

Instructions on how to integrate the RETScreen® Download Table within your Website

To further increase the access to its products over the Internet, RETScreen International¹ has begun to make it easier for third parties to incorporate the RETScreen Online Download Table (www.retscreen.net/ang/t_software.php) within their own website.

Once the RETScreen Download Table (see **Figure 1**) is integrated with your website, the related content (e.g. text, documents, files, etc.) is updated automatically without any manual intervention. All RETScreen content is always stored on the RETScreen server and is accessed in real time for each user request, ensuring up-to-date information and minimal operation from your server. As a result, visitors to your website are able to transparently access all the RETScreen products (see the schematic representation shown in **Figure 2** or the online example at: <http://third-party.retscreen.net>).

The screenshot shows the RETScreen International website interface. At the top, there is a navigation bar with 'SOFTWARE & DATA', 'TRAINING COURSE', and 'CASE STUDIES'. Below this is a sub-menu with 'INFO'. The main content is a table with columns for 'Software & Data', 'User Manual', and 'Engineering Textbook'. The table lists various software versions and their associated files, with checkboxes indicating availability. At the bottom, there is a language selection dropdown set to 'English - Anglais' and a checkbox for 'File available in English only'.

		Software & Data	User Manual	Engineering Textbook
Software & Data	Version 4	Coming soon	Coming soon	> <input checked="" type="checkbox"/> 13.0 MB
Software & Data	Version 3	▼	▼	▼
Introduction	Version 3.0	---	---	<input checked="" type="checkbox"/> 3.0 MB
Wind Energy	Version 3.2	<input checked="" type="checkbox"/> 1.0 MB	<input checked="" type="checkbox"/> 1.0 MB	<input checked="" type="checkbox"/> 1.0 MB
Small Hydro	Version 3.2	<input checked="" type="checkbox"/> 2.0 MB	<input checked="" type="checkbox"/> 1.0 MB	<input checked="" type="checkbox"/> 1.0 MB
Photovoltaics	Version 3.2	<input checked="" type="checkbox"/> 2.0 MB	<input checked="" type="checkbox"/> 1.0 MB	<input checked="" type="checkbox"/> 1.0 MB
Combined Heat & Power	Version 3.6	<input checked="" type="checkbox"/> 8.0 MB	<input checked="" type="checkbox"/> 4.0 MB	Coming soon
Biomass Heating	Version 3.1	<input checked="" type="checkbox"/> 2.0 MB	<input checked="" type="checkbox"/> 1.0 MB	<input checked="" type="checkbox"/> 1.0 MB
Solar Air Heating	Version 3.1	<input checked="" type="checkbox"/> 1.0 MB	<input checked="" type="checkbox"/> 1.0 MB	<input checked="" type="checkbox"/> 1.0 MB
Solar Water Heating	Version 3.1	<input checked="" type="checkbox"/> 2.0 MB	<input checked="" type="checkbox"/> 1.0 MB	<input checked="" type="checkbox"/> 2.0 MB
Passive Solar Heating	Version 3.1	<input checked="" type="checkbox"/> 2.0 MB	<input checked="" type="checkbox"/> 1.0 MB	<input checked="" type="checkbox"/> 1.0 MB
Ground-Source Heat Pumps	Version 3.1	<input checked="" type="checkbox"/> 2.0 MB	<input checked="" type="checkbox"/> 1.0 MB	<input checked="" type="checkbox"/> 2.0 MB
Refrigeration	Version --	Coming soon	Coming soon	---

21 Languages: File available in English only

Figure 1: RETScreen Online Download Table

¹ For more information on RETScreen International, please visit the RETScreen Website at: www.retscreen.net.

Technical Details²

A dedicated RETScreen Online Download Table page “**t2.php**” has been setup on the RETScreen server to generate the HTML mark-up necessary for integrating the RETScreen Online Download Table. The content generated by “**t2.php**” is not a complete HTML page as it only contains the necessary HTML mark-up to allow a transparent integration within a page from your website. The page “**t2.php**” is available for all languages supported by RETScreen International as listed in **Appendix A**. The inclusion of the generated HTML is language specific and must be repeated for each language (e.g. English, French, Spanish, etc.) integrated in your website.

To render language scripts correctly on your website, a mutual agreement about **charset encoding** must be done first. Since RETScreen uses **UTF-8** for character encoding, your website must be adjusted to ensure adequate control strings layout. If UTF-8 for encoding pages is not used, display problems might be encountered, especially in languages other than English. Examples explaining how to set charset encoding for different technologies are given in **Appendix B**.

To allow the integration for a specific language (e.g. English) of the RETScreen Online Download Table (e.g. “**t2.php**”) with your website, you must query the related “**t2.php**” page as indicated in Appendix A (e.g. www.retscreen.net/ang/t2.php), and include the generated HTML in your Website. Examples explaining how to include the generated HTML for various scripting technologies are given in **Appendix C**.

Your server will then act as a proxy between your visitors and the RETScreen server³. This process will be transparent and won't be noticed by your visitors while they access the RETScreen products from your website. Note that the space needed to incorporate “**t2.php**” must have a width of 600 pixels.



Figure 2: Schematic representation

² The integration of the RETScreen Online Download Table to a third party website is non-exclusive and Natural Resources Canada (NRCan) reserves the right to remove the ability to integrate the RETScreen Online Download Table to a third party website for any reason. It is also understood that NRCan is under no obligation to provide technical support, maintenance services, update services, notices of latent defects, or correction of defects for the integration of the RETScreen Online Download Table to a third party website, and does not assume any liability deemed to have been caused directly or indirectly from the inclusion of the RETScreen Online Download Table on third party websites.

³ Any information that is disclosed from third party websites expresses the views of the owner of the third party websites, not necessarily the views of NRCan or any entity associated with NRCan. Therefore, NRCan does not vouch for or warrant the accuracy, completeness or usefulness of third party websites, and is not responsible for the contents of any message associated with third party websites. Third party shall not make any statement or representation indicating that RETScreen International, Natural Resources Canada, the Government of Canada or its partners endorses or approves any product, service or other course of action as a result of the inclusion of the RETScreen Online Download Table to a third party website.

Appendix A

Access to “t2.php” per language

Languages	Native Script	RETScreen Server's URL
Arabic	العربية	http://www.retscreen.net/ar/t2.php
Bengali	বাংলা	http://www.retscreen.net/bn/t2.php
Chinese	中文	http://www.retscreen.net/zh/t2.php
Danish	Dansk	http://www.retscreen.net/da/t2.php
Dutch	Nederlands	http://www.retscreen.net/nl/t2.php
English	English	http://www.retscreen.net/ang/t2.php
Finnish	Suomi	http://www.retscreen.net/fi/t2.php
French	French	http://www.retscreen.net/fr/t2.php
German	Deutsch	http://www.retscreen.net/de/t2.php
Greek	Ελληνικά	http://www.retscreen.net/el/t2.php
Hindi	हिन्दी	http://www.retscreen.net/hi/t2.php
Italian	Italiano	http://www.retscreen.net/it/t2.php
Japanese	日本語	http://www.retscreen.net/ja/t2.php
Korean	한국어	http://www.retscreen.net/ko/t2.php
Polish	Polski	http://www.retscreen.net/pl/t2.php
Portuguese	Português	http://www.retscreen.net/pt/t2.php
Romanian	Română	http://www.retscreen.net/ro/t2.php
Russian	Русский	http://www.retscreen.net/ru/t2.php
Spanish	Español	http://www.retscreen.net/es/t2.php
Swedish	Svenska	http://www.retscreen.net/sv/t2.php
Telugu	ఆంగ్లం లము	http://www.retscreen.net/te/t2.php

Appendix B

UTF-8 Charset Encoding Examples

To render language scripts correctly on your website, a mutual agreement about **charset encoding** must be done first. Since RETScreen uses **UTF-8** for characters encoding, your website must be adjusted that way to ensure adequate control strings layout. If UTF-8 for encoding pages is not used, displayed problems might be encountered, especially in language other than English⁴. Examples explaining how to set the charset encoding (**highlighted in yellow**) are given hereafter⁵ for **HTML**, **ASP3**, **ASP.NET**, **PHP**, and **ColdFusion**. For other programming languages not included in those samples, please contact RETScreen International (www.retscreen.net).

HTML

(charset encoding can be specified in html with the *meta* tag)

```
<html>
<head>
<title>Third-party page title</title>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
</head>
...
```

Charset encoding in .htm or .html file.

ASP3

(charset encoding can be done anywhere in the script, but preferably as soon as possible)

```
<html>
<head>
<title>Third-party page title</title>
<meta content="Microsoft Visual Studio .NET 7.1" name="GENERATOR">
<% Response.Charset="UTF-8" %>
</head>
...
```

Charset encoding in .asp file

ASP.NET

(charset encoding can be done anywhere in the script, but preferably as soon as possible)

```
<html>
<head>
<title>Third-party page title</title>
<meta content="Microsoft Visual Studio .NET 7.1" name="GENERATOR">
<% Response.Charset="UTF-8"; %>
</head>
...
```

Charset encoding in .asp file

⁴ Charset controls strings layout and the character to display (e.g. between “?” or “é” for French, “爰” or “中” for Chinese, etc.).

⁵ While UTF-8 is the most compatible encoding to represent most languages, changing the encoding of a website may have impacts, particularly if the content is stored with a specific encoding in a database.

PHP

(the function *header* specifies which charset to use)

```
<?php header('Content-Type: text/html; charset=UTF-8') ?>
<html>
<head>
<title>Third-party page title</title>
</head>
...
```

Charset encoding in .php file.

To avoid any error or warning in your php script, the *header* function must be called before sending or rendering any html content. In the following examples, the PHP engine will raise a warning. A warning is raised because the server already began to send html content to the client browser.

```
<html>
<head>
<title>Third-party page title</title>
<?php header('Content-Type: text/html; charset=UTF-8') ?>
</head>
...
```

Example 1: sending html content before calling *header* function

```
<?
// ...
echo "some stuff";
header('Content-Type: text/html; charset=UTF-8');
// ...
```

Example 2: sending php content before calling *header* function

ColdFusion

(charset encoding can be done anywhere in the script, but preferably as soon as possible)

```
<html>
<head>
<title>Third-party page title</title>
<meta content="Microsoft Visual Studio .NET 7.1" name="GENERATOR">
<cfprocessingdirective pageEncoding="UTF-8">
</head>
...
```

Charset encoding in .cfm file.

Appendix C

Generated HTML Inclusion Examples

To integrate the RETScreen Online Download Table with your website, you must make a server-side query to an external web server. This can usually be done in most server scripting technologies with a few lines of code. Samples for the most used programming languages (highlighted in yellow) are provided hereafter for **ASP 3**, **ASP.NET (C#)**, **PHP (3, 4 & 5)**, and **ColdFusion**. For other programming languages not included in those samples, please contact RETScreen International.

Your server will then act as a proxy between your visitors and the RETScreen server. This process will be transparent and won't be perceived by your visitors while they access the RETScreen products from your website (see **Figure 2**). Note that the space in your page needed to incorporate the RETScreen Online Download Table (e.g. "t2.php") must have a width of 600 pixels and a height of at least 670 pixels, and the inclusion of the generated HTML is language specific, and must be repeated for each language (e.g. English, French, Spanish, etc.) integrated in your website.

ASP 3

Since ASP3 does not have built in functionalities to query content from external web page, a Windows object to query a web page must be created.

1. Add your ASP tag in your .asp file, where you want to integrate the RETScreen Online Download Table.

```
<div>
    
</div>
<div>
    <span class="text">Lorem ipsum dolor sit amet, consectetur adipiscing
        elit. Aenean posuere aliquam libero. Suspendisse ultricies arcu vitae
        enim. Donec consectetur ornare la cus</span>
</div>
<div>
    <% Response.Write GetExternalContent() %>
</div>
<div>
    <label id="lbl1">Lorem ipsum</label>&nbsp;
    <a href="">consectetur adipiscing</a>
</div>
```

Example of necessary code in .asp file

2. Add the function to retrieve the external content in this file.

```
Public Function GetExternalContent()
    Dim objHTTP

    Set objHTTP = Server.CreateObject("Microsoft.XMLHTTP")
    objHTTP.Open "GET", "http://www.etscreen.net/ang/t2.php", false

    ' The previous line can cause a fatal error. This is why
    ' we use "on error resume next" instruction.
    On Error Resume Next

    objHTTP.Send
```

```

` The previous line can cause an error, but not a fatal one.
` In this case, the built-in object Err will be set to a
` number greater than 0.
If Err.Number = 0 Then
    GetExternalContent = objHTTP.ResponseText
Else
    //Insert error handling here
End If

```

End Function

The content of *GetExternalContent* function, with error handling

ASP.NET (C#)

ASP.NET built-in functionalities are used to query content from external web pages.

1. Add a Placeholder control in your .aspx or .ascx file where you want to integrate the RETScreen Online Download Table.

```

<div>
    
</div>
<div>
    <span class="text">Lorem ipsum dolor sit amet, consectetur
        adipiscing elit. Aenean posuere aliquam libero. Suspendisse
        ultricies arcu vitae enim. Donec consectetur ornare la cus</span>
</div>
<div>
    <asp:placeholder id="phRETScreen" runat="server"></asp:placeholder>
</div>
<div>
    <asp:label id="lb11" runat="server">Lorem ipsum</asp:label>&nbsp;
    <asp:linkbutton id="lnk1" runat="server">consectetur
dipiscing</asp:linkbutton>
</div>

```

Example of necessary code in .aspx or .ascx file

2. Add the function to retrieve the external content in your code-behind page (.cs). You will also need to add a using statement for the System.Net and System.IO namespaces.

```

using System.Net;
using System.IO;

//...

protected string GetExternalContent()
{
    WebClient client = new WebClient();
    Stream stream = Client.OpenRead("http://www.etscreen.net/ang/t2.php");

    StreamReader reader = new StreamReader(stream);

    return reader.ReadToEnd();
}

```

Example of code in .cs file

3. In your Page_Load or in the function where you render your content, call the GetExternalContent() function to load the content in the Placeholder control you inserted in the previous step 1.

```
private void Page_Load(object sender, System.EventArgs e)
{
    //do other stuff...
    try
    {
        phRETScreen.Controls.Add(new LiteralControl(GetExternalContent()));
    }
    catch
    {
        //Insert error handling here
    }

    //do other stuff...
}
```

Example of rendering the *placeholder* in a .cs file, with error handling

PHP (3, 4 & 5)

Since PHP does not have built-in functionalities to query content from external web pages, a few lines of code have to be written.

1. Add your PHP tag in your .php file, where you want to integrate the RETScreen Online Download Table. Note that the first two lines (*include_once...* and *function GetExternalContent...*) are mutually exclusive. You must choose if you want to integrate the function directly in your php file or in an external utility file.

```
<?php
include_once($_SERVER['DOCUMENT_ROOT'].'/path/to/your/php/file.php')
/* OR */
function GetExternalContent(){ /* See code in the next table; */ }
?>

<div>  </div>
<div>
    <span class="text">Lorem ipsum dolor sit amet, consectetur
        adipiscing elit. Aenean posuere aliquam libero. Suspendisse
        ultricies arcu vitae enim. Donec consectetur ornare la cus</span>
</div>
<div>
    <?php echo GetExternalContent(); ?>
</div>
<div>
    <label id="lbl1">Lorem ipsum</label>&nbsp;
    <a href="javascript:void(0)">consectetur adipiscing</a>
</div>
```

Example of necessary code in .php file

2. Add the function to retrieve the external content in this file or somewhere else using the *include_once* instruction.

```
function ErrorHandler(){
    // Insert error handling here
}

function GetExternalContent(){
    $content = '';

    set_error_handler('ErrorHandler');
    $filePtr = fopen("http://www.retscreen.net/ang/t2.php", "r");
    restore_error_handler();

    // If an error occurred, the variable $filePtr will be set
    // to an empty string.
    if($filePtr != ''){
        while (!feof($filePtr)){
            $content .= fread($filePtr, 8192);
        }
        fclose($filePtr);
    }
    else{
        $content = "";
    }

    return $content;
}
```

The content of *GetExternalContent* function, with error handling

3. Set the *allow_url_fopen* parameter to “On” in your *php.ini* file.

```
...
;;;;;;;;;;;;;;;;;;;;;;;;
; Fopen wrappers ;
;;;;;;;;;;;;;;;;;;;;;;;;

; Whether to allow the treatment of URLs (like http:// or ftp://) as files.
allow_url_fopen = On

; Define the anonymous ftp password (your email address)
;from="john@doe.com"

; Define the User-Agent string
; user_agent="PHP"
...
```

Part of *php.ini* file. The *allow_url_fopen* parameter must be set to “On”

ColdFusion

ColdFusion has powerful tags that can be used to query content from external web pages.

1. Add these ColdFusion tags in your `cfm` file, where you want to integrate the RETScreen Online Download Table. The `cfhttp` tag lets you fetch the content of the external page. This tag also put the content into a structure called `cfhttp`. The `cfoutput` tag lets you print the content of the `cfhttp` structure into your page. By default, error handling is automatically done in `cfhttp` tag. It will set the `cfhttp` structure to a string like "An error occurred while querying the site". However, if you want to handle errors, you can embed `cfhttp` and `cfoutput` tags into a `cftry` tag. Your handler will be embedded into `cfcatch` tag, as show in previous table.

```
<div>
    
</div>
<div>
    <span class="text">Lorem ipsum dolor sit amet, consectetur
        adipiscing elit. Aenean posuere aliquam libero. Suspendisse
        ultricies arcu vitae enim. Donec consectetur ornare
        la cus</span>
</div>
<div>
    <cftry>
        <cfhttp url="http://www.etscreen.net/multi/t2.php" method="get">
        <cfoutput>#cfhttp.FileContent#</cfoutput>
        <cfcatch type="any">
            <!-- Insert error handling here -->
        </cfcatch>
    </cftry>
</div>
<div>
    <label id="lbl1">Lorem ipsum</label>&nbsp;
    <a href="">consectetur adipiscing</a>
</div>
```

Example of necessary code in .cfm file