

Cisco Virtual Office – End User Instructions for Cisco 871 and Cisco 881 Router Set Up at Home or Small Office

Introduction

This document describes the end-user instructions to deploy the Cisco Virtual Office (CVO) for home or small office use.

Cisco Virtual Office (CVO) solution offers a seamless home/small office experience comparable to working in your company's central office. CVO features support secure, always-on wired and wireless (WLAN) data connectivity, voice services, and video capabilities.

Setup Your CVO Hardware

In this section you will be able to identify the basic hardware configuration needed to install the CVO solution in your home/office. This is a known working configuration to assist you in your initial set-up and is not intended to cover all variations of home/office network environments. This guide is written based on Cisco 871 and Cisco 881 routers.

Ports on the CVO Router

It is important that you understand which ports on the back of your CVO router are used for what purposes.

- FE0, FE1, FE2, and FE3: LAN Ports FE0 to FE3 are end-user device secure ports. Connect your PC/Mac/Linux/IP phone equipment here.
- FE4: Use the WAN/FE4 port to connect your CVO router to your Internet Service Provider (ISP) device.



How to Connect Your Equipment

This scenario shows an example of your company's provided devices and the Internet Service Provider (ISP) device (modem/router) properly connected to a CVO 871W router. The same ports should be used to connect to a CVO Cisco 881W or non-wireless router.

For detailed descriptions, see below Step-by-Step Instructions.



Step-by-Step Instructions

	Follow these steps to connect your CVO router to the ISP device and to your PC
Step 1	Make sure your ISP device (DSL modem, cable modem, etc) is plugged in and turned on. If your ISP device is already on, power off your ISP device and wait 10 seconds. Remove the cables. Then power it up and wait 30 seconds to complete the reset and reconnect your cables. Plug in your CVO router as shown and power it up. Do not do any type of soft reboot on your ISP devices at this point.
Step 2	Plug the CVO router into the ISP modem/router using an Ethernet cable going from the Ethernet port on the ISP device, to the WAN/FE4 port on the CVO router as shown in Figure 1.
Step 3	Plug your PC into the CVO router using the LAN trusted port FE0 as shown in Figure 1.

Configure Your Router

Once you have set up your CVO hardware you will need to configure your router so that you can access the Internet and your company's corporate network.

After the Internet connectivity is established you need to follow the steps that invoke the Secure Device Provisioning (SDP) tool to communicate with your company's core infrastructure and complete your CVO router's configuration.

Internet Connectivity

The configuration needed to connect to the Internet is determined by the IP address assignment type.

DHCP Assignment

If you have a DHCP connection, your PC should already be able to access the Internet at this point, no additional work is needed.

Other (PPPoE or Static) Assignment

If your IP address assignment type is **anything other than DHCP** some additional configuration is needed to access the Internet. You must run the Cisco Configuration Professional Express (CCP Express) tool and follow the steps to get the router connected to the Internet before you can proceed. You must know what type of connectivity your ISP is providing you, typically PPPoE or static IP. Your ISP should be able to give you this information. Go to "Appendix A: CCP Configuration" in this document and follow the instructions to get internet access. Once done, return to the "Corporate Network Connectivity" section and complete the SDP provisioning process.

Corporate Network Connectivity

Step 1 Test your Internet connection.

To double check that your PC is now connected to the Internet, open a browser window and type any Internet website, for example, www.cisco.com.

Step 2 Initiate the Secure Device Provisioning (SDP) Process.

You will need to complete the process for Secure Device Provisioning (SDP) so that your CVO router can access the corporate network and securely download its configuration.

If you are using Static addressing or PPPoE and used CCP Express for the initial configuration of your router, specifying SDP for provisioning, then CCP Express will automatically direct you to the SDP welcome page, where you have to authenticate using the login username/password that you configured during the CCP Express setup (Figure 2).

Figure 2 SDP Authentication

Cisco Launch Page (10.10.10) Loading	🕽 about:blank - M	Mozilla Firefox				
Authentication Required Image: Control of the cont	Cisco Launch Page	ge (10.10.10 🔛	🛟 Loading		Cisco Configuration	n Professio 🔝 🗌
		Authentication R Enter user User Name Svuser Password: ********** Use Pa	equired name and password for "CIS :: assword Manager to rememb	ICO DEVICE" at	Loss corriga des http://10.10.10.1	

If you're using DHCP, to initiate the SDP process, go to the PC which is connected to the CVO router and open a browser window. Then type in the address bar: http://10.10.10.1/ezsdd/welcome. You will be prompted to authenticate, and you **must** use **username/password cisco/cisco.**

You will see the screen shown in Figure 3 while the router prepares for the rest of the SDP process.

Figure 3 SDP Screen

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3155 - O - 🖻 🖻 🚯 🔑 Search 👷 Favorites 🐵 🗇 🖓 👾 🍇	
(3mil 🐔 http://10.10.10.1/ezskd/webcome	🛩 🔂 Go Urika
tatus: Pending dessage: Generating TTI key pair. Nhat to do next: The page will refresh automatically. Please wait TTV ersion: 1.1	

Step 3 Securely download the CVO router configuration.

Connect to SDP Server

When the screen refreshes you will notice a field for site URL. Enter the URL provided by your network administrator (Figure 4).

Figure 4	URL Field	
	🗿 EZ-Secure Device Deployment WELCOME to yourname.yourdomain.com Microsoft Internet Explorer provided by Cisco Systems, Inc.	
	File Edit View Favorites Tools Help	A.
	🔇 Back + 🐑 - 🖹 🖻 🕎 🔎 Search 👷 Favorites 🔗 🍰 - 🌺 🖓 📓 - 🕞 🇱 🦓	
	Address 🕘 http://10.10.10.1/ezsdd/welcome	💌 🔁 Go
	Welcome to Cisco Secure Device Deployment for yourname.yourdomain.com To join a Virtual Private Network (VPN) enter the web site URL provided by your network administrator.	
	https://SDP_server.cisco.com/ezsdd/intro	

After you click Next you will see a Security Request confirmation window; select Yes to proceed.

Step 4 Authenticate yourself.

> When the system attempts to connect to the corporate CVO management server, you are prompted to authenticate yourself. You must use the credentials provided by your network administrator (Figure 5).

Figure 5	Connect to SDP Serve	er
	Connect to SDI	P server 🛛 💽 🔀
	tti_access	
	<u>U</u> ser name:	🔮 username 🛛 🔽
	<u>P</u> assword:	••••••
		Remember my password
		OK Cancel

When your authentication is accepted you will see the confirmation screen shown in Figure 6.

Figure 6	Confirmation Screen	
	E2-Secure Device Deployment INTRODUCTION to sdp_server.cisco.com - Microsoft Internet Explorer provided by Cisco Systems, Inc.	
	File Edit Vitew Favorites Tools Help	N
	🔇 Back + 🕥 - 🖹 🛃 🏠 🔎 Search 👷 Favorites 🤣 🍰 - 🌺 🎧 🔳 - 🗖 🏭 🦓	
	Agdress 🕘 https://sdp_server.oisco.com/ecsdd/intro	💌 🔁 Go
	Welcome to the VPN network gateway on sdp_server.cisco.com	
	Your 'username' and 'password'entered have been accepted. Your device will now be allowed to automatically join the VPN network	
	Press Next to complete automatic configuration of your VPN device.	
	[]jest >]	27.9807 2

Select Next to proceed.

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Step 5 CVO router auto-configuration.

> You should now see the enrollment window and your CVO router will automatically download the configuration from the CVO management server (Figure 7).

Note

Do not select any of the options on this screen. This will interrupt your CVO router configuration.

Please be patient during this process. This can take 5 or more minutes to complete. Any interruption will cause an incomplete deployment.

Figure 7 **Enrollment Window**

Edit View Fevorites Tools Help	4
) Back = 🕥 - 😠 🖉 🏠 🔎 Sewerk 🤺 Favorites 🛷 🔗 - 🌺 🎘 💷 - 🕞 🏭 🖄	
mss 🕘 http://10.10.10.1/essdd/complete	🛩 🛃 Go
nrolling sjo-username-vpn.clsco.com with the VPN network	
Now enrolling sjo-username-vpn.cisco.com with the VPN network Full network VPN access should be available in a moment	
New enrolling sjo-username-vpn.cisco.com with the VPN network Full network VPN access should be available in a moment What to do next:	
Now enrolling sjo-username-vpn.cisco.com with the VPN network Full network VPN access should be available in a moment What to do next: Click here to see the running-config Click here to disolaw the enrollment status	
Now enrolling sjo-username-vpn.cisco.com with the VPN network Full network VPN access should be available in a mament What to do next: Citck here to see the running-config Citck here to display the enrollment status Citck here to display the enrollment status	

Verify that your CVO router has a VPN Light on in the front. Step 6

After 5 minutes, your router should have its VPN LED lit solid green.

At this point you need to have your PC register with the new router configuration to renew its IP address. You have two options to renew your IP address:

- a. restart your PC this will automatically renew its IP address
- (advanced users) right click on your network adaptor icon in the systray and click repair as show in b. Figure 8:



Once you have a valid IP Address, open your browser and attempt to connect to an external Website. This should be something other than your company's internal home page; e.g. www.cisco.com.

If this is successful then proceed with testing an internal Website.

Step 7 Verify connectivity to your company's corporate network.

Once your CVO router's configuration is complete you will be able to access your company's internal network via the VPN tunnels that have been created. Before you are allowed to access any internal resources you will have to authenticate in accordance with your company's corporate policy. Just open a browser in the PC connected to the CVO router and type an internal Website of your company.

Congratulations! You are now ready to begin using your Cisco Virtual Office.

The CVO router will build a direct connection to the corporate network. Once the CVO router is installed and configured, there is no need to run a VPN client or SSLVPN to be connected to your company network.

Please refer to the CVO overview further information about the solution, its architecture, and all of its components.

For more details about the Cisco 800 Series Routers please visit

http://www.cisco.com/en/US/products/hw/routers/ps380/index.html

For additional information about Cisco Configuration Professional (CCP), please visit http://www.cisco.com/en/US/products/ps9422/index.html

Appendix A: CCP Configuration

To start configuring the CVO router with Cisco Configuration Professional Express (CCP Express) make sure the PC is physically connected to CVO router on port FE0. Open an Internet browser and type **http://10.10.10.1**. When prompted for **username/password**, please enter: **cisco/cisco**. CCP Express will guide you to remove or configure a new username/password. The Cisco Configuration Professional (CCP) Express wizards will guide you through the process of configuring your CVO router to connect to the Internet, as described next.

1. Figure 9 shows the welcome screen of CCP Express. Click "Next" to start the wizard.

Cisco CP	Express: 10.10.10.1	Cisco CP Express	alada
	AREA IN	CISCO OF Express	cisco
	Cisco CP Express Wizard		×
Ø Overv Ø Basic ₩ LAN	Configuration Steps	Welcome to the Cisco CP Express Wizard The Cisco CP Express wizard will help you connect your router to the local network and to the latenet. Allowing accelerations into a strand exceeds the user to the	F
避 Wirele 🔗 Intern	Overview	settings and return to any screen to change settings before delivering the settings to the router.	
Firews	Basic Configuration		
NAT	DHCP	If you use Cloco Network Services (CNS) to configure routers in your network, you can specify the CNS parameters that will enable the router to contact the CNS server to obtain a configuration.	
🖏 Secur	Wireless		
	Firewall		
_	Summary		
🖉 Ping			
🔗 Teinet			
Softw		< Back Next > Finish Cancel Help	1
Madal 7	J. L.		
IOS Versi	on:	Refresh	
sco CP Exp	press Home	00:07:27 UTC Fri A	ug 22 2008

Figure 9 Welcome Screen

2. Enter the desired login credentials and enable password, as well as the hostname and domain name for the router (Figure 10), then click "Next".

		Cisco CP Expre	ss		lini) Isco
	Cisco CP Express Wizard			X	
🔗 Overv 🧬 Basic 🐉 LAN	Configuration Steps	Basic Configuration Host Name: ccp-router	Domain Name:	cisco.com	
🗳 Wirele 🗭 Intern	Overview	Username and Password Your router comes with a factory default lo	gin usemame and pas	sword. You must	
🗿 Firewa	Basic Configuration	change these values to make your router :	secure.		
🛃 DHCP	LAN IP Address	After you complete the Cisco CP Express password to reconnect to the router.	Wizard, enter this new l	ogin username and	
Routir	DHCP	Enter new username:	svuser		
Secur	Wireless	Enter new password:	*******	(minimum 6 characters)	
👼 Reset	Internet (WAN)	* Reenter new password:	*******]	
	Firewall	Enable Secret Password			
	Security Settings	This password is used to administer the r interface (CLI).	outer when using the c	ommand-line	
_		* Enter new password:	*******	(minimum 6 characters)	
👰 Ping 🐠 Telnet	51	Reenter new password:	******		
💞 Cisco		 indicates mandatory fields. 			
🕄 Softw			< Back Next > Fi	nish Cancel Help	

Figure 10 Basic Configuration

3. Specify "Secure Device Provisioning" as the method for provisioning the router, as SDP will be used for the bootstrap config (Figure 11), then click "Next"

		Cisco CP Express	cisco
	Cisco CP Express Wizard		
⊘ Overv ⊘ Basic ⅔ LAN	Configuration Steps	Router Provisioning Provision this router through:	
避 Wirele 🔗 Intern	Overview Resic Configuration	Clisco CP Express Secure Device Provisioning You must enter registrar information from your ISP.	
Firewa	LAN IP Address DHCP	The SDP application will be launched after the Cisco CP Express Wizard is completed.	
🐏 Routin 💐 Secur 🎝 Reset	Wireless Internet (WAN)	CNS Server You must enter CNS server information from your ISP.	
	Firewall Security Settings Summary		
🗊 Ping 🐠 Telnet	SA.		
∛ Cisco ੴ Softw		< Back Next > Finion Cancel H	leip
Model Typ IOS Versi	pe: on:	Refresh 🖉 Apply Changes 👔 Disc	card Changes

Figure 11 SDP for Router Provisioning

4. Choose the corresponding IP address assignment method (PPPoE or Static).

For PPPoE, select the authentication method (CHAP or PAP), and provide the appropriate credentials provided to you by your ISP (Figure 12)

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ã		Cisco CP Express
_	Cisco CP Express Wizard	×
 Øverv Basic LAN 	Configuration Steps	WAN Configuration (Interface:fastEthernet4) Note: Enter the WAN parameters that your service provider gave you.
A Wirele	Overview Basic Configuration	C Enable PPPoE Address Type IP Negotiated
Firewa DHCP NAT + Routir	LAN IP Address DHCP Wireless	This interface will obtain IP address using PPP/IPCP (IP Control Protocol) address negotiation.
Reset	Internet (WAN) Firewall Security Settings Summary	Authentication Enter a valid username and password for CHAP and/or PAP authentication. Authentication Type: IF CHAP IF PAP Username: User
Cisco		Password: ******* Confirm Password: *******
Model Ty IOS Versi	pe: on:	Refresh

Figure 12 PPPoE

For Static IP addresses, specify the IP address and subnet mask to be used by the router (Figure 13).

		Cisco CP Express	cisco
	Cisco CP Express Wizard		×
P Basic LAN	Configuration Steps	WAN Configuration (Interface:FastEthernet4) Note: Enter the WAN parameters that your service provider gave you.	
🗳 Wirela	Overview	Enable PPPoE	
Firew.	Basic Configuration	Address Type Static IP Address	
🛃 DHCP 🐉 NAT	LAN IP Address	IP address: 10 10.1.50	
🔅 Routir	Wireless	Subnet mask: 255 255.255.0 or Subnet Bits: 24	
A Kesel	Firewall		
	Security Settings		
	Summary		
Ping			
🖉 Cisco			
🖏 Softw		<back next=""> Finish Cancel</back>	Help
Model Type IOS Versio	n:	Refresh 🖓 Apply Changes	Discard Changes

Figure 13 Static IP Addresses

5. Choose whether or not to create a default route (Figure 14), then click "Next".

	oress: 10.10.10.1	Help About Exil	
		Cisco CP Express	cisco
Ta	Cisco CP Express Wizar	d	
 Overview Basic Con LAN 	Configuration Steps	Internet (WAN) - Advanced Options	
Wireless internet (* Firewall DHCP NAT * Routing Security Reset to F	Overview Basic Configuration LAN IP Address DHCP Wircless Internet (WAN) Firewall Security Settings	There is no default route configured on the router. A default route ensures that outgoing traffic will always be sent to another router on the network Create Default Route Cruse This Interface as Forwarding Interface Cruset Hop IP Address (If your ISP has given you a next hop IP address enter it here)	
To Ping Telnet Cisco CP Software L	Summary	< Back Next> Finish Canc	el Help
Model Type: IOS Version:		Refresh 🔊 Apply Changes	Discard Changes

Figure 14 Default Route

6. CCP Express displays a summary page of the basic configuration that you setup for the router. Click "Finish" to deliver it to the router (Figure 15 and Figure 16).

	Cisco CP Expr	Help About Exit	ahaha cisco
Cisco CP Express Wizard			×
Basic Configuration Steps	Cisco CP Express Summary Summary of changes you have made:		
Wrete Intern Preve Basic Configuration DHCP NAT DHCP Route Security Wireless	Basic Configuration Host Name: Domain Name: Usemame: Password: Enable Secret Password: WAN Configuration Interface: PPPoE Encapsulation: IF Address: Authentication Type: Usemame: Password: Advanced Options Advanced Options	cp-router clsco.com svuser Dialer0(FastEthernet4) Enabled Negotiated CHAP User 	
Ping Teinet 7 Cisco 3 Softw oddel Type: S Version:	If you are satisfied with the configuration changes.	n, click Finish. Otherwise, click Back to make	Help scard Changes

Figure 15 Summary Page PPPoE

	Cisco CP Expr	Help About Exit	ahaha cisco
Cisco CP Express Wizar	J		
Overv Basic Configuration Steps LAN	Cisco CP Express Summary Summary of changes you have made:		
Wirel Overview Intern Basic Configuration DHCP LAN IP Address NAT DHCP NAT DHCP Nat DHCP Reset Internet (WAN) Firewall Security Settings	Basic Configuration Host Name: Domain Name: Usemame: Password: Enable Secret Password: WAN Configuration Interface: PPPOE Encapsulation: IP Address: IP Address: Subnet Mask: Advanced Options Advanced Options Configured:	cp-router cisco.com svuser ******** FastEthernet4 Disabled Btatic 10.10.1.50 255.255.255.0 Routing or NAT are not configured.	
Summary Summary Fing Feiner Cisco Softw Model Type:	If you are satisfied with the configuratio changes.	n, click Finish. Otherwise, click Back to make	Help

Figure 16 Summary Page Static

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