

Automatic Monitoring System

Customer

The customer is an American-British company specializing in software development in the following spheres: parental control, children security when in the Internet, fight against children pornography, net security.

Aim

The main aims of the programming complex were the following:

- Logging of the internet sites (interception of the information in the browsers as IE, FireFox, AOL, MSN Explorer, etc.) visited by a user (presumably a child).
- Logging of the messaging in the internet chats (MSN, AOL, Yahoo, ICQ, Trillion, etc.).
- Getting remote access to the computer (prototype of the function «remote desktop»).
- Remote management and limitation of child's access to the computer in general, and also to the internet, to separate applications.
- Notification of a parent about child's visiting of restricted web-sites, and also about restricted words in the chat, through sms, email.
- The mode of program's «invisibility» for applications as «Antivirus» and «Brandmauer».
- High loading of the server part of the project. Approximate peak amount of transaction per 24 hours: 20 million.
- Big amount of processed data. Approximate amount of information received from clients is around 10 GB per day.

Solution

As the risks at developing some functions were rather high, it was decided to develop a pilot version of some modules, which became the basis of the whole system. During the development of the pilot project, the following basic modules of the system have been developed: the module of interprocess exchange and communication, the module of «invisible» sending, synchronization module, and also the basic data communications protocol and interaction protocol. Further, other modules of the system have been developed, according to specifications and functional requirements to the program. This system is a complex distributed system of data interception inside the computer, working under the OS Windows XP and higher. It allows to trace and to block the access to this or that data or process. Theoretically, this system may monitor any actions of a user on a computer. The data encryption algorithm BLOWFISH was used as security against cracking. MSSQL2005 was used as a database server for providing compatibility with the previous version of the product.

Basic Functions

- Client part:
 - The function of switching on/off the invisible mode.
 - Automatic updating and downloading of settings.
 - Blocking from program deleting.
 - Diagnostic and self-recovery of the system.
 - Interception and registering of the visited sites.
 - Interception of messages in the chats.
 - Blocking (on different levels) of the access to the computer/internet/web-site/internet-chat/a separate application.
 - «Video recording» of user's action on the computer.
- Server functions:

- Logs reception, and packing them to the database.
- Sending the settings to the client's computer.
- Broadcasting of *TV-set* queries (viewing, recording, etc.).
- Broadcasting of remote file downloading queries.
- Automatic delivery of notifications through SMS/e-mail.
- Web-interface:
 - Managing the settings at the level of separate users and computers.
 - Managing the settings of definite computers.
 - Managing the settings of access to the computer/web-site/internet-chat/a separate application.
 - Detailed logs viewing.
 - Computer desktop remote management (*TV-set*).
 - Remote shutdown of open programs.
 - Remote blocking, reloading, shutting down of the computer.
 - Remote downloading of files from/to the managed computer.

Technologies

C++, QT, MFC, WinAPI, FSDDK, ASM, reverse engineering, C#/ASP.NET, MSSQL, MSProject, MSVisio, MSWord, payment systems

Product Title

SAH

Results

Publication in the section *Must Have (Everyone must have)* of one of the biggest British on-line journals www.Telegraph.co.uk

Project Capacity

Over 150 man-months