

Perkins Program Application
July 1, 2008 - June 30, 2009

Department/Program Name: Networking/Juniper

1. Describe the program/project and area(s) of need for funding.

Juniper Network technology is a new player in the computer networking industry competing with Cisco, the dominant player in the market. Juniper distinguishes itself from its competitors as a high performance networking infrastructure, providing a fast, reliable and secure access to application and services at global scale. The top 40 service providers and 93 of the Fortune 100 use Juniper Networks and its revenue has grown 23% from 2006-2007 with \$2.84 billion in sales, making it a market competitor. It has received many awards including the Silver Award in the category of Networking and Storage and a Bronze Award in the category of Endpoint Security from E-Week; and Network Computing's ranking of Product of the Year 2008

We will begin implementation of the Juniper Network Education Services Curriculum with two courses in Spring 2008 consisting of courseware and certifications for both the Enterprise and Service Provider environments. The program will then expand progressively to offer the entire Juniper program that leads to the Juniper Networks Technical Certification Program (JNTCP: Juniper Networks Certified Internet Associate (JNCIA-RE); Juniper Networks Certified Internet Specialist (JNCIS-ER, and Juniper Networks Certified Internet Expert (JCCIE-ER). The Juniper Networks Academic Alliance provides all the networking courseware, lab guides and diagrams, technical manuals, discounts on courseware, technical support, router and switch hardware, course design templates, access to Juniper professional course developers and teams, access to the Juniper Technical Assistance Center, and training for instructional faculty. The equipment requested for Juniper is the routers and switch hardware and software necessary to implement the Juniper training.

2. Describe how your program provides students with strong experience in all aspects of the industry.

Juniper Network Education Services Curriculum prepares students for jobs such as Network Technician/Administrator, Systems Analyst, and Network Security Specialist. The program consists of about 50% classroom and 50% lab time with a high level of hands-on activity and demonstration necessary for student learning. The Juniper Networking partners in Nevada are expanding with the number of Juniper Networks certifications awarded in 2007 growing from a combined 30 in Q1 to a 3,500+ in Q4. Students in the program will be able to obtain internships with local business such as Boyd Gaming, Datanamics Inc., Embarq, Shelby Automotive, Switch Communications, Ultimate Electronics, and Vegas.com.

3. Describe strategies to implement instruction in employability

Students participating in the CET Internship program must take a course in IT Customer Relations. As part of that course, the College Career Service Center provides training on job interview skills and resume writing. The student must submit a resume to a Business Partner and go on an interview to be selected as an intern. The Internship is a credit course and the students are evaluated and graded by the company. The Intern program also serves as an opportunity for our business partners to evaluate the students as potential future employees.

4. Document that the training leads to high wage, and/or high demand jobs.

With services such as voice, conference and multicast, IP router platforms, and market for enterprise routers, networking is growing exponentially and the need for certified engineers to keep up with network developments in protocols and security is paramount. According to

DETR information, Network Systems Administrator positions are growing 7.48% annually, with 48 openings/year and entry level wages of \$48,262, and a mean wage of \$70,255. Network Systems and Data Administration jobs will grow a phenomenal **101.8%** from 2004 to 2014 with 96 openings annually, an entry level wage of \$39,936, and mean wage of \$67,837 annually.

5. Describe how the integration of academics in CTE programs will be strengthened.

Mathematics and science content is covered in courses MATH 111B, EGG131 and EGG132. Communications is covered in ENG101, and ENG107 in the degree program. Math skills are integral in computer fields like Juniper with courses emphasizing binary and logic skills.

6. Provide assurances that the program will be of such size, scope, and quality to simulate the appropriate workplace environment

The program will begin with one professor who will attend Juniper training to prepare for offering the two new courses next year. The program will then expand based on enrollment and the need to either hire or train Cisco instructors to be re-assigned to the new program. Sufficient space is provided in the CSN Cheyenne campus Telecommunications building to install the necessary routers and switches to set up a dedicated classroom.

7. Describe how CTE is linked at the secondary and postsecondary levels by offering courses in program of study.

The high school Cisco Academy students Tech Prep courses and credit will qualify for entry into the Juniper program just as it qualifies for the Cisco Networking Academy Program (CNAP). The articulation agreements are CSCO 109B, PC Troubleshooting & Repair; CSCO 120B, Cisco Networking Academy I; CSCO 121B, Cisco Networking Academy II; CSCO 220B, Cisco Networking Academy III; and CSCO 221B, Cisco Networking Academy IV.

8. Describe how your program will provide professional development programs to teachers, and other staff who are involved in the CTE program.

One faculty member will attend the Juniper Networking Learning Center out of the National Foundation Center National Center for Telecommunication Technology in Springfield, MA during Summer 2008 through other funds.

9. Describe how the program will implement evaluations of career and technical education programs, and student technical skills.

The Juniper Academic Alliance requires a combination of written proficiency exams and hands-on configuration and troubleshooting exams, to demonstrate competence with Juniper Networks technology. Successful candidates must also demonstrate thorough understanding of Internet and security technologies, and Juniper Networks platform configuration and troubleshooting skills. Student learning outcomes are defined for every course, every semester at the College and reported and evaluated by the College Assessment department. Courses are evaluated by students every semester and reviewed by the College annually for evaluation of effectiveness

10. Describe the structure for joint technical skills or advisory committees (membership of business, school district, college, and student representatives).

The Juniper Networks curriculum will be supported through the Cisco Academy Joint Technical Skills Committee with representatives from local industry, NSC, CSN, and CCSD providing input on equipment and curriculum, and evaluation of this new program. Meeting minutes are kept in the Tech Prep office, in Room 2101 of CSN's Cheyenne Campus. This proposal has been sent to the JTSC members for review and comment.