Project Astoria – Read me

Part 1

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For the techy people who have some Reverse Engineering skills and interested in Astoria:

I have took time to run the 10240 Astoria Kernel through IDA Pro, and pulled the 'decompiled' Psudocode for each function I could load, and exported each decompiled function into seperate files.

I have not edited any of the code, as I have no idea how or where to start.

There will also be some errors in a few of the psudocode output.

Note this is NOT compliable as-is,

Likely will need to reference with Windows 10 public headers and other available sources.

So, Currently:

ntoskrnl.exe - 10.0.10240.16384 (View readme to find link to .pdb)

Project Astoria Sources

<https://drive.google.com/drive/folders/1yukSY-UOz2Wib2dd2RAUa4txCrfRySsU>

Discussion Zone

<https://3rdpartysource.microsoft.com/>

GitHub - W10M decompiled files

<https://github.com/Empyreal96/W10M_unedited-decomp>

Empyreal96, [14.05.21 23:15]

F to anyone with actual Reverse Engineering knowledge.. I loaded AoWFramework.dll along with its .pdb file into IDA Pro.. over 15000 detected "Functions" (Functions, classes etc) 😭 but luckily the Public Debug symbols show us some of the Function names and not mangled names

Empyreal96, [14.05.21 23:16]

For reference I loosly think AoWFramework is Astoria(Android) on Windows Framework, it acts as the "Wrapper" to convert Android API calls into NT API calls etc

Empyreal96, [14.05.21 23:18]

I.e it seems to looks for stuff from Android IO Syncs, transfer and requests to what is called up when clicking "share" in an Android app

Empyreal96, [14.05.21 23:19]

Also heavy use on Windows RunTime which was used alot in Windows ARM iirc.. all this though is "from what I can see" so may not be 100% accurate

Empyreal96, [14.05.21 23:22]

This all gets sent through AoWFramework and other .dlls, from and back into a hidden mounted Android .wim, almost like a Headless version of Android

(End of maybe informative spam lol, some will already know this)

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Unknown User, [14.05.21 02:55]

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Unknown User, [14.05.21 02:55]

[Переслано от Fadil]

Hello guys,

Finally I‘m publishing the tools to get Project Astroria working on a few more devices.

WARNING:-

~ The Project Astoria build is not meant for daily use.

~ It is not recommended to use this build on your primary Device.

~ This is totally for fun.

NOTE:-

\* The tool is still in Beta.

\* Only few devices are tested.

\* Only de-de, en-us, es-es, fr-fr, it-it keyboards are working for now.

\* Instructions are in the readme.txt inside the tool folder.

\* Project Astoria is offially supported on 1GB devices only.

10166 BUILD SUPPORTED DEVICES:-

-Htc One M8

-Samsung Ativ S

-Samsung Ativ SE

-Lumia 640

-Lumia 640

-Lumia 730

-Lumia 735

-Lumia 830

-Lumia 920

-Lumia 925

-Lumia 928

-Lumia Icon

-Lumia 930

-Lumia 1020

-Lumia 1520

10240 BUILD SUPPORTED DEVICE BY FFU:-

+ Lumia 640: <https://mega.nz/file/hrxRhYIY#4rbc57p7D4jVV0BK77wvRhRQ7ezAopPm7mUeLphux2Y>

+ Lumia 640xl: <https://mega.nz/file/l6Rw2QbI#Jf0SFzRyAfwptTndNU2RF0nxOIgwrBAtShLsXcXLtFo>

+ Lumia 930: <https://mega.nz/file/l7ohjSKR#7UHGDDQ_OUaRyb1JfbhgROklyRC9rYRPTHSXRxbeIjs>

10536 BUILD SUPPORTED DEVICES:-

- Htc One M8

- Samsung Ativ Odyssey

- Samsung Ativ SE

- Lumia 430

- Lumia 435

- Lumia 520

- Lumia 532

- Lumia 630

- Lumia 635

- Lumia 636

- Lumia 638

- Lumia 810

- Lumia 820

- Lumia 822

- Lumia 920

- Lumia 925

- Lumia 928

- Lumia Icon

- Lumia 930

- Lumia 1020

- Lumia 1520

TOOLS:-

× Phone Updater: <http://www.mediafire.com/file/5c5kqbls7ucaj5c/04.25.6_phoneupdater_iu_refresh_astoria_refresh>

\_4.7z/file

× Apk2Appx Packer: <http://www.mediafire.com/file/vm23fvsaf443uzk/Apk2Appx_Packer_v2.0_Beta.zip/file>

APPS COLLECTIONS:-

• Matheus Repo: <https://mega.nz/#F!om4kkKCa!Nv7RCZOhCXlCfzRnKpfCXg>

THANKS:-

# Thanks to @Tourniquet88 for his tool to make our dream as reality.

# Thanks to HD2Owner for providing the update cabs.

# Thanks to Matheus silva and others who participated to testing and feedbacking.

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Fadil, [24.05.21 14:26]

INTRODUCTION:

Project Astoria is a abandoned project of Microsoft back in 2015s. It’s an Android runtime environment for Windows 10 Mobile, which would allow Android to run in an emulated environment with minimal changes, and have access to Microsoft platform APIs. It help developers to port their android apps without having much effort. Which means it let the users to install android packages directly to the windows 10 Mobile through this bridge. But unfortunately Microsoft has abandoned the project and blacklisted on production builds. So it was unable to bring Astoria back to the Windows 10 Mobile running 10586 or higher builds.

But recently we had got two insider builds 10549 and 10570 update packages that support Astoria. And we can push the update packages by little tricky. Surprisingly, it supports all Windows Phones having an unlocked bootloader. Most importantly, this is Astoria’s all-time consistency and best performance build. Also the Android subsystem has been improved in this build. But the Android version is still KitKat (4.4.4). Keep in mind that this is an insider build, so bugs are expected. But we have fixed almost all the bugs with a patch, and we provide the patch with the updater.

Fadil, [24.05.21 14:26]

NOTES:

\* The Lumia devices which is X50s are unsupported. But Lumia 550 can be install by flashing the leaked Astoria FFU.

\* You must have to update to 10549 build first and then update to 10570 build.

\* After the build 10570 update, you must have to apply ‘Patch 2.bat’ before doing anything. And you have to wait about 10 minutes to install some apps in the background.

\* Project Astoria is offially supported on 1GB devices only.

\* Only able to install APK that is Targeted to API 19 or lower.

\* Most of the Google serviced apps are unsupported.

Fadil, [24.05.21 14:26]

KNOWN BUGS:

- After the build 10549 update, there is a possibility of getting stuck in the black screen. In such cases, reboot or wait until the phone boots.

- Can’t able to set a LockScreen Pin. Due to Settings app is bugged, The signin option in Settings app will crashes. But you can set a Pin by signing into MS account and it will ask you for setup a Pin.

- If you have did a Hard Reset for some reason, you must have to set date to 14 oct 2015 in the OOBE setup. Else you will loss some system apps, and the only solution to get back the apps is... perform a Hard Reset again and set the date as mentioned above.

Fadil, [24.05.21 14:26]

DOWNLOADS:

• Phone Updater (<https://www.mediafire.com/file/jzryci5vwi9v7xr/04.25.6_phoneupdater_iu_refresh_astoria_refresh_7.zip/file> ) helps to download and push insider builds into Windows Phone devices.

• Astoria Patch (<https://www.mediafire.com/file/va15592og212n0k/Astoria_Patch.zip/file> ) helps to enable testsigning, fix some major bugs and much more etc...

• Apk2Appx Packer (<https://www.mediafire.com/file/tz76d83u2898e0x/Apk2Appx_Packer_v2.1_Beta.zip/file> ) helps to install APK and convert installed APK to APPX using a PC.

• Ak2Appx Converter (<https://www.mediafire.com/file/fpwwsyvjge0mpyp/Apk2Appx_Converter_v2.3.5.zip/file> ) helps to convert APK to APPX directly from PC.

• Astoria Package Installer (<https://www.mediafire.com/file/sqreqwiao5anpft/AstoriaPackageInstaller_0.3.0.0.zip/file> ) helps to install android converted appx along with it's data.

• ProjectA Repo (<https://mega.nz/folder/QVFQnBSA#2Rj8OvBoF1Qd5tYte7cbQA> ) is a mega cloud based repository, contains android converted apps & games appx for Astoria builds.

Fadil, [24.05.21 14:26]

TUTORIALS:

+ How to get PROJECT ASTORIA on Windows Phones (<https://youtu.be/vP-z8jVXVBQ> )

+ How To Convert & Install Android APK To Windows 10 Mobile APPX (<https://youtu.be/YhqctrrFDpo>)

Part 2

So something that may or may not be interesting to techy people here:

I have fetched and uploaded to Google drive 7GB of files, these are from: <https://3rdpartysource.microsoft.com/> and are labelled "Project Astoria"

What this seems to be is some kind of Android source used in development with the Astoria Android image, and as it is originally Open Source Code, MS have to supply links and Info on the Open Sourced code they use in Microsoft Products..

Not before any excitement brews, I strongly feel this still lacks Device Configs for the "hyperv hardware" that Astoria is targeted for, as these are likely Microsoft made.. but we could try extract from image/recreate the configs..

Now I have never built ASOP or even know what the source tree for ASOP looks like, but to any here who has Android experience, these could help in some way! Even if just to understand what they used to build.

(Archives are unedited, from the MS website, thanks to @Tourniquet88 for pointing me towards the original files)

<https://drive.google.com/drive/folders/1yukSY-UOz2Wib2dd2RAUa4txCrfRySsU?usp=sharing>

Microsoft (<https://3rdpartysource.microsoft.com/> )

Third Party Disclosures

How-to: filter third party notices and source code from Microsoft products by typing "Astoria"

Empyreal96, [18.05.21 02:05]

Could someone who currently has a device that can run Astoria, possibly send me the C:\Windows\System32\aow\aow.wim file from a Fresh install(I.e reflash FFU and pass oobe) please?

I want to check something about it against one from the FFUs to see if a few things are placed after install or not

Empyreal96, [18.05.21 02:06]

Or at the very least an already installed system, open the .wim and tell me if anything exists in: AoW.wim\proc\

Reason is that if files get linked on init, there isn't a visible kernel config, which my guess would imply it is still very "bash on windows" style with the Android/linux kernel being baked into a special system file, which would suck eggs

Empyreal96, [18.05.21 02:09]

Also anyone interested in info, some of the Astoria android image references ro.hardware = hyperv which is interesting

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zhin\_, [27.04.21 14:58]

[ Файл : MyBoy! (GBA).xap ]

Guys you can fix the Myboy xap to work in wp10 build 1511, the application installs correctly but when entering the menu it closes :( this is the best gameboy advance emulator for windows phone, please repair it 🥺🙏

Andrew, [27.04.21 16:35]

[В ответ на Anonymous]

Pinned message

Anonymous, [27.04.21 19:24]

[В ответ на Fadil]

I'm using Lumia 550 with a 1gb RAM, can it work??

JULIΛN (Pinguin2001), [27.04.21 19:46]

[В ответ на Anonymous]

read the message and you will see its not supported

VLΛD, [27.04.21 19:56]

[В ответ на Anonymous]

Lumia 550 is not supported

Naughty Choudhary, [28.04.21 14:59]

Is Astoria working in Nokia Lumia 929 icon... like whatsapp Facebook Instagram ??

Netrotion, [28.04.21 15:09]

[В ответ на Naughty Choudhary]

Read pinned message

Naughty Choudhary, [28.04.21 15:09]

It mean support 👍

Netrotion, [28.04.21 15:10]

Think it doesn't for lumia 929

Maimoon Jamil, [28.04.21 17:31]

how to boot to uefi mode on lumia 640

Jamal Meddani, [28.04.21 17:57]

/rules@MissRose\_bot

Rose, [28.04.21 17:57]

[В ответ на Jamal Meddani]

The rules for ProjectA are:

The rules are simple:

1.Only use ENGLISH to chat

2.Do not ask OFF-TOPIC questions (WhatsApp, Facebook, windows 10 arm32,...)

Jamal Meddani, [28.04.21 17:58]

Hp elite x3 need apps

Maimoon Jamil, [28.04.21 18:46]

how to install project astoria witout PhoneUpdater

Maimoon Jamil, [28.04.21 19:24]

[ Файл : Annotation 2021-04-28 212205.png ]

can anyone help me plz

Fadil, [28.04.21 19:41]

[В ответ на Maimoon Jamil]

Read the instructions

Maimoon Jamil, [28.04.21 19:41]

[В ответ на Fadil]

where it is

Fadil, [28.04.21 19:42]

[В ответ на Maimoon Jamil]

Readme.txt in the phone updater

Maimoon Jamil, [28.04.21 20:55]

how to know project astoria installed or not

Maimoon Jamil, [28.04.21 21:29]

how to install project astoria without going back to windows 8 or 8.1

د.مصطفى, [28.04.21 21:54]

[ Фотография ]

Hi please i want the link of

547

603

Update cos i just have

107

1066

297

Using universal updater offline 2021 pc app

Maimoon Jamil, [28.04.21 22:56]

convert apk to appx

Maimoon Jamil, [28.04.21 23:24]

[ Файл : {F8D54AA7-4657-431D-BBCA-1EA81CC68CE2}.png ]

PLZ help me

¥Д§ƩℛℋДτДᛗ¶ℬJ, [28.04.21 23:47]

/rules@MissRose\_bot

Rose, [28.04.21 23:47]

[В ответ на ¥Д§ƩℛℋДτДᛗ¶ℬJ]

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Candela, [29.04.21 00:10]

is there any interop tools for 10240?

Fadil, [29.04.21 00:17]

[В ответ на Candela]

IT preview

Candela, [29.04.21 00:19]

ok thanks

د.مصطفى, [29.04.21 00:41]

Why win 10 with project a developer wont be able to used after reboot or second day it just make crash

Andrew, [29.04.21 00:46]

It could be a windows bug

د.مصطفى, [29.04.21 00:47]

[В ответ на Andrew]

How can fix it ?

Andrew, [29.04.21 00:48]

If you are using build 10166 I have read before that you have to disable developer mode before restart

Candela, [29.04.21 00:57]

[В ответ на د.مصطفى]

it is common bug with astoria. you should disable devmode with interop tools or factory reset your phone

Candela, [29.04.21 01:00]

[В ответ на Fadil]

can you give appx of it, i cant login to store or download with adguard

Fadil, [29.04.21 01:00]

[В ответ на Fadil]

Here it is

Candela, [29.04.21 01:04]

ok thanks, can i install them with enterprise installer or should i use another method?

د.مصطفى, [29.04.21 01:08]

[В ответ на Andrew]

Yes last time when i make update to

297 i was able the developer

But it just stuck on logo when it update is that the problem ?

د.مصطفى, [29.04.21 01:09]

[В ответ на Candela]

If i dissable develop mode

I cant work with apk to appx

Candela, [29.04.21 01:10]

you should disable it to access to developer mode and device portal again

Candela, [29.04.21 01:11]

after disabling it with registry you can enable it back and use it usually again

د.مصطفى, [29.04.21 01:12]

[В ответ на Candela]

Just do this to fix it ever

Or every day make it

Candela, [29.04.21 01:13]

[В ответ на د.مصطفى]

need to do this only when developer mode page crashing

د.مصطفى, [29.04.21 01:13]

I was install every interiptool from 1.1 beta to 2.0

Not work or show on app

Candela, [29.04.21 01:14]

and for preventing crashing, keep your device portal off when you arent going to install anything

د.مصطفى, [29.04.21 01:15]

[В ответ на Candela]

Oh that good thx

Fadil, [29.04.21 01:16]

[В ответ на د.مصطفى]

Keep dev unlocked and keep device discovery disabled after the use

د.مصطفى, [29.04.21 01:18]

[В ответ на Fadil]

Ok i will do this

د.مصطفى, [29.04.21 01:18]

[В ответ на د.مصطفى]

And this any fix ?

Fadil, [29.04.21 01:19]

[В ответ на د.مصطفى]

Use 2.0 preview

Fadil, [29.04.21 01:20]

Install dependencies first

د.مصطفى, [29.04.21 01:20]

[В ответ на Fadil]

Where can i find it please ?

د.مصطفى, [29.04.21 01:20]

[В ответ на Fadil]

Ok i will do this

Fadil, [29.04.21 01:20]

[В ответ на Fadil]

^

د.مصطفى, [29.04.21 01:22]

[В ответ на Fadil]

Thx i will do it

د.مصطفى, [29.04.21 01:23]

But left the forth update 547

When will fix this

Candela, [29.04.21 14:11]

is there any workaround for memory leak?

Andrew, [29.04.21 14:27]

What do you mean with memory leak?

Candela, [29.04.21 14:35]

hadn't astoria framework got memory leaks or am i wrong?

Andrew, [29.04.21 15:21]

Idk

Maimoon Jamil, [29.04.21 16:11]

[ Файл : Annotation 2021-04-29 181011.png ]

help me plz

zhin\_, [29.04.21 18:14]

guys android apps run slow in lumia 640 :(

Lasitha Samarasinghe, [29.04.21 19:09]

[В ответ на zhin\_]

Astoria is an unfinished project so expected as usual

Maimoon Jamil, [29.04.21 19:09]

can i install project astoria on lumia 640 lte ATT US verion

zhin\_, [29.04.21 19:14]

[В ответ на Lasitha Samarasinghe]

ok guy :(

Newb Stuff, [02.05.21 05:49]

/rules@MissRose\_bot

Rose, [02.05.21 05:49]

[В ответ на Newb Stuff]

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thakor arvind, [02.05.21 09:34]

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Rose, [02.05.21 09:34]

[В ответ на thakor arvind]

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Sandeep Soul, [02.05.21 18:45]

Can I install Apk in 640l dual sim 3g??

Andrew, [02.05.21 19:02]

[В ответ на Sandeep Soul]

Install astoria build first

Sandeep Soul, [02.05.21 19:05]

Can uh help me

A8 Player, [02.05.21 19:06]

[В ответ на Sandeep Soul]

Read pinned message

Sandeep Soul, [02.05.21 19:08]

My build is 15063

Andrew, [02.05.21 19:11]

[В ответ на Sandeep Soul]

Read pinned message

A8 Player, [02.05.21 19:11]

[В ответ на Sandeep Soul]

Model?

Sandeep Soul, [02.05.21 19:12]

Rm-1067

A8 Player, [02.05.21 19:15]

It supports to every ver of w10m project Astoria in pinned message

Sandeep Soul, [02.05.21 19:18]

Ok bro

Sandeep Soul, [02.05.21 19:18]

I will try

A8 Player, [02.05.21 19:19]

[В ответ на Sandeep Soul]

Good luck

Fadil, [03.05.21 22:09]

[ Альбом ]

Hello everyone,

It’s been a long time there was nothing about ASTORIA. And we all know that only few devices are working with latest ASTORIA build. also it’s kinda buggy OS.

So now I have to inform that we have just got a progress. Yeah! we have going to get even more updates with all devices support. Which is 10549 and 10570 build. It is perfect stable and uwp apps from TH2 build will also supported in it. Also we got added 10536 build for devices having 720x1280 resolution, like lumia 640 and XL. So STAY TUNED.

JULIΛN (Pinguin2001), [03.05.21 22:09]

[В ответ на Fadil]

Wow 🥳

xTR, [03.05.21 22:09]

[В ответ на Fadil]

yey

xTR, [03.05.21 22:09]

@PEPSIMANTR

Alex, [03.05.21 22:09]

🥳🥳🥳

VLΛD, [03.05.21 22:10]

[В ответ на Fadil]

Nice 🥳

Candela, [03.05.21 22:10]

[В ответ на Fadil]

🥳

Andrew, [03.05.21 22:10]

[В ответ на Fadil]

Good job

J3rry, [03.05.21 22:10]

Will it work on lumia 950xl?

Empyreal96, [18.05.21 00:47]

[В ответ на Arañita Ando\_pero\_no\_pico]

After 10586 Astoria binaries are blocked by the OS so without heavy patching by people who know how, we will always be somewhat limited if we want to use Astoria

Empyreal96, [18.05.21 00:48]

One thing I would like to see, is if the minimal Android base has a kernel, and if so, a kernel config

Arañita Ando\_pero\_no\_pico, [18.05.21 00:48]

Every new compilation will also have different keys

Arañita Ando\_pero\_no\_pico, [18.05.21 00:48]

If we somehow could run a chroot-like windows mobile subsystem inside a newer version...

Empyreal96, [18.05.21 00:52]

In a sense yeah, MS could have marketed WP much better, but without Astoria we wouldn't have WSL

Empyreal96, [18.05.21 02:05]

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