The Wyoming FROST Act: Leading the Nation in Open Government Technology

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Introduction

The Wyoming "Free, Open Source and Transparent" (FROST) Act represents a bold legislative proposal aimed at fundamentally reshaping how Wyoming state and local government entities interact with technology. This proposed state law would mandate that all taxpayer-funded departments and organizations throughout Wyoming transition away from proprietary, licensed software solutions toward free and open source alternatives. Additionally, the Act would establish new standards for transparency in government communications and transactions, creating a more accountable public sector that serves as a national model for digital governance.

A government that hides its code from its citizens cannot claim to be truly transparent, just as a democracy that outsources its technological sovereignty cannot claim to be fully independent.

I. Background: The Need for Change in Wyoming

A. The Proprietary Software Problem in Wyoming

Currently, Wyoming state agencies, counties, municipalities, and school districts spend millions annually on proprietary software licenses, maintenance fees, and vendor lock-in arrangements. Microsoft Windows dominates approximately 85% of government workstations across the state, creating dependencies that limit competition and innovation while draining public resources that could be better invested in Wyoming communities. These arrangements not only represent significant ongoing costs but also create technological dependencies that can compromise the state's autonomy and security.

B. Wyoming's Transparency Opportunity

Despite Wyoming's strong tradition of open government, current technological practices often obscure government operations from citizens. Proprietary systems frequently hide how data is handled, stored, and shared, while closed-source code prevents independent security audits. Wyoming has the opportunity to lead the nation by aligning its technological practices with its values of transparency and citizen engagement.

II. Key Provisions of the Wyoming FROST Act

A. Open Source Software Mandate

- 1. Prohibits the procurement of proprietary licensed software in all Wyoming state agencies, counties, municipalities, and school districts when viable open source alternatives exist
- 2. Requires the phased replacement of Microsoft Windows with open source operating systems (e.g., Linux distributions) across all government workstations and servers statewide
- 3. Establishes a 4-year transition period for full implementation, with annual benchmarks for compliance

B. Government Transparency Requirements

- 1. Mandates that all non-confidential government communications and transactions be stored in accessible, machine-readable, open formats
- 2. Creates the Wyoming Open Government Data Portal where citizens can access government documents, communications, and transaction records from all participating entities
- 3. Establishes uniform standards for data retention, accessibility, and machine readability across all Wyoming government entities
- 4. Requires the establishment of publicly addressable Git-based code repositories for all government-developed software, applications, and scripts, excluding only those containing security-sensitive information
- 5. Mandates that all government software development follow open source licensing practices, making code freely available for public inspection, audit, and reuse
- 6. Implements self-hosted blockchain systems for creating immutable audit trails of government transactions, document modifications, and administrative decisions
- 7. Requires blockchain-based timestamping and verification for all official government documents and communications to ensure integrity and prevent tampering
- 8. Establishes smart contract capabilities for automating transparent government processes such as procurement, licensing, and regulatory compliance

C. Implementation Framework

- 1. Creates the Wyoming Office of Open Technology (WOOT) within the Department of Enterprise Technology Services to oversee the transition and provide technical support
- 2. Establishes grants for counties, municipalities, and school districts to facilitate compliance
- 3. Funds expanded training programs for Wyoming government IT staff through partnerships with the University of Wyoming and Wyoming community colleges

D. Infrastructure Management and Workforce Development

1. Mandates a strategic transition from on-premise hardware to virtualized and service-oriented architecture where appropriate for Wyoming government entities

- 2. Requires the express use of microservices architecture when feasible for hosting web applications and web services, promoting modularity, scalability, and reduced vendor dependencies
- 3. Mandates the implementation of Secure DevOps practices including continuous integration/continuous deployment (CI/CD) pipelines, automated security testing, and code review processes for all software development
- 4. Requires the establishment of self-hosted blockchain infrastructure using open source blockchain platforms for document integrity, audit trails, and transaction transparency where applicable
- 5. Requires each government organization to maintain direct accountability for their information systems within their budgets
- 6. Mandates the establishment and maintenance of IT departments staffed with qualified engineers for routine maintenance and troubleshooting
- 7. Places strict limitations on outsourcing to large consulting firms, with caps of 25% of IT budget allocated to external consultants
- 8. Creates incentives for hiring and training Wyoming residents as IT professionals, including apprenticeship programs and educational partnerships with Wyoming institutions
- 9. Establishes competitive technical career paths within Wyoming government service to attract and retain talent in the state
- 10.Requires government IT staff to receive training and certification in Secure DevOps methodologies, version control systems, blockchain technologies, and collaborative software development practices

III. Benefits of the Wyoming FROST Act

A. Economic Advantages for Wyoming

- 1. Elimination of recurring license fees across all Wyoming government entities
- 2. Reduced hardware requirements allowing extended use of existing equipment
- 3. Competitive bidding for support contracts rather than vendor lock-in
- 4. Innovation through collaborative development with other states and communities
- 5. Microservices architecture enabling incremental upgrades and replacements, reducing the cost of major system overhauls
- 6. Improved system reliability through distributed architecture, reducing downtime costs and maintenance expenses
- 7. Secure DevOps practices reducing deployment time, minimizing human error, and decreasing the cost of bug fixes through early detection
- 8. Automated testing and deployment processes reducing manual labor costs and improving development efficiency
- 9. Self-hosted blockchain systems eliminating expensive third-party verification and audit services
- 10.Smart contract automation reducing administrative overhead and manual processing costs for routine government transactions

11.Reduced fraud and compliance costs through cryptographically verifiable audit trails

Conservative estimates suggest Wyoming state and local governments could save \$15-25 million annually after the transition period, representing significant savings for a state of Wyoming's size.

B. Job Creation and Workforce Development in Wyoming

- 1. Estimated creation of 200-350 new technical positions within Wyoming government entities
- 2. Development of local technical talent through Wyoming-sponsored training programs
- 3. Retention of Wyoming graduates by creating attractive technology career paths in-state
- 4. Creation of new business opportunities for Wyoming-based technology firms focused on open source support and implementation
- 5. Investment in Wyoming's technological self-sufficiency and reduced dependence on out-of-state technology corporations
- 6. Positioning Wyoming as a leader in government technology innovation
- 7. Creation of specialized blockchain development and administration positions, establishing Wyoming as a pioneer in government blockchain implementation
- 8. Development of smart contract auditing and security expertise within Wyoming government
- 9. Training programs for blockchain technology creating a skilled workforce that can support both government and private sector blockchain initiatives

C. Security Enhancements

- 1. Transparent code allows for independent security audits by Wyoming institutions
- 2. Rapid community-led patching of vulnerabilities
- 3. Reduced risk of backdoors or hidden vulnerabilities
- 4. Greater control over Wyoming government data storage and transmission
- 5. Microservices architecture providing improved security isolation, limiting the impact of potential breaches to individual services rather than entire systems
- 6. Enhanced ability to apply security updates to specific services without affecting the entire application ecosystem
- 7. Secure DevOps practices ensuring automated security testing, vulnerability scanning, and compliance checks throughout the development lifecycle
- 8. Version control and audit trails through Git repositories providing complete accountability for all code changes and deployments
- 9. Continuous monitoring and automated security response capabilities built into the development and deployment pipeline
- 10.Blockchain-based immutable audit trails preventing tampering with government records and providing cryptographic proof of data integrity
- 11.Distributed consensus mechanisms ensuring data authenticity and reducing single points of failure in critical government systems
- 12. Enhanced identity and access management through blockchain-based authentication systems

D. Democratic Accountability and Wyoming Values

- 1. Enabling more effective citizen oversight of government operations
- 2. Providing Wyoming researchers and journalists with better access to government activities
- 3. Creating a culture of accountability within Wyoming government
- 4. Aligning technological practices with Wyoming's democratic principles and open government traditions
- 5. Allowing citizens, developers, and security researchers to inspect, audit, and contribute to government software through public code repositories
- 6. Providing complete transparency in how taxpayer-funded software is developed, maintained, and deployed
- 7. Enabling collaborative improvement of government services through community contributions and peer review
- 8. Blockchain-based systems providing citizens with cryptographic proof that government records have not been altered or tampered with
- 9. Real-time transparency of government transactions and decisions through blockchain audit trails accessible to the public
- 10.Enhanced voter confidence in government processes through verifiable, immutable recordkeeping
- 11.Smart contract implementation ensuring consistent, transparent application of government policies and procedures

IV. Implementation Challenges and Considerations

A. Technical Transition

- 1. Legacy system compatibility and data migration across diverse Wyoming entities
- 2. Training requirements for government employees throughout the state
- 3. Initial deployment and support infrastructure appropriate for Wyoming's geography
- 4. Application compatibility and alternatives suitable for Wyoming's specific needs

B. Infrastructure Transformation

- 1. Wyoming government organizations must develop plans for appropriate virtualization and cloud adoption using open source technologies
- 2. Data sovereignty must be maintained, with clear requirements that Wyoming government data remains under Wyoming control
- 3. Agency-specific requirements for computing performance, security, and reliability must guide infrastructure decisions
- 4. Internal expertise must be developed for each infrastructure model adopted, with consideration for Wyoming's rural geography
- 5. Microservices architecture implementation must include proper service discovery, load balancing, and monitoring systems using open source solutions

- 6. Government entities must develop containerization strategies using open source platforms (such as Docker and Kubernetes) to support microservices deployment
- 7. API standardization across Wyoming government services must be established to ensure interoperability and data sharing between agencies
- 8. Secure DevOps pipelines must be implemented using open source CI/CD tools (such as Jenkins, GitLab CI, or similar) with automated testing, security scanning, and deployment processes
- 9. Git-based version control systems must be established for all code, configuration files, and infrastructure-as-code implementations
- 10.Code review processes and pull request workflows must be implemented to ensure quality control and security compliance before deployment
- 11.Self-hosted blockchain networks must be implemented using open source platforms (such as Hyperledger Fabric, Ethereum, or similar) with appropriate consensus mechanisms for government use
- 12.Blockchain nodes must be distributed across Wyoming government entities to ensure redundancy and prevent single points of failure
- 13.Smart contract development and deployment procedures must be established with proper testing, auditing, and governance frameworks
- 14.Integration between blockchain systems and existing government databases must be planned and implemented securely

C. In-House Technical Capacity

- 1. Each organization must maintain minimal staffing ratios of qualified IT professionals relative to system size and complexity
- 2. Wyoming agencies must establish competitive salary structures and career advancement opportunities for technical staff
- 3. Educational partnerships with the University of Wyoming, Wyoming community colleges, and technical schools must be established to create talent pipelines
- 4. External consultants can only be engaged for knowledge transfer, specialized projects, or temporary capacity needs, not routine operations

D. Exemption Framework

- 1. Public safety applications without viable open source alternatives
- 2. Specialized educational or scientific software without open equivalents
- 3. Temporary exemptions where immediate transition would cause significant disruption to essential services
- 4. Systems required for federal compliance where open source alternatives are not acceptable

E. Cost of Transition

- 1. Technical infrastructure upgrades across Wyoming's diverse government entities
- 2. Staff training and certification programs
- 3. Migration services and support

4. Temporary parallel systems during transition

V. Addressing Potential Criticisms

A. "Wyoming Is Too Small for This Initiative"

Wyoming's smaller scale actually makes it an ideal testing ground for comprehensive open source adoption. The state can implement changes more quickly and efficiently than larger states, creating a model for others to follow while demonstrating Wyoming's leadership in innovation.

B. "Rural Areas Can't Support This Technology"

Open source solutions often require less bandwidth and can run on older hardware, making them more suitable for rural environments than resource-intensive proprietary alternatives. Additionally, the FROST Act's emphasis on local technical capacity ensures support is available throughout Wyoming.

C. "We'll Lose Access to Expert Support"

By building internal capacity and creating competitive technical career paths in Wyoming government service, agencies will develop greater expertise than what is typically provided by vendor support contracts. This also keeps technology jobs and expertise within Wyoming.

D. "The Transition Costs Outweigh Benefits"

While upfront costs exist, the long-term savings are substantial for Wyoming. The FROST Act's phased implementation allows costs to be spread over multiple budget cycles, while savings accumulate permanently once the transition is complete.

E. "This Threatens Private Sector Innovation"

The Wyoming FROST Act applies only to government procurement and would actually expand opportunities for Wyoming-based innovative companies to compete for government contracts without the barrier of established vendor relationships.

F. "Total Transparency Creates Security Risks"

The Act includes appropriate exemptions for genuinely sensitive information while focusing transparency on information that should already be accessible to Wyoming citizens under existing laws.

G. "Blockchain Technology Is Too Complex and Unproven for Government"

Wyoming has already established itself as a blockchain-friendly state with comprehensive cryptocurrency and blockchain legislation. The FROST Act builds on this foundation by implementing mature, open source blockchain platforms that have been proven in enterprise environments. Self-hosted blockchain systems provide greater security and control than traditional centralized databases while offering unprecedented transparency and auditability.

VI. Conclusion: Wyoming Leading the Digital Future

The Wyoming FROST Act represents an opportunity to position Wyoming as a national leader in open government technology while realigning state and local government technology practices with Wyoming values of independence, fiscal responsibility, and transparency. By embracing open source solutions and strengthening transparency, Wyoming government at all levels can better serve citizens while reducing costs and enhancing security.

This transformation would establish Wyoming as a model for other states and create new opportunities for innovation and collaboration between government, citizens, and Wyoming's growing technology sector. The Wyoming FROST Act is not merely a procurement policy but a fundamental reimagining of how Wyoming government can operate in the digital age—open by design, transparent by default, and accountable to the people of Wyoming.

When Wyoming entrusts millions of taxpayer dollars to systems we cannot examine, maintained by vendors we cannot replace, we are not practicing the fiscal responsibility our citizens expect—we are surrendering technological sovereignty. The Wyoming FROST Act is not simply about software choice; it is about Wyoming reclaiming democratic control over the digital infrastructure that increasingly shapes our civic life.

This article represents a proposal for potential Wyoming state legislation and does not reflect any current bills before the Wyoming Legislature.