

Byron Rakitzis

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• OBJECTIVE

I am a filesystem software developer with more than 15 years of experience. My educational background is in physics and I bring a generalist's approach to problem solving. I like to work on new approaches in filesystem scalability and performance. I am also passionate about classical music, and strive to be the best performer that I can be.

• EMPLOYMENT HISTORY

NetApp, Inc.: June 1992–present (with two long absences: 1998–2003, and 2006–2011)

As the first employee, I was responsible for one-third of the code in the company's first product (the FAServer, a dedicated NFS file server). The first generation products ran a proprietary microkernel and NetApp's WAFL (Write Anywhere File Layout) filesystem on top of a RAID-4 array whose control was implemented in software. My work on WAFL and RAID has been protected with the following U.S. patents:

6,480,969: Providing parity in a RAID sub-system using non-volatile memory

6,289,356: Write anywhere file-system layout

6,138,126: Method for allocating files in a file system integrated with a RAID disk sub-system

5,819,292: Method for maintaining consistent states of a file system and for creating user-accessible read-only copies of a file system

Freelance musician: June 1996–present

Since mid-1996 I have devoted part of my time to a career in classical music. After two years of full-time study in the Netherlands I have performed as a freelance flutist, oboist and bassoonist in the following orchestras: Boston's Handel and Haydn Society, the Portland Baroque Orchestra, Vancouver's Pacific Baroque Orchestra, San Francisco's Magnificat and the American Bach Soloists.

V2Green Inc.: September 2007–February 2008

As a part-time employee, I helped to design and implement the embedded software in V2Green's Vehicle-to-grid "Vehicle Control Module": a device which included a utility-grade power meter, power electronics charge control, and a two-way communication protocol with a centralized server.

ClariStor (formerly Agile Storage, Inc.): January 2001–May 2003

As an independent consultant, I helped design and implement the Agile filesystem. I worked closely with the founders on high level design from the earliest days of the company's inception. My work included design and implementation of a B-tree library customized for use with filesystem snapshots, as well as performance tuning for the SPEC SFS benchmark.

Jive Technology: November 1995–January 1996

I implemented a two-pass Just In Time (JIT) compiler for Java bytecodes to SPARC and x86 targets. The compiler stressed speed of compilation so that there was a considerable payoff even for Java methods being called just once. The code generator had hooks for running inside Sun's JDK and was used by Jive Technology as a proof-of-concept demonstration of the viability of its compiler products.

Texas A&M University: September 1990–June 1992

I worked as the Unix system administrator for the Visualization Laboratory of the College of Architecture. I supported a heterogeneous network of Sun-2, Sun-3, SGI and NeXT workstations. I was responsible for maintaining backups, postmaster and Usenet administration duties, as well as for offering such help as informal tutorials on shell programming.

• EDUCATION

Bachelor of Arts in Physics from Princeton University (1990).

Music student at the Utrecht Conservatorium, the Netherlands, 1996–1998.

Part-time student in Electrical Engineering, University of Washington, 2007–2008:

(I took coursework at the University of Washington to fulfill the background requirements for admission to the graduate program in Electrical Engineering. My coursework included topics on electrical generation and distribution, as well as the fundamentals of circuit design.)

Masters student in Electrical Power Engineering, Technical University of Delft, 2009–2011:

(I followed two years of the MS program with the notion of following a career in renewable energy, but ultimately I abandoned the program.)

• SOFTWARE SKILLS

Most of my work has been in the Unix/C environment. I am very familiar with cross-compilers and remote debugging of embedded systems. I have done extensive tuning of operating system software for performance — from the algorithmic level down to optimizing sequences of machine instructions. I'm also fluent in scripting languages (shell, perl). I have used Java more recently, but not yet for any large projects. I have tinkered with window systems, graphics, font design, and compiler design. I enjoy making “tools to make tools”.

• PUBLISHED WORK AND SOFTWARE

Paul Haahr and Byron Rakitzis, Es: A shell with higher-order functions, Proceedings of the Winter 1993 Usenix Technical Conference.

A free implementation for Unix of the Plan 9 shell *rc*.

An implementation of Gerard Holzman's *pico* picture editor with on-the-fly compilation for SPARC and MIPS targets.

Winner (Best Utility category) in the 1990 Obfuscated C Programming Contest (IOCCC):

```
#define D ,close(
char          *c,q          [512          ],m[          256
],*v[          99],**u,          *i[3 ];f[          2],p; main          () {for
(m[m          [60]= m[62          ]=32          ]=m[*          m=124          [m]=          9]=6;
e(-8)          ,gets          (1+(          c=q          )||          exit          (0);          r(0,0)
)for(          ;*++          c;); }r(t,          o){          *i=i          [2]=          0;for
(u=v          +98          ;m[*--c]          ^9;m          [*c]          &32          ?i[*c
&2]=          *u,u-          v^98          &&+u:
3          )if(!m[*c]){for(*++c=0;!m[*--c]);}
*          --u= ++c; }u-v^98?strcmp(*u,"cd"?*c?pipe(f),o=f[
1          ]:
4          ,(p=fork())?e(p),o?r(o,0)D o)D*f):
1          ,wait(0):(o?dup2(*f,0)D*f)D o):*i?
5          D 0),e(open(*i,0)):
9          ,t?dup2(t,1)D t):i[
2          ]?
6          D 1),e(creat(i[2],438)):
5          ,e(execvp(*u,u)):e(chdir(u[1])*2):
3          ;}e(x){x<0?write(2,"?\n$ "-x/4,2),x+1||exit(1):
5          ;}
```