

BIXOLON®

API Reference Guide

Web Driver

Rev. 1.05

<http://www.bixolon.com>

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1. Manual Guide

This manual contains the information needed to create applications in using BIXOLON's label printers, POS printers and mobile printers with the BIXOLON Web Driver.

Those who are using the Web Driver are recommended to carefully read the instructions in this manual prior to use.

2. Web Driver Overview

2-1 Features

- The web driver enables to easily control a BIXOLON printer from a web browser.



Caution

From Web Driver V1.0.4, The default listen port is changed to 18080.

2-2 Terminology

- BIXOLON Label SDK: SDK used in web driver to control the label printer
- B-gate SDK: SDK used to control POS printer and mobile printer in web driver
- JSON: An abbreviation for JavaScript Object Notation, a lightweight data-interchange format to send and receive simple data with.

2-3 Supported O/S & Web Browser

2-3-1 Windows

- Microsoft Windows XP (32bit/64bit)
- Microsoft Windows VISTA (32bit/64bit)
- Microsoft Windows 7 (32bit/64bit)
- Microsoft Windows 8 (32bit/64bit)
- Microsoft Windows 10 (32bit/64bit)

2-3-2 Web Browser

- jQuery and XMLHttpRequest Object-enabled web browser
 - IE10 or later
 - Edge
 - Chrome

2-4 Supported printer models

2-4-1 Label printer

SLP-TX400 / SLP-TX403 / SLP-TX420 / SLP-TX423 / SLP-TX220 / SLP-TX223
SLP-DX420 / SLP-DX423 / SLP-DX220 / SLP-DX223 / SLP-DL410 / SLP-DL413
SRP-770II / SRP-770III / SRP-E770III
XT5-40 / XT5-43 / XT5-46
SPP-L3000
SPP-L310 / SPP-L410
XD3-40d

2-4-2 POS printer

SRP-S300
SRP-Q300 / SRP-Q302 / SRP-QE300 / SRP-QE302
SRP-380 / SRP-382 / SRP-383
SRP-F310II / SRP-F312II / SRP-F313II
SRP-350III / SRP-352III / SRP-350plusIII / SRP-352plusIII
SRP-330II / SRP-332III / SRP-340II / SRP-342II
SRP-E300 / SRP-E302
SRP-Q200

2-4-3 Mobile printer

SPP-R210 / SPP-R220 / SPP-R200III
SPP-R310
SPP-R410 / SPP-R400II

2-4-4 B-gate

BGT-100P / BGT-102P
SRP-Q300H / SRP-Q302H
IFJ-BGT(B-gate I/F type)

3. Web Driver Installation

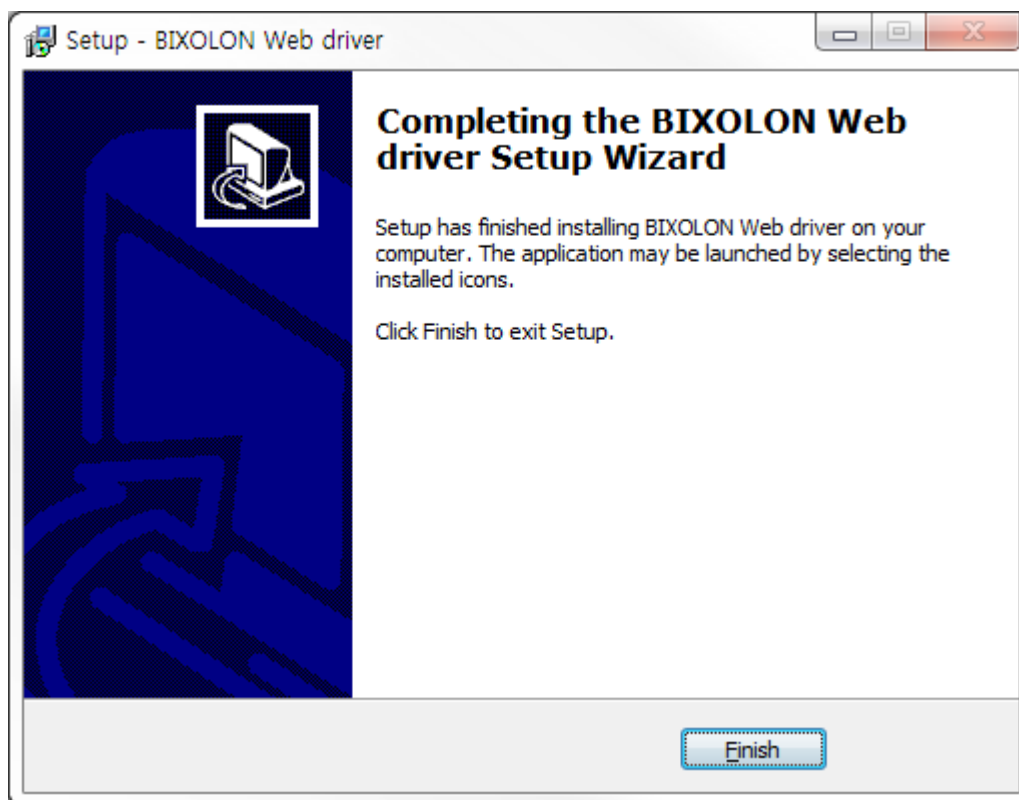
3-1 Overview

- You can install the web driver and set up the printer to be connected to the PC, and enable the necessary settings to run the web server included in the web driver.

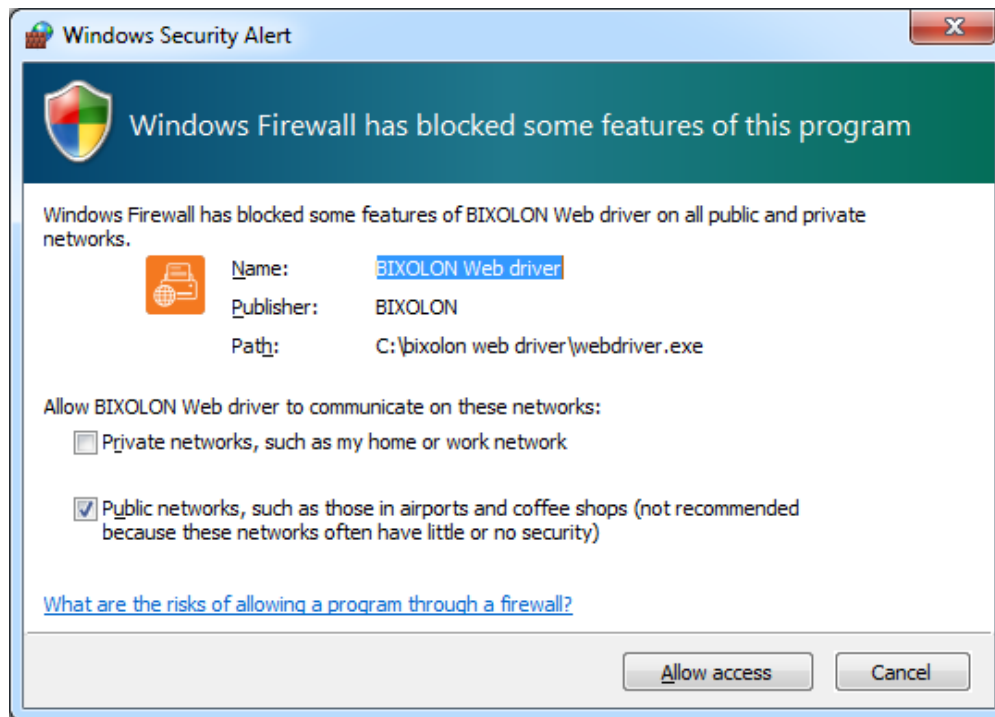
3-2 Installation and Uninstallation of Web Driver

3-2-1 Installation

- 1) Run the Software_BIXOLON_Web_driver_Setup.exe file and follow the prompts to proceed with the installation.
- 2) After completing installation, click 'Finish'.



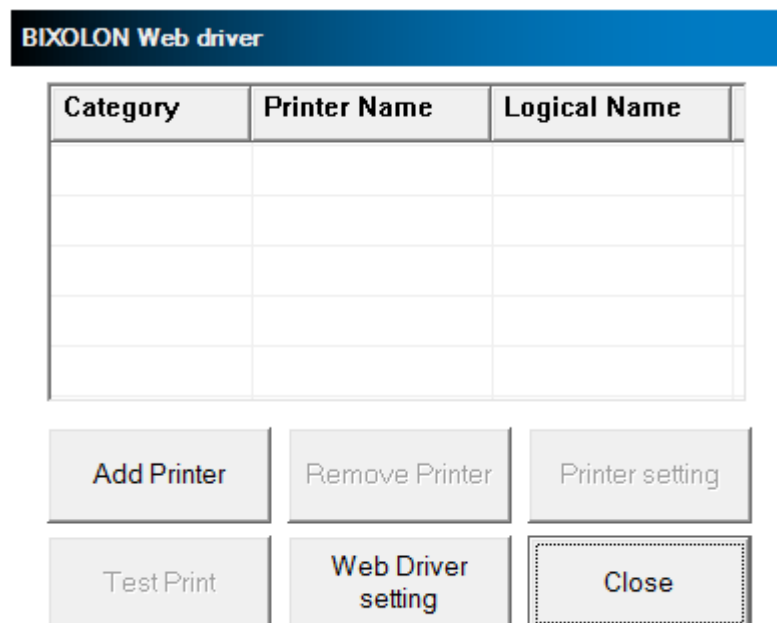
3) If a firewall setting screen is displayed as below, click 'Allow access'.



Caution

If you do not allow access at the firewall, the web driver may not operate normally.

4) The following screen is displayed as the web driver is running.

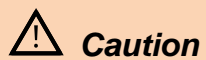
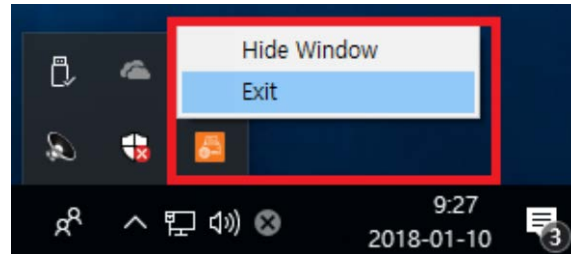


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3-2-2 Uninstallation

Exit the currently running web driver before uninstalling the web driver.

To exit the web driver, right-click on the tray icon at the bottom right of the screen and click 'Exit'.



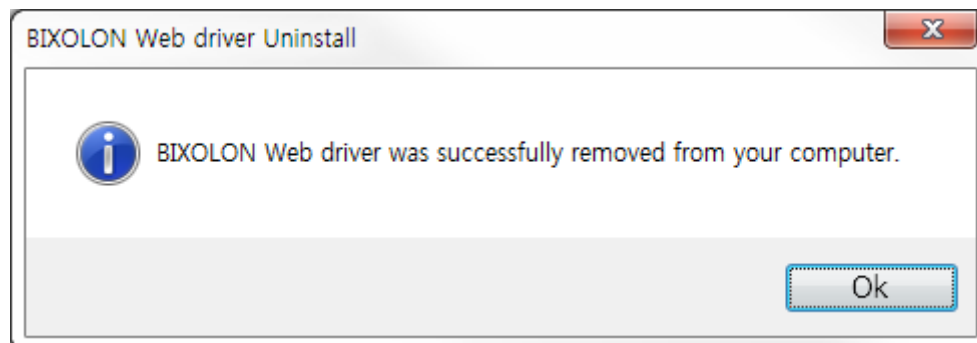
Caution

If you do not exit the web driver, it will not be uninstalled normally.

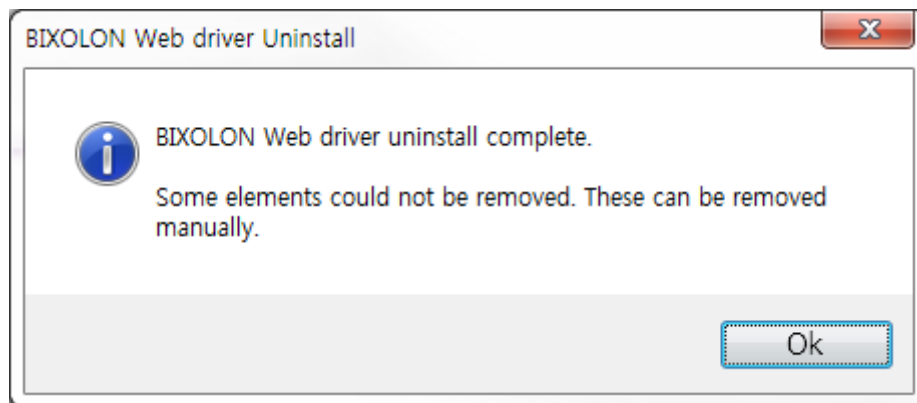
1) Select 'Uninstall BIXOLON Web driver' from 'Start' - 'Programs' - 'BIXOLON Web driver' or delete 'BIXOLON Web driver' from 'Control Panel' - 'Add / Remove Programs'.

When the uninstallation screen is displayed, follow the prompts and click the button.

2) In case of normal uninstallation, the following message window appears. Click "OK."



- 3) In case of abnormal uninstalling, the following message window appears. Select "OK".
In this case, find the installation folder of web driver and delete the remaining files.

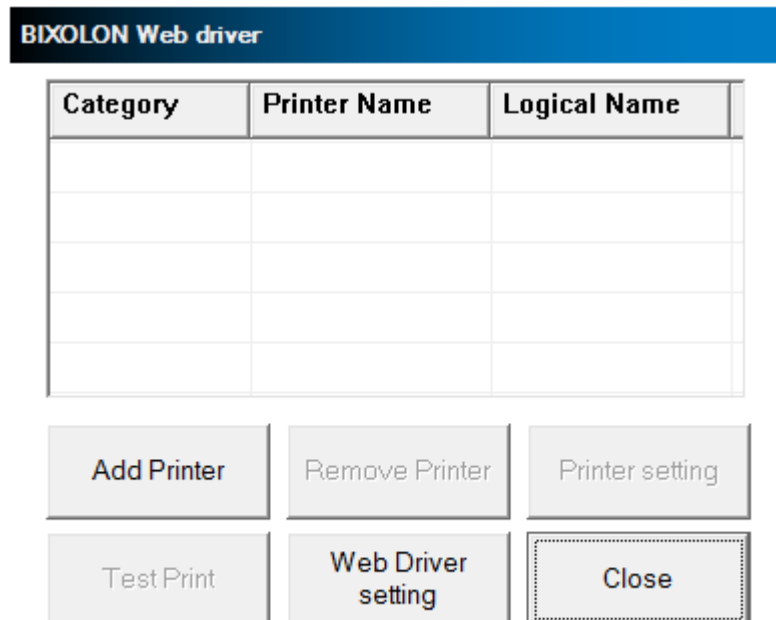


Note

Default installation path : C:\BIXOLON Web driver

3-3 Printer Settings

- You can set the printer to be used by web driver. The printer must be connected to a PC running the web driver. You can add a printer and modify/delete settings of registered printers.



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3-3-1 Add printer

1) Click 'Add Printer'.

Specify 'Logical name', configure the communication settings of the connected printer, and click 'Save'.

Printer setting

Printer Type : Label Printer

Logical name : Printer1

Device name : SLP-DX420

Interface type

USB Serial LPT

Ethernet Bluetooth

Communication setting

Port : SLP-DX420

BaudRate : 9600

Databits : 8

Parity : NONE

Stopbit(s) : 1

Flow Control : DTR/DSR

Test Print Save Close

 **Caution**

- If 'Printer Type' is different from the connected printer, it may not operate normally. Choose the right product for your BIXOLON product line.
- If 'Logical name' is not specified, the printer cannot be used in web application.
- If USB is selected when there is no USB connected printer, the message 'No printers connected' is displayed and 'Serial' is selected.

2) If you click 'Search' button for 'Ethernet' communication setting, the IP address of the printer in the same network with the PC is displayed. If the printer's IP is not displayed, you can enter it manually.

The image shows a 'Printer setting' dialog box with the following fields and options:

- Printer Type: Label Printer (dropdown)
- Logical name: Printer1 (text field)
- Device name: (empty text field)
- Check status
- Interface type:
 - USB
 - Serial
 - LPT
 - Ethernet
 - Bluetooth
- Communication setting:
 - Search (button, highlighted with a red box)
 - IP: (text field)
 - TCP port: 9100 (text field)
 - Databits: 8 (dropdown)
 - Parity: NONE (dropdown)
 - Stopbit(s): 1 (dropdown)
 - Flow Control: DTR/DSR (dropdown)
- Test Print (button)
- Save (button)
- Close (button)

Name	Description
Printer Type	The printer type is displayed.
Logical name	The name of the printer to which the web application will request printing.
Device name	The name of the physical device.
Interface type	Interface of the connected printer.
Port	USB: Display the name of the connected printer or USB information. Serial or Bluetooth: Select COM port. LPT: Select LPT port. Ethernet: IP address.
Test Print	Print test of the currently connected printer.

3) After completing the printer setup, the list of registered printers appears as below.

BIXOLON Web driver

Category	Printer Name	Logical Name
LabelPrinter	SLP-DX420	Printer1

Add Printer Remove Printer Printer setting

Test Print Web Driver setting Close

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3-3-2 Delete printer

Select the printer to be deleted from the printer list, and then click 'Remove Printer'.
The selected printer will be deleted from the list.

3-3-3 Modify printer settings

Select the printer to be modified from the printer list and click 'Printer setting'.
The same screen as 'Add printer' is displayed.

3-3-4 Print test

Select the printer to be tested from the printer list and click 'Test Print'.
Check whether the printer prints, or not.



Caution

If printing does not work, check the communication settings.

3-4 Web Driver Configuration

- You can configure the web driver.

1) Click 'Web Driver setting'.

BIXOLON Web driver

Category	Printer Name	Logical Name
LabelPrinter	SLP-DX420	Printer1

Add Printer

Remove Printer

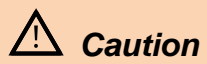
Printer setting

Test Print

Web Driver setting

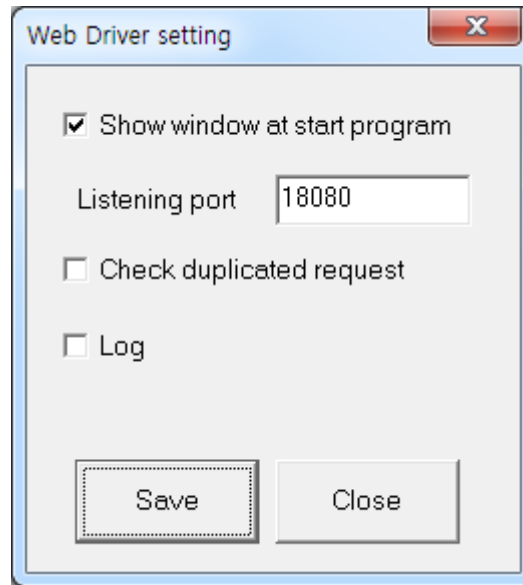
Close

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Caution

The web driver setting is applied when re-running after saving.



3-4-1 Show window at start program

- You can set whether to show the Web Driver window.

When the window is not visible, it is displayed as a Tray icon. The default is set to 'Show window at start program'.

3-4-2 Set the listening port

- You can set the listening port of the web driver. Listening port is the port number on which the Web Driver handles data requests of the web application. The default value is 18080.

3-4-3 Check duplicated request

- If a web browser requests duplicated data, it can be checked by the Web Driver. The default value is 'Uncheck duplicated request'.

3-4-4 Log

- You can record the log of Web Driver. The default value is 'disabled'.

4. Web Driver API Reference

4-1 Overview

- The web driver provides basic functions to control the printer. The web browser uses XmlHttpRequest Object to request to the web driver and JSON for the data format to be transferred.
- The sample are located installation folder and consists of the following:
 - bxlcommom.js : Print request and check result
 - Sample_PosPrinter.html : receipt printer sample(Include sample JSON data)
 - Sample_LabelPrinter.html : label printer sample(Include sample JSON data)



Note

The samples are located in installation folder.

Default installation path : C:\BIXOLON Web Driver

4-2 Generating JSON Data

- To request data processing to the web driver, the mode value, id value of each request, and print request data must be included.

4-2-1 mode

- Data processing mode value. Print request data must be generated according to the data processing mode.

Value	Spec
0	API mode
1	Text mode
2	Hex string mode

4-2-2 id

- It is a value to prevent duplicated processing of same data in web driver.
Only numeric values are allowed. The duplicated processing option can be disabled.

*sample code

```
{“mode”:0,  
  “id”:1,  
  ...  
}
```

4-2-3 Print request data

1) API mode

*sample code

```
{
  "mode":0, //API mode
  "id":1,
  "functions":{
    "func1":{"function name":[func1 parameters]},
    "func2":{"function name":[func2 parameters]},
    ....
    "funcN":{"function name":[funcN parameters]}
  }
}
```



Note

- For more information about APIs when generating label print request data, see the BIXOLON Label SDK manual.
- For more information about APIs when generating print request data of POS printers and mobile printers, see the B-gate SDK manual.

2) Text mode

Without modification, data are transferred to the printer. For label printers, label emulation can be used as it is.

*sample code

```
{
  "mode":1, //text mode
  "id":1,
  "functions":{
    "data": "Web driver text mode sample\n"
  }
}
```

3) Hex string mode

The data to be sent to the printer is used as a hex string. For POS printers and mobile printers, you can use hex string.

*sample code

```
{
  "mode":2, //Hex string mode
  "id":1,
  "functions":{
    "data":"776562206472697665722074657874206d6f64652073616d706c650a"
  }
}
```


4-3 bxlcommon.js



Note

- Request URL of Web Driver : <http://127.0.0.1:18080/webdriver/>
- the 'var serverURL' variable is declared in the js file

4-3-1 Request Printing

- Create an XmlHttpRequest Object to make a print request.
The order of print requests is shown below.

- 1) Create an XmlHttpRequest object.

```
//----- Sample code for create an XmlHttpRequest object -----  
var httpRequest;  
if (window.XMLHttpRequest) {  
    httpRequest = new XMLHttpRequest();  
} else if (window.ActiveXObject) { // IE 6  
    httpRequest = new ActiveXObject("Microsoft.XMLHTTP");  
}
```

2) Request printing to Web Driver's print request URL.

Example code for requesting printing to 'Printer1' set by the Web driver.

* sample code

```
function requestPrint(strPrinterName, strSubmit, _callback) {
    var requestURL = serverURL + strPrinterName + ".bxl";
    var xmlhttpReq = false;

    if (window.XMLHttpRequest) { // Chrome/Mozilla/Safari, IE7 or later
        xmlhttpReq = new XMLHttpRequest();
    }

    //make XmlHttpRequest Object

    xmlhttpReq.open('POST', requestURL, true);
    xmlhttpReq.setRequestHeader('Content-Type', 'application/x-www-form-urlencoded');
    xmlhttpReq.send(strSubmit);

    xmlhttpReq.onreadystatechange = function() {
        if (xmlhttpReq.readyState == 4 && xmlhttpReq.status == 200) {
            var res = JSON.parse(xmlhttpReq.responseText);
            var ret = res.Result;
            if (ret.search("ready") >= 0 || ret.search("progress") >= 0) {
                //If response is not properly, can select POST or GET method.
                checkResult('POST', strPrinterName, res.RequestID, res.ResponseID, _callback);
                //checkResult('GET', strPrinterName, res.RequestID, res.ResponseID, _callback);
            }
            else if (ret.search("duplicated") >= 0) {
                _callback(res.Result);
            }
        }
        else if (xmlhttpReq.readyState == 4 && xmlhttpReq.status == 404) {
            _callback("No printers");
        }
        else if (xmlhttpReq.readyState == 4) {
            _callback("can't connect to server");
        }
    }
}
```

4-3-2 Print result check request

- Create XmlHttpRequest Object to request print result verification.

The order of the request for confirmation of the print result is as follows:

- 1) Create an XmlHttpRequest object.
- 2) Creating JSON data for printing result verification

```
function makeResultInquiryData(requestId, responseId, timeout) {  
    return "{\"RequestID\":\""+requestId+"\", "  
           "\"ResponseID\":\""+responseId+"\", "  
           "\"Timeout\":\""+timeout+"\"}";  
}
```

- 3) Request to print result URL



Print result requests support both 'GET' and 'POST' methods. Please be aware that URLs vary depending on the method.

This example code checks the print request result in 'Printer 1'.

* sample code

```
function checkResult(method, strPrinterName, requestId, responseId, _callback) {
    var requestURL = serverURL + strPrinterName + "/checkStatus.bxl"; //POST
    if(method == 'GET'){
        requestURL = serverURL + strPrinterName + "/" + responseId; //GET
    }

    var xmlHttpCheck = false;
    if (window.XMLHttpRequest) {
        xmlHttpCheck = new XMLHttpRequest();
    }

    var inquiryData = makeResultInquiryData(requestId, responseId, 30);

    xmlHttpCheck.open(method, requestURL, true);
    xmlHttpCheck.setRequestHeader('Content-Type', 'application/x-www-form-urlencoded');
    xmlHttpCheck.send(inquiryData);
    xmlHttpCheck.onreadystatechange = function() {
        if (xmlHttpCheck.readyState == 4 && xmlHttpCheck.status == 200) {
            var res = JSON.parse(xmlHttpCheck.responseText);
            var ret = res.Result;
            if(ret.search("ready") >= 0 || ret.search("progress") >= 0) {
                checkResult(method, strPrinterName, requestId, responseId, _callback);
            }
            else {
                _callback(res.ResponseID + ":" + ret);
            }
        }
        else if (xmlHttpCheck.readyState == 4 && xmlHttpCheck.status == 404) {
            _callback("No printers");
        }
        else if(xmlHttpCheck.readyState == 4) {
            _callback("cannot connect to server");
        }
    }
}
```

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Caution

Some semiconductor devices are easily damaged by static electricity. You should turn the printer "OFF", before you connect or remove the cables on the rear side, in order to guard the printer against the static electricity. If the printer is damaged by the static electricity, you should turn the printer "OFF".

