

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Name and address of submitting body:

NIELIT Patna,
Near IIT Patna, Amhara, Bihta, Patna(Bihar)-801106.

Name and contact details of individual dealing with the submission

Name: Shri Manoj Kumar

Position in the organisation: Joint Director

Address if different from above: NA

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List of documents submitted in support of the Qualifications File

1. Industry Validation (Annexure I)
2. Detailed Curriculum (Annexure II)
3. Evidence of Job (Annexure III)
4. Annexure -IV : Occupational Map as identified by IT SSC mapped to Job roles.

Model Curriculum to be added which will include the following:

- **Indicative list of tools/equipment to conduct the training**
- **Trainers qualification**
- **Lesson Plan**
- **Distribution of training duration into theory/practical/OJT component**

SUMMARY

| | | |
|----------|--|--|
| 1 | Qualification Title | Certificate Course in System Administration using Linux. |
| 2 | Qualification Code, if any | NIELIT/IT/L5/020 |
| 3 | NCO code and occupation | 3513.0100, Assistant System Administrator |
| 4 | Nature and purpose of the qualification (Please specify whether qualification is short term or long term) | <p>Nature:</p> <p><input type="checkbox"/> <input type="checkbox"/> Short Term Certificate Course which will help in employment.</p> <p>Purpose:</p> <p><input type="checkbox"/> <input type="checkbox"/> To enhance employability.</p> <p><input type="checkbox"/> <input type="checkbox"/> To upgrade the skills of people already in work in area of Linux System Administration</p> <p><input type="checkbox"/> <input type="checkbox"/> Entrepreneurship development.</p> |
| 5 | Body/bodies which will award the qualification | Examination Cell, National Institute of Electronics and Information Technology, NIELIT Bhawan, Plot no-3,PSP Pocket,Sector-8,Dwarka, New Delhi-110077. |
| 6 | Body which will accredit providers to offer courses leading to the qualification | National Institute of Electronics and Information Technology, NIELIT Bhawan, Plot no-3,PSP Pocket,Sector-8,Dwarka, New Delhi-110077. |
| 7 | Whether accreditation/affiliation norms are already in place or not , if applicable (if yes, attach a copy) | NA |
| 8 | Occupation(s) to which the qualification gives access | Assistant System Administrator |
| 9 | Job description of the occupation | <p>Job Responsibilities are: -</p> <ul style="list-style-type: none"> ➤ Provide helpdesk assistance in resolving software, hardware and network related problems. ➤ Assist in equipment set-up and software installation and updates. ➤ Perform troubleshooting, archiving and back-up of server applications. ➤ Assist in implementing firewalls and security devices to ensure network security. ➤ Coordinate with Network Administrator to set user access, permissions and |

NSQF QUALIFICATION FILE

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| | | roles to prevent unauthorized access. |
| 10 | Licensing requirements | N/A |
| 11 | Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided) | NA |
| 12 | Level of the qualification in the NSQF | Level-6 |
| 13 | Anticipated volume of training/learning required to complete the qualification | 80 Hours |
| 14 | Indicative list of training tools required to deliver this qualification | Linux operating system e.g. Red Hat Linux, CentOS, Fedora, Ubuntu etc. |
| 15 | Entry requirements and/or recommendations and minimum age | B.Sc.(CS)/BCA/PGDCA/Diploma(CS/IT)/NIELIT 'A' Level (s/w) |
| 16 | Progression from the qualification (Please show Professional and academic progression) | <p>Assistant System Administrator -Next Job Role- Next Job Role</p> <p>1. <u>Academic:</u> After completion of this course, students can go for other courses that provide them certification such as Red Hat Certified Systems Engineer (RHCSE)</p> <p>2. <u>Professional</u> Initially candidate can work as an Assistant System Administrator whose role would be to assist Linux system administrator to identify and troubleshoot basic system & network related problems. After gaining sufficient experience and upgrading his technical qualifications he could become Linux system administrator.</p> |
| 17 | Arrangements for the Recognition of Prior learning (RPL) | <p><input type="checkbox"/><input type="checkbox"/> Presently only candidates who undergo training shall be assessed.</p> <p><input type="checkbox"/><input type="checkbox"/> Later on, candidate can appear for certification examination directly if they fulfill entry requirements.</p> |
| 18 | International comparability Where known (research evidence to be provided) | N/A |

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| | | | | | |
| 19 | Date of planned review of the qualification After Every 2 Years | | | | |
| 20 | Formal structure of the qualification | | | | |
| | Mandatory components | | | | |
| | Title of component and identification code/NOSs/Learning outcomes | Estimated size(learning hours) | | | Level |
| | | Theory | Practical | Total | |
| | Understanding Fundamentals of Linux Systems and User account management | 10 | 15 | 25 | 6 |
| | Understanding Networking Administration | 8 | 12 | 20 | 6 |
| | Understanding Software & Configuration Management | 6 | 9 | 15 | 6 |
| | Understanding Logging, Performance Analysis, and System Monitoring | 4 | 6 | 10 | 6 |
| | Understanding Linux Troubleshooting | 4 | 6 | 10 | 6 |
| | Total | 32 | 48 | 80 | |

SECTION 1
ASSESSMENT

| | |
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| 21 | Body/Bodies which will carry out assessment: Examination Cell, National Institute of Electronics and Information Technology, NIELIT Bhawan, Plot no-3, PSP Pocket, Sector-8,Dwarka, New Delhi-110077. |
| 22 | How will RPL assessment be managed and who will carry it out? Give details of how RPL assessment for the qualification will be carried out and quality assured. Presently only candidates who undergo training shall be assessed. Later on, candidate can appear for certification examination directly if they fulfill entry requirements. |
| 23 | Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF. The emphasis is on practical demonstration of skills & knowledge based on the performance criteria. Student is required to pass in all OUTCOMES individually and marks are allotted. The Following assessment methodologies are used. A. Theory online assessments (LAN & Web based) (Multiple Choice Questions) B. Practical Assessment C. Internal Assessment D. Assignment The assessment results are backed by following evidences. 1. The assessor collects a copy of the attendance for the training done under the scheme. The attendance sheets are signed and stamped by the In-charge / Head of the Training Centre. 2. The assessor verifies the authenticity of the candidate by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same is mentioned in the attendance sheet. 3. The assessor assigns roll number. 4. The assessor takes photograph of all the students along with the assessor standing in the middle and with the centre name/banner at the back as evidence. |

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Please attach most relevant and recent documents giving further information about assessment and/or RPL.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

ASSESSMENT EVIDENCE

Complete a grid for each component as listed in “Formal structure of the the qualification” in the Summary.

NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – ie Learning Outcomes to be assessed, assessment criteria and the means of assessment.

24. Assessment evidences

Title of Component:

(Detailed Curriculum attached as Annexure-II)

| Outcomes to be assessed/NO Ss to be assessed | Assessment criteria for the outcome | Means of Assessment | | | | |
|--|--|---------------------------------|----------------------------------|--------------------------------|-----------------------|---------------|
| | | Theory (01 Paper): (100 Marks) | Practical (01 Paper): (60 Marks) | Internal Assessment (20 Marks) | Assignment (20 Marks) | Major Project |
| Understanding Fundamentals of Linux Systems and User account | Demonstrate proficiency with the Linux command line interface, directory/file management | 30 | 18 | 5 | 5 | NA |

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| management | techniques, file system organization, and tools commonly found on most Linux distributions. | | | | | |
| Understanding Networking Administration | Effectively operate a Linux system inside of a network environment to integrate with existing service solutions and/or provide its own such as DHCP, DNS, Routing, Network Address Translation, and NTP. | 25 | 15 | 5 | 5 | NA |
| Understanding Software & Configuration Management | Apply configuration management techniques to track modifications made by system administrators over time, and identify discrepancies with system configuration. | 15 | 9 | 5 | 5 | NA |
| Understanding Logging, Performance Analysis, and System Monitoring | Identify key performance metrics related to system performance, and routinely collect information on a Linux system to ensure that a given level of service is being met, and system resources | 15 | 9 | 5 | 5 | NA |

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| | are being utilized appropriately. | | | | | | |
| Understanding Linux Troubleshooting | Demonstrate the ability to troubleshoot challenging technical problems typically encountered when operating and administering Linux systems. | 15 | 9 | 5 | 5 | NA | |
| TOTAL(200) | | 100 | 60 | 20 | 20 | NA | |
| | Means of assessment 1 Proctored online assessments (LAN and Web based), carried out using a variety of question formats applicable for the course. | | | | | | |
| | Means of assessment 2 Add boxes as required. | | | | | | |
| | Pass/Fail Following Grading Scheme (on the basis of total marks) will be followed: | | | | | | |
| | Grade | S | A | B | C | D | Fail |
| | Marks Range (in %) | 85 to 100 | 75 to 84 | 65 to 74 | 55 to 64 | 50 to 54 | Below 50 |

SECTION 2

25. EVIDENCE OF LEVEL

Level of qualification: 6

Summary of Direct Evidence:

| Certificate Course in System Administration using Linux | | | | | |
|---|--|---|---|--|-------|
| Process required | Professional knowledge | Professional skill | Core skill | Responsibility | Level |
| Assistant System Administrator or understands requirements of System administration and acquires varied theoretical and practical skills in order to Install, Configure, Manage/Maintain and troubleshoot Linux System. | After acquiring professional knowledge on system administration using Linux Course, initially Assistant System administrator will be able to assist in operations, management and troubleshooting & network related problem. | They are proficient in developing and providing solution based on theoretical and practical knowledge gained during course. They can Install, Configure, Manage /Maintain and Troubleshoot the problems of the system and the network. | Assistant System Administrator acquire skills of technical level. He will be involved in efficiently managing /maintaining Linux system setup, manage network infrastructure & troubleshooting. They may assist to system administrator to propose solution and cater to all the activities regarding Solution's implementation. Starting from Installation, Configuration, Management and troubleshooting a System. | They will technically Assist the System Administrator and will Install, configure, Troubleshoot the problems and maintain the Linux System setup & network Infrastructure. | 6 |
| 6 | 6 | 6 | 6 | 6 | |

SECTION 3

EVIDENCE OF NEED

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| 26 | <p>What evidence is there that the qualification is needed?</p> <p>The Assistant System administrators are responsible for installing, configuring and maintaining the Linux servers and workstations. They are responsible for maintaining the network environment as well as the health of the network and servers. They support the requests of the users and solve any problems related with the Linux servers and workstations.</p> <p>So to generate human resource for managing/maintaining the Linux system setup and the network, “System Administration using Linux” qualification is needed.</p> <p>What is estimated uptake of this qualification and what is the basis of this estimate?</p> <p>The employment outlook for Network and Computer Systems Administrators, which includes Linux Professionals/Administrators, is quite good. As of year 2014 no. of jobs was 382,600. As per projection of the U.S. Bureau of Labour Statistics (BLS), employment of Network and Computer Systems Administrators will grow by 8% from 2014-2024. They earn median salary of \$77,810 per year as of January 2015.</p> |
| 27 | <p>Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidences: NA</p> |
| 28 | <p>What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF? Give justification for presenting a duplicate qualification</p> <p>The Qualification with similar name “Certificate Course in Linux System Administration” exists, but it is different from the Qualification file “Certificate Course in System Administration using Linux” being submitted by NIELIT. Comparative analysis of Qualification files is attached.</p> |
| 29 | <p>What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated? Specify the review process here</p> <p>The Qualification is to be monitored and reviewed every two years. The following data will be used</p> <ul style="list-style-type: none"> <input type="checkbox"/> <input type="checkbox"/> Results of assessments <input type="checkbox"/> <input type="checkbox"/> Employer feedback regarding student skill after conducting a placement drive <input type="checkbox"/> <input type="checkbox"/> Employer feedback will be sought post-placement <input type="checkbox"/> <input type="checkbox"/> Student feedbacks |

| | |
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| | <input type="checkbox"/> <input type="checkbox"/> Workshops and seminar for reviewing the qualifications <input type="checkbox"/> <input type="checkbox"/> Consultation/ Tie-up with Industries or Expert for review of the Curriculum so as to meet the changing pace of technology and Industry requirements. |
|--|--|

Please attach most relevant and recent documents giving further information about any of the topics above: **NIL**

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

SECTION 4
EVIDENCE OF PROGRESSION

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| 30 | <p>What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector? <i>Show the career map here to reflect the clear progression</i></p> <p>This qualification comprises both technical and analytical skills and can be linked to any qualification higher than this one, existing or to come.</p> <p>After successful completion of this course a candidate can choose for either specialized course such as Red Hat Certified Systems Engineer (RHCSE) or they can start their own business. In addition to this as per industry requirement they may be hired as a Assistant System Administrator.</p> <p>Please attach any documents giving further information about any of the topics above: NA</p> |
|-----------|---|

Please attach most relevant and recent documents giving further information about any of the topics above.: **NA**

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.