HOST YOUR OWN

# LAN

# EXPERT TIPS FOR BUILDING YOUR GAME PLAN

A h, how fondly we remember our first LAN party—intrepid warriors loading their *screaming* Pentium II-based rigs into every variety of rusted-out station wagon/hatchback/El Camino, voyaging across vast stretches of asphalt to reach the gracious host's humble dwelling, carefully carrying their beige weapons of choice to the lower-most recesses of said dwelling, and finally bellowing battle cries in nigh-unintelligible tongues before plunging headlong into a Half-Life/StarCraft/Quake II multiplayer melee. We romanticize a little, of course, especially against the backdrop of today's multiday, multithousand-attendee events, but everyone has to start somewhere, right?

In the spirit of starting somewhere, this month we look at starting your own LAN event. To be clear, though, you won't find in the following pages instructions for setting up a QuakeCon-style event. But by the same token, our advice goes beyond which pizza crust style will be most popular among your five friends. Ultra-large and ultra-small LAN parties certainly have their place in the LANdscape of gaming gatherings, but the focus here is on creating an event that requires a venue bigger than your basement but not so big you need to get on the horn with your local arena. If you're interested in kick-starting a 50- to 100-person LAN party and gradually growing it to become a perennial regional favorite, you've come to the right place. (And if you're *not* interested, our answer to the above pizza puzzler is "hand-tossed." You're welcome.)

If you've attended a decent-sized LAN in the past (say, a PDXLAN or a NETWAR, or maybe one of Intel's many LAN Fests), then you might already have a few ideas in mind for your own LAN party. You'll soon find that LAN party planning becomes a game of crossover points. At what point does your basement become too small to hold you and your fellow gamers, and at what point do you need to start looking into a hotel's convention center? At what point will your own 802.11n router become too meager to handle the networking demands of your attendees? And, perhaps most importantly, at what point do you need to start charging an admission fee for your LAN?

In "The Right Stuff," we give you general pointers for tackling the most pressing concerns—finding a venue, determining how much power you need to run all those PCs (this is more crucial than you might think, at least according to one seasoned LAN organizer), paying the bill, establishing law and order, and planning for the future. Running a LAN party requires a lot more than circulating an email with a meeting place and time, as you'll soon find out.

As your LAN grows (actually, probably *before* it grows), having the appropriate infrastructure in place becomes proportionately more important. However, you might think that as soon as you move into the family room of your local Perkins that you need to start "borrowing" your employer's networking hardware. You'd be wrong: Consumer-grade hardware and broadband service can often comfortably manage LANs as large as 50 attendees. "Some Assembly Required" drills down to the finer details of calculating bandwidth and power requirements, setting up and routing the network connections, and testing a facility's capability to host your event.

And then there's that persnickety little thing called money. You need it, probably lots of it, and *definitely* lots of it if you have to rent a venue. We can tell you right now that taking out a second mortgage is not the best way to pay for your LAN; "Follow The Money" will help you estimate and anticipate the final bill so your LAN party doesn't become a loan party. You'll also find that sponsors are more approachable than you might think, provided your event can live up to their expectations.

Through it all, though, remember that a LAN party should still be a party. Though LAN parties won't always be fun to plan, you should always plan for fun. ▲

by Vince Cogley

# THE RIGHT STUFF

**H**ow many buddies can you cram into your garage? Six? Twelve? At what point do you outgrow a basement? For many gamers, there comes a day when you want more—more people, more fun, more vibe. You want to put on a *real* LAN party, just like those events you've either heard about or personally attended. Why settle for 12 people when you could host 120? But a lot of details need to be addressed when you migrate a LAN out of the basement, beginning with the most important.

## Venue

Where will you hold your event? Think about places where people gather. How about fraternal orders, such as the Eagles or Elks? How about churches? Depending on the organization, there may be codes of conduct more strict than those of even a well-run, respectable LAN party, particularly in regard to language used in the heat of battle, so be honest with potential hosts about their expectations.

Another common venue is local schools, especially the cafeteria or gymnasium. Pay special attention to the floors here, though. School officials don't want to arrive on Monday morning and scrape leftover adhesive off their gym floor or find a patchwork of duct tape scraps littering the cafeteria.



This typical scene, from PDXLAN 14, shows the look and feel of a 500-seat event in a hotel conference facility. Note the somewhat close spacing of the table rows, which organizer Matt Conwell says helps foster a more personal, fun atmosphere.

Alternatively, especially given today's commercial real estate market, you might also find available space to rent. The trouble with commercial spaces is that it can be leased to a new business at any time.

"The problem with most venues is that they'll have the space but not the power," says Matt "Vector" Conwell, owner of PDXLAN (www.pdxlan.net) and organizer of a wide variety of LAN events around the country, "or they'll have the power but not the space. Your goal to find a proper venue is a place that has both."

Assuming your event will last more than a few hours, you'll need to consider food. Some venues will have an adjacent cafeteria, which can be either a good or a bad thing depending on your attendees' expectations. Often, you'll want a venue with nearby restaurants of the pizza/burgers/sandwiches bent. Some shops that don't normally deliver will make an exception if the attendance looks promising enough. If you give nearby restaurants advance notice, they might even extend their evening hours.

"Do you want to supply food for free and have the cost included in sign-up?" asks Tori Pugliese, marketing manager at gaming hardware vendor SteelSeries (www.steelseries.com). "Or is it easier to bring in local restaurants or caterers selling snacks as fundraisers like candy bars, chips, etc.? Chain restaurants that are associated with sponsoring high school sports would also be excellent to approach."

Of course, food and drink lead to another inevitable concern. When planning an event of any size, keep an eye on your ratio of people to restrooms. A 1:100 ratio isn't pleasant. Also, don't assume that public restrooms and/or nearby restaurant restrooms will be available for all of your attendees unless you have explicit permission.

If you're planning on a relatively low headcount, as in less than 40 people, consider using the banquet/meeting room in a restaurant. Conwell recounts one event he attended that was held at a local Denny's. A total of 25 tickets at $20 per person were sold, and the admission price included dinner. That's a pretty sweet deal for everyone involved, especially if there's direct access to the banquet room from the parking lot.

Got grub? Pizza is the perennial staple of LAN parties, but you'll want to coordinate with nearby pizza shops to make sure they're ready for the spike in demand. You might work with them to extend hours and offer discounts to event participants.

www.gamerzunite.com, www.lanparty map.com, and GotFrag.com."

And, of course, go to www.computer poweruser.com/lanyard to take advantage of our LAN party resources.

## The Money

Venue may be the most important aspect of LAN party planning, but many people immediately jump on the idea of sponsorships. Some naively assume that because their vision for the LAN-to-be is so compelling that sponsors will fall all over themselves to cough up CPUs, video cards, and all manner of other big-ticket prizes.

In the real world, sponsorship is a commercial decision made by companies fighting tooth and nail to maximize profits for their investors and shareholders. If you don't sell the idea of sponsoring your party as a sound business decision likely to yield an acceptable return on their investment, your odds of success with vendors will plummet.

"SteelSeries is approached daily about providing products and/or support for LAN parties," says Pugliese. "Most requests that come in are parties ranging from 50 to 100 attendees, but the bigger the better." Pugliese says that SteelSeries almost always sponsors LANs guaranteeing at least 100 attendees. "Things that 'wow' our team include an excellent Web site already designed, examples of where the sponsor logos will go, and talking about where the event will be cross-promoted with other partners. Will you do a local press push, etc.?"

For an idea of what vendors will expect to see in the *first round* of questioning, see SteelSeries' site at tinyurl.com/ykb9afj.

Conwell and Motter both agree that beginning admins should approach vendors looking for swag—lots of swag— such as T-shirts, caps, banners, posters, pens, key chain fobs, mugs, USB flash drives, etc. For vendors, this is cheap advertising for their target audience, and it ensures that every recipient leaves with that advertising in hand. Conversely, a single prize, such as a CPU, only vanishes into one person's bag. Swag is fun, and most people like winning it.

If this sounds like sour grapes, look on the bright side: Do you want attendees who are motivated by big prizes or those motivated by big fun? Attendees only after big-ticket prizes often have bigger attitudes and cause more problems. Because of this, many LANs don't announce their prizes until after registration closes, just to make sure that the people who show are there for the "right" reasons.

Speaking of registration, how much should you charge? At least in the beginning, just look to break even. If you make a little extra, consider it gravy, or do as Intel does with its LAN Fest proceeds and donate it. (So far, Intel LAN Fest has given over $300,000 to charity.) Regardless, you may want to avoid taking a loss by padding your admission prices by a given percentage. Attendee dropouts are your biggest concern. If you arrive at a per-person cost of $50 and pad the admission price by 20% to $60, you now have a buffer in case 20% of

your registrants fail to show up. The second and simpler method is to have a no-refund policy. Some attendees might object to this, but these are the best ways to avert potential financial disaster for yourself.

## The People Factor

Remember that 25-seat LAN party at Denny's? According to Conwell, it had a good run with regular attendees, but eventually it died. The event petered out not because of Denny's but because of the admin, who never did anything to make the party different or more interesting over time. It was the same meeting, over and over.

"I always hate it when people tell me that PDXLAN was the same thing as the year before, because that means we're getting stale and we'll cease to exist," says Conwell. "That's why we really change things up with contests. We did shuffleboard contests with old hard drives. Rather than do another eating contest with the LAN staple of pizza, we changed to Costco muffins, and it was a hoot. Wii Tennis. Rock Band. Dodgeball in the parking lot. Just doing fun and crazy things we don't normally do. At our last event, we did Family Feud. It was amazing!"

Ironically, though, the Family Feud got taken a bit too literally. In the absence of a buzzer, players had to grab a baton on the table before them. In one of the final rounds, two contestants had a death grip on the baton. The larger male contestant decided to resolve the issue by judo-flipping the 125-pound female contestant. Yes, for real.

This is why codes of conduct and making sure you attract the right audience are essential at LAN parties. Understand that when you rent a property, that property is legally yours to control during the rental period, with all of the rights and liabilities thereby associated. For personal conduct, it might be prudent to either have a lawyer draft you a waiver form or else "borrow" one from a large, well-established LAN in your area.

PDXLAN uses a waiver containing a list of 35 rules to which each attendee must agree, with the last of these being "Admins are always right and have the final word in all decisions." If people get out of line, you can call the cops and have them removed. And just remember that if you make rules, you need to uphold all of them without exception. If you let one attendee use speakers, they all will think they can use speakers, and with one rule broken, people will think all rules can be broken.

For individual game rules, you might consult the World Cyber Games past and present lists (tinyurl.com/yhk29hj), but Motter cautions setting up tournaments with certain games.

"Try not to run your tournaments for the games that the professionals are playing," he says. "It might be a great game, but you probably won't see it at too many LAN parties because it brings the group of people that play *that game*. If you get a pro or semi-pro group that effortlessly destroys everyone else, it can ruin the event."

## Growth

PDXLAN went from 20 people to 500 in one year, but Conwell says this was a fluke and has never seen it repeated. Instead, a far more prudent course would be to aim for growing 50 to 100% each year. Go from 20 to 35 or 40. Go from 35 to 50, and then from 50 to 75 or 100. Work your way up gradually and make the inevitable mistakes that come from learning the ropes on a smaller scale. Again, Conwell cites the disaster that was the Portland Expo Center.

"They charged me over $12,000 for power—*just* power. My wife and I were sick the week before, because we were in the hole about $10,000 up to a week before the LAN. We had 800 attendees. That's $15 per person just for power. On top of that, the venue cost $8,000 per day. Now we're at $45 per person. At that time, we were offering soda for everyone, so that's

## Top Tips From PDX

We've covered a lot of "big picture" factors in organizing a LAN event, but what about the stuff to keep in mind as zero-hour approaches and your party is actually under way? We asked PDXLAN's Matt "Vector" Conwell for some more advice.

1. Have a clear plan of attack for the event. How is your setup going to look? What needs to be done and when? If it's not done before the doors open, things are only going to get worse.
2. Make sure your power is good to go before the doors open and keep an eye on power throughout the event. It's the single most important thing in the room.
3. Have a contingency plan if something goes wrong.
4. Say hello to everybody as you rush by. You don't realize it, but often people are there to see you as much as they're there for the LAN. It can take a lot of nerve for people to walk up and introduce themselves to the LAN organizer. Be friendly so they don't have to.
5. Make sure everyone knows the schedule, including sponsors and staff. The schedule is the plan that's public. The "plan" involves the internal schedule but also includes stuff that isn't on the schedule, like monitoring traffic.
6. Keep your staff fed and rested. If they're not happy, they're not going to react well to attendees, and your event is going to get a bad name.
7. Watch the physical temperature of the LAN. Places will tell you they can maintain 70 degrees with no problem—when there are 20 people in the room. How about with 200 computers?
8. Extrapolate requests. When someone asks me if they can bring in an extra monitor, I immediately multiply that request by assuming that every attendee will want the same thing. What will an extra 200 or 500 monitors do to the space and power configuration? I answer based on the multiplication, not the individual. ▲

another $7 per person. And the Expo Center charges $2 per chair rental, $30 for a two-person table.

"It really adds up quick at these bigger venues. The power is so expensive because of the union required to lay out the power. The Expo Center is a union shop. It was like $120 per 20-amp circuit just to be laid on the floor and plugged in. That's why venue selection will make or break you."

Ultimately, Conwell decided that an event of more than 500 people would be unsustainable given the kind of audience and event he wanted to maintain. Psychology is important. For example, the Expo Center venue doubled aisle widths to 12 feet, which made the event far less personal for participants. With so much distance, you might as well be playing online. On the other hand, too much closeness can violate venue codes and possibly city ordinances.

Talk with your venue manager about codes. Beyond a certain point, the local

fire marshal may need to be involved and approve your floor diagram and power map. You don't want the fire marshal to appear on your doorstep 60 minutes before your LAN is scheduled to start and order you to redo your entire wiring and table layout. It happens. This is why it's important to work with the venue manager as early and thoroughly as possible, because the manager will often go to bat for you with city officials if you've done your homework properly.

With each step in your LAN's growth, expect to make mistakes. Just make sure you learn from your mistakes and avoid repeating them. Do this and you won't have attendees for long. So go slowly, do your planning many months in advance, and keep your growing LAN as safe as it is fun. Game on! ▲

by William Van Winkle

# THE ESSENTIAL LAN CHECKLIST

For larger LANs that run over multiple days, hotels are a perennial favorite venue, especially because a hotel will likely work with you on the price of its conference room in return for a commitment on rooms booked. Be careful here, though.

"If you commit to too many rooms, you could be on the line for them if they don't sell," says Conwell. "If you promise 100 rooms at $100 each and you only fill 80, that's $2,000 out of your pocket. It adds up quick. Don't get into a deal you can't handle. Undercommit and over-deliver."

## Power

We dig further into power concerns in "Some Assembly Required," but for now, we want to cover a few essentials that are inherently tied to venue selection. You'll likely find that many venues, especially smaller ones, fail to adequately understand their power setup. A manager might look at a room with five outlets, each offering two plugs, and tell you that he has 10 circuits. He probably doesn't.

The only way to be sure that you have adequate power for your attendees is to use lamp testing to create a power map. This means that you take a map of your LAN event's environment and mark every outlet on the map. Then you take a lamp and, one by one, plug it into every single outlet on the map. Once the lamp is lit, go to the circuit breaker box and identify exactly which breaker turns off the lamp. In this way, you can gain a precise knowledge of how many circuits there are and where they run. Be sure to clear this with the venue's management before beginning this undertaking, however.

You'll also need to find out how many amps are on each circuit, keeping in mind that you don't want to sustain

more than 80% load on a circuit. As a rule of thumb, Conwell figures 20 amps for every six people. John Motter, who is an organizer of Intel's LAN Fest Portland, says that he estimates 3A per person.

Motter says, "If you need more power, you go with a generator. I've never used a generator at a LAN, although I've been to some that have. I just don't want the hassle of bringing it onsite and having to get the hazardous materials—the diesel fuel—approved. I just don't think [a LAN organizer] needs that complexity."

Conwell describes renting power as "pouring money down a drain."

## Marketing

Introverts will find this aspect of running a LAN to be the hardest of all. If you



Heavy construction can mean heavy power requirements. LAN party systems tend to pile on as much bling as speed, and that can mean even more demanding power needs. If your clientele leans toward monster boxes, consider increasing your per-capita amperage figures.

want to grow your event beyond your circle of friends, it will require getting in front of strangers and persuading them to attend your party. Having charisma will help. If you're not charismatic and good with strangers, hopefully one of your buddies is.

Where do you find these strangers? The most obvious and effective place is at existing LAN parties. Some admins are willing to help promote other local LAN parties, believing that fostering enthusiasm in the LAN community helps everyone and increases the overall audience. If the LAN's admin provides a corner or bulletin board for other admins to advertise, use it. If you can get them to introduce you personally to their group, that's even better.

Word of mouth is far and away the most effective means of promoting your LAN. If you're already running a small LAN (or are a recognized regular at another LAN), ask the attendees to find and sign up one guest to your planned, larger event. If you frequent local PC hardware shops or game stores enough to know the employees, ask them to attend and refer you to others who might be interested. Colleges tend to be pretty fertile recruitment grounds, as well. Just be warned that putting a flier up on a bulletin board tends to yield few results. The human touch is far more effective—so effective that Conwell states he's never spent a dime on advertising PDXLAN, which is now the largest regular LAN on the West Coast.

"Another way to get the word out for your local LAN party includes social media," says SteelSeries' Pugliese, "the free and easy way to tell the world about what's going on. Use Facebook, Twitter, forums, and even blogs. There are also sites like www.lanpartylist.com,

# SOME ASSEMBLY

# REQUIRED

**T**here's really only one good cure to that lonely, solitary feeling you can get playing the same online game at home, alone, night after night—and we're not talking about stopping the game and getting some sunshine and fresh air. (Geesh, thanks Mom.) No, we're talking about getting together with other people, in real life, with our computers and gaming gear in tow, and having a good ol' fashioned LAN party.

A LAN party is in many ways like a normal party, complete with social interaction, food and drink, stories, and laughs—just the thing to make you feel like a part of society and civilization. But there's also a LAN present, suitable for use with online games so you can all try to kill each other (virtually, of course, and in the spirit of fun).

We expect you to already know how to have a party. You might not be on top of what it takes to build the LAN part of the LAN party of your dreams. So, we've consulted a few LAN party veterans, along

over, so planning one is a little different. It needs to be good enough for the number of attendees, supplying just enough bandwidth to accommodate everyone's gaming, but it has to be reliable immediately and not require a lot of tinkering to keep running. Even an hour of downtime is a significant portion of a short LAN party. So, planning is important.

Unless you're all playing on a game server located within your LAN party (more on this a little later), everyone will be connecting to a host on the Internet, so doing some bandwidth math is the first step. Calculating bandwidth needs is surprisingly simple: Take the number of players and multiply it by the bandwidth a game needs to its server, adding about 20% for some overhead. You might be able to get away with less overhead for cooperative players who are good friends, but plan on more overhead for players you don't know very well.

Determining the bandwidth a game uses to talk to its host is simple, too. Download and install the free



For smaller affairs of fewer than 50 people, you might be able to get by with a standard consumer-grade networking hardware. However, as your LAN grows in size, you'll probably need gear that can handle some heavy lifting, such as this Trendnet switch.

with our notes from when we've run LAN parties and gaming conventions, with the intent of helping you figure out what it takes on the technology side of things to put together a successful LAN party, be it for just a few friends or maybe for a few hundred.

Basically, the tech boils down to having enough electricity, a functional LAN, and in almost every circumstance, a broadband Internet connection. But the devil is in the details.

## Broadband Bandwidth

When you plan a LAN at a permanent installation, you build for the long haul. The LANs at LAN parties, however, are almost always temporary, being set up before the party and torn down as soon as it's

program NetStat Live from AnalogX (www.analogx .com) and let it run while playing the game, though there are other free bandwidth meters you can use. Periodically ALT-TAB to NetStat Live and observe its Incoming and Outgoing connection graphs. Look at averages and don't worry too much about the irregular peaks. Another method is to play through a router that displays bandwidth utilization graphs, but be sure only one computer is playing through the router for an accurate measurement.

If you think folks will be playing different games, try this with all the games, find the game that needs the most bandwidth, and use that for your calculations. You'll probably be surprised how little bandwidth modern games need. Under 50Kbps on the

# HOW TO STRUCTURE YOUR LAN INFRASTRUCTURE

download side is pretty common; some games require less than 10Kbps. The upload sides are usually only a quarter as large as the downloads. As an example, you can have 22 players playing a 50Kbps (download side) game and still have 20% extra capacity on a 1.5Mbps connection for a given direction.

"For the last Aces High annual convention, we've had about 50 PCs

Communications, Travis Kreikemeier, NETWAR'S Internet coordinator, tells us. To be fair, most of NETWAR's game servers are located onsite for the event, "but users still need to download patches and games, check mail, and surf the Web," Kreikemeier says. "We do some basic traffic shaping and P2P blocking with the router so the connection is fairly divided, but bandwidth is rarely the problem.

infrastructure (the DHCP server and other router/networking settings). If your venue has one or both infrastructure types available, there are advantages and disadvantages to using them vs. doing it all yourself with your equipment, so these need to be weighed. Let's talk about doing it all yourself first.

The basic LAN consists of at least one router connected to the broadband connection, enough switched Ethernet ports for all of the computers that will be playing, and enough Ethernet cables to connect everything.



Once the infrastructure is laid down and working properly (note the switch in the foreground), even a LAN party organizer can spend time enjoying the fruits of his labor. (That's him to the left of the switch.)

connecting to the game server through the hotel's [wired broadband connection], and we were just fine, even with other hotel guests using the connection," says Roy "Skuzzy" Neese, network administrator and community manager for HiTech Creations (www.hitech creations.com), publisher of the World War II combat flight sim Aces High.

Similarly, the NETWAR Omaha LAN party (www.netwar.org) usually has about 200 computers online at any time, with their Internet connection split among three basic cable modem connections supplied by Cox

As another example, we've wired up 80-seat gaming conventions in hotel ballrooms with a single synchronous 1.5Mbps T1 line without bandwidth problems, even without advanced routing rules. (Though, to be fair, this was in an era before widespread P2P.)

So in some ways, adequate bandwidth might be the least of your problems.

## Get Connected: Building The LAN

The LAN consists of two parts: the physical infrastructure (including cables, switches, and routers), and the logical

"Make sure everything is running on a switched network," advises Neese. "Nonswitching hubs are really, really bad here." The problem has to do with network congestion. Hubs are "dumb" devices that immediately rebroadcast packets received on one port directly to all the other ports, meaning that computers need to wait for a clear period before transmitting packets of their own. A switch (or "switching hub" or "switched hub") is a "smart hub." It actively looks at each packet, determines its final destination, and then routes the packet directly to the only Ethernet which will eventually lead to the packet's end point. It verifies packet integrity, inspects traffic quality, and essentially acts like a "packet traffic cop" so data passes through intersections smoothly.

"A smooth gaming experience is all about the smooth delivery of packets. It's actually more important than raw bandwidth," says Neese.

So start building the LAN by getting enough switches with enough ports to accommodate all the PCs that will be at the party. If you'll be supplying all the necessary cabling, you can use a single, large, centrally located switch and use lots of very long cables to reach everyone. If players are bringing their own cables, experience shows that hardly

anyone brings cables much longer than 15 feet (well, we do, of course), so instead plan on having smaller switches distributed throughout the venue, with each of the switches connected to each other. The intelligent packet inspection will work through multiple switches.

Once computers are physically connected, they need to talk to each other via TCP/IP, which means each machine needs its own IP address. Although it's possible to manually assign static IP addresses to each player's computer, this becomes a big headache as you encounter players who don't know how to change their TCP/IP settings. Still, if for various technical reasons you must work this way, handing out slips of paper with IP address assignments (and don't forget addresses for the gateway, netmask, and DNS servers) is the way to go. Write basic instructions for how to manually change addresses on a blackboard or overhead projector, or just instruct those who know how to do this to help those who don't.

Of course, it's much easier to have a DHCP server (usually a router with a built-in DHCP server) assigning IP addresses, but be sure to check the size of the DHCP assignment pool. Many routers have an off-the-shelf setting of only 50 IP addresses, which is obviously a problem if you have more than 50 computers hooking up. Increasing the size of the pool to at least 100 or 150 addresses is a good idea, as the overhead can account for machines and devices that get an IP and then disconnect from the network unexpectedly.

Should you bother with providing 802.11 wireless access? Opinions range from "possibly" to flat out "no." Jed Penna, one of the organizers of Intel's LAN Fest (lanfest.intel.com), plainly says, "We don't even run [wireless]; we don't even see a reason to provide it. Most of the PCs are desktops anyway, so they all have [Ethernet] ports. Plus, latency during competition can be a really upsetting issue."

Roy Neese says that wireless "can work for small numbers of players," but



DSL Reports' speed test is one of the many free tests you can use to determine if a potential venue has the bandwidth to handle your LAN.

that the resulting connection is a lot more variable than a wired connection. As such, if your router is a wireless model, and within range of the gamers, it may make a good backup connection for the hypothetical one or two players with laptops whose Ethernet jacks aren't working. Otherwise, turning it off means one less thing for you to worry about.

## Route The Connection

The router acts as the gateway between all the players on the LAN and the Internet at large, and being the brains of the LAN, it performs several tasks. On a basic level, it acts like a smart splitter, slicing up the broadband connection so that each PC on the LAN can talk on the Internet. It usually also assigns IP addresses to the LAN via its own DHCP server, and must also act as a firewall, blocking undesired inbound connections while opening up ports for outbound connections as necessary. (Incidentally, there was a time when you needed to manually open ports in a firewall for specific games, but almost all modern games can now gracefully navigate through a firewall.) Hooking up the router in a LAN party is just like doing it at home: Plug the broadband connection's cable into the router's WAN or Internet port and then plug your switches into any available LAN port.

The quality and robustness of the router you need basically depends on two things: how many players you have at your LAN and whether these players are "good LAN party citizens."

"A 'dumb router' can handle 10 or 20 people pretty well," says Neese. And by "dumb router," Neese means an off-the-shelf, consumer-grade router with factory firmware. And in fact, we'll admit to using an ancient Linksys BEFSR81 wired router to share a T1 connection among 80 PCs in hotel ballrooms in 2001 and 2002.

But today, realistically, when you start reaching 40 or 50 people, then you start needing more advanced routers with special features. Penna agrees, saying "50 people is probably an upper limit where special equipment isn't needed. People downloading videos and running P2P software can be a problem for others." Straightforward video downloads can saturate the broadband connection, and P2P connections can saturate the router's internal routing tables and generate inconsistent packet routing. If your group can be trusted to not use the LAN party's connection for these things, then a dumb router may suffice, but some LAN partygoers feel their registration fee entitles them to do whatever they want on the Internet, so then you need a smarter router.

"Without traffic shaping, games would suffer," Penna tells us. For LAN Fest, traffic shapers ensure that gaming-related packets receive the highest priority through the router and subsequently the LAN itself, while other LANs are able to get away with using the QoS (Quality of Service) settings available on higher-end routers or even prosumer-grade routers running DD-WRT (www.dd-wrt.com) or other advanced open-source firmware. For best results, you need to figure out what ports your games are using and give those QoS priority. Then, optionally, reduce priority for nonessential traffic, block certain protocols entirely, and block obvious bandwidth-sucking sites such as YouTube.

## The Server Situation

The mechanics of a dedicated server at a LAN party are very straightforward and involve doing two things. First, to make the game server easily discoverable

on the LAN, give the game server computer a static IP address and then just post the IP address on a chalkboard, whiteboard, overhead projector, or even just scraps of paper handed around the room. Then, when players' PCs prompt them for a server address, just input the IP address (and, if necessary, the port number) on display.

The router's firewall determines if the server will be visible and available to the outside world. If you want to keep the LAN party's game server private, just make sure the router isn't set to allow communications over the ports the server needs to communicate with the outside world. On the other hand, if you have some folks who couldn't attend the party but still want to get in on the fun from home, open up the necessary ports. If you do this, be sure there's an administrator on hand who knows about the "kick" command, letting you dismiss uninvited players. You can normally learn which ports need to be opened or closed on the discussion forums dedicated to your game.

## Use What's There

In 2010, a lot of potential venues already have not only broadband access but also a ready-to-use LAN and wireless network. Should you use it? Possibly. Before signing on the dotted line, you need to go to the venue and really test it, and you need to convince the venue to agree to either let you change settings on the router as necessary or ensure a network engineer is onsite during your event and is authorized to make necessary modifications to the router.

Testing can be pretty straightforward: Take a notebook, plug it into the LAN, run traceroutes and pingplots to your anticipated game servers, and then run any of the common Internet speed tests (we like the DSLReports' speed test at www.dslreports.com/stest) to check the broadband speed. Ideally, do this several times throughout the day, and do it on the same days of the week you're having your event, which should give you a sense of the venue's Internet use patterns.



You'll quickly find that nonswitching hubs will wreak havoc on your LAN; using a tool like WireShark can help determine if you'll need to bring your own switches.

You should physically inspect (or get the model numbers of) the switches to ensure the venue is using a switched network. Alternatively, use a packet sniffer such as WireShark (www.wireshark.org). If you see lots of traffic, then the venue is using unswitched hubs; you'll need to bring your own instead. If you need more Ethernet ports than the venue has available, then plugging your own switches into its network is usually acceptable, but ensure the venue knows you'll be doing this.

Most newer hotels (and other buildings) use relatively modern networking equipment and routers, so their on-staff engineers can (and should) make requested changes, but if an older or smaller venue's equipment isn't suitable, ask if you can swap out yours for theirs for the duration of the event, or make the booking contingent on their upgrading their equipment. The venue should commit to these stipulations in writing before the event.

## Power It Up

Electrical bugaboos have been the source of more problems in LAN parties than even connectivity for two reasons. The first is that it can be a little hard to test beforehand. Secondly, if a venue has never scheduled an event full of power-hungry computers, venue owners just never give electricity a moment's thought. But you need to, and proper planning is the key.

"Most commercial venues have electrical circuits limited to 20 amps each," says Neese. "If you assume close to 600 watts per computer, then that limits you to four, or maybe five PCs per circuit."

Penna agrees, saying "Gamers use high-end PCs, with many using SLI (dual-video card setups); the more SLI rigs, the more power problems there are. Assume four amps per PC, but SLI setups can push that even higher."

Gaming laptops are becoming popular, and their power draw is significantly less—between 1.5 and 2 amps each.

Fortunately, there are things to do to mitigate power problems. First, get a detailed layout of the venue's electrical system. Get the number of available circuits, confirm the maximum amperage of each, work out how many computers each circuit can adequately supply, and then make sure you don't have any more PCs installed than the system can handle. If that means turning people away at the door, you may just have to accept that as an unfortunate necessity. If you can plan an early registration, having attendees identify their computers can help.

When laying out the room, make sure the different circuits are distributed evenly among the tables and then assign users their spots based on where amps are available. You can reinforce this by supplying your own power strips at tables and limiting players to two or three outlets unless special arrangements are made. Additionally, don't allow anyone to bring UPSes; these draw surges of electricity to charge their batteries at random times, frequently tripping breakers and bringing everyone else down.

You should also ensure ready access to the venue's circuit breaker box (or its engineering personnel) in order to reset breakers when they blow, which can still happen despite your best efforts.

## Is That It?

In terms of the hardware for a LAN party, broadband connectivity, a router, switches and cable, and a suitable, distributed power grid are the basic ingredients. Paying for them and organizing the event is another story, of course, but keep reading for some tips in that department, too. ▲

by Warren Ernst

FOLLOW THE

# MONEY

**W**hen you see an advertisement for a LAN party or gaming convention, you probably aren't wondering how its organizers managed to pay for it all. If you have aspirations of running one yourself, however, it really should probably be the first question that pops into your head. Being the sensible types ourselves (and not being independently wealthy besides), it's the first thing that pops into *our* heads.

Fortunately for you, some of us here have some experience organizing large LAN parties and gaming conventions, and we also know folks who do it regularly. We even happen to know people at companies who occasionally help out LAN parties with sponsorship. We've put our heads together and talked to our sources and have put together some tips, ideas, and honest realizations that should help you organize and finance the large LAN party of your dreams.

## In The Beginning . . .

Unless you've inherited a building with a very large room with lots of tables and chairs, ample electricity, a broadband connection with a fat pipe, and a ready-to-go local-area network, then you're going to need some money to pay for these things. The obvious way to raise money for these things is to charge an admission price to attendees, but the owners of the things you need usually need either money up front or at least a contractual promise to pay immediately afterward—a definite Catch-22.

Sponsorship seems like it might be a good solution, but sponsors expect to get something in return for their investment, and most sponsors need a LAN party to reach a critical mass of attendees before they'll even consider sending help your way. Catch-22 again. What to do?

We think these situations explain some common trends among LAN parties: They started small and were initially self-funded. Fortunately for their organizers, the small size makes self-funding manageable, but these are still money losers, at least initially.

"[NETWAR] started off small, with buying the equipment and charging a cover," says Travis Kreikemeier, Internet coordinator for NETWAR

Omaha (www.netwar.org), which now operates 26-hour-long LAN parties with attendance figures hovering around 200. "For the first three or four events," he continues, "it was a total money loss. Now it's sort of a 'break even' proposition. We've been doing it eight years now, and probably everything is now finally paid off."

Harry Mason, convention organizer of the Aces High Players Convention for several years, agrees. "[Getting started is] the really hard part. [Initial expenses] are all really out of pocket to get things rolling."

We've heard similar stories during informal talks with other LAN party organizers over the years. Most start with the organizer buying (or using previously purchased hodgepodge collections of) switches, Ethernet cables, power strips, and extension cords; hooking the network up to their existing router and broadband connection; and then setting up a few people in the garage, basement, backyard, or spare bedrooms.

"The nice thing about network equipment is that it all gets reused," says Mason.

Charging a small cover charge to help defray costs is appropriate at this level of LAN party, but not if you're asking attendees to bring their own networking and electrical equipment to piece the LAN together.

The other big LAN party expenses at this level are tables and chairs. These can be rented inexpensively at party/event supply stores, but like networking equipment, tables and chairs can be reused between events. Purchasing what you need to get started, and then adding as attendance grows, makes better financial sense in the long run.

## Getting Bigger, Getting A Venue

The next stage of LAN party evolution involves getting more space for the party, and spaces tend to break down into two categories: improvised meeting spaces and purpose-built meeting spaces. Surprisingly, one isn't inherently better than another, and also surprisingly, one isn't necessarily more expensive than another when the party's over. However, purpose-built meeting spaces tend to be located within hotels, and hotels are

# HOW TO PLAY (& WIN) THE LAN NUMBERS GAME

really set up to have people staying overnight (or nights) in hotel rooms, meaning that LAN parties at hotels tend to turn into conventions. But hotels have certain advantages over most improvised spaces, as we'll soon see.

Improvised spaces tend to be cheaper initially, but they also tend to have less infrastructure in place for LAN parties. "The biggest pain when moving venues is power and connectivity," says Kreikemeier, "but there can be other problems, too. Can we have an electrician come in? Can we add a junction box? We've had a lot of venues turn us away after all the requirements. [When venues are attached to restaurants], sometimes you need to make deals with catering." Many improvised spaces don't have a robust broadband connection either, so you need to either plan on bringing in connectivity on your own (at your expense, of course), or you need to plan on only running games that use a server that's hosted on your LAN. At NETWAR's current home, connectivity is supplied by three cable modems brought in by Cox Communications, which can be a significant expense, though in NETWAR's case, Cox is a premiere sponsor. (We'll cover sponsors in a little bit.)

Some improvised spaces work out pretty well, though. "Venues where bands play have the wiring all set up for what we need," says Kreikemeier. "We've also done it at family fun centers, where they have ample power set up for arcade games." One was located after hours at a McDonalds restaurant, where at least there were plenty of late-night snacks available.

Purpose-built meeting spaces at hotels usually have some sort of infrastructure (even tables and chairs) already in place, but it's up to you to ensure that it meets your requirements. We've already covered the technical requirements for electricity, broadband connectivity, and the LAN itself elsewhere in this issue (see page 64), but the nice thing about most hotels is that these elements are normally included in the room price, or can be negotiated into the deal.

"Everything is negotiable," says Mason, "even things such as the bar rate, (that is, the price attendees pay for food and drink at the hotel bar), service fees, and security."

Meeting rooms (even ballrooms) are generally priced against "room-nights." In other words, renting a ballroom (and its infrastructure) might cost $4,000 all by itself, but the price goes down for every block of guest rooms that are booked by attendees. For example, this hypothetical ballroom price might drop to $3,000 if your attendees book a total of at least 40 room-nights, $2,000 if they book 75, $1,000 if they book 100, and totally free and clear if they book more than 120.

As you can see, creating a multiday event is a little like playing chicken. The larger the event with a greater attendance, the more likely it will actually cost less in the end. But if enough people don't come out, or stay at the hotel, you're on the hook for potentially thousands of dollars because you've planned too big. Usually, the combination of registration fees and a venue discount for achieving some of your room-night goals results in a positive money maker, but you need to be prepared for things going wrong.

"You better be ready to take a bath," advises Mason. "You make commitments and sign contacts, and you're responsible for it. You've got to be ready to lose some money, and you can never go into [organizing a LAN] thinking you're going to make money. [This past year], with expenses running several thousand dollars [for our three-and-a-half-day convention], we actually made $285 overall."

Ultimately, knowing what your attendees want to experience should

Although piles of sponsors' swag won't offset the operating costs of your LAN event, it can be extremely helpful to draw new attendees in and keep current attendees coming back for more. (*Note: The Crucial goodies pictured here are shown for illustration purposes. Crucial's actual sponsorship package may differ.*)

help when selecting a venue. If people are simply looking to play a game as much as is humanly possible in one stretch, a single-day LAN party using an improvised space usually makes the most sense. If people are looking to socialize with each other and catch up with people they only see once a year (or less), then the purpose-built meeting space of a hotel could be the right choice.

## Get The Ball Rolling: Covering Startup Costs

With mention of how organizers should be ready to "take a bath" financially, you can probably guess how the vast majority of LAN parties get their seed money: Organizers usually pour in their own money.

"Getting started—that's the really hard part," says Mason. "It's all really out of pocket to get things rolling."

So what are some typical avenues for initial financing? There are several common ways: plowing in your own money or credit, finding several partners with whom you can pool resources, and requiring the paying attendees to prepay early during the planning stages. All of these require

doing some basic math and following a plan to avoid a financial disaster.

Although you shouldn't count on making money with LAN parties, you should still try to determine if breaking even is even remotely possible. Some "back of the envelope" calculations usually suffice, and using other LAN parties as a guide is also helpful. NETWAR Omaha, for example, has around 200 attendees paying either $25 (if preregistered) or $40 (at the door). If half preregister, then the basic budget you have to work with is $6,500 ($2,500 + $4,000), which seems like a lot until you realize you need to rent a venue that holds 200 people, get broadband connectivity for 200 users, build a LAN that supports 200 computers, and find tables and chairs to seat 200 people.

The Aces High Convention has similar math: About 50 people paying $125 registration comes up to $6,250 for a four-day event at a hotel. Each attendee needs to stay over three nights, but some are locals or shared rooms, so figure 25 room-nights a night for 75 room-nights total. Because a hotel generally includes the entire infrastructure in its ballroom price, you need to calculate how 75 room-nights bring down the cost of the ballroom. Is it

low enough that registration fees will cover it? Knowing the number of local attendees, who won't need a room, vs. out-of-town attendees, who will, can help you determine the amount of the hotel discount you can expect.

If you're reasonably confident that registration fees will come close to covering costs, then there's a chance you'll be able to recoup your initial seed money, which you'll need for things such as buying the LAN hardware (which is, of course, reusable), paying deposits on venues, prepaying the broadband supplier (if necessary), food or catering you may supply to attendees, and so forth. Even if suppliers don't need large deposits up front, doing this math should at least ease your mind when you're signing contracts committing to pay.

Having partners helps dramatically, especially when starting out with a new event. You divide up areas of responsibility (John handles the venue, Mike deals with the LAN, Bill handles the money and credit card processing, Pat takes care of the food, Chris gets the broadband, etc.), and everyone chips in startup monies to divide the risk. As a bonus, you won't be responsible for every single thing and might actually have a chance to enjoy the LAN party yourself.

Encouraging early registration is a good way to scrape together startup funds, and doing things to ensure you reach the maximum capacity of your venue helps the bottom line overall. A healthy early registration discount is one good way to get registration fees early. (Note NETWAR's 37% discount for early registrations.) Offering prizes to registrants drawn at random (either among early registrants and/or from anyone who registers) is another way to entice registrations. Sponsors can help with this in a major way, and in other ways, too.

## The Benefits Of Sponsors

Sponsors are companies (or, once in a great while, individuals) who agree to give you and your LAN party their

products, services, or monies in exchange for something that will increase their own business or brand awareness. Sponsors can help ease some of the financial burden of paying for a LAN party, but usually only indirectly.

"[These days], I just try to get a certain level of prizes [from our sponsors] so our attendees have something to look forward to," says Kreikemeier, which is a sentiment repeated by everyone we spoke with, and which jives with our personal experiences.

Is it possible to get a direct financial contribution from a sponsor to help out with costs? Well, anything is possible, but such gifts are extremely rare, especially today. "Larger events may request a (sponsorship) fee, says Zak Wood, director of global marketing at Trendnet, which sponsors dozens of LAN parties and gaming conventions every year. "They'll sell sponsorship levels, ranging from $3,000 to $10,000, and we generally stay away from that.

"Generally, we're happy to send items for prizes and swag, though we have also had people borrow equipment [for a LAN party], too."

When asked what he thinks TrendNet gets out of sponsoring LAN parties, Wood says, "That is a very good question. Networking isn't a field you'd think would want to sponsor a LAN Party. Mainly, we do it to capture the attention of early adopters, and we think LAN party folks are the early adopters we're looking for."

Wood might be on to something, as Kreikemeier told us stories of attendees winning items they never knew existed but came away impressed with once they were opened and played with.

Requirements for sponsorship, at least from TrendNet, aren't insurmountable. "The screening is pretty simple: Anything above 50 [attendees] is likely to get sponsorship," says Wood. "[LAN parties] with fewer [attendees] have less of a sponsorship chance. Actually, we establish contact with maybe 70% of the events we sponsor."

Now, we don't expect you to fill a venue as large as DreamHack's for your first LAN party, but doing your homework about a potential venue is vital. You should be realistic about the space and power requirements of your LAN when finding a venue. (*Photo courtesy of Toffelginkgo via Wikimedia Commons*)

Regarding other requirements, Wood says, "We require proof that the [TrendNet] logo is posted on the LAN party's Web site before stuff gets shipped out. And following the event, photos and pictures are appreciated, both of the event and of prize winners."

We didn't ask Wood these questions so that everyone reading this can hit up Trendnet for sponsorship but rather to get a sense of what you and your LAN party can offer a potential sponsor in exchange for some of its products. Namely, if your event is large enough, it can present a good opportunity to expose trendsetting users to new equipment or brands. Getting products to offer as raffle prizes or contest prizes is very possible and can help bring event excitement and attendance levels up. Borrowing a sponsor's equipment for the purpose of both running the event and demonstrating its abilities and qualities is a distinct possibility. But no matter what their level of involvement may be, sponsors expect you to actively promote the brand and its products to attendees.

Contacting potential sponsors can feel a little like asking someone on a date, but our experience shows that taking a personal risk when contacting sponsors out of the blue yields better results than a relatively riskless email or Web page form. Keeping in mind that the worst that can happen is that a company politely tells you "no thanks," we suggest the following tips when contacting potential sponsors. First, get your act together: Have your LAN party's Web site

up and running and make sure it works fine and looks good. Second, make a phone call to a potential sponsor and ask to speak with someone in public relations, gamer relations (if it's a company that sells gaming products), or marketing. Third, politely and clearly identify who you are, what your event is, and what you would like in the form of sponsorship (items to raffle or offer as prizes, items to borrow or demo at your event, or, if you're feeling lucky, funding). Fourth, explain what benefits a sponsor would enjoy by helping you. And, finally, regardless of their response, thank them for their time, leave your contact info and Web site address, and ask them if you can contact them for a future event. They could very well monitor your event's Web site after the fact to determine if you're worthy of sponsorship in the future.

## Experience Counts, But It Isn't Everything

We know this can all seem daunting, so we have one more tip: If you can partner up with someone who has financed, planned, or even just helped with a LAN party before, do it. Misery may love company, but stress loves partnerships.

Still, there have been plenty of successful LAN parties started by inexperienced individuals, and you really can do it, too. Let us know how it goes. ▲

by Warren Ernst