

❖ Consultants in Minnesota ❖

October 2002

President's Message

By Randy Hayman

Greetings!

Thank you Jack Rose for sponsoring Joe Foley, CTO Synera Systems, Inc. The presentation was wonderfully refreshing and extremely intriguing, plus Synera Systems wants to partner with folks like us and provide generous compensation helping them market their product.

Jack and myself will have details on Synera Systems Early Adopter program at the October meeting. Don't miss it!

Now on to something more technical and invaluable in today's networked world. Have you ever wondered what the significance of subnet masks are, how they are used, or what exactly that 255.255.255.0, 255.255.255.248, or 10.0.0.0/24 mean when you see them in the subnet mask field of network configurations or user

manuals?

I am in the process of writing a white paper to condense the plethora of networking technical details into a short fundamental knowledge manual for setting up SOHO networks that will become a benefit to our Chapter's members.

Briefly, then here is what subnet masking in IPv4 is all about:

255.255.255.0 explained:

An IP number consists of four numbers separated by the decimal or dot character (referred to as 'dotted decimal' notation). Each of the four numbers has a range of 0 through 255 inclusive, though 0 and 255 are special. Going back to an earlier day in your life, you most likely learned that 8 bits can represent numbers from 0 through 255. Thus, an IP number can be represented by

four sets of 8 bits, or 32 bits.

Subnet masks are usually represented in dotted decimal notation. The most common representation for subnet masks is represented in the first two examples above: 255.255.255.0 and 255.255.255.248. These subnet masks are direct bit representations of the subnet and the hosts a computer can communicate with. A bit that is set to 1 in a subnet mask represents the subnet portion of the address space to communicate with and a bit that is set to a 0 in a subnet mask represents the hosts it can communicate with.

In a LAN, populated with no more than 254 computers (256 minus the two special numbers 0 and 255), the subnet mask of 255.255.255.0 will see and be able to talk to all 254 computers in that LAN segment. This is typically how small organizations are set up.

Let's assume that you have a computer with the following network configuration (from DHCP):

IP Number: 10.113.202.172
Subnet mask: 255.255.255.0
Gateway: 10.113.202.1

This computer can see and communicate with any network device in the range of 10.113.202.0 through 10.113.202.255 and here's why: 10.113.202.172 can be represented as 0000 1010 . 0111 0001 . 1100 1010 . 1010 1100, and 255.255.255.0 can be represented as 1111 1111 . 1111 1111 . 1111 1111 . 0000 0000.

Realize also that since the Gateway is in the range of network devices your computer can communicate with, it can effectively communicate with any network device that the Gateway can also, but that is another column for another time.

The subnet mask above indicates that the first 24

Officers:

President: Randy Hayman

Voice (651) 261-9939
Fax (651) 456-9426
mail: haymanr@pureice.com

VicePresident: John B. Rose

Voice (651) 214-5053
email: jbr@icca.org

Treasurer: Norm Nelson

Voice (612) 399-0107
email: norm.nelson@icca.org

Secretary: Larry Bremer

Voice (763) 553-1994
email: ljbremers@compuserve.com

Editor: Magne A. Hatlevik

Voice (651) 264-1608
email: magne@magpcs.com

Chapter WebSite: www.icca-mn.org

INDEPENDENT
COMPUTER
CONSULTANTS
ASSOCIATION

Newsletter
of the



Minnesota Chapter



(Continued from page 1)

bits (from left to right) represent the subnet that your computer can communicate with, because those bits are set to 1 in the subnet mask. Remember that the subnet mask tells the computer to look at its IP number to find the result, so this results in 10.113.202. or 0000 1010 . 0111 0001 . 1100 1010 . as the subnet portion. The subnet mask bits that are set to 0 represent the hosts in the subnet that your computer can communicate with. In this example, the furthest right 8 bits are set to 0 in the subnet mask, so all 2^8 hosts (less the two special numbers), or 254 network devices are valid hosts to communicate with.

255.255.255.248 explained:

This example represents a common situation where an organization has obtained a block of static IP numbers from their ISP, or they are setting up a LAN where they do not wish to waste IP numbers.

Let's assume that you purchased a block of 8 static IP numbers from your ISP and you are setting up a web presence. Let's assume that the ISP has provided you with the following information for your DSL router configuration:

IP Number: 10.113.202.186
 Subnet mask: 255.255.255.248
 Gateway: 10.113.202.185

So, what really does the subnet mask of 255.255.255.248 actually represent? Recall that the bits that are set to a 1 represent the subnet portion of the addresses your DSL router can communicate with.

10.113.202.186 can be represented as
 0000 1010 . 0111 0001 . 1100 1010 .
 1011 1010

255.255.255.248 can be represented as
 1111 1111 . 1111 1111 . 1111 1111 .
 1111 1000,

The subnet mask of 255.255.255.248 indicates that the left-most 29 bits represent the subnet that your DSL router can communicate with since they are set to 1, the right-most three bits represent the hosts that your DSL router can communicate with since they are set to 0. The left-most 29 bits in 10.113.202.186 are 0000 1010 . 0111 0001 . 1100 1010 .

1011 1__ __, which is 10.113.202.184 plus what the three right-most bits hold. The right-most three bits can hold 2^3, or eight different values, and they represent the eight static IP numbers you purchased from your ISP - your own little subnet address space. Thus, your static IP address range is 10.113.202.184 through 10.113.202.191.

10.0.0.0/24 explained:

This notation is most commonly used in network devices such as routers or DSL modems. In this example, the 10.0.0.0 represents the base, or network address and the 24 represents the number of bits used to represent the host portion of your subnet. Put another way, of the 32 bits 10.0.0.0 is represented by, the left-most 8 bits (32-24) is the subnet portion of the range, and the 24 right-most bits represents the hosts that can be communicated with.

There is so much more about subnet masking that I do not have the space to get into in this column, but if you are interested in the white paper I'm writing, renew your membership and you will have it made available to you when it gets finalized.

That's the view from here.



September Speaker Highlights "Exploration Warehousing," Business Intelligence

By Jack Rose
 ICCA-MN vice president

ICCA's Sept. 18 monthly meeting at the Wyndham heard from Joe Foley, chief technology officer at Synera Systems. Joe

outlined the features and benefits of Synera's product line, which uses an associative (non-relational) database approach to "put all the data in one place in a form everyone can understand." The result is a data engine that makes the immense amounts of data your client generates accessible for decision-making support.

As the hour grew late, it appeared many of the members present wanted to stick around for a look at Joe's product. We adjourned the formal meeting and a surprisingly large number of attendees remained for a knock-your-socks-off demo.

The typical management interface to a data warehouse is to spend resources constructing a SQL query, examine the results, and from that information compose a refined query. Synera's eponymous product promotes related, nested inquiries against an unlimited number of fields in differently formatted databases as an iterative process. Further questions arise as answers are uncovered.

One example Joe cited was a clothing retail chain whose management wanted to determine which of two promotions had the bigger payback in increased sales: a buy-one-get-one-free event, or a 50%-off sale. Using the raw point-of-sale terminal transaction records as input, Synera was able to show management that while the first promotion induced people to come into a store and buy a single item of clothing (getting a second one free), the latter resulted in customers' purchasing several full-priced accessories in addition to the half-off jeans. Without the advantage of Synera's package, this intelligence would have remained hidden from company management.

Synera Systems is on the web at <http://www.synerasystems.com>, and Joe Foley can be reached at their Bloomington office, (952) 814 9300.

Accounting and Taxes
How do you keep ahead of the game?

By Ray Giske

Darrell Foss will be covering a range of subject matter regarding accounting and taxes. First, he will be discussing the different ways of organizing your company in order to help make some sense of the alphabet soup of approaches to organization (LLC, LLP, Sub Chapter S, C Corporation, Sole Proprietor, and Partnerships). He will also describe the different tax forms that need to be used depending on the type of organization as well as specific tax planning steps that could be taken before the end of the year. Other topics will briefly address one or more of the following questions:

- How do I keep my company in compliance with all the different government agencies?
- How will the recent corporate and accounting scandals impact my business?
- How do I keep my banker happy?
- What are the "mine fields" and "booby traps" that I need to recognize and how can I avoid them?

BIOGRAPHY
of
Darrell G. Foss, CPA

Darrell G. Foss, P.A. was founded following a diverse 25 year corporate career of practical and diverse experiences focusing on all aspects of management information systems and finance.

Darrell works with several businesses in the areas of executive compensation, strategic direction in financial accounting practices and procedures, management redirection, information systems, mergers and acquisitions. Using his broad based

experiences, he brings clarity and focus to complex business issues.

He has built his career upon experiences as an independent consultant working for many large and small businesses. In addition, he was Vice President of Finance and Accounting for Custom Research Inc. a highly respected world-class marketing research firm. He managed the company's needs of finance and accounting through an eight-fold increase in sales (\$2 million to over \$18 million). Darrell provided the financial, productivity, and department documentation for site visits for the Malcolm Baldrige Quality Award. His accounting career started with Kuusisto, Froehlich, Borgfelt and Segal, CPAs, where he specialized in financial records, employee benefit plans and taxes for professional service businesses of every size and type.

Darrell has a Masters of Business Administration from the University of St. Thomas. He is a member of the American Institute of Certified Public Accountants, and has been an active professional member of the Minnesota Society of Certified Public Accountants since 1976, having held several committee officer positions. He has served on the Customer Council for Norstan Communications, Inc. and is currently on the Advisory Board of Vaske Computer Solutions. Since 1990 Darrell has served on the Finance and Personnel Council of his church. He has chaired the Finance sub-committee. He has taught Managerial Accounting at University of St. Thomas. In Addition, Darrell has taught Financial, Intermediate, Managerial, and Cost Accounting courses at Concordia University, St. Paul, Minnesota.



Meeting Reservations: Members may phone your reservation to Joan Barnes at 651-257-2570 **by 3:00 PM, Tuesday, October 15, 2002.** Non-members should mail this form to: ICCA Minnesota, c/o Norm Nelson, 2200 E 22nd St. Minneapolis, MN 55404-3165

Name: _____ Company: _____
 Address: _____ City: _____
 State: _____ Phone: () _____

Menu Selection: The Lido Italian Buffet

Members \$25 Non-members \$28 x _____ = _____
 Late Charge \$2 x _____ = _____
 Enclosed is a check for: _____



Next Meeting

Thursday, October 17, 2002

Tax Planning

Italian Market Deli by Lido

2801 North Snelling Ave
651-636-9721 (north of Rosedale)

Social Hour at 5:30PM
Dinner at 6:30PM

For reservations call
Joan Barnes @ 651-257-2570

FUTURE MEETINGS

Tuesday, November 19, 2002 Wyndham
Wednesday, December 18, 2002
TBD Holiday Party

ICCA Disclaimer notice.
"Discussion of any legal issues in any article that appears in this publication is presented as educational material only. The Independent Computer Consultants Association does not and cannot take responsibility for any statements made within this publication as to the meaning or effect of any federal or state law, statute, regulation or ordinance and any opinions expressed in this publication as to such meaning or effect are the opinions of the authors and are not the opinions of the Independent Computer consultants Association, Inc. Any actions or legal steps taken should be thoroughly reviewed with your personal attorney or tax consultant as laws vary from state to state and also because the facts or your situation may not support application of any rule, statement, or suggestion that may be printed in this publication."

Permission is granted to all ICCA publications to quote and reprint any material appearing in Consultants in Minnesota, except where protected by individual copyright, provided credit is given to the author and Consultants in Minnesota

[ed. note]
:
Attention all ICCA members:
Get involved--write a story for the newsletter. I need stuff to fill these white(blue) pages!!



5930 N. Oakview Lane
Plymouth, MN 55442-1536

Stamp

First Class Mail

