



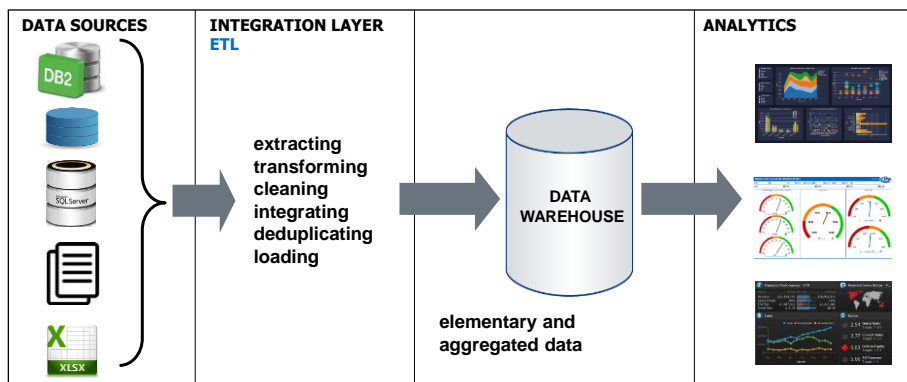
POZNAN UNIVERSITY OF TECHNOLOGY

# Traditional Data Warehouse Architectures

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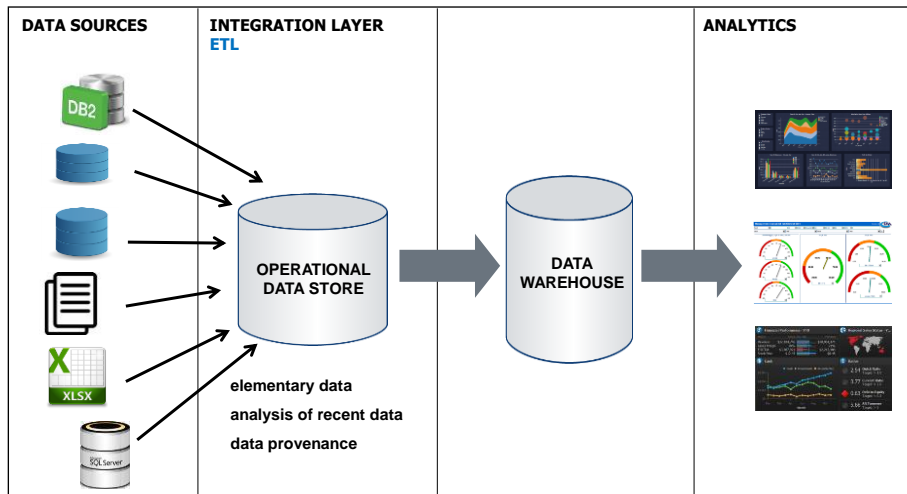


## DW Architecture 1 (basic)

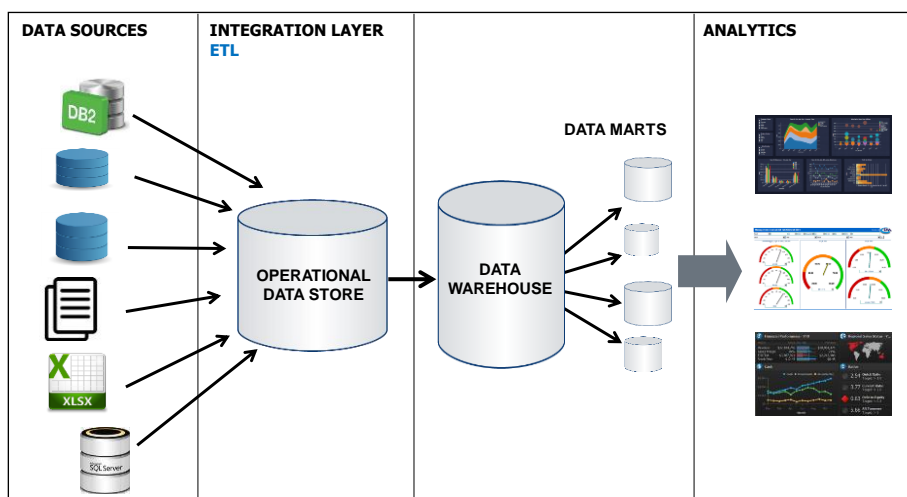




## DW Architecture 2

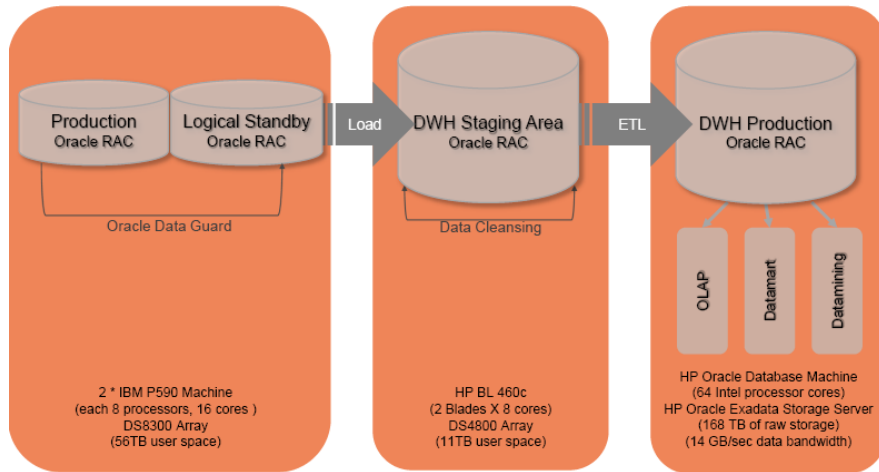


## DW Architecture 3





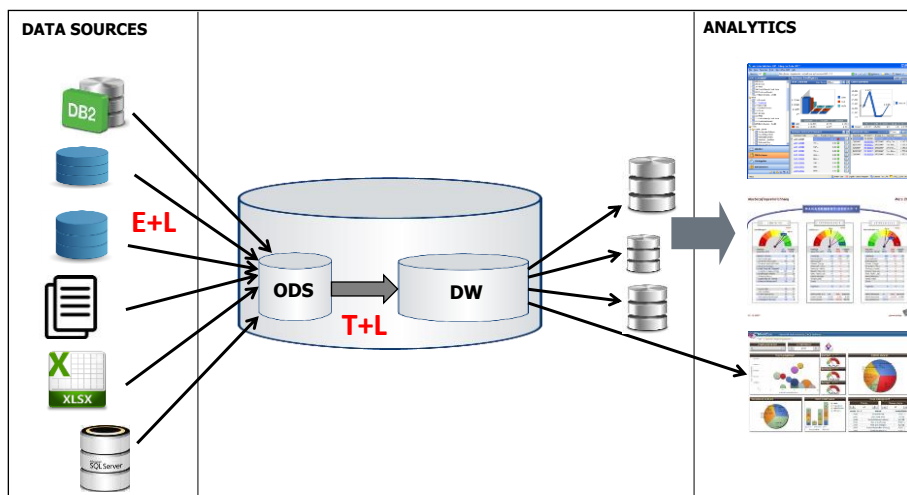
## Allegro DW



**C. Maar, R. Kudliński: Allegro on the way from XLS based controlling to a modern BI environment. National conference on Data Warehousing and Business Intelligence, Warsaw, 2008**



## DW Architecture 4: ELT (ELTL)





# ELT Architecture

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## ⇒ Performance

- data stored in a DB ⇒ processing by means of: SQL, PL/SQL, SQL PL, Transact SQL
- single server for ELT and HD ⇒ heavier workload

## ⇒ Functionality

- data provenance
- drill through



# ETL vs. ELT (experiment 1)

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## ⇒ Data sources

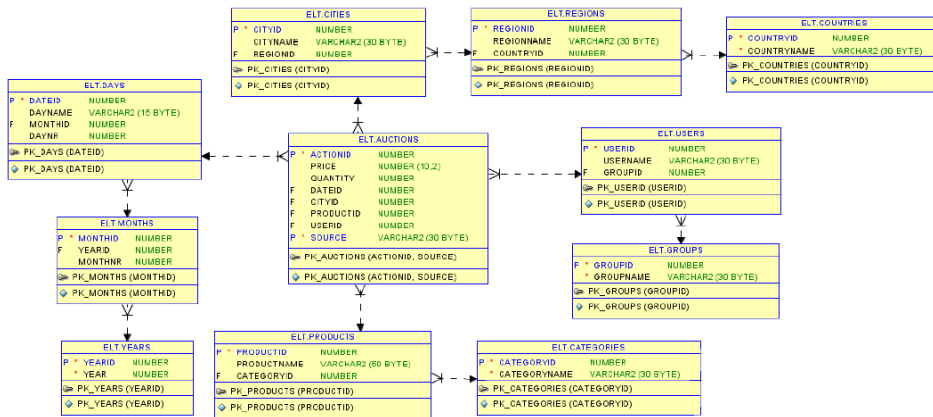
- topic: Internet auctions
- storage:
  - Oracle11g (Object-Relational model)
  - MySQL
  - PostgreSQL
  - XML
- a collection/table composed of 11 attributes

## ⇒ Data warehouse: Oracle11g



# ETL vs. ELT (experiment 1)

## ➤ DW schema



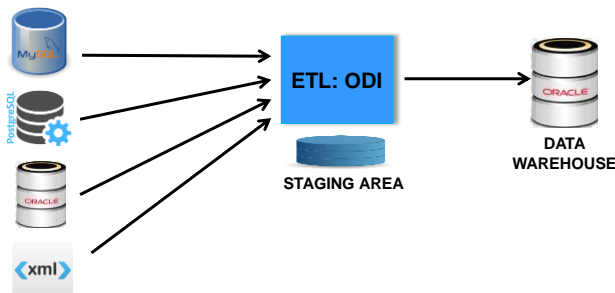
# ETL vs. ELT (experiment 1)

## ➤ Transformations of data for:

- dimensions
- fact table

## ➤ Tools and architectures

- ETL ⇒ Oracle Data Integrator (ODI)
  - ETL in a staging area on a separate server

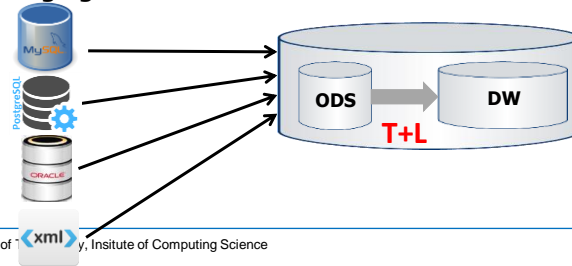




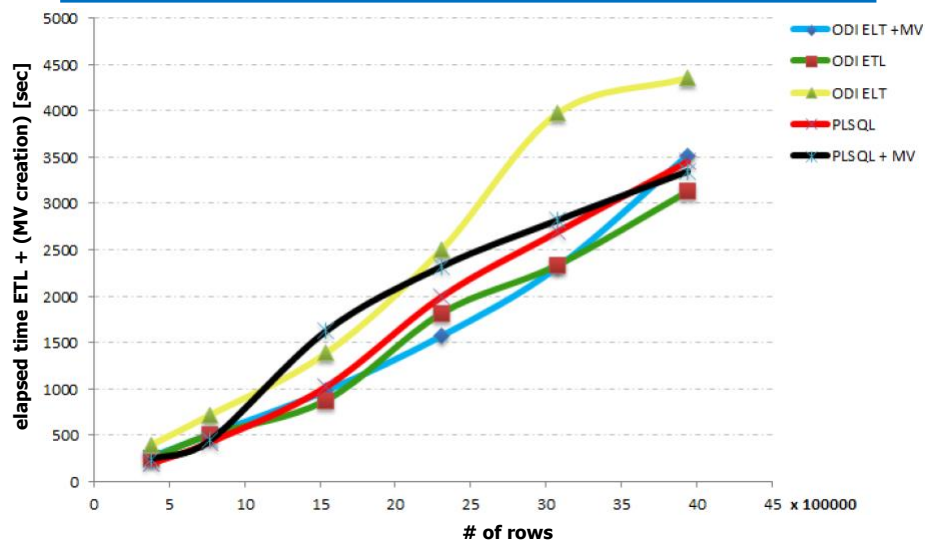
## ETL vs. ELT (experiment 1)

### Tools and architectures

- **ELT ⇒ ODI**
  - TL in a staging area on the same server as a DW
- **ELT ⇒ ODI + materialized views (MVs)**
  - TL in a staging area on the same server as a DW
- **ELT ⇒ stored packages (SPs)**
  - TL in a staging area on the same server as a DW
- **ELT ⇒ SPs + MVs**
  - TL in a staging area on the same server as a DW



## ETL vs. ELT (experiment 1)





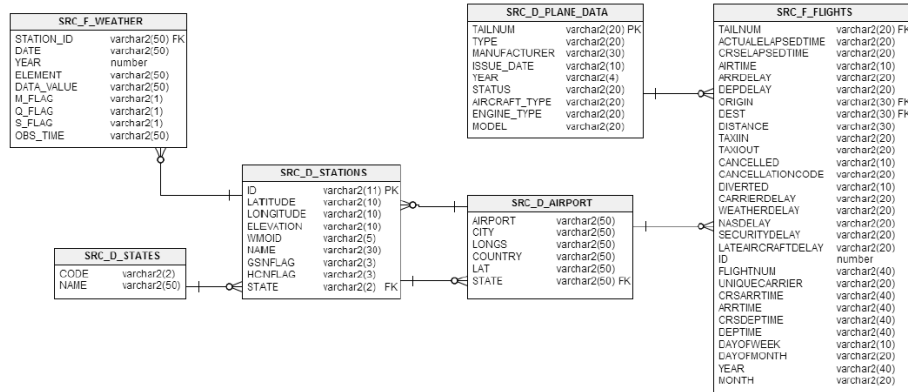
## ETL vs. ELT (experiment 2)

### ➔ Data source

- flight and weather data in the US, from 1986 until 2008
- 6 tables in Oracle11g

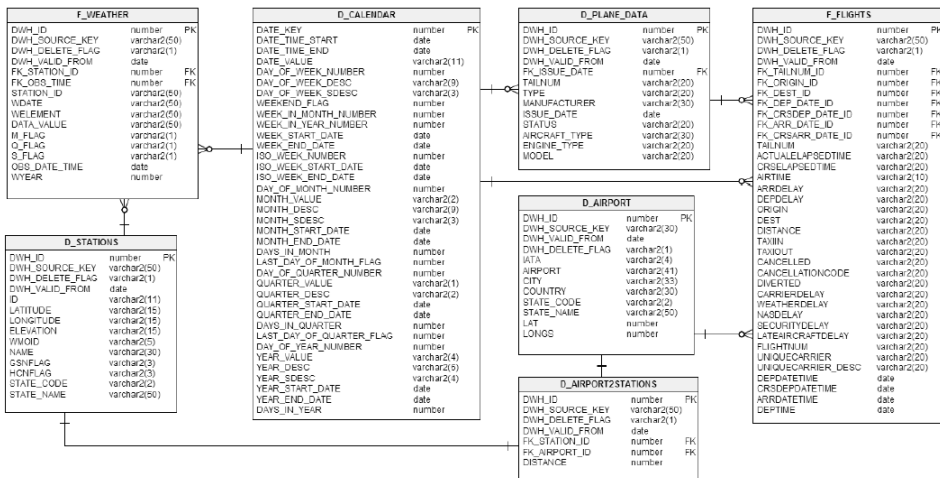
### ➔ Data warehouse: Oracle11g

### ➔ ETL/ELT: Informatica



## ETL vs. ELT (experiment 2)

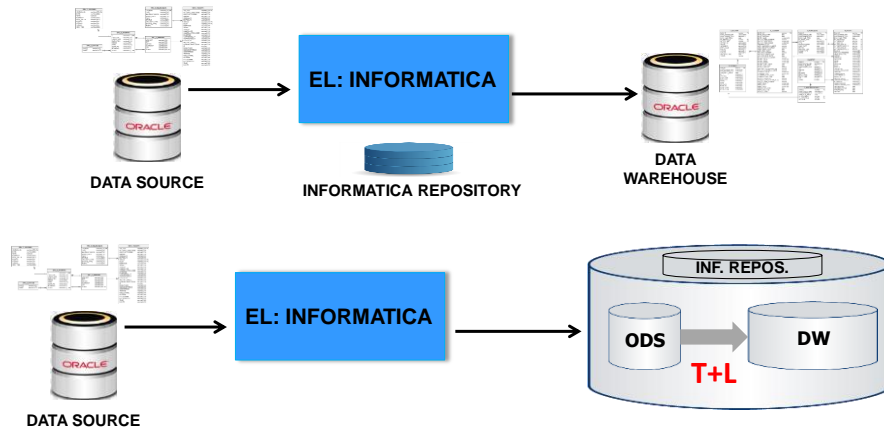
### ➔ DW schema





## ETL vs. ELT (experiment 2)

- ETL ⇨ Informatica
- ELT ⇨ Informatica (load), DB views (transform)



## ETL vs. ELT (experiment 2)

- ETL ⇨ Informatica
- ELT ⇨ Informatica (load), DB views (transform)

