LD VN Template and Guidelines

(CERN VNs are published in English language only)

July 2019

A few notes to get you started:

- Effective sourcing starts with a clear and effective definition of your requirements, a clear title & clear functions.
- The purpose of this VN Template is to assist you in writing your job requirements to maximise your chances of attracting the best possible candidate pool.
- Your HRA is your first point of contact regarding recruitment needs and the recruitment unit is there to help you with the sourcing and marketing of the post.
- You will find the instructions in grey colour with some useful tips and links in italic.
- The VN draft should be discussed with your HRA and the RU then be
  - Agreed by the department as first draft
  - Sent to your HRA who will coordinate with RU
  - The final version is then approved by the department and entered in EDH by the recruiter in charge.
POST TITLE

Linux kernel software developer

Tips:
- Make sure your Post Title reflects the true nature of the job and can be understood by candidates outside CERN. Suggestion: Google it to ensure you find other jobs with same title.
- It does not need to be exactly the same title that the Benchmark Job

Requesting Unit

BE-CO-HT

Associated Benchmark Job

Computing Engineer

Use only one benchmark job. Eg Electronics Technician OR Electronics Technical Engineer
To be defined/confirmed in collaboration with your HRA.
https://hr-dep.web.cern.ch/content/benchmark-jobs

Grade

6-10

X - Y (e.g. technician roles = Grades 3 - 4) Grades are classified in ranges (3-4, 4-5, 6-7), therefore it’s not possible to choose one grade only.

Job description

Introduction
In the Beams Department (BE), Controls Group (CO), Hardware and Timing section (HT) you will work in a team of developers of Linux device drivers and other low-level software. The BE-CO group is responsible for providing and supporting the controls infrastructure used to operate the CERN accelerators 24/7. The HT Section is in charge of providing hardware support and maintaining a standard set of modules that can be used to build control systems. This support includes the development or procurement of the hardware and the associated device drivers. The supported platforms include VMEbus and PCI/PCIe (industrial PCs, PXI/PXIe, uTCA), and the Operating system currently in use is Linux.

Hook + brief role summary (give a description of the general purpose of the post, the "mandate")+ link with department/group/section website.

Tips:
- Be as brief as possible here. Applicant’s attention focus on Functions and Experience
- Hook the candidate”! Highlight the most appealing aspects of the job in a couple of sentences; it will be the point of entry for candidates to read on. Recruiters can help you to make a catchy one.
- Consider self-eliminating questions, e.g "Are you a skilled Java Programmer?".
- You can include a short video to this section (this increases the job ad visibility), ask Recruitment Unit’s support.

Functions

You will:

- Take responsibility in new software projects at the level of device drivers, libraries and C/C++ user space code;
• Take responsibility for the maintenance of existing device drivers including the re-programming of obsolete parts and the development of new components;
• Participate in the architecture and design of new systems based on PXI/PXIe and uTCA platforms;
• Participate in the design of software support for platforms based on System-on-Chip (SoC) components;
• Collaborate in a small team of developers, taking over tasks such as requirements gathering, planning, quality assurance, continuous integration, tooling, testing and communication with users in equipment groups;
• Participate in the operational support of the deployed Linux device drivers and low-level libraries;
• Document and present your work as appropriate;

Describe the functions using the vocabulary in the Technical Competency list https://hrapps.cern.ch/auth/f?p=158:1:200834829239097::NO;

Tip: A common pitfall is describing the skills required rather than the functions! Also, if the job is 'mechanical engineer' please don’t describe what a mechanical engineer does – assume the applicant knows that and try to address the specificities of this post.

Qualifications

Master’s Degree or equivalent in computer science.

Please specify diploma (copy the following text depending on the Grade), and field concerned:

Grade 1: short apprenticeship (French equivalent: apprentissage court)
Grade 2 - 3: long apprenticeship (French equivalent: apprentissage long)
Grade 3 - 4: technical certificate or general secondary education (French equivalent: Diplôme de technicien)
Grade 3 - 4: higher technical diploma or higher administrative diploma (French equivalent: Diplôme de technicien supérieur)
Grade 4 - 5: Bachelor (French equivalent: Diplôme d’ingénieur-technicien)
Grade 6 - 10: Master’s Degree
Grade 6 - 10: PhD/doctorate

Experience

• Extensive experience in and knowledge of low-level software development (Unix, C/C++), in particular Linux device drivers;
• Extensive knowledge of embedded real-time systems programming;
• In-depth knowledge of the Linux kernel;
• Participation in distributed development of Free/Open Source software projects and knowledge of the different licensing options for such projects;
• Knowledge of the PCI/PCIE and VMEbus platforms would be an advantage;
• An understanding of programmable logic design using Hardware Description Languages and SoCs would be an advantage;
• Knowledge of the Python programming language for tooling, CI and testing would be an advantage;

Tips:

Avoid adding a “wish list” of skills if not all of them are mandatory. You can also split them between “mandatory” and “nice to have”

Avoid use of number of years – it is a discriminatory practice in several of our member states. Use instead:

Initial experience in..., Demonstrated experience, Proven experience, Extensive experience.

Technical competencies
• Domain: Information and communication technologies
  Subdomain: Software
  Competency: Development of software for embedded and real-time systems with/without OS

• Domain: Information and communication technologies
  Subdomain: Software
  Competency: Development of system software (drivers, system configuration and monitoring, etc.)

• Domain: Controls and data acquisition
  Subdomain: ICT Architectures
  Competency: Architecture and design of ICT systems. Control & data acquisition systems, distributed applications and services.

(No free-text) Use maximum 5 competencies from the Technical Competency list grouping them if necessary:

Tip: NB you can further elaborate the competency with free-text if needed, e.g
Programming Languages : Java, C++ and python (competency + detailed requirement)

Behavioural competencies
(No free-text)

• Achieving Results: Takes responsibility for achieving quality results. Works in a structured and efficient way. Drives work and projects to a successful outcome.
• Solving Problems: Identifies and analyses the key issues in complex situations. Anticipates issues and seeks all possible relevant information for problem solving and decision-making. Has a disciplined approach to analysing data and situations. Produces a range of innovative and workable solutions.
• Communicating Effectively: Demonstrates an ability to express and explain ideas in a convincing manner. Practises attentive listening and actively promotes mutual understanding. Makes effective oral presentations. Negotiates effectively.

  o Use 3-5 of CERN’s Behavioural competencies
    Link with CERN Behavioural Competencies
  o The format is “Competency : desired behaviour”
    Tip : The wording must be taken either from the effective behaviour, or from the description, e.g.
    ▪ Achieving results: having a structured and organized approach towards work; able to set priorities and plan tasks with results in mind.

Language skills

Spoken and written English: ability to understand and speak English in professional contexts. Ability to draw-up technical specifications and/or scientific reports and to make oral presentations.

  • he language competencies required for this post are:
    • Technical posts in:
      o Grades 1 to 3:
        Spoken and written English or French: ability to understand and speak the other language in routine situations.
      o Grades 4-5 (tech eng):
        Spoken and written English or French: ability to draw up technical texts in one of the two languages, as well as ability to understand and speak the other language in professional contexts.
      o Grades 6 and above:
Spoken and written English or French: ability to understand and speak the other language in professional contexts. Ability to draw-up technical specifications and/or scientific reports and to make oral presentations in at least one of the two languages.

- Administrative posts in:
  - Grades 1-3/4:
    Spoken and written English or French: ability to understand and speak both languages in professional contexts as well as the ability to prepare/draft and/or translate accurate texts in both languages.
  - Grades 4 (tech eng) and above:
    Spoken and written English and French: ability to understand and speak both languages in professional contexts as well as the ability to draft texts for publications and/ or official communications and to make oral presentations in both languages.

Additional information

Eligibility

Diversity has been an integral part of CERN’s mission since its foundation and is an established value of the Organization. Employing a diverse workforce is central to our success. We welcome applications from all Member States and Associate Member States (CERN: Member States).

Employment Conditions

Contract type: Limited duration contract (X years – to be completed). Subject to certain conditions, holders of limited-duration contracts may apply for an indefinite contract.

What kind of special conditions (working hours, work environment) are required by the functions (tick the appropriate boxes)? This means that chosen conditions will apply in a regular basis for this job.

<table>
<thead>
<tr>
<th>SPECIAL CONDITIONS WHICH ARE REQUIRED IN A REGULAR BASIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>These functions require shift work, including nights, Sundays and official holidays.</td>
</tr>
<tr>
<td>These functions require participation in a regular stand-by duty, including nights, Sundays and public holidays.</td>
</tr>
<tr>
<td>These functions require work during nights, Sundays and public holidays.</td>
</tr>
<tr>
<td>These functions require work in radiation controlled areas.</td>
</tr>
<tr>
<td>These functions require interventions in underground installations.</td>
</tr>
<tr>
<td>A valid driving license is required.</td>
</tr>
</tbody>
</table>

What kind of special conditions may be required in the future depending on the needs of the Organization (tick the appropriate boxes)? Please note: the use of these standard phrases is an exception and needs to be justified by the hiring manager, for example by an anticipated future reorganization of work implying special working conditions due to departures, absences etc. This means that chosen conditions can apply (or not) at certain circumstances, as something exceptional during the length of the contract.

<table>
<thead>
<tr>
<th>SPECIAL CONDITIONS WHICH MAY BE REQUIRED DEPENDING ON THE NEEDS OF THE ORGANIZATION IN THE FUTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>X Shift work</td>
</tr>
<tr>
<td>X Stand-by duty</td>
</tr>
<tr>
<td>X Work during nights, Sundays and official holidays</td>
</tr>
<tr>
<td>X Work in radiation controlled areas</td>
</tr>
<tr>
<td>X Interventions in underground installations</td>
</tr>
</tbody>
</table>