Thin−Client SSL VPN (WebVPN) IOS Configuration Example with SDM

Document ID: 70664

Contents

Introduction

Thin−Client SSL VPN technology can be used to allow secure access for applications that use static ports. Examples are Telnet (23), SSH (22), POP3 (110), IMAP4 (143), and SMTP (25). The Thin−Client can be user−driven, policy−driven, or both. Access can be configured on a user−by−user basis, or group policies can be created that include one or more users. SSL VPN technology can be configured in three main modes: Clientless SSL VPN (WebVPN), Thin−Client SSL VPN (Port Forwarding), and SSL VPN Client (SVC−Full Tunnel Mode).

1. Clientless SSL VPN (WebVPN):

A remote client needs only an SSL−enabled web browser to access http− or https−enabled web servers on the corporate LAN. Access is also available to browse for Windows files with the Common Internet File System (CIFS). A good example of http access is the Outlook Web Access (OWA) client.

Refer to Clientless SSL VPN (WebVPN) on Cisco IOS using SDM Configuration Example in order to learn more about the Clientless SSL VPN.

2. Thin−Client SSL VPN (Port Forwarding)

A remote client must download a small, Java−based applet for secure access of TCP applications that use static port numbers. UDP is not supported. Examples include access to POP3, SMTP, IMAP, SSH, and Telnet. The user needs local administrative privileges because changes are made to files on the local machine. This method of SSL VPN does not work with applications that use dynamic port assignments, for example, several FTP applications.

3. SSL VPN Client (SVC−Full Tunnel Mode):

The SSL VPN Client downloads a small client to the remote workstation and allows full, secure access to the resources on the internal corporate network. The SVC can be downloaded permanently to the remote station, or it can be removed after the secure session ends.

Refer to SSL VPN Client (SVC) on IOS using SDM Configuration Example in order to learn more about the SSL VPN Client.

This document demonstrates a simple configuration for the Thin−Client SSL VPN on a Cisco IOS® router. The Thin−Client SSL VPN runs on these Cisco IOS routers:

- Cisco 870, 1811, 1841, 2801, 2811, 2821, and 2851 Series routers
- Cisco 3725, 3745, 3825, 3845, 7200, and 7301 Series routers

Prerequisites

Requirements

Ensure that you meet these requirements before you attempt this configuration:

Requirements for the Cisco IOS router

- Any of the listed routers loaded with SDM and an advanced image of IOS version 12.4(6)T or later
- Management station loaded with SDM

  Cisco ships new routers with a pre−installed copy of SDM. If your router does not have SDM installed, you can obtain the software at Software Download−Cisco Security Device Manager. You must possess a CCO account with a service contract. Refer to Configure Your Router with Security Device Manager for detailed instructions.

Requirements for Client computers

- Remote clients should have local administrative privileges; it is not required, but it is highly suggested.
- Remote clients must have Java Runtime Environment (JRE) Version 1.4 or higher.
- Remote client browsers: Internet Explorer 6.0, Netscape 7.1, Mozilla 1.7, Safari 1.2.2, or Firefox 1.0
- Cookies enabled and Popups allowed on remote clients

Components Used

The information in this document is based on these software and hardware versions:

- Cisco Advanced Enterprise Software Image 12.4(9)T
- Cisco 3825 Integrated Services Router
- Cisco Router and Security Device Manager (SDM) Version 2.3.1

The information in this document was created from the devices in a specific lab environment. All the devices used in this document began with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command. The IP addresses used for this configuration come from the RFC 1918 address space. They are not legal on the Internet.

Conventions

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

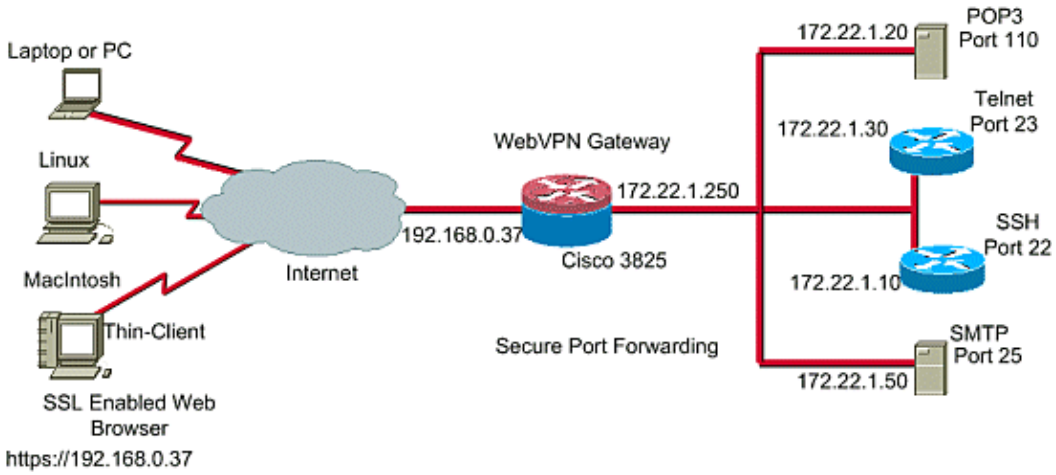
Configure

Task

This section contains the information needed to configure the features described within this document.

Network Diagram

This document uses this network setup:

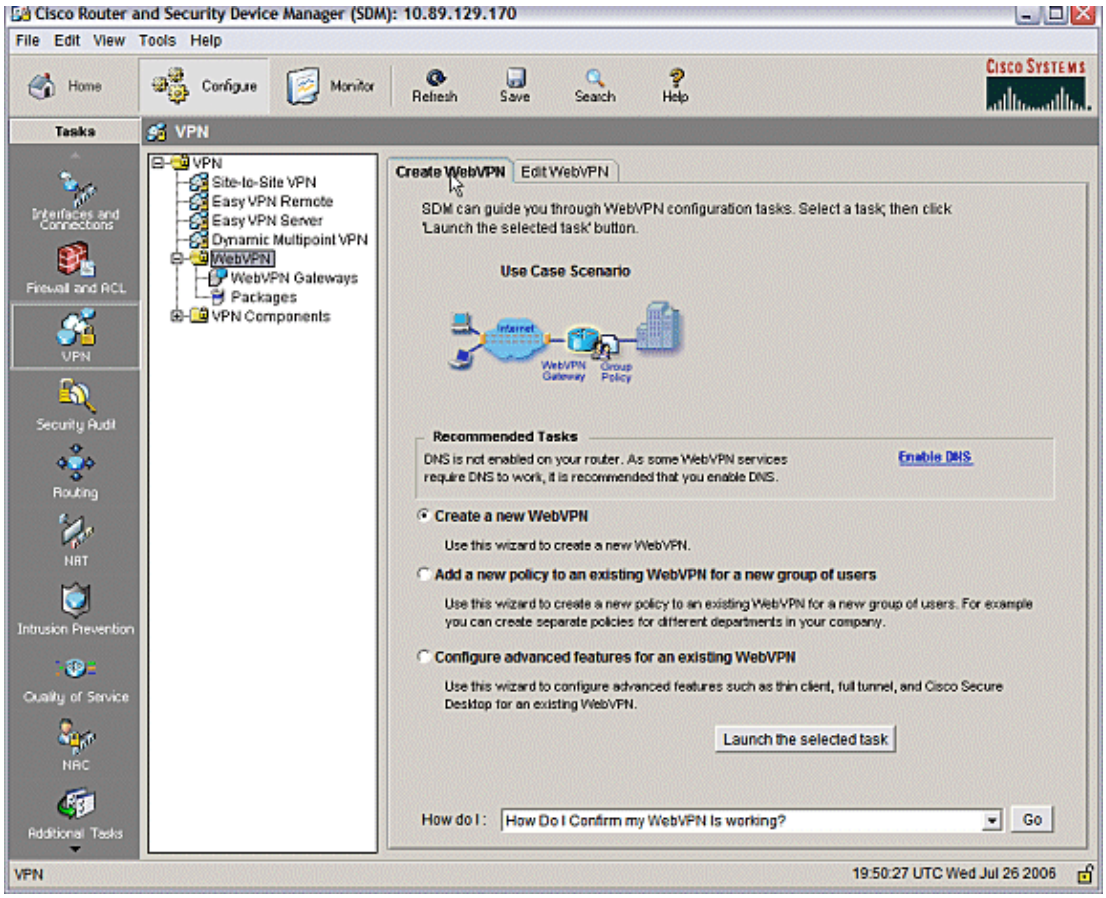


Configure the Thin−Client SSL VPN

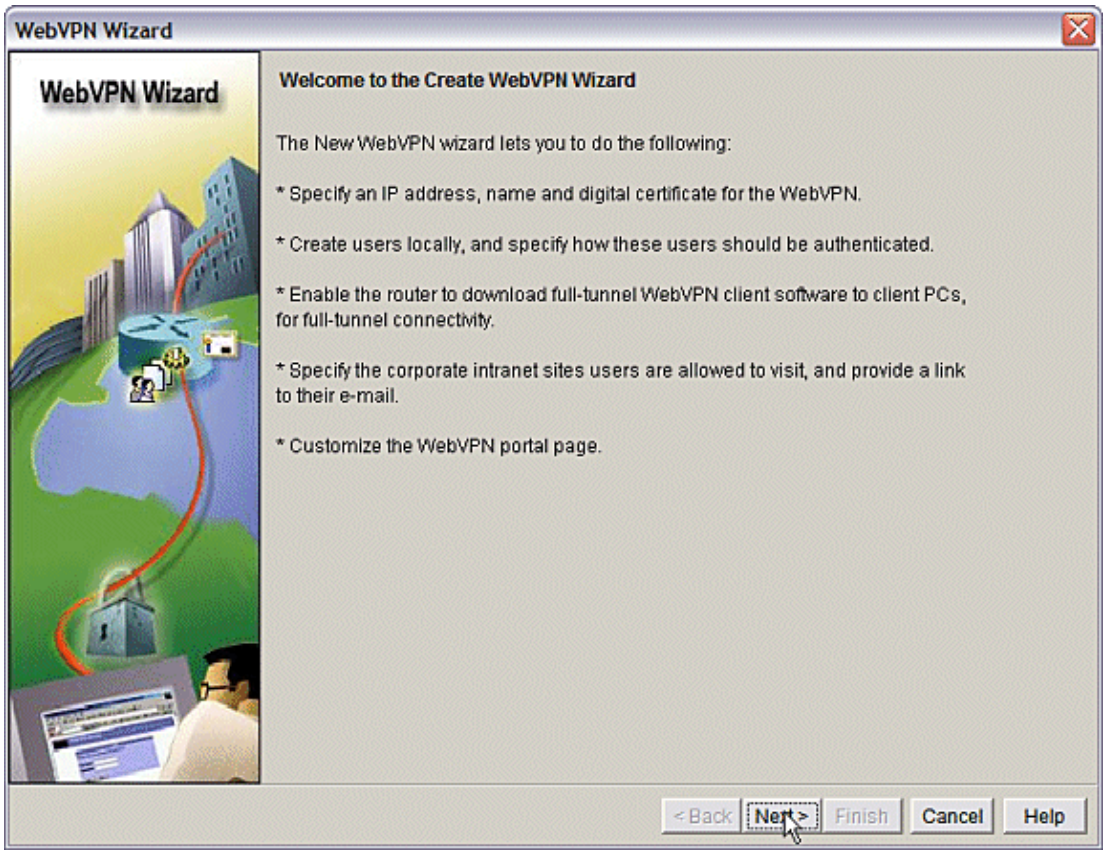
Use the Wizard provided in the Security Device Manager (SDM) interface to configure the Thin−Client SSL VPN on Cisco IOS, or configure it either at the Command Line Interface (CLI) or manually in the SDM application. This example uses the Wizard.

1. Choose the **Configure** tab.

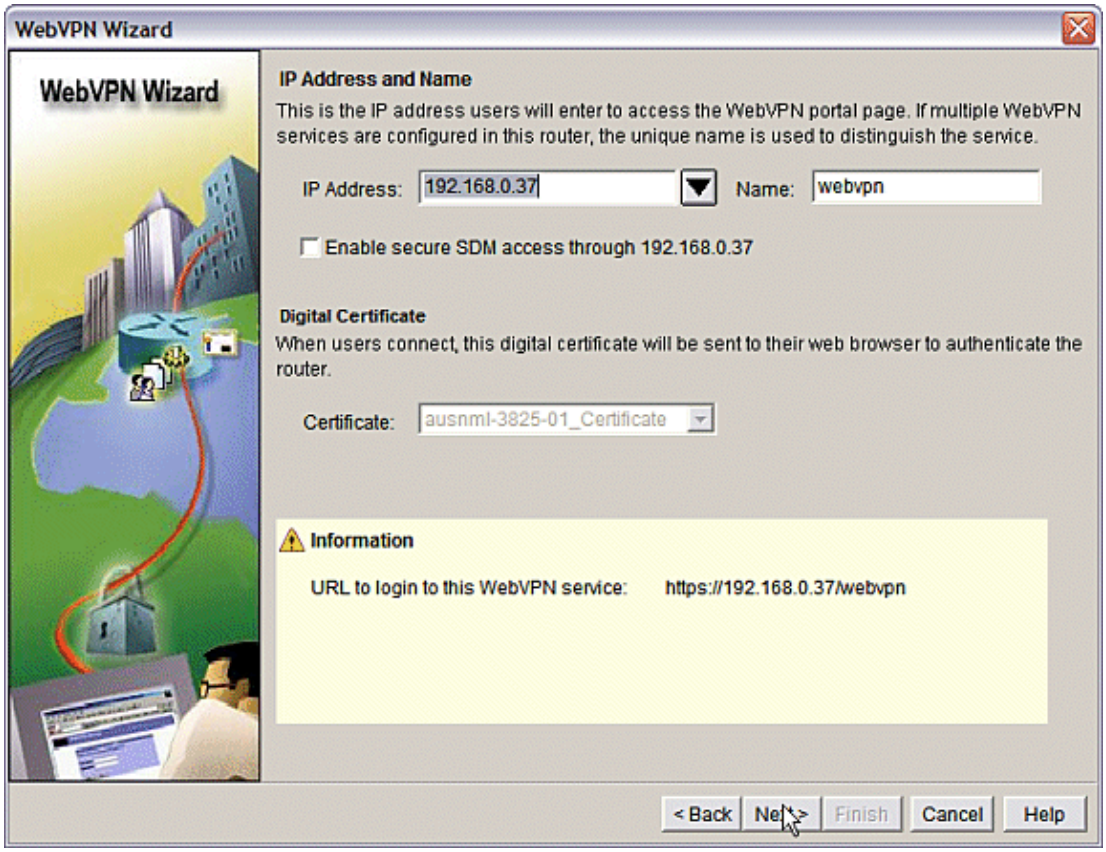
    a. From the navigation pane, choose **VPN > WebVPN**.
    b. Click the **Create WebVPN** tab.
    c. Click the radio button next to **Create a new WebVPN**.
    d. Click the **Launch the selected task** button.



2. The WebVPN Wizard launches. Click **Next**.

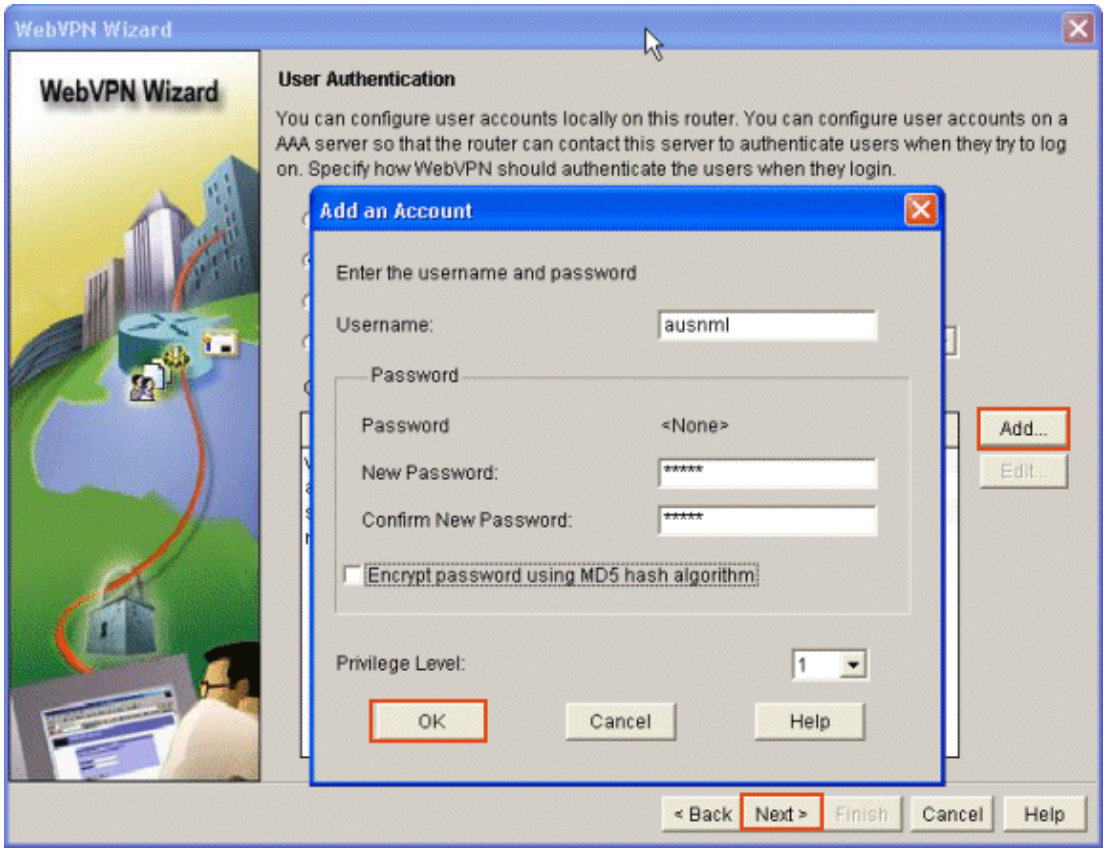


Enter the IP address and a unique name for this WebVPN gateway. Click **Next**.

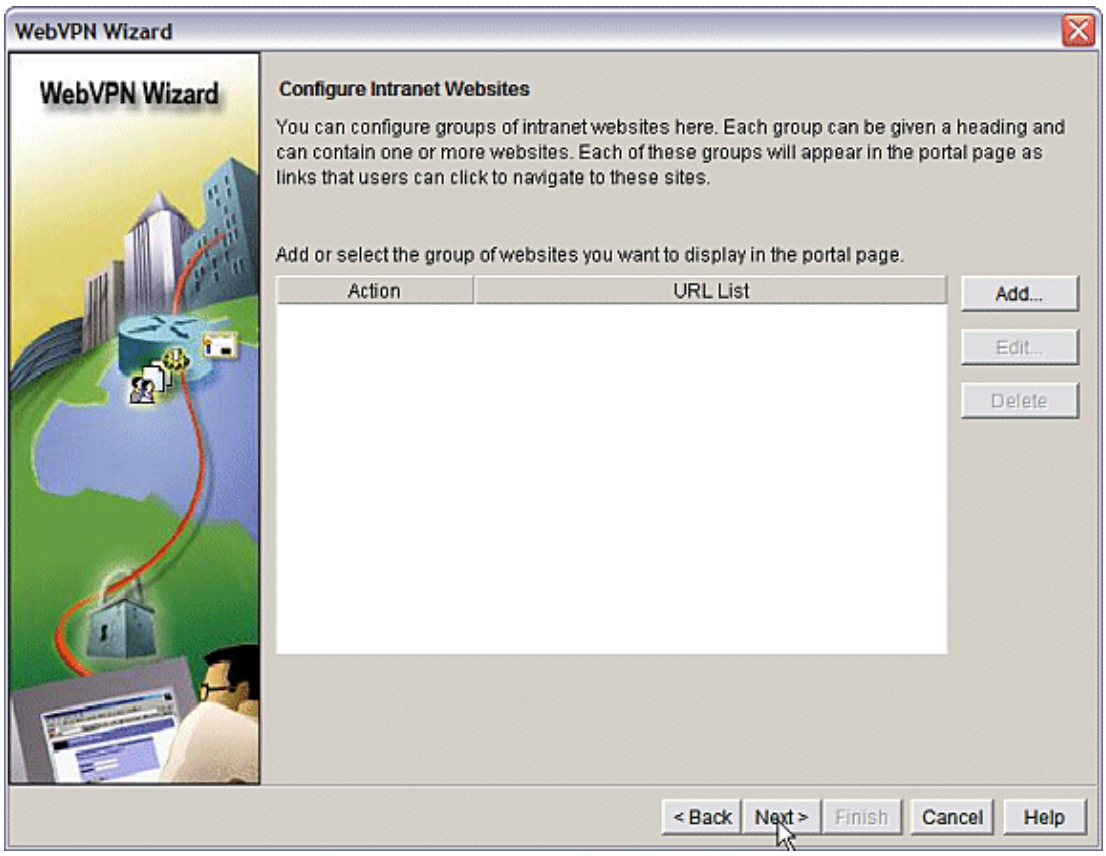


3. The User Authentication screen allows the opportunity to provide for the authentication of users. This configuration uses an account created locally on the router. You can also use an Authentication, Authorization, and Accounting (AAA) server.

    a. To add a user, click **Add**.
    b. Enter the user information on the Add an Account screen, and click **OK**.
    c. Click **Next** on the User Authentication screen.



d. The WebVPN Wizard screen allows for the configuration of Intranet web sites, but this step is omitted because Port−Forwarding is used for this application access. If you want to allow access to web sites, use the Clientless or Full Client SSL VPN configurations, which are not within the scope of this document.

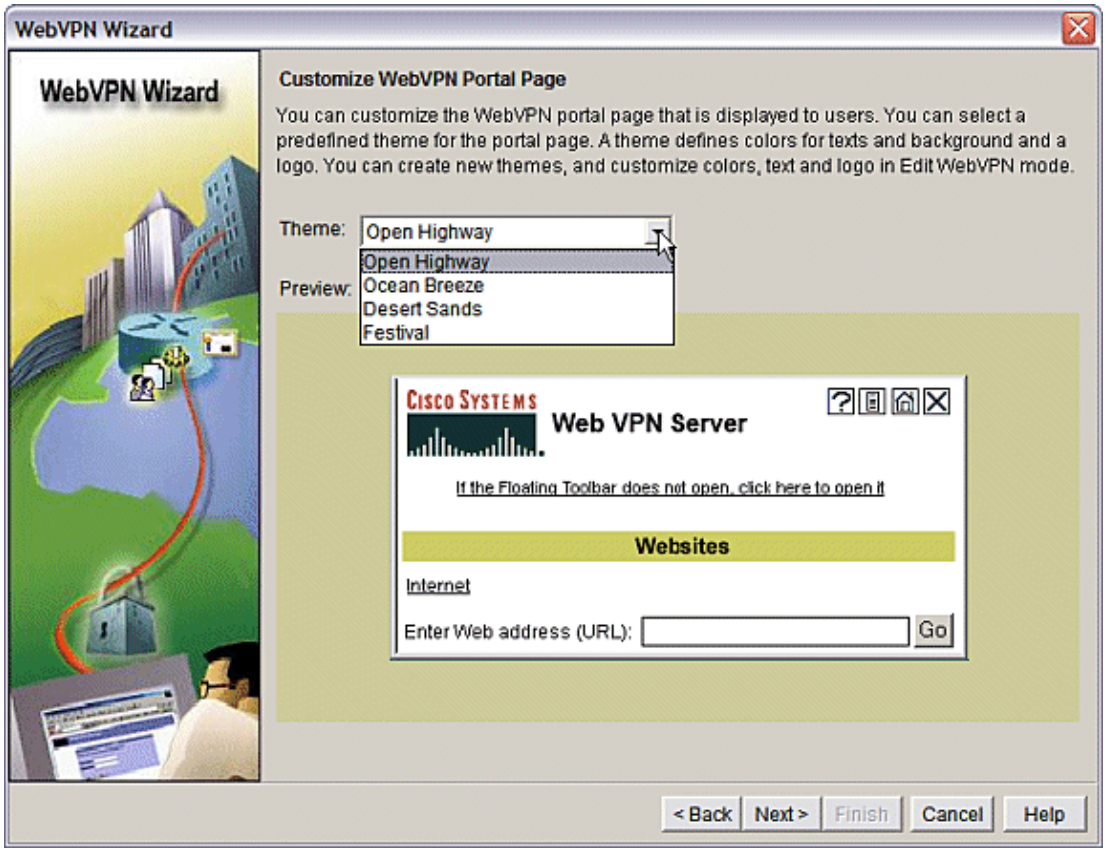


e. Click **Next**. The Wizard displays a screen that allows configuration of the Full Tunnel client. This does not apply to the Thin−Client SSL VPN (Port Forwarding).

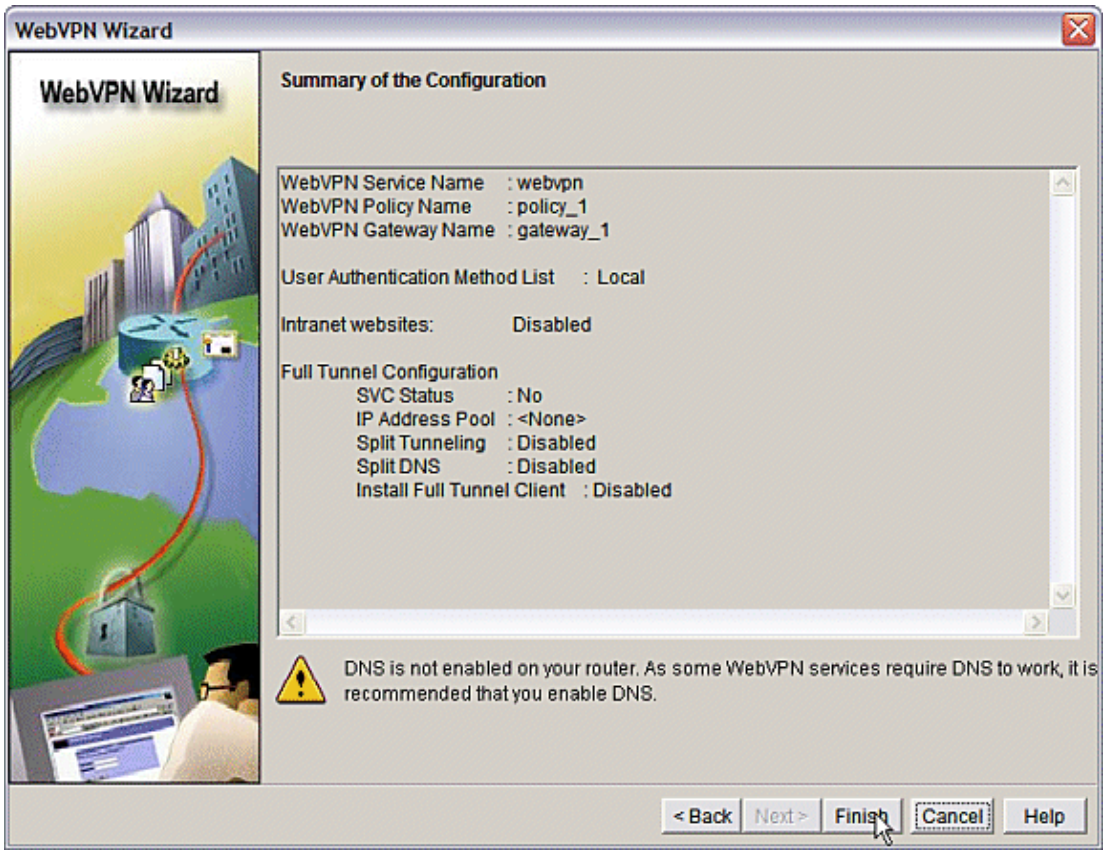
f. Uncheck **Enable Full Tunnel**. Click **Next**.

4. Customize the appearance of the WebVPN portal page or accept the default appearance.

a. Click **Next**.



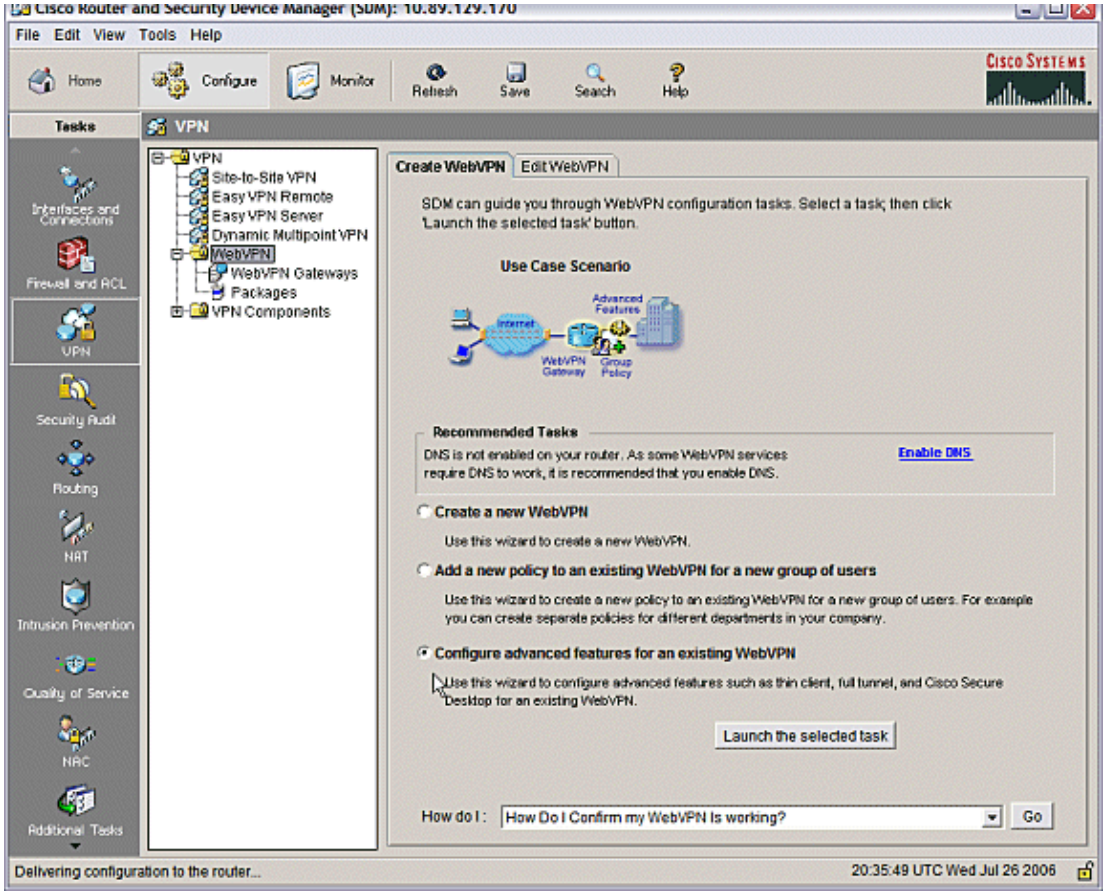
b. Preview the Summary of the Configuration and click **Finish > Save**.



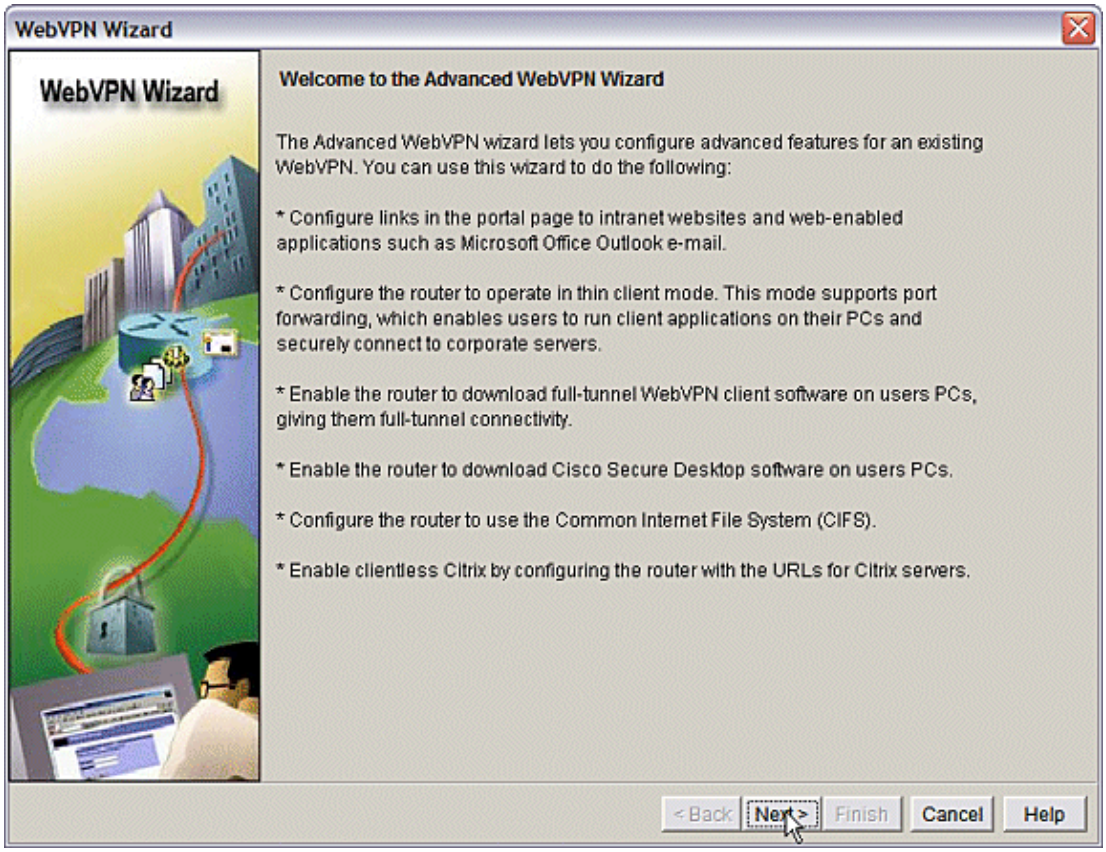
5. You have created a WebVPN Gateway and a WebVPN Context with a linked Group Policy. Configure the Thin−Client ports, which are made available when clients connect to the WebVPN.

   a. Choose **Configure**.

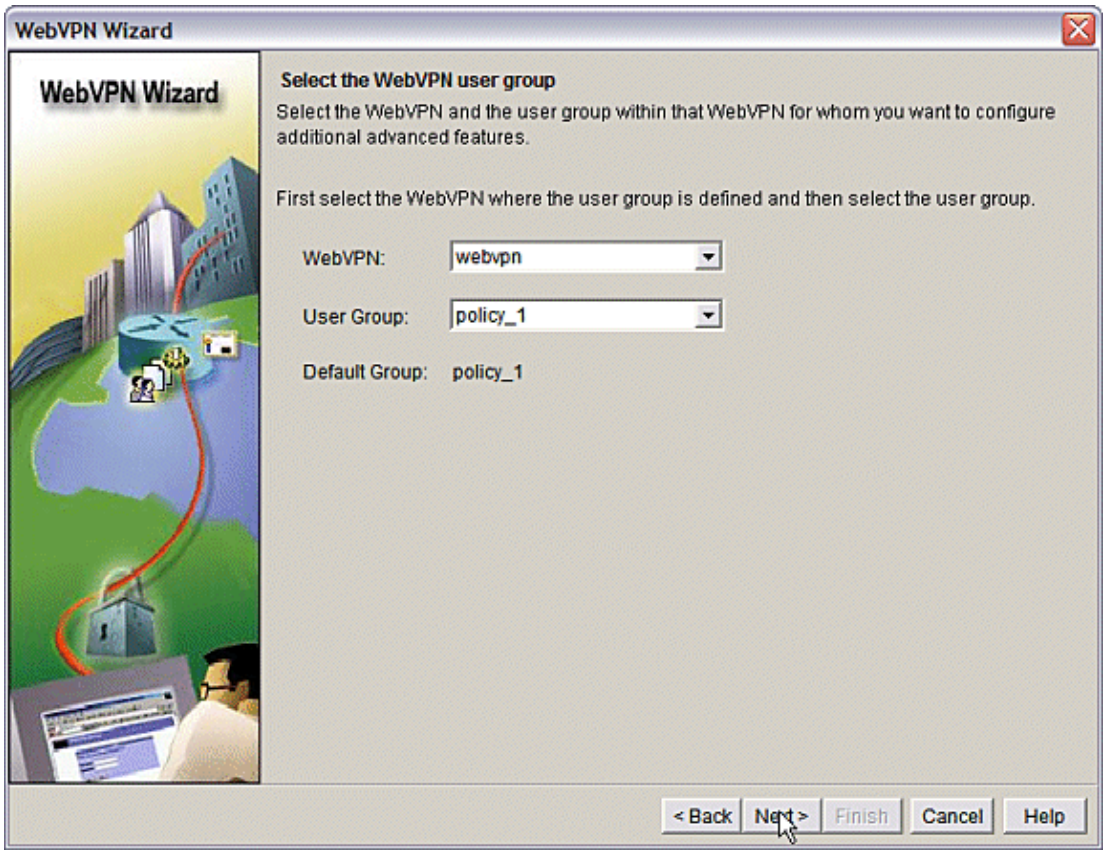
b. Choose **VPN > WebVPN**.
c. Choose **Create WebVPN**.
d. Choose the radio button **Configure advanced features for an existing WebVPN** and click **Launch the selected task**.



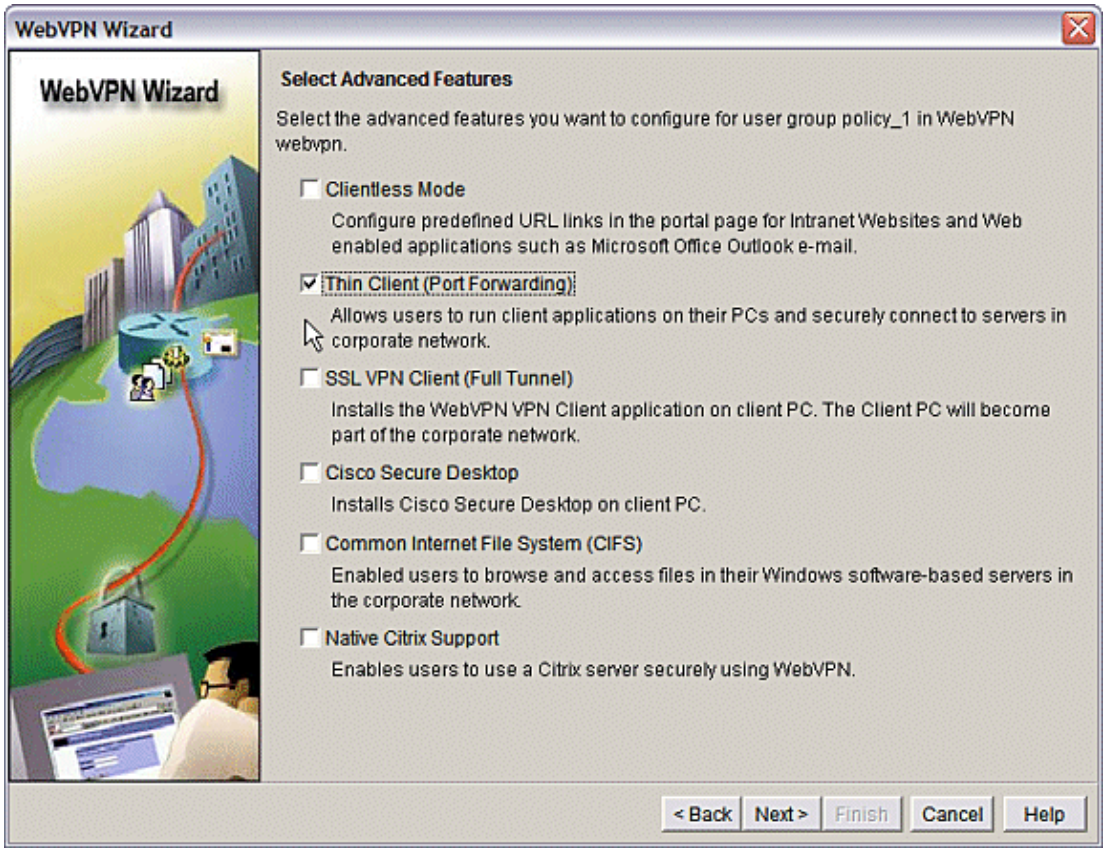
e. The Welcome screen offers highlights of the capabilities of the Wizard. Click **Next**.



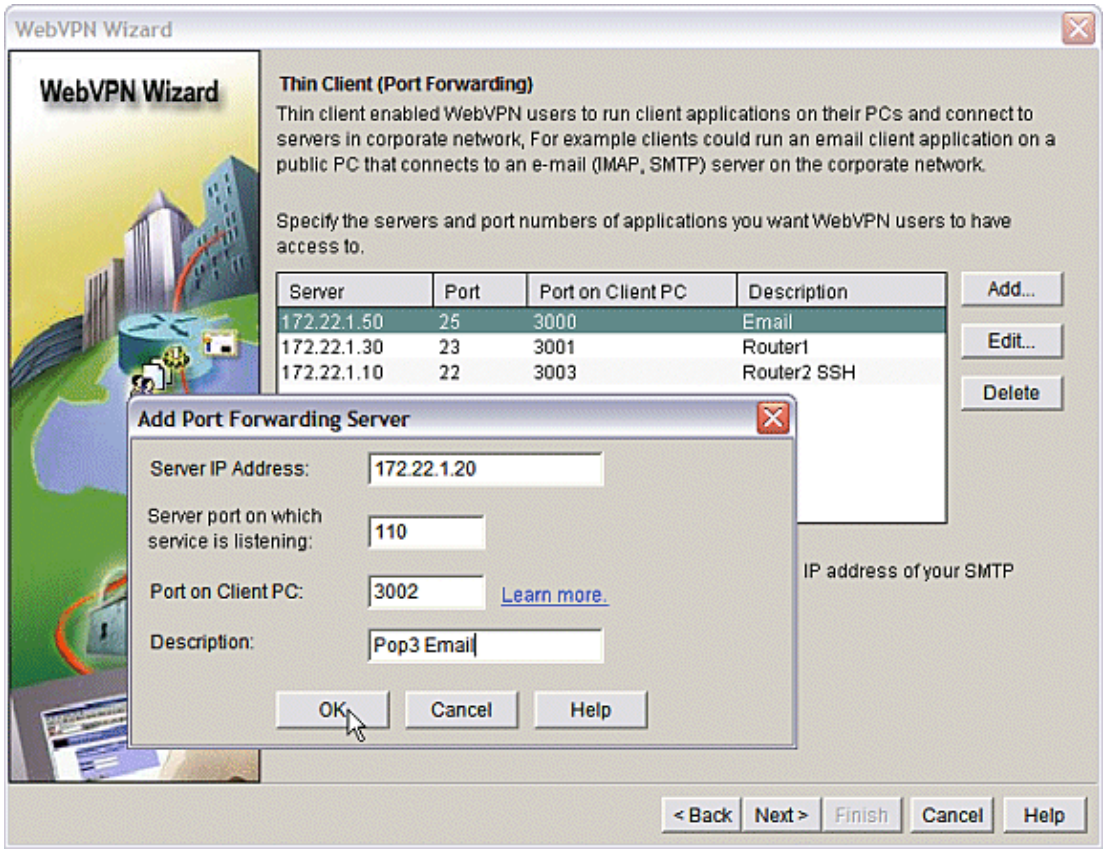
f. Choose the WebVPN context and user group from the drop−down menus. Click **Next**.



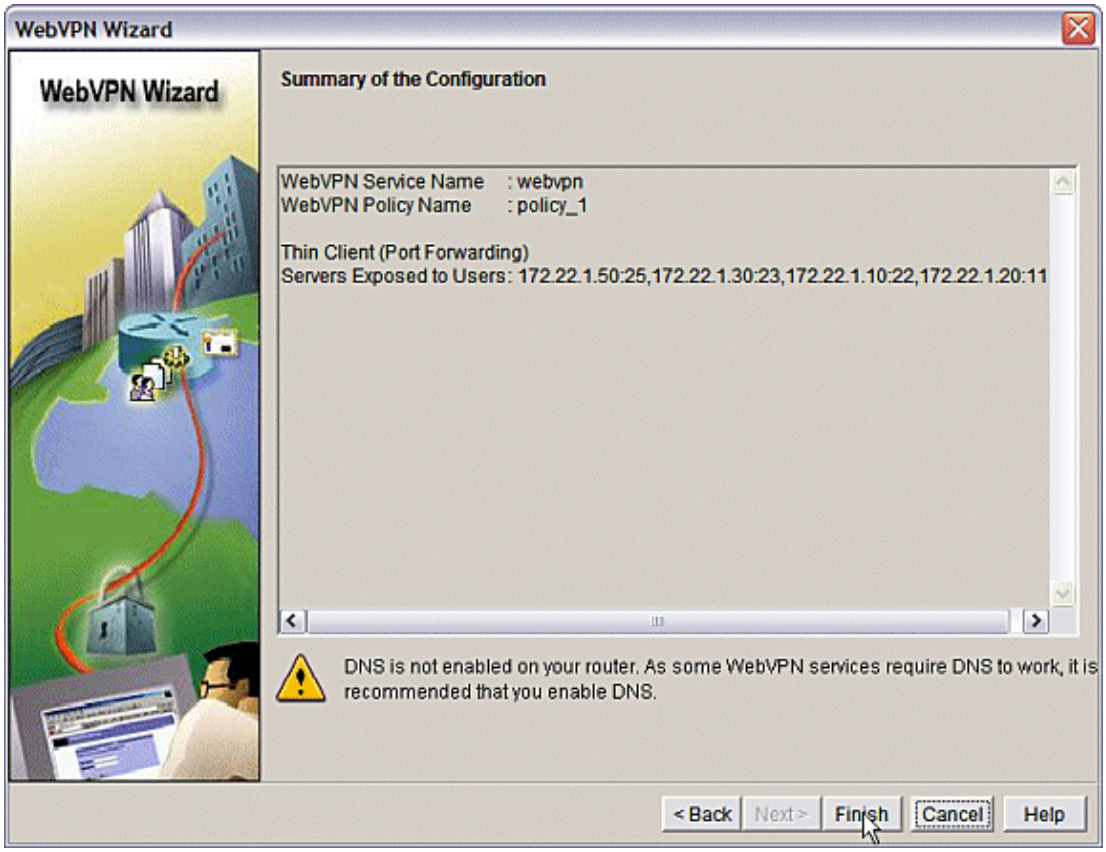
g. Choose **Thin Client (Port Forwarding)** and click **Next**.



h. Enter the resources that you want to make available through Port Forwarding. The service port must be a static port, but you can accept the default port on the client PC assigned by the Wizard. Click **Next**.



i. Preview your configuration summary and click **Finish > OK > Save**.



Configuration

Results of the SDM Configuration.

ausnml−3825−01

```
Building configuration...

Current configuration : 4343 bytes
!
! Last configuration change at 15:55:38 UTC Thu Jul 27 2006 by ausnml
! NVRAM config last updated at 21:30:03 UTC Wed Jul 26 2006 by ausnml
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
service password−encryption
!
hostname ausnml−3825−01
!
boot−start−marker
boot system flash c3825−adventerprisek9−mz.124−9.T.bin
boot−end−marker
!
no logging buffered
enable secret 5 $1$KbIu$5o8qKYAVpWvyv9rYbrJLi/
!
aaa new−model
!
aaa authentication login default local
aaa authentication login sdm_vpn_xauth_ml_1 local
aaa authentication login sdm_vpn_xauth_ml_2 local
aaa authorization exec default local
!
```

```
aaa session-id common
!
resource policy
!
ip cef
!
ip domain name cisco.com
!
voice-card 0
 no dspfarm

!--- Self-Signed Certificate Information

crypto pki trustpoint ausnml-3825-01_Certificate
 enrollment selfsigned
 serial-number none
 ip-address none
 revocation-check crl
 rsakeypair ausnml-3825-01_Certificate_RSAKey 1024
!
crypto pki certificate chain ausnml-3825-01_Certificate
 certificate self-signed 02
  30820240 308201A9 A0030201 02020102 300D0609 2A864886 F70D0101 04050030
!----------------------
!--- cut for brevity

  quit
!
username ausnml privilege 15 password 7 15071F5A5D292421
username fallback privilege 15 password 7 08345818501A0A12
username austin privilege 15 secret 5 $1$3xFv$W0YUsKDx1adDc.cVQF2Ei0
username sales_user1 privilege 5 secret 5 $1$2/SX$ep4fsCpodeyKaRji2mJkX/
username admin0321 privilege 15 secret 5 $1$FxzG$cQUJeUpBWgZ.scSzOt8Ro1
!
interface GigabitEthernet0/0
 ip address 192.168.0.37 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
!
interface GigabitEthernet0/1
 ip address 172.22.1.151 255.255.255.0
 duplex auto
 speed auto
 media-type rj45
!
ip route 0.0.0.0 0.0.0.0 172.22.1.1
!
ip http server
ip http authentication local
ip http secure-server
ip http timeout-policy idle 600 life 86400 requests 100
!
control-plane
!
line con 0
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
 exec-timeout 40 0
 privilege level 15
 password 7 071A351A170A1600
 transport input telnet ssh
line vty 5 15
 exec-timeout 40 0
```

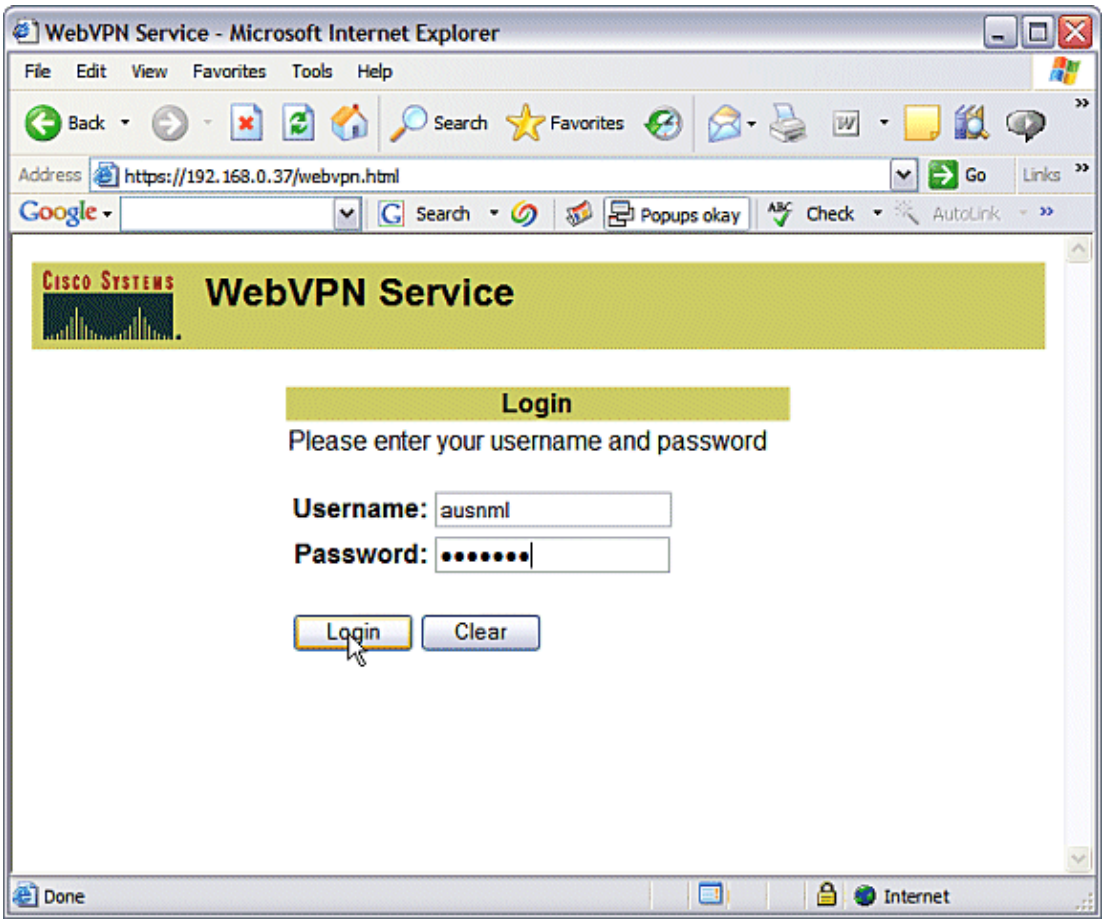
```
 password 7 001107505D580403
 transport input telnet ssh
!
scheduler allocate 20000 1000

!--- the WebVPN Gateway

webvpn gateway gateway_1
 ip address 192.168.0.37 port 443
 http-redirect port 80
 ssl trustpoint ausnml-3825-01_Certificate
 inservice

!--- the WebVPN Context

webvpn context webvpn
 title-color #CCCC66
 secondary-color white
 text-color black
 ssl authenticate verify all

!--- resources available to the thin-client

 port-forward "portforward_list_1"
   local-port 3002 remote-server "172.22.1.20" remote-port 110 description "Pop3 Email"
   local-port 3001 remote-server "172.22.1.30" remote-port 23 description "Router1"
   local-port 3000 remote-server "172.22.1.50" remote-port 25 description "Email"
   local-port 3003 remote-server "172.22.1.10" remote-port 22 description "Router2 SSH"

!--- the group policy

 policy group policy_1
   port-forward "portforward_list_1"
 default-group-policy policy_1
 aaa authentication list sdm_vpn_xauth_ml_2
 gateway gateway_1 domain webvpn
 max-users 2
 inservice
!
end
```

Verify

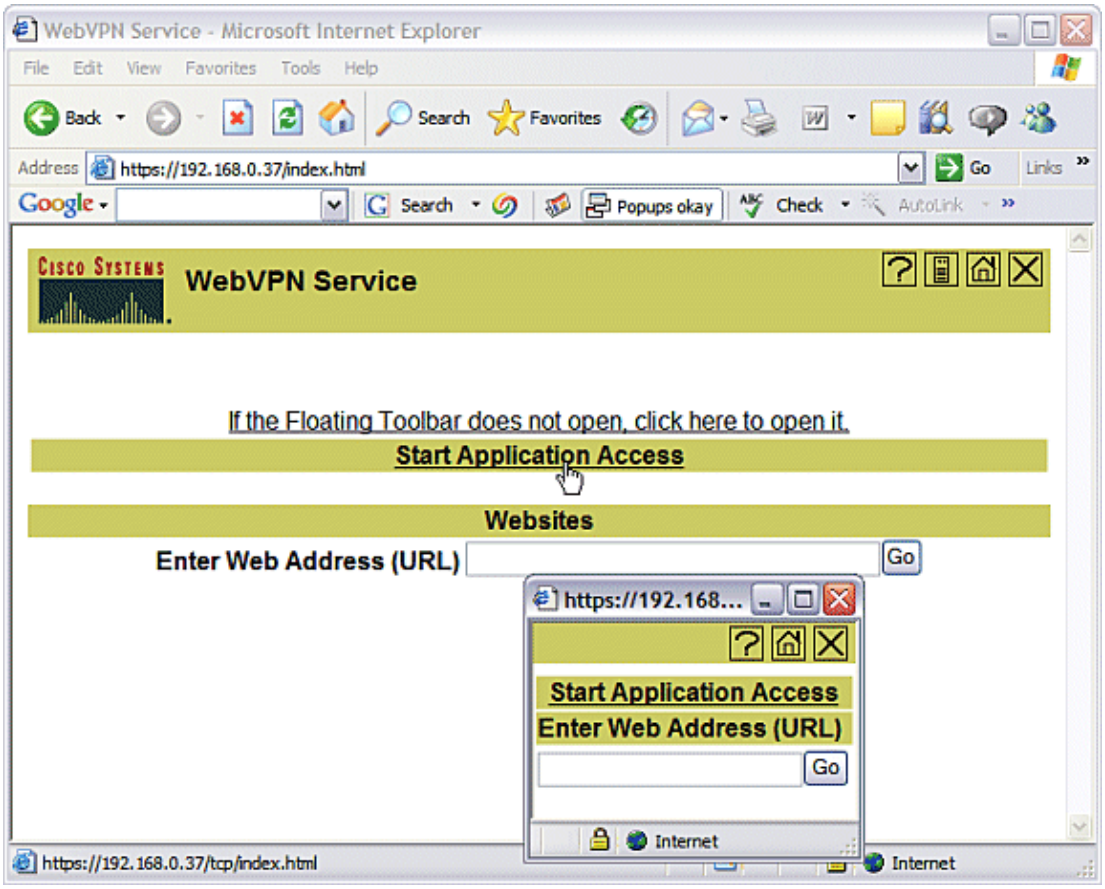
Verify Your Configuration

Use this section to confirm that your configuration works properly.

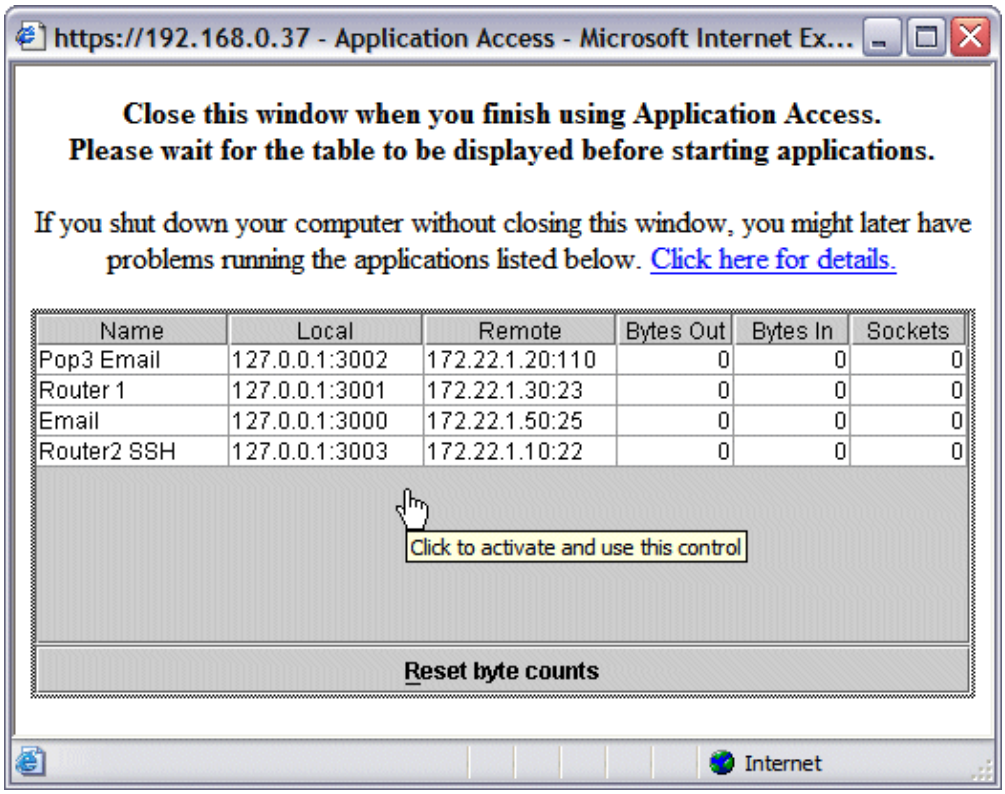
1. Use a client computer to access the WebVPN gateway at **https://gateway_ip_address.** Remember to include the WebVPN domain name if you create unique WebVPN contexts. For example, if you have created a domain called sales, enter **https://gateway_ip_address/sales**.



2. Login and accept the certificate offered by the WebVPN gateway. Click **Start Application Access**.



3. An Application Access screen displays. You can access an application with the local port number and your local loopback IP address. For example, to Telnet to Router 1, enter **telnet 127.0.0.1 3001**. The small Java applet sends this information to the WebVPN gateway, which then ties the two ends of the session together in a secure fashion. Successful connections can cause the **Bytes Out** and **Bytes In** columns to increase.



Commands

Several **show** commands are associated with WebVPN. You can execute these commands at the command−line interface (CLI) to show statistics and other information. To see the use of **show** commands in detail, refer to Verifying WebVPN Configuration.

The Output Interpreter Tool (registered customers only) (OIT) supports certain **show** commands. Use the OIT to view an analysis of **show** command output.

Troubleshoot

Use this section to troubleshoot your configuration.

Client computers must be loaded with SUN Java Version 1.4 or later. Obtain a copy of this software from Java Software Download

Commands Used to Troubleshoot

Note: Refer to Important Information on Debug Commands before the use of **debug** commands.

- **show webvpn ?** There are many **show** commands associated with WebVPN. These can be performed at the CLI to show statistics and other information. In order to see the use of **show** commands in detail, refer to Verifying WebVPN Configuration.

- **debug webvpn ?** The use of **debug** commands can adversely impact the router. In order to see the use of **debug** commands in more detail, refer to Using WebVPN Debug Commands.

Related Information

- **Cisco IOS SSLVPN**
- **SSL VPN − WebVPN**
- **Cisco IOS WebVPN Q&A**
- **Technical Support & Documentation − Cisco Systems**

Updated: Aug 15, 2008 Document ID: 70664