



ALTAIR

ONLY FORWARD

VOV Subsystem 2025.1.2

Tutorials

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Generate Custom HTML Reports Using CGI Tutorial

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This chapter covers the following:

- [Job Reports: List](#) (p. 5)
- [Job Reports: Table](#) (p. 6)

Every vovserver has a built-in HTTP interface, which includes the ability to quickly generate customized reports using the CGI (Common-Gateway-Interface) mechanism. This tutorial guides you through the first simple CGI script.

You will write a CGI script that is project specific, and install it in the cgi subdirectory of the server configuration directory:

```
% set cgidir = `vovserverdir -p cgi`  
% echo $cgidir  
/home/someuser/vov/test.swd/cgi # Or similar  
% mkdir $cgidir  
% cd $cgidir  
% vi tutorial.cgi
```

File tutorial.cgi

```
#!/bin/csh -f  
# The rest is -*- Tcl -*-   exec vovsh -f $0 $*  
  
# This is file tutorial.cgi  
  
VOVHTML_START  
HTML {  
    HEAD { TITLE "CGI Tutorial" }  
    BODY {  
        OUT "Hello World"  
    }  
}  
VOVHTML_FINISH
```

The first 3 lines are a common UNIX technique to make this script executable by vovsh, which is the main FlowTracer client. Notice that this script is written in Tcl syntax.

The commands VOVHTML_START and VOVHTML_FINISH are required.

The procedures HTML, HEAD, BODY, and OUT, are defined in the file `$VOVDIR/tcl/vtcl/vovhtmlgen.html` and are a convenient way to generate well formed HTML code. You are not required to write the CGI script in Tcl, only we believe you will find it extremely more convenient to do, especially considering that the FlowTracer API is itself in Tcl.

To satisfy the curious, here is how the same script could have been written without Tcl.

```
#!/bin/csh -f
```

```
# This is the hard way to write a CGI script.  
echo "\r"           # Important empty line!  
echo "<html>"  
echo "<head><title>CGI Tutorial</title></head>"  
echo "<body>Hello World</body>"  
echo "</html>"  
exit 0
```

Make the script executable and use a browser to visit the URL given to you by the command `vovbrowser`.

```
% chmod a+x tutorial.cgi  
% vovbrowser -url /cgi/tutorial.cgi  
http://host:port/cgi/tutorial.cgi
```

Job Reports: List

Use an ordered list

```
#!/bin/csh -f
# The rest is -*- Tcl -*-   exec vovsh -f $0 $*

# This is file tutorial.cgi

VOVHTML_START
HTML {
    HEAD { TITLE "CGI Tutorial" }
    BODY {
        set setId [vtk_set_find "System:jobs"]
        OL {
            foreach job [vtk_set_get_elements $setId "@ID@ @STATUS@ @HOST@" ] {
                LI { OUT $job }
            }
        }
    }
}
VOVHTML_FINISH
```

In this example we introduce two `vtk` procedures:

1. `vtk_set_find` takes a set name and returns its the set id. In this case, the name of the set is "System:jobs" which is a system set.
2. `vtk_set_get_elements` which takes 2 arguments, namely the id of a set and a format string. In this case, the format string asks for the job id, its status, and the host on which the job was executed.

We also show two more HTML procedures, that is OL and LI, which are used to build ordered lists.

Job Reports: Table

Use a table.

```
#!/bin/csh -f
# The rest is -*- Tcl -*-   exec vovsh -f $0 $*

# This is file tutorial.cgi

VOVHTML_START
HTML {
  HEAD { TITLE "CGI Tutorial" }
  BODY {
    set setId [vtk_set_find "System:jobs"]
    TABLE border="1" align="center" {
      foreach job [vtk_set_get_elements $setId "@ID@ @STATUS@ @HOST@" ] {
        set id      [shift job]
        set status  [shift job]
        set host    [shift job]
        TR {
          TH { OUT $host }
          TD { HREF "/node/$id" $id }
          TD { OUT $status }
        }
      }
    }
  }
}
VOVHTML_FINISH
```

In this example we introduce the HTML procedures TABLE, TR, TH and TD, which are used to create tables. The procedure HREF is used to introduce a hyperlink. In this case, the page "/node/XXX" has a detailed description of the node with id XXX.

Finally, in this example we introduce the Tcl procedure shift which is really an Altair Accelerator extension and is used to take the first element from a list while shifting the list left by one.

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