Cradle-7
From concept to creation...

3SL

Cradle-WEBA

The **Cradle-WEBA** module provides the means to create custom web UIs that allow users to access Cradle databases from web browsers in a manner that is appropriate to their needs and use cases.

Cradle provides WorkBench as the means to access databases, and provides many choices to create a customised environment, including start pages and the phase hierarchy. However, WorkBench is not suitable for all users:

- Users may not want to install Cradle
- Users may be remote from the Cradle system and WorkBench may not provide acceptable performance (despite server-side processing)
- Users may not allow Cradle to communicate through their firewall
- WorkBench provides more functionality than needed and, therefore, appears too complex

So there are at least three reasons why a project may wish to create web UIs:

- IT restrictions on the use of WorkBench
- Performance needs of remote users
- Provide simple UIs tailored to the needs of specific user groups

Cradle allows web UIs to create, manipulate or view database information. Each web UI is created to meet the needs of a group of users, either to offer a wide range of UI controls to provide a flexible and powerful UI so users can perform many tasks, or a simple UI that allows users to perform perhaps one or two tasks very quickly and easily.

All web UIs are zero thickness, with no client-side code. No browser add-ins or plug-ins are needed.

Any number of web UIs can be created. Each is associated with a project-specific user type. Each Cradle login account is also associated with a user type. When a user connects to the Cradle Web Server (CWS) and logs-in, the CWS serves the web UI defined for the user's user type, or a default web UI.

Therefore, the CWS can serve many, potentially very different, web UIs to its users, based on their user types.

Users login to a web UI with the same username and password used with non-web tools. Web-based users have the same access rights to items and Cradle operations as users of non-web tools such as WorkBench and utilities.

Web UIs are created from templates and building blocks provided in the **Cradle-WEBA** module. The module also includes four example web UIs:

- A web UI using all blocks to offer a powerful and flexible environment for engineers
- A basic UI providing controls over page layout, item creation, viewing and reporting
- A simple UI that provides general purpose browsing of items, well suited to customers
- A very simple UI that automates one task, reviewing items, suitable for managers who simply want a list of decisions to be made, and to make the decisions

In the example web UIs, users can create, view, edit

WEBA
Web
Access

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and delete items and they can manipulate and follow cross references.

Users can navigate through the database using the phase hierarchy, the master tree, or using a table-based browse mechanism.

Items edited in web UIs are locked in the same way as non-web UIs and the API, to prevent simultaneous update by other web or non-web users.

Tables of items shown in web UIs will load into Word® and Excel® as hyperlinked documents.

Web users can create and use the same queries as non-web UI users. All query processing is server-side in the CWS to optimise the performance for each user.

Views created in WorkBench can be used in web UIs. Items can be edited in table views. Items can be shown in user-defined forms. Binary data can be modified and uploaded in a web UI. Rich text can be shown in web UIs.

Diagrams are shown in SVG. Diagrams can be zoomed and panned. Hyperlinks in each diagram symbol allow users to navigate to child diagrams and from symbols to their descriptions in data definitions and specifications.

Change histories are fully supported, together with all collaboration facilities, including discussions and alerts.

Authentication to web UIs can use LDAP and supports single-sign-on. Access to web UIs can be limited to specific proxy servers, network interfaces and remote hosts.

Cradle provides `cradle://` protocol URLs that allow direct access to items and query results by external tools.

Feature Summary

Feature	Benefits
Web UIs for RW and RO access	Provides access to the database for users for whom non-web UIs are impracticable or undesirable
Zero thickness web UIs	All web UI building blocks and all example web UIs can be deployed without any restrictions, particularly in environments where application security is vital, and do not need browser add-ons or plug-ins
Define any number of web UIs	Web UIs can be designed to meet the needs of specific user groups, either general purpose or task-specific
Four example web UIs	Four different styles of web UI are provided for you to use, or to help you build your own custom UIs
Serve multiple web UIs	The Cradle Web Server can serve a user community simultaneously requiring any number of web UIs
Consistent access controls	User authentication and authorisation controls are identical to non-web UIs
Consistent user environment	The same queries, navigations, metrics and reports are available through web-based and non-web UIs
Phase hierarchy	User-defined process-orientated UI is available in web UIs wherever needed
Server-side processing	All query processing is server-side, improving performance for remote users
Generate reports	Any reports, including metrics, tables and matrices can be generated from web UIs
User-defined views	Views can be defined showing textual, numeric, image or any other attributes. They can include UI controls to sort by any column. Item can be edited through views. Views from WorkBench are available in web UIs.
Nested table support	Correlation, traceability and coverage analysis views can be shown between any types of information, and allow interaction with items at any level
User-defined forms	Any forms can be defined showing textual, numeric, image or any other data types, with facilities to download and upload binary content where needed
Diagram viewing and navigation	Model diagrams shown using SVG that allows zoom, pan and scroll, and allows navigation to symbols' child diagrams and descriptions in specifications and data definitions
Full change history support	All changes made through web UIs are included in items' change histories
Full discussion support	All project collaboration facilities are available through web UIs in the same way as non-web UIs
Item review support	Simple item review mechanism that is very easy to use for occasional Cradle users
URL login and initial actions	Provide direct access to Cradle database items by external tools
Flexible user authentication	Users can authenticate with username and passwords. LDAP can optionally be used to verify these. Single-sign-on is supported through the REMOTE_USER HTTP request header.
Flexible access control	Optionally limit web UIs by network interfaces, or to a specific proxy server, or to specific remote users
Section 508 compliant	All web UI building blocks are Section 508 compliant, and so are all example web UIs supplied with Cradle
Supports all web browsers	All web UI building blocks and example web UIs fully support all current popular web browsers, including Firefox, Chrome and Internet Explorer / Edge
cradle:// protocol URLs	Embed links to Cradle items in other tools' databases, links are authenticated when used

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