

Market Requirements Document

Feature Name: User Friendly Error Messages

Version: 2 **Date:** 01/31/2005

Version: 1 Date: 01/26/2005

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Description of the Problem

Objectivity/DB runtime errors are very difficult to diagnose after the fact, especially in heavily loaded, concurrent applications. Specifically:

- Most of the current diagnostic mechanisms either show a historical statistical summary [ooRunstatus] or a static situation [oospace, oolockmon].
- Error messages are useful to Objectivity engineers but don't provide many clues to the application developer as to their probable cause.

Description of the Requested Feature

The requested feature will add advisory messages at the API level to make it easier to interpret the most probable cause of a sequence of error messages.

If the kernel currently generates an error message it is not always easy to decode exactly what was happening at the time. For example, suppose that the user is deleting an object and that this implicitly causes the kernel to open another database and container to remove a reverse link from an associated object. It may be impossible to obtain the update lock on the remote container. The application receives an exception from the delete() call but it may not be obvious why. The current error message simply says "Error deleting object #12-34-56-7", or something similar, even though the real error occurred trying to obtain access to a completely different object. A more user-friendly message is required, e.g. "Error: Object #12-34-56-7 could not be deleted because container #15-2-0-0 is locked for update, making it impossible to remove a bi-directional association from object #15-2-25-1".

Part of an existing feature or does it require another feature, if so, which one?

- Enhancement to the exception handling feature.

How is this problem being solved now, and why isn't that acceptable?

Application developers often have to add their own diagnostic facilities, or request assistance from Objectivity System Engineers or Customer Support staff. Difficult problems often require the attention of Engineering developers. Some problems have been impossible to reproduce within Objectivity's engineering environment. There is no documentation of error messages in our user manuals.

The lack of adequate diagnosis capabilities decreases customer satisfaction, increases our overheads and adversely affects Engineering schedules.

What languages must support this capability?

All APIs, as the capabilities are all to be provided by the kernel.

Which platforms must be supported?

All platforms.

Do any competitors already have this feature?

Oracle, DB2, ObjectStore and (inherently) all Open Source products.

Customers who require this feature

All.

Revenue at risk, or which could be won

Diagnosing errors accounts for a large proportion of most development efforts and is a prime source of customer dissatisfaction with deployed products. Every serious problem in a deployed application increases the risk of losing a customer. Evaluators will be more likely to choose a product that has good development and deployment tools.

When is this required?

- This requirement may be satisfied by incremental improvements to the error reporting, starting with documentation of frequently encountered errors on the Customer Support web site by Release 10.

Additional Notes

1. We will also need:

- Marketing collateral
- Sales training material
- New training material
- New Quality Assurance material.

2. This feature may require keeping the error numbers in a stack and then providing hints based on the order in which they occur; or it may require that the error numbers are much more specific and are fully documented in the user manuals, or on our support site. In the latter case the API level message can simply refer the developer to the documentation or knowledge base.

3. It may be possible to adapt the kernel's circular buffer that traces API calls to help meet this requirement.