



ERIE COUNTY WATER AUTHORITY

INTEROFFICE MEMORANDUM

October 24, 2018

To: Terrence McCracken
Secretary to the Authority

Robert Lichtenthal
Deputy Director

From: Jeffrey Schlierf
Acting Manager of Data Processing

Subject: CISCO IP Routing Training – Rick Deren (Network Specialist)

I highly recommend Rick Deren attend this 5 day training class on implementing CISCO IP Routing held in Arlington Virginia 12/10/18 – 12/14/18. The estimated cost to send Rick to this training is \$5,510 (training and travel combined).

The information covered in this class directly relates to the CISCO equipment and protocols used in the ECWA business and SCADA networks. We will have over 270 pieces of CISCO equipment ranging from large 384 port back bone switches down to 8 port peripheral switches. This count also includes the CISCO switches used in the Wide Area Network (WAN) project, WiFi access points strategically placed throughout Water Authority facilities and the 51 CISCO switches slated to replace the Phoenix Contact switches currently used in the Production SCADA network. Currently the only person that can configure these switches is an outside consultant. It is in the best interest of the Authority to have someone in house with the same capability.

TRAVEL REQUEST

Name RICHARD DEREN Today's Date 10/17/18

Job Title NETWORK SPECIALIST

Department INFORMATION TECHNOLOGY

Destination(s) ARLINGTON, VIRGINIA

Reason for Travel / (check one): Training [X] Authority Business []

Is this training needed to meet professional licensing requirements? NO

Description of training or business, and reasons and benefits of attendance

ATTEND THE CISCO ROUTE 5 DAY TRAINING COURSE IN ARLINGTON, VA. ROUTE IS 2ND COURSE IN SERIES ROUTE WILL CONTINUE TO IMPROVE MY NETWORKING SKILLS, & EXPANA ON PAST TRAINING. ROUTE COURSE IS 5 DAYS OF LECTURE & HANDS ON LABS. THE COURSE FOCUSES ON ROUTING PROTOCOLS & ROUTER SECURITY. THE LATEST NETWORK TRENDS, HARDWARE & SOFTWARE ARE DISCUSSED. THE RCWA NETWORK RELIES ON CISCO EQUIPMENT. STAYING UP TO DATE IS CRUCIAL TO SECURITY.

Dates of Travel

From: Day (M T W T F S S), Date 12/9/18 To: Day (M T W T F S S), Date 12/14/18

Total number of business days: 5

Estimated Cost Transportation costs can be obtained from Trish Fabozzi X8456.

Transportation \$ 850.00 Hotel Accommodations \$ 825.00 Meals \$ 240.00

TOTAL ESTIMATED COST \$ 1,915.00 W/ REGISTRATION FEE \$ 5,510.00

Balance in the travel budget prior to this trip \$ 8,000.00 G/L Number 401000 Unit # 8525 Primary # 931212

Comments (i.e. spouse traveling, preferences): Hotel - ??? (Booked by RFD)

AIRFARE - SUNDAY, REAGAN NATIONAL, RENTAL CAR FOR TRANSPORTATION. PREFER NOT STOP THROUGH DC. Time needs to be discussed by flight schedule

Approvals:

Supervisor Department Head Jeffrey Schlus Date 10/23/18

Deputy EXEC. DIR.

Executive Director Robert G. ... Date 10/23/18

Secretary [Signature] Date 10/23/18

Date of Resolution Item No.

TRAINING REQUEST

Name RICHARD DEKEN Today's Date 10/17/18

Job Title NETWORK SPECIALIST

Department INFORMATION TECHNOLOGY

Dates of Training

From: Day (M T W T F S S), Date 12/10/18 To: Day (M T W T F S S), Date 12/14/18

Total number of business days: 5

Location of Training ARLINGTON, VIRGINIA

Training requests which require overnight accommodations/transportation costs must be accompanied by a Travel Request form.

Training Information

Title of Course(s) CISCO ROUTE - IMPLEMENTING CISCO IP ROUTING NETWORKS - VERSION 2.0

Description THE CISCO (ROUTE) TRAINING COURSE INCLUDES 5 DAYS OF LECTURES & HANDS ON LABS. ROUTE IS TAUGHT BY A NETWORKING PROFESSIONAL. ROUTE IS A CONTINUATION OF THE SWITCH COURSE THAT I TOOK LAST YEAR. THE KNOWLEDGE THAT I WILL LEARN AT ROUTE WILL HELP ME ENHANCE MY SKILLS AS A NETWORK SPECIALIST. ROUTE WILL FOCUS ON PLANNING, IMPLEMENTING & MONITORING THE ECWA ROUTED NETWORK. ROUTER SECURITY WILL BE DISCUSSED IN DEPTH. INDUSTRY TRENDS (HARDWARE & SOFTWARE) WILL BE ADDRESSED. THE ECWA RELIES HEAVILY ON CISCO EQUIPMENT FOR THE ECWA NETWORK.

Is this course needed to meet continuing education or contact hour requirements? N/A

How many credit hours will you receive? N/A

How many credits (per year) required for your license? N/A

How many credits do you have year-to-date? N/A

Are there 2 or more people attending this seminar? NO

Are there concurrent sessions? N/A

Why is there a need for 2 or more people to attend this seminar? N/A

Estimated Cost

Registration Fee \$ 3,595.00 Mileage & Tolls \$ 0

TOTAL ESTIMATED COST \$ 3,595.00

Balance in the training budget prior to this trip \$ 12,410 G/L Number 8625 401000 931267

Approvals:

Department Head [Signature] Date 10/23/18

Executive Director [Signature] Date 10/23/18

Secretary [Signature] Date 10/23/18

Deputy



Global Knowledge

ROUTE - IMPLEMENTING CISCO IP ROUTING V2.0

Course Code: 5590

CLASSROOM LIVE

\$3,595 USD

5 days

Classroom Live Outline

1. Basic Network and Routing Concepts

- Differentiating Routing Protocols
- Understanding Network Technologies
- Connecting Remote Locations with the Headquarters
- Implementing RIPng

2. EIGRP Implementation

- Establishing EIGRP Neighbor Relationships
- Building the EIGRP Topology Table
- Optimizing EIGRP Behavior
- Configuring EIGRP for IPv6
- Discovering Named EIGRP Configuration

3. OSPF Implementation

- Establishing OSPF Neighbor Relationship
- Building the Link State Database
- Optimizing OSPF Behavior
- Configuring OSPFv3

4. Configuration of Redistribution

- Implementing Basic Routing Protocol Redistribution
- Manipulating Redistribution Using Route Filtering

5. Path Control Implementation

- Using Cisco Express Forwarding Switching
- Implementing Path Control

6. Enterprise Internet Connectivity

- Planning Enterprise Internet Connectivity
- Establishing Single-Homed IPv4 Internet Connectivity

- Establishing Single-Homed IPv6 Internet Connectivity
- Improving Resilience of Internet Connectivity
- Considering Advantages of Using BGP
- Implementing Basic BGP Operations
- Using BGP Attributes and Path Selection Process
- Controlling BGP Routing Updates
- Implementing BGP for IPv6 Internet Connectivity

7. Routers and Routing Protocol Hardening

- Securing Cisco Routers
- Describing Routing Protocol Authentication Options
- Configuring EIGRP Authentication
- Configuring OSPF Authentication
- Configuring BGP Authentication

Classroom Live Labs

Lab 1: Configuring IPv6 and RIPng

Lab 2: Configuring EIGRP for IPv4

Lab 3: Investigating EIGRP for IPv4 Behavior

Lab 4: Configuring EIGRP for IPv6

Lab 5: Configuring Named EIGRP for IPv4 and IPv6

Lab 6: Configuring OSPF for IPv4

Lab 7: Investigating OSPF for IPv4 Behavior

Lab 8: Optimizing OSPF for IPv4

Lab 9: Configure OSPFv3

Lab 10: Configuring Route Redistribution and Filtering

Lab 11: Configuring Path Control

Lab 12: Configuring Basic Internet Connectivity

Lab 13: Configuring BGP for IPv4

Lab 14: Configuring BGP for IPv6

Lab 15: Configuring EIGRP Authentication

Lab 16: Configuring OSPF and BGP Authentication

Students will get an additional 10 e-lab credits to use in the 30 days following class.



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Training Quote

Quote date: October 17, 2018

Quote #: 00127458

Student contact information:

Richard Deren
Erie County Water Auth
295 Main St Rm 350
Buffalo, NY 14203-2415
(716) 685-8556

Global Knowledge contact information:

Andrew Roberts
Account Manager
919-461-8640
andrew.roberts@globalknowledge.com

Course	Course Name	Start Date	End Date	Location	Price	Qty	Total
5590C	ROUTE - Implementing Cisco IP Routing v2.0	12/10/2018	12/14/2018	Arlington VA USA	\$3,595.00	1	\$3,595.00

Subtotal: \$3,595.00
Estimated Tax: \$0.00
Total: \$3,595.00

Payment Options

Remit by mail:
Global Knowledge Training LLC
Attn: Andrew Roberts
29214 Network Place
Chicago, IL 60673-1292

Fax copy of check or PO:
Andrew Roberts
919-468-4848

Call with a credit card:
Andrew Roberts
919-461-8640

Policy and Purchase Information

Total does not include applicable taxes. Non-promotional pricing is valid 30 days from October 17, 2018. Promotional pricing may end at any time. GSA contract number: GS-35F-501GA.

Enrollment and purchase polices are available at www.globalknowledge.com/termsandconditions.

Nov 5 - 9, 2018 | 8:30 AM - 5:00 PM | MORRISTOWN, NJ

Dec 3 - 7, 2018 | 8:30 AM - 5:00 PM | LOS ANGELES, CA

★ Dec 10 - 14, 2018 | 8:30 AM - 5:00 PM | WASHINGTON, DC (ARLINGTON, VA)

Dec 17 - 21, 2018 | 8:30 AM - 5:00 PM | DALLAS, TX

Jan 7 - 11, 2019 | 8:30 AM - 5:00 PM | WASHINGTON, DC

Jan 14 - 18, 2019 | 8:30 AM - 5:00 PM | NEW YORK CITY, NY

Jan 21 - 25, 2019 | 8:30 AM - 5:00 PM | DALLAS, TX

Jan 21 - 25, 2019 | 8:30 AM - 5:00 PM | SAN JOSE, CA

Jan 28 - Feb 1, 2019 | 8:30 AM - 5:00 PM | ATLANTA, GA

Feb 4 - 8, 2019 | 8:30 AM - 5:00 PM | CHICAGO, IL

Feb 11 - 15, 2019 | 8:30 AM - 5:00 PM | RESEARCH TRIANGLE PARK, NC

Mar 4 - 8, 2019 | 8:30 AM - 5:00 PM | DALLAS, TX

Mar 11 - 15, 2019 | 8:30 AM - 5:00 PM | WASHINGTON, DC

Mar 18 - 22, 2019 | 8:30 AM - 5:00 PM | HOUSTON, TX

Mar 25 - 29, 2019 | 8:30 AM - 5:00 PM | MORRISTOWN, NJ

Mar 25 - 29, 2019 | 8:30 AM - 5:00 PM | SAN JOSE, CA