Building an Application with G2S

What we’ll explore in this session:

- What is G2S? (a hopefully non-technical view)
- How does it work?
- How is G2S different than what you have now?
- How you can build (or design) an App for G2S
- How to get started…
A QUICK OVERVIEW OF G2S

A little bit of WHY it’s cool and HOW it works
The Jargon of G2S

- **GSA** – Gaming Standard Association
- **G2S** – GSA’s Game To System Protocol
- **EGM** – Electronic Gaming Machine
- **Host** – A Server or service running one or more apps
- **XML** – A modern method of expressing data to move it
- **Web-services** – communicating across a network by connecting to web-servers on remote Hosts
- **App** – A programmed application that does cool stuff with G2S information
- **Happy Camper** – You when you finally get what you want, when you want it…
WHY is G2S Cool?

1. Every G2S EGM can talk directly to multiple hosts

2. G2S uses off-the-shelf Internet technologies

3. You access incredible data in each EGM

4. Since G2S accommodates multiple hosts
   - Your slot system can do the boring stuff, and you can do the fun applications
   - With multiple hosts, anyone can build an app for your floor
Here’s HOW your floor works now
With G2S, there’s a network on your floor!
The Benefits of the Network

- Every EGM is a web-server – easy access to data
- Fast – if 1Gbps, then over 50,000 times faster than today
- Open using Internet technologies, vs. Closed/pollled
- Highly secure – same security as the Internet
- Off-the-shelf tools are available

- Network = 1 physical connection to the EGM
- Network = Each EGM can talk to lots of hosts
- Six Host connections should be the minimum
Why SIX Connections?

- Systems vendors like to be in control (it’s a safer choice)
- Imagine if all web-access went through Google

Each EGM talks to ONE Server

Diagram:
- Application Servers
- EDW or Marketing System
- G2S Network
- EGM
Why SIX Connections?

- Direct access to EGM means no reliance on middleware
- 1 for Slot System, 1 for Regulators, 4 for your apps
- To add functionality, just add another app

Each EGM talks to MANY Servers over 1 physical network connection
EGM Startup and Discovery (How does this work?)

- Each EGM has a list of registered Hosts
- On start-up, the EGM contacts each Host
- Each Host asks EGM about his capabilities
- Each Host can tweak devices he “owns”
- Each Host can explore devices if “guest” access
EGM Says “Hi – I’m here!”

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- **EGM Location:** http://localhost:38101/RST/api-services/G2SAPI
- **Device Reset?:** true
- **Device Changed?:** true
- **Subscription Lost?:** false
- **Meters Reset?:** false
Host Checks EGM’s Capabilities

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<th>Device Active</th>
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**Row Values**

- **Device Class:** G2S_noteAcceptor
- **Device ID:** 1
- **Device Active:** true
- **Configuration ID:** 0
- **Host Enabled:** true
- **EGM Enabled:** true
- **EGM Locked:** false
- **Host Locked:** false
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- **Device Guest:** true
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- **Vendor ID:** RBG
- **Product ID:** RNG_NA23
- **Release Number:** RBG_548754
- **Vendor Name:** Radical Blue Gaming
- **Product Name:** Worldly Note Acceptor
- **Serial Number:** 6548174-57B
Meters – accessing the EGM’s data

- Every G2S host can access any meter in a G2S EGM
- Direct Access – Give me these meters
- Subscription – Give me these meters every hour

Good for:
- Which themes are popular in the EGM?
- How full are the note acceptors? With what?
- When the show breaks, where do people go, and how do they play?
Events – the EGM tells you when things happen

- The EGM will generate any events you ask for
- Events are created when something changes
  - Player Session starts
  - A new theme is selected on the EGM
- Events are well-defined by G2S
  - G2S says which events are generated when
  - Certification ensures an EGM is working properly
- Tune your subscription in real-time
  - Get only the events you want
  - Associated data is available (Status, Logs, and Meters)
BUILD AN APP WITH EVENTS

The secret to your success…
General Floor Information
CBE314 [Game Combo Activated]

- Sent when a Player wagers on a new Theme
- Provides real-time info about themes

- Associated data includes the `cabinetStatus`
  - Includes Theme, Paytable ID, Bet Denomination

Subscribe to this one event, and you can do this
- Time-based popularity of themes by EGM
- Floor map of which games are being played
General Floor Information
GPE112 [Game Ended]

- Sent at the end of each played Game to convey the detail

- Associated data
  - Affected Meters
  - Transaction Log

- This event can cause lots of traffic
  - Provides real-time game play information

- Selectively turn this on/off for any EGM
  - Subscribe when you need granular information
  - Clear the subscription when you don’t
Security Information
CBE203 [Device failure disables EGM]

- Sent when the EGM tilts because of a problem
  - BV failure, Printer failure, general tilt, etc.

- Associated data includes the cabinetStatus
  - Identifies which device is causing the problem
  - Also shows the status of all of the EGM doors

- This event, with a few others can be used to write a camera system, or other security application
Uncarded Player Activity
Hot Player Events

- With G2S, player information can be sent from the EGM
- Rather than watching every play, watch for “Hot Players”
- Hot Player – Player exceeds a defined limit
  - Can have up to 5 levels (each with different events)
  - Play Basis – can be almost anything
  - Also define the period (Must wager $100 in 5 minutes)
- Apps you can write:
  - Traditional: Watch for hot players of a certain level, then notify a host to greet them (pager, text message, etc)
  - More modern: dialogue with the player to see if they want to join your player club; get their info via an interface at the EGM
Carded Player Events

- Session has started – includes player Id
- Session updated – sent at the end of every play cycle
  - Real-time player update; includes theme and all meters
- Session has Ended – get the final rating
- Interval rating – can be sent when theme changes
- EGM maintains session meters for player

Simple Apps

- Maintain an active player locator
- Use Interval Ratings to see which theme they are playing
- Use session meters to see who’s doing what
INTERACTING WITH PLAYERS
Messages, Promotions, and Bonuses
Player User Interface

- New trend to slide in a player window on the EGM display
- Content and applications are distinct from the EGM
- A clear line between gaming app and player display
- The PUI employs Flash or other modern technology
- Soon, SDKs will be available for any developer
- Player Apps in a big way…
  - Display Flight Information (why wait at the airport?)
  - Print Boarding Pass
  - IM with Player (or Video) using off-the-shelf technologies
Interacting with Players

- **Ask a question while the player is at the EGM**
  - What would you ask?
  - Simple query – answer is routed back to the app
  - sessionId ties request / response together

- **Auto-enroll Hot Players**
  - Set Minimum criteria
  - When player becomes “Hot” ask if they want to join your club
  - Player enters name and PIN,
  - System tells EGM to start tracking play

- **Allow players to order drinks – from a menu**
  - Only available for carded players…
Simple Promotions for Carded Players

- It’s your birthday!
- Play $100 or 50 games and get a special prize

- Watch Player Session Updates [PRE114]
  - set subscription when they arrive / clear it when they leave

- When level is achieved, then give a prize
  - setBonusAward – give promo or nonCash money
  - setPlayerOverride – give this player double or triple points
  - setHostPoints – add 50 points to the player’s balance at the EGM
  - setPlayerMessage – tell the player that a comp for 2 is waiting for them
Tuning Countdowns and bonus points

Countdowns and Bonus Points

- G2S allows you to define the bonus point calculation
  - **Basis** – a single value, or a calculated one (e.g., wageredAmt)
  - **Direction** – will the count go down or up?
  - **Target** – How many **Counts** for a **Point**?
  - **Increment** – How much **Basis** per **Count**?
  - **Award** – How many **Points** do they get when reaching the **Target**?

**Example:** (Basis=wageredAmt, Direction=down)
Countdown starts at 20, then down by 1 for each $1.00 bet
When the countdown hits the **Target**, the player gets **Award** points
Countdowns and Bonus Points

- **G2S also accommodates overrides**
  - *Basis* (using wageredAmt) and *Direction* are fixed
  - Can change *Target* (How many it takes)
  - *Increment* (how much it costs to move one step)
  - *Award* (how many points you get when you get there)

- **Player Overrides** *(down by 1 for each $0.50 bet)*
  - Limited to a specific player, follows them around the floor
  - Birthday or other event for the player
  - bonus award (play $100 and get double points for an hour)

- **Generic Overrides** *(double points – change *Award* to 2)*
  - Tied to the machine (double points in this area from 3AM-5AM)
HOW TO GET THERE FROM HERE

Where do I start?
Help is Available to Roll Your Own App

- Own your own network – Cisco, Brocade, etc.
  - Your network can’t be too fast
  - Consider a 10Gbps backbone, 1Gbps to EGM

- Strategic planning
  - Involve your System Vendor – what are they planning?
  - Consider an Independent provider to help you get started

- Tools are available – the benefit of a standard protocol
  - A single reference implementation is used by all developers

- G2S Engines and stacks are starting to appear
  - A G2S Engine abstracts out all of the G2S details, making it easy

- Training from GSA University
Or, Have a Custom App Built for You

- In an open network, anyone can build an app for you
- Soon, you’ll see lots of vendors with all sorts of apps

The secrets:

- Your Slot Floor Management System does the hard stuff
  - Vouchers, EFT, Regulated Accounting Reports, etc.
- Insist that every EGM be able to talk to 6 Hosts
  - One for the Slot System, One for the regulators, Four for your apps
- G2S means you can talk to your players at the EGM
  - Your system vendor doesn’t have to change a dozen moving parts.
Involving Regulators
[Give them a server on your floor]

1. The Slot System handles all of the regulated activity
2. The regulator’s server provides an independent view
   - Significant events
   - Independent Meters
   - Check digital signatures of EGM and Peripheral Code
3. Then you get 4 network connections for your servers
   - Marketing applications should have minimal regulatory review
   - Meaning they can be available more quickly
   - New apps for your players are available in months, not years.
Take Aways

1. Every EGM MUST Support at least 6 Hosts
2. Your network cannot be too fast
3. Anyone can build a simple G2S Application
4. EGM Certification is crucial
5. Start small with a sand-box
More information

GSA Resources (gamingstandards.com)
- Standards can be downloaded by anyone
- GSA University for training (gsauniv.com)

RadBlue Resources
- Student Versions of our Sims (EGM, Host, RPA)
- Networked Gaming Resource Page @ radblue.com
- Working prototypes that demonstrate all of these examples using G2S

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