

# Related Works

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## 1 Closely Related Works

### 1.1 Evaluation of RDMA opportunities in an Object-Oriented DSM

entry paper[7]

### 1.2 Efficient Distributed Memory Management with RDMA and Caching

cache-line granularity[1]

## 2 Loosely Related but Evaluated

### 2.1 CoRM: Compactable Remote Memory over RDMA

page based I think (re-read this)[6]

### 2.2 FaRM: Fast Remote Memory

Just like LOCO as we know, but no caching so not really DSM[2]

### 2.3 MENPS: A Decentralized Distributed Shared Memory Exploiting RDMA

- Page based DSM
- Special Diff merging and page sharing
- Combine write notices and logical leases (what is that?)[3]

### 2.4 Scaling out NUMA-Aware Applications with RDMA-Based Distributed Shared Memory (MAGI)

Page-based DSM again[4]

### 2.5 GiantVM: A Novel Distributed Hypervisor for Resource Aggregation with DSM-aware Optimizations

Page-based DSM again but also works over TCP and RDMA[5]

### 2.6 Argo DSM

Page-based DSM again but directory coherence

## 3 Evaluated but not Related

### 3.1 Rcmp: Reconstructing RDMA-Based Memory Disaggregation via CXL

page based and uses CXL, not comparable[8]

## References

- [1] CAI, Q., GUO, W., ZHANG, H., AGRAWAL, D., CHEN, G., OOI, B. C., TAN, K.-L., TEO, Y. M., AND WANG, S. Efficient distributed memory management with rdma and caching. *Proc. VLDB Endow.* 11, 11 (July 2018), 1604–1617.
- [2] DRAGOJEVIĆ, A., NARAYANAN, D., HODSON, O., AND CASTRO, M. Farm: fast remote memory. In *Proceedings of the 11th USENIX Conference on*

*Networked Systems Design and Implementation* (USA, 2014), NSDI’14, USENIX Association, p. 401–414.

- [3] ENDO, W., SATO, S., AND TAURA, K. Menps: A decentralized distributed shared memory exploiting rdma. In *2020 IEEE/ACM Fourth Annual Workshop on Emerging Parallel and Distributed Runtime Systems and Middleware (IPDRM)* (2020), pp. 9–16.
- [4] HONG, Y., ZHENG, Y., YANG, F., ZANG, B.-Y., GUAN, H.-B., AND CHEN, H.-B. Scaling out numa-aware applications with rdma-based distributed shared memory. *Journal of Computer Science and Technology* 34 (01 2019), 94–112.
- [5] JIA, X., ZHANG, J., YU, B., QIAN, X., QI, Z., AND GUAN, H. Giantvm: A novel distributed hypervisor for resource aggregation with dsm-aware optimizations. *ACM Trans. Archit. Code Optim.* 19, 2 (Mar. 2022).
- [6] TARANOV, K., DI GIROLAMO, S., AND HOEFLE, T. Corm: Compactable remote memory over rdma. In *Proceedings of the 2021 International Conference on Management of Data* (New York, NY, USA, 2021), SIGMOD ’21, Association for Computing Machinery, p. 1811–1824.
- [7] VELDEMA, R., AND PHILIPPSSEN, M. Evaluation of rdma opportunities in an object-oriented dsm. pp. 217–231.
- [8] WANG, Z., GUO, Y., LU, K., WAN, J., WANG, D., YAO, T., AND WU, H. Rcmp: Reconstructing rdma-based memory disaggregation via cxl. *ACM Trans. Archit. Code Optim.* 21, 1 (Jan. 2024).