Byron Rakitzis

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Storage software expert with more than 20 years' experience. Works on new approaches to scalability and performance. Uses a generalist's approach to problem solving. Helped bring a Fortune 500 company from inception to IPO.

EMPLOYMENT

Amazon Web Services (Seattle, WA)

Principal Engineer, S3/Glacier   2020–present

Amazon's Principal Engineer role has broad scope. Among many others, my duties and activities include: oversight of all hardware and software initiatives in Glacier; mentoring junior and senior engineers; working with the go-to-market team on defining new cutomer-facing features for Glacier; working with the finance team to define cost-saving priorities for Glacier; evaluating investment opportunities for the corporate development team. My "wins" in 2021 included:
- Optimization of Glacier transcoding path, reducing network and CPU cost by 75%
- Specification of Glacier's next-generation low-cost storage platform
- Coordination of cross-cutting initiatives for CO_2 reduction in S3/Glacier (Amazon Climate Pledge)

Igneous, Inc. (SaaS startup for file-based backups — Seattle, WA)

Co-founder and Storage Architect   2013–2020
- Wrote Go code for all aspects of Igneous' on-premise and cloud-resident data protection and scanning system
- Architected and implemented Igneous' novel Reed-Solomon-protected cold storage array
- Implemented ultra-fast backup and restore (bulk copy) of storage volumes to/from the cloud
- 8 patents awarded. Notable patents:
    9,210,735: Distributed storage data repair via partial data rebuild[...]
    9,116,833: Efficiency for erasure encoding
    9,075,773: Prioritized repair of data storage failures

NetApp, Inc. (First storage appliance company — Sunnyvale, CA)

Principal Software Engineer   2011–2013
- Architected the extent store for NetApp's all-flash array
- Implemented the first version of the extent store in C++
- 4 patents awarded

Senior Software Engineer   2003–2006
- Helped develop the proprietary RPC layer for NetApp's cluster mode product

Software Engineer   1992–1998
- First non-founding employee of the company.
- Helped the company achieve its first customer ship (1993) and then all the way to IPO (1995)
- Authored approximately one-third of the C code contained in the first shipping product
- Designed and implemented NetApp's novel NVRAM-backed RAID-4 implementation
- 4 patents awarded

V2Green Inc. (Electric vehicle charge-management startup — Seattle, WA)

Software Engineer   2007–2008
- Designed and implemented embedded software in V2Green's vehicle-to-grid control module

ClariStor (SAN filer startup — Cupertino, CA)

Software Engineer   2001–2003
• Designed and implemented B-tree library customized for use with filesystem snapshots

Jive Technology (Java software consultancy — San Francisco, CA)   1995–1996

• First-ever Just-In-Time compiler of Java bytecodes for SPARC and x86 targets

SKILLS

• Unix/C, C++, Go
• Cross-compilation / remote debugging / embedded systems
• Performance analysis and tuning: algorithmic all the way to low-level instruction sequencing
• Scripting languages (author of three Unix shells)
• Enjoy making "tools to make tools"

PUBLISHED WORK AND SOFTWARE
Paul Haahr and Byron Rakitzis, Es: A shell with higher-order functions (Usenix, 1993)
Open source implementation for Unix of the Plan 9 shell *rc*
Open source implementation of Gerard Holzman's *pico* picture editor with on-the-fly compilation for SPARC and MIPS targets.

EDUCATION
University of Washington, MSEE (2008–incomplete)
Utrecht Conservatory, baroque flute performance (1998)
Princeton University, AB Physics (1990)

TRIVIA
GeekWire "Geek of the Week" (2017)
Winner, "Best Utility", International Obfuscated C Code Contest (1990):


```
#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       ;}
```