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Server Direct Print
User's Manual

Overview
Describes the operating environment and system configuration of Server Direct Print.

Sample Program
Describes how to use the sample program and how to configure the system.

Request and Response
Describes the requests and responses of Server Direct Print.

Status Notification
Describes the Status Notification function.

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About this Manual

Aim of the Manual

This manual provides the information necessary for developing and designing systems with the Server Direct Print and Status Notification function for TM printers with SDP (Server Direct Print) support.

Manual Content

The manual is made up of the following sections:

Contents

Overview

This chapter describes the overview of Server Direct Print and Status Notification.

Overview of Server Direct Print

Server Direct Print function enables the TM printers with SDP (Server Direct Print) support to obtain the print data from the Web server and print the data. The Web server application performs printing by including print data in the response to a print request from the TM printers with SDP support.

(1) Request
(2) Response
    <Data to be printed>

(3) TM printer print data
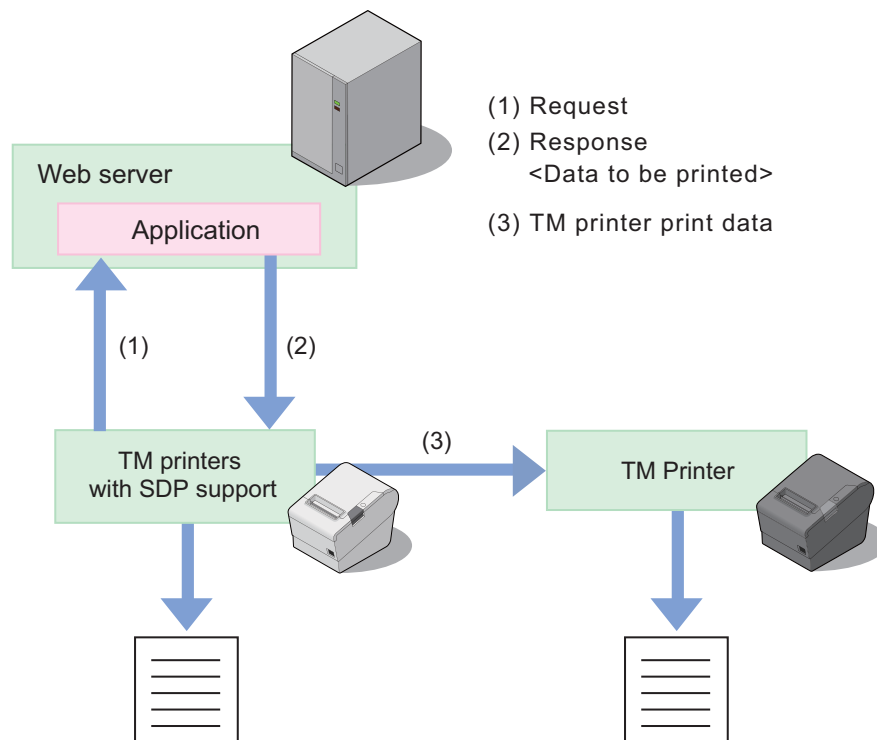
A TM printer with SDP support periodically sends a print request ((1) in the figure above) to the Web server.

The Web server application includes print data in the response ((2) in the figure above) to a print request from the TM printers with SDP support. (When no print data exists, the Web server returns an empty response.)

If print data for the TM printer is included in a response, the TM printers with SDP support controls the TM printer in order to do the printing ((3) in the figure above).

The print data can be printed in the ePOS-Print XML format.

Upon receipt of a response of print data including print layout from the Web server application, the TM printers with SDP support converts the ePOS-Print XML format into the print layout and prints it.

If the spooler is enabled in the TM printers with SDP support, print data can be saved in the spooler, which allows an operation in which the next print request can be processed regardless of the printer status. [1]

In a system consisting of multiple printers, if forwarding is set in the TM printers with SDP support, print data can be printed from another printer when it cannot be printed from the printer. [1]

It also allows you to control display of a Customer Display connected to the printer. [2]

[1]: TM-i series (TM-i Firmware Ver.4.0 or earlier) and TM-DT series (TM-DT Software Ver.2.6 or earlier) are not supported.

[2]: Only for TM-T88VI and TM-T88VI-iHUB.

Difference from General Printing System

In general printing systems, the application sends a print instruction to the printer.

With Server Direct Print, the printer sends an Inquiry of print request to the Web application, and the Web application returns a response that has print data included in it.

General Printing

Computer

Application

Specifies a printer

Print layout data

TM Printer

Print data

Server Direct Print

Web Server

Application

Global IP Address

TM printers with SDP support
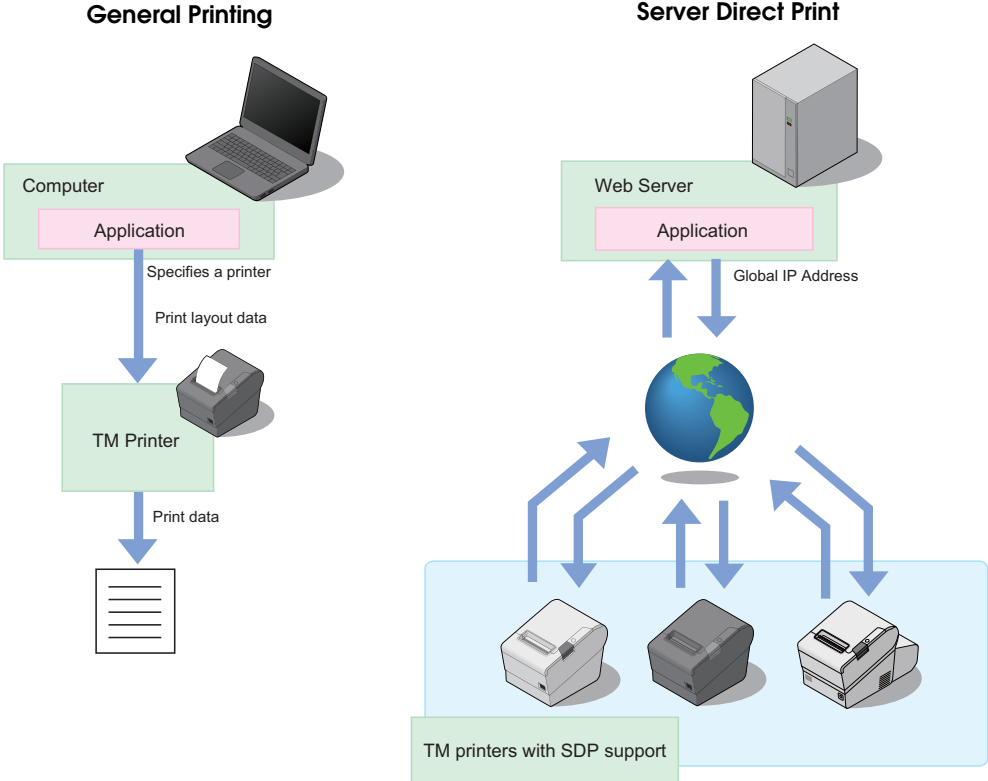
Printing Process

1 TM printers with SDP support sends a request (print request) to the Web server. This request is sent periodically at the set timing.

2 When data to be printed exists, the Web server application creates an XML-format response containing the data to be printed, and returns it to the TM printers with SDP support.
When no data to be printed exists, an empty response is returned.

3 TM printers with SDP support prints the data to the specified printer.

4 TM printers with SDP support sends a printing result request (printing result). *

5 Upon receipt of the printing result, the application performs the required process. The Web server automatically responds with an empty response.

*: If the spooler is enabled in the TM printers with SDP support, a request (print result) is returned upon receipt of a response (print request).
(For TM-i Firmware Ver.4.1 or later of the TM-i series. For TM-DT Software Ver.3.0 or later of the TM-DT series. For TM-T88VI)

The printing flow is as follows:
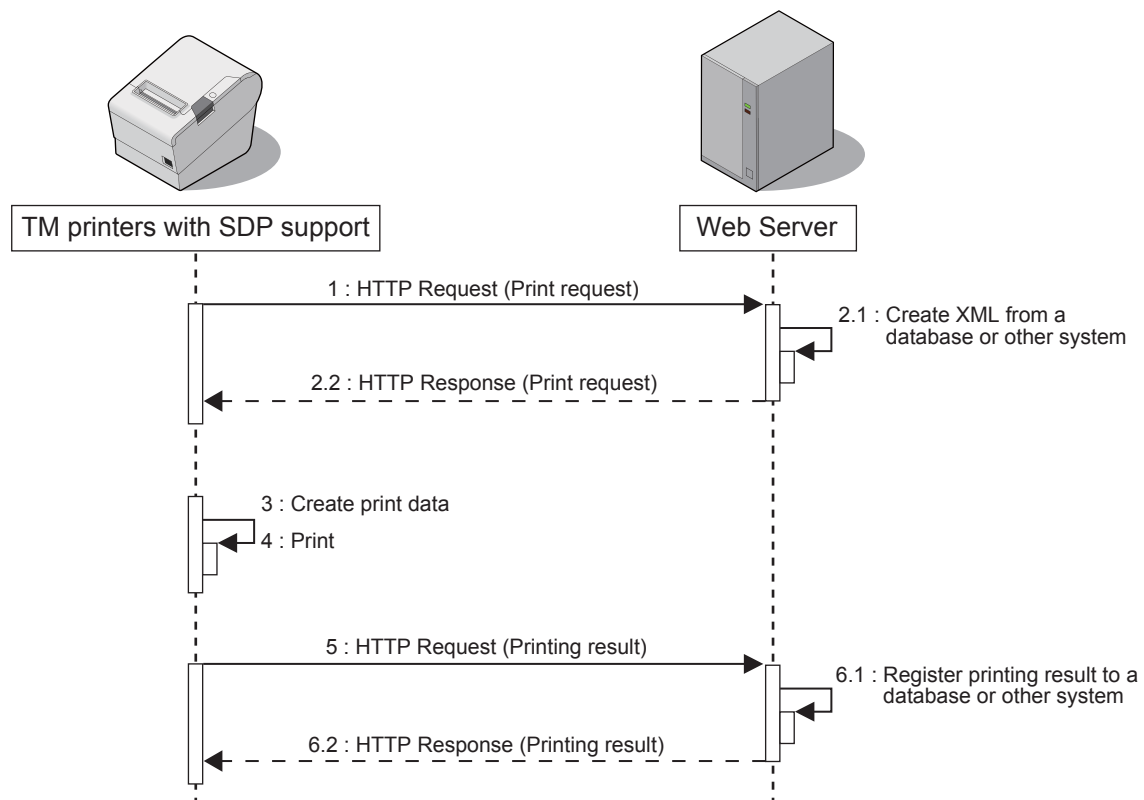
Response Data

When the Web server creates HTTP response (print request) data, the following points must be considered.

HTTP Response (Print request) version

Some functions can be added by specifying the <PrintRequestInfo> tag version of HTTP response (print request). These functions may be unavailable depending on the TM printers with SDP support model or version.

The syntax of the HTTP request (printing result) from a TM printer with SDP support is different depending on the <PrintRequestInfo> tag version.

There is no compatibility between versions. Check the printer before use.

<PrintRequestInfo> Tag Version	TM printers with SDP support			Function		
	TM-i series	TM-DT series	TM-T88VI/ TM-T88VI-iHUB	Print job ID	Customer display control	Response File Notification
<PrintRequestInfo Version="1.00"> <PrintRequestInfo> : No version specified	All version	All version	All version	Unavailable	Unavailable	Unavailable
<PrintRequestInfo Version="2.00">	TM-i firmware Ver.4.1 or later	TM-DT software Ver.3.0 or later	All version	Available	Unavailable	Unavailable
<PrintRequestInfo Version="3.00">	Unavailable	Unavailable	All version	Available	Available	Available

Overview of Status Notification

Status Notification is the function used to periodically notify the printer status to the Web server. The web server registers status from a TM printer with SDP support to database, then responds with an empty response to the TM printers with SDP support.

Operating the printer management application created by the user with the Web server enables grasp of the status of the printers installed in a shop from a remote place.

TM printers with SDP support Web Server

1 : HTTP Request (Status Information)

2 : Register the status to the database

2.1 : HTTP Response (Status Information)
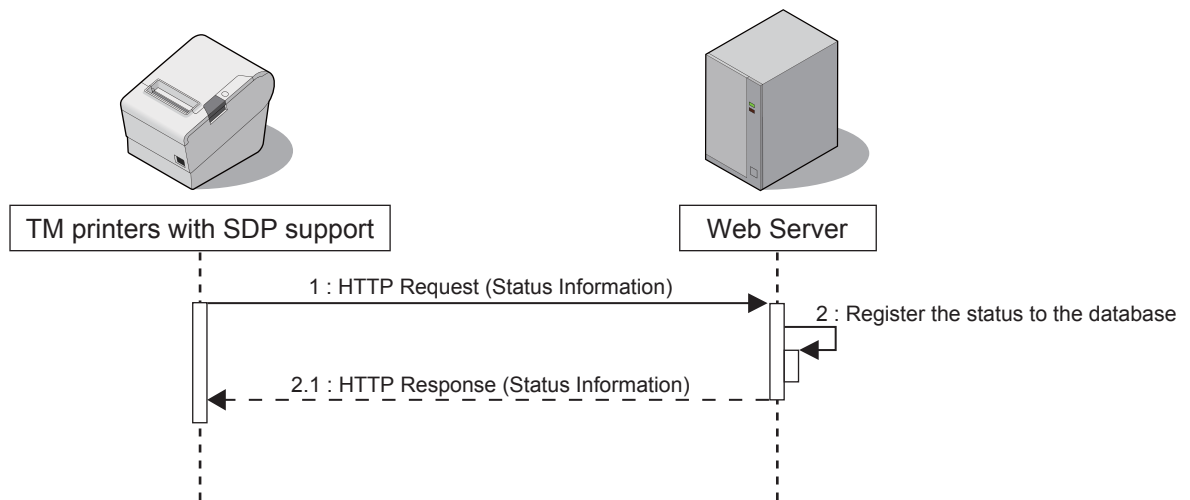
Operating Environment

TM printers with SDP support

The TM printers with SDP support that allow you to use Server Direct Print are listed below.

TM printers with SDP support		Software
TM-i series	TM-L90-i	TM-i firmware Ver.3.0 or later
	TM-T20II-i	TM-i firmware Ver.4.3 or later
	TM-T70-i	TM-i firmware Ver.3.0 or later
	TM-T82II-i	
	TM-T83II-i	
	TM-T88V-i	
	TM-U220-i	All firmware version
TM-DT series	TM-H6000IV-DT	TM-DT software Ver.2.2 or later
	TM-T70II-DT	
	TM-T88V-DT	
TM-T88VI		All firmware version
TM-T88VI-iHUB		All firmware version

For details about how to check the version of Software, refer to the Technical Reference Guide for each printer.

TM Printer

TM printers that can be controlled via the TM printers with SDP support.

Available TM printers are different depending on the version of the software installed in the product. For details, refer to the Technical Reference Guide for each printer.

How to Access the Web server

How to access	TM-i series	TM-DT series	TM-T88VI/ TM-T88VI-iHUB
Proxy server	TM-i firmware Ver.4.0 or later	TM-DT software Ver.3.0 or later	All firmware version
Proxy authentication	TM-i firmware Ver.4.0 or later	TM-DT software Ver.3.0 or later	All firmware version
Digest authentication	TM-i firmware Ver.4.0 or later	TM-DT software Ver.2.2 or later	All firmware version
HTTPS communication	TM-i firmware Ver.4.0 or later	TM-DT software Ver.2.2 or later	All firmware version
HTTPS communication with server authentication	TM-i firmware Ver.4.0 or later	TM-DT software Ver.3.0 or later	All firmware version
TLS 1.2 support	TM-i firmware Ver.4.4 or later *	TM-DT software Ver.3.0 or later	All firmware version

*: SSL3.0 is not support.

Number of URLs accessible for Server Direct Print

Model	Version	Number of URLs accessible
TM-i series	TM-i firmware Ver.4.0 or later	3
	TM-i firmware Ver.3.x or earlier	1
TM-DT series	TM-DT software Ver.3.0 or later	3
	TM-DT software Ver.2.6 or earlier	1
TM-T88VI/ TM-T88VI-iHUB	All firmware version	3

Customer Display

The following customer displays can be controlled via the TM-T88VI and the TM-T88VI-iHUB:

❏ DM-D30

❏ DM-D110

Contents In the Package

Manual

❏ Server Direct Print User's Manual (This Document)

❏ ePOS-Print XML User's Manual

❏ Technical Reference Guide for each printer

Sample Program

The sample program included in the package of this manual consists of the following programs:

File name	Description
SDP_Sample_Vx.x.xE.zip	Contains a sample program for Server Direct Print.
epsonsample.zip	Contains a sample program for ePOS-Print XML.
README.txt	Describes the changes from the previous version.

Utility

Used to register NV logo to the printer.

Utility		TM printers with SDP support
Utility specialized for each model	TM-H6000IV Utility	• TM-H6000IV-DT
	TM-T20II Utility	• TM-T20II-i
	TM-T70II Utility	• TM-T70II-DT
	TM-T82II Utility	• TM-T82II-i
	TM-T83II Utility	• TM-T83II-i
	TM-T88V Utility	• TM-T88V-DT, TM-T88V-i
	TM-T88VI Utility	• TM-T88VI, TM-T88VI-iHUB
Logo registration utility (TMFLogo)		• TM-L90-i
		• TM-T70-i
		• TM-U220-i

> For the utility to register the NV logo to a printer other than the TM printers with SDP support, refer to the Technical Reference Guide for each printer.

Download

For customers in North America, go to the following web site:

http://www.epson.com/support/ and follow the on-screen instructions.

For customers in other countries, go to the following web site:

https://download.epson-biz.com/?service=pos

Restriction

❏ If power is restored the device or the cover is open during printing, printing may not occur properly.

❏ To turn the device power off and on, be sure to allow an interval of five seconds or more between power off and on.

❏ Use a switching hub to connect the device.
If no switching hubs are used, the device in online status is more likely to be judged as offline depending on the traffic condition.

❏ The drawer can be controlled when the TM printer with SDP support is online (when the roll paper is loaded and the roll paper cover is closed). When the printer is offline, it can be controlled using the ePOS-Print XML forced transmission mode.
The following printers are not supported.

- TM-i series: TM-i Firmware Ver.3.0 or earlier
- TM-DT series: TM-DT Software Ver.2.2 or earlier

❏ When the specified timeout time has passed after printing starts, the printing is canceled, but the data recognized by the printer before print canceling process starts is printed.

❏ Messages that contain BOM are not supported.

❏ The only supported character encoding is UTF-8.

❏ Maximum size of data that can be transmitted at once are below.

- TM-T88VI and TM-T88VI-iHUB
  2 MB

- TM-i series/ TM-DT series
  These values depend on the TM-i firmware or TM-DT software version, and on the printing speed of the printer. For details regarding the printing speed of the printer, refer to the Technical Reference Guide for each TM printer.

TM-i series	TM-DT series	Printing speed	
Firmware version	TM-DT Software version	300 mm/s	200 mm/s
Ver.4.0 or earlier	Ver.2.5 or earlier	200 KB	133 KB
Ver.4.1	-	400 KB	267 KB
Ver.4.3 or later	Ver.3.0 or later	2 MB	

Sample Program

This chapter describes how to use the sample program for Server Direct Print.

> • In this chapter, a system configuration using a Web server is explained as an example.
> • In this chapter, the Web server is described as a Web server configured with IIS (Microsoft Internet Information Services).
>   When using other environment, interpret the descriptions accordingly.

Overview

Use the sample program screen to enter orders. The Web server sends a response containing print data for a request sent from the TM printers with SDP support. The TM printers with SDP support uses the returned response data to print a delivery slip to the main unit and two pieces of cooking slip to the TM printer. The print results appear on the screen.
Different programs are available for each <PrintRequestInfo> version.

Version 1.00
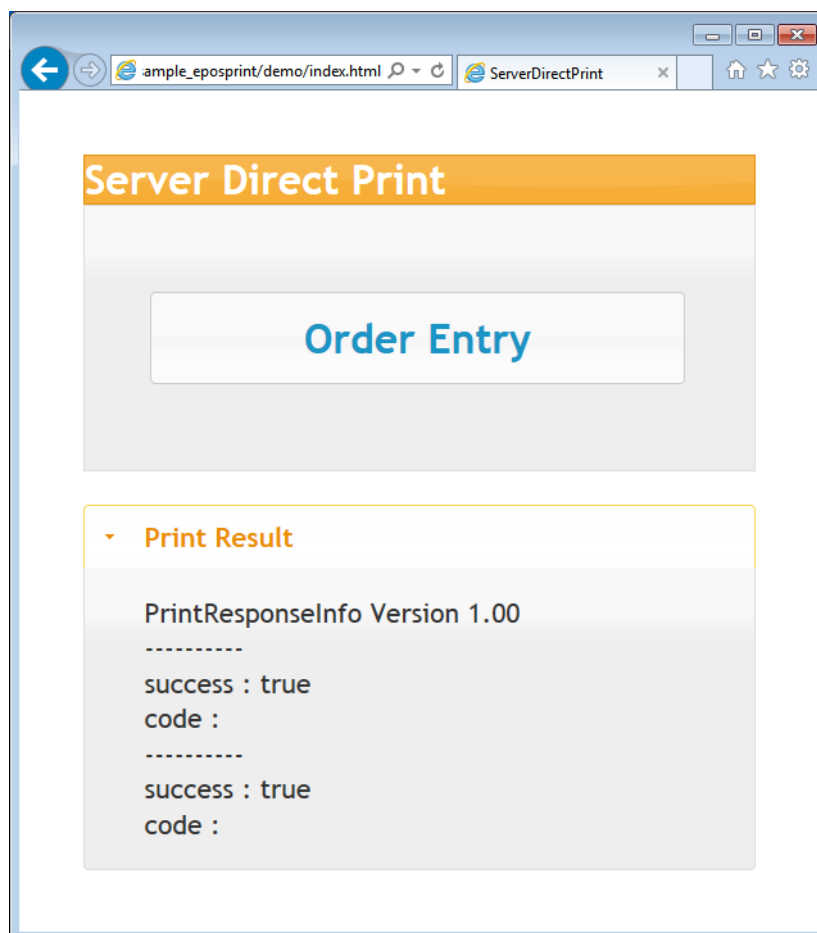
Version 2.00

> Supported printers are below.
> * TM-i series TM-i firmware Ver.4.1 or later
> * TM-DT series TM-DT software ver.3.0 or later
> * TM-T88VI
> * TM-T88VI-iHUB
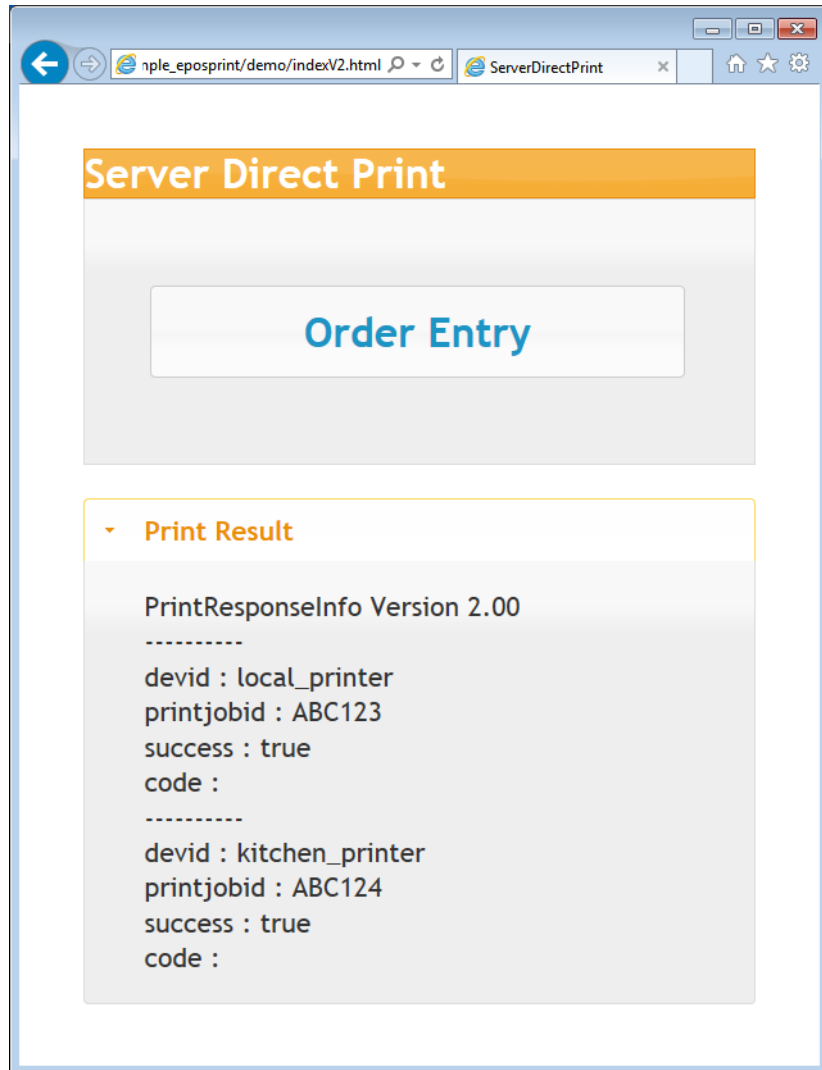
Version 3.00

Supported printers are below.
*   TM-T88VI
*   TM-T88VI-iHUB
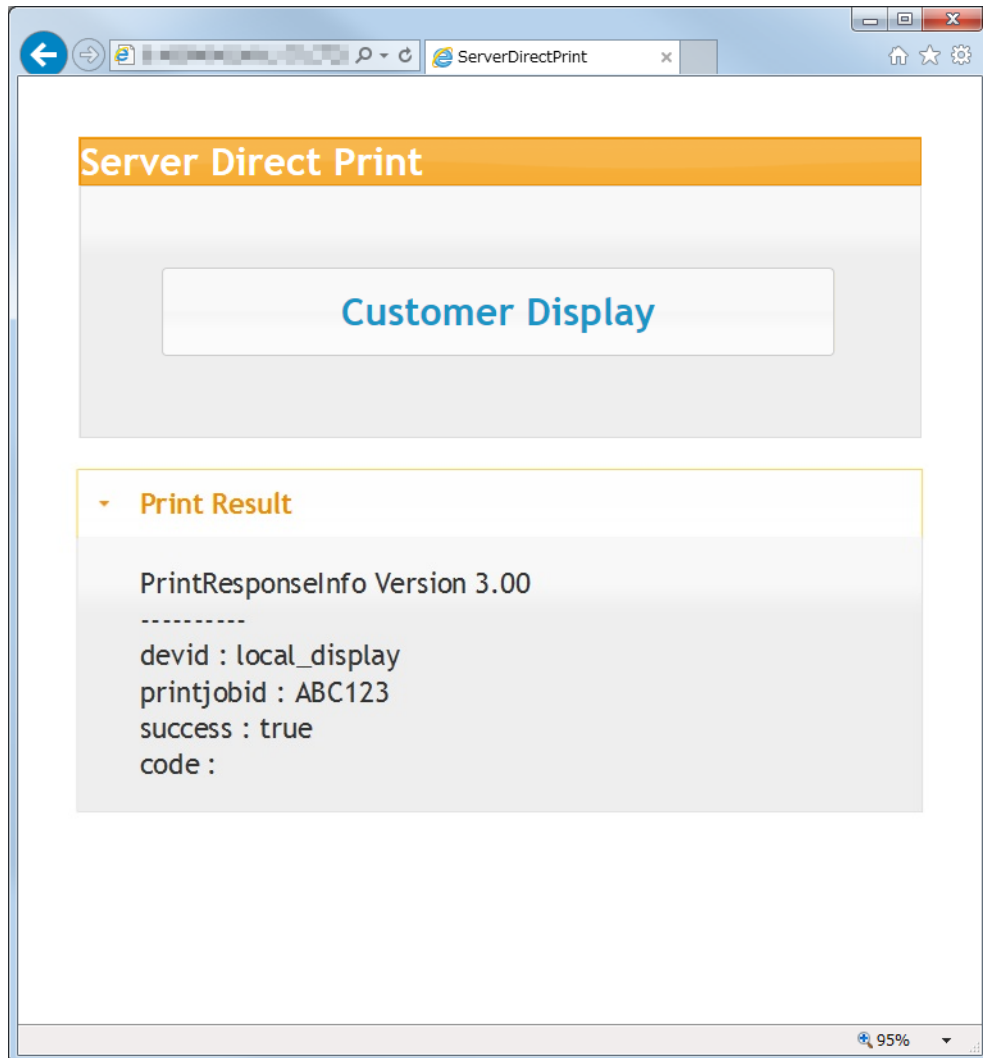
Hardware Configuration (For Ver.1.00 or Ver.2.00)

The system configuration of the sample program is as shown below.
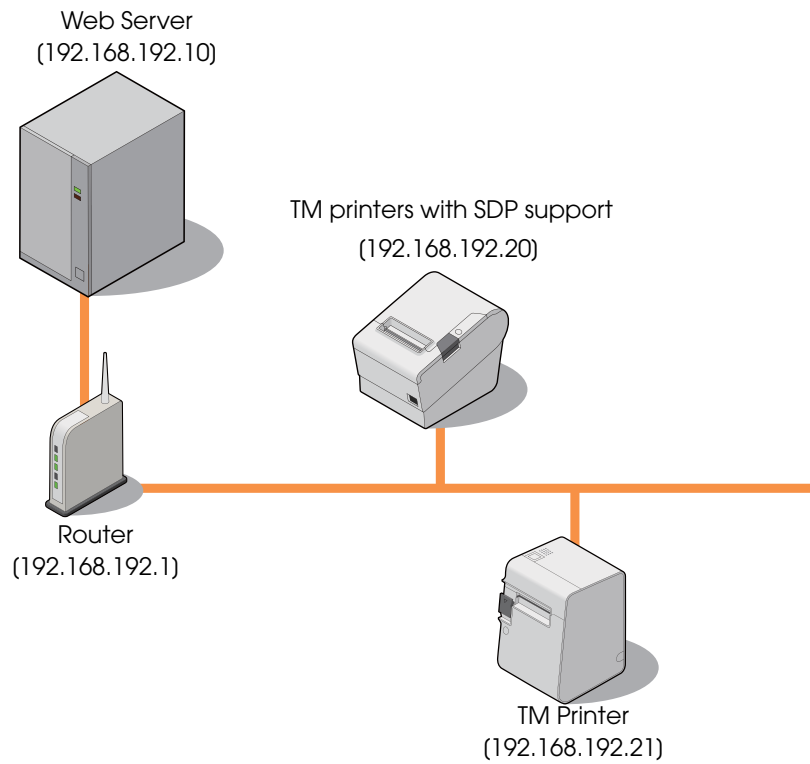
Web Server
(192.168.192.10)

TM printers with SDP support
(192.168.192.20)

Router
(192.168.192.1)

TM Printer
(192.168.192.21)

❏ Web Server
   (Its operation has already been checked using IIS and XAMPP.)

❏ Router

❏ TM printers with SDP support

❏ TM Printer

Hardware Configuration (For Version 3.00)

The system configuration of the sample program is as shown below.
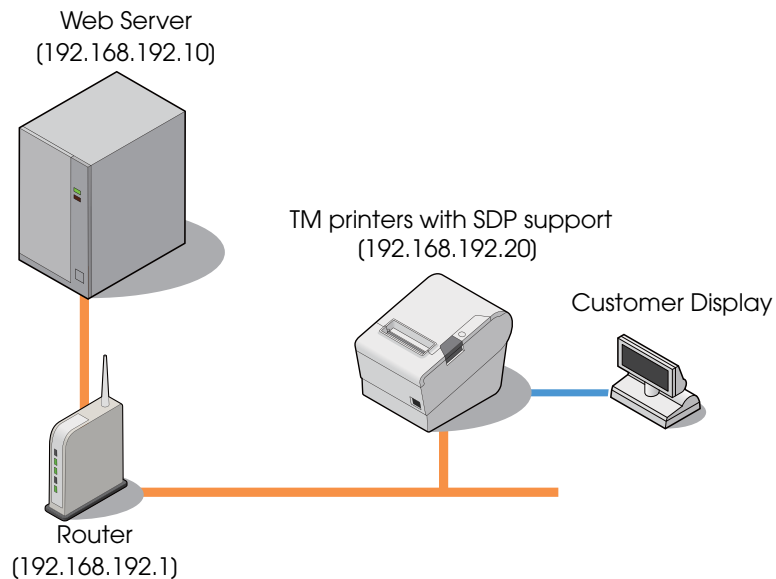
- ❏ Web Server
  (Its operation has already been checked using IIS and XAMPP.)
- ❏ Router
- ❏ TM printers with SDP support (TM-T88VI)
- ❏ Customer Display

File Configuration

File Name		Description
Test_print.php		The server returns a response containing print data when the printer sends a request.
resultPrint.log		The printing result is retained in this file. The file is created after printing.
demo	index.html	Sends a print instruction and displays the printing result. (For Version 1.00)
	sample.xml	The data of response message. (For Version 1.00)
	indexV2.html	Sends a print instruction and displays the printing result. (For Version 2.00)
	sampleV2.xml	The data of response message. (For Version 2.00)
	indexV3.html	Sends a print instruction and displays the printing result. (For Version 3.00)
	sampleV3.xml	The data of response message. (For Version 3.00)

Printing Result

Cooking Slip	Delivery Slip
2 Alt Beer Seat: A-3 Kitchen 【New Order】 0001 2013-03-19 13:53 15	**DELIVERY TICKET** Order 0001 Time Mar 19 2013 13:53:15 Seat A-3 Alt Beer $6.00 x 2 $12.00 TOTAL $12. 00

Program Flow

The flow from the initial display to the print completion of the sample program is as shown below.

1. Start the browser.

⬇

2. Enter the order.

⬇

3. Receive a request from the printer.

⬇

4. Responses print data (sample.xml) to the printer.

⬇

5. Output the printing result sent from the printer to resultPrint.log after printing.

⬇

6. Display the printing result on the screen.
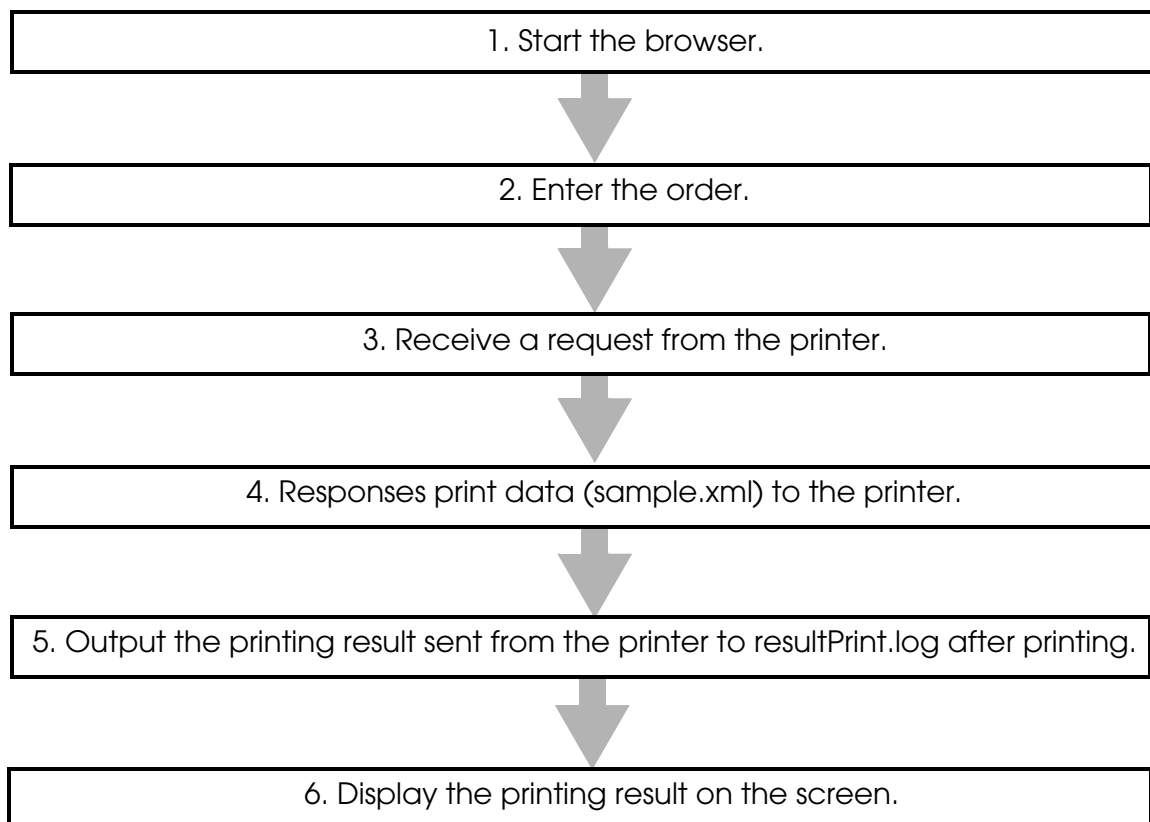
Environment Settings

The environment setting flow of the sample program is as shown below.

1. Router Settings

Set information such as SSID, IP address, DHCP and allocated IP address. For details, see the manual for each device.

2. Web Server Settings

1. Web Server Configuration

Configure IIS and XAMPP in the computer.

2. Sample Program Configuration (p.25)

Save the sample program files in the computer.

3. Network Settings

Configure the network settings such as IP address to the computer.

3. TM Printer Network Settings

Configure the network settings such as IP address to the TM printer to be connected.
Configure the network settings such as IP address to the printer by using EPSON TMNet WebConfig from a Web browser on the setup computer.
For the configuration procedure, refer to the Technical Reference Guide for each TM printer.

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4.TM printers with SDP support Settings

❏ TM-i series (p. 26)

- IP Address Setting
- Server Direct Print Setting
  (Including Server authentication setting and Proxy server setting)
- Register the TM Printers (Device ID, IP Address)

❏ TM-DT series (p. 30)

- IP Address Setting
- Initial OS Settings
- Initializing the ePOS-Device
- Service Startup Settings
- Server Direct Print Setting
- Register the TM Printers (Device ID, IP Address)

❏ TM-T88VI, TM-T88VI-iHUB (p. 33)

- IP Address Setting
- Server Direct Print Setting
  (Including Server authentication setting and Proxy server setting)
- Register the TM Printers (Device ID, IP Address)

Sample Program Configuration

Save the sample program files to the Web server.

Save the files directly under the following folders:

Environment	Folder	Saved File
IIS	inetpub\wwwroot	Test_print.php
XAMPP	xampp\htdocs	demo\index.html \sample.xml (Expansion of epsonsample_eposprint.zip)

> For details about how to create a zip file, refer to the Technical Reference Guide for each printer.

2

TM printers with SDP support Settings

❏ TM-i series (p. 26)

❏ TM-DT series (p. 30)

❏ TM-T88VI, TM-T88VI-iHUB (p. 33)

TM-i Series Settings

❏ IP Address Setting   : Refer to the Technical Reference Guide for each printer.

❏ Server Direct Print Setting   : p. 26

- Server authentication setting (TM-i Firmware Ver.4.0 or later, available)

- Proxy server setting (TM-i Firmware Ver.4.0 or later, available)

❏ Register the TM Printers   : p. 29

Server Direct Print Settings

Configure the Server Direct Print settings by using EPSON TMNet WebConfig.
For TM-i Firmware Ver.4.0 or later, configure the server authentication and the proxy server settings when necessary. For TM-i Firmware Ver.3.x or earlier, the server authentication and proxy server setting are unavailable.

1 Start the Web browser on the setup computer and enter as follows:
For TM-i Firmware Ver.4.0 or later
http://<IP address of the TM-i series>/webconfig/
For TM-i Firmware Ver.3.x or earlier
http://<IP address of the TM-i series>/PrinterConfigurationPage/

2 EPSON TMNet WebConfig starts.
For TM-i Firmware Ver.4.0 or later, select (Web Service Settings) - (Direct Print).
For TM-i Firmware Ver.3.x or earlier, select (Configuration) - (Direct Print).

3 The "Server Direct Print Setting" screen appears.

Set the following items and click (Submit) / (Apply).

For TM-i Firmware Ver.4.0 or later

Item		Description
Server Direct Print		Select the (Enable).
ID		Set ID for the server-side program to identify TM-i series. This ID becomes the user ID used for Digest access authentication. The set value will also be passed as an ID parameter value for the form data posted to the server. Not required for the sample program.
Password		Set your password used for Digest access authentication. The Digest access cannot be authenticated for user IDs without passwords. To authenticate the Digest access, configure a password that is not empty. Not required for the sample program.
Server 1/ Server 2/ Server 3	URL	Specify the Test_print.php address of the Web server. **Example: http://<IP address of the Web server>/Test_print.php** Click the (Access Test) to check if the address is accessible.
	Interval(s)	Set the request interval. Request interval refers to the interval between the end of the previous communication and the start of the next communication.
Authenticate Server		Sets whether the server authentication is performed with the registered certificate when accessed through https.

For TM-i Firmware Ver.3.x or earlier

Item	Description
Server Direct Print	Select the (Enable).
ID	Set ID for the server-side program to identify TM-i series. This ID becomes the user ID used for Digest access authentication. The set value will also be passed as an ID parameter value for the form data posted to the server. Not required for the sample program.
Password	Set your password used for Digest access authentication. The Digest access cannot be authenticated for user IDs without passwords. To authenticate the Digest access, configure a password that is not empty. Not required for the sample program.
URL	Specify the Test_print.php address of the Web server. **Example: http://<IP address of Web server>/Test_print.php** Click the (Access Test) to check if the address is accessible.
Interval(s)	Set the request interval. Request interval refers to the interval between the end of the previous communication and the start of the next communication.

4 When using the proxy server, select (System Settings) - (Proxy).

5 The "Proxy" screen appears. Set the following items, then click (Apply).

Item		Description
Proxy URL and Port Number		Enter the proxy server URL and port number in the following: "http://host name: port number". Example: **http://10.0.0.1:8008**
ID		Registers the proxy authentication ID.
Password		Set your password used for Digest access authentication. The Digest access cannot be authenticated for user IDs without passwords. To authenticate the Digest access, configure a password that is not empty. Not required for the sample program.
Enable Proxy for following services	Automatic Update	Sets whether the proxy is used for automatic update of Web contents.
	Direct Print	Sets whether the proxy is used for Server Direct Print.
	Status Notification	Sets whether the proxy is used for Status Notification.

Registration of TM Printer

Register the device ID and IP address of the controlled TM printer to TM-i series. Use EPSON TMNet WebConfig to register the device ID.

⚠️
- TM-i printer cannot be deleted from the device.
- The device ID of TM-i printer can be changed.

1 Connect all TM printers to the network and power on.

2 EPSON TMNet WebConfig starts.
For TM-i Firmware Ver.4.0 or later, select (Web Service Settings) - (Direct Print).
For TM-i Firmware Ver.3.x or earlier, select (Configuration) - (Direct Print).

3 The "Printer" / "Device Settings" screen appears.
Set the following items and click (Add) / (Submit).

Item	Description
Device ID	Set the ID for the controlled printer. (Any character string)
Model	Select the model for the controlled printer.
IP Address	Set the printer IP address for each device ID.
Retry Interval (ms)	Set the timeout retry interval. Specify "100".

4 The information of the registered device is displayed.
Click (Test Print) to check if the registered printer operates properly.

TM-DT Series Settings

Configure the following settings to TM-DT series.

❏ Initial OS Settings   : Refer to the Technical Reference Guide for each printer.

❏ Initializing the ePOS-Device : Refer to the Technical Reference Guide for each printer.

❏ IP Address Settings   : Refer to the Technical Reference Guide for each printer.

❏ Service Startup Settings   :

❏ Server Direct Print Settings :

❏ Registration of TM Printer   :

Service startup settings

To make service startup settings, use EPSON TMNet WebConfig and the following procedure.

1 Start EPSON TMNet WebConfig from the shortcut on the desktop.
EPSON TMNet WebConfig starts.

> If you are making settings from an external device, set the TM-DT series IP address in the address for the Web browser. The default IP address for TM-DT series is 192.168.192.168.
> http://<IP address of the TM-DT series>/webconfig/

2 Select as (Settings)-(Web service settings)-(Startup settings).

3 The "Startup settings" screen appears.
Set the following according to the system you are using, and then click (Apply).

Item	Description	Setting
Device control	Sets whether to use TM-DT series to control peripheral POS devices.	On (Default)
Automatic update of web content	Sets whether to automatically update web content.	Off
Server direct print	Sets whether to use server direct print.	On
Status notification	Sets whether to send status notification when using the server direct print function.	On/Off

Server Direct Print Settings

Configure the Server Direct Print settings using EPSON TMNet WebConfig.

1 EPSON TMNet WebConfig starts.

For TM-DT Software Ver.2.5 or later, select (Settings)-(Web service settings)-(Server access) -(Direct Print).
For TM-DT Software Ver.2.2 or earlier, select (Settings)-(Web service settings)-(Direct print).

2 The "Server direct print" screen appears.

Set the following items and click (OK).
For TM-DT Software Ver.3.0 or later:

Item	Description
ID	Set ID for the server-side program to identify TM-DT series. This ID becomes the user ID used for Digest access authentication. The set value will also be passed as an ID parameter value for the form data posted to the server. Not required for the sample program.
Password	Set your password used for Digest access authentication. Not required for the sample program.
Server1	Specify the Test_print.php address of the Web server. **Example: http://<IP address of the Web server>/Test_print.php** Click the (Access Test) to check if the address is accessible.
Interval (sec.)	Set the request interval. Request interval refers to the interval between the end of the previous communication and the start of the next communication.
Server Authentication	When accessing by https, this sets whether or not server authentication is conducted based on a registered certificate.

For TM-DT Software Ver.2.6 or earlier

Item	Description
ID	Set ID for the server-side program to identify TM-DT series. This ID becomes the user ID used for Digest access authentication. The set value will also be passed as an ID parameter value for the form data posted to the server. Not required for the sample program.
Password	Set your password used for Digest access authentication. Not required for the sample program.
URL	Specify the Test_print.php address of the Web server. **Example: http://<IP address of the Web server>/Test_print.php** Click the (Access Test) to check if the address is accessible.
Interval (sec.)	Set the request interval. Request interval refers to the interval between the end of the previous communication and the start of the next communication.

Registration of TM Printer

Register the device ID and IP address of the controlled TM printer to TM-DT series. Use EPSON TMNet WebConfig to register the device ID. This printer is already registered with the "local_printer" device ID, and therefore this setting is not required.
Use the following procedure for registration.

1 Connect all TM printers to the network and power on.

2 EPSON TMNet WebConfig starts.
Select (Settings)-(Web service settings)-(Device Admin)-(Device registration)-(Printer).

3 The "Printer" screen appears.
Set the following items and click (Add).

Item	Description
Device ID	Set the ID for the controlled printer. (Any character string)
Model no.	Select the model for the controlled printer.
IP address	Set the printer IP address for each device ID.
Retry interval (ms)	Set the timeout retry interval. Specify "100".

4 The information of the registered device is displayed in "Registered printers". Click (Test Print) to check if the registered printer operates properly.

TM-T88VI and TM-T88VI-iHUB Settings

Configure the following settings to TM-T88VI.

❏ IP Address Settings   : Refer to the Technical Reference Guide.

❏ Server Direct Print Settings   :

  • Server authentication setting

  • Proxy server setting

❏ Registration of TM Printer   :

Server Direct Print Settings

Configure the Server Direct Print settings using TM-T88VI Utility.

1 Starting the TM-T88VI Utility.

2 After TM-T88VI Utility starts, click (TM-Intelligent) - (Server Access) - (Server Direct Print).

3 The Server Direct Print screen appears.
Set the following items and click (Set).

Item			Description
Server Direct Print			Enable Server Direct Print.
	Server 1		Enable Server 1.
		URL	Specifies the Web server URL and the application path. Example: http://<IP address of Web server>/Test_print.php
		Update Interval	Set the request interval.
	Server 2		Disable Server 2.
		URL	-
		Update Interval	-
	Server 3		Disable Server 3.
		URL	-
		Update Interval	-
	ID		This ID will be the user ID used for Digest authentication. Not required for the sample program.
	Password		Set your password used for Digest access authentication. The Digest access cannot be authenticated for user IDs without passwords. To authenticate the Digest access, configure a password that is not empty. Not required for the sample program.
	URL Encode		Specifies whether to enable or disable the URL encode.
	Identifier		Select valid/invalid for Server Authentication.

Item	Description
Server Authentication	Specifies whether to enable or disable the server authentication. Register certificates in advance. Not required for the sample program.

4 When using the proxy server, click the (TM-Intelligent) - (Server Access) - (Proxy).

5 The "Proxy" screen appears. Set the following items, then click (Set).

Item			Description
Proxy			Specifies whether to enable or disable the proxy.
	Proxy Server	URL	Enter the proxy server URL.
		ID	Enter the authentication ID. This ID will be the user ID used for Digest authentication.
		Password	Enter the authentication password. This password will be the password used for Digest authentication.
		Port	Enter the proxy server port number.
	Service to Enable a Proxy	Web Contents Automatic Update	Set to "Disabled".
		Server Direct Print	Set to "Enabled".
		Status Notification	Set to "Enabled".

Registration of TM Printer

Register the device ID and the IP address of the TM printer to be controlled.
Use the following procedure for registration.

1   Connect the Customer Display to the TM printers with SDP support.

2   Connect all TM printers to the network and power on.

3   Starting the TM-T88VI Utility.
Click the (TM-Intelligent) - (Server Access) - (Device Administration) - (Printer Registration).

4   The Printer Registration screen appears.

5   Registered network printers are displayed as a list. Click (Add).

6   The "Add" window is displayed. Set the information of the printer to be registered.
After setting, click (OK).

Item	Description
Device ID	Sets the device ID of a printer to register. You can use half-width alphanumeric characters, underscoring, full stops and hyphens in the device ID. Enter between 1 to 30 characters.
Model	Selects the model of a printer to register.
IP Address	Sets the IP address of a printer to register.

7   Adds a printer to the List.

8   Click the (Set). The settings are reflected in the printer.

2

Execution of Sample Program

1   Confirm that the Server Direct Print function is enabled for TM printers with SDP support.

2   Open the sample program page from the Web browser.
Example: **http://<IP address of the Web server>/demo/index.html**

3   Click (Order Entry).

4   In response to a request from the TM printers with SDP support, print data is sent and a slip is printed from the printer.

5   resultPrint.log is created from the printing result sent from the TM printers with SDP support and the printing result is displayed on the screen.

Request and Response

This chapter describes requests from the TM printers with SDP support and responses from the Web server.
User's application can start printing by returning a response containing print data to a HTTP POST request
(print request) from the printer.
It can also check if printing is properly finished by analyzing a HTTP POST request (print request) from the
printer.

Request (Print Request)

This section describes the request (print request) from the TM printers with SDP support.
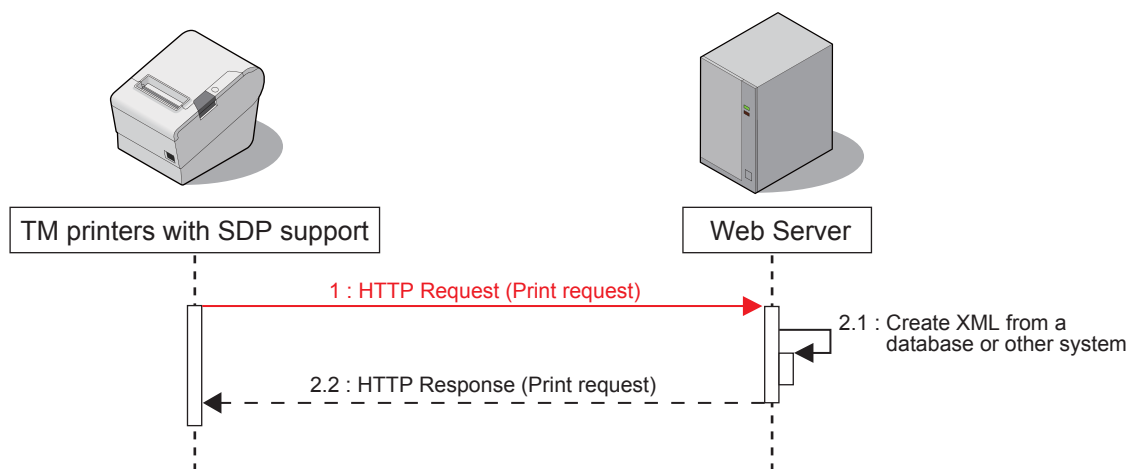
A TM printer with SDP support periodically sends a HTTP POST request (print request) shown below.
The format of request message is URL-encoded form data (application/x-www-form-urlencoded).
Set the sending destination and sending interval according to "Server Direct Print Settings" (p. 26).
If communication fails, it is attempted again after a specified interval.

Parameter	Value
ConnectionType	GetRequest
ID	The ID set with WebConfig (p. 26)

Header —

```
POST /demo/Test_print.php HTTP/1.1
Host: 192.168.192.10
Content-Type: application/x-www-form-urlencoded
Content-Length: 29
```

ConnectionType=GetRequest&ID=

Response (Print request)

This section describes the response (print request) containing the print data from the Web server.
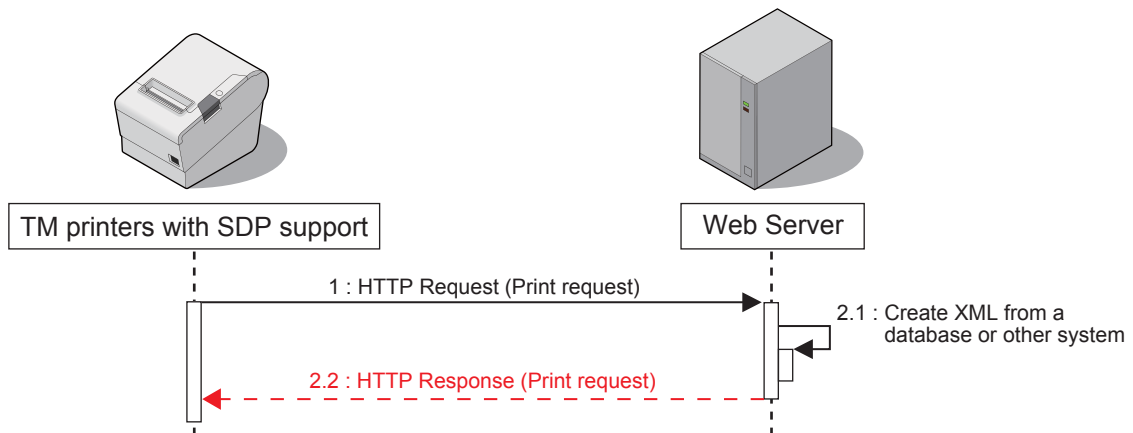
Response data created in XML(text/xml) from the application is returned. The data also contains print data.

When an invalid print request is received, the server retries a request (print request) after a specified interval.

Format of the response message

Basic Structure

The structure is different depending on the <PrintRequestInfo> version.

<PrintRequestInfo Version="1.00">

When no version for the <PrintRequestInfo> tag is specified, the same structure as with <PrintRequestInfo Version="1.00"> is applied.

Create the <ePOSPrint> tag for each print request.

The <ePOSPrint> tag consists of the following tags:

❏ <Parameter> tag: For details, see .

❏ <PrintData> tag: For details, see .

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: xxx

<?xml version="1.0" encoding="utf-8"?>
<PrintRequestInfo Version="1.00">
  <ePOSPrint>
    <Parameter>
      <devid>local_printer</devid>
      <timeout>10000</timeout>
    </Parameter>
    <PrintData>
          .
          .
          .
    </PrintData>
  </ePOSPrint>

  <ePOSPrint>
    <Parameter>
      <devid>local_printer</devid>
      <timeout>10000</timeout>
    </Parameter>
    <PrintData>
          .
          .
          .
    </PrintData>
  </ePOSPrint>
</PrintRequestInfo>
```

<PrintRequestInfo> tag
<ePOSPrint> tag
Print request 1

<Parameter> tag

<PrintData> tag
Print data

<ePOSPrint> tag
Print request 2
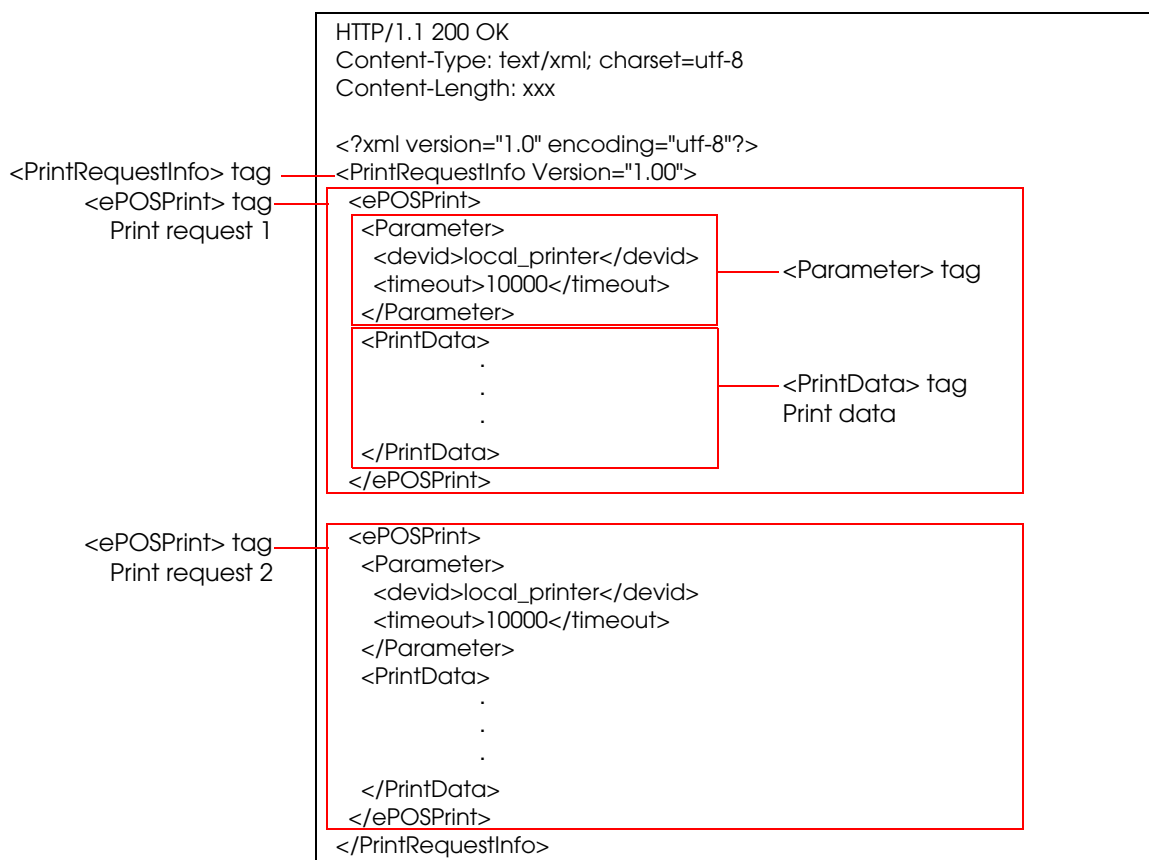
Note: Enclosing the <ePOSPrint> tag in the <PrintRequestInfo> tags enables sending multiple print requests to the printer.

3

<PrintRequestInfo Version="2.00">

Specify the print job ID with the <printjobid> tag in the <Parameter> tab.

Create the <ePOSPrint> tag for each print request.

The <ePOSPrint> tag consists of the following tags:

❏ <Parameter> tag:　　　For details, see .

❏ <PrintData> tag:　　　For details, see .

Specify the PrintRequestInfo Version="2.00" ───

<ePOSPrint> tag Print request 1 ───

Specify the <printjobid> ───

<ePOSPrint> tag Print request 2 ───

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: xxx

<?xml version="1.0" encoding="utf-8"?>
<PrintRequestInfo Version="2.00">
  <ePOSPrint>
    <Parameter>
      <devid>local_printer</devid>
      <timeout>10000</timeout>
      <printjobid>ABC123</printjobid>
    </Parameter>
    <PrintData>
              .
              .
              .
    </PrintData>
  </ePOSPrint>

  <ePOSPrint>
    <Parameter>
      <devid>local_printer</devid>
      <timeout>10000</timeout>
      <printjobid>ABC123</printjobid>
    </Parameter>
    <PrintData>
              .
              .
              .
    </PrintData>
  </ePOSPrint>
</PrintRequestInfo>
```

<PrintRequestInfo Version="3.00">

> Supported printers are below.
> - TM-T88VI
> - TM-T88VI-iHUB

Printing to the printer and control of customer display can be performed.

❑ <ePOSPrint> tag: Printer control

❑ <ePOSDisplay> tag: Customer display control

The <ePOSPrint>/<ePOSDisplay> tag consists of the following tags:

❑ <Parameter> tag: For details, see "<Parameter> Tag" (p.42).

❑ <PrintData> tag: For details, see "<PrintData> Tag" (p.42).

❑ <DisplayData> tag: For details, see "<DisplayData> Tag" (p.42).

Specify the
PrintRequestInfo Version="3.00"

<ePOSPrint> tag
Print request 1

<ePOSDisplay> tag
Customer Display
control request 1

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: xxx

<?xml version="1.0" encoding="utf-8"?>
<PrintRequestInfo Version="3.00">
  <ePOSPrint>
    <Parameter>
      <devid>local_printer</devid>
      <timeout>10000</timeout>
      <printjobid>ABC123</printjobid>
    </Parameter>
    <PrintData>
              .
              .
              .
    </PrintData>
  </ePOSPrint>

  <ePOSDisplay>
    <Parameter>
      <devid>local_display</devid>
      <timeout>10000</timeout>
      <printjobid>ABC456</printjobid>
    </Parameter>
    <DisplayData>
              .
              .
              .
    </DisplayData>
  </ePOSDisplay>
</PrintRequestInfo>
```

3

<Parameter> Tag

Set the <Parameter> tag as shown below.

<PrintRequestInfo Version="1.00">

```
<Parameter>
    <devid>(Device ID used for slip printing)</devid>
    <timeout>(Timeout time (in milliseconds))</timeout>
</Parameter>
```

Example

```
<Parameter>
    <devid>local_printer</devid>
    <timeout>10000</timeout>
</Parameter>
```

<PrintRequestInfo Version="2.00">/<PrintRequestInfo Version="3.00">

> Supported printers are below.
> <PrintRequestInfo Version="2.00">
> • TM-i series TM-i firmware Ver.4.1 or later
> • TM-DT series TM-DT software ver.3.0 or later
> • TM-T88VI
> • TM-T88VI-iHUB
> <PrintRequestInfo Version="3.00">
> • TM-T88VI
> • TM-T88VI-iHUB

Specify the print job ID ———
```
<Parameter>
 <devid>local_printer</devid>
 <timeout>10000</timeout>
 <printjobid>ABC123</printjobid>
</Parameter>
```

<PrintData> Tag

Describe print data. Even if the <PrintRequestInfo> version is different, the print data can be shared.

For details, see ePOS-Print XML User's Manual.

<DisplayData> Tag

> The <DisplayData> tag is available with <PrintRequestInfo Version="3.00">.

For details, see ePOS-Print XML User's Manual.

Print Data Example

<PrintRequestInfo Version="1.00">

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: xxx

<?xml version="1.0" encoding="utf-8" ?>
 <PrintRequestInfo>

  <ePOSPrint>
   <Parameter>
   <devid>local_printer</devid>
   <timeout>10000</timeout>
   </Parameter>
   <PrintData>
   <epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <text lang="en" />
   <text smooth="true" />
   <text align="center" />
   <text font="font_b" />
   <text width="2" height="2" />
   <text reverse="false" ul="false" em="true" color="color_1" />
   <text>DELIVERY TICKET</text>
   <feed unit="12" />
   <text></text>
   <text align="left" />
   <text font="font_a" />
   <text width="1" height="1" />
   <text reverse="false" ul="false" em="false" color="color_1" />
   <text>Order 0001</text>
   <text width="1" height="1" />
   <text reverse="false" ul="false" em="false" color="color_1" />
   <text>Time Mar 19 2013 13:53:15</text>
   <text>Seat A-3</text>
   <text></text>
   <text width="1" height="1" />
   <text reverse="false" ul="false" em="false" color="color_1" />
   <text>Alt Beer</text>
   <text>$6.00 x 2</text>
   <text x="384" />
   <text>$12.00</text>
   <text></text>
   <text reverse="false" ul="false" em="true" />
   <text width="2" height="1" />
   <text>TOTAL</text>
   <text x="264" />
   <text>$12.00</text>
   <text reverse="false" ul="false" em="false" />
   <text width="1" height="1" />
   <feed unit="12" />
   <text align="center" />
   <barcode type="code39" hri="none" font="font_a" width="2" height="60">0001</barcode>
   <feed line="3" />
   <cut type="feed" />
   </epos-print>
   </PrintData>
  </ePOSPrint>

 </PrintRequestInfo>
```

<PrintRequestInfo Version="2.00">

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: xxx

<?xml version="1.0" encoding="utf-8" ?>
 <PrintRequestInfo Version="2.00">

  <ePOSPrint>
   <Parameter>
   <devid>local_printer</devid>
   <timeout>10000</timeout>
  <printjobid>ABC123</printjobid>
   </Parameter>
   <PrintData>
   <epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
   <text lang="en" />
   <text smooth="true" />
   <text align="center" />
   <text font="font_b" />
   <text width="2" height="2" />
   <text reverse="false" ul="false" em="true" color="color_1" />
   <text>DELIVERY TICKET</text>
   <feed unit="12" />
   <text></text>
   <text align="left" />
   <text font="font_a" />
   <text width="1" height="1" />
   <text reverse="false" ul="false" em="false" color="color_1" />
   <text>Order 0001</text>
   <text width="1" height="1" />
   <text reverse="false" ul="false" em="false" color="color_1" />
   <text>Time Mar 19 2013 13:53:15</text>
   <text>Seat A-3</text>
   <text></text>
   <text width="1" height="1" />
   <text reverse="false" ul="false" em="false" color="color_1" />
   <text>Alt Beer</text>
   <text>$6.00 x 2</text>
   <text x="384" />
   <text>$12.00</text>
   <text></text>
   <text reverse="false" ul="false" em="true" />
   <text width="2" height="1" />
   <text>TOTAL</text>
   <text x="264" />
   <text>$12.00</text>
   <text reverse="false" ul="false" em="false" />
   <text width="1" height="1" />
   <feed unit="12" />
   <text align="center" />
   <barcode type="code39" hri="none" font="font_a" width="2" height="60">0001</barcode>
   <feed line="3" />
   <cut type="feed" />
   </epos-print>
   </PrintData>
  </ePOSPrint>

 </PrintRequestInfo>
```

<PrintRequestInfo Version="3.00">

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: xxx

<?xml version="1.0" encoding="utf-8"?>
<PrintRequestInfo Version="3.00">

 <ePOSPrint>
   <Parameter>
    <devid>local_printer</devid>
    <timeout>10000</timeout>
    <printjobid>ABC123</printjobid>
   </Parameter>
   <PrintData>
    <epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
     <text lang="en"/>
     <text smooth="true"/>
     <text align="center"/>
     <text font="font_b"/>
     <text width="2" height="2"/>
     <text reverse="false" ul="false" em="true" color="color_1"/>
     <text>DELIVERY TICKET&#10;</text>
     <feed unit="12"/>
     <text>&#10;</text>
     <text align="left"/>
     <text font="font_a"/>
     <text width="1" height="1"/>
     <text reverse="false" ul="false" em="false" color="color_1"/>
     <text>Order&#9;0001&#10;</text>
     <text width="1" height="1"/>
     <text reverse="false" ul="false" em="false" color="color_1"/>
     <text>Time&#9;Mar 19 2013 13:53:15&#10;</text>
     <text>Seat&#9;A-3&#10;</text>
     <text>&#10;</text>
     <text width="1" height="1"/>
     <text reverse="false" ul="false" em="false" color="color_1"/>
     <text>Alt Beer&#10;</text>
     <text>&#9;$6.00  x 2</text>
     <text x="384"/>
     <text>   $12.00&#10;</text>
     <text>&#10;</text>
     <text reverse="false" ul="false" em="true"/>
     <text width="2" height="1"/>
     <text>TOTAL</text>
     <text x="264"/>
     <text>   $12.00&#10;</text>
     <text reverse="false" ul="false" em="false"/>
     <text width="1" height="1"/>
     <feed unit="12"/>
     <text align="center"/>
     <barcode type="code39" hri="none" font="font_a" width="2" height="60">0001</barcode>
     <feed line="3"/>
     <cut type="feed"/>
    </epos-print>
   </PrintData>
 </ePOSPrint>

 <ePOSDisplay>
   <Parameter>
    <devid>local_display</devid>
    <timeout>10000</timeout>
    <printjobid>ABC456</printjobid>
   </Parameter>
   <DisplayData>
    <epos-display xmlns="http://www.epson-pos.com/schemas/2012/09/epos-display">
     <text>Thanks for using Server Direct Print!</text>
    </epos-display>
   </DisplayData>
 </ePOSDisplay>

</PrintRequestInfo>
```

3

Response When No Printing Is Performed

When no printing is required, to notify no print data, the following response is returned for a HTTP request (print request) sent from the TM printers with SDP support.

See Test_print.php of the sample program.

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: 0
```

Request (Printing Result)

A TM printer with SDP support sends a HTTP POST request (printing result) shown below after printing.
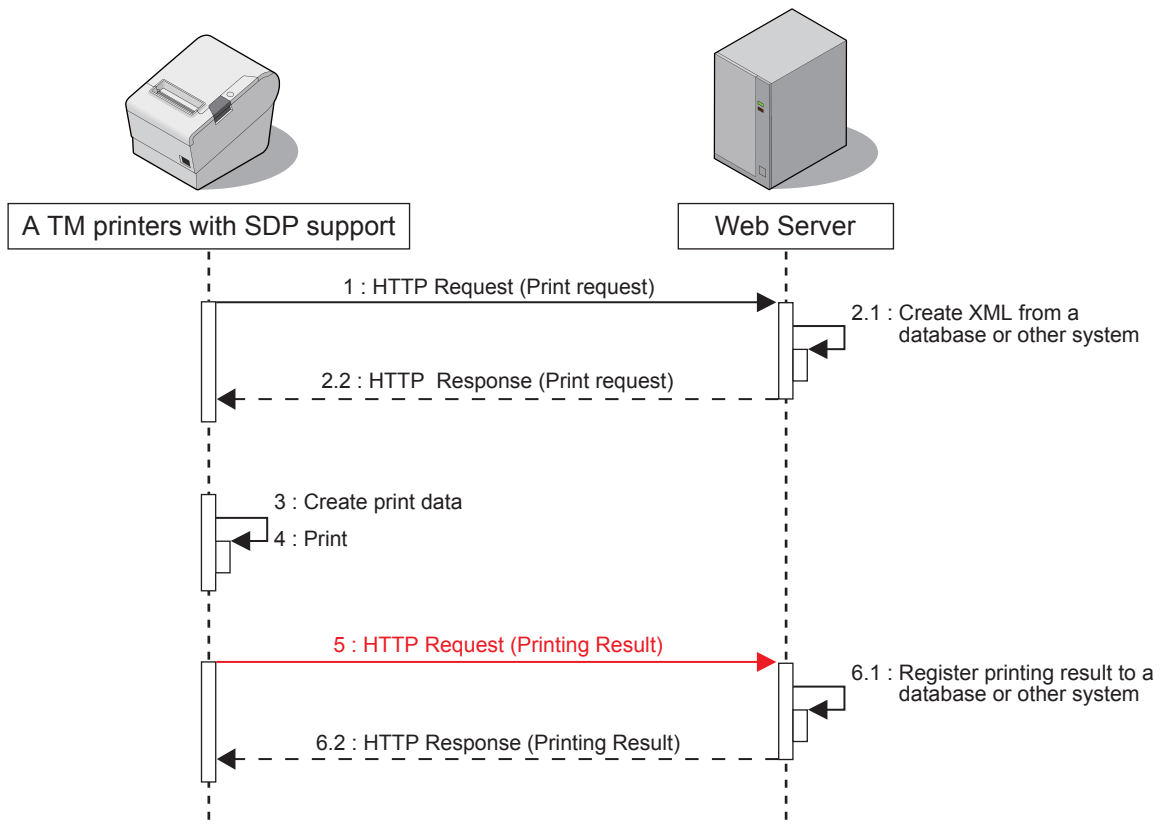
The application can check the printing result (if printing is properly finished) and the printer status by analyzing request data.
If communication fails, it is attempted again after a specified interval.

Format of the request message

```
POST /demo/Test_print.php HTTP/1.1
Host: 192.168.192.10
Content-Type: application/x-www-form-urlencoded
Content-Length: xxx

ConnectionType=SetResponse&ID=&ResponseFile=Printing Result
```

Parameter	Value
ConnectionType	SetResponse
ID	The ID set with WebConfig (p. 26)
ResponseFile	Printing result

Basic Structure

The structure of a request (printing result) created by the TM printers SDP support are different depending on the <PrintRequestInfo> version contained in the response (print request) from the Web server.

<PrintRequestInfo Version="1.00">

In the <PrintResponseInfo> tag, the printing result is included in the <response> tag,
When no version for the <PrintRequestInfo> tag is specified, the same structure as with <PrintRequestInfo Version="1.00"> is applied.

```
                           <?xml version="1.0" encoding="utf-8"?>
                           <PrintResponseInfo Version="1.00">
                           #Success
                             <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print"
<response> tag ─────────     success="true" code="" status="251854870" battery="0"/>
                           </PrintResponseInfo>
```

<PrintRequestInfo Version="2.00">

The <ePOSPrint> tag is created in the <PrintResponse> tag, and the <Parameter> tag and <PrintResponse> tag are created.
In the <Parameter> tag, the device ID is included in the <devid> tag and the print job ID is included in the <printjobid> tag.
In the <PrintResponseInfo> tag, the printing result is included in the <response> tag,
This is the same structure as with <PrintRequestInfo Version="1.00">.

```
                           <?xml version="1.0" encoding="utf-8"?>
                           <PrintResponseInfo Version="2.00">
<ePOSPrint> tag ──────       <ePOSPrint>
<Parameter> tag ──────         <Parameter>                              Device ID
                                 <devid>local_printer</devid>
                                 <printjobid>ABC123</printjobid>
                               </Parameter>                             Print job ID
<PrintResponse> tag ──────     <PrintResponse>
<response> tag ──────             <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print"
                                   success="true" code="" status="251854870" battery="0"/>
                               </PrintResponse>
                             </ePOSPrint>
                           </PrintResponseInfo>
```

<PrintRequestInfo Version="3.00">

The printer confirms the data when it receives an HTTP response (print request).

If the data contains an error, a different request message than usual is sent.

The <ServerDirectPrint> tag contains the confirmation result for the HTTP response (print request) XML data.

If the HTTP response (print request) XML data contains an error, the structure of the request (printing result) varies.
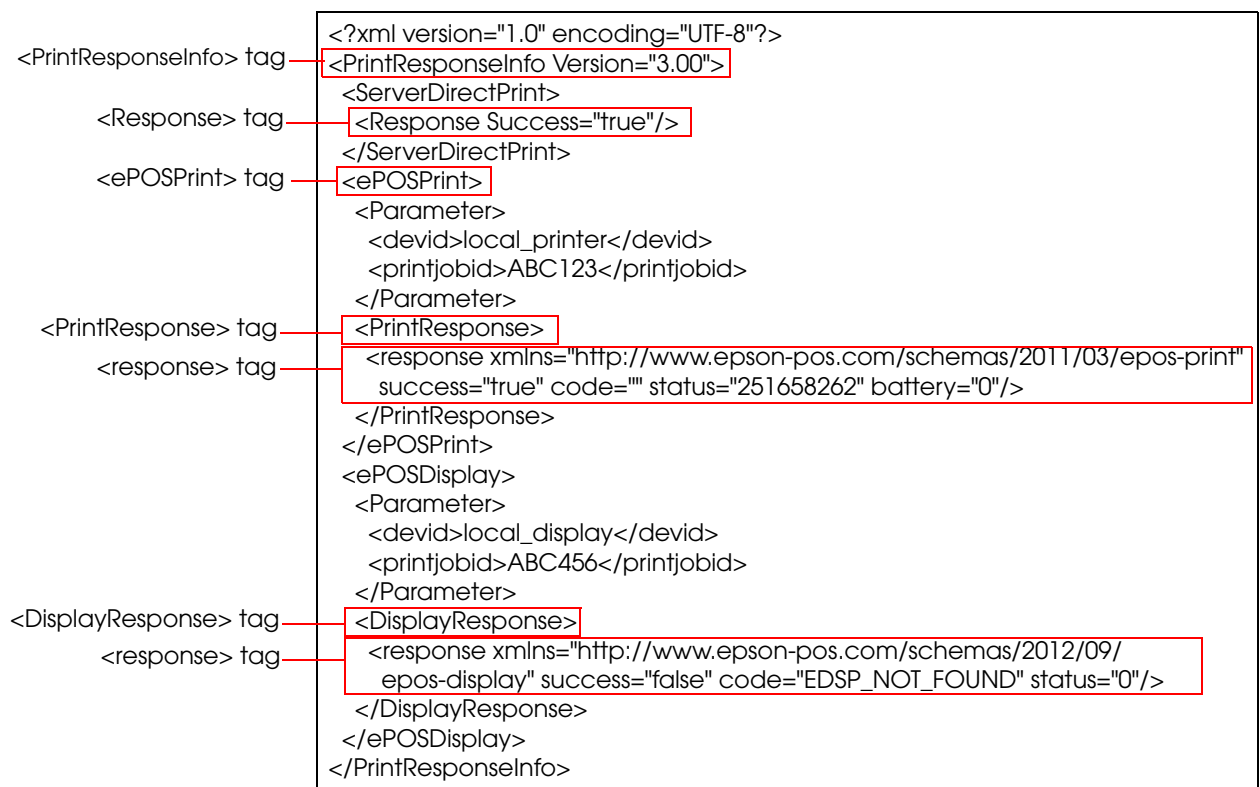
❏ When the HTTP response (print request) XML data is normal:

In the <PrintResponseInfo> tag, the <ServerDirectPrint> tag, <ePOSPrint> tag, and <ePOSDisplay> tag are created.

The confirmation result of the HTTP response (print request) XML data is described in the <Response> tag in the <ServerDirectPrint> tag.

The <response> tag is created in the <PrintResponse> tag in the <ePOSPrint> tag, and details of the printing result are described there.

The <response> tag is created in the <DisplayResponse> tag in the <ePOSDisplay> tag, and details of the customer display control result are described.

```
                                    <?xml version="1.0" encoding="UTF-8"?>
<PrintResponseInfo> tag ———— <PrintResponseInfo Version="3.00">
                                      <ServerDirectPrint>
<Response> tag ————             <Response Success="true"/>
                                      </ServerDirectPrint>
<ePOSPrint> tag ————        <ePOSPrint>
                                        <Parameter>
                                          <devid>local_printer</devid>
                                          <printjobid>ABC123</printjobid>
                                        </Parameter>
<PrintResponse> tag ————         <PrintResponse>
<response> tag ————              <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print"
                                            success="true" code="" status="251658262" battery="0"/>
                                        </PrintResponse>
                                      </ePOSPrint>
                                      <ePOSDisplay>
                                        <Parameter>
                                          <devid>local_display</devid>
                                          <printjobid>ABC456</printjobid>
                                        </Parameter>
<DisplayResponse> tag ————       <DisplayResponse>
<response> tag ————              <response xmlns="http://www.epson-pos.com/schemas/2012/09/
                                            epos-display" success="false" code="EDSP_NOT_FOUND" status="0"/>
                                        </DisplayResponse>
                                      </ePOSDisplay>
                                    </PrintResponseInfo>
```

3

❏ When the HTTP response (print request) XML data has an error:

A ResponseFile is returned, which includes the printing result in the <Response> tag of the <ServerDirectPrint> tag.

For details, see

The ResponseFile does not contain the <ePOSPrint> tag or the <ePOSDisplay> tag,

ResponseFile
```xml
<?xml version="1.0" encoding="utf-8"?>
<PrintResponseInfo Version="3.00">
  <ServerDirectPrint>
    <Response Success="false">
      <ErrorSummary>Data size is exceeded</ErrorSummary>
      <ErrorDetail>Too many job requests</ErrorDetail>
    </Response>
  </ServerDirectPrint>
</PrintResponseInfo>
```

<response> tag

Use the success element of the <response> tag to confirm the printing result and the control result * of the customer display.

* For <PrintRequestInfo Version="3.00">

For details about the code element and the status element, refer to the ePOS-Print XML User's Manual.

Item	Description
true	Success
false	Failed

On failure, an error code is described in code element.

For details, see

❏ <PrintRequestInfo Version="1.00"> Example of a success

```xml
<PrintResponseInfo Version="1.00">
  <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print" success="true"
            code="" status="251854870" battery="0"/>
</PrintResponseInfo>
```

❏ <PrintRequestInfo Version="1.00"> Example of a failure

```xml
<PrintResponseInfo Version="1.00">
  <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print" success="false"
            code="EX_BADPORT" status="1" battery="0"/>
</PrintResponseInfo>
```

❏ <PrintRequestInfo Version="2.00"> Example of a success

```xml
<?xml version="1.0" encoding="utf-8"?>
<PrintResponseInfo Version="2.00">
  <ePOSPrint>
    <Parameter>
      <devid>local_printer</devid>
      <printjobid>ABC123</printjobid>
    </Parameter>
    <PrintResponse>
      <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print" success="true"
                code="" status="251854870" battery="0"/>
    </PrintResponseInfo>
  </ePOSPrint>
<PrintResponseInfo>
```

❏ <PrintRequestInfo Version="2.00"> Example of a failure

```
<?xml version="1.0" encoding="utf-8"?>
<PrintResponseInfo Version="2.00">
  <ePOSPrint>
    <Parameter>
      <devid>local_printer</devid>
      <printjobid>ABC123</printjobid>
    </Parameter>
    <PrintResponse>
      <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print" success="false"
                code="EX_BADPORT" status="1" battery="0"/>
    </PrintResponseInfo>
  </ePOSPrint>
<PrintResponseInfo>
```

❏ <PrintRequestInfo Version="3.00">

In the following example, printer printing was successful but customer display control failed.

```
<?xml version="1.0" encoding="UTF-8"?>
<PrintResponseInfo Version="3.00">
  <ServerDirectPrint>
    <Response Success="true"/>
  </ServerDirectPrint>
  <ePOSPrint>
    <Parameter>
      <devid>local_printer</devid>
      <printjobid>ABC123</printjobid>
    </Parameter>
    <PrintResponse>
      <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print"
        success="true" code="" status="251658262" battery="0"/>
    </PrintResponse>
  </ePOSPrint>
  <ePOSDisplay>
    <Parameter>
      <devid>local_display</devid>
      <printjobid>ABC456</printjobid>
    </Parameter>
    <DisplayResponse>
      <response xmlns="http://www.epson-pos.com/schemas/2012/09/
        epos-display" success="false" code="EDSP_NOT_FOUND" status="0"/>
    </DisplayResponse>
  </ePOSDisplay>
</PrintResponseInfo>
```

Error code

Request Error

This occurs when the device has a problem. The following table shows errors that can occur.

Code	Message	Cause
EPTR_AUTOMATICAL	An automatically recoverable error occurred.	Continuous printing of high-density printing
EPTR_BATTERY_LOW	No remaining battery.	No battery
EPTR_COVER_OPEN	The device has a problem.	The cover is open.
EPTR_CUTTER	The device has a problem.	The cutter has a foreign matter.
EPTR_MECHANICAL	The device has a problem.	Mechanical error, etc.
EPTR_REC_EMPTY	There is no paper.	No paper
EPTR_UNRECOVERABLE	An unrecoverable error occurred.	Low voltage
EX_BADPORT	The port is invalid or the device is not connected.	• The registered information is invalid. • The device power is off. • The device is not connected. • Other device control software exists on the system.
EX_TIMEOUT	Timeout occurred.	• The process was not completed within a certain period of time. • A large amount of data was sent with 1 method.
SchemaError	The message does not conform to the schema.	The request message is invalid.
DeviceNotFound	No device is found.	Inaccessible due to a problem in the operation status control in the output destination device.
PrintSystemError	An error occurred in the printing system.	Inaccessible due to a problem in the operation status in the TM printers with SDP support.

Error occurs in <PrintRequestInfo Version="2.00"> or later

Code	Cause
EX_SPOOLER	No buffer for the print queue
JobNotFound	The specified job ID does not exist
Printing	Printing in progress

ResponseFile

If the XML structure obtained from the server is incorrect, an error notification is sent to the server with SetResponse.

> Supported printers are below.
> * TM-T88VI
> * TM-T88VI-iHUB

Error Description	Details of ResponseFile in SetResponse
The XML obtained with GetRequest exceeds 2MB.	<?xml version="1.0" encoding="utf-8"?> <PrintResponseInfo Version="3.00"> <ServerDirectPrint> <Response Success="false"> <ErrorSummary>Data size is exceeded</ErrorSummary> <ErrorDetail>Too big print request</ErrorDetail> </Response> </ServerDirectPrint> </PrintResponseInfo>
The XML obtained with GetRequest does not conform to the XML format. (The ErrorDetail tag in the right column is an example. The elements of the ErrorDetail tag differ depending on the parts that do not conform to the XML format.)	<?xml version="1.0" encoding="utf-8"?> <PrintResponseInfo Version="3.00"> <ServerDirectPrint> <Response Success="false"> <ErrorSummary>Invalid XML format</ErrorSummary> <ErrorDetail>Entity: line 99: parser error : expected '>' </ErrorDetail> </Response> </ServerDirectPrint> </PrintResponseInfo>
The number of print data units in the XML obtained with GetRequest exceeds 5000.	<?xml version="1.0" encoding="utf-8"?> <PrintResponseInfo Version="3.00"> <ServerDirectPrint> <Response Success="false"> <ErrorSummary>Data size is exceeded</ErrorSummary> <ErrorDetail>Too many job requests</ErrorDetail> </Response> </ServerDirectPrint> </PrintResponseInfo>
The XML obtained with GetRequest contains the ePOS-Print/ePOS-Display data, but the ePOS-Print of the printer is disabled.	<?xml version="1.0" encoding="utf-8"?> <PrintResponseInfo Version="3.00"> <ServerDirectPrint> <Response Success="false"> <ErrorSummary>Invalid printer settings</ErrorSummary> <ErrorDetail>ePOS-Print not activated</ErrorDetail> </Response> </ServerDirectPrint> </PrintResponseInfo>

3

Response (Printing Result)

The Web server sends a response (print result) upon receipt of print result to the TM printers with SDP support.
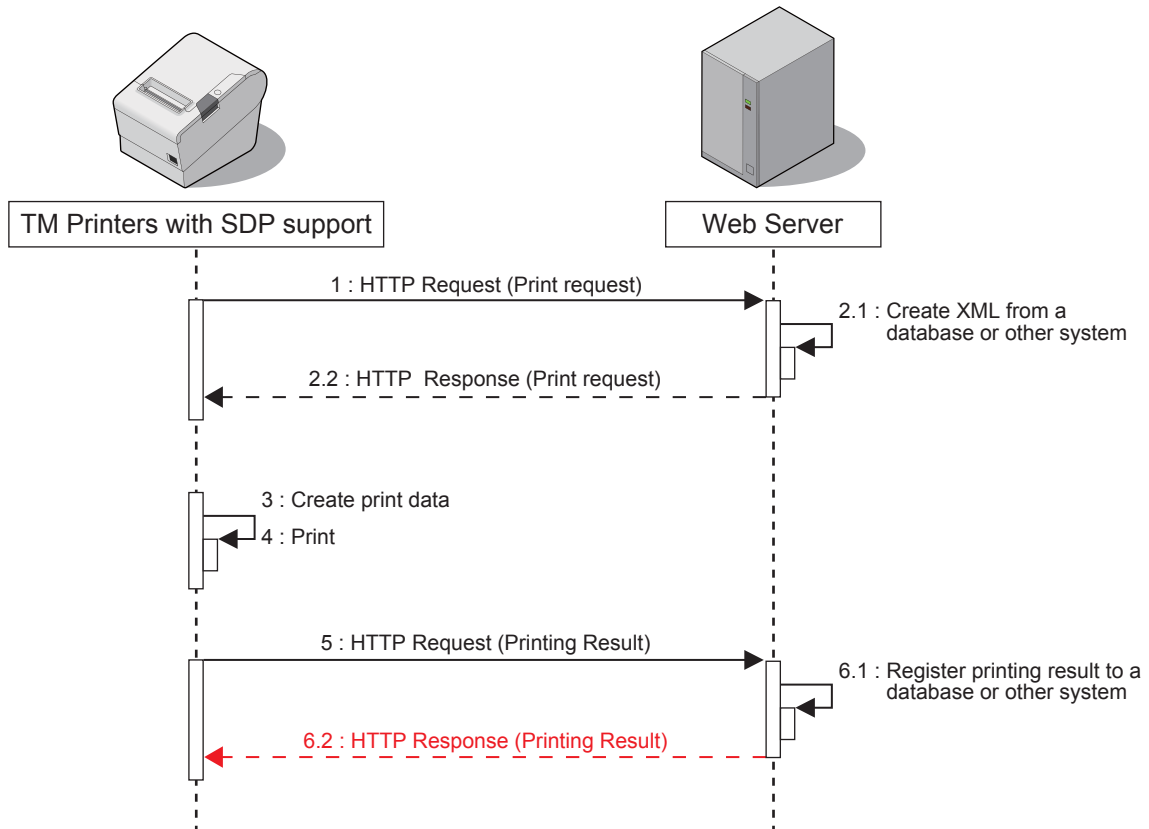

The format of response message is XML(text/xml).

If communication failed, wait the specified interval then retry communication.

The Web server automatically returns the following response.

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: 0
```

Digest Access Authentication

This section describes the flow and settings for carrying out Digest access authentication with the web server.
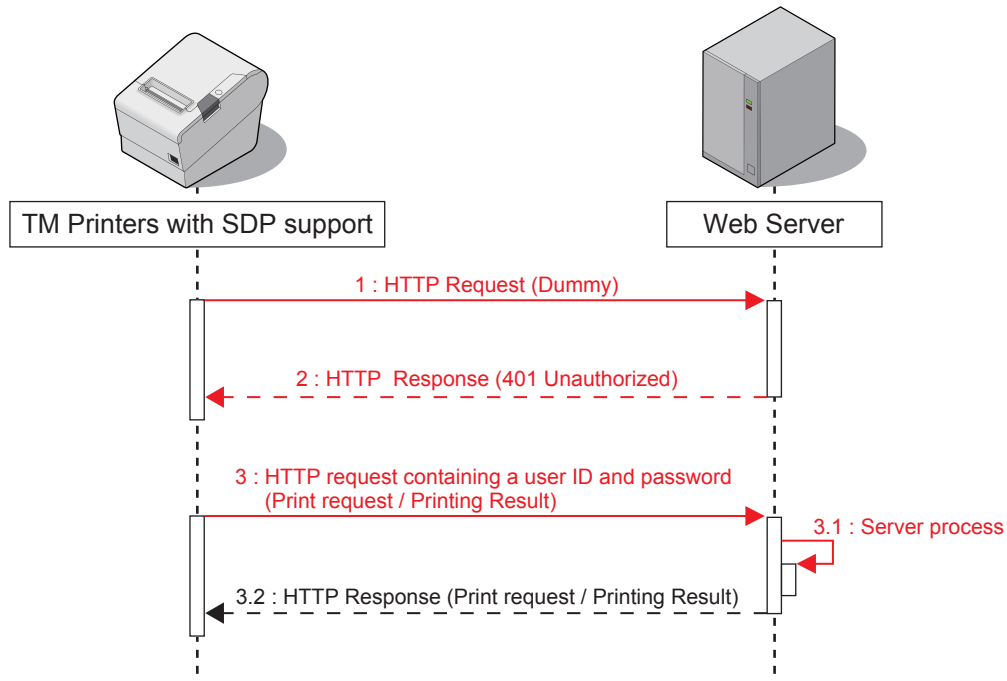
For Digest access authentication, the printer sends a dummy HTTP request before sending a print-related request to the server. The server returns a response with HTTP status code "401 Unauthorized". The printer sends a print-related request containing the user ID and password. The server carries out the Digest access authentication process. Once authenticated, the server continues to carry out the print-related process.

Digest Access Authentication Settings

Digest access authentication requires settings for the TM printers with SDP support and the server.

TM Printers with SDP Support

Set the user ID and password necessary for Digest authentication in the TM printers with SDP support.
For details, see

Web Server Settings

For detailed information on how to set Web server's Digest access authentication, see individual Web server documents, etc.

3

Program Example

See the following programming data (file name: Test_print.php)

```php
<?php

    header('Content-Type: text/xml; charset=UTF-8');

    define("REQUEST_XML_PATH", "demo/request/sample.xml");
    define("RESPONSE_XML_PATH", "demo/response/sample.xml");

    if (isset($_POST["ConnectionType"])) {
        $http_request = $_POST["ConnectionType"];
    }

    if ($http_request == 'GetRequest') {
        # send print data

        # ID
        #
        #
        $shop_id = $_POST["ID"];

        # create print data
        if (file_exists(REQUEST_XML_PATH)) {
            # return print data
            $handle = fopen(REQUEST_XML_PATH, "r");
            fpassthru($handle);
            fclose($handle);

            # move file
            rename(REQUEST_XML_PATH, RESPONSE_XML_PATH);
        }
    } else if ($http_request == 'SetResponse') {
        # get print result

        $xml = simplexml_load_string($_POST["ResponseFile"]);
        $version = $xml['Version'];

        if ($version == '1.00') {

            # save log
            $fhandle = @fopen("ResultPrint.log", "wt");
            fprintf($fhandle, "PrintResponseInfo Version %s\n", $version);
            foreach ($xml->response as $response) {
                fprintf($fhandle, "----------\nsuccess : %s\ncode : %s\n",
            $response['success'], $response['code']);
            }
            fclose($fhandle);

        } else if ($version == '2.00') {

            # save log
            $fhandle = @fopen("ResultPrint.log", "wt");
            fprintf($fhandle, "PrintResponseInfo Version %s\n", $version);
            foreach ($xml->ePOSPrint as $eposprint) {
                $devid = $eposprint->Parameter->devid;
                $printjobid = $eposprint->Parameter->printjobid;
                $response = $eposprint->PrintResponse->response;
                fprintf($fhandle, "----------\ndevid : %s\nprintjobid : %s\nsuccess :
            %s\ncode : %s\n", $devid, $printjobid, $response['success'],
            $response['code']);
            }
            fclose($fhandle);

        } else {
            # Ignore other version
        }

    } else {
        # Ignore other connectionType than GetRequest and SetResponse.
    }
?>
```

Status Notification

This chapter describes the Status Notification function.

Overview

Status Notification is used to periodically notify the TM printers with SDP support status to the Web server. The Web server automatically responds with an empty response.
Operating the printer management application created by the user with the Web server enables grasp of the status of the printers installed in a shop from a remote place.
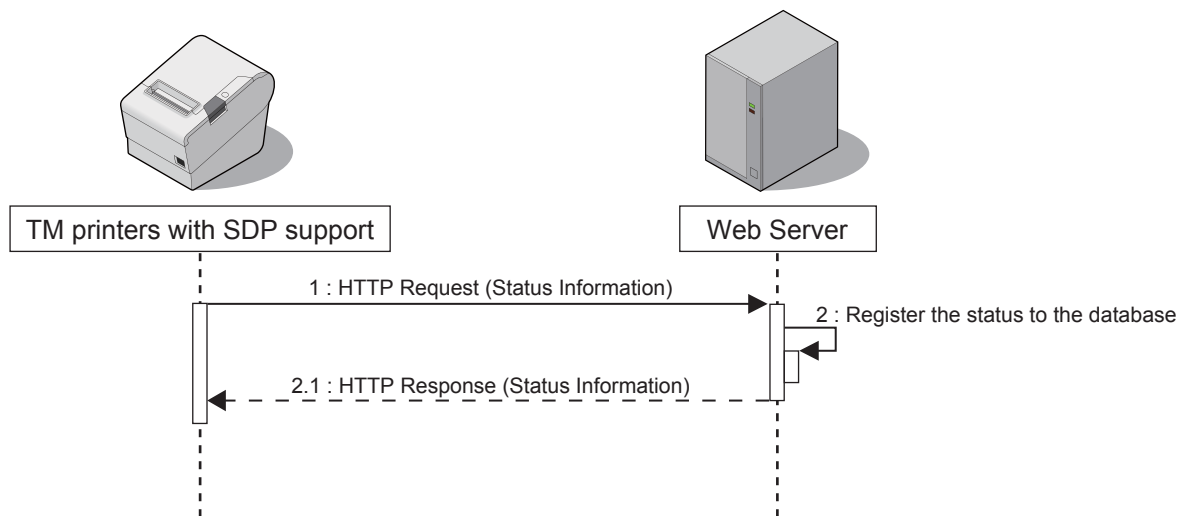
Overview of Status Notification Sample Program

This program displays the status of the connected printer on the screen.
For the configuration such as Hardware Configuration () and Environment Settings (), the same configuration is used as with the Server Direct Print.

File Configuration

File Name		Description
Test_status.php		Obtains and displays the result in response to a request from the printer.
resultPrint.log		The printing result is retained in this file. The file is created after printing.
demo	indexStatus.html	Displays the printer status.

TM Printers with SDP Support Settings

The registration screen will vary according to the model of TM printers with SDP support.

TM-i Series Settings

Configure the Status Notification settings using EPSON TMNet WebConfig.
Use the following procedure for registration.

1 Connect the printer to the network and turn the power ON.

2 Start the Web browser on the setup computer and enter as follows:
For TM-i Firmware Ver.4.0 or later
http://<IP address of the TM-i series>/webconfig/
For TM-i Firmware Ver.3.x or earlier
http://<IP address of the TM-i series>/PrinterConfigurationPage/

3 EPSON TMNet WebConfig starts.
For TM-i Firmware Ver.4.0 or later, select (Web Service Settings) - (Status Notification).
For TM-i Firmware Ver.3.x or earlier, select (Configuration) - (Status Notification).

4 The "Status Notification" / "Status Notification Settings" screen appears.
Set the following items and click (Apply) / (Submit).

For TM-i Firmware Ver.4.0 or later

Item	Description
Status Notification	Select the (Enable).
ID	Set ID for the server-side program to identify TM-i series. This ID becomes the user ID used for Digest access authentication. The set value will also be passed as an ID parameter value for the form data posted to the server. Not required for the sample program.
Password	Set your password used for Digest access authentication. The Digest access cannot be authenticated for user IDs without passwords. To authenticate the Digest access, configure a password that is not empty. Not required for the sample program.
URL	Specify the Test_print.php address of the Web server. Example: **http://<IP address of the Web Server>/Test_status.php** Click the (Access Test) to check if the address is accessible.
Interval(s)	Set the request interval. Request interval refers to the interval between the end of the previous communication and the start of the next communication.
Authenticate Server	Sets whether the server authentication is performed with the registered certificate when accessed through https.

For TM-i Firmware Ver.3.x or earlier

Item	Description
Status Notification	Select the (Enable).
ID	Set ID for the server-side program to identify TM-i series. This ID becomes the user ID used for Digest access authentication. The set value will also be passed as an ID parameter value for the form data posted to the server. Not required for the sample program.
Password	Set your password used for Digest access authentication. The Digest access cannot be authenticated for user IDs without passwords. To authenticate the Digest access, configure a password that is not empty. Not required for the sample program.
URL	Specify the Test_print.php address of the Web server. Example: **http://<IP address of the Web Server>/Test_status.php** Click the (Access Test) to check if the address is accessible.
Interval(s)	Set the request interval. Request interval refers to the interval between the end of the previous communication and the start of the next communication.

4

TM-DT Series Settings

Configure the Status Notification settings using EPSON TMNet WebConfig.

1 Connect the TM-DT series to the network and turn the power ON.

2 Start EPSON TMNet WebConfig from the shortcut on the desktop.
EPSON TMNet WebConfig starts.

> If you are making settings from an external device, set the TM-DT series IP address in the address for the Web browser. The default IP address for TM-DT series is 192.168.192.168.
> http://<IP address of the TM-DT series>/webconfig/

3 EPSON TMNet WebConfig starts.
Select (Settings)-(Web service settings)-(Server access)-(Status notification).

4 The "Status Notification" screen appears.
Set the following items and click (Apply).
For TM-DT Software Ver.3.0 or later

Item	Description
ID	Set ID for the server-side program to identify TM-DT series. This ID becomes the user ID used for Digest access authentication. The set value will also be passed as an ID parameter value for the form data posted to the server. Not required for the sample program.
Password	Set your password used for Digest access authentication. Not required for the sample program.
URL	Specifies the Web server URL and path to applications. Example: **http://<IP address of the Web Server>/Test_status.php** Click the (Access Test) to check if the address is accessible.
Interval (sec)	Set the request interval. Request interval refers to the interval between the end of the previous communication and the start of the next communication.
Server Authentication	Sets whether or not to conduct server authentication based on the registered certificate when conducting access by https.

For TM-DT Software Ver.2.6 or earlier

Item	Description
ID	Set ID for the server-side program to identify TM-DT series. This ID becomes the user ID used for Digest access authentication. The set value will also be passed as an ID parameter value for the form data posted to the server. Not required for the sample program.
Password	Set your password used for Digest access authentication. Not required for the sample program.
URL	Specifies the Web server URL and path to applications. Example: **http://<IP address of the Web Server>/Test_status.php** Click the (Access Test) to check if the address is accessible.
Interval (sec)	Set the request interval. Request interval refers to the interval between the end of the previous communication and the start of the next communication.

4

TM-T88VI and TM-T88VI-iHUB Settings

Configure the Status Notification settings using TM-T88VI Utility.

1 Starting the TM-T88VI Utility.

2 After TM-T88VI Utility starts, click (TM-Intelligent) - (Server Access) - (Status Notification).

3 The Server Status Notification appears.
Set the following items and click (Set).

Item			Description
Status Notification			Specifies whether to enable or disable the status notification.
	Notification Server	URL	Specifies the Web server URL and the application path. Example: http://<IP address of Web server>/Test_print.php
		ID	Enter the ID. This ID will be the user ID used for Digest authentication.
		Password	Set your password used for Digest access authentication. The Digest access cannot be authenticated for user IDs without passwords. To authenticate the Digest access, configure a password that is not empty. Not required for the sample program.
	Notification Interval		Specify the standby time between completion of status notification and issue of the next notification.
	URL Encode		Specifies whether to enable or disable the URL encode.
	Identifier		Enter the identifier for identifying the printer on the Web server side.
	Server Authentication		Specifies whether to enable or disable the server authentication. Register certificates in advance. Register the certificate for server authentication in (Network) - (Detailed Settings) - (Certificate). For instructions regarding the certificate registration, refer to TM-T88VI Utility User's Manual.

4   When using the proxy server, click the (TM-Intelligent) - (Server Access) - (Proxy).

5   The "Proxy" screen appears. Set the following items, then click (Set).

Item			Description
Proxy			Specifies whether to enable or disable the proxy.
	Proxy Server	URL	Enter the proxy server URL.
		ID	Enter the authentication ID. This ID will be the user ID used for Digest authentication.
		Password	Enter the authentication password. This password will be the password used for Digest authentication.
		Port	Enter the proxy server port number.
	Service to Enable a Proxy	Web Contents Automatic Update	Set to "Disabled".
		Server Direct Print	Set to "Enabled".
		Status Notification	Set to "Enabled".

4

Execution of Sample Program

1 Confirm that Status Notification of a TM printer with SDP support is set.

2 Open the sample program page from the Web browser.
Example: **http://<IP address of the Web Server>/demo/indexStatus.html**

3 The "resultPrint.log" is created from the message from the TM printers SDP support and the result is displayed on the screen.
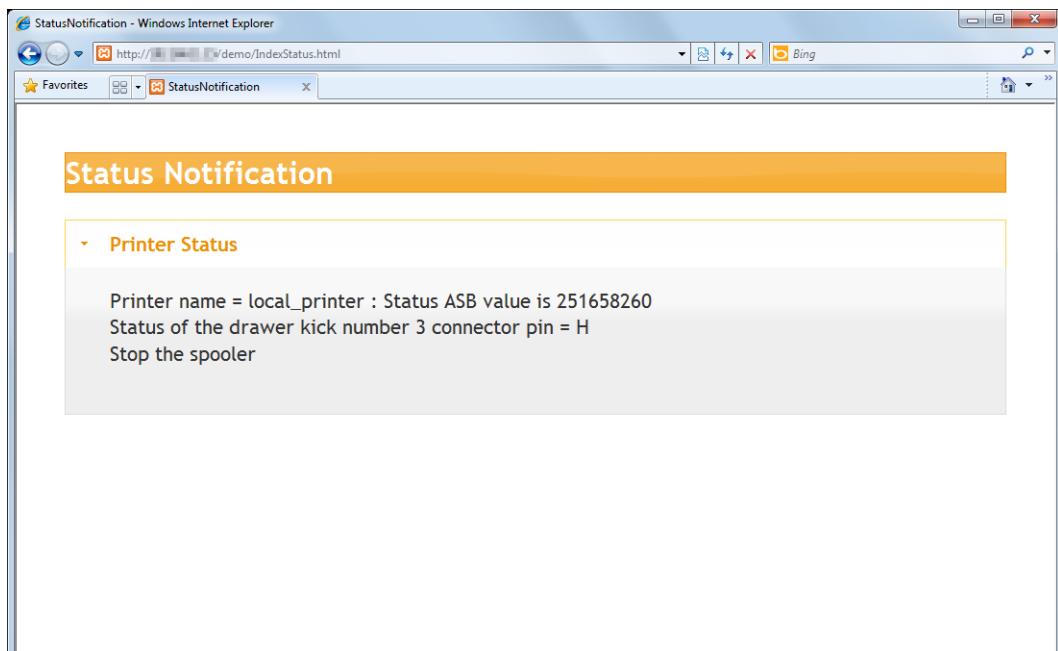
Status Type

The following types of ASB (AutoStatusBack) status can be obtained from the TM printers with SDP support.

Code	Description
0x00000004	Status of the drawer kick number 3 connector pin = "H" Offline due to a weak battery (supported model only)
0x00000008	Offline status
0x00000020	Cover is open
0x00000040	Paper feed switch is feeding paper
0x00000100	Waiting for online recovery
0x00000200	Paper feed switch is being pressed
0x00000400	Mechanical error occurred
0x00000800	Auto cutter error generated
0x00002000	Unrecoverable error generated
0x00004000	Auto recovery error generated
0x00020000	No paper in the roll paper near end detector
0x00080000	No paper in the roll paper end detector
0x01000000	Buzzer activated (supported model only) Waiting for label to be removed (supported model only)
0x04000000	No paper in label peeling sensor (supported model only)

4

Program Example

Refer to the programming below. (File name: Test_status.php)

```php
<?php
  header('Content-Type: text/xml; charset=UTF-8');
  # Open the file to save status.
  $fhandle = @fopen("ResultStatus.log", "wt");

  # Update the printer status.
  if (isset($_POST["Status"])) {
    $status =  $_POST["Status"];
  }
  $xml = simplexml_load_string($status);

  foreach ($xml->printerstatus as $printerstatus) {
          $asb = hexdec($printerstatus['asbstatus']);
          $strmsg = "";
    if (($asb & 0x00000004) == 0x00000004)
    {
          $strmsg .= "  Status of the drawer kick number 3 connector pin\n";
    }
    if (($asb & 0x00000008) == 0x00000008)
    {
          $strmsg .= "  Offline status \n";
    }
    if (($asb & 0x00000020) == 0x00000020)
    {
        $strmsg .= "  Cover is open \n";
    }
    if (($asb & 0x00000040) == 0x00000040)
    {
          $strmsg .= "  During paper feeding by pressing paper feed switch \n";
    }
    if (($asb & 0x00000100) == 0x00000100)
    {
          $strmsg .= "  Waiting for online recovery \n";
    }
    if (($asb & 0x00000200) == 0x00000200)
    {
          $strmsg .="  Paper feed switch is being pressed (ON) \n";
    }
    if (($asb & 0x00000400) == 0x00000400)
    {
          $strmsg .= "  Mechanical error generated \n";
    }
    if (($asb & 0x00000800) == 0x00000800)
    {
          $strmsg .= "  Auto cutter error generated \n";
    }
       if (($asb & 0x00002000) == 0x00002000)
    {
          $strmsg .= "  Unrecoverable error generated \n";
    }
    if (($asb & 0x00004000) == 0x00004000)
    {
          $strmsg .= "  Auto recovery error generated \n";
    }
    if (($asb & 0x00020000) == 0x00020000)
    {
          $strmsg .= "  No paper in the roll paper near end detector \n";
    }
```

```
     if (($asb & 0x00080000) == 0x00080000)
     {
             $strmsg .= "  No paper in the roll paper end detector \n";
     }
     if (($asb & 0x01000000) == 0x01000000)
     {
             $strmsg .= "  Buzzer activated (supported model only)   \n";
     }
     if (($asb & 0x01000000) == 0x01000000)
     {
             $strmsg .= "  Waiting for label to be removed (supported model only)
                         \n";
     }
     if (($asb & 0x04000000) == 0x04000000)
     {
             $strmsg .= "  No paper in label peeling sensor (supported model only)
                         \n";
     }
             $result = fprintf($fhandle, "Printer name = %s : Status ASB value is
                             %s \n",  $printerstatus['devicename'], $asb);
             $result = fprintf($fhandle,  "%s\n", $strmsg);
             if ($result) {
                 # OK
             } else {
                 # N.G
     }
 }
 fclose($fhandle);

?>
```

Request and Response

Request

The format of request message is URL-encoded form data (application/x-www-form-urlencoded).

Parameter	Value
ConnectionType	Status
ID	The ID set with WebConfig ()
ResponseFile	Status Information

```
POST /demo/Test_status.php HTTP/1.1
Host: 192.168.192.10
Content-Type: application/x-www-form-urlencoded
Content-Length: xxx

ConnectionType=SetStatus&ID=&Status=Status Information
```

The status information configuration is as follows:

Obtain the ASB status

```
<?xml version="1.0" encoding="utf-8"?>
<statusmonitor Version="1.00">
<printerstatus devicename="kitchen_printer" asbstatus = "0x00000001"/>
<printerstatus devicename="kitchen_printer2" asbstatus = "0x00000001"/>
<printerstatus devicename="local_printer" asbstatus = "0x0F00003C"/>
</statusmonitor>
```

Battery Status

With TM-T88VI and TM-T88VI-iHUB, a battery status notification is sent for the controlled mobile printer.

Code	Description
0x30XX	The AC adapter is connected
0x31XX	The AC adapter is not connected
0xXX36	Battery amount 6
0xXX35	Battery amount 5
0xXX34	Battery amount 4
0xXX33	Battery amount 3
0xXX32	Battery amount 2
0xXX31	Battery amount 1 (Near end)
0xXX30	Battery amount 0 (Real end)

```
The status information configuration is as follows:
<printerstatus devicename="local_printer" asbstatus = "0x0F00001C" battery = "0x0000"/>
```

Server Access Error Notification

With TM-T88VI and TM-T88VI-iHUB, a notification can be sent for errors that occur when the server is accessed.

Code	Description
%Function%	
Server Direct Print	Server Direct Print
Web Contents Updater	Web Contents Updater
Network	Network
Status Notification	Status Notification
%Code%	
Service Start	Normal Operation
Server Connection error	An error occurred in the connection with the specified URL When %Function% = Web Contents Updater or %Function% = Network
Server Connection error Server1	An error occurred in the connection with the specified URL1 When %Function% = Server Direct Print
Server Connection error Server2	An error occurred in the connection with the specified URL2 When %Function% = Server Direct Print
Server Connection error Server3	An error occurred in the connection with the specified URL3 When %Function% = Server Direct Print
Unknown Device	Elements other than the wireless dongle have been installed When %Function% = Network
Wlan module lost	The wireless dongle has been removed When %Function% = Network
Server connection error	Could not connect to the time server When %Function% = Network
%Severity%	
blank character	Normal Operation
Warning	Printer in warning mode
Offline	Printer in offline mode
%Msg%	
Cannot connect server	An error occurred in the connection with the specified URL When %Function% = Web Contents Updater or %Function% = Network
Cannot connect server1 http://...	An error occurred in the connection with the specified URL1 When %Function% = Server Direct Print
Cannot connect server2 http://...	An error occurred in the connection with the specified URL2 When %Function% = Server Direct Print
Cannot connect server3 http://...	An error occurred in the connection with the specified URL3 When %Function% = Server Direct Print
Contents not found.	Could not access the specified URL When %Function% = Web Contents Updater
Failed to get HTTP Header.	Failed to get HTTP(S) header with the specified URL

4

Code	Description
No Last-Modified information in a header.	No Last-Modified information in a header.
Insufficient Disk Space to download.	Not enough ROM space to download the web contents
Failed to download contents.	Failed to download contents.
Insufficient Disk Space to extract.	Not enough ROM space to expand the web contents
Failed to extract a zip file.	Failed to expand the web contents
A suffix of actual URL is not ended with ".zip"	A suffix of actual URL is not ended with ".zip"
Authentication failed.	Failed to authenticate the server password
Proxy authentication failed.	Failed to authenticate the proxy password
Secret key for SSL certificate is not found.	Could not find ServerKey.key in the sslservercerts folder in the web contents
Certificate for SSL certificate is not found.	Could not find ServerCrt.crt in the sslservercerts folder in the web contents
MD5 hash value is invalid.	The MD5 value of the web contents and the MD5 file value did not match
Invalid server certificates.	Incorrect format of the server certificate in the ssltrustedcerts folder in the web contents
Server certificates has been expired.	The server certificate in the ssltrustedcerts folder in the web contents has expired
Failed to import SSL certificate.	Failed to import ServerCrt.crt in the sslservercerts folder in the web contents
Failed to import SSL private key.	Failed to import ServerKey.key in the sslservercerts folder in the web contents
Failed to import SSL chained certificate.	Failed to import ChainCrt.crt in the sslservercerts folder in the web contents
Invalid SSL certificate.	Incorrect combination of ServerKey.key and ServerCrt.crt in the sslservercerts folder in the web contents
WebApplication is running.	Unable to update the web contents because the PHP application is running on the printer
Unknown Device	Elements other than the wireless dongle have been installed When %Function%=Network
Wlan module lost	The wireless dongle has been removed When %Function%=Network
SNTP sync failed	Could not connect to the time server When %Function%=Network

```
<?xml version="1.0" encoding="utf-8"?>
<statusmonitor Version="1.10">
<printerstatus devicename="local_printer" asbstatus = "0x0F00001C"
battery = "0x0000"/>
<servicestatus servicename="%Function%" code="%Code%"
severity="%Severity%" message="%Msg%" />
</statusmonitor>
```

Response

The format of response message is XML(text/xml).

To indicate that the server received the status notification, the Web server returns a response as follows:

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: 0
```

Digest Access Authentication

Digest access authentication can be used for the status notification.

See

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