

^WX – Configure Wireless Securities

Description Use this command to configure the wireless security settings for your printer. Values entered for this command must match what is configured on your WLAN and must be supported by the wireless radio card that you are using.

The ^WX command replaces individual ZPL commands for different security types.



This command applies to printers with firmware version X60.15.x, V53.15.x, V50.15.x, or later.



Note • When using certificate files, your printer supports:

- Using Privacy Enhanced Mail (PEM) formatted certificate files.
- Using the client certificate and private key as two files, each downloaded separately.
- Using exportable PAC files for EAP-FAST.



Important • When using certificate files, the time on the printer must be set correctly for the websocket connection to succeed, as the time is used in the certificate validation.



Format ^WXa,[zero or more supporting parameters]



Note • The supporting parameters that are required vary based on the security type that you select. See *Supporting Parameters for Different Security Types* on page 459 for instructions for each security type.

Parameters	Details																
a = security type	<p>Enter the two-digit code for the security type that your WLAN uses. For which supporting parameters (b through n) to use with the different security types, see <i>Supporting Parameters for Different Security Types</i> on page 459.</p> <p> Note • Configuring the printer for WPA also allows the printer to be used in WPA2 environments.</p> <p><i>Accepted Values: 01 to 15</i></p> <table> <tr> <td>01 = No wireless security is active</td> <td>09 = WPA PSK (R6x15.x, R53.15.x, ZSPx, and later.)</td> </tr> <tr> <td>02 = WEP 40-bit</td> <td>10 = WPA EAP-TLS</td> </tr> <tr> <td>03 = WEP 128-bit</td> <td>11 = WPA EAP-TTLS</td> </tr> <tr> <td>04 = EAP-TLS</td> <td>12 = WPA EAP-FAST</td> </tr> <tr> <td>05 = EAP-TTLS</td> <td>13 = WPA PEAP</td> </tr> <tr> <td>06 = EAP-FAST</td> <td>14 = WPA LEAP</td> </tr> <tr> <td>07 = PEAP</td> <td>15 = Kerberos</td> </tr> <tr> <td>08 = LEAP</td> <td></td> </tr> </table> <p><i>Default Value: 01</i></p>	01 = No wireless security is active	09 = WPA PSK (R6x15.x, R53.15.x, ZSPx, and later.)	02 = WEP 40-bit	10 = WPA EAP-TLS	03 = WEP 128-bit	11 = WPA EAP-TTLS	04 = EAP-TLS	12 = WPA EAP-FAST	05 = EAP-TTLS	13 = WPA PEAP	06 = EAP-FAST	14 = WPA LEAP	07 = PEAP	15 = Kerberos	08 = LEAP	
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* Not used for all security types

Parameters	Details
b = WEP encryption index*	<p>Specifies which encryption key to use for WEP encryption. A value must be specified if using WEP 40-bit or WEP 128-bit.</p> <p><i>Accepted Values:</i> 1, 2, 3, 4</p> <p><i>Default Value:</i> 1</p>
c = WEP authentication type*	<p>Enables the WEP key authentication type. A value must be specified if using WEP 40-bit or WEP 128-bit.</p> <p><i>Accepted Values:</i> 0 or S</p> <p>0 = open system S = shared key</p> <p><i>Default Value:</i> 0</p>
d = WEP key type*	<p>Specifies the format of the WEP key. A value must be specified if using WEP 40-bit or WEP 128-bit.</p> <p><i>Accepted Values:</i> H or S</p> <p>H = hex key storage S = string key storage</p> <p><i>Default Value:</i> S</p>
e,f,g,h = WEP encryption keys 1 through 4*	<p>Specifies the actual values of any WEP encryption keys to be used. A value must be specified for at least one WEP encryption key if you specify 40-bit or 128-bit WEP encryption for the security type.</p> <p> Important • Be careful to include the exact number of commas required for this command when setting encryption keys (parameters e through h). A missing or extra comma will cause the keys to be stored in the wrong slots and can prevent the printer from joining the wireless network.</p> <p>The encryption mode affects what can be entered for the encryption keys:</p> <ul style="list-style-type: none"> • For 40-bit, encryption keys can be set to any 5 hex pairs or any 10 alphanumeric characters. • For 128-bit, encryption keys can be set to any 13 hex pairs or any 26 alphanumeric characters. <p> Note • When using hex storage, do not add a leading 0x on the WEP key.</p> <p><i>Accepted Values:</i> The actual value for the encryption key</p> <p><i>Default Value:</i> None</p>

* Not used for all security types

Parameters	Details
i = user ID*	<p>Specifies a user ID for security types that require one. A value must be specified if using the following security types:</p> <ul style="list-style-type: none"> • EAP-TTLS • LEAP • WPA LEAP • PEAP • WPA PEAP • WPA EAP-TTLS • Kerberos <p><i>Accepted Values:</i> The actual value for the user ID. <i>Default Value:</i> user</p>
j = password*	<p>Specifies a password for security types that require one. A value must be specified if using the following security types:</p> <ul style="list-style-type: none"> • EAP-TTLS • LEAP • WPA LEAP • PEAP • WPA PEAP • WPA EAP-TTLS • Kerberos <p><i>Accepted Values:</i> The actual value for the password. <i>Default Value:</i> password</p>
k = optional private key password*	<p>Specifies an optional private key password for security types that require one. A value must be specified if using the following security types:</p> <ul style="list-style-type: none"> • EAP-TLS • EAP-FAST • WPA EAP-TLS • WPA EAP-FAST <p><i>Accepted Values:</i> The actual value for the optional private key. <i>Default Value:</i> None</p>
l = realm*	<p>Specifies the realm for security types that require it. A value must be specified if using Kerberos.</p> <p><i>Accepted Values:</i> The actual value for the realm. <i>Default Value:</i> kerberos</p>
m = Key Distribution Center (KDC)*	<p>Specifies the KDC for security types that require it. A value must be specified if using Kerberos.</p> <p><i>Accepted Values:</i> The actual value for the KDC. <i>Default Value:</i> krbtgt"</p>

* Not used for all security types

Parameters	Details
n = Pre-Shared Key (PSK) value*	<p>Enter the PSK value. This value is calculated and must be the same for each device on the WLAN. Use ZebraNet Bridge to generate the PSK value. A value must be specified if using WPA PSK.</p> <p> Important • Do not enter a pass phrase for this field in this command. To use a pass phrase, use the ZebraNet Bridge Enterprise Wireless Setup Wizard.</p> <p><i>Accepted Values:</i> a minimum of 64 hexadecimal digits</p> <p><i>Default Value:</i> None</p>

* Not used for all security types

Supporting Parameters for Different Security Types

The supporting parameters required for this command vary based on the security type that you select. You should not use all of the supporting parameters each time that you use this command, nor will you use extra commas to separate unused fields. Follow the example and format for your specific security type in this section, substituting your own wireless network data.

Security Type 01: No Wireless Security Active

Format ^WX01



Example • This example turns off all wireless securities controlled under this command, but it does not reset the printer's wireless settings to their defaults.

```
^XA
^WX01
^JUS^XZ
```

Security Type 02: WEP 40-Bit

Format ^WX02,b,c,d,e,f,g,h



Example • This example configures the printer for WEP 40-bit encryption using index key 1, open authentication, and a hexadecimal WEP key with a value of "A1B2C3D4F5."

```
^XA
^WX02,1,0,H,A1B2C3D4F5,,
^JUS
^XZ
```

Security Type 03: WEP 128-Bit

Format ^WX03,b,c,d,e,f,g,h

→ **Example** • This example configures the printer for WEP 128-bit encryption using index key 2, open authentication, and four hexadecimal WEP keys.

```
^XA
^WX03,2,0,H,001122334455667788,112233445566778899,223344556677889900,334455
667788990011
^JUS
^XZ
```

Security Type 04: EAP-TLS

Format ^WX04,k

→ **Example** • This example configures the printer for EAP-TLS authentication with an optional private key password with a value of “private.”

```
^XA
^WX04,private
^JUS
^XZ
```

Security Type 05: EAP-TTLS

Format ^WX05,i,j

→ **Example** • This example configures the printer for EAP-TTLS authentication, including a user ID of “user” and a password of “password.”

```
^XA
^WX05,user,password
^JUS
^XZ
```

Security Type 06: EAP-FAST

Format ^WX06,i,j,k

→ **Example** • This example configures the printer for EAP-FAST authentication, including a user ID of “user,” a password of “password,” and an optional private key of “private.”

```
^XA
^WX06,user,password,private
^JUS
^XZ
```

Security Type 07: PEAP

Format ^WX07,i,j



Example • This example configures the printer for PEAP authentication, including a user ID with a value of “user” and a password with a value of “password.”

```
^XA
^WX07,user,password
^JUS
^XZ
```

Security Type 08: LEAP

Format ^WX08,i,j



Example • This example configures the printer for LEAP authentication, including a user ID with a value of “user” and a password with a value of “password.”

```
^XA
^WX08,user,password
^JUS
^XZ
```

Security Type 09: WPA PSK



Note • Configuring the printer for WPA also allows the printer to be used in WPA2 environments (R6x15.x, R53.15.x, ZSPx, and later.)

Format ^WX09,n



Example • This example configures the printer for WPA PSK authentication with a PSK value of all zeroes (64 hexadecimal digits).

```
^XA
^WX09,00000000...
^JUS
^XZ
```

Security Type 10: WPA EAP-TLS



Note • Configuring the printer for WPA also allows the printer to be used in WPA2 environments.

Format ^WX10,k



Example • This example configures the printer for WPA EAP-TLS authentication with an optional private key password with a value of “private.”

```
^XA
^WX10,private
^JUS
^XZ
```

Security Type 11: WPA EAP-TTLS



Note • Configuring the printer for WPA also allows the printer to be used in WPA2 environments.

Format ^WX11,i,j



Example • This example configures the printer for WPA EAP-TTLS authentication, including a user ID with a value of “user” and a password with a value of “password.”

```
^XA
^WX11,user,password
^JUS
^XZ
```

Security Type 12: WPA EAP-FAST



Note • Configuring the printer for WPA also allows the printer to be used in WPA2 environments.

Format ^WX12,i,j,k



Example • This example configures the printer for WPA EAP-FAST authentication, including a user ID of “user,” a password of “password,” and an optional private key of “private.”

```
^XA
^WX12,user,password,private
^JUS
^XZ
```

Security Type 13: WPA PEAP



Note • Configuring the printer for WPA also allows the printer to be used in WPA2 environments.

Format ^WX13,i,j



Example • This example configures the printer for WPA PEAP authentication, including a user ID with a value of “user” and a password with a value of “password.”

```
^XA
^WX13,user,password
^JUS
^XZ
```

Security Type 14: WPA LEAP



Note • Configuring the printer for WPA also allows the printer to be used in WPA2 environments.

Format ^WX14,i,j



Example • This example configures the printer for WPA LEAP authentication, including a user ID with a value of “user” and a password with a value of “password.”

```
^XA
^WX14,user,password
^JUS
^XZ
```

Security Type 15: Kerberos

Format ^WX15,i,j,l,m



Example • This example configures the printer for Kerberos encryption, including a Kerberos user ID with a value of “user,” a Kerberos password with a value of “password,” a realm of “zebra,” and a KDC of “krbtgt.”

```
^XA
^WX15,user,password,zebra,krbtgt
^JUS
^XZ
```