10/2011	00292045	BUDGET RENT A CAR	BUDGET CREDIT CLUB DEPT.	300 CENTRE POI
002346811282501	CAR RENTAL	10/8/2011	10/10/2011	00195231	AVIS RENT A CAR CORP	AVIS RENT A CAR CORP	SEND ALL MAIL
005947011283501	CAR RENTAL	10/8/2011	10/10/2011	00198052	AVIS RENT A CAR CORP	AVIS RENT A CAR CORP	SEND ALL MAIL
008410811296501	CAR RENTAL	10/22/2011	11/10/2011	00131772	AVIS RENT A CAR CORP	AVIS RENT A CAR CORP	SEND ALL MAIL
008538911296501	CAR RENTAL	10/22/2011	11/10/2011	00184593	AVIS RENT A CAR CORP	AVIS RENT A CAR CORP	SEND ALL MAIL
008875011294501	CAR RENTAL	10/20/2011	11/10/2011	00194157	AVIS RENT A CAR CORP	AVIS RENT A CAR CORP	SEND ALL MAIL
009196211289501	CAR RENTAL	10/15/2011	11/10/2011	00144233	ENTERPRISE RAC CO-PITTSBU	NATIONAL CAR RNTL SCET01	2493 FOX HILL R
009450811287501	CAR RENTAL	10/13/2011	11/10/2011	00195215	AVIS RENT A CAR CORP	AVIS RENT A CAR CORP	SEND ALL MAIL
009900411281501	CAR RENTAL	10/7/2011	10/10/2011	00127352	AVIS RENT A CAR CORP	AVIS RENT A CAR CORP	SEND ALL MAIL
009929211303501	CAR RENTAL	10/29/2011	11/10/2011	00136116	AVIS RENT A CAR CORP	AVIS RENT A CAR CORP	SEND ALL MAIL
010016211281501	CAR RENTAL	10/7/2011	10/10/2011	00129189	AVIS RENT A CAR CORP	AVIS RENT A CAR CORP	SEND ALL MAIL
010064711281501	CAR RENTAL	10/7/2011	10/10/2011	00186278	AVIS RENT A CAR CORP	AVIS RENT A CAR CORP	SEND ALL MAIL

Expense Detail on SAP HANA – Architecture



SAP NetWeaver BW data source

- Fact data sourced from the cubes under the EQT multiprovider EXM100

SAP HANA

- Created 7 master data tables
- Created one fact table and loaded 15 million records
- Built an analytic view on SAP HANA

SAP Crystal Reports

- Report has embedded SQL statement that reads analytic view in SAP HANA

Expense Detail on SAP HANA – Highlights

Table	Record count	SAP NetWeaver BW size (MB)	SAP HANA size (MB)
Fact table	10 MM	2,757	296

9x
compression

SAP HANA query time –
4 seconds

SAP HANA – Highlights

- ✓ One single query provides the result
- ✓ Entire comment string available in one column
- ✓ 200x faster query performance
- ✓ 9x data compression

Expense Detail on SAP HANA – Demo



DPS Expense Details by - Top 15 Employees

Print Date: 4/3

Pay Period End Date: 7/10/2010

Employee	Job	Email	Job Level	Pay Period End date	Costcenter	Costcenter Description	Expense Type	Ex
Cartwright, Cameron								
195140	Cartwright, Cameron	SBLOUNT@TST.DELOITTE.COM	60000288	7/10/2010	0000000143		MS05	MI
195140	Cartwright, Cameron	SBLOUNT@TST.DELOITTE.COM	60000288	7/10/2010	0000000143		MS05	MI
Lemons, Latoya								
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
185255	Lemons, Latoya	KMOORE@TST.DELOITTE.COM	60000291	7/10/2010	0000001148		MS05	MI
Fletcher, Nora								
141146	Fletcher, Nora	ELPATTERSON@TST.DELOITTE.COM	50129646	7/10/2010	0000015218		MS05	MI
141146	Fletcher, Nora	ELPATTERSON@TST.DELOITTE.COM	50129646	7/10/2010	0000015218		MS05	MI
141146	Fletcher, Nora	ELPATTERSON@TST.DELOITTE.COM	50129646	7/10/2010	0000015218		MS05	MI
141146	Fletcher, Nora	ELPATTERSON@TST.DELOITTE.COM	50129646	7/10/2010	0000015218		MS05	MI
Whitley, Michael								