IDENTIFICATION

Department	Position Title	
Environment and Climate Change	Wildfire Software Architect	
Position Number	**Community**	**Division/Region**
23-17336	Fort Smith	Forest Management / HQ

PURPOSE OF THE POSITION

The Wildfire Software Architect is responsible for planning, developing, deploying, and managing software solutions and information management systems within the Forest Management Division (FMD) and on external projects, as required. The Wildfire Software Architect is highly skilled in computer programming and is expected to develop and manage web-based software, including certification and training systems, decision support tools, and the production of corresponding training and documentation resources. The position provides technical support and timely solutions to complex software needs for FMD headquarters, its five (5) regional offices, and six (6) air tanker bases.

SCOPE

Located in Fort Smith and reporting to the Team Lead, Information Systems (Team Lead), the Wildfire Software Architect plans and undertakes software development projects and assignments, including interfaces and applications within the FMD, ensuring implemented solutions meet the anticipated business requirements. Services are delivered on behalf of Northwest Territories (NWT) Fire Operations and Forest Management programs. Projects and initiatives range from simple to extremely complex and have significant organizational, financial, and reputational risks.

The Wildfire Software Architect is an expert on software development, ensuring the planning, designing, creation, amending, verification, testing and documentation of new and amended software components in order to deliver agreed value to stakeholders. The position assists in the identification, creation and application of agreed software development and security standards and processes. The position adopts and adapts software development lifecycle models based on the context of the work and selects appropriately from predictive (plan-driven) approaches or adaptive (iterative/agile) approaches. The incumbent ensures software solutions are designed and developed to meet complex Divisional needs.

The position collaborates with the FMD Fire Geomatics Analyst and the Forest Planning Officer

to ensure consistent protocols, approaches, and standards throughout the organization. The incumbent may provide guidance and supervision to temporary project staff and contractors on an as-needed basis.

The position operates under limited direction, using individual discretion in identifying and responding to complex issues and assignments. It accepts guidance and has work reviewed at agreed milestones. The position holder uses its discretion to determine when issues should be escalated to a higher level.

There is a requirement for security and privacy in their own work and the operation of the organization. The position seeks specialist security and privacy knowledge or advice when required to support their own work or the work of immediate colleagues.

The position plans, schedules and monitors its own work within limited project deadlines and according to relevant legislation, standards, and procedures.

RESPONSIBILITIES

1. **Takes technical responsibility across all stages and iterations of software development.**
   - Plans and drives software construction activities.
   - Adopts and adapts appropriate software development methods, tools, and techniques, selecting appropriately from predictive (plan-driven) or adaptive (iterative/agile) approaches.
   - Measures and monitors applications of project/team standards for software construction, including software security.
   - Contributes to the development of organizational policies, standards, and guidelines for software development.
   - Leads review of peer's work and participates in reviews of own work.
   - Keeps current on emerging Information and Web Technologies.

2. **Performs release management activities associated with complex system or solution implementations, upgrades, or enhancements.**
   - Assesses and analyzes release components related to software and web technology solutions.
   - Carries out the builds and tests in coordination with testers, project managers, developers, and stakeholders.
   - Ensures appropriate documentation and configuration records are developed and maintained.
   - Ensures release processes and procedures are applied.
   - Carries out early life support activities such as providing support advice to initial users.

3. **Assists in managing and decommissioning legacy software systems and services.**

- Working collaboratively with the Information Technology Technician, provides support for legacy Decision Support Systems and their associated services.
- Assists in ensuring that legacy software systems and services are kept in a working condition until approved for decommissioning.
- Supports efforts to ensure legacy system data is backed up and kept secure.

4. **Works collaboratively to improve software user interfaces (UIs) and user experiences (UXs) based on business needs.**
   - Working with users and stakeholders, provides expert input and direction on the development of consistent UIs and UXs.
   - Solicits feedback from users and stakeholders on UX and strives for continuous improvements.

5. **Performs system integration tasks by developing and utilizing APIs and microservices.**
   - Writes, tests, and debugs software components to enable the use of APIs to integrate data amongst disparate systems.
   - Ensures APIs developed for in-house applications follow industry-standard design and documentation practices.

6. **Participates in wildland fire season on-call support rosters.**
   - Working collaboratively with the Team Lead, provides on-call software and decision support systems support per the division's support rosters.
   - Provides on-call support as per the direction of the Territorial Duty Officer.

WORKING CONDITIONS

Physical Demands

There is limited physical effort required for this position. While performing development duties, there are long periods where the incumbent must remain highly focused on computer monitors, which can cause back muscle and eyestrain.

Environmental Conditions

No unusual conditions.

Sensory Demands

The incumbent may spend long periods of intense concentration reviewing technical and business specifications, program code, and data flows.

Mental Demands

The severity of the wildland fire season will impact the incumbent's workload, and this factor is beyond the control of the incumbent, and the incumbent will be exposed to shifting priorities and tight deadlines, which significantly increase the stress levels of in this position, especially during wildland fire season.

Given the nature of the organization and responsibilities for emergency response, flexibility is required for sudden changes in workload and assignments during times of increased fire activity. During the wildland fire season, the position is required to work extended hours and be on standby for extended periods of time in accordance with operation plans.

KNOWLEDGE, SKILLS, AND ABILITIES

- Knowledge of software development methods, practices and processes.
- Knowledge of Application Programming Interfaces (APIs).
- Knowledge of Project Management practices such as those described in the Project Management Body of Knowledge (PMBOK).
- Knowledge of the software development lifecycle, as well as the various methodologies, including predictive (plan-driven) approaches or adaptive (iterative/agile).
- Problem-solving and analytical skills.
- Ability to implement software design and programming concepts, processes and methodologies.
- Knowledge of containerization platforms such as Docker and Podman.
- Fluency in SQL database technologies, including MySQL and MariaDB.
- Knowledge of and ability to apply project management best practices in information systems, including analysis, design, development, implementation, support, evaluation, and life cycle management.
- Knowledge of User Interfaces (UI) and User Experience (UX).
- Ability to translate complex technical information and to develop complex technology business and strategic plans in plain language.
- Ability to learn and understand Geospatial Data, Geoserver and Geoserver Administration, PostgreSQL and PGSQL, NoSQL environments such as MongoDB.
- Ability to commit to actively upholding and consistently practicing personal diversity, inclusion, and cultural awareness, as well as safety and sensitivity approaches in the workplace.

Typically, the above qualifications would be attained by:

Completion of an undergraduate degree in computer science, information systems/technology and three (3) or more years of directly relevant experience in developing and implementing enterprise software and web application solutions.

Equivalent combinations of education and experience will be considered.

ADDITIONAL REQUIREMENTS

- A valid NWT class 5 Driver's license.

Position Security (check one)

☐ No criminal records check required
☒ Position of Trust – criminal records check required
☐ Highly sensitive position – requires verification of identity and a criminal records check

French language (check one if applicable)

☐ French required (must identify required level below)
    Level required for this Designated Position is:
        ORAL EXPRESSION AND COMPREHENSION
            Basic (B) ☐   Intermediate (I) ☐   Advanced (A) ☐
        READING COMPREHENSION:
            Basic (B) ☐   Intermediate (I) ☐   Advanced (A) ☐
        WRITING SKILLS:
            Basic (B) ☐   Intermediate (I) ☐   Advanced (A) ☐
☐ French preferred

Indigenous language: Select language

☐ Required
☐ Preferred