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1 Aventail Integration

**SonicWall Aventail clientless SSL VPN Gateway
Integration Guide**

2 Introduction

This document outlines the steps required to integrate the SonicWALL Aventail SSL VPN with Swivel. SonicWALL Aventail SSL VPN appliances are able to use external RADIUS servers for providing authentication and Swivel provides RADIUS authentication, so this forms the basis for the integration approach. This document is designed for use with version 10.x of the SonicWALL Aventail and is significantly different to 9.x and earlier versions.

Swivel users can use either Swivel's Single Channel (**TURing**, Pattern) or Dual Channel (SMS, J2ME) methods to retrieve Security Strings, which are applied against the user's PIN to extract a One-Time Code (OTC) which represents the password for an authentication request.

With Dual Channel methods, the user already holds one or more Security Strings on their mobile device (and can request more at any time) so with the Aventail VPN configured to use the matching Swivel server for RADIUS authentication, no further integration is required. However if Swivel is set to send many security strings in a single text message, then the login page can be modified to indicate to the user which string to use. For details of this refer to the additional details section. (The Authentication configuration section below describes how to achieve the RADIUS configuration).

However with Single Channel methods, the user must be presented with a Turing or Pattern image at sign-in time (representing a single time-limited Security String), so they can extract their OTC. The SonicWall Aventail makes a proxy request to Swivel so a NAT rule is not required to Swivel, see below for details.

3 Prerequisites

SonicWall Aventail 10.5.2

or SonicWall Aventail 10.5.3 Client Hot Fix 003

Swivel 3.x

[Aventail login page script](#)

4 Baseline

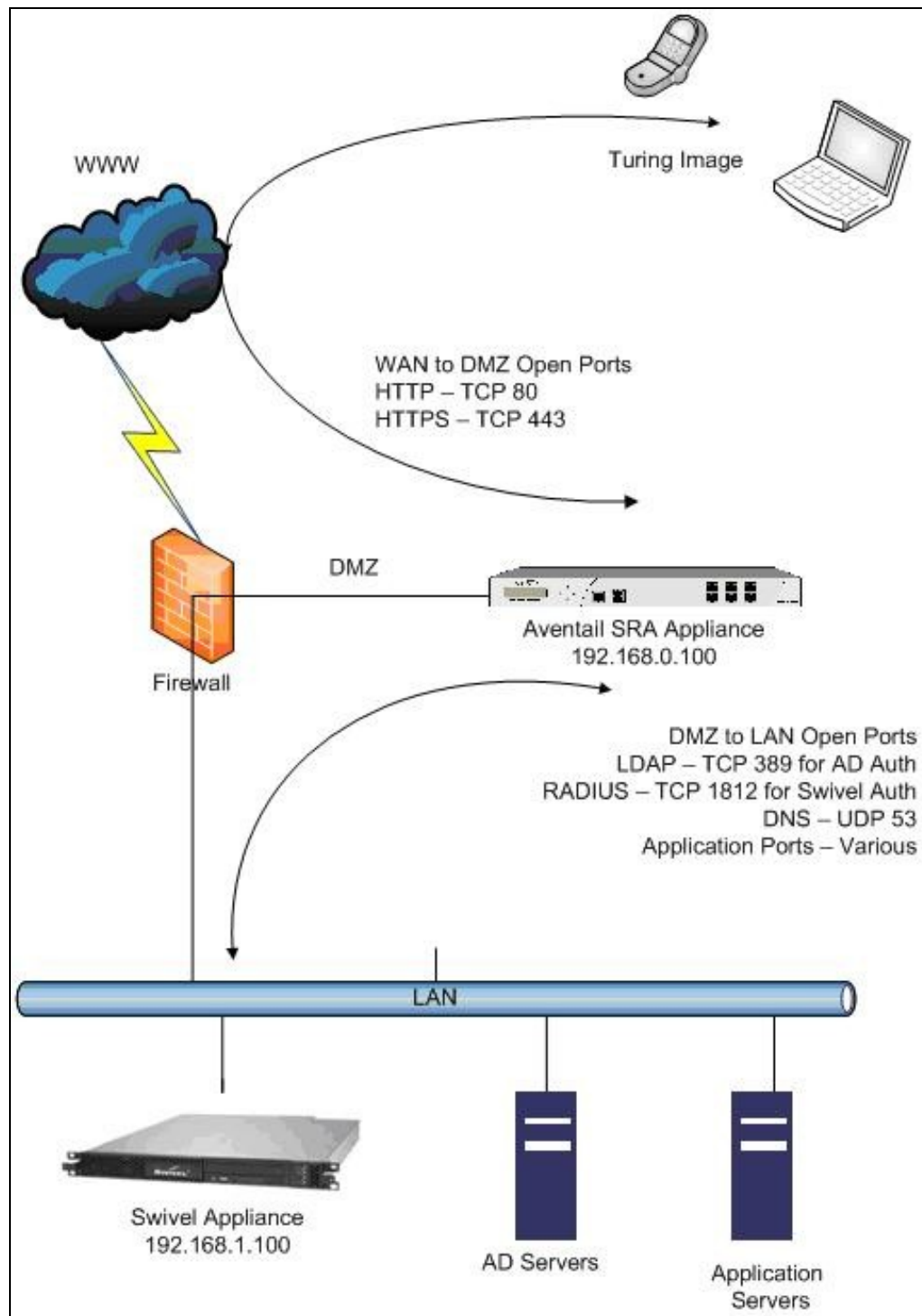
SonicWall Aventail 10.5.2 and 10.6.2-196

Swivel 3.7

5 Architecture

The user connects to the SonicWALL Aventail VPN using a web browser, pointing to the appropriate sign-in URL for the VPN in question.

The SonicWALL Aventail VPN is configured to use Swivel for radius authentication. Users are stored and maintained in Swivel.



6 Swivel Configuration

6.1 Configuring the RADIUS server

On the Swivel Administration console configure the RADIUS Server and NAS, see [RADIUS Configuration](#)

6.2 Enabling Session creation with username

To allow the TURing image, PINpad and other single channel images, under Server/Single Channel set [Allow session request by username](#) to Yes.

6.3 Setting up Swivel Dual Channel Transports

See [Transport Configuration](#)

7 SonicWall Aventail Integration

7.1 Configuring The Sonicwall Aventail for RADIUS Authentication

A new Authentication Server needs to be set up with RADIUS username/password authentication. The Primary RADIUS server needs to be set to the IP address of the Swivel virtual or hardware appliance followed by the authorisation port (see below). The secret needs to match the secret set on the NAS configuration screen.

If you want to configure a secondary Swivel RADIUS server for failover you would add the details of the server in the ?Secondary RADIUS server? section on this page.

Swivel can be configured as the Primary Authentication Server or the Secondary Authentication server using *Chained Authentication*, typically AD will be the Primary authentication server and Swivel as the secondary authentication server. To configure this on the SonicWall Aventail Administration console click on Realms, then click on the name of the realm to be modified, or click New and select an authentication server in the drop down list. Click Advanced and select a Secondary Authentication server (If it has not yet been defined click on New to create it).

SonicWALL Aventail Authentication Server RADIUS Configuration

SONICWALL | **Aventail** Management Console

Security Administration
Access Control
Resources
Users & Groups

User Access
Realms
Aventail WorkPlace
Agent Configuration
End Point Control

System Configuration
General Settings
Network Settings
SSL Settings
Authentication Servers
Services
Maintenance

Monitoring
User Sessions
System Status
Logging
Troubleshooting

Configure Authentication Server [Authentication Servers > Configure Authentication Server](#)

Configure authentication settings for a RADIUS server.

Credential type: Username/Password

Name:*
Swivel PinSafe

General

Primary RADIUS server:*
192.168.1.100:1812

Secondary RADIUS server:

Shared secret: *
.....

Match RADIUS groups by:
None

Retry interval:
5 seconds

Advanced

Save Cancel

Under the Advanced section you should specify the NAS settings and you can also customise the password prompt to show ?Enter your OTC:? or whatever is your preference.

Advanced RADIUS settings

Advanced

Service type:

1

An integer, usually 1 for Login or 8 for Authenticate Only.

☐ Suppress RADIUS success message

Determines whether the appliance displays the login confirmation message (as configured on the RADIUS server) to the end user.

RADIUS identifier

Specify how the appliance identifies to the RADIUS server (specifying both attributes is allowed but not typically necessary). If both fields are left blank, the appliance sends its host name.

NAS-Identifier

Aventail

NAS-IP-Address

192.168.1.100

Custom prompts

Use this area to change the prompts and other text on the login page.

☒ Customize authentication server prompts

Title:

Please log in:

Message:

Enter your username and password, then click "Show Turing Image", now enter your One Time Code and click "OK"

Identity:

Username:

Proof:

Enter your OTC:

Locale encoding

Change this setting to control the encoding scheme used by your RADIUS server.

☒ Selected:

Unicode (UTF-8)

☐ Other:

NTLM authentication forwarding

Forward NTLM credentials to back-end Web servers.

☒ Forward a custom domain name

Domain name:

domain

For resources configured with NTLM authentication forwarding, this will be used for the domain name portion of the credentials.

☐ Forward the authentication server name as domain name

Save

Cancel

7.2 Test the RADIUS authentication

At this stage it should be possible to authenticate by SMS, hardware Token, Mobile Phone Client and Taskbar to verify that the RADIUS authentication is working for users. Browse to the SSL VPN login page, and enter Username and if being used, the password. From the Swivel Administration console select User Administration and the required user then View Strings, and select an appropriate authentication string or OTC for the user. At the SSL VPN login enter the required OTC. Check the Swivel logs for a RADIUS success or rejected message. If no RADIUS message is seen, check that the Swivel RADIUS server is started and that the correct ports are being used.

7.3 Modifying the Aventail Sign-In Page for Turing

Note: When working with an Aventail Active Passive pair, the Master and Slave may need to be both configured, or shutdown the Slave whilst the master is configured for the changes to be evident.

Swivel sends Security Strings to users via SMS, J2ME (Dual Channel) or through a Turing image (Single Channel). The user extracts their One Time Code (OTC) from the Security String and enters that (preceded by their static Swivel password if they have one) into the SSL VPN log-in page.

If they were using Dual Channel (SMS or J2ME) they would have a security string ready and waiting on their mobile device. For Single Channel, we need some way of presenting a Turing image on the SSL VPN's sign-in page.

Using the Aventail AMC, it is necessary to create a URL resource for the Swivel virtual or hardware appliance and then make it available to un-authenticated users. It is also necessary to create a custom authentication page to present the ?Turing? button and also the image. The following steps describe how this is achieved.

1. Create a URL resource and give it the name ?swivel? with the URL of the Swivel virtual or hardware appliance. URL = https://swivel_server:8443/proxy for a Swivel hardware or virtual virtual or hardware appliance, for a software only install see [Software Only Installation](#). Do not create a workplace shortcut. Under Custom access select Translate this resource with an Alias = ?swivel?. Creating an alias means the real URL of the Swivel virtual or hardware appliance is hidden from any user attempting to log in.

Security Administration

Access Control

Resources

Users & Groups

User Access

Realms

Aventail WorkPlace

Agent Configuration

End Point Control

System Configuration

General Settings

Network Settings

SSL Settings

Authentication Servers

Services

Virtual Assist

Maintenance

Monitoring

User Sessions

System Status

Logging

Troubleshooting

Edit Resource - URL

Resources > Edit

Create or modify a resource.

Name:*

swivel

Description:

Test URL for Swivel Auth

URL:*

https://100.100.100.30:8443/proxy

{variable}

If an HTTPS resource, include https:// protocol.

WorkPlace shortcuts

+ New

✗ Delete

<input type="checkbox"/>	Link text	Description	Used
<input type="checkbox"/>			

Web proxy options

Web application profiles

Web application profiles determine single sign-on capabilities and content translation options.

Web application profile:

Default

View selected profile

Custom access

You can choose to translate this resource or provide access to it on a custom port or FQDN.

Translate this resource

Alias name:

swivel

Synonyms:

2. Create an ACL which allows all users access to the resource created in step 1. Select Access Control and New Rule with Permit access for type User

with access from Any User to the Swivel Resource.

The screenshot shows the 'Security Administration' console with a sidebar menu on the left and a main configuration area on the right. The sidebar menu includes sections for 'Security Administration' (Access Control, Resources, Users & Groups), 'User Access' (Realms, Aventail WorkPlace, Agent Configuration, End Point Control), 'System Configuration' (General Settings, Network Settings, SSL Settings, Authentication Servers, Services, Virtual Assist, Maintenance), and 'Monitoring' (User Sessions, System Status, Logging, Troubleshooting). The main area is titled 'Edit Access Rule' and has two tabs: 'General' (selected) and 'Advanced'. Below the tabs, it says 'Create or modify an access control rule.' and shows fields for 'Number: *' (value 1), 'Description: Swivel Access', and 'Action: Permit' (selected). To the right of these fields are the IDs 'ID: AV13940369304' and a note 'The Description app... useful in debugging.' Below this is a 'Basic settings' section with a note 'Click an Edit button to specify the users and resources to which this rule applies' and radio buttons for 'User' (selected) and 'Resource'. Below the radio buttons is a note: 'Select User for a forward connection (resource). If you deploy a network turn Resource for a reverse connection (resource cross connection (user to user)).' Below this are fields for 'From: Any user' and 'To: swivel'. At the bottom is a section titled 'End Point Control zones'.

3. The Swivel resource is behind and therefore protected by the Aventail appliance. It is necessary to allow un-authentication access to the URL created in step 1, this is NOT the same as adding an ACL.

- Using an SSH client such as **PUTTY** or **WinSCP** connect to the Aventail appliance as ?root? with the admin password.
- Then using Vi or an editor in **WinSCP** edit the file : /usr/local/app/mgmt-server/datastore/pending/sysconf/avconfig.xml
- Find the resource id for the resource you just created (search for ?swivel?): <webURL id="AV1193773540220KE" name="swivel" scope="all_descendants">
- Then, find the following line: <webAuthRule enabled="true" id="WebSSLNullAuthRule" managed="system">
- Add your resource id to the ?destinations? block: <destinations_item refId="AV1193773540220KE"/>
- Restart the management console: /etc/init.d/mgmt-server restart
- Log in to the management console again and add/edit something; it doesn't really matter what, you just want to get the ?Pending changes? and then apply the changes.
- Changes to the avconfig.xml file will not get replicated to a HA secondary appliance so the settings need to be made on this appliance. Also, during firmware upgrades the changes to avconfig.xml may not be retained.

4. For the given workplace site it is necessary to create a customised authentication request page. The section below describes this in detail.

7.4 Creating A Custom Authentication Request Page

In order to have the TURING image displayed on the authentication page it is necessary to create and customise an ?authentication-request.tmpl? file.

In version 10.0.0 and later the default WorkPlace template files contain only plain HTML: the rendering is done using cascading style sheets. The content has also been streamlined with the help of <div> tags that define more general divisions on the workplace portal pages (for example, <div id="container">, <div id="head">, <div id="foot">, and so on).

1. For the required workplace, create a new style (or use one already created) to be used only for this workplace. Make a note of the styles ID num. The style needs to be used for the SSL VPN login point for which Swivel authentication will be used.

Configure Workplace and record Style ID

The screenshot shows the SonicWall Aventail Management Console interface. The left sidebar contains navigation menus for Security Administration, User Access, System Configuration, and Monitoring. The main content area is titled 'Configure Workplace Site' and has tabs for 'General' and 'Advanced'. The 'General' tab is active, showing fields for 'Name:*' (set to 'Demo') and 'Description:' (set to 'Demo workplace site'). Below these is a section for 'Fully qualified domain name' with a radio button selected for 'Custom host name only*' and a text field containing 'Demo'. To the right of this section is a note explaining that the configuration will share the appliance domain name. At the bottom, there is a 'Login page appearance' section with a 'Style:' dropdown set to 'Demo Style', 'New' and 'Modify' buttons, and a circled 'ID: AV1243420624569NM'. 'Save' and 'Cancel' buttons are at the very bottom.

SONICWALL | **Aventail** Management Console

Security Administration
Access Control
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Configure Workplace Site [WorkPlace Sites](#) > [Configure WorkPlace Sites](#)

General | [Advanced](#)

Name this Aventail WorkPlace site and assign a domain name (which determines the URL used to access WorkPlace).

Name:* Description:

Fully qualified domain name

Specify the FQDN used to access this WorkPlace site.

☒ Custom host name only*

☐ Custom host and domain name*

This site configuration will share the appliance domain name. This name, prefixed with https://workplace.glos.nhs.uk/go/, used to access WorkPlace.

Login page appearance

Select a style that has the logo, color scheme, and text you want for the WorkPlace login page. You can also modify an existing style, or create a new one. The style and layout for other WorkPlace portal pages is specified during community configuration.

Style: **ID: AV1243420624569NM**

The default WorkPlace template files should be used as a starting point for customized templates, and never edited directly, because your changes will be overwritten the next time you customize WorkPlace in AMC. The default templates are as follows (one for each supported display size):

/usr/local/extranet/templates/extraweb.tmpl


```
/usr/local/extranet/templates/compact-extraweb.tpl  
/usr/local/extranet/templates/micro-extraweb.tpl
```

When you create a workplace site, you specify a style for the login pages, which include realm selection, realm error, licensing error, and so on.

Copy the basic template from your v10 appliance: transfer `/usr/local/extranet/templates/extraweb.tpl` (using [WinSCP](#), for example) to your local computer. Log in using root and the admin password.

2. Save a copy of the extraweb.tpl as authentication-request.tpl.

Insert the following code into the new file directly below

```
<input type=button name=btnTuring value="Show Turing Image" onclick=ShowTuring() class='submitbutton' style="visibility:visible; position:  
<img id=imgTuring name=imgTuring style="visibility:hidden;position: relative; left:40;top:70;">  
<script language="JavaScript">  
  
// Add on-blur method to username field so that  
// TURING image appears automatically  
if(document.getElementsByName("data_0")[0] != null) {  
    document.getElementsByName("data_0")[0].onblur = function () {ShowTuring();};  
}  
  
function ShowTuring() {  
sUser=document.getElementsByName("data_0")[0].value;  
  
    if (sUser=="") {  
        alert ("Please enter your username first!");  
        document.getElementsByName("data_0")[0].focus()  
    } else {  
        //The IP address below must be the External IP of the Aventail VPN  
        sUrl="https://FQDN_of_workplace/swivel/SCImage?username=";  
  
        //Find the image using Mozilla compatible pproach...  
        varImg = document.getElementById("imgTuring");  
  
        //Set the image SRC and make it visible  
        varImg.src = sUrl + sUser + "&random=" + Math.round(Math.random()*1000000);  
        varImg.style.visibility = "visible";  
  
        //Alternative approach - show image in Popup  
        //window.showModalDialog(sUrl + sUser,null,"dialogWidth=305px;dialogHeight=110px;status:no;scroll:no;help:no;")  
  
        //Set focus to the OTC input  
        document.getElementsByName("data_2")[0].focus()  
    }  
}  
  
</script>
```

The customization first adds a button to the page to allow the user to request a TURING image and a placeholder for the image so that it can be displayed.

`<input type=button name=btnTuring value="Show Turing Image" onclick=ShowTuring() class='submitbutton' style="visibility:visible; position: relative; left:50;top:60;width:75;">` When the user presses the TURING button it calls the `showTuring` function that retrieves the image from Swivel via the alias that has been set up and makes the TURING image visible. The customisation also adds an "onblur" action to the username field. This means that when the user tabs away from the username field a TURING image will be automatically requested.

3. The newly customised authentication-request.tpl needs to be saved to the correct location on the Aventail. Again using [WinSCP](#), copy the file to the folder `/usr/local/extranet/templates/AV` (ID identified in Figure 7). The ID folder should have been created automatically when the style was created.

4. Make a change in the Aventail AMC such that ?pending changes? can be applied.

5. The newly configured workplace configuration should now be available.

If your Aventail appliance is part of a HA pair then copy the customised authentication-request.tpl file across to the backup appliance.

8 Verifying the Installation

Login using the Turing or SMS.

Example of a modified SonicWALL Aventail sign-in page

Log in to:

Swivel

Username:

Enter your OTC:

Log in

Turing

1234567890

7432059168

9 Known Issues and Limitations

None

10 Configuration Options

10.1 Turing Image Size

Change the line:

```
<img id=imgTuring name=imgTuring style="visibility:hidden;">
```

to

```
<img id=imgTuring name=imgTuring width="450" style="visibility:hidden;">
```

A width of 450 to gives a 50% larger image (300 is standard). Different values may be used.

10.2 Security String Index

To modify the login page to display the required Security String index rather than a Turing image use the following modifications. See also [Multiple Security Strings How To Guide](#)

1) The button that is used for Turing needs to be changed to request the index and rather than an image tag a text field is required to display the result.

```
<tr>
<td>
  <input type=button name=btnTuring value="Get Index" onclick=ShowIndex()
  class='submitButton' style="visibility:visible;width:100;">
</td>
<td >
  Use index : <INPUT class="indextext" TYPE="text" id="indextext" name="indextext" size = "3">
  to select your security string.
</td>
</tr>
```

Similarly the onBlur action should be changed

```
if (document.getElementsByName("data_0")[0] != null) {
  document.getElementsByName("data_0")[0].onblur = function () {ShowIndex();};
}
```

2) The ShowIndex function then needs adding

```
function ShowIndex() {
{
  sUrl="https://FQDN_of_workplace/swivel/SCImage?username="
  sUser=document.getElementsByName("data_0")[0].value;
  if (sUser=="") {
    alert ("Please enter your username first!");
    document.getElementsByName("data_0")[0].focus()
  }
  else
  {
    updateindex(sUrl,sUser);
    document.getElementsByName("data_1")[0].focus()
  }
}
}

function updateindex(sUrl,sUser)
{
  //this means call the getText function and when callback is called,
  // call setIndex
  getText(sUrl + sUser, setIndex) + "&random=" + Math.round(Math.random()*1000000);
}

function getText (url, callback) {
  var request = null;
  //Initialize the request variable.
  if (window.XMLHttpRequest) {
    // Are we working with mozilla?
    request=new XMLHttpRequest();
  }
  else
  {
    //Not Mozilla, must be IE
    request=new ActiveXObject("Microsoft.XMLHTTP");
  }
  if (request==null) {
    //If we couldn't initialize request...
    alert("Your browser doesn't support the Get Index Button, sorry.");
    return false;
  }
  request.onreadystatechange = function() {
    if (request.readyState == 4 && request.status == 200)
    {
      callback(request.responseText);
    }
  }

  request.open("GET", url);
  request.send(null);
}

function setIndex(text){
  index = document.getElementById("indextext");
  if(text.length < 3){
    index.value = text;
  } else {
    index.value = "";
  }
}
```



```
}
```

10.3 TURING and SMS

To support TURING and SMS Index you need to include both buttons and both sets of scripts.

But not have any onBlur action on the username, as the user may choose either option.

10.4 Manual Turing Display

To stop the automated Turing display remove the **.onblur** entry. Note you would use this where dual channel authentication is required. The starting of a single channel session makes the Swivel server expect a single channel login:

```
// Remove on-blur method to username field so that
// TURING image appears automatically
if (document.getElementsByName("data_0")[0] != null) {
    document.getElementsByName("data_0")[0] = function () {ShowTuring();};
}
```

10.5 Automated Turing Display

To automate the Turing display we can add the below lines of code. Note you would not use this where dual channel authentication is required as the starting of a single channel session makes the Swivel server expect a single channel login:

```
// Add on-blur method to username field so that
// TURING image appears automatically
if (document.getElementsByName("data_0")[0] != null) {
    document.getElementsByName("data_0")[0].onblur = function () {ShowTuring();};
}
```

Example:

```
<input type=button name=btnTuring value="Show Turing Image" onclick=ShowTuring() class='submitbutton' style="visibility:visible; position:
<img id=imgTuring name=imgTuring style="visibility:hidden;position: relative; left:40;top:70;">
<script language="JavaScript">

// Add on-blur method to username field so that
// TURING image appears automatically
if (document.getElementsByName("data_0")[0] != null) {
    document.getElementsByName("data_0")[0].onblur = function () {ShowTuring();};
}

function ShowTuring() {
{
    sUser=document.getElementsByName("data_0")[0].value;

    if (sUser=="") {
        alert ("Please enter your username first!");
        document.getElementsByName("data_0")[0].focus()
    }
}
else
{
//The IP address below must be the External IP of the Aventail VPN
sUrl="https://FQDN_of_workplace/swivel/SCImage?username=";

//Find the image using Mozilla compatible pproach...
varImg = document.getElementById("imgTuring");

//Set the image SRC and make it visible
varImg.src = sUrl + sUser + "&random=" + Math.round(Math.random()*1000000);
varImg.style.visibility = "visible";

//Alternative approach - show image in Popup
//window.showModalDialog(sUrl + sUser,null,"dialogWidth=305px;dialogHeight=110px;status:no;scroll:no;help:no;")

//Set focus to the OTC input
document.getElementsByName("data_2")[0].focus()
}
}
}

</script>
```

11 Troubleshooting

Check the Swivel logs for TURING images and RADIUS requests.

INFO RADIUS: <0> Access-Request(1) LEN=78 192.168.1.1:4175 PACKET DROPPED - Duplicate packet from NAS

This can be caused by the following:

- If the Swivel server sends the reply but it is not received by the access device, the access device may try to resend the RADIUS request. This can be caused by the Access device sending a RADIUS request from an external interface, but not accepting the response through that external interface.

If a red cross appears instead of the TURING image it is likely that a self signed certificate may be preventing the image from appearing. To verify this, in I.E. right click on the red cross and click on properties, copy the URL into the URL bar and see if a certificate error occurs with an image. The URL will be similar to:

virtual or hardware Appliance: <https://<VPN URL>:8443/proxy/SCImage?username=test>

For a software only install see [Software Only Installation](#)

To overcome this install a valid certificate on the Swivel virtual or hardware appliance. Using non SSL communication will likely result in the web browser creating a pop up about SSL and non SSL communications in the web page.

12 Additional Information

For assistance in the Swivel installation and configuration please firstly contact your reseller and then email Swivel Secure support at support@swivelsecure.com

13 SonicWall NSA Integration

13.1 SonicWall NSA PINsafe integration with SMS

The SonicWALL Network Security Appliance (NSA) Series applies next-generation Unified Threat Management (UTM) against a comprehensive array of attacks, combining intrusion prevention, anti-virus and antispyware with the application-level control of SonicWALL Application Firewall.

The appliances have SSL VPN capability with which PINsafe can provide Two Factor Authentication using SMS with RADIUS authentication.

If Strong authentication is required using **TURing**, then the image needs to be displayed to the user such as the use of a **Taskbar**, Web page etc. The use of TURing is not covered in this document.

13.2 Overview

13.2.1 Prerequisites

Swivel 3.x configured with users and SMS gateway

SonicWALL Network Security Appliance configured for local authentication. Tested with 5.2 and 5.8

13.2.2 Baseline

PINsafe 3.x

NSA 240, SonicOS Enhanced 5.2.0.1-21o

13.2.3 Architecture

The NSA appliance was the firewall/SSL VPN device with the PINsafe server located within the DMZ.

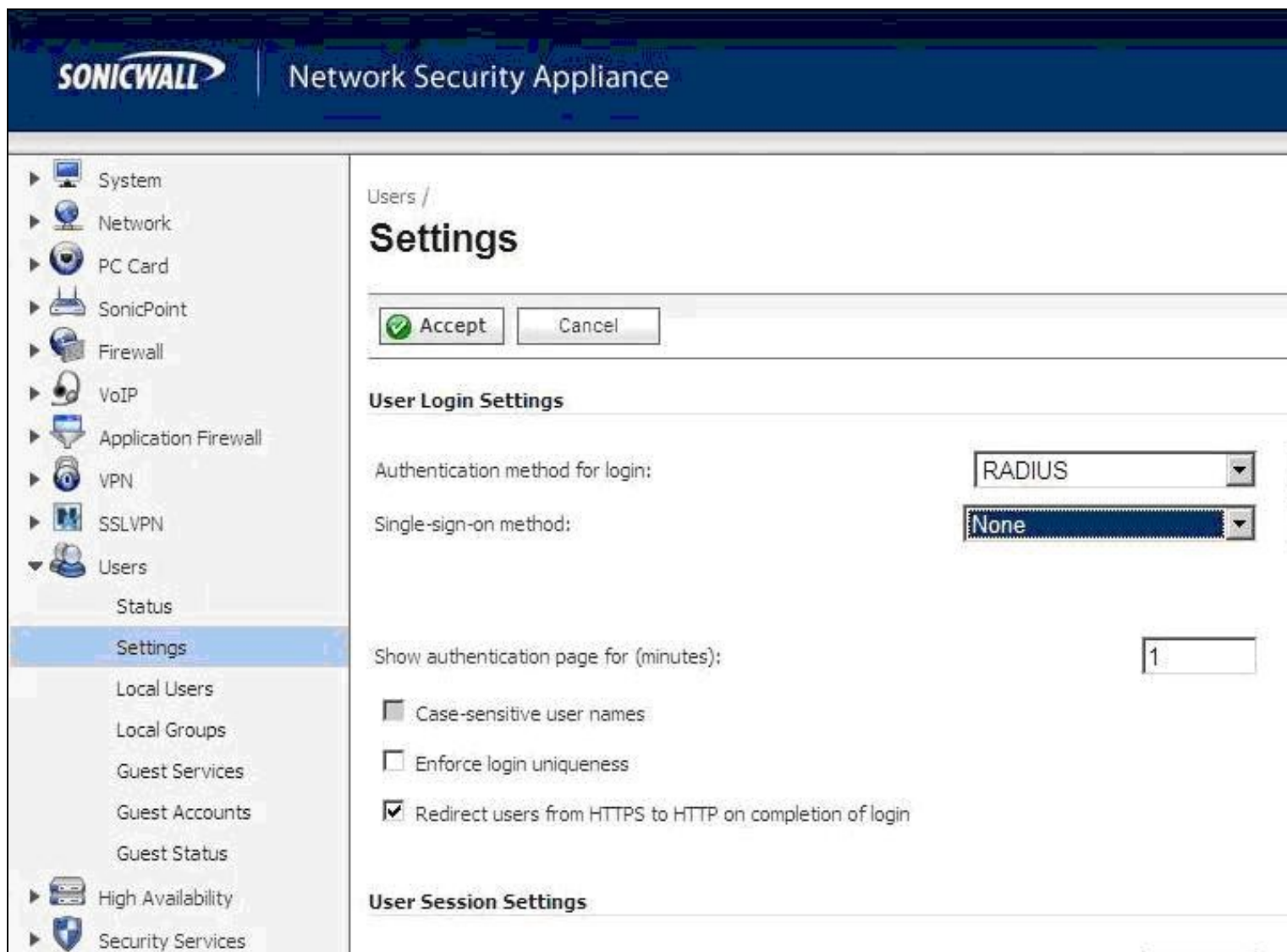
13.3 Installation

13.3.1 Configuring the PINsafe server

Configure PINsafe as a RADIUS server, from the RADIUS/server menu, enter the RADIUS server details and then select Enable RADIUS server. From the RADIUS/NAS menu enter a name for the SonicWALL NAS appliance and its IP address and a shared secret key.

13.3.2 Configuring the SonicWALL NSA Appliance User Settings

Select Users, then Settings, and on the menu for Authentication Method for Login: select RADIUS



13.3.3 Configuring the SonicWALL NSA Appliance RADIUS settings

From the Users/Settings menu click on Configure button next to the RADIUS option, then select the Settings tab and in the Primary Server IP Address field, enter the IP address of the PINsafe server and the shared secret key, and the required port.

Configuring the SonicWALL NSA Appliance RADIUS settings


From the Users/Settings menu click on Configure button next to the RADIUS option, then select the Settings tab and in the Primary Server IP Address field, enter the IP address of the PINsafe server and the shared secret key, and the required port.

The screenshot shows the 'Network Security Appliance' configuration window for RADIUS settings. At the top, there are three tabs: 'Settings' (selected), 'RADIUS Users', and 'Test'. Below the tabs, the 'Global RADIUS Settings' section contains two input fields: 'RADIUS Server Timeout (seconds):' with the value '5' and 'Retries:' with the value '3'. The 'RADIUS Servers' section is divided into 'Primary Server' and 'Secondary Server' configurations. The 'Primary Server' section has three fields: 'Name or IP Address:' with the value '192.168.168.22', 'Shared Secret:' with a masked value '.....', and 'Port Number:' with the value '1812'. The 'Secondary Server' section has three empty fields: 'Name or IP Address:', 'Shared Secret:', and 'Port Number:'. At the bottom, there is a 'Ready' status bar and four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

Select the RADIUS Users tab, and ensure there is no tick in the allow only users listed locally box. Enter any other required information.

13.3.4 Testing SonicWALL NSA Appliance RADIUS configuration

Select the Test tab, and enter a Username and a One Time Code in the password field from the users SMS, click on the Test button (Once only), and the returned attributes will verify if the test has worked, or alternatively, enter 1234, and check for a Authentication Rejected message.

 Network Security Appliance

Settings

RADIUS Users

Test

Test RADIUS Settings

To test the RADIUS settings, enter a valid RADIUS login name and password and click the Test button. Note that this will apply any changes that have been made.

User:

graham

Password:

••••

Test

Test:

☒ Password authentication

☐ CHAP

☐ MSCHAP

☐ MSCHAPv2

Test Status:

Radius Client Authentication Succeeded

Returned User Attributes:

Ready

OK

Cancel

Apply

Help

13.3.5 Known Issues and Limitations

It is not currently possible to embed the Turing image into the login page, however other options such as the Taskbar utility or a web page can be used.

13.3.6 Additional Information

For assistance in the PINsafe installation and configuration please firstly contact your reseller and then email Swivel Secure support at support@swivelsecure.com or the local SonicWALL office <http://www.sonicwall.com/emea/Support.html>.

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14 SonicWall SMA Appliances

For Integration with the SonicWall SMA Appliances see [SonicWall SSL VPN Integration](#)

15 SonicWall SRA EX appliances

For Integration with the SonicWall SRA EX appliances see [SonicWall SSL VPN Integration](#)

16 SonicWall SSL VPN Integration

16.1 Introduction

Swivel can provide Two Factor authentication such as [SMS](#), [Token](#), [Mobile Phone Client](#) and strong Single Channel Authentication [TURING](#), [Pinpad](#) or in the [Taskbar](#) using RADIUS.

If Strong authentication is required using Single Channel such as [TURING](#), [Pinpad](#) then the image can be displayed in the login page or in the [Taskbar](#). The image is served from the PINsafe server to the client.

This document will use the following steps:

- Configuring the PINsafe server
- Configuring the SonicWall login page
- Configuring the SonicWall authentication

To use the Single Channel Image such as the Turing Image, the PINsafe server must be made accessible. The client requests the images from the PINsafe server, and is usually configured using Network Address Translation, often with a proxy server. The PINsafe virtual or hardware appliance is configured with a proxy port to allow an additional layer of protection.

16.2 Prerequisites

Swivel 3.x configured with users and SMS gateway

SonicWALL SSL VPN

Swivel login script for the SonicWall SSL VPN

The customisation script can be downloaded from [here](#)

A customisation script that also includes refresh for the TURING is [\[1\]](#) here

Swivel server must be accessible by client when using Single Channel Images, such as the TURING Image.

16.3 Baseline

SonicWALL SMA

SonicWALL SRA

SonicWALL SSL VPN 200 and 4200 and Firmware 3.5 onwards

SonicOS SSL-VPN 7.5.0.6-23sv

16.4 Architecture

The SSL VPN appliance and the Swivel server are usually located within the DMZ. Authentication requests are made from the SonicWall SSL VPN using RADIUS.

16.5 Swivel Configuration

16.5.1 Configuring the RADIUS server

Configure the RADIUS settings using the RADIUS configuration page in the Swivel Administration console. In this example (see diagram below) the RADIUS Mode is set to ?Enabled? and the HOST IP (the Swivel server) is set to 0.0.0.0. (leaving the field empty has the same result). This means that the server will answer all RADIUS requests received by the server regardless of the IP address that they were sent to.

Note: for virtual or hardware appliances, the Swivel appliance VIP should not be used as the server IP address, see [VIP on PINsafe Appliances](#)

RADIUS>Server

Please enter the details for the RADIUS server.

Server enabled:	<input type="text" value="Yes"/>
IP address:	<input type="text" value="0.0.0.0"/>
Authentication port:	<input type="text" value="1812"/>
Accounting port:	<input type="text" value="1813"/>
Maximum no. sessions:	<input type="text" value="50"/>
Permit empty attributes:	<input type="text" value="No"/>
Filter ID:	<input type="text" value="No"/>
Additional RADIUS logging:	<input type="text" value="Both"/>
Enable debug:	<input type="text" value="Yes"/>
Radius Groups:	<input type="text" value="Yes"/>
Radius Group Keyword:	<input type="text" value="POLICY"/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

16.5.2 Setting up the RADIUS NAS

Set up the NAS using the Network Access Servers page in the Swivel Administration console. Enter a name for the SonicWall SSL VPN server. The IP address has been set to the IP of the VPN virtual or hardware appliance, and the secret that will be used on both the Swivel appliance and VPN RADIUS configuration.

RADIUS>NAS

Please enter the details for any RADIUS network access servers. A NAS is permitted to access the authentication via the RADIUS interface.

NAS: Identifier:	<input type="text" value="Device Name"/>
Hostname/IP:	<input type="text" value="192.168.0.1"/>
Secret:	<input type="password" value="•••••"/>
EAP protocol:	<input type="text" value="None"/>
Group:	<input type="text" value="---ANY---"/>
Authentication Mode:	<input type="text" value="All"/>
Change PIN warning:	<input type="text" value="No"/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

You can specify an EAP protocol if required, others CHAP, PAP and MSCHAP are supported. All users will be able to authenticate via this NAS unless authentication is restricted to a specific repository group.

16.5.3 Enabling Session creation with username

The Swivel appliance can be configured so that it returns an image stream containing a TURING image by presenting the username via the XML API or the SCIMage servlet. It is this mechanism that is used to return the TURING image to the VPN sign in page.

Go to the ?Single Channel? Admin page and set ?Allow Session creation with Username:? to YES.

To test your configuration you can use the following URL using a valid PINsafe username:

Virtual or hardware appliance

https://PINsafe_server_IP:8443/proxy/SCImage?username=testuser

For a software only install see [Software Only Installation](#)

For further information see [Single Channel How To Guide](#)

16.5.4 Setting up Swivel Dual Channel Transports

See [Transport Configuration](#)

16.5.5 Using AD Password Authentication

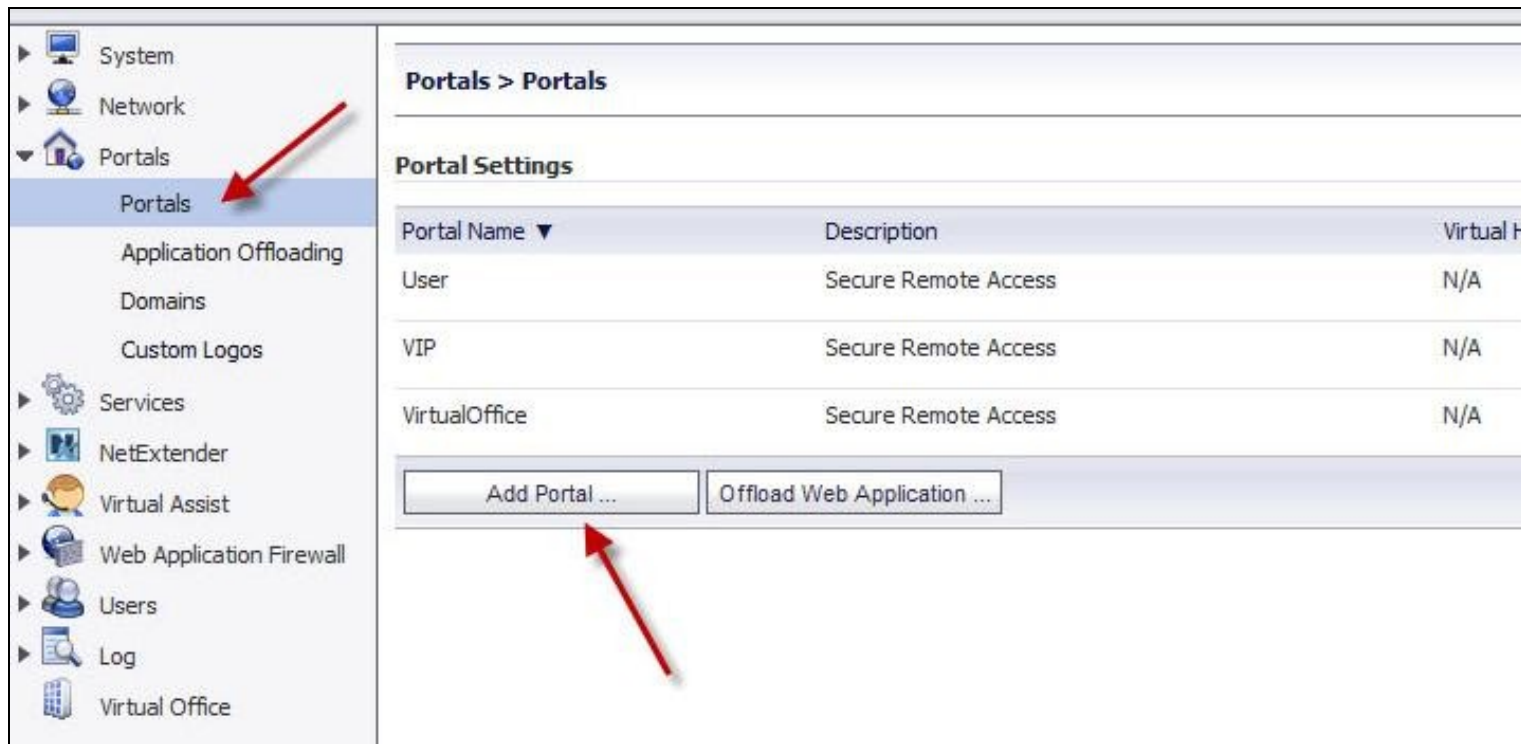
This is an option to enter the AD password of users for authentication

See [Check Password With Repository](#)

16.6 SonicWall SSL VPN Configuration

16.6.1 Login Page Customisation

On the SonicWall SSL VPN select Portals, then click on Add Portal to open the add portal page.



Enter the following information:

Portal Name: Name for the Portal, Example, PINsafe

Portal Site Title: Name for Portal Site, Example Virtual Office

Portal Banner Title: Name for Page, Example Virtual Office

Login Message: optional login message. If the Single channel TURING image is to be used then the login script needs to be pasted into this section. Ensure the relevant scripts are modified with the External IP NAT address of the PINsafe server:

```
$('#psImage').attr('src', 'https://192.168.0.35:8443/proxy/SCImage?username=' + encodeURIComponent(username));
```

For a PINsafe virtual or hardware appliances this would need to be:

<https://192.168.0.35:8443/proxy/SCImage?username=>

For a software only install see [Software Only Installation](#)

Portal URL: The name of the login portal

Display custom login page: Ensure this is ticked

Display login message on custom login page: Ensure this is ticked

Enable HTTP meta tags for cache control (recommended): Usually selected

Enable ActiveX web cache cleaner: Optional

Enforce login uniqueness: Ensure this is ticked

Click OK to save the settings.

General

Home Page

Virtual Assist

Virtual Host

Logo

Portal Settings

Portal Name:

Pinsafe

Portal Site Title:

Virtual Office

Portal Banner Title:

Virtual Office

Login Message:

<h1>Welcome to the
SonicWALL Virtual
Office</h1>
<p>The SonicWALL Virtual
Office provides easy and

Portal URL:

https://192.168.200.1/portal/Pinsafe

☒ Display custom login page

☒ Display login message on custom login page

☒ Enable HTTP meta tags for cache control (recommended)

☐ Enable ActiveX web cache cleaner

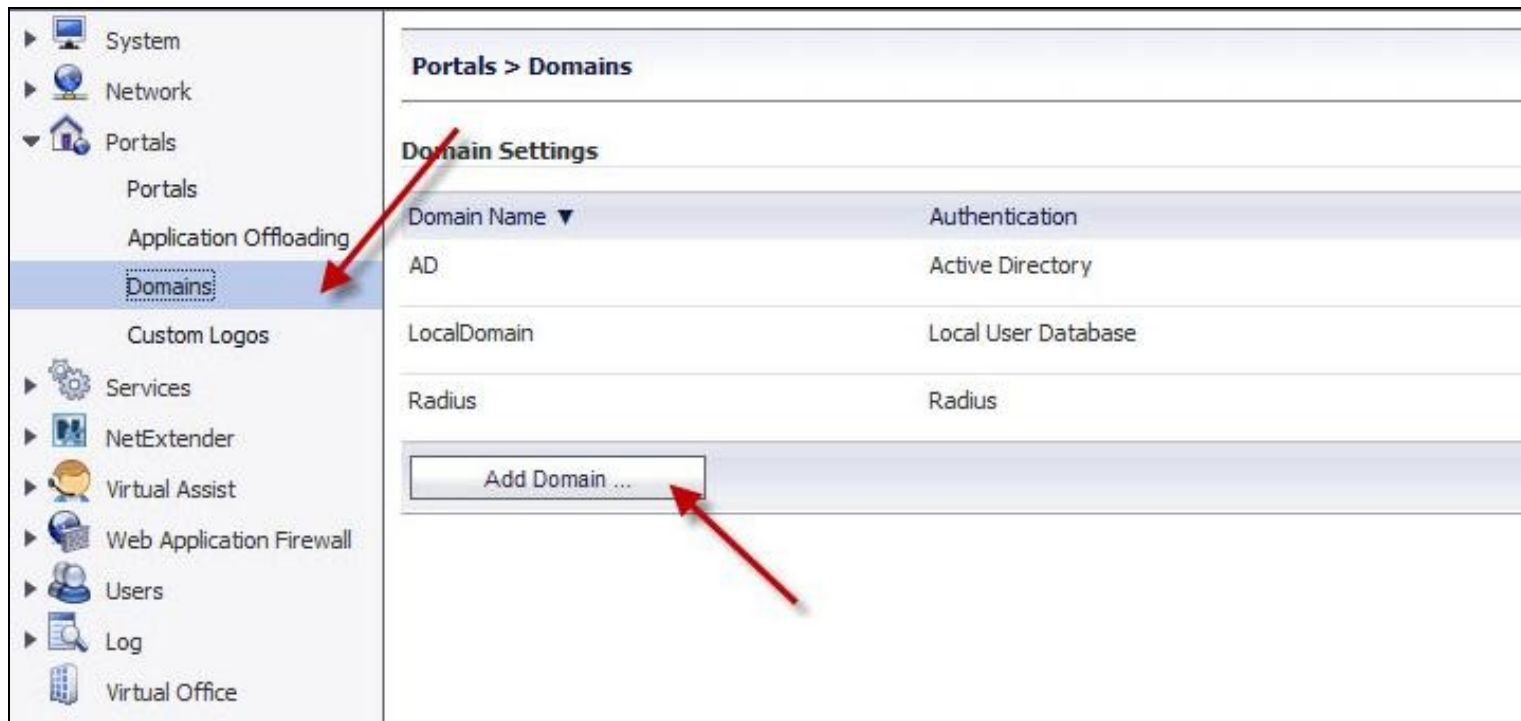
☒ Enforce login uniqueness

OK

Close

16.6.2 Configuring SonicWall SSL VPN Domain Settings

On the SonicWall SSL VPN select Portals then domains and click on Add Domain.



On the Add Domain page configure the Authentication server

Authentication type: select RADIUS

Domain name: Name for the domain

Authentication Type: Select the required authentication

RADIUS server address: Hostname or IP address of the PINsafe server

RADIUS server port: Usually 1812

Secret password: Enter a shared secret that needs to be also entered on the PINsafe server NAS entry

Portal Name: Select the Portal Name created above.

Click OK to save the settings.

Add Domain

Authentication type: Radius

Domain name: pin

Authentication Protocol: MSCHAP

Primary Radius server

Radius server address: 192.168.168.3

Radius server port: 1812

Secret password: ●●●●●●●●

Radius Timeout (Seconds): 5

Max Retries: 2

Backup Radius server

Radius server address:

Radius server port: 1812

Secret password:

☐ Use Filter-ID For RADIUS Groups

Portal name: VirtualOffice
User
VIP
Pinsafe

☐ Enable client certificate enforcement

☐ Delete external user accounts on logout

☐ One-time passwords

Add Cancel

16.7 Additional Configuration Options

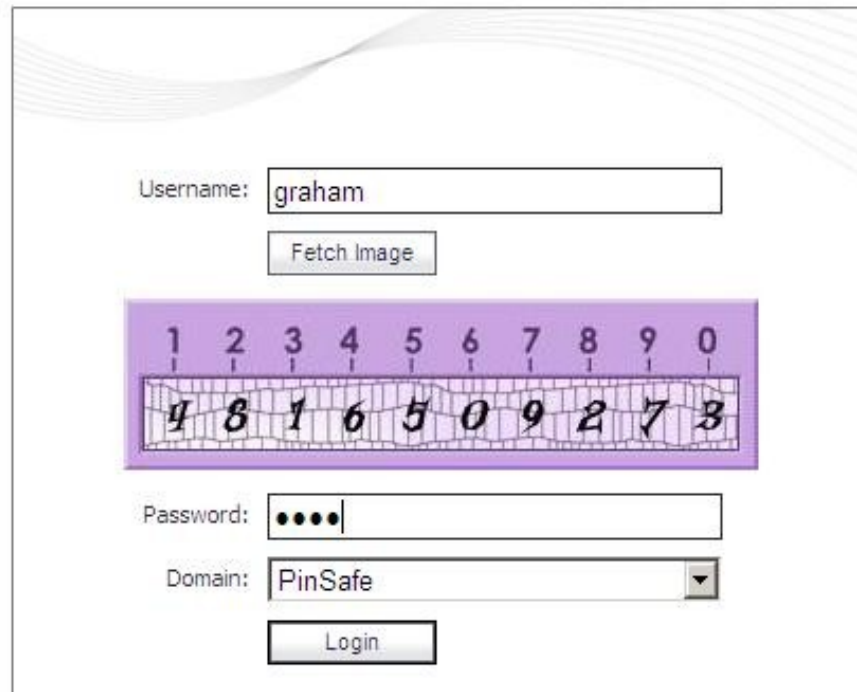
16.8 Testing

Browse to the login page and verify the login

Login page showing the TURING image where OTC is entered as the Password

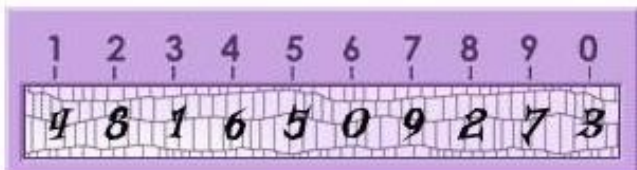
Welcome to the SonicWALL Virtual Office

The SonicWALL Virtual Office provides easy and secure remote access to your corporate network from anywhere on the Internet.



The login page features a light blue header with the SonicWALL logo and the text 'Virtual Office'. Below the header, a welcome message states: 'Welcome to the SonicWALL Virtual Office' and 'The SonicWALL Virtual Office provides easy and secure remote access to your corporate network from anywhere on the Internet.' The main login area is enclosed in a rounded rectangle. It contains a 'Username:' label followed by a text input field with the value 'graham'. Below this is a 'Fetch Image' button. A large, stylized Turing image is displayed, consisting of a grid of numbers (1-0) with a wavy, distorted pattern overlaid. Below the image is a 'Password:' label followed by a text input field with four dots. To the right of the password field is a 'Domain:' label followed by a dropdown menu showing 'PinSafe'. At the bottom of the login area is a 'Login' button.

Username:



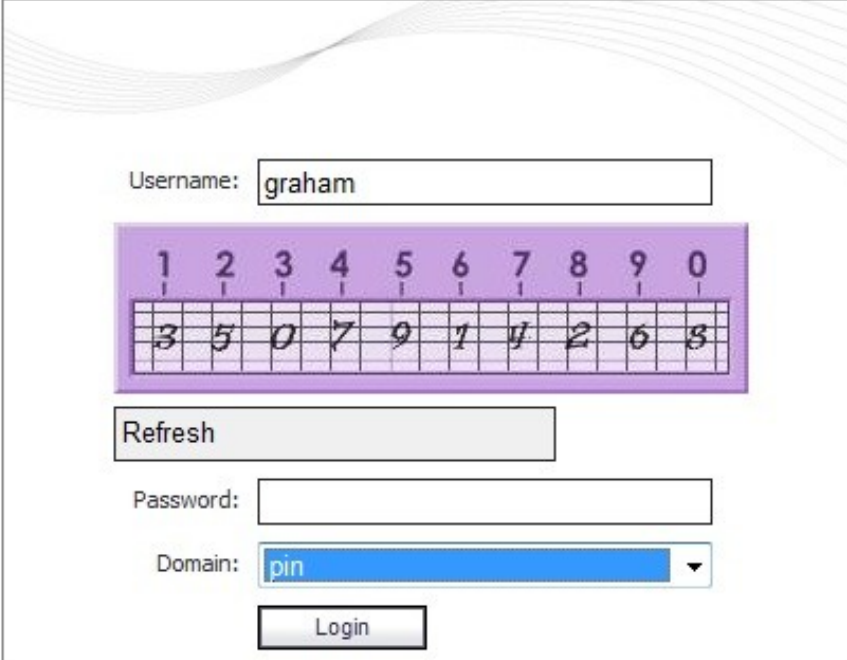
Password:

Domain:

Login page showing the TURING image with where OTC is entered as Password and a *Refresh* Image button

Welcome to the SonicWALL Virtual Office

The SonicWALL Virtual Office provides easy and secure remote access to your corporate network from anywhere on the Internet.



The login interface is enclosed in a light gray border. At the top, there is a decorative wavy line. Below it, the 'Username:' label is followed by a text input field containing 'graham'. Underneath the username field is a PINsafe device, which is a purple rectangular unit with a numeric keypad (0-9) and a row of ten buttons labeled with the numbers 3, 5, 0, 7, 9, 1, 4, 2, 6, and 8. Below the PINsafe is a 'Refresh' button. Further down are the 'Password:' label and an empty text input field. Below the password field is the 'Domain:' label followed by a dropdown menu currently showing 'pin'. At the bottom of the form is a 'Login' button.

16.9 Troubleshooting

Check the PINsafe logs for Turing images and RADIUS requests.

Users can bypass Swivel authentication

When a user authenticates using RADIUS, a local account may be created on the SonicWall. With some SSO policies the user may then not be required to sign in using RADIUS authentication. Verify the SSO policy and adjust as required.

16.10 Known Issues and Limitations

None

16.11 Additional Information

For assistance in the PINsafe installation and configuration please firstly contact your reseller and then email Swivel Secure support at support@swivelsecure.com