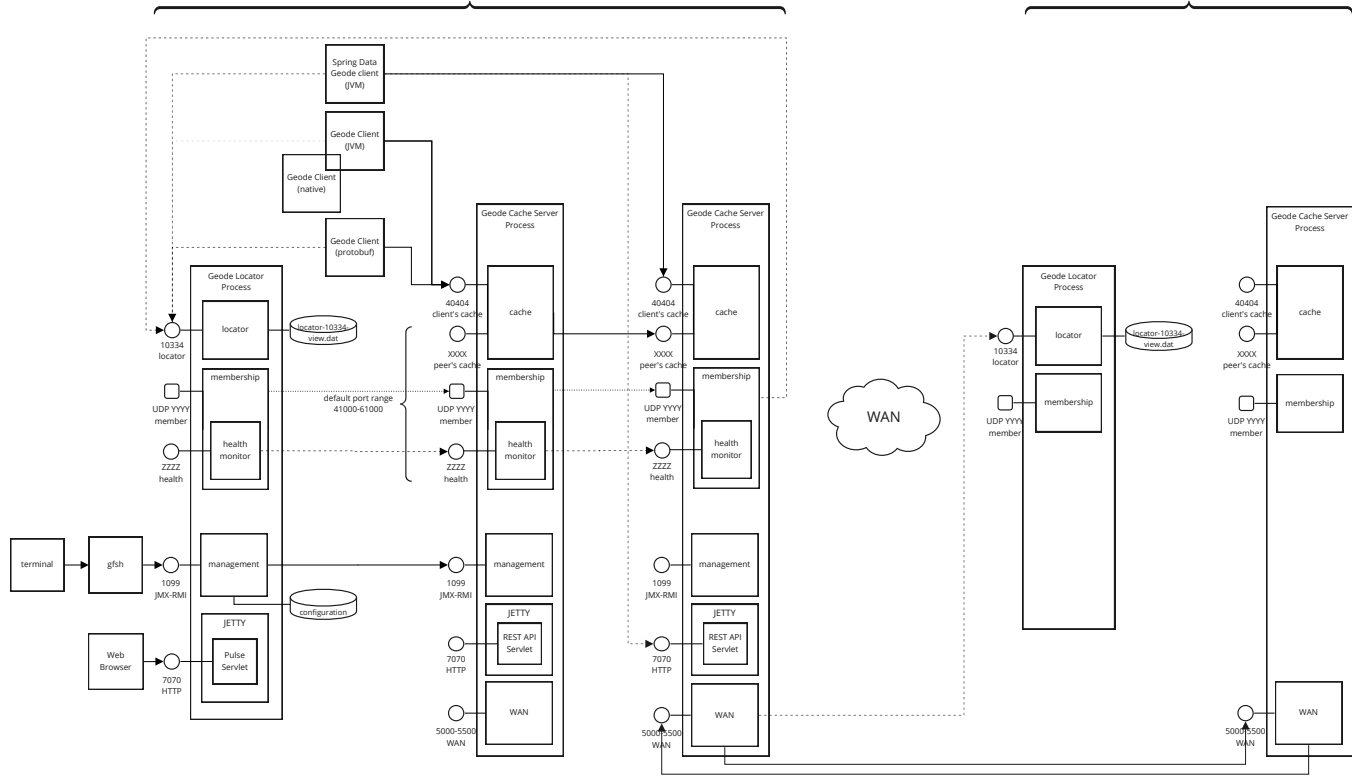


Site One

Site Two



Communication Modes

- async** one-way messaging
  - **UDP unicast** e.g. member interface
- request-response**
  - **ephemeral connection** single request-response per connection e.g. locator interface
  - **persistent connection** TCP full-duplex; pooling implemented e.g. client's cache interface, WAN interface
  - **HTTP 1.1** servlets: Pulse, REST API; persistent connections
- hybrid** usually one-way with request-response possible too
  - **P2P** e.g. peer's cache interface is usually TCP one-way but can optionally do request-response
- streaming**
  - CQ and "register interest" results flow from client's cache interface back to client on a dedicated (separate) connection

Serialization Formats

- Java Formats
- **DSFD** DataSerializableFixedID
    - used for member, and peer's cache interfaces
  - **Java Serializable**
    - for user-defined cache content
  - **Java, C++, and .Net** Formats
  - **DataSerializable**
    - used in geode-core for peer's cache interface and also for user-defined cache content
  - **PDX**
    - for user-defined cache content
- Language-Agnostic Formats
- **protobuf**
    - an alternate format supported by parts of the locator and client's cache interfaces

locator interface (request-response with ephemeral connection):

- "peer" locator interface as defined in **geode-membership** module:
  - find coordinator
  - get view
- locator interface defined in **geode-core** module:
  - locator list
  - client connection
  - queue connection
  - client replacement
  - get all servers
  - locator status
  - info
  - JMX manager locator
  - shared configuration status
- locator interface WAN Edition™ (as defined in **geode-wan** module):
  - remote locator join
  - locator join
  - remote locator ping
  - remote locator

member interface (async via UDP unicast):

- final check passed
- heartbeat
- heartbeat request
- install view
- join request
- join response
- leave request
- network partition
- remove member
- suspect members
- suspect request
- view ACK

health a.k.a. failure detection interface (request-response with ephemeral connection):

- caller requests with (serialization version, and expected view id, and UUID of recipient)
- receiver responds with OK = 0x7B or ERROR = 0x00

client's cache interface (request-response with persistent connection):

- PutOp
- GetOp
- 73 other Op implementations defined in `oag.cache.client.internal` and their corresponding Command implementations
- **streaming** CQ and "register interest" results flow to client on dedicated (separate) connection

peer's cache interface (hybrid P2P):

- PutMessage
- GetMessage
- 361 other Message implementations

WAN interface (request-response with persistent connection):

- GatewaySenderBatchOp / GatewayReceiverCommand
- PingOp (from client's cache operators)

Interface and Serialization Format Selection

- locator and client's cache interfaces support Geode message object or protobuf format based on magic number in request

Not Pictured

1. memcached-compatible interface (default port 11211)
2. redis-compatible interface (default port 6379)

author: Bill Burcham  
 bill.burcham@gmail.com  
 bburcham@vmware.com  
 last revision: 8/7/2020