



# Cisco Cloud Web Security

## WSA Deployment Guide

October 2014

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## Introduction

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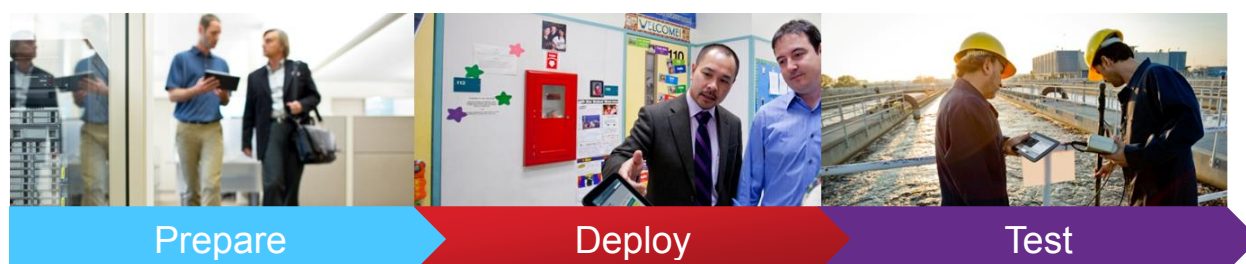
Integrate CWS and WSA to enable identity information to the cloud and extend other on-premises enterprise features to Cloud Web Security customers.

This document provides directions to redirect network traffic to CWS through the WSA/WSAv Connectors.

\*Note: we refer to our cloud proxies as towers. You will see the terms “proxy” and “tower” used interchangeably throughout the document.





## Cloud Deployment

Deployment is divided into the following three sections



## Additional Redirect Methods

There are 4 additional redirection methods that have corresponding deployment guides. Deployment guides for each redirection methods can be found [here](#), under Technical Collateral.

	<b>Cisco Integrated Services Router (ISR G2 with CWS Connector)</b>	Save bandwidth, money and resources by intelligently redirecting Internet traffic from branch offices directly to the cloud to enforce security and control policies. Apply acceptable use policy to all users regardless of location.
	<b>Next Generation Firewall (ASA/ASAv with CWS Connector)</b>	Capitalize ASA investments by offloading content scanning to Cisco's cloud through CWS. Apply acceptable use policy to the company, groups or individual users.
	<b>Cisco AnyConnect Secure Mobility Client (AnyConnect)</b>	Authenticate and redirect web traffic securely whenever the end user is off the corporate network. CWS leverages cached user credentials and directory information when they are away from the office or VPN, ensuring that exactly the same web-usage policies are applied.
	<b>Standalone Deployment</b>	Deploy a simple web security solution that does not require any additional hardware. Connect to Cisco's Cloud Web Security service using existing browser settings and PAC/WPAD files.

## Prepare

### Verify connection to a tower

Site-to-tower communication is accomplished over TCP port 8080. HTTP and HTTPS requests are sent to a cloud scanning tower in this method. Therefore, TCP port 8080 outbound is required to be open for all users within the organization. For security reasons, Cisco recommends that port 8080 outbound destinations be limited to the scanning towers provisioned for the customer's account.

Reference video: [Verify connection to a tower](#)

**Step 1:** Log on to a client computer inside the customer's network.

**Step 2:** Click on the Control Panel and go to Programs and Features.

**Step 3:** Click Turn on Windows features on or off. Scroll down the list of available features until you find the Telnet Client. Check the box and click OK. Now that the Telnet Client is installed, we can resume our test.

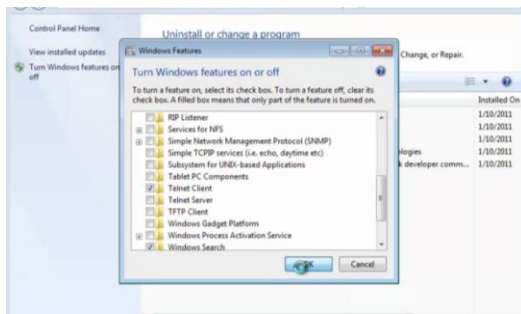


Figure 1.1

**Step 4:** Open the command line window and type command 'telnet [tower IP address] 8080.' A successful connection is noted by a blank screen and blinking cursor.

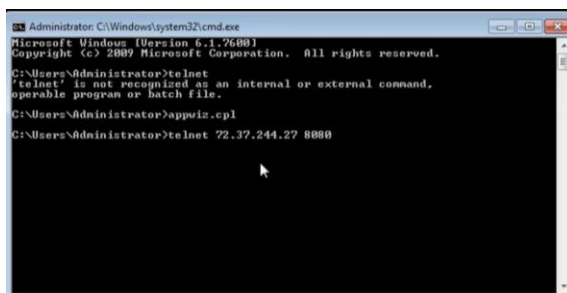


Figure 1.2

## Create authentication license key

Reference video: [Authentication license key creation and management](#)

**Step 1:** Log on to the Cisco Cloud Web Security portal at <https://scancenter.scansafe.com/>.

**Step 2:** From the *Admin* tab, mouse over *Authentication*, and select the key that you would like to generate. The options are *Company Key* and *Group Key*. To have a single key for all users in the company (can be used in various Connectors), AnyConnect, or a mixture of them all, select *Company Key*.

**Step 3:** Notice that no Company Key currently exists in this account. Click the *Create Key* button to create the Company Key. If one already exists and you don't know the whole string (only the last four characters will be seen), then you will have to revoke it before you can create a new one, but then if it is in use anywhere (Connectors or AnyConnect) then it will have to be replaced with the new one.

**Step 4:** The key is active immediately. The email option below is only for the admin to have a backup of the key. **Note:** Once you navigate away from the page you'll no longer see the complete string of the key (only the last 4 characters will be displayed henceforth).



Figure 1.3

**Step 5:** Copy the entire alphanumeric string in the *Authentication Key* field and record it in a document that will be backed up.

\*Note: The second option is to create a group key by selecting *Group Key* under *Authentication*. To create a group key you may either use an existing directory group or you may create a custom group under → Admin → Management → Groups.

**Step 6:** Click on the *Create Key* button which corresponds to the group for which you are creating a key.

**Create, activate and deactivate a group authentication key**

To add or delete a group, go to the "Groups" link in the "Management" menu or [click here](#)

Search:

Search

Reload list 

Group Name	Key Ref	State	Action	Sel.
WinNT://ORG\WebSec No Access	 No key	 No key	Create Key	<input type="checkbox"/>
WinNT://ORG\WebSec Privileged Access	 No key	 No key	Create Key	<input type="checkbox"/>
WinNT://ORG\WebSec Social Networking	 No key	 No key	Create Key	<input type="checkbox"/>
WinNT://ORG\web_execs	 No key	 No key	Create Key	<input type="checkbox"/>
WinNT://ORG\web_execs_minus_email_and_chat	 No key	 No key	Create Key	<input type="checkbox"/>
WinNT://ORG\web_management	 No key	 No key	Create Key	<input type="checkbox"/>
WinNT://ORG\web_no_access	 No key	 No key	Create Key	<input type="checkbox"/>
WinNT://ORG\web_sales	 No key	 No key	Create Key	<input type="checkbox"/>
WinNT://ORG\web_staff	 No key	 No key	Create Key	<input type="checkbox"/>
WinNT://ORG\web_warehouse	 No key	 No key	Create Key	<input type="checkbox"/>

10 items found, displaying all items.

Page 1

Figure 1.4

\*Note: It is the same UI and process for creating a Company Key

## Deploy

### Configure WSA Connector

This document is intended to provide an overview of the deployment process. For more detailed information and troubleshooting, please refer to the [Admin Guide](#).

Typically when configuration changes are submitted on the WSA they are not immediately committed. When you see the yellow *Commit Changes* button appear in the upper right after making a configuration change, you must click it and then you will be presented with an option to commit the change with notes or abandon the changes. Please be sure to commit your changes as you complete the recommended configurations in this guide.



Figure 2.1

### Run the System Setup Wizard

**Step 1:** Logon to the WSA/WSAv appliance. Default credentials are:

- Username – admin
- Password – ironport



Figure 2.2

**Step 2:** To begin setup, select **System Administrator > System Setup Wizard**



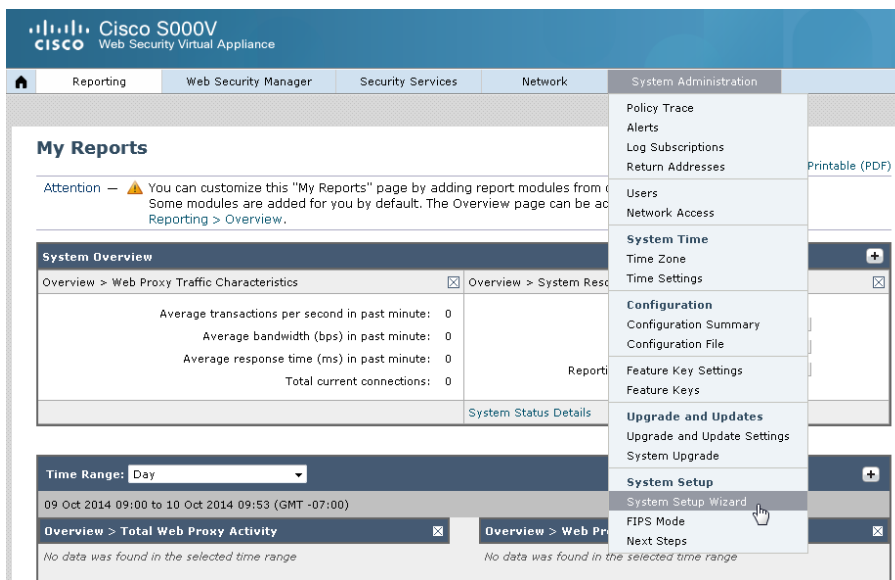


Figure 2.3

**Step 3:** Configure the following:

- Default System Hostname – a DNS name that will resolve to the IP address of this WSA
- DNS Server – supply at least one DNS server
- NTP Server – supply a server where this WSA may automatically configure time from
- Time Zone – select the time zone for which this WSA resides in
- Appliance Mode of Operation – select **Cloud Web Security Connector**

1. Start	2. Network	3. Security	4. Review
<b>System Settings</b>			
Default System Hostname: ?		wsaconn.stbulab.com <small>e.g. proxy.company.com</small>	
DNS Server(s):		<input type="radio"/> Use the Internet's Root DNS Servers <input checked="" type="radio"/> Use these DNS Servers: 10.6.1.5 10.6.1.4 (optional) (optional)	
NTP Server:		time.sco.cisco.com	
Time Zone:		Region: America Country: United States Time Zone / GMT Offset: Pacific Time (Los Angeles)	
<b>Appliance Mode</b>			
Appliance Mode of Operation		<input type="radio"/> Standard <small>This appliance will be used for on-premise policy enforcement (Standard Web Security Appliance installation).</small> <input checked="" type="radio"/> Cloud Web Security Connector <small>This appliance will be used primarily to direct traffic to Cisco Cloud Web Security for cloud policy enforcement and threat defense (Cloud Web Security Connector installation).</small>	
<input type="button" value="Prev"/> <input type="button" value="Cancel"/>		<input type="button" value="Next"/>	

Figure 2.4

**Step 4: Define the Following:**

- Cloud Web Security Proxy Servers – supply the primary and secondary (backup) Cloud Web Security Proxy Server's host names or IP addresses.
- Failure Handling – this is how the WSA will handle web requests if it loses connection with both primary and secondary *Cloud Web Security Proxy Servers*.

- Cloud Web Security Authorization Scheme, 7 bullet *Send authorization key information with transaction*, and provide the **Authentication Key** generated from ScanCenter (see above).

1. Start		2. Network		3. Review	
<b>Cloud Web Security Connector Settings</b>					
Cloud Web Security Proxy Servers: ?		Server Address <input type="text" value="cws801.cws.sco.cisco.com"/> <input type="text" value="cws601.cws.sco.cisco.com"/> <input type="text"/> <small>hostname or IP address</small>			
Failure Handling:		Specify how to handle requests if all specified Cloud Web Security Proxy servers fail. <input checked="" type="radio"/> Connect directly <input type="radio"/> Drop requests			
Cloud Web Security Authorization Scheme:		<input type="radio"/> Authorize transaction based on IP address <input checked="" type="radio"/> Send authorization key information with transaction Authorization Key: <input type="text" value="0123456789ABCDEF0123456789ABCDEF"/>			
<input type="button" value="Prev"/> <input type="button" value="Cancel"/>		<input type="button" value="Next &gt;"/>			

Figure 2.5

**Step 5:** Provide an IP address, either IPv4 and/or IPv6, to be associated with this WSA. Subnet mask should be in CIDR notation.

1. Start		2. Network		3. Review	
<b>Network Interfaces and Wiring</b>					
<b>Note:</b> <b>M1</b> : This interface is used to manage the appliance. Optionally, it may also handle web traffic. <b>P1</b> : This interface may be used to handle web traffic.					
<b>Interfaces</b>					
Ethernet Port:		<b>M1</b> <input type="checkbox"/> Use M1 port for management only		<b>P1</b> (Optional if M1 used for data)	
IPv4 Address / Netmask:		<input type="text" value="10.6.1.70/24"/>			
<small>If multiple interfaces are configured, they must be assigned IP addresses on different subnets.</small>					
IPv6 Address / Netmask:		<input type="text"/>			
Hostname:		<input type="text" value="mgmt.wsacnn.stbulab.cor"/> <small>(e.g. wsa.example.com)</small>		<input type="text"/> <small>(e.g. data.example.com)</small>	
<input type="button" value="Prev"/> <input type="button" value="Cancel"/>		<input type="button" value="Next &gt;"/>			

Figure 2.6

**Step 6:** Configure the **Default Gateway** this WSA will use.

1. Start	2. Network	3. Review												
<b>IPv4 Routes for Management and Data Traffic (Interface M1: 10.6.1.70)</b>														
Default Gateway: <input type="text" value="10.6.1.1"/> <i>This will be the default route for external traffic as well as internal traffic with no static route below.</i>														
<b>Static Routes Table</b> Optionally, add static routes for Management access to the Cisco Web Security Appliance as well as Data traffic. Depending on the appliance functions you enable, these routes will be used for monitoring by the Secure Web Proxy and optional blocking by the L4 Traffic Monitor.														
<table border="1"> <thead> <tr> <th>Name</th> <th>Internal Network</th> <th>Internal Gateway</th> <th></th> </tr> </thead> <tbody> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td></td> </tr> <tr> <td><i>Identifying name for route</i></td> <td><i>IPv4 Address (such as 10.1.1.10) or CIDR (such as 10.1.1.0/24)</i></td> <td><i>IPv4 Address</i></td> <td></td> </tr> </tbody> </table>	Name	Internal Network	Internal Gateway		<input type="text"/>	<input type="text"/>	<input type="text"/>		<i>Identifying name for route</i>	<i>IPv4 Address (such as 10.1.1.10) or CIDR (such as 10.1.1.0/24)</i>	<i>IPv4 Address</i>		<input type="button" value="Add Route"/>	
Name	Internal Network	Internal Gateway												
<input type="text"/>	<input type="text"/>	<input type="text"/>												
<i>Identifying name for route</i>	<i>IPv4 Address (such as 10.1.1.10) or CIDR (such as 10.1.1.0/24)</i>	<i>IPv4 Address</i>												
<div> <input type="button" value="« Prev"/> <input type="button" value="Cancel"/> <input type="button" value="Next »"/> </div>														

Figure 2.7

**Step 7:** If clients will use a PAC/WPAD file or layer 4 switch to forward web traffic to this WSA, select *Layer 4 Switch or No Device*. If clients will transparently redirect traffic to this WSA, select *WCCP v2 Router*.

1. Start	2. Network	3. Review
<b>Transparent Connection Settings</b> For the Cisco Web Security Appliance to accept transparent connections, it must be connected via a Layer 4 switch or WCCP router.		
<div> <div>Transparent Redirection Device:</div> <div> <input checked="" type="radio"/> <b>Layer 4 Switch or No Device</b>  <i>If no transparent redirection device is connected, only explicit forward requests can be proxied.</i>  <input type="radio"/> <b>WCCP v2 Router</b>  <input type="checkbox"/> Enable standard service ID: 0 web_cache (port 80)            Router Addresses: <input type="text"/>  <i>Separate multiple addresses with commas or whitespace.</i>  <input type="checkbox"/> Enable router security for this service            Password: <input type="text"/>            Confirm Password: <input type="text"/>  <i>Must be 7 or less characters.</i>            Additional WCCP services and advanced options can be configured after completing the System Setup Wizard.         </div> </div>		
<div> <input type="button" value="« Prev"/> <input type="button" value="Cancel"/> <input type="button" value="Next »"/> </div>		

Figure 2.8

**Step 8:** Supply a secure password, an email address to send system alerts to, and (optionally) an SMTP relay to send email through.

1. Start		2. Network		3. Review	
<b>Administrative Settings</b>					
Administrator Password:		Password: <input type="password" value="••••••"/> <i>Must be 6 or more characters</i> Confirm Password: <input type="password" value="••••••"/>			
Email system alerts to:		<input type="text" value="admin@example.com"/> <i>e.g. admin@company.com</i>			
Send Email via SMTP Relay Host (optional): ?		<input type="text" value="smtp.example.com, 10.0.0.3"/> <i>i.e., smtp.example.com, 10.0.0.3</i>		Port: ? <input type="text" value=""/> <i>optional</i>	
AutoSupport:		<input checked="" type="checkbox"/> Send system alerts and weekly status reports to Cisco Customer Support			
<a href="#">&lt; Prev</a>		<a href="#">Cancel</a>		<a href="#">Next &gt;</a>	

Figure 2.9

**Step 9:** Once configuration is complete, click **Install This Configuration**.

[Install This Configuration](#)

Figure 2.10

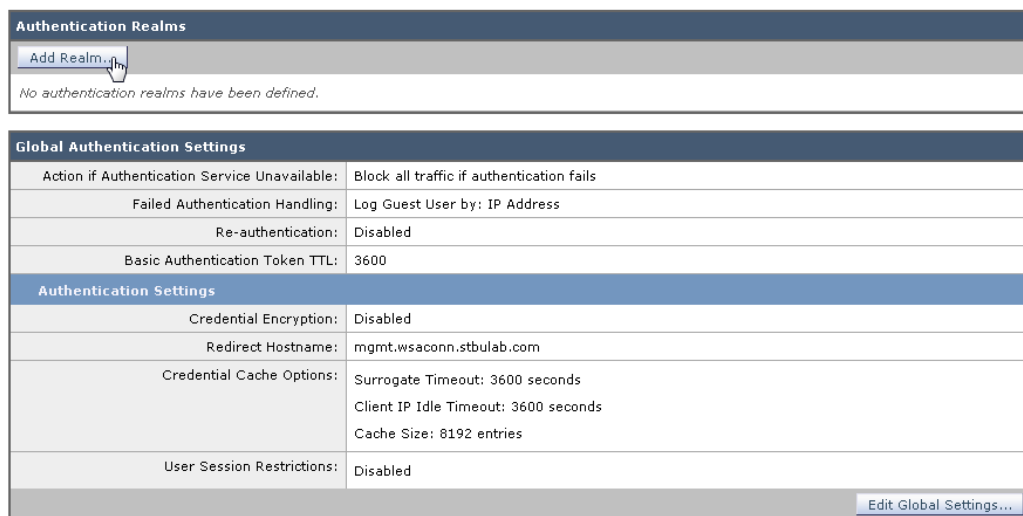
### Add an Authentication Realm

**Step 1:** To create an authentication realm, click **Network > Authentication**.

Figure 2.11

**Step 2:** Click **Add Realm**.

## Authentication



**Authentication Realms**

[Add Realm...](#)

No authentication realms have been defined.

Global Authentication Settings	
Action if Authentication Service Unavailable:	Block all traffic if authentication fails
Failed Authentication Handling:	Log Guest User by: IP Address
Re-authentication:	Disabled
Basic Authentication Token TTL:	3600
Authentication Settings	
Credential Encryption:	Disabled
Redirect Hostname:	mgmt.wsaconn.stbulab.com
Credential Cache Options:	Surrogate Timeout: 3600 seconds Client IP Idle Timeout: 3600 seconds Cache Size: 8192 entries
User Session Restrictions:	Disabled

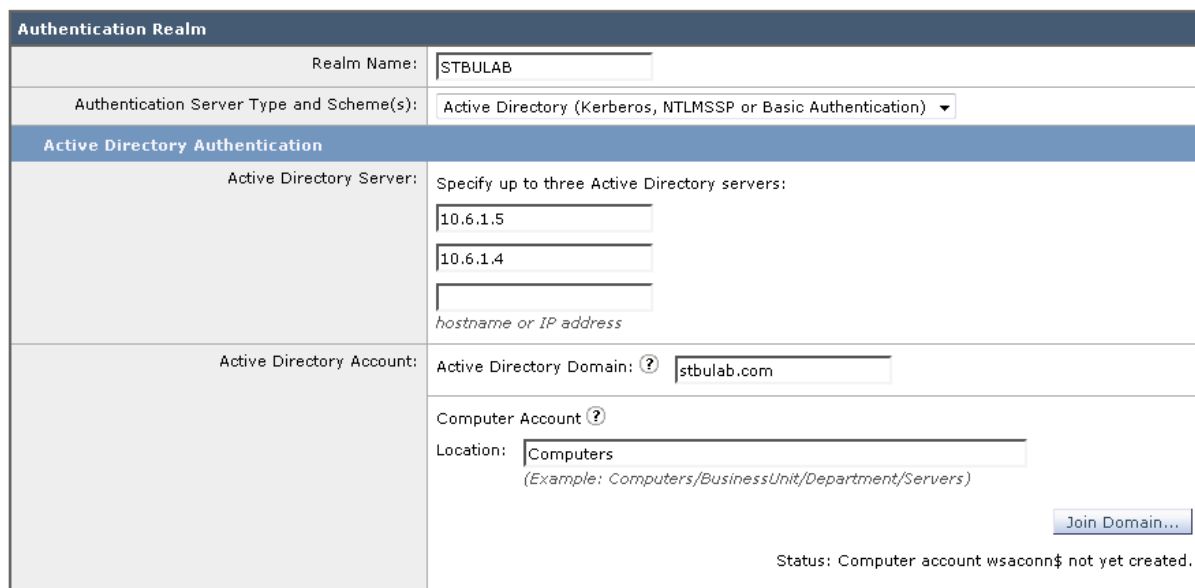
[Edit Global Settings...](#)

Figure 2.12

### Step 3: Configure the following and then click **Join Domain**:

- Ream Name – is a friendly name that identifies the authentication realm.
- Authentication Server Type and Scheme(s) – select *Active Directory (or LDAP if not using Microsoft Active Directory)*.
- Active Directory Server – supply at least one domain controller host name or IP address that will manage authenticating users.
- Active Directory Domain – supply the FQDN of the active directory domain.

## Add Realm



**Authentication Realm**

Realm Name:

Authentication Server Type and Scheme(s):

**Active Directory Authentication**

Active Directory Server: Specify up to three Active Directory servers:

hostname or IP address

Active Directory Account: Active Directory Domain:

Computer Account

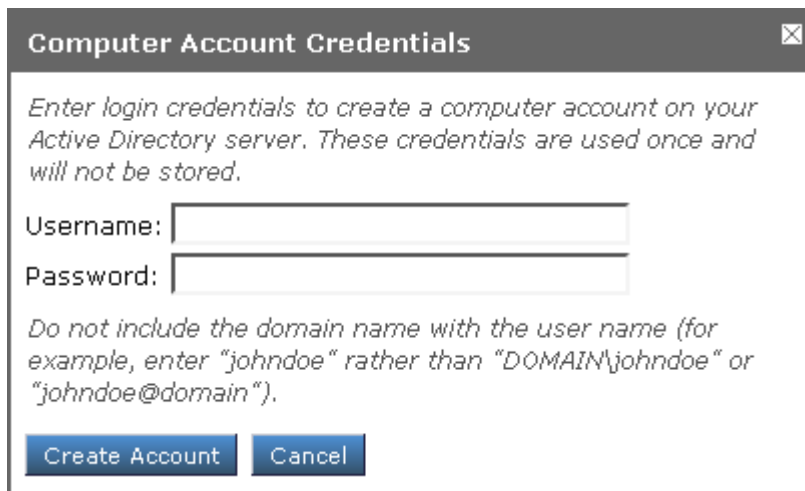
Location:   
 (Example: Computers/BusinessUnit/Department/Servers)

[Join Domain...](#)

Status: Computer account wsaconn\$ not yet created.

Figure 2.13

**Step 4:** After clicking **Join Domain**, you will be presented with an authentication challenge. The credentials used should have permissions to add objects to Active Directory. These credentials will NOT be saved and are used this one time to create a computer account in Active Directory for the WSA.



**Computer Account Credentials**

Enter login credentials to create a computer account on your Active Directory server. These credentials are used once and will not be stored.

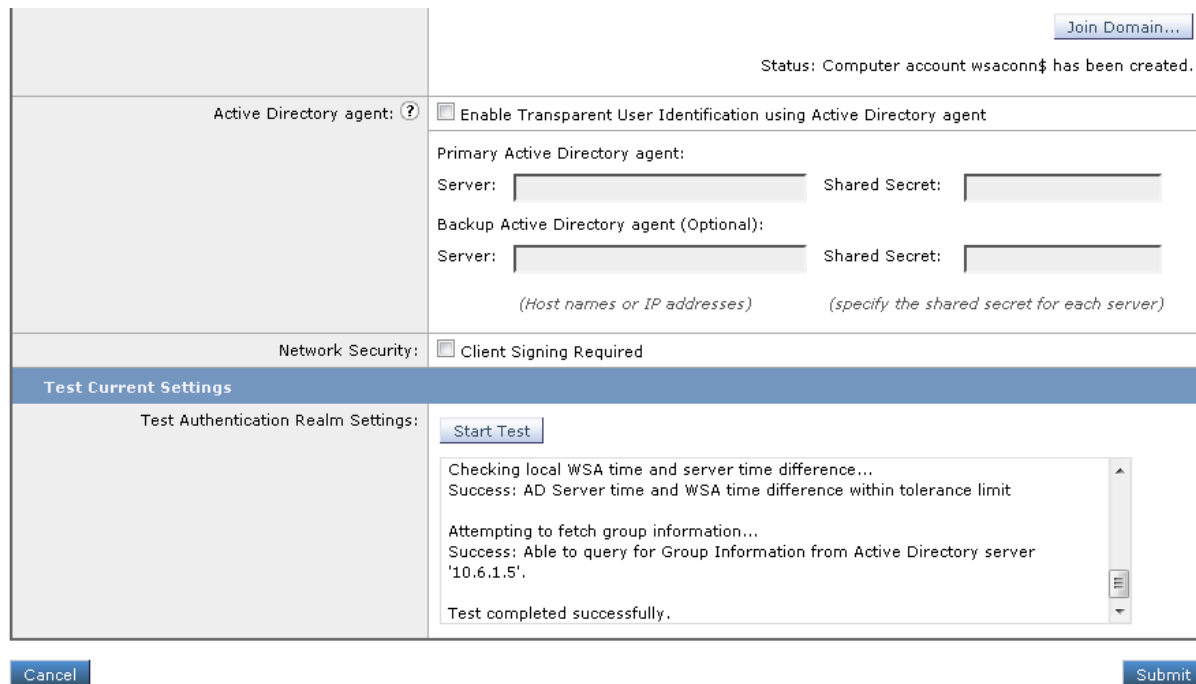
Username:

Password:

Do not include the domain name with the user name (for example, enter "johndoe" rather than "DOMAIN\johndoe" or "johndoe@domain").

Figure 2.14

**Step 5:** Once the computer account for the WSA has been completed, click **Start Test** to ensure all authentication operations function as expected. Once the test has completed successfully, click **Submit**.



Status: Computer account wsaconn\$ has been created.

Active Directory agent: ☐ Enable Transparent User Identification using Active Directory agent

Primary Active Directory agent:

Server:  Shared Secret:

Backup Active Directory agent (Optional):

Server:  Shared Secret:

(Host names or IP addresses) (specify the shared secret for each server)

Network Security: ☐ Client Signing Required

**Test Current Settings**

Test Authentication Realm Settings:

Checking local WSA time and server time difference...  
Success: AD Server time and WSA time difference within tolerance limit

Attempting to fetch group information...  
Success: Able to query for Group Information from Active Directory server '10.6.1.5'.

Test completed successfully.

Figure 2.15

## Configure Identity Management

**Step 1:** To configure identity management, select **Web Security Manager > Identities**.

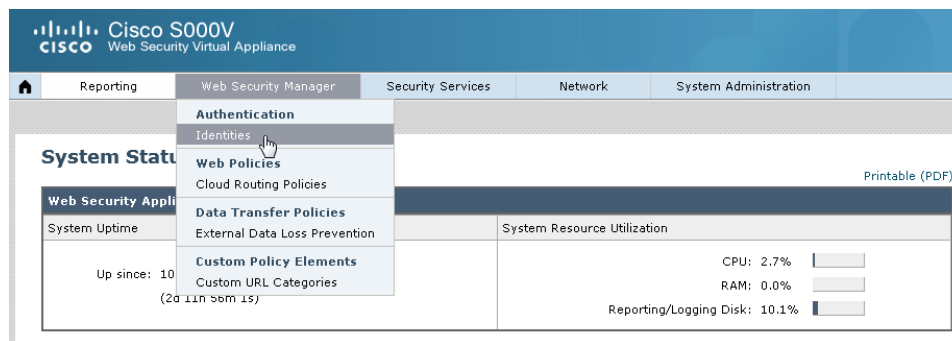


Figure 2.16

**Step 2:** Click **Add Identity**.

### Identities

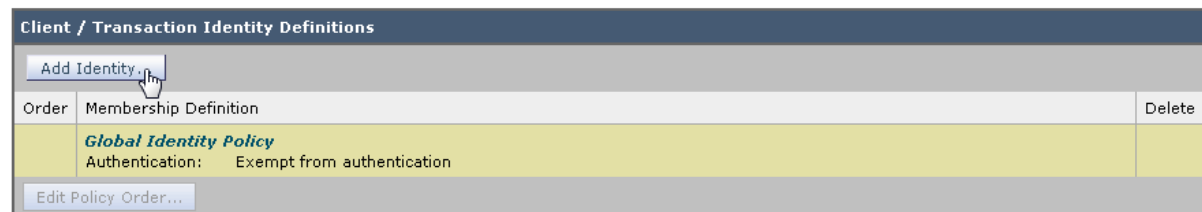


Figure 2.17

**Step 3:** Configure the following and then click **Submit**:

- Name – is a friendly name that identifies these identity settings.
- Identification and Authentication – select **Authenticate Users** from the dropdown list.
- Select a Realm or Sequence – select your authentication realm.
- Select a Scheme – select **Use NTLMSSP**.
- Authentication Surrogates – bullet **IP Address**.

\*Note: cookie surrogates may not work with non-browser apps, such as desktop widgets or agents.

**Identities: Add Identity**

**Identity Settings**

☒ **Enable Identity**

Name:   
(e.g. my IT policy)

Description:

Insert Above: **1 (Global Policy)**

---

**Membership Definition**

Membership is defined by any combination of the following options. All criteria must be met for the policy to take effect.

Define Members by Subnet:   
(examples: 10.1.1.0, 10.1.1.0/24, 10.1.1.1-10, 2001:420:80:1::5, 2000:db8::1-2000:db8::10)

Identification and Authentication: **Authenticate Users**

Select a Realm or Sequence:

Select a Scheme:   
Scheme setting applies to HTTP/HTTPS only.

If a user fails authentication: ☐ Support Guest privileges

Authorization of specific users and groups is defined in subsequent policy layers (see Web Security Manager > Cloud Routing Policies and External Data Loss Prevention).

Authentication Surrogates: ☒ IP Address  
☐ Persistent Cookie  
☐ Session Cookie  
☒ Apply same surrogate settings to explicit forward requests  
If this option is not selected, no surrogates will be used with HTTP/HTTPS explicit forward requests, and NTLM credential caching will not be available to these requests. In addition, re-authentication will not be available for Kerberos.

[Advanced](#) Define additional group membership criteria.

Figure 2.18

**Configure Directory Groups**

**Step 1:** To identify directory groups that should be used with CWS, select **Network > Cloud Connector**.

**Cisco S000V**  
Web Security Virtual Appliance

Reporting | Web Security Manager | Security Services | **Network** | System Administration

**Identities**

Client / Transaction Identity Definitions

[Add Identity...](#)

Order	Membership Definition	Delete
1	<b>CWS User Identity</b> Authentication: Realm: STBULAB (Scheme: NTLMSSP) Surrogate Type: HTTP/HTTPS: IP Address	
	<b>Global Identity Policy</b> Authentication: Exempt from authentication	

[Edit Policy Order...](#)

Network menu items: Interfaces, Transparent Redirection, Routes, DNS, Internal SMTP Relay, Authentication, External DLP Servers, **Cloud Connector**

Figure 2.19



**Step 2:** Click **Edit Groups**.

### Cloud Connector Settings

Cloud Web Security Connector Settings	
Cloud Web Security Proxy Servers:	72.37.248.42, 108.171.130.128
Failure Handling:	Connect Directly
Cloud Web Security Authorization Scheme:	Authorization Key
<a href="#">Edit Settings...</a>	

Cloud Policy Directory Groups
No directory groups selected. Only groups used in Cloud Web Security Proxy Routing Policies will be sent.
<a href="#">Edit Groups...</a>

Figure 2.20

**Step 3:** Select the groups to use with CWS in the *Directory Search* pane on the left, and click **Add** to place those groups in the *Authorized Groups* pane on the right. When complete click **Done**.

### Edit Cloud Policy Directory Groups

Authorized Groups	
<p>Directory groups that are used to define Cloud Routing Policy membership will automatically be sent to the Web Cloud Security proxy server. Use the fields below to select additional group information that will be sent to the cloud for use in policy enforcement and reporting.</p> <p>Start typing a group name into the Directory Search field to see matching entries from the directory. For Active Directory groups, omit the domain name (for instance, type "group" to find "DOMAIN\Group1"). The search is case-insensitive. The wildcard character "*" may be used. However, it cannot be used as the last character.</p> <p>Select items from the Directory Search list and press Add to add them to the Authorized Groups list. Alternatively, you can type the entire name (for instance, to add a group that belongs to a trusted domain or a group that is not yet available in the directory). If group(s) are added that already exist in the Authorized Group list, the duplicates will be automatically omitted.</p>	
<p>Realm: <span>All Realms</span></p> <p>Directory Search: <input type="text"/></p> <p>Directory search completed (69 matches).</p> <div> <p><b>Realm: STBULAB</b></p> <p>STBULAB\SM31000-0870AQDG0EA3</p> <p>STBULAB\Account Operators</p> </div>	<p><a href="#">Add »</a></p> <p><b>Authorized Groups:</b></p> <div> <p><b>Realm: STBULAB</b></p> <p>STBULAB\Help Desk</p> <p>STBULAB\Human Resources</p> <p>STBULAB\Managers</p> <p>STBULAB\Marketing</p> </div>

Figure 2.21

## Configure WSAv Connector

[This guide](#) should serve as a supplement to the current instructions.

**Step 1:** Download the WSAv Image

- Please contact your SE to obtain the WSAv license.

**Step 2:** Apply the WSAv Connector License


- Follow the video guide for help with installation:  
<https://www.youtube.com/watch?v=3syECpx68HQ>

**Step 3:** Size the WSAv based on the Number of Transactions

- Set up the number of WSAVs needed based on the sizing. Since the WSAv Connector is not performing any security services, the “Essentials” RPS numbers can be used as guidance. The license you downloaded in the previous step can be used to activate all the WSAVs.
- The WSAV sizing guidelines for the Connector are in the table below.

	S300V	S100V	S000V
<b>Peak RPS (Requests per Second)</b>	608	316	147
<b>Sustained RPS</b>	608	316	147
<b>Sustained Bandwidth</b>	90 Mbps	47 Mbps	22 Mbps

**Step 4:** Download GD virtual image at or above ASyncOS 8.0.6

- Go to the Cisco Product Download page [here](#)
- Navigate to Security  Web Security  Web Security Virtual Appliance

## Test

---

### Verify web redirection to the cloud

**Step 1:** From a client machine, browse to [whoami.scansafe.net](http://whoami.scansafe.net). If a message is displayed, “User is not currently using the service,” then the traffic is not redirected to the Cisco cloud. This can be useful in determining if: the user is being resolved correctly, any groups being discovered, the internal/external IP of the user/location, and what Connector is in use.

This is an example of a successful [whoami.scansafe.net](http://whoami.scansafe.net) output:

```
authUserName: "WinNT://CISCO\\user"
authenticated: true
companyName: Cisco
connectorGuid: 0123456789ABCDEF1234-0123456789AB
connectorVersion: coeus-x-x-x-xxx
countryCode: US
externalIp: 12.34.56.78
groupNames:
  - "WinNT://CISCO\\Group"
internalIp: 1.2.3.4
logicalTowerNumber: 1782
staticGroupNames:
  - "WinNT://CISCO\\Group"
userName: "WinNT://CISCO\\user"
```

**Step 2:** From a client machine, browse to [policytrace.scansafe.net](http://policytrace.scansafe.net) and enter a URL to see how the web request is processed against the current web filtering policy.

**Step 3:** With *SearchAhead* enabled in ScanCenter (the CWS admin portal), browse to Google, Bing, or Yahoo and search for something. The *SearchAhead* data should be prepended to each search result in the form of a green, yellow, or red dot. Mouse over the dot to see what information is contained within.

\*Note: the search engine may enforce search results being displayed using HTTPS (such as Google). In this case you must enable HTTPS Inspection to see the *Search Ahead* results.



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