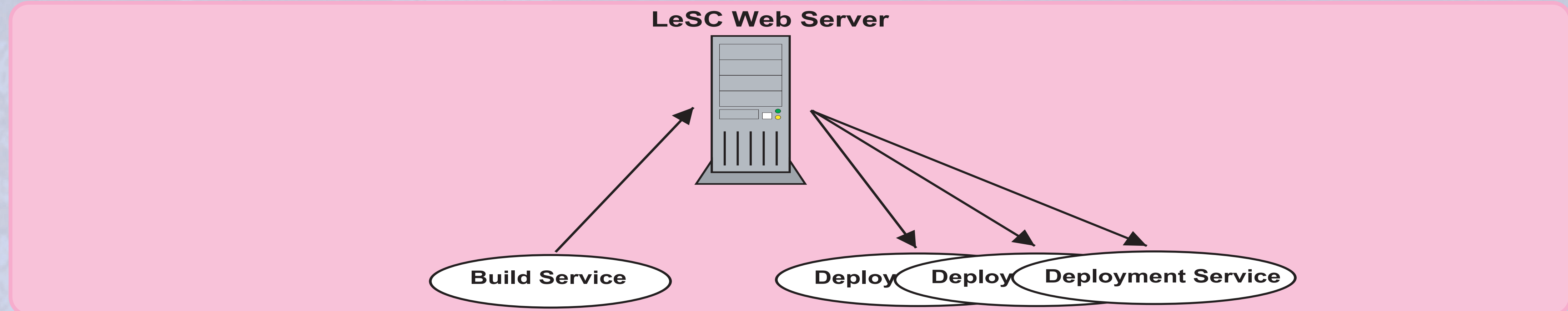


## Test and Deployment of ICENI, An Integrated Grid Middleware on the UK e-Science Grid



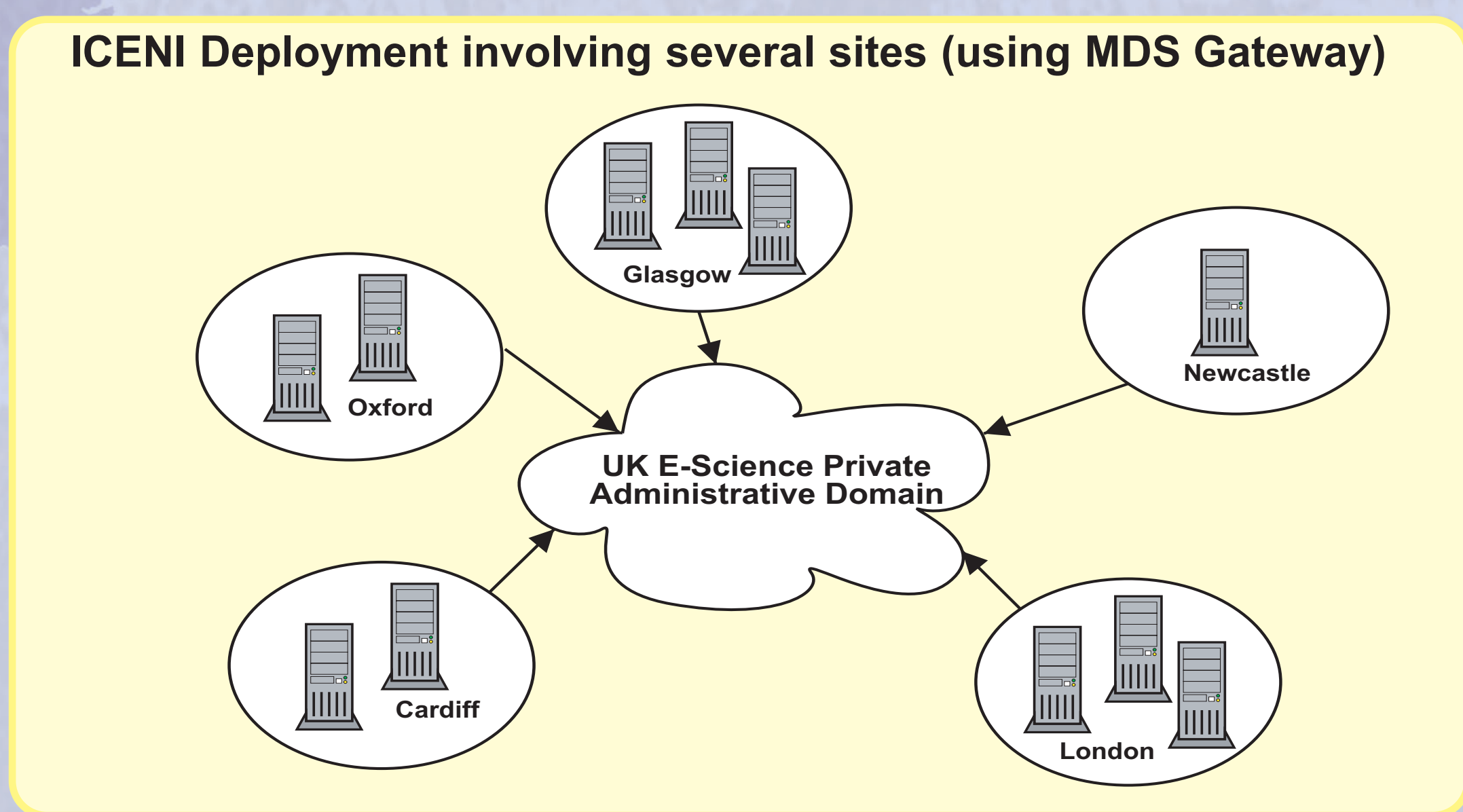
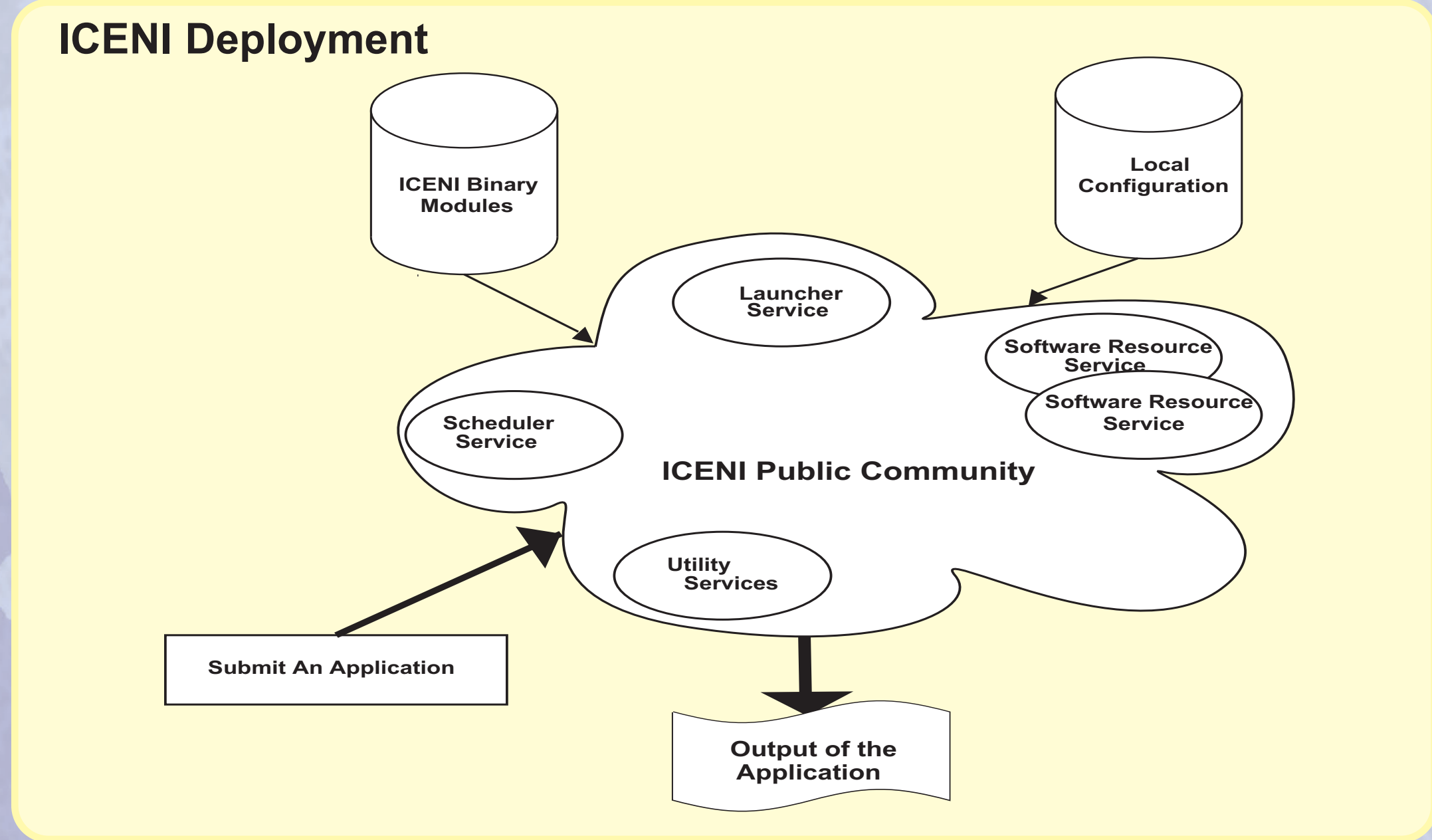
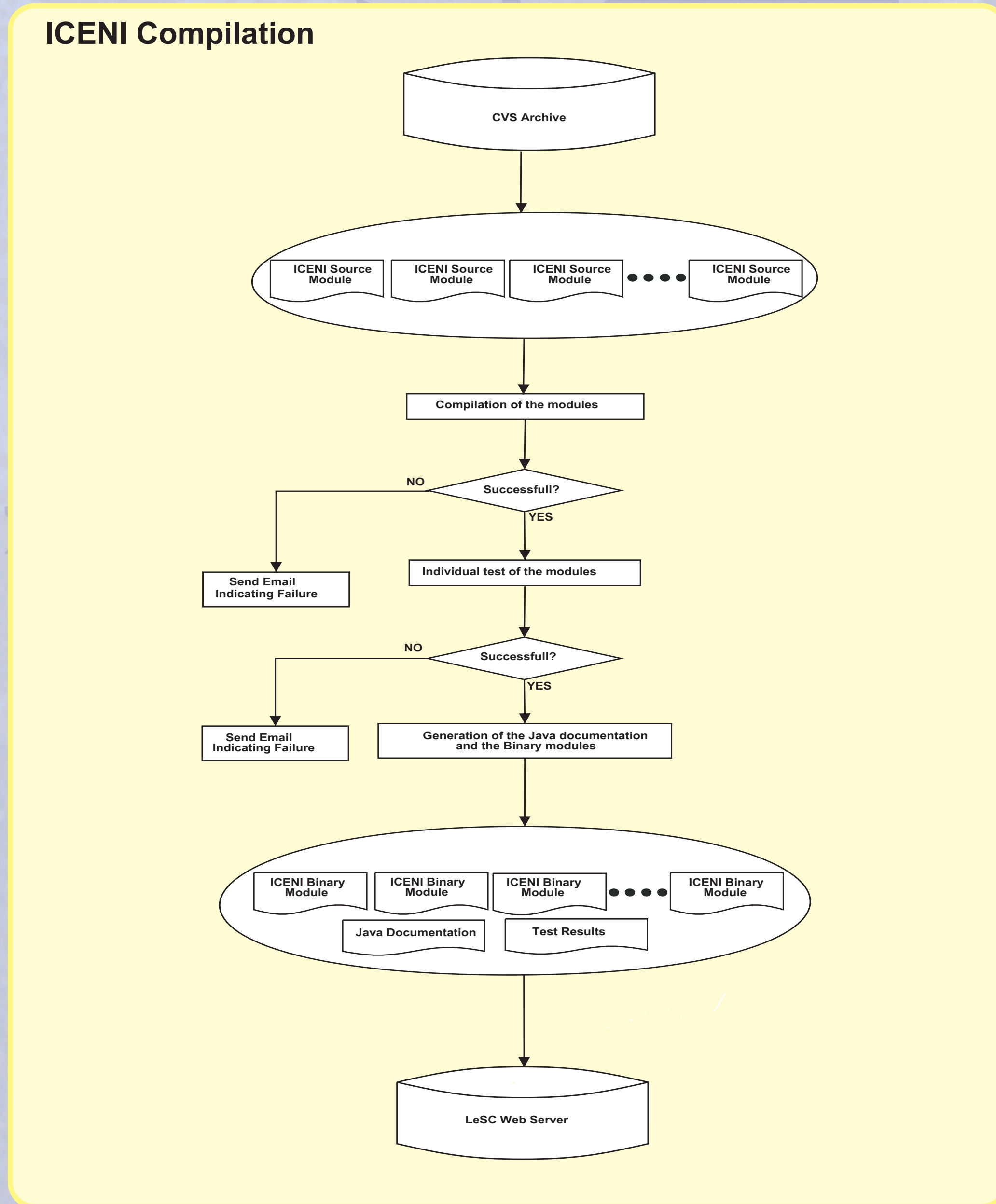
Authors: Nathalie Furmento, William Lee, Steven Newhouse, and John Darlington

We present a test and deployment infrastructure that has been developed to validate the ICENI Grid Middleware. Services have been developed to monitor the different steps in the life of the middleware from its compilation to its execution. We will show how these services can be composed to provide a full validation of the architecture and the functionalities of ICENI. We also present a MDS to ICENI Gateway used to register machines currently available in the MDS Server as ICENI launcher services.



The figure below shows the execution of the build service where the ICENI source modules are compiled and individually tested. Successful compilation will result in the upload of the Binary modules as well as the API documentation on the LeSC Web server.

The figures below show the execution of deployment services where the ICENI binary modules are downloaded on a specific box. Giving a local configuration, ICENI services will get instantiated and evaluated for their expected functionality.



### Nightly builds

Hostname	Arch & OS	Date	Build result	Tests		
				Run	Failures	Errors
rhea.lesc.doc.ic.ac.uk	SunOS 5.8	2003-08-21 --- 02:00	Build Successful	29	0	0
rhea.lesc.doc.ic.ac.uk	SunOS 5.8	2003-08-20 --- 02:00	Build Successful	29	0	0
LeSCDemo2.doc.ic.ac.uk	WindowsNT 1	2003-08-20 --- 00:01	Build Successful	29	0	0
rhea.lesc.doc.ic.ac.uk	SunOS 5.8	2003-08-19 --- 02:00	Build Successful	29	0	0
LeSCDemo2.doc.ic.ac.uk	WindowsNT 1	2003-08-19 --- 00:01	Build Successful	29	0	0

### Nightly deployments

Hostname	Arch & OS	Date	Release	Name	Result
bouscat.cs.cf.ac.uk	Linux 2.4.2-2smp	2003-08-21 --- 08:00	-	Hello World	Pass
dirac.chem.ucl.ac.uk	IRIX64 6.5	2003-08-21 --- 06:45	-	Hello World	Fail, No output file
rhea.lesc.doc.ic.ac.uk	SunOS 5.8	2003-08-21 --- 05:29	-	Hello World	Pass
dirac.chem.ucl.ac.uk	IRIX64 6.5	2003-08-20 --- 06:45	-	Hello World	Fail, No output file
rhea.lesc.doc.ic.ac.uk	SunOS 5.8	2003-08-20 --- 05:29	-	Hello World	Pass

Testing and validating the behaviour of a distributed service oriented architecture presents many challenges. The build, test & deployment cycle within the ICENI nightly process represents an initial exploration of these issues. Such an infrastructure is essential in building the resilient, robust and reliable S.O.A needed to support the UK e-Science Grid.

London e-Science Centre