# Case Study

**Icreon**

# A Web Based Audit Engine

**Our client, an audit firm based in the US, required a software solution that would help them to manage their audit delivery process in a more streamlined manner. The solution was also required to enable them to build and manage a knowledge repository of all previous audits. Based on these requirements, Icreon delivered to them, a web based audit engine. The solution provides our client with a centralized framework to plan and prepare for multiple audits, to be conducted for various clients, and also store information about issues and findings resulting from each audit.**

## Customer Profile

Our client is a US based audit firm specializing in network security audits for companies across industries. They also offer several security assessment tools that helps its customers in identifying network security issues at their work sites.

## Business Requirements

Our client wanted a solution that would enable them to standardize their audit process across multiple teams and locations. The solution was required to enable administrators to prepare a list of tasks that are to be performed in every audit and assign them to specific auditors. Auditors, in turn, were required to be able to view a list of assigned tasks and record these findings, resulting from performing the audit task. Through the solution our client wanted to create and manage a searchable knowledge base of all previous audits that could aid auditors in performing their tasks. Provisions to enable administrators to generate and download audit reports, to be distributed to their clients, in the form of Open Office documents were required to be built into the solution.

## A web based system to plan and prepare for audits

Icreon designed and developed the web based audit management system using PHP. The solution has been designed to be deployed on an intranet, to be used internally by the employees of our client.

The audit engine enables administrators to create audits and assign tasks within it to specific auditors. An audit is based on an audit template that includes a list of tasks that need to be performed and also describes the scope of the audit, the approach to be taken by the auditor, and additional references and guidelines for the auditor to follow. The administrator can add tasks to the template by either selecting relevant tasks from the knowledge base or by creating new tasks. The concept of audit templates were used so as to ease the process of preparing for audits and avoid duplication of work in cases where similar or same set of tasks need to be performed.

An audit task provides a detailed set of instructions that an auditor is required to follow in performing the task. Tasks can be grouped into categories thereby easing the process of assigning them to the

auditors. Assigning a task category to an auditor will collectively assign all the tasks available within the category to the auditor.

During the audit process, auditors can log into the system to view their lists of assigned tasks. The results of the task i.e. findings, its impact, risk level and recommendations can be stored with the task. To avoid duplication of work and to save time in recording the results of the task, the auditor is provided with options to make use of previous findings available in the system for the selected task. The auditor also has the option to edit/add new findings to the task.

Audits within the system can have multiple stages. When an audit is currently in progress its status is "Active". Administrators can monitor progress of the audits and can approve audits that have been completed. Once all tasks, associated with the audit, have been completed the status of the audit is changed to "Pending for Approval" and will be available to the administrator for approval. Once approved, the audit status is set to "Approved" and its associated tasks and findings can no longer be edited. Detailed audit reports in the form of Open Office documents (.odt) can be generated and downloaded by the administrator.
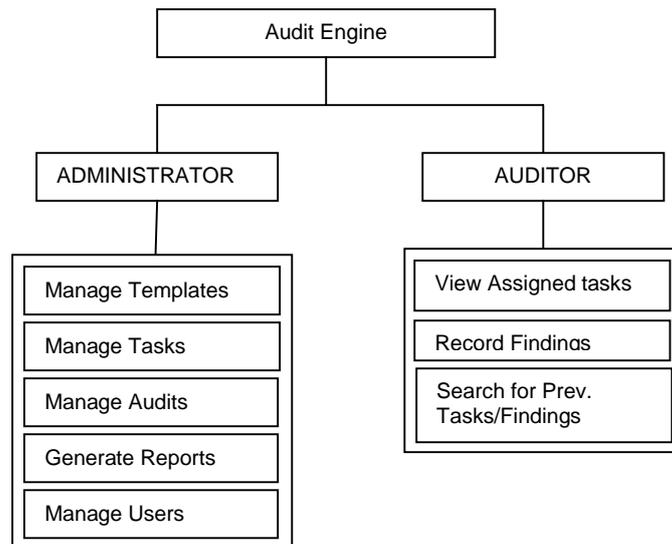
One of the major features of the solution is the use of AJAX to incorporate an auto-save functionality. Typically, recording audit data (i.e. issues and findings) is lengthy and time consuming. To avoid any loss of data that may arise due to problems such as system failure etc an auto-save feature has been built into the solution. At periodic intervals the system automatically saves the data contained in the forms that the users are working on.

Automated e-mail notifications have also been built into the system. The notifications, alerting the administrators/auditors, are sent on the occurrence of various events such as when an audit task is assigned/ completed, when the status of an audit changes etc.

**AUDIT ENGINE MODULES**
The audit engine has been divided into the following modules:

- **User Management:** Two types of users can access the system: administrators and auditors. Administrators have complete access to all the modules available in the application. They can add/edit tasks, findings, templates, and audits. They can assign tasks, within an audit to specific users. Auditors have restrictive access within the system.

- **Task Management:** Administrators can define and manage tasks and their associated findings in the system. Tasks can be grouped into various categories and sub-categories, defined and managed by the administrator. The module also includes a bulk upload features that enables administrators to easily import existing tasks and findings data into the system.

- **Template Management:** The template management module enables administrators to create and manage audit templates.

- **Audit Management:** Administrators can create audits based on a template and can assign available audit tasks to specific auditors. The administrator can track the progress of audits and can also view a list of audits which are pending approval. In case of an auditor, the Audit Management module will display a list of tasks that have been assigned to him/her.

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                    ┌─────────────────────┐
                    │   Audit Engine      │
                    └──────────┬──────────┘
              ┌────────────────┴────────────────┐
    ┌─────────┴─────────┐              ┌─────────┴─────────┐
    │   ADMINISTRATOR   │              │     AUDITOR       │
    └─────────┬─────────┘              └─────────┬─────────┘
    ┌─────────┴─────────┐              ┌─────────┴─────────┐
    │  Manage Templates │              │ View Assigned tasks│
    ├───────────────────┤              ├───────────────────┤
    │  Manage Tasks     │              │ Record Findings   │
    ├───────────────────┤              ├───────────────────┤
    │  Manage Audits    │              │ Search for Prev.  │
    ├───────────────────┤              │ Tasks/Findings    │
    │  Generate Reports │              └───────────────────┘
    ├───────────────────┤
    │  Manage Users     │
    └───────────────────┘
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**System Architecture**

**Technologies used in developing this application are:**

## Summary

With the successful delivery of the audit engine application, Icreon has provided the client with an easy and effective means to streamline their audit delivery process. The system enables multiple audits to be easily tracked and managed. Common audit task lists can be created and shared across multiple auditors. With the storage of all audit data (tasks and findings) in a centralized repository, auditors can search for and browse through the data as and when required. Since all data is readily available, reports can be generated at any point during the audit.