DEEP PROJECTS

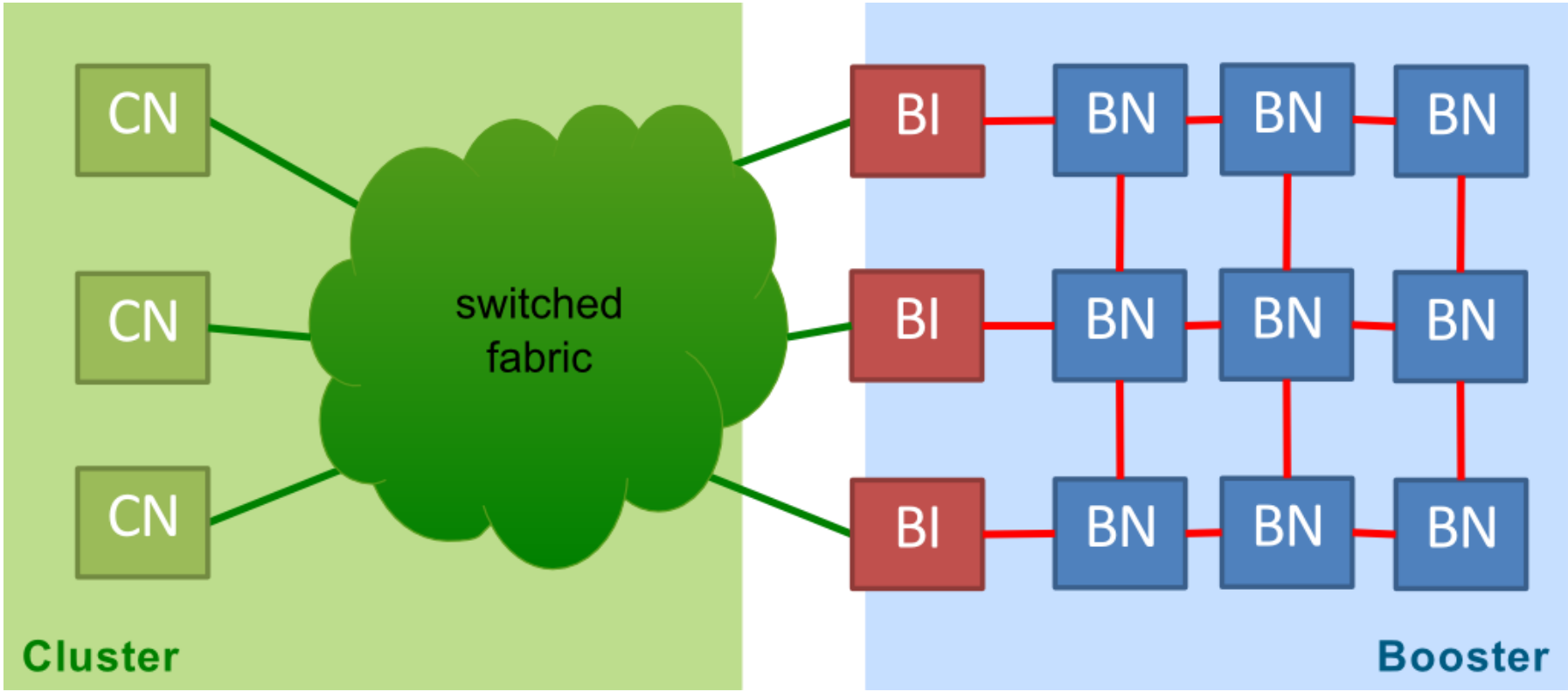
ESD ROUNDTABLE AT EUROPEAN HPC SUMMIT WEEK 2017

		(current) Maturity
Highlights	• Modular Supercomputer **Architecture**	+++
	• Innovative **memory technologies** (NVM, NAM, GCE)	++
	• Orchestration and **dynamic scheduling** of heterogeneous resources (SLURM-based)	+
	• Efficient **bridging network technologies**	++
	• **Software stack** and programming environment **for heterogeneous systems** fitting HPC and HPDA codes	++(+)
	• Scalable and efficient **I/O and resiliency techniques** exploiting multi-level memory hierarchy	+++
	• **Co-design methodology** successfully applied at all system levels	+++

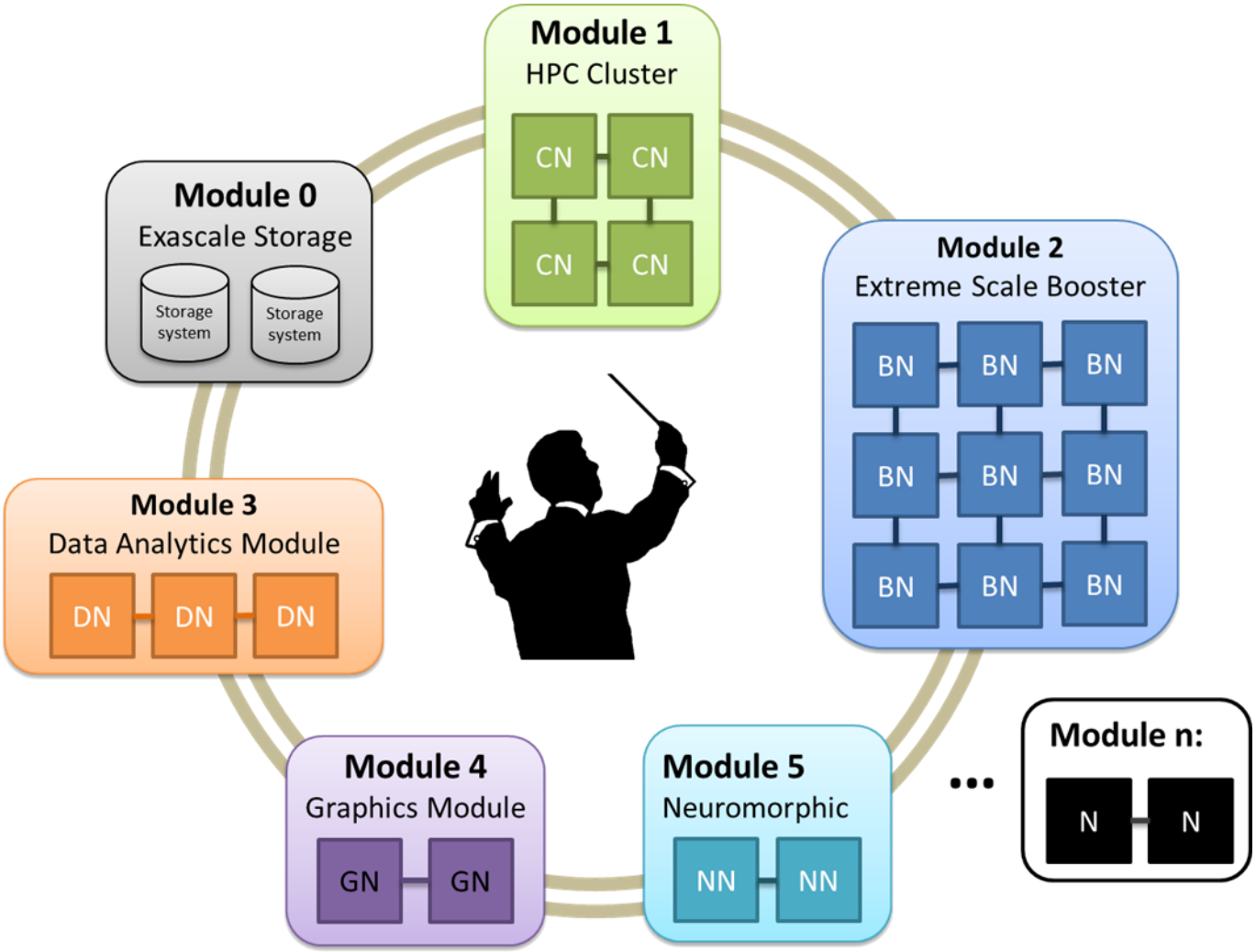
EsD

- Architecture efficiently integrates multiple technologies fitting application needs (e.g. neuromorphic devices, low-power process. units, etc.)
- Management and SW-infrastructure to efficiently orchestrate and use these resources

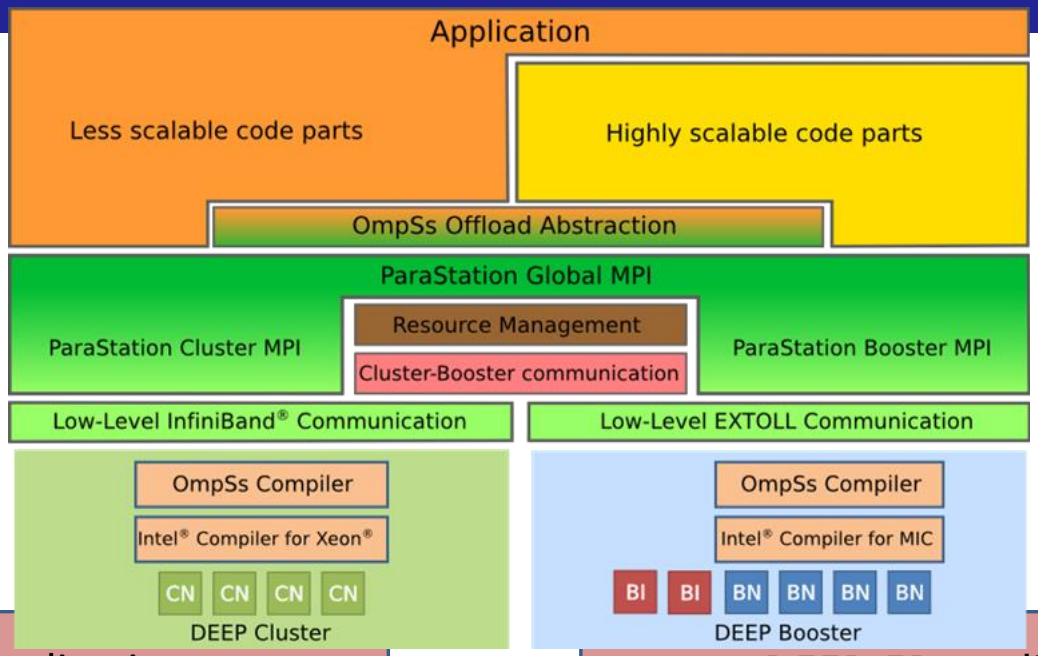
Cluster-Booster Architecture



Modular Supercomputing



Software Stack



I/O stack

Resiliency

DEEP-ER applications

SIONlib

E10

DEEP-ER extensions to BeeGFS

File system BeeGFS

Disks

NAM

DEEP-ER applications

User-level Checkpoint/Restart

Task-based resiliency with OmpSs

Resiliency Abstraction Layer

BeeGFS

NAM

On node NVM

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FETHPC project presentations should help to understand:

One page teaser format:

- Highlights of your project (5-8 lines)
- What are anticipated technology (hw/sw/methodology) suggested for inclusion in an EsD project and describe the current maturity?
- How should this technology be used / integrated (I/F, APIs)
- Are there any pre- or co-requisite items
- Any extra work/interaction (on top of current project roadmap) needed to make them ready?
- What information / actions are needed to best prepare for EsD projects?