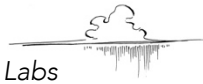


## HIRING

Contractor | Backend Deployment & DevOps Architect | *Virga Labs*



## WHO WE ARE

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Virga Labs is a mission-driven natural water and resource consulting firm, based in Tucson, Arizona. We focus on delivering integrated modeling, analysis, and data visualization tools to drive solutions to wicked problems and the intersection of water, climate, and society.

We develop data-focused products at the local and regional scales, ranging from public-facing dashboards with high traffic to smaller bespoke customer-specific analyses and tools. Our products are designed to support decision-making, communicate water-related climate risks, detail economic impacts associated with climate risk, and visualize potential solutions.

We are a small cohesive team who thrives on strong communication, emotional intelligence, and a foundational desire to engage in some of the West's most pressing work. We foster a culture of respect driven by celebrating individual strengths, encouraging vulnerability, and supporting the personal and professional growth of team members. Our team is made up of individuals with a diverse set of skills and backgrounds who are committed to making the best available data come to life through dynamic tools and visualizations that make the information and resources more useful, accessible, and impactful.

We look for individuals who are looking to be on the forefront of data tool development to answer our most pressing water and climate issues and who are looking to collaborate with a highly driven team who shares in that passion. We believe connection is at the heart of our ability to work together and tackle the difficult but critical work we engage in and we are looking for individuals who are interested in engaging on that level, whether that be connecting one-on-one throughout the week or engaging in a group meditation. As a growing company each role at Virga Labs is unique, but all require a desire for a high degree of collaboration with a small team, the ability to listen, learn, teach, and compromise, and a willingness to roll with changing needs and priorities.

## YOUR ROLE

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Contractor will work with the Virga Labs team to help develop and improve cloud deployments and backend architecture for production-grade R Shiny apps in development. Specifically creating, managing, documenting, and maintaining a secure, cost-effective, load balanced R Shiny application back-end in any appropriate language and the Docker files, databases, and AWS cloud services for the project.

### Specific Duties

- Collaborate with Data Scientists and R Developers to design and implement best solutions for our needs
- Ensure a high performing database environment by developing a database server architecture that may consist of multiple connected databases
- Build Docker containers for Shiny app deployment
- Build Github Actions for continuous integration and testing
- Develop containers to automate desktop-based Windows software runs (Riverware, RiverSMART)
- Develop container deployment processes (e.g. AWS ECS) with appropriate systems to balance costs and create optimal user experience
- Help perform installation, configuration, and maintenance of database management systems
- Build/maintain database schema, tables, procedures, and permissions

- ▷ Establish and enforce database security best practices
- ▷ Perform Data Warehousing and Business Intelligence
- ▷ Develop/maintain database utilities and automate cost, usage and performance reporting & estimation
- ▷ Leverage expertise in highly efficient back-end deployment & architecture to collaborate directly with development teams to architect back-end design schema and make code suggestions related to database queries
- ▷ Continually monitor database availability, usage, job scheduling, clustering, replication, and failover
- ▷ Assist with development of a centralized authentication system for Virga Labs clients that manages access to their apps and specific client permissions
- ▷ Streamline and centralize logging of load-balancing frameworks, Docker containers and R Shiny sessions across all Virga Labs AWS deployments
- ▷ Design and implement an effective backup/recovery strategy
- ▷ Design and implement an effective credential management and data security strategy
- ▷ Automate routine administrative tasks
- ▷ Design, develop, and maintain bash scripts to automate continuous deployment
- ▷ Assist with developing guidelines for ETL best practices in an AWS environment
- ▷ Evaluate and recommend new and emerging database management technologies to enable the use of related developmental tools and techniques

### Preferred Skills and Experience

- ▷ 3+ years of DevOps and/or backend engineering experience or equivalent years of relevant education and experience. Related education should be in Computer Science, Engineering, Data Management, or other quantitative field
- ▷ Prior experience maintaining databases in AWS and associated cloud deployment technologies (Docker, ECS, RDS) and/or Microsoft Azure equivalents
- ▷ Prior experience developing infrastructure for R Shiny applications
- ▷ Prior experience in Data Modeling and Data Normalization with the ability to manage multiple databases
- ▷ Strong knowledge of theory and concepts related to network and object-oriented database systems including thorough knowledge of database design
- ▷ Mastery of multitasking and high-level time management skills
- ▷ Comfort communicating at both technical and executive levels of detail, especially explaining complex topics to those new to the subject area
- ▷ Effective communication skills and high degree of emotional intelligence
- ▷ Ability to work in a highly collaborative and inclusive environment

### DETAILS

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*Timing* | August 2022 - June 2023

### APPLY

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Applicants should send a resume in PDF format to: [info@virgalabs.io](mailto:info@virgalabs.io) please indicate "Backend Deployment & DevOps Architect" in the subject line. Applications will be reviewed on a rolling basis and be accepted until position is filled, with preference given to candidates who apply before August 5<sup>th</sup>, 2022.