

### [Talk Is Cheaper](#)

Voice over IP is finally worth a look. Learn everything you need to know, and get a comparative review of the services from our full report

- [The basics](#) • [Free services](#) • [Area codes](#) • [Common features](#)
- [Sound quality](#) • [The drawbacks](#) • [Providers](#) • [Pricing plans](#)
- [Reviews of service providers](#)

**TOP PRODUCT:**

### [8x8 Packet8 Videophone](#)

For those with a visual bent and a higher-speed broadband connection, the 8x8 Packet8 Videophone and VoIP service is an attractive package. The phones aren't cheap (about \$500 a pair), but the service is reasonably priced and video quality is stunning.

**Editor Rating:** ●●●●○

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## Talk Is Cheaper

### The Basics

*Click here to view [Traditional Phone System and VoIP Compared](#) .*

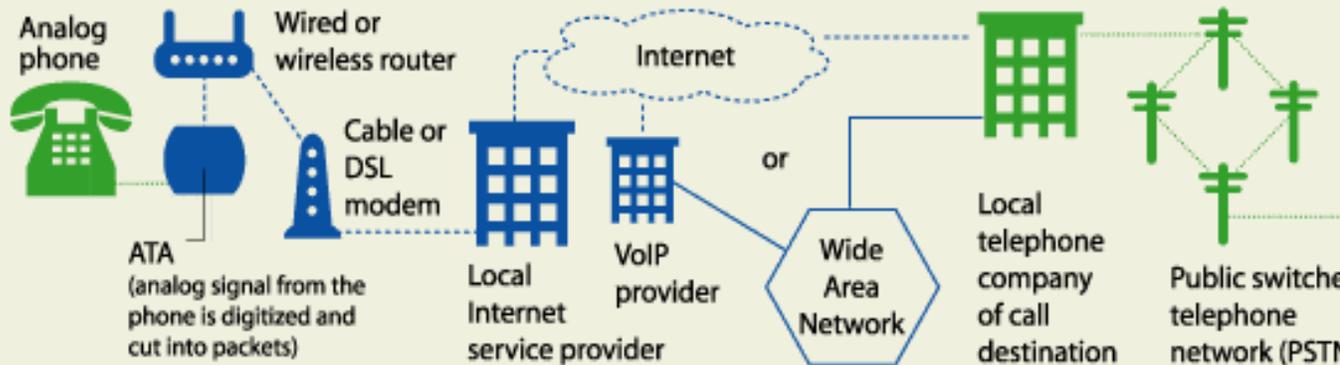
VoIP, a technology that transmits voice communications via the Internet, has been used by businesses and long-distance companies for years. The introduction of broadband to the home has made consumer VoIP possible.

To get started with a paid VoIP plan, you need a broadband connection, an analog telephone adapter (ATA), and a plain old analog phone. ATAs generally have either one or two phone jacks to which you connect the telephones. Some ATAs are single-function devices, while others are built into wired or wireless routers. You can purchase them at a local retail store or an online retailer, or get one in the mail from your provider after you sign up for VoIP service at its Web site. Once you have the adapter and have registered for the service (either online or by phone), you connect the ATA to your broadband connection or home network and then to a conventional analog phone, and you're ready to start making calls.

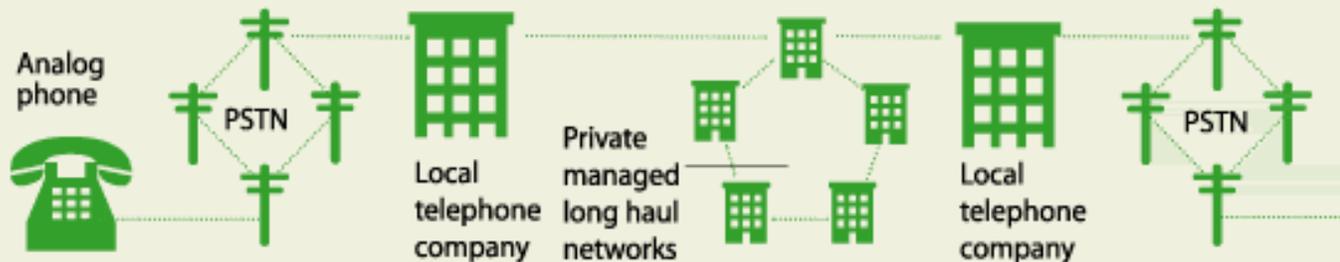
VoIP service limits you to placing an ATA where you have an Internet connection, since VoIP does not use the telephone wiring within the walls of your house. Hard-wiring additional phones will most likely require an electrician. A simpler solution is to buy a cordless phone with multiple handsets, keep the base station near the VoIP adapter or router, and place the handsets anywhere in the house.

# Traditional Phone System and VoIP Compared

## BROADBAND VOICE OVER IP RESIDENTIAL SYSTEM: A Packet-Switched Network



## TRADITIONAL PHONE SYSTEM: A Circuit-Switched Network



## Talk Is Cheaper

### Free Services

Alternative low-cost or free VoIP services exist that let you talk with others over the Internet. These are more like an instant-messaging voice system like AIM than a phone-service replacement (luckily, that's the FCC's current take as well—otherwise they would not be free). They are most suited for talking at no cost with friends and family whom you can convince to download and register the client software.

One of the most talked-about examples is Skype. It and the other services typically connect two PCs using a software client app. You talk via an attached microphone and speakers or headset—not a telephone.

As these services are running on the Internet, though, they are susceptible to latency, distortion, and other factors that can lower performance and sound quality. Also, you generally can't call out to numbers on the traditional phone system (Dialpad is an exception to this); you're restricted to talking to people on the same service. With some of the services, you can sign up for additional paid plans (SkypeOut, for instance) that

allow calling outside numbers on a per-minute basis. Another drawback: You can't receive traditional calls either.

Although the underlying network communications with these services are based on the Internet Protocol, they are generally proprietary and not necessarily based on an interoperable protocol such as SIP (as are the paid services).

### **Area Codes: Take Your Pick**

Most paid VoIP providers, including all of the services we review, let you keep your existing telephone number. But if you want a new number, you can select your area code and maybe even the exchange number (the three digits after the area code) when you sign up. So if you live in San Francisco, your number doesn't have to begin with 415. If a lot of people are calling you from Chicago, for example, you could choose 312 or 773, so they can dial you locally.

Likewise, most providers will sell you a "virtual number" for a small monthly charge. This is a real phone number that anyone can call; it is virtual only because your VoIP provider routes the calls it receives to the phone attached to your ATA. Since most providers support two phone lines on each adapter, you could have New York and Los Angeles "office" numbers ringing on your desk in Houston.

Because a VoIP phone number is assigned to your adapter, travelers have the option of taking their number with them. If your hotel room has broadband Internet access, you can plug your ATA and phone into it and have your home phone number ring in your room.

### **Common Features**

Most consumer VoIP providers' basic plans offer a set of features comparable with the "premium" features available from your traditional phone company, including voice mail, caller ID, call waiting, call forwarding, and three-way calling. Yet many of these features go beyond what traditional phone services offer. For example, many VoIP services let you access your voice mail via a Web browser as well as a telephone. Most services also provide e-mail notification of new voice mail; a few will even forward your voice mail as an attachment to your e-mail address.

### **How Do Voip Services Sound?**

For most people, advanced features and cost savings aren't compelling enough reasons to switch to VoIP if the sound quality isn't as good as a conventional land-line telephone's. That's one reason many find it difficult to rely on the free services.

Paid VoIP services, however, have come a long way in correcting issues that lead to poor voice quality. The sound quality with VoIP is now usually indistinguishable from that of traditional phone service.

We could not test the free services because of technical limitations, but in our lab and jury tests of the paid services, we found the latest crop to have good or excellent sound quality across the board.

## **The Drawbacks**

What's not to like about VoIP service? There are a few limitations. First, you need a reliable Internet connection, because you can make and receive calls only if you're connected. Second, traditional telephones do not require power, but with VoIP, the ATA relies on power from your home electricity. So in a power outage, you'll lose your VoIP service unless your home network's components are backed up with an uninterruptible power system.

Emergency 911 calls also present a challenge for VoIP. Your service provider knows only the IP address of your ATA, not its physical location. Most VoIP providers currently route 911 calls based on the address people used when registering for service—so if you're anywhere else, you'll need to use a traditional phone line for 911 calls. The National Emergency Number Association ( [www.nena.org](http://www.nena.org) ), a coalition of providers and emergency-response organizations, is working on a solution, but it remains a year or two away.

## **Providers Aplenty**

*Click here to view the table [Pricing: VoIP vs. Traditional Phone Service](#).*

Independent providers, such as Vonage, were the ones who jump-started the consumer VoIP market. At the end of 2003, such companies accounted for nearly two-thirds of the residential VoIP market. Vonage has over 300,000 subscribers, but there's intense competition. With predictions that this market will reach 17.5 million U.S. households by 2008 (according to The Yankee Group), cable/DSL operators, such as Time Warner Cable and Optimum Online, and traditional telecom companies, such as AT&T and Verizon, have jumped into the game.

Cable TV providers have gotten into the telephony business too. Their underlying technology differs from the other paid services (voice communications travel on an already available channel path in the cable operator's network), but the end result is the same. We are unable to test cable VoIP systems as of now because of the geographic diversity of cable providers, but many of these companies offer package bundles of cable TV, Internet access, and VoIP service—all on one bill.

## **Pricing Plans Galore**

Like cell-phone service providers, most VoIP providers offer multiple pricing plans. Some charge a setup fee of around \$30, and some also require that you sign an annual contract. The plans range from limited plans with "buckets" of minutes for local and long-distance calling to unlimited calling plans. Lingo and Broadvox offered the most attractive plans at press time; Lingo's \$19.95 monthly plan includes unlimited calls to the U.S., Canada, and Western Europe.

Traditional telcos (AT&T and Verizon) charge a bit more, from \$29.95 to \$34.95 a month for unlimited U.S. calls, and both offer competitive international rates.

Cable/DSL providers tend to charge somewhat more for their VoIP services; Time Warner Cable offers its New York– area subscribers an unlimited local and long-distance

plan for \$39.95 a month. Optimum Online's plan, also for the New York metro area, is \$34.95 for its subscribers.

Is VoIP right for you? If you have a reliable broadband Internet connection, you can reap savings with VoIP by merely dipping a toe in and using a free service. Or you can take the plunge and save even more with a paid VoIP service plan. The number of calling plans and features is growing fast, and there's likely a service tailored to meet your needs. What follows are detailed reviews and comprehensive test results for the top six choices.

*Our contributors: Robert P. Lipschutz is a frequent contributor to PC Magazine. Craig Ellison is the director of operations of PC Magazine Labs. Associate editor Davis D. Janowski and PC Magazine Labs lead analyst Oliver Kaven were in charge of this story.*

## Editors' Choice: AT&T CallVantage

01.12.05

**Total posts: 1**

Crowning a winner for this story was not easy, but after long deliberation, we awarded our Editors' Choice to [AT&T CallVantage](#). Although it wasn't the first service to reach the market, and isn't the best performer or the cheapest, CallVantage strikes the best balance overall, solid in every major category. In addition, AT&T is the only provider that will send a qualified technician to do an in-house installation. Yes, there's a fee attached, but for anyone who wants to leave installation completely up to professionals, this is an essential service. The Web-based configuration interface is one of the best we've seen, and sound quality was well above average. Its well-balanced feature set, conference bridge for up to 10 users, and clear voice menus also helped send CallVantage to the top of our list.

[VoicePulse](#) earns an honorable mention for its wide variety of service options, extensive feature set, and reasonable pricing.

### AT&T Callvantage

REVIEW DATE: 01.12.05

**AT&T**  
**AT&T CallVantage™**  
 Phone service for broadband

HOME | YOUR ACCOUNT | INTERNATIONAL RATES | FEEDBACK | HELP | LOGOUT

Hello, Craig Ellison | YOUR ACCOUNT: (201) 590-0306

**CONTROL PANEL**

- Phone Feature Manager**  
 (201) 389-0301  
[CHANGE SETTINGS](#)
- Voice Mail + eFeatures**  
 1 new message(s).  
[GET VOICEMAIL](#)  
[CHANGE SETTINGS](#)
- Call Logs**  
 Last 3 calls received:  
 Unavailable  
 unknown  
 unknown  
[VIEW CALL LOGS](#)
- Do Not Disturb**  
 Not Active  
 Schedule Settings:  
 11:15 AM - 11:45 AM US  
 EST, weekdays (Mon-Fri)  
[CHANGE SETTINGS](#)

**help**  
 Learn how to use your service

**feedback**  
 Tell us about AT&T CallVantage Service

**Your Personal CALL MANAGER**

**Your Features:**

- [PHONE FEATURE MANAGER](#)  
 Get Voice Mail, set Do Not Disturb, and more.
- [PERSONAL CONFERENCING](#)  
 Set up a "meeting room" for up to 10 callers.

**VOICE MAIL**

**ACTIONS:** LISTEN TO VOICE MAIL MSG | CLICK TO DIAL | ANYWHO LOOKUP | FORWARD

<input type="checkbox"/>	Listen	From	Add	Name	Find	Date	Time
<input type="checkbox"/>		(212) 503-5572		Unavailable		21 Nov 04	06:41PM US
<input type="checkbox"/>		unknown		Unknown Caller		11 Nov 04	12:04PM US
<input type="checkbox"/>		unknown		Unknown Caller		11 Nov 04	12:02PM US
<input type="checkbox"/>		unknown		Unknown Caller		11 Nov 04	12:00PM US

[DELETE CHECKED MESSAGES](#)

By Oliver Kaven

If you are ready to take the plunge into broadband telephony but are afraid to wrangle with cables, AT&T CallVantage is right for you. This plan's installation options, rich features, and easy-to-use interface are the chief reasons it's our Choice.

America Online 9.0 Optimized SE - [AT&T Callvantage review by PC Magazine]

File Edit Mail Community Services Safety Window Keyword Sign Off Help

Read 422 Write IM People Safety Settings Music Finance Expressions Buzzline Remind Me Greetings

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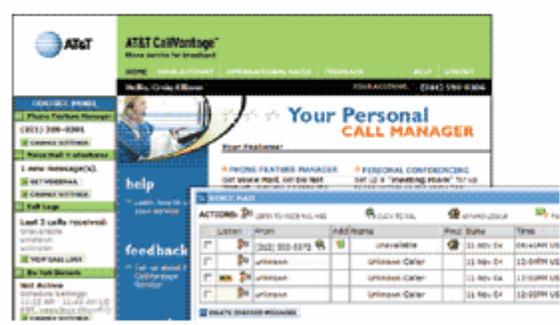
[Home](#) > [Product Guides](#) > [Networking](#) > [Internet Telephony & VoIP](#) > [AT&T Callvantage](#)

 [networking] ALL CATEGORIES

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## AT&T Callvantage

REVIEW DATE: 01.12.05



**ENLARGE**

LISTEN	PHONE	ADD NAME	SEND TO CALL	DATE	TIME
	202-555-5515	Unknown		12 Nov 04	08:44AM US
	Unknown	Unknown Caller		12 Nov 04	12:08PM US
	Unknown	Unknown Caller		12 Nov 04	12:08PM US
	Unknown	Unknown Caller		12 Nov 04	12:08PM US



**EDITOR RATING**

● ● ● ● ●

**VERY GOOD**

**BOTTOM LINE**

Good voice quality, low base price, and optional in-house installation.

**PROS**

Lots of handy call options, including free conference calling for up to 10 callers. Generally very good voice quality.

**CONS**

No fax service.

**REVIEW**

ADVERTISE

Base

THE PROJECT MANAGE

COMPU

NETWO

SECUR

XML DATA

AND

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## AT&T Callvantage

REVIEW DATE: 01.12.05



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By Oliver Kaven

If you are ready to take the plunge into broadband telephony but are afraid to wrangle

with cables, AT&T CallVantage may be just right for you. This plan's installation options, rich features, and easy-to-use interface are the chief reasons it earns our Editors' Choice.

AT&T is the only VoIP provider to offer in-home installation (\$135). For an additional \$15, the company's technician will connect your PCs to your newly configured network. For those who want to do the wiring themselves, AT&T provides excellent setup instructions and a wiring guide.

When it comes to features, AT&T's offerings stand out: They include a conferencing bridge for up to ten users, at no extra charge, and Record and Send, a new feature that sends a recorded message to up to 20 recipients at once (\$0.49 per use). The Locate Me service will ring up to five alternate phone numbers either in sequence or simultaneously.

Configuring and managing such features online is very simple, thanks to the CallVantage Personal Call Manager Web site, the best-organized management interface in our roundup. You can easily access various configuration pages and important functions, such as checking voice mail, accessing speed-dial numbers, or setting do-not-disturb preferences. Unlike some of the other services, CallVantage lets you control most Call Manager features either by phone or online.

As for the hardware, AT&T's plan works with the D-Link DVG-1120M adapter, as well as the Linksys RT41P2 wired router and wireless WRT54G router. On our tests, all devices performed similarly. But the D-Link unit was the only adapter here that experienced problems, specifically in tests that dealt with touch-tone dialing accuracy. In addition, the D-Link unit's post-dial delay in some tests exceeded what we would consider acceptable. But as with all of the services here, voice quality was quite good.

Many enhancements to the CallVantage service are planned for the near future. Fax services, call filtering, and call forwarding (to route calls to a land line automatically in case of a network outage) should be available by the time you read this. AT&T also plans to introduce subaccounts that will all run (and can be managed) on the same CallVantage plan but will be available at a fraction of the price.

CallVantage is a solid choice from a well-established company. Its impressive, well-rounded service finishes tops in our book.

- [VOIP Calling Plans](#)

1 month Free - then \$19.95/month to US, Canada and Western Europe.  
[www.Lingo.com](http://www.Lingo.com)

- [Vonage IP Phone Service](#)

Unlimited US & Canada Calls \$24.99 and works with your regular phone!  
[www.vonage.com](http://www.vonage.com)

- [All the VOIP](#)

All the VOIP, All the Time! Smart VOIP Shoppers Start Here.  
[Voip.AlltheBrands.com](http://Voip.AlltheBrands.com)

- [Covad Small-Business VoIP](#)

Integrate Voice & Data Lines, save up to 40% and increase productivity  
savings.covad.com

- [Voice Over IP Phone Calls](#)

\$19.95/mo US & International Make Unlimited Calls Now  
www.broadvoice.com

CBT Nuggets: IP Addressing - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Home Mail Print Word PDF Yellow Pages Maps

Address C:\Documents and Settings\Dave J\My Documents\CBT Nuggets IP Addressing.htm

Mail: 422 IM Blocked: 0

A, B, C, D are PC's or VOIP phones

Hub or switch

Router

IP Addresses have for sections called octets or quads

The bottom numbers are what's called the "Subnet Mask"

192.168.1.14  
255.255.255.0

192.168.1.27  
255.255.255.0

192.168.2.29  
255.255.255.0

192.168.2.29  
255.255.255.0

RO

Internet

CBT Nuggets: IP Addressing - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Mail: 422 IM Blocked: 0 Yellow Pages Maps

Address C:\Documents and Settings\Dave J\My Documents\CBT Nuggets IP Addressing.htm

MetaCreations Painter Classic - [subnet.RIF @ 100%]

File Edit Effects Canvas Window Help

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 Virtual Lab  
 In Development  
 Site Map

192.168.1.14  
 255.255.255.0  
 192.168.1.1

192.168.1.27  
 255.255.255.0

Router

192.168.1.1

192.168.2.29

192.168.2.25

Internet

the "Subnet Mask" "cuts" or divides the IP Address into 2 sections. Depending on how it's done, the first section can have 3 octets or quads [as this example does] or it can have 2 or 1 quads. The vertical line here represents the "cut". Those numbers to the left of the cut now make up the "network address" portion of the IP Address. Those to the right are called the "Node", or "Host" or "PC" portion of the IP Address.

CBT Nuggets: IP Addressing - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search

Address C:\Documents and Settings\Dave J\My Documents

MetaCreations Painter Classic

File Edit Effects Canvas

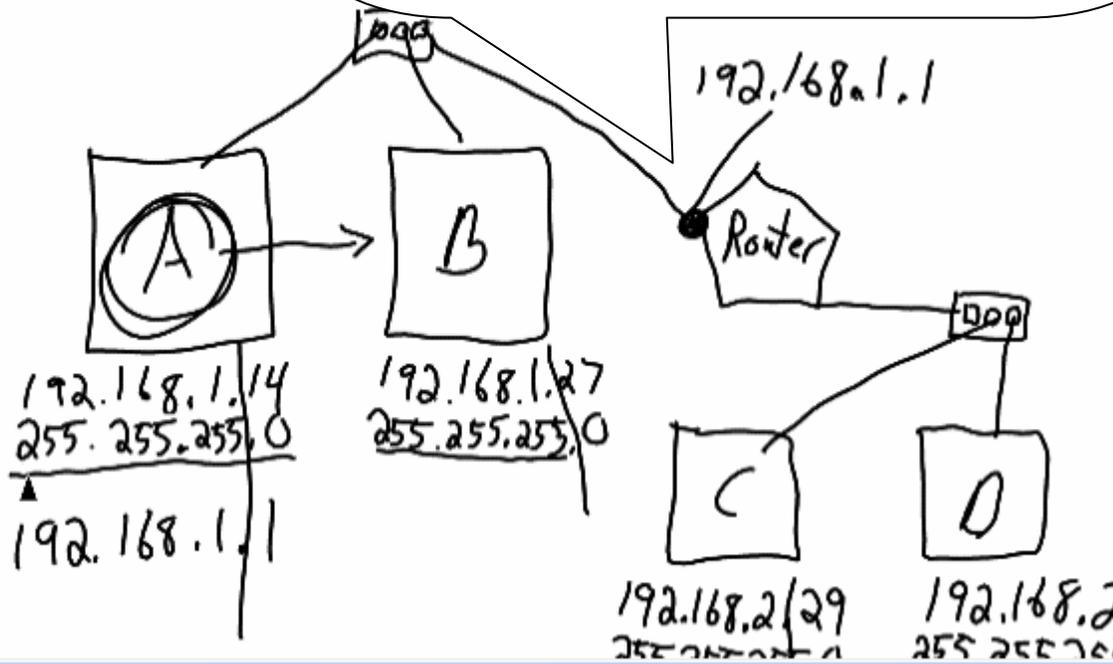
Free Videos  
 at the Trainers  
 Guarantee  
 Letter Archive

Contact Us  
 Billing Order Form  
 Purchase Orders  
 FAQs  
 Licensing  
 Virtual Lab  
 in Development  
 Site Map

After the subnet mask cut, PC's A and B are now on the 192.168.1 network. Usually the first address in that network or 192.168.1.1 is assigned to the port on the router that "feeds" that network. This 192.168.1.1 port on the router becomes what is known as the "Default Gateway".

I guess it gets that name because it is the Gateway to the rest of the routable world for that 192.168.1. network.

Pretty cool huh?



Free Videos  
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Guarantee  
...  
FAQs  
Licensing  
Virtual Lab  
... in Development  
Site Map

MetaCreations Painter Class  
File Edit Effects Canvas

**A**

192.168.1.14  
255.255.255.0

---

192.168.1.1

### Internet Protocol (TCP/IP) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

Obtain an IP address automatically

Use the following IP address:

IP address: 192 . 168 . 1 . 14

Subnet mask: 255 . 255 . 255 . 0

Default gateway: 192 . 168 . 1 . 1

Obtain DNS server address automatically

Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

Advanced

This is how the setup looks with these numbers in the Windows 2000 Internet Protocol Properties dialog box.

- Free Videos
- at the Trainers
- Guarantee
- letter Archive
- Contact Us
- ailing Order Form
- chase Orders



If you want to learn more [like DNS and DHCP] check out CBT Nuggets. And no I don't get paid for doing this commercial; I just think they are great.

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Subnet mask: 255 . 255 . 255 . 0

Default gateway: 192 . 168 . 1 . 1

Obtain DNS server address automatically

Use the following DNS server addresses:

Preferred DNS server: 192 . 168 . 1 . 5

Alternate DNS server: . . .

Advanced...