

Middleware Property	UNICORE	Globus	Legion	Gridbus
Focus	High level Programming models	Low level services	High level Programming models	Abstractions and market models
Category	Mainly uniform job submission and monitoring	Generic computational	Generic computational	Generic computational
Architecture	Vertical multi tiered system	Layered and modular toolkit	Vertically integrated system	Layered component and utility model
Implementation Model	Abstract Job Object	Hourglass model at system level	Object-oriented metasystem	Hourglass model at user level
Implementation Technologies	Java	C and Java	C++	C, Java, C# and Perl
Runtime Platform	Unix	Unix	Unix	Unix and Windows with .NET (Alchemi)
Programming Environment	Workflow environment	Replacement libraries for Unix & C libraries. Special MPI library (MPICH –G), CoG (Commodity Grid) kits in Java, Python, CORBA, Matlab, Java Server Pages, Perl and Web Services	Legion Application Programming Interfaces (API). Command line utilities	Broker Java API XML-based parameter-sweep language Grid Thread model via Alchemi.
Distribution Model	Open source	Open source	Not open source. Commercial version available	Open source
Some Users and Applications	EuroGrid [18], Grid Interoperability Project (GRIP) [20], OpenMolGrid [19], and Japanese NAREGI [22].	AppLeS [28], Ninf [30], Nimrod-G [29], NASA IPG [36], Condor-G [31], Gridbus Broker [32], UK eScience Project [33], GriPhyN [35], and EU Data Grid [34].	NPACI Testbed [42], Nimrod-L [41], and NCBioGrid [40]. Additionally, it has been used in the study of axially symmetric steady flow [39] and protein folding [38] applications.	ePhysics Portal [52], Belle Analysis Data Grid[50], NeuroGrid [48], Natural Language Engineering [53], HydroGrid [46], and Amsterdam Private Grid [47].