Recruiting Fundamentals Training

Operating Systems
An Overview

IT 4 Recruiters

IT4Recruiters.com Confidential

Revised: Rob Broadhead

IT4Recruiters.com
Suite 300 #288
115 Penn Warren Dr
Brentwood, TN 37027

Contact Name: Rob Broadhead

Printed in the United States

Overview

Operating Systems (OS) are the basis of computer systems. The level of abstraction from the OS has grown to a point where the OS used during development and deployment of a computer solution is not always important, but it can still be a factor in putting together a development team. This document will provide a brief history of operating systems to modern day, along with how they are related.

The technical details of operating systems will be glossed over to limit how technical this document gets while still trying to provide a level of knowledge that a typical recruiter or hiring manager might find useful. This will go a little deeper than the user interfaces that most users see as the Operating System and touch on technical differences that are useful to know without needing to know much beyond that for recruiting purposes.

Keywords

Here are some useful definitions to keep in mind while reading this document:

- *Nix : A shortened way to refer to any Unix or Linux variant
- MS : As a prefix indicates Microsoft developed solutions (MS-DOS, MS Windows, etc)
- Linux : An open source Unix based operating system that has many derivatives known as distributions or “distros”
- Open Source : A form of application that includes its source code. This allows the owner of the application to maintain it if they desire. This is a simplified definition of open source and it will be covered in more depth in its own training package.
- Shrink-wrap Software : Software applications sold as a commercial product. This may include shrink-wrapped packages found in a brick and mortar store or digital download packages that can be purchased online. This is becoming a legacy term as more software is delivered digitally, but the term includes the modern application delivery methods.
- FTE - (or F.T.E.) Full Time Equivalent is a measurement of resources and is equal to a single person working 40 hours/week. Project schedulers staffing a project often refer to FTE numbers as a way to define how the project will be staffed. In some cases an FTE can be filled by two or more individuals working part-time.
- Power User - Users that have more technical experience/skills than a typical user. These are the users that push applications to the limits and can even act as a first line of support for the general population.

Operating Systems Snapshot

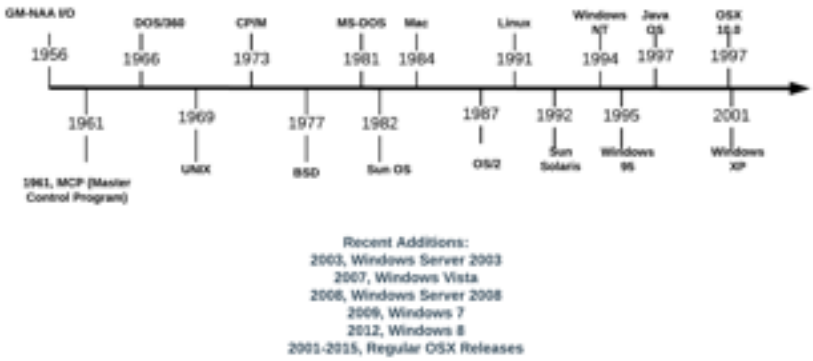
The importance of operating systems to system development is similar to the importance of natural laws to building a house. Google defines an operating system as: “the software that supports a computer's basic functions, such as scheduling tasks, executing applications, and controlling peripherals.” This is a good definition, and as technical as this document will get. In order to avoid getting mind numbingly technical, we are going to gloss over and simplify many operating system details to provide a foundation of knowledge for the non-technical. The definitions will have just enough detail to allow you to contribute to conversations about how operating systems might be involved in IT job postings.

Operating Systems can be a deeply technical subject, but we are going to cover the topic in a non-technical way.

History

The history of operating systems goes back as far as computers. Rather than go into a dry detail of the entire history we can summarize and get to the modern landscape quickly without loss of needed detail. An in depth treatment of the history can be found in Tanenbaum’s “Modern Operating Systems” in the chapter on history. This document will summarize and paraphrase accomplishments up to the 1990’s where we see major growth of the systems of today.

Operating Systems have existed as long as computers and form the rules for how a computer runs.



Any industry in its youth seems to have a large number of players taking different approaches to solving the problem and, over time,

"winners." The operating system landscape started out nearly as varied as computer manufacturers. As time went on, operating system developers saw features and ideas in competing products that they built into their own systems. Early on, the OS and hardware were tightly coupled so an OS rarely had direct competition, instead the OS was often just one of many reasons to buy certain hardware. This changed in the 70s and 80s as operating system ran on specific hardware systems, but users had a choice of multiple operating systems that they could run on their hardware. The competition for the machines that ran big business was won by IBM. They dominated the 70s and 80s in the business world. IBM did not control everything though. Businesses often had IBM built proprietary operating systems on their mainframes, but they also used UNIX variants on work stations and smaller servers.

Hardware systems used to be tightly coupled to the OS but they have evolved to be able to run on many hardware configurations.

There are a large number of UNIX variants in use today including the popular Mac OS and Linux variants.

UNIX came out of Bell Labs (what can be considered a research arm of AT&T) and the IEEE (Institute of Electrical and Electronics Engineers) built the POSIX standard out of UNIX. The complex genealogy chart of UNIX based operating systems is shown above from the Wikipedia page. To this day POSIX compliance is one of the things that links UNIX variants together.

When you hear POSIX, think standard UNIX.

The POSIX standard has evolved, but is still one of the few operating system standards not owned by a corporation. This lack of being "owned" by a company has led to UNIX as a basis for the popular LINUX operating system and Apple's Mac OS X among many others.

Microsoft grew out of a project IBM thought was not worth pursuing. IBM practically gave away the technology for PC based operating systems. Microsoft started with a general PC based operating system and it was not long before the vast majority of PCs built ran Microsoft DOS. The major growth came as Microsoft added a visual layer on top of their operating system that made graphics applications much easier to run and use. UNIX had a competing X Windows option, but it did not run on PCs so Microsoft Windows and X Windows competed in different areas. Microsoft continued to grow through the 80's and 90's and they are still the leader on PC systems.

Microsoft started with DOS, but built Windows on top of it in the late 80's and dominated the PC market by the early 90's

Apple made a big move onto the scene in 1984 with their Mac operating system for PCs, but never had the customer base Microsoft held. It is thought by many that the choice to make Macs require Apple hardware (often more costly than its PC competitors and similar to old mainframe limitations) limited its adoption. Apple managed to find a niche and we see more about Apple later.

Apple kept their OS tied to their hardware and was a niche player.

As you move into the 90s UNIX holds the bulk of the "workstation" and server market while Microsoft windows dominates the PC market. Mac is essentially an "also ran" and several attempts are made at changing the landscape (OS/2, NeXT, etc), but the market share stays fairly stable. The turn of the century starts with Microsoft releasing its incredibly popular Windows XP while Apple releases a game changing Mac OS X that starts them down the path of being able to support intel based processors and lower costs for the base hardware of their machines. Linux showed steady growth through the 90s and beyond as it became a highly popular small server operating system. The open source Linux also grew through a number of new variations (distributions) as developers created their own versions of Linux to better support certain types of applications.

UNIX has always been much more popular as a workstation and server OS, but holds very little desktop market share.

Top Linux Distributions

- Ubuntu
- Linux Mint
- openSUSE
- Debian
- Redhat/CentOS

The various Linux distributions threatened to splinter support and stall growth efforts, but a few distributions managed to save the day. RedHat made an initial public offering in 1999 and made its distribution (RedHat Linux) much more appealing to commercial customers while giving Linux in general a boost of credibility. Linux, like UNIX, was primarily a console based OS until the mid 90s when it started to provide a number of X windows based graphical tools and applications. The GUI improvements led a push for more desktop users and it has grown to a small, but vibrant community of users and (mostly open source) applications.

Linux distributions combine for a small market share in PCs, but have made great in roads in the areas of servers and workstations

Current Operating Systems Landscape

The amount of Operating Systems can be difficult to keep up with. However, the similarities and types of positions that might require operating system expertise allow us to simplify the systems out there. An overview of the modern OS options will be covered in this section. Later we will cover clarifying questions and then sample screening questions will provide more details applicable to requesting or fulfilling a position with OS requirements. In the modern IT world here are the operating systems that are most common on job requests:

The modern landscape can be simplified to Windows, Mac, or Unix for most positions requirements.

- Windows (any version)
- Windows Server (any version)
- UNIX (any version)
- LINUX (any version)
- Mac OSX (any version)
- Other

We do not consider mobile operating systems in this overview. Those are left for the mobile systems overview.

Windows dominates the landscape in its many forms and the newer versions (7.x, 8.x, Vista, 10) are different enough from earlier versions that some skills do not translate. In particular system and network administrators do have a little bit of a learning curve when moving from the older 2000/2003/XP versions to the latest versions. Mac has shown a steady growth and tends to force users to keep up with new release versions so you do not see Mac version specialists as you might Windows. There are occasionally needs for older Mac versions, but those tend to be niche and costly.

Windows Vista, 7, 8, and 10 are notably different from the older XP, 2000, and 2003 versions.

In the last few years RedHat has continued to be one of the top Linux distributions with its partner CentOS. Ubuntu is one of the other top distributions and then Mint, Debian, SUSE, and Fedora round out the top of the modern distributions. Slackware and Puppy Linux are popular, but tend to be used on older, less powerful systems and commercially are more likely to provide low end mail or file servers rather than anything that would need more horsepower. The good news is that all of these are fairly similar and resources tend to be interchangeable across distributions. Job postings do sometimes refer to specialty skills such as experience with high availability systems or a specific packaging system (yum, rpm, linuxbrew, tgz, etc). These are not likely to be blocking skill requirements and are more often a “nice to have”, but clarification is always best.

Linux skills are very portable across the different distributions so always clarify if there is a hard requirement for experience with a specific distro.

Developer jobs that might specify an Operating System might do so to keep a homogenous environment and thus general user

knowledge of the OS should be fine. Most developers at mid level or higher (more than three to four years of experience) might have their ramp-up time on a project impacted by being on a new-to-them OS, but not severely. Projects that create OS tools or are highly tuned for an OS can require a deeper knowledge than a typical or even "power" user. In these more demanding OS developer projects there may be a lot of generally good developers that are not a good fit for the project due to lack of OS specific knowledge. This, of course, makes the positions harder to fill.

Development jobs typically do not require specific OS skills or experience.

Network specialists, System administrators, and other hardware based roles will need to have specific OS knowledge in line with the position requirements. In these cases similar experience on another OS will often not be transferrable so the ramp-up to a new OS for an experienced network engineer or system administrator might be substantial.

Network, Admin, and support roles often have some sort of OS experience required or key to success in the role.

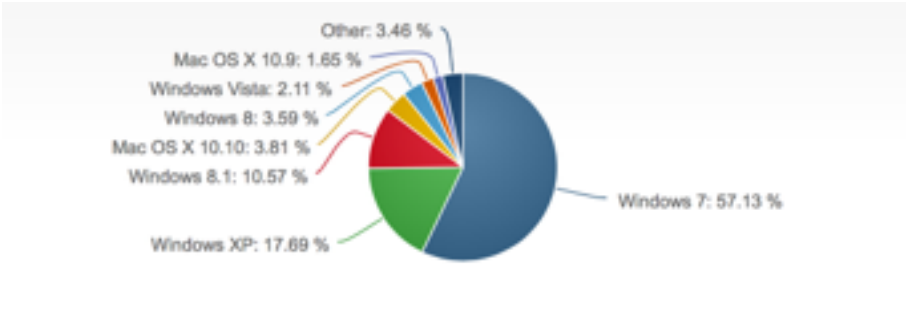
OS types that fall in the "Other" category are a special case and if they appear on a request it is highly likely experience with that specific OS is highly desirable if not a major requirement for the position. Some examples that fall into the "Other" category are: NeXT, Amiga, OS/2, and any mobile OS. Requests for any of the non-mobile OS types are rare, but also hard to fill.

The "Other" OS types can be hard to find resources for as they are often niche.

Adoption

The market has changed somewhat in the last decade, but the desktop is still dominated by Microsoft. Across all MS OS versions they are installed on roughly 90% of the desktops worldwide, Mac is a distant second at around 5.5% of the worldwide desktops. The server world is different as public Internet servers show a split of 33% MS, 30% Mac or other UNIX flavors, 37% some form of

Windows OS skills are the most common and in demand. When you look at just servers the Unix/Linux market share is about two thirds and thus those skills are more common.



LINUX. These are web servers of some sort and the breakdown down does not include internal corporate servers.

Apple has made gains in some sectors, but it is still hard to find IT professionals that do not have Microsoft experience of some sort. Mac OS X even has emulators to run windows that allow a Mac owner to still do work on a windows OS while on a Mac machine. This has allowed users to work from a Mac while still doing windows work and keeping those skills fresh.

As popular as Apple is in the press, Windows is still the OS most IT users use daily.

Although OS skills are still an important part of certain types of jobs, the Internet has made browser skills an area that is replacing OS skills. We will cover this in detail in the web development topics, but for now it is important to note that browser skills can require a specific OS as part of the skill set particularly in QA, testing, and customer support roles.

Browser skills are becoming more common as a requirement and those are often OS specific as well. (e.g. Chrome on windows)

Market skill set

The OS experience thresholds vary by type of job so we will look at those individually. Job titles also vary by company. This means that sometimes some clarification will be needed to ensure that the position to be filled is understood beyond simply a job title.

Developers fall into two categories with regard to operating systems: a power user, or an application developer. In this case an application developer is defined as: a developer building an application that runs on the operating system directly or its GUI layer. This does not include browser based applications or similar applications that run within a self contained environment such as a database, or CRM. This type of development is also referred to as “native application” development.

Native application development involves creating an OS specific application.

You may also encounter developer positions that include administrator requirements, in these cases refer to the areas of this document where those administrator functions are described. These cases are best treated as a combination of two positions in one when looking for a candidate. The combination will make it a harder position to fill and often require higher compensation than either of the individual roles.

Developer and Admin skills are often combined into a single role, particularly in small companies and departments. This makes for a harder to fill position.

Power Users can include a variety of non-developer roles such as: technical writers, quality assurance analysts and more. Operating system requirements for any of the power user roles are almost always a way for the customer to find candidates that can ramp up quickly to the environment, and thus other requirements will supersede the OS ones.

Power User skills can be a way to determine if a new hire will ramp up faster to the role.

Application developers will often be required to possess specific OS knowledge in order to properly complete the tasks for the project. This can thin the number of prospects for these sort of positions, but even a senior prospect may have as little as three to five years of experience in the specific OS area. Since these tend to be small, well defined, areas of expertise they can also be easier to master. It is not uncommon to see developer OS requirements as some small number of years of experience (one to three, or maybe even "some" experience) alongside a requirement for a greater amount of experience in a broader area (e.g. ten years C# or java experience). A key word to look for with application developers is "native" or sometimes "shrink-wrap" or "stand-alone" development projects. These key words imply that OS knowledge is going to be applicable to the role to some extent.

"Native", "Shrink-Wrap", and "Stand Alone" are all descriptors in a development job description that imply OS knowledge will be a factor in the selection process.

Administrators of various sorts, security, and support roles are always going to be a power user at least. These positions will have more emphasis on the OS requirements than other IT roles. This will appear in job descriptions, but you will also be more likely to see OS specific experience listed on a resume for these roles.

Administrator, Support, and Security roles tend to have more OS specific requirements than other IT roles.

Support and PC specialist roles will often list one or more OS requirements and these will most often be "hard" requirements. A Linux PC tech is not likely to be able to be a good fit for a Windows PC tech position. There is sometimes a mix of OS requirements listed for a PC tech, or technical support position. In these cases it is helpful to clarify if a single candidate needs all the skills listed, or if it is a posting for a number of positions and a candidate just needs one or more of the OS requirements listed.

Support positions sometimes are bundled into a single posting for several roles which can make determining specific requirements difficult.

In help desk and technical support roles the experience requirements often go up with the tier support number. Tier I support roles require little OS specific experience and are really just a power user, while tier II and beyond roles tend to require more specific OS experience including administrative tool experience. The table below provides a sample breakdown of how support tier staff are divided. This division among support tiers varies by company often due to a lack of higher tier support staff (they only have tier I and II, for example) that puts pressure on lower tier staff to perform tasks normally above their level. There is also sometimes a blend of higher tier support with development roles so the higher tier jobs are advertised as developer, rather than support, positions.

As roles go up from Tier 1 to Tier 2, etc the experience requirements increase as well.

Support/Help Desk Types - Operating Systems	
Tier I (1-2 yrs exp)	Needs to be able to "get around" the OS, no administrative tasks outside of personal account (password reset, email configuration). Should be able to understand enough about the OS to take down information and pass to a higher tier when escalation is needed.
Tier II (2-4 yrs exp)	Varies, but typically includes basic administration experience/skills and higher comfort level with applications and OS navigation than tier I.
Tier III (3-4+ yrs exp)	Typically able to move around OS and perform routine administration tasks including user setup and common security configuration, able to support and assist power users. Able to communicate with the more technical tier IV staff and developers. Can learn and apply company procedures and policies.
Tier IV (5+ yrs exp)	Highly technical and experienced support staff, often with some programming skills and able to perform any needed administration tasks. The next progression from tier IV is typically development or a call to Vendor support and tier IV can handle the discussion and troubleshooting details. This role also acts as a liaison to developers.

Support roles are often broken into "tiers" but this is not universal. When working in a new environment it may be necessary to review the four tiers described here and map them to different terminology and job titles.

Administrator positions typically fall into one of four categories: network admin, system admin, application admin, or database admin. The exceptions can often be considered a two (or more) for one position where head count or FTE hours makes a position best filled by a single person even though the job description crosses over a couple of areas. For example, it is not uncommon for network administrators to have system admin responsibilities as well. This again is something that occurs more often in small companies and departments.

The Administrator Types:

- Network
- Database
- System
- Application

Network administrators tend to fall into junior/entry, middle, and senior positions requiring up to two years, three to five years, and over five years of experience respectively. Pure system admins are rare (usually they have other skills as well) but they also fall into entry/junior, middle, and senior categories with progressions at around two of experience at each level (up to two for entry, two to four for mid and over four for senior). It is not uncommon for a pure system administrator to grow to mid and senior levels in a short period of time. This is a role that can be very specialized and lack complexity when compared to other administrator roles. The support tiers information fits well with system and application administrators as there tends to be a lot of cross over in skill sets

Network Administrator experience levels:

- Junior 0-2 years
- Mid 3-5 years
- Senior 5+ years

for these types of roles. These are also roles that are often combined into a single position.

Application administrators typically support a number of applications, although there are some specialists out there. Database administrators are probably the most common specific application administrator (and thus have their own category), but large CRM/ERM applications are spawning these sort of jobs as well (Salesforce, PeopleSoft, NetSuite, etc) and these will be covered in more detail in future white papers. Generalist application administrators often are ranked a little more in the number of applications they administer than years of experience. This is due to most applications being able to be mastered as an administrator in weeks or months at most. The greatest demand for these application administrators seems to be in Microsoft office related technologies (office suite, outlook, site point, etc) and the Oracle financials suite of applications (AR,AP, General Ledger, etc.). Database administrators run more in line with developer experience thresholds with junior running up to three years experience, mid level requiring three to seven years of experience, and senior starting around six or seven years in rare cases, but often starting closer to ten years of experience to be truly considered a senior database administrator.

DBA roles can be considered an advanced application admin role.

Highly complex system such as ERM, CRM, and other enterprise applications (SalesForce, SAP, etc.) are requiring application specialists with more experience that is closer to a DBA then a traditional application admin role.

Administrator Types - Operating System Requirements	
Network	OS requirements for network admins tend to be specific to installing and trouble shooting network applications/functions. This often includes knowledge about the network tools available for the OS and how to use them.
System	System administrators tend to perform tasks such as user administration, basic security, backups, restarts, and trouble shooting. This is more prevalent in UNIX shops as Windows shops typically combine these functions into other roles (usually system-application admin dual roles).
Application	Skilled in installing/configuring applications on the OS and tends to be at least a power user in applications used by the company. Able to administer and trouble shoot those applications.
Database	Covered in more detail in the Databases Overview white paper, but with respect to OS a DBA often will have some level of knowledge about the underlying storage and memory options for the OS as well as application admin skills for the DB in question. May even be able to start/stop and install an OS.

The provided examples of OS requirements for various administrator roles can vary widely from position to position so always seek clarity in any job posting for these roles.

Be on the lookout for administrator roles combined into a single position as that often can lead to confusion.

Certifications

Certifications can be found for any operating system and often there is a wide variety of certifications available. This abundance of certifications does make them more likely to be a strongly suggested or required achievement for a job candidate.

The certifications related to Operating Systems are often tied to various roles and positions rather than the OS itself. This makes searches usually more effective when including a role or skill rather than just an OS so a search for "windows administrator certifications" will be far more useful than "windows certifications". The OS plus certification searches will usually return too broad an array of answers.

All operating systems except Mac OS have programs of certifications that require a series of tests to be passed to reach certain levels and scope of certification. This can lead to job requirements for several of those tests and thus a long list of certifications being a "plus" or even required. This does not necessarily make for an expensive or hard to fill position as the certifications are really just stepping stones to a needed certification.

For example, Microsoft has a number of certifications, each with its own requirements, but it also has a Microsoft Certified Professional certification that is granted when any single MS certification test is passed. Thus, anyone that has passed any MS test will have the MCP certification and it is so common it is almost useless and overshadowed by any other MS certification. The page at https://www.microsoft.com/learning/en-us/exam-list.aspx can be viewed for a full list of the MS provided exams for certification.

Unix and Mac/OSX certifications do not blend skills in a certification as we see in Microsoft certifications. This makes it easier, usually, to match the non-Windows certifications to job requirements directly.

Certifications abound for OS related jobs and often can be found with a Google search with the OS name and "certification" as the search terms.

DBA roles can be considered an advanced application admin role.

Most OS certifications require a suite of tests, but Mac/OSX tends to be a one test per certification approach.

Look closely at the requirements for a certification to ensure they match up with the job requirements in a way that makes the certification applicable to the job.

Operating Systems Conversations

Clarifying Questions

Any position that includes mention of OS in the job description will likely need clarification. An OS will be involved in nearly all IT related jobs, to some extent, so clarification will be needed to determine how integral OS knowledge is to the position. A good starting point is to clarify whether the mention of OS in the position is to provide a candidate an idea of the work environment or is related to a hard requirement. In cases where the OS need is beyond a simple description of environment, clarification will be needed to determine which category the OS requirement falls into: development, administration, user, security, networking, or other. Each category can also have either a software or a hardware aspect, so it helps to clarify that as well. For example, a job position that mentions UNIX experience could be clarified by stating that the position requires development of printer drivers on a UNIX platform. In this case the job would fall into hardware administration for UNIX.

OS requirements almost always need to include the type of work:

- Development
- Administration
- User/Support
- Security
- Networking

When specific OS experience is required, it is often the technical details that matter so the more detail provided, the better. Good detail will include aspects such as: what part of the OS will be involved in the project, current team skill set and/or gaps, and the OS version being used.

Clarify whether OS is mentioned to describe the environment or as a job requirement.

Crossover/Complementary Skills

There are a lot of skills that can be considered complementary for a project involving operating system requirements. Networking skills tend to translate very well from OS to OS. This is because core network knowledge tends to be OS agnostic. Development skills can often translate as well, in particular user interface experience, multi-threading, and memory management related projects will have some similarities across OS types and versions. Administration roles are not quite as complementary from OS to OS, but sometimes skills and experience can translate to another OS.

Networking and Development Roles tend to have more crossover OS skills than an administrator.

At a high level, Linux and UNIX administration skills are almost entirely interchangeable once someone has gotten past a year or two of experience. A Linux admin with 5 years of experience should be able to ramp up quickly to a UNIX admin job. Mac OS X is a bit different from UNIX and Linux, but the similarities are

UNIX and Linux skills are very complementary and can often be considered equivalents.

enough to make a move from Mac admin to Linux admin possible.

MS Windows is not only the biggest leap to or from another OS as an admin, it even has some sizable differences across some versions. The differences vary by type of administration due to the tools that will be used. The MS tools have changed a lot in some OS revisions so it is important to have details about what sort of administration will be needed for the job role.

Microsoft Windows versions XP, 2000, and 2003 tend to be grouped due to similarities as are the 7/8/10 and Vista versions.

Development skills tend to be language specific, but can be very OS specific as well. When OS is mentioned in requirements for a development role it is critical to get details on why OS matters to the position. It will often be less of an issue for the more experienced (five or more years) developers, but can be a critical factor even for highly skilled developers. Roles that require OS expertise for a developer will often have some key words to indicate the need such as: tuning, multi-threading, semaphore, high availability, memory management, or other words that the "right" developers will recognize. A developer that can not explain terms included in the OS requirement for a position are not as likely to be a fit unless the OS requirement is determined to be a "nice-to-have."

Key Words for OS requirements for Developers :

- Tuning
- Multi-Threading
- Semaphore
- High Availability
- Memory Management
- Real Time/RT

Weasels

OS related weasels tend to be looking for ways to expand their experience through on-the-job training. They might be looking for an "in" to a new OS or (more often) are looking for experience in a more marketable facet of the OS. Since OS discussions tend to involve a lot of acronyms and buzz words, this makes it a great source of weasel opportunity. The key to avoiding OS related weasels is to ask for an explanation of the terms thrown about and ask them to tie their generalizations back to a specific experience. The definition request will fluster weasels in many cases, and the experience question will expose gaps. There might be an attempt to play off unrelated experience as an example of the OS requirement, but if they are made to explain how the experience ties to the skill, it will typically become clear they are stretching to make the connection.

Avoid Weasels by asking for specific details and experience that relates to the job requirements.

Screening Questions

The range and type of questions that are useful in vetting a prospect for a position with OS requirements vary widely. The broad range of potential topics will not be covered here, but

instead we can look at general questions that can be used to drill down into OS skills possessed by a candidate.

- What is your comfort level with the OS required?
- Have you had experience installing and/or configuring the OS?
- Do you consider yourself a “power user” of the OS? If so, what sort of advanced features of the OS do you use?
- Do co-workers come to you with OS related questions? If so, provide some examples.
- Do you use the OS outside of work? How so?

OS screening often requires detailed technical questions, but there is value in general questions to help remove bad fits from the candidate pool early.

It may seem like these are very general questions, and that is correct. OS related requirements will require some general screening questions, but that is the challenge in placing these positions. The detailed OS questions for screening a candidate require a skilled technician to be able to vet the answer. These screening questions work for entry level technicians and support staff, as well as cases where the OS requirements are secondary or less important. When a specific OS requirement is listed, the best way to develop screening questions is to ask for input from a known expert on that requirement. For example, an OS requirement that specifies a need for memory usage debugging is going to require input from someone that has done memory usage debugging to ask the proper questions and know when the answers given are correct. The expert does not need to be present during the screening, but will be critical in helping to create good screening questions and feedback on how correct (or not) the candidate responses are.

Find a reliable technical resource to help build detailed screening questions for OS requirements and to help determine how good or bad a candidate response is to each question.

Operating Systems Introduction Resources

Resources for more information

For readers that want to know more about operating systems including some specifics, here are some great resources:

Source Materials

https://www.google.com/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=Operating+System+definition - A general definition of operating system.

http://stst.elia.pub.ro/news/SO/Modern%20Operating%20System%20-%20Tanenbaum.pdf - Modern Operating System Third Edition Tanenbaum, Andrew S.

http://internationalprogrammersday.org/history-of-operating-systems/ - Data for the OS timeline.

http://www.netmarketshare.com/operating-system-market-share.aspx?qprid=10&qpcustomd=0&qptimeframe=Y - OS Market share tool

http://www.howtogeek.com/191207/10-of-the-most-popular-linux-distributions-compared/ - List of Top 10 Linux Distributions

Quick Reference Sheet Links

http://www.payscale.com/research/US/Job=Security_Administrator%2c_IT/Salary/30fdfc1b/Late-Career

http://www.payscale.com/research/US/Job=Database_Administrator_(DBA)/Salary

http://www.payscale.com/research/US/Job=Network_Administrator/Salary/cbec27bd/Experienced

http://www.payscale.com/research/US/Job=Support_Technician%2c_Information_Technology_(IT)/Hourly_Rate