

DEBORA Client-Server Architecture

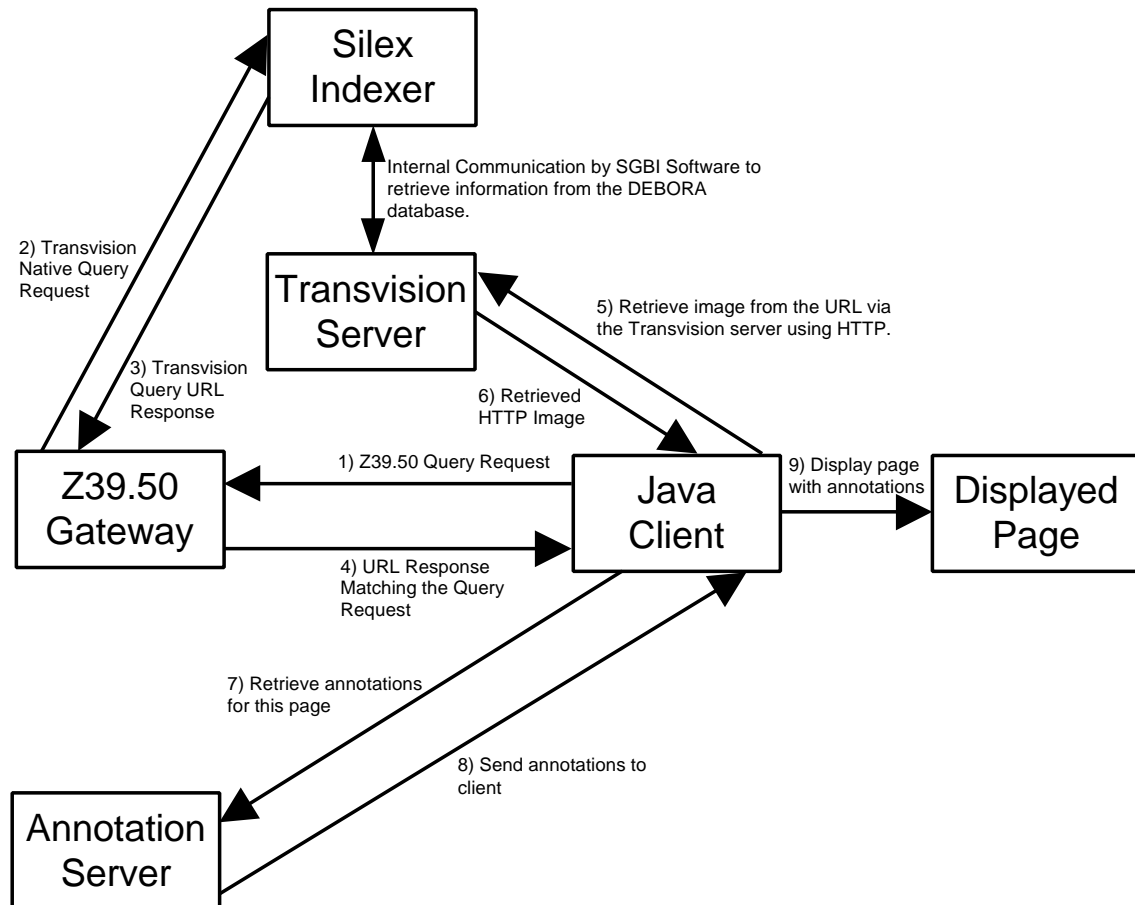


Figure 1 DEBORA Client-Server Architecture Overview

Key to software component interactions

- 1. Z39.50 Query Request** – The Java client sends a Z39.50 type-1 RPN query request to the SGBI Z39.50 gateway. This is then forwarded in step 2 to the Silex indexer that is part of the SGBI application suite (see below).
- 2. Transvision Native Query Request** – The Z39.50 gateway translates the Z39.50 query passed by the Java client (see step 1 above) into a format internally understandable by the SGBI software. This query is then forwarded to the Silex indexer for database interrogation.
- 3. Transvision Query URL Response** – After communication from the Silex indexer to the Transvision server the query response is sent back to the Z39.50 gateway.
- 4. URL Response Matching the Query Request** – The URL of the image that matches the query in the previous steps is returned to the Java client.
- 5. HTTP Image Request** – The Java client now requests the scanned image of the page from the Transvision server's database using the HTTP protocol and the previously returned URL (see above).

6. *HTTP Image Download* – The image data for the page (e.g. GIF, TIFF, JPEG) is returned to the client via a HTTP response.
7. *Annotation Retrieval for Displayed Page* – Before final user display the Java client retrieves any previously added annotations to the displayed page. These annotations could be made by other users via the CSCW annotation mechanisms built into the client.
8. *Annotations sent to client* – The Java based annotation server returns any matching annotations for the requested page.
9. *Display page and annotations in client* – The page previously requested is now displayed in the client application along with any relevant user annotations.

NB – The procedure described above is still followed even if the search request is simply to retrieve the next page of the book. Therefore the above diagram is relevant to both page advance queries and more complex user formulated query strings. To improve performance in each case the client will incorporate a “pre-fetch” caching algorithm to decrease page retrieval times for linear reading operations.