

SENIOR EMBEDDED SOFTWARE ENGINEER · SET TOP BOXES - SECURITY - DRM - STREAMING - OTT - ANDROID

rue Jesse Owens . Saint Denis

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Skills

Programming C, C++, JAVA, PYTHON, PERL, SHELL, Makefiles, HTML, PHP, XML, Javascript

Versioning CVS, SVN, Clear CASE, RTC, JENKINS, GIT, MERCURIAL, Bitbucket

Web & OTT node.js, dash.js, angularJs (2 & 4), shaka player, Packet Video, GUPNP, Lib Platinum, WSDL, REST, SOAP

J2ee & DB Java Jersey Rest , J2ee , Spring , Mongo db , Hbase

others Agile, Android: NDK/SDK/JNI, STB:Middleware & Drivers, HDCP, MPEGDASH, HLS, VOD, OTT, Playready, UPNP

Languages Arabic, French, English

Education _

EXPWAY

ENSI(National School of Computer Sciences of Tunis)

Tunis, Tunisia

2004 - 2007

ENGINEERING DEGRE IN COMPUTER SCIENCE

speciality in open systems and networks

Experience _____

LINUX/ANDROID DEVELOPMENT ENGINEER

PARIS, France
Jan. 2018 - PRESENT

• Development of Solution for Public Gateway EMBMS Live Services WIFI multicast

- LTE eMBMS (evolved Multimedia Broadcast Multicast Service) are used to drive live multicast service to end userphones.
- An LTE Outdoor unit is connected to a Gateway, the soft to be developed will be deployed on PG to activate dash live services and forward multicast packet to WIFI.
- based on Expway Libarary a service will be developped and installed as daemon on Broadcom based public Gateway
- Environment: Modem AT-Command, Broadcom, Gateway, WIFI, Multicast, dash, EXPWAY Middleware, redmine, C, C++, Android

SFR-Numericable Saint-Denis, France

SOFTWARE DRM/HDCP ENGINEER

Feb. 2016 - Jan. 2018

- Integration of Netflix nrd 4.3 within new 4K STB .
- Concept and develop a library HDCPmanager that provides interface to manage hdcp link in 1.X and 2.x protocole versions.
- Concept and develop a library DrmManager that provides interfaces to manager Playready 2.5 and eventually Widevine for SFR new Box used for VOD playing
- Concept and develop a library that will install provisioning Data on STB: On factory for SFR new Box (data: Nagra, HDCP, DRM and SFR keys)
- Integration of STMicroelectronics PlayReady SDK in SFR Set Top Boxes products
- Developing a library interface of STM PlayReady SDK, to be used by SFR Middleware on Set Top Box.
- Environment: STB, STM, Broadcom, Middleware WYPLAY, MW SFR, C, C++, PlayReady 1.2/2.5,TEE, Gentoo, mercurial, Git
- References: Sbastien Keller(SFR), François Delavaud, Anouar Chelbia (SFR), Vishal Sharma (Netflix)

NETFLIX INTEGRATION Aug. 2014 - Jan.2016

- Integration of Netflix Partner Client Code in Middleware code on Set Top Box Based on 7105 Chip of STM.
- · Porting some parts of Netflix client code (audio and video driver and some Direct FB code) to work on 7105 based Set Top Box
- Realization of automatic Netflix tests and certification
- Monitoring with Netflix partner via weekly conferences calls between team in US and France and daily coordination integration
- Environment: STM, MW SFR, C, C++, PlayReady 1.2, DirectFb, TEE, Gentoo, mercurial, Git
- References: François Delavaud, Anouar Chelbia (SFR), Vishal Sharma (Netflix)

Bouygues télécom Vélizy-villacoublay, France

SOFTWARE INTEGRATION & DEVELOPPING ENGINEER

Feb. 2014 - Jun. 2014

- Development of software module that use a cloud client (based on PogoPug Fuse solution); So the user could connect, mount and use his pogo cloud files on her STB
- Development and integration of Media Center new features on Middleware.
- Environment: STB, Middleware Sagem, Product Bouygues Sensation Box, C, C++, Linux, UPNP, DLNA, POGOCLOUD Cloud, Fuse File system, PacketVideo
- References: Sandrine Figard (Bouygues telecom), Majed Jabri (Bouygues telecom)

ARCHITECTE STB FOR PVR SHARING SERVICE

Jun. 2013 - Jan. 2014

- Writing of SSA (Software Specification Architecture) of service STB PVR sharing (PVR: Personnel Video Recording): secured solution based on Protocol HLS to play STB recorded movies on LAN and WAN devices; records will be transcoded, segmented, encrypted and served to clients).
- Writing of STS (Software tests Specifications) of PVR Sharing service on STB part of Service.
- Environment: STB, Middleware Sagem, LibPlatinum, C, C++, Linux, UPNP, HTTP, HTTPS, SSL
- References: Nicolas Gaude (Bouygues telecom), Jabri Majed (Bouygues telecom)

SOFTWARE ENGINNER Sep. 2011 - May. 2013

- Develop Web Services STB Export module that will export multiple STB features (Remote Control, Pairing, PVR, EPG ..) via HTTP Rest and UPNP.
- Develop STB DMR: module proposing DLNA DMR service UPNP and HTTP Rest.
- Develop MediaPlayer: module STB, for mixed playlist media managements
- Develop Receiver Expo STB: module that serves as a asynchronous full duplex communication library between the Middleware and Web Services Export Binary
- Develop PfsProxy: module on multiple platforms (STB, Android and IOS) of for connection and communication with Bouygues platforms (EPG, PVR, OAuth, Smartvision ...) with automatic authentication tokens management.
- Develop DMC: module on multiple platforms (STB, Android and IOS) it's a UPnP control point
- Development of a Native Middleware on Android (NDK / C / C ++ / JNI / JAVA and JAVASCRIPT) composed from DMC, DMS and PF-SPROXY: JNI, JAVA and JavaScript Layers for each library...
- Environment: Middleware Sagem, STB, C, C++, Java, JNI, JavaScript, Android, Linux, UPNP, DLNA, SOAP, REST, LibPlatinum...
- References: Nicolas Gaude (Bouygues telecom), Jabri Majed (Bouygues telecom), Pascal Souveaux (Bouygues telecom), Joël Motoumassy (Bouygues telecom)

NDS-CISCO Issy les Moulineaux, France

CONSULTING ENGINEER

March 2010 - Aug. 2011

- Development and integration of a module within Middleware STB; it's a MediaCenter module that allow the sharing and control of medias over networks via Upnp/Dlna Protocol.
- DMS (Digital Media Server) solution is Twonky from PacketVideo company
- Development of a module in C for control and management of the Twonky server via RPC and for sharing FTA PVR and media content from USB drives connected to the STB
- Development and JAVA JNI layer of the module to be exploited later by the UI in JAVA
- Environment: Middleware MHP de NDS-CISCO, languages C and JAVA, Shell, Makefiles, UPNP, PV Twonky API, PV Twonky Server.
- References: Hassen Taleb (NDS-CISCO), Eric Delaunay (NDS-CISCO)

Sagem Défense Massy-Palaiseau, France

SOFTWARE ENGINEER DEVELOPMENT

Dec. 2009 - Feb. 2010

- TMA: Third Maintenance Application of Network Server System on aircraft Airbus A380
- Environment: C, C++, Java, Perl, Python, SGBD MYSQL, Linux..

Eurogiciel Tunis, Tunisia

SOFTWARE ENGINEER May. 2009 - Nov. 2009

- Design and implementation of an application that manage a Switch via i2C in the NSS (Network System Server) for the Airbus A380
- The PSM, interfaces with LDAP, VPN, an I2C interface to control the Switch and a Flight switches.
- Test are automatized in virtual environment using Perl scripting and shared memory C programs .
- Environment: C, tested and integrated under Linux FreeBsd 5.3., perl ...

APRIL 17, 2018 MOHAMED AZZOUNI · CV 2

STMicroelectronics Tunis, Tunisia

SET TOP BOX LOW LAYER DEVELOPMENT ENGINEER,

Out. 2007 – Apr. 2009

• Engineer in STAPI (ST-API) team: responsible for development, maintenance and support for VOUT (Video Output Stage) and HDMI (High Definition Multimedia Interface) drivers for STM socks.

- Bug fixing and support for various clients.
- Porting of drivers code on new chips and update documentation of drivers for new socks
- Environment: C, OS21, STLinux, Clear Case, socks: ST7100, ST7109, ST7200 et ST7105.

Personal Projects

it's a private project on bitbucket, it still on going

BitBucket Project Link

REALIZATION OF FJ STREAMING ENGINE

Jun. 2012 - PRESENT

- The FJSE is three part project, containing: j2ee rest java server with a mongodb Database called FJServer, a AngularJs 4 Server UI called FJUI and a html 5 Js dash player called FJPlayer:
 - FJServer:
 - * The FJServer will upload video content, transcode it(using ffmpeg) to 5 bitrates h264 video (from 360kb/s to 4500kb/s) and 3 bitrates aac audio(from 128kb/s to 450 kb/s, then dash and encrypt it using Bento4 framework for vod and Googlepackager for Live (packaging is done wi python scripts and CENC clear key is used). once done, the movie is available to FJSE client to be streamed as dash protected content.
 - this FJServer is used by manager user to connect using oauth2 protocol (login/password), than he can upload medias
 and define streams, slso define app or web site allowed to access this stream, once dashed streams will be availables to
 allowed app or web sites for streaming
 - FJUI:
 - * it the Server Angular 4 UT, which allow User to connect to FJServer, define stream and upload movies or define live streams, user also can define app/webSite that are allowed to use his streams. streaming
 - * The UI contains also a dashboard that presents statistics about streams regarding number of watches, clients IP..
 - FJPLAYFR:
 - * The FJPlayer Html 5 Js player based on Video Balise
 - * The FJPlayer also is based On Dashjs player
 - * Once we ask to play a media content on website, the player will ask the encryption key of the media presenting the web site AppID, then get the mpd and start streaming, decrypting and playing..

Easy UPNP

Easy Upnp on Google Play Link

REALIZATION OF AN ANDROID APPLICATION

Nov. 2012

- The applicartion is an upnp control point wthat allow to discover and control upnp devices on a lan network.
- This app was completly developpend with Java code.
- This app also contains advertissment, it's done with google AdsMob..
- This app is no more maintained