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Sergey Manoylo

Independent (one-person) freelancer (Software Development).

Overall 15 years of Software Development experience.

7+ years: C/C++ (4+ years - Security/Crypto/Networking); 7+ years: Java (Java SE, Java EE, Java Spring Framework) (Java EE and Java Spring Framework, mainly, Back-End);

3+ years: DataBase (MySQL, PostgreSQL, Oracle);

Major technical skills:

- C++11/C++14/C++17L
- C11/C17
- Microsoft Visual Studio C++
- gcc, g++
- Eclipse C++
- Kdevelop
- Qt Creator
- Qt
- MFC
- OpenSSL, LibTomCrypt, GnuPG
- STL C++
- Boost C++
- POCO C++
- CMake, Make Tool
- gdb, Kdbg
- flex, bison
- Win API
- Linux POSIX
- Sockets
- Multi-Threading
- CppUnit, cmocka
- valgrind
- bash scripts
- Java SE (inc multi-threading)
- Java EE
- Oracle, MySQL, PostgreSQL
- Tomcat
- Spring (Core Beans, Spring MVC, Spring Flow, Spring Security), JSF (MyFaces, Tomahawk, Richfaces)
- Hibernate
- JavaScript, HTML, XML/XSD, JSON
- JCA
- Gradle, Apache Maven, Apache Ant
- Jenkins/Hudson
- Junit
- Eclipse, Spring Tool Suite
- Crypto API
- Git (github, bitbucket), SVN
- Python
- Windows XP/7/8/10

- Linux (GNU Debian, CentOS, Ubuntu/Kubuntu, Mint, OpenSUSE)

| root | web link: | | http://smansoft.com/portfolio/ | | | | | | |
|-------|------------------------------------|--------|--|--|--|--|--|--|--|
| conta | acts: | | http://smansoft.com | | | | | | |
| | e-mail mobile phone skype | : : | <pre>info@smansoft.com +380-67-150-2244 smansoft.net</pre> | | | | | | |
| GitHu | ıb: | | https://github.com/smansoft | | | | | | |
| Khark | Kharkov (Kharkiv), Ukraine, Europe | | | | | | | | |

SMan Portfolio:

Projects:

25.sm_vpn_stack_suite

Own product/project. sm_vpn_stack_suite (Android VPN Stack Suite) tool.

Features of the Android VPN Stack Suite:

- Simple TCP/UDP socket server (with multi-thread support) (Linux platform), that implements open simple communication protocol (application level):
 - TCP:
 - The Client connects to the TCP Server;
 - The Client sends "socket client: Hello" to the Server;
 - The Server reads message from the Client;
 - The Server sends "socket_server: Hello" to the Client;
 - The Client reads message from the Server;
 - The Client sends some text message (size 1024 with '\0' symbol) to the Server;
 - The Server reads text message from the Client and generates inverted message (src: "1234567890" -> inverted: "0987654321");
 - The Server sends inverted message to the Client;
 - The Client reads message from the Server;
 - The Client send read message to the Server;
 - The Server reads text message from the Client and generates inverted message (src: "0987654321" -> inverted: "1234567890");
 - The Server sends inverted message to the Client;
 - The Client reads message from the Server;
 - Last received message by the Client should be similar to the first message sent by Client to the Server;
 - UDP:
 - The Client connects to the TCP Server;
 - The Client sends "socket client: Hello" to the Server;
 - The Server reads message from the Client;
 - The Server opens new UDP connection on new socket port;
 - The Server sends new UDP port number to the Client (using first connection);
 - The Client reads the UDP port number and closes first connection;
 - The Client creates new UDP connection, using received from Server port number;
 - The Client sends "socket client: Hello" to the Server;
 - The Server reads message from the Client;
 - The Server sends "socket server: Hello" to the Client;

- ... Then communication protocol (application level) is same as described in TCP section;

- Simple TCP/UDP socket client (Microsoft Visual Studio C++, Windows platform), that implements previous described protocol;
- Simple TCP/UDP socket client (Android Studio/Android SDK, Android platform), that implements previous described protocol;
- VPN Stack Application, that (Android Studio/Android SDK/Android NDK/C, Android platform), that is based on VpnService (Android platform) and implements intermediate IP/TCP/UDP stack (JNI/C/Sockets);
- VPN Stack Application provides catching, monitoring and processing TCP/UDP/ICMP/IP packages; Then these
- packages are processed (via JNI) at the Native API level;
- VPN Stack Application can catch packages from some defined application (if text edit "Filtered Package Name" is defined) or from all applications (if text edit "Filtered Package Name" is empty);
- VPN Stack Application creates tun0 device (after launching), which is used for catching TCP/UDP/ICMP/IP packages;
- VPN Stack Application reads packages, sent from Android application(s) from tun0 device, provides processing these packages and creates new or uses saved (sessions) TCP connections (if Android Application sends TCP package) or just uses sendto (if Android Application sends TCP package);
- VPN Stack Application receives all packages from network, provides processing these packages
- and writes packages to tun0 device, then packages will be received by Android application(s);
- VPN Stack Application doesn't use Raw Sockets;
- VPN Stack Application writes detailed log to Logcat and to the file
- /data/data/com.smansoft.vpn_stack/files/logs/vpn_stack.log;
- Follow applications from this suite:
 - Simple TCP/UDP socket server (with multi-thread support) (Linux platform);
 - Simple TCP/UDP socket client (Microsoft Visual Studio C++, Windows platform);
 - Simple TCP/UDP socket client (Android Studio/Android SDK, Android platform);

have been created and have been used for testing network connections and for testing the **VPN Stack** Application;

Technologies and tools:

- Android Platform: Android Studio, Android SDK, Android NDK, JNI, C11, gradle, CMake, POSIX, multi-threading, sockets;
- Windows Platform: C++17, Visual Studio 2019, Git, Tortoise Git client;
- Linux Platform: C++17, gcc, Make Tool, Bash scripts, Git;

More Info (links, documents, screenshots, examples): <u>sm vpn stack suite (Android VPN Stack Suite)</u>.

24.vpn_tunnel

vpn_tunnel:

- simple **Android Service Applicatio**n, that is based on the Android VpnService and provides catch and tunneling ip/tcp, ip/udp,... packages to Linux application, that

extracts packages and routes them in internet; - provides tunneling in both directions: from Some Android Application to Internet (Some Server) and from Internet (Some Server) to Some Android Application; - this tool is based on ToyVpn and doesn't provide any encryption of tunneling packages; - some improvement of handshake (Vpn tunnel service and Linux tunnel server) has been provided;

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Technologies and tools:
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- Android Platform: Android Studio, Android SDK, Gradle, Git;
- Linux Platform: Debian 10, gcc, Make tool, Bash, Git;
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More Info (links, documents, screenshots, examples): **<u>vpn tunnel</u>**.

23.btcpool tuning

btcpool tuning - building, configuring and some investigate of the suite:

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- bitcoind (bitcoin launched in the server mode);
- suite of tools of btcpool:
    - blkmaker;
    - gbtmaker;
    - jobmaker;
    - sserver (Stratum Server);
    - statshttpd;
    - sharelogger;
    - slparser;
    - poolwatcher;
- Kafka (+zookeeper) - broker manager (bus);
- simulator (part of the btcpool tools suite) -
    multi-user and multi-miner testing tool, that provides testing the suite working and
    modules cooperation, generating test/virtual blockchain blocks;
- MySql;
- Httpd + Php;
```

Technologies and tools:

- Linux Platform: Debian 10, gcc, g++, Make tool, GTest (unit tests framework from Google), MySql, Php, Git;

More Info (screenshots, examples): btcpool tuning.

22.sm_producer_consumer

Own product/project.

sm_producer_consumer (SM Producer Consumer) - is an open-source multi-thread demo/template resolving the producerconsumer (bounded-buffer) problem.

Features of the sm_producer_consumer (SM Producer Consumer) tool:

- Multi-thread demo/template, that resolves producer-consumer problem (bounded-buffer problem);
- Using thread support primitives (classes, api), which are parts of the C++ (C++11) language, defined by the standard ISO/IEC 14882:2011;
- Using several producer-consumer objects, which use suite of limited-size queues shared by various number of threads with various productivity/periodicity/frequency;
- Writing processed results into the text file (in the special directory);
- Logging results and applications workflow;
- Multi-thread (thread-safe) log library, that supports output to the log file and/or console;
- Multi-thread (thread-safe) log library, supports log level output (TRACE, DEBUG, INFO, WARN, ERROR, FATAL); - Usage string secure library in some C-language functions;
- Self-stopping support, when file '.stop' is placed in the special directory;

Technologies and tools:

- Linux Platform: C/C11/C++/C++11, gcc, g++, Make Tool, Kdbg,
- Eclipse IDE for C/C++ Developers, valgrind, Bash scripts, Git;
- Virtual Box (Virtualization Software), Various distros of Linux (Debian 9/10, OpenSUSE, Ubuntu, Mint);

21.sm_regex

Own product/project.

sm regex (SM Regular Expressions Calculator) - is a multi-platform (Windows/Linux) Qt-based Regular Expressions Calculator.

Features of the SM Regular Expressions Calculator:

- Multi-platform application: there are builds for Windows 64/32 (.zip) and Linux 64 (.tar.gz);
- Calculation a Match (finds all substrings in the input string which match a regular expression pattern and returns all occurrences) using regular expressions;
- Calculation a Replace (finds all substrings in the input string which match a regular expression pattern and replaces all occurrences, by entered replacement text), using regular expressions;
- Calculation a SubExpressions (finds all substrings in the input string which match a regular expression pattern and separates text, by found substrings), using regular expressions;
- Usage follow Regular Expressions engines: Qt RegEx, STL C++ RegEx (C++ 11);
- Usage ECMAScript standard (by both engines as Qt RegEx as STL C++ RegEx (C++ 11));

- One-line and multi-line modes;
- Case-insensitive and case-sensitive modes;
- Saving the result in the Clipboard;
- Saving the result in a Text File;
- Tuning interface, usage Light and Dark themes;
- Usage database, where Regular Expressions and options (one-line/multi-line and case-insensitive/case-sensitive), using during calculations can be saved;
- Usage the System Tray on the Windows and Linux platforms during work of the SM Regular Expressions Calculator tool;
- Log of results and applications workflow;
- Portable build/version (archive(s) which can be just extracted);

Technologies and tools:

- Windows Platform: C/C11/C++/C++11, CMake, Qt 5.14.2, Qt Creator 4.14, Visual Studio 2019 (including NMake tool), diff tool, Git, Windows Batch scripts, Tortoise Git client;
- Linux Platform: C/C11/C++/C++11, CMake, gcc, g++, Make Tool, Kdbg, Qt 5.14.2, Qt Creator 4.14, diff tool, Python 3, Bash scripts, Git;
- Virtual Box (Virtualization Software), Various distros of Linux (Debian 9/10, OpenSUSE, Ubuntu, Mint);

More Info (links, documents, screenshots, examples): <u>SM Regular Expressions Calculator</u>.

20.vector_syntax_parser

Development of some suite of tools and PostgreSQL modules/extensions at the backend layer (for US and India Customers), that provides processing of vector data, using special expressions language. This suite and PostgreSQL DB data are used by .Net Framework Web Application.

http://smansoft.com/portfolio/20.vector_syntax_parser/vector_syntax_parser.jpg.

This suite and PostgreSQL DB data are used by .Net Framework Web Application.

Technologies and tools:

- Linux Platform (Ubuntu, Debian);
- C11, C++11/C++17, GCC/G++;
- flex, bison;
- STL, Boost C++, Log4cplus;
- Multi-threading;
- Posix API;
- Make Tool;
- GDB, Kdbg;
- Eclipse C/C++, KDevelop;
- valgrind;
- Git, bitbucket;
- PostgreSQL 10, modules/extensions of PostgreSQL;
- PostgreSQL SPI;
- libpq, libpqxx;
- PL/pgSQL;
- pgAdmin, DBeaver;
- https://github.com/pjungwir/aggs_for_arrays;
- https://github.com/pjungwir/aggs_for_vecs;

More Info (links, documents, screenshots, examples): Vector Syntax Parser.

<u>19.sm_calculator</u>

Own product/project.

sm_calculator (SM Calculator) tool - is a multi-platform (Windows/Linux) open-source console calculator, implementing a simple language for processing of mathematical expressions.

Features of the SM Calculator:

- Multi-platform application: there are builds for Windows 64/32 (.zip) and Linux 64/32 (.tar.gz);
- Various types of values (64 bits integers, 64 bits floats, strings);
- Various float constants (pi, exp,...);
- Solving of mathematical expressions, using basic arithmetic operators;
- Solving of mathematical expressions, using bracket delimiters
 - '(' and ')' (in one expression) and delimiters ';', '\n';
- Solving using suite of mathematical (including trigonometric, logarithm, exponentiation) functions;
- Solving using bitwise functions and operators;
- Various types of entering and output formats of integers (decimal, octal, hexadecimal, binary formats);
- Various values of unit for measuring of angles (radians, degrees, gradians), which are used by trigonometric functions;
- Support of output properties (precision) of float values;
- Suite of converting functions (various values of unit for measuring of angles, various types of entering and output formats of integers);
- Suite of commands, which provide setup of configuration of SM Calculator;
- Several modes of execution (processing of files, processing of expressions, obtained via command line, processing of expressions in interactive mode, using standard input/output devices);
- Control/administration the creation/start of the log of the sm_calculator (SM Calculator) tool: start without log output (command line option: -q, --no_log) changing the path of the created/opened log file (command line option: -l, --log file);
- Access to the sm_calculator (SM Calculator) tool can be included into \$PATH (Windows/Linux) and the sm calculator (SM Calculator) tool can be launched from any current directory;
- Detailed processing of syntax error(s);

- Restoring of syntax parsing after error(s);
- Reentrant implementing of the parser, i.e. parser can work in multi-thread mode;
- Help (command: help[;] or command line option: -h, --help);

SM Calculator supports follow modes of execution:

- processing of file, that contains expression(s);
- processing of command line expression(s);
- interactive mode (user enters expression(s), using standard input device/console).
- User can use same expressions in all these modes (processing of file,

processing of command line expression(s), interactive mode);

Technologies and tools:

- Windows Platform: C/C11, CMake, Visual Studio 2019 (including NMake tool), flex, bison, diff tool, Python 3, Git, Windows Batch scripts, Tortoise Git client;
- Linux Platform: C/C11, CMake, gcc, Make Tool, Kdbg, flex, bison,
 - diff tool, Python 3, Git, Bash scripts;
- Virtual Box (Virtualization Software), Various distros of Linux (Debian 9/10, openSUSE, Ubuntu, Mint);

More Info (links, documents, screenshots, examples): <u>SM Calculator</u>.

18.secure_messenger

Android Secure XMPP/Jabber Messenger (for some European Company). Adding secure solutions to already implemented XMPP/Jabber protocol.

Technologies and tools:

- Java 8;
- C/C++;
- Android Studio;
- Android SDK;
- Android NDK;
- XMPP/Jabber protocol;
- OpenSSL;
- Olm (Double-Ratchet ptotocol);
- SQLite cipher package;
- gradle;
- CMake;
- Git;

More Info (links, documents, screenshots, examples): Secure Messenger.

<u>17.qt-win</u>

Qt-based CRM (customer relationship management) software tools (only Windows platform). Projects of the Qt-based CRM application contain 65 forms and about 100 classes (without log4cplus).

Technologies and tools:

- C++11; - Visual Studio 2003; - Visual Studio 2017;
- Qt3.3.5;
- Qt5.12.2;
- PostgreSQL 10/11;
- log4cplus;

More Info (links, screenshots): <u>Qt-Win</u>.

AES 256

GCM

16.file_exchanger

Own product/project. File Exchanger (file exchanger) Tool is a peer-to-peer files exchanger for Windows/Linux platforms.

- transfer of files from client to server, using open socket connections;
- transfer of files from client to server, using SSL connections;
- control of entirety of received files, comparing of checksum values sent and received files, using CRC-32 algorithm;
- using transfer of files from client to server, using SSL connections;
- using follow SSL mode/algorithms (TLSv1.2), if SSL connection is used: ECDHE-ECDSA-AES256-GCM-SHA384
 - TLSv1.2 - version
 - the protocol used TLS
 - ECDHE - the key exchange mechanism
 - ECDSA - the algorithm of the authentication key
 - the symmetric encryption algorithm
 - the key size of AES
 - the mode of AES
 - the MAC used by the algorithm SHA384

prime256v1 (NIST P-256, secp256r1) - Elliptic Curve, that is used by ECDHE and ECDSA;

- using unique CA of client and server certificates;
- user can update CA, client/server keys/certificates, using suite of scripts ssl.ecdsa.tar.gz (ReadMe.txt in ssl.ecdsa.tar.gz);

- using of xml configuration files, which can be updated by user and will be applied without restart of processes (sm_file_send_clns, sm_file_send_srvs);
- scanning of configured directories, where sent files can be copy;
- copying of sub-directories with files, saving of sub-directories tree at the server side;
- support of unicode symbols in file/directory names;
- backup of sent/received files;
- server and client modules can be launched as Services (Windows)/Daemons (Linux);
- console command line control application (only Windows) of client/server Services (requires Administrator permissions);
- Windows gui application, that allows to monitor states of client/server Services, control of client/server Services and change parameters of client/server Services;
- Linux gui application (Qt-based), that allows to monitor states of client/server Daemons, control of client/server Daemons (when it's possible, according to users permissions) and change parameters of client/server Daemons;
- using ECDSA (NIST P-256, secp256r1) for signing/verification parameters, which are sent between client/server and gui applications (Windows/Linux);
- tool applications don't use any intermediate servers and transfer files directly between client and server;

Technologies and tools:

- Windows Desktop: C/C++, CMake, Visual Studio (C++) 17, MFC, WinApi, Poco, OpenSSL, Sockets, Secure Sockets, Multi-threading, Windows Services, NSIS, Git, Windows Batch scripts, Tortoise Git client;
- Linux Desktop: C/C++, CMake, gcc/g++, Qt, Qt Creator, Kdbg, Posix api, Poco, OpenSSL, Sockets, Secure Sockets, Multi-threading, Linux Daemons, Linuxdeployqt, Makeself, Linux Bash scripts, Git, Git Cola client;
- Virtual Box (Virtualization Software), Various distros of Linux (Debian 8/9, openSUSE, Ubuntu, Mint);

More Info (links, documents, screenshots, examples): File Exchanger.

15.ssl_scripts

Own product/project SSL ECDSA Scripts and SSL Web Scripts.

The main features of SSL ECDSA scripts:

- generation of CA key and Self-Signed CA Certificate;
- generation of SSL private key, public key and sign public key, using CA key and generation of X.509 certificate of server;
- generation of SSL private key, public key and sign public key, using CA key and generation of X.509 certificate of client;
- usage of Elliptic Curves (ECDSA-WITH-SHA384) prime256v1 (NIST P-256, secp256r1) for signing of public keys;

The main features of SSL Web scripts:

- generation of CA ECDSA key and Self-Signed CA ECDSA Certificate;
- generation of SSL ECDSA private key, ECDSA public key and sign ECDSA public key, using ECDSA CA key and generation of X.509 certificate of server (server certificate);
- generation of CA RSA key and Self-Signed CA RSA Certificate;
- generation of SSL RSA private key, RSA public key and sign RSA public key, using RSA CA key and generation of X.509 certificate of server (server certificate);
- usage (by default) of Elliptic Curves (ECDSA-WITH-SHA256) prime256v1 (NIST P-256, secp256r1) or RSA (RSA2048-WITH-SHA256) for signing of public keys;

Technologies and tools:

- Bash, OpenSSL;

More Info (links, documents, screenshots, examples): <u>SSL Scripts</u>.

<u>14.spring_login</u>

Own product/project. Spring Login.

Suite of demo projects (tempaltes) (Spring, Spring Boot, Spring-Security, JSP, Apache Tiles, Thymeleaf, Spring-Jpa, Spring-Data-Jpa, JCache, Ehcache, Infinispan, Hibernate, EclipseLink, MySQL, Logback, Maven, Gradle).

Technologies and tools:

- Java 8;
- Eclipse;
- Spring;
- Spring Boot;
- Spring-Security;
- JSP;
- Apache Tiles;
- Thymeleaf;
- Spring-Jpa;
- Spring-Data-Jpa;
- Jcache;
- Ehcache;
- Infinispan;
- Hibernate;

- EclipseLink;
- MySQL;
- Logback;
- Maven;
- Gradle;
- Git;

More Info (links, documents, screenshots, examples): Spring Login.

13.print_tool

Own product/project. Print Tool.

Reflection-based suite of facades over Logger, that provides logging of complex objects.

Technologies and tools:

- Java 8 SE; - Eclipse;

More Info (links, documents, screenshots, examples): Print Tool.

12.fundfulp2p

FundfulP2P project (Spring Boot application) (peer-to-peer fundraising).

Technologies and tools:

- Java Spring Framework: Java 8, Spring MVC + Spring Security + Spring Data JPA + EclipseLink (as ORM), MultiTenancy, Thymeleaf, WePay, Validation, CSS template Admin LTE, Captcha, JMeter, Facebook authentication, Share with twitter facebook and google, Upload care, Scheduler to send emails, Trigger emails, Amazon email service client, SQL Injection, XSS Filter, Wysiwyg editor, Chart.js, Freemarker, Maintenance page, Performance logging aspect, Cloudflare, Liquibase, Slf4j, Log4j, Apache Maven, Bootstrap, JQuery, JUnit, Mockito, Git (Tortoise Git);
- SQL, PostgreSQL;
- Jenkins CI, GitLab, Jira;
- Bash, Bash Scripts (build, install/deployment);
- Linux (Debian), Docker Virtualization Software;

More Info (links, documents, screenshots, examples): FundfulP2P.

<u>11.sumac</u>

Sumac. Java SE CRM (customer relationship management) software tools.

This is a big CRM tool for control of donation activity of persons and organizations. Projects of the Sumac Java SE application contain more than 3k classes.

Technologies and tools:

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    Java 6, Java SE (Awt, Swing), Java WebStart, SQL, Derby Db, MySQL, Jacob,
BouncyCastle, iText, Java Mail, SSHJ Client, Apache Ant, Apache Maven, JUnit, Mockito,
Bash, Eclipse, Squirrel Sql Client, Git (Tortoise Git);
    GitLab, Jira;
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More Info (links, documents, screenshots, examples): <u>Sumac</u>.

<u>10.curr-ip</u>

Own products/projects. On-line **Network Tools**.

On-line Nmap Scanner.

On-line Network Tools <u>http://curr-ip.com</u> - ajax-based suite of network tools, which implements follow features: Current Ip location (including ipv6 support), Browser Info, DNS resolve (A, AAAA, MX, NS, TXT, SRV, SOA, CNAME, HINFO requests), Reverse DNS resolve (PTR request), Whois Info lookup, Geo-Location resolve;

On-line Nmap Scanner http://scan-ip.curr-ip.com/scan-ip.htm - ajax-based network tool, that implements web interface of nmap command-line (with logging and backups support);

Technologies and tools:

- HTML, JavaScript, jQuery, Spring Core, Spring MVC, Spring Boot, EhCache, Hibernate, MySQL, Tomcat, Apache WebServer, Debian, Log4j, JAXB, Spring Rest Json, nmap tool, geolocation databases, Ant, Maven, Bash, Git, Git (Tortoise Git);
- Virtual Box (Virtualization Software), Linux Debian 8;

More Info (links, documents, screenshots, examples): Curr-IP.

09.java_spring

Java Spring software development (Java Web Applications and WebServices) of Document Circulation Project that provides control of Employee Visas (for Immigration Service) (UAE customer).

Technologies and tools:

- Tomcat 7, Jboss AS 6, Spring (Core Beans, Spring MVC, Spring Flow,
- Security, WebServices), Apache Tiles 2.0, JSP, Hibernate, Oracle 11g, JavaScript, jQuery, Maven; SVN;
- Eclipse;

More Info (links, documents, screenshots, examples): Java Spring (Document Circulation Project).

08.java_spring_jsf_fin

Java Spring software development (Java Web Applications and WebServices) of Financial On-Line Payments Project (Suite of Java Spring Applications, that provides global business payments and money transfers to be made through the Internet like PayPal, Payoneer,...) (startup, US customer).

Technologies and tools:

- Tomcat 7, Spring (Core Beans, WebServices), JSF 1.2/2.0 (Richfaces), RMI, JMS (Apache ActiveMQ), Hibernate, PostgreSQL, Maven, JUnit;
- JCA, OpenSSL command-line tools;
- ocii, openoor
- SVN;
- Eclipse, Linux (OpenSUSE, Mint);

More Info (links, documents, screenshots, examples): java_spring_jsf_fin.

07.java_ee_ejb_jsf

Java EE application (Enterprise Applications, Web Applications, WebServices using follow platforms JBoss AS, WebLogic AS) of the Control Telecommunication System (several projects), that implements suite of TR-069 protocols family for US Customers.

Technologies and tools:

- Tomcat 7, WebLogic AS 11, Jboss AS 6, EJB3, JSF 1.2/2.0 (Richfaces), RMI,
- Hibernate/OpenJPA, Oracle 11g, MySQL, Maven, JUnit;
- SVN;
- Eclipse, Linux (OpenSUSE, Mint);

More Info (links, documents, screenshots, examples): java_ee_ejb_jsf.

06.java_spring_jsf_law

Java Spring application of the information system for Law Government Organization using JSF Richfaces, Hibernate, Spring Core, Spring Security, Facelets (Italian customer).

Java web service of import/export support functionality for information system for Law Government Organization using Java EE (Axis SOAP, JAXB, Hibernate) (Italian customer).

Technologies and tools:

- Tomcat 6, Spring (Core Beans, Security), JSF 1.2 (Richfaces), Axis SOAP, JAXB,
 - Facelets, Hibernate, MySQL;
- Hudson CI, SVN;
- Eclipse, NetBeans, Linux (Slackware);

More Info (links, documents, screenshots, examples): java spring jsf law.

Medical software product for a big US company (with high requirements to quality and stability), that provides development of medical hardware and software.

This suite is an information system, that provides specialized ambulance workflow. This system communicates with ambulance devices (defibrillator) and allows to get info from defibrillator(s), include this info into ambulance workflow and save it on the server side. Also this information system allows to distribute and remote assign of ambulance duty calls via server admin service/application.

This suite has been developed for Ambulance services and includes:

- Java SE client part (Java SE, JNI, RMI, Axis SOAP Client, Secure Network Connections, Java multi-threading) for early mobile devices (tablet PC platform); For this client has been developed transactional high-stable subsystem (controlling hash codes of files and modules), that provides remote updating of new versions, using secured network connections (Axis SOAP client + SSL + JSSE + JCA), instead non-stable Java WebStart;
- Huge suite of COM/OLE/ActiveX servers (including multi-threading) (using VS "C/C++" and MS Access), that is a part of Complex Medical Tools (including MFC/ATL/WTL GUI tools) which support communication with special medicine devices; This suite is used by Java SE client part;
- Java SE RMI Server (Java SE, RMI, JSSE, JCA, JDBC, MS SQL);
- ASP.NET Admin Server (C#, ASP.NET + MS SQL) admin application for control of ambulance workflow, including remote assign of ambulance duty calls;

- Tomcat Apache-based server, that provides secure distribution of new versions of Java SE client parts (Apache Tomcat, Axis SOAP server, SSL, JSSE, JCA, OpenSSL command-line tools);

Technologies and tools:

- Java SE 6, JNI, WebStart (partially), RMI, JSSE, JCA, Swing, Awt, JAXB, JDBC, Axis SOAP, JUnit, Java Mutli-Threading;

- Visual Studio C++, C/C++, stl, COM/OLE/ActiveX, ATL, MFC, Windows Mutli-Threading;
- OpenSSL command line tools;
- MS SQL (main client-server storage of ambulance workflow documents);
- MS Access (used by suite of COM/OLE/ActiveX servers and GUI tools as temporary storage of hardware (medicine devices) info,
- used by the client at the tablet PC platform);
- Microsoft SourceSafe, Team Foundation Server (TFS);
- Microsoft SharePoint;

More Info (links, documents, screenshots, examples): cybermate.

04.crypto_sdk

Taking part in the development of Crypto SDK, that implements National Ukrainian standard of digital signature based on elliptic curves (National Ukrainian standard: DSTU 4145-2002).

Technologies and tools:

- MS Visual C++, Windows SDK, C/C++, stl, MFC, Long Numbers Math, Crypto Primitives, Crypto Algorithms, Assembler, NASM;

More Info (links, documents, screenshots, examples): Crypto SDK.

03.api_hooks_sdk

API hooks SDK (using Hooks, remote threads technology, PE header analysis).

Suite, that provides monitoring of some functions calls (input-output functions) in varoius processes of Windows OS. Suite uses Win drivers to inform about new launched processes.

Technologies and tools:

- MS Visual C++, Windows SDK, C/C++, stl, MFC, Assembler, NASM, SysInternals/WinInternals Tools, Kernel and User Mode debuggers (SoftIce, OllyDebug), WinPCap;

More Info (links, documents, screenshots, examples): API hooks SDK.

02.billing_solver

Taking part in the development of a Billing Solution for a big European Telecommunication company (for the AIX Unix platform).

Technologies and tools:

- C/C++98, GCC/G++, Posix Api, GNU BIN Tools, STL, GDB, DDD, Make Tool, Bash,
 Borland C++ Builder 3.0-5.0, Microsoft Visual C++ 6.0, Win32 API, Multi-Threading (AIX/Linux/Windows), Oracle
 9i, Oracle Client API, PL/Sql Developer, Toad;
- CVS;
- AIX Unix, Fedora/RedHat Linux;

More Info (links, documents, screenshots, examples): Billing Solution.

01.fdpa_fdp_language

Form Data Postprocessor Application (FDPA) (for a US company).

Tool, that implements Form Data Postprocessing Language (FDPL). Form Data Postprocessor Application implements own

(without flex(lex)/bison(yacc) and similar tools) generators of lexical analyzer and syntax parser. Syntax parser implements recursive descent parser algorithm. Form Data Postprocessor Application provides processing of command scripts (FDPL) (generates simple byte-code files during processing of command scripts (FDPL)) and provides interpreted processing of data files in multi-thread mode.

This application has been used by US government department in the Massachusetts State.

Technologies and tools:

- C/C++, Visual Studio C++, stl, MFC, Windows API, Windows Multi-Threading;

More Info (links, documents, screenshots, examples): Form Data Postprocessor Application.

Projects (detailed descriptions):

below...

25.sm_vpn_stack_suite

Own product/project. **sm vpn stack suite** (Android VPN Stack Suite) tool.

Features of the Android VPN Stack Suite:

- Simple TCP/UDP socket server (with multi-thread support) (Linux platform), that implements open simple communication protocol (application level):

- TCP:

- The Client connects to the TCP Server;
- The Client sends "socket client: Hello" to the Server;
- The Server reads message from the Client;
- The Server sends "socket_server: Hello" to the Client;
- The Client reads message from the Server;
- The Client sends some text message (size 1024 with '\0' symbol) to the Server;
- The Server reads text message from the Client and generates inverted message (src: "1234567890" -> inverted: "0987654321");
- The Server sends inverted message to the Client;
- The Client reads message from the Server;
- The Client send read message to the Server;
- The Server reads text message from the Client and generates inverted message (src: "0987654321" -> inverted: "1234567890");
- The Server sends inverted message to the Client;
- The Client reads message from the Server;
- Last received message by the Client should be similar to the first message sent by Client to the Server;

- UDP:

- The Client connects to the TCP Server;
- The Client sends "socket client: Hello" to the Server;
- The Server reads message from the Client;
- The Server opens new UDP connection on new socket port;
- The Server sends new UDP port number to the Client (using first connection);
- The Client reads the UDP port number and closes first connection;
- The Client creates new UDP connection, using received from Server port number;
- The Client sends "socket client: Hello" to the Server;
- The Server reads message from the Client;
- The Server sends "socket server: Hello" to the Client;
- ... Then communication protocol (application level) is same as described in TCP section;
- Simple TCP/UDP socket client (Microsoft Visual Studio C++, Windows platform), that implements previous described protocol;
- Simple TCP/UDP socket client (Android Studio/Android SDK, Android platform), that implements previous described protocol;
- VPN Stack Application, that (Android Studio/Android SDK/Android NDK/C, Android platform), that is based on VpnService (Android platform) and implements intermediate IP/TCP/UDP stack (JNI/C/Sockets);
- VPN Stack Application provides catching, monitoring and processing TCP/UDP/ICMP/IP packages; Then these packages are processed (via JNI) at the Native API level;
- VPN Stack Application can catch packages from some defined application (if text edit "Filtered Package Name" is defined) or from all applications (if text edit "Filtered Package Name" is empty);
- VPN Stack Application creates tun0 device (after launching), which is used for catching TCP/UDP/ICMP/IP packages;
- VPN Stack Application reads packages, sent from Android application(s) from tun0 device, provides processing these packages and creates new or uses saved (sessions) TCP connections (if Android Application sends TCP package) or just uses sendto (if Android Application sends TCP package);
- VPN Stack Application receives all packages from network, provides processing these packages and writes packages to tun0 device, then packages will be received by Android application(s);
- VPN Stack Application doesn't use Raw Sockets;
- VPN Stack Application writes detailed log to Logcat and to the file
- /data/data/com.smansoft.vpn_stack/files/logs/vpn_stack.log;
- Follow applications from this suite:
 - Simple TCP/UDP socket server (with multi-thread support) (Linux platform);
 - Simple TCP/UDP socket client (Microsoft Visual Studio C++, Windows platform);
 - Simple TCP/UDP socket client (Android Studio/Android SDK, Android platform);

have been created and have been used for testing network connections and for testing the **VPN Stack** Application;

Technologies and tools:

- Android Platform: Android Studio, Android SDK, Android NDK, JNI, C11, gradle, CMake, POSIX, multi-threading,

- sockets;
- Windows Platform: C++17, Visual Studio 2019, Git, Tortoise Git client;
- Linux Platform: C++17, gcc, Make Tool, Bash scripts, Git;

Activity:

- Development Linux Socket Server Application;
- Development Windows Socket Client Application;
- Development Android Socket Client Application;
- Development Android VPN Stack Application;

Resources:

Links file; Blog Post;

sm_vpn_stack_suite-0.0.1.1

License.txt; ChangeLog.txt; ReadMe.txt; Demo Video (.mp4), Screenshots (.jpg), demo log files (.log);

Some screenshots:



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| VPN Stack | - |
| | 0 |
| Catch VPN Stack App only | |
| Filtered Package: | \Diamond |
| Filtered Package Name | 0 |
| Status: Not Started | € |
| | \triangleleft |
| | 0 |
| | |
| START VPN | |



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| 🔢 adb shell - Far 3.0.5700.0 x64 | <u>_</u> | × |
|--|----------|---|
| inet6 fec0::ff:fe44:5566/64 scope site mngtmpaddr dynamic valid_lft 85919sec preferred_lft 13919sec | | ^ |
| inet6 fe80::ff:fe44:5566/64 scope link valid lft forever preferred lft forever | | |
| 5: hwsim0: <broadcast,multicast> mtu 1500 gdisc noop state DOWN group default</broadcast,multicast> | | |
| link/ieee802.11/radiotap 12:00:00:00:00:00 brd ff:ff:ff:ff:ff:ff 6: sit0@NONE: <noarp> mtu 1480 gdisc noop state DOWN group default</noarp> | | |
| link/sit 0.0.0.0 brd 0.0.0.0 8. radio0: «PRADCAST MULTICAST UP LOWER UP» mtu 1500 adisc pfifo fast state UP aroun default alon 1000 | | |
| link/ether b6:a5:69:b0:8e:0d brd ff:ff:ff:ff:ff:ff | | |
| inet 192.168.200.2/24 brd 192.168.200.255 scope global radio0 valid lft forever preferred lft forever | | |
| inet6 fec0::4cbb:5111:b347:2128/64 scope site temporary dynamic | | |
| inet6_fec0::b4a5:69ff:feb0:8e0d/64_scope_site_mngtmpaddr_dynamic | | |
| valid_lft 85919sec preferred_lft 13919sec inet6_fe80::b4a5:69ff:feb0:8e0d/64_scope_link | | |
| valid_lft forever preferred_lft forever | | |
| generic_x86_64:/ # generic_x86_64:/ # | | |
| generic_x86_64:/ # ip addr 1. lo: <100PBACK UP LOWER UP> mtu 65536 adisc poqueue state UNKNOWN group default | | |
| link/loopback_00:00:00:00:00:00:00:00:00:00:00:00 | | |
| inet 127.0.0.1/8 scope host To valid_lft forever preferred_lft forever | | |
| inet6 ::1/128 scope host | | |
| 3: w]an0: <broadcast,multicast,up,lower_up> mtu 1500 qdisc mq state UP group default q]en 1000</broadcast,multicast,up,lower_up> | | |
| link/ether 02:00:00:44:55:66 brd ff:ff:ff:ff:ff:ff inet 192.168.232.2/21 brd 192.168.239.255 scope olobal wlan0 | | |
| valid_lft forever preferred_lft forever | | |
| valid_lft_86224sec preferred_lft_14224sec | | |
| inet6 fec0::ff:fe44:5566/64 scope site mngtmpaddr dynamic valid lft 86224sec preferred lft 14224sec | | |
| inet6 fe80::ff:fe44:5566/64 scope link | | |
| valid_ift_forever_preferred_ift_forever 5: hwsim0: <broadcast,multicast> mtu 1500 qdisc noop state DOWN group default</broadcast,multicast> | | |
| link/ieee802.11/radiotap 12:00:00:00:00:00 brd ff:ff:ff:ff:ff:ff 6: sit0@NONE: <noarp> mtu 1480 gdisc poop state DOWN group default</noarp> | | |
| link/sit 0.0.00 brd 0.0.0.0 | | |
| 8: radio0: <broadcast,multicast,up,lower_up> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000 link/ether b6:a5:69:b0:8e:0d brd ff:ff:ff:ff:ff:ff</broadcast,multicast,up,lower_up> | | |
| inet 192.168.200.2/24 brd 192.168.200.255 scope global radio0 | | |
| inet6_fec0::4cbb:5111:b347:2128/64_scope_site_temporary_dynamic | | |
| valid_ltt 86224sec preterred_ltt 14224sec inet6 fec0::b4a5:69ff:feb0:8e0d/64 scope site mnotmpaddr dynamic | | |
| valid_lft 86224sec preferred_lft 14224sec | | |
| valid_lft forever preferred_lft forever | | |
| 15: tun0: <pointopoint,up,lower_up> mtu 10000 qdisc pfifo_fast state UNKNOWN group default qlen 500 Γιπκ/ποπe</pointopoint,up,lower_up> | | |
| inet 10.1.10.1/32 scope global tun0 | | |
| inet6_fd00:1:fd00:1:fd00:1/128 scope global | | |
| valid_Ift forever preferred_Ift forever generic x86 64:/ # | | |
| generic_x86_64:/ # | | |
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| generic_x86_64:/ # | | |
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| 15/05/2021 21:16:39.248 - DEBUG - <handle_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 21 ack 21 data 16 win 1245 uid -1 ESTABLISHED loc 21 rem 21 acked 21 handling 15/05/2021 21:16:39.248 - DEBUG - <queue_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 21 ack 21 data 16 win 1245 uid -1 ESTABLISHED loc 21 rem 21 acked 21 handling 15/05/2021 21:16:39.248 - DEBUG - <queue_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 21 ack 21 data 16 win 1245 uid -1 ESTABLISHED loc 21 rem 21 acked 21 handling 15/05/2021 21:16:39.248 - DEBUG - <queue_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 21 ack 21 data 16 win 1245 uid -1 ESTABLISHED loc 21 rem 21 acked 21 queue_tcp bytes (str) qwerty_123 asdfg 15/05/2021 21:16:39.248 - DEBUG - <queue_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 21 ack 21 data 16 win 1245 uid -1 ESTABLISHED loc 21 rem 21 acked 21 queue_tcp bytes (hex) 71 77 65 72 74 79 5F 31 32 33 5F 61 15/05/2021 21:16:39.248 - DEBUG - <queue_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 21 ack 21 data 16 win 1245 uid -1 ESTABLISHED loc 21 rem 21 acked 21 queue_tcp bytes (hex) 71 77 65 72 74 79 5F 31 32 33 5F 61 15/05/2021 21:16:39.248 - DEBUG - <queue_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 21 ack 21 data 16 win 1245 uid -1 ESTABLISHED loc 21 rem 21 acked 21 queuing 2137</queue_tcp></queue_tcp></queue_tcp></queue_tcp></queue_tcp></queue_tcp></handle_tcp> | 73 64 | 66 6 | 7 |
| 15/05/2021 21:16:39.252 - DEBUG - <check_tcp_socket> - TCP socket from 10.1.10.1/55877 to 192.168.64.4/31111 ESTABLISHED loc 21 rem 37 recv bytes 16 15/05/2021 21:16:39.252 - DEBUG - <check_tcp_socket> - TCP socket from 10.1.10.1/55877 to 192.168.64.4/31111 ESTABLISHED loc 21 rem 37 recv bytes (str) gfdsa 321 ytrewq 15/05/2021 21:16:39.252 - DEBUG - <check_tcp_socket> - TCP socket from 10.1.10.1/55877 to 192.168.64.4/31111 ESTABLISHED loc 21 rem 37 recv bytes (hex) 67 66 64 73 61 5F 33 32 31 5F 79 74 72 65 77 71</check_tcp_socket></check_tcp_socket></check_tcp_socket> | | | |
| 15/05/2021 21:16:39.257 - DEBUG - <handle_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 37 ack 37 data 16 win 1245 uid -1 ESTABLISHED loc 37 rem 37 acked 21 handling 15/05/2021 21:16:39.257 - DEBUG - <queue_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 37 ack 37 data 16 win 1245 uid -1 ESTABLISHED loc 37 rem 37 acked 21 queue_tcp bytes (str) gfdsa 321 ytrewq 15/05/2021 21:16:39.258 - DEBUG - <queue_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 37 ack 37 data 16 win 1245 uid -1 ESTABLISHED loc 37 rem 37 acked 21 queue_tcp bytes (str) gfdsa 321 ytrewq 15/05/2021 21:16:39.258 - DEBUG - <queue_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 37 ack 37 data 16 win 1245 uid -1 ESTABLISHED loc 37 rem 37 acked 21 queue_tcp bytes (hex) 67 66 64 73 61 SF 33 32 31 SF 79 74 15/05/2021 21:16:39.258 - DEBUG - <queue_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 37 ack 37 data 16 win 1245 uid -1 ESTABLISHED loc 37 rem 37 acked 21 queu_tcp bytes (hex) 67 66 64 73 61 SF 33 32 31 SF 79 74 15/05/2021 21:16:39.258 - DEBUG - <queue_tcp> - TCP AP 10.1.10.1/55877 > 192.168.64.4/31111 seq 37 ack 37 data 16 win 1245 uid -1 ESTABLISHED loc 37 rem 37 acked 21 queuing 3753</queue_tcp></queue_tcp></queue_tcp></queue_tcp></queue_tcp></handle_tcp> | 72 65 | 77 7: | 1 |
| 15/05/2021 21:16:39.260 - DEBUG - <check_tcp_socket> - TCP socket from 10.1.10.1/55877 to 192.168.64.4/31111 ESTABLISHED loc 37 rem 53 recv bytes 16 15/05/2021 21:16:39.260 - DEBUG - <check_tcp_socket> - TCP socket from 10.1.10.1/55877 to 192.168.64.4/31111 ESTABLISHED loc 37 rem 53 recv bytes (str) gwerty_123_asdfg 15/05/2021 21:16:39.260 - DEBUG - <check_tcp_socket> - TCP socket from 10.1.10.1/55877 to 192.168.64.4/31111 ESTABLISHED loc 37 rem 53 recv bytes (hex) 71 77 65 72 74 79 5F 31 32 33 5F 61 73 64 66 67</check_tcp_socket></check_tcp_socket></check_tcp_socket> | | | |

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vpn stack.2.txt - Notepad

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Ln 2, Col 1 100% Windows (CRLF) UTF-8

<u>File Edit Format View H</u>elp 15/05/2021 21:18:23.956 - DEBUG - <handle_tcp> - TCP AP 10.1.10.1/37209 > 213.136.82.117/80 seq 1 ack 1 data 432 win 1245 uid -1 ESTABLISHED loc 1 rem 1 acked 1 handling 15/05/2021 21:18:23.956 - DEBUG - <queue_tcp> - TCP AP 10.1.10.1/37209 > 213.136.82.117/80 seq 1 ack 1 data 432 win 1245 uid -1 ESTABLISHED loc 1 rem 1 acked 1 queue_tcp bytes (str) GET / HTTP/1.1 Host: curr-ip.com Connection: keep-alive Upgrade-Inscure-Requests: 1 Upgrade-Inscure-Requests: 1 User-Agent: Mozilla/5.0 (Linux; Android 8.0.0; Android SDK built for x86_64 Build/OSR1.180418.026) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/69.0.3497.100 Mobile Safari/537.36 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/appng,*/*;q=0.8 Accept-Encoding: gzip, deflate Accept-Language: en-US,en;q=0.9 15/05/2021 21:18:24.037 - DEBUG - <check_tcp_socket> - TCP socket from 10.1.10.1/37209 to 213.136.82.117/80 ESTABLISHED loc 1 rem 433 recv bytes 6329 15/05/2021 21:18:24.037 - DEBUG - <check_tcp_socket> - TCP socket from 10.1.10.1/37209 to 213.136.82.117/80 ESTABLISHED loc 1 rem 433 recv bytes (str) HTTP/1.1 200 OK Server: Apache-Coyote/1.1 Set-Cookie: JSESSIONID=EDEE2971F408E7D599986251894EDFEE; Path=/; HttpOnly Set-Lookie: JSESSIONID=EUEZ9/IF4U8E/DS999E Content-Type: text/html;charset=ISO-8859-1 Content-Language: en-US Content-Length: 6080 Date: Tue, 15 Jun 2021 18:09:34 GMT

<!DOCTYPE html>

<!--[if IE 8]> <html class="ie ie8" lang="en-US"> <![endif]--> <!--[if !(IE 7) ! !(IE 8)]><!--> <html lang="en-US"> <!--<![endif]-->

<head> <title>{.Curr.Ip.} Current IP Info</title>

<!--[if lte IE 7]> <meta http-equiv="refresh" content="0;url=empty.htm"> <![endif]-->

<meta charset="UTF-8" /> <meta name="viewport" content="width=device-width" />

<meta name='robots' content='index,follow'/>

<link rel='stylesheet' id='fonts-css' href='/resources/css/fonts.css' type='text/css' media='all'/>
<link rel="stylesheet" id="font-awesome-css" href='/resources/css/font-awesome.css' type="text/css" media='all'/>

<!--[if lt IE 9]> <link rel='stylesheet' id='style-css' href='/resources/css/style.ie.css' type='text/css' media='all'/> <![endif]-->

<!--[if (gte IE 9)]>
slink rel='stvlesheet' id='stvle-css' href='/resources/css/stvle.css' tvne='text/css' media='all'/>



. Can be used as a finewall or as a Web Guard



24.vpn_tunnel

vpn_tunnel:

- simple Android Service Application, that is based on the Android VpnService and provides catch and tunneling ip/tcp, ip/udp,... packages to Linux application, that
 - extracts packages and routes them in internet;
- provides tunneling in both directions: from Some Android Application to Internet
- (Some Server) and from Internet (Some Server) to Some Android Application;
- this tool is based on ToyVpn and doesn't provide any encryption of tunneling packages;
- some improvement of handshake (Vpn tunnel service and Linux tunnel server) has been provided;

Technologies and tools:

- Android Platform: Android Studio, Android SDK, Gradle, Git;
- Linux Platform: Debian 10, gcc, Make tool, Bash, Git;

Activity:

- Development VPN Tunnel Android Service Application;
- Development Linux Tunnel Server Application;

Resources:

Demo Video (.mp4), Screenshots (.jpg);



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| | | ar sman@10debian64-ws4: /home/strgs/sdb.05/sman/git.cur/w.vpn_suite_a/src/inv/vpn_tunnel_suite/tunnel_server/_bin/bin | – 🗆 X |
|-----------------|--------------------|---|-----------------------|
| | | sman@l0debian64-ws4:/home/strgs/sdb.05/sman/git.cur/w.vpn_suite_a/src/inv/vpn_tunnel_suite/tunnel_server\$ | ^ |
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| | | smanfilueDiands-ws+:/nome/Strgs/sdb.05/sman/git.cur/w.vpn_suite_a/src/inv/vpn_tunnel_suite/tunnel_server; make install mkdir - p./ bin/bin | |
| VPN Tunnel | | mkdir -p ./ bin/share | |
| | | cp -f ./tunnel_server./_bin/bin | |
| | 192 168 64 4 | sman#i0debian6+ws+//nome/strg/sdb.05/sman/glt.cut/w.vpi_sult=a/stc/inv/vpi_tunnel_sult=/unnel_servers sman#i0debian6+ws+//nome/strg/sdb.05/sman/glt.cut/w.vpi_sult=a/stc/inv/vpi_tunnel_sult=/unnel_servers | |
| Server Address: | | sman@l0debian64-ws4:/home/strgs/sdb.05/sman/git.cur/w.vpn_suite_a/src/inv/vpn_tunnel_suite/tunnel_server\$ | |
| Server Port | 8000 | sman@iOdebian64-ws4:/home/strgs/sdb.05/sman/git.our/w.vpn_suite_4/src/inv/vpn_tunnel_suite/tunnel_server\$ | |
| ocreation. | | sman#10debian6+ws+/nome/stugs/sub.og/sman/glt.cut/w.vbn_sult=_a/stc/inv/ybn_tunnel_sult=/unnel_servers sman#10debian6+ws4:/home/stugs/sub.og/sman/glt.cut/w.vbn_sult=_a/stc/inv/ybn_tunnel_sult=/unnel_servers | |
| c | | sman@10debian64-ws4:/home/strgs/sdb.05/sman/git.cur/w.vpn_suite_a/src/inv/vpn_tunnel_suite/tunnel_server/_bin/bin\$ | |
| ĭ C | Catch VPN App only | sman §10 debian 64-ws4:/home/strgs/sdb.05/sman/git.cur/w.ypn_suite_a/src/inv/ypn_tunnel_suite/tunnel_server/bin/bin? | |
| | | smangiUdeblands-w84:/nome/strgs/sdb.US/sman/git.cur/w.vpm_suite_/src/inv/vpm_tunnel_suite/tunnel_server/_bin/binS smangiUdebland5-w84:/nome/strgs/sdb.OS/sman/git.cur/w.vpm_suite_/src/inv/vpm_tunnel_suite/tunnel_server/_bin/binS | |
| | | total 340 | |
| Status: | Started | -rwxr-xr-x 1 sman sman 518 Jun 13 15:55 launch tunnel server.sh | |
| | | -rewr-wr-x i sman sman Saitos Jun 14 13:22 Unnel Server sman@lodebian64-ws4:/home/strops/sdb.05/sman/dit.cu//w.vn. suite /src/inv/vnn tunnel suite/tunnel server/ bin/bin\$ | |
| | | sman@iddebian64-ws4//home/stgs/sdb.05/sman/gitcur/w.vp.suite_a/src/inv/vpn_tunnel_suite/tunnel_serve/bin/bin\$ | |
| | | sman@l0debian64-ws4:/home/strgs/sdb.05/sman/git.cur/w.vpn_suite_a/src/inv/vpn_tunnel_suite/tunnel_server/_bin/bin\$ | |
| | START VPN | sman@iddebian64-w84:/home/strgs/sdb.d5/sman/git.cur/w.vpn suite a/src/inv/vpn tunnel suite/tunnel server/bin/bin\$ mudo. /launch tunnel server sh | |
| | | [sudo] password for sman: | |
| | | 14/05/2021 13:27:25.591 - INFO - <int char**)="" main(int,=""> - int main(int, char**)</int> | |
| | STOP VPN | 14/05/2021 13:27:25.609 - INFO - <int char**)="" main(int,=""> - tunnel_server is started</int> | |
| | | 14/05/2021 $13/27:44.922 - 1080 - (And Mean(And, Chart)) - received len = 18$ | |
| | | 14/05/2021 13:27:44.922 - INFO - <int get_tunnel(char*)=""> - received packet[0]:</int> | |
| | | 14/05/2021 13:27:44.922 - INFO - <int get_tunnel(char*)=""> - received packet[1]: VPN_TUNNEL_CLIENT</int> | |
| | | $14/05/2021$ $13:27:44.924 - IANO - - sent ten = 1614/05/2021 13:27:44.924 - INNO - - received len = 14$ | |
| | | 14/05/2021 13:27:44.924 - INFO - <int get_tunnel(char*)=""> - received packet[0]:</int> | |
| | | 14/05/2021 13:27:44.924 - INFO - <int get_tunnel(char*)=""> - received packet[1]: VPN_TUNNEL_OK</int> | |
| | | 14/05/201 13:27:44.924 - INFO - <int get_tunnel(chat*)=""> - sent ten = 14 14/05/201 13:27:44.924 - INFO - <int get_tunnel(chat*)=""> - tun0: Here comes a new tunnel</int></int> | |
| | | 14/05/2021 13:28:35.567 - INFO - <int char**)="" main(int,=""> - tun0: The tunnel is broken</int> | |
| | | 14/05/2021 14:38:40.617 - INFO - <int get_tunnel(char*)=""> - received len = 18</int> | |
| | | 14/05/2021 14:30:40.617 - INFO - <int get_tunnel(char*)=""> - zeceived packet[0]: 14/05/2021 14:38:40.617 - INFO - <int get_tunnel(char*)=""> - zeceived packet[1]: VPN TUNNEL CLIENT</int></int> | |
| | | 14/05/2021 14:38:40.617 - INFO - <int get_tunnel(char*)=""> - sent len = 18</int> | |
| | | 14/05/2021 14:38:40.620 - INFO - <int get_tunnel(char*)=""> - received len = 14</int> | |
| | | 14/05/2021 14:38:40.620 - INFO - (int get_tunnel(char*)) - received packet[0]: 14/05/2021 14:38:40.620 - INFO - (int get_tunnel(char*)) - received packet[1]: VPN TINNEL 0K | |
| | • | 1/05/2021 14:35:40.620 - INFO - (int gc tunnel(char)) - sent len = 14 | |
| | | 14/05/2021 14:38:40.620 - INFO - <int char**)="" main(int,=""> - tun0: Here comes a new tunnel</int> | |
| | | 14/05/2011 14:39:25.456 - INFO - <int char**)="" main(int,=""> - tun0: The tunnel is broken 14/05/2011 14:39:37.570 - INFO - <int fact="" tunnel(char%)=""> - terestued len = 19</int></int> | |
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23.btcpool tuning

btcpool tuning - building, configuring and some investigate of the suite:

```
- bitcoind (bitcoin launched in the server mode);
- suite of tools of btcpool:
   - blkmaker;
    - gbtmaker;
    - jobmaker;
    - sserver (Stratum Server);
    - statshttpd;
    - sharelogger;
    - slparser;
    - poolwatcher;
- Kafka (+zookeeper) - broker manager (bus);
- simulator (part of the btcpool tools suite) -
   multi-user and multi-miner testing tool, that provides testing the suite working and
   modules cooperation, generating test/virtual blockchain blocks;
- MySql;
- Httpd + Php;
```

Technologies and tools:

- Linux Platform: Debian 10, gcc, g++, Make tool, GTest (unit tests framework from Google), MySql, Php, Git;

Activity:

- Building bitcoin project (using sources);
- Building btcpool project (from sources), rebuilds with debug options;
- Configuring and launching bitcoind, bitcoin-qt (including initializing wallets, datadirs, ...);
- Configuring and launching kafka, zookeeper, btcpool (all modules, configuration files, ...);
- Configuring and launching btcpool (in various modes: one user/multiuser, various number of workers/miners);
- Investigating some algorithms of working this schema, including:
 - rewards generation;
 - new test blocks generation (including period and it's tuning);
 - multi-user mode;
 - multi-miners mode;

Resources:

Screenshots (.jpg);







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| > == stats_pool_day | 16K | 764 | 0 | 6a6bbcfde00aa2b0 | 636c1d518b6752f38 | 2d1cc5ba89a8 | 9 765 625 | 233 000000054b1c |)df04f8c3506fe344a0ddedd | b410345e7bcc 424,273,193 | 536 870 912 | 2021-06-09 19:16:40 | | | | |
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22. sm_producer_consumer

Own product/project.

Features of the sm_producer_consumer (SM Producer Consumer) tool:

- Multi-thread demo/template, that resolves producer-consumer problem (bounded-buffer problem);
- Using thread support primitives (classes, api), which are parts of the C++ (C++11) language, defined by the standard ISO/IEC 14882:2011;
- Using several producer-consumer objects, which use suite of limited-size queues shared by various number of threads with various productivity/periodicity/frequency;
- Writing processed results into the text file (in the special directory);
- Logging results and applications workflow;
- Multi-thread (thread-safe) log library, that supports output to the log file and/or console;
- Multi-thread (thread-safe) log library, supports log level output (TRACE, DEBUG, INFO, WARN, ERROR, FATAL);
- Usage string secure library in some C-language functions;
- Self-stopping support, when file '.stop' is placed in the special directory;

Technologies and tools:

- Linux Platform: C/C11/C++/C++11, gcc, g++, Make Tool, Kdbg,
- Eclipse IDE for C/C++ Developers, valgrind, Bash scripts, Git;
- Virtual Box (Virtualization Software), Various distros of Linux (Debian 9/10, OpenSUSE, Ubuntu, Mint);

Activity:

- Design and architecture;
- Software development;
- Documentation/help;
- Testing;

Resources:

<u>Links file;</u> <u>Blog Post;</u>

sm_producer_consumer on GitHub; sm_producer_consumer - 0.0.1.1;

License.txt; ChangeLog.txt; ReadMe.txt; Install.txt; Help.txt;

Screenshots (.jpg), demo log file (.log), demo result file (.out.txt);

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| Getting Started | | | |
| 🛱 smansoft / sm_pr | roducer_consumer | | Q Notifications Star 0 8 Fork 0 |
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21. sm_regex

Own product/project.

sm_regex (SM Regular Expressions Calculator) - is a multi-platform (Windows/Linux) Qt-based Regular Expressions
Calculator.

Features of the SM Regular Expressions Calculator:

- Multi-platform application: there are builds for Windows 64/32 (.zip) and Linux 64 (.tar.gz);
- Calculation a Match (finds all substrings in the input string which match a regular expression pattern and returns all occurrences) using regular expressions;
- Calculation a Replace (finds all substrings in the input string which match a regular expression pattern and replaces all occurrences, by entered replacement text), using regular expressions;
- Calculation a SubExpressions (finds all substrings in the input string which match a regular expression pattern and separates text, by found substrings), using regular expressions;
- Usage follow Regular Expressions engines: Qt RegEx, STL C++ RegEx (C++ 11);
- Usage ECMAScript standard (by both engines as Qt RegEx as STL C++ RegEx (C++ 11));
- One-line and multi-line modes;
- Case-insensitive and case-sensitive modes;
- Saving the result in the Clipboard;
- Saving the result in a Text File;
- Tuning interface, usage Light and Dark themes;
- Usage database, where Regular Expressions and options (one-line/multi-line and case-insensitive/case-sensitive), using during calculations can be saved;
- Usage the System Tray on the Windows and Linux platforms during work of the SM Regular Expressions Calculator tool;
- Log of results and applications workflow;
- Portable build/version (archive(s) which can be just extracted);

Technologies and tools:

- Windows Platform: C/C11/C++/C++11, CMake, Qt 5.14.2, Qt Creator 4.14,
 - Visual Studio 2019 (including NMake tool), diff tool, Git, Windows Batch scripts, Tortoise Git client;
- Linux Platform: C/C11/C++/C++11, CMake, gcc, g++, Make Tool, Kdbg,
- Qt 5.14.2, Qt Creator 4.14, diff tool, Python 3, Bash scripts, Git;
- Virtual Box (Virtualization Software), Various distros of Linux (Debian 9/10, OpenSUSE, Ubuntu, Mint);

Activity:

- Design and architecture;
- Software development;
- Documentation/help;
- Testing;

Resources:

Links file; Blog Post; Product Page;

<u>sm_regex - 0.0.1.1;</u>

License.txt; ChangeLog.txt; ReadMe.txt; Install.txt; Help.txt;

Screenshots (.jpg), demo log files (.log);

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20. vector_syntax_parser

Development of some suite of tools and PostgreSQL modules/extensions at the backend layer (for US and India Customers), that provides processing of vector data, using special expressions language. This suite and PostgreSQL DB data are used by .Net Framework Web Application.

http://smansoft.com/portfolio/20.vector_syntax_parser/vector_syntax_parser.jpg.

This suite and PostgreSQL DB data are used by .Net Framework Web Application.

Technologies and tools:

- Linux Platform (Ubuntu, Debian);
- C11, C++11/C++17, GCC/G++;
- flex, bison;
- STL, Boost C++, Log4cplus;
- Multi-threading;
- Posix API;
- Make Tool;
- GDB, Kdbg;
- Eclipse C/C++, KDevelop;
- valgrind;
- Git, bitbucket;
- PostgreSQL 10, modules/extensions of PostgreSQL;
- PostgreSQL SPI;
- libpq, libpqxx;
- PL/pgSQL;
- pgAdmin, DBeaver;
- https://github.com/pjungwir/aggs_for_arrays;
- <u>https://github.com/pjungwir/aggs_for_vecs;</u>

- Development of re-entrant/multi-thread support syntax parser, that implements special expressions language for processing of vector data, that supports arithmetic, bitwise operators, comparison, various types of constants, several functions for the processing of vector data, brackets, ordering, ...:
 - flex, bison;
- Development of console tool, that provides processing of vector data, using special expressions language:
 - flex, bison;
 - libpq, libpqxx;
 - STL, Boost C++ (command line parameters, xml files reading, regular expressions parsing, boost algorithms);
 - Log4cplus;
 - Make Tool;
 - GDB, Kdbg;
 - Eclipse C/C++;
 - valgrind;
- Development of PostgreSQL module/extension, that provides processing of vector data, using special expressions language:
 - flex, bison;
 - PostgreSQL Native API (SPI);
 - STL, Boost C++ (regular expressions parsing, boost algorithms);
 - Make Tool;
 - GDB, Kdbg;
 - Eclipse C/C++, KDevelop;
- Updating the PostgreSQL open-source modules/extensions, adding some additional functionality (some additional vectors processing, weighted medians solving, standard deviation (sigma) solving):
 - https://github.com/pjungwir/aggs_for_arrays;
 - <u>https://github.com/pjungwir/aggs_for_vecs;</u>
 - ltree (standard PostgreSQL module/extension);
 - PostgreSQL Native API (SPI);
 - Make Tool;
 - GDB, Kdbg;
 - Eclipse C/C++, KDevelop;

- Development of some suite of stored functions and triggers (PostgreSQL, PL/pgSQL);
- Development of some suite of console tools for reading/analysis/parsing/extracting data/multi-thread export to DB, that reads vector data in binary formats and provides multi-thread export these vector data to the DB. Development some version of syntax/parser, that provides converting from one dialect of special expressions language to another:
 - flex, bison;
 - libpq, libpqxx;
 - STL, Boost C++ (command line parameters, xml files reading, regular expressions parsing, boost algorithms, multi-threading);
 - Log4cplus;
 - Make Tool;
 - GDB, Kdbg;
 - Eclipse C/C++;
 - valgrind;
- Support of Ubuntu/Debian WS/Servers;

Screenshots (.jpg);

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| | ez_parser text |
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| 2 | message:Invalid syntax at position 6 |
| 3 | current buffer:var61 ! |
| 4 | current error position:6 |
| 5 | current error lexem:! |
| 6 | length of the current error lexem:1 |
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19. sm_calculator

Own product/project.

sm_calculator (SM Calculator) tool - is a multi-platform (Windows/Linux) open-source console calculator, implementing a simple language for processing of mathematical expressions.

Features of the SM Calculator:

- Multi-platform application: there are builds for Windows 64/32 (.zip) and Linux 64/32 (.tar.gz);
- Various types of values (64 bits integers, 64 bits floats, strings);
- Various float constants (pi, exp,...);
- Solving of mathematical expressions, using basic arithmetic operators;
- Solving of mathematical expressions, using bracket delimiters
 - '(' and ')' (in one expression) and delimiters ';', '\n';
- Solving using suite of mathematical (including trigonometric, logarithm, exponentiation) functions;
- Solving using bitwise functions and operators;
- Various types of entering and output formats of integers (decimal, octal, hexadecimal, binary formats);
- Various values of unit for measuring of angles (radians, degrees, gradians), which are used by trigonometric functions;
- Support of output properties (precision) of float values;
- Suite of converting functions (various values of unit for measuring of angles, various types of entering and output formats of integers);
- Suite of commands, which provide setup of configuration of SM Calculator;
- Several modes of execution (processing of files, processing of expressions, obtained via command line, processing of expressions in interactive mode, using standard input/output devices);
- Control/administration the creation/start of the log of the sm_calculator (SM Calculator) tool: start without log output (command line option: -q, --no_log)
- changing the path of the created/opened log file (command line option: -1, --log_file);
- Access to the sm_calculator (SM Calculator) tool can be included into \$PATH (Windows/Linux) and the sm_calculator (SM Calculator) tool can be launched from any current directory;
- one om daldaladdi (dii daldaladdi) dool dan de laandnoa liom anj dallond alloddolj,
- Detailed processing of syntax error(s);
- Restoring of syntax parsing after error(s);
- Reentrant implementing of the parser, i.e. parser can work in multi-thread mode;
- Help (command: help[;] or command line option: -h, --help);

SM Calculator supports follow modes of execution:

- processing of file, that contains expression(s);
- processing of command line expression(s);
- interactive mode (user enters expression(s), using standard input device/console).

User can use same expressions in all these modes (processing of file, processing of command line expression(s), interactive mode);

Technologies and tools:

- Windows Platform: C/C11, CMake, Visual Studio 2019 (including NMake tool), flex, bison, diff tool, Python 3, Git, Windows Batch scripts, Tortoise Git client;
- Linux Platform: C/C11, CMake, gcc, Make Tool, Kdbg, flex, bison,
 - diff tool, Python 3, Git, Bash scripts;

- Virtual Box (Virtualization Software), Various distros of Linux (Debian 9/10, openSUSE, Ubuntu, Mint);

Activity:

- Design and architecture;
- Software development;
- Development of build scripts;
- Development of unit tests;
- Documentation/help;
- Testing;

Resources:

Links file; Blog Posts: - version 0.2.0.4 release; - building the solution; Product Page;

sm_calculator - 0.2.0.4;

License.txt; ChangeLog.txt; ReadMe.txt; Install.txt; Help.txt;

Screenshots (.jpg), demo video (.mp4), demo log files (.log);









b/10 lest #0: sm_calc_test_files_05 Passed 0.01 sec Start 7: sm_calc_test_files_06 Passed 0.01 sec Start 8: sm_calc_test_files_07 Passed 0.02 sec Start 9: sm_calc_test_expr Passed 1.53 sec Start 10: sm_calc_test_expr Passed 1.53 sec Start 10: sm_calc_test_log Passed 1.53 sec 10/10 Test #10: sm_calc_test_log Passed 1.53 sec 100% tests passed, 0 tests failed out of 10 Total Test time (real) = 6.25 sec CPack: Create package using ZIP CPack: Create package using ZIP CPack: Create package using ZIP CPack: Create package CPack: Create package for: sm_calculator CPack: Create package CPack: Create package ising ZIP CPack: Create package CPack: Install projects CPack: - Install directory: E:/sman/sm_calculator-0.1.0.2-Source CPack: - Install directory: E:/sman/sm_calculator-0.1.0.2-Source CPack: - package: E:/sman/sm_calculator-0.1.0.2-Source/_cmake/_build/sm_calculator-0.1.0.2-Source.zip generated. E:\sman\sm_calculator-0.1.0.2-Source_cmake>_

| 2 * | sm_calculator : bash — Konsole | | \sim \sim \otimes |
|---|---|---|-------------------------|
| File Edit View Bookmarks Settings Help | | | |
| SM Calculator | | | |
| Log has been started in the file: /home/sman/bin/sm_ca | lculator/sm_calculator-0.1.0.2-Linux-x64/log/sm_calc.log | | |
| USAGE: sm_calc [OPTION] | | | |
| -h,help -i,interactive -l <lfile>,log_file=<lfile></lfile></lfile> | <pre>display this message force the interactive mode name/path of the log file *{SM_CALC_BIN}* - pseudo-variable, that can be used in the value of name/path of the log file and defines path to the binary directory where the lem called avec is deployed</pre> | | |
| -q,no_log -f <infile>,in_file=<infile> -ocofile>,out_file=<ofile> -xexpression_value>,expression=<expression_value> -p<precision_value>,f_precision=<precision_value></precision_value></precision_value></expression_value></ofile></infile></infile> | <pre>don't create/open the log file and don't start the log output name/path of the input file name/path of the output file expression, that should be solved floating-point precision (after '.'): [0-20 exp] by default, precision_value == '10' i f 'precision value' == 'exp' - exponential output will be used</pre> | | |
| -n <i_format_value>,i_format=<i_format_value></i_format_value></i_format_value> | output format of integers: [dec oct hex bin] by default, output format of integers == 'dec' default unit of measurement of an anole = 'rad dec orad' | | |
| sman@10debian64-ws4∶~/bin/sm_calculator\$ sm_calcexp sm_calc 0.1.0.2 Copyright (c) 2020 SManSoft SM Calculator | ression="pow_^2(sin(pi/2))+pow_^2(cos(pi/2));" | | |
| Log has been started in the file: /home/sman/bin/sm_ca | lculator/sm_calculator-0.1.0.2-Linux-x64/log/sm_calc.log | | |
| Command line processing: In >> pow_^2(sin(pi/2))+pow_^2(cos(pi/2)); Out >> 1.0000000000; | | I | |
| sman@10debian64-ws4:~/bin/sm_calculator\$ sm_calcin_ sm_calc 0.1.0.2 Copyright (c) 2020 SManSoft SM Calculator | file="./sm_calc_test.in.02.txt"out_file="./sm_calc_test.out.02.txt" | | |
| Log has been started in the file: /home/sman/bin/sm_ca | lculator/sm_calculator-0.1.0.2-Linux-x64/log/sm_calc.log | | |
| Files processing: in file = ./sm_calc_test.in.02.txt out file = ./sm_calc_test.out.02.txt | | | |
| sman@10debian64-ws4:~/bin/sm_calculator\$ sm_calc sm_calc 0.1.0.2 Copyright (c) 2020 SManSoft SM Calculator | | | |
| Log has been started in the file: /home/sman/bin/sm_ca | lculator/sm_calculator-0.1.0.2-Linux-x64/log/sm_calc.log | | |
| Interactive processing: Type 'help' for more information. In >> b1010 + 0xa; Out >> 20; | | | |
| In >> quit; Out >> Exit. Good Bye! | | | |
| <pre>sman@10debian64-ws4:~/bin/sm_calculator\$</pre> | | | |

| Command Prompt | | <u> </u> | × |
|---|---|----------|---|
| SM Calculator | | | ^ |
| Log has been started in the file: C:\sman\bin\sm_calcu | lator\sm_calculator-0.1.0.2-Windows-x64\log\sm_calc.log | | |
| USAGE: sm_calc [OPTION] | | | |
| -h,help | display this message | | |
| -l <lfile>,log_file=<lfile></lfile></lfile> | name/path of the log file *{SM_CALC_BIN}* - pseudo-variable, that can be used in the value of name/path of the log file and defines path to the binary directory, where the 'sm_calc' exec is deployed | | |
| -q,no_log | don't create/open the log file and don't start the log output | | |
| -f <infile>,in_file=<infile></infile></infile> | name/path of the input file | | |
| -o <ofile>,out_file=<ofile></ofile></ofile> | name/path of the output file | | |
| <pre>-x<expression_value>,expression=<expression_value></expression_value></expression_value></pre> | expression, that should be solved | | |
| <pre>-p<precision_value>,f_precision=<precision_value></precision_value></precision_value></pre> | floating-point precision (after '.'): [0-20 exp] by default, precision_value == '10' if 'precision value' == 'exp' - exponential output will be used | | |
| -n <i_format_value>,i_format=<i_format_value></i_format_value></i_format_value> | output format of integers: [dec oct hex bin] by default, output format of integers == 'dec' | | |
| -a <unit_value>,a_unit=<unit_value></unit_value></unit_value> | default unit of measurement of an angle = 'rad deg grad' | | |
| C:\sman\bin\sm_calculator>sm_calcexpression="pow_^2 sm_calc 0.1.0.2 Copyright (c) 2020 SManSoft SM Calculator | ?(sin(pi/2))+pow_^2(cos(pi/2));" | | |
| Log has been started in the file: C:\sman\bin\sm_calcu | llator\sm_calculator-0.1.0.2-Windows-x64\log\sm_calc.log | | |
| Command line processing: In >> pow_^2(sin(pi/2))+pow_^2(cos(pi/2)); Out >> 1.0000000000; | | | |

C:\sman\bin\sm_calculator>sm_calc --in_file="./sm_calc_test.in.01.txt" --out_file="./sm_calc_test.out.01.txt" sm_calc 0.1.0.2 Copyright (c) 2020 SManSoft SM Calculator

Log has been started in the file: C:\sman\bin\sm_calculator\sm_calculator-0.1.0.2-Windows-x64\log\sm_calc.log

Files processing: in file = ./sm_calc_test.in.01.txt out file = ./sm_calc_test.out.01.txt

C:\sman\bin\sm_calculator≻sm_calc sm_calc 0.1.0.2 Copyright (c) 2020 SManSoft SM Calculator

Log has been started in the file: C:\sman\bin\sm_calculator\sm_calculator-0.1.0.2-Windows-x64\log\sm_calc.log

Interactive processing: Type 'help' for more information. In >> b1010 + 0xa; Out >> 20;

In >> exit; Out >> Exit. Good Bye!

C:\sman\bin\sm_calculator>_

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| | sm_calc | Reentrant (multi-thread) implementing of the parser ha | s been added; | 4 months ago | কা View license | | | |
| | sm_calc_tests | Reentrant (multi-thread) implementing of the parser ha | s been added; | 4 months ago | | | | |
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| B | CMakeLists.txt | Reentrant (multi-thread) implementing of the parser ha | s been added; | 4 months ago | | | | |
| D | HELP | Reentrant (multi-thread) implementing of the parser ha | is been added; | 4 months ago | Packages | | | |
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18. secure_messenger

Android Secure XMPP/Jabber Messenger (for some European Company). Adding secure solutions to already implemented XMPP/Jabber protocol.

Technologies and tools:

- Java 8;
- C/C++;
- Android Studio;
- Android SDK;
- Android NDK;
- XMPP/Jabber protocol;
- OpenSSL;
- Olm (Double-Ratchet protocol);
- SQLite cipher package;
- gradle;
- CMake;
- Git;

Activity:

- Build of OpenSSL for Android platform;
- Native integration of OpenSSL in the Secure XMPP/Jabber Messenger (JNI access);

- Adding native OpenSSL-based crypto functionality:
 - SHA256;
 - SHA512;
 - ECDH (using NID X9 62 prime256v1/NID secp256k1);
 - AES256-CBC;
 - Base64;
- Strong encrypted login, based on native OpenSSL-based crypto functionality:
 - SHA512;
- Encryption of SQLite Database, using OpenSSL, based on: net.zetetic:android-database-sqlcipher package, that uses:
 - AES256-CBC;
- Native SSL connect to Jabber Server(s) (or any server, using SSL protocol) (using native OpenSSL functionality) (messenger-to-server secure connection) using protocols:
 - TLSv1.2;
 - TLSv1.3;
- Implementing the contact-to-contact shared secret generation, using ECDSA (over XMPP/Jabber protocol): ECDH protocol, using Elliptic Curve: NID X9 62 prime256v1 (NID secp256k1); Generated contact-to-contact shared secret is used for base initializing of contact-to-contact Double-Ratchet protocol:

https://signal.org/docs/specifications/doubleratchet/

- Integration the Double-Ratchet Algorithm (based on olm) in the Secure XMPP/Jabber Messenger

and integration Double-Ratchet Algorithm in the the XMPP/Jabber protocol (contact-to-contact encryption), using the olm sdk:

https://gitlab.matrix.org/matrix-org/olm Olm uses:

- EC 25519 (X25519) used by ECDH during every generation of a new Shared Secret;
- AES256-CBC Encryption of message, using new Shared Secret;
- HMAC-SHA256 hmac for every message;
- Secure XMPP/Jabber Messenger(s) provides regular synchronizing of the Double-Ratchet Protocol, for the same contact-to-contact shared secret usage;
- Suite of bash scripts for generation the EC (prime256v1) keys in formats (for OpenSSL connections): - PEM;
 - PKCS12 (container, encrypted, by AES-256-CBC);
- Adding usage of Dagger (dependency injection framework for Java, Kotlin, and Android): https://dagger.dev/;
- Multi-platform (Windows/Linux/Android) build of WebRTC, using depot tools (for following integration);

Screenshots (.jpg), demo video (.mp4), examples;

Demo description:

secure_messenger.launch.01.mp4

Shows first launch of Secure Messenger and joining of Secure Messenger to the Jabber account;

/data of com.secure.encrypted.chat.messenger package:

```
following files:
    - databases/
         - history.enc
         - message_delete.enc
    - files/
        - keys/
             - ca_certificates.crt
             - keys.p12
         - logs/
             - x-chat_logcat.log
             - x-chat_logout.log
    - shared_prefs/
         - "com.secure.encrypted.chat.messenger_preferences.xml"
        - "com.XECURE CHAT.systems.crypto.xml"
files:
    - history.enc
    - message_delete.enc
        encrypted Databases (AES-256-CBC);
    - ca_certificates.crt
        certificates, is used during creating of SSL connection;
    - keys.p12
        EC public and private keys, are used during creating of SSL connection;
        keys.p12 - pkcs12 is encrypted by AES-256-CBC:
             openssl pkcs12 -certpbe AES-256-CBC -keypbe AES-256-CBC -maciter -macalg sha256 -export
              -in "$OUT DIR"/"$CERT FILE" -inkey "$OUT DIR"/"$KEY FILE" -passout pass:"$CERT PASSWORD"
              -out "$OUT DIR"/"$CERT12 FILE"
    - x-chat_logcat.log
    - x-chat_logout.log
         log files:
             x-chat_logcat.log - generated by Java code;
    x-chat_logout.log - generated by JNI code;
- "com.secure.encrypted.chat.messenger_preferences.xml"
    - "com.XECURE CHAT.systems.crypto.xml"
        property files;
    "com.XECURE CHAT.systems.crypto.xml"
        contains:
             <map>
                 <boolean name="is locked" value="false" />
                 <string
e="password_hash">ujJTh2rta8ItSm/1PYQGxq2GQZXtFEq1yHYhtsIztUi66uaVbfNG7IwX9eoQ817jy8UUeX7X3dMUVGTioLq0Ew==</string>
                 <string name="iv">2xCVvbjy6fUBUf06PrrWQw==</string>
                 <string name="domain encrypted">CnUykjJ+y9XPox2rz6cF437RFlmv9+nnwo30G/EMYDs=</string>
                 <string name="key">jqrXjG59JdWwDGvK30x9UMAmQx8GGH+M0LorW9Tf3ew=</string>
             </map>
         "password_hash" - hash of password;
         "iv"
         "key"
               - parameters of AES-256-CBC; these parameters are used for encryption of DB and other data;
         "domain_encrypted" - XMPP/Jabber domain, encrypted by AES-256-CBC;
        "iv"
         "key"
            and
        password/key for reading keys.p12
             should be saved on a remote protected storage;
             in these release theay are saved in code and in "com.XECURE CHAT.systems.crypto.xml".
```

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```
_____
secure_messenger.connect.ws-1.01.mp4
secure_messenger.connect.ws-2.01.mp4
         _____
   Show communication of two secure messengers.
   They are launched at two different WSs (WS-1 and WS-2).
   And they use various accounts:
       sman_01@jabber.hot-chilli.eu
       sman 02@jabber.hot-chilli.eu
    •
   At the start both secure messengers are launched.
   They created SSL connections to XMPP/Jabber servers.
   Then they create point-to-point connection, synchronizing public keys and generating common share secret, that is
     used as the start point of Double-Ratchet protocol. I.e. Double-Ratchet protocol should use same shared secret at
     the both side as init point.
   During generation of Shared Secret ECDH is used.
   After syncronizing of Shared Secrets both Secure Messenger have same state (ready for send/receive messengers):
       12/06/2020 14:34:13.696 - <XenCrypt2ServiceLib> - setState(): state = 6
   After that sent mmessage is read from buffer and encrypted/decrypted, using Double Ratchet:
       secure messenger.connect.ws-1.01.mp4
       secure_messenger.connect.ws-2.01.mp4
   and see attached logs.
   After sending/receiving of several messages, secure messanger is closed at the WS-2 and launched again.
   After that synchronizing of keys is produced again.
   then after state:
       12/06/2020 14:44:50.051 - <XenCrypt2ServiceLib> - getState(): this.state = 6
   messages sent again (WS-1 <-> WS-2).
   See:
     secure messenger.connect.ws-1.01.mp4
     secure_messenger.connect.ws-2.01.mp4
 _____
secure_messenger.connect.ws-1.02.mp4
secure_messenger.connect.ws-2.02.mp4
       _____
Show similar communication
(like
     secure_messenger.connect.ws-1.01.mp4
     secure_messenger.connect.ws-2.01.mp4)
of two secure messengers, when one messenger sends several messages at the same time and other messenger send several
messages at the same time too.
```

Some screenshots:

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5 Правила возврата платежей в Google Play









17. qt-win

Qt-based CRM (customer relationship management) software tools (only Windows platform). Projects of the Qt-based CRM application contain 65 forms and about 100 classes (without log4cplus).

Technologies and tools:

- C++11; - Visual Studio 2003; - Visual Studio 2017; - Qt3.3.5; - Qt5.12.2; - PostgreSQL 10/11;
- log4cplus;

Activity:

- Converting (and refactoring) sources of the Qt-based CRM from usage of Qt3.x api to Qt5.x api;
- Optimizing for increasing of CRM tools performance;
- Adding log4cplus support;
- New small Qt-based admin tool has been developed;

Screenshots (.jpg);





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Process

Applications

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Contact Person Comments

| IPMS Users: | | | | |
|--------------------|----------|------------|------------------|----------------|
| User Name guest | Password | Level 0 | Status Active | Maxusers 10 |
| admin1 | ******* | 1 | Active | 5 |
| admin2 | ****** | 2 | Active | 3 |
| admin3 | ****** | 3 | Active | 3 |
| admin4 | ****** | 4 | Active | 2 |
| admin5 | ****** | 5 | Active | 1 |
| admin6 | ****** | 5 | Active | 10 |
| | | | | |

16. file_exchanger

Own product/project. File Exchanger (file exchanger) Tool is a peer-to-peer files exchanger for Windows/Linux platforms. Features of File Exchanger (file exchanger) Tool: - transfer of files from client to server, using open socket connections; - transfer of files from client to server, using SSL connections; - control of entirety of received files, comparing of checksum values sent and received files, using CRC-32 algorithm; - using transfer of files from client to server, using SSL connections; - using follow SSL mode/algorithms (TLSv1.2), if SSL connection is used: ECDHE-ECDSA-AES256-GCM-SHA384 TLSv1.2 - version - the protocol used TLS ECDHE - the key exchange mechanism ECDSA - the algorithm of the authentication key AES - the symmetric encryption algorithm 256 - the key size of AES GCM - the mode of AES - the MAC used by the algorithm SHA384 prime256v1 (NIST P-256, secp256r1) - Elliptic Curve, that is used by ECDHE and ECDSA; - using unique CA of client and server certificates; - user can update CA, client/server keys/certificates, using suite of scripts ssl.ecdsa.tar.gz (ReadMe.txt in ssl.ecdsa.tar.gz); - using of xml configuration files, which can be updated by user and will be applied without restart of processes (sm file send clns, sm file send srvs); - scanning of configured directories, where sent files can be copy; - copying of sub-directories with files, saving of sub-directories tree at the server side; - support of unicode symbols in file/directory names; - backup of sent/received files; - server and client modules can be launched as Services (Windows)/Daemons (Linux); - console command line control application (only Windows) of client/server Services (requires Administrator permissions); - Windows gui application, that allows to monitor states of client/server Services, control of client/server Services and change parameters of client/server Services; - Linux gui application (Qt-based), that allows to monitor states of client/server Daemons, control of client/server Daemons (when it's possible, according to users permissions) and change parameters of client/server Daemons; - using ECDSA (NIST P-256, secp256r1) for signing/verification parameters, which are sent between client/server and gui applications (Windows/Linux); - tool applications don't use any intermediate servers and transfer files directly between client and server; Technologies and tools:

- Windows Desktop: C/C++, CMake, Visual Studio (C++) 17, MFC, WinApi, Poco, OpenSSL, Sockets, Secure Sockets, Multi-threading, Windows Services, NSIS, Git, Windows Batch scripts, Tortoise Git client;
- Linux Desktop: C/C++, CMake, gcc/g++, Qt, Qt Creator, Kdbg, Posix api, Poco, OpenSSL, Sockets, Secure Sockets, Multi-threading, Linux Daemons, Linuxdeployqt, Makeself, Linux Bash scripts, Git, Git Cola client;
- Virtual Box (Virtualization Software), Various distros of Linux (Debian 8/9, openSUSE, Ubuntu, Mint);

Activity:

- Design and architecture;
- Software development;
- Development of build scripts;
- Documentation/help;
- Testing;

Resources:

Links file; Blog Post; Product Page,



file exchanger - 0.0.11.11;

License.txt; ReadMe.txt;

Screenshots (.jpg), demo video (install, run) (.mp4);

sm_fe.win.install.mp4;

sm_fe.linux.install.01.mp4; sm_fe.linux.install.02.mp4;

sm_fe.win-linux.run.01.mp4; sm_fe.win-linux.run.02.mp4; sm_fe.win-linux.run.03.mp4; sm_fe.win-linux.run.04.mp4;

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| ontrol | Status | Control | Status |
| Start Client | Client Daemon status: Running Server Daemon status: Running UID: 1000 UID: 1000 | Start Client | Client Daemon status: Running Server Daemon status: Running UID: 1000 UID: 1000 |
| | Properties | | Properties |
| Stop Client | Client Common Settings | Stop Client | Client Server Common Settings |
| Start Server | Output Directory: /var/lib/smansoft/sm_file_send_work/cln_out | Start Server | Input Directory: /var/lib/smansoft/sm_file_send_work/srv_in |
| | Backups Directory: /var/lib/smansoft/sm file send work/cln backups | | Backups Directory: Nar/lib/smansoff/sm file send work/sry backups |
| Stop Server | | Stop Server | |
| | File: | | Port: 22222 |
| | | | CCI Dette General |
| | Server Address: 127.0.0.1 | | SSL POR: 22223 |
| | | | |
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| | Server Port: 22223 | | |
| | Server Port: 22223 | | |
| | Server Port: 22223 ✓ Use SSL ✓ Scan Subdirectories Apply Revert | | Apply Revert |
| | Server Port: 22223 ✓ Use SSL ✓ Scan Subdirectories Apply Revert | | Apply Revert |
| | Server Port: 22223 | | Apply Revert |
| | Server Port: 22223 ✓ Use SSL ✓ Scan Subdirectories Apply Revert Log Time Message 05:22:46.797 GUI Parameters have been updated by values from Common Settin | | Log Time Message 05:23:41.416 Server Parameters were read form xml file |
| | Server Port: 22223 ✓ Use SSL ✓ Scan Subdirectories Apply Revert Log Time Message 05:22:46.797 GUI Parameters have been updated by values from Common Settin 05:22:46.798 Switched to tab: 'Client' | | Apply Revert Log Time Message 05:23:41.416 Server Parameters were read form xml file 105:23:41.419 05:23:41.419 Dialog Controls have been updated, according to read Server Para |
| | Server Port: 22223 ✓ Use SSL ✓ Scan Subdirectories Apply Revert Log Time Message 05:22:46.797 GUI Parameters have been updated by values from Common Settin 05:22:46.798 Switched to tab: 'Client' 05:22:46.798 Connected to: address: '127.0.0.1' port: 33111 | | Apply Revert Log Time Message 05:23:41.416 Server Parameters were read form xml file 05:23:41.419 Dialog Controls have been updated, according to read Server Para 05:23:41.416 Connected to: address: '127.0.0.1' port: 33222 |
| About | Server Port: 22223 ✓ Use SSL ✓ Scan Subdirectories Apply Revert Log Time Message 05:22:46.797 GUI Parameters have been updated by values from Common Settin 05:22:46.798 Switched to tab: 'Client' 05:22:46.798 Connected to: address: '127.0.0.1' port: 33111 05:22:46.798 Connection to Client Service: address: '127.0.0.1' port: 33111 | About | Apply Revert Log Time Message 05:23:41.416 Server Parameters were read form xml file 5:23:41.419 05:23:41.419 Dialog Controls have been updated, according to read Server Para 05:23:41.416 05:23:41.416 Connected to: address: '127.0.0.1' port: 33222 05:23:41.416 |
| About | Server Port: 22223 ✓ Use SSL ✓ Scan Subdirectories Apply Revert Log Time Message 05:22:46.797 GUI Parameters have been updated by values from Common Settin 05:22:46.798 Switched to tab: 'Client' 05:22:46.798 Connected to: address: '127.0.0.1' port: 33111 05:22:46.798 Connection to Client Service: address: '127.0.0.1' port: 33111 05:22:47.057 Parameters were received from Client Service | About | Apply Revert Log Time Message 05:23:41.416 Server Parameters were read form xml file 05:23:41.419 05:23:41.416 Connected to: address: '127.0.0.1' port: 33222 05:23:41.416 05:23:41.416 Connection to Server Service: address: '127.0.0.1' port: 33222 05:23:41.417 |
| About | Server Port: 22223 ✓ Use SSL ✓ Scan Subdirectories Apply Revert Log Time Message 05:22:46.797 GUI Parameters have been updated by values from Common Settin 05:22:46.798 Switched to tab: 'Client' 05:22:46.798 Connected to: address: '127.0.0.1' port: 33111 05:22:47.057 Parameters were received from Client Service 05:22:47.057 Connection to Client Service 05:22:47.057 | About | Apply Revert Log Time Message 05:23:41.416 Server Parameters were read form xml file Server Parameters were read form xml file 05:23:41.416 Server Parameters were read form xml file Server Parameters were read form xml file 05:23:41.416 Connected to: address: '127.0.0.1' port: 33222 Server Parameters were received from Server Service 05:23:41.416 Connection to Server Service: address: '127.0.0.1' port: 33222 Server Service 05:23:41.417 Parameters were received from Server Service Server Service 05:23:41.417 Connection to Server Service is closed Server Service |
| About | Server Port: 22223 Use SSL Scan Subdirectories Apply Revert Log Time Message 05:22:46.797 GUI Parameters have been updated by values from Common Settin 05:22:46.798 Switched to tab: 'Client' 05:22:46.798 Connected to: address: '127.0.0.1' port: 33111 05:22:46.798 Connection to Client Service: address: '127.0.0.1' port: 33111 05:22:47.057 Parameters were received from Client Service 05:22:47.057 Connection to Client Service is closed 05:22:47.057 Connection to Client Parameters has been verified. Ok | About | Apply Revert Log Time Message 05:23:41.416 Server Parameters were read form xml file 05:23:41.419 05:23:41.419 Dialog Controls have been updated, according to read Server Para 05:23:41.416 Connected to: address: '127.0.0.1' port: 33222 05:23:41.416 Connection to Server Service: address: '127.0.0.1' port: 33222 05:23:41.417 Parameters were received from Server Service 05:23:41.417 05:23:41.417 Connection to Server Service is closed 05:23:41.425 05:23:41.425 Signature of Server Parameters has been verified. 0k |

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| 18 × | | SM File Send Control Q ? 🗸 😣 | 18 × | SM File Send Control Q ? 🗸 😵 |
|--------------|--------------|--|--------------|--|
| Control Help | | | Control Help | |
| Control | Status | | Control | Status |
| Start Client | Client Dae | mon status: Stopped Server Daemon status: Stopped UID: UID: | Start Client | Client Daemon status: Running Server Daemon status: Running UID: 0 (ROOT) UID: 0 (ROOT) |
| | Properties | | | Properties |
| Stop Client | Client | Server Common Settings | Stop Client | Client Server Common Settings |
| Start Server | | Client Control Port: 33111 | Start Server | Output Directory: /var/lib/smansoft/sm_file_send_work/cln_out |
| Stop Server | | Server Control Port: 33222 | Stop Server | Backups Directory: /var/lib/smansoft/sm_file_send_work/cln_backups |
| | | Start Minimized | | File: Server Address: smansoft.com Server Port: 22223 |
| | Log | Apply Revert | | ✓ Scan Subdirectories Apply Revert |
| | | | | |
| | 05:40:04 310 | Message | | Time Message |
| | 05:40:04.310 | Dialog Controls have been updated, according to read Server Para | | US:29:39.735 Signature of Client Parameters has been verified. Ok |
| | 05:40:30.485 | Switching to tab: 'Common Settings' | | 05:29:39.739 Dialog Controls have been updated, according to received Client P |
| About | 05:40:30.488 | Server Parameters have been updated by values from Server Dialo | | 05:29:50.127 Client Parameters have been updated by values from client Dialog |
| About | 05:40:30.488 | Switched to tab: 'Common Settings' | About | 05:29:52.130 Clenic Farameters have been signed (ECDSA). 0k |
| | 05:40:30.488 | Reading of GUI Parameters from file: /var/lib/smansoft/common/sm f | | 05:29:52:130 Connected to: address: 127.0.0.1 port: 33111 |
| Evit | 05:40:30.488 | GUI Parameters were read form xml file | | 05:29:52.130 Connection to client service: address: 127.0.0.1 port: 33111 |
| EAIL | 05:40:30.491 | Dialog Controls have been updated, according to read GUI Parame | Exit | 05:29:52:179 Connection to Client Service is closed |

| 1ē × | SM File Send Control Q ? 🗸 😣 | ii x | SM File Send Control Q ? 🗸 🕅 |
|--------------|--|--------------|---|
| Control Help | | Control Help | |
| Control | Status | Control | Status |
| Start Client | Client Daemon status: Running Server Daemon status: Running UID: 1000 UID: 1000 | Start Client | Client Daemon status: Running Server Daemon status: Running UID: 1000 UID: 1000 |
| | Properties | | Properties |
| Stop Client | Client Common Settings | Stop Client | Client Server Common Settings |
| Start Server | Client Control Port: 33111 | Start Server | Output Directory: /var/lib/smansoft/sm_file_send_work/cln_out |
| Stop Server | ✓ Start Minimized | Stop Server | Backups Directory: /var/lib/smansoft/sm_file_send_work/cln_backups |
| | | | Application 'SM File Send Control Q' will be closed. Are you sure? |
| | Apply Revert | | ✓ Use SSL ✓ Scan Subdirectories Apply Revert |
| | Log | | Log |
| | Time Message 05:24:55.675 Switched to tab: 'Common Settings' 05:24:55.675 Reading of GUI Parameters from file: /var/lib/smansoft/common/sm_f 05:24:55.675 GUI Parameters were read form xml file | | Time Message 05:29:50.127 Client Parameters have been updated by values from Client Dialog 05:29:52.130 Client Parameters have been signed (ECDSA). Ok |
| About | 05:24:55.679 Dialog Controls have been updated, according to read GUI Parame 05:24:59.830 GUI Parameters have been updated by values from Common Settin | About | 05:29:52.130 Connected to: address: '127.0.0.1' port: 33111 05:29:52.130 Connection to Client Service: address: '127.0.0.1' port: 33111 05:29:52.179 Parameters were sent to Client Service |
| Exit | 05:25:02.290 GUI Parameters were saved to xml file 05:25:02.296 GUI Parameters were applied | Exit | 05:29:52.179 Connection to Client Service is closed 05:33:42.446 Client Parameters have been updated by values from Client Dialog 05:37:09.637 Client Parameters have been updated by values from Client Dialog |

| 18 × | SM File Send Control Q ? 🗸 😣 | 18 × | SM File Send Control Q ? 🗸 🛛 🗸 🗸 🗸 🤉 |
|--------------|--|--------------|--|
| Control Help | | Control Help | |
| Control | Status | Control | Status |
| Start Client | Client Daemon status: Running Server Daemon status: Running UID: 1000 UID: 1000 | Start Client | Client Daemon status: Stopped Server Daemon status: Stopped UID: UID: |
| | Properties | | Properties |
| Stop Client | Client Common Settings | Stop Client | Client Server Common Settings |
| Start Server | Output Directory: /var/lib/smansoft/sm_file_send_work/cln_out | Start Server | Input Directory: //var/lib/smansoft/sm_file_send_work/srv_in |
| Stop Server | Backups Directory: /var/lib/smansoft/sm_file_send_work/cln_backups | Stop Server | Backups Directory: /var/lib/smansoft/sm_file_send_work/srv_backups |
| | File: | Stop Server | Port: 22222 |
| | Server Address: 127.0.0.1 | | SSL Port: 22223 |
| | Server Port: 22223 | | |
| | ✓ Use SSL ✓ Scan Subdirectories Apply Revert | | Apply Revert |
| | Log | | Log |
| | Time Message | | Time Message |
| | 05:38:43.806 Signature of Client Parameters has been verified. Ok | | 05:40:03.357 Dialog Controls have been updated, according to received Client P |
| | 05:38:43.809 Dialog Controls have been updated, according to received Client P | | 05:40:04.300 Switching to tab: 'Server' |
| | 05:38:59.803 Switching to tab: 'Common Settings' | | 05:40:04.309 Client Parameters have been updated by values from Client Dialog |
| About | 05:38:59.804 Client Parameters have been updated by values from Client Dialog | About | 05:40:04.309 Switched to tab: 'Server' |
| | 05:39:02.117 Switched to tab: 'Common Settings' | | 05:40:04.310 Connection to Server Service was not provided. Error |
| | 05:39:02.118 Reading of GUI Parameters from file: /var/lib/smansoft/common/sm_f | | 05:40:04.310 Reading Parameters of Server Service from file: /var/lib/smansoft/co |
| Exit | 05:39:02.118 GUI Parameters were read form xml file | Exit | 05:40:04.310 Server Parameters were read form xml file |
| | 05:39:02.120 Dialog Controls have been updated, according to read GUI Parame 💌 | Service. | 05:40:04.310 Dialog Controls have been updated, according to read Server Para 🐙 |
| | | | |





15. ssl_scripts

Own product/project SSL ECDSA Scripts and SSL Web Scripts.

The main features of SSL ECDSA scripts:

- generation of CA key and Self-Signed CA Certificate;
- generation of SSL private key, public key and sign public key, using CA key and generation of X.509 certificate of server;
- generation of SSL private key, public key and sign public key, using CA key and generation of X.509 certificate of client;
- usage of Elliptic Curves (ECDSA-WITH-SHA384) prime256v1 (NIST P-256, secp256r1) for signing of public keys;

The main features of SSL Web scripts:

- generation of CA ECDSA key and Self-Signed CA ECDSA Certificate;
- generation of SSL ECDSA private key, ECDSA public key and sign ECDSA public key, using ECDSA CA key and generation of X.509 certificate of server (server certificate);
- generation of CA RSA key and Self-Signed CA RSA Certificate;
- generation of SSL RSA private key, RSA public key and sign RSA public key, using RSA CA key and generation of X.509 certificate of server (server certificate);
- usage (by default) of Elliptic Curves (ECDSA-WITH-SHA256) prime256v1 (NIST P-256, secp256r1) or RSA (RSA2048-WITH-SHA256) for signing of public keys;

Technologies and tools:

- Bash, OpenSSL;

Activity:

- Design;
- Software development;

Resources:

Blog Posts:

- <u>SSL ECDSA scripts 0.0.11.11;</u>
- Spring Login (Stack Templates) with HTTPS;

ssl-ecdsa-scripts on GitHub; ssl-web-scripts on GitHub;

Screenshots (.jpg);



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| | ipis | | 🛛 | |
|--|--|---|------------------------|--|
| ssl.ecdsa.ca | Small fix of configuration files; | 12 months ago | using as RSA as ECDSA. | |
| ssl.ecdsa.req | Small fix of configuration files; | 12 months ago | L Readme | |
| ssl.ecdsa.sign | Scripts and keys have been updated; | 12 months ago | ata ivin cicense | |
| 💼 ssl.rsa.ca | Small fix of configuration files; | 12 months ago | Releases | |
| 💼 ssl.rsa.req | Small fix of configuration files; | 12 months ago | No releases published | |
| 📄 ssl.rsa.sign | Scripts and keys have been updated; | 12 months ago | | |
| LICENSE | Initial commit | 12 months ago | Languages | |
| README.md | README.md has been updated; | 12 months ago | | |
| SSL Web scripts | | | | |
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| SSL Web scripts SSL Web scripts is a suite SSL Web scripts © Copyri Overview SSL Web scripts @ Copyri Overview SSL Web scripts gener The main features of - generation of G and generation - usage (by defau (RSA2048-WIT | of scripts for generation X.509 keys/certificates for Web Application ght © 2018-2019 by SManSoft Pates X.509 keys/certificates, using as RSA as ECDSA. SSL Web scripts: EA ECDSA key and Self-Signed CA ECDSA Certificate; SSL ECDSA private key, ECDSA public key and sign ECDSA pub on of X.509 certificate of server (server certificate); EA RSA key and Self-Signed CA RSA Certificate; SSL RSA private key, RSA public key and sign RSA public key on of X.509 certificate of server (server certificate); It) of Elliptic Curves (ECDSA-WITH-SHA256) prime256v1 (NI H-SHA256) for signing of public keys; | ons. lic key, using ECDSA CA k y, using RSA CA key ST P-256, secp256r1) or R | | |

Usage

14. spring_login

Own product/project. Spring Login.

Suite of demo projects (tempaltes) (Spring, Spring Boot, Spring-Security, JSP, Apache Tiles, Thymeleaf, Spring-Jpa, Spring-Data-Jpa, JCache, Ehcache, Infinispan, Hibernate, EclipseLink, MySQL, Logback, Maven, Gradle).

Technologies and tools:

- Java 8;
- Eclipse;
- Spring;
- Spring Boot;
- Spring-Security;
- JSP;
- Apache Tiles;
- Thymeleaf;
- Spring-Jpa;
- Spring-Data-Jpa;
- Jcache;
- Ehcache;
- Infinispan;
- Hibernate;
- EclipseLink;
- MySQL;
- Logback;
- Maven;
- Gradle;
- Git;

OIC

Activity:

- Design and architecture;
- Software development;

Resources:

Blog Posts:

- <u>Spring Login (Stack Templates)</u>;
- Spring Login (Stack Templates) with HTTPS;

Spring Login on GitHub;

Screenshots (.jpg);

Some screenshots:

| <u>F</u> ile <u>E</u> dit <u>V</u> iew Hi <u>s</u> tory <u>B</u> ookmarks | s <u>T</u> ools <u>H</u> elp | | | | – 0 × |
|---|--|---|---------------|--|-------|
| GitHub - smansoft/spring-logir × | + | | | | |
| (\leftarrow) \rightarrow C' \textcircled{a} | Attps://github.com/smansoft/spring-login | | | V 5 | |
| | doc/screenshots | sl-jsp-djpa-jc-hib-infsp: fix of pom.xml; | 15 months ago | Spring-Jpa, Spring-Data-Jpa, JCache, Ehcache, Infinispan, Hibernate, | ŕ |
| | print-tool | Gradle build scripts have been re-factored; | 12 months ago | EclipseLink, MySQL, Logback, Maven, Gradle). | |
| | scripts | sl-jsp-djpa-jc-hib-ehc3-ssl: project has been added; | 13 months ago | E Readme | |
| | sl-jsp-djpa-ednk-cache | sl-jsp-hib-ehc2: Configuration files have been updated; | 12 months ago | ata Apache-2.0 License | |
| | sl-jsp-djpa-jc-hib-ehc3-ssl | sl-jsp-hib-ehc2: Unit tests have been added: draft; | 12 months ago | 1 | |
| | sl-jsp-djpa-jc-hib-ehc3 | Gradle build scripts have been re-factored; | 12 months ago | Releases | |
| | sl-jsp-djpa-jc-hib-infsp | Gradle build scripts have been re-factored; | 12 months ago | No releases published | |
| | sl-jsp-hib-ehc2 | sl-jsp-hib-ehc2: Configuration files have been updated; | 12 months ago | | |
| | sl-jsp-jpa-hib-ehc2 | sl-jsp-hib-ehc2: Unit tests have been added: draft; | 12 months ago | Languages | |
| | 🗋 .gitattributes | initial version of spring-login has been added; | 15 months ago | | |
| | 🗋 .gitignore | .gitignore has been updated; | 15 months ago | Java 67.6% JavaScript 23.8% CSS 5.0% Shell 3.3% | |
| | LICENSE | Initial commit | 2 years ago | • HTML 0.3% | |
| | C README.md | README.md has been updated; | 12 months ago | | |
| | 🕒 build.gradle | Gradle build scripts have been re-factored; | 12 months ago | | |

| ۵ | pom-sb.xml | sl-jsp-hib-ehc2: Unit tests have been added: draft; | 12 months ago |
|---|-----------------|---|---------------|
| ß | pom.xml | sl-jsp-hib-ehc2: Unit tests have been added: draft; | 12 months ago |
| D | settings.gradle | Gradle build scripts have been re-factored; | 12 months ago |

README.md

spring-login

Spring Login (Stack Templates).

Suite of demo projects (Spring, Spring Boot, Spring-Security, JSP, Apache Tiles, Thymeleaf, Spring-Jpa, Spring-Data-Jpa, JCache, Ehcache, Infinispan, Hibernate, EclipseLink, MySQL, Logback, Maven, Gradle).

This Suite contains follow demo/template projects:

13. print_tool

Own product/project. Print Tool.

Reflection-based suite of facades over Logger, that provides logging of complex objects.

Technologies and tools:

- Java 8 SE; - Eclipse;

Activity:

- Design;

- Software development;

Resources:

Blog Posts: - <u>Java Print Tool</u>;

Print Tool on GitHub;

Screenshots (.jpg);



12. fundfulp2p

FundfulP2P project (Spring Boot application) (peer-to-peer fundraising).

Technologies and tools:

- Java Spring Framework: Java 8, Spring MVC + Spring Security + Spring Data JPA + EclipseLink (as ORM), MultiTenancy, Thymeleaf, WePay, Validation, CSS template Admin LTE, Captcha, JMeter, Facebook authentication, Share with twitter facebook and google, Upload care, Scheduler to send emails, Trigger emails, Amazon email service client, SQL Injection, XSS Filter, Wysiwyg editor, Chart.js, Freemarker, Maintenance page, Performance logging aspect, Cloudflare, Liquibase, Slf4j, Log4j, Apache Maven, Bootstrap, JQuery, JUnit, Mockito, Git (Tortoise Git);
- SQL, PostgreSQL;
- Jenkins CI, GitLab, Jira;
- Bash, Bash Scripts (build, install/deployment);
- Linux (Debian), Docker Virtualization Software;

Activity:

- Development of Persistence (EclipseLink) Layer (Entities);
- Development of Some functionality of Services Layer;
- Development of Unit tests and Integration tests;
- Stress Testing of some functionality, using JMeter;
- Development of some Bash Scripts, which have been used by Jenkins and for providing of deployment;
- Some investigation tasks, including working with Docker (creating of several Linux-based containers);

Resources:

FundfulP2P;

Screenshots (.jpg), demo video (.mp4);

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| ← → C ① Not secure 192.168.64.1:8080/register | | ☆ 💹 🚳 🚔 🕓 🗄 |
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| Carlos Contractor | First Name | |
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| | Organization Name | |
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| | Step 1 of 2 | |
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11. sumac

Sumac. Java SE CRM (customer relationship management) software tools.

This is a big CRM tool for control of donation activity of persons and organizations. Projects of the Sumac Java SE application contain more than 3k classes.

Technologies and tools:

- Java 6, Java SE (Awt, Swing), Java WebStart, SQL, Derby Db, MySQL, Jacob, BouncyCastle, iText, Java Mail, SSHJ Client, Apache Ant, Apache Maven, JUnit, Mockito, Bash, Eclipse, Squirrel Sql Client, Git (Tortoise Git);
 GitLab, Jira;
- Activity:

- Software development;

Resources:

Sumac;

Screenshots (.jpg), demo video (.mp4);

Some screenshots:



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| Contacts | Optimized in the second sec | Field Search ∆ | List Builder | Search Builder | | | |
|-------------------------------|---|---------------------|--------------------------|-----------------------|----------------------|-------------------------------|------------------|
| • New | Ctrl N | Search Type: Sho | w All | × + | | | |
| Add To Contact | | General Control: | Search all records. Show | w only matching ones. | ~ | | |
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| | | | Delaciolx | 492-029-3290 | Málaga | n pices an @howardschoolofd | |
| 🖣 Print | | V Pablo | Picasso | 407-040-7155 | Obieses | p.picasso@nowardscriooloid | |
| | | ✓ waiter | Disney | 061 227 0710 | Drubl | w.usney@jonnsianniyiounuau | |
| Special Editing | Δ | V Max | Emst | 961-337-0719 | Bruni Obadda Caad | m.emst@deinicivic.org | |
| Select All | Ctrl A | ✓ Andrew | vvyetn | 581-458-7257 | Chadds Ford | a.wyetn@deinicivic.org | |
| 🐟 Find Duplicates | | VHenri | Matisse | 845-340-1/64 | Le Cateau-Cambres | h.matisse@thejoshuafoundati | |
| a. Resolve Duplicates | | | Rubens | 361-792-9164 | Siegen | p.rubens@catconnectionofcind | |
| A Households | | ∀ Georges | Seurat | 240-698-5542 | Paris | g.seurat@chesterchildcenter. | |
| 蒙 Bulk Edit | | | Chippendale | 543-586-3558 | Farnley | t.chippendale@thespotteence | |
| | | | Dürer | 426-061-4480 | Nürnberg | a.dürer@waynecountyrcclub. | |
| ^a Mailing | Δ | ∇ John | Constable | 824-531-1089 | Suffolk | j.constable@chesterchildcent | |
| ➤ Mail Merge | | | Pollock | 995-592-8991 | Tingley | p.pollock@chillicothecavalier | |
| ➤ Quick Mail Merge | | ∀ Michelangelo | Buonarroti Simoni | 295-123-7414 | Caprese | m.buonarrotisimoni@thtminist | |
| Labels/Envelopes | | ∇ Suzanne | Valadon | 609-686-6821 | Haute-Vienne | s.valadon@troykhpcharityeven | |
| 🖻 Mail Merge Codes | | ∀ Georgia | O'Keeffe | 172-708-2070 | | g.okeeffe@waynecountyrcclub | |
| | | ∀ Mary | Cassatt | 972-490-4364 | Allegheny City | m.cassatt@chesterchildcente | |
| er Email | Δ | | Bacon | 482-964-2018 | Dublin | f.bacon@cinnamongirls.org | |
| @† Send (Bulk) Email | | ∇ William | Hogarth | 617-645-9076 | London | w.hogarth@delhicivic.org | |
| ^{@↑} Email Documents | | ▽ Thomas | Thomson | 640-443-9993 | Owen Sound | t.thomson@waynecountyrcclu | |
| Click-through Statistics | | | Klee | 987-024-0592 | Munchenbuchsee | p.klee@cinnamongirls.org | |
| | | ⊽ Joan | Ferrà | 685-949-5475 | Barcelona | i.ferrà@thtministries.org | |
| Analyze & Report | Δ | | Rockwell | 842-120-7051 | New York City | n.rockwell@theioshuafoundati | |
| Age Group | | ∇ Diego | Velázquez | 907-559-6035 | Seville | d velázquez@iohnsfamilvfound | |
| 🔍 Analyze Email | | ⊽ Max | Klinger | 134-626-8366 | Leinzig | m klinger@delbicivic.org | |
| Review Facts | | ⊽ Paul | Cézanne | 313-995-1047 | Aix-on-Provence | n cézanne@witneo.org | |
| Birthdays | | ⊽ Pembrandt | van Biin | 010 707 1515 | Laidan | p.cezanne@wineo.org | |
| By Postal-zip Code | | | Mooro | 210-121-1313 | Castlaford | h mooro@dublistoike.org | |
| By Renewal Date | | √ Helliy ⊽ Frank | Wright | 200-175-4830 | Dichland Captor | fwright@nhonemonolworce | |
| Communications | | | Discorra | 202 420 0727 | Charlette America | n.wrigni@prienomenaiwomen | |
| Contacts Associated With an E | vent | V Camilie | Pissarro | 393-132-0737 | Charlotte Amalle | c.pissarro@tnejosnuatoundati | |
| Info - Summary | | | Monet | 088-0/0-5959 | Rue Lamitte | c.monet@waynecountyrcclub. | |
| 🔟 Info - Details | | V Leonardo | da vinci | 442-669-2994 | VINCI | i.davinci@phenomenalwomen | |
| Never Donated | | ∨ Eugène | Gauguin | 589-182-2538 | Paris | e.gauguin@witneo.org | |
| Related Contacts | | ✓ Anthonie | van Dyck | 654-194-6505 | Antwerp | a.vandyck@cinnamongirls.org | |
| Relations | | ∇ Edgar | Degas | 355-672-0077 | Paris | e.degas@waynecountyrcclub. | |
| Team Members | | | | | | | |

| Sumac Console (Sumac — | Contacts [support@sumac | .com] | | \times |
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| Contacts | Summary Basic Relations Residence Address | Business Address Vacation Address Facts Picture Member Direct | ory History Case Management | |
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| ti Cueste | Middle Victor Eugène | Gender - V | Alert | |
| Events | Last/Company Delacroix | | ^ | |
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| * More | Salutations | Contact Source - | Notes | |
| ** | Letter Salutation | Renewal: | <u>^</u> | |
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| Help Videos & Resources | | Donations | | |
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10. curr-ip

Own products/projects On-line Network Tools. On-line Nmap Scanner.

> On-line Network Tools <u>http://curr-ip.com</u> - ajax-based suite of network tools, which implements follow features: Current Ip location (including ipv6 support), Browser Info, DNS resolve (A, AAAA, MX, NS, TXT, SRV, SOA, CNAME, HINFO requests), Reverse DNS resolve (PTR request), Whois Info lookup, Geo-Location resolve;

> On-line Nmap Scanner http://scan-ip.curr-ip.com/scan-ip.htm - ajax-based network tool, that implements web interface of nmap command-line (with logging and backups support);

Technologies and tools:

- HTML, JavaScript, jQuery, Spring Core, Spring MVC, Spring Boot, EhCache, Hibernate, MySQL, Tomcat, Apache WebServer, Debian, Log4j, JAXB, Spring Rest Json, nmap tool, geolocation databases, Ant, Maven, Bash, Git, Git (Tortoise Git);
- Virtual Box (Virtualization Software), Linux Debian 8;

http://curr-ip.com
http://scan-ip.curr-ip.com/scan-ip.htm

Activity:

- Design and architecture;
- Software development;
- Testing;

Resources:

<u>Curr-Ip;</u> <u>Scan-Ip;</u>

Screenshots (.jpg);

| .Curr.lp.} Ge | o IP Info | × + | | | | | |
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| | Address | | 31.202.57.246 | | | | |
| | GEOIP REG | CORD: | | | | | |
| | Ip From | | 31.202.0.0 | | | | |
| | Ip To | | 31.202.127.255 | | | | |
| | IP Protoco | l (IPv4/IPv6) | IpV4 | | | | |
| | Latitude | | 49.9935 | | | | |
| | Longitude | | 36.2304 | | | | |
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| | A | | IN | | 3600 | 213.136.88.76 | | | | | | |
| | DNS RESOL | /E RESULTS(QU | ERY SRV): | | | | | | | | | |
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| | DNS RESOL | /E RESULTS(QU | ERY NS): | | | | | | | | | |
| | ТҮРЕ | CLASS | | TTL | DETAILS | | | | | | | |
| | NS | IN | | 3600 | ns39.domaince | ontrol.com. | | | | | | |
| | NS | IN | | 3600 | ns40.domainco | ontrol.com. | | | | | | |
| | DNS RESOL | /E RESULTS(QU | ERY AAAA): | | | | | | | | | |
| | ТҮРЕ | CLAS | S | TTL | DETAILS | | | | | | | |
| | AAAA | IN | | 3600 | 2a02:c207:200 | 8:417:0:0:0:1 | | | | _ | | |
| | DNS RESOLV | /E RESULTS(QU | ERY MX): | | | | | | | | | |
| | ТҮРЕ | CLAS | SS | TTL | DETAI | LS | | | | | | |
| | MX | IN | | 3600 | 0 mx.: | smansoft.com. | | | | | | |
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| | | | | SMTP | (25) | | | |
| | | | | SMTP with SSL | (465) | | | |
| | | | | SMTP with SSL | (587) | | | |
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| | | | | POP3 with SSL | (995) | | | |
| | | | | IMAP | (143) | | | |
| | | | | IMAP with SSL | (993) | | | |
| | | | | HTTPS | (443) | | | |
| | | | | Win File Sharing | (445) | | | |
| | | | | | (139) | | | |
| | | | | HTTP Alternate | (8080) | | | |
| | | | | Microsoft Remote Desktop | (3389) | | | |
| | | | | UVNC Remote Desktop | (5900) | | | |
| | | | | UVPN (PPTP) Service | (1723) | | | |
| | | | | OpenVPN Service | (1194) | | | |
| | | | | ☐ Microsoft SQL Server | (1433) | | | |
| | | | | Oracle Database Server | (1521) | | | |
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| | | | | PostgreSQL Database Server | (5432) | | | |
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| 4. | rou may | scan only i | P addresses unde | r your control |
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5. You may not use a proxy service or/and VPN service when using this service to mask your IP address

NMap Scan Options >>

| 🔾 Regular (no params) nmap scan | "O" |
|---------------------------------|--|
| O Ping nmap scan | "(-sn)" |
| O Quick nmap scan | "(-T4 -F)" |
| O Quick nmap scan plus | "(-sV -T4 -O -Fversion-light)" |
| O Quick nmap traceroute | "(-sntraceroute)" |
| O Slow comprehensive nmap scan | "(-sS -sU -T4 -A -v -PE -PP -PS80,443 -PA3389 -PU40125 -PY -g 53script de- |
| | fault)" |
| O Intense nmap scan | "(-T4 -A -v)" |
| O Intense nmap scan, no ping | "(-T4 -A -v -Pn)" |
| O Intense nmap scan plus UDP | "(-sS -sU -T4 -A -v)" |

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NMAP SECURITY SCANNER

| TEF | RMS OF USE: |
|-----|---|
| 1. | You may make only 3 scan requests (from your IP) using different HTTP sessions and can't make more requests till executed requests are not finished |
| 2. | You may scan your own IP address 100 times in any 24-hour period |
| 3. | You may scan another IP address 25 times in any 24-hour period |
| 4. | You may scan only IP addresses under your control |

| NMap Scan Options >> | |
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| O Regular (no params) nmap scan | "0" |
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| O Quick nmap scan | "(-T4 -F)" |
| O Quick nmap scan plus | "(-sV -T4 -O -Fversion-light)" |
| O Quick nmap traceroute | "(-sntraceroute)" |
| O Slow comprehensive nmap scan | "(-sS -sU -T4 -A -v -PE -PP -PS80,443 -PA3389 -PU40125 -PY -g 53script default)" |
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| O Intense nmap scan, no ping | "(-T4 -A -v -Pn)" |
| O Intense nman scan plus UDP | "(-sS -sU -T4 -A -v)" |

09. java_spring

Java Spring software development (Java Web Applications and WebServices) of Document Circulation Project that provides control of Employee Visas (for Immigration Service)(UAE customer).

Technologies and tools:

- Tomcat 7, Jboss AS 6, Spring (Core Beans, Spring MVC, Spring Flow, Security, WebServices), Apache Tiles 2.0, JSP, Hibernate, Oracle 11g, JavaScript, jQuery, Maven;
- SVN;
- Eclipse;

Activity:

- Development of some functionality of the project;

08. java_spring_jsf_fin

Java Spring software development (Java Web Applications and WebServices) of Financial On-Line Payments Project (Suite of Java Spring Applications, that provides global business payments and money transfers to be made through the Internet like PayPal, Payoneer,...) (startup, US customer).

Technologies and tools:

- Tomcat 7, Spring (Core Beans, WebServices), JSF 1.2/2.0 (Richfaces), RMI, JMS (Apache ActiveMQ), Hibernate, PostgreSQL, Maven, JUnit;
- JCA, OpenSSL command-line tools;
- SVN;
- Eclipse, Linux (OpenSUSE, Mint);

- Development of some functionality of the project;
- Cryptography security development (using ECDSA for financial data verification);

07. java_ee_ejb_jsf

Java EE application (Enterprise Applications, Web Applications, WebServices using follow platforms JBoss AS, WebLogic AS) of the Control Telecommunication System (several projects), that implements suite of TR-069 protocols family for US Customers.

Technologies and tools:

- Tomcat 7, WebLogic AS 11, Jboss AS 6, EJB3, JSF 1.2/2.0 (Richfaces), RMI, Hibernate/OpenJPA, Oracle 11g, MySQL, Maven, JUnit;
- SVN;
- Eclipse, Linux (OpenSUSE, Mint);

Activity:

- Development of some functionality of the project;

06. java_spring_jsf_law

Java Spring application of the information system for Law Government Organization using JSF Richfaces, Hibernate, Spring Core, Spring Security, Facelets (Italian customer).

Java web service of import/export support functionality for information system for Law Government Organization using Java EE (Axis SOAP, JAXB, Hibernate) (Italian customer).

Technologies and tools:

- Tomcat 6, Spring (Core Beans, Security), JSF 1.2 (Richfaces), Axis SOAP, JAXB, Facelets, Hibernate, MySQL;
- Hudson CI, SVN;
- Eclipse, NetBeans, Linux (Slackware);

- Development of some functionality of the project;Requirements agreements, detailed design specification control, control of technical solutions;

05. cybermate

Medical software product for a big US company (with high requirements to quality and stability), that provides development of medical hardware and software.

This suite is an information system, that provides specialized ambulance workflow. This system communicates with ambulance devices (defibrillator) and allows to get info from defibrillator(s), include this info into ambulance workflow and save it on the server side. Also this information system allows to distribute and remote assign of ambulance duty calls via server admin service/application.

This suite has been developed for Ambulance services and includes:

- Java SE client part (Java SE, JNI, RMI, Axis SOAP Client, Secure Network Connections, Java multi-threading) for early mobile devices (tablet PC platform); For this client has been developed transactional high-stable subsystem (controlling hash codes of files and modules), that provides remote updating of new versions, using secured network connections (Axis SOAP client + SSL + JSSE + JCA), instead non-stable Java WebStart;
- Huge suite of COM/OLE/ActiveX servers (including multi-threading) (using VS "C/C++" and MS Access), that is a part of Complex Medical Tools (including MFC/ATL/WTL GUI tools) which support communication with special medicine devices; This suite is used by Java SE client part;
- Java SE RMI Server (Java SE, RMI, JSSE, JCA, JDBC, MS SQL);
- ASP.NET Admin Server (C#, ASP.NET + MS SQL) admin application for control of ambulance workflow, including remote assign of ambulance duty calls;
- Tomcat Apache-based server, that provides secure distribution of new versions of Java SE client parts (Apache Tomcat, Axis SOAP server, SSL, JSSE, JCA, OpenSSL command-line tools);

Technologies and tools:

- Java SE 6, JNI, WebStart (partially), RMI, JSSE, JCA, Swing, Awt, JAXB, JDBC, Axis SOAP, JUnit, Java Multi-Threading;
- Visual Studio C++, C/C++, stl, COM/OLE/ActiveX, ATL, MFC, Windows Multi-Threading;
- OpenSSL command line tools;
- MS SQL (main client-server storage of ambulance workflow documents);
- MS Access (used by suite of COM/OLE/ActiveX servers and GUI tools as
 - temporary storage of hardware (medicine devices) info, used by the client at the tablet PC platform);
- Microsoft SourceSafe, Team Foundation Server (TFS);
- Microsoft SharePoint;

Activity:

- Creating/support of requirements (as a part of software development process of medicine/ambulance services);
- Design and architecture of some parts of product(s);
- Software development;
- Stabilization of the suite (as a part of software development process of medicine/ambulance services);
- Design/build documentation;
- User manuals;
- Unit testing;

Resources:

Screenshots (.jpg), Documentation (.pdf);





| Measurements | | | | | |
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| EtCO2 (mmHg) |) | | | | |
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04. crypto_sdk

Taking part in the development of Crypto SDK, that implements National Ukrainian standard of digital signature based on elliptic curves (National Ukrainian standard: DSTU 4145-2002).

Technologies and tools:

- MS Visual C++, Windows SDK, C/C++, stl, MFC, Long Numbers Math, Crypto Primitives, Crypto Algorithms, Assembler, NASM;

- Development of the SDK for primitive and reducible polynomials testing;
- Development of the SDK for long number factorization (including distributed computing);
- Optimization and Speed-up of Scalar multiplication over Elliptic Curves (for elliptic curves signature generation/verification);
- Quantum calculations research;
- Quantum cryptography research;

03. api_hooks_sdk

API hooks SDK (using Hooks, remote threads technology, PE header analysis).

Suite, that provides monitoring of some functions calls (input-output functions) in varoius processes of Windows OS. Suite uses Win drivers to inform about new launched processes.

Technologies and tools:

- MS Visual C++, Windows SDK, C/C++, stl, MFC, Assembler, NASM, SysInternals/WinInternals Tools, Kernel and User Mode debuggers (SoftIce, OllyDebug), WinPCap;

- Design and architecture of some parts;
- Software development;

02. billing_solver

Taking part in the development of a Billing Solution for a big European Telecommunication company (for the AIX Unix platform).

Technologies and tools:

- C/C++98, GCC/G++, Posix Api, GNU BIN Tools, STL, GDB, DDD, Make Tool, Bash,
 - Borland C++ Builder 3.0-5.0, Microsoft Visual C++ 6.0, Win32 API, Multi-Threading (AIX/Linux/Windows), Oracle 9i, Oracle Client API, PL/Sql Developer, Toad;
- CVS;
- AIX Unix, Fedora/RedHat Linux;

Activity:

- System analysis and development of high-efficient multi-platform (AIX, Linux, Windows)
- financial-oriented applications (including development and client customization of billing solvers);
- Development of multi-platform applications with paralleling processing;
- Multi-platform client applications development for Oracle 9i for financial-oriented info access;
- Multi-platform multi-thread applications development for huge text/report files processing;

- Design and architecture of some parts;
- Software development;

01. fdpa_fdp_language

Form Data Postprocessor Application (FDPA) (for a US company).

Tool, that implements Form Data Postprocessing Language (FDPL). Form Data Postprocessor Application implements own (without flex(lex)/bison(yacc) and similar tools) generators of lexical analyzer and syntax parser. Syntax parser implements recursive descent parser algorithm. Form Data Postprocessor Application provides processing of command scripts (FDPL) (generates simple byte-code files during processing of command scripts (FDPL)) and provides interpreted processing of data files in multi-thread mode.

This application has been used by US government department in the Massachusetts State.

Technologies and tools:

- C/C++, Visual Studio C++, stl, MFC, Windows API, Windows Multi-Threading;

Resources:

Documentation (.pdf);

Form Data Postprocessor Application Specification; Form Postprocessing Language Ref; Form Postprocessing Language specification;