



## **Gameflex Generic Integration (GGI) API**

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## Change History

Version	Date	Author	Summary of Changes
1.0	14 <sup>th</sup> December 2015	Craig Osborne	First release.
1.1	16 <sup>th</sup> December 2015	Craig Osborne	Add Channel ID onto requests to support Game Providers who use the same Game Code for Desktop and Mobile.
1.2	17 <sup>th</sup> February 2016	Craig Osborne	Fix typos.
1.3	22 <sup>nd</sup> February 2016	Keith Molloy	Add Exchange Rate and Platform Currency Code to Redeem Session Token Response.
1.4	4 <sup>th</sup> April 2016	Craig Osborne	Correct -12 Error Code description to Loss Limit.
1.5	10 <sup>th</sup> April 2016	Alan Wignall	Corrected URI's, "/round/" to "/gameround/".
1.6	17 <sup>th</sup> June 2016	Craig Osborne	Fix Redeem Session Token URI for better routing support.
1.7	21 <sup>st</sup> June 2016	Craig Osborne	Correct Content-Type misunderstanding in documentation.
1.8	26 <sup>th</sup> July 2016	Craig Osborne	Improve documentation around the difference between Launch Session Token and Session Token. Merge in Common Integration Issues and Error Handling guide into this document. Deprecated Jackpot Contribution and Winnings from End Game Round method.

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## Table of Contents

1	Preface .....	4
1.1	Definitions .....	4
2	Gameflex Generic Integration API Overview .....	6
2.1	Architecture Overview .....	6
2.1.1	Common Data Types .....	6
2.1.2	Request Format .....	7
2.1.3	Response Format .....	8
2.1.4	Common Response Values .....	8
2.1.5	Response Error Codes .....	8
2.1.6	Request Authentication .....	9
3	API Methods .....	11
3.1	Redeem Session Token .....	11
3.1.1	Request Format .....	11
3.1.2	Response Format .....	12
3.1.3	Possible Error Codes .....	13
3.2	Get Account Balance .....	13
3.2.1	Request Format .....	13

3.2.2	Response Format .....	14
3.2.3	Possible Error Codes.....	14
3.3	Place Bet .....	15
3.3.1	Request Format .....	15
3.3.2	Response Format .....	16
3.3.3	Possible Error Codes.....	17
3.4	Award Winnings.....	17
3.4.1	Request Format .....	18
3.4.2	Response Format .....	19
3.4.3	Possible Error Codes.....	20
3.5	Rollback Bet .....	20
3.5.1	Request Format .....	20
3.5.2	Response Format .....	21
3.5.3	Possible Error Codes.....	22
3.6	Void Bet.....	23
3.6.1	Request Format .....	23
3.6.2	Response Format .....	24
3.6.3	Possible Error Codes.....	25
3.7	End Game Round .....	25
3.7.1	Request Format .....	25
3.7.2	Response Format .....	26
3.7.3	Possible Error Codes.....	27
3.8	Query Game Round Transaction.....	27
3.8.1	Request Format .....	27
3.8.2	Response Format .....	28
3.8.3	Possible Error Codes.....	29
4	Error Handling .....	30
4.1	Error Code Action Matrix .....	30
4.2	Transaction Error – Place Bet.....	31
4.3	Transaction Error – General Retry .....	31
5	Common Implementation Issues.....	32
5.1	Missing Award Winnings.....	32
5.2	Delayed End Game Rounds .....	32
5.3	Unhandled Award Winnings Error .....	32
6	Game Provider Configuration .....	34
6.1	Game Engine Configuration Parameters .....	34

# 1 Preface

This document is intended to provide a Game Provider the necessary information to support a generic seamless integration into the Gameflex Platform. The documentation defines the Architecture, Gameflex Generic Integration API methods and the necessary integration steps required.

## 1.1 Definitions

The table below lists the definitions used in this document and all Gameflex documentation:

Term	Description
Award Winnings	This is return winnings back to the Player during the Game Round. If the Player has lost, the Game Provider can send zero winnings.
Bonus	This is a play-through bonus provisioned by the Gameflex Bonus System.
Brand	This is an individual Operator Website skin. If the Operator operates under multiple jurisdictions, an individual Brand must be configured for each jurisdiction.
Channel	This is the primary delivery channel of the Game e.g. Desktop, Mobile or Retail.
Free Game	This is a free game round / free spin provided by the Game Provider.
Game	The term 'Game' is a reference to any third party game (Casino, Soft Game, Slot etc.) provided by a Game Provider.
Game Engine	This is the core Game Round Transaction processing engine implemented by the Gameflex Platform.
Game Launch	This is the mechanism that controls the launching of a Game by a Game Provider.
Game Provider	This is third party integration partner which provisions Games to the Gameflex Platform.
Game Provider Platform	This is the software platform that provider uses to provision their Game into the Gameflex Platform.
Game Release	This is a process that the Game Provider must follows to release new Games to the Gameflex Platform.
Game Round	A Game Round consists of a series of transactions when playing a Game: bets, winnings and void bets. A Game round may contain multiple bets, winnings and void bet transactions. When the Game Round is signalled as ended by the Game Provider, it is counted as revenue by the Gameflex Platform.
Game Round Transaction	Place Bet, Award Winnings, Rollback Bet and Void Bet transactions against the Game Round.
Gameflex Platform	This is the software platform that provides core Gameflex functionality.
Guest	This is an anonymous Player who is using the Operator's Website and hasn't logged on to authenticate themselves.
Jackpot	Jackpot is the accumulated Jackpot Contributions that a Player can win when playing a progressive Game.
Jackpot Contributions	The amount of bet Stakes that contributes to the Jackpot.
Launch Session Token	A Launch Session Token is single-use token which is used as a secure Session hand-shaking mechanism between the Gameflex Platform and the Game Provider Platform when launching a Game.
Live Production Environment	This is the live hardware platform that Operators will use in

	production.
Operator	This is the betting operator / casino operator which is a customer of Iforium.
Operator Website	The desktop and mobile front end website developed by the Operator.
Place Bet	When the Player starts the Game, the Game Provider places a bet to represent the Stake of the spin / hand.
Play for Fun	This is a play mode where Players plays a Game to trial the Game to see if they should Play For Real. No real funds are debited or credited from the Gameflex Platform. The Player doesn't need to be Authenticated on the Operator Website to play.
Play for Real	This is a play mode where Players plays with real funds. The funds are debited and credited from the Gameflex Platform. The Player must be Authenticated on the Operator Website to play in this mode.
Player	A Player of the Operator. A Player is an end-user who plays Games from the various Game Providers in either Play For Real or Play For Fun mode.
Rollback Bet	The Place Bet request failed with an unknown error or a timeout occurred with the Gameflex Platform, the Game Provider issues a Rollback Bet to reconcile the Game Round.
Seamless Wallet Integration	All Game Round Transactions are debited and credited directly from the Gameflex Platform.
Session Token	A Session Token is a multi-use token which is returned from the Redeem Session Token method which will be used with all other Gameflex Generic Integration API methods.
Staging Environment	This is a permanent environment that Iforium will provide to the Game Provider to integrate into. On completion of the integration, it is the responsibility of the Game Provider to make available all Games to this environment.
Stake	This is the cost amount to make a Place Bet request.
Void Bet	A Void Bet request allows the Game Provider to return the Place Bet Stake to the Player. The original Stake of the spin / hand is not counted as turnover.

## 2 Gameflex Generic Integration API Overview

The Game Provider needs to communicate with the Gameflex Platform for the purposes of launching Games and seamlessly debiting and crediting funds from the Gameflex Wallet. This section documents the implementation of the Gameflex Generic Integration API.

### 2.1 Architecture Overview

The Gameflex Generic Integration API has been designed using a lightweight REST (Representational State Transfer) style web service. This has the following advantages:

- The architecture style is designed for light-weight APIs which use simple HTTP request/response packets rather than complex messaging formats like SOAP.
- It is completely language independent, for example the caller could be a Windows C# Web Service and the receiver could be a Linux Java service. It also avoids a lot of the headaches of overzealous SOAP proxy generators failing to create the proxy client.
- It has none of the versioning headaches associated with SOAP when enhancements are made to the API. For example in a SOAP web service if an additional optional parameters are added to the API, the caller would have to re-consume the API and re-compile the code so that the schema between the two end-points are identical. With REST, changes can be made without the caller being affected and the caller can therefore implement and use the optional parameter when required.

Where the Web API differs from strict REST:

1. We do not use the HTTP verb to determine an action (i.e. PUT for updating DELETE for removing) we favour the URI explicitly denoting the action (i.e. Player/update) and accept any HTTP verb although we would recommend using GET only for idempotent actions
2. We do not use HTTP status codes for business logic rules (i.e. returning 404 when a Player does not match the id supplied) instead details will be supplied via the response body.

Iforium will provide the Gameflex Generic Integration API endpoint to the Game Provider at the start of the integration process. During the integration process into the Iforium Staging Environment, all communication will be over HTTP. In the Live Production Environment, all communication must be over HTTPS.

All requests must be made in the form of name/value pairs Post request. The Content-Type must be set to application/x-www-form-urlencoded. All responses will be in JSON using the content Content-Type application/json. The Game Pro

#### 2.1.1 Common Data Types

The Gameflex Generic Integration API uses the following standard data types for input request and response JSON values:

Data Type	Description	Typical Value(s)
Boolean	Represents a Boolean logic value.	true or false
Date	All dates and times are UTC. Using the following format:  YYYY-MM-DDThh:mm:ss.ffZ  The Z suffix can be omitted	1965-05-16T00:00:00.99Z
Integer	32 bit number.	123456

Integer64	64 bit number.	12345678901234
Money	All monetary amounts are to 2 decimal places.	12.14
String	String value.	MyUsername

### 2.1.2 Request Format

Each Gameflex Generic Integration API method will be represented as URI of the following format:

```
http://api.operator.com/gameflexgenericintegration/v1.0/{PlatformKey}/{GameProviderID}/{InstanceReference}
```

The **PlatformKey** URI parameter represents a unique instance of a Gameflex Platform provisioned by Iforium e.g. L100. Note that the **Platformkey** will be different for the Staging Environment and Live Production Environment.

The **GameProviderID** URI parameter is a unique value issued by Iforium at the start of the integration to represent you as a Game Provider integrating into the Gameflex Platform. This will be the same value in the Staging Environment and Live Production Environment.

The **InstanceReference** URI parameter is a unique value that represents a deployed instance of the Game Provider Platform e.g. you may have a separate environment for the Isle of Man and another for the UK or you may configure a different value per Brand. We use the **InstanceReference** to make up the Primary Key for the Game Round to allow multiple Game Provider deployed instances to point to a single Gameflex Platform instance. Note we expect the **InstanceReference** to be different for the Staging Environment and Live Production Environment.

Each request will have the following common JSON payload:

```
{
  "Sequence": "0df12437-1b74-476e-b5c5-66a668319cf7",
  "Timestamp": "2015-08-24T20:41:42.8167019Z",
  "Signature": "CalculatedSignature",
  "CorrelationData": "OptionalGameProviderCorrelationData"
}
```

Name	Type	Description
Sequence	String(50)	A unique sequence number generated by the Game Provider making the request to the Gameflex Generic Integration API. We recommend that you use a GUID.
Timestamp	Date	A UTC Timestamp for the request. It is imperative the Game Provider maintains accurate time on their servers as the Gameflex Platform performs a check that the time is within 2 minutes of the the time sent, to protect against replay attacks.
Signature	See section 2.1.6	A hashed value that is used to verify the request is valid.
CorrelationData	String(128)	This is an optional string of data that the Game Provider may choose to send on each request. It will then be reflected back on the response.

The primary usage of the request Sequence and Timestamp is to allow correlation of any request and response in both the Game Providers logging system and the Gameflex logging system to aid quick diagnosis of integration issues and any Live Production Environment issues.

### 2.1.3 Response Format

All API commands will return JSON containing an ErrorCode and the Result data and the content-type as "application/json". Each method returns a similar structured JSON packet. For example:

```
{
  "Result": {
  },
  "AccountBalance": {
  },
  "ErrorCode": 0,
  "Sequence": "0df12437-1b74-476e-b5c5-66a668319cf7",
  "Timestamp": "2015-08-24T21:30:51.8814726Z",
  "CorrelationData": "OptionalGameProviderCorrelationData"
}
```

### 2.1.4 Common Response Values

Name	Type	Description
ErrorCode	Integer	The Error Code of the request made see 2.1.5. The Game Provider must map the returned Error Code to their own internal Error Code and return a translated error message to the Player.
ErrorDesc	String	The description of return Error Code. This is in English and for information only.
Sequence	String(50)	This is the Sequence value that was provided in the request to allow the caller to correlate the response.
Timestamp	Date	A UTC Timestamp for the response in the Dates format.
CorrelationData	String(128)	This is data that is reflected back on the response.

### 2.1.5 Response Error Codes

We have standardised the error codes across all methods as follows:

Error Code Number	Description
0	Success – The API call has successfully completed without any errors.
-1	Unknown Error – An unknown error has occurred during the API call. More details will be available in the error description returned on the API.
-2	Insufficient Funds – The Gameflex Platform has insufficient Player funds to complete the debit.
-3	Session Not Found – The Session Token was not found on the Gameflex Platform or the Session Token has expired.
-4	Account Frozen – The account has been suspended by the Gameflex Platform.
-5	Account Not Found – The account was not found on the Gameflex Platform.
-6	Signature Invalid – This is returned if the Signature on the request is Invalid.
-7	Transaction Queue Blocked – internal transaction queue has become blocked inside the Gameflex Platform. On Place Bet, the Game Provider should Rollback the Bet. On Award Winnings, Rollback Bet, Void Bet and End Game Round methods, the Game provider should issue periodic retries until Success is received.
-8	Transaction Not Found – The Game Round Transaction cannot be found in the Gameflex Platform.
-9	Currency Mismatch – The Game Provider Currency Code mismatches the Player Currency Code inside the Gameflex Platform.



-10	Stake Limit – The bet has exceeded the individual Stake limit set for the Player inside the Gameflex Platform.
-11	Wager Limit – The bet will exceed the wager limit set for the Player inside the Gameflex Platform.
-12	Loss Limit – The bet will exceed the loss limit set for the Player inside the Gameflex Platform.
-13	Session Length Limit – The Player has exceeded the session length set for the Player inside the Gameflex Platform.
-14	Game Round Not Found – The Game Round was not found inside the Gameflex Platform.
-15	Game Not Found – Game not found for the specified Game Code.
-16	Game Blocked – the Player has self-excluded themselves from playing this Game during game play or the Game has been set inactive if we believe we have a problem our end.
-17	Invalid Parameter – the Error Description will contain details of the invalid parameter.
-18	Transaction Rolled Back – the Game Round Transaction has been rolled back. This can only occur on Place Bet.

## 2.1.6 Request Authentication

The Gameflex Generic Integration API integration is secured by signing each request. This mechanism ensures no passwords are transmitted inside the request.

### 2.1.6.1 Signature Token

The Operator will also be provided with a unique signature token:

4C882ADE2A0119409BD3184C546800DBF5AE2213258B4F8DECF321F463518431

This signature token should never be transmitted. It is used to calculate the hash of the following parameters in the request:

1. Relative base URI request (/v1.0/L100/41/MaltaInstance/account/L100-2/balance)
2. Sequence (7e7782ef-feaa-4ddb-831d-5fde81cac415)
3. Timestamp (2002-05-30T09:30:10)
4. Session Token (L100-I+fGntpjt/HXHduCocB0hEqi8feEJ4cctgM3qUWQXWk=)

The Operator must apply canonicalization to the above in the correct order separating each with a newline this uses the LF (Line Feed character only), then using the signature token as the key perform a HMAC-256 hash the result of this must then be Base64 encoded, this is the algorithm for reference:

```
Urlencode(base64(hmac-sha256(relativerequesturi + "\n" + sequence + "\n" + timestamp +
"\n" + sessiontoken + "\n", signaturetoken)))
```

Given the above this is how the example above would look:

```
"/v1.0/L100/41/MaltaInstance/account/L100-2/balance" + newline
"7e7782ef-feaa-4ddb-831d-5fde81cac415" + newline
"2002-05-30T09:30:10" + newline
"L100-I+fGntpjt/HXHduCocB0hEqi8feEJ4cctgM3qUWQXWk=" + newline
```

This concatenated string must then be hashed as a HMAC SHA-256 (defined in RFC 2104 (<http://www.ietf.org/rfc/rfc2104.txt>)) using the signature token as the key and then base64 encoded, this will then be used in the request name/value pairs with the name **Signature**, for the example above you would end up with the following posted value:

Signature= 38A3HTKEToJYwZHyvcap%2BuPR1UCFsAiY41z%2FWGZecjc%3D

If the signature does not conform the API will respond with an error code of -6.

In C# the following method would generate the signature:

```
public static string GenerateSignature(string data, string key)
{
    byte[] bData = Encoding.UTF8.GetBytes(data);
    byte[] bKey = StringToByteArray(key);

    HMACSHA256 hmac = new HMACSHA256(bKey);

    using (CryptoStream cryptoStream = new CryptoStream(Stream.Null, hmac, CryptoStreamMode.Write))
    {
        cryptoStream.Write(bData, 0, bData.Length);
        cryptoStream.Close();
    }

    return Convert.ToBase64String(hmac.Hash);
}

private static byte[] StringToByteArray(string hex)
{
    int numberChars = hex.Length;
    byte[] bytes = new byte[numberChars / 2];

    for (int i = 0; i < numberChars; i += 2)
    {
        bytes[i / 2] = Convert.ToByte(hex.Substring(i, 2), 16);
    }
    return bytes;
}
```

It is the Game Providers responsibility to keep these tokens secure and confidential and to notify Iforium immediately if there is any suspicion that either of these tokens have been compromised.

### 2.1.6.2 Disabling Signature Check

In the Staging Environment we normally disable signature checking during development process for rapid testing of functionality. Signature checking will always be enabled in Live Production Environment.

## 3 API Methods

The Gameflex Generic Integration API is composed of the following API methods:

### 3.1 Redeem Session Token

This method is used as a secure session hand-shaking mechanism between the Game Provider Platform and the Gameflex Platform.

During the Game Launch process the Gameflex Platform generates a Launch Session Token which is sent into to the Game Provider. The Game Provider must redeem the Launch Session Token using this method to determine the identity of the Player. The redeem method returns sufficient information to allow you to perform just-in-time registration of the Player inside the Game Provider Platform.

The Launch Session Token will be unique, non-sequential, single use and expire within a maximum of 60 seconds for the purposes of security. The Launch Session Token is a Base 64 Url encoded string as defined by rfc4648 (<https://tools.ietf.org/html/rfc4648#section-5>) for safe usage as part of the request URI.

This method will return a new multi-use Session Token which should be used for all other calls made in the rest of Gameflex Generic Integration API. The new Session Token will be a Base 64 encoded string with no Url encoding. It should be posted to the other methods without any Url encoding applied.

If the Player exits a Game halfway through the Game Round, when the Game Launches again, a new Launch Session Token will be issued using the Redeem Session Token process. The Game Provider should re-join the incomplete Game Round, and all subsequent requests made to the Gameflex Generic Integration API should now use the new issued Session Token.

#### 3.1.1 Request Format

The request will be sent to the following URI:

```
/v1.0/{PlatformKey}/{GameProviderID}/{InstanceReference}/sessiontoken/{LaunchSessionToken}/redeem
```

The API method expects the following parameters:

Parameter	Type	Typical Value	Description
PlatformKey (URI only)	String(4)	L100	The platform key associated with the caller.
GameProviderID (URI only)	Integer	41	A unique Game Provider ID assigned by Iforium to the Game Provider.
InstanceReference (URI only)	String(50)	MT-71	This is unique reference for the deployed Game Provider instance.
LaunchSessionToken (URI only)	String(256)	L100-VGg4UIFkTm4vM1duME5zdjZ5ZDFHWWVudkRsSWFqdlZyYUIUSTQxcU5vdUtFUWVKNmhPV2FkRGt4K0wrMUVTWN2NmYzd mVyS29weE5yK2tuQUoyRDA2L29DTDE2Y0FV	Unique Launch Session Token generated by Iforium during the Game Launch process. The Launch Session Token will be single use only for security in the Live Production Environment.
ChannelID	String	Desktop	The Channel that was used to launch

			the Game: Desktop or Mobile.
GameCode	String(50)	SlotsMania	A code assigned to the Game by the Game Provider. The Gameflex Platform will lookup the Game using ChannelID and GameCode.

### 3.1.2 Response Format

The API method will return JSON in the following format:

```
{
  "Result": {
    "AccountReference": "G255-3",
    "CurrencyCode": "GBP",
    "CountryCode": "GB",
    "UserName": "G255-3",
    "Test": true,
    "ExchangeRate": 1.5,
    "PlatformCurrencyCode": "EUR",
    "SessionToken": "L100-WEuyIqC+tyT4JEF/drX7gy5pO5Rf11XsqcYjhGgz01I="
  },
  "AccountBalance": {
    "Version": 635854245386417700,
    "CashFunds": {
      "Balance": 999.99
    },
    "BonusFunds": {
      "Balance": 111.11
    },
    "CurrencyCode": "GBP"
  },
  "ErrorCode": 0,
  "ErrorDesc": "Success",
  "Sequence": "Sequence",
  "Timestamp": "2015-12-11T09:55:38.6417705Z",
  "CorrelationData": "OptionalGameProviderCorrelationData",
}
```

Parameter	Type	Typical Value	Description
ErrorCode	Integer	0	Error Code.
Result. AccountReference	String(50)	L123456	Unique identifier for the Player in the Gameflex Platform.
Result. CurrencyCode	String(3)	GBP	3 character currency code for the Player in ISO 4217 format. See "Iforium Common Reference Data" document.
Result. CountryCode	String(2)	GB	2 character country code for the Player in ISO 3166 format. See "Iforium Common Reference Data" document.
Result. UserName	String(50)	TestUser01	Optional. The Username of Player inside the Player inside the Gameflex Platform. Note that this may not be unique.
Result. Test	Boolean	True	Indicates if the Player is a test account. No revenue should be reported for test Players.
Result. SessionToken	String(256)	L100-WEuyIqC+tyT4JEF/drX7gy5pO5Rf11XsqcYjhGgz01I=	New a multi-use Session Token which should be used with all other Gameflex Generic Integration API methods.
Result. ExchangeRate	Decimal	1.5	Exchange Rate for Account Currency to Platform Currency.

Result. PlatformCurrencyCode	String	EUR	Platform Currency Code.
AccountBalance. Version	Int64	123	This is the current version number on the balance inside the Gameflex Platform.
AccountBalance. CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common Reference Data" document.
AccountBalance. CashFunds. Balance	Decimal	120.15	Cash Funds Balance for the Player to a maximum of 2 decimal places.
AccountBalance. BonusFunds. Balance	Decimal	30.10	Optional Bonus Funds Balance for the Player to a maximum of 2 decimal places.

### 3.1.3 Possible Error Codes

The API method can return the following error codes:

Error Code Number	Reason(s)
0	Success
-1	Unknown Error – An unknown error has occurred during the API call e.g. The Operator Authentication threw an exception and was unable to process the request
-3	Session Not Found – The Session Token was not found on the Gameflex Platform or the token has expired
-4	Account Frozen – The account has been suspended by the Gameflex Platform.
-5	Account Not Found – The account was not found on the Gameflex Platform.
-15	Game Not Found – Game not found for the specified Game Code.
-17	Invalid Parameter – the Error Description will contain details of the invalid parameter.

## 3.2 Get Account Balance

This method is used to get the current Player's Cash and Bonus Funds inside the Gameflex Platform.

### 3.2.1 Request Format

The request will be sent to the following URI:

```
/v1.0/{PlatformKey}/{GameProviderID}/{InstanceReference}/account/{AccountReference}/balance
```

The API method expects the following parameters:

Parameter	Type	Typical Value	Description
PlatformKey (URI only)	String(4)	L100	The platform key associated with the caller.
GameProviderID (URI only)	Integer	41	A unique Game Provider ID assigned by Iforium to the Game Provider.
InstanceReference (URI only)	String(50)	MT-71	This is unique reference for the deployed Game Provider instance.
AccountReference (URI only)	String(50)	L123456	Unique identifier for the Player in the Gameflex Platform. This is returned from the Redeem Session Token

			method.
SessionToken	String(256)	L100-WEuyIqC+tyT4JEF/drx7gy5pO5Rf11XsqcYjhGgz01I=	Session Token returned from the Redeem Session Token method.
ChannelID	String	Desktop	The Channel that was used to launch the Game: Desktop or Mobile.
GameCode	String(50)	SlotsMania	A code assigned to the Game by the Game Provider. The Gameflex Platform will lookup the Game using ChannelID and GameCode.

### 3.2.2 Response Format

The API method will return JSON in the following format:

```
{
  "AccountBalance": {
    "Version": 635854245386417700,
    "CashFunds": {
      "Balance": 999.99
    },
    "BonusFunds": {
      "Balance": 111.11
    },
    "CurrencyCode": "GBP"
  },
  "ErrorCode": 0,
  "ErrorDesc": "Success",
  "Sequence": "Sequence",
  "Timestamp": "2015-12-11T09:55:38.6417705Z",
  "CorrelationData": "OptionalGameProviderCorrelationData"
}
```

Parameter	Type	Typical Value	Description
AccountBalance. Version	Int64	123	This is the current version number on the balance inside the Gameflex Platform.
AccountBalance. CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common Reference Data" document.
AccountBalance. CashFunds. Balance	Decimal	120.15	Cash Funds Balance for the Player to a maximum of 2 decimal places.
AccountBalance. BonusFunds. Balance	Decimal	30.10	Optional Bonus Funds Balance for the Player to a maximum of 2 decimal places.

### 3.2.3 Possible Error Codes

The API method can return the following error codes:

Error Code Number	Reason(s)
0	Success
-1	Unknown Error – An unknown error has occurred during the API call. More details will be available in the error description returned on the API.
-3	Session Not Found – The Session Token was not found on the Gameflex Platform or the Session Token has expired.
-5	Account Not Found – The account was not found on the Gameflex Platform.

-6	Signature Invalid – This is returned if the Signature on the request is Invalid.
-15	Game Not Found – Game not found for the specified Game Code.
-17	Invalid Parameter – the Error Description will contain details of the invalid parameter.

### 3.3 Place Bet

The Place Bet request is used to place a bet within the Game Round. The method is idempotent. The Game Engine supports multiple Place Bets requests for a single Game Round, and the Game Provider may place a bet after an Award Winnings if the Game Round has not been ended.

#### 3.3.1 Request Format

The request will be sent to the following URI:

```
/v1.0/{PlatformKey}/{GameProviderID}/{InstanceReference}/account/{AccountReference}/game-round/{GameRoundReference}/{TransactionReference}/placebet
```

The API method expects the following parameters:

Parameter	Type	Typical Value	Description
PlatformKey (URI only)	String(4)	L100	The platform key associated with the caller.
GameProviderID (URI only)	Integer	41	A unique Game Provider ID assigned by Iforium to the Game Provider.
InstanceReference (URI only)	String(50)	MT-71	This is unique reference for the deployed Game Provider instance.
AccountReference (URI only)	String(50)	L123456	Unique identifier for the Player in the Gameflex Platform. This is returned from the Redeem Session Token method.
GameRoundReference (URI only)	String(50)	GRT123	Unique identifier reference for the Game Round. Same reference should not be shared across different Players.
TransactionReference (URI only)	String(50)	GRTR456	Unique identifier reference for the Game Round Transaction. Same reference should not be shared across different Players.
TransactionData	String(255)	Transaction Data	Optional - The Game Provider may provide any data which is maybe relevant to the Gameflex Platform.
SessionToken	String(256)	L100-WEuyIqC+tyT4JEF/drx7gy5pO5Rf11XsqcYjhGgz01I=	Session Token returned from the Redeem Session Token method.
ChannelID	String	Desktop	The Channel that was used to launch the Game: Desktop or Mobile.
GameCode	String(50)	SlotsMania	A code assigned to the Game by the Game Provider. The Gameflex Platform will lookup the Game using ChannelID and GameCode.
CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common Reference Data" document.

Amount	Decimal	10.99	The amount of the bet. This should always be a positive number. This should always be zero for Free Games.
JackpotContributions	Decimal	1.123213	Jackpot Contribution for the Bet which can be up to 10 decimal places.
FreeGameOfferCode	String(50)	SlotsManiaFreeSpin50	Optional. The Free Game offer code used to trigger the Free Games.
FreeGameAmount	Decimal	0.02	Optional. The Free Game Amount is the cost of the Free Game. This will always be zero when the Game Round is not a Free Game. This will not be debited from the Gameflex Platform and is for reconciliation only.

### 3.3.2 Response Format

The API method will return JSON in the following format:

```
{
  "Result": {
    "TransactionID": "G255-3af5578233794a20a2acdb946e8a8807",
    "AlreadyProcessed": false,
    "CashAmount": 10.00,
    "BonusAmount": 0.99
  },
  "AccountBalance": {
    "Version": 635854407764658800,
    "CashFunds": {
      "Balance": 999.99
    },
    "BonusFunds": {
      "Balance": 111.11
    },
    "CurrencyCode": "GBP"
  },
  "ErrorCode": 0,
  "ErrorDesc": "Success",
  "Sequence": "Sequence",
  "Timestamp": "2015-12-11T14:26:16.4658835Z",
  "CorrelationData": "OptionalGameProviderCorrelationData"
}
```

Parameter	Type	Typical Value	Description
Result. TransactionID	String(50)	G255-3af5578233794a20a2acdb946e8a8807	Unique Game Round Transaction Reference assigned by the Gameflex Platform.
Result. AlreadyProcessed	Boolean	false	Indicates if the Gameflex Platform has already processed the Game Round Transaction.
Result. CashAmount	Decimal	10.00	The split of the Game Round Transaction amount which was processed as Cash via the Gameflex Platform.
Result. BonusAmount	Decimal	0.99	The split of the Game Round Transaction amount which was processed as Bonus via the Gameflex Platform.
AccountBalance. Version	Int64	123	This is the current version number on the balance inside the Gameflex



			Platform.
AccountBalance. CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common Reference Data" document.
AccountBalance. CashFunds. Balance	Decimal	120.15	Cash Funds Balance for the Player to a maximum of 2 decimal places.
AccountBalance. BonusFunds. Balance	Decimal	30.10	Optional Bonus Funds Balance for the Player to a maximum of 2 decimal places.

### 3.3.3 Possible Error Codes

The API method can return the following error codes:

Error Code Number	Reason(s)
0	Success
-1	Unknown Error – An unknown error has occurred during the API call. More details will be available in the error description returned on the API.
-2	Insufficient Funds - The Operator Wallet has insufficient Player funds to complete the debit
-3	Session Not Found – The Session Token was not found on the Gameflex Platform or the Session Token has expired.
-4	Account Frozen – The account has been suspended by the Gameflex Platform.
-5	Account Not Found – The account was not found on the Gameflex Platform.
-6	Signature Invalid – This is returned if the Signature on the request is Invalid.
-7	Transaction Queue Blocked – internal transaction queue has become blocked inside the Gameflex Platform. The Game Provider should Rollback the Bet.
-9	Currency Mismatch – The Game Provider Currency Code mismatches the Player Currency Code inside the Gameflex Platform. On Currency Code Mismatch the funds will be held within the Gameflex Wallet.
-10	Stake Limit – The bet has exceeded the individual Stake limit set for the Player inside the Gameflex Platform.
-11	Wager Limit – The bet will exceed the wager limit set for the Player inside the Gameflex Platform.
-12	Loss Limit – The bet will exceed the loss limit set for the Player inside the Gameflex Platform.
-13	Session Length Limit – The Player has exceeded the session length set for the Player inside the Gameflex Platform.
-15	Game Not Found – Game not found for the specified Game Code.
-16	Game Blocked – the Player has self-excluded themselves from playing this Game during game play or the Game has been set inactive if we believe we have a problem our end.
-17	Invalid Parameter – the Error Description will contain details of the invalid parameter.

## 3.4 Award Winnings

The Award Winnings request is used to Award Winnings within the Game Round. The method is idempotent. The Game Engine supports multiple Award Winnings requests for a single Game Round, and the Game Provider may place a bet after an Award Winnings.

If an error occurs, the Game Provider should keep on trying at periodic intervals until they receive a success.

Award Winnings requests can be made even after the Game has been exited by the Player, but the Game Provider must send the last used Session Token used by the Player to play the Game.

### 3.4.1 Request Format

The request will be sent to the following URI:

```
/v1.0/{PlatformKey}/{GameProviderID}/{InstanceReference}/account/{AccountReference}/game/round/{GameRoundReference}/{TransactionReference}/awardwinnings
```

The API method expects the following parameters:

Parameter	Type	Typical Value	Description
PlatformKey (URI only)	String(4)	L100	The platform key associated with the caller.
GameProviderID (URI only)	Integer	41	A unique Game Provider ID assigned by Iforium to the Game Provider.
InstanceReference (URI only)	String(50)	MT-71	This is unique reference for the deployed Game Provider instance.
AccountReference (URI only)	String(50)	L123456	Unique identifier for the Player in the Gameflex Platform. This is returned from the Redeem Session Token method.
GameRoundReference (URI only)	String(50)	GRT123	Unique identifier reference for the Game Round. Same reference should not be shared across different Players.
TransactionReference (URI only)	String(50)	GRTR456	Unique identifier reference for the Game Round Transaction. Same reference should not be shared across different Players.
TransactionData	String(255)	Transaction Data	Optional - The Game Provider may provide any data which is maybe relevant to the Gameflex Platform.
SessionToken	String(256)	L100-WEuyIqC+tyT4JEF/drx7gy5pO5Rf11XsqcYjhGgz01I=	Session Token returned from the Redeem Session Token method.
ChannelID	String	Desktop	The Channel that was used to launch the Game: Desktop or Mobile.
GameCode	String(50)	SlotsMania	A code assigned to the Game by the Game Provider. The Gameflex Platform will lookup the Game using ChannelID and GameCode.
CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common Reference Data" document.
Amount	Decimal	10.99	The amount of winnings awarded. This should always be a positive number. If no winnings were awarded this should be zero.
JackpotWinnings	Decimal	1.123213	Jackpot Winnings that have been awarded. This should be less than or equal the overall winnings Amount

			for the transaction.
EndGameRound	Boolean	True	This indicates that the Game Round has completed. The Game Provider must ensure every Game Round is completed, as revenue is only calculated on completed Game Rounds.

### 3.4.2 Response Format

The API method will return JSON in the following format:

```
{
  "Result": {
    "TransactionID": "G255-3af5578233794a20a2acdb946e8a8807",
    "AlreadyProcessed": false,
    "CashAmount": 10.00,
    "BonusAmount": 0.99
  },
  "AccountBalance": {
    "Version": 635854407764658800,
    "CashFunds": {
      "Balance": 999.99
    },
    "BonusFunds": {
      "Balance": 111.11
    },
    "CurrencyCode": "GBP"
  },
  "ErrorCode": 0,
  "ErrorDesc": "Success",
  "Sequence": "Sequence",
  "Timestamp": "2015-12-11T14:26:16.4658835Z",
  "CorrelationData": "OptionalGameProviderCorrelationData"
}
```

Parameter	Type	Typical Value	Description
Result. TransactionID	String(50)	G255-3af5578233794a20a2acdb946e8a8807	Unique Game Round Transaction Reference assigned by the Gameflex Platform.
Result. AlreadyProcessed	Boolean	false	Indicates if the Gameflex Platform has already processed the Game Round Transaction.
Result. CashAmount	Decimal	10.00	The split of the Game Round Transaction amount which was processed as Cash via the Gameflex Platform.
Result. BonusAmount	Decimal	0.99	The split of the Game Round Transaction amount which was processed as Bonus via the Gameflex Platform.
AccountBalance. Version	Int64	123	This is the current version number on the balance inside the Gameflex Platform.
AccountBalance. CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common Reference Data" document.
AccountBalance. CashFunds. Balance	Decimal	120.15	Cash Funds Balance for the Player to a maximum of 2 decimal places.
AccountBalance. BonusFunds.	Decimal	30.10	Optional Bonus Funds Balance for the Player to a maximum of 2

Balance			decimal places.
---------	--	--	-----------------

### 3.4.3 Possible Error Codes

The API method can return the following error codes:

Error Code Number	Reason(s)
0	Success
-1	Unknown Error – An unknown error has occurred during the API call. More details will be available in the error description returned on the API.
-5	Account Not Found – The account was not found on the Gameflex Platform.
-6	Signature Invalid – This is returned if the Signature on the request is Invalid.
-7	Transaction Queue Blocked – internal transaction queue has become blocked inside the Gameflex Platform. The Game provider should issue periodic retries until Success.
-9	Currency Mismatch – The Game Provider Currency Code mismatches the Player Currency Code inside the Gameflex Platform. On Currency Code Mismatch the funds will be held within the Gameflex Wallet.
-14	Game Round Not Found – The Game Round was not found inside the Gameflex Platform.
-15	Game Not Found – Game not found for the specified Game Code.
-17	Invalid Parameter – the Error Description will contain details of the invalid parameter.

## 3.5 Rollback Bet

The Rollback Bet request should be used to rollback a Place Bet within a Game Round when an unknown error or timeout occurred with the Gameflex Platform during the Place Bet request. If the original Place Bet is found, then the Gameflex Platform will then rollback the original Stake in the form of credit to the Player. If the original Place Bet is not found, no adjustment will be made and the method will return the error code -8, Transaction Not Found. The method is idempotent.

Rollback Bet requests can be made even after the Game has been exited by the Player, but the Game Provider must send the last used Session Token used by the Player to play the Game.

If an error occurs, the Game Provider should keep on trying at periodic intervals until they receive a success.

### 3.5.1 Request Format

The request will be sent to the following URI:

```
/v1.0/{PlatformKey}/{GameProviderID}/{InstanceReference}/account/{AccountReference}/game/round/{GameRoundReference}/{TransactionReference}/rollbackbet
```

The API method expects the following parameters:

Parameter	Type	Typical Value	Description
PlatformKey (URI only)	String(4)	L100	The platform key associated with the caller.
GameProviderID (URI only)	Integer	41	A unique Game Provider ID assigned by Iforium to the Game Provider.
InstanceReference	String(50)	MT-71	This is unique reference for the

(URI only)			deployed Game Provider instance.
AccountReference (URI only)	String(50)	L123456	Unique identifier for the Player in the Gameflex Platform. This is returned from the Redeem Session Token method.
GameRoundReference (URI only)	String(50)	GRT123	Unique identifier reference for the Game Round. Same reference should not be shared across different Players.
TransactionReference (URI only)	String(50)	GRTR456	Unique identifier reference for the Game Round Transaction. Same reference should not be shared across different Players. This should be the same value as specified in the Place Bet request.
TransactionData	String(255)	Transaction Data	Optional - The Game Provider may provide any data which is maybe relevant to the Gameflex Platform.
SessionToken	String(256)	L100-WEuyIqC+tyT4JEF/drX7gy5pO5Rf11XsqcYjhGgz01I=	Session Token returned from the Redeem Session Token method.
ChannelID	String	Desktop	The Channel that was used to launch the Game: Desktop or Mobile.
GameCode	String(50)	SlotsMania	A code assigned to the Game by the Game Provider. The Gameflex Platform will lookup the Game using ChannelID and GameCode.
CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common Reference Data" document.
Amount	Decimal	10.99	The amount of the bet. This should always be a positive number. This should always be zero for Free Games.
EndGameRound	Boolean	True	This indicates that the Game Round has completed. The Game Provider must ensure every Game Round is completed, as revenue is only calculated on completed Game Rounds.

### 3.5.2 Response Format

The API method will return JSON in the following format:

```
{
  "Result": {
    "TransactionID": "G255-3af5578233794a20a2acdb946e8a8807",
    "AlreadyProcessed": false,
    "CashAmount": 10.00,
    "BonusAmount": 0.99
  },
  "AccountBalance": {
    "Version": 635854407764658800,
    "CashFunds": {
      "Balance": 999.99
    },
    "BonusFunds": {
      "Balance": 111.11
    }
  }
}
```

```

    "CurrencyCode": "GBP"
  },
  "ErrorCode": 0,
  "ErrorDesc": "Success",
  "Sequence": "Sequence",
  "Timestamp": "2015-12-11T14:26:16.4658835Z",
  "CorrelationData": "OptionalGameProviderCorrelationData"
}

```

Parameter	Type	Typical Value	Description
Result. TransactionID	String(50)	G255- 3af5578233794a 20a2acdb946e8a 8807	Unique Game Round Transaction Reference assigned by the Gameflex Platform.
Result. AlreadyProcessed	Boolean	false	Indicates if the Gameflex Platform has already processed the Game Round Transaction.
Result. CashAmout	Decimal	10.00	The split of the Game Round Transaction amount which was processed as Cash via the Gameflex Platform.
Result. BonusAmout	Decimal	0.99	The split of the Game Round Transaction amount which was processed as Bonus via the Gameflex Platform.
AccountBalance. Version	Int64	123	This is the current version number on the balance inside the Gameflex Platform.
AccountBalance. CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common Reference Data" document.
AccountBalance. CashFunds. Balance	Decimal	120.15	Cash Funds Balance for the Player to a maximum of 2 decimal places.
AccountBalance. BonusFunds. Balance	Decimal	30.10	Optional Bonus Funds Balance for the Player to a maximum of 2 decimal places.

### 3.5.3 Possible Error Codes

The API method can return the following error codes:

Error Code Number	Reason(s)
0	Success
-1	Unknown Error – An unknown error has occurred during the API call. More details will be available in the error description returned on the API.
-5	Account Not Found – The account was not found on the Gameflex Platform.
-6	Signature Invalid – This is returned if the Signature on the request is Invalid.
-7	Transaction Queue Blocked – internal transaction queue has become blocked inside the Gameflex Platform. The Game provider should issue periodic retries until Success.
-8	Transaction Not Found – The Game Round Transaction cannot be found in the Gameflex Platform.
-9	Currency Mismatch – The Game Provider Currency Code mismatches the Player Currency Code inside the Gameflex Platform. On Currency Code Mismatch the funds will be held within the Gameflex Wallet.

-14	Game Round Not Found – The Game Round was not found inside the Gameflex Platform.
-15	Game Not Found – Game not found for the specified Game Code.
-17	Invalid Parameter – the Error Description will contain details of the invalid parameter.

## 3.6 Void Bet

The Void Bet request should be used to return a Place Bet Stake back to the Player. The amount cannot be greater than the total Stakes for the Game Round. The method is idempotent.

Void Bet requests can be made even after the Game has been exited by the Player, but the Game Provider must send the last used Session Token used by the Player to play the Game.

If an error occurs, the Game Provider should keep on trying at periodic intervals until they receive a success.

### 3.6.1 Request Format

The request will be sent to the following URI:

```
/v1.0/{PlatformKey}/{GameProviderID}/{InstanceReference}/account/{AccountReference}/game/round/{GameRoundReference}/{TransactionReference}/voidbet
```

The API method expects the following parameters:

Parameter	Type	Typical Value	Description
PlatformKey (URI only)	String(4)	L100	The platform key associated with the caller.
GameProviderID (URI only)	Integer	41	A unique Game Provider ID assigned by Iforium to the Game Provider.
InstanceReference (URI only)	String(50)	MT-71	This is unique reference for the deployed Game Provider instance.
AccountReference (URI only)	String(50)	L123456	Unique identifier for the Player in the Gameflex Platform. This is returned from the Redeem Session Token method.
GameRoundReference (URI only)	String(50)	GRT123	Unique identifier reference for the Game Round. Same reference should not be shared across different Players.
TransactionReference (URI only)	String(50)	GRTR456	Unique identifier reference for the Game Round Transaction. Same reference should not be shared across different Players.
TransactionData	String(255)	Transaction Data	Optional - The Game Provider may provide any data which is maybe relevant to the Gameflex Platform.
SessionToken	String(256)	L100-WEuyIqC+tyT4JEF/drx7gy5pO5Rf11XsqcYjhGgz01I=	Session Token returned from the Redeem Session Token method.
ChannelID	String	Desktop	The Channel that was used to launch the Game: Desktop or Mobile.
GameCode	String(50)	SlotsMania	A code assigned to the Game by the Game Provider. The Gameflex

			Platform will lookup the Game using ChannelID and GameCode.
CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common Reference Data" document.
Amount	Decimal	10.99	The amount of the void bet. This should always be a positive number.
EndGameRound	Boolean	True	This indicates that the Game Round has completed. The Game Provider must ensure every Game Round is completed, as revenue is only calculated on completed Game Rounds.

### 3.6.2 Response Format

The API method will return JSON in the following format:

```
{
  "Result": {
    "TransactionID": "G255-3af5578233794a20a2acdb946e8a8807",
    "AlreadyProcessed": false,
    "CashAmount": 10.00,
    "BonusAmount": 0.99
  },
  "AccountBalance": {
    "Version": 635854407764658800,
    "CashFunds": {
      "Balance": 999.99
    },
    "BonusFunds": {
      "Balance": 111.11
    },
    "CurrencyCode": "GBP"
  },
  "ErrorCode": 0,
  "ErrorDesc": "Success",
  "Sequence": "Sequence",
  "Timestamp": "2015-12-11T14:26:16.4658835Z",
  "CorrelationData": "OptionalGameProviderCorrelationData"
}
```

Parameter	Type	Typical Value	Description
Result. TransactionID	String(50)	G255-3af5578233794a20a2acdb946e8a8807	Unique Game Round Transaction Reference assigned by the Gameflex Platform.
Result. AlreadyProcessed	Boolean	false	Indicates if the Gameflex Platform has already processed the Game Round Transaction.
Result. CashAmount	Decimal	10.00	The split of the Game Round Transaction amount which was processed as Cash via the Gameflex Platform.
Result. BonusAmount	Decimal	0.99	The split of the Game Round Transaction amount which was processed as Bonus via the Gameflex Platform.
AccountBalance. Version	Int64	123	This is the current version number on the balance inside the Gameflex Platform.
AccountBalance. CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common



			Reference Data" document.
AccountBalance. CashFunds. Balance	Decimal	120.15	Cash Funds Balance for the Player to a maximum of 2 decimal places.
AccountBalance. BonusFunds. Balance	Decimal	30.10	Optional Bonus Funds Balance for the Player to a maximum of 2 decimal places.

### 3.6.3 Possible Error Codes

The API method can return the following error codes:

Error Code Number	Reason(s)
0	Success
-1	Unknown Error – An unknown error has occurred during the API call. More details will be available in the error description returned on the API.
-5	Account Not Found – The account was not found on the Gameflex Platform.
-6	Signature Invalid – This is returned if the Signature on the request is Invalid.
-7	Transaction Queue Blocked – internal transaction queue has become blocked inside the Gameflex Platform. The Game provider should issue periodic retries until Success.
-9	Currency Mismatch – The Game Provider Currency Code mismatches the Player Currency Code inside the Gameflex Platform. On Currency Code Mismatch the funds will be held within the Gameflex Wallet.
-14	Game Round Not Found – The Game Round was not found inside the Gameflex Platform.
-15	Game Not Found – Game not found for the specified Game Code.
-17	Invalid Parameter – the Error Description will contain details of the invalid parameter.

## 3.7 End Game Round

The End Game request is separate method used to indicate that the Game Round is complete. If the Game Provider sets the Game Round as complete on an individual Game Round Transaction, then the Game Provider is not required to call this method to complete the Game Round. Revenue is only calculated on completed Game Rounds. The method is idempotent.

If an error occurs, the Game Provider should keep on trying at periodic intervals until they receive a success.

End Game requests can be made even after the Game has been exited by the Player, but the Game Provider must send the last used Session Token used by the Player to play the Game.

### 3.7.1 Request Format

The request will be sent to the following URI:

```
/v1.0/{PlatformKey}/{GameProviderID}/{InstanceReference}/account/{AccountReference}/game/round/{GameRoundReference}/end
```

The API method expects the following parameters:

Parameter	Type	Typical Value	Description
PlatformKey (URI only)	String(4)	L100	The platform key associated with the

			caller.
GameProviderID (URI only)	Integer	41	A unique Game Provider ID assigned by Iforium to the Game Provider.
InstanceReference (URI only)	String(50)	MT-71	This is unique reference for the deployed Game Provider instance.
AccountReference (URI only)	String(50)	L123456	Unique identifier for the Player in the Gameflex Platform. This is returned from the Redeem Session Token method.
GameRoundReference (URI only)	String(50)	GRT123	Unique identifier reference for the Game Round. Same reference should not be shared across different Players.
SessionToken	String(256)	L100-WEuyIqC+tyT4JEF/drx7gy5pO5Rf11XsqcYjhGgz01I=	Session Token returned from the Redeem Session Token method.
ChannelID	String	Desktop	The Channel that was used to launch the Game: Desktop or Mobile.
GameCode	String(50)	SlotsMania	A code assigned to the Game by the Game Provider. The Gameflex Platform will lookup the Game using ChannelID and GameCode.
CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common Reference Data" document.

### 3.7.2 Response Format

The API method will return JSON in the following format:

```
{
  "Result": {
    "AlreadyProcessed": false
  },
  "AccountBalance": {
    "Version": 635854407764658800,
    "CashFunds": {
      "Balance": 999.99
    },
    "BonusFunds": {
      "Balance": 111.11
    },
    "CurrencyCode": "GBP"
  },
  "ErrorCode": 0,
  "ErrorDesc": "Success",
  "Sequence": "Sequence",
  "Timestamp": "2015-12-11T14:26:16.4658835Z",
  "CorrelationData": "OptionalGameProviderCorrelationData"
}
```

Parameter	Type	Typical Value	Description
Result. AlreadyProcessed	Boolean	false	Indicates if the Gameflex Platform has already processed the Game Round Transaction.
AccountBalance. Version	Int64	123	This is the current version number on the balance inside the Gameflex Platform.
AccountBalance. CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common Reference Data" document.

AccountBalance. CashFunds. Balance	Decimal	120.15	Cash Funds Balance for the Player to a maximum of 2 decimal places.
AccountBalance. BonusFunds. Balance	Decimal	30.10	Optional Bonus Funds Balance for the Player to a maximum of 2 decimal places.

### 3.7.3 Possible Error Codes

The API method can return the following error codes:

Error Code Number	Reason(s)
0	Success
-1	Unknown Error – An unknown error has occurred during the API call. More details will be available in the error description returned on the API.
-5	Account Not Found – The account was not found on the Gameflex Platform.
-6	Signature Invalid – This is returned if the Signature on the request is Invalid.
-7	Transaction Queue Blocked – internal transaction queue has become blocked inside the Gameflex Platform. The Game provider should issue periodic retries until Success.
-9	Currency Mismatch – The Game Provider Currency Code mismatches the Player Currency Code inside the Gameflex Platform. On Currency Code Mismatch the funds will be held within the Gameflex Wallet.
-14	Game Round Not Found – The Game Round was not found inside the Gameflex Platform.
-15	Game Not Found – Game not found for the specified Game Code.
-17	Invalid Parameter – the Error Description will contain details of the invalid parameter.

## 3.8 Query Game Round Transaction

The Query Game Round Transaction can be used by the Game Provider to determine the status of a Game Round Transaction in the Gameflex Platform.

### 3.8.1 Request Format

The request will be sent to the following URI:

```
/v1.0/{PlatformKey}/{GameProviderID}/{InstanceReference}/account/{AccountReference}/gameRound/{GameRoundReference}/{TransactionReference}
```

The API method expects the following parameters:

Parameter	Type	Typical Value	Description
PlatformKey (URI only)	String(4)	L100	The platform key associated with the caller.
GameProviderID (URI only)	Integer	41	A unique Game Provider ID assigned by Iforium to the Game Provider.
InstanceReference (URI only)	String(50)	MT-71	This is unique reference for the deployed Game Provider instance.
AccountReference (URI only)	String(50)	L123456	Unique identifier for the Player in the Gameflex Platform. This is returned from the Redeem Session Token method.
GameRoundReference	String(50)	GRT123	Unique identifier reference for the

(URI only)			Game Round. Same reference should not be shared across different Players.
TransactionReference (URI only)	String(50)	GRTR456	Unique identifier reference for the Game Round Transaction. Same reference should not be shared across different Players.
SessionToken	String(256)	L100-WEuyIqC+tyT4JEF/drX7gy5pO5Rf11XsqcYjhGgz01I=	Session Token returned from the Redeem Session Token method.
ChannelID	String	Desktop	The Channel that was used to launch the Game: Desktop or Mobile.
GameCode	String(50)	SlotsMania	A code assigned to the Game by the Game Provider. The Gameflex Platform will lookup the Game using ChannelID and GameCode.

### 3.8.2 Response Format

The API method will return JSON in the following format:

```
{
  "Result": {
    "TransactionID": "G255-3af5578233794a20a2acdb946e8a8807",
    "AlreadyProcessed": false,
    "CashAmount": 10.00,
    "BonusAmount": 0.99
  },
  "AccountBalance": {
    "Version": 635854407764658800,
    "CashFunds": {
      "Balance": 999.99
    },
    "BonusFunds": {
      "Balance": 111.11
    },
    "CurrencyCode": "GBP"
  },
  "ErrorCode": 0,
  "ErrorDesc": "Success",
  "Sequence": "Sequence",
  "Timestamp": "2015-12-11T14:26:16.4658835Z",
  "CorrelationData": "OptionalGameProviderCorrelationData"
}
```

Parameter	Type	Typical Value	Description
Result. TransactionID	String(50)	G255-3af5578233794a20a2acdb946e8a8807	Unique Game Round Transaction Reference assigned by the Gameflex Platform.
Result. AlreadyProcessed	Boolean	false	Indicates if the Gameflex Platform has already processed the Game Round Transaction.
Result. CashAmount	Decimal	10.00	The split of the Game Round Transaction amount which was processed as Cash via the Gameflex Platform.
Result. BonusAmount	Decimal	0.99	The split of the Game Round Transaction amount which was processed as Bonus via the Gameflex Platform.
AccountBalance.	Int64	123	This is the current version number

Version			on the balance inside the Gameflex Platform.
AccountBalance. CurrencyCode	String(3)	GBP	3 character currency code in ISO 4217 format. See "Iforium Common Reference Data" document.
AccountBalance. CashFunds. Balance	Decimal	120.15	Cash Funds Balance for the Player to a maximum of 2 decimal places.
AccountBalance. BonusFunds. Balance	Decimal	30.10	Optional Bonus Funds Balance for the Player to a maximum of 2 decimal places.

### 3.8.3 Possible Error Codes

The API method can return the following error codes:

Error Code Number	Reason(s)
0	Success
-1	Unknown Error – An unknown error has occurred during the API call. More details will be available in the error description returned on the API.
-5	Account Not Found – The account was not found on the Gameflex Platform.
-6	Signature Invalid – This is returned if the Signature on the request is Invalid.
-8	Transaction Not Found – The Game Round Transaction cannot be found in the Gameflex Platform.
-14	Game Round Not Found – The Game Round was not found inside the Gameflex Platform.
-15	Game Not Found – Game not found for the specified Game Code.
-17	Invalid Parameter – the Error Description will contain details of the invalid parameter.
-18	Transaction Rolled Back – the Game Round Transaction has been rolled back. This can only occur on Place Bet.

## 4 Error Handling

Each method documents possible returned error codes. This section documents in detail the correct action and processes which the Game Provider must follow to ensure the correct resolution of Game Rounds inside the Gameflex Platform. We need to ensure all Game Rounds are closed off.

### 4.1 Error Code Action Matrix

Error Code	Reason	GGI Method							
		Redeem Session Token	Get Account Balance	Place Bet	Rollback Bet	Void Bet	Award Winnings	End Game Round	Query Game Round Transaction
Timeout	Method fails to respond	RL	RL	E1	E2	E2	E2	E2	BRT
-1	Unknown Error	RL	RL	E1	E2	E2	E2	E2	BRT
-2	Insufficient Funds			PRT					
-3	Session Not Found	RL	RL	RL					
-4	Account Frozen	RL		RL					
-5	Account Not Found	C	C	C	C	C	C	C	C
-6	Signature Invalid		C	C	C	C	C	C	C
-7	Transaction Queue Blocked			E1	E2	E2	E2	E2	
-8	Transaction Not Found				NFA				NFA
-9	Currency Mismatch			C	C	C	C	C	
-10	Stake Limit			PRT					
-11	Wager Limit			PRT					
-12	Loss Limit			PRT					
-13	Session Length Limit			RL					
-14	Game Round Not Found				NFA	NFA	NFA	NFA	NFA
-15	Game Not Found	C	C	C	C	C	C	C	C
-16	Game Blocked			RL					
-17	Invalid Parameter	C	C	C	C	C	C	C	C
-18	Transaction Rolled Back								

The following actions and processes for each Error Handling Code:

Error Handling Codes	Suggested Action / Process	Description
C	Major configuration or integration error	Generally, these errors should not be seen in Live Production Environment. No action would have been taken in the Gameflex Platform and the Game Provider should contact Iforium for further support to resolve.
RL	Re-launch	The Gameflex Platform could not complete the method due to restrictions, changes in Player status or insufficient funds, etc. The Player should re-launch this or another game. No action would have been taken in the Gameflex Platform.
BRT	Backend Retry	The Game Provider must retry the method. No action would have been taken in the Gameflex Platform.
PRT	Player Retry	The Gameflex Platform could not complete the method due to insufficient Player funds, account limits, etc. The Player should make appropriate changes and retry. No action would have been taken in the Gameflex Platform.
NFA	No Further Action	The Gameflex Platform could not find a Game Round or Game Round Transaction by the provided references. It is unlikely that retrying the method with the same parameters will resolve the problem.
E1	Transaction Error – Place Bet	This error condition arises when the status of the Place Bet method returns an unknown status inside the Gameflex Platform e.g. the bet may or may not have been placed. See section 4.2 for suggested actions.
E2	Transaction Error - General Retry	This error condition arises when Rollback Bet, Void Bet, Award Winnings or End Game Round method returns an unknown status inside the Gameflex Platform e.g. the winnings may or may not have been awarded to the Player. See section 4.3 for suggested actions.

## 4.2 Transaction Error – Place Bet

The Game Provider must implement the following process:

- Issue an asynchronous Rollback Bet method call from the Game Provider backend. If the method returns Success, then the transaction will be resolved. If the call returns one of the "E2" errors, then the call should be repeated as detailed in section 4.3 below until the Place Bet transaction is resolved.
- Optionally, the Game Provider can wait 10 seconds after the first failed Place Bet method call and retry the Place Bet method again with the same parameters. If the single retry fails, the Game Provider must issue an asynchronous Rollback Bet method call to resolve the Place Bet transaction.

## 4.3 Transaction Error – General Retry

The Game Provider must implement the following process:

- Wait 1 minute after the failed method call and then retry the same method call again. If the method call still returns one of the "E2" errors, then the method call should be repeated again. The delay should be progressively increased on each retry up to a retry period of every 15 minutes. Repeat calls must continue indefinitely until a call returns a Success or another error associated with one of the other handling codes.

## 5 Common Implementation Issues

The following common implementation issues have caused problems in the past with other Game Providers during the integration process:

### 5.1 Platform Key

the Platformkey will be different for the Staging Environment and Live Production Environment. The Game Provider must remember to make this configurable.

### 5.2 Request Format

The Game Provider must ensure that they use the HTTP POST Verb and the Content-Type is set to application/x-www-form-urlencoded. The Game Provider must not use HTTP GET Verb or start posting JSON or any other request format to the method.

### 5.3 Including URI Parameters in the Request

Each method requires certain parameters in the request URI. The Game Provider must ensure that they are not sent again as part of the name/value pairs posted to the method.

### 5.4 Launch Session Token Encoding and Length

The Launch Sesison Token is a Base 64 Url encoded string. The Game Provider must ensure that this is sent to the Redeem Session Token method unaltered. Also, the Game Provider needs to ensure they can support Launch Sesison Tokens upto 256 characters in length.

### 5.5 Session Token Encoding and Length

The Launch Sesison Token a Base 64 encoded string with no Url encoding. The Game Provider must ensure that this is sent to all methods apart from Redeem Session Token method unaltered. Also, the Game Provider need to ensure they can support Sesison Tokens upto 256 characters in length.

### 5.6 Missing Award Winnings

If the Game Provider is completing a Game using the Award Winnings method rather than the End Game Round method, the Award Winnings must be sent for all Game Rounds including those where the winning amount is 0. The missing Award Winning calls for losing Games would have resulted in excessive open Game Rounds.

### 5.7 Delayed End Game Rounds

The End Game Round call should not be delayed until the Player starts the next Game Round. If left unresolved this would have resulted in the last Game Round played by every Player being left open.

Iforium appreciate that some Game Rounds will be left open, for example when a Player does not complete a bonus feature. But the number of legitimately open Game Rounds should be small when compared to the total Game Rounds played.

### 5.8 Unhandled Award Winnings Error

If the Game Provider is using the End Game Round call then the Game Provider must also ensure that any preceeding Award Winnings calls are completed successfully before making the End Game Round call. Once an End Game Round call is received by the Gameflex Platform the round is marked as complete and any following Award Winnings will be rejected.



We have seen instances where the Player was unable to play the Game again as each time it was launched, the Game Provider tried to resolve the unpaid winnings which were rejected by the GGI API.

Please note the Gameflex Platform will process with any combination of Place Bet and Award Winnings before receiving a End Game Round call, e.g. Place Bet, End Game Round.

## 6 Game Provider Configuration

Iforium needs to configure Gameflex Generic Integration platform for each individual Game Provider. This drives how our Game Engine processes the Game Round Transactions. The Game Provider must confirm the configuration with Iforium.

### 6.1 Game Engine Configuration Parameters

Parameter	Type	Typical Value	Description
AllowAwardWinningsToStartNewGameRound	Boolean	False	Does the Game Provider Award Winnings for Game Round without a Place Bet request?
AllowAwardWinningsAfterGameRoundClosed	Boolean	False	Does the Game Provider Award Winnings after ending the Game Round? We can support this, but this should never be the case.
AllowFreeBetWithNoFreeBetCost	Boolean	False	If the Game Provider supports Free Games, we expect a Free Game amount to be sent on the Place Bet request. Do you have Free Games without a Free Game amount?
AllowPlaceBetWithZeroStake	Boolean	False	Does the Game Provider make Place Bet requests with zero Stake? We would normally expect this for Free Games where the Free Game amount is recorded separately.
AllowVoidBetWithZeroReturnedStake	Boolean	False	Does the Game Provider make Void Bet requests with zero Stake?