

Global Software Solutions for Business Management



## **ConsistADS - Migration System for SAG**

**CONSIST**

# Advanced Development Solution (ADS) Basic Concepts



**ConsistADS is a solution including a set of tools designed for migrating applications written in Natural® and Adabas® to a new technology automatically, preserving the companies' investments and culture.**

**New compiler , runtime engine, DB conversion , DB mapping , WEB Editor,Security , Multi layers operation MF,Unix, Linux, Windows**

A blue banner with a white swoosh on the left side. The word "CONSIST" is written in white, bold, sans-serif capital letters on the right side of the banner.

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# Who needs Consist ADS?

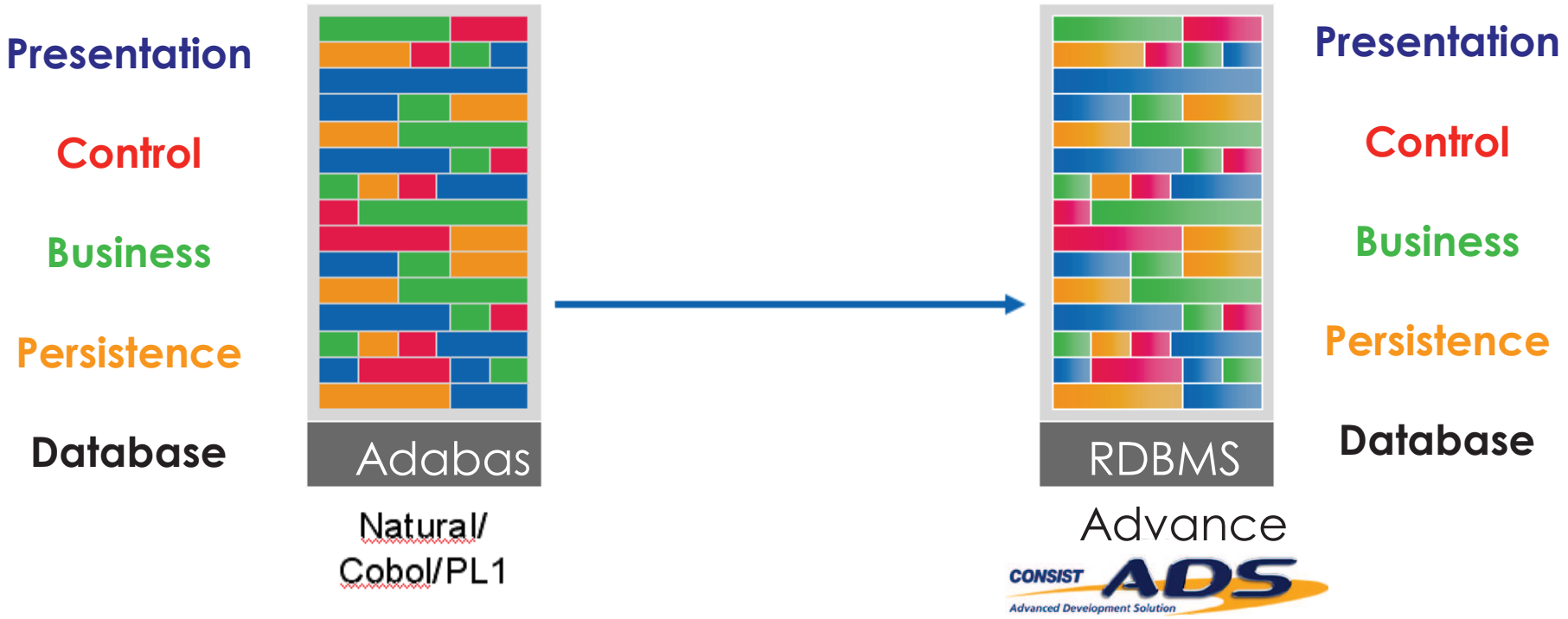


- Customers which like to reduce license and **maintenance costs**
- Customers which like to develop in Advance (**in Natural syntax**) further using Web-based development platform
- Customers are looking to keep a **huge investment on existing application**
- Customers are looking to preserv existing **staff and organization know-how**
- Customers are looking for independent or mix platform based on **MF, Unix , Linux , Windows** to leverage modern application
- Customer are looking for **Web-based application support**
- Customers are looking to offers optional components to implement an **SOA and to integrate with BPM tools.**

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# ConsistADS Technology

## The Basic Principle



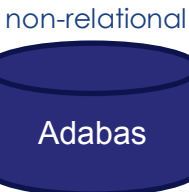
1:1 application conversion and modernization towards RDBMS stand

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# ConsistADS Technology Conversion Overview

Customer owned proprietary source code, e.g. in:

COBOL



NATURAL



Java



other

Automatic database conversion with ConsistDMS



ASCII text for editor in „former“ syntax



ASCII text in ADS-Syntax Advance Language



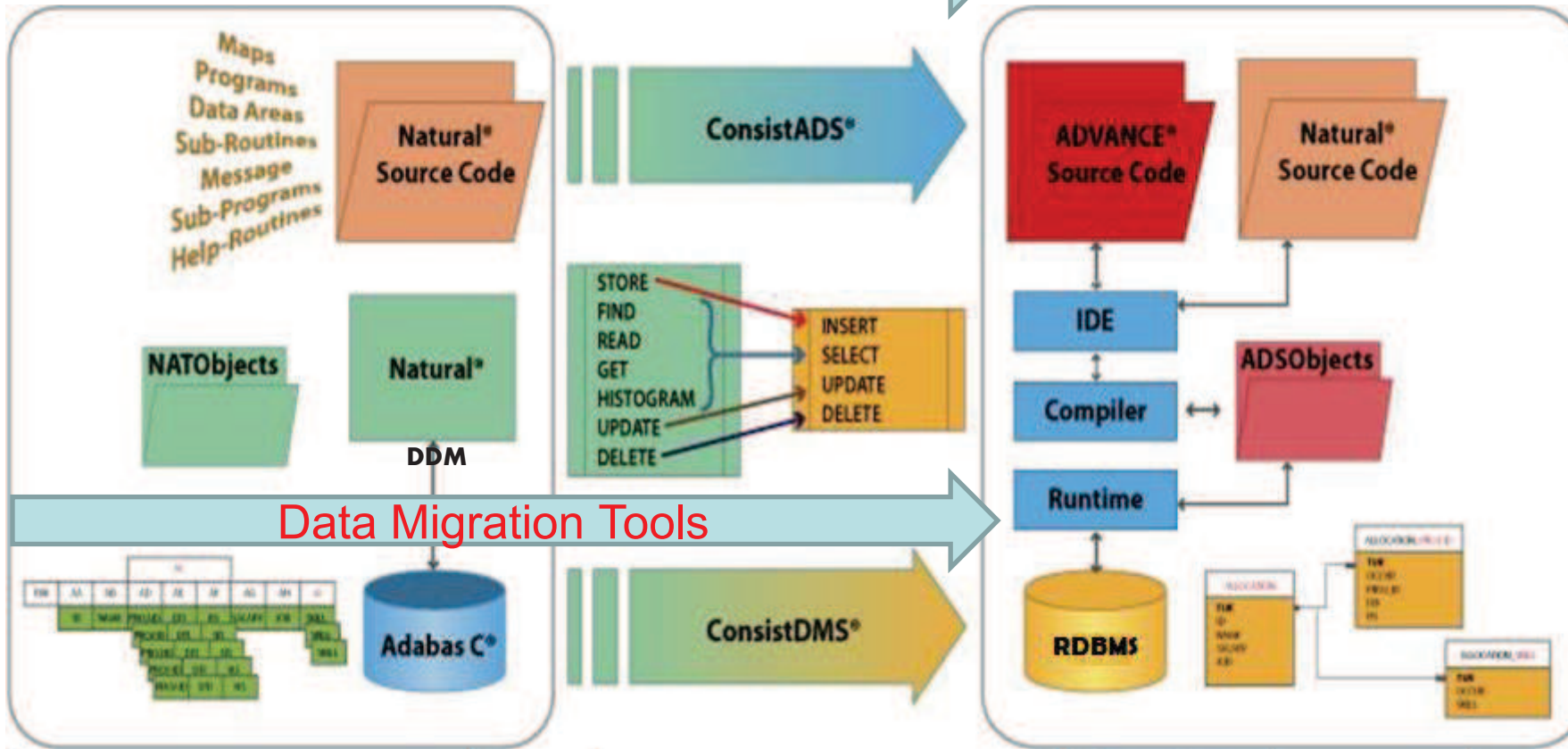
Executable Advance binary code





# Advanced Development Solution

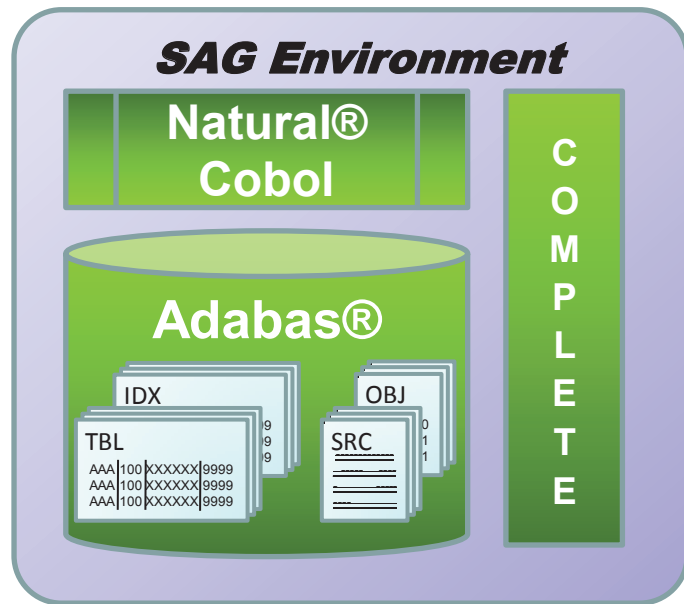
## Application Migration Tools



## Data Migration Tools

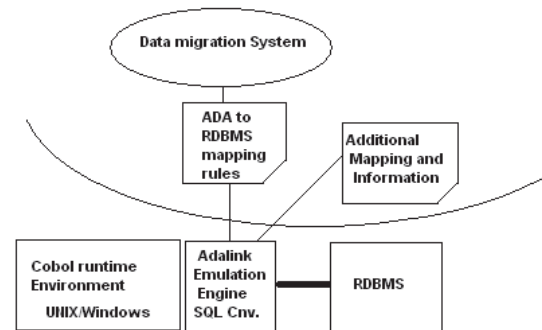
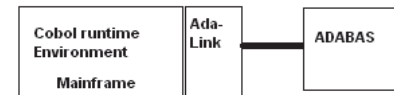
# Execution Environment

## Before and After



- Runtime independent from compiler
- Universal object (Byte code is the same across platforms)
- Relational database
- Access to the data either statically or dynamically (DB2®)
- Native access using Internet browser
- Better resource organization

## ADS/DB2® Environment



# System Migration

Data migration process schematic representation

➔ Planning

➔ Modeling

➔ Migration

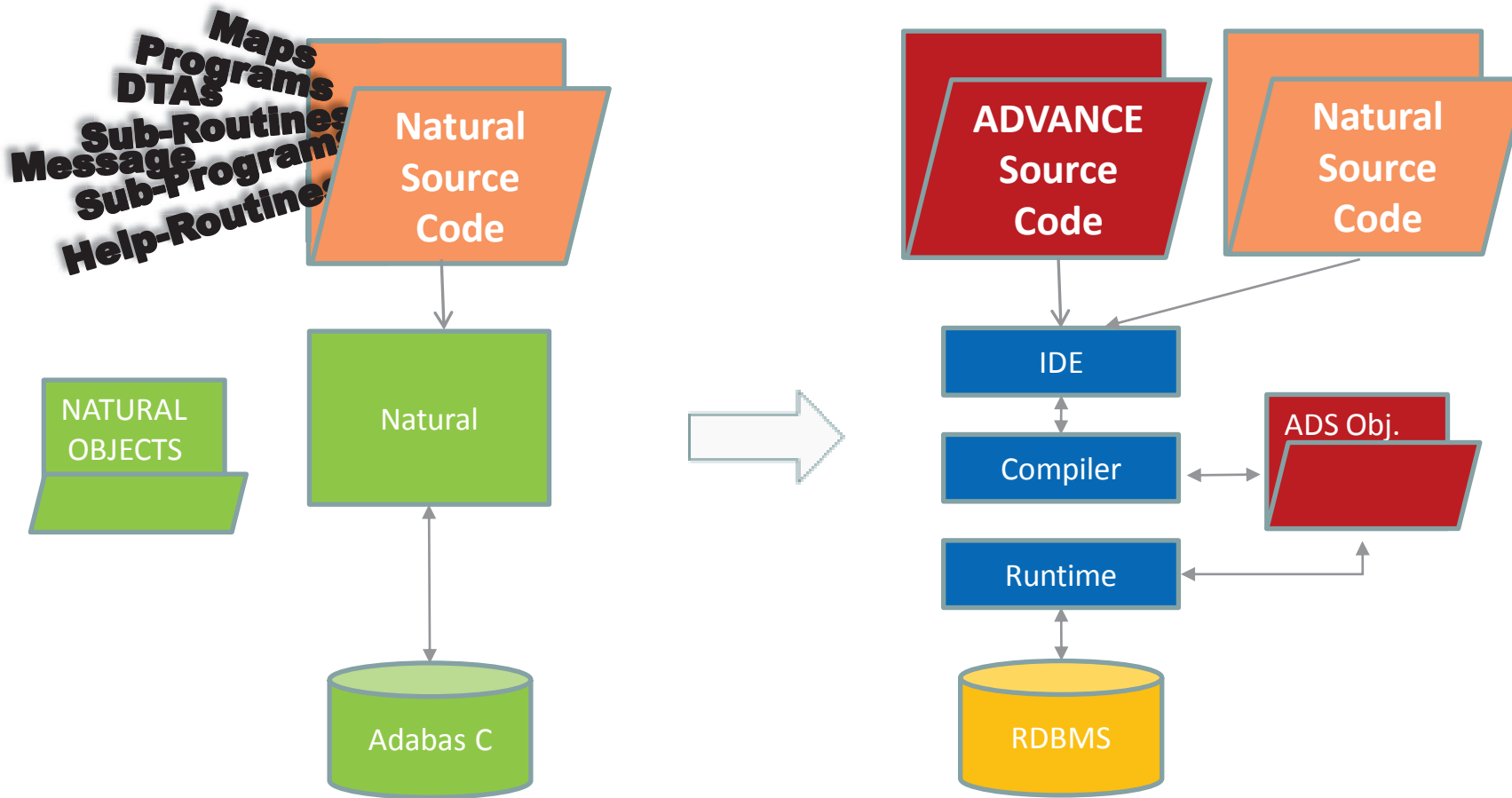
➔ Optimization

➔ Evolution

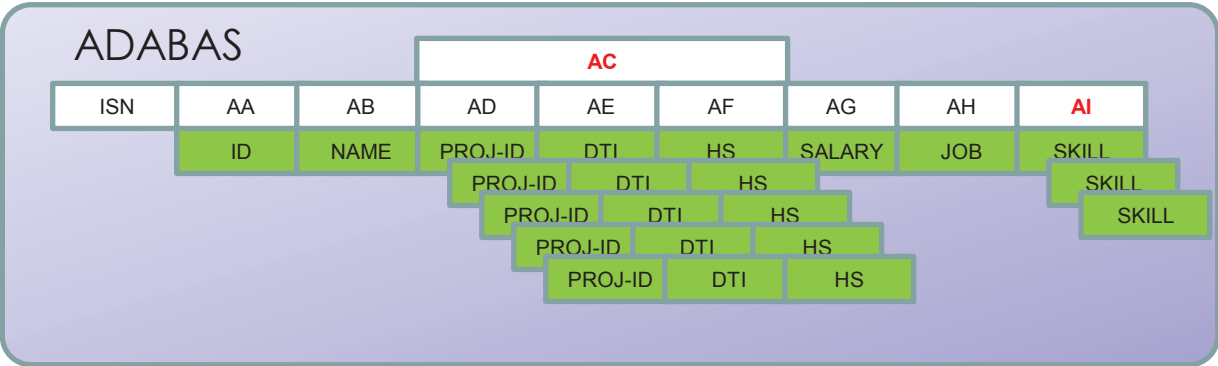


# System Migration

Definitive migration perspective

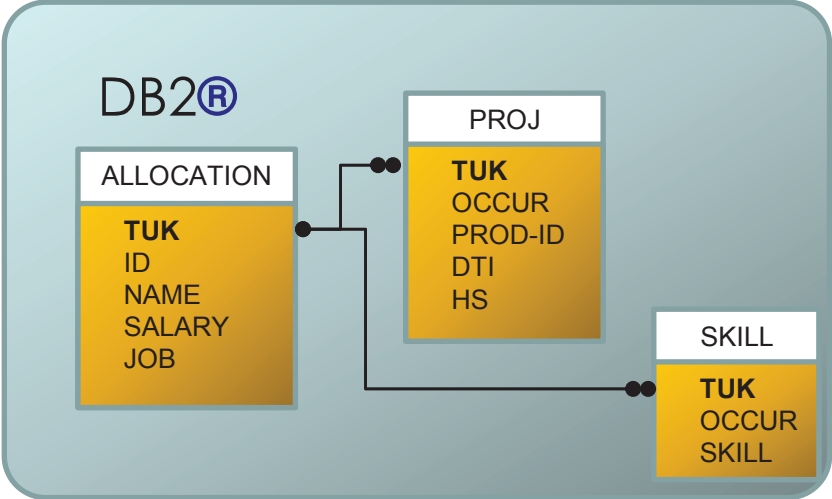


# Data Migration



## Database migration

- Automatically converts the data
- Generates DDL and DML



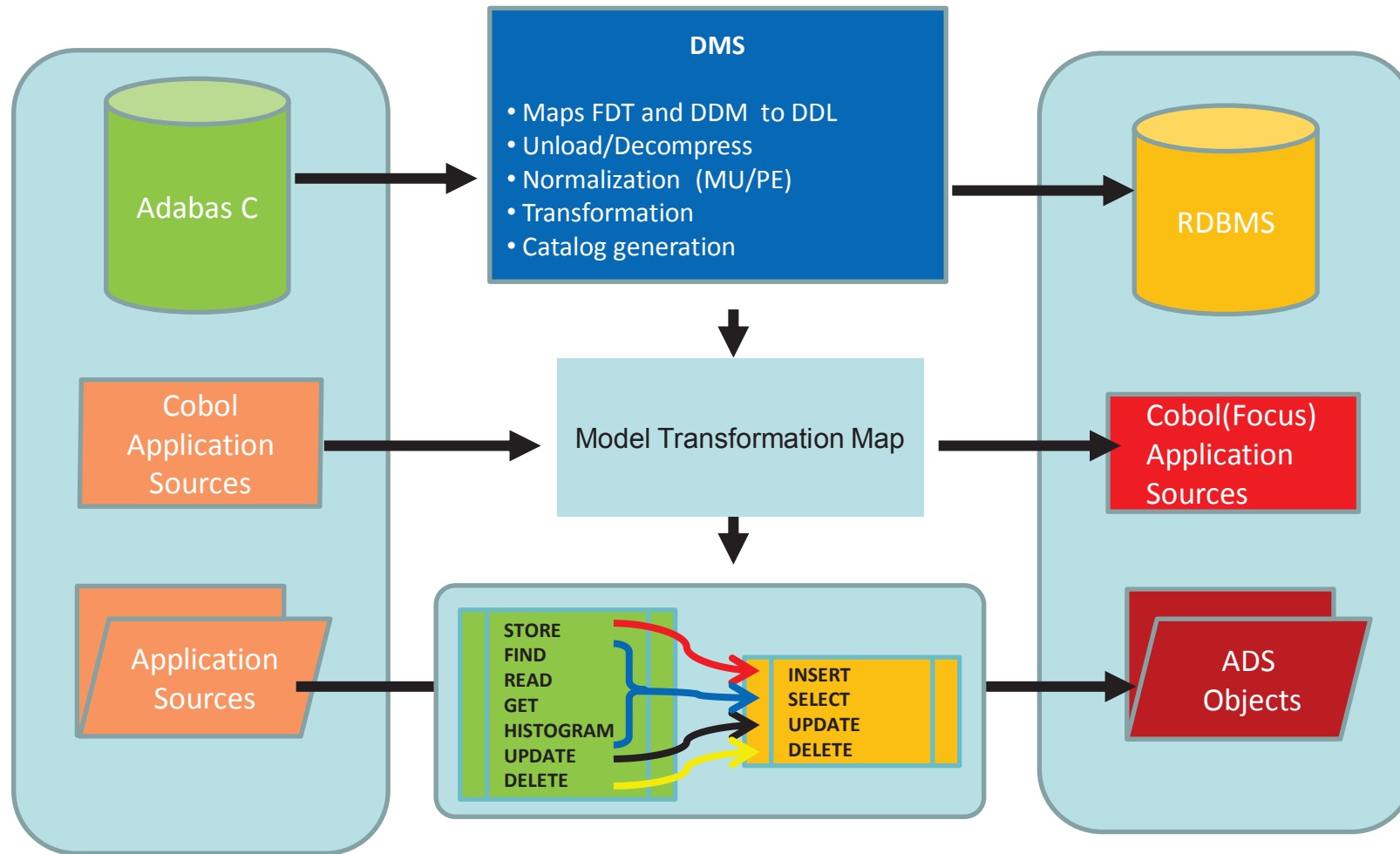
# ADS/DMS Normalized Model - Samples

<b>READ</b>	TargetDB=DB2,ORA,SQL,PSG,MSQ,MYS,ZDB
* READ BY ISN WITH VALUE RANGE	Mapped
* R3A. READ EMPLOY-R3 BY ISN = 100 THRU 200 WRITE 'R3A' *COUNTER(R3A.) *ISN(R3A.) NAME SEX CITY END-READ	RESET R3A R3A. SELECT TUK,NOME,SEXO,CIDADE INTO ADS00003_TUK,EMPLOY-R3.NAME,EMPLOY-R3.SEX ,EMPLOY-R3.CITY FROM EMPREGADO WHERE TUK>=100 AND TUK<=200 ORDER BY TUK WITH UR ADD 1 TO R3A WRITE 'R3A' R3A ADS00003_TUK EMPLOY-R3.NAME EMPLOY-R3.SEX EMPLOY-R3.CITY END-SELECT
Statement sent to the database:	SELECT TUK,NOME,SEXO,CIDADE FROM EMPREGADO WHERE TUK>=100 AND TUK<=200 ORDER BY TUK WITH UR

<b>HISTOGRAM</b>	TargetDB=DB2,ORA,SQL,PSG,MSQ,MYS,ZDB
* Search with super-descriptor based on a MU/PE field	Mapped
H5. HISTOGRAM EMPLOY-H5 FOR CURRENCY-SALARY WRITE 'H5' *COUNTER *NUMBER *ISN #CURR-CODE #SALARY END-HISTOGRAM	RESET H5 H5. SELECT SUPER3,COUNT(DISTINCT(TUK)) INTO EMPLOY- H5.CURRENCY-SALARY(1),HIST/9 FROM RENDIMENTOS WHERE SUPER3<>' ' GROUP BY SUPER3 ORDER BY 1 ADD 1 TO H5 WRITE 'H5' H5 HIST/9 0 EMPLOY-H5.#CURR-CODE EMPLOY- H5.#SALARY END-SELECT
Statement sent to the database:	SELECT SUPER3,COUNT(DISTINCT(TUK)) FROM RENDIMENTOS WHERE SUPER3<>' ' GROUP BY SUPER3 ORDER BY 1
The system variable *ISN contains the number of the occurrence in which the descriptor value last read is contained. *ISN will contain 0 if the descriptor is not contained within a periodic group.	SELECT SUPER3, P_OCCUR, COUNT(*) FROM RENDIMENTOS WHERE SUPER3<>' ' GROUP BY SUPER3, P_OCCUR ORDER BY SUPER3, P_OCCUR;

# System Migration

## Joint migration of data and programs





**Consist GEM ADS**

**ADS Development tools**



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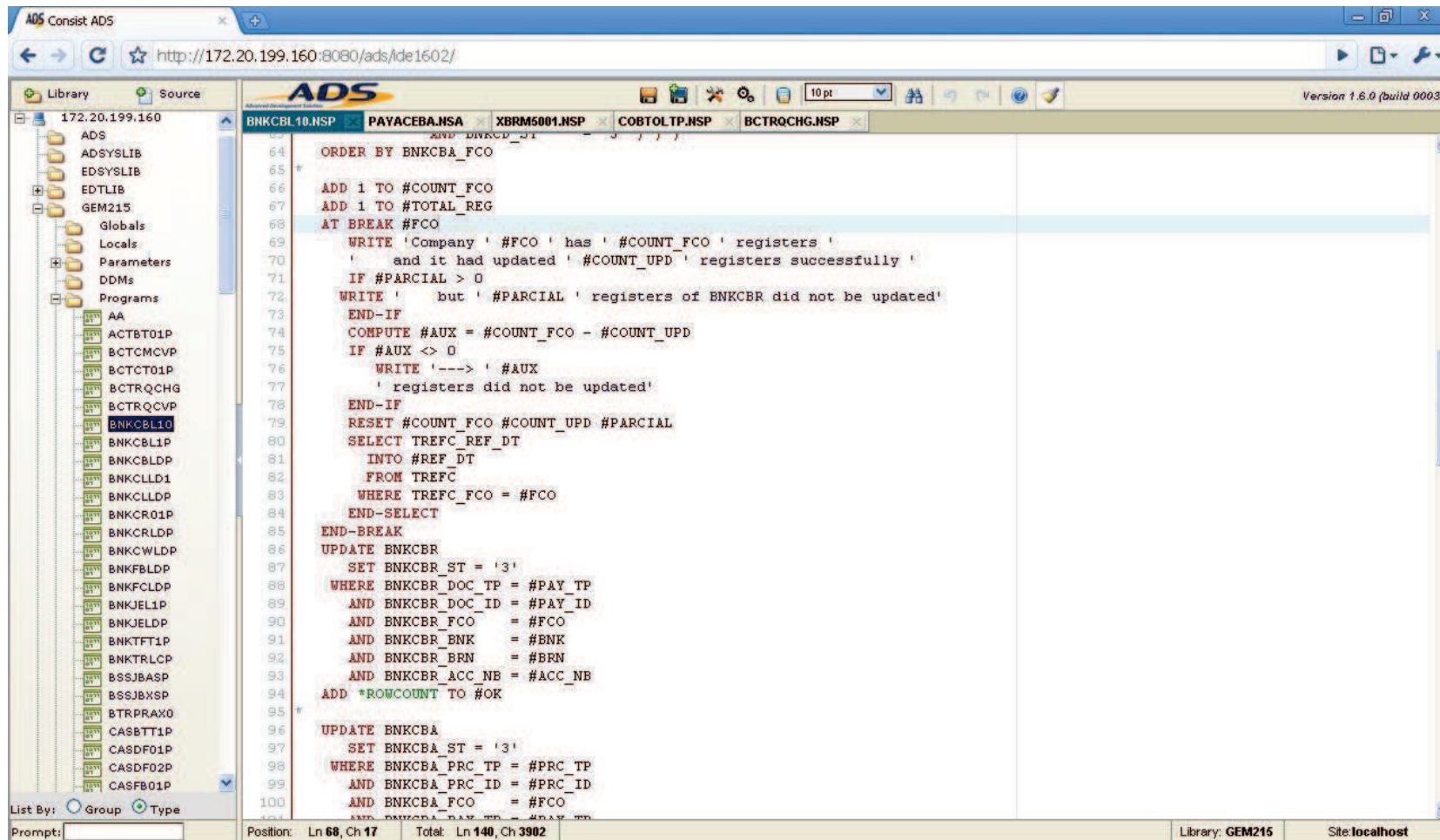


# User Identification Page



# Integrated Development Environment

## Example: Using the IDE to edit programs



The screenshot displays the ADS IDE interface. The top window shows the URL `http://172.20.199.160:8080/ads/ide1602/`. The left sidebar contains a project tree for `172.20.199.160` with folders for `ADS`, `EDSYSLIB`, `EDTLIB`, `GEM215`, `Globals`, `Locals`, `Parameters`, `DDMs`, and `Programs`. The `Programs` folder is expanded, showing a list of programs including `AA`, `ACTBT01P`, `BCTCMCVF`, `BCTCT01P`, `BCTRQCHG`, `BCTRQCVF`, `BNKCBL10` (selected), `BNKCBL1P`, `BNKCBLDP`, `BNKCLLD1`, `BNKCLLDP`, `BNKCR01P`, `BNKCRLLDP`, `BNKCWLDP`, `BNKFBLLDP`, `BNKFCLDP`, `BNKJEL1P`, `BNKJELDP`, `BNKTFT1P`, `BNKTRLLCP`, `BSSJBASP`, `BSSJBNSP`, `BTRPRAX0`, `CASBTT1P`, `CASDF01P`, `CASDF02P`, and `CASFB01P`. The main editor window displays the source code for `BNKCBL10.NSP`, which includes SQL and COBOL statements. The status bar at the bottom indicates the current position is `Ln 68, Ch 17` and the total length is `Ln 140, Ch 3902`. The library is `GEM215` and the site is `localhost`.

```
64 ORDER BY BNKCBA_FCO
65 *
66 ADD 1 TO #COUNT_FCO
67 ADD 1 TO #TOTAL_REG
68 AT BREAK #FCO
69 WRITE 'Company ' #FCO ' has ' #COUNT_FCO ' registers '
70 ' and it had updated ' #COUNT_UPD ' registers successfully '
71 IF #PARCIAL > 0
72 WRITE ' but ' #PARCIAL ' registers of BNKCBR did not be updated'
73 END-IF
74 COMPUTE #AUX = #COUNT_FCO - #COUNT_UPD
75 IF #AUX <> 0
76 WRITE '---> ' #AUX
77 ' registers did not be updated'
78 END-IF
79 RESET #COUNT_FCO #COUNT_UPD #PARCIAL
80 SELECT TREFC_REF_DT
81 INTO #REF_DT
82 FROM TREFC
83 WHERE TREFC_FCO = #FCO
84 END-SELECT
85 END-BREAK
86 UPDATE BNKCBR
87 SET BNKCBR_ST = '3'
88 WHERE BNKCBR_DOC_TP = #PAY_TP
89 AND BNKCBR_DOC_ID = #PAY_ID
90 AND BNKCBR_FCO = #FCO
91 AND BNKCBR_BNK = #BNK
92 AND BNKCBR_BRN = #BRN
93 AND BNKCBR_ACC_NB = #ACC_NB
94 ADD *ROWCOUNT TO #OK
95 *
96 UPDATE BNKCBA
97 SET BNKCBA_ST = '3'
98 WHERE BNKCBA_PRC_TP = #PRC_TP
99 AND BNKCBA_PRC_ID = #PRC_ID
100 AND BNKCBA_FCO = #FCO
101 AND BNKCBA_PAY_TP = #PAY_TP
```

# Obvius (processes) Monitor

Obvius Middleware - Client Monitoring and Operator Tool

File Window Help

Obvius Monitor

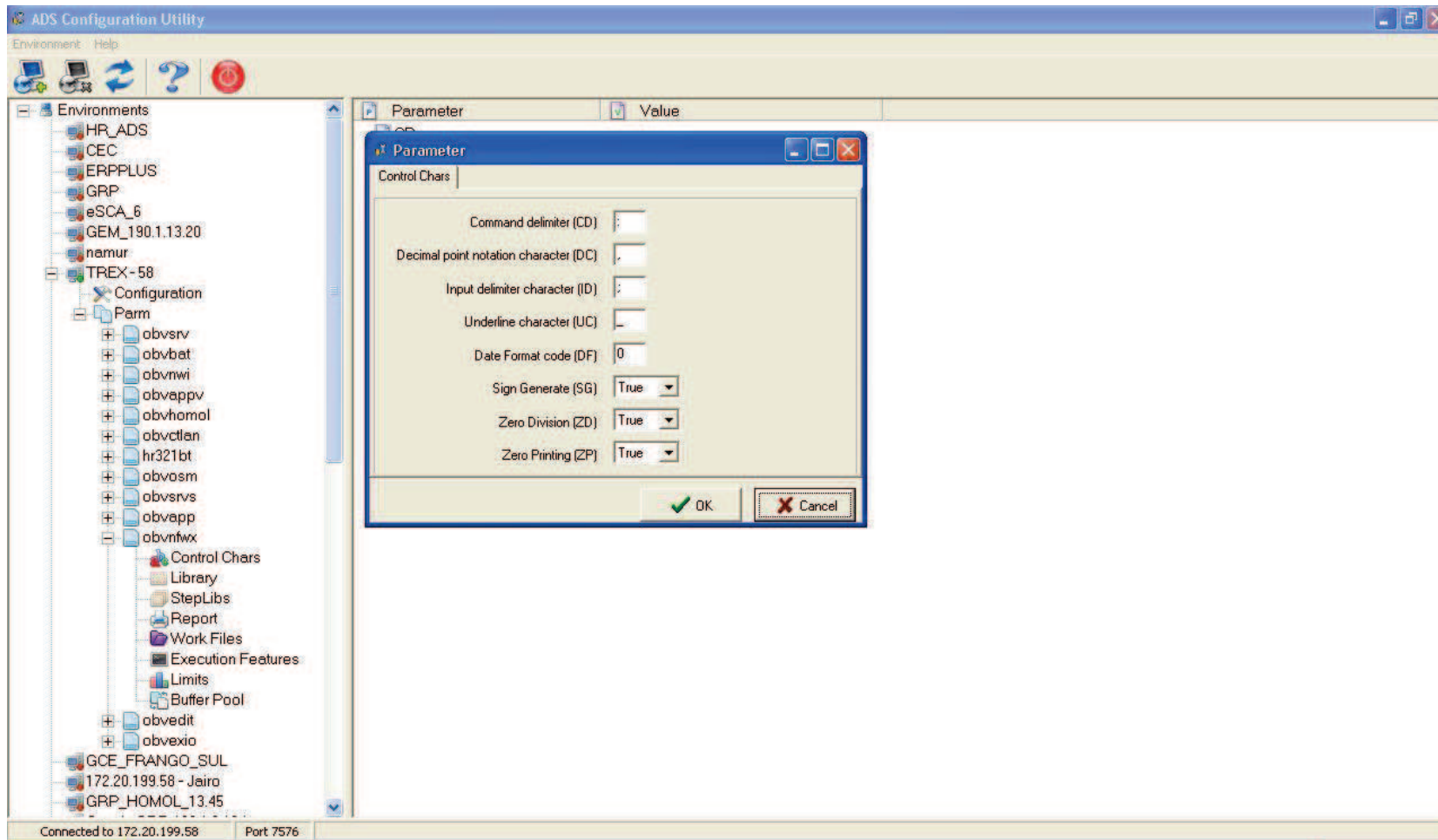
Server Types

Start up Configuration  
 Current Configuration

Type Name	Act.Mode	Max.	Low	Min.	Inact.Time	Curr.Act.	Par.Sess.	Act.Line	Type
Dispatcher	Fixed	2	2	2	0	2	1	obvdsptc	D
Listener	Fixed	1	1	1	0	1	0	obvdaemn 7576 obvclnt 1800 300 30	L
Utilities	Demand	2	1	1	300	1	32	orbutil	A
Browser	None	20	2	2	300	0	32	obvcsvr	B
Client	None	80	0	0	0	3	1		C
Repository	None	5	2	1	300	0	32	obvcsvr	I
DBServer	Fixed	1	1	1	300	1	32	obvdbsr2	X
BatchSub	None	3	1	1	300	0	32	obvcsvr	P
ClientDB	None	1	1	1	300	0	32	obvcsvr	R
Report	Demand	6	1	0	300	1	32	obvcsvr	M
Document	None	20	5	2	300	0	10	docsrv	D
NaturalM	Demand	20	0	0	1200	1	1	natrun parm=obvsrv	N
Compiler	None	2	1	1	300	0	1	scc -SRV	W
Batch	None	1	1	1	300	0	32	bsshandl -mode=full	Q

Connected 190.1.10.107 7576

# Configuration of runtime environments





# Maps samples

## Original Natural character view

SuSe\_HR\_ADS

File Edit Options Send Receive Window Help

BP1 - BRASIL FICHA CADASTRAL DE FUNCIONARIO DT. REF.: 07/2006 PAG.: 1  
RH1100 20/10/2010 22:05

Prontuario : 22 Nome do Empregado : MARINA LIMA

Categoria : CLT - EMPREGADOS-CLT  
Data Admissao ..: 01/06/2006 Situacao .....: ATIUO Data Rescisao:  
Nome Extenso ...: MARINA LIMA  
Nome Abreviado ..: MARINA LIMA Nome Usual .....: LIMA  
Id. Complementar: IDENTIFICACAO DO PRONTUARIO 22 - marina lima  
Codigo da Pessoa: 165  
\*L. ANIVERSARI : S \*DATA ALT. ENDE : 1 /7 /2006  
\*HOBBY : LEITURA \*TESTE RAIS : 2  
\*SEGURO VIDA R : TESTE \*ANO ALEATORIO : 0  
\*TESTE4 : \*N4 : 0

DADOS PESSOAIS  
Nasc.: Data : 21/05/1980 Cidade: PORTO ALEGRE U.F.: RS Pais: BRASIL  
Sexo : 2 FEMININO Estado Civil: MAR MARITAL Grau Instrucao..: 2 ATE 4A SERIE INCOMP.ENS.FUND.  
Raca/Cor: 1 Sit. Militar: Naturalizado: M Nacionalidade ..: 10 BRASILEIRO  
Fumante : Defic.Fisico: Estatura .....: Grp. Sanguineo:  
Religiao: CTL CATOLICA Emprego Anterior: S Ano 1. Emprego: 1998  
Nome da Mae : MARIA LIMA  
Nome do Pai : ANTONIO LIMA  
Funcionario Estrangeiro casado(a) c/ nascido(a) no pais sede: Data da chegada funcionario estrangeiro .:

DADOS EMPRESA I  
Tipo Mao de Obra ...: ADM Adiantamento: 1 Percentual: Data de Termino do Contrato .....: 31/12/2006  
Desconta IR ....: S Data de Fim do Prazo Experiencia : 30/06/2006  
Reclamante Justica : S Aceita Transferencia de Cidade: S Data Prorrogaao Prazo Experiencia : 30/07/2006  
Data Inicio de Prorrogaao ...: 01/01/2007 Data Fim de Prorrogaao .....: 31/12/2007  
Declaracao de Bens : S Data do Ultimo Exame Medico ..: 01/07/2006 Data da Nomeacao : 01/06/2006  
Disponibilidade para Viagens: S Tempo de Previdencia : 1 Anos 1 Meses 1 Dias Data de Anuenio : 01/07/2006

MORE

VT220 TCP/IP 17:12 0000



# Maps samples

## ADS view using a browser

CONSISTHR PAYROLL AND HUMAN RESOURCES CONSISTHR PAYROL

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**CONSIST** BP1 - BRASIL FICHA CADASTRAL DE FUNCIONARIO DT.REF.: 07/2006 PAG.: 1  
RH1100 20/10/2010 22:10

Prontuario : 22 Nome do Empregado : MARINA LIMA

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Categoria : CLT - EMPREGADOS-CLT Situacao .....: ATIVO Data Rescisao:  
Data Admissao ..: 01/06/2006  
Nome Extenso ...: MARINA LIMA Nome Usual .....: LIMA  
Nome Abreviado ..: MARINA LIMA Id. Complementar: IDENTIFICACAO DO PRONTUARIO 22 - marina lima  
Codigo da Pessoa: 165 \*L. ANIVERSARI : S \*DATA ALT.ENDE : 1 /7 /2006  
\*HOBBY : LEITURA \*TESTE RAIS : 2  
\*SEGURO VIDA R : TESTE \*NRO ALEATORIO : 0  
\*TESTE4 : \*N4 : 0

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**DADOS PESSOAIS**

Nasc. : Data : 21/05/1980 Cidade: PORTO ALEGRE U.F.: RS Pais: BRASIL  
Sexo : 2 FEMININO Estado Civil: MAR MARITAL Grau Instrucao..: 2 ATE 4A SERIE INCOMP.ENS.FUND.  
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Fumante : Defic.Fisico: Estatura .....: Grp. Sanguineo:  
Religio: CTL CATOLICA Emprego Anterior: 5 Ano 1. Emprego: 1990  
Nome da Mae : MARIA LIMA  
Nome do Pai : ANTONIO LIMA  
Funcionario Estrangeiro casado(a) c/ nascido(a) no pais sede: Data da chegada funcionario estrangeiro ..

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**DADOS EMPRESA I**

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Reclamante Justica : S Data Inicio de Prorrogacao ...: 01/01/2007 Data Prorrogacao Prazo Experiencia: 30/07/2006  
Data de Ultimo Exame Medico ...: 01/07/2006 Data Fim de Prorrogacao .....: 31/12/2007  
Declaracao de Bens : S Data da Nomeacao : 01/06/2006  
Disponibilidade para Viagens: 5 Tempo de Previdencia : 1 Anos 1 Meses 1 Dias Data de Anuencio : 01/07/2006

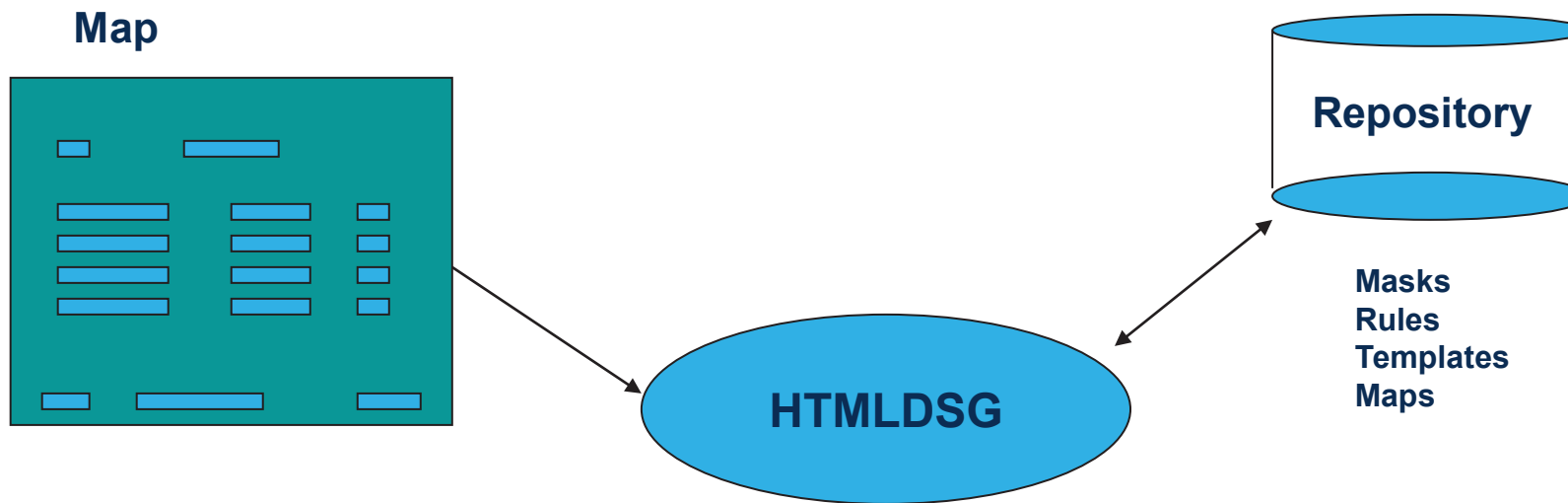
Copyright 2009 AdvantSol Inc. - All rights reserved

Concluido Internet | Modo Protegido: Ativado 100%

# Map Customization Tool

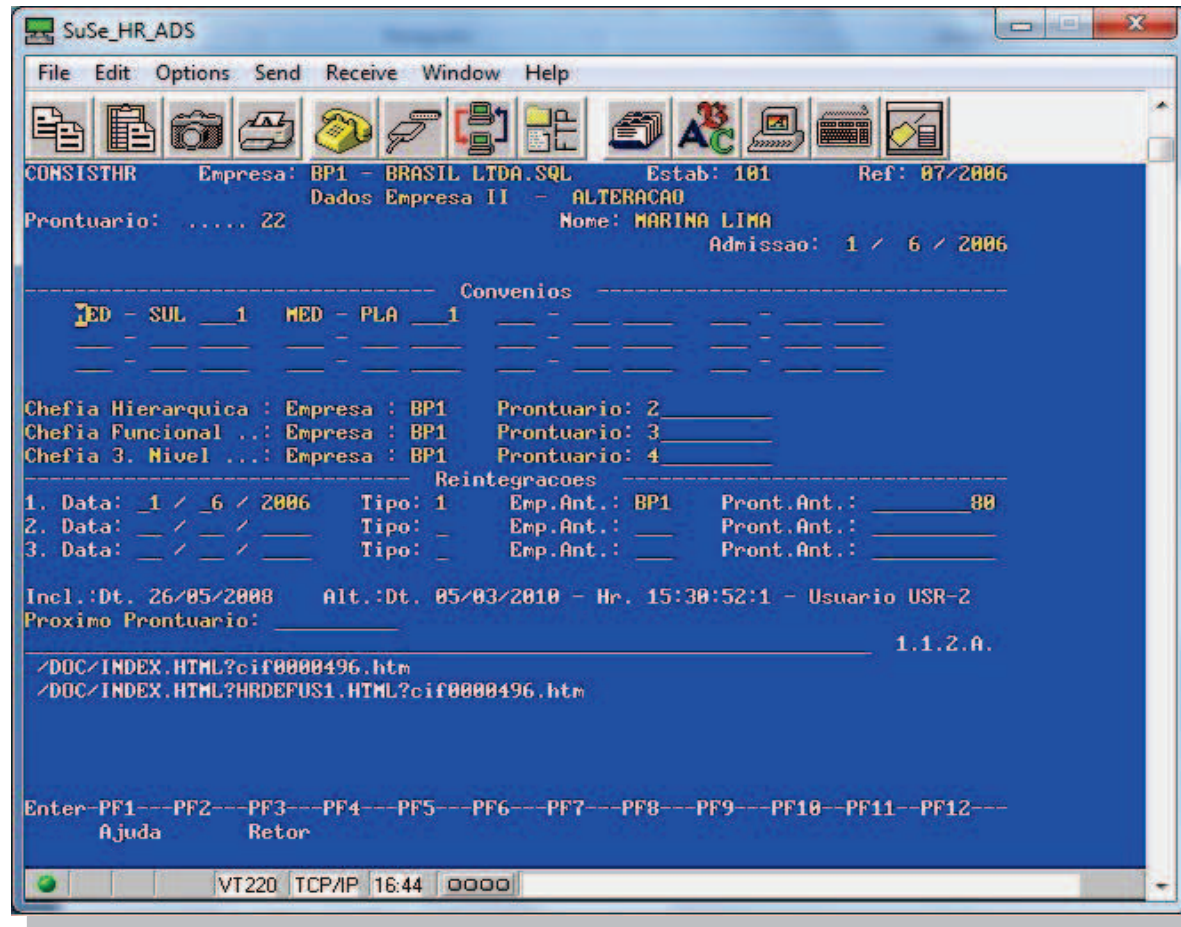
## HTML Designer

- Associates map fields to HTML tags
- Generates HTML from graphical definitions
- Allow movement rules
- Supports variables and field concatenation



# Maps samples

## Original Natural character view



# Maps samples

## ADS customized view using a browser

The screenshot displays the 'CONSISTHR PAYROLL AND HUMAN RESOURCES' web application. The header includes the company name and navigation options. The main content area is divided into several sections:

- Identificação:** Fields for 'Prontuario: 22', 'Nome: MARINA LIMA', and 'Admissao: 1 / 6 / 2006'.
- Convenios:** A table with columns for various agreement types and counts. The first row shows 'MED' with a count of 1, and 'PLA' with a count of 1.
- Reintegracoes:** A table for recording reintegration events with columns for date, type, and employee number.
- Other fields:** 'Chefia Hierarquica', 'Chefia Funcional', and 'Chefia 3. Nivel' with associated company and employee numbers.
- Footer:** 'Copyright 2009 AdvanSol Inc. - All rights reserved'.

The browser's status bar at the bottom indicates 'Internet | Modo Protegido: Ativado' and a zoom level of 100%.

# ConsistADS Technology Benefits

Reusing the same Natural Cobol source without modification

Multi platform support (MVS Unix Linux and Windows)

Maintenance process with same manner (like Adabas or DB/2)

No SAG license needs

Automatic fully migration from Adabas to any RDBMS including utilities scripts and DLM /DDL generation

Global modification between multi platform (Natural Execution compatibilities)

Adabas , Natural and Cobol fast migration keeping same source

Adabas Native Call to SQL Interface for 3GL (compile and runtime )



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## The Consist / IBM Partnership

- Close, strategic partnership between IBM and Consist
  - Global agreement
  - ConsistADS is optimized for DB2
  - Close development and support cooperation
  - Flexible, customer-specific complete offerings
- DB2 offers the most advantages
  - Comprehensive openness by the leading RDBMS
  - Proven stability
  - Best performance and high availability of all RDBMS
  - Easy vertical and horizontal scalability
  - Future-oriented web and XML technology



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## The Consist / IBM Partnership

- **DB2 offers lower total cost of ownership**
  - Special ConsistADS / DB2 license and maintenance bundle pricing
  - Typical, significant savings in storage by sophisticated compression algorithms
  - Lower consolidated database management cost
- **Reliable migration to DB2**
  - Fast, cost-saving migration to DB2 based on proven tools, e.g. ConsistDMS, and on the Consist/IBM experts
  - Easy, customer-specific skill training



**CONSIST**

# IBM and Consist Partnership

## ***SAG Products***

Adabas  
Adabas Utilities  
Adabas Cache Facility  
Adabas Review  
Adabas SAF Security  
Adabas Text Retrieval  
Cluster/Parallel Services  
Complete  
Data Encryption  
Delta Save Facility  
Event Replicator  
Natural  
Natural Security  
Entire Network  
Predict



## ***ADS/DB2 products***

ADS  
ADS Monitor  
DB2®  
DB2® Catalog  
DB2® Connect  
DB2® Data Sharing  
DB2® Utilities  
DB2® Buffer Pools.  
DB2® RACF Access Control  
Tivoli OMEGAMON XE  
OmniFind® Text Search  
Websphere  
Data Encryption  
Incremental Image Copy  
InphoSphere Replication

# Conclusion ConsistADS Benefits



- ConsistADS generates cost savings
- ConsistADS offers a modernization path to SOA, Web and RDBMS technologies
- ConsistADS allows evolutionary enhancement, e.g. the option to continue to develop in Natural / other 3GL syntax
- Consist & IBM cooperation ensures a safe, future-oriented migration path based on proven DB2 RDBMS
- ConsistADS offers interesting pilot project conditions

**CONSIST**

**Thank You**



**CONSIST**