1. **Overview**

Payletter and ZingMe define the 5 billing interfaces for **ZingMe Item-selling business model** :

1. Balance Inquiry Request/Response Packet
2. OrderNo Inquiry Request/Response Packet
3. Item Purchase Request/Response Packet
4. Item Gift Request/Response Packet
5. Purchase Cancel Request/Response Packet

|  |  |  |
| --- | --- | --- |
| **Packet Type** | **Command** | **Description** |
| Balance Inquiry Request/Response | ReqType=10 | Inquiry user’s cash balance |
| OrderNo Inquiry Request/Response | ReqType=50 | Inquiry unique OrderNo |
| Item Purchase Request/Response | ReqType=20 | Request Item purchase |
| Item Gift Request/Response | ReqType=30 | Request Item gift |
| Purchase Cancel Request/Response | ReqType=40 | Cancel Item purchase |

1. **Data Byte Ordering**

Payletter Billing server runs on Windows 2003 system.

If ZingMe servers communicating with Payletter billing server are not running on the same system of Payletter, Payletter and ZingMe should do network byte ordering. All of numeric data like int, short and \_\_int64 data type should be done with network byte ordering.

1. **Balance Inquiry Packet (ReqType=10)**
   1. Description

ZingMe sends this packet to inquiry user’s cash balance in billing system.

When getting the packet, Billing Server(GTX) sends the result of the request in this packet.

* 1. Balance Inquiry Packet Structure

|  |
| --- |
| #pragma pack(1)  typedef struct \_BILL\_PACK\_BALANCE  {  WORD ReqLen;  WORD ReqType;  WORD RetCode;  \_\_int64 UserNo;  DWORD CashRemain;  }BILL\_PACK\_BALANCE, \*PBILL\_PACK\_BALANCE;  #pragma pack() |
|  |

* 1. Structure Description

|  |  |
| --- | --- |
| **Variable** | **Description** |
| ReqLen | Packet length (sizeof(BILL\_PACK\_BALANCE)) |
| ReqType | Packet Command (10) |
| RetCode | Response Code (0:Success, <> 0 : Error happened) |
| UserNo | VINA Passport UserNo |
| CashRemain | Cash Remaining |

* 1. Request/Response Sample

|  |  |  |
| --- | --- | --- |
| **Variable** | **Request** | **Response** |
| ReqLen | sizeof(BILL\_PACK\_BALANCE) | sizeof(BILL\_PACK\_BALANCE) |
| ReqType | 10 | 10 |
| RetCode | 0 | 0 |
| UserNo | 1234 | 1234 |
| CashRemain | 0 | 3500 |

1. **OrderNo Inquiry Packet (ReqType=50)**
   1. Description

ZingMe sends this packet to inquiry billing unique OrderNo in billing system.

When getting the packet, Billing Server(GTX) sends the result of the request in this packet.

* 1. OrderNo Inquiry Packet Structure

|  |
| --- |
| #pragma pack(1)  typedef struct \_BILL\_PACK\_GORDERNO  {  WORD ReqLen;  WORD ReqType;  WORD RetCode;  char OrderNo[19+1];  }BILL\_PACK\_ GORDERNO, \*PBILL\_PACK\_ GORDERNO;  #pragma pack() |
|  |

* 1. Structure Description

|  |  |
| --- | --- |
| **Variable** | **Description** |
| ReqLen | Packet length (sizeof(BILL\_PACK\_BALANCE)) |
| ReqType | Packet Command (10) |
| RetCode | Response Code (0:Success, <> 0 : Error happened) |
| OrderNo | OrderNo issued from billing server(Needed to purchase and gift item) |

* 1. Request/Response Sample

|  |  |  |
| --- | --- | --- |
| **Variable** | **Request** | **Response** |
| ReqLen | sizeof(BILL\_PACK\_BALANCE) | sizeof(BILL\_PACK\_BALANCE) |
| ReqType | 10 | 10 |
| RetCode | 0 | 0 |
| OrderNo | ‘’ | ‘987654321’ |

1. **Item Purchase Packet (ReqType=20)**
   1. Description

ZingMe sends this packet to purchase item when users buy some item in game.

Billing server(GTX) checks cash balance of user, deduct from cash balance, logs purchase history and then sends response packet to ZingMe.

* 1. Item Purchase Packet Structure

|  |
| --- |
| #pragma pack(1)  typedef struct \_BILL\_PACK\_BUY  {  WORD ReqLen;  WORD ReqType;  WORD RetCode;  \_\_int64 UserNo;  char UserID[50+1];  char OrderNo[19+1];  DWORD CashRemain;  WORD ItemCnt;  }BILL\_PACK\_BUY, \*PBILL\_PACK\_BUY;  typedef struct \_BILL\_ITEM\_INFO  {  char ItemID[30+1];  WORD ItemQty;  DWORD ItemPrice;  char ItemName[50+1];  char ChargeNo[19+1];  }BILL\_ITEM\_INFO, \*PBILL\_ITEM\_INFO;  #pragma pack()  BILL\_ITEM\_INFO structure should be iterated as many as ItemCnt of BILL\_PACK\_BUY. |

* 1. Structure Description

|  |  |
| --- | --- |
| **Variable** | **Description** |
| ReqLen | Packet length  (sizeof(BILL\_PACK\_BUY)+(ItemCnt\*sizeof(BILL\_ITEM\_INFO))) |
| ReqType | Packet Command (20) |
| RetCode | Response Code (0:Success, <> 0 : Error happened) |
| UserNo | VINA Passport UserNo |
| UserID | VINA Passport UserID |
| OrderNo | OrderNo (OrderNo from OrderNo Inquiry Packet=50) |
| CashRemain | Cash Remaining (After deducting) |
| ItemCnt | The number of Item buying |
| ItemID | ItemID identifying game item in game |
| ItemQty | Item quantity of ItemID |
| ItemPrice | Item Price |
| ItemName | Item Name |
| ChargeNo | ChargeNo issued from billing server (Needed to cancel the purchase) |

* 1. Request/Response Sample

|  |  |  |
| --- | --- | --- |
| **Variable** | **Request** | **Response** |
| ReqLen | sizeof(BILL\_PACK\_BUY)  +  ItemCnt \* sizeof(BILL\_ITEM\_INFO) | sizeof(BILL\_PACK\_BUY)  +  ItemCnt \* sizeof(BILL\_ITEM\_INFO) |
| ReqType | 20 | 20 |
| RetCode | 0 | 0 |
| UserNo | 1234 | 1234 |
| UserID | ‘dialup’ | ‘dialup’ |
| OrderNo | ‘987654321’’ | ‘987654321’ |
| CashRemain | 0 | 3500 |
| ItemCnt | 2 | 2 |
| ItemID | ‘AB\_1234’ | ‘AB\_1234’ |
| ItemQty | 1 | 1 |
| ItemPrice | 100 | 100 |
| ItemName | ‘Bomb’ | ‘Bomb’ |
| ChargeNo | ‘’ | ‘1234567890123456789’ |
| ItemID | ‘1235’ | ‘1235’ |
| ItemQty | 1 | 1 |
| ItemPrice | 100 | 100 |
| ItemName | ‘Sword | ‘Sword |
| ChargeNo | ‘’ | ‘1234567890123456780’ |

1. **Item Gift Packet (ReqType=30)**
   1. Description

ZingMe sends this packet to give item as a gift when users buy some item in game for a gift.

Billing server(GTX) checks cash balance of user, deduct from cash balance, logs purchase history and then sends response packet to ZingMe.

* 1. Item Gift Packet Structure

|  |
| --- |
| #pragma pack(1)  typedef struct \_BILL\_PACK\_GIFT  {  WORD ReqLen;  WORD ReqType;  WORD RetCode;  \_\_int64 UserNo;  \_\_int64 RUserNo;  char UserID[50+1];  char RUserID[50+1];  char OrderNo[19+1];  DWORD CashRemain;  WORD ItemCnt;  }BILL\_PACK\_GIFT, \*PBILL\_PACK\_GIFT;  typedef struct \_BILL\_ITEM\_INFO  {  char ItemID[30+1];  WORD ItemQty;  DWORD ItemPrice;  char ItemName[50+1];  char ChargeNo[19+1];  }BILL\_ITEM\_INFO, \*PBILL\_ITEM\_INFO;  #pragma pack()  BILL\_ITEM\_INFO structure should be iterated as many as ItemCnt of BILL\_PACK\_BUY. |

* 1. Structure Description

|  |  |
| --- | --- |
| **Variable** | **Description** |
| ReqLen | Packet length  (sizeof(BILL\_PACK\_GIFT)+(ItemCnt\*sizeof(BILL\_ITEM\_INFO))) |
| ReqType | Packet Command (30) |
| RetCode | Response Code (0:Success, <> 0 : Error happened) |
| UserNo | VINA Passport UserNo |
| RUserNo | Recipient VINA Passport UserNo |
| UserID | VINA Passport UserID |
| RUserID | Recipient VINA Passport UserID |
| OrderNo | OrderNo (OrderNo from OrderNo Inquiry Packet=50) |
| CashRemain | Cash Remaining (After deducting) |
| ItemCnt | The number of Item buying |
| ItemID | ItemID identifying game item in game |
| ItemQty | Item quantity of ItemID |
| ItemPrice | Item Price |
| ItemName | Item Name |
| ChargeNo | ChargeNo issued from billing server (Needed to cancel the purchase) |

* 1. Request/Response Sample

|  |  |  |
| --- | --- | --- |
| **Variable** | **Request** | **Response** |
| ReqLen | sizeof(BILL\_PACK\_ GIFT)  +  ItemCnt \* sizeof(BILL\_ITEM\_INFO) | sizeof(BILL\_PACK\_ GIFT)  +  ItemCnt \* sizeof(BILL\_ITEM\_INFO) |
| ReqType | 30 | 30 |
| RetCode | 0 | 0 |
| UserNo | 1234 | 1234 |
| RUserNo | 4321 | 4321 |
| UserID | ‘dialup’ | ‘dialup’ |
| RUserID | ‘frog’ | ‘frog’ |
| OrderNo | ‘987654321’’ | ‘987654321’ |
| CashRemain | 0 | 3500 |
| ItemCnt | 2 | 2 |
| ItemID | ‘1234’ | ‘1234’ |
| ItemQty | 1 | 1 |
| ItemPrice | 100 | 100 |
| ItemName | ‘Bomb’ | ‘Bomb’ |
| ChargeNo | ‘’ | ‘1234567890123456789’ |
| ItemID | ‘1235’ | ‘1235’ |
| ItemQty | 1 | 1 |
| ItemPrice | 100 | 100 |
| ItemName | ‘Sword | ‘Sword |
| ChargeNo | ‘’ | ‘1234567890123456789’ |

1. **Purchase Cancel Packet (ReqType=40)**
   1. Description

ZingMe sends this packet to cancel the previous item purchase.

Billing server(GTX) returns the result of item purchase cancellation.

* 1. Purchase Cancel Structure

|  |
| --- |
| #pragma pack(1)  typedef struct \_BILL\_PACK\_BUY\_CNL  {  WORD ReqLen;  WORD ReqType;  WORD RetCode;  \_\_int64 UserNo;  DWORD CashRemain;  char OrderNo[19+1];  char ChargeNo[19+1];  }BILL\_PACK\_BUY\_CNL, \*PBILL\_PACK\_BUY\_CNL;  #pragma pack() |
|  |

* 1. Structure Description

|  |  |
| --- | --- |
| **Variable** | **Description** |
| ReqLen | Packet length (sizeof(BILL\_PACK\_BUY\_CNL)) |
| ReqType | Packet Command (40) |
| RetCode | Response Code (0:Success, <> 0 : Error happened) |
| UserNo | VINA Passport UserNo |
| CashRemain | Cash Remaining (After cancelling) |
| OrderNo | OrderNo to be cancelled |
| ChargeNo | ChargeNo to be cancelled |

※ If ChargeNo is not returned due to the Timeout error after sending Item Purchase or Item Gift requests, ChargeNo can be null.

When ChargeNo is null, the billing system finds ChargeNo by using OrderNo to execute Purchase Cancel.

Please refer to Sample Code 5).

* 1. Request/Response Sample

|  |  |  |
| --- | --- | --- |
| **Variable** | **Request** | **Response** |
| ReqLen | sizeof(BILL\_PACK\_BUY\_CNL) | sizeof(BILL\_PACK\_BUY\_CNL) |
| ReqType | 40 | 40 |
| RetCode | 0 | 0 |
| UserNo | 1234 | 1234 |
| CashRemain | 0 | 3500 |
| OrderNo | ‘987654321’’ | ‘987654321’ |
| ChargeNo | ‘1234567890123456789’ | ‘1234567890123456789’ |

* 1. Request/Response Sample (ChargeNo is not returned due to the Timeout error)

|  |  |  |
| --- | --- | --- |
| **Variable** | **Request** | **Response** |
| ReqLen | sizeof(BILL\_PACK\_BUY\_CNL) | sizeof(BILL\_PACK\_BUY\_CNL) |
| ReqType | 40 | 40 |
| RetCode | 0 | 0 |
| UserNo | 1234 | 1234 |
| CashRemain | 0 | 3500 |
| OrderNo | ‘987654321’’ | ‘987654321’ |
| ChargeNo | ‘’ | ‘1234567890123456789’ |

1. **Error Code Definition**

|  |  |
| --- | --- |
| **ErrCode** | **Error Description** |
| 100 | Short of Cash |
| 200 | Non-Existing User |
| 300 | DB Internal Error |
| 400 | Billing Server Internal Error |
| 500 | Already cancelled Purchase |