

IBM Informix

OR: the good old rival of Oracle

WHAT ARE WE GONNA TALK ABOUT?

—
RDBMS, IoT

—
Origin story

—
Tools & Features

—
Fun-Fact
Informix vs. Oracle

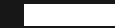
—
Whatever happened

—
Installation



RDBMS

= relational database
management system



RDBMS

most-used system

data structure is bound to a scheme or template
(error minimization, easy read of complex data)

ACID is forced

not practicable for data migration or very large
internet-data



Relational

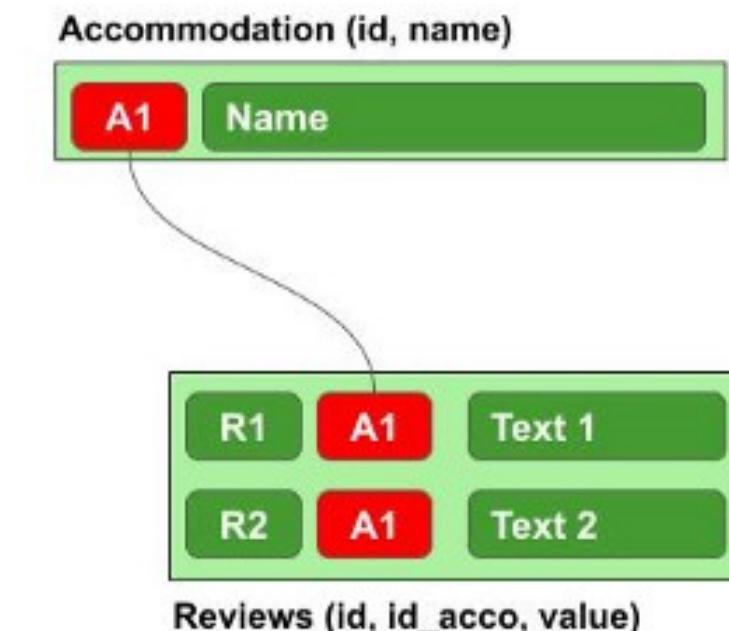
VS



Non-relational



Relational DB



Non Relational DB



RDBMS

RELATIONAL DATABASE MANAGEMENT SYSTEM

= collection of **relations** (tables)
= based on relational algebra

RELATION
= set of **attributes** (columns) and
tuples (rows)

ATTRIBUTES
= set of **non-key** attribute(s),
primary key attribute(s) and
foreign key attribute(s)

SQL
= "Structured Query Language"
= **Definition, Query** and
Manipulation Language

TUPLES
= one **record**

RELATIONAL

VS.

NON-RELATIONAL

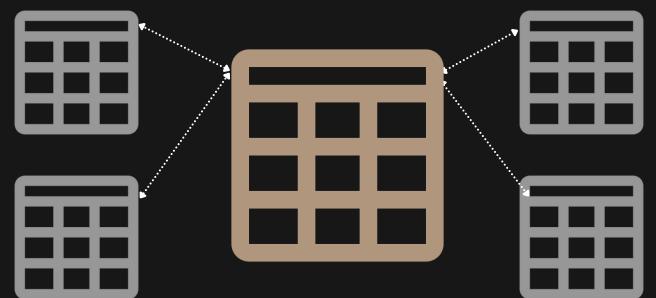
—
RESTAURANT / BANKING SYSTEM

small data (texts) with schema

consistency important

= low manipulation frequency
and/or lower data volume,
all data connected

-> RDBMS



—
FOOD DIARY / SOCIAL MEDIA

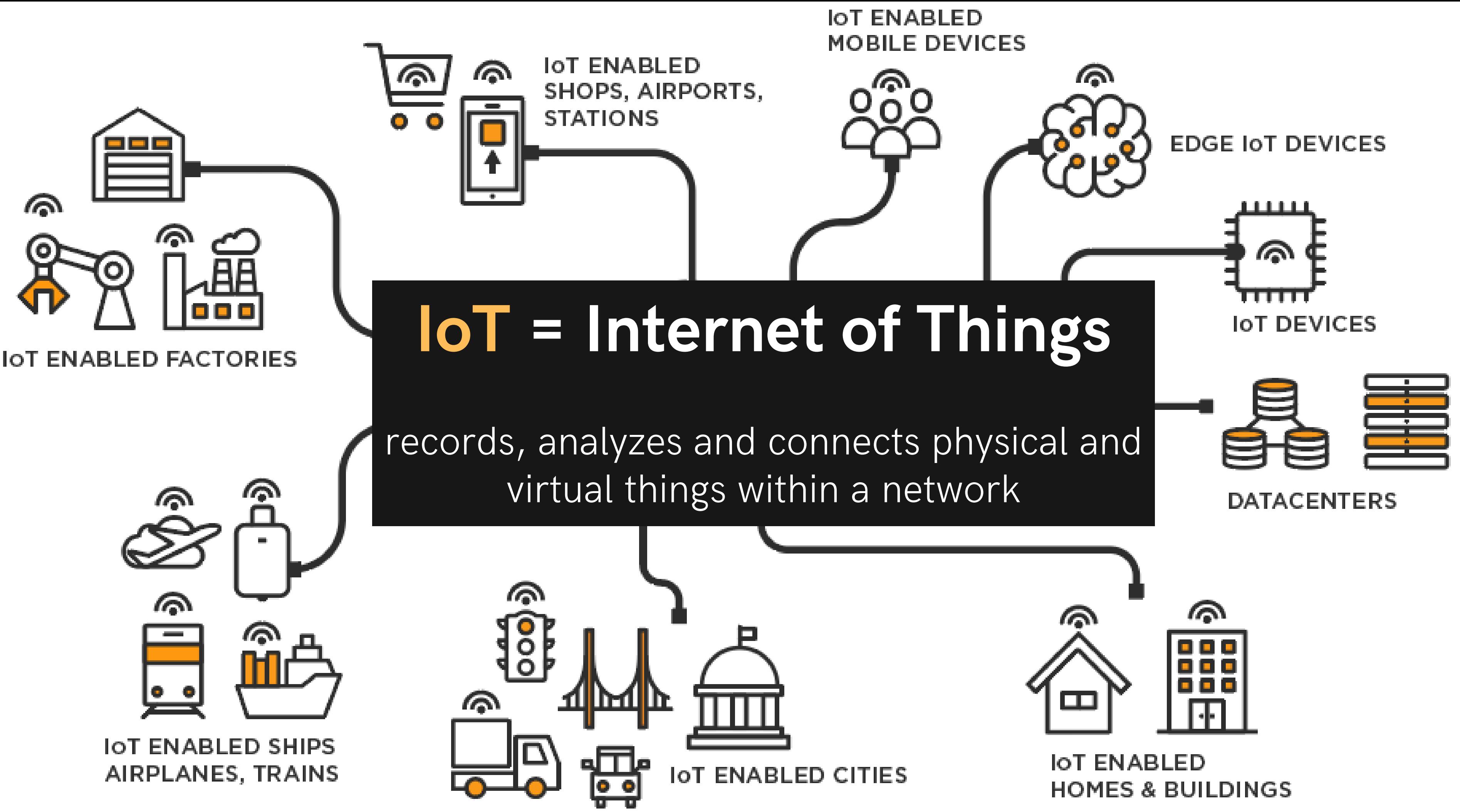
big data (pictures, clips)

varying content without schema

= high manipulation frequency
+ large data volume,
no/low data connection needed

-> NoSQL







INFORMIX

**analytics on the edge /
cloud / premises
embedabble
low-footprint
self-management**



high-performance db for integrating
SQL, NoSQL, JSON, BSON,
time-series and spatial data

ORIGIN STORY: INFORMIX

INFORMATION ON UNIX

first release in 1981 (Relational Database Systems Inc.) - no SQL

final release in 1986, Version 3.30
(Informix Corp.) - incl. ISQL and I4GL

RDBMS

bought by IBM in 2001 (thx Walmart)
outsourced to HCL in 2017

SECURITY

native encryption

current (2021) version is 14.10

about 241 products (licences, support options, mediapacks)

SPEED

native processing of JSON, time-series, spatial & relational data

used in high transaction rate OLTP applications (retail, finance, energy, utilities, manufacturing, transport, data warehouse) and IoT

FLEXIBILITY

supports flexible schema, multiple APIs and configurations

supports heterogeneous clusters
very low or no db administration

TOOLS & FEATURES

Informix HQ

Informix SQL

Informix 4GL

Option oncheck -w [#sec]

Datatype SERIAL

Informix Flexible Grid & Co

TOOLS & FEATURES

InformixHQ

new since Informix v14.10

administration and monitoring tool

java-based on Jetty

expects Informix 12.10 and Java 8

Informix SQL (ISQL)

SQL dialect

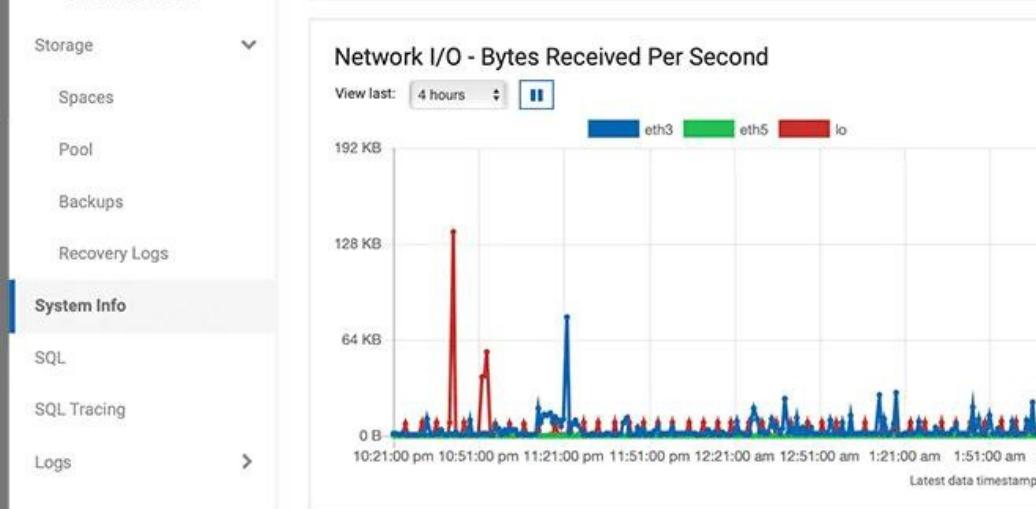
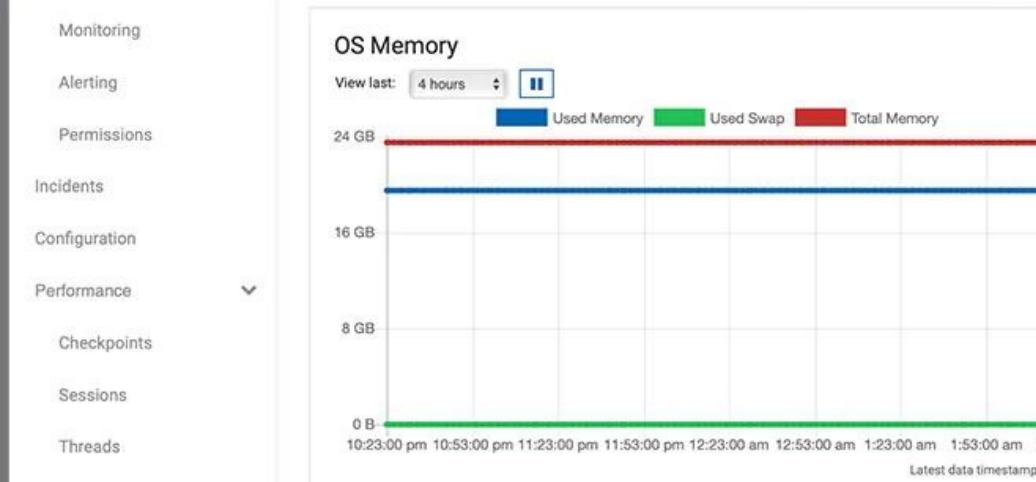
SQL Query - mask
Reports

SEARCH
BEFORE
BACK
CREATE
ALTER
DELETE
END

Informix 4GL (I4GL)
comprehensive application
development and production
environment

letter-based
SQL embedded

DATABASE, GLOBALS, DEFINE
LET, INITIALIZE
MAIN, FUNCTION, REPORT
FOR, FOREACH, WHILE
PROMPT, INPUT
DISPLAY, PRINT, MESSAGE,
ERROR



Vendor: Edit New Delete Search Quit
Add new vendor

Vendor Code	[<input type="text"/>]
Vendor Name	[<input type="text"/>]
Address	[<input type="text"/>]
City	[<input type="text"/>]
Country	[UNITED KINGDOM] State [<input type="text"/>] ZIP [<input type="text"/>]
Currency	[GBP]
Vendor Type	[<input type="text"/>]
Term Code	[<input type="text"/>]
Tax Claim	[<input type="text"/>]
ABN	[<input type="text"/>] Tax Inclusive Pricing [<input type="text"/> N]

F1=Apply ESC=Cancel

BROWSE: [Next | Previous | First | Last | Select | Quit]
View the next customer in the list

Customer Form

Number	:[114]
Owner Name	:[Frank] [Albertson]
Company	:[Sporting Place]
Address	:[947 Waverly Place]
City	:[Redwood City] State:[CA] Zipcode:[94062]
Telephone	:[415-886-6677]

```

CREATE FUNCTION two_returns (stockno INT) RETURNING CHAR (15);
  DEFINE des CHAR(15);
  ON EXCEPTION (-272)          -- if user does not have select privilege
    RETURN;                      -- return no values.
  END EXCEPTION;
  SELECT DISTINCT descript INTO des FROM stock
    WHERE stock_num = stockno;
  RETURN des;
END FUNCTION;

```

```

FOR i IN (1 TO 5) LOOP
  EXIT WHEN i = 5;
END LOOP;

WHILE (i < 6) LOOP
  LET i = i + 1;
  IF i = 5 THEN EXIT;
  ELSE
    CONTINUE;
  END IF
END LOOP;

```

```

CREATE TABLE name
(
  rec_num SERIAL PRIMARY KEY,
  lname CHAR(20),
  fname CHAR(20),
  bdate DATE,
  anniv DATE,
  email VARCHAR(25)
);

```

```

CREATE TABLE child
(
  child CHAR(20),
  rec_num INT,
  FOREIGN KEY (rec_num) REFERENCES NAME (rec_num)
);

```

```

CASE i
  WHEN 1 THEN LET j = x;
  WHEN 2 THEN LET k = x;
  WHEN 3 THEN LET l = x;
  WHEN 4 THEN LET m = x;
  ELSE
    RAISE EXCEPTION 100; --invalid value
END CASE;

```

TOOLS & FEATURES

option oncheck -w [#sec]
how long should oncheck wait for
the acquired shared lock

```
oncheck -cDI stores_demo:customer -w 10
```

-w 10 = waits 10 seconds before
timing out

```
oncheck -cc my_db -w
```

-w = wait as long as the other lock
remains, no timing out

interruption at command line

datatype SERIAL(n) / SERIAL8(n)
alike sequence using INT/BIGINT

0 = next free number

n = if free

if n > i = further counting from n

no update of n
no SQL standard
reset by droping table

```
CREATE TABLE name
(
  rec_num  SERIAL PRIMARY KEY,
  lname   CHAR(20),
  fname   CHAR(20),
  bdate   DATE,
  anniv   DATE,
  email   VARCHAR(25)
);
```

```
ALTER TABLE child3_tab
MODIFY (s_col SERIAL(100), s8_col SERIAL8 (200))
```

TOOLS & FEATURES

Informix Warehouse Accelerator
extreme high performance on business intelligence and data warehouse style queries

in-memory data

tokenization

deep compression

columnar database technology

Informix Flexible Grid
very high level of data redundancy and fault tolerance

CDR without primary keys

DDL + DML on all servers

automatic create of new objects on all nodes in one operation

expects configuration of CDR

Informix TimeSeries
efficient and fast manipulation of time series data

from devices

or smart electric meters

or financial trading systems (time stamped stock 'ticks')

FUN-FACT

INFORMIX VS. ORACLE

—

during the 1990's the informix corp.
was part of the "big three" database
companies, next to Oracle and Sybase,
sitting on first place in 1996

—

1997 Oracle's and Informix'
"billboard war" on highway 101 ->



Alexander Koerner
@AlexKoeMUC

While browsing through some of my old analog #image collections today, I came cross the following two pictures from 1997 which made me laugh. The good 'ol #Informix/#Oracle billboard 'wars' on highway 101 in the S.F. bay area. 😂 @WW_Informix @iiug @IIUGWorld @hcltech



8:50 nachm. · 15. Sep. 2019 · Twitter Web App

4 Retweets 15 „Gefällt mir“-Angaben



Vercelletto Eric @EricVercelletto · 18. Sep. 2019

Antwort an @AlexKoeMUC @WW_Informix und 3 weitere Personen
One of the picture is talking about a RDMBS, the other one is talking about a person because they could say nothing bad about the RDBMS :-)



informix_ids @informix_ids · 18. Sep. 2019

I like the Dinosaur one ;)



WHATEVER HAPPENED TO INFORMIX

sharing technology with DB2



optimized for low or no database administration

targeted at Internet-of-Things (IoT) solutions

INSTALLATION

BEFORE

Register in IBM (installation owner)

Create admin group informix + user
informix (secure pw)

current database server version?

JRE? + JDBC Driver

secure directory

- IBM Informix 14.10. Developer Edition
- IBM Informix 14.10 Advanced Developer Edition
- IBM Informix 14.10 Time Limited Enterprise Edition
- IBM Informix 14.10 Advanced Time Limited Enterprise Edition
- IBM Informix 14.10 Express Edition
- IBM Informix 14.10 Workgroup Edition
- IBM Informix 14.10 Innovator Edition
- IBM Informix 14.10 Enterprise Edition
- IBM Informix 14.10 Advanced Enterprise Edition

DURING

typical or customer installation?

create database after installation? Y/N

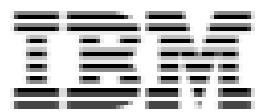
AFTER

if necessary: CSDK

if not yet: add edition



ibm.com/uk-en/products/informix



[Informix](#)

[Editions](#)

[Embedded for IoT](#)

[Developer tools](#)

IBM Informix

A scalable, embeddable database with self-managing capabilities, optimized for OLTP and Internet of Things (IoT) data

[Get the free Developer Edition](#)

[Book a consultation](#)

REGISTRATION

In wenigen Schritten zum Download

1. Kontoinformationen

E-Mail-Adresse (i)

Ihre E-Mail-Adresse wird als IBMid für die Anmeldung bei IBM.com eingerichtet.

Vorname

Nachname

Kennwort

- Mindestens 8 Zeichen
- Ein Kleinbuchstabe

- Ein Großbuchstabe
- Eine Zahl

Land oder Region des Wohnsitzes

Staat/Bundesland oder Provinz (Optional)

Österreich

Bundesland/-staat auswählen

Weiter

Entitlement

What is your current reason for downloading? *

--Select Here--

How will you be involved in the decision making process for your projects? *

--Select Here--

Which of the following best describes your company?

--Select Here--

If other, please specify

Would you like an IBM representative to contact you regarding this IBM Software information?

Yes

DOWNLOAD

Select	Offering	Platform	Languages
<input type="radio"/>	Informix Client SDK 4.50.FC7 AIX 64	AIX on 64-bit POWER	English

Offering	Platform	Languages	Select	Offering	Platform	Languages
Informix Advanced Enterprise Time-Limited Edition Installer 1410FC7	Multiplatform	Chinese Simplified, Traditional, Czech, English U.S., French, German, Italian, Korean, Portuguese, Polish, Brazilian, Russian, Spanish	<input type="radio"/>	Informix Developer Edition 14.10.FC7 AIX 64 14.10.FC7	AIX on 64-bit POWER	English
Informix Enterprise Time-Limited Edition Installer 1410FC7	Multiplatform	Chinese Simplified, Traditional, Czech, English U.S., French, German, Italian, Korean, Portuguese, Polish, Brazilian, Russian, Spanish	<input type="radio"/>	Informix Developer Edition 14.10.FC7 HP Itanium 64 14.10.FC7	HP-UX Itanium	English
Informix Advanced Enterprise Time-Limited Edition Installer	Multiplatform	Chinese Simplified, Traditional, Czech, English U.S., French, German, Italian, Korean, Portuguese, Polish, Brazilian, Russian, Spanish	<input type="radio"/>	Informix Developer Edition 14.10.FC7 zLinux / LinuxONE 64 14.10.FC7	Linux for System z	English
Informix Enterprise Time-Limited Edition Installer	Multiplatform	Chinese Simplified, Traditional, Czech, English U.S., French, German, Italian, Korean, Portuguese, Polish, Brazilian, Russian, Spanish	<input type="radio"/>	Informix Developer Edition 14.10.FC7 Linux Power PC 64 14.10.FC7	Linux for System x (64 bit)	English
			<input type="radio"/>	Informix Developer Edition 14.10.FC7 Linux x86 64 14.10.FC7	Linux for System x86-64	English

UNPACK DEVELOPER EDITION



Name	Typ
doc	Dateiordner
ids.properties	PROPERTIES-Datei
ids_install.exe	Anwendung
README_ids.txt	Textdokument

UNPACK ADDITIONAL EDITION



Name	Typ
 aetl_edition.jar	Executable Jar File
 README-Edition.txt	Textdokument

START INSTALLATION

Common installation methods:

The commands below describe basic installation methods. They

Available at <https://www.ibm.com/support/knowledgecenter/>

Run this command to install Informix in graphical mode:

`ids_install -gui`

Alternately, to install Informix in console mode:

`ids_install -console`

```
# export INFORMIXDIR=/work2/rsivaguru
# ./ids_install
Preparing to install
Extracting the JRE from the installer archive...
Unpacking the JRE...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...
Launching installer...

=====
(created with InstallAnywhere)
-----

Preparing CONSOLE Mode Installation...

To Begin Installation,
Respond to each prompt to proceed to the next step in the installation.
If you want to change something on a previous step, type 'back'.

You may cancel this installation at any time by typing 'quit'.

PRESS <ENTER> TO CONTINUE: [REDACTED]

* PROMPTLY RETURN THE UNUSED MEDIA, DOCUMENTATION, AND PROOF OF
ENTITLEMENT TO THE PARTY FROM WHOM IT WAS OBTAINED FOR A REFUND OF THE
AMOUNT PAID. IF THE PROGRAM WAS DOWNLOADED, DESTROY ALL COPIES OF THE
PROGRAM.

Press Enter to continue viewing the license agreement, or enter "1" to
accept the agreement, "2" to decline it, "3" to print it, or "99" to go back
to the previous screen.: [REDACTED]
=====

Installation Location
-----
Choose location for software installation

Default Install Folder: /work2/rsivaguru

ENTER AN ABSOLUTE PATH, OR PRESS <ENTER> TO ACCEPT THE DEFAULT
: [REDACTED]
```

```
Optionally install a configured database server instance.
Minimum disk space required: 75 MB (without a server instance)

->1- Typical installation
2- Custom installation
3- Extract the product files (-DLEGACY option)
4- Create a RPM package for redistribution

ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT: 2 [REDACTED]

Server Instance
-----
Type 'back' to go to the previous step or 'quit' to cancel the installation.

Create a database server instance?

->1- Yes - create a server instance
2- No - do not create a server instance

ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT: 2 [REDACTED]

Disk Space Information (for Installation Target):
Required: 700,612,144 Bytes
Available: 343,026,683,904 Bytes

PRESS <ENTER> TO CONTINUE:
=====

Ready To Install
-----
InstallAnywhere is now ready to install IBM Informix Software Bundle onto your
system at the following location:

/work2/rsivaguru

PRESS <ENTER> TO INSTALL: [REDACTED]
```

=====

Installation Complete

Congratulations! IBM Informix Software Bundle installation is complete.

Product install status:

Informix Dynamic Server: Successful

For more information about using Informix products, see the IBM Informix 14.10 Knowledge Center at

<https://www.ibm.com/support/knowledgecenter/SSGU8G/welcomeIfxServers.html>.

PRESS <ENTER> TO EXIT THE INSTALLER: █

IBM Informix

OR: the good old rival of Oracle