

## HIRING

Contractor | Back-end Deployment & Database Architect | *Virga Labs*



## KEYWORDS

---

R; Shiny; Docker; YAML; AWS; Relational database architect; Database engineering & administration

## WHO WE ARE

---

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.

## YOUR ROLE

---

Contractor will work with the Virga Labs team to develop Docker deployments and design database architecture for R Shiny apps in development. Specifically managing, documenting, and maintaining a secure, cost-effective, load balanced R Shiny application back-end 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 files for containerized Shiny app deployment
- Build Github Actions for continuous integration and testing
- Develop containers to automate desktop based Windows software runs (Riverware, RiverSMART)
- 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
- Design and implement an effective backup/recovery strategy
- Automate routine administrative tasks
- Design, develop, and maintain a wide array of extract, transform, and load operations in R, Python &/or SQL
- Evaluate and recommend new and emerging database management technologies to enable the use of related developmental tools and techniques

## Preferred Skills and Experience

- ▷ 5+ years of database administration and development experience or a combination of five 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

## PROJECT TIMEFRAME

---

May 2022 - March 2023

## APPLY

---

Applicants should send a cover letter and resume combined as a single document in PDF format to: [info@virgalabs.io](mailto:info@virgalabs.io) please indicate "Back-end Deployment & Database Architect application" 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 May 8, 2022.