EPSON®

EXCEED YOUR VISION

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.

M00062904

Rev.E

Cautions

- No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Seiko Epson Corporation.

- The contents of this document are subject to change without notice. Please contact us for the latest information.

- While every precaution has taken in the preparation of this document, Seiko Epson Corporation assumes no responsibility for errors or omissions.

- Neither is any liability assumed for damages resulting from the use of the information contained herein.

- Neither Seiko Epson Corporation nor its affiliates shall be liable to the purchaser of this product or third parties for damages, losses, costs, or expenses incurred by the purchaser or third parties as a result of: accident, misuse, or abuse of this product or unauthorized modifications, repairs, or alterations to this product, or (excluding the U.S.) failure to strictly comply with Seiko Epson Corporation's operating and maintenance instructions.

- Seiko Epson Corporation shall not be liable against any damages or problems arising from the use of any options or any consumable products other than those designated as Original EPSON Products or EPSON Approved Products by Seiko Epson Corporation.

Trademarks

EPSON and EXCEED YOUR VISION are registered trademarks of Seiko Epson Corporation in Japan and other countries/regions.

Windows® and Internet Explorer® are either registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.

Safari™ and TrueType® are either registered trademarks or trademarks of Apple Inc. in the United States and other countries.

For Safety

Key to Symbols

The symbols in this manual are identified by their level of importance, as defined below. Read the following carefully before handling the product.

⚠	Provides information that must be observed to avoid damage to your equipment or a malfunction.
✎	Provides important information and useful tips.

Restriction of Use

When this product is used for applications requiring high reliability/safety such as transportation devices related to aviation, rail, marine, automotive etc.; disaster prevention devices; various safety devices etc; or functional/precision devices etc, you should use this product only after giving consideration to including fail-safes and redundancies into your design to maintain safety and total system reliability. Because this product was not intended for use in applications requiring extremely high reliability/safety such as aerospace equipment, main communication equipment, nuclear power control equipment, or medical equipment related to direct medical care etc, please make your own judgment on this product's suitability after a full evaluation.

About this Manual

Aim of the Manual

This manual presents information that is necessary information for using the TM-Intelligent.

The TM-Intelligent series in this manual is a generic term for the TM-DT series and TM-i series.

The TM-DT series in this manual is a generic term for the following printers.

- TM-T88V-DT
- TM-T70II-DT
- TM-H6000IV-DT

The TM-i series in this manual is a generic term for the following printers.

- TM-T88V-i
- TM-T70-i
- TM-T82II-i
- TM-L90-i

Manual Content

The manual is made up of the following sections:

Chapter 1   Overview

Chapter 2   Sample Program

Chapter 3   Request and Response

Chapter 4   Status Notification

Contents

Request and Response 41

Status Notification...53

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 intelligent printer (TM-i and TM-DT) to obtain the print data from the Web server and print the data. TM intelligent printer can be used also for controllable printers in the network.

The TM intelligent printer can print to a TM printer in the network.
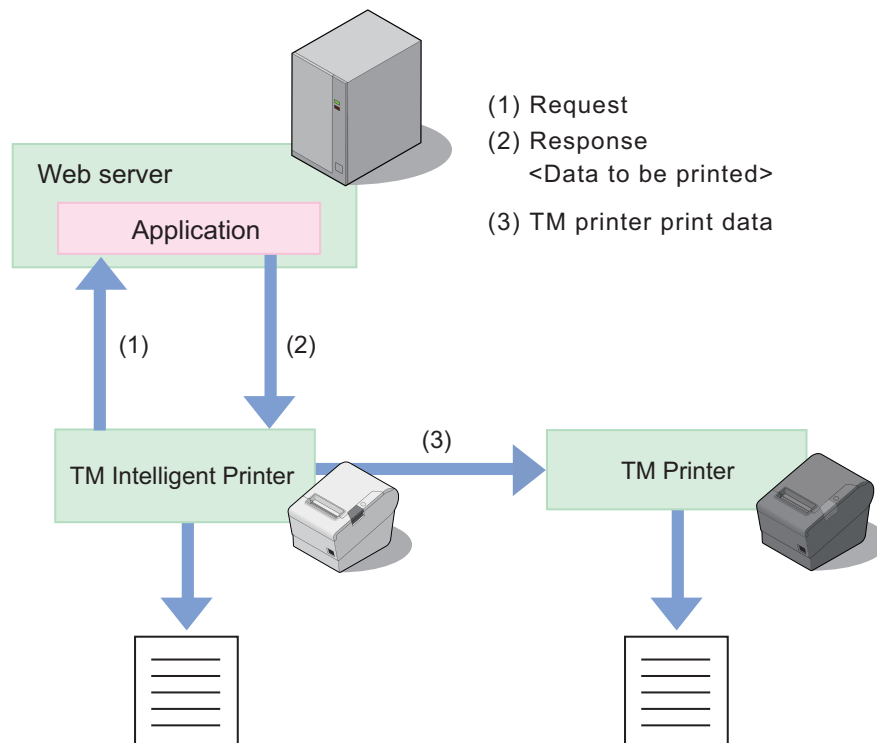
TM intelligent printer periodically sends a print request ((1) in the figure above) to the Web server.

The Web server application includes print data in the response ((2) in the figure above) to a print request from the TM intelligent printer. (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 intelligent printer 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 intelligent printer converts the ePOS-Print XML format into the print layout and prints it.

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.

Traditional Printing

Server Direct Print

Computer

Application

Specifies a printer

Print layout data

TM Printer

Print data

Web Server

Application

Global IP Address

TM Intelligent Printer
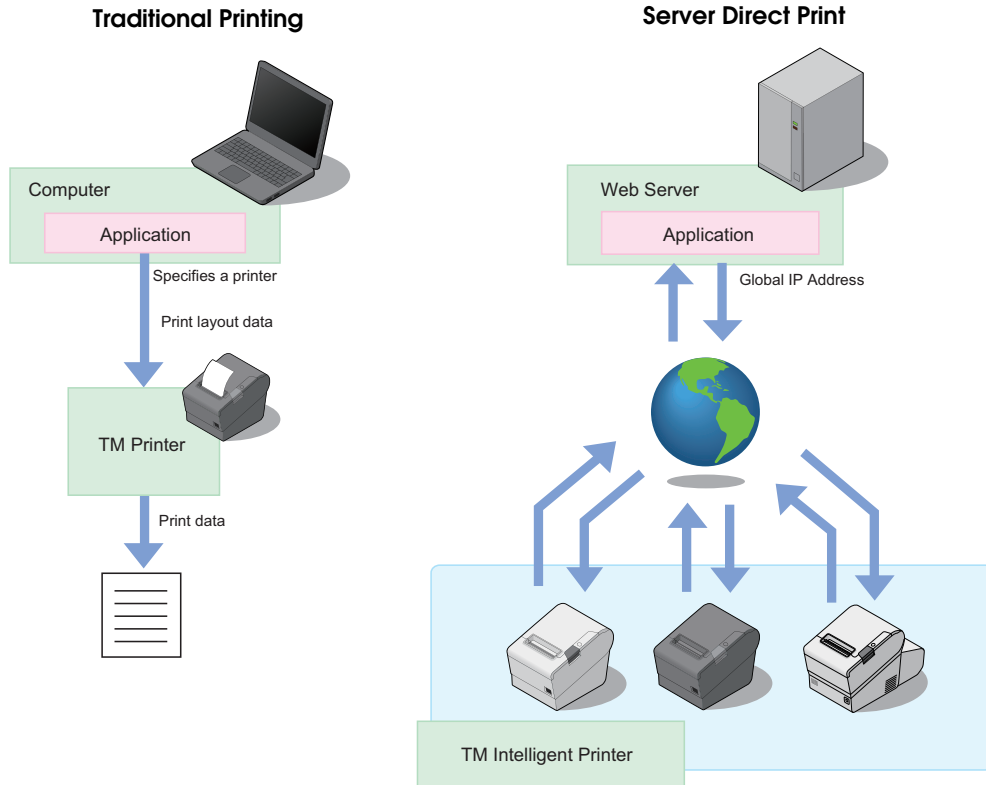
Printing Process

1 TM intelligent printer asks the Web server whether data to be printed exists.

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 intelligent printer.
When no data to be printed exists, an empty response is returned.

3 TM intelligent printer prints the data to the specified printer.

4 TM intelligent printer sends a request (printing result) to check whether the data was printed properly.

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

The printing flow is as follows:
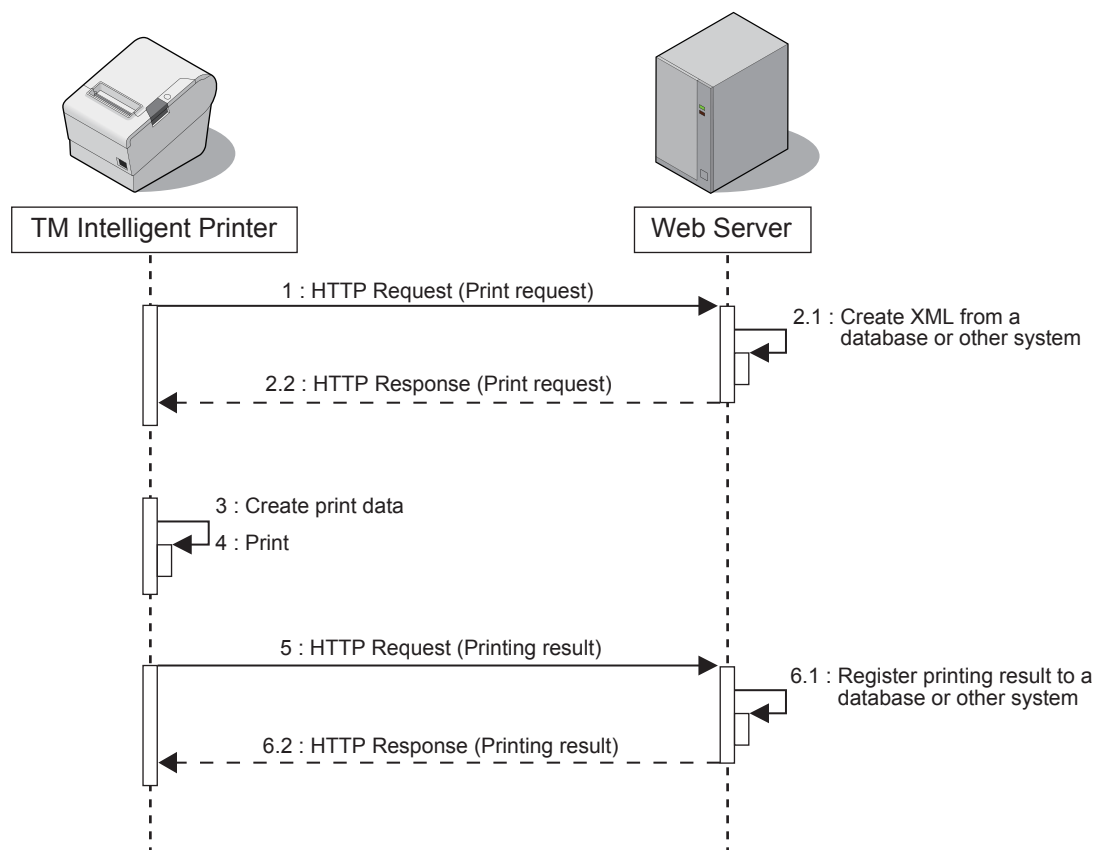
Overview of Status Notification

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

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.
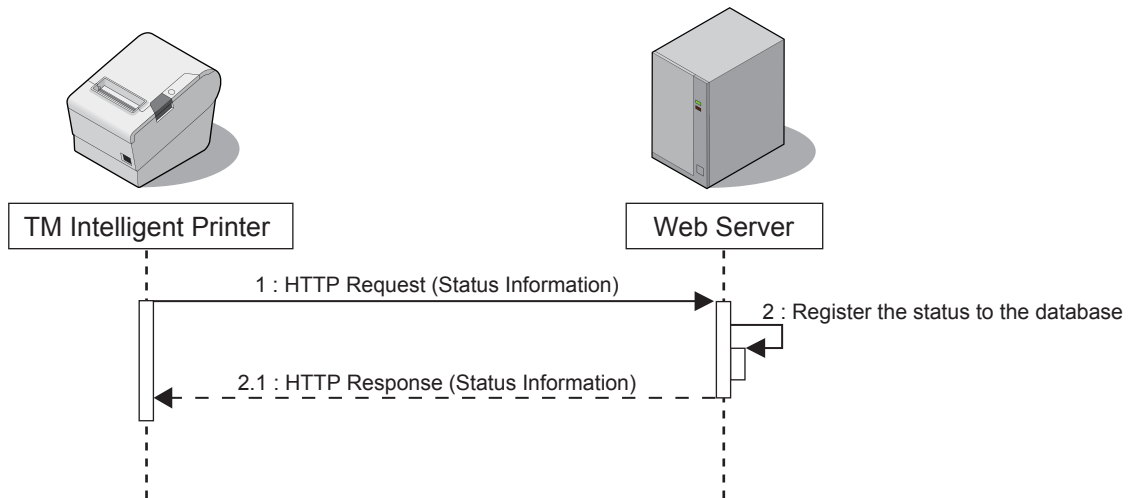
Operating Environment

How to Access the Web server

How to access	TM-DT	TM-i
Proxy server	●[*1]	●[*2]
Proxy authentication	▲	●[*2]
Digest authentication	●[*3]	●[*2]
HTTPS communication	●[*4]	●[*2]
HTTPS communication with server authentication	▲	●[*2]

●: Supported, ▲: Not supported

*1: Available only for Web contents automatic updating

*2: TM-i firmware ver.4.0 or later

*3: Available only for Server Direct Print and Status Notification

*4: ePOS-Device ver.2.2 or later

Number of URLs accessible for Server Direct Print

Model	Version	Number of URLs accessible
TM-DT		1
TM-i	TM-i firmware ver.4.0 or later	3
	TM-i firmware ver.3.x or earlier	1

TM Intelligent Printer

TM Intelligent Printer		ePOS-Print
TM-DT	TM-T88V-DT TM-T70II-DT TM-H6000IV-DT	●*1
TM-i	TM-T88V-i TM-T70-i TM-T82II-i TM-L90-i	●*2

●: Supported, ▲: Not supported

*1: ePOS-Device ver.2.2 or later

*2: TM-i firmware ver.3.0 or later

TM Printer

TM Printer	TM-i	TM-DT
TM-T88V	●	●
TM-T88IV	●	▲
TM-T70	●	●
TM-T70II	●*1	●
TM-T90	●	●
TM-T20	●*2	●
TM-T20II	●*1	●
TM-T82II	●*1	●
TM-L90	●	●
TM-U220	●*2	●
TM-P60II	●*2	●
TM-P60II Peeler	●*2	●
TM-P80	●*1	▲

●: Supported, ▲: Not supported

*1: TM-i firmware ver.4.0 or later

*2: TM-i firmware ver.3.0 or later

Contents In the Package

Manual

❏ Server Direct Print User's Manual (This Document)
❏ Detailed user's manual for each printer

Sample Program

The sample program is included in the Server Direct Print User's Manual package.

❏ epsonsample_eposprint.zip: Sample Program for ePOS-Print XML

Utility

Used to register NV logo to the printer.

Utility		TM printer
Utility specialized for each model	TM-T88V Utility	• TM-T88V-i/ TM-T88V-DT/ TM-T88V
	TM-T70II Utility	• TM-T70II-DT/ TM-T70II
	TM-H6000IV Utility	• TM-H6000IV/ TM-H6000IV-DT
	TM-T20 Utility	• TM-T20
	TM-T20II Utility	• TM-T20II
	TM-T82II Utility	• TM-T82II-i/TM-T82II
	TM-P60II Utility	• TM-P60II/ TM-P60II Peeler
	TM-P80 Utility	• TM-P80
Logo registration utility (TMFLogo)		• TM-L90/ TM-L90-i • TM-T90 • TM-T88IV • TM-T70-i/ TM-T70 • TM-U220

Download

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

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

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

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

TM-DT Version

The functions that can be implemented vary with the TM-DT software version (ePOS-device Version) of the TM-DT.

If you update the ePOS-Device, you will be able to use Server Direct Print's new functions.

Confirming the ePOS-Device version

You can confirm the version of the ePOS-Device on the EPSON TMNet WebConfig title bar.

Downloading the ePOS-Device update program

Download the following file from the Epson website and save it in your local environment.

• File name:　　　ePOS-Device System Update Package

For more information about the update method, refer to the Readme file in the ePOS-Device update package.

> ⚠ The ePOS-Device cannot be rolled back to an earlier version.

TM-i Version

The functions that can be implemented vary with the TM-i firmware version. Inquire with your dealer concerning updates for the TM-i firmware.

Confirming the TM-i firmware version

You can confirm the version of the ePOS-Device on the EPSON TMNet WebConfig title bar.

Make sure that this printer is ready to print (the paper is set and the power is turned on), and hold down the push button at the rear of this printer for at least 3 seconds before releasing it.

TM-i firmware ver.4.0 or later	TM-i firmware ver.3.x or earlier
```\n*******************************\n EPSON Status Sheet\n*******************************\n\n<General Information>\nFirmware\n X.XX\nePOS-Device\n X.XX\nModel\n TM-T88V-i\nTime\n```	```\n*******************************\n EPSON Status Sheet\n*******************************\n\n<General Information>\nSoftware\n X.XX\nModel\n TM-T88V-i\nTime\n yyyy-mm-dd hh:nn:ss\n GMT+hh:nn\n```
"Firmware" (TM-i Firmware Version) is printed under <General Information>.	"Software" (TM-i Firmware Version) is printed under <General Information>.

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.

❏ Drawer open operates when the TM intelligent printer is in online status (when the roll paper is loaded and the roll paper cover is closed).
If you are using a TM-i (firmware version 3.0 or later)/ TM-DT (firmware version 2.2 or later), if you designate forced transmission mode with ePOS-Print XML, it will operate offline.

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

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 intelligent printer. The TM intelligent printer 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.
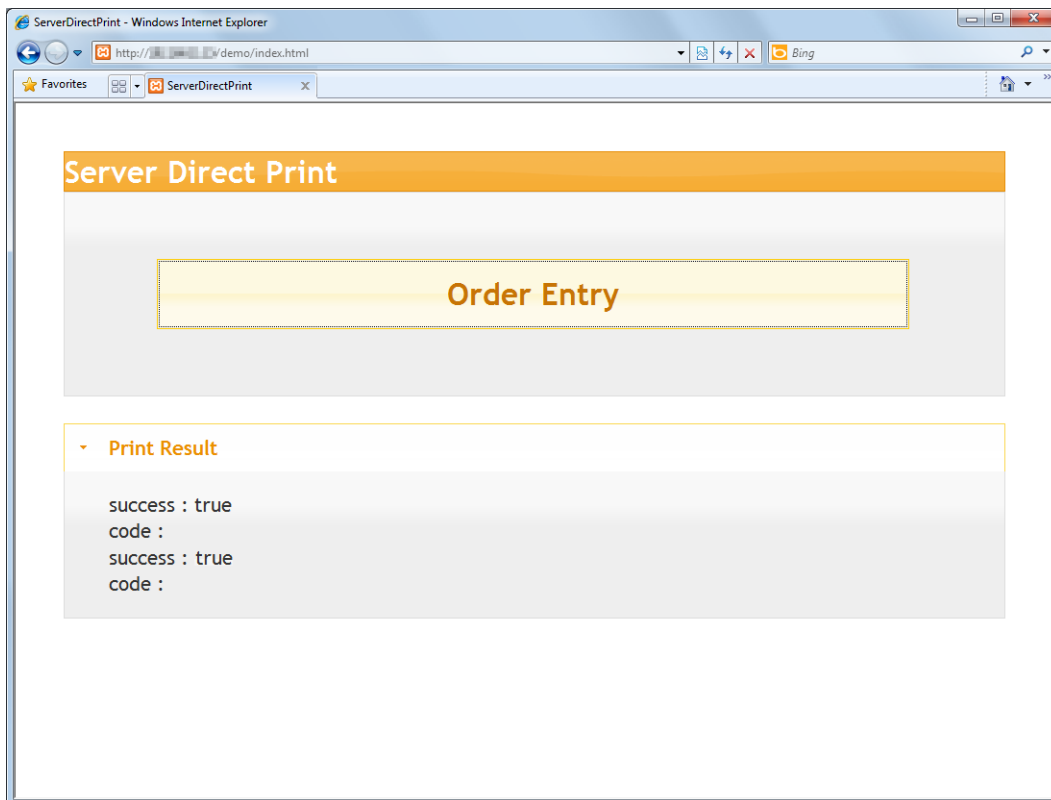
Hardware Configuration

The system configuration of the sample program is as shown below.

Web Server
(192.168.192.10)

TM Intelligent Printer
(TM-T88V-i)
(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 XAMP.)
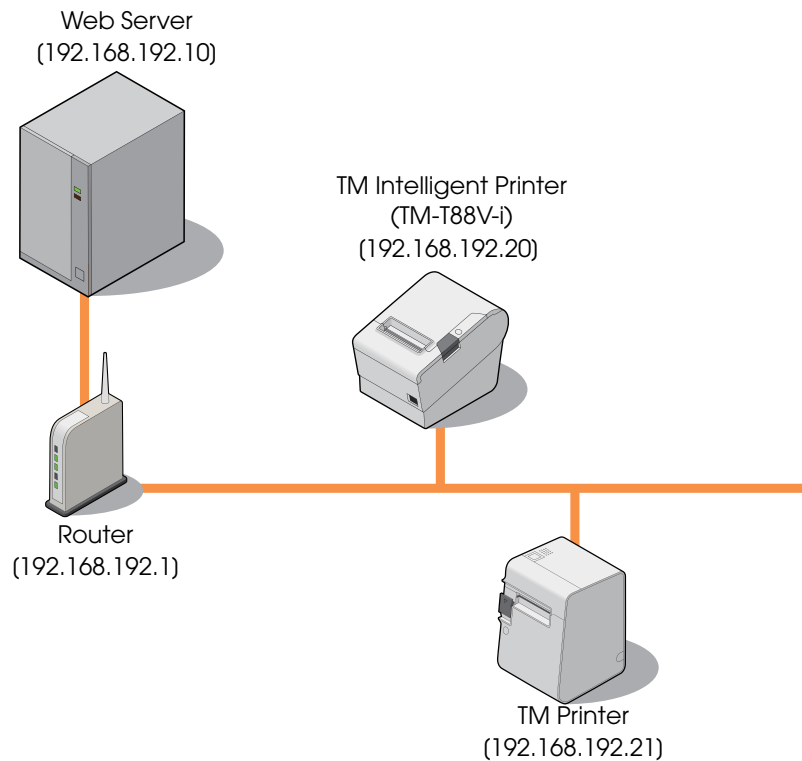
❏ Router

❏ TM Intelligent Printer

- TM-T88V-i, TM-T70-i, TM-L90-i, TM-T88V-DT, TM-T70II-DT or TM-H6000IV-DT

❏ TM Printer

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.
	sample.xml	The data of response message.

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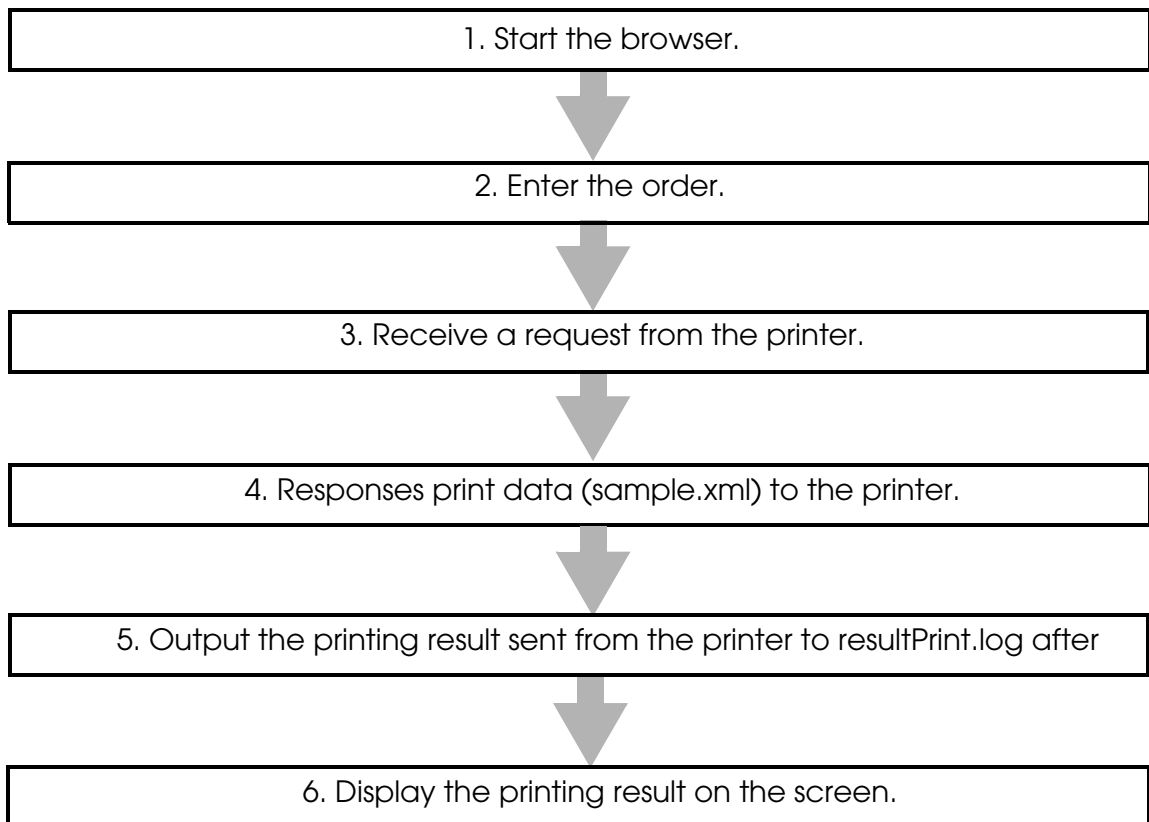
Environment Settings

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.21)

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 (p.22)

Set an IP address to the TM printer to be connected.

⬇

4.TM Intelligent Printer Settings

❏ TM-i ()

- IP Address Setting
- Register the TM Printers (Device ID, IP Address)
- Server authentication setting * (set this as necessary)
- Proxy server setting * (set this as necessary)
- Server Direct Print Setting

*: TM-i firmware ver.4.0 or later.

❏ TM-DT ()

- Initial OS Settings
- Initializing the ePOS-Device
- IP Address Setting
- Service Startup Settings
- Server Direct Print 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)

TM Printer Network Settings

Configure the network settings such as IP address from the Web browser on the setup PC to the printer, using EPSON TMNet WebConfig.

⚠️ Be sure to set the TM printer network settings for each TM printer.
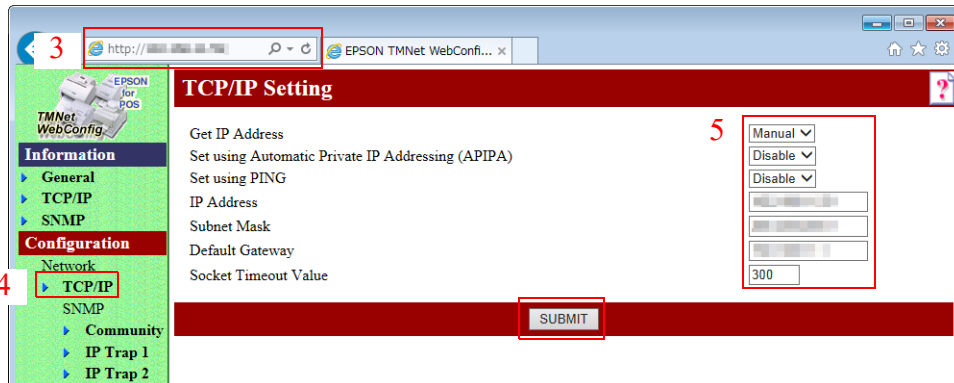
Configure the settings according to the following procedure:

1 Start the setup computer.

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

3 Start the Web browser and type the URL of the TM printer interface into the address bar. Enter the password.
http://(IP address of the TM printer)/PrinterConfigurationPage/

> • The default ID address of TM printer is "192.168.192.168".
> • The login name for the TM printer is "epson", and the default password is "epson".

4 EPSON TMNet WebConfig starts.
Select as (Configuration) - (Network) - (TCP/IP).

5 The "TCP/IP Setting" screen appears.
Configure the network settings for the TM printer and click (SUBMIT).

6 Print the status sheet with the TM printer to confirm that the IP address is updated, and turn off the TM printer.

7 Repeat Step 2 to 6 for all TM printers.

TM-i Settings

Configure the following settings to TM-i.

❏ IP Address Settings (p. 23)

❏ Registration of TM Printer (p. 24)

❏ Server Direct Print Settings (p. 27)

IP Address Settings

There are two ways of setting IP address of TM-i.

• Automatic Setting Using DHCP

• Manual Setting Using EPSON TMNet WebConfig

Automatic Setting Using DHCP

1   Make sure the power of TM-i is turned off, and then connect it to the network.

2   Turn on the TM-i.
IP address is obtained automatically by DHCP.

3   If automatic acquisition of IP address using DHCP successed, the IP address is printed.

> If automatic acquisition of IP address using DHCP fails, the IP address is set to "192.168.192.168".

Manual Setting Using EPSON TMNet WebConfig

1   Start the setup computer.

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

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

4   EPSON TMNet WebConfig will start. Make the network setting.
For detail, refer to Technical Reference Guide of each TM-i. After making the setting, click (Apply).

5   Print the TM-i status sheet and check the network setting.

Registration of TM Printer

Register the device ID and IP address of the controlled TM printer to TM-i. 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.

TM-i firmware ver.3.x or earlier
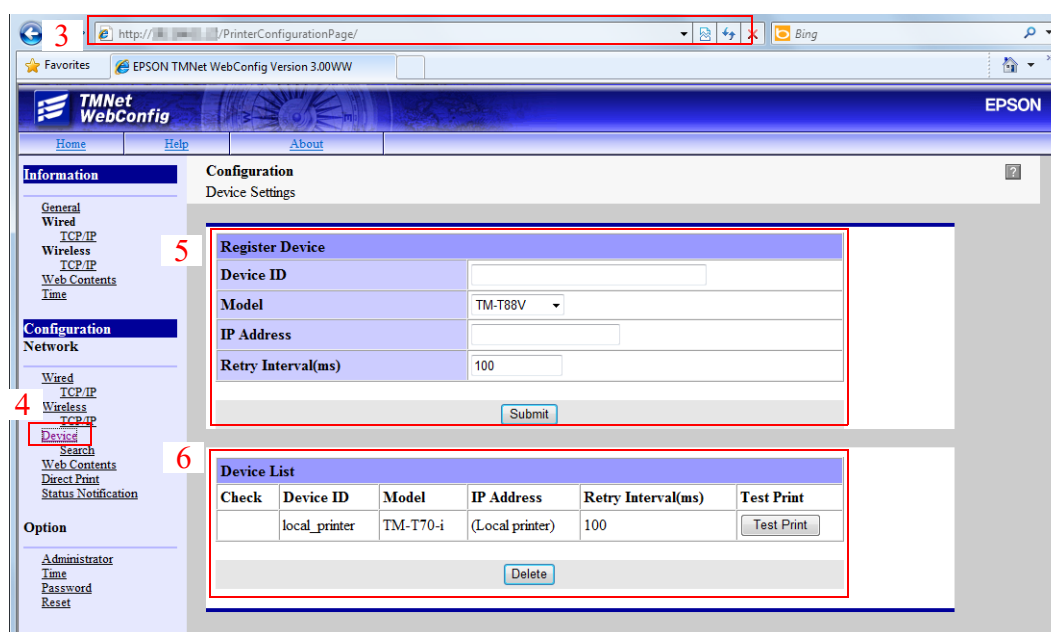
Use the following procedure for registration.

1 Start the setup computer.

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

3 Start the Web browser on the setup computer and enter as follows:
http://(IP address of the TM-i)/PrinterConfigurationPage/
For details about the IP address settings for TM-i, see IP Address Settings (p.23).

4 EPSON TMNet WebConfig starts.
Select as (Device).

5 The "Device Settings" screen appears.
Set the following items and click (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. (p. 22)
Retry Interval (ms)	Set the timeout retry interval. Specify "100".

6 The information of the registered device is displayed in "Device List".
Click (Test Print) to check if the registered printer operates properly.

TM-i firmware ver.4.0 or later

Use the following procedure for registration.

1 Start the setup computer.

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

3 Start the Web browser on the setup computer and enter as follows:
http://(IP address of the TM-i)/PrinterConfigurationPage/
For details about the IP address settings for TM-i, see IP Address Settings (p.23).
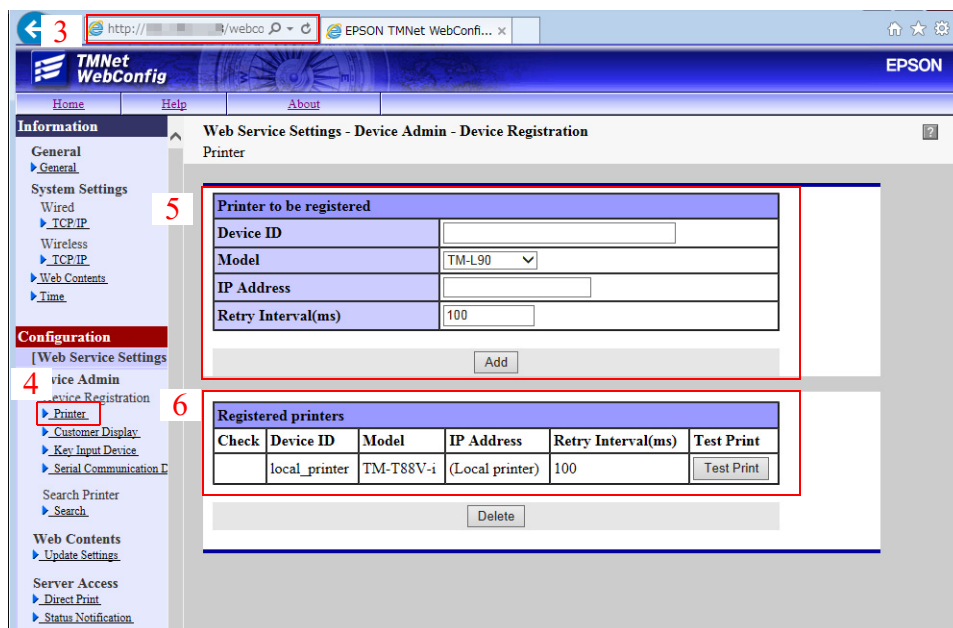
4 EPSON TMNet WebConfig starts. Select (Web Service Settings) - (Printer).

5 The "Printer" screen appears.
Configure the following items, click (Add).

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. (p. 23)
Retry Interval (ms)	Set the timeout retry interval. Specify "100".

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

Server Direct Print Settings

Configure the Server Direct Print settings using EPSON TMNet WebConfig.

TM-i firmware ver.3.x or earlier
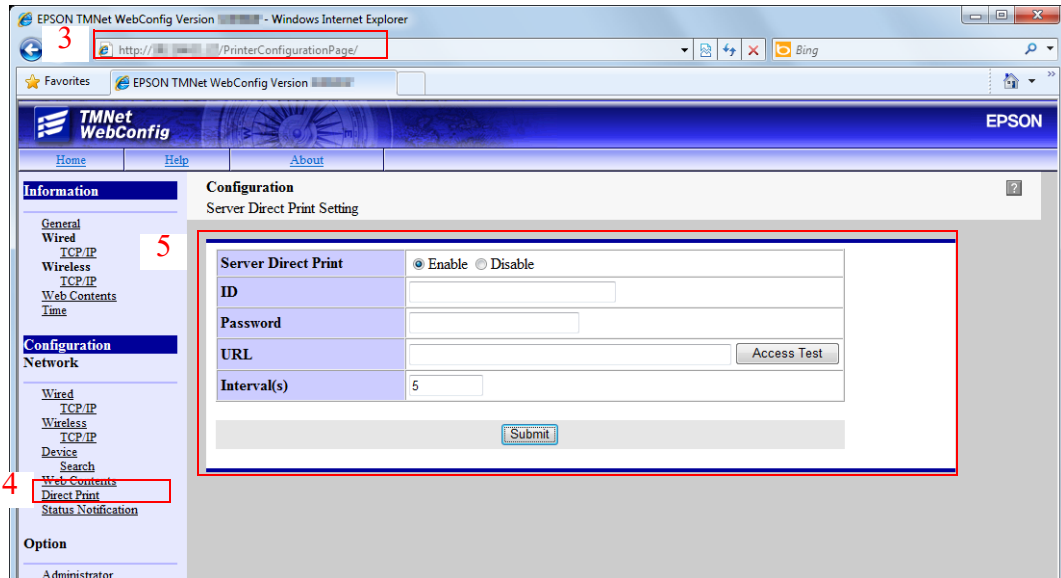
Use the following procedure for registration.

1 Start the setup computer.

2 Connect the TM-i to the network and turn the power ON.

3 Start the Web browser on the setup computer and enter as follows:
http://(IP address of the TM-i)/PrinterConfigurationPage/
For details about the IP address settings for TM-i, see IP Address Settings (p.23).

4 EPSON TMNet WebConfig starts.
Select as (Direct Print).

5 The "Server Direct Print Setting" screen appears.
Set the following items and click (Submit).

Item	Description
Server Direct Print	Select the (Enable).
ID	Set ID for the server-side program to identify TM-i. 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 Web server)/Test_print.php** Click the (Access Test) button to check if the address is accessible.
Interval(s)	Set the request interval.

TM-i firmware ver.4.0 or later

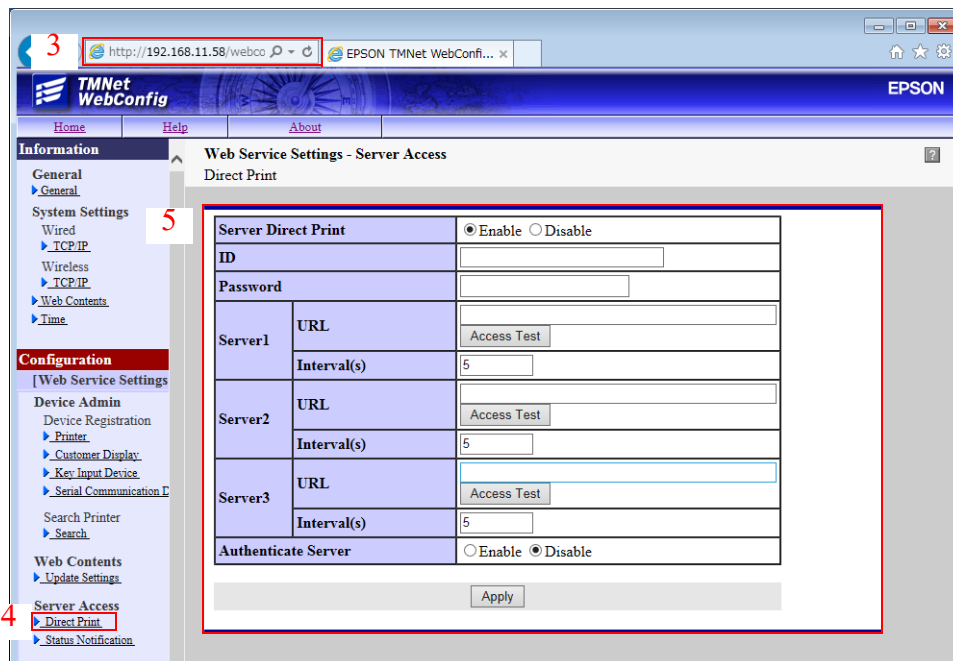Use the following procedure for registration.

1 Start the setup computer.

2 Connect the TM-i to the network and turn the power ON.

3 Start the Web browser on the setup computer and enter as follows:
http://(IP address of the TM-i)/PrinterConfigurationPage/
For details about the IP address settings for TM-i, see IP Address Settings (p.23).

4 EPSON TMNet WebConfig starts.
Select (Web Service Settings) - (Direct Print).

5 The "Direct Print" screen appears.
Set the following items and click (Apply).

Item		Description
Server Direct Print		Select the (Enable).
ID		Set ID for the server-side program to identify TM-i. 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.
Server 1	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) button to check if the address is accessible.
	Interval(s)	Set the request interval.

Item	Description
Authenticate Server	Sets whether the server authentication is performed with the registered certificate when accessed through https.

6 When using Server, select (System Settings) - (Proxy).
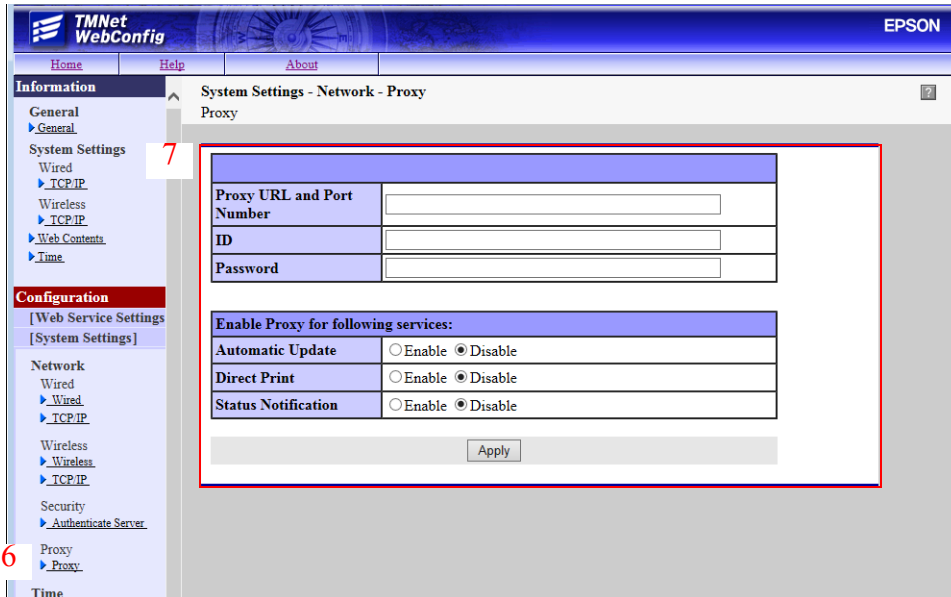
7 The "Proxy" screen appears. Set the following items, then click (Apply).

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		Registers the proxyauthentication password.
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.

TM-DT Settings

Configure the following settings to TM-DT.

❏ Initial OS Settings ()

❏ Initializing the ePOS-Device ()

❏ IP Address Settings ()

❏ Service Startup Settings ()

❏ Server Direct Print Settings ()

❏ Registration of TM Printer ()

Initial OS Settings

This section describes the procedure for making OS settings when the TM-DT is turned on for the first time.

⚠	• A display and keyboard are required to set up the OS. • Connect the display when the power to the TM-DT is off. Connecting the display when the power is on could cause the display to not function correctly.
✎	This section describes details for Windows Embedded POS Ready 2009. If you are using a different OS, substitute the name of the OS as appropriate.

1 Make sure the power to the TM-DT is off, and then connect the display and keyboard.

2 When the power to the TM-DT is turned on for the first time, the Windows Embedded POS Ready 2009 Setup screen is displayed briefly.

3 The logon screen is displayed. Enter your user name and password.
Refer to the TM-DT Technical Reference Guide for details about initial settings.

4 The desktop for the OS is displayed. Select (Start) - (Control Panel) - (Clock, Language, and Region) - (Date and Time). Set the date, time, and time zone.

Initializing the ePOS-Device

Use the shortcut on the desktop to enable the ePOS-Device.
(Enabled) is set in the default factory settings.

Enabling the ePOS-Device

Select the (ePOS-Device Enabled) shortcut on the desktop.

IP Address Settings

Set an IP address. This setting is the same as for Windows computers. Use the following procedure.

- Setting in Windows
- Setting in EPSON TMNet WebConfig (TM-DT software ver. 2.x or later)
- Setting in EPSONNet Config (TM-DT software ver. 2.x or later)

Setting in Windows

Click (Start) - (Control Panel) - (View network status and tasks) and make a "Network connection".
Right-click the connection you want to set, and then select the connection properties.
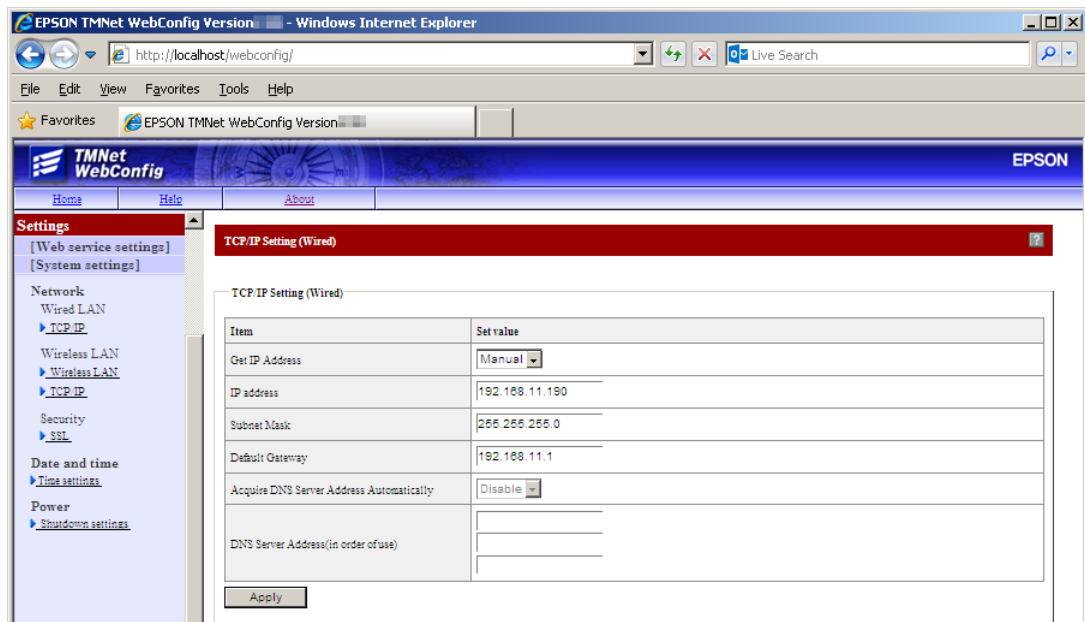
Setting in EPSON TMNet WebConfig

You can make these settings via a network from the computer you want to set. You can set an IP address even if a display is not connected to TM-DT. Use 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 IP address in the address for the Web browser. The default IP address for TM-DT is 192.168.192.168.
> http://[IP address of TM-DT]/webconfig/

2 Select as (Settings)-(System settings)-(Wired LAN)-(TCP/IP).
The "TCP/IP Setting (Wired)" screen appears.

**3** Make the other network settings, and then click (Apply).

Setting in EPSONNet Config

To set an IP address for TM-DT from an external device, use EPSONNet Config. You can set an IP address even if a display is not connected to TM-DT. For more information, refer to the EPSONNet Config Operation Guide.
The default IP address for TM-DT is 192.168.192.168.

Service startup settings

To make service startup settings, use EPSON TMNet WebConfig and the following procedure.
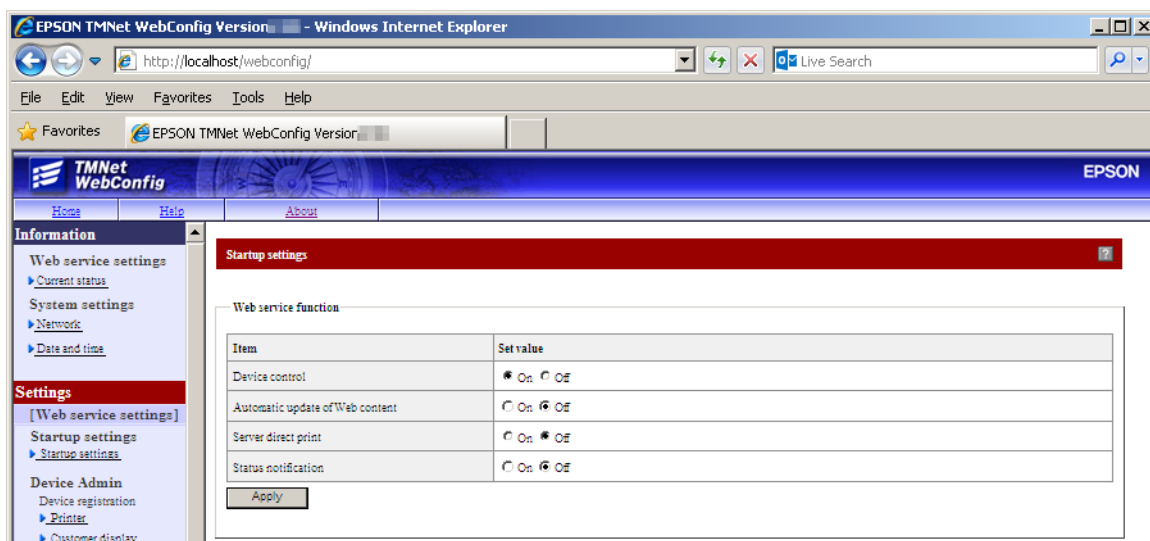
1 Start EPSON TMNet WebConfig from the shortcut on the desktop.

EPSON TMNet WebConfig starts.

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

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

The "Startup settings" screen appears.

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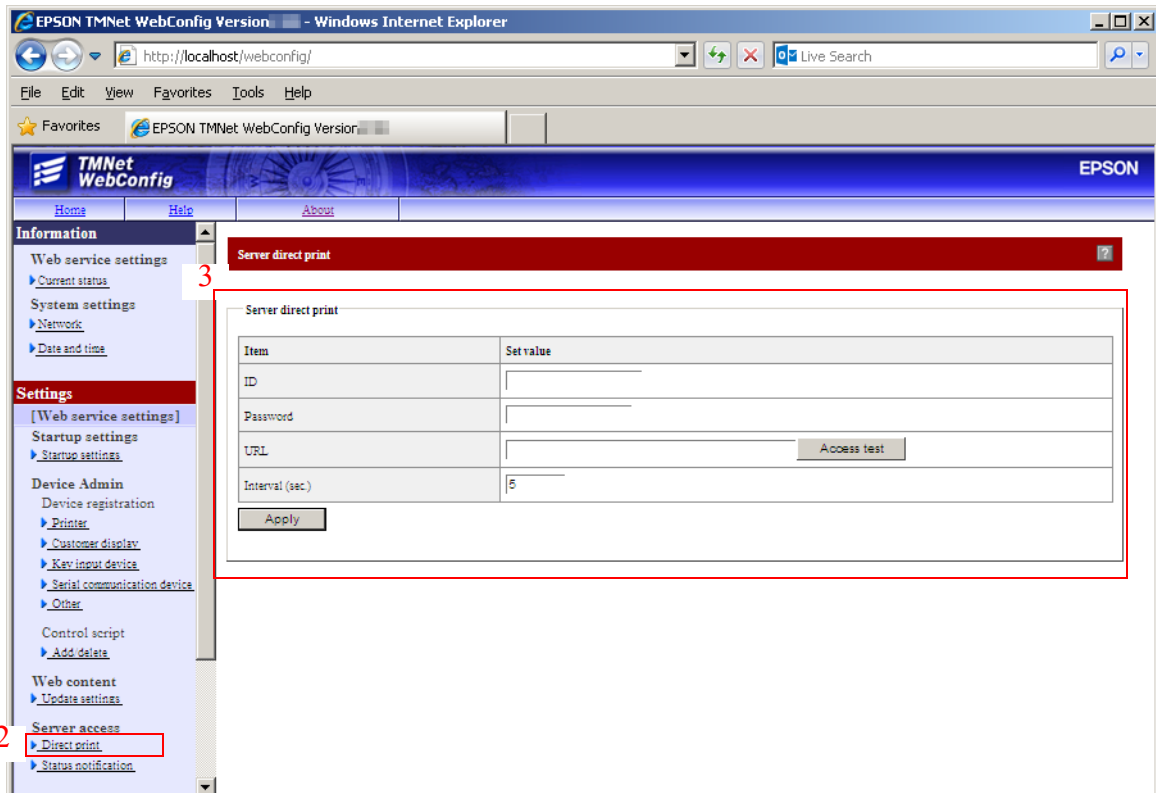EPSON TMNet WebConfig starts.

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

2 Select as (Settings)-(Web service settings)-(Direct print).
The "Server direct print" screen appears.

3 Set the following items and click (OK).

Item	Description
ID	Set ID for the server-side program to identify TM-DT. 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 Web server)/Test_print.php** Click the (Access Test) button to check if the address is accessible.
Intercal (sec)	Set the request interval.

Registration of TM Printer

Register the device ID and IP address of the controlled TM printer to TM-DT. 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 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 IP address in the address for the Web browser. The default IP address for TM-DT is 192.168.192.168.
> http://[IP address of TM-DT]/webconfig/

2 Select as (Settings)-(Web service settings)-(Printer).
The "Printer" screen appears.

37

3 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. (p. 22)
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.

Execution of Sample Program

1 Using EPSON TMNet WebConfig, confirm that Server Direct Print settings are valid.

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 intelligent printer, 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 intelligent printer and the printing result is displayed on the screen.

2

Request and Response

This chapter describes requests from the TM intelligent printer 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-i.
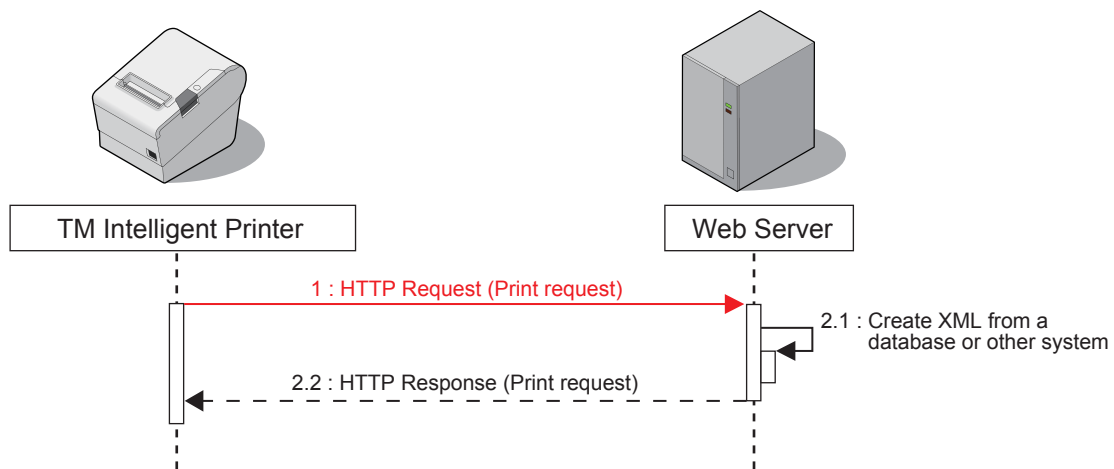
TM intelligent printer periodically sends a HTTP POST request (print request) shown below.
The format of request message is URL-encoded form data (application/x-www-form-urlencoded).
Set the sending destination and sending interval according to "Server Direct Print Settings" (p. 27).

Parameter	Value
ConnectionType	GetRequest
ID	The ID set with WebConfig (p. 27)

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.
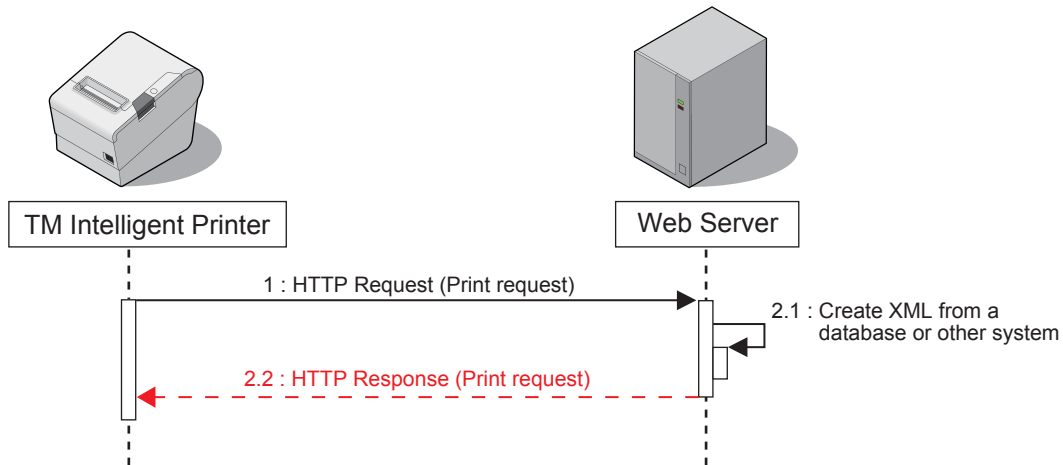
The application responds by creating response data as shown below. This data contains print data. The format of response message is XML(text/xml).

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

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

    <ePOSPrint>
            .
            .
            .
    </ePOSPrint>
</PrintRequestInfo>
```

<ePOSPrint> tag
Print request 1

<ePOSPrint> tag
Print request 2

Note: Enclosing the ePOSPrint tag in the PrintRequestInfo tags enables sending multiple print requests to the printer.

The print data configuration is as follows:

Header

```
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>
```

Specify the device ID

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

<ePOSPrint>tag

```
<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>
<ePOSPrint>
<Parameter>
<devid>kitchen_printer</devid>
<timeout>10000</timeout>
</Parameter>
<PrintData>
```

43

3

```xml
<epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
<text lang="en" />
<text smooth="true" />
<text rotate="true" />
<text align="center" />
<barcode type="code39" hri="none" font="font_a" width="2" height="60">0001
                </barcode>
<feed unit="30" />
<text align="left" />
<text>0001</text>
<text>03-19-2013 13:53:15</text>
<text reverse="true" />
<text>Kitchen</text>
<text reverse="false" />
<text />
<text>(New Order)</text>
<text></text>
<text width="1" height="2" />
<text>Seat:</text>
<text width="2" height="2" />
<text>A-3</text>
<text width="1" height="1" />
<text></text>
<text width="2" height="2" />
<text>2</text>
<text width="1" height="2" />
<text>Alt Beer</text>
<text width="1" height="1" />
<text></text>
<cut type="feed" />
<text rotate="false" />
</epos-print>
</PrintData>
 </ePOSPrint>
 </PrintRequestInfo>
```

<ePOSPrint>tag

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 intelligent printer.

See Test_print.php of the sample program.

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

About Response Message

A response message consists of a header and <ePOSPrint> tags.

<Parameter> tag

Set the <Parameter> tag as shown below.

```
<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>
```

3

45

Print Data

Describe the print data in the ePOS-Print format and specify the data to the <epos-print> tag. For ePOS-Print XML reference, see Chapter 4 "ePOS-Print XML Reference" in "ePOS-Print XML User's Manual" included in the package.

```
Header ───┐  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>
Specify the
device ID ───── <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" />
<ePOSPrint>tag ── <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>
```
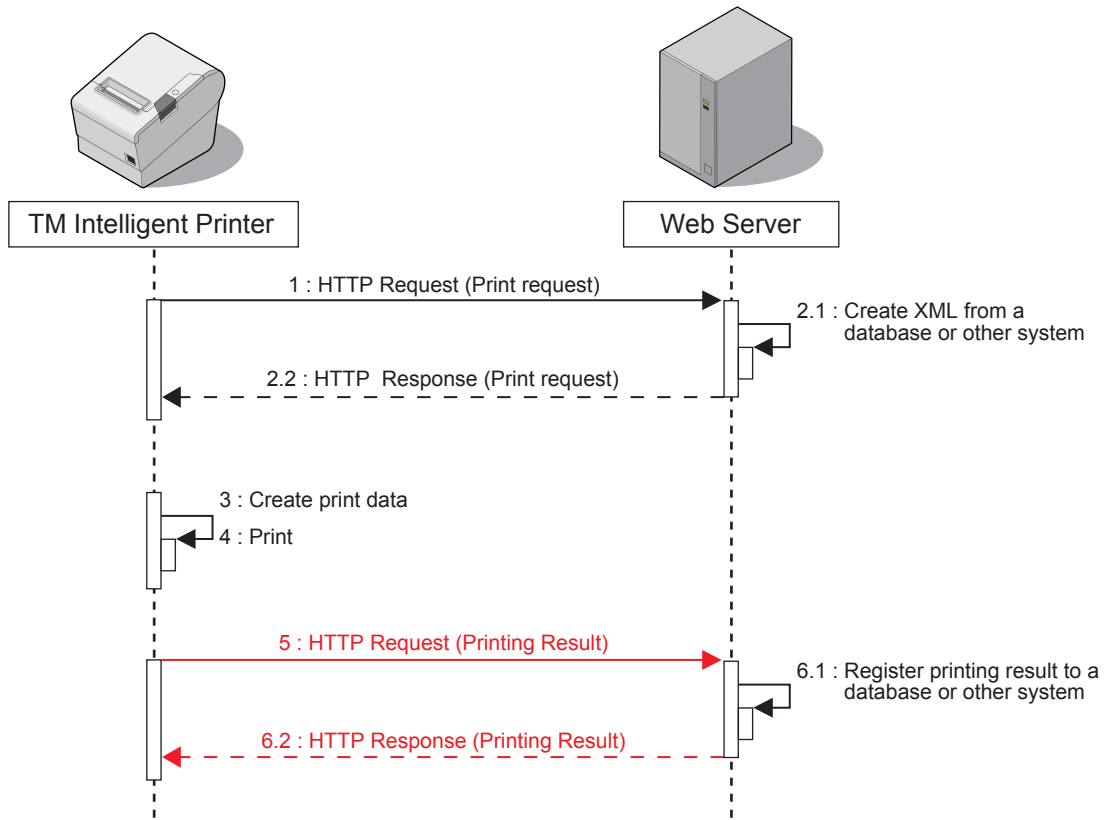
```
  </ePOSPrint>
  <ePOSPrint>
  <Parameter>
  <devid>kitchen_printer</devid>
  <timeout>10000</timeout>
  </Parameter>
  <PrintData>
 <epos-print xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print">
<text lang="en" />
<text smooth="true" />
<text rotate="true" />
<text align="center" />
<barcode type="code39" hri="none" font="font_a" width="2" height="60">0001</barcode>
<feed unit="30" />
<text align="left" />
<text>0001</text>
<text>03-19-2013 13:53:15</text>
<text reverse="true" />
<text>Kitchen</text>
<text reverse="false" />
<text />
<text>(New Order)</text>
<text></text>
<text width="1" height="2" />
<text>Seat:</text>
<text width="2" height="2" />
<text>A-3</text>
<text width="1" height="1" />
<text></text>
<text width="2" height="2" />
<text>2</text>
<text width="1" height="2" />
<text>Alt Beer</text>
<text width="1" height="1" />
<text></text>
<cut type="feed" />
<text rotate="false" />
</epos-print>
</PrintData>
</ePOSPrint>
</PrintRequestInfo>
```

<ePOSPrint>tag

3

Request (Printing Result)

TM intelligent printer 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.

Parameter	Value
ConnectionType	SetResponse
ID	The ID set with WebConfig (p. 27)
ResponseFile	Printing result

```
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
```

Check the <response> tag for the printing result.

```
<?xml version="1.0" encoding="utf-8"?>
<PrintResponseInfo Version="1.00">
#Success
  <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print"
success="true" code="" status="251854870" battery="0"/>
#Failed
  <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print"
success="false" code="EX_BADPORT" status="1" battery="0"/>
</PrintResponseInfo>
```

<response>tag

Checking Error Occurrence

Check if the <response> tag indicates "success" or "failed".

Item	Description
true	Success
false	Failed

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

For details, see .

```
<PrintResponseInfo Version="1.00">
#Success
  <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print" success="true" code=""
                  status="251854870" battery="0"/>
#Failed
  <response xmlns="http://www.epson-pos.com/schemas/2011/03/epos-print" success="false"
                  code="EX_BADPORT" status="1" battery="0"/>
</PrintResponseInfo>
```

3

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_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.

Response (Printing Result)

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

To indicate that the server received the printing result, 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

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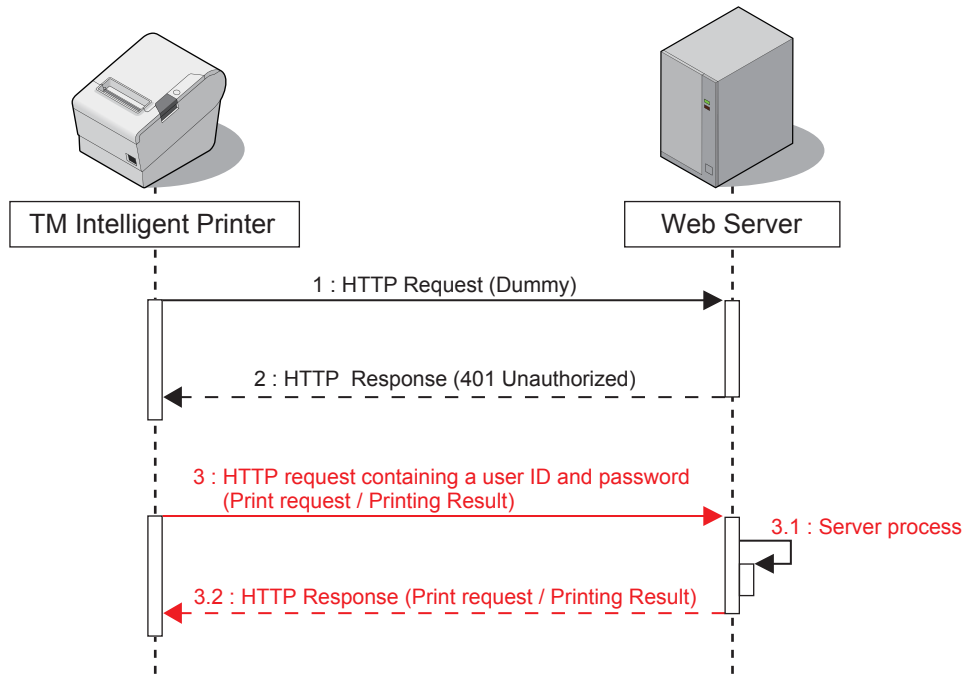
For Digest access authentication, the printer sends a dummy HTTP request before sending a print-related request to the server. The server returns a response with HTTP status code "401 Unauthorized". The printer sends a print-related request containing the user ID and password. The server carries out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

TM Intelligent Printer

Use EPSON TMNet WebConfig of TM-i/TM-DT to set your user ID and password required for Digest access authentication.

For details, see "Server Direct Print Settings" for individual TM intelligent printers.

Web Server Settings

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

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"]);
        if (count($xml->response) != 0) {

            # save log
            $fhandle = @fopen("ResultPrint.log", "wt");
            foreach ($xml->response as $response) {
                fprintf($fhandle, "success : %s\ncode : %s\n", $response['success'],
                $response['code']);
            }
            fclose($fhandle);
        }
    } else {
        # Ignore other connectionType than GetRequest and SetResponse.
    }
?>
```
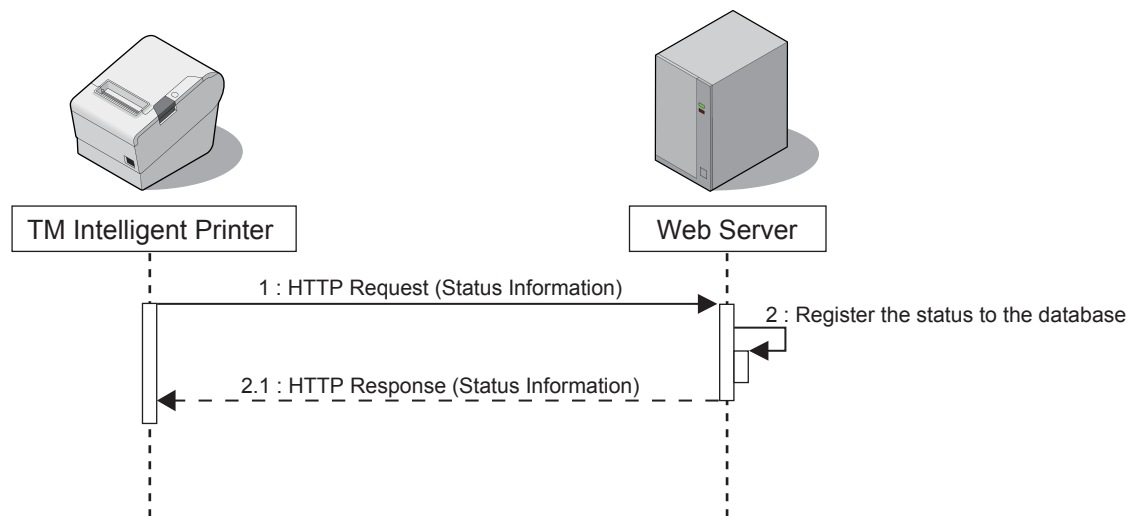
Status Notification

This chapter describes the Status Notification function.

Overview

Status Notification is used to periodically notify the TM intelligent printer 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.

TM Intelligent Printer	Web Server

1 : HTTP Request (Status Information)

2 : Register the status to the database

2.1 : HTTP Response (Status Information)

⚠ For TM-DT, enable the following settings in EPSON TMNet WebConfig.
- ePOS-Device (p. 32)
- Service startup settings (p. 34)
- Device control (p. 37)
- Server direct print (p. 35)
- Status notification (p. 54)

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 (p. 18) and Environment Settings (p. 20), the same configuration is used as with the Server Direct Print. (p. 18)

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 Intelligent Printer Settings

The registration screen will vary according to the model of TM Intelligent printer.
- "TM-i Settings" (p.54)
- "TM-DT Settings" (p.57)

TM-i Settings

TM-i firmware ver.3.x or earlier

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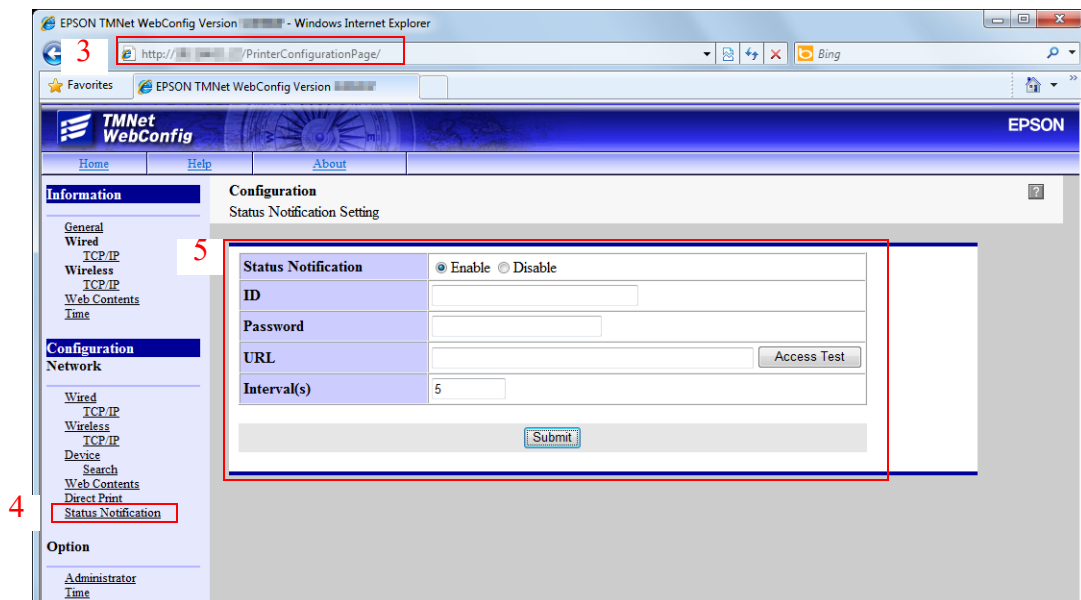
Use the following procedure for registration.

1 Start the setup computer.

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

3 Start the Web browser on the setup computer and enter the IP address of TM-i set in "IP Address Settings" (p.23).

4 EPSON TMNet WebConfig starts.
Select (Status Notification).
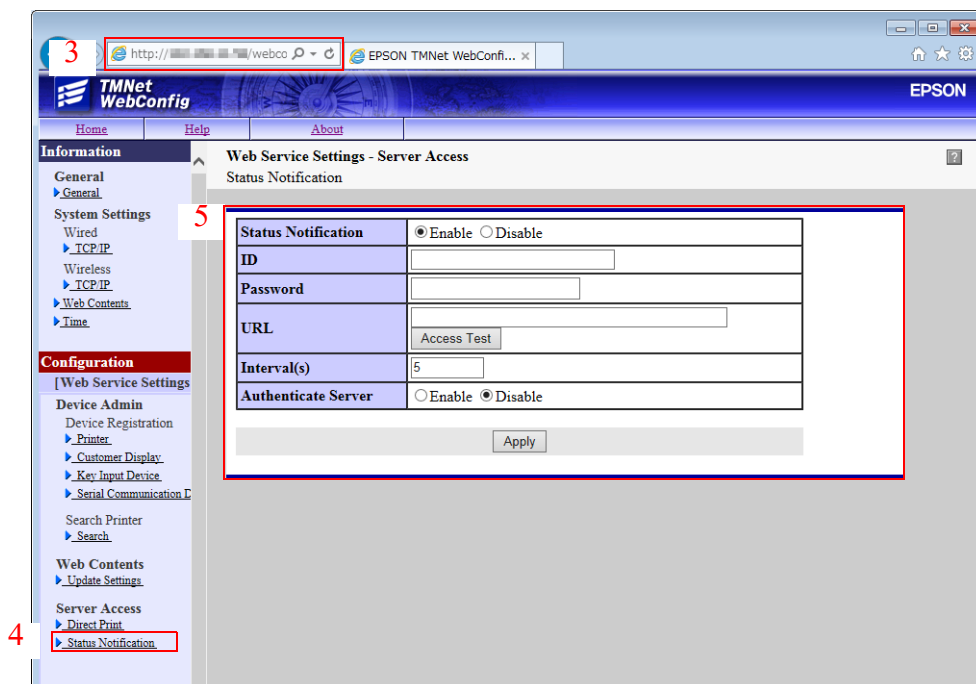
5 The "Status Notification Settings" screen appears.
Set the following items and click (Submit).

| Item	Description
Status Notification	Select the (Enable).
ID	Set ID for the server-side program to identify TM-i. 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_status.php** Click the (Access Test) button to check if the address is accessible.
Interval(s)	Set the request interval.

TM-i firmware ver.4.0 or later

1 Start the setup computer.

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

3 Start the Web browser on the setup computer and enter as follows:
http://(IP address of the TM-i)/PrinterConfigurationPage/
For details about the IP address settings for TM-i, see "IP Address Settings" (p.23).

55

4 EPSON TMNet WebConfig starts.
Select (Web Service Settings) - (Status Notification).

5 The "Status Notification" screen appears.
Set the following items and click (Submit).

Item	Description
Status Notification	Select the (Enable).
ID	Set ID for the server-side program to identify TM-i. 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_status.php** Click the (Access Test) button to check if the address is accessible.
Interval(s)	Set the request interval.
Authenticate Server	Sets whether the server authentication is performed with the registered certificate when accessed through https.

TM-DT Settings

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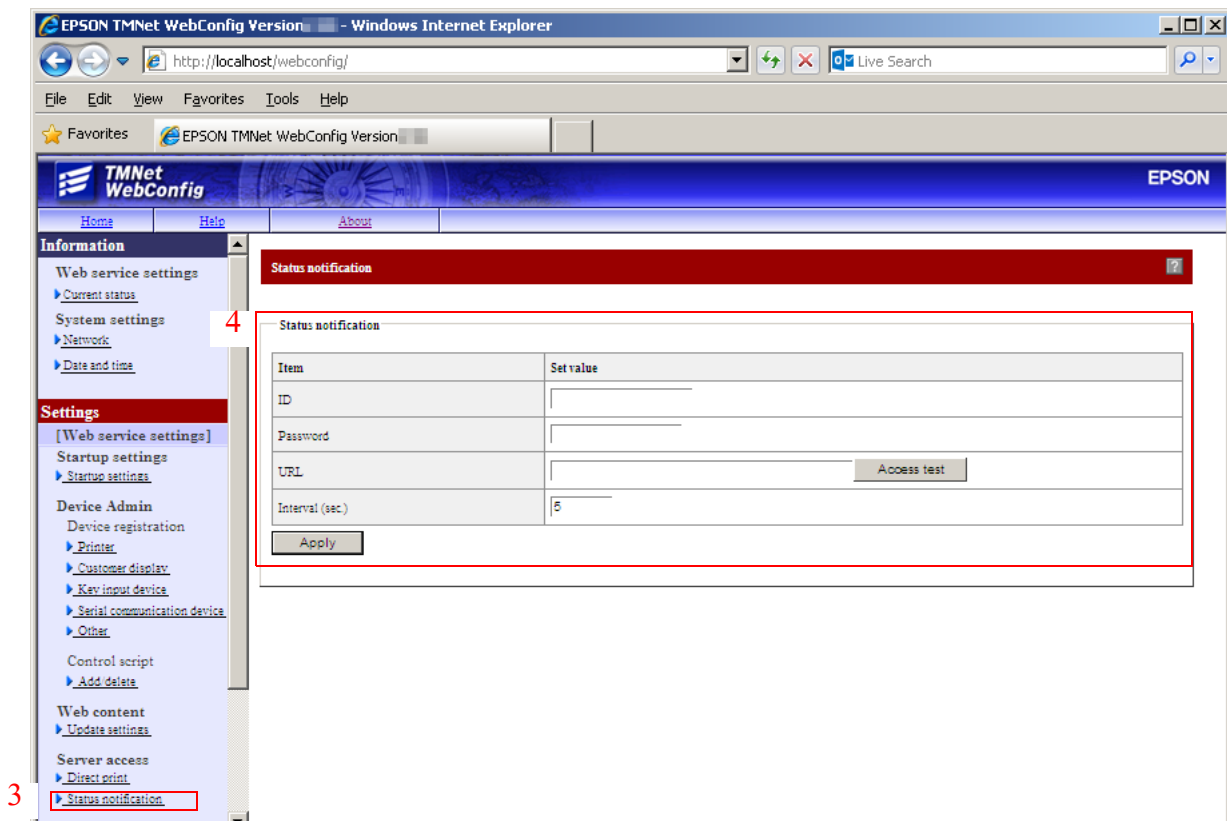
Use the following procedure for registration.

1   Connect the TM-DT 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 IP address in the address for the Web browser. The default IP address for TM-DT is 192.168.192.168.
> http://[IP address of TM-DT]/webconfig/

3   Select as (Settings)-(Web service settings)-(Status notification).

The "Status notification" screen appears.

4 Set the following items and click (Apply).

Item	Description
ID	Set ID for the server-side program to identify TM-DT. 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_status.php** Click the (Access Test) button to check if the address is accessible.
Interval (sec)	Set the request interval.

Execution of Sample Program

1   Confirm that Status Notification of TM intelligent printer 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 intelligent printer and the result is displayed on the screen.

4
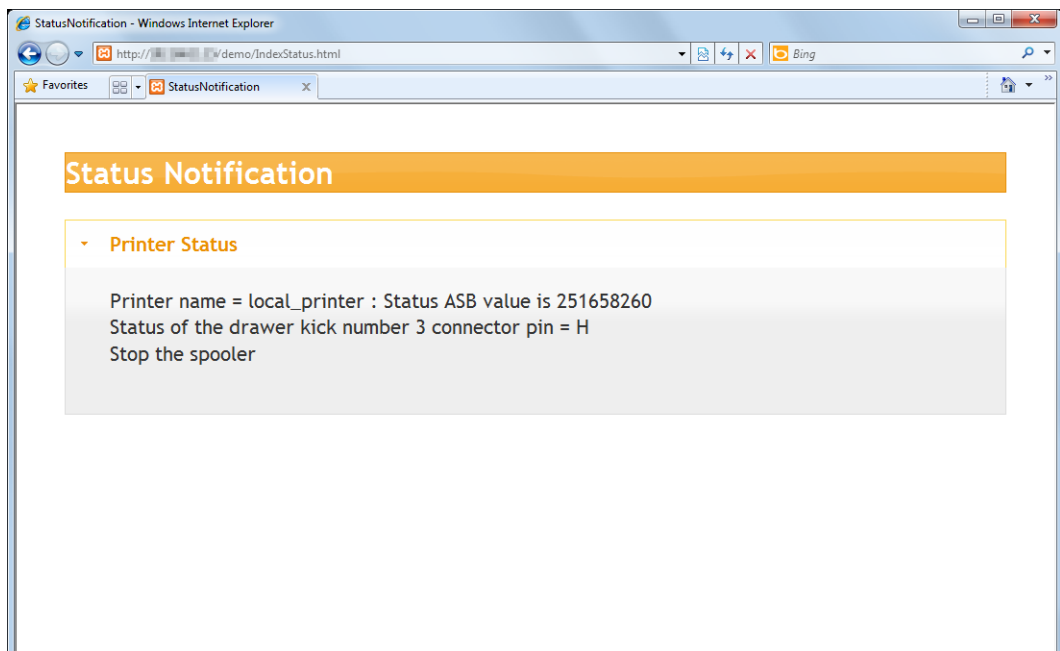
Status Type

The following types of ASB (AutoStatusBack) status can be obtained from the TM-i.

Code	Description
0x00000001	No printer response
0x00000002	Print complete
0x00000004	Status of the drawer kick number 3 connector pin = "H"
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)
0x80000000	Stop the spooler

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 & 0x00000001) == 0x00000001)
    {
          $strmsg .= "  No TM printer response\n";
    }
    if (($asb & 0x00000002) == 0x00000002)
    {
        $strmsg .= "  Print completed \n";
    }
    if (($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";
    }
```

4

```php
        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 & 0x80000000) == 0x80000000)
        {
                $strmsg .= "  Stop the spooler \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 (p. 54)
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>
```

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 "Digest Access Authentication" (p.51)