From Clusters to the Fabric: The Job Management Perspective
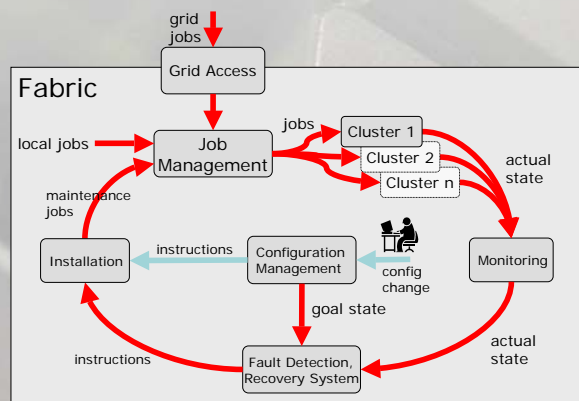
T. Röblitz, F. Schintke, A. Reinefeld, Zuse Institute Berlin, Germany
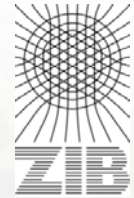
Integrating large heterogeneous clusters into the Grid requires

• support for automated maintenance,
• consistent job management, *and*
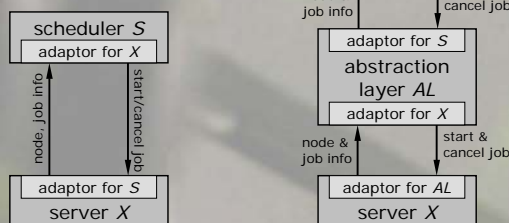• support for advanced scheduling strategies.

Automated maintenance cycle

Developed within EDG "WP4 – Fabric Management".
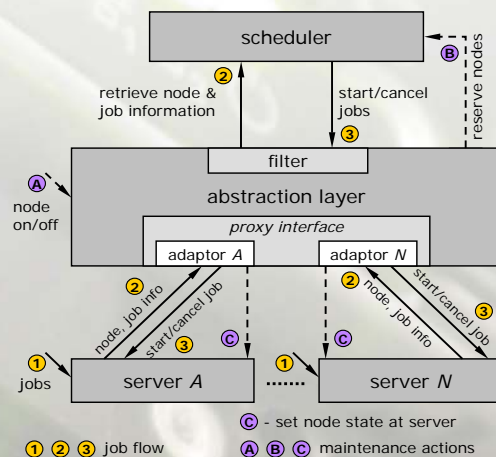
Resource Management Virtualization

N resource mgmt. systems, *M* schedulers

N x *M* adaptations
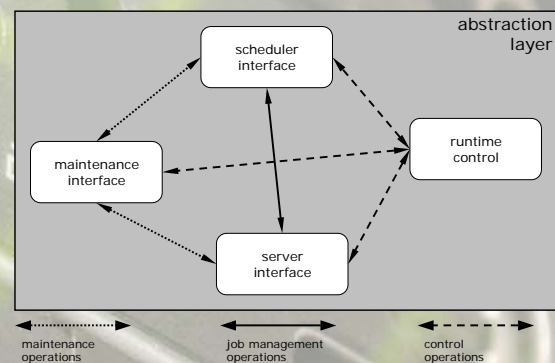+ efficient
- adaptation effort
- non-flexible (specific)

N + *M* adaptations
- less efficient
+ adaptation effort
+ flexible, info. filtering

Architecture and Control Flow

① ② ③ job flow   Ⓐ Ⓑ Ⓒ maintenance actions

Ⓒ - set node state at server

Implementation and Performance

Components of the abstraction layer

Performance measurements

Scenario	getNodes		getJobs		startJob	
	Maui	AL	Maui	AL	Maui	AL
Maui ↔ PBS	121	-	180	-	71	-
Maui ↔ AL ↔ PBS script	46	44	318	309	110	109
Maui ↔ AL ↔ PBS lib	13	11	236	227	67	66