

WS-POS Environment Setup Guide

Overview

Describes the operating environment for WS-POS services.

Windows Service Environment

Describes the configuration methods in Windows service environment.

IIS Environment

Describes the configuration methods in IIS (Internet Information Service) environment.

Troubleshooting

Describes troubleshooting.

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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

The purpose of this document is to provide developers with necessary information when configuring the system using WS-POS (Web Service for Point of Service).

Manual Content

The manual is made up of the following sections:

- Chapter 1 [Overview](#)
- Chapter 2 [Windows Service Environment](#)
- Chapter 3 [IIS Environment](#)
- Chapter 4 [Troubleshooting](#)

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Overview

In this chapter, the operating environment for WS-POS services is explained.

Web Services for Point of Service

Web Services for Point of Service (WS-POS) control devices using a Web-based POS system.

Refer to the URL below for WS-POS specifications and WS-POS reference implementation.

<http://www.nrf-arts.org/content/unifiedpos>

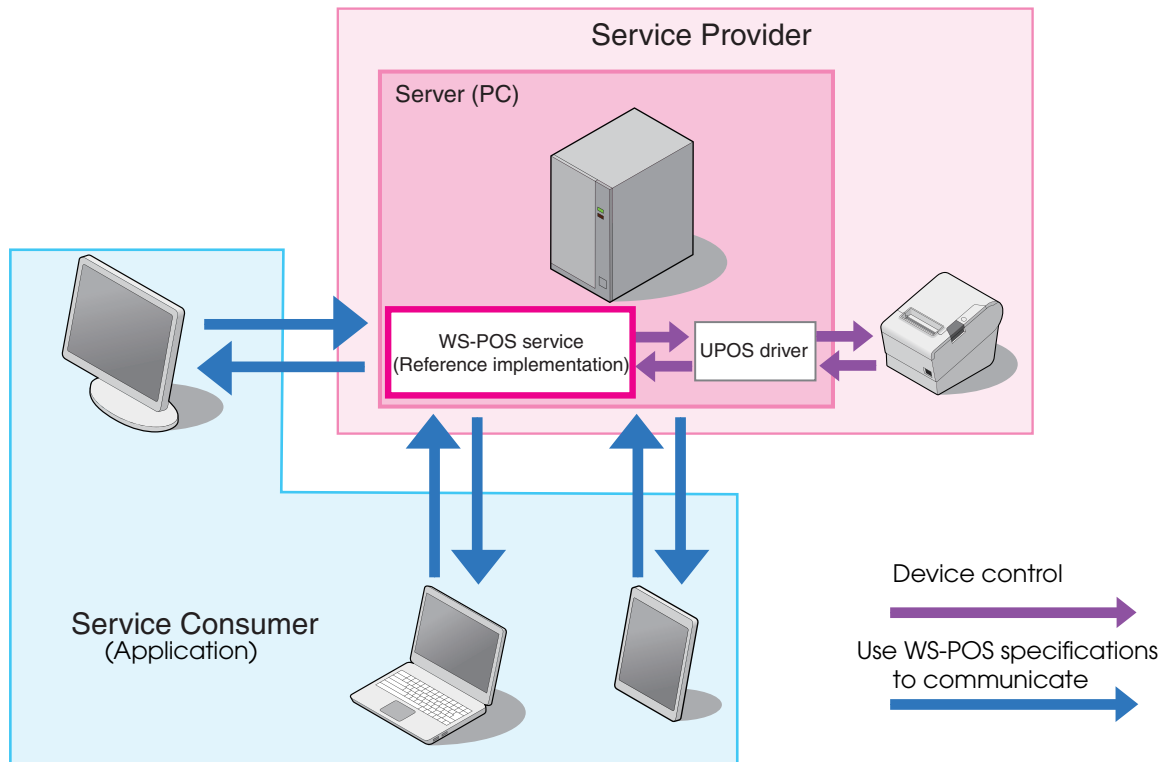
In this document, the basic environment configuration method to use WS-POS is described. The following WS-POS system environments are described.

- Windows Service Environment ([p. 11](#))
- Internet Information Services Environment ([p. 37](#))



There are cross domain access restrictions on WS-POS reference implementation. In this document, the configuration method of Internet Information Services environment is described as one of examples to avoid them.

WS-POS configuration



- Service Provider refers to the side providing WS-POS services. This document describes the configuration of a Service Provider's environment.
- Service Consumer refers to people who use WS-POS services.

Environment of Service Provider

EPSON has tested the operation under all the following environment.

OS

- ☐ Microsoft Windows 8
- ☐ Microsoft Windows 7 SP1
- ☐ Microsoft Windows XP Professional SP3
- ☐ Microsoft Windows Server 2012
- ☐ Microsoft Windows Server 2008 SP2
- ☐ Microsoft Windows Embedded POSReady 7
- ☐ Microsoft Windows Embedded POSReady 2009

External module

- ☐ EPSON OPOS ADK for .NET Ver.1.12.xx or later
- ☐ .NET Framework
 - Microsoft .NET Framework 3.0
 - Microsoft .NET Framework 3.5



Obtain from the following: (As of Oct. 1st, 2013)

- Microsoft .NET Framework 3.5
<http://www.microsoft.com/en-us/download/details.aspx?id=21>
- Microsoft .NET Framework 3.5 ServicePack1
<http://www.microsoft.com/en-us/download/details.aspx?id=25150>

- ☐ Microsoft Point Of Service for .NET v1.12



Obtain from the following: (As of Oct. 1st, 2013)

<http://www.microsoft.com/en-us/download/details.aspx?id=5355>

WS-POS Service (Reference Implementation)

- ☐ WS-POS reference implementation Version 1.0



Obtain from the following: (As of Oct. 1st, 2013)

<http://www.nrf-arts.org/content/unifiedpos>

Available Materials

Manual

- ☐ WS-POS Application Development Guide
- ☐ WS-POS Environment Setup Guide (this document)

Driver

- ☐ EPSON OPOS ADK for .NET

Download

Download the available materials from the following URL.

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

<http://www.epsonexpert.com/>

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

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

Windows Service Environment

In this chapter, the environment configuration method of WS-POS under Windows service environment is explained.

Environments Used in This Chapter

The configuration method of Windows service environment in this chapter is described under the following environments.

The URL and versions of download files are as of 9/1/2013. When your environment is different, please apply the descriptions to your environment.

- ❑ Windows 7 (32bit)
- ❑ Microsoft .NET Framework 3.5.1
- ❑ Microsoft Point Of Service for .NET v1.12
- ❑ EPSON OPOS ADK for .NET Ver.1.12.8

Setup Environment Used in This Chapter

Environment configuration is performed assuming the following environment.

- ❑ Microsoft POS for .NET Environment

| Item | Environment Setup |
|-----------------------------|-------------------|
| Download destination folder | C:\work\pos |

- ❑ EPSON OPOS ADK for .NET Environment

| Item | Environment Setup |
|-----------------------------------|-------------------|
| Extraction destination folder | C:\work\OPOS |
| Logical device name (1st printer) | Unit1 |
| Logical device name (2nd printer) | Unit2 |

- ❑ WS-POS System Environment

| Item | Environment Setup |
|-----------------------------------|----------------------|
| servicename (Service name) | WSPOSProviderHost35 |
| Provider IP address : Port number | 192.168.1.100:8087 |
| Consumer IP address : Port number | 192.168.1.102:8001 |
| behavior name (1st printer) | POSPrinter_Behavior1 |
| behavior name (2nd printer) | POSPrinter_Behavior2 |
| Device name (1st printer) | Unit1 |
| Device name (2nd printer) | Unit2 |
| endpoint name (1st printer) | POSPrinter1 |
| endpoint name (2nd printer) | POSPrinter2 |

Setup of Service Provider



Please conduct setups with administrator privilege.

Workflow



In this Chapter, the Windows 7 environment is explained. If using another OS, before installing Microsoft POS for .NET, install Microsoft .NET Framework. For Windows 7, enable Microsoft .NET Framework 3.5.1 since it is already included in the package.

1. [Installation of Microsoft POS for .NET v1.12 \(p.13\)](#)



2. [Installation of EPSON OPOS ADK for .NET \(p.17\)](#)



3. [Device Registration \(p.22\)](#)



4. [Placement of WS-POS Reference Implementation \(p.25\)](#)

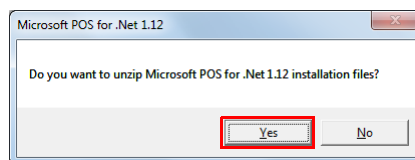
Installation of Microsoft POS for .NET v1.12

Please follow the procedures below to install Microsoft POS for .NET(Microsoft Point of Service for .NET) v1.12.

- 1 Open the download website of Microsoft POS for .NET using a Web browser.
URL: <http://www.microsoft.com/en-us/download/details.aspx?id=5355>
- 2 Click (Download).
The download is executed.



- 3 Double click the downloaded executable file (.exe).
- 4 The following screen is displayed. Click (Yes).

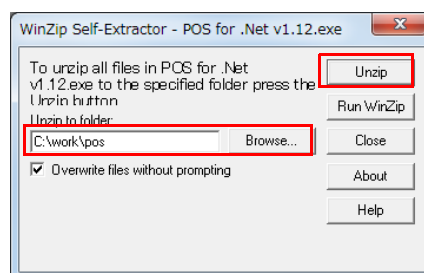


- 5 Create a working folder.

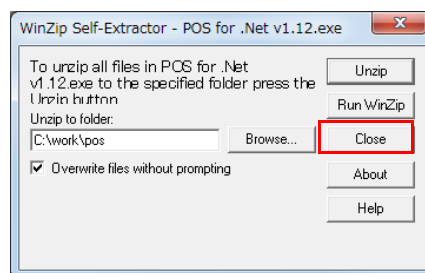


Please make sure the created folder is empty.

- 6 The following screen is displayed. Specify the folder created in Step 5 as the destination of (Unzip to folder) and click (Unzip).

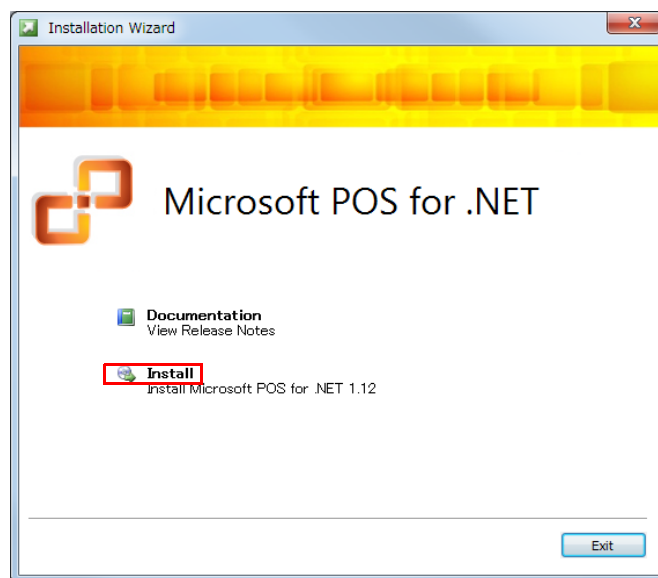


- 7 When the extraction is done, click (Close).

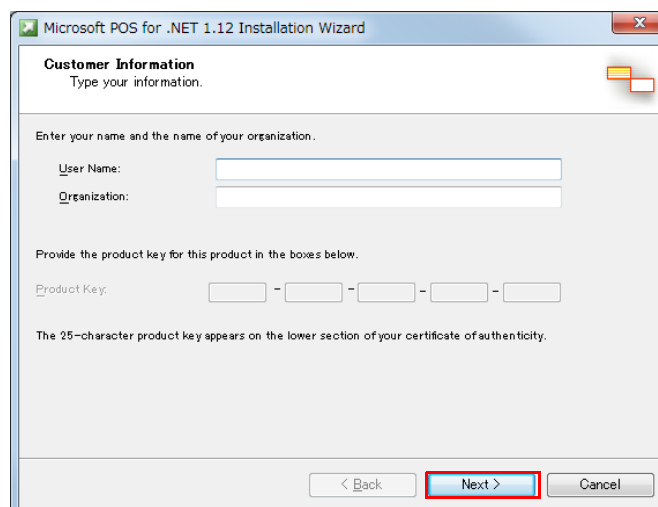


- 8 Click "Setup.exe" inside the specified extraction folder.

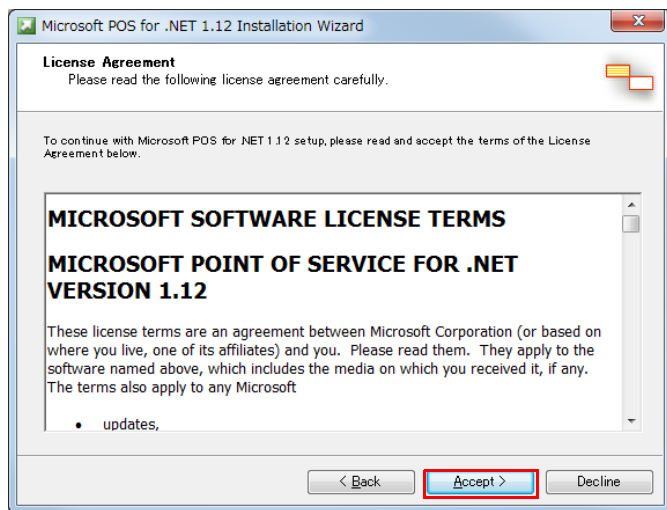
- 9 The "Installation Wizard" screen is displayed. Click (Install).



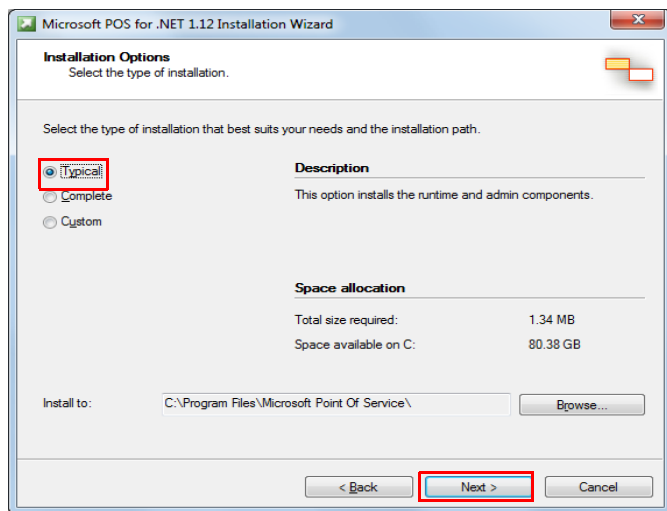
- 10 The following screen is displayed. Click (Next).



11 The following screen is displayed. Click (Accept).

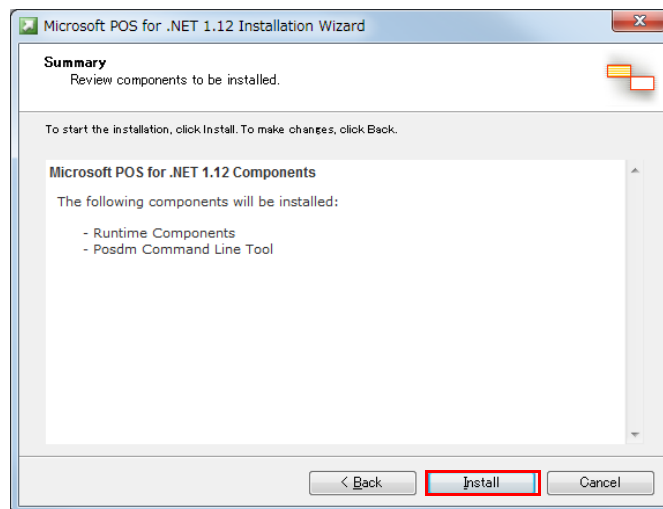


12 The following screen is displayed. Select "Typical" and click (Next).

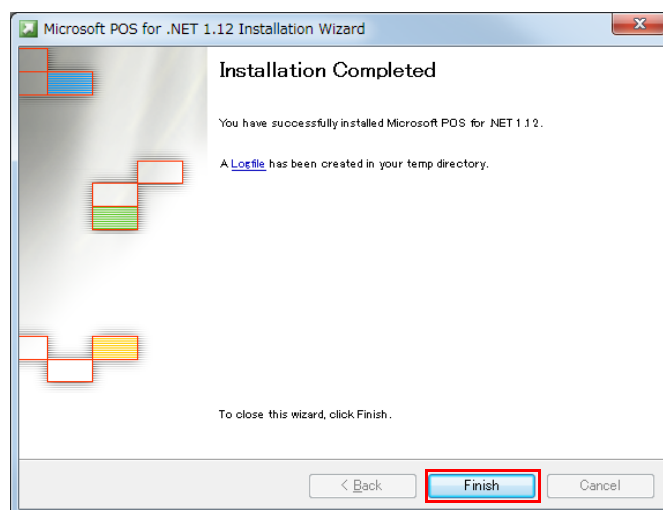


2

- 13** The following screen is displayed. Click (Install).
The installation begins.



- 14** The following screen is displayed. Click (Finish).



The installation finishes.

Installation of EPSON OPOS ADK for .NET

Please follow the procedures below to install EPSON OPOS ADK for .NET.

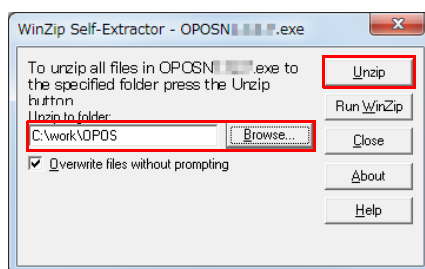
- 1 Download EPSON OPOS ADK for .NET using a Web browser.
Please refer to [Download \(p.10\)](#) for detail.

- 2 Create a working folder.

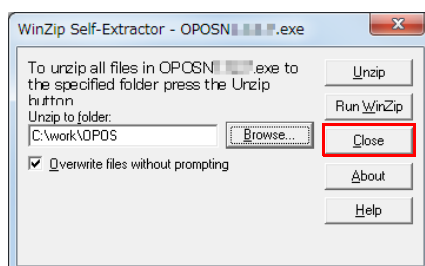


Please make sure the created folder is empty.

- 3 Double click the executable file (.exe) downloaded in Step 1.
- 4 The following screen is displayed. Specify the folder created in Step 2 as the destination of (Unzip to folder) and click (Unzip).

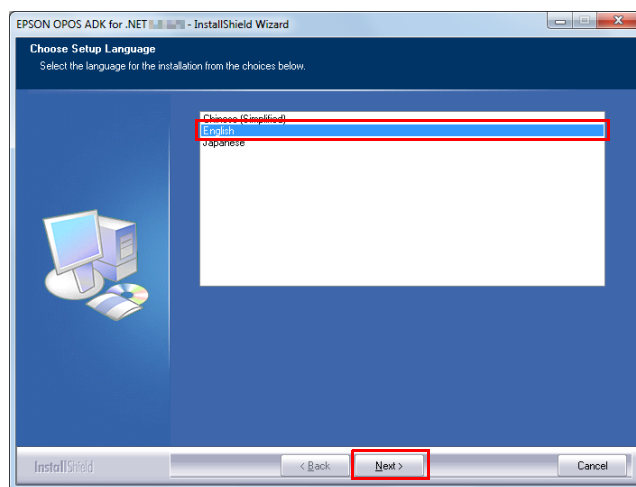


- 5 When the extraction is done, click (Close).

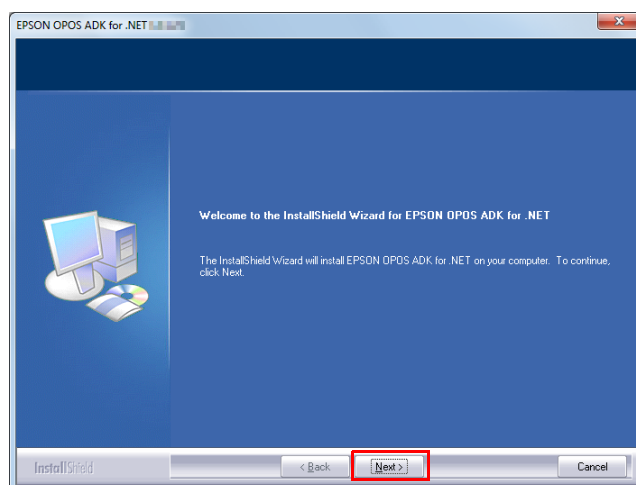


- 6 Click "Setup.exe" inside the specified extraction folder.

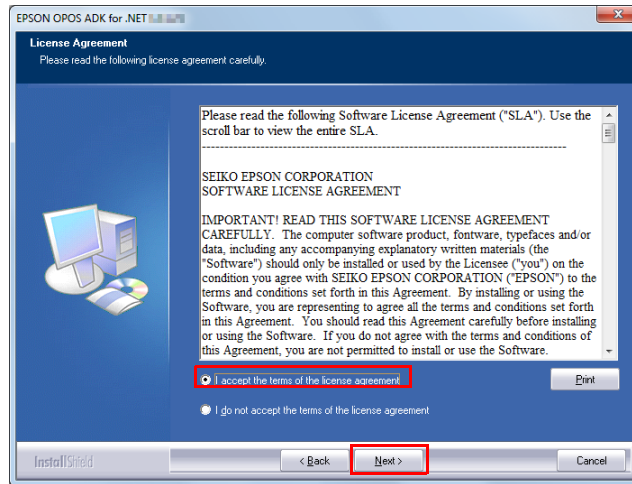
- 7** The following screen is displayed. Select (English) and click (Next).



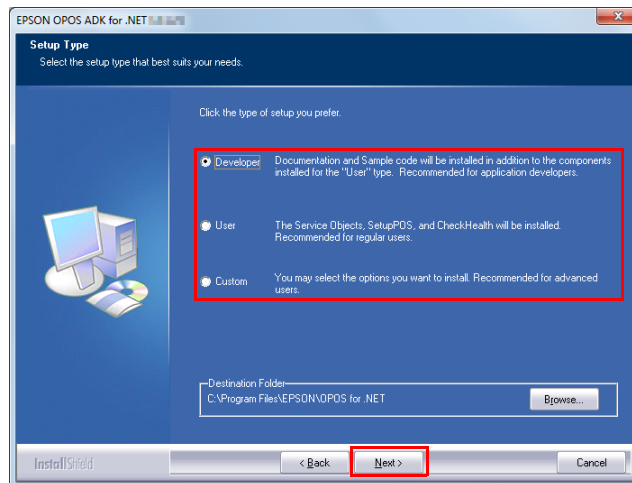
- 8** The following screen is displayed. Click (Next).



- 9 The following screen is displayed. Select (I accept the term of the license agreement) and click (Next).

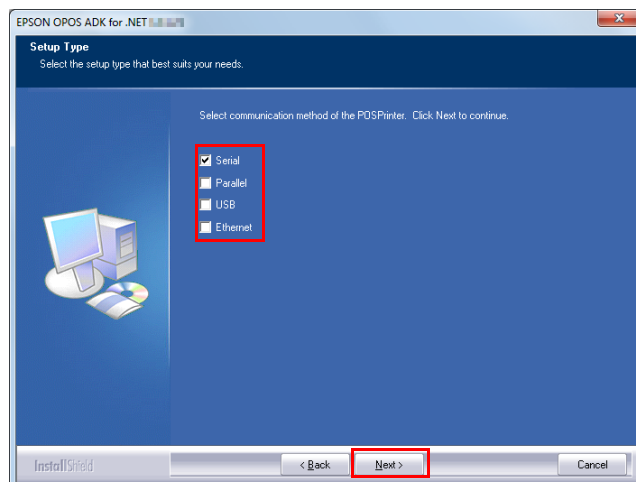


- 10 The following screen is displayed. Select (Setup Type) and click (Next).

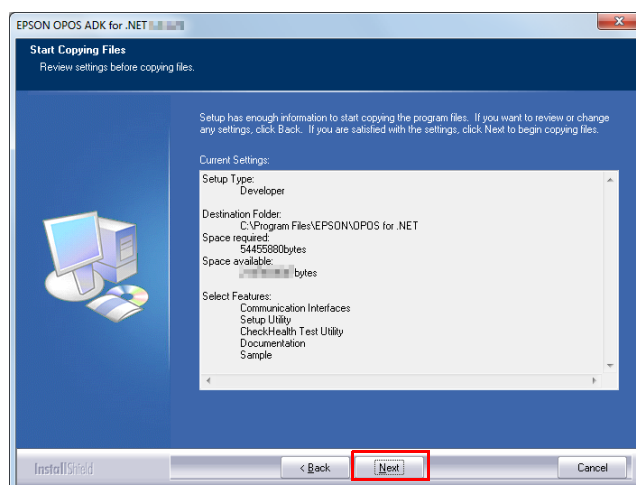


When "Custom" is selected for (Setup Type) and (Next) is clicked, set (Select Features) and (Select Program Folder).

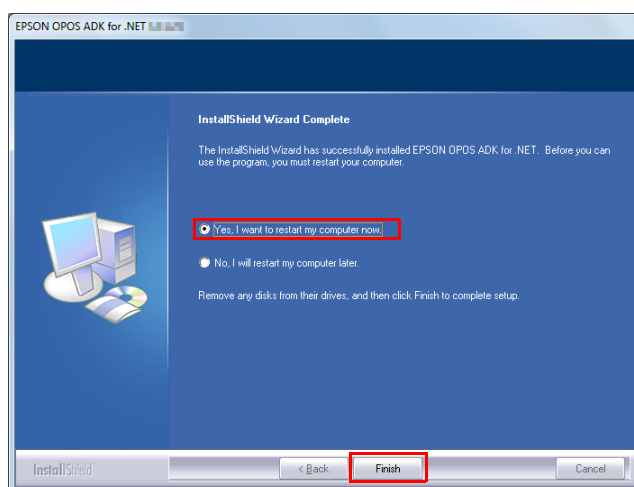
- 11** The following screen is displayed. Select the connection method of the printer to be used and click (Next).
Multiple connection methods can be selected.



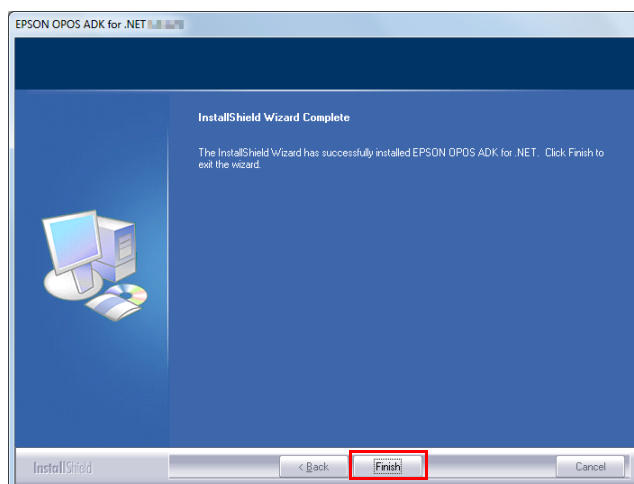
- 12** The following screen is displayed. Confirm the installation contents and click (Next).
The installation begins.



- 13** If the following screen is displayed, select (Yes, restart the computer now.) and click (Finish).



- 14** The following screen is displayed. Click (Finish).
Your computer restarts.



The installation finishes.

Device Registration

A device is registered using SetupPOS for OPOS.NET.



Please refer to (Start)-(All Programs)-(EPSON OPOS for .NET)-(Manual) for detail description on how to use SetupPOS for OPOS.NET.

Follow the procedures below to register.

- 1 Select (Start)-(All Programs)-(EPSON OPOS for .NET)-(SetupPOS).

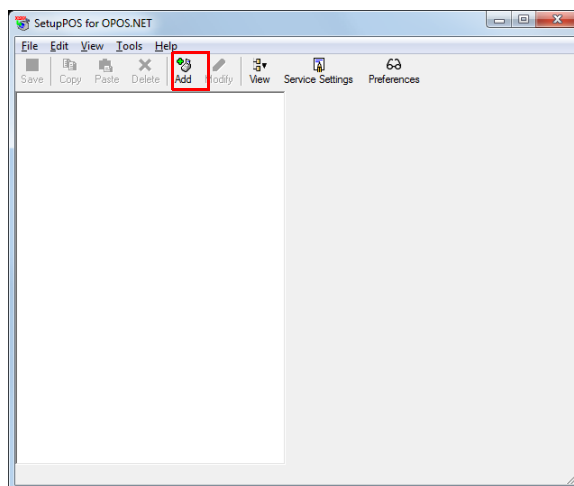


Please register a device with administrator privilege.

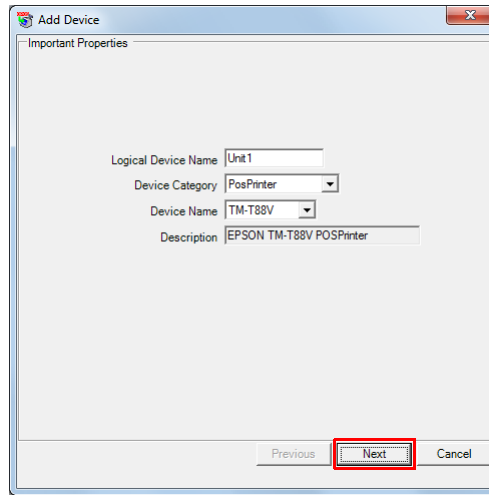


When using Windows 8, launch from the shortcut in the start screen.

- 2 "SetupPOS for OPOS.NET" is launched. Click (Add).



- 3** The following screen is displayed. Set the device's information to be registered and click (Next).



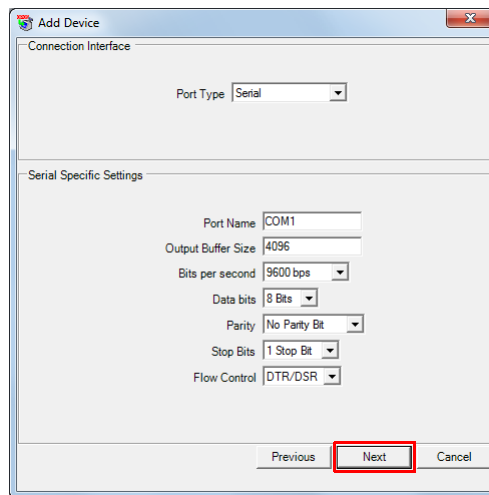
Logical Device Name: Unit1
Device Category: PosPrinter
Device Name: TM-T88V
Description: EPSON TM-T88V POSPrinter

Previous Next Cancel



Please refer to EPSON OPOS ADK for .NET ([p. 11](#)) for device information to setup.

- 4** The following screen is displayed. Set the port of device to be registered and click (Next).



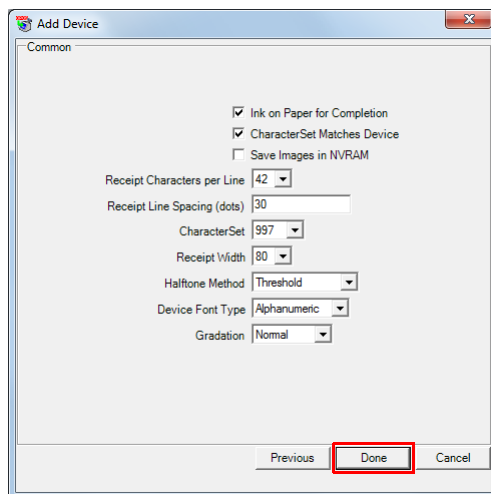
Port Type: Serial

Serial Specific Settings

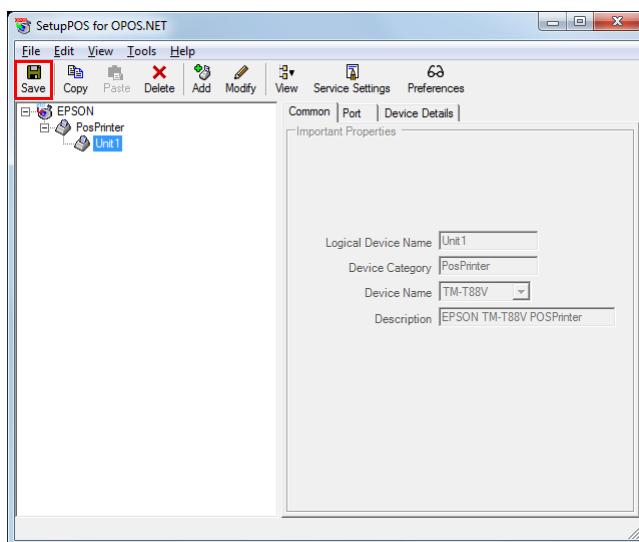
Port Name: COM1
Output Buffer Size: 4096
Bits per second: 9600 bps
Data bits: 8 Bits
Parity: No Parity Bit
Stop Bits: 1 Stop Bit
Flow Control: DTR/DSR

Previous Next Cancel

- 5** The following screen is displayed. Set the property of Device Statistics of device to be registered and click (Done).



- 6** Click (Save) to register the device.



Placement of WS-POS Reference Implementation

Store the obtained WS-POS reference implementation in an appropriate folder.

This section describes the following topics.

- [Edition of Setup File \(p.25\)](#)
- [Registration and Launching, Termination and Deletion of Windows Service \(p.30\)](#)



Refer to "Overview Of Reference Implementation" for detailed information on WS-POS reference implementation. You can find "Overview Of Reference Implementation" in WS-POS reference implementation.

Obtain from the following: (As of Oct. 1st, 2013)

<http://www.nrf-arts.org/content/unifiedpos>

Edition of Setup File

Edit the WcfServiceHostWindowsService.exe.config file according to the Service Provider's environment as described below.

- [Change of behavior name and device name \(p.26\)](#)
- [Change of Service Provider URL \(p.27\)](#)
- [Setup Change of FileHostService \(p.28\)](#)
- [Change of Session Timeout Value \(p.28\)](#)
- [Setup of Maximum Simultaneous Open Number of Communication Port \(p.29\)](#)
- [Change of Support Runtime Version \(p.29\)](#)

Change of behavior name and device name

- Change "behavior name" within <behaviors> tag to the behavior name to be used.
- Change "wsposDevice deviceName" within <behaviors> tag to the device name to be used.



- Please refer to [WS-POS System Environment \(p.11\)](#) for the behavior and device name to change.
- If using multiple devices in the same device category, copy the <behavior> definition and add the definition for the second device.

```
<configuration>
  <system.serviceModel>
    <behaviors>
      ...
      <behavior name="POSPrinter_Behavior1">
        <wsposDevice deviceName="Unit1" providerSessionTimeout="180"
eventPollingTimeout="-1" eventResponseTimeout="-1"/>
      </behavior>
      <behavior name="POSPrinter_Behavior2">
        <wsposDevice deviceName="Unit2" providerSessionTimeout="180"
eventPollingTimeout="-1" eventResponseTimeout="-1"/>
      </behavior>
      ...
    </behaviors>
    ...
  </system.serviceModel>
</configuration>
```

Please setup the following keys within "wsposDevice" as needed.

| key | Description |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| deviceName | Specifies a device name to use. |
| providerSessionTimeout | Specifies timeout duration of a session (sec.) |
| eventPollingTimeout | Specifies timeout duration of long polling (sec.) When -1 is specified, no timeout is executed. |
| eventResponseTimeout | Specifies timeout duration for termination of event waiting processing of self-host/long polling (sec.) When -1 is specified, no timeout is executed. |

Change of Service Provider URL

Change the Service Provider URL of name="WSPOSInitiative.POSPrinter.POSPrinterService" within <service> tag of <services> tag. Change the following.



- Please refer to [WS-POS System Environment \(p.11\)](#) for the port number of Provider IP address to change, endpoint name and behavior name.
- If using multiple devices in the same device category, copy the <endpoint> definition and add the definition for the second device.

- Change add baseAddress within <baseAddresses> tag to the provider IP address port number to be used.
- Change "address" within <endpoint> tag of <services> tag to the name of endpoint to be used.
- Change "behaviorConfiguration" within <endpoint> tag of <services> tag to the name of behavior to be used.

```
<configuration>
  <system.serviceModel>
    ...
    <services>
      ...
      <service name="WSPOSInitiative.POSPrinter.POSPrinterService"
        behaviorConfiguration="WS-POS_ServiceProvider">
        <host>
          <baseAddresses>
            <add baseAddress="http://192.168.1.100:8087/POSPrinter.svc"/>
          </baseAddresses>
        </host>
        <endpoint address="POSPrinter1"
          behaviorConfiguration="POSPrinter_Behavior1"
          binding="basicHttpBinding"
          contract="UnifiedPOS.POSPrinter.V1_2.POSPrinter"
          bindingNamespace="http://www.nrf-arts.org/UnifiedPOS/POSPrinter/" />
        <endpoint address="POSPrinter2"
          behaviorConfiguration="POSPrinter_Behavior2"
          binding="basicHttpBinding"
          contract="UnifiedPOS.POSPrinter.V1_2.POSPrinter"
          bindingNamespace="http://www.nrf-arts.org/UnifiedPOS/POSPrinter/" />
      </service>
      ...
    </services>
  </system.serviceModel>
</configuration>
```

Setup Change of FileHostService

Change the FileHostService setup of name="WSPOSInitiative.Common.FileHostService" within <service> tag of <services> tag. Change the following.

- Change add baseAddress within <baseAddresses> tag to the provider IP address port number to be used.



Please refer to [WS-POS System Environment \(p.11\)](#) for the port number of Provider IP address to change, endpoint name and behavior name.

```
<configuration>
  <system.serviceModel>
    ...
    <services>
      ...
      <service name="WSPOSInitiative.Common.FileHostService"
        behaviorConfiguration="WS-POS_ServiceProvider">
        <endpoint address=""
          behaviorConfiguration="WcfService_webHttp"
          binding="webHttpBinding"
          bindingConfiguration="webHttp"
          name="Files"
          contract="WSPOSInitiative.Common.IFileHost" />
        <host>
          <baseAddresses>
            <add baseAddress="http://192.168.1.100:8087/" />
          </baseAddresses>
        </host>
      </service>
      ...
    </services>
    ...
  </system.serviceModel>
</configuration>
```

Change of Session Timeout Value

Change the value of key's POSPrinterService_ProviderSessionTimeoutCheckPeriod within <appSettings> as needed.

POSPrinterService_ProviderSessionTimeoutCheckPeriod specifies the duration (sec.) to periodically confirm session timeout.

```
<configuration>
  <appSettings>
    ...
    <add key="POSPrinterService_ProviderSessionTimeoutCheckPeriod" value="1" />
    ...
  </appSettings>
</configuration>
```

Setup of Maximum Simultaneous Open Number of Communication Port

Specify the maximum number of communication ports to be used simultaneously when Service Provider and Service Consumer communicate.



In the sample program, the following communications are used simultaneously. At the minimum, 3 ports are required for communication.

- Error notification
- Event notification
- KeepAlive notification

Change the maxconnection value within <connectionManagement> tag of <system.net> tag. The default value is 48.

```
<configuration>
  <system.net>
    <connectionManagement>
      <add address = "*" maxconnection = "48" />
    </connectionManagement>
  </system.net>
</configuration>
```

Change of Support Runtime Version

Change the version value of supportedRuntime within <startup> tag according to the version of Microsoft .NET Framework to be used. Version values of supportedRuntime that can be specified are shown below.

| Microsoft .NET Framework | Version of SupportRuntime |
|------------------------------------------------------------------|---------------------------|
| • Microsoft .NET Framework 4.0 | v4.0 |
| • Microsoft .NET Framework 3.0 • Microsoft .NET Framework 3.5 | V2.0.50727 |

The following shows the entry example when Microsoft .NET Framework 3.5 is used.

```
<configuration>
  <startup>
    <supportedRuntime version="V2.0.50727" />
  </startup>
</configuration>
```

Registration and Launching, Termination and Deletion of Windows Service

- [Registration and Launching of Windows Service \(p.30\)](#)
- [Termination and Deletion of Windows Service \(p.32\)](#)



In this section, WcfServiceHostWindowsService35.exe is used for explanation.

Registration and Launching of Windows Service

Follow the procedures below to register and launch Windows Service.

1 Launch the command prompt.



Execute the command prompt with administrator privilege.

2 Execute the following commands to register Windows Service.

```
> InstallUtil.exe(full path) WcfServiceHostWindowsService35.exe(full path)
```

The following message is displayed and Windows Service is registered.

Running a transacted installation.

```
*****
Installing service WSPOSProviderHost35...
Service WSPOSProviderHost35 has been successfully installed.
```

```
*****
The transacted install has completed.
```



- InstallUtil.exe is contained in Microsoft .NET Framework.
- Windows Service can be registered also using the following command.

```
> sc create WSPOSProviderHost35 binPath= WcfServiceHostWindowsService35.exe(full path)
```

<Note>

- * Specify an appropriate name for servicename.
- * Insert a space after "binPath=" and then enter full path.
- * Do not use a space and/or 2-byte characters for folder name.
- * Specify the full path for the execution file.

When execution of command is successful, the following message is displayed.

```
(SC) CreateService SUCCESS
```

- 3** Execute the following command to setup the service for auto-launch.

```
> sc config WSPOSPProviderHost35 start= auto
```



Enter a space after "start=".

When the setup is successful, the following message is displayed.

```
(SC) ChangeServiceConfig SUCCESS
```

- 4** Start the service by executing the following command.

```
> net start WSPOSPProviderHost35
```

When the service is started successfully, the following message is displayed.

```
The WSPOSPProviderHost35 service is successfully started.
```

Registration and launching of Windows Service are finished.

Termination and Deletion of Windows Service

Follow the procedures below to terminate and delete Windows Service.

1 Launch the command prompt.



Execute the command prompt with administrator privilege.

2 Execute the following command to terminate Windows service.

```
> net stop WSPOSProviderHost35
```

When the service is terminated successfully, the following message is displayed.

```
WSPOSProviderHost35 service is successfully terminated.
```

3 Execute the following command to delete the registered service.

```
> Installutil.exe(full path) /u WcfServiceHostWindowsService35.exe.exe(full path)
```

When the service is deleted successfully, the following message is displayed.

```
Uninstallation is complete.
```



Windows Service can be deleted also using the following command.

```
> sc delete WSPOSProviderHost35
```

When the service is successfully deleted, the following message is displayed.

```
(SC) DeleteService SUCCESS
```

Termination and deletion of Windows Service are finished.

Preparation of Service Consumer

In this section, setup and launching of following sample program are explained.

- [Consumer LongPolling Sample \(p.33\)](#)
- [Consumer BiDirection Sample \(p.35\)](#)



Conduct the setup with administrator privilege.



You can find an sample program in WS-POS reference implementation.
Obtain from the following: (As of Oct. 1st, 2013)
<http://www.nrf-arts.org/content/unifiedpos>

Consumer LongPolling Sample

Edition of Setup File

Edit the Console_POSPrinterConsumerLongPollingSample.exe.config file as described below.



- Please refer to [WS-POS System Environment \(p.11\)](#) for the Provider IP address port number and endpoint name to change.
- If using multiple devices in the same device category, copy the <endpoint> definition and add the definition for the second device.

- Change "address" within <endpoint> tag to Provider IP address port number to be used and endpoint name.
- Change "name" within <endpoint> tag to "POSPrinterPort1".

```
<configuration>
...
<system.serviceModel>
  <client>
    <endpoint address="http://192.168.1.100:8087/POSPrinter.svc/POSPrinter1"
              binding="basicHttpBinding"
              contract="UnifiedPOS.POSPrinter.V1_2.POSPrinter"
              name="POSPrinterPort1"/>
    <endpoint address="http://192.168.1.100:8087/POSPrinter.svc/POSPrinter2"
              binding="basicHttpBinding"
              contract="UnifiedPOS.POSPrinter.V1_2.POSPrinter"
              name="POSPrinterPort2"/>
  </client>
</system.serviceModel>
</configuration>
```

Launch Program

Execute Console_POSPrinterConsumerLongPollingSample.exe.

When it's successfully executed, the following message is displayed in the command prompt.

```
>Press ENTER to OpenDevice, Claim, Enable.
```

Consumer BiDirection Sample

Edition of Setup File

Edit the Console_POSPrinterConsumerBiDirectionSample.exe.config file as described below.



- Please refer to [WS-POS System Environment \(p.11\)](#) for the Provider IP address port number, consumer IP address : Port number and endpoint name to change.
- If using multiple devices in the same device category, copy the <endpoint> definition and add the definition for the second device.

- Change "address" within <endpoint> tag to Provider IP address port number to be used and endpoint name.
- Change "name" within <endpoint> tag to "POSPrinterPort1".

```
<configuration>
...
<system.serviceModel>
  <client>
    <endpoint address="http://192.168.1.100:8087/POSPrinter.svc/POSPrinter1"
              binding="basicHttpBinding"
              contract="UnifiedPOS.POSPrinter.V1_2.POSPrinter"
              name="POSPrinterPort1"/>
    <endpoint address="http://192.168.1.100:8087/POSPrinter.svc/POSPrinter2"
              binding="basicHttpBinding"
              contract="UnifiedPOS.POSPrinter.V1_2.POSPrinter"
              name="POSPrinterPort2"/>
  </client>
</system.serviceModel>
</configuration>
```

- Change "baseAddress" within <baseAddress> tag of <services> tag to consumer IP address : Port number to be used.

```
<configuration>
...
<system.serviceModel>
...
  <services>
    <service
      name="Console_POSPrinterConsumerBiDirectionSample.POSPrinterEventService"
      behaviorConfiguration="WSPOSClient.POSPrinterEventServiceBehavior">
      <host>
        <baseAddresses>
          <add baseAddress="http://192.168.1.102:8001/POSPrinterEvent"/>
        </baseAddresses>
      </host>
      <endpoint address=""
        binding="basicHttpBinding"
        contract="UnifiedPOS.POSPrinterEvents.V1_2.POSPrinterEvent"
        bindingNamespace="http://www.nrf-arts.org/UnifiedPOS/POSPrinterEvents/">
        ...
      </endpoint>
      <endpoint address="mex" binding="mexHttpBinding" contract="IMetadataExchange"/>
    </service>
  </services>
...
</system.serviceModel>
</configuration>
```

Launch Program

Execute Console_POSPrinterConsumerBiDirectionSample.exe.

When it's successfully executed, the following message is displayed in the command prompt.

```
>Press ENTER to OpenDevice, Claim, Enable.
```

IIS Environment

In this Chapter, the environment configuration method of WS-POS under IIS (Internet Information Service) environment is explained.

Environment Used in This Chapter

In this Chapter, explanations are provided under the following environments. The URL and versions of download files are as of 9/1/2013. When your environment is different, please apply the descriptions to your environment.

- ☐ Windows 7 (32bit)
- ☐ Microsoft .NET Framework 3.5.1
- ☐ Microsoft Internet Information Services
- ☐ Microsoft Point Of Service for .NET v1.12
- ☐ EPSON OPOS ADK for .NET Ver.1.12.8

Setup Environment Used in This Chapter

Environment configuration is performed assuming the following environment.

- ☐ Microsoft POS for .NET Environment

| Item | Environment Setup |
|-----------------------------|-------------------|
| Download destination folder | C:\work\pos |

- ☐ EPSON OPOS ADK for .NET Environment

| Item | Environment Setup |
|-----------------------------------|-------------------|
| Extraction destination folder | C:\work\OPOS |
| Logical device name (1st printer) | Unit1 |
| Logical device name (2nd printer) | Unit2 |

- ☐ WS-POS System Environment

| Item | Environment Setup |
|------------------------------------|--------------------------|
| Provider IP address | 192.168.1.100 |
| Consumer IP address : Port number | 192.168.1.102 |
| HTTP port number | 80 |
| Root directory of application | %WINDIR%\inetpub\wwwroot |
| ASP.NET Web application folder | WebAppSample |
| Setup file name of Web application | Web.config |
| behavior name | POSPrinter_Behavior1 |
| device name | Unit1 |
| endpoint name | POSPrinter1 |

Setup of Service Provider



Please conduct setup with administrator privilege.

Workflow



In this Chapter, the Windows 7 environment is explained. If using another OS, before installing Microsoft POS for .NET, install Microsoft .NET Framework. For Windows 7, enable Microsoft .NET Framework 3.5.1 since it is already included in the package.

1. [Installation of Microsoft POS for .NET v1.12 \(p.39\)](#)



2. [Installation of EPSON OPOS ADK for .NET \(p.43\)](#)



3. [Device Registration \(p.48\)](#)



4. [Installation of IIS \(p.51\)](#)



5. [Setup of Firewall \(p.52\)](#)



6. [Placement of ASP.NET Web Application \(p.53\)](#)



7. [Registration of ASP.NET Web Application \(p.58\)](#)

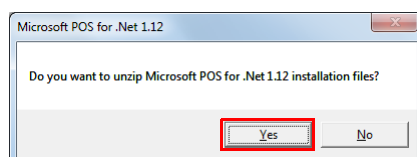
Installation of Microsoft POS for .NET v1.12

Please follow the procedures below to install Microsoft POS for .NET(Microsoft Point of Service for .NET) v1.12.

- 1 Open the download website of Microsoft POS for .NET using a Web browser.
URL: <http://www.microsoft.com/en-us/download/details.aspx?id=5355>
- 2 Click (Download).
The download is executed.



- 3 Double click the downloaded executable file (.exe).
- 4 The following screen is displayed. Click (Yes).

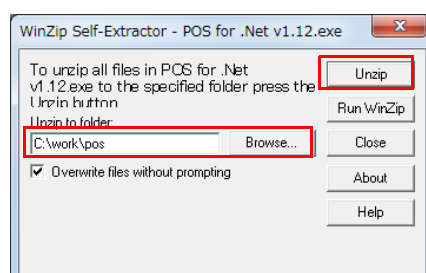


- 5 Create a working folder.

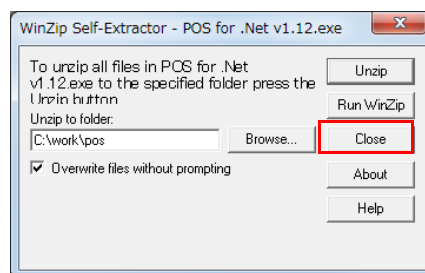


Please make sure the created folder is empty.

- 6 The following screen is displayed. Specify the folder created in Step 5 as the destination of (Unzip to folder) and click (Unzip).

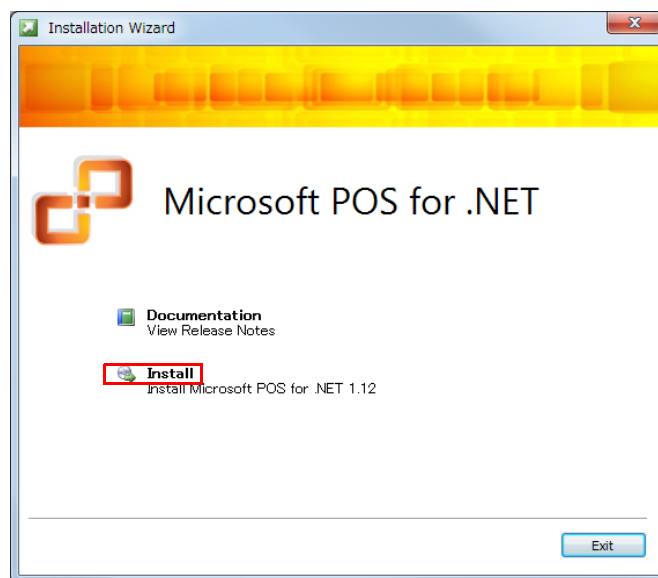


- 7 When the extraction is done, click (Close).

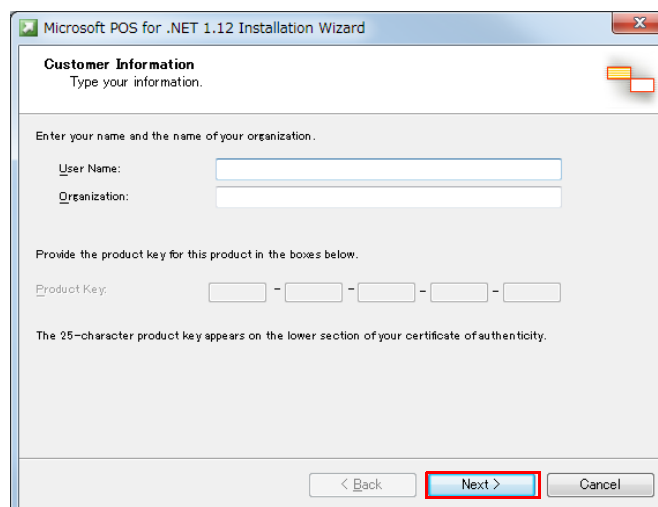


- 8 Click "Setup.exe" inside the specified extraction folder.

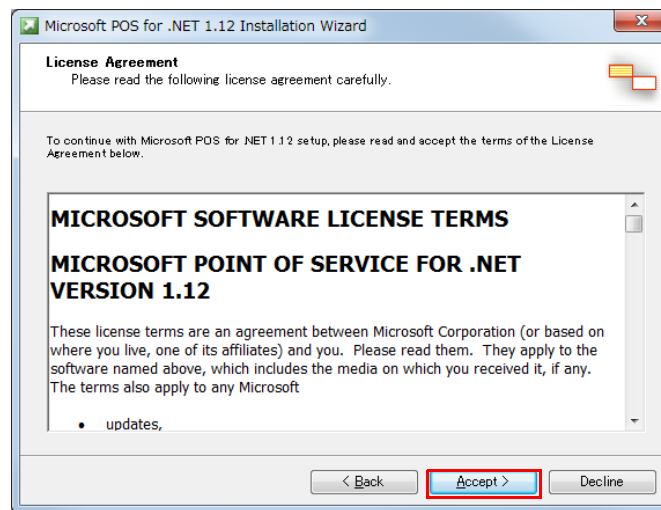
- 9 The "Installation Wizard" screen is displayed. Click (Install).



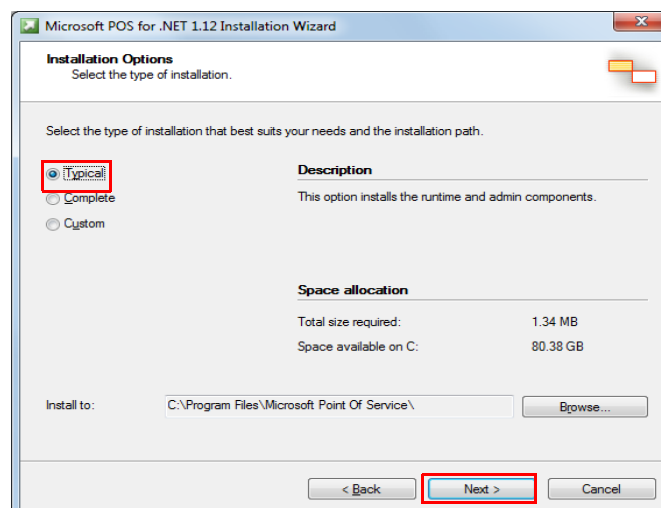
- 10 The following screen is displayed. Click (Next).



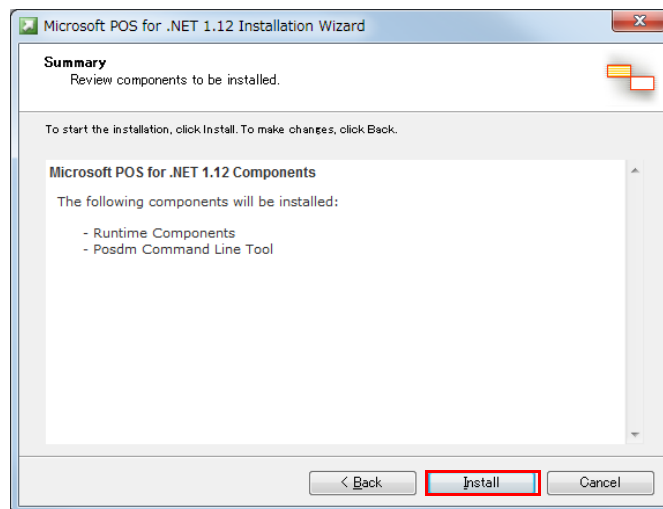
11 The following screen is displayed. Click (Accept).



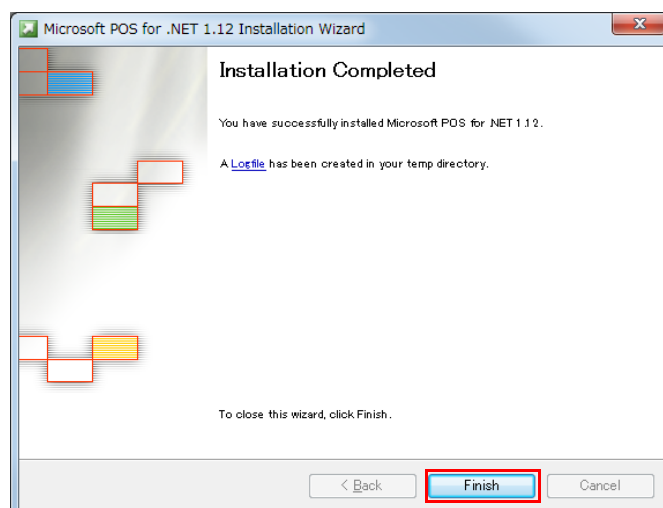
12 The following screen is displayed. Select "Typical" and click (Next).



- 13** The following screen is displayed. Click (Install).
The installation begins.



- 14** The following screen is displayed. Click (Finish).



The installation finishes.

Installation of EPSON OPOS ADK for .NET

Please follow the procedures below to install EPSON OPOS ADK for .NET.

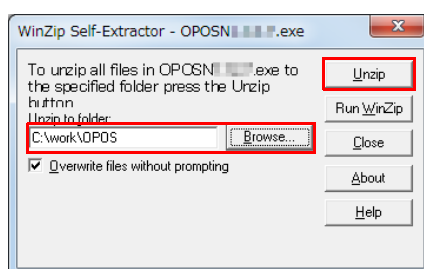
- 1 Download EPSON OPOS ADK for .NET using a Web browser.
Please refer to [Download \(p.10\)](#) for detail.

- 2 Create a working folder.

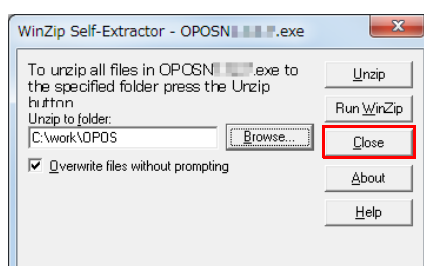


Please make sure the created folder is empty.

- 3 Double click the executable file (.exe) downloaded in Step 1.
- 4 The following screen is displayed. Specify the folder created in Step 2 as the destination of (Unzip to folder) and click (Unzip).

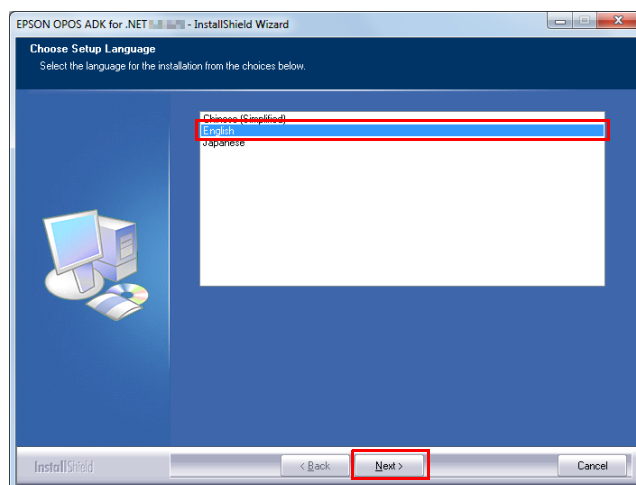


- 5 When the extraction is done, click (Close).

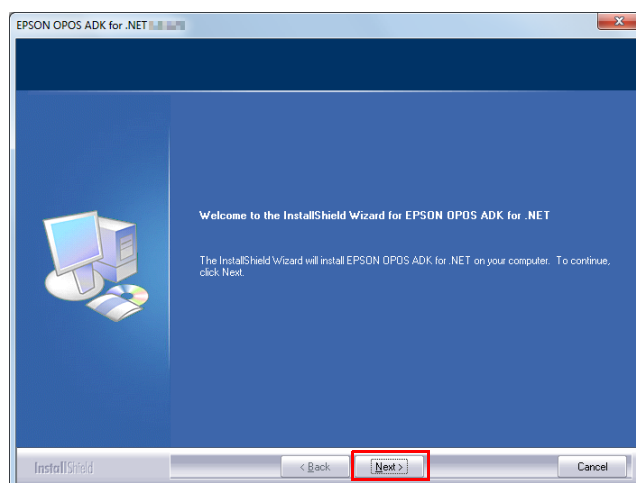


- 6 Click "Setup.exe" inside the specified extraction folder.

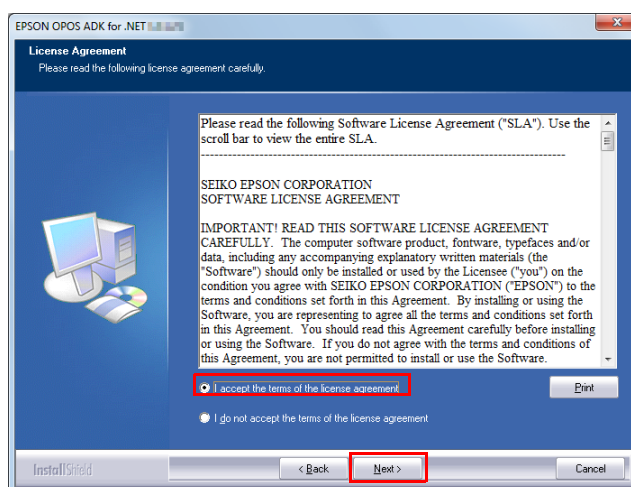
- 7** The following screen is displayed. Select (English) and click (Next).



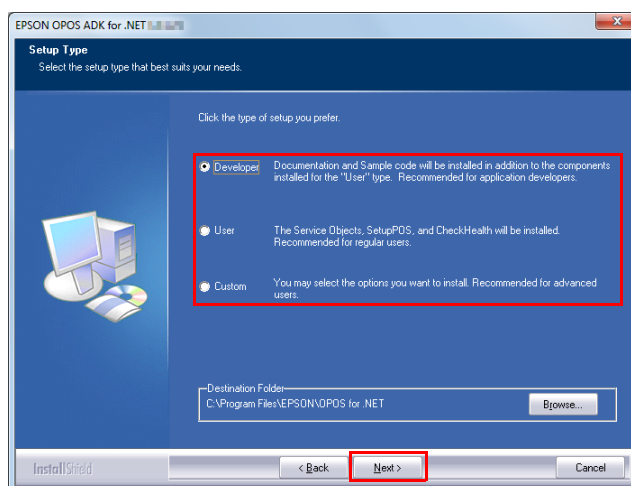
- 8** The following screen is displayed. Click (Next).



- 9 The following screen is displayed. Select (I accept the term of the license agreement) and click (Next).

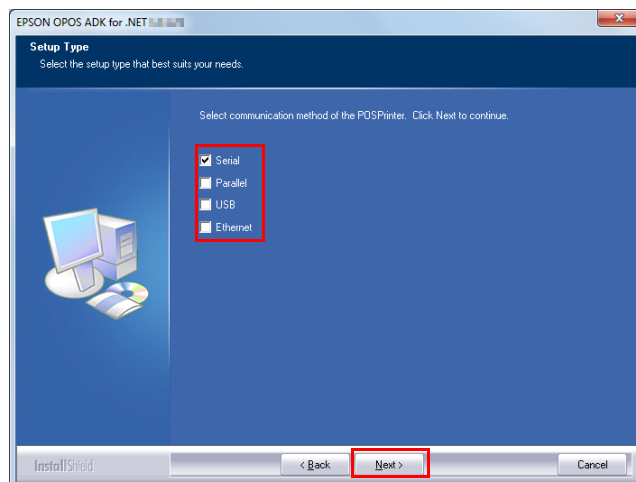


- 10 The following screen is displayed. Select (Setup Type) and click (Next).

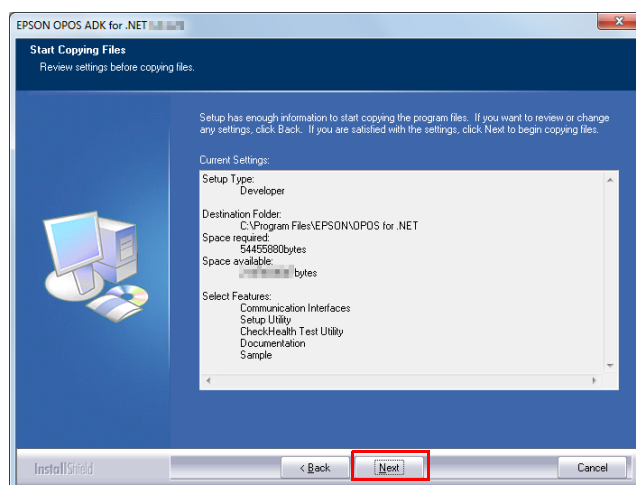


When "Custom" is selected for (Setup Type) and (Next) is clicked, set (Select Features) and (Select Program Folder).

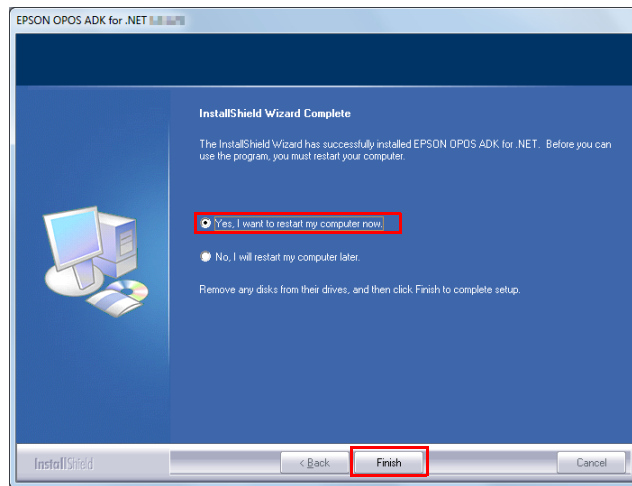
- 11** The following screen is displayed. Select the connection method of the printer to be used and click (Next).
Multiple connection methods can be selected.



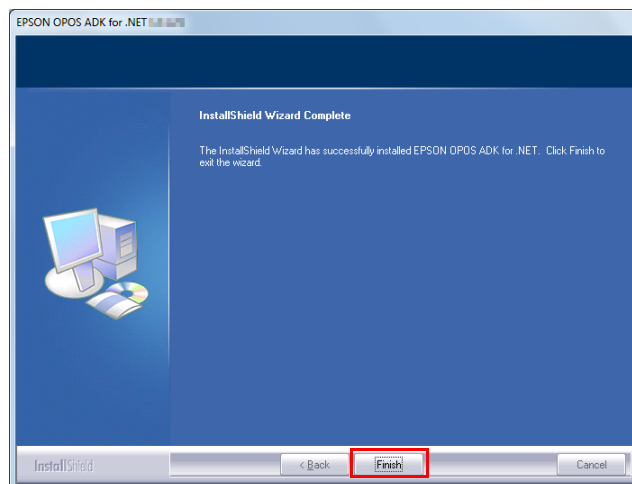
- 12** The following screen is displayed. Confirm the installation contents and click (Next).
The installation begins.



- 13** The following screen is displayed. Select (Yes, restart the computer now.) and click (Finish).



- 14** The following screen is displayed. Click (Finish).
Your computer restarts.



The installation finishes.

Device Registration

A device is registered using SetupPOS for OPOS.NET.



Please refer to (Start)-(All Programs)-(EPSON OPOS for .NET)-(Manual) for detail description on how to use SetupPOS for OPOS.NET.

Follow the procedures below to register.

- 1 Select (Start)-(All Programs)-(EPSON OPOS for .NET)-(SetupPOS).

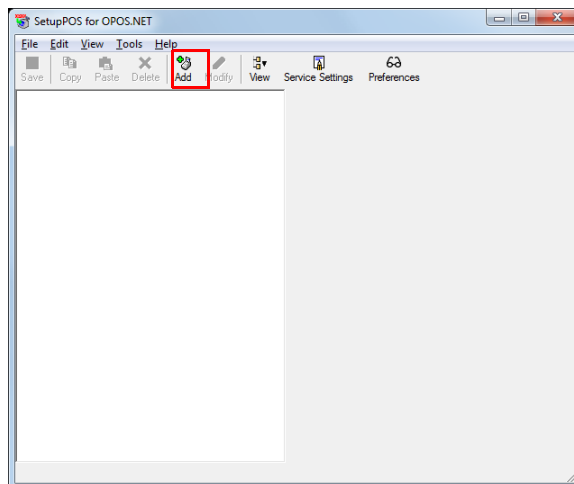


Please register a device with administrator privilege.

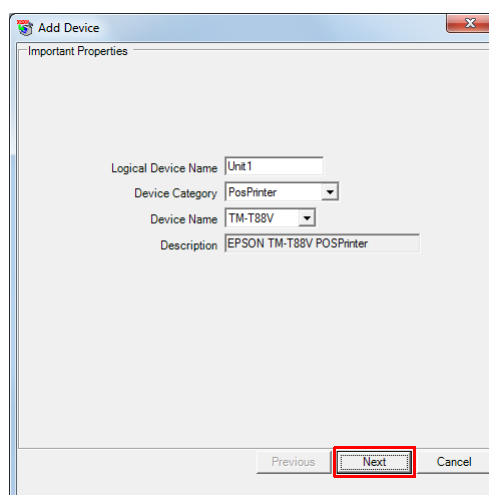


When using Windows 8, launch from the shortcut in the start screen.

- 2 "SetupPOS for OPOS.NET" is launched. Click (Add).



- 3** The following screen is displayed. Set the device's information to be registered and click (Next).



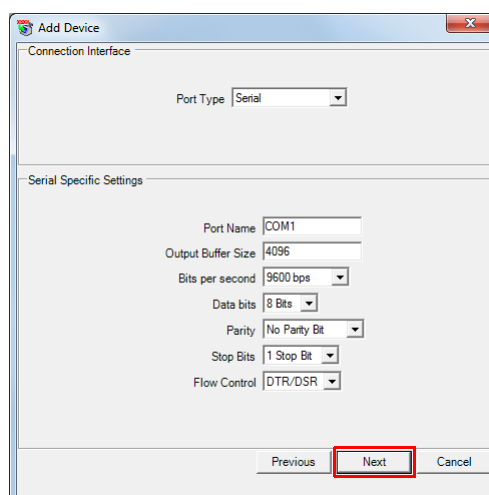
Logical Device Name: Unit1
 Device Category: PosPrinter
 Device Name: TM-T88V
 Description: EPSON TM-T88V POSPrinter

Previous Next Cancel



Please refer to [EPSON OPOS ADK for .NET Environment \(p.37\)](#) for device information to setup.

- 4** The following screen is displayed. Set the port of device to be registered and click (Next).



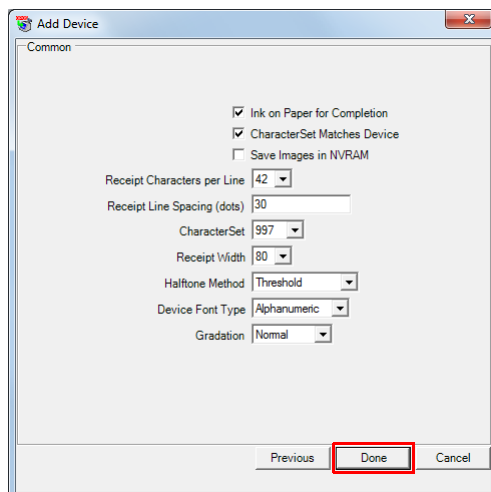
Port Type: Serial

Serial Specific Settings

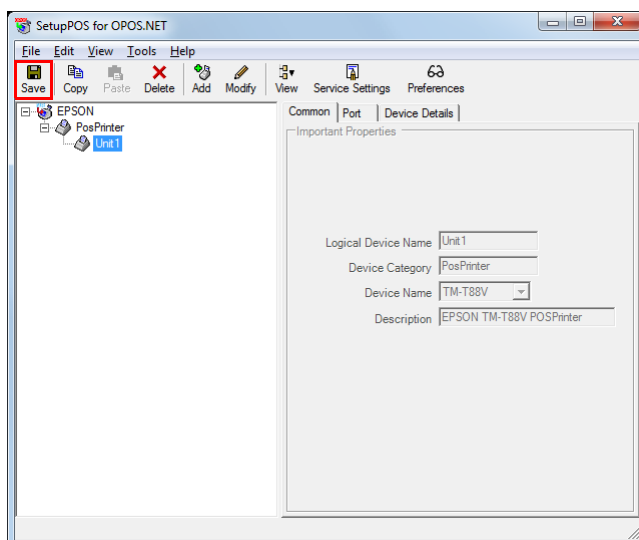
Port Name: COM1
 Output Buffer Size: 4096
 Bits per second: 9600 bps
 Data bits: 8 Bits
 Parity: No Parity Bit
 Stop Bits: 1 Stop Bit
 Flow Control: DTR/DSR

Previous Next Cancel

- 5** The following screen is displayed. Set the property of Device Statistics of device to be registered and click (Done).



- 6** Click (Save) to register the device.



Installation of IIS

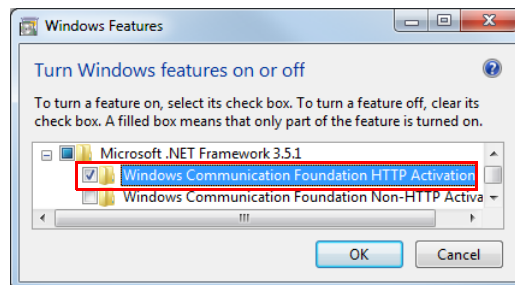
Install Microsoft Internet Information Services (IIS) following the procedures below.

- 1 Select (Start)-(Control Panel)-(Programs)-(Turn Windows features on or off).



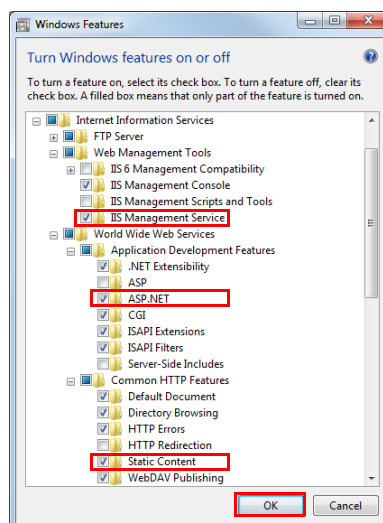
Please conduct with administrator privilege.

- 2 The "Windows Features" screen is displayed.
Expand the tree of (Microsoft .NET Framework 3.5.1) and place a checkmark on (Windows Communication Foundation HTTP Activation).



- 3 Expand the tree of (Internet Information Services) and check the following items. Click (OK).

- IIS Management Service
- ASP.NET
- Static Contents



The installation finishes.

Setup of Firewall

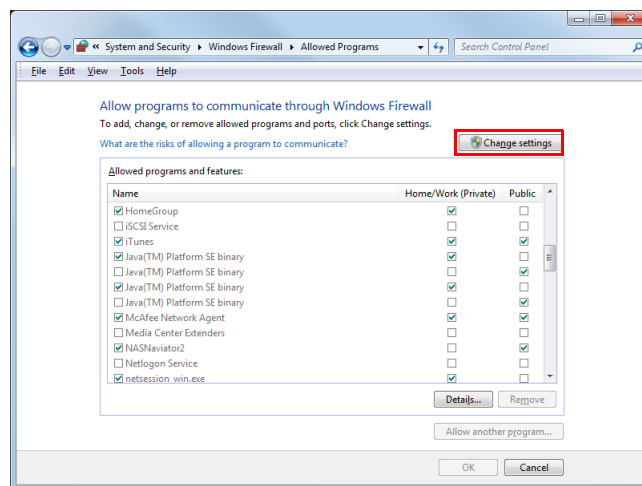
Setup the communication access privilege through Windows Firewall to the application following the procedures below.

- 1 Select (Start)-(Control Panel)-(System and Security)-(Allow a program through Windows Firewall).

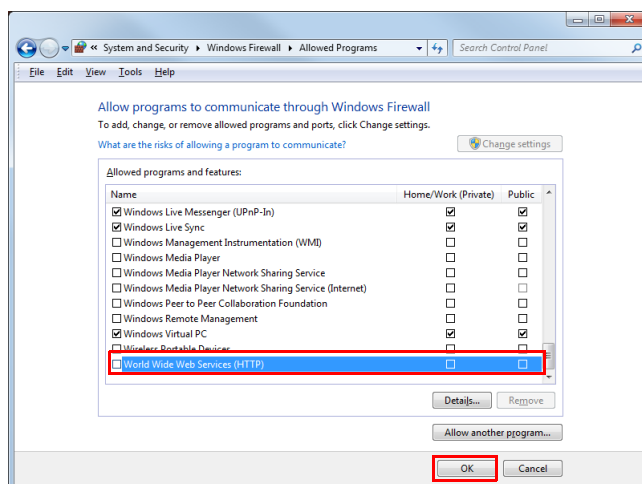


Please conduct with administrator privilege.

- 2 The "Allowed Programs" screen is displayed. Click (Change settings).

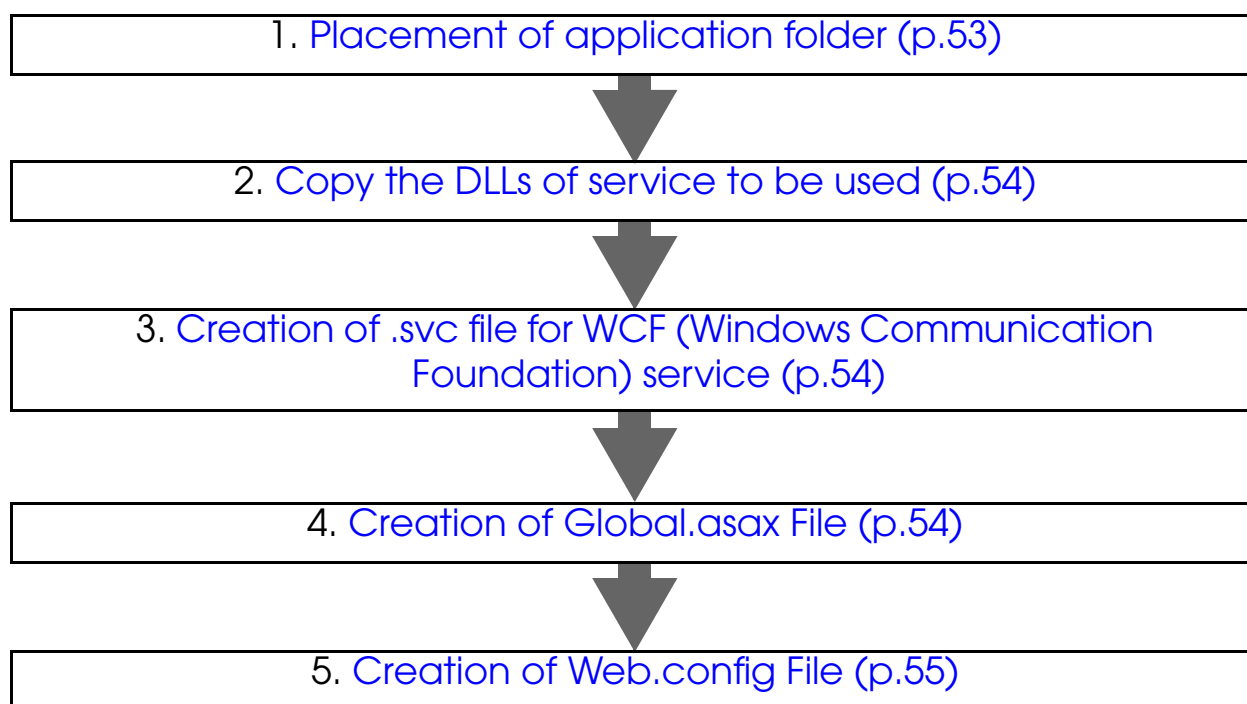


- 3 Place a checkmark on (World Wide Web Services(HTTP)) and click (OK).



Placement of ASP.NET Web Application

Place ASP.NET Web application following the procedures below.



Placement of application folder

Create an application folder (WebAppSample) under the application root directory <%SYSTEMDRIVE%\inetpub\wwwroot> and create the application.

Example of folder structure

```

%SYSTEMDRIVE%\inetpub\wwwroot
├─ WebAppSample (folder)      : Application folder
│   └─ bin (folder)          : Folder to place the DLLs of service to be used
│       └─ web.config (folder) : Setup file
│           └─ Global.asax (folder) : ASP.NET application file
│               └─ POSPrinter.svc (folder)
  
```

Copy the DLLs of service to be used

Copy the following files to the bin folder.

❑ Common device DLL

- WSPOSContract.dll
- WSPOSProviderCommonBehavior.dll

❑ Device specific DLL

- WSPOSPOSPrinterServiceProviderBehavior.dll

Creation of .svc file for WCF (Windows Communication Foundation) service

Create a new POSPrinter.svc file and add the common language runtime type name of service using the syntax below.

```
<%@ ServiceHost Language="C#" Debug="true"
    Service="WSPOSInitiative.POSPrinter.POSPrinterService" %>
```

Creation of Global.asax File

Create a new Global.asax file and make it accessible under cross domain environment.

Add the following syntax to the Global.asax file.

```
<%@ Application Language="C#" %>
<script runat="server">
    protected void Application_BeginRequest(object sender, EventArgs e)
    {
        HttpContext.Current.Response.Cache.SetCacheability(HttpCacheability.NoCache);
        HttpContext.Current.Response.Cache.SetNoStore();
        HttpContext.Current.Response.AddHeader("Access-Control-Allow-Origin", "*");
        if (HttpContext.Current.Request.HttpMethod == "OPTIONS")
        {
            HttpContext.Current.Response.AddHeader("Access-Control-Allow-Methods", "GET"
                , "POST");
            HttpContext.Current.Response.AddHeader("Access-Control-Allow-Headers"
                , "SOAPAction", "Content-Type");
            HttpContext.Current.Response.AddHeader("Access-Control-Max-Age", "1728000");
            HttpContext.Current.Response.End();
        }
    }
}
</script>
```

Creation of Web.config File

Create Web.config file following the procedures below.

- 1** Create a setup file.
Copy the "WcfServiceHostWindowsService.exe.config" file and change the file name to "Web.config".
- 2** Delete unnecessary class definitions from the "Web.config" file.
Delete the followings (gray part).
 - Delete <configSections> tag and <wsposInfoSection> tag.
 - Delete unused device categories within <appSettings> tag.
(Delete everything except POSPrinterService_ProviderSessionTimeoutCheckPeriod)

```
<configuration>
  <configSections>
    <section name="wsposInfoSection" type="WSPOSInitiative.Common.wsposInfoSection,
      WSPOSProviderCommonBehavior, Version=1.0.0.0, Culture=neutral,
      PublicKeyToken=null" allowDefinition="Everywhere"
      allowExeDefinition="MachineToRoamingUser" allowLocation="true"
      requirePermission="false"/>
  </configSections>
  <wsposInfoSection>
  <startServiceList>
    ...
    <startService type="WSPOSInitiative.POSPrinter.POSPrinterService"
      assembly="WSPOSPOSPrinterServiceProviderBehavior.dll"/>
    ...
  </startServiceList>
</wsposInfoSection>
<appSettings>
  <add key="CommonBehavior_SessionContextImpl"
    value="WSPOSProviderCommonBehavior.dll,WSPOSInitiative.Common.SessionContextD
    efaultImpl"/>
  <add key="CommonBehavior_SessionManagerImpl"
    value="WSPOSProviderCommonBehavior.dll,WSPOSInitiative.Common.SessionManagerD
    efaultImpl"/>
  <add key="CommonBehavior_LogImpl"
    value="WSPOSProviderCommonBehavior.dll,WSPOSInitiative.Common.LogConsoleOutIm
    pl"/>
  ...
  <add key="POSPrinterService_ProviderSessionTimeoutCheckPeriod" value="1"/>
  ...
</appSettings>
</configuration>
```

3 Change the device name.

Change the following.

- Change the behavior tag name of <behaviors> tag within <system.serviceModel> tag to the name of endpoint to be used.
- Change the behavior tag deviceName of <behaviors> tag within <system.serviceModel> tag to the name of device to be used.



- Please refer to [WS-POS System Environment \(p.37\)](#) for the endpoint and device name to change.
- If using multiple devices in the same device category, copy the <behavior> definition and add the definition for the second device.

```
<configuration>
  <system.serviceModel>
    <behaviors>
      ...
      <behavior name="POSPrinter_Behavior1">
        <wsposDevice deviceName="Unit1" providerSessionTimeout="180"
          eventPollingTimeout="-1" eventResponseTimeout="-1"/>
      </behavior>
      ...
    </behaviors>
  </system.serviceModel>
</configuration>
```

Please setup the following keys within "wsposDevice" as needed.

| key | Description |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| deviceName | Specifies a device name to use |
| providerSessionTimeout | Specifies timeout duration of a session (sec.) |
| eventPollingTimeout | Specifies timeout duration of long polling (sec.) When -1 is specified, no timeout is executed. |
| eventResponseTimeout | Specifies timeout duration for termination of event waiting processing of self-host/long polling (sec.) When -1 is specified, no timeout is executed. |

4 Change Service Provider URL

Change the following.

- Change the baseAddress of the baseAddress tag within <host> tag within <services> to the ASP.NET Web application folder.
- Change the address of <endpoint> tag within <services> tag to address name, and behaviorConfiguration to behavior name.



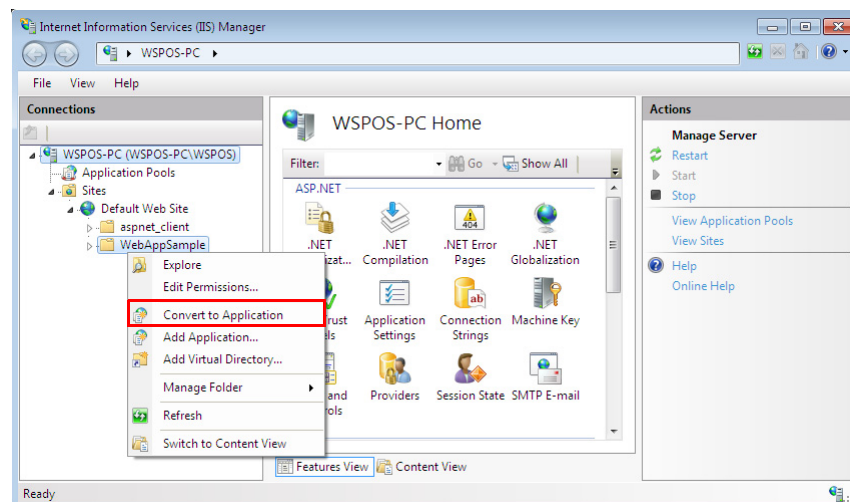
- Please change according to the Service Consumer environment.
- Please refer to [WS-POS System Environment \(p.37\)](#) for the ASP.NET Web application folder, device name and behavior name to change.
- If using multiple devices in the same device category, copy the <endpoint> definition and add the definition for the second device.

```
<configuration>
<system.serviceModel>
  ...
  <services>
    <service>
      <host>
        <baseAddresses>
          <add baseAddress="http://192.168.1.100/WebAppSample/POSPrinter.svc" />
        </baseAddresses>
      </host>
      <endpoint address="POSPrinter1"
        behaviorConfiguration="POSPrinter_Behavior1"
        binding="basicHttpBinding"
        contract="UnifiedPOS.POSPrinter.V1_2.POSPrinter"
        bindingNamespace="http://www.nrf-arts.org/UnifiedPOS/POSPrinter/" />
    </service>
  </services>
</system.serviceModel>
</configuration>
```

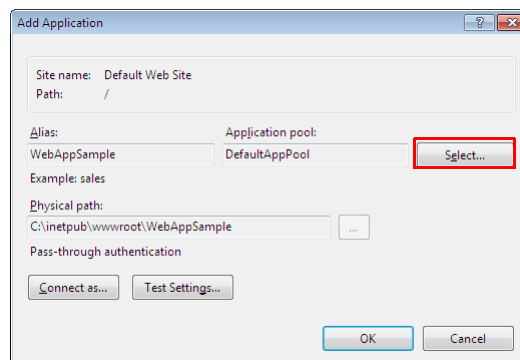
Registration of ASP.NET Web Application

Follow the procedures below to register ASP.NET Web application.

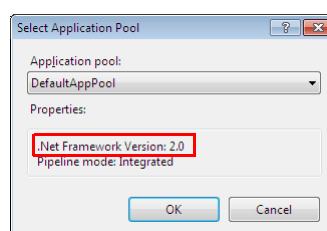
- 1 Launch Internet Information Services (IIS) Manager.
- 2 The "Internet Information Services (IIS) Manager" screen is displayed. Right click the folder in which ASP.NET Web application is placed in the left side trees and select (Convert Application).



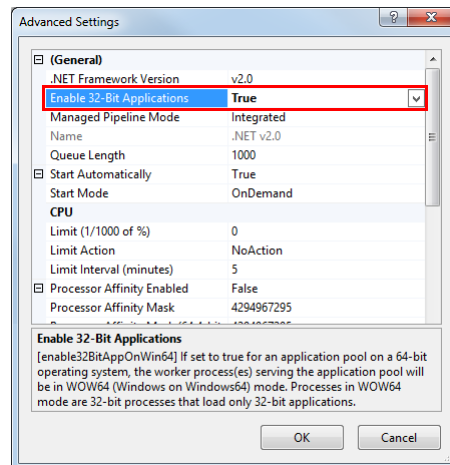
- 3 The "Add Application" screen is displayed. Click (Select).



- 4 The "Select Application Pool" screen is displayed. Verify (.NET Framework Version) is "2.0" and click (OK).



- 5 The "Add Application" screen is displayed. Click (OK).
- 6 When the Service Provider environment is 64-bit OS, select (Application Pools) from the left side trees.
 1. From the list of application pools, select the application to be used and click (Advanced Settings).
 2. The "Advanced Settings" screen is displayed. Select (Enable 32-bit Applications) to "True" and click (OK).



ASP.NET Web application registration is finished.

Preparation of Service Consumer

In this section, setup and launching of following sample program are explained.

- [Consumer LongPolling Sample \(p.60\)](#)
- [Consumer BiDirection Sample \(p.61\)](#)



Conduct the setup with administrator privilege.



You can find an sample program in WS-POS reference implementation.
Obtain from the following: (As of Oct. 1st, 2013)
<http://www.nrf-arts.org/content/unifiedpos>

Consumer LongPolling Sample

Edition of Setup File

Edit the Console_POSPrinterConsumerLongPollingSample.exe.config file as described below.



- Please refer to [WS-POS System Environment \(p.37\)](#) for the ASPNET Web application folder and endpoint name to change.
- If using multiple devices in the same device category, copy the <endpoint> definition and add the definition for the second device.

- Change "address" within <endpoint> tag to the ASPNET Web application folder and endpoint name.
- Change "name" within <endpoint> tag to "POSPrinterPort1".

```
<configuration>
...
<system.serviceModel>
  <client>
    <endpoint address="http://192.168.1.100/WebAppSample/POSPrinter.svc/POSPrinter1"
              binding="basicHttpBinding"
              contract="UnifiedPOS.POSPrinter.V1_2.POSPrinter"
              name="POSPrinterPort1"/>
  </client>
</system.serviceModel>
</configuration>
```

Launch Program

Execute Console_POSPrinterConsumerLongPollingSample.exe.

When it's successfully executed, the following message is displayed in the command prompt.

>Press ENTER to OpenDevice, Claim, Enable.

Consumer BiDirection Sample

Edition of Setup File

Edit the Console_POSPrinterConsumerBiDirectionSample.exe.config file as described below.



- Please refer to [WS-POS System Environment \(p.37\)](#) for the ASPNET Web application folder and endpoint name to change.
- If using multiple devices in the same device category, copy the <endpoint> definition and add the definition for the second device.

- Change "address" within <endpoint> to the ASPNET Web application folder and endpoint name.
- Change "name" within <endpoint> tag to "POSPrinterPort1".

```
<configuration>
...
<system.serviceModel>
  <client>
    <endpoint address="http://192.168.1.100/WebAppSample/POSPrinter.svc/POSPrinter1"
              binding="basicHttpBinding"
              contract="UnifiedPOS.POSPrinter.V1_2.POSPrinter"
              name="POSPrinterPort1"/>
  </client>
</system.serviceModel>
</configuration>
```

- Change "baseAddress" within <baseAddress> tag of <services> tag to consumer IP address : Port number to be used.

```
<configuration>
...
<system.serviceModel>
  ...
  <services>
    <service
      name="Console_POSPrinterConsumerBiDirectionSample.POSPrinterEventService"
      behaviorConfiguration="WSPOSClient.POSPrinterEventServiceBehavior">
      <host>
        <baseAddresses>
          <add baseAddress="http://192.168.1.102:8001/POSPrinterEvent"/>
        </baseAddresses>
      </host>
      <endpoint address=""
        binding="basicHttpBinding"
        contract="UnifiedPOS.POSPrinterEvents.V1_2.POSPrinterEvent"
        bindingNamespace="http://www.nrf-arts.org/UnifiedPOS/POSPrinterEvents/">
        ...
      </endpoint>
      <endpoint address="mex" binding="mexHttpBinding" contract="IMetadataExchange"/>
    </service>
  </services>
  ...
</system.serviceModel>
</configuration>
```

Launch Program

Execute Console_POSPrinterConsumerLongPollingSample.exe.

When it's successfully executed, the following message is displayed in the command prompt.

```
>Press ENTER to OpenDevice, Claim, Enable.
```

Troubleshooting

In this chapter, troubleshooting that can occur during configuring WS-POS environment is explained.

Windows Service

- ❑ When starting WsposService (execute net start WsposService), following errors are displayed.

System error 2 occurred.

Specified file is not found.

- Confirm if Windows Service is registered with full path.
- Verify there is no space or Japanese character in the specified path when registering the service.

- ❑ Following errors are displayed when starting WsposService (execute net start WsposService).

System error 5 occurred.

Access is denied.

- Verify correct full path of WcfServiceHostWindowsService.exe (including the file name) is specified when registering the Windows Service.

- ❑ Following errors are displayed when starting WsposService (execute net start WsposService).

Starting WsposService.

Could not start WsposService.

Service did not report errors.

Enter NET HELPMSG 3534 to view detail information.

- Verify if classes (DLL/EXE) that do not exist within the same folder are specified in the setup (extension ".config").file.

Internet Information Service (IIS) Service

- ❑ The following exception is displayed when executing LongPollingSample or BiDirection Sample application while using the cross domain.

System.ServiceModel.EndpointNotFoundException: ... TCP Error Code 10060 ...

- Verify the program permission setting of Windows firewall.
(Refer to [Setup of Firewall \(p.52\)](#) for detail.)

- ❑ The following exception is displayed when executing LongPollingSample or BiDirection Sample application while using the cross domain.

...
System.Exception: wrong device name : Unit1 it can'n create instance.
...

- Verify SetupPOS is registered with administrator privilege when registering the device.
(Refer to [Device Registration \(p.48\)](#))
- Verify the logical device name of registered device name is "Unit1".