Taking account of graph data structure concept in Jpql:

1. New Client-server data type Sqlx.INSTANCE so that this layer can ensure that entities are only sent once and network relationships are reconstructed in the client. The client layer does extra fetching from the server to populate entity-valued columns.
2. Sqlx.INSTANCE columns are sent back always in the form of references (i.e. POSITION)
3. Treat JpqlFroms not as some sort of join but as a simple From: get the Persistence machinery to do all the hard work.
4. Make new sorts of SqlEntity and SqlEntityField : SqlValue
5. On client side implement entitystate so that missing content can be synced later.
6. On client side implement IdClass.

If A.a2 references B, then there is a reference index on A containing all of the values of a2m indexed by the values, and the values are the record physposes.