

# Request for Expressions of Interest in a DPM Collaboration

## Context

The end of the EMI project represents a shift in the funding landscape for middleware, and in particular for DPM, a project heavily reliant on this source of support. At the same time there has never been more data in DPMs around the world and the project itself has never been in better shape. It has recently benefited from significant investment during the EMI project, in core performance and standard interfaces. Moreover, changes in data management philosophy, in particular the decoupling of tape and disk, represent new possibilities for deployment at larger sites. In light of this situation, the current maintainers of the project at CERN are requesting expressions of interest in the formation of a collaboration whose aim is to drive the DPM project forward after the end of the EMI project.

## DPM Today

DPM is today deployed at over 200 sites and manages over 34PB of data with single installations often exceeding 1PB. It has recently benefited from an internal refactoring which makes progress on new developments significantly quicker and promotes targeted modular development which does not require knowledge of the entire system. By the end of EMI it will boast an enhanced feature set including new standard interfaces (HTTP/WebDAV & NFSv4.1), federation technology, new backends (HDFS and S3 are being prototyped), Nagios probes, a rich functional and performance test suite and a memcache plugin for a fast in-memory namespace. The list goes on, consult the references for more details.

## Type of Collaboration

The precise mechanism for establishing the collaboration is currently undefined and will depend on the wishes of those involved. It should nevertheless allow the following

- Pledging of effort on which other members of the collaboration can depend via an MOU.
  - All types of contribution could be contemplated; testing, tools, support, development.
- Influence on the project's direction proportional to effort provided
- Periodic collaboration board meetings to determine direction, possibly co-hosted with DPM workshops.
- Membership of various types of entity: sites, projects, NGIs...

## Tasks and Effort

The level of effort DPM enjoys at the time of writing will not be necessary after EMI as large subprojects (e.g. new interfaces) will naturally move from development into maintenance. The

following is a highly approximate estimate of what various effort levels will buy for DPM, the reality will depend on the partition of effort, the experience of the people and the resources available.

No collaboration. CERN minimal contribution.	Minimal critical and security bugfixes while a transition is planned
2 FTE collaboration Minimum for a viable project	Maintain the DPM with current feature set, regular bugfixes, support for new platforms, user support, testing infrastructure, staged rollout, packaging & release.
2.5 FTE collaboration	Regular non-disruptive functional updates
Just add developers	Larger functional development program. Note this may be desirable in areas where requirements are not yet fixed, e.g. federation
Project based contributions	Work could be time-limited and project based, suitable for temporary contributions, eg implementation of a new backend

## Benefits

The benefits to members would be the following

- A sustainable vehicle for evolving the software on which they depend
  - Ensure continued support, updates and development
- Influence on future direction. Potentially very important for larger sites considering investment in DPM
- Protection of investment. Ensure that existing DPM installations remain well maintained and supported and able to evolve with the hardware and OS.
- Opportunity to seek external funding in the context of participation in an international project

## Contact

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## References

CHEP 2012 papers:

Overview : <https://cdsweb.cern.ch/record/1458022?ln=en>

HTTP/WebDAV : <https://cdsweb.cern.ch/record/1457962?ln=en>

Dynamic federations : <https://cdsweb.cern.ch/record/1460525?ln=en>