



# NGS

National Grid Service

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# The NGS Software Stack

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# What is the software stack?

- Describes the different components that a resource provider can use to install a service to satisfy membership conditions for the NGS
- Modular to allow flexibility therefore not limiting sites to just providing computational resources

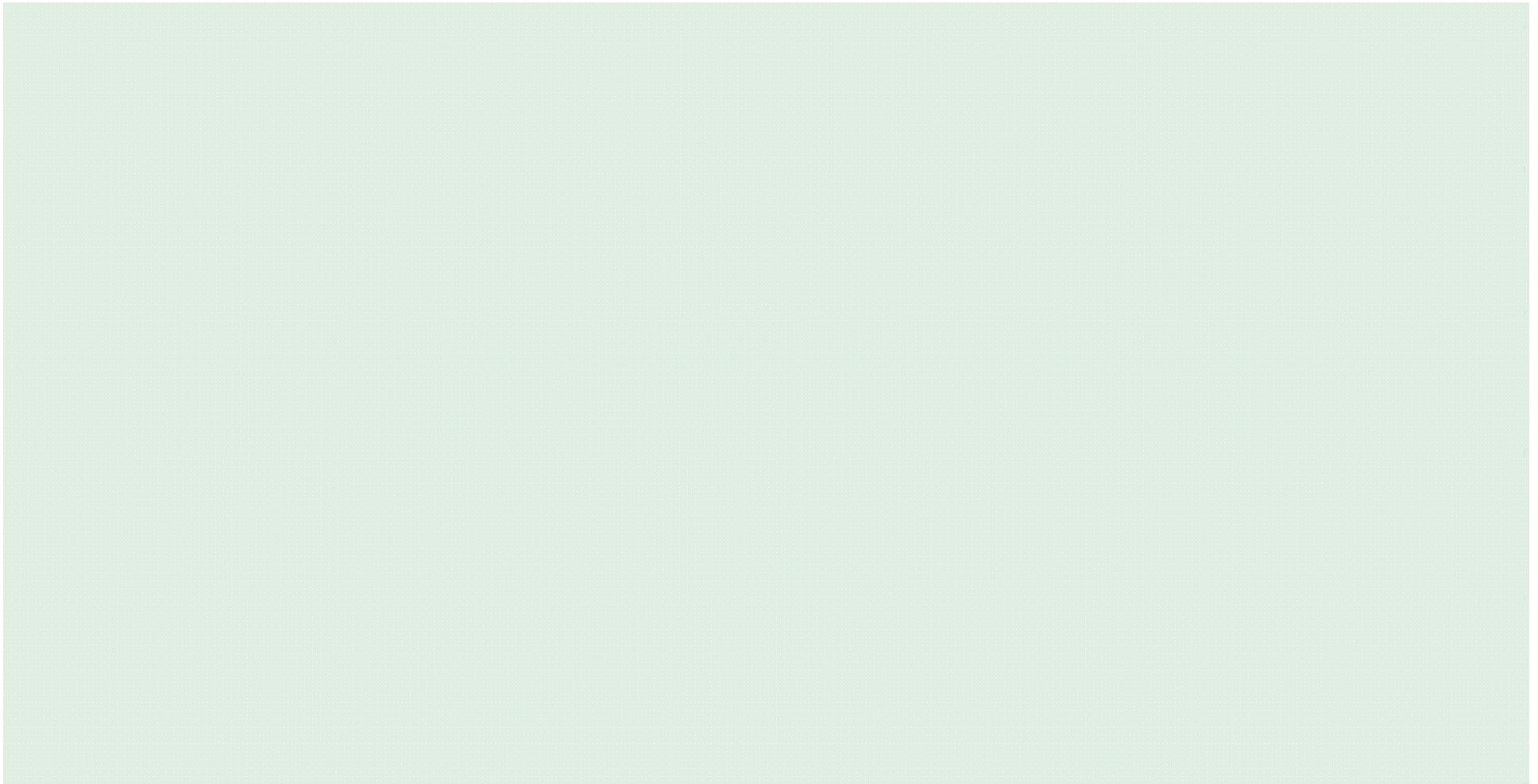


# Functional Modules

- M0: Foundation, the fundamental base on which the rest of the service that a site is offering will be based.
- M1: Service, these types of service provide the interface to low-level functionality such as computational submission, data transport etc.
- M2: Application, services are those that enable access to higher-level functionality of the grid.
- M3: Pioneer. Services from resources that can be classified as significantly different that the rest of the NGS.

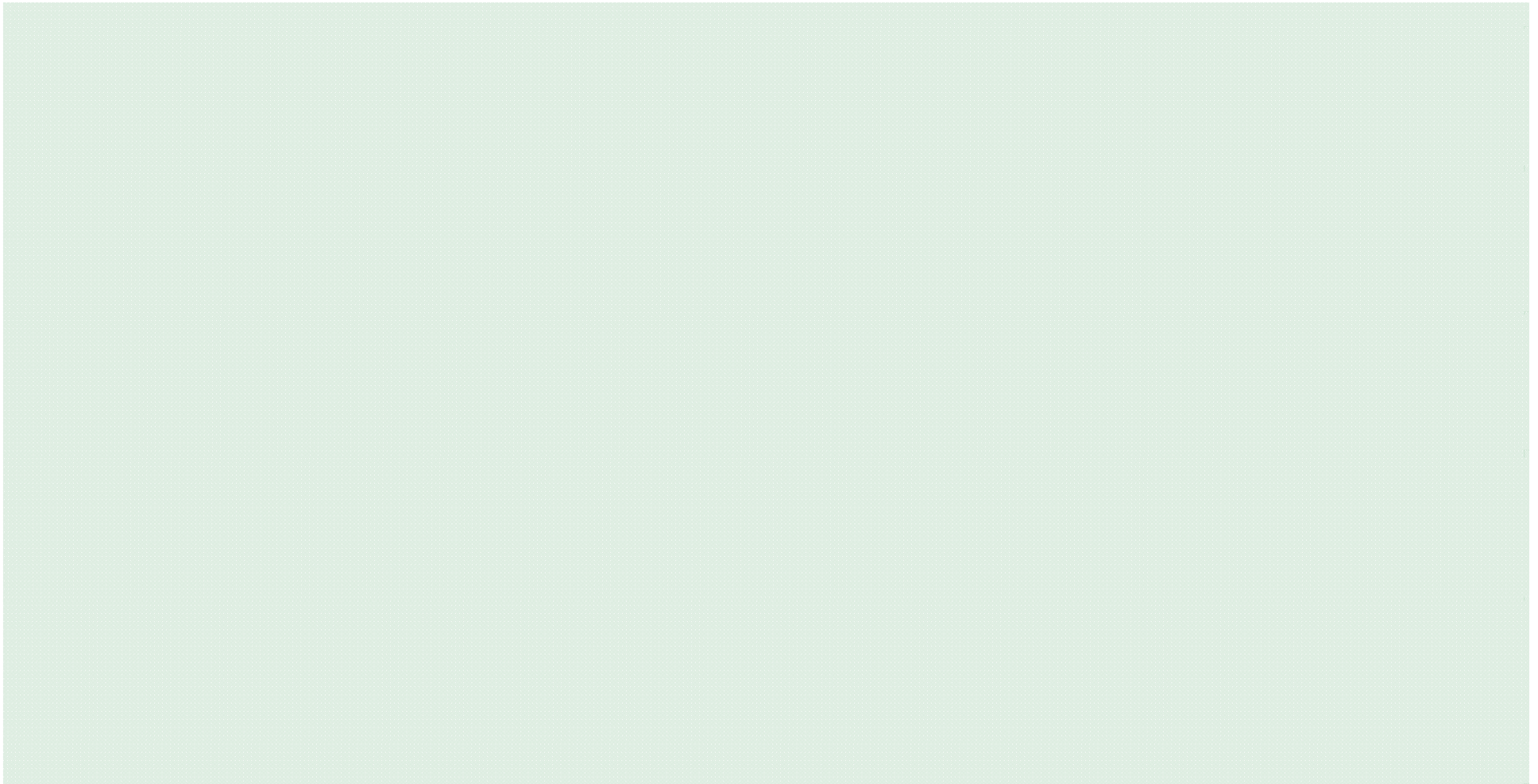


# Software Components





# Software Components





# Software Stack Profiles

- S0: Must include suitable M0 service instance for each functional group
- S1: S0 + n M1 services
- S2: S0 + M2 service
- S3: S1 + M2 service
- S\*: M3 service
- S\*\*: Experimental service aligned with the NGS mission

# Example

- **An NGS core node:**
  - M0: User Authentication and Authorisation: x509 (VDT)
  - M0: Information System: GLUE (VDT)
  - M1: Compute resource Service: Pre-WS GRAM (VDT)
  - M1: Data Transfer Tools: GridFTP (VDT)
  - M1: Storage Management, Database Hosting & User Data access Services: Clients (SRB, SRM, OGSA-DAI)
  - M1: User Application and Compilation: C, C++ & Fortran Compilers (Intel, Portland),
  - M2: User Interface Service: GSISSH (VDT)
- ***In this case the node is an S3 service.***

# Example

- **GridPP node:**
  - M0: User Authentication and Authorisation: x509 (gLite)
  - M0: Information System: GLUE (gLite)
  - M1: Compute resource Services: Pre-WS GRAM (gLite)
  - M1: Data Transfer Tools: GridFTP (gLite)
  - M1: Storage Management, Database Hosting & User Data access Services: Clients (SRM)
- ***In this case the site is an S1 service.***





# Example

- **Belfast Partner Node:**
  - M0: User Authentication and Authorisation (OMII-UK)
  - M0: Information System: WS-Registry (OMII-UK)
  - M1: Compute Resource Services: GridSAM (OMII-UK)
  - M3: Hosting: WS-Hosting
- ***In this case the site is an S1\* service.***



# Conclusion

- The functional modules are a breakdown of how a site may provide a service
- The software stack profiles give an indication of the different configurations which we consider produce a site which provides a significant service as required within our membership guidelines