

Wapp

A Library For Writing Web Apps That Are...

- Easy to build
- Easy to maintain
- Powerful
- Secure

<https://wapp.tcl.tk/>

You might benefit from Wapp if...

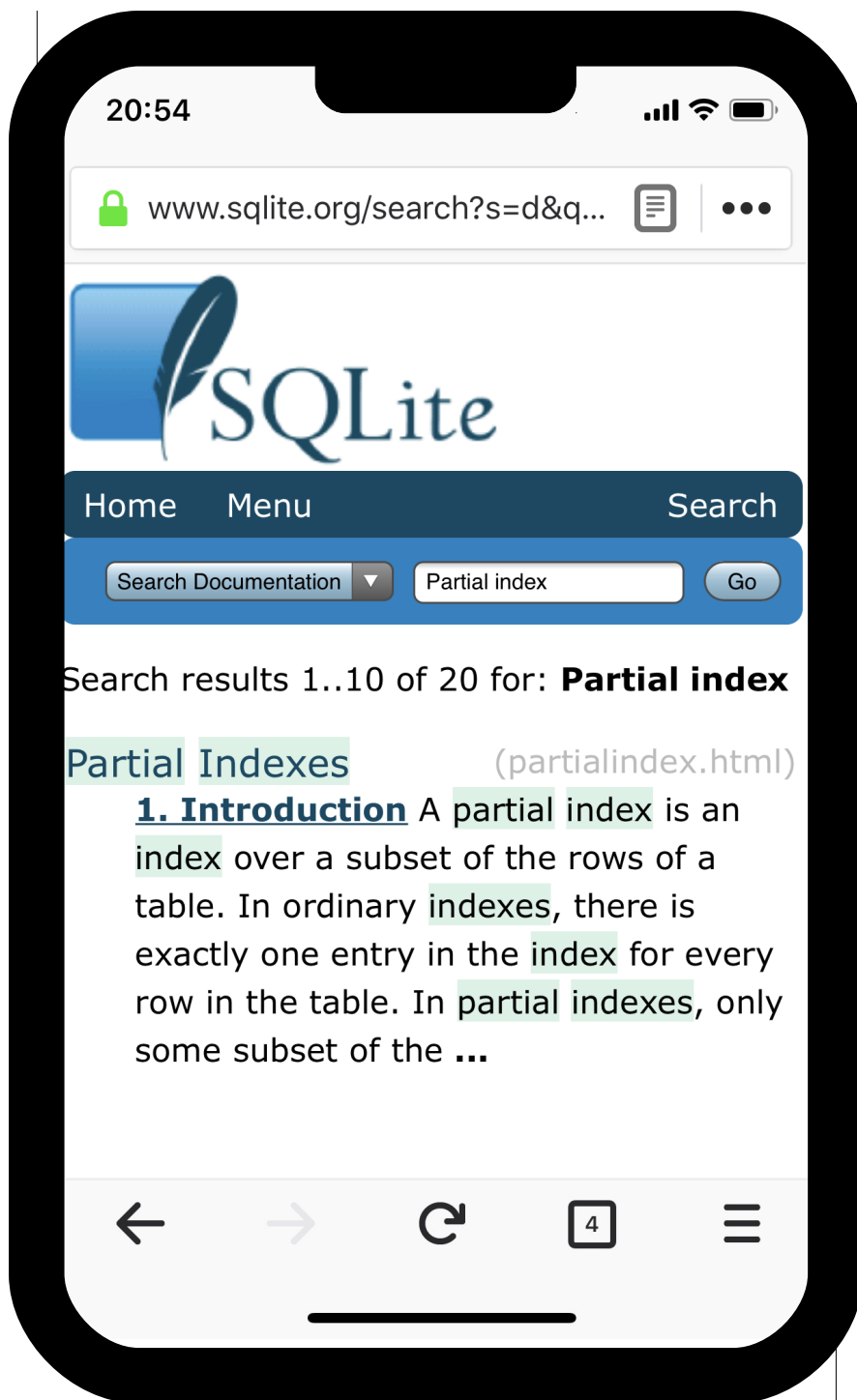
- Your primary job is something other than designing and maintaining websites
- You want a simple platform for experimenting with web technologies
- You need small accessory apps on a larger website
- You need to embed web-based command and control into a larger TCL application
- You don't want to waste time worrying about potential vulnerabilities

Easy To Learn

- Very small API - completely described on a one-page cheat-sheet
 - <https://wapp.tcl.tk/home/doc/trunk/docs/quickref.md>
- “Hello World” is 6 lines of Tcl (2 of which are the `#!` and the “package require Wapp”)
- Requires just “tclsh” (8.6+) and “wapp.tcl”
- Up and running in 5 minutes or less

Flexible, Cross-platform Deployment

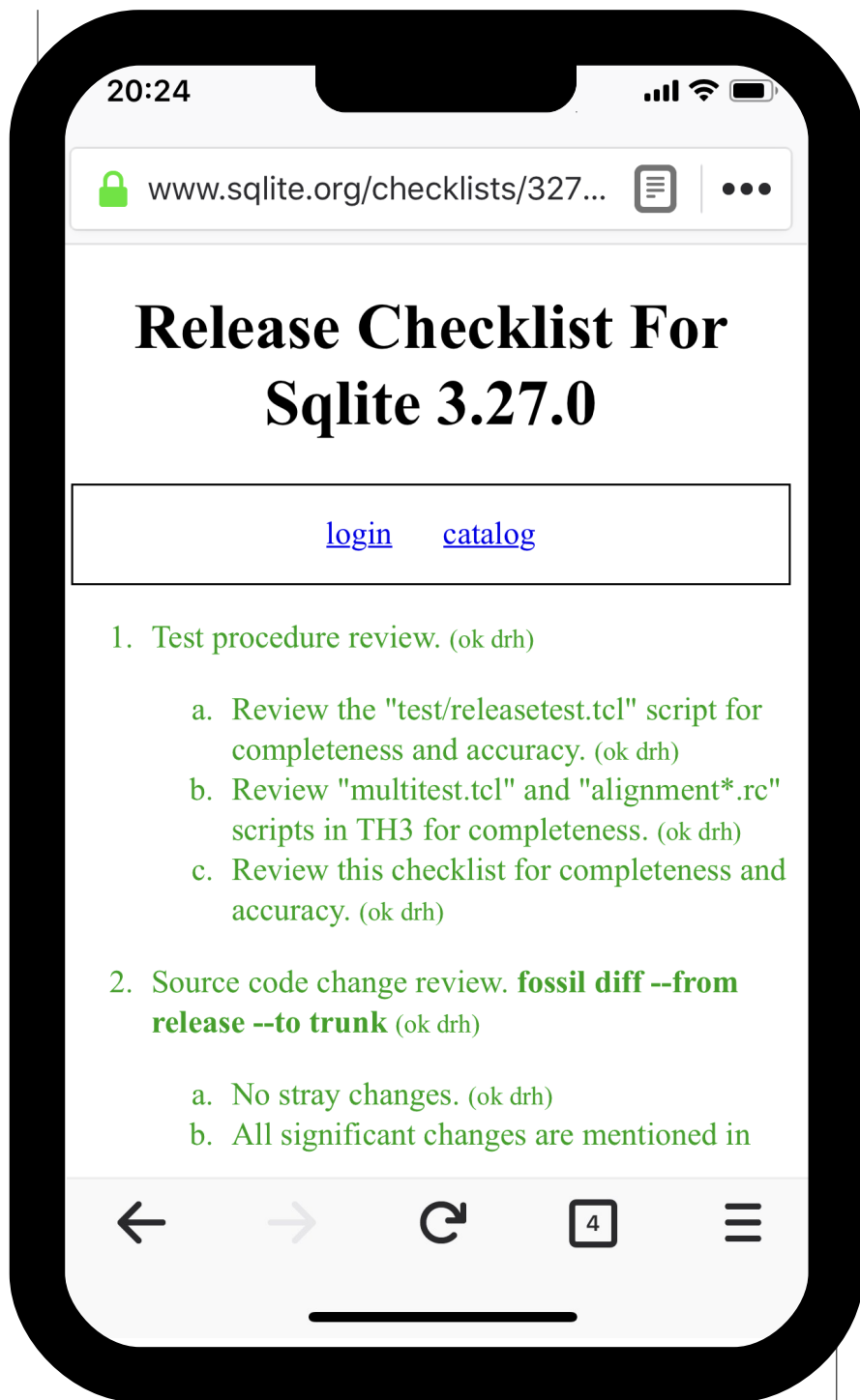
- `tclsh myapp.tcl`
 - Pops up in your desktop web-browser
- `tclsh myapp.tcl --server 8080`
 - Stand-alone server
- `tclsh myapp.tcl --scgi 9001`
 - SCGI server
- Make `myapp.tcl` executable and put it in your CGI directory



<https://sqlite.org/search>

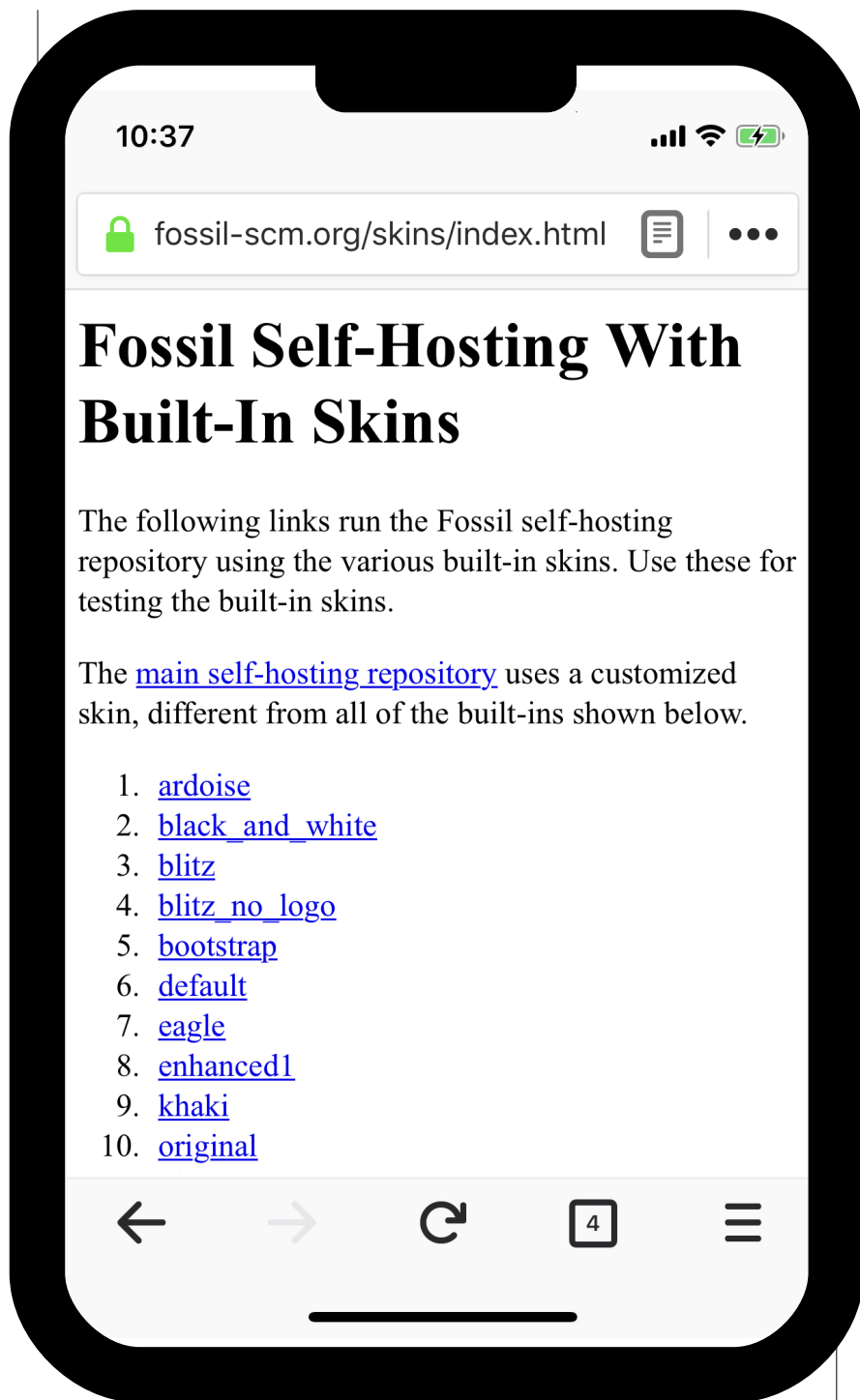
- Originally 353 lines¹ of Tcl with bits of TclLib for decoding CGI
- Converted to 237 lines of Wapp
- Easier to maintain
- Fixed security issues
- Added capabilities
- Now runs stand-alone in addition to CGI

¹ All code size measurements are source-lines-of-code (SLOC), exclusive of whitespace and comments.



<https://sqlite.org/checklists>

- Originally 1737 lines of C code
- Rewritten as 627 lines of Wapp
- Much easier to maintain
- Many new capabilities using XMLHttpRequest
- Cross-platform



<https://fossil-scm.org/skins/>

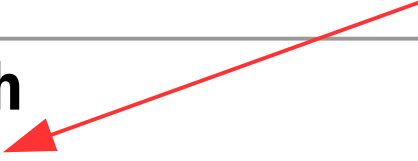
- 28 lines of code, more than half of which is just the text at the top of the webpage.
- Sometimes you just need a page that lists the files in a directory, with hyperlinks and some explanatory text

Hello, World!

*994 lines, 30760 bytes
loads in 250 microsec*

hw.tcl:

```
#!/usr/bin/tclsh
source wapp.tcl
proc wapp-default {} {
    wapp-trim {<h1>Hello, World!</h1>\n}
}
wapp-start $argv
```



tclsh hw.tcl

“Hello, World” plus environment

```
source wapp.tcl
proc wapp-default {} {
    set B [wapp-param BASE_URL]
    wapp-trim {
        <h1>Hello, World!</h1>
        <p>See the <a href='%html($B)/env'>Wapp
        Environment</a></p>
    }
}
proc wapp-page-env {} {
    wapp-allow-xorigin-params
    wapp-subst {<h1>Wapp Environment</h1>\n<pre>\n}
    foreach var [lsort [wapp-param-list]] {
        if {[string index $var 0]=="."} continue
        wapp-subst {%html($var) = %html([list [wapp-param $var]])\n}
    }
    wapp-subst {</pre>\n}
}
wapp-start $argv
```

Parameters

- CGI Variables
 - Query parameters
 - POST parameters
 - Cookies
- 
- wapp-param NAME DFLT
 - wapp-param-exists NAME
 - wapp-param-list
 - wapp-set-param NAME VAL
 - wapp-allow-xorigin-params

Parameters

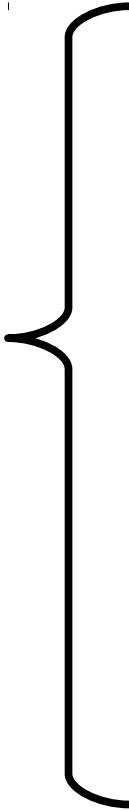
- CGI Variables
 - Query parameters
 - POST parameters
 - Cookies
- 
- BASE_URL
 - DOCUMENT_ROOT
 - REMOTE_ADDR
 - HTTP_USER_AGENT
 - SAME_ORIGIN
 - SELF_URL

Parameters

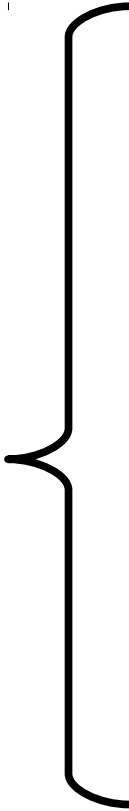
- CGI Variables
- Query parameters
- POST parameters
- Cookies

- 
- Lower-case only - may not impersonate a CGI variable
 - Only if same-origin or if wapp-allow-xorigin-params
 - Automatically decoded

Parameters

- CGI Variables
 - Query parameters
 - POST parameters
 - Cookies
- 
- Automatically decoded
 - x-www-form-urlencoded or form-data
 - Lower-case only

Parameters

- CGI Variables
 - Query parameters
 - POST parameters
 - Cookies
- 
- Automatically decoded
 - Lower-case only

Summary Of API

- wapp-start \$argv
- wapp-subst {TEXT}
- wapp-trim {TEXT}
- wapp-param NAME ?DFLT?
- wapp-set-param NAME VALUE
- wapp-param-exists NAME
- wapp-param-list \$glob
- wapp-allow-xorigin-params
- wapp-mimetype \$type
- wapp-reply-code \$code
- wapp-redirect \$url
- wapp-reset
- wapp-set-cookie NAME VALUE
- wapp-clear-cookie NAME
- wapp-cache-control \$control
- wapp-content-security-policy \$x
- wapp-debug-env

CGI vs Server

- Separate process for each request
- High concurrency
- Higher startup cost
- Every instance in its own address space
- Uses fileevent to handle multiple inputs
- Single-threaded during page generation
- Low per-page startup cost
- Global variables preserved

tcsh or wapptcsh?

- wapptcsh understands “package require Wapp”
- wapptcsh has SQLite3 built-in
- wapptcsh is statically linked and works inside of a chroot jail or other sandbox
- wapptcsh omits script-based commands (ex: clock)

Tcl 8.6 or 8.7

8.6:

```
proc wapp-subst {txt} {  
    global wapp  
    regsub -all {% (html|url|qp|string|unsafe){1,1}? (|%) \((.+)\) \2} $txt \  
        {[wappInt-enc-\1 "\3"]} txt  
    dict append wapp .reply [uplevel 1 [list subst -novariables $txt]]  
}
```

8.7:

```
proc wapp-subst {txt} {  
    global wapp  
    regsub -all -command \  
        {% (html|url|qp|string|unsafe){1,1}? (|%) \((.+)\) \2} $txt wappInt-enc txt  
    dict append wapp .reply [subst -novariables -nocommand $txt]  
}
```

More Examples

- <https://wapp.tcl.tk/demo/self>
- <https://wapp.tcl.tk/demo/fileupload>
- <https://wapp.tcl.tk/demo/tableajax>

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- <https://wapp.tcl.tk/demo/>

Summary

- Wapp simplifies writing and maintaining small utility web applications
 - Small API for a short learning curve
 - Cross-platform
 - Secure by default
 - Full power of TCL
 - Permissive license
- Patches and suggests welcomed!
- <https://wapp.tcl.tk/>



The rest is just backup slides...

20:54

www.sqlite.org/search?s=d&q...[Home](#)[Menu](#)[Search](#)

Search Documentation

Partial index

Go

Search results 1..10 of 20 for: **Partial index**

Partial Indexes

[\(partialindex.html\)](#)

1. Introduction A partial index is an index over a subset of the rows of a table. In ordinary indexes, there is exactly one entry in the index for every row in the table. In partial indexes, only some subset of the ...

Deterministic SQL Functions

2. Restrictions on [\(deterministic.html\)](#)

the use of non-deterministic functions ...

The values of functions in CHECK constraints determines which entries are valid for a table, and functions in the WHERE clause of a partial index or in an index on an



4



20:24



 www.sqlite.org/checklists/327...  

Release Checklist For Sqlite 3.27.0

[login](#) [catalog](#)

1. Test procedure review. (ok drh)
 - a. Review the "test/releasetest.tcl" script for completeness and accuracy. (ok drh)
 - b. Review "multitest.tcl" and "alignment*.rc" scripts in TH3 for completeness. (ok drh)
 - c. Review this checklist for completeness and accuracy. (ok drh)
2. Source code change review. **fossil diff --from release --to trunk** (ok drh)
 - a. No stray changes. (ok drh)
 - b. All significant changes are mentioned in the "changes" log of the documentation. (ok drh)
 - c. New code complies with style guidelines. (ok drh)
 - d. New code complies with design rules. (ok drh)
 - e. Comments have been updated to reflect code changes. (ok drh)
 - f. Variables and functions have been renamed



20:08



 gingerwyrick.com/shoplist/list...



Grocery List

Bread [Got It!](#)

Celery [Got It!](#)

Grits [Got It!](#)

Add

[Common Purchases](#)

[Undelete](#)

[Refresh](#)

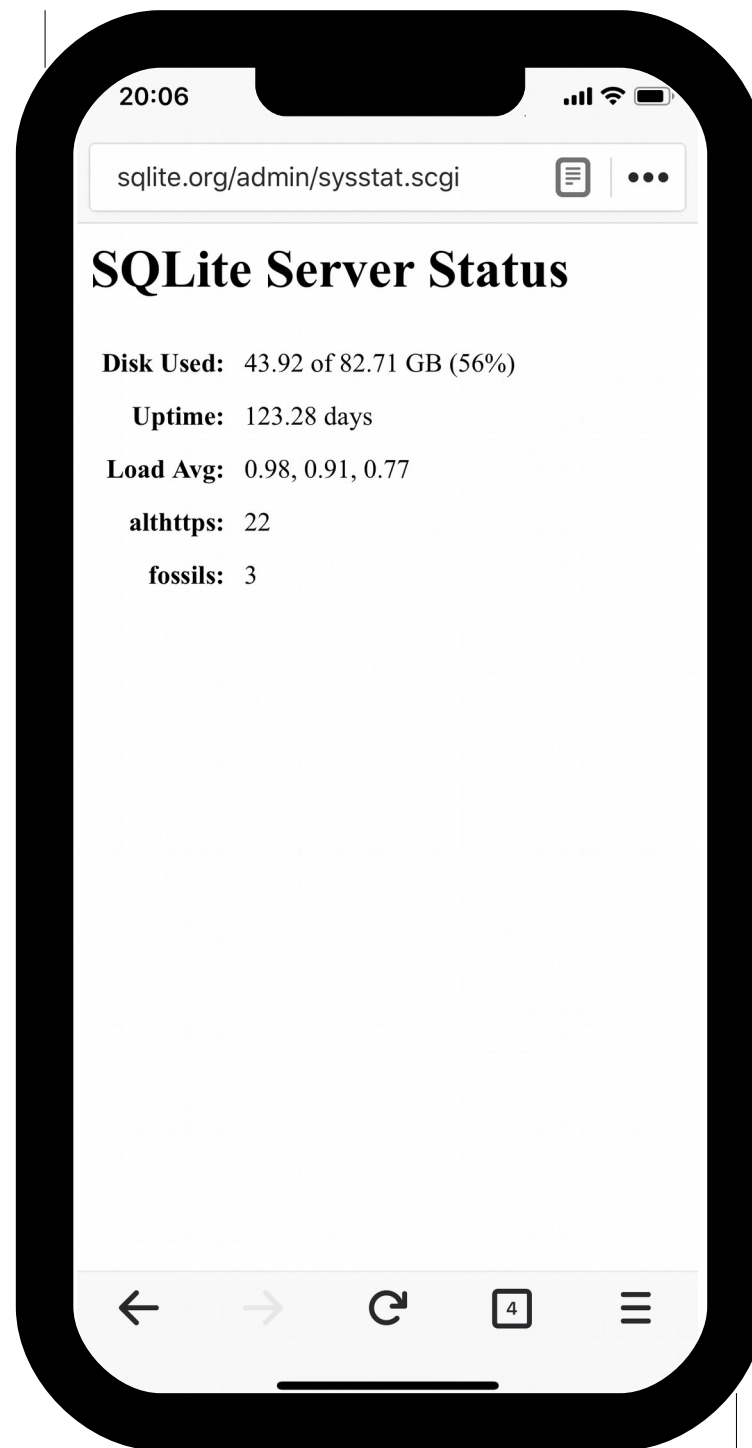
[Edit](#)

[Logout](#)



4





20:54



www.sqlite.org/search?s=d&q...



Home

Menu

Search

Search Documentation ▼

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Search results 1..10 of 20 for: **Partial index**

Partial Indexes

(partialindex.html)

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20:06



sqlite.org/admin/sysstat.scgi



SQLite Server Status

Disk Used: 43.92 of 82.71 GB (56%)

Uptime: 123.28 days

Load Avg: 0.98, 0.91, 0.77

althttps: 22

fossils: 3



20:08



gingerwyrick.com/shoplist/list...



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www.sqlite.org/checklists/327...



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