**MultiLibOS**: A **single-tenant, single-process** distributed OS composed of library OS instances that run across many heterogeneous nodes.

- MultiLibOS combines legacy OS compatibility with highly-optimized efficiency on hardware
- Asymmetric 'library' framework distributes single application across many heterogeneous nodes
- No need for traditional OS level functionality on majority of nodes

**EbbOS**: A MultiLibOS on which applications are constructed as Elastic Building Blocks. EbbOS combines **distributed system objects** and an **event driven programming** infrastructure.

- Software is constructed as a collection Ebb instances that are bound to Ebb identifiers (ID’s).
- Ebb instances may have a distributed implementation, with multiple "reps" local to different nodes and cores.
- Indirection is exploited to enable elastic behavior to be programmable.

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**Elastic building block (Ebb)** the core programming abstraction

**Classic Object-Like Interface**

Internals defined as represent objects that combine interface and data members

Methods can be invoked via function **call** or direct target of an **event** (see bottom)

Internals of object may be decomposed into a dynamic set of distributed representatives. Methods may operate across the set.

Every Ebb specifies behavior for lazy/dynamic creation on first access in a new location combining with event bind is key to elastic programming.

**EBBAlocId**: Allocates an id (initially bound to NULL/Ebb)  
**COBjEBBBind**: Binds an allocated id to instance

Call can trigger elastic/lazy behavior

Ebb Id and method can be bound directly to an Event

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![Diagram](image.png)