Research Contributions:

The contributions of this thesis are:

- An effective framework for the evaluation of performance and scalability of web servers.

- A study for characterization and comparison of web server benchmarking tools and techniques.

- An exhaustive study of web server software architectures.

- An experimental evaluation and comparative analysis of user-mode and kernel-mode web servers.

- An experimental evaluation and analysis of computational and retrieve intensive workloads.

- Effective scalability characterization and analysis of web servers on clustered systems.

- The Design, Implementation and Evaluation of the proposed Java-based hybrid web server.

- The identification, evaluation and comparison of security mechanisms in-place in web servers.