

**Bkav Webservice Connection Model**

For eHoaDon

# General

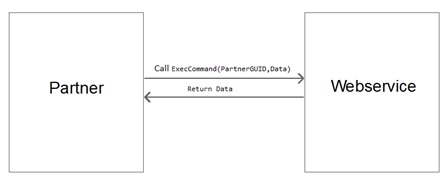
## Description

Bkav Webservice serves as the information portal to receive requests from Partners regarding Invoice database on eHoaDon.vn (Creating, updating, checking status, checking info details, checking process history, etc.), using SOAP (Simple Object Accesss Protocol).

## Definitions

* Webservice URL: The link for Partner to connect to Bkav Webservice.
* PartnerGUID: The exclusive GUID for each Partner, one GUID per Partner.
* Token: The exclusive token for each Partner to encrypt the transferred data.
* Webservice demo URL: The link for connecting to eHoaDon demo system of Bkav, URL: <https://wsdemo.ehoadon.vn/WSPublicEHoaDon.asmx>
* Webservice URL: The link for connecting to eHoaDon system of Bkav, URL: <https://ws.ehoadon.vn/WSPublicEHoaDon.asmx>.
* Webservice reference file (.xml): For describing Webservice. Since Bkav set Webservice running in hidden mode, it is not possible to directly access via the URL. In order to reference to Webservice, please use file ws.ehoadon.vn.xml in App\_Data folder of sample code.
* eHoaDon account: Used by customers to log-in and use Bkav’s services on ehoadon.vn system. Each Partner needs account, with imported invoice format and number range, to connect to ws.ehoadon.vn.
* eHoaDon demo account: Used by customers to log-in and use Bkav’s demo services on demo.ehoadon.vn system. Each Partner needs account, with imported invoice format and number range, to connect to wsdemo.ehoadon.vn

## Model

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* Client initializes object CommandData, sends command code and input parameter object (matched to each sent Command Code) to Webservice.
  + Step 1: Oject CommandData is converted to json.
  + Step 2: archived in Zip file.
  + Step 3: Convert to base64 with ECB encryption (with Token as key) as string EncryptedCommandData before it is sent to webservice via ExecCommand.
* Webservice returns 1 encryptedResult string. To read that string, exec by three step:
  + Step 1: Decryption with ECB standard.
  + Step 2: Upzip.
  + Step 3: Parse that string to json object.. Oject Result includes 2 properties: Status (status of processed command) and Object (object includes data of the returned result).

# Details

## ExecCommand Method

Is the method for Client to send data to webservice for processing

string ExecCommand(string PartnerGUID, string EncryptedCommandData)

### Input

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| PartnerGUID | The exclusive GUID for each Partner, one GUID per Partner. |
| EncryptedCommandData | This object CommandData converted to json, Ziped and hash base 64 with ECB encryption (with Token as key – string type) |

* Object CommandData

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | Is command code. Each type of enquiry is assigned with a command code |
| CommandObject | Is an input parameter object, matched with each CmdType |

* Valid CmdType Table

|  |  |
| --- | --- |
| **CmdType** | **Description** |
| 100 | Generating Invoice, eHD assigns InvoiceForm, InvoiceSerial; InvoiceNo = 0 (new Invoice) |
| 101 | Generating Invoice, eHD assigns InvoiceForm, InvoiceSerial and InvoiceNo <> 0 (blank Invoice) |
| 110 | Generating Invoice, Client assigns InvoiceForm, InvoiceSerial; InvoiceNo = 0 (new Invoice) |
| 111 | Generating Invoice, Client assigns InvoiceForm, InvoiceSerial; InvoiceNo <> 0 (new Invoice, with Invoice No.) |
| 120 | Tạo Hóa đơn thay thế cho Hoá đơn khác |
| 121 | Tạo Hóa đơn điều chỉnh cho Hoá đơn khác |
| 122 | Tạo Hóa đơn điều chỉnh chiết khấu |
| 200 | Updating details of pending/not-issued Invoice(s) |
| 202 | Hủy hóa đơn |
| 301 | Xoá hóa đơn chưa phát hành |
| 800 | Checking Invoice’s details infor |
| 801 | Checking Invoice’s Status |
| 802 | Checking Invoice’s process history |
| 804 | Lấy link để tải file hóa đơn in chuyển đổi |
| 904 | Collecting company’s details based on Tax Code |

### Output

* Object Result

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Each CmdType will have a specific returning result (refer to CmdType description in 2.2 Command Code below)  + Status<>0: content error (String type) |

## CmdType

### CmdType 100 Generating Invoice, eHD assigns InvoiceForm, InvoiceSerial; InvoiceNo = 0 (new Invoice)

* Input: Object CommandData (refer to 3.1.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 100 |
| CommandObject | Is List object InvoiceDataWS (List<InvoiceDataWS>) |

* Output: Object Result

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Là Is List object InvoiceResult (List<InvoiceResult)  + Status<>0: nội dung lỗi (kiểu String) content error (String type) |

### CmdType 101: Generating Invoice, eHD assigns InvoiceForm, InvoiceSerial and InvoiceNo (blank Invoice)

* Input: Object CommandData (refer to 3.1.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 101 |
| CommandObject | Is List object InvoiceDataWS (List<InvoiceDataWS>) |

* Output: Object Result (refer to 3.1.2 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Is List object InvoiceResult (List<InvoiceResult)  + Status<>0: content error (String type) |

### CmdType 110: Generating Invoice, Client assigns InvoiceForm, InvoiceSerial; InvoiceNo = 0 (new Invoice)

* Input: Object CommandData (refer to 3.1.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 110 |
| CommandObject | Is List object InvoiceDataWS (List<InvoiceDataWS>) |

* Output: Object Result (refer to 3.1.2 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Is List object InvoiceResult (List<InvoiceResult)  + Status<>0: content error (String type) |

### CmdType 111: Generating Invoice, Client assigns InvoiceForm, InvoiceSerial; InvoiceNo (new Invoice, with Invoice No.)

* Input: Object CommandData (refer to 3.1.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 111 |
| CommandObject | Is “List object InvoiceDataWS (List<InvoiceDataWS>)” |

* Output: Object Result (refer to 3.1.2 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Is List object InvoiceResult (List<InvoiceResult)  + Status<>0: content error (String type) |

### CmdType 120: Tạo Hóa đơn thay thế cho Hoá đơn khác

* Input: Object CommandData (refer to 3.1.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 120 |
| CommandObject | Is “List object InvoiceDataWS (List<InvoiceDataWS>)” |

* Output: Object Result (refer to 3.1.2 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Is List object InvoiceResult (List<InvoiceResult)  + Status<>0: content error (String type) |

### CmdType 121: Tạo Hóa đơn thay thế cho Hoá đơn khác

* Input: Object CommandData (refer to 3.1.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 121 |
| CommandObject | Is “List object InvoiceDataWS (List<InvoiceDataWS>)” |

* Output: Object Result (refer to 3.1.2 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Is List object InvoiceResult (List<InvoiceResult)  + Status<>0: content error (String type) |

### CmdType 122: Tạo Hóa đơn điều chỉnh chiết khấu

* Input: Object CommandData (refer to 3.1.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 122 |
| CommandObject | Is “List object InvoiceDataWS (List<InvoiceDataWS>)” |

* Output: Object Result (refer to 3.1.2 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Is List object InvoiceResult (List<InvoiceResult)  + Status<>0: content error (String type) |

### CmdType 200: Updating details of pending/not-issued Invoice(s)

* Input: Object CommandData (refer to 3.1.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 200 |
| CommandObject | Is List object InvoiceDataWS (List<InvoiceDataWS>) |

* Output: Object Result (refer to 3.1.2 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Is List object InvoiceResult (List<InvoiceResult)  + Status<>0: content error (String type) |

### CmdType 800: Checking Invoice’s details

* Input: Object CommandData (refer to 3.2.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 800 |
| CommandObject | Is InvoiceGUID ( the GUID returned by eHoadon system after successfully generating an Invoice) |

* Output: Object Result (refer to 3.2.2 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Is object InvoiceDataWS (refer to SampleCode for more details)  + Status<>0: content error (String type) |

### CmdType 801: Checking Invoice’s Status

* Input: Object CommandData (refer to 3.3.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 801 |
| CommandObject | Is InvoiceGUID ( the GUID returned by eHoadon system after successfully generating an Invoice) |

* Output: Object Result (refer to 3.3.2 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Status ID for the requested Invoice  + Status<>0: content error (String type) |

* Invoice’s status ID table

|  |  |
| --- | --- |
| **ID** | **Description** |
| 1 | New |
| 2 | Issued |
| 3 | Terminated |
| 5 | Pending for replacement |
| 6 | Replace |
| 7 | Pending for adjustment |
| 8 | Adjust |
| 9 | Replaced |
| 10 | Adjusted |
| 11 | Blank |
| 12 | Not in use |

### CmdType 802: Checking Invoice’s process history

* Input: Object CommandData (refer to 3.4.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 802 |
| CommandObject | Is InvoiceGUID ( the GUID returned by eHoadon system after successfully generating an Invoice) |

* Output: Object Result (refer to 3.4.2 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Is List object History (List<History>)  + Status<>0: content error (String type) |

### CmdType 804: Lấy link để tải file hóa đơn in chuyển đổi

* Input: Object CommandData (refer to 3.1.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 804 |
| CommandObject | Is “List object InvoiceDataWS (List<InvoiceDataWS>)” |

* Output: Object Result (refer to 3.1.2 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Is List object InvoiceResult (List<InvoiceResult)  + Status<>0: content error (String type) |

### CmdType 904: Collecting company’s details based on Tax Code

* Input: Object CommandData (refer to 3.5.1 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| CmdType | 904 |
| CommandObject | Is the requested Tax Code |

* Output: Object Result (refer to 3.5.2 for more details)

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| Status | + Status=0: Succeeded  + Status<>0: Error |
| Object | + Status=0: Is object BusinessInfo  + Status<>0: content error (String type) |

# Object matched with CmdType

## CmdType 100,101,110,111,200

### Object CommandData:

{

"CmdType":100, /// Command Code, please refer to CmdType table for more details

"CommandObject":[

{

"Invoice":{

"InvoiceTypeID":1, /// Invoice Type: always at 1 (VAT invoice)

"InvoiceDate":"2017-09-20T09:43:06.7105319+07:00", /// Date of the invoice

"BuyerName":"Nguyễn Văn A Update",/// Name of the buyer

"BuyerTaxCode":"0104746603", /// The buyer’s tax code

"BuyerUnitName":"Công Ty Luật TNHH ABC", /// Name of the buyer’s Company/Organization

"BuyerAddress":"Nhà N2D Khu ĐT Trung Hoà-Nhân Chính, Phường Nhân Chính, Quận Thanh Xuân, Hà Nội",/// The buyer’s address

"BuyerBankAccount":"",/// The buyer’s bank account info, for example: 11111111111 – BIDV, Tay Ho Branch

"PayMethodID":1, /// Payment method: 1- In cash (by default), 2- Wire transfer, 3- In cash/wire transfer, 4-Shipping goods to branch, 5- Gifting/Giving away

"ReceiveTypeID":3, /// Types of invoice delivery: 1 email, 2 SMS, 3 email and SMS, 4 express service

"ReceiverEmail":"testABC@gmail.com",/// email to receive Invoice

"ReceiverMobile":"01789143399",/// Phone number to receive Invoice

"ReceiverAddress":"Nhà N2D Khu ĐT Trung Hoà-Nhân Chính, Phường Nhân Chính, Quận Thanh Xuân, Hà Nội",/// Physical address for Invoice delivery:

"ReceiverName":"Nguyễn Văn A",/// Name of the recipient

"Note":"Test eHoaDon",/// Note

"BillCode":"",/// Accounting ID or Bill code of the invoice

"CurrencyID":"VND",/// Currency ID: VND – Vietnam Dong (by default), USD – US Dollars, EUR – Euro, GBP – British Pound, CNY – Chinese Yuan, CHF - Swiss Franc etc.

"ExchangeRate":1.0, /// Exchange rate: 1 by default.

"InvoiceGUID":"00000000-0000-0000-0000-000000000000",/// ID generated by eHoadon system to communicate with other systems

"InvoiceStatusID":1, /// Invoice status (please refer to invoice status table for more details)

"InvoiceForm":"",/// Invoice Form No., must send when use CmdType 110 and 111

"InvoiceSerial":"",/// Invoice Serial No., must send when use CmdType 110 and 111

"InvoiceNo":0, /// Inovice No., must send when use CmdType 111

"InvoiceCode":null, /// Reference code

"SignedDate":"2017-09-20T09:43:06.7135334+07:00"/// Signed Date

},

"ListInvoiceDetailsWS":[

{

"ItemName":"Chữ ký số Bkav CA ENT BN (bao gồm Thiết bị USB Token) update",/// Name of items services, and/or discount content (IsDiscount = 1)

"UnitName":"Gói",/// Unit of the goods and/or services

"Qty":1.0, /// Quantity of the goods and/or services

"Price":600000.0, /// Prices of the goods and/or services

"Amount":600000.0, /// Total amount of the goods and/or services, or discount amount

"TaxRateID":3, /// Tax rate ID: 1 0%, 2 5%, 3 10%, 4 Not object to tax, 5 No tax clearance required, 6 Other (use for FCT as xxx,5.2% …)

"TaxAmount":60000.0, /// Total tax amount

"IsDiscount":false/// Is discount value on Invoice: 1- is discount amount, at 0 by default (use positive value for input, Bkav system will auto-calculate for final display value on eHoadon website)

}

],

"PartnerInvoiceID":0, /// Long-type Key BillId of Partner’s system (must select either PartnerInvoiceID or PartnerInvoiceStringID)

"PartnerInvoiceStringID":"aaaaaa", /// String-type Key BillId of Partner’s system (must select either PartnerInvoiceID or PartnerInvoiceStringID)

"IsSetInvoiceNo":false, /// The default value is false

"TransactionID":0, /// The default value is 0

"TransactionStringID":null /// The default value is null

}

]

}

### Object Result Returned by Webservice:

{

"Status":0,

"Object":[

{

"PartnerInvoiceID":0, /// Partner’s BillID in long type

"PartnerInvoiceStringID":" aaaaaa",/// Partner’s BillID in string type

"InvoiceGUID":"9ea9db57-b8c4-4149-9dce-2fd8b73712fd", /// Invoice GUID returned by Bkav after successfully generating invoice

"InvoiceForm":"01GTKT0/001",/// Invoice Form No.

"InvoiceSerial":"AA/17E",/// Invoice Serial No.

"InvoiceNo":0, /// CmdType 100 receives returned result of value 0, CmdType 101 receives invoice No. as the returned result.

"Status":0, /// Status of each Bill, 0: succeeded, 1: error

"MessLog":null /// If status = 1, details of error are returned.

}

],

"isOk":true,

"isError":false

}

## CmdType 800: Checking Invoice’s details

### Object CommandData

{

"CmdType":800,

"CommandObject":"7206dd3d-1302-457f-911d-0ab749a65cec" /// }

### Object Result returned by Webservice:

{

"Status":0,

"Object":"{

"Invoice":{

"InvoiceTypeID":1, /// Invoice Type: always at 1 (VAT invoice)

"InvoiceDate":"2017-09-20T09:43:06.7105319+07:00", /// Date of the invoice

"BuyerName":"Nguyễn Văn A Update",/// Name of the buyer

"BuyerTaxCode":"0104746603", /// The buyer’s tax code

"BuyerUnitName":"Công Ty Luật TNHH ABC", /// Name of the buyer’s Company/Organization

"BuyerAddress":"Nhà N2D Khu ĐT Trung Hoà-Nhân Chính, Phường Nhân Chính, Quận Thanh Xuân, Hà Nội",/// The buyer’s address

"BuyerBankAccount":"",/// The buyer’s bank account info, for example: 11111111111 – BIDV, Tay Ho Branch

"PayMethodID":1, /// Payment method: 1- In cash (by default), 2- Wire transfer, 3- In cash/wire transfer, 4-Shipping goods to branch, 5- Gifting/Giving away

"ReceiveTypeID":3, /// Types of invoice delivery: 1 email, 2 SMS, 3 email and SMS, 4 express service

"ReceiverEmail":"testABC@gmail.com",/// email to receive Invoice

"ReceiverMobile":"01789143399",/// Phone number to receive Invoice

"ReceiverAddress":"Nhà N2D Khu ĐT Trung Hoà-Nhân Chính, Phường Nhân Chính, Quận Thanh Xuân, Hà Nội",/// Physical address for Invoice delivery:

"ReceiverName":"Nguyễn Văn A",/// Name of the recipient

"Note":"Test eHoaDon",/// Note

"BillCode":"",/// Accounting ID or Bill code of the invoice

"CurrencyID":"VND",/// Currency ID: VND – Vietnam Dong (by default), USD – US Dollars, EUR – Euro, GBP – British Pound, CNY – Chinese Yuan, CHF - Swiss Franc etc.

"ExchangeRate":1.0, /// Exchange rate: 1 by default.

"InvoiceGUID":"00000000-0000-0000-0000-000000000000",/// ID generated by system to communicate with other systems

"InvoiceStatusID":1, /// Invoice status (please refer to invoice status table for more details)

"InvoiceForm":"",/// Invoice Form No., must send when use CmdType 110 and 111

"InvoiceSerial":"",/// Invoice Serial No., must send when use CmdType 110 and 111

"InvoiceNo":0, /// Inovice No., must send when use CmdType 111

"InvoiceCode":null, /// Reference code

"SignedDate":"2017-09-20T09:43:06.7135334+07:00"/// Signed Date

},

"ListInvoiceDetailsWS":[

{

"ItemName":"Chữ ký số Bkav CA ENT BN (bao gồm Thiết bị USB Token) update",/// Name of items services, and/or discount content (IsDiscount = 1)

"UnitName":"Gói",/// Unit of the goods and/or services

"Qty":1.0, /// Quantity of the goods and/or services

"Price":600000.0, /// Prices of the goods and/or services

"Amount":600000.0, /// Total amount of the goods and/or services, or discount amount

"TaxRateID":3, /// Tax rate ID: 1 0%, 2 5%, 3 10%, 4 Not object to tax, 5 No tax clearance required

"TaxAmount":60000.0, /// Total tax amount

"IsDiscount":false/// Is discount value on Invoice: 1- is discount amount, at 0 by default (use positive value for input, Bkav system will auto-calculate for final display value on eHoadon website)

}

],

"PartnerInvoiceID":0, /// Long-type Key BillId of Partner’s system (must select either PartnerInvoiceID or PartnerInvoiceStringID)

"PartnerInvoiceStringID":"aaaaaa", /// String-type Key BillId of Partner’s system (must select either PartnerInvoiceID or PartnerInvoiceStringID)

"IsSetInvoiceNo":false, /// The default value is false

"TransactionID":0, /// The default value is 0

"TransactionStringID":null /// The default value is null

}",

"isOk":true,

"isError":false

}

## CmdType 801: Checking Invoice’s Status

### Object CommandData

{

"CmdType":801,

"CommandObject":"E4EBAB10-265A-4F18-8513-9F58B8B2C346"/// InvoiceGUID returned by Bkav after successfully generating new invoice

}

### Object Result returned by Webservice

{    
   "Status":0,  
   "Object":11, //

   "isOk":true,  
   "isError":false  
}

## CmdType 802: Checking Invoice’s process history

### Object CommandData

{

"CmdType":802,

"CommandObject":"E4EBAB10-265A-4F18-8513-9F58B8B2C346"/// InvoiceGUID returned by Bkav after successfully generating new invoice

}

### Object Result returned by Webservice

{

"Status":0,

"Object":"[

{

"FuncId":0,

"STT":1,

"UserName":"3700256179", /// The username which was used to generate invoice.

"ID":0,

"CreateDate":"2017-09-18T16:08:22.437", /// Date of generating invoice

"IP":null,

"UserID":0,

"ObjectGUID":"00000000-0000-0000-0000-000000000000",

"LogContent":"Cập nhật Hóa đơn: Trạng thái: <b>Mới tạo</b>; Mẫu số: <b>01GTKT0/001</b>; HTTT: <b>Chuyển khoản</b>; Cấp số: 0000005; Lý do: abc"s

},

{

"FuncId":0,

"STT":2,

"UserName":"3700256179",

"ID":0,

"CreateDate":"2017-09-18T15:36:38.957",

"IP":null,

"UserID":0,

"ObjectGUID":"00000000-0000-0000-0000-000000000000",

"LogContent":"Thêm Hàng hóa, dịch vụ: <b>phôi thép</b>; Thành tiền: <b>40.000.000</b>; Tiền thuế: <b>4.000.000</b>"

},

{

"FuncId":0,

"STT":3,

"UserName":"3700256179",

"ID":0,

"CreateDate":"2017-09-18T15:36:38.95",

"IP":null,

"UserID":0,

"ObjectGUID":"00000000-0000-0000-0000-000000000000",

"LogContent":"Thêm mới Hóa đơn: Ký hiệu: <b>AA/17E</b>; Ngày Hóa đơn: <b>18/09/2017</b>"

}

]",

"isOk":true,

"isError":false

}