Comments From

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Big Admin

Salary Survey

Survey Comments: Predictions, Desires, and Challenges

Hundreds of people entered comments in reply to a question about the state and future of the system administration profession. They have been partitioned into sections with related topics:

- General outlook: both the positive and negative views
- Outsourcing: a source of great trepidation these days
- Automation: Reducing complexity? Enabling increased complexity?
- Professionalism: What does it mean? How is it achieved?
- Security: Many believe it is the "future" of system administration
- Change: It appears to be the only constant
- New technical models and roles: What does the future hold?
- Hot technologies: What's the current hot product?
- Business and management paradigms: Business usually pays the bills; how should system managers deal with business?
- Challenges: Specific comments on what's very hard right now

Many themes emerged as respondents thought about what they wanted or what the future might hold. These included both optimism and pessimism (everyone sees the world through their own experiences, and that's abundantly clear in this set of responses).

General Optimism

Let's start with glowing, mostly unadulterated optimism ("it") refers to the future of system administration):

It's only going to get better from here.

Overall, very good.

Looks promising.

Growing.

Headed in the right direction!

The future looks bright ?!

It can only get better, right?

Future of sysadm... looks bright! Will look even better when the economy turns up.

Future of systems admin is bright! I see people having to become more specialized as the technology diversifies.

Continuing the theme of optimism, here are a few comments about why sysadmins will be needed in the long-term. Many dwell on the complexity of trying to make systems usable by not-exclusively-technical end-users:

> *System Administration will always be needed. Hopefully, more and more the people with the power will recognize the importance of having good System Administrators.*

> *We sysadmins are here to stay for a while yet.*

> *This is an in-demand job that is here to stay.*

> *Systems administration will always be around. However there will be a deepening division between the LCD (lowest common denominator) operating systems (such as Windows) require an understanding of the system. Hopefully someday there will be more companies stepping away from Microsoft and demanding both truly skilled admins and truly flexible and cost effective software.*

> *Growing, growing, growing.*

> *System admin in this area seems to be growing in prestige and compensation due to its high tech nature.*

> *Job prospects: Expanding. Emphasis on security, performance, and clustering. I LOVE this work!*

> *I see sysadmin as being more important, since I'm observing technology becoming more complex rather than simpler for end users. I work with small rural schools in western Arkansas, and we have systems from DOS 4 to XP Pro/MacOS X to deal with.*

> *As long as we have Microsoft they will need lots of me :) .*

> *As long as Microsoft keep putting out shamefully insecure server software, Windows sysadmins will have job security, but IT-related industries will continue to suffer.*

> *System Administration will always be needed, the same way as administrators are needed for maintaining robots at factories.*

> *There is no silver bullet, that's why there will always be sysadmins!*

> *The future, hopefully humanity on a whole will decide that being intelligent and using common sense can be fun and even make their lives easier.*

> *As long as willfully ignorant users grow in number, there will always be sysadmins.*

General Pessimism

Just as those having a good year write glowing predictions, so do those having a bad year write, with fabulous imagery, depressing predictions:

> *Future looks dismal...*

> *No future.*

> *Conditional Boredom.*

> *There is no future.*

> *The future is in goat herding.*

> *What future? I took a nearly 50% pay cut in the last year because HR folks won't talk to old, female sysadmins, companies want specialists with certifications (not experience)*

> *Overworked and underpaid.*

Unfortunately during the dot-com boom the average administrator was commanding a very high salary, and companies felt like they were being forced to overpay people. Now that the economy has tanked, companies are feeling an overwhelming desire to screw over the average admin by cutting the staff and making him/her do the jobs of two or more people. This leading to burnout and resentment. Unfortunately if/when the economy stabilizes, a lot of companies are going to be hemorrhaging talent. Sad situation.

The future of system administration seems dead. Employers and IT vendors seem out to get rid of us all. Employers don't want pure systems administrators - they want people who have multiple skills - networking, database administration, programming, etc.

It's a dead end. Computers have been a hobby for 25 years (since I was 6). Now they are a burden and I find my job is mainly "babysitting" for people who can't figure out File->Open, or reboot their PC by power cycling the monitor.

Hopefully I will still have a job in five years. The future seems bleak to me, but I'm in it until the very end.

Where do we go from here? It's truly become a dead-end, and it's not all the fault of the economy. Bad management, "corporate logic" (oxymoron), and incompetent workforce are completely incompatible with the field. Technology is advancing(?) or changing too rapidly for us mere mortals to keep up with, software seems more broken with every new release, and hardware is degrading in quality on the high-end to become more "pc"-like. Security issues are a nightmare. Kill me.

Sysadmin will become less specialized and will cease to exist.

Eventually people will figure out that computers don't need to be so complicated, and all the sys-admins will be screwed. Enjoy it while you can.

Think future looks bleak at the moment as privacy in the workplace continues to erode as well as irresponsible (immoral) youngsters and cheap foreign labor replaces good quality people.

System Administrators as we know them are going away. I do not think there is a future for the full time admin. We now need to be able to be a source of revenue and not a sink. That means we need to become DBAs, programmers, developers or some other person, in addition to the sysadmin stuff, to offer a positive impact on the bottom line. If we don't, we will be outsourced or replaced by someone who can.

If the tech industry compensation in Canada does not improve, Canada will face a massive skills shortage that will cripple the industry as people move to the US or even overseas for higher compensation.

On the future of system administration: Unfortunately I think that the future of system administration isn't so bright. Not because of spending or the economy or the war or whatever - these things come and go - but because system administrators are going to become bored. There was a thread on Slashdot recently about why people don't want to become mainframe operators [because it's boring]. I'm afraid that this is what will happen with system administration.

I fear that the future of highly compensated ($85K+) sysadmins is at significant risk due to several factors, including: 1. Misunderstanding and cluelessness of HR and management in general about the value of a professional, competent and self-educating sysadmin generalist. 2. Replacement of experienced sysadmins with less experienced employees who are willing to work for significantly lower salaries and with foreign outsourcing

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few highly paid Sysadmins in the US, but for the most part it will be automated or outsourced. I predict that DBAs will also be eliminated very soon. The American business practice of doing it "right now" instead of right is killing investment and jobs in the US and will drive IT to the ground.

Very boring...

Doomed.

It'll only get worse.

Would be nice to have a future, but at least I am employed for the time being...

An undercurrent through the pessimistic replies below concerned lack of respect (or the perception thereof) for members of the profession. This is not new but is expressed here in more colorful language than usually seen (often with references to so-called blue-collar career choices):

Sysadmin functions will continue to be denigrated, underfunded, and underpaid.

... Sysadmins are going to have to be more information services architects, not merely plumbers. As a physical architect plans for the best use of space, so sysadmins have to plan for the best use of information services. It will not be enough to know how to install the OS or "fix it"; that way will lead us into the janitorial recesses of our employers' consciousnesses. Regardless of the exact technologies, we are the experts on how it all works together, and we need to be present from step zero in the planning process. ...

It's becoming a trade job just like a plumber - no advancement from a SA position without a business degree, longer working hours, less thinking expected from the SAs and more rote following of documented procedures. It's sad - I will still be in it for 5 years but likely not for 10.

Being a military sysadmin is not the best. The opportunities for personal education and training are nonexistent, there is not a lot of respect for what we do (until something breaks of course), and the opportunities to connect with others of our ilk (via conferences and the like) is severely restricted.

Sometimes I feel that we are just glorified plumbers. I'm still very worried about how the economy will affect job opportunities.

We are tech monkeys. We are replaceable. Those that move into management (be it project or people) are the only ones that will survive long term. Why does a company want a 40-year-old admin that costs 40% more than a 24 year-old with the same skills? Analytical skills and (I hate to use a buzz word) "adding value" are important, one's prowess with technology will only get one so far unless that technology is a very specialize niche.

If companies continue to treat and compensate sysadmins the way they do here, there will be a huge shortage in the future.

I hope we're not getting the reputation in the industry as "digital janitors" UNIX Admins getting new job offers recently in Silicon Valley have been getting laughable offers that are often comparable to a janitor's pay. If I am going to get paid like a janitor, I should at least get to work as many (fewer) hours, like a janitor, and not carry a pager!

I feel that sysadmins generally are treated as cattle here. The management believes that we are disposable, usually negating arguments with, "Well, if you are not happy, leave." I feel demoralized all the time.

I'm starting to think of being a sysadmin as being fundamentally the same as being a plumber. If the pipe is clogged, you get called in at whatever hour to fix it. If the pipe has a capacity problem, you install a bigger pipe. The technical details are very different, but the position is becoming more of a trade than a profession.

Often "professional" work (Doctor/Lawyer, etc) but given the respect of "grease monkey" garage work by management and employers.

I think benefits, salary, and overall job satisfaction issues are only going to get worse in the years to come. IT admins used to be respected. Now we are IT janitors.

"Work smarter, not harder" is taking on new meaning as the complexity of IT infrastructure increases and the number of interoperable (!?) sub-systems increases. I am watching the growth of "intelligent agents," self-healing systems, and grid technology with great interest. The two greatest challenges for IT this decade are to successfully partner with their organizations to align IT strategy with business strategy and demonstrate VALUE. We need more respect! (and money ;)

We are appliance repair staff.

I see most of us in the IT industry as mechanics. I feel that as time progresses, society will begin to see us more and more in this light, and our current "deific" status will diminish greatly.

Outsourcing

Outsourcing is causing major fear, uncertainty, and doubt in the sysadmin community. Most are worried about jobs drying up and use the language of fear (again, "it" refers to sysadmin and/or its future):

I'm very concerned about outsourcing to non-US countries.

It's going away for the most part. Most system administration can be done remotely. It will move offshore with the development jobs.

Worries me that IT continues to be outsourced. Also that I am tied to Microsoft, and all their security hassles.

Too much of it being shipped overseas.

The future of system administration appears to be in India, less a few on-site people for any physical work that needs to be done (although that will probably be contracted out on an as-needed basis). I believe system administrators will be regarded as equivalent to janitors and building maintenance people in the near future.

We are a dying breed. The outsourcing of our labor to India is killing the industry, and the lack of union-ization prevents collective bargaining on Capitol Hill.

We are in big trouble, due to exporting jobs to India, and H1B "slaves" this survey needs to allow more than 3 or 5 choices to the questions above

moving to India, how can one envision a long term career in administration?

Very concerned about outsourcing of IT to India and other "cheaper" locations. http://www.businessweek.com/magazine/content/03_05/b3818051.htm

How long till it's all outsourced to Bangalore?

Hope they don't all go to offshore or foreign companies for contracted system administration.

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I think the field will shrink in the U.S. as telecontacts permit sysadmin to be conducted by engineers in India and other places with lower salaries.

Very concerned about the current trend in "off-shoring" IT support.

Outsourcing is almost dead. Server consolidation is in. Please don't hire any more Indians or Chinese people, they are taking all the US jobs.

I think companies are fooling themselves by thinking they can effectively move sysadmin jobs offshore. Blindly following a corporate directive of cutting costs by a predetermined percentage smacks of the worst kind of uninformed management.

It will be interesting to know how secure other sysadmins believe they are in their job. This is in the light that they probably are seeing a lot of programming jobs being outsourced to India etc. As major corporations are focusing more on profiting at the expense of quality or future sustainability I can only assume that we will most probably be the next to go when the going gets tough.

Worried about jobs moving offshore.

I believe system administration is least impacted by offshore outsourcing due to the typical hands-on nature of the work.

The trend for all hands-on system administration to be out sourced is growing. Leaving a few managers to organize the contractors.

The offshore initiatives of the past couple of years have really taken a toll on the IT job market. I would really like to see a grass roots movement to stop this BS policy.

I'm concerned about who will be calling the shots in the future, marketing or engineering. A merger of the two is a good idea, a marketing driven company is the kiss of great illness.

All routine computer jobs, including most sysadmin jobs, will eventually go overseas (outside of U.S.). [...]

Scared: worried that H-1B visas and shortsighted quarterly returns are helping send work to other countries.

A recent article outlined how many technical support/development functions are being contracted overseas, esp. in Asia, where salaries and cost of living is cheaper. I don't believe this will affect the system administration function quite as much since on-site support will always be a need.

Automation, Complexity, and Skill

Some respondents exhibited real fear about administration automation packages (such as Sun's future N1 release) that will cause them to be obsolete:

Hopefully Sun's N1 technology doesn't make me obsolete.

The concepts of N1, eliza might shrink the number of system administrators required...

Sun's N1 will decrease number of UNIX sysadmin jobs.

Automation will [create] a need for fewer human sysadmins.

The hardware vendors want to remove administrators from the picture; for example, Sun's N1 venture (I know IBM and HP have similar projects in the works, but I don't remember what they're called). MIS is seen as a necessary evil, a leech sucking precious resources away from the "productive" areas of the company. This type of mentality crushes the spirit and makes improvements difficult or impossible.

Management software will lessen need for as many sysadmins.

Computers to control computers in the future... less system admins needed.

Automation is king.

This company is downsizing and looking to automate every task... any future for sysadmin here will be part time at best and possibly outsourced.

We're [in bad shape] - robots will soon replace us all.

Sysadmins are a dying breed...as software gets smarter, fewer sysadmins will be able to manage more systems. Time to blend Sysadmin with other jobs...

Point and click, automated, menu systems are gradually replacing the need for System Administrators - future prospects limited.

Systems are gaining in stability and self repair every year. I expect large numbers system administrators to be severely reduced by automation over the course of the next 5-10 years.

I see fewer admins with more systems per admin. I see little potential for promotion. I see layoffs looming. I see more ulcers coming.

I knew Networking Professionals were to become a thing of the past when Cisco starting selling color-coded routers.

They will not need us anymore as a full time worker.

I think that sysadmin skills are becoming more and more of a commodity (and thus less and less salary opportunity) and hope to be out of the line work and into management in the next 2-3 years.

Others, though, were more optimistic on the same subjects:

Until the "self-healing," "self-managing" servers become more than marketing material for IBM, the sysadmin is going to be in demand.

Just as all technology, over time, becomes more end-user friendly, network computing will - in the next 10 to 15 years - cease to require a human element to keep it running.

System administration is a dying art, it seems. Self-healing systems are designed to do away with us, almost entirely. However, if they're as reliable as Windows servers are, then system administration has a long future ahead of it.

Sysadmin is becoming more of a commodity skill in that O/S's are becoming easier to manage, so more people are perceived as having the necessary skills. I don't think that the "glamour" of being a sysadmin will continue, and certainly the ability to command high salaries is almost over.

It's going too be interesting too see how advances in technology change the number of required sysadmins and their required skill sets.

Job getting easier as tools mature/stabilize, but harder due to specialization.

"They" say that sys-admin jobs will become automated out of existence. It holds about as much water as the "paperless office." Also, as much as try to deny it, Microsoft still can't beat Unix.

Sysadmin should become simpler with the increase in power that will allow an improvement in configuration interfaces.

Anticipate more automation for low-level sysadmin tasks to allow better workload and provide time for building a better architecture.

The phrase "dumbing down" appears in many of these responses that concern themselves with sysadmin's future and the influence of more powerful tools and decreasing requirements to be an expert on various system components:

With the dumbing down of sysadmin that M$ perpetuates, there will need to be a more senior position 'super-admin' to resolve all the problems that the dumbed down sysadmin can't.

Someone is going to have to know the low-level system information. I am seeing too many new Sysadmins that only know the tools but not the underlying concepts.

The key in the future will be to separate admins who "just keep things running" from those who take a more proactive role in creating and improving systems that provide tangible benefits to the organization. The difference is also those who can administer distributed systems vs. just managing a few larger hosts well. As a manager, my challenge is to hire people who understand networked computing which has been proven to be very difficult.

Seems anyone out there can call himself an administrator nowadays. Granted, O.S./software installation & hardware installation are part of it, but knowing how to set things up so they don't cause constant issues/errors all the time and remain error free and work without needed all this tweaking is a whole 'nother issue.

I think the complexities of basic sysadmin duties (not Oracle supporters, major apps, or huge clusters) will start to come down to the PC help desk level. It will take a few more years for that to happen with major apps, but it will happen. As ease of manageability increases, you will need fewer and fewer people in the field. You might have one onsite expert or the help desk salaried individual will handle 99% of all problems and the expert will only be called in when needed. ... Sysadmins will scramble to find more complicated apps to support in order to justify their positions/salaries. There will be fewer yet more specialized sysadmins. ... union projectionists making $20/hour [were] replaced by kids making $3.35/hr. This will happen slowly over the next eight years. There should be plenty of time to see the change coming over the horizon.

I can't wait until the huge influx of paper admins from the last couple of years get weeded out of the market.

I think sysadmins are getting dumber as their jobs are made easier with stupid GUI interfaces. My company is making me switch from bind to some GUI based DNS/DHCP software and the selling point is that I don't have to understand anything about the mechanics of what's going on. I hate that, and I see it more and more. If people have to read a config file and, god forbid, type, they'll never do anything. This makes me crazy.

I see too many badge/certification collectors who don't have the background and experience claiming expertise. This occurs at the expense of trying to promote our field(s) as "professional," where there is expected to be self-policing of "members."

People don't seem to be getting any smarter...

I wonder if we're dumbing down the admin community with enhanced emphasis on GUI based, network accessible administration tools. Sysadmin as an employee for a small company is going to disappear! Small companies are outsourcing, and network services are more and more easy to deploy (thanks to network appliances, and services offers from equipment vendors)

Future sysadmins will (hopefully) see greater automation of the basic grunt-work (backup, performance monitoring, installations, etc.) allowing greater time to be spent on project work that allows their companies to do business more effectively.

It's getting dumbed down in favor or a one size fits all. People will only work in very small areas and have little or no exposure to other technologies.

I feel that in the future system administration will continue as it is, with the people who gain the most skill and experience elevating to the better jobs. With the flood of entry-level workers, the pay scales may drop slightly but systems will suffer under their skill set, which will always make good admins worth their weight in gold.

Future of sysadmin: I am seeing a lot more unskilled untrained personnel being hired into or placed in a role of security administrator in peer organizations. The investment of time it takes for me to educate these peers to the point we can accomplish collaborative tasks is a drain on productivity. If this trend continues I suspect more and more we will see the negative affects in frequent compromise and denial of service. I foresee sysadmin screaming for education and training and companies tightening their belts and denying such request. Over all skill seems likely to decrease.

UNIX Systems administration is getting dumbed down to the point that there isn't anything hard left :(I say five years from now, the experts won't work for your average company, rather service companies that contract specialists as required.

For the most part this job is becoming bugs administration. I think that the competence rate is steadily decreasing in the computer field and it shows.

Here are counterpoints that discusses complexity rather than simplification:

Sysadmin requires more and more deeper and wider knowledge to embrace technology complexity. While becoming more integrated and concentrated in Head Quarter, the number of sysadmin declines. Interest of job will be reduced for remaining Branch administrators.

Only going to get harder with more gotchas, frequency of OS patching, and conflicts between various vendor patches

I also handle the LAN for my division as well as system admin, and manage a firewall. The complexity and interconnectedness of all the processes and programs are becoming overwhelming. I'm already behind in my current knowledge of new Microsoft platforms, while new programs and initiatives are underway. I feel like a jack-of-all-trades and a master-of-none and am trying to hold things together while slowly edging in new technology. I fear that total burnout is lurking around the corner.

System Administration has become an extremely complex job outside the technical considerations, and companies are only barely starting to recognize this on an organizational level. Other professions are not expected to perform as many duties outside the scope of their work as a traditional Sysadmin has had to. This is changing as the field matures and normalizes, but we, as practitioners of our profession, must maintain control over this process in order to continue working in a safe, ethical, and rewarding profession of our choosing.

I believe that system administration will become more complex with integration of legacy and new hw and sw, while at the same time being hampered with unrealistic expectation from upper management and its attitude that "technology" is a black box, i.e., they don't know how it works, they just expect it to always work and it's able to do anything they want.

Professionalism and Unionization

Different people, cultures, and countries have different views of both professionalism and unionization. The first set of these comments discuss area that many people think surround the "professionalism" of administration:

SA has a good future, but because of "the bubble" and too many people calling themselves SA's, we have become commodities, but the fact is we work in the [real] world, and without us nothing happens. "The SA" does not need [to be a wizard], but does need to be technically proficient, helpful, and professional. This is the best way to raise our status back to being trusted professionals with a voice about how things should be done rather than remaining mere technicians.

I believe that as technology morphs into more specialized threads, each unique to one another. This will force SA's to choose (or forced upon them)…, while removing them from being a traditional "generalist SA"…. I also believe that companies will use the current financial environment to whittle away at SA's salaries/benefits. This in the long term could cause the IT field in general to require a union to ensure proper compensation, which I believe would be a bad thing for the IT field.

I think the field is still maturing. People and leadership skills are becoming important as it does.

I can't wait 'til the people who got into this field solely or primarily for the money get out. They are a burden to those of us who come to work to work and genuinely love what we do. System administration will enjoy greater respect from those outside our community, including management, when the average skill and motivation of sysadmins once again start to increase.

I hope the future of system administration is perceived as more of a professional occupation. It would be nice to see system administration offered as a field of study in more higher educational institutions.

The second set of comments show a certain frustration with the field - along with a possible solution:

Should we be unionized?? MAYBE! Some employers seem to make ridiculous demands on admins, cell phones, on call, long hours… maybe a professional union could tame that.

It may be getting to the point that we need a union.

Unionized time sharing.

We need a union; Middle Managers are Spawning beyond health limits.

Should we talk union? (halfhearted joke…)

Brazil sysadmins are not united. I think that if we were more united that would benefit us all.

Security

Security was one of the main career paths cited by those who are thinking of changing from being a system administrator. These comments bolster the motivations behind that thinking:

I think security is going to become uber important.

Security related work is becoming increasingly important and is becoming integrated into normal job responsibilities.

Security will continue to be a top priority for organizations and system administrators far into the foreseeable future. Wireless Security is going to be an important focus for the next year.

IT security will no doubt increase. The move toward the cyber-warrior requires more focused attention to the security of the IT environment.

All sysadmins of any platform or device must be security-conscious.

System Administrators should go for more security training.

People should be focusing more on systems security and network infrastructure as the 'pure' sysadmin field is becoming too full and less appreciated.

Will become more security oriented.

More recognized security related certification. System Administrators at most locations must also act as a security administrator and security certification in Canada is difficult if not impossible to obtain.

I envision security consulting becoming an important service that many companies will acquire in order to comply with standards/law.

Change

"Change" is a way of life in many industries. Given the time administrators spend on learning new technologies, it's not surprising that many respondents had comments about this technological growth and its side effect of instability:

The future of system administration is going to get a lot more complicated. Security issues aside, keeping up with changes in the field is forcing more sysadmins to specialization and, at the same time, the economic slump is forcing fewer sysadmins to do more. I'm not sure what this will bring, but I'm sure there will be more psychological problems in the field if it keeps up.

The ability to adapt to changing technologies and users' inconsistencies is the sysadmins way of life.

Instability is the word for the next few years.

It's tough to keep up with all the advances in this field.

I find that the ability of an employee to deal with any situation, regardless of certification, is becoming more important. For example, with massive layoffs, the consolidation of job duties on fewer staff members requires employees who are better able to deal with situations that they have less experience in.

System administration is like trying to hit a moving target. Not for those in it to make fat $$$.

The more things change, the more they stay the same... no matter how many advances companies make in "Zero-Administration" kit the administration load just moves somewhere else. Systems administration will never go away, but it will change more and more rapidly, and encompass more and more for the foreseeable future.

As the new networking technologies(Wirelell, FDDI, IPv6) are coming, Sysadmins are having more [technologies to study].

System Administration always looks for new trends and new technologies and it never fails on supporting the organization.

Sysadmin has a future. However the future itself will continue to change (as has its past). Gone are the days of the guru - there is simply too much to know these days. Heterogeneous systems need teams with a broad knowledge base rather than an individual who knows it all.

Systems Administration will evolve as networks become faster and more reliable, and as automation of Sysadmin functions increases.

Changing, changing, changing. Job is going to get harder because of security issues.

New Technical Models and Roles

Maybe members of the profession will morph into something else or have a different job. These comments address that idea:

System admins will be a dime a dozen unless Linux gets more market share and I think it will.

Systems administration will probably be merged more with programming. In addition, system administrators will have to learn to work more closely with sales and marketing as a team rather than against them. In doing so they will have to learn to be able to speak more clearly in order to convey technical challenges and problems.

Sysadmin will formalize and stop being quite so "free and easy." Hopefully the rest of the world will meet us half way, but I suspect not ;-)

I think the future of system administration is open source software and cheaper but capable x86 hardware. Even with a large bureaucracy and massive resistance, I have seen open source software taking root. Any executive who has a decent amount of intelligence and access to some hard figures can see this coming down the pike IMHO.

IMHO, Sysadmin is becoming very fragmented by specialization. Perhaps this is unavoidable. But I used to build my own CAT5, run the wires, install/customize OS, add/remove packages (and write code and web interfaces too). Now networking and security is specified from a not-always-well-informed management group and many changes/implementations are mandated (do it, but no additional compensation). Yes, I do work for the U.S. Government (NASA/Goddard Space Flight Center).

System administration even in small companies is becoming less and less generalized and is only going to continue to more specialized areas, such as database, security, and engineering.

Hope next years will further increase the use of Open Source software in the professional/commercial environment.

UNIX is replaced by Linux and much more people consider them selves as experienced in System Administration. It means that salary for Sysadmins will be low next years

Linux will gain more market and become an even greater challenge to MS especially in the education sector because it is more stable and has better support

I wonder how many Sysadmins are only doing Sysadmin work these days. Seems they want you to be able to do Project Management, programming, Web Development, etc. Along with all your Sysadmin duties. It's too much to learn, but if you don't at least try you may find yourself out of a job. I am tired. I am not sure what they want or need from me. I am overhead. I don't bring in any money to the company since I am in the support role. They used to be happy with one specialty, such a Exchange Administration or UNIX Administration. Now you are required to do the work of at least two people. This seems to be happening in other positions also.

The future of systems administration will follow other industrialized industries. Most control will be exercised from a central location; the computer is the network (and the computer is probably not sun)

Focus more on Open Source; managers are flocking to it now since it's free and they have no money.

I forecast: Cell phone/Pager implanted into the brain. Free sleeping bag in the server room. Magic pills to keep the sysadmin awake 24h/day. Millions of single sysadmins (no time to have a real life). A lot of money and no time to spend it. Soon the machines won't need humans anymore. God I hate this job!

VPN desktop to host is making IDS and firewalls less important.

We aren't really system administrators anymore; we're actually enterprise network managers.

It appears that system administration is evolving into compliance scanning and monitoring as the role based environments are set up whereby the data owner handle their own access control (based on their scoped administration).

Integration with archaic phone system, VOIP, and IPv6 are going to be challenging

[Sites will] move into more open source software and away from commercial vendors.

Our job of patching systems is stupid. The architecture of our systems is flimsy. The job of a sysadmin is to envision and build quality IT infrastructure and applications. Yet, admins spend a huge amount of time trying to stay on top of a moving target. It's like trying to patch the tire while the car is running on a road of nails. We sysadmins are the lowest level of IT life. We catch all the blame for system problems we had nothing to do with. It's like being the parking lot sweeper with daily sand storms.

Hot Technologies on the Horizon

Some respondents discussed the technologies they thought were most likely to affect the future:

Linux & open source are a big part of my future plans.

Utility computing will massively decrease number of administrators needed for common tasks. SAs will become a rare breed in IT.

IP Telephony is hot now, learning security for the future.

Business and Management Paradigms

By no means are all the pivotal points in administration related to technology. The relationship between technologists, management, and business goals is extremely important. These comments address that relationship and some of the ways management might be (or should be dealing) with the current situation:

Unless they are willing to come into the 20th Century (never mind the 21st century) with regard to attitudes towards their staff, things will not improve. There is no flex time, no overtime pay, and [comp time] is a joke.

Administration has been/is becoming a commodity market.... Must we all work for consulting agencies?

The pendulum has swung widely in the last few years. I see companies looking for senior people in the Boston area with the expectation of not paying more than $65k. I took a significant pay cut to leave my last job to get out of a bad situation. I'm afraid I'm going to have to do it again.

Future of sysadmin work: There's still money to be made, but you have to learn to play nice with the rest of the organization. IT is no longer the guys who keep the servers running...even in good times, they'll be expected to pay their own way in the company. Demonstrating that you add real value is the key to success.

I think that the government of Canada, probably like many others, contributed to the bust of 2000 by over-hyping IT. Now the pay and any opportunities for those coming out of a Comp Sci program is really lowered, and given current economic circumstances, i.e., post Sept 11, Iraq, SARS, it will be another year before we see any recovery.

The future.. status quo for a while. I believe that large vendors drive the "floating" sysadmin to job hop. Organizations trust contracts with strangers more than their own people when money is involved. This is stupid and sad, and will keep the migratory System Administrator a constant in the future. System Administrators are basically project managers,...

There is still a strong divide between management and IT. And it is hard on the IT staff because management wants one thing, but fails to properly plan or budget. They tend to choose NOT to involve IT in the decision making and then become frustrated and angry when IT can't accomplish their unrealistic goal in short order and for no money. System Admins and Network Admins take a lot of flak because management can't or won't understand that IT is an infrastructure based job, not a service.

I'm worried that political appointees are going to force us to use technology that we don't necessarily think is the best solution for our problems.

The future seems to be a desire by employers for a sysadmin to have expert-level and up-to-date knowledge of several environments, i.e., Oracle+Firewall+*nix. I don't believe this is realistic.

There will be a greater integration between Business Practices and Systems Admin/Architecture the likes of which we have not seen. The thinning of the Management layers of protection will require us to be not only able to be unlocked from the dungeon, but excel in the presentation of ideas, issues, etc. to influence the decision makers.

Future in state and local government is relatively stable but very poor management, awful mix of ancient legacy systems with newer technologies, lack of interest/focus in security issues, no chances for training (except for pets and suckups), often extremely boring. Private sector in this area seems to be beginning to pick up again; wide variety in range of sysadmin positions and responsibilities, from help desk level to engineering/development.

Business will reduce IT staff. They have to: costs of maintaining a large IT staff is too high. Technology advancements will allow IT staff reductions.

There is a definite trend in this economy to squeeze every possible hour of work out of the employees. It has been said … that we can do this and hire really good people for much less than they are worth because of this economy. It is a shame that management does not have the foresight to see that will turn around and haunt them as soon as the economy picks up.

The number of users a sysadmin is supporting is only going to increase as systems become more user friendly and businesses become more competitive.

Let's face the fact that the IT / security honeymoon is over. … [M]anagement is focused on ROI more than ever. Security is treated as an expensive option, and only really implemented when mandated by regulation or after a serious event has disrupted operations. Sysadmins have been underappreciated for the time and effort it takes to manage network infrastructure. Longer hours are expected for less pay. The market economy has too many talented IT people not working, and it is driving down compensation. This is fun work, but constant change, more demands on personal time, and less financial compensation will drive good IT talent out of the trade. This in turn will make our network infrastructure more susceptible to threats and less secure.

With the encroachment of the CFO into the world of IT, I see the System Administrator being relegated back to an 'expense' position. Terms like "ROI" and "TCO" have failed and now it's back to a numbers game. That, and with all the layoffs (pick you favorite word..), they are working us right out of the field. If companies don't start adding IT staff soon, it may cause some serious repercussions for the future of the industry.

Companies will continue to look for cheaper sysadmins, making it harder for more skilled sysadmins to find jobs.

I'm amazed at how few admins are compensated for on-call and off-hours work. Maybe we need to unionize to demand this! Management never takes security serious and we admins are stuck sacrificing our time when a break in occurs against known problems (or unknown problems due to being too busy fighting fires to do audit/manage/control things)

Challenges

A few respondents cited specific challenges:

More and more US laws seem to be passed that lead to making parts of our jobs impossible. Some are leading up to the very technologies we require for securing or testing our systems being made illegal, and others lead to us not being able to guarantee our customers data privacy to be safe from interception and impounding without full warrants.

The problem with living in Tasmania, Australia is finding competent peers/co-workers. Also, the perception by the general public that anyone is able to do competent systems administration is highly frustrating, not to mention insulting. The best outcome for the IT industry would be tight regulation and training/education requirements, such as those required to practice medicine, law, or architecture for example. …

A-76 is my biggest worry as a federal employee. [I'm earning many worthwhile certifications]… A-76 does not care that I've worked my tail off since Jan 02 to take this training to serve as the ISSO for my organization, … A-76 is going to flush all of us in IT out, taking years of corporate knowledge with us. I don't believe contractors are the great panacea to fix the ills of the federal government. … I also feel that contractors will use the flood of Federal IT workers hitting the market in the Wash. DC area to lower salaries and benefits across the board. I'm not optimistic. I had hoped that a move into the Security Field would solidify my position in the Federal IT work force - after 16 years I really don't wish to leave. The Federal Government needs security people now more than ever. …

I don't like whining. Many sysadmins do too much of that already, so I have been gravitating more recently toward organizations that focus on professionalism and professional development rather than ones exploring questions such as "How do we get more respect?" The former leads to the latter.

Will the daily flow of patches ever stop?

New DMCA laws may put me out of the industry - too risky.

Professional Reflections

If you want to know about system administration and related fields, it only makes sense to listen to what administrators have to say. This section includes comments on: becoming a system administrator, the current and future state of skills required, general philosophies, the profession itself, advice for many different entities, and reflections on today's (and tomorrow's) products.

Entering the Field

Is administration a good profession to enter? Many respondents volunteered comments:

I really enjoy the variety of tasks which I am called on to perform but desire a bit more time to enjoy the accomplishment of a given task before another challenge (or three or eight) presents itself!

I love doing system administration in a responsive, small-business environment. I get to work with a great deal of heavy-duty equipment and software on a daily basis, and also work with very competent coworkers. I would hope that the move towards Linux keeps Sysadmins' skills in improvement by focusing on a rapidly developing operating system.

I would encourage young folks to go into Systems Administration. I am very nervous about the whole topic of "certification" - I know many more folks without a job-related certification who are wonderfully competent at their work - and I know some really dangerous idiots with pieces of paper, which say that they supposedly know something. If the World were just a tad different I'd suggest bringing back the apprenticeship model of training. Future Sysadmins should get a good mentor and get their hands dirty! ...

I'm still learning, but I'm learning fast. The job's not great by any stretch of the imagination, but for the work experience, it's worth it. I plan to migrate into programming within 10 years.

Kinda feels like a dead end job right now, no one really knows what we do, so everyone just thinks we "play on the computers."

It is unfortunately getting harder to "grow old" in this field. Many companies / organizations seem a bit shortsighted, and tend to want to hire young and less expensive talent, and miss the value of experience in evaluating candidates.

Very few young Americans are entering the field. When interviewing candidates for open positions, over 90% of the people are either Indian, Chinese, or Russian. This usually leads to communication and cultural difficulties.

It is a wonderful career for the mind, however the IT is in general underappreciated, undervalued, and very unstable... which makes it a hard career to stay in.

My job is great meaning the people I work with (workers only), the upper management is favoritism and they only hire friends and promote friends etc. No room for advancement and they are a marketing company not technical, so they have the wrong people in the wrong places which makes it very difficult and insecure to perform admin types of jobs etc.

This is still one of the best jobs for people who want to be able to learn all sorts of different things and keep on top of the good changes in technology while avoiding the bad things.

System administration is a thankless job.

A factor I see increasing [is] people returning to sysadmin from other positions. The shrinking job market has caused a lot of us with many years of experience to target our resumes at our past positions when that's what's available. This has to increase the competition for the more readily available admin positions. I was a SunOS admin 20 years ago, then a network admin, manager, and IT Director for high tech companies. To stay in my geographic location I took a network/sysadmin position at a smaller company and felt lucky to get it. We could sure use an economic turn-up.

This job sucks, we should have scared straight days where smart high school kids are brought in and scared into applying for med school or something, anything other than system admin.

I work for a local county government. Thus, there is no capability for rewarding of quality work, training, knowledge or skill. There is a relatively low and limited advancement and raise track. There is tons of bureaucracy, politics, and BS and lower than industry standard pay. However, there are good benefits including health, dental, eye, vacation time, sick leave, and pension, some flexible hours (to an extent) and is reasonably family friendly. There are certainly tradeoffs.

I plan to stay in the Information Security area until I retire. However, I have noticed lately that my company is not keeping up with regular salary increases. This year, it was delayed 9 months, yet there was plenty of money for bonuses.

No challenges in sysadmin. I'm now a full time developer, but de facto sysadmin due to small company size - this survey is not friendly to 'partial' sysadmins. Survey questions regarding insurance etc. don't make sense in countries with public health care.

Sysadmin continues to grow in importance as a profession everyday. SAGE's efforts to publicize, standardize, and grow the profession are commendable. It is great to see that other Sysadmins feel the way I do about my chosen career. Keep up the great work!

It's a tough job, but will show if you are good at your job or not ~ you can't fake it as a Systems Admin.

It's a dirty job, but someone has to do it ;-)

I am very excited about the new developments on the horizon for sysadmins and the technologies that we work with.

Can't imagine working with anything but computers and software

Sysadmin is fun to do, great knowledge to acquire, responsibilities, making a difference.

Sysadmins will always be needed!

Live and die as sysadmin.

It's a Good Job.

A number of respondents expressed serious frustration:

Sucks to be us.

Where have all the jobs gone?! Just about every sysadmin I know is unemployed! Including me.

Heavy workload...and must be content to forever be the unsung heroes!

[We] continue to be a highly skilled, under recognized, under staffed and thankless job. People only notice us when things go wrong. Doing our job properly means people are unaware of the technology behind their daily chores or us, the people who make that technology integrate seamlessly with their tasks.

While this organization sells itself as technologically savvy, the management does not have a fundamental understanding of technology. The IT department is looked at as an overhead cost center, and not as an integrated part of the business process. We have no CTO to represent us, so management does not listen to our recommendations or suggestions.

Once you hit "bitter and jaded" it can only get better... but I doubt it.

I believe many companies abuse the 'exempt' policies and take advantage of Systems Administrators through the excessive weekend hours with no compensation.

I guess I'm an old timer on the admin bus. ... I want to go back to an R band D environment, but I don't think that's possible to find one before my current employer implodes. ...

[I am really a physicist.] My only disappointment is that my position here is as high as I can go. I enjoy managing the computer systems and interacting with people, but there is no room for advancement. Right now, I'm waiting for the result of reapplying for my position, which, if I'm successful, will give me a permanent position here.

It used to be fun, but now I can't find a decent position, even by recession standards. It's no longer very interesting, and many co-admins are only administrators because of paper certifications.

My biggest issue with a sysadmin career is the need to be on call 24/7 for a lot of positions. I think that this proves to burn out quality employees over time. (I am fortunate enough to have recently found a position that does not require this.)

We're too often treated as a necessary evil and not as professionals. Too many people don't understand the different levels of sys. admin.

Staggering how often managers can't recognize the difference between [b.s.] and rational analysis when it comes to computing!

I hate coming into work each day and hoping that I still have a job at the end of the day. Telecom (especially my group) has been very unstable in the last few years and it has become frightening.

I think it's time to find a new job.

I'm 22 years old and I'm burnt out.

The burnout rate is usually very high, but I feel very privileged to in my current job. I expect to stay here for quite some time.

It's not "System Administration," it's "System Management," dammit. We gotta change the perspective a bit. We are not Net Janitors, we are Net Gods.

The pendulum seems to have swung back from having silly perks and benefits a few years ago to having nothing but a whip cracking at my back today. I wish I had more time to do things the right way instead of just slinging servers together and hoping for the best. If we all joined together and went on strike the modern world would screech to a halt and yet, for the most part, we get the same level of respect as dogcatchers. I do it because I love it, although sometimes I hate myself for loving it.

Computer/staff questions focus on internal services, rather than provision of services to others, e.g., ISP. I enjoy sysadmin, but am becoming severely disillusioned as to the quality of the tools available (even "Unix"). Everything seems to be backsliding. Survival of the mediocre or crap-but-advertised.

One particular undercurrent about entering the field is a shared frustration about being undervalued, under-recognized, or not understood at all by management:

I work for a good place, but they don't understand that Unix people aren't a dime a dozen.

We get very very small money compared to the work done and benefits earned by the organization.

The future of system administration is sure in the need for people, but not the compensation. More and more I see employers asking for more requirements at less pay. It's disheartening. Things are so bad in California in this respect that I'm starting to look elsewhere in the country.

We are undervalued and underpaid based on industry vs. a particular aspect of the IT industry. Also our salary/job is determined by a group of people who have no clue (corporate management).

System administration undervalued by management. Companies hire many low level/minimally talented people to be supervised by 1 or 2 high level sysadmins. No middle ground.

Skills

Many seem to believe that too many sysadmins are not qualified or "smart enough":

Lots of new unqualified candidates are spoiling the market.

I think that the quality and background of sysadmin seems to be declining. I find that certifications are of little to no value and that the best sysadmins come from an engineering background and not CS.

Too many [...] MCSE's are giving people in our profession a bad image.

Although computer usage is increasing, the level of competent administrators is not keeping pace. Professional certifications should not be "easy" to get if they are to hold true value. Professional Engineers, for example, could never get away with buying a "Pass The PE Exam" book and studying for a couple weeks. But that's all a person has to do to pass some IT-related certification tests these days. Also, the value of a computer science education is being overlooked by many employers who don't realize the advantages of having diverse platform experience and some programming ability. Systems/Network Administrators should be a group of educated, knowledgeable professionals, not a gang of get-rich-quick seekers brandishing certifications that they earned via two weeks of reading.

Lots of things are considered 'system administration' but there are a wide number of things that lower level SA's are not qualified to perform - but the pay is not keeping up with the increased responsibility.

Alas what sorrow for the fallen dot com era. As long as I can stay pure Unix/Solaris prospects are good. My skills being diluted with Windows or Linux is undesirable.

Several respondents discussed education, training, and skills acquisition:

I'm starting to see more certificate programs in the Systems Administration field, which I think is great. I've never been a big fan of the take a year of unrelated courses (Math, Lit, History) to get a degree in an marginally related field (Computer Science) that is far more suited to programmers than Systems Administrators.

Flexible, knowledgeable workers are necessary to survive in this industry.

Unlike most people in the IT field, the economic downturn has been good for me. It has allowed me accelerate the development and implementation of open source tools on inexpensive hardware in my organization. This, coupled with the fact that I've been recognized for the successful implementation of zero-hard-dollar cost systems (free software on old/recycled hardware) has worked to my advantage greatly. However, I would not have been taken seriously had the economy not turned negative, and money-savings not become the high priority issue that it is today.

It is nice to see system administrators being trained today on security as well as the operational environment.

The big question is which way now - after some years in Unix, C & Perl -> W2K -> Linux -> Solaris x86 -> Mac OsX -> Java ... always something interesting.

I've been working with computers for over a decade; four years in system administration of one kind or another. I have been wondering about training/learning opportunities and future job prospects. I'm primarily self-taught through reading many books. However, I can only read so much before I begin forgetting all of what I've read. I've also taken some classes, but I find the depth of coverage to be minimal at best. I've therefore been wondering about alternative approaches to training on these topics, such as changing jobs to work in an environment where mentoring/coaching is more encouraged, tutorial-based training curriculums, and attending classes with deeper coverage of these topics. The second thing is the future growth prospects for the field of system administration. ...

System Administration is an ongoing learning process. Remote management of some systems is reducing the need for on-site system administration. Most of our NT services here are remotely managed with our NT system administrators doing very little true system administration. Thankfully, there is still a need for Unix on-site system administration in my company.

I find that system administration tends to evolve on one level and stay the same on another. While the technologies continually change, the people skills stay the same. Clear and effective communication to all parties involved will make this job easier. Though it is not always easy to convince someone to jump into the open communication lines, it is valuable to make the environment as open as possible.

Too many admins work hard and not smart. No exception at our location.

On system administration, I do not see the value in Professional Certification. I have spent 7.5 years in Universities getting a degree in Physics (Masters). I have developed problem solving abilities beyond what you can get out of any Cert. program. So did I waste my time in attending college? The job market seems to indicate that I have wasted my time and energy on college. If the industry continues on this path then I see a very dangerous road ahead. There will be an increase of mediocre administrators and [reduction in] value of all system administrators.

Certifications mean too much to some companies and people. Experience is what makes a good sysadmin.

The push for certification is a bunch of crap. Talk to anybody with Novell or Microsoft experience - the people who get hired in these areas because of certificates rarely know how to apply the "test taking" knowledge to the real world. Sysadmin jobs vary so much that you could be the best/most senior/most talented at Company A and be completely useless at Company B.

System Administration is going downhill due to all these radio ads, etc. that are offering their classes ... [so people can earn] 50k/yr. The only problem with this is that these *students* are Burger flippers ... with no experience or understanding of the computer business. ...

Philosophy and Observations

Many respondents volunteered philosophies, pithy comments, and a general outlook on the field:

With power comes great responsibility.

If system administration were a building, it'd be on fire and people seem to be running away, into the snow, which is no place to stay either. Summary: crisis.

It is a strange field, as if you are doing your job right, you are designing yourself out of a job.

I've noticed a definite increase in the visibility and perceived corporate value of systems administrators over the past 15 years, but I think we still have significant ground to cover. While I applaud the efforts by SAGE in the area of certification and accreditation of sysadmins ..., I'm concerned that the overall IT certification paradigm emphasizes test taking over actual hands-on experience.

They say we should strive to be indispensable employees - problem is, once we are indispensable, management cannot afford to promote us. So we have to do some succession planning as well. Organizations are not interested in training staff, they prefer hiring people who paid for training out of their own pocket.

The future is open source ... Spam may kill the Internet though, so none of it will probably matter.

Isn't the natural progression from being an "administrator" to "engineer"? ...

The market is really bad in my opinion. Sysadmins are choosing incumbency over money ...

Contractors are killing us. They give everyone a bad name and work for cheap. ... We need to get open source easier to use or Microsoft admins will squash the rest of us.

Petty politics makes this field most unpleasant. Structuring and protecting data should not be so political. So many IT staffers dedicate a great deal of time to empire building in order to mask competence issues, that it is a miracle the users are provided any valid data …

… I think that systems administration loses visibility as an important aspect of operations when cost cutting begins. We tend to have to do more with less for less compensation, and because business leaders still do not fully appreciate what we do, the perceived business value is greatly diminished. Unfortunately, this seems to be a "payback" economy for executive management who feel they were overpaying for IT resources and personnel during the boom years….

Desperately hoping for the market to change; during 2002 I was made redundant twice.

Sysadmin job description being broadened and fragmented too much. Consequently, people in traditionally defined Systems Administrator job roles now being under rated.

My favorite part of the job is when I can find a team lead position. I like the architecture and planning, I'm becoming sick of the day-to-day hands on stuff.

I, like many others in small companies am only partly a sysadmin. Experience tells me that this profession is changing, getting more mature and more proactive. I wonder how management realize that this is a because of better tools and sysadmins, but not that sysadmins are less needed.

… Since most of my coworkers were laid off, I was put into a do-or-die position [solely] responsible for a global network spanning fifteen sites, … I now have additional headcount, and network architecture (instead of implementation) has become my primary focus. … The huge increase in responsibilities has allowed me to very rapidly build a broad set of technical and non-technical skills that otherwise would have taken me years to learn. My new management appreciates what I have managed to do, which has greatly boosted my job satisfaction. …

I take blame for the users installing apps on their systems and email they get. I was even blamed for an email message that was not received because the receiving server was down.

System Administration is a highly important field, but still has low respect/understanding from users. One of the most frustrating things I have had to deal with is users not understanding (or in some cases refusing to understand) why things can't be done quicker, or in a certain way, etc. My focus on security also led to much consternation. …

Security is more about people than technology. Technology is but a tool.

My organization has recently stated that my position will have its pay reduced by 10 percent this July as the IT market no longer requires higher pay to keep people.

I would just like to hang in there for 10 more years to retirement without having to dirty my hands with Microsoft products.

… Gone are the days of a person calling themselves a "senior sysadmin" after just having installed Linux for the first time (and no other experience), since this is what their current/prior employer used as a title. … [Good admins] will prosper, the mediocre will find the next "big thing" and latch on to that.

and/or control this technology tend to be labeled as "wizards" or "gods" of a sort. Unfortunately, this categorization leads to repeated unrealistic expectations. My term for this is "Magic wand syndrome."

Supporting the government is often difficult. Resources are hard to come by and sometimes there is little appreciation for what it takes to do the job. Many of the decisions are political in nature and done for the convenience of appointees.

"… damn the hackers"

Sysadmin: A Real Profession

The notion of system administration as a "real profession" was mentioned several times:

I think it is very important for those of us in this field to stick together and stand up for our profession. So many sysadmins I've met have been very self-absorbed and the health of the profession could be damaged if this isn't reconciled. I am a team player. I like working in teams.. mostly because I know I don't know everything.

There should be an Academy Award for Sysadmins for those that perform their art well.

If sysadmins don't unify around a Body of Knowledge - then we will go by way of the TV repairmen.

System administration needs to become a recognized profession and academic discipline like software engineering/computer science has become. A realistic/useful training program would require both educational training and internships.

It's very difficult to be a professional system administrator without any standards that different employers agree on as to the goals and requirements of system administration. Requiring certain network and server security standards via the Law would be an excellent start.

The push for a CBK and the fostering of infrastructure architecture are probably the two most important directions for the future of system administration.

We need a structured guild system.

We need a degree program for Sysadmin. We need more paying members. We need more benefits for joining SAGE.

SAGE needs to grow and actually have relevance to the industry and to employers. Dare I say Union? Maybe not, but I think SAGE should make evolving System Administration into a true Engineering discipline, on par with Engineering discipline from other industries. State Certification Boards and the like. If I show an employer my SAGE card, it should mean something.

We must continue to push system administration as its own profession that not just anybody can do.

Very important to become visible and accepted as a profession.

SAs must pursue professionalism issues to reduce the flow of new unqualified workers into the field to oppose the corporate pressure to reduce pay scales. Fewer better higher paid not more worse lower paid.

The field of system administration will/must move toward being a more professional field, with established best practices and body of knowledge.

Since IT is a new discipline, there is a definite need for the establishment of a centralized, professional organization. ... I believe that SANS and its focus on (thorough) certifications and establishment of accepted practices are a definite step in the right direction. Also, a recognized association of IT professionals can advocate governmental and corporate policies that enhance the overall state of information security.

Advice

Several respondents had prescriptions for the field, system administrators, and/or management:

Sysadmin is more of an engineering/art position than a "technician" position. Sysadmins are original. Technicians mass-produce or mass-service. Management still needs to really learn this.

System admins have allowed the profession to degenerate into "commodity staff." We must demonstrate value to the business not be an "IT Tax" charge to end-users. We have failed our end user communities by focusing on sexy technology not the deploying stable software/hardware and integrating ourselves into the business side of the house.

Because some systems work is mundane and somewhat repetitive, management sometimes has difficulty seeing the reality. Work is only noticed when it fails. Like insurance (hate to pay but know I need it) I would like a survey of management's opinion of systems administration and how its role/recognition could be improved.

Systems Administration must still be considered a high priority. Most companies seem to be losing focus of how important their data is. The latest trend in hiring appears to involve the less educated and less experienced. This equals less compensation for the employee and less payroll for the company. Once again, they get what they pay for. It is true that spending must be controlled; however, far too many companies are placing their data at risk (total loss, security issues) at the cost of a few dollars.

System Admin [needs] management that understands technology. The leading downfall of many IT companies has been the deceptiveness of hiring more managers that do not understand nor relate to IT; thus driving programs and expectations that are unrealistic and ungrounded. C*O's also need to have a greater grasp of technology so they can relate their visions better to those who build them. As usual communication is essential to any positive growth.

Future needs to be more geared to infrastructures, and needs to allow open sharing of local work within a general architecture of infrastructures.

I think that many companies will make the switch to outside contractors to perform their sysadmin tasks. This will involve both pros and cons: lack of intimate company knowledge, lack of availability when you need it, no local presence, higher total cost vs. greater support base thus wider skill set. Overall, I think this will be a mistake!

… I'd like to see companies shift dollars from support contracts for commercial *nixes to positions for Linux admins. It would also be nice if they would stop treating their *nix admins as grunts who get all of the none-of-the-above tasks (having them ship packages or order desktop software, etc.). …

As US companies explore expanding business opportunities on other continents, greater competition for jobs will bring compensation/salary numbers down. People who want to remain employable will have to be flexible in what job assignments they get and the schedule of hours they work (e.g., work with people in different time zones, etc.) One's time is best spent adding skills to one repertoire including the dreaded managerial and budget set.

Companies need to give their IT system's infrastructure administrators more authority and weight in decision making that is proportional to the amount of responsibility they expect these team members to carry.

I have found that a lack of direction and lack of the communicated direction (however little) is the most irritating part of being associated with a large corp. environment. If the corporate core is not IT oriented (as mine is newspaper publishing), the lack of knowledge at higher levels eliminate the checks-and-balances of IT spin control. Multiple high level "IT Posers" pointing in as many directions as they have hands. This results in large amounts of lost and wasted funds on the whims of unchecked influential people. If your corp. is not IT, hire it out.

Systems administrators spend a great deal of time making up for the shortcomings of users, software developers, and infrastructure vendors. We need a global method of sharing this knowledge that will let us all spend more time out of the office.

Future system admins need to be team players. They must develop good business and communication skills.

Management must understand the realm of responsibilities of a sysadmin. It's not just monitoring a system, you must install patches, fix vulnerabilities, interact with application development, and negotiate changes with business units (i.e., reboot, security fixes, upgrades/patches in OS). In addition, training in new features, technologies, and security must receive funding to allow for efficient use of resources. ….

Go to school and get a BS or MS.

Management and companies need to realize the importance and value of a very good system administrator. Many a time, the higher profile positions (i.e., programming and database administrators) get more recognition and better compensation for equal or less work accomplished.

We all require to develop a much more focused, business oriented view of systems administration - become much more professional

The job market is terrible. ...The government needs to stop non-US citizens from coming here and taking the few IT jobs that are available, at lower salaries. Companies need to realize that the most important resource that they have are the employees, and that retention will become a MAJOR issue when the economy starts to pick up. Employees are going to remember the cancelled training, certifications, and conferences. As well as the ridiculous salary increases, the reduced or eliminated bonuses, and worthless stock options that were part of the compensation package.

I see Linux/Unix skills as becoming more important for administrators in the next few years - I see more and more companies deploying at least 1 Linux box for some reason or other. Security issues have come to the fore, and admins will have to have an appreciation of security issues to survive in the marketplace.

Continuing education is vital and a more focused approach to security InfoSys will be a key change in the next five years.

I've found that the more focused one is on making more and more money, the less likely that person will be to make the rapid advances the person is aiming for. My observations lead me to believe that the people who go into work to work hard, enjoy what they are doing, and be pleasant to work with are the ones who progress most quickly along the food chain. …

There should be a political movement to eliminate the global use of exempt (salaried) status for most computer workers. The Fair Labor Standards Act is outdated and employees are suffering as a result.

I would like to see a change in attitude concerning On-Call/After Hours support. If everyone in this business had more respect for their personal lives and refused to do it, On-Call would be the exception rather than the rule.

We need better PR. We're always the first person contacted to bail out the IT dept, but the LAST to get any credit.

People must learn that Unix or Linux driving dumb terminals is the way to go for any office with > 3 computers.

SAGE is a valuable resource in the professionalization of system admin, however more attention should be given to management education, especially management which works from a mainframe mindset, and too much value is placed on certification.

In the age of open source, a college education is meaning less and less. You can go to college and learn the old fashion way to do things then find yourself unable to compete with the next guy.

Need to fix the problem with off hours support. It is too demanding to work 40 hours and be on call the rest of the time; even if they pay you more for it.

To hell with it, just go back to school.

Send all H-1B's back please.

The employers should not be cheap on training and should provide more opportunity.

We still try and do everything on the cheap, with insufficient staff and this will have to change.

You can decide: live with free software or with only one evil company left?

I guess SAGE should try to raise more awareness of what System Administration is all about. A colleague put it best when we were trying to recover a server in the middle of the night: "We should have them crash more often, now all of the sudden they appreciate us."

Need to have better trained management, provide staff with clearer objectives and a plan for the future of our corporation. No real career path for staff in my position. No training benefits, always hard to get approved for courses.

The cream will rise to the top, but will get skimmed off if given the opportunity. Do not settle, always keep looking.

Learn Linux: Linux is going to wipe Solaris unless Sun does something radical. Save us from MSWindows.

Most system administrators better start looking for a 4-year degree.

The current economic climate dictates that one 'sit tight' for a while; jobs seem to be few and far between in this geographic location right now.

It's time that management stopped thinking of systems administrators as "techies," i.e., as commodities and began to understand that without us and our knowledge of their business, their business would be in serious jeopardy. How we get that across to management is a different matter, however.

Training, Training, Training. Companies need to realize the dynamic nature of the industry and that continued success and the ability to complete more complex tasks on shorter schedules require constant education and re-education.

Product Reflections

Many respondents felt an affinity (or antagonism) toward one or more products, usually revolving around the Microsoft vs. Open Source debate.

Some just wanted to share their enthusiasm:

Long live open source!

One word: Linux.

Love Linux.

Linux, Unix will continue to rule.

FreeBSD forever.

Unix Forever!

Unix Rules...

Windows = Crap; Solaris = Good....

Go Usenix!

Some had longer comments along the same lines:

The continuing war between Microsoft and the open source movement is the thing to watch.

Micro$oft is KILLING [the future]! We must stop the predatory monopoly from destroying our livelihood!

Open source is clearly superior, and very compelling.

With open source software, things will be easier to control and implement.

Sun Solaris is the finest operating system in the world. I wish there was some real support for the Intel platform. With some serious promotion, Solaris 8 (Intel) would be a competitor to any version of Windows. Without a strong push from Sun Microsystems, it is a hard sell in the corporate or government environment. Linux is growing up nicely and VMWare virtual machines may be the interface that will gain wide distribution of the OS. Why is VMWare not compiled for Solaris (Intel)? Or Sun offer another hosting solution? Keep up the great work! Dave Carter Principal Network Engineer/Analyst DigitalNet Government Solutions.

Some of the comments below, though, take a more reflective attitude toward this issue and reveal interesting experiences (including comments not precisely related to the above issues):

Was just about to switch some servers over to Linux until I realized the cost is the same. Why bother I already know more MS than I do Linux.

Installed Linux at home, haven't found a use for it. Installed Linux at work, found most projects and applications only hosted on Microsoft platforms. Installed Linux at school, use it mostly for social activities.

Linux has grown rapidly within our organization. It is my desire to assist in the reduction/elimination of windows to the best of my abilities.

Why is Linux, the worst possible flavor of Unix, the one that was picked by everyone to compete with Microsoft? I'd much rather be a FreeBSD admin, but I'm stuck with Linux at work.

Corporate mentality of conformance to Microsoft even when UNIX machines may provide a better answer with respect to stability, and long term costs. Certain sectors seem quite influenced by glitzy presentations and willing to accept substandard performance because it comes from a corporation "with support." However, accessing support is rarely possible as it "costs" too much to access.

HP has turned their [online] forum into such a valuable support resource that it has actually been influential in the decision to continue buying their Unix servers. We have chosen several times to stick with HP instead of increasing our AIX or Solaris purchases specifically because of how valuable we consider their user forums for support. Their forum employs a points-per-reply feature that strongly encourages users to support each other. We almost never make HP's technical support line our first stop for help even though we've already paid for their support - the answers we get from the forum are nearly always faster and more complete. HP clearly recognizes the value of their forum, and I think that will be a trend followed by other big vendors this year. HP even goes so far as to periodically reward active forum users with nice prizes. Considering that the amount of money we spend with them each year is usually around half a million dollars and that we decided not to use AIX because of a perceived lack of such support, I think that's a wise decision on their part.

And a prediction about Novell vs. Microsoft:

I predict that Novell will again overtake Microsoft in network OS's because of security issues. When it becomes more evident that Netware has dramatically fewer vulnerabilities needing patching as well as the ability to network on a non-Internet routable protocol if necessary, sysadmins will begin flocking to Big Red.

Summary

A technically challenging profession that pays its entry people as much as US$50,000/year is an interesting one. System administration appears to be a fine way to make a living. Experience, education, and enhanced skill sets seem to be the growth path of choice (at least as far as increasing the midpoint of the salary bell curves goes).

About SAGE

SAGE is the technical and professional organization for the entire gamut of computer administrators. With thousands of members and an international membership base, SAGE's goal is to advance the profession of system administration. SAGE distributes a light yet densely packed weekly e-mail newsletter that's all meat and no fat (see http://sageweb.sage.org/newsletter.html). SAGE fosters professional development, sponsors a mentoring program, recognizes outstanding administrators with awards, and strives to improve communication with and among administrators of all kinds. See SAGE's website (http://www.sage.org) for discussion forums, news, and information for the entire administration community. SAGE is a special technical group of The USENIX Association.

About SANS

SANS is the trusted leader in information security certification, education, and research. The SANS (SysAdmin, Audit, Network, Security) Institute was established in 1989 as a cooperative research and education organization and today enables more than 156,000 security professionals, auditors, system administrators, and network administrators to share the lessons they are learning and find solutions to the challenges they face. Last year, more than 12,000 security professionals spent a week or more in immersion training programs on the most up to date techniques for protecting and auditing information systems. At the heart of SANS are the many security practitioners in government agencies, corporations, and universities around the world who invest hundreds of hours each year in research and teaching to help the entire information security community.

Many SANS resources, such as news digests, research summaries, security alerts and award-winning papers are free to all who ask. See the website at http://www.sans.org for a host of free resources.

About BigAdmin

The BigAdmin site at http://www.sun.com/bigadmin focuses on helping system administrators solve day-to-day problems by providing the latest resources, articles, FAQs, scripts, and discussion forums. While the bulk of the content covers the Solaris OS and Sun systems, the site is of general interest to all system administrations regardless of their operating platform.