IIR CONFERENCES & TRAINING

A DIVISION OF IIR HOLDINGS LTD.

Dear Networking Professional,

"On average, US businesses with more than 1,000 employees lose about 2% of annual revenues due to network downtime."

"On average, 250 hours are lost per year to outages and service degradations: 34% for LANs, 34%, for WANs, and 32% for networked applications"

Source: Infonetics Research

The stratospheric rise in the use of mission-critical, bandwidth-hungry applications services means that organisations need to take a closer look at how they manage their networks and troubleshoot any problems that arise. As these applications are network dependent, the cost of the downtime can be crippling. A study shows that a brokerage can lose more than US$ 100,000 for every minute of downtime.

Downtime is caused due to a number of reasons eg. network overload, bad software or hardware component problems. The accurate location and immediate correction of any network problems is of ultimate importance in ensuring high levels of service.

In addition, with the bulk of network outages being traced to network overload (specifically, insufficient bandwidth and performance overload) it has become imperative for network professionals to work proactively to optimise and manage their networks. The use of appropriate enterprise management tools and administration of the network infrastructure will help a great deal in alleviating network downtime.

As a network engineer or manager, fault tolerance and recognition of your network's point of failure are increasingly important. By assessing current standards, this course will show you how a network can attain new levels of reliability and availability.

Your course leader for this intensive event is Scott Hogg who has more than 13 years of experience in the field of network engineering and troubleshooting. Register now for this highly interactive event to ensure you are up-to-speed in building and maintaining a resilient network.

I look forward to meeting you at this extremely important event in May, 2002.

Yours faithfully,

Mahmood Rattansi
Event Manager

Who Should Attend:

• Network Managers, Administrators & Analysts • Communications Managers & Analysts • Systems Managers, Engineers & Analysts • Technical Support Staff • IT/IS Managers • LAN / WAN Administrators • And any IT professional involved in planning, maintenance, design and implementation of distributed network systems

IN-HOUSE TRAINING

IIR is happy to organise a range of training courses for your company. If you would like to take advantage of this service, please contact **David Stuckey** or **Gael MacLeod-MacLean** on 971-4-3512777.

Network Troubleshooting, Management & Optimisation

WHERE?   Crowne Plaza Hotel, Dubai
Tel: 971-4-3311111   Fax: 971-4-3315555

WHEN? & HOW MUCH?   Please indicate which session(s) you wish to attend:

❑ Course 1 – Network Troubleshooting – 25-26 May 2002
US$1,495 / Dhs 5,490

❑ Course 2 – Network Management And Optimisation
27-29 May 2002 – US$1,995 / Dhs 7,326

Save US$500 if you attend both seminars - US$2,990 / Dhs 10,981

Register 3 delegates from the same company and the 4th attends for FREE!

Fees include documentation, luncheon, refreshments and a certificate of attendance.

HOTEL RESERVATION DETAILS

Crowne Plaza Hotel, Dubai
Tel: 971-4-3311111   Fax: 971-4-3315555
A discounted room rate is available for IIR delegates.
Please contact the hotel directly to make your reservation.

PAYMENTS

CANCELLATION

AVOID VISA DELAYS – BOOK NOW

Delegates requiring visas should contact the hotel they wish to stay at directly, as soon as possible. Visas for non-GCC nationals may take several weeks to process.

REGISTRATION FORM

Please do not remove this label

I SK GC DB DA230

If your address above appears incorrectly, please fill in the correct details below

❑ YES. Please register the following delegate/s for

Network Troubleshooting, Management & Optimisation

(for additional delegates please photocopy this form)

1 Name (Mr/Ms) _____
Position _____
Department _____

2 Name (Mr/Ms) _____
Position _____
Department _____
Company _____
Address _____
_____
Country _____ ZIP Code _____
Tel: _____ Fax: _____
Approving Manager _____
Position _____
Department _____
Training Manager _____
Position _____
Department _____

Number of employees at your site:

0 - 49 ☐   50 - 249 ☐   250 - 499 ☐   500 - 999 ☐   1000+ ☐

Please indicate the nature of your business: Public Sector ☐   Financial ☐
Retailing ☐   Distribution ☐   Services ☐   Technology ☐   Construction ☐
Oil & Gas/Chemical ☐   Utilities ☐   Manufacturing ☐
Other (Please specify) _____

FUTURE EVENTS: Please send me details of any relevant future IIR events
BY MAIL ☐ BY E-MAIL AT _____

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iir training
Developing your skills for tomorrow

Network Troubleshooting

25 – 26 May 2002

➡ **Key Reasons To Attend:**
• Gain a thorough understanding of network troubleshooting methodologies
• Understand typical causes of problems caused by hubs, bridges, routers and switches
• Isolate problems methodically and eliminate "finger pointing"
• Develop troubleshooting skills to guarantee availability and scalability of your network
• Learn how to troubleshoot the latest converged technologies such as: QoS, VoIP, and IP Multicast
• Troubleshoot your network with confidence

Network Management And Optimisation

27 - 29 May 2002

➡ **Key Reasons To Attend:**
• Gain project management skills to guarantee availability, reliability, and scalability of your network
• Bullet-proof your networking infrastructure to support growing business demands for data transmission including Internet usage, e-business, CRM and ERP
• Learn how to deploy network management systems for maximum effectiveness
• Gain access to industry best practices of performance engineering and management
• Understand and apply modelling techniques that help you simulate real life scenarios
• Improve the reliability of your network using appropriate techniques, tools and software
• Decrease your network downtime through the implementation of best practices in network management

Strategic Business Information Partner

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25 - 29 May 2002, Crowne Plaza Hotel, Dubai

Course 1
Network Troubleshooting

Course Objectives
On successful completion, participants will have gained the knowledge required to deal with the most common network problems and the different ways to monitor, diagnose and troubleshoot them.

Day 1 – Saturday, 25 May 2002

08:00   *Registration And Refreshments*

08:30   **Introduction And Course Objectives**

Basic Troubleshooting Methodologies
- Troubleshooting process flow
- Best practices tips and techniques

Troubleshooting LANs/Ethernet
- Ethernet 10/100/1000Mbps review
- Typical problems with Hubs, Bridges, Switches, and VLANs
- 802.1d Spanning Tree issues
- Troubleshooting case studies

Wireless LAN Issues
- Review of Wireless LAN technologies (TDM, ISDN, Frame Relay, ATM)
- Common problems with design and implementation
- Operational problems
- Security concerns

Troubleshooting WAN Connectivity
- TDM-based WAN services
- Frame Relay troubleshooting
- ATM troubleshooting

Routing And Switching Troubleshooting
- Review of IP routing protocols (RIP, OSPF, IGRP, EIGRP, BGP-4)
- Methods and procedures for troubleshooting

14:30   *Close Of Day Followed By Lunch*

Day 2 – Sunday, 26 May 2002

08:00   *Morning Refreshments*

08:30   **Troubleshooting Internet Systems**
- Internet connection steps
- Putting the layers together
- What can go wrong with Internet connections?

Troubleshooting QoS And VoIP In Converged Networks
- Converged architectures and designs
- Review of IP QoS techniques
- Review of VoIP technologies, standards and protocols
- Troubleshooting soft-state protocols
- Troubleshooting QoS
- Troubleshooting VoIP systems
- Methods and procedures for troubleshooting converged networks
- Troubleshooting case studies

Multimedia Troubleshooting (Videoconferencing And IP Multicast)
- IP multicast review
- Multicast troubleshooting techniques
- Videoconferencing technologies and protocols
- Troubleshooting multimedia systems

14:30   *Close Of Course One Followed By Lunch*

> *"I have had the chance to meet experts who really enlightened my horizons"*
> Rasheed M. Buqara'a, *Electrical Engineer*
> **Dubai Civil Aviation**

NOTE: There will be two refreshment breaks at approximately 10:30 and 12:30. Running order may vary according to the preference of the delegates.

Course 2
Network Management And Optimisation

Course Objectives
On successful completion, participants will have gained the knowledge required to manage, optimise and test high standards compliant networks in both LAN and WAN environments to improve uptime and QoS.

Day 1 – Monday, 27 May 2002

08:00   *Registration And Refreshments*

08:30   **Introduction And Course Objectives**

Network Measurements
- Measurement techniques
- Ping, Traceroute
- SNMP overview
- RMON
- Synthetic transactions
- Measurement tools
- Protocol analysis

Traditional IP Network Management
- Statistics and trending – capacity management
- Technology based network management
- Network discovery tools

TMN FCAPS Model
- Review the FCAPS model and how it is applied
- Fault management
- Configuration management
- Accounting management
- Performance management
- Security management

NMS Tools Overview
- Event correlation techniques
- HP Openview, CiscoWorks, CA Unicenter, Tivoli,
- BMC Patrol, NerveCenter, NetCool, Remedy, and others

14:30   *Close Of Day Followed By Lunch*

Day 2 – Tuesday, 28 May 2002

08:00   *Morning Refreshments*

08:30   **NOC Best Practices**
- Methods, processes, and procedures
- Change management and control
- Trouble ticketing and hand-offs
- Proactive network management
- NOC staffing
- Documentation techniques

Performance Engineering
- Contributors to system performance
- How to measure network performance
- Response time, path latency, efficiency, network utilisation, anomalies
- Communities of interest/traffic
- Gathering statistics
- Long term trending and prediction
- What tools are available?

Network Application Readiness
- Network baseline measurements
- Assessment methodology
- Application response times
- Optimising transaction-based systems
- Overview of assessment tools

14:30   *Close Of Day Followed By Lunch*

> *"This type of event helps you make your mission achievable"*
> Saied Basamh, *Assistant General Manager*, **Basamh Trading Co.**

NOTE: There will be two refreshment breaks at approximately 10:30 and 12:30. Running order may vary according to the preference of the delegates.

Day 3 – Wednesday, 29 May 2002

08:00   Morning Refreshments

08:30   **Modelling/Simulation**
- Comparing techniques
- Available tools and software

Deploying And Managing QoS To Improve Performance

SLA Management And Monitoring
- SLA metrics
- Vendor/service provider monitoring
- SLA techniques

Improving Reliability Of Network Systems
- Mathematics behind reliability - MTBF, MTTR
- Load balancing and redundancy
- Challenges with making hosts fault-tolerant
- Techniques for clustering
- LAN-based load balancing – hardware and software options
- Geographical server load balancing
- Disaster recovery – business continuity

14:30   *Close Of Course Two Followed By Lunch*

Glossary/Acronyms:

ARP	–	Address Resolution Protocol
BGP-4	–	Border Gateway Protocol version 4
FCAPS	–	Fault Configuration Accounting Performance Security
EIGRP	–	Enhanced Interior Gateway Routing Protocol
ICMP	–	Internet Control Message Protocol
IGRP	–	Interior Gateway Routing Protocol
MTBF	–	Mean Time Between Failures
MTTR	–	Mean Time To Repair
NOC	–	Network Operating Centre
OSPF	–	Open Shortest Path First
QoS	–	Quality of Service
RIP	–	Router Information Protocol
RMON	–	Remote MONitoring
SLA	–	Service Level Agreement
SNMP	–	Simple Network Management Protocol
TCP/IP	–	Transmission Control Protocol/Internet Protocol
TDM	–	Time Domain Multiplexing
TTL	–	Time To Live
TMN	–	Telecommunications Management Network
VLAN	–	Virtual Local Area Network
VoIP	–	Voice over Internet Protocol

Meet Your Expert Course Leader

Scott Hogg is the founder and Principal Consultant for Hogg Networking. As a network-troubleshooting expert for over 13 years, Scott provides network and security consulting and training services to his clients. Scott is focused on creating reliable, high-performance, secure, manageable and cost effective network solutions.

Scott's tremendously broad and in-depth skill-set is a result of his long career in the networking industry. He has been working with computers since 1985 and has worked with UNIX and networking systems since 1988. He has a B.S. in Computer Science from Colorado State University, a M.S. in Telecommunications from the University of Colorado, along with his CCIE (#5133), and his CISSP (#4610) certifications.

Scott has been consulting, designing, implementing, and troubleshooting networks for such clients as Agilent, Qwest, CompuServe, Microsoft, REI, Frank Russell, American Express, GE Capital, Boeing, Level(3), Time Warner Telecom, and many other enterprises and service providers. Scott's current interests are in the areas of IP QoS, MPLS, VoIP, IPv6, intrusion detection, VPNs and virtual routing.

> *"It was a great event"*
> Al Ahmari Nasser, *Computer Operator*, **Saudi Air Force**