

Smart Home

The system was developed for a US based home automation Startup Company to launch a home automation software product.

Challenges

Smart home project was the development of an extensible and scalable home automation framework supporting multiple home automation devices and protocols such as X-10, TCP/IP or ZigBee.

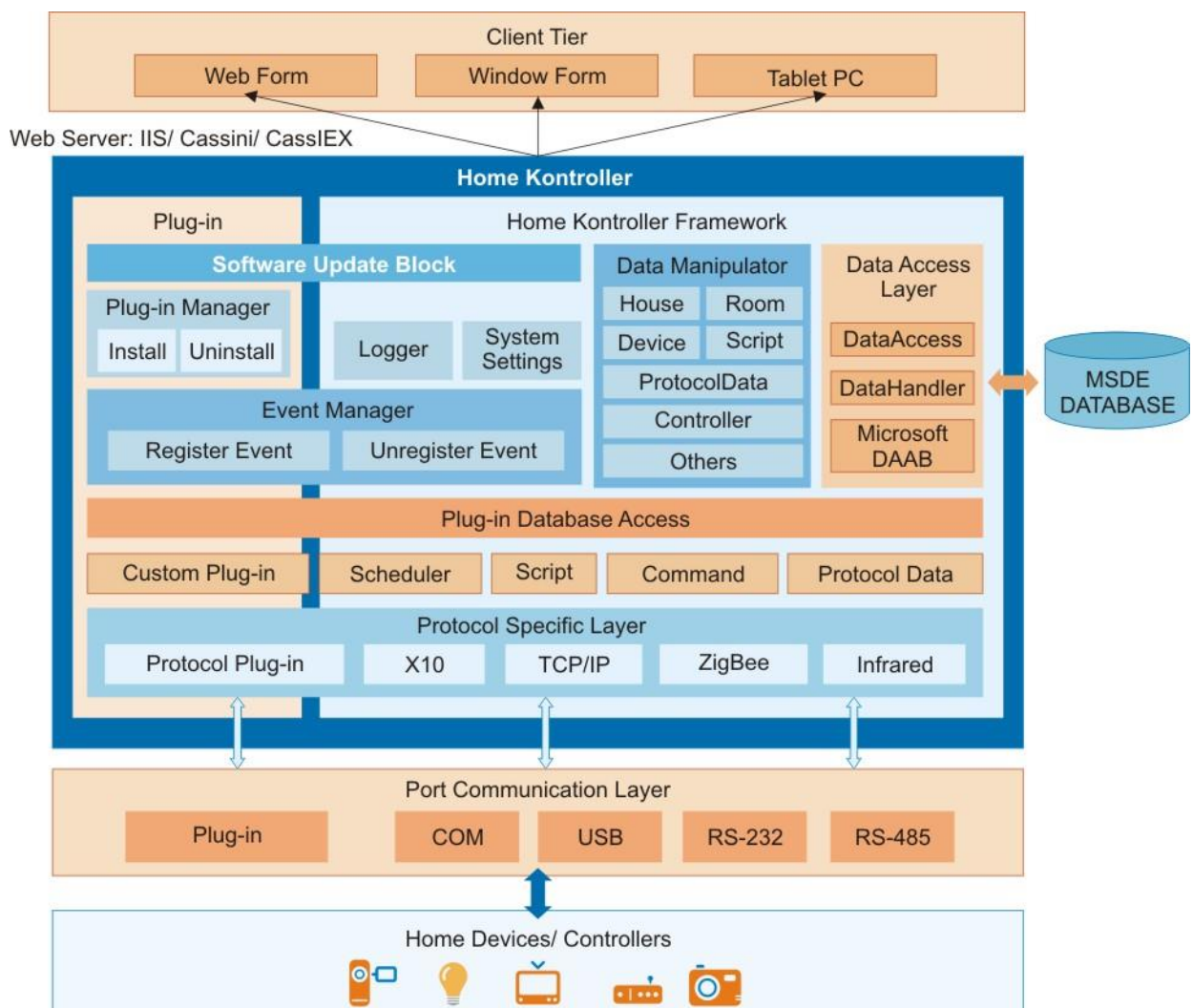
Solution

The technical architecture can be elaborated as follows:

1. **Client Tier:** This tier of the application handled primarily the user interface portion. This component was conceptualized to support web based application, desktop application, various mobile devices and handheld devices like tablet PCs. The client tier was formed to mold information for various user interfaces to the smart Home application.
2. **Plug-ins:** This module provides extensible framework for adding new plug-ins to the application for supporting new devices or protocol.
3. **Data Manipulator:** It was used for providing data required for different devices, controllers, scripts, plug-ins and homes.
4. **Logger:** It was used for maintaining event history and related security issues. Also used to maintain error records for better system performance.
5. **System Settings:** It was used for different system settings as per the user environment.
6. **Event Manager:** It was used for the integration of unregistered plug-ins to the system.
7. **Plug-in Database Access:** This layer was used to support enhancements in existing plug-ins and other related settings.

8. **Scheduler, Command and scripts:** These components were used for scheduling script execution, execution of commands on different devices based on command type and execution of a set of commands in the scripts.
9. **Protocol Communication Tier:** It played a crucial role in the system to identify a device (or controller) supported protocol intended by the end user command (or scripts). Core focus of this system was to make a protocol oriented generic device access approach.
10. **Port Communication Layer:** Once the device communication was finalized by Protocol Communication tier mentioned above; this layer was used as third party components for the actual device communication purpose. The system could utilize the device vendor dependent communication channels for physical data exchange purpose.

The technical architecture of Smart Home is as depicted in following diagram.



Technology

Microsoft.NET, Microsoft SQL Server Desktop Engine (MSDE)

Conclusion

e-Zest provided a home automation product with cutting edge technology support, high scalability with lower protocols, device dependency and low total cost of ownership for customers.