# **Important Info**

|  |  |  |  |
| --- | --- | --- | --- |
|  | https://www.samsung.com/au/offer/galaxy-a-series/redeem/ |  |  |
| IGT Melbourne office | Alarm code :2798 |  |  |
| Alarm Code Entry and Exit Concerns | LAS VEGAS Security team to be contacted  2798 | Phone Number is 0011 1 702 669 3214  Email is [IGT-SecurityLVALL@IGT.com](mailto:IGT-SecurityLVALL@IGT.com) |  |
| Dhaval’s Account Info | E-mail: [dhaval.parikh@igt.com](mailto:dhaval.parikh@igt.com) | Account Name: mvk10208 | Sign in Name: dhaval.parikh@igt.com |
| Device name | AUMELD104043 (PC at home) |  |  |
| Submissions PC | AUMELD104030 | This PC is also used by Padmini for submissions |  |
| PC in office | IGTD983V72 |  |  |
| Laptop | IGT4KFL9Y3 |  |  |
| O drive | [\\mel946app8\Oa5](file:///\\mel946app8\Oa5)  [\\melnetapp01b\Oa5](file:///\\melnetapp01b\Oa5) |  |  |
| ADP payroll | <https://secure.adppayroll.com.au/> | Password:Worldcupt20$ |  |
| Clarity PPM | <https://clarityppm.igt.com/pm/#/timesheets> |  |  |
| Released Shells location | \\mel946app8\oa5\Submissions\Software\Platform\Shell |  |  |
| Sydney share drive | [\\sydp-fsvd03\ProdTrac\Submissions\Software\Platform](file:///\\sydp-fsvd03\ProdTrac\Submissions\Software\Platform) |  |  |
| jira | <https://cspjira.igt.com/jira/browse/AUGP-1290> |  |  |
| Collabrator | <http://ccollab:8080/ui#review:id=75425> |  |  |
| Protocol Docs | \\mel946app8\Oa5\Jurisdictions\X Series\Protocol Docs |  |  |
| ADP payroll | [ADP Login (adppayroll.com.au)](https://secure.adppayroll.com.au/siteminderagent/forms/adplogin.fcc?TYPE=33554433&REALMOID=06-0000b210-efd4-17c4-a0bf-c2460a64d05d&GUID=&SMAUTHREASON=0&METHOD=GET&SMAGENTNAME=IrUHdTfEHiNhFdp3nikIicOhDPEmk5mOsptT83IfbK0OHHL43I5PQBqbSr3QSKkV&TARGET=-SM-https%3a%2f%2fsecure%2eadppayroll%2ecom%2eau%2f)  Password :Worldcupt20$  Client ID: S108878  User ID: 000083204  Password :Worldcupt20$ |  |  |
| Local admin rights request | I need local admin access to:    1. Create and modify IGT package installation USB keys, on a daily basis.  2. Use and maintain various legacy IGT software applications that require admin access, on a daily basis.  3. Develop and maintain IGT gaming software applications that require admin access, on a daily basis. |  |  |
| IGT AL | 8123864002  880 01867382848 |  |  |
| Laptop  Device NAME :  **IGT4KFL9Y3** | Recovery ID : 91B24330-A5FD-4746-8CB9-F75FD2359377 | BitLocker Key :  478808-001639-591151-458128-065208-206173-426811-338261 |  |

# **Confluence Links**

|  |  |  |
| --- | --- | --- |
|  |  |  |
| UGP onboarding | <https://developers.confluence.igt.com/display/POT/UGP+Onboarding+Program> |  |
| Package Tracker | <http://apacproddev/PackageTracker/StudioHomePage.aspx?&MainMenu=Studio> |  |
| Package Tracker Permissions | <http://apacproddev/PackageTracker/Permissions.aspx> |  |
| EasyVista  Service request portal | <https://igt-apps.easyvista.com/s/ServiceDesk?token=bK%2FYuAiXEEqyzq4zCJThUw%3D%3D> |  |
| Key Master | [\\ausydpfsvd01\DevDept\UtilityInstalls\Production\KeyMaster](file:///\\ausydpfsvd01\DevDept\UtilityInstalls\Production\KeyMaster) |  |
| O drive | [\\mel946app8\Oa5](file:///\\mel946app8\Oa5)  New name  [\\melnetapp01b\Oa5](file:///\\melnetapp01b\Oa5) |  |
| Sydney Share Drive | [\\sydp-fsvd03\ProdTrac\Submissions\Software\Platform](file:///\\sydp-fsvd03\ProdTrac\Submissions\Software\Platform) |  |
| UGP Launcher | <https://developers.confluence.igt.com/display/ALP/UGP+Launcher>  <https://igt-developer-docs.atlassian.net/wiki/spaces/ALP/pages/102508307/UGP+Launcher>  <https://igt-developer-docs.atlassian.net/wiki/spaces/ALP/pages/102508307/UGP+Launcher> |  |
| Protocol Simulators | <https://developers.confluence.igt.com/pages/viewpage.action?pageId=20939085>  <https://igt-developer-docs.atlassian.net/wiki/spaces/ALP/pages/102507600/Network+Protocol+Simulators> |  |
| UGP platform  Usage Tips | <https://developers.confluence.igt.com/display/ALP/UGP+Platform+Usage+Tips> |  |
| Package Builder | <https://developers.confluence.igt.com/display/ALP/Building+Packages+using+Package+Builder> |  |
| Jurisdictions & protocols | <https://developers.confluence.igt.com/display/POT/APAC+Jurisdictions+and+Protocols>  <https://igt-developer-docs.atlassian.net/wiki/spaces/ALP/pages/102509825/Australian+Jurisdictions+and+Protocols> |  |
| Submission Wizard | \\ausydpfsvd01\DevDept\UtilityInstalls\Studio\SubmissionWizard |  |
| Office Alarm | * For Alarm Codes and Enter and Exit concerns the following the office LAS VEGAS Security is the team to contact.   Phone Number is 0011 1 702 669 3214  Email is [IGT-SecurityLVALL@IGT.com](mailto:IGT-SecurityLVALL@IGT.com) |  |
| Com lab | * <https://developers.confluence.igt.com/pages/viewpage.action?pageId=184650181> |  |
| Brain box BIOS loading procedure | * <https://developers.confluence.igt.com/display/ALP/Ascent+Production+EGM+Setup> |  |
| Brain box information | * <https://gtechcorp.sharepoint.com/sites/ANZEngineeringHub/UGPPlatformSubSite/SitePages/UGP-Brain-Box-OS-BIOS-Mappings.aspx> |  |
| How to create Bootable Flash drive | * <https://developers.confluence.igt.com/pages/viewpage.action?spaceKey=AscentOperatingSystem&title=How+to+Create+a+Bootable+Flash+Drive> |  |
| Office PC | * IGTD983V72 * IPV4 address 10.93.42.73 |  |
| Australian Platforms | <https://igt-developer-docs.atlassian.net/wiki/spaces/ALP/overview>  [**https://igt-developer-docs.atlassian.net/wiki/spaces/ALP/overview**](https://igt-developer-docs.atlassian.net/wiki/spaces/ALP/overview) |  |
| Hardware and firmware configurations | <https://igt-developer-docs.atlassian.net/wiki/spaces/ALP/pages/102499900/APAC+EGM+Hardware+Firmware+Configurations> |  |
| Special game list  Single denom game | <https://igt-developer-docs.atlassian.net/wiki/spaces/AGP/pages/252216888/Special+Game+List> |  |

# **Collabrator:**

Collabrtor client needs to be installed to integrate collab and perforce

<https://downloads.codecollaborator.com/14.1.14100/ccollab_client_14_1_14100_windows_x64.exe>

server url while installing client should be <http://ccollab:8080>

Sample link : <http://ccollab:8080/ui#review:id=75425>

gdz70072 is the name of Zach in Collab

# **Jira:**

Sample link : <https://cspjira.igt.com/jira/browse/AUGP-1290>

# **Command Line Arguments**

## Xseries

/shellid:UP010117 /packagedatafolder:"D:\Dhav\Game" /networkportnsw1:2

## Qcom

## Asp

## Sas

# **Cabinets**

|  |  |  |
| --- | --- | --- |
| Cabinet | Device | Firmware |
| UG20 |  |  |
| Crystal Dual 23 (CrystalDual-i) |  |  |
| Crystal Curve |  |  |
| Crystal Curve Version 2(cost Reduced) |  |  |
| Crystal Slant |  |  |
| Crystal Dual 27 |  |  |
| Crystal Dual 27 (cost Reduced) |  |  |
| Peak Slant 32 | Peak Slant Button and Light Controller ( VID 0A70 , PID 2001) | UBPF0318.bin |
| Peak Dual 27 | Peak Upright Button and Light Controller Firmware (VID 0A70, PID 2000 | UBPF0335.bin |
|  |  |  |

# **App Loader**

* app loader is the Authenticator project in the solution

# **BIOS**

* IBRF41AUST14\_001 is installer for AVP 4.1 RS brain box
* If you install Release Bios on an EGM, you need to have platform shell a release version not a debug/demo one.
* IBRF40IAUST14\_001
* IBDX14 cannot be used on USBIO Cabinets – use IBDX41IAUST15.bin instead

## Bios Update feature

|  |
| --- |
| BIOS Update will only be offered if all below condition are met: |
| 1. Brain box is AVP4V2 or AVP4+ |
| 2. The BIOS vrsion on the install key is different to the BIOS version on the brain box |
| 3. The BIOS version on the install key is later than IBxxxxxAUST09 |
| 4. The BIOS on the key is compatible with the brain box (e.g. IBxxxxAAUSTxx is for AMD only and IBxxxxIAUSTxx is for intel |

# **Firmware IDs**

|  |  |  |  |
| --- | --- | --- | --- |
| **Device & Cabinet** | **Vendor and Product ID** | **Firmware ID as seen in system menu** |  |
| Peak Slant Button and Lights  Peak slant 32 Cabinet | 0A70, 2001 | UBPF0342.bin2023-09-25 🡪 UBPF0342.bin  UBPF0336.bin2023-05-22 🡪 UBPF0336.bin  UBPF0318.bin2020-03-12 🡪 UBPF0318.bin | Peripheral |
| Peak upright button and lights  PD27 or PU27 | 0A70, 2000 | UBPF0341.bin2023-09-06 🡪 UBPF0341.bin  UBPF0335.bin2023-05-05 🡪 UBPF0335.bin | Peripheral |
| USBIO Cabinet controller | 0A70, 3005 | USBC0004.bin2023-04-11 🡪 ver 24 (USBC0004\_ver\_0024.dfu)  USBCQCM1.bin2022-12-22 🡪 ver18  USBC0004.bin2023-03-27 -> ver 23 (USBC0004\_ver\_0023.dfu)  USBC0004.bin2023-03-09 🡪 (USBC0004\_ver\_0022.dfu)  USBCTSTR.bin2023-10-24 🡺test version with logs for Qcom issue | DFU |
| Dyanmix ButtonPanel  Crystal curve and cd 27 | 0A70, 0382 | BFBP0003.bin2016-04-04  BFBP0002.bin2015-04-15 | Peripheral |
| JCM GEN5 USB Printer | 16F5, 0401 | G5I2052202 2019-02-21 🡪 G5I2052202.dfu  G5I2042203 2019-02-12  G5I2012203 2019-02-19 🡪 G5I2012203.dfu  G5I2062202 2019-02-19 🡪 G5I2062202.dfu  G5I2072202 2019-02-20 🡪 G5I2072202.dfu  1.0.3,FL GEN5 HID PRINTER,5HAUSSP20,0🡪  5HAUSSP20.dfu  Unified GDS firmware for Australia  5HQLDSP20 -> qld  1.0.3,FL GEN5 HID PRINTER,5HNZLSP21,0 🡪 5HNZLSP21.dfu  5HNZLSP20.dfu | Peripheral if spc firmware  Dfu if GDS firmware |
| FL GEN 2 universal USB PRINTER | 16F5,0202 | GUU122A509 2015-07-01 🡪 GUU122A509.sha  GUU122A507 2013-02-12 🡪GUU122A507.sha  GUU001A508 2013-06-20 | Peripheral |
| JCM iVIZION Note Acceptor | 2475,0105 | JiVAUSV286302020-09-21 🡪 iVIZION-100\_SS-SU\_28630\_ID028\_AUS.BIN  JiVNZLV281302019-09-05 🡪  iVIZION-100\_SS-SU\_27240\_ID003\_AUS.BIN  iVIZION-100\_SS-SU\_28130\_ID028\_AUS.BIN  iVIZION-100\_SS-SU\_28430\_ID028\_AUS.BIN  1.1.2,iVIZION-100-SS,i(NZL)100-SS ID0G8-01,V2.84-43,2022-12-27 🡪  1.1.2,iVIZION-100-SS,i(AUS)100-SS ID0G8-01,V2.86-41,2020-09-21 🡪 | Ivizion note acceptor supports both SPC and GDS firmwares |
| UBA Note Acceptor | 2475,0101 | Ux4NZLV283252019-09-04  Ux4AUSV285252020-07-22 🡪 UBA14-24\_SS-SU\_28525\_ID028\_AUS.BIN  Ux4AUSV286252020-10-01 🡪 UBA14-24\_SS-SU\_28625\_ID028\_AUS.BIN | UBA note acceptor supports only SPC  Peripheral |
| Curve Lights | 0A70,046F | ULCF0270.bin2016-07-28 🡪 ULCF0270.bin | Peripheral  There are two light controllers in Crystal cabinets |
| CD27 Lights | 0A70,046F | ULCF0312 -> ULCF0312.bin2018-04-11  ULCF0293 -> ULCF0293.bin2018-03-27 | Peripheral  There are two light controllers in Crystal cabinets |
| CD27 Cost reduced light controller firmware |  | ULCF0319.bin2019-10-21 🡪ULCF0319.bin | peripheral |
| Crystal curve cost reducted Light controller |  | ULCF0320.bin 🡪 ULCF0320.bin2019-10-21 | peripheral |
| Topper (cd27/crystal curve) |  | ULCF0314.bin2019-04-11 🡪 ULCF0314.bin | peripheral |
| Transact Epic 950 printer | 0x613,0x950 | IUU1220310 2015-06-08 🡪IUU1220310.bin | peripheral |

# **Old Firmware Upgrade Key**

Confluence link for different hardware and firmware Configurations :

<https://igt-developer-docs.atlassian.net/wiki/spaces/ALP/pages/102499900/APAC+EGM+Hardware+Firmware+Configurations>

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cabinet** | **Device** | **VID** | **PID** | **Firmware ID** |
| Cd23 | Lights | 0A70 | 0465 |  |
| CD27 Cost Reduced | Dynamix Buttons | 0A70 | 0382 |  |
| Peak slant 32 | Peak Slant Button and Lights | 0A70 | 2001 | UBPF0342.bin2023-09-25  UBPF0318.bin2020-03-12  UBPF0336.bin2023-05-22 |
| Peak Dual27 | Peak upright button and lights | 0A70 | 2000 | UBPF0341.bin2023-09-06 |
| Peak family  Crystal family | USBIO CC | 0A70 | 3005 | USBC0004.bin2023-04-11 |

## Build Procedure :

building the legacy FW key is a little complicated You need to get //Ignite-Australia/Diagnostics/DIAGUNV00118/ as the base

then follow the instructions in //Ignite-Australia/Diagnostics/DIAGUNV00118/How to build custom DIAGUNV0118 app package.txt

it's basically a custom build of the DIAG with the FW updater app packaged

this might explain it not working on Peak if DIAGUNV 118 doesn't support Peak

You can try using the latest DIAGUNV for the FW key

|  |  |  |  |
| --- | --- | --- | --- |
| Tool | Usage | Document | Code |
| IGT Firmware Manifest Generator Version 1.1.1.0 | Run on PC to generate FirmwareUpgrade.zip package which is then loaded on to a key by burning the package using IGT Diagnostics key Creator | How to Create the Firmware Update Image.docx | //Ignite-Australia/Platform/Trunk/Tools/IgtUsbFirmwareManifestGenerator/ |
| IGT Diagnostics and Installation Key Creator Version 1.4.2.0 | Run on PC to create Firmware Upgrade key  Note: A key of minimum 2gb size needs to be inserted on the pc . Also browse to the Firware package (.zip)using the browse button | How to Create and Use the Firmware Update USB Key.docx | //Ignite-Australia/Platform/Utilities/IgtDiagnosticsKeyCreator/  private static Tuple<string, string, string> GetInstallerAndBootLoaderFiles(bool createReleaseInstaller)  {  var currentDir = new DirectoryInfo(Directory.GetCurrentDirectory());  var bootLoaderFile = Path.Combine(Directory.GetCurrentDirectory(), "boot\_loader.boot.app.avp4");  if (!File.Exists(bootLoaderFile))  throw new Exception(string.Format("Could not find the boot loader file in {0}", currentDir.FullName));  var diagPackage = currentDir.GetFiles(createReleaseInstaller ? "DIAGAUSTFW??.package" : "DIAGAUSTFW??DEV.package").FirstOrDefault();  var certPackage = currentDir.GetFiles(createReleaseInstaller ? "DIAGAUSTFW??.certificate" : "DIAGAUSTFW??DEV.certificate").FirstOrDefault();    if (diagPackage == null || certPackage == null)  throw new Exception(string.Format("Could not find the firwmare installer package in {0}", currentDir.FullName)); |
| Firmware Update Key | Run on the EGM.  To update firmware of the devices |  |  |
| Firmware Installer Package  DIAGAUSTFW03.package AND .certificate | Copied to IgtDiagnosticsKeyCreator 1.4.2.0\Release\ |  | //Ignite-Australia/Platform/Trunk/Tools/IgtUsbFirmwareInstaller/ |
|  |  |  |  |

* IgtUsbFirmwareInstaller project in Trunk/Tools references Igt.Egm, Igt.Hardware projects
* VID 0x0A70 PID 0x2001 for Peak Button and Lights PS32 cabinet
* UBPF0336.bin2023-05-22 is the latest firmware for peak Buttons and Lights devices on peak slant cabinets
* Code flow when user hits update button on the UI of IGT USB Firmware Installer tool/key

Update MainWindowViewModel.cs

updater.updateDevices()

device.Upgrade()

Device.upgrade(target.DecryptedPath)

# **Full SMO Key (Regulator Tool)**

* This Tool is useful to get all packages from the brain box including bios,os, games, platform, select packages

|  |  |  |  |
| --- | --- | --- | --- |
| File Name | Sha1 code |  |  |
| IBDX40IAUST14.bin | 990E70DE3CA3693501233FACD454D6FC6CA90209 |  |  |
| IBDX41IAUST15.bin | AB6A68E6D73E44065C351A053F7F4414D7145CA3 |  |  |
| PLATFORM\_00700009 | A49DAD4ACB9AA4CC3D1E8C83539357ED548A1D41 |  |  |
| PLATFORM\_00700010 | BC1080DE11E95270B9392AA84AA042C49A44ED20 |  |  |
|  |  |  |  |
|  |  |  |  |
| OS020PM00608.certificate | FCC0C7C64A5917057C677FB174250FDE47BC6AAB |  |  |
| OS020PM00608 (without MBR) | B37E1A9CDAA90551E198A4F2526E8E8F5C2BBD13 |  |  |
|  |  |  |  |
| OS000023\_007.certificate | B85E6936A36C03C3DD5FDB27AA4219AAAB57D8FA |  |  |
| IBRF40IAUST14.bin | 8C087C25BFE4C0D09D426CDEA28AE607D7BC0AC5 |  |  |
|  |  |  |  |

* Signed Package is available at [\\melnetapp01b\Oa5\Submissions\Software\Platform\DIAG Packages\SMOKey\SMK001](file:///\\melnetapp01b\Oa5\Submissions\Software\Platform\DIAG%20Packages\SMOKey\SMK001)
* Some times when you try to build the full smo key app you might end up in a problem where you cannot delete Temp/Mount/Windows files thenyou can run the following command on an elevated command prompt

**dism /cleanup-wim**

# **Peak Dual FirmwareUpdate Key**

* The signed package for updating Button panel device on PD27 is available at

\\melnetapp01b\oa5\Submissions\Software\Platform\DIAG Packages\FW Update Key

* The above package updates the button panel firmware from UBPF0335.bin to UBPF0341.bin only
* In system Menu the firmware id for UBPF0341 is **UBPF0341.bin2023-09-06**
* In system Menu the firmware id for UBPF0335 is **UBPF0335.bin2023-05-05**
* Some times when you try to build the full smo key app you might end up in a problem where you cannot delete Temp/Mount/Windows files thenyou can run the following command on a elevated command prompt

**dism /cleanup-wim**

# Peak Slant FirmwareUpdate Key

* The above package updates the button panel firmware from UBPF0318.bin to UBPF0342.bin
* In system menu the firmware id for UBPF0318 is **UBPF0318.bin2020-03-12**
* The firmware id for UBPF0342 in system menu is **UBPF0342.bin2023-09-25**
* Some times when you try to build the full smo key app you might end up in a problem where you cannot delete Temp/Mount/Windows files thenyou can run the following command on a elevated command prompt

**dism /cleanup-wim**

# Manifest Based Firmware Update Key

* The new firmware update key (DIAGAUSTFWU001) which is based on DIAGUNV code and Manifest xml file is used to update firmware for both peripheral Devices like Button Panel, printer, Lights and controller etc and also Dfu Devices like USBIO CC and Note acceptor.
* This key is based on latest DIAGUNV code base so it should support all devices which DIAGUNV supports
* A Firmwre package (.zip) needs to be created using IgtUsbFirmwareManifestGenerator version 1.1.1.0
* Some times when you try to build the full smo key app you might end up in a problem where you cannot delete Temp/Mount/Windows files thenyou can run the following command on a elevated command prompt

dism /cleanup-wim

# **Boot Apps**

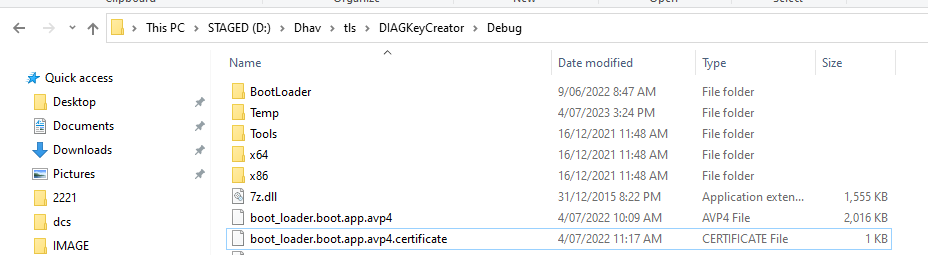
## Boot Loader

* Boot loader code is available at //Ignite-Australia/Boot/Trunk/
* The entry point for your boot application is a function called BootApplicationMain()
* A screenshot of a computer

  Description automatically generated

### Boot Loader Build Procedure :

* Source code location : //Ignite-Australia/Boot/Trunk/
* Solution loads and builds with VS 2019 (BiosExt2.sln)
* select the debug/win32 configuration and hit build
* It will create all the files inside the \bin folder of the source tree
* Output is boot\_loader.boot.app.avp4 file and its certificate file
* Copy them to the DiagKeyCreator’s root



* You'll have to enable debug output in the boot loader and rebuild
* To do this, enable **DEBUG\_BIOS** preprocessor in debug.c

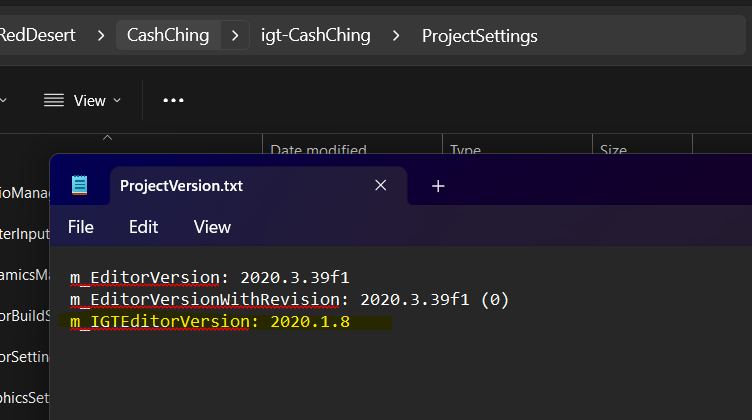
### NTFS Key not working issue

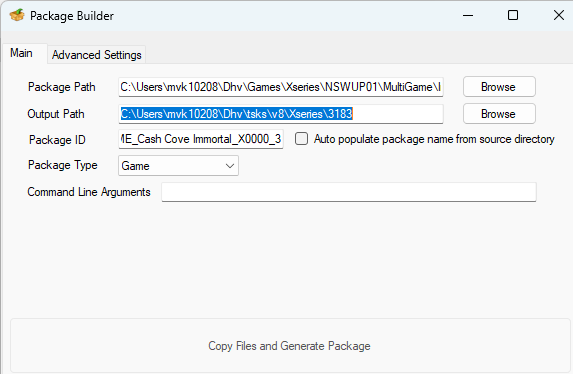
* We enabled the memory debugger to know what was wrong by calling the following functions
* K
* We also faced authentication failure issue due to ntfs special files on the rootdir , solution was to ignore all the special files (hint special files start with$)
* Then we faced the disk read error , it was because the way exfat boots and ntfs boots is different
* Proper way to boot is from bootmgr as in os\_installer.c
* The reason it doesn't launch with the other call is because the disk is formed a bit differently to what the normal volume boot record expects

<https://flatcap.github.io/linux-ntfs/ntfs/files/index.html>

# **Game**

* To know the unity version of the game go to Game source ProjectSettings and open the ProjectVersion.txt and look for m\_IGTEditorVersion :

Ex : 

* you can do that using this infomration in the game source
* To get a game package from game exe , you can use Package Builder like you use to build shell packages, except that you need to select Package Type drop down as Game
* 

# **Installer**

## Basics:

* Australian Installer code is present at //Ignite-Australia/Diagnostics/DIAGAUSTI028/
* Installer is the application which is used to deploy packages onto the EGM and clear Brain box drives and also to get Quick SMO Key Logs
* Australian DIAGAUSTI0xx package in burnt to an Installer key like Transcend key and put onto the usb drive on the brain box to run it
* To run Installer we need secure run ie. The processor door needs to be open
* To use Installer in dev mode , you need to have a \_ file in Packages folder of the key.

## Build Script :

startBld.bat

build.py

main()

setup\_paths()

prepare\_build()

run\_release/development\_build(args)

build\_dianostic(args.configuration) // builds the diagnostics solutionIGT.Dianostic.sln

cleanup\_build(args.configuration)

strip\_binaries()

customise\_utosmanifest(args) // runs only for Australian installer/regulator tool/fwupdate key

## How to Run Installer Key:

1. Installer Key has two modes Dev Mode and Release Mode
2. Dev Mode is where the Packages Folder in the root of Installer key has a special file called **\_**

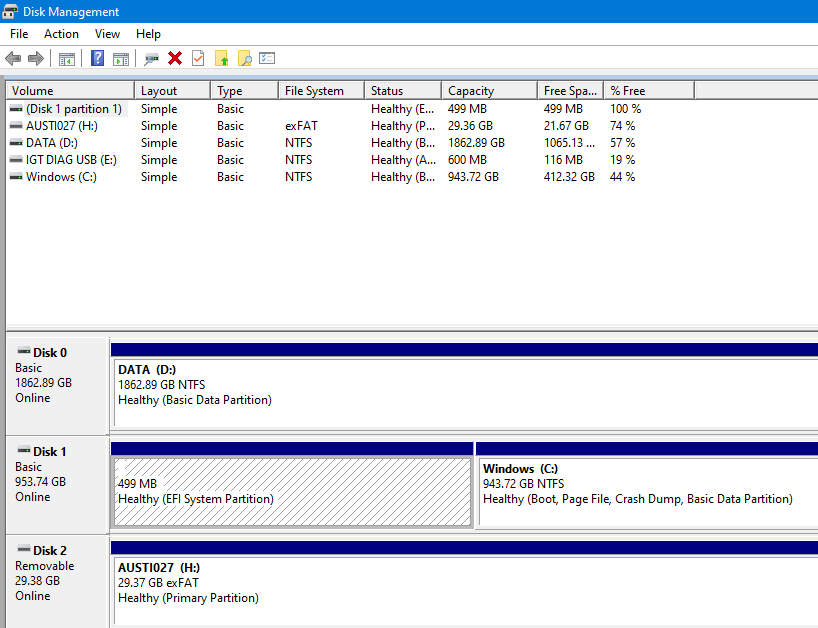
## Procedure to Build DIAGAUSTINST :

|  |  |
| --- | --- |
| Tool | Version |
| Python | 3.11 |
| Visual studio 2019 Build Tools |  |
| MS Build |  |
| C++ ATL V142 |  |
| Windows SDK | Version 10.0.17763.0 |

1. update your Visual studio 2019 BUILD Tools
2. Install latest python for windows from python.org and also from windows store
3. Set the python installed path to your env variables

Ex: C:\Users\mvk10208\AppData\Local\Programs\Python\Python311

1. Make sure to have MS BUILD V142 and C# ATL V142 latest
2. Make sure to have Windows SDK version 10.0.17763.0
3. Plug in USB key to the PC where you would build DIAG code (the key for the build cannot be used as installer)
4. The contents of the USB key would be destroyed
5. Find the drive number of inserted usb key by going to Disk Management utility from start menu



1. Set Drive=x set the drive number from above step in StartBld.bat
2. Open command prompt -> Run as administrator and do StartBld.bat /australia\_test
3. the installer package should be in the build's output directory
4. It would create a output directory at the root like **D:\DIAGAUSTI028**
5. The images are inside the **D:\DIAGAUSTI028\IMAGE**
6. you burn this to another key to create an Installer key which is plugged in on a brain box to install packages/OS/Games on the EGM
7. Some times when you try to build the full smo key app you might end up in a problem where you cannot delete Temp/Mount/Windows files thenyou can run the following command on a elevated command prompt

**dism /cleanup-wim**

## Procedure to burn Installer package on an Installer Key:

* Use the DIAGKEYCREATOR tool(IgtDiagnosticsKeyCreator 1.4.3.0) to make an Installer key using the installer package ex: DIAGAUSTI028.package
* Run "IgtDiagnosticsKeyCreator" as admin (IgtDiagnosticsKeyCreator.exe)
* Select the "Australian Keys" tab
* plug in the USB key
* **tick the checkbox for "Large Package Support"**
* click on first Browse button and point to the Installer package
* ignore the 2nd Browse Button
* click on "Create Key" button

## Logs from Installer code:

* install.log will be on the installer key Packages directory.

## Code Flow :

### Installing Packages flow for Australian Installer :

Install() // called when Install button is pressed from the UI

UpdateEnableButtons(false) // Disables other buttons & all other tabs of deployment application

StopMonitoringDiskEvents() // calls disk.UnregisterUpdateEvents() where disk is obj of Disk class in DiskPreparation.cs file

ClearAllDrivesCore() // If os is tobe installed calls

Disk.DetectHD(Disk.DISK0) // if detect hard disk 0 remove layout

Disk.RemoveLayout(Disk.DISK0)

Disk.DetectHD(Disk.DISK1) // if detect hard disk 1 remove layout

Disk.RemoveLayout(Disk.Disk1)

// if os is to be installed

CreateDiskLayouts()

If (legacyOSInstallation )

CreateLegacyDiskLayouts()

disk.PreparePrimaryDisk2\_CDF

PreparePrimaryLayoutDualDisk\_CDF(0)

Offline(0)

RemoveLayout(0)

PrepareDrives()

### Clearing All drives from System Restore tab

ClearAllDrives() // called when ClearAllDrives btn pressed from System Restore tab (ClearAllDrivesCommand)

ClearAllDrivesCore()

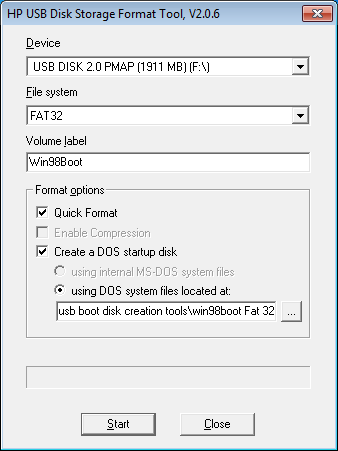
CreateDiskLayouts()

PrepareDrives()

# **UGP**

## Procedure to build qsim dos key

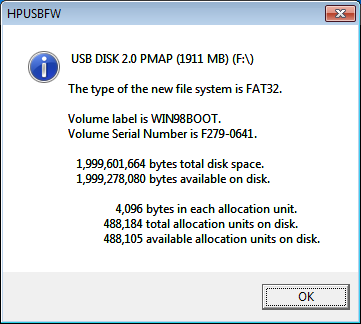
1. Install "\\melnetapp01b\Oa5\Environment\General PC Drivers and Installs\usb boot disk creation tools\sp27213.exe"
2. Run "C:\Drive Key\HPUSBFW.EXE"



using DOS system files located at:

"\\melnetapp01b\Oa5\Environment\General PC Drivers and Installs\usb boot disk creation tools \win98boot Fat 32

1. Click Start.



1. Copy “\\melnetapp01b\Oa5\Jurisdictions\Dos Current Simulators” folder’s content to your USB key.

### Qsim KEY EXPIRED error :

Some times dos version of qsim may not run because of key expired error . Follow the below steps to set the system time on mini computer

1. Restart the dos Computer and press del while booting, which takes you to BIOS setup
2. Set the system date to today’s date and press F10 to save and exit.
3. Restart the dos computer, you should be able to run the qsim now

### Qsim event display issue :

Please try to go toQsim EGM->Events ->Display-> Compress Horz and see the whole message , also try Expand Vert to see the whole events

## BrianBox:

* AVP 4.0+ is For crystal curve cabinets

## OS:

* OS 611 🡪 Win 10 based , also there is OS 611 which is Win 7 based
* OS 608 (**OS020PM00608**) 🡪 Win 10 based
* OS 25 &26 🡪 Win 7 based
* OS020PMAU025 is based on US s OS508
* OS21 = OS502 -> is for Curve cabinets only also requires platform version 3
* OS504 IS 00000023

## Communication with Game :

* MessageCategory.cs lists all the different message categories foundation has with Game
* F2LServer.cs is where the server is started
* LinkControlCategory is the first connection for game and foundation

GetThemeApiVersions()

## Branch Information :

Version-08 was branched from Version 08

Version 08 was branched from trunk on 21/01/2024 7:44pm perforce time

Version-07-NZC-Qcom was branched from Version 07

## StateMachine:

### QCOM :

HandleExitBootHalt()

OnBootHaltCompleted()

BootHaltCompleted()

CleanUpComponentsForBootHalt()

#### HandlePostBootHalt()

EgmApp.InitialiseComponentsAfterBootHalt()

InitialiseLoadGamePackage()

LoadPackage() LoadPackage()

Package.Load() // sends the StorageId.JurisdictionName to game in GameStateMachine

PackageAccessorCreated.Raise()

PackageAccessorCreated()

CreateCoreComponents()

IntializeJurisdictionTarget() InitialisePackage(egmApp, TargetJurisdictionId)

InitialiseQcomConfigurationManager() -> QcomConfigurationManager()

LoadPackage()

Load()

GameStateMachine()

LoadPackage()

PackageAccessorCreated.Raise()

LoadPackage

Package.Load() // sends the StorageId.JurisdictionName to game in GameStateMachine

#### HandleEnterColdBoot()

EnterColdBoot()

EnteringColdBoot()

CreateComponentsForColdBoot()

\_jurisdictionTarget.InitialiseColdBootComponents()

QcomJurisdiction.cs InitialiseColdBootComponents()

QcomMenuCreators.CreateColdBootMenus()

CreateColdBootNetworkConfigurationMenu()

#### HandleFinishBoot()

EnterNormalBoot() Raises EnteringNormalBoot event

EnteringNormalBoot()

CreateComponentsForNormalBoot()

InitialiseNormalBootComponents()

InitialiseNormalBootMenus()

InitialiseNormalBootComponents

InitialiseArbiters

InitialiseNoteAcceptorArbiter(app)

Process() QcomEgmConfigurationPoll

ApplyEgmConfigurationPollValues()

ApplyRunTimeJurisdictionConfigurations()

NewJurisdictionActivated.Raise()

ReconfigureCurrentJurisdictionTarget()

### Xseries:

X sereies has mainly following jurisidctions

NSW UP01xxxx ( New South Wales )

SCC UP05xxxx ( Star city casino )

ADC UP13xxxx ( south Australia casino )

NTC UP20xxxx ( Northern Territory casino )

BUR UP19xxxx (Crown Perth or Burswood)

TicketInHandler state flow for successful accepting of a ticket

Idle

Transmit

WaitingForHostResponse

ProcessingCcce

Processing

Idle

### Sas

### Asp

## Devices:

### Printer:

* There are 2 printer drivers available SPC and GDS

|  |  |  |  |
| --- | --- | --- | --- |
| Manufacturer | Model | Firmware | Comments |
| JCM | GEN5 | 5HAUSSP20 | Unified GDS firmware for Australia. |
|  |  |  |  |
|  |  |  |  |

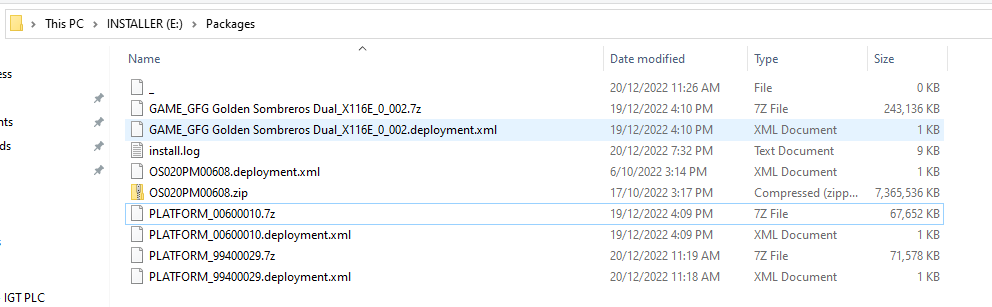
### NoteAcceptor/BNA:

* iVIZION-100\_SS-SU\_28641\_ID0G8\_AUS is the GDS FW for AU
* iVIZION-100\_SS-SU\_28630\_ID028\_AUS is the SPC FW for AU
* iVIZION-100\_SS-SU\_28230\_ID028\_NZL ---- jiVNZLV282302019-10-22 is the NZ SPC FW FOR IVISION NOTE ACCEPTORS
* iVIZION-100\_SS-SU\_28443\_ID0G8\_NZL is NZ GDS FW
* To update Fw on the note acceptor device use the BlueWave DX installer provided by JCMglobal

## Running Games on an EGM:

* To run games on the EGM do the following steps

1. Create Installer key using **KeyMaster**
2. You would need Game package, Shell, Os, and Installer
3. Download the required files from KeyMaster’s Download Files tab or get the copies from Sydney Share drive
4. You can build package
5. Go to UGP Installation Key tab in KeyMaster and give the paths to OS, Shell, Installer and Game and click on Begin Task
6. Contents of your Installer key after it finishes should look something like this



There should be a game package and game deployment xml and similar to that a platform package(.7z which contains .package and a .certificate file) and a deployment xml , Also a OS package and its deployment xml

To be able to install packages in Dev Mode, you need to have a special file called \_ on the packages folder of the install key

1. You can have multiple game and platform packages in the installer key , just select the ones which you want to install during the installation on EGM.

#### Common ERRORS:

##### Not in a Dev mode:

To be able to install packages in Dev Mode, you need to have a special file called \_ on the packages folder of the install key

##### Install Key Authentication Failure :

Some times there could be files on the install key other than the files shown in the screen shot above , if there are any such files they should be removed from the install key or install key authentication would fail.

1. Create Licence key using KeyMaster
2. Put exactly in the same values of BIOS ID, shell, game id and cabinet ID from the Boot halt menu-> Licence Key menu expected coloumn
3. Create Licence key on a **Safe Net Key**
4. Some times if the Safe Net Key is not detected by PC , uninstall/remove the **iKey X64 Driver** and re install it
5. BOSS ID can be any number 1 or 2 digits

## Running EGM on Crystal Curve :

* Make sure all the connections to backplane are made correctly.

## Pre Build events to kill Zombie processes:

* When you run EGM on simulator , it does not kill the Game exe process even after you stop your EGM from VS
* We need to set the following Pre Build Events in our Target EGM properties -> BuildEvents-> Pre-build event Command Line

taskkill /f /im "$(TargetFileName)" 2>nul & set errorlevel=0

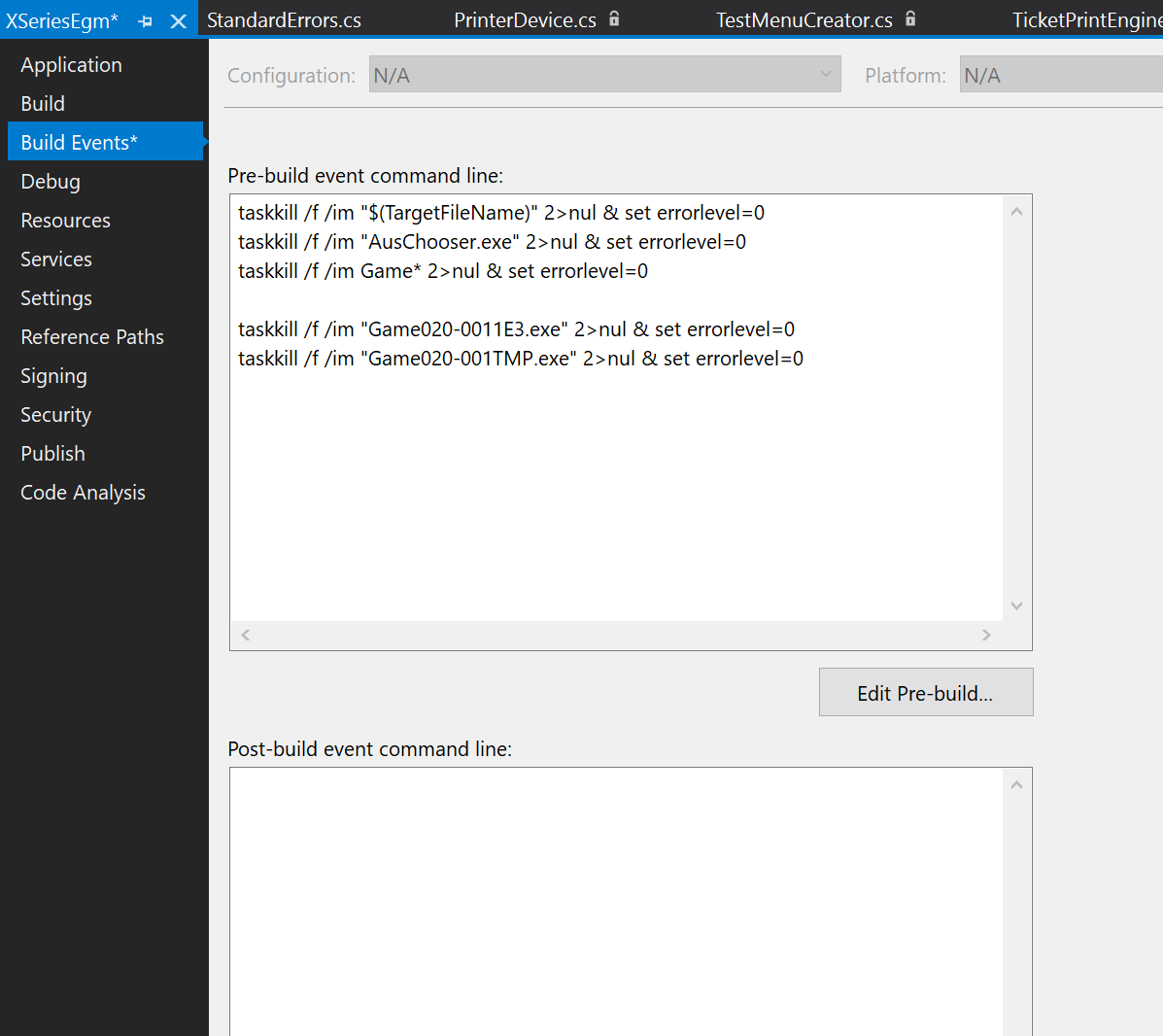
taskkill /f /im "AusChooser.exe" 2>nul & set errorlevel=0

taskkill /f /im Game\* 2>nul & set errorlevel=0

taskkill /f /im "Game020-0011E3.exe" 2>nul & set errorlevel=0

taskkill /f /im "Game020-001TMP.exe" 2>nul & set errorlevel=0

Feel free change the game name if necessary .



## Running Xseries on EGM:

* To test printer related stuff, you need to have clock synchronized with the xseries simulator tool, to do that connect a cable between NSW Port 1 in egm to serial port in your pc where you would run the Xseries simulator tool
* If you have connected the cable between EGM and office PC AUMELD104030 then the port number to be selected on xseries simulator tool is COM 1

#### USBIO Backplane :

* If you are trying to run Xseries on an EGM having USBIO backplane, you need to use the usb supercomms board whose USB end is connected either to Backplane or brain box and port1 is connected to a xseries cable , The other end of the x series cable is a serial port connected to the simulator PC .

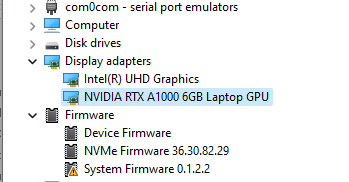
## Command Line Arguments on Simulator:

* /shellid:**UPxx0116** /packagedatafolder:" D:\Dhv\Game" /printer:simulate

## Running Platform from laptop :

* To run EGM from laptop follow the below steps

1. Disable the nvidia gpu from Device manger



1. Disconnect the monitor connected to laptop via HDMI port
2. Set the following command line argument /windowsize:100,-100,1600,950

## Running Xseries on Simulator:

* Go to visual studio Solution Explorer go to Targets folder and set XSeriesEgm as start up project
* Build the code in vs using ctrl+f5 , go to the XSeries project properties -> Debug and set the following command line arguments

/shellid:**UP010116** /packagedatafolder:"D:\Game" /networkportnsw1:5

Command Line Parameters while running x series from Laptop :

/shellid:UP010116 /packagedatafolder:"C:\Users\mvk10208\Dhv\Game\Nsw" /networkportnsw1:4 /windowsize:100,-100,1600,950

X sereies has mainly following jurisidctions

NSW UP01xxxx ( New South Wales )

SCC UP05xxxx ( Star city casino )

ADC UP13xxxx ( south Australia casino )

NTC UP20xxxx ( Northern Territory casino )

BUR UP19xxxx (CrownPerth Casino/Burswood Casino)

1. Disable the nvidia gpu from device manager
2. Disconnect other monitor connected via HDMI port

* Make sure to copy the extracted game package to location D:\Game as we have set it in the command line arguments
* You would need a loop back serial cable connected on your PC
* Run the solution , it should launch the game
* Click F2 during cold boot to clear the nvram and in the boot halt menu do a factory reset by clicking F5 ( to open processor door) .
* Set the cold boot configurations and it should launch the game , to add credits press f3
* Play the game by pressing space bar (equal to pressing play button on EGM )
* If you are unable to print ticket, as the collect button directly goes to attendant payout it could be because your EGM’s clock is not synchroinsed with the simulator
* To fix do the following

1. Set the command line argument /networkportnsw1:2 , here 2 being portnumber of serial port on your PC
2. Run the xseries simulator and select a different port on it .ex port 3 on my home PC
3. Run the EGM and see in system menu if clock is synchronized

* To test printer related stuff in office PC AUMELD104030, the com port to be selected on Xseries simulator is COM 3

### BUR

* Xseries Burswood is UP19xxxx shell. Last released version was V3 , in June 2024 we are planning to release burswood with Version 8 Platform
* /shellid:UP190116 /packagedatafolder:"C:\Users\mvk10208\Dhv\Game\Bur" /windowsize:100,-100,1600,950

## Running ASP on Simulator:

* Go to visual studio Solution Explorer go to Targets folder and set AspEGM as start up project
* Set the following command line arguments in the AspEGM properties->Debug->start options-> Command line arguments

/shellid:**UP080116** /packagedatafolder:"D:\Game" /autolicensekey /networkportasp:3

UP08 is for crown casino

Asp has only 3 Jurisdictions

* Crown Casino CRN – Shell id UP08xxxx
* New zealand Casinos NZC - Shell id UP09xxxx
* Tasmania Casinos TSC – Shell id UP15xxxx

## Running SAS on Simulator:

* Go to visual studio Solution Explorer go to Targets folder and set SasEgm as start up project
* Build the code in vs using ctrl+f5 , go to the SasEgm project properties -> Debug and set the following command line arguments

/shellid:**UP190116** /packagedatafolder:"D:\Game"

UP19xxxx is SAS Burswood

SAS Western Australia means Burswood casino ( UP19xxxx)

* Cold boot configuration must be done carefully as per the following page

<https://developers.confluence.igt.com/display/ALP/How+to+Setup+and+Configure+a+UGP+SAS+Machine>

Note: channel 1 could be a different COM port in your machine so check your device manager to find your Serial port numbers

### Sas Network config in cold boot :

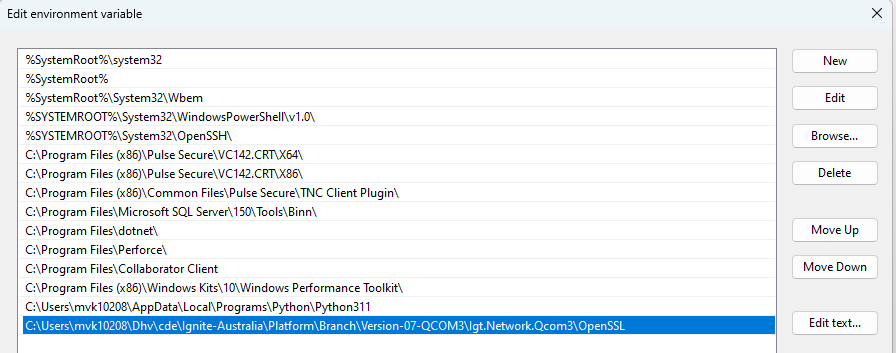
Select channel 1 -> COM4 (if you had connected serial port at x series port 1) or select COM1 (if you had connected ethernet cable at qcom port on the EGM)

* Run Sas simulator and select the appropriate com port on the COMM menu of the simulator
* Send Validation message by going to Validation tab and clicking on Initialise Enhanced validation button

## Running Qcom3 On Simuator:

* Latest code for Qcom3 can be found in the branch **//Ignite-Australia/Platform/Branch/Version-07-QCOM3/**
* Set the open ssl path in your **environment variables**

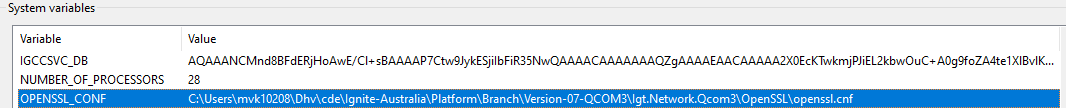
Ex :



* Set the following **system variable**

Variable Value

OPENSSL\_CONF C:\Users\mvk10208\Dhv\cde\Ignite-Australia\Platform\Branch\Version-07-QCOM3\Igt.Network.Qcom3\OpenSSL\openssl.conf



* Open the project in visual studio 2022/2019 and set **QcomThreeEgm** as startup Project
* Command line parameters are /packagedatafolder:" C:\Users\mvk10208\Dhv\Game\Qcom3"  /shellId:UP020601 /autolicensekey /networkportqcom:7 /qcom8bit /usedisknvram
* Download the latest sdk from **qcom3 teams channel** ex : QCOM 3 SDK - 2023-07-05 qsim3-r48.zip
* Extract the SDK and create a **Users** folder in it
* Copy Collect 1.zip and extract it under UAA folder in SDK
* Copy UAA 1.zip and extract it under Users folder in SDK
* Run the Igt.UGP.Utils.GUI.exe tool for machine commissioning

## Running Qcom On Simulator:

* Go to visual studio Solution Explorer go to Targets folder and set QcomEgm as start up project
* Build the code in vs using ctrl+f5 , go to the QcomEgm project properties -> Debug and set the following command line arguments

**/shellid:UP020116** **/packagedatafolder:"**D:\Game"

To support 8 bit add the following command line argument **/qcom8bit**

UP02xxxx is QLD

* You need to run qsim to enable EGM and game
* To Configure Qsim, download the protocol simulator from teams and create a short cut of qsimxp.exe and modify the following by right clicking on the short cut file

Target : "D:\Dhav\protocolsimulators\Qcom\QCOM Simulator (QSIM)\qs1675\qs1675\QSIMXP\qsimxp.exe" p COM3

* Run the qsim and observe the EGM Responding would be N
* To make EGM and qsim talk to each other configure correct port number in the above target and also makesure loop back cable is connected in your PC
* Make sure the EGM serial number you enter in cold boot and in qsim-> EGM -> CONFIGURE-> SERIAL number matches
* Now go to EGM->CONFIGURE->SEND EGM CFG POLL REQ and then EGM CFG POLL from qsim
* <https://developers.confluence.igt.com/pages/viewpage.action?spaceKey=ALP&title=How+to+Use+the+QCom+Simulator>
* /qcom8bit is the command line argument to be added to support 8 bit

### QLD

* UP02xxxx shell is qld shell , it does not have progressives menu in cold boot

### NZP

* NZP should use package name starts with J letter

### NZC

* It has been recently moved to Qcom protocol from Asp

### SAS

* South australia state shell is UP14xxxx , UP02xxxx shell can be used with licence key having UP14xxxx

### TAS

* UP18XXXX

### VSI

* UP47xxxx is the Victoria specific shell
* The psdv menu is different from QLD shell

## Running Curve Game on Simulator:

* You need to include a command line parameters /monolith to see the curve game properly in simulator

## Running MultiGame on Simulator:

* Download the select package from keyMaster or Sydney shared drive
* Download all the games associated with the package
* Copy the games to the D:\Game folder which is mentioned in the command line arguments /packagedatafolder of your target EGM
* Copy the select package to the D:\Select folder which is mentioned in the command line arguments /selectdirectory of your targetEGM

## Running MultiGame on an EGM:

## Platform Pacakge Naming:

For submitted ones (i.e. official), we use the first 3 digits to represent the major version

So PLATFORM\_00400034 is a V4 shell

## Shell Naming :

* NSW UP**01**0502\_003 -01 indicates it is for NSW Jurisdiction

## Platform migration to .net core & avalonia :

Code developed by zach is at //Ignite-Australia/Platform/XPlat/

NativeCode is used to run on Linux

## Logs On Console(output tab in VS) :

* Add the following statement at the top of your file

using System.Diagnostics;

* To get Logs from your code on to output console in VS just add the following line

Ex :

Debug.WriteLine("Exception disconnect transports: " + ex.Message);

Debug.WriteLine($"Receive Power Status Event External Power: {extPowerOn.ToString()} reset: {reset.ToString()}");

## Redirecting Logs to a file :

1. Create a new object of type System.IO.StreamWriter with parameters the log file name (string) and a Boolean true indicating to append logs to the file
2. Do sw.WriteLine($”print some variable {something}”);
3. Do sw.Flush();

using (var sw = new System.IO.StreamWriter("logs.txt", true))

{

sw.WriteLine($"2ndL Line is {line} count is {ListView.Items.Count}");

sw.Flush();

}

## Logs from EGM:

### Procedure to get the logs on an USB:

* To get logs from EGM, insert the installer key and go to Smo key tab on boot up
* Insert a formatted USB drive when asked and press YES
* Logs will be copied to the pen drive

### Action Logs:

* Procedure to add Action Logs is as follows

Refer TemparatureChecker.cs from Igt.Gaming namespace

1. Add the following attribute to your class

[ActionLog(LogName)]

1. Add the following Action delegate to your class

private Action<string> addToActionLog;

1. Adda LogName string to your class as a private const variable

Ex: private const string LogName = "TemperatureChecker";

1. Assign addToActionLog as below

addToActionLog = s => ActionLog.Add(LogName, s);

1. To Log any string simply do the following

var str = getSensorName(sensor.NameId) + ": " + sensor.CurrentTemperature + " (" + sensor.CurrentTemperatureStatus + ")";

addToActionLog(str);

### .Log():

* Another way to get Logs from EGM is doing as follows

Ex: ("Initialising cabinet system environment").Log();

("Monitor error state changed : " + args.Value).Log();

To do the above way of logging you need to include the following modules in to your code

using Igt.Core;

using Igt.Core.DebugLog;

using Igt.Core.Helpers;

using Igt.Core.Tracing;

.Log() implementation is as follows, so it internally calls Logger class of Igt.Core.DebugLog

public static void Log(this string str, LogLevel level = LogLevel.Info, bool includeTimestamp = true)

{

if (includeTimestamp)

Logger.Instance.WriteEntry(str, level);

else

Logger.Instance.WriteLine(str);

}

## Rebuild performance counters windows:

<https://community.qlik.com/t5/Official-Support-Articles/Qlik-Sense-Repository-keeps-restarting-Performance-Counter/ta-p/1716161>

## Game Naming convention per protocol:

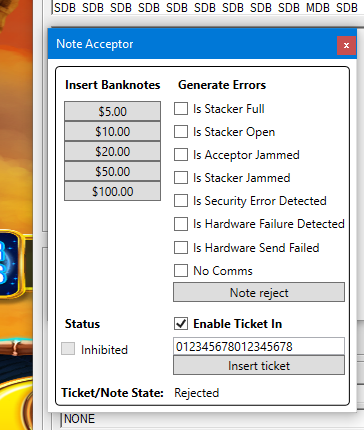
* normally game name contains the **I** letter will go to BUR/SAS protocol
* If the game name contains **x** it will be for X Series
* If the game name contains Dual it will be for Dual cabinet

## Xseries TicketIn test in Simulator :

* Go to simulation-> devices-> NoteAcceptor and tick the Enable Ticket In and give any 18 digits

Preferable 012345678012345678

And click Insert ticket



## DIAGAUST Installer :

* To Determine if the installer to run in Developer mode there should be a file called \_ in the Packages folder in your installer key.

InDeveloperMode = mediaDrives.Any(x => File.Exists($@"{x}:\Packages\\_"));

## Tools:

### MEND ( Formerly white source ) :

<https://saas.whitesourcesoftware.com/Wss/WSS.html#!login>

### Team city:

<http://10.213.254.30/>

### CSV firmware update tool :

USBIGTClassDeviceManager131.msi

### Package Tracker:

* To get access to IGT Package Tracker submit the request from the portal

<http://apacproddev/PackageTracker/FoundationsHomePage.aspx?&MainMenu=Foundations>

### Perforce:

Server: ssl:perforce:1666

Diff :

* Ignore Line ending all white space differences

### Comlab:

is a dos PC tool used to measure timings between two messages

<https://developers.confluence.igt.com/pages/viewpage.action?pageId=184650181>

* Press F1 to start the capture and when you captured the packet you need press F1 to stop.
* Press F2 to enable the measuring tool.
* Use the arrow keys and place the cursor on the first byte of SDB and press F4.
* Use the arrow keys and place the cursor on the last byte of the SDB and read the timing that is shown on top.

### OSFMount :

* This tool is to be used to get the package contents from the game.package file .
* Open OSFMount app and click on Mount new
* Source : Image FILE and give the path to your games’ .package file
* Select partion 2 in the prompt to select a partition image
* Select drive letter something which is not configured on your PC.

### UGP Launcher:

* go to the folder

\\ausydpfsvd01\DevDept\UtilityInstalls\Studio\UgpLauncher

then run setup.exe on your PC

* <https://developers.confluence.igt.com/display/ALP/UGP+Launcher>
* You need to select the folder above the folder NSW UP010701\_001 and then select the shell which you want to run in platform configurator
* One quick work around to get thefiles ne

### KeyMaster:

* To be able to use KeyMaster, get yourself added to its Users’ list by contacting Kim Eugene
* To be able to use KeyMaster, get yourself added to its Users’ list by contacting Kim Eugene
* Download KeyMaster from this location [\\ausydpfsvd01\DevDept\UtilityInstalls\Production\KeyMaster](file:///\\ausydpfsvd01\DevDept\UtilityInstalls\Production\KeyMaster)
* It is used to create Install Keys and Licence Keys
* Licence keys are useful in release shells
* You can also download any shell , Game , OS or select package from KeyMaster
* <https://developers.confluence.igt.com/display/AGP/Burn+a+custom+key+with+Key+Master>
* To Build an Install key with Key Master insert a formatted key/pendrive and go to UGP Installation Keys tab on the Key Master tool
* Specify the paths of Game(.package), Platform(.package), Installer (.zip), OS (.zip)
* Click on Begin task

### PackageBuilder:

* <https://developers.confluence.igt.com/display/ALP/Building+Packages+using+Package+Builder>

### Submission Wizard :

* \\ausydpfsvd01\DevDept\UtilityInstalls\Studio\SubmissionWizard

### IGTDiagnosticsKeyCreator:

* This tool helps to create an Installer key from Installer Package and Certificate file
* Run the IgtDiagnosticsKeyCreator.exe as an Administrator

### Network/Protocol Simulatos:

#### Mikhon Simulator :

<https://gtechcorp.sharepoint.com/sites/NetworkSimulators/Shared%20Documents/Forms/AllItems.aspx?csf=1&web=1&e=61c3ee&OR=Teams%2DHL&CT=1684461365162&clickparams=eyJBcHBOYW1lIjoiVGVhbXMtRGVza3RvcCIsIkFwcFZlcnNpb24iOiIyNy8yMzA0MDIwMjcwNSIsIkhhc0ZlZGVyYXRlZFVzZXIiOmZhbHNlfQ%3D%3D&cid=55184f05%2D1c2d%2D4efc%2D9288%2Dec66335e204c&RootFolder=%2Fsites%2FNetworkSimulators%2FShared%20Documents%2FGeneral%2FMikohn%20Simulator&FolderCTID=0x01200035B398D76FDD47468D93DAD1A5F7D5AA>

# Common Issues

## Build never finishes in visual studio

* Some times visual studio behaves weird and does not finish the build
* Clean the solution, close visual studio. Open it again. Clean again. Close again. Reboot your computer. Open visual studio again. Clean again and then build

# **Tasks**

## Things to do Later

1. Merge jira 2688 code to trunk
2. Check if changes of jira 2643 are required in trunk

## Timesheet Information

* If you do some general training log your time under General Training (T-0000039)
* If you take annual leave log your time under Vacation
* If you take sick/carers leave log your time under Sick
* If you work for diagnostics project log your time under IGT Employee time – ANZ Sustaining Dev OPS CY23

If you work for platform log your time under ANZ Platform SW Sustaining CY23 -IGT time general

## Things to check before Floating Code for Review

### Platform Code

* Remove all unwanted commented lines which you might have done
* Run cleanup code of resharper on the files which you have touched for your changes
* Make sure to add appropriate comments to your code changes
* Makes sure to add xml comments on new properties and public members you might have added

### Review Comments to keep in mind

* Any change in the file , it needs to be code cleanup including xaml and cs files.
* Change the unused variable to discard ( \_ ) in event assignments

Ex : ConfirmCommand = new RelayCommand(\_ => ResetRequest(), i => IsConfirmationRequired);

To

ConfirmCommand = new RelayCommand(\_ => ResetRequest(), \_ => IsConfirmationRequired);

* Properties of viewmodel to be RaisePropertyChangedWithCallerName()

Ex : /// <summary>

/// Indicates whether the option to enable/disable the collect button as game demo/gaff menu button and the SEF ports are visible.

/// </summary>

public bool IsDemoOptionsVisible

{

get => \_isDemoOptionsVisible;

set

{

\_isDemoOptionsVisible = value;

RaisePropertyChangedWithCallerName();

}

}

* Comments in code to start with a capital letter always.
* Comments to end with a full stop **.**
* If your lambda function has only one line change it to single line i.e remove { }
* In case of UI message with a **:** do not place a space before it

Ex : Selected Jurisdiction : {0}

To

Selected Jurisdiction: {0}

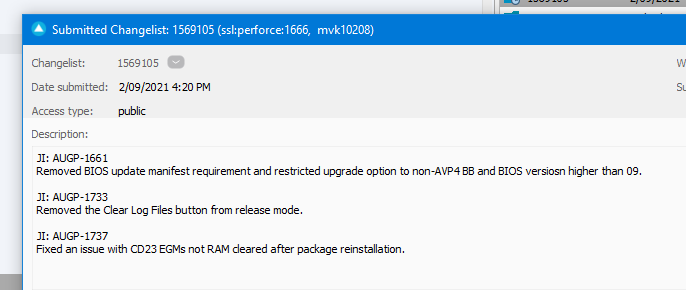
* Always add code to unsubscribe eventhandlers for the events you have added subscribers to
* Always check for the property spelling correctly in Xaml and viewmodel as well.

### Installer code

* Make sure to ident the code changes which you have done
* Remove unwanted commented lines if you have done any

## How to complete a Task

* Create a changelist for the change
* You can create a changelist by clicking on checkout of the file which you want to make change in
* Once the changes are done, float it for review using collaborator
* To send it to review , right click on change list and do Smart Bear – Add to review
* Once review is approved, submit the change list and merge it to other branches
* A friendly reminder to everyone that it’s very important that you \***always**\* rebuild the solution with your changes every time you merge them to another branch, no matter how trivial the changes are. This is to ensure that the solution is always in a working state no matter what.
* The way to have more than one task submitted in perforce is as below.



### Review Comments to keep in mind

* Any change in the file , it needs to be code cleanup including xaml and cs files.
* Change the unused variable to discard ( \_ ) in event assignments

Ex : ConfirmCommand = new RelayCommand(\_ => ResetRequest(), i => IsConfirmationRequired);

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* In case of UI message with a **:** do not place a space before it

Ex : Selected Jurisdiction : {0}

To

Selected Jurisdiction: {0}

* Always add code to unsubscribe eventhandlers for the events you have added subscribers to
* Always check for the property spelling correctly in Xaml and viewmodel as well.
* Always use String.IsNullOrWhiteSpace instead of String.IsNullOrEmpty because it covers more cases.
* Check your comments to not have double spaces in them.

## Official Submissions

1. Sometimes you will be asked to do official submission
2. Open Submission Wizard on AUMELD104030 Computer
3. Set the Submission Type as Platform Package, CreatePackage, Perforce, Correct repo, Correct version, Correct Target and select a folder in the PC where the submission files will be stored to .
4. Tick the official mode and generate DCH ( dch can be generated later as well)

<https://developers.confluence.igt.com/display/POT/How+to+do+official+submissions+build>

## Jira

### Asp

#### Crown Casino UP08xxxx

|  |  |  |  |
| --- | --- | --- | --- |
| AUGP-3524 (version 5)  (From BMM) on shell UP080503\_001/PLATFORM\_00500027 | The touch screen is inactive after card removed during free games: | Could have happened because of merging fix of AUGP-3355 to v5 crn mcp branch. |  |
|  |  |  |  |
|  |  |  |  |

Example jira task link after cloud migration is <https://igt-csp.atlassian.net/browse/AUGP-3098>

|  |  |  |  |
| --- | --- | --- | --- |
| Jira ID | Issue | Resolution | Other Details |
| 2316,2317,2329 | Align issue for combobox in V7 | Center aligned the content of Combobox in Menu Styles in Igt.Gaming project | <http://ccollab:8080/ui#review:id=75425>  20/01/2023 |
| 2348 | Continuous play not working on V6 shell | Reverted the fix for jira id 1913 | <http://ccollab:8080/ui#review:id=75429>  20/01/2023 |
| 2336 | GDS printer driver time out on Ticket complete as it was not looking for has errors while enabling the printer | Issue Similar to jira id 1973, fixed 2336 by making a change in checking for errors flag | <http://ccollab:8080/ui#review:id=75463>  12/01/2023 - 23/01/2023 |
|  |  |  |  |
| 2356 | Continuous Play in Demo shell | To display continuous play option in cold boot network configuration for NSW demo shell | <http://ccollab:8080/ui#review:id=75465>  23/01/2023 - 24/01/2023 |
| 2357 | GDS printer wont work if its not connected on power up |  | <http://ccollab:8080/ui#review:id=75552>  home pc shelved at 1766500 |
| 2375 | Ticket stacking complete bit should be set to 1 in MDB Byte 15 when ticket is not accepted. | Wrong issue, clarification provided | <https://cspjira.igt.com/jira/browse/AUGP-2375> |
| 2377 | Cancel credit bit should be 1 in SDB when game is under large win lockup. |  | Fixed and closed on 17/02/2023 |
| 2380 | Network port option port names are not consistent in ASP, QCOM with SAS and back plane | Changed work PORT to COM in UsbIoCabinetController.cs file  Asp -> CreateNetworkConfigurationMenu()  Asp/Menus/ColdBoot/ColdBootNetworkConfigurationViewModel.cs | <https://cspjira.igt.com/jira/browse/AUGP-2380> |
| 2379 | Time diff b/w 2 MDB packet is recommened to be 1.5 seconds | Rejected the issue as it is just a recommended value not mandatory | 14/02/2023 |
| 2395 | Partial Game Feature |  | Fixed and closed on 21/02/2023  Submitted changes to trunk, V7 |
| 2396 | Remove the collect word on the RCG lockup button |  | Fixed and closed on 22/02/2023  Submitted changes to trunk, V7 |
| 2391 | Xseries tool is crashed | Fixed the code in svn for Xseries simulator and perforce |  |
| 2479 | Configurable COM Ports for PEAK32 with FPGA Backplane |  | Fixed and closed on 18/05/2023 |
| 2400 | MDB should be received within 460MS of transmitting last byte of phase 2 request | Clarification Provided , not an issue as it is acceptable behaviour |  |
| 2402 | Time diff b/w last byte of progressive win notification and its echo more than 200ms | Same behaviour in FPGA backplane EGM |  |
| 2409 | Xseries Tool Update |  | Changed code in perforce and svn as well – 27/02/203 |
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| 2599 | Remove Mikohn Support from NZC |  |  |
|  |  |  |  |
|  |  |  |  |
| 2223 | QCOM Consolidation | CL 1732808 |  |
| 2738 | New Firmware Upgrade Key (DIAGUNV) | CL in home pc home2 work space is 1848292  Refer to CL 1800140 in mvk10208\_ofc2 CL |  |
|  |  |  |  |
| 2793 | Igt diag key creator default format type to be exFAT | //Ignite-Australia/Platform/Utilities/IgtDiagnosticsKeyCreator | Resolved on 10/10/2023 |
| 2866 | Progressives are summarised  Similar issue 1324 was fixed on version 4 on 26 aug 2020 | Steps to reproduce   1. S1 s1 s1 triggers free games 2. C1 C2 S2 triggers respin features , grand and major progressives 3. S1 s1 s1 triggers free games 4. Trigger 270 + free games   Need to repeat the test twice to reproduce the issue | Fix for 1324 was in ReplayManager.cs -> SummariseGame() |
|  |  |  |  |

### All Jurisdictions

|  |  |  |  |
| --- | --- | --- | --- |
| 3020 | Progressive set ID does not match up | Fix was to change the button content property to textblock | Checked in perforce on 22/01/2024 |
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### NZC Qcom shell changes in version 07

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| --- | --- | --- | --- |
| 2675 | NZ Casino Transition to QCOM |  |  |
| 2730,2740,2731,2732,2737,2742,2746,2783 | Issues from NZC consolidation shell qcom |  |  |

### Version 8

#### Common

|  |  |  |  |
| --- | --- | --- | --- |
| 2223 | QCOM Consolidation –  To add VSI to UP02 shell so that we can send single licence to all jurisdictions | The changelist ID for NZC QCOM changes is **1732808.**  Submitted the fix only in Version-08 | Checked in on 11/03/2024 |
| 2862 | Logic Door Access Review | Submitted the fix only in Version-08 | Checked in on 11/03/2024 |
|  |  |  |  |
| 3033 | Not center aligned for last or 3rd last game played - cycles menu in replay. | Checked the fix in to trunk, version-08 and version-07-QCOM3  ReplayMenuPage.xaml  ReplyMenuPage.xaml.cs | Checked in on 20/03/2024 |
| 2866 2545 3124 | Progressive Replay Summarising  To trigger free games 3 s1  To trigger auto spin with grand and major C1 C2 S2 | Checked the fix in to trunk, version-08 and version-07-QCOM3 ReplayManager.cs | Checked in on 19/03/2024 |
| 3217,3262,3264 | Jackpot Win string missing in message strip in asp version-08 and trunk only | Looks like the bug starts from cl 1819453 ( AUGP-2603 ) fix , however same fix in version 07 and crn branch works fine  Issue root cause is resharper’s code inspection doing “**auto property can be made only**” which was removing the private set part of the properties in BonusTransferRecord class which has an attribute [RawSerialiser] | Checked in on 28/03/2024 to version-08, trunk, version-07-QCOM3 |
| 2750 | Adding the Audio setting page to cold boot menu |  |  |
| 3560 | From BMM :  The test audio sound will continue to play when started in the audio tab of cold boot menu and exit the cold bootmenu | ColdBootCreators.cs | Checked in the fix on 07/07/2024 9:50 pm perforce time |
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#### Qcom

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| --- | --- | --- | --- |
| 2223 | Qcom consolidation | Add VSI jurisdiction to UP02xxxx shell |  |
| 3327 | NZC crash on UP02 consolidation shell ( Invalid Jurisdiction received exception) |  |  |
| 3326 | Ram clear after jurisdiction selected in boot halt |  |  |
| 3325 | No jur selected in boot halt jur selection screen issue due to radio button selection problem |  |  |
| 3344 | NO SAP information on PID pages when testing with normal NZC games |  |  |
| 3333 | Progressive menu is only displayed for VSI jur in cold boot config |  |  |
| 3336 | Hardmeter is not optional for Vsi, It should be disabled |  |  |
| 3328 | Tok 100 not accepted for NZC jurisdiction in egmcfg poll |  |  |
| 3330 | Power cycle in boot halt is resetting thejurisdiction selection menu | This is as per design, no code change required | Closed on 06/05/2024 |
| 3329 | Make UP02 default simulated shell in boothalt-> license key menu | Version-08  Trunk  Version-07-QCOM3 | Submitted the code change to perforce on 10/05/2024 |
| 3396 | Power cycle in cold boot causes to set qld as jurisdiction |  |  |
| 3393,3398,3392 |  |  |  |
| 3434 | Crash for not handling invalid jurisdiction id in qcom egm config poll message |  | Fix checked in on 23/05/2024 6:24 PM perforce time |
| 3437 | Inconsistent abbreviation for VSI |  |  |
| 3443 |  |  | Need to check 498 –where the virtualticketpayout option is removed from cold boot  1352  624  501 |
| 3435 | JUR Mismatch message disappeared after power cycle |  | Clarification provided  As per design |
| Xxxx | License key removal handling is a bit slow | <https://igt-csp.atlassian.net/browse/AUGP-391>  could be because of change for this issue.  Thread.Sleep(1000); |  |
| 3491 | V8 nzp shell crashes after cold boot | QcomCommunicationDisablingConditions.cs | Submitted the fix to perforce on 11/06/2024 8:20 PM perforce time |
| 3486 | QCOM NZC accepts tok 0 and then crashes (tok 0 should not be accepted by egm in egm config poll) |  |  |
| 3544 | Qcom Consolidation shell to send correct jurisdiction name to game | StorageId.cs  QcomEgmBoot.cs | Fix submitted to version-08 on 24/06/2024 7:22PM perforce time |
| 3557 | Memory stream is not expandable crash with Fire Dragon Moon Blossom MLP DL\_X12DC\_0\_000 |  |  |

##### NZP

|  |  |  |  |
| --- | --- | --- | --- |
| 3494 | Mikohn configuration in cold boot shows empty combobox for serial port in FPGA backplane | FPGA backplane should not let user select the serial port in Cold boot for Mikohn Configuration |  |
| 3572 | No com port display for Mikohn Network Port on FPGA Cabinet Only. |  |  |
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### Xseries

|  |  |  |  |
| --- | --- | --- | --- |
| 2686 | Cashless transfer reject message  To add message in message strip when credit can increase beyond limit with cashless in transfer | XSeriesJurisdiction.cs  RegisterCashlessInCreidts()  RegiesterCashlessInCents()  XCcceCashlessTransfer.cs line no 306  If( | Change checked in to perforce on 30/04/2024 05:09 PM |
| 2687 | Ticket In Reject Reason | XccceTicketIn.cs  XSeriesTicketHandler.cs  XSeriesTicketInValidation.cs | No code change needed, it was already displaying correct ticket in reject reason |
| 3295 | MCN display in game info menu for Single denom games | For multi games we have MutliGamePackageData.xml file in Registries directory |  |
| 3348 | BUR -> credit meter limit ( prog cashless) is 100$ where as prog CCCE limit is 3000$ | <https://igt-csp.atlassian.net/browse/AUGP-2555>  could be because of the change to the above issue. |  |
| 3359 | BUR-> Machine became un responsive and lost video topper ifpower cycled while printing ticket |  |  |
| 3532 | Default loss limit string is not as same as in protocol  ( Machine Lockup command ) |  | Checked in the code to perforce on 20/06/2024 |
| 3346 | Refer to this for burswood limit settings  <https://igt-csp.atlassian.net/browse/AUGP-1116> |  |  |
| 3593 | No Pre emptive menus in system and audit mode in xseries burswood shell |  |  |
| 3607 | Maxbet group all button crash |  | Checked into perforce on 28/07/2024 5:49 pm CL1957375 |
| 3609 | Sometimes wait for payment lockup still displays after progressive winpayment failed |  |  |
| 3606,3612,3610 | Need to provide clarification on these to PA |  |  |

### Asp

### Sas

### UGP Tools Support

<https://igt-csp.atlassian.net/browse/AUGP-1544>

### Firmware Update Key

|  |  |  |  |
| --- | --- | --- | --- |
| 2572 | Migrate fwupdate key concept to DIAGUNV |  |  |
| 2853 | Merge DIAGUNV mainline to DIAGAUSTI028 |  | Need to talk to the US team about app.xaml.cs file changes they have done  CL 1788432 29/03/2023  1)App.xaml.cs  2) DiscoveryAust.cs  3)PackageDatabaseAustViewModel.cs |
| 3098 |  |  | <https://igt-csp.atlassian.net/browse/AUGP-3098> |
|  |  |  |  |
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### DIAGAUSTI028 Tasks

|  |  |  |  |
| --- | --- | --- | --- |
| 2254 | Change the Bios detectionc ode | DIAGAUSTI028 Installer code | Checked in perforce on 04/04/2023 |
| 2173 | Capturing game and chooser log folder with Smokey | DIAGAUST1028 Installer code | Checked in perforce on 30/03/2023 |
| 2174 | DIAGAUST Installer to allow IGT keys to be used for saving Smokeydata |  | Checked in perforce on 30/03/2023 |
| 2207 | Fix for clearing Nvram Card for AVP4.0 brain box |  | Checked in perforce on 12/04/2023 |
| 2381 | USBIO Backplane FW upgrade support in DIAGAUST installer |  |  |
| 1848 | FullSMokey implementation |  |  |
| 2221 | To zip quick smokey and full smokey |  |  |
| 2617 | Download Button to be disabled at startup of DIAGAUSTSMK001 |  |  |
| 2612 | Removed header for download button panel |  |  |
| 2620 | updating progress with Full Smo Key in the message |  |  |
|  |  |  |  |
| 3519 | Unhandled Exception has occurred in your application when loading OS PM25 on CD27 with Installer 28 ( Splash Form ) |  |  |
| ADE-893 ( <https://igt-csp.atlassian.net/browse/ADE-893> ) | To merge fix of 3519 to US Diag Mainline | Fix checked into mainline on 22/07/2024 4:27pm |  |
| Package for push 2 testing is at [\\melnetapp01b\data\Oa5\Temp\Test Shells\DIAGAUSTI028\Push 2](file:///\\melnetapp01b\data\Oa5\Temp\Test%20Shells\DIAGAUSTI028\Push%202) |  |  |  |

## Gamble for new game:

1. For all older games when the player gambles his/her win amount, the whole amount is risked
2. For new game , GameStateMachine.cs line no 2492 might have to be changed.
3. New games allows only upto 5 Gambles consecutively ( you must be winning all of the previous 4 gambles in a row )
4. Balloons Partial Game - [\\mel946app8\oa5\Temp\Dhaval](file:///\\mel946app8\oa5\Temp\Dhaval)
5. Slider Partial Game - \\mel946app8\oa5\Temp\Partial Gamble

# **Learnings**

## Windows

* To take a screen shot press windows key + shift + s and select the portion of screen you wan to take screen shot of.

<https://au.pcmag.com/how-to/63419/how-to-take-screenshots-in-windows-10>

* Batch script to copy a file to another location and procedure to create a task in windows

<https://www.minitool.com/news/copy-files-one-folder-another-script-001.html>

## .Net & C#

### Files & Directory Operations

Use System.IO name space

* To check a Directory exists do **Directory.Exists**(string)

1. **string** root = @"C:\Temp";
2. // If directory does not exist, don't even try
3. **if** (Directory.Exists(root))
4. {
5. Directory.Delete(root);
6. }

<https://www.c-sharpcorner.com/UploadFile/mahesh/check-if-a-directory-exists-in-C-Sharp/>

## WPF

### Dispatcher Thread

The dispatcher is responsible for queuing things onto the UI thread

You need to use it anytime you want to update the UI and are not on the UI thread

<https://docs.microsoft.com/en-us/dotnet/desktop/wpf/advanced/routed-events-overview?view=netframeworkdesktop-4.8>

<http://www.csharphelper.com/howtos/howto_wpf_tunnel_bubble.html>

# Stand up Meeting

## 10.01:

* Test old game and new game and findout what meters are being updated
* hh

s