

## Library & Software & Platform-OS

// Metadata

Name	Library & Software & Platform-OS
Keywords	Library, Software, Operating System, Middleware, Virtual Machine, Platform, Computer, Grid, Cluster, Network
Creation date	April 24 <sup>th</sup> , 2009
Has contributor	Frédéric Fürst, Gilles Kassel, Pascal Lando, Anne Lapujade
Used ontology engineering methodology	OntoSpec
Is of type	Core ontology
Natural language	English
Has ontology language	OntoSpec
Has formality level	Semi-informal
Ressource locator	<a href="http://www.laria.u-picardie.fr/IC/site/IMG/pdf/Library_Software_Platform-OS.pdf">http://www.laria.u-picardie.fr/IC/site/IMG/pdf/Library_Software_Platform-OS.pdf</a>
Version	1.0
Number of concepts (classes)	35
Number of relations (properties)	3

// Relations

Can be accessed on

### Properties

[EP/DDR & RR] A PROGRAM or SOFTWARE *can be accessed on* a NETWORK.

Is connected to during

### Properties

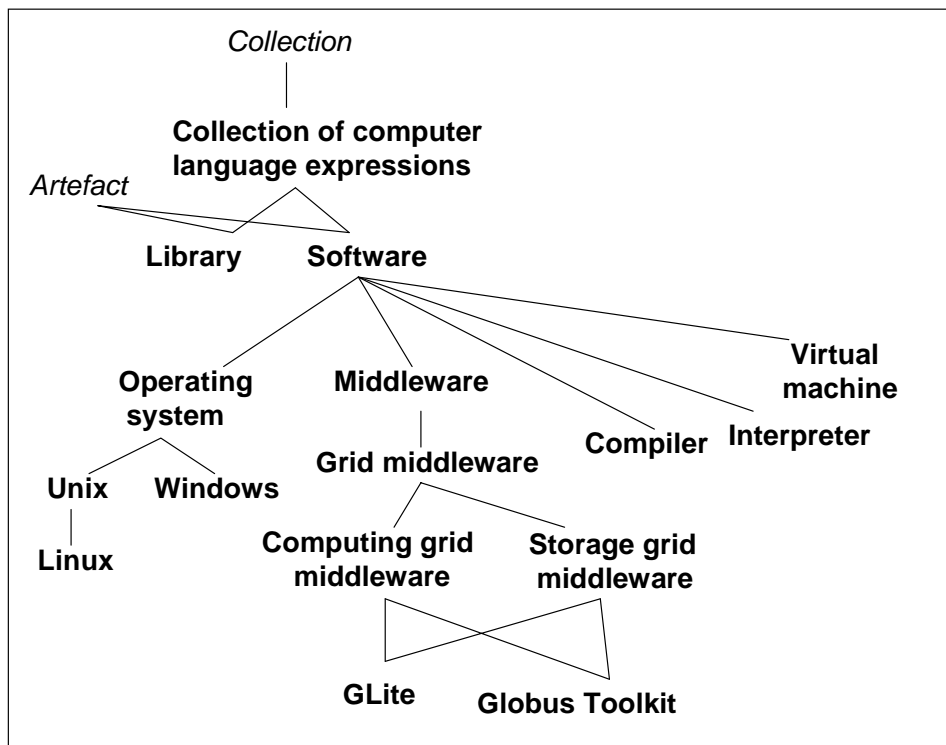
[EP/R1 & R2 & R3] A COMPUTER *is connected to* a NETWORK *during* a TIME INTERVAL. [EP/SL] *x is connected to y during t* implies that *x is member of y during t*.

Runs at

### Properties

[EP/R1 & DR2 & R3] An EXECUTION PLATFORM *runs* a PROGRAM or SOFTWARE *at* a TIME INTERVAL. [EP/NSMC] *x runs y at t* iff there exists a *z*, either a RUNNING A PROGRAM or RUNNING A SOFTWARE, such that *x is agent of z at t* and *z has for data y at t*. [EP/IVL] *Runs at* mutually implies *is running on at*.

// Concepts



Collection of computer language expressions

#### Meta-properties

COLLECTION OF COMPUTER LANGUAGE EXPRESSIONS is RIGID (+**R**).  
COLLECTION OF COMPUTER LANGUAGE EXPRESSIONS is EXTERNALLY-DEPENDENT (+**D**).

#### Properties

[EP/SLD] A COLLECTION OF COMPUTER LANGUAGE EXPRESSIONS is a COLLECTION which *has for member* only COMPUTER LANGUAGE EXPRESSIONS and which *has for member* at least one COMPUTER LANGUAGE EXPRESSION *during* a TIME INTERVAL.

#### Library

##### Meta-properties

LIBRARY is RIGID (+**R**). LIBRARY is EXTERNALLY-DEPENDENT (+**D**).

##### Properties

[EP/SLD] A LIBRARY is a COLLECTION OF COMPUTER LANGUAGE EXPRESSIONS which is an ARTEFACT which *allows to carry out* DEVELOPING SOFTWARE.

##### Comment

[DEF] Article “Library” of Wikipedia: “A library is a collection of subroutines or classes used to develop software. Libraries contain code and data that provide services to independent programs. This allows code and data to be shared and changed in a modular fashion.”

## Software

### Meta-properties

SOFTWARE is RIGID (+**R**). SOFTWARE is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SLD] SOFTWARE is a COLLECTION OF COMPUTER LANGUAGE EXPRESSIONS which *has for member* at least one INTERPRETABLE PROGRAM or EXECUTABLE PROGRAM *during* a TIME INTERVAL and which is an ARTEFACT which *allows to carry out* at least one DATA PROCESSING.

## Operating system

### Meta-properties

OPERATING SYSTEM is RIGID (+**R**). OPERATING SYSTEM is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SL] an OPERATING SYSTEM is SOFTWARE which *allows to carry out* RUNNING A PROGRAM or RUNNING A SOFTWARE.

### Comment

[CIT] Article “Operating system” of Wikipedia: “An operating system (OS) is a computer program that manages the hardware and software resources of a computer. At the foundation of all system software, the OS performs basic tasks such as controlling and allocating memory, prioritizing system requests, controlling input and output devices, facilitating networking, and managing files. It also may provide a graphical user interface for higher level functions. It forms a platform for other software”.

## Unix

### Meta-properties

UNIX is RIGID (+**R**). UNIX is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SL] A UNIX is an OPERATING SYSTEM.

### Comment

[DIV] Instances of the concept UNIX correspond to various versions of this OPERATING SYSTEM.

## Linux

### Meta-properties

LINUX is RIGID (+**R**). LINUX is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SL] a LINUX is a UNIX.

### Comment

[DIV] Instances of the concept LINUX correspond to various versions of this OPERATING SYSTEM.

## Windows

### Meta-properties

WINDOWS is RIGID (+**R**). WINDOWS is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SL] a WINDOWS is an OPERATING SYSTEM.

### Comment

[DIV] Instances of the concept WINDOWS correspond to various versions of this OPERATING SYSTEM.

## **Middleware**

### **Meta-properties**

MIDDLEWARE is RIGID (+**R**). MIDDLEWARE is EXTERNALLY-DEPENDENT (+**D**).

### **Properties**

[EP/SLD] MIDDLEWARE is SOFTWARE.

### **Comment**

[CIT] Article « Middleware » of Wikipedia: “Middleware is computer software that connects software components or applications”.

## **Grid middleware**

### **Meta-properties**

GRID MIDDLEWARE is RIGID (+**R**). GRID MIDDLEWARE is EXTERNALLY-DEPENDENT (+**D**).

### **Properties**

[EP/SL] a GRID MIDDLEWARE is a MIDDLEWARE.

### **Comment**

[CIT] Article “Grid Middleware” of gridipedia.eu: “Grid middleware can be seen as Operating System of the virtual Super Computer that in reality consists of many independent nodes on different sites, but appears to the user as one computational unit”.

## **Computing grid middleware**

### **Meta-properties**

COMPUTING GRID MIDDLEWARE is RIGID (+**R**). COMPUTING GRID MIDDLEWARE is EXTERNALLY-DEPENDENT (+**D**).

### **Properties**

[EP/SL] a COMPUTING GRID MIDDLEWARE is a GRID MIDDLEWARE which *allows to carry out* RUNNING A PROGRAM or RUNNING A SOFTWARE.

## **Storage Grid middleware**

### **Meta-properties**

STORAGE GRID MIDDLEWARE is RIGID (+**R**). STORAGE GRID MIDDLEWARE is EXTERNALLY-DEPENDENT (+**D**).

### **Properties**

[EP/SL] a STORAGE GRID MIDDLEWARE is a GRID MIDDLEWARE which *allows to carry out* STORING DATA.

## **GLite**

### **Meta-properties**

GLITE is RIGID (+**R**). GLITE is EXTERNALLY-DEPENDENT (+**D**).

### **Properties**

[EP/SL] a GLITE is a COMPUTING GRID MIDDLEWARE and a STORAGE GRID MIDDLEWARE.

### **Comment**

[DIV] Instances of the concept GLITE correspond to various versions of this software.

## Globus Toolkit

### Meta-properties

GLOBUS TOOLKIT is RIGID (+**R**). GLOBUS TOOLKIT is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SL] a GLOBUS TOOLKIT is a COMPUTING GRID MIDDLEWARE and a STORAGE GRID MIDDLEWARE.

### Comment

[DIV] Instances of the concept GLOBUS TOOLKIT correspond to various versions of this software.

## Compiler

### Meta-properties

COMPILER is RIGID (+**R**). COMPILER is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SLD] a COMPILER is SOFTWARE which *allows to carry out* COMPILING A PROGRAM.

## Interpreter

### Meta-properties

INTERPRETER is RIGID (+**R**). INTERPRETER is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SLD] an INTERPRETER is SOFTWARE which *allows to carry out* INTERPRETING A PROGRAM.

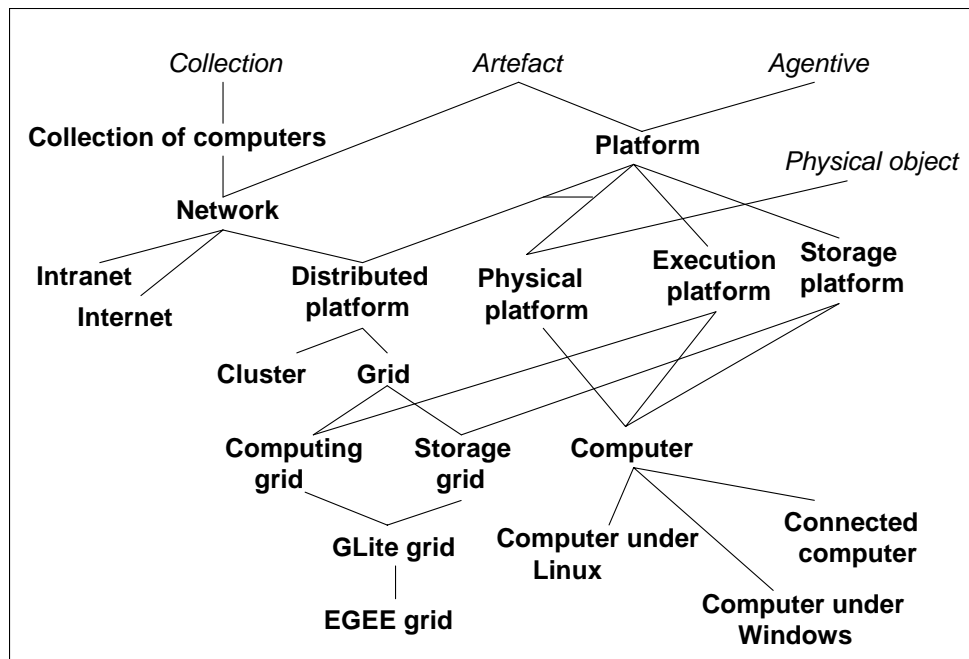
## Virtual machine

### Meta-properties

VIRTUAL MACHINE is RIGID (+**R**). VIRTUAL MACHINE is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SLD] a VIRTUAL MACHINE is SOFTWARE which *allows to carry out* EXECUTING A PROGRAM.



Platform, Computing platform

#### Meta-properties

PLATFORM is RIGID (+**R**). PLATFORM is EXTERNALLY-DEPENDENT (+**D**).

#### Properties

[EP/SLD] A PLATFORM is an ARTEFACT which *allows to carry out* DATA PROCESSING and an AGENTIVE which *is capable to perform* DATA PROCESSING.

Execution Platform

#### Meta-properties

EXECUTION PLATFORM is RIGID (+**R**). EXECUTION PLATFORM is EXTERNALLY-DEPENDENT (+**D**).

#### Properties

[EP/SLD] An EXECUTION PLATFORM is a PLATFORM which *is capable to perform* RUNNING A PROGRAM or RUNNING A SOFTWARE.

Storage Platform

#### Meta-properties

STORAGE PLATFORM is RIGID (+**R**). STORAGE PLATFORM is EXTERNALLY-DEPENDENT (+**D**).

#### Properties

[EP/SLD] A STORAGE PLATFORM is a PLATFORM which *is capable to perform* DATA STORING.

Physical platform

#### Meta-properties

PHYSICAL PLATFORM is RIGID (+**R**). PHYSICAL PLATFORM is EXTERNALLY-DEPENDENT (+**D**).

#### Properties

[EP/SLD] A PHYSICAL PLATFORM is a PLATFORM and a PHYSICAL OBJECT.

[EP/ICL] No PHYSICAL PLATFORM is a DISTRIBUTED PLATFORM.

## Computer

### Meta-properties

COMPUTER is RIGID (+**R**). COMPUTER is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SL] A COMPUTER is a PHYSICAL PLATFORM. [EP/ER] Every COMPUTER is an EXECUTION PLATFORM. [EP/ER] Every COMPUTER is a STORAGE PLATFORM which *is capable to perform* STORING PROGRAMS.

### Comment

[CIT] Article “Computer” of Wikipedia: “A computer is a machine that manipulates data according to a list of instructions... The defining feature of modern computers which distinguishes them from all other machines is that they can be programmed. That is to say that a list of instructions (the program) can be given to the computer and it will store them and carry them out at some time in the future”.

## Computer under Linux

### Meta-properties

COMPUTER UNDER LINUX is RIGID (+**R**). COMPUTER UNDER LINUX is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SLD] A COMPUTER UNDER LINUX is a COMPUTER on which a LINUX is *installed at* a TIME INTERVAL.

## Computer under Windows

### Meta-properties

COMPUTER UNDER WINDOWS is RIGID (+**R**). COMPUTER UNDER WINDOWS is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SLD] A COMPUTER UNDER WINDOWS is a COMPUTER *on* which a WINDOWS is *installed at* a TIME INTERVAL.

## Connected computer, Networked computer

### Meta-properties

CONNECTED COMPUTER is ANTI-RIGID (~**R**). CONNECTED COMPUTER is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SLD] A CONNECTED COMPUTER is a COMPUTER which *is connected to* a NETWORK *during* a TIME INTERVAL.

## Collection of computers

### Meta-properties

COLLECTION OF COMPUTERS is RIGID (+**R**). COLLECTION OF COMPUTERS is EXTERNALLY-DEPENDENT (+**D**).

### Properties

[EP/SLD] A COLLECTION OF COMPUTERS is a COLLECTION which *has for member* at least two COMPUTERS.

## Network, Computer network

### **Meta-properties**

NETWORK is RIGID (+**R**). NETWORK is EXTERNALLY-DEPENDENT (+**D**).

### **Properties**

[EP/SL] A NETWORK, or COMPUTER NETWORK, is a COLLECTION OF COMPUTERS. [EP/ER] Every NETWORK is an ARTEFACT which *allows to carry out* EXCHANGING DATA.

### **Comment**

[DEF] A NETWORK *allows* COMPUTERS that are interconnected *to carrying out* EXCHANGING DATA between each other.

[CIT] Article “computer network” of Wikipedia: “A computer network is a collection of computers and devices connected to each other. The network allows computers to communicate with each other and share resources and information”.

## **Internet**

### **Meta-properties**

INTERNET is RIGID (+**R**). INTERNET is EXTERNALLY-DEPENDENT (+**D**).

### **Properties**

[EP/SL] An INTERNET is a NETWORK.

### **Comment**

[CIT] Article “Internet” of Wikipedia: “The Internet is a global network of interconnected computers, enabling users to share information along multiple channels. Typically, a computer that connects to the Internet can access information from a vast array of available servers and other computers by moving information from them to the computer's local memory. The same connection allows that computer to send information to servers on the network; that information is in turn accessed and potentially modified by a variety of other interconnected computers.”

## **Intranet**

### **Meta-properties**

INTRANET is RIGID (+**R**). INTRANET is EXTERNALLY-DEPENDENT (+**D**).

### **Properties**

[EP/SL] An INTRANET is a NETWORK.

### **Comment**

[CIT] Article “Intranet” of Wikipedia: “An intranet is a private computer network that uses Internet technologies to securely share any part of an organization's information or operational systems with its employees.”

## **Distributed Platform**

### **Meta-properties**

DISTRIBUTED PLATFORM is RIGID (+**R**). DISTRIBUTED PLATFORM is EXTERNALLY-DEPENDENT (+**D**).

### **Properties**

[EP/SL] A DISTRIBUTED PLATFORM is a PLATFORM and a NETWORK. [EP/ICL] No DISTRIBUTED PLATFORM is a COMPUTER.

## **Cluster**

### **Meta-properties**

CLUSTER is RIGID (+**R**). CLUSTER is EXTERNALLY-DEPENDENT (+**D**).

### **Properties**

[EP/SL] A CLUSTER is a DISTRIBUTED PLATFORM.

**Comment**

[CIT] Article “Cluster” of Wikipedia: “A computer cluster is a group of linked computers, working together closely so that in many respects they form a single computer”.

**Grid, Computational grid****Meta-properties**

GRID is RIGID (+**R**). GRID is EXTERNALLY-DEPENDENT (+**D**).

**Properties**

[EP/SL] A GRID, or COMPUTATIONAL GRID, is a DISTRIBUTED PLATFORM.

**Computing grid****Meta-properties**

COMPUTING GRID is RIGID (+**R**). COMPUTING GRID is EXTERNALLY-DEPENDENT (+**D**).

**Properties**

[EP/SLD] A COMPUTING GRID is a GRID and an EXECUTION PLATFORM.

**Storage grid****Meta-properties**

STORAGE GRID is RIGID (+**R**). STORAGE GRID is EXTERNALLY-DEPENDENT (+**D**).

**Properties**

[EP/SLD] A STORAGE GRID is a GRID and a STORAGE PLATFORM.

**GLite grid****Meta-properties**

GLITE GRID is RIGID (+**R**). GLITE GRID is EXTERNALLY-DEPENDENT (+**D**).

**Properties**

[EP/SL] A GLITE GRID is a COMPUTING GRID and a STORAGE GRID.

**EGEE Grid****Meta-properties**

EGEE GRID is RIGID (+**R**). EGEE GRID is EXTERNALLY-DEPENDENT (+**D**).

**Properties**

[EP/SL] An EGEE GRID is a GLITE GRID.