

How to Interview a System Administrator

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The green slides
are what I show
on the projector

Probably in a different color

In the B&W version, the projected slides are
the ones on the left side of the page

The black slides
are my speaking
notes

In the B&W version, my speaking notes are
the ones on the right side of the page

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Schedule

- 9:00 – 10:30 Presentation
- 10:30 – 11:00 Break
- 11:00 – 12:30 Presentation
- 12:30 – 1:30 Lunch

Schedule

- About 3 hours of presentation
- Plenty of time for questions
 - Please try to avoid “telling stories”
 - Focus on class materials, not “impossible situations”

Clarification

- From the perspective of the employer

Clarification

- This class is from the perspective of the employer
- You may also learn some things that will help you when you're a candidate

Goal

- Help you make better hiring decisions

Goal

- Help you make better hiring decisions
- Let's get right to it ...

Let's jump right in

Let's jump right in

- If you remember only one thing from today's class, it should be this ...

The Question

- “Tell me about a time when you ...”

The Question

- “Tell me about a time when you ...”

The Question

- “Tell me about a time when you ...”

The Question

- “Tell me about a time when you deployed a new service.”
- “Tell me about a disagreement you had with a co-worker and how you resolved it.”
- “Tell me about a time when you had a job you really liked.”

The Question

- “Tell me about a time when you ...”

The Question

- This (style of) question is the “guts” of today’s class
- It’s called “behavior-based interviewing”
- I recommend it above all other methods
- Why?

The Question

- “Tell me about a time when you ...”

The Question

- Because it helps you determine what I believe are the three most important things about a candidate:
 - Is the candidate smart?
 - Does s/he get things done?
 - Will s/he be a good fit for the group?

The Question

- “Tell me about a time when you ...”

The Question

- Everything else is secondary
- Yes, even specific skills
 - Because it's easy to teach new technical skills
 - Good people will learn them on their own
- But B-B will also let you find out how much a person knows about a given topic
- Here's how ...

The Question

The Question

- Imagine the following interview ...
 - Or, let's "role play" it right now

The Question

- “Please tell me about a time when you set up DNS from scratch, both clients and server.”

The Question

- “Please tell me about a time when you set up DNS from scratch, both clients and server.”

The Question

- “Please tell me about a time when you set up DNS from scratch, both clients and server.”

The Question

- If they don't mention this, you can ask ...
- “With regard to the client, what file(s) did you have to install or modify?”
- “How did you figure out what to put in those files?”

The Question

- “Please tell me about a time when you set up DNS from scratch, both clients and server.”

The Question

- Again, you can probe for details ...
- “For the server, after you installed the package, what file(s) did you have to create or modify?”
- “How did you figure out what to put in those files?”

The Question

- “Please tell me about a time when you set up DNS from scratch, both clients and server.”

The Question

- “Tell me how you handled the root cache file.”
- “How did you get the latest root server names and addresses?”

The Question

- “Please tell me about a time when you set up DNS from scratch, both clients and server.”

The Question

- Do you agree that you know have a fair understanding of the candidate’s knowledge of DNS, as well as evidence of his/her experience and ability to install and configure it?
- I say “yes”

Let's Start Over

Let's Start Over

- Now that you have the most important bit, let's back up a bit and put it in context
 - Or you could leave now
 - But please don't ☺

Goal

- Help you make better hiring decisions

Goal

- Help you make better hiring decisions
- But there's a problem ...

The Problem

- Hiring is hard
- Interviewing isn't a particularly good tool
 - But most of the time it's the only option

Problem

- Hiring is hard
- It's expensive to get it wrong
- Interviewing is generally a bad way to do it
- All the other ways are "too hard"
- Let's make the best of interviewing because it's what we've got

Other Ways

- What are the other ways to do it?

Other Ways?

- One-day contract
 - Easier for developers
- “Contract-to-Perm”
 - Typically 1 to 3 months
- “Probation” period
 - Typically 1 to 3 months
 - Usually harder to fire than contract-to-perm

Other Ways

- Yes, but they're difficult
 - Or maybe even impossible

Stuck

- Since we're stuck with interviewing, let's try to make the best of it

The Process

The Process

- I want to start talk a little bit about the interview process as a whole, how and where interviewing fits into it, and the interview format
- After that we'll get back to what questions you should ask in an interview

The Process

- People
- Format
- Content

The Process

- Here's what I believe works best:
- 1-hr phone screen by the manager
- All-day interview
 - 1-hr group presentation by candidate
 - 1-on-1 interviews with senior technical lead, peers, HR, manager
 - Lunch

The Process

- People
- Format
- Content

The Process

- Presentation (1h)
- Senior technical lead (1h)
- Peers
 - At least 3 (1h each)
 - Ideal is 5
- HR next-to-last (30m - 45m)
- Manager last (1h – 1 ½h)

The Process

- People
- Format
- Content

The Process

- With presentation, lunch, 1 hour per person and more for the manager, that's a very long day
- Consider doubling up peers
- Leave at least an hour for lunch
 - But with a peer, talking casually

The Phone Screen

- Done by the manager
 - Or maybe the senior technical lead
- One full hour

The Phone Screen

- Done by the manager
- 1 full hour
 - 15m fizzbuzz-y questions
 - 15m recent project by candidate
 - 15m upcoming projects at employer
 - (why you are hiring another sysadmin)
 - 15m questions from candidate

Fizz Buzz?

- For the numbers 1 to 100 ...
- 1, 2, fizz, 4, buzz, fizz, 7, 8, fizz, buzz, 11, fizz, 13, 14, fizzbuzz, ...

Fizz Buzz?

- **Very** simple programming test
- 1, 2, fizz, 4, buzz, fizz, 7, 8, fizz, buzz, 11, fizz, 13, 14, fizzbuzz, ...

Fizz Buzz?

- No good equivalent for sysadmins

Fizz Buzz?

- No direct equivalent for sysadmins
- Here are three I think come close
 - How to install/update/remove a package?
 - How to start/stop/restart a service?
 - What is the most basic purpose of DNS?
 - Looking for “translate between host names and IP addresses”

Fizz Buzz?

- No good equivalent for sysadmins

Fizz Buzz?

- Yes, those are **very** simple questions
- They're only meant to eliminate people who have no business claiming to already be a sysadmin
- Sadly, they're enough to eliminate more than a few candidates

Group Presentation

- Given **by the candidate**
- One full hour
- Includes all interviewers

Group Presentation

- 1 full hour
 - Introduction and resume overview (5m)
 - Project discussion (40m)
 - Questions (15m)
- Manager, whole group, maybe other managers or tech. leads
 - Maybe the candidate would be a better fit for a different group or position

But ... !

- “But sysadmins **hate** giving presentations”
- Deal with it.

But ... !

- “But sysadmins **hate** giving presentations”
- “They’re really bad at it”
- They need to be able to do it
- Give them plenty of time to prepare
- Review their slides at least once
- Talking about stuff they did should be easy
- Communication is important

But ... !

- No, really
- Think about it ...
- Communication is vital
- And talking about stuff you know should be easy

But ... !

- Communication is a **critical** skill for sysadmins
- Being able to present ideas to your team is pretty much a **requirement**
- Talking about something you did should be trivial
- Not looking for great presentation, just “good enough”

1-on-1 Interviews

- About 45 minutes of the candidate answering questions
- Leave 15 minutes for the candidate to **ask** questions

1-on-1 Interviews

- 1-on-1 (or 2-on-1) interviews should be well-structured and organized
- Leave at least 15 minutes for the candidate to ask questions
- Schedule a 5 minute break halfway through the morning and the afternoon

1-on-1 Interviews

- Candidate stays in one room
- Interviews come and go

Some Tips

- To save time, put the candidate in a room (empty office or small conference room) and interviewers come to the candidate
- Never leave the candidate alone
- If next person is late, call
- Time is tight, so show up, start, and end on time!

1-on-1 Interviews

- Read resume in advance!
- Decide as a group who will probe which areas of experience

Some Tips

- Before the day of the interview, every interviewer should read the candidate's resume
- Meet as a group to decide who will probe which area of the candidate's experience
- Use the opening presentation for routine general questions

1-on-1 Interviews

- What questions to ask in the 1-on-1 interviews?
- Sorry, not yet

But First ...

- What to ask?
- You've already seen the main example
- We'll cover it in more detail soon
- Let's cover a few simple things first

What Is the
Purpose
of an Interview?

What Is the
Purpose
of an Interview?

Purpose?

- Assess candidate's skills
- Tell candidate about the job
- Tell candidate about the company
- Determine "fit"

Purpose

- Assess the skills of the candidate
 - Learn, don't challenge; "teaser" for good/bad questions
- Inform the candidate of the job duties
 - Ask candidate if s/he has questions

**DID YOU
HEAR
THAT?**

**DID YOU
HEAR
THAT?**

It's A Two-Way Process!

A two-way process!

- You learn about/from the candidate
- The candidate learns about/from you
- It's A Bad Thing if either party makes the wrong decision

It's A Two-Way Process!

A two-way process!

- Interviews should help both parties make good decisions
- Make them collegial and informative, **NOT** adversarial!

**No need to
prove how much
you know!**

**No need to
prove how much
you know!**

Purpose

- It's not a contest!

Purpose

- **It's not a contest!**
- The goal is for everyone to win
 - Don't play "stump the chump"

Purpose

- It's not a contest!

Purpose

- You already have a job!
- What matters is whether the candidate knows enough to meet the job requirements
 - NOT if s/he knows as much as you!

Purpose?

- Assess candidate's skills
- Tell candidate about the job
- Tell candidate about the company
- Determine "fit"

Purpose

- Determine whether the candidate is a good "fit" for the group
 - Personality, work style, work hours, personal requirements, etc.
- Help the candidate figure out if the group is a good fit for him/her
 - (talk about fit, and "teaser" for prohibited questions)

More Tips

More Tips

- [Back to interview process tips ...](#)

Important!

- Help the candidate feel comfortable
- You'll get better results

Important!

- A few simple things help make the candidate feel comfortable
- Introduce yourself: name and title
 - Give candidate your business card
- Ask about drinks and the bathroom
- Turn off your cell phone and pager
 - Have someone cover on-call for you

Important!

- Help the candidate feel comfortable
- You'll get better results

Important!

- Have your questions prepared in advance
- Explain there's no "right answer"
- Remind candidate it's OK to say "I don't know"

Are we there yet?

- Now do we get to ask questions?

Are we there yet?

- So finally we get to “what question to ask in an interview”
- Well, almost; sorry 😊
- First we have to figure out what we’re trying to learn about the candidate

Almost 😊

Almost There

- There are lots of possibilities
- Most people focus on specific knowledge
- I think that doesn't matter
- Knowing answers to questions and being able to put that knowledge to use are not the same thing

Questions (Almost)

- Only three things matter:
 - Is the candidate smart?
 - Does s/he get things done?
 - Will s/he be a good fit for the group?

Questions

- So what **do** we want to know about the candidate?
- I think there are exactly three things:
 - Is the candidate smart?
 - Does s/he get things done?
 - Will s/he be a good fit for the group?

Questions

- **All questions** should help you learn those three things about the candidate
- You can teach “things”
 - Smart people tend to learn new things quickly
- You can’t teach “smart” or “getting things done”

Questions

- If someone is smart, and has already demonstrated s/he can get things done, that almost certainly proves s/he can learn things
- You can teach people new technology
- It’s next to impossible to teach someone to be smart or to get things done

Questions

- Past performance **is** (usually) a good indicator of future performance

Questions

- Unlike stocks and mutual fund, with people, past performance is usually the best indicator of future performance
- Given that, it's much better to ask "what have you done" than "what do you know"
- Next best is "how would you do <task>"

Bad Questions

Bad Questions

- Let me give you two examples of bad questions
- “Bad” in that I believe they don’t help you figure out what you really want to know about a candidate
- Again: smart, gets things done, good fit

Bad Questions

- 18 gold coins
 - 17 real, 1 fake
- Using just a balance scale, find the fake
- Fewest possible number of weighings?

Bad Questions

- You have 18 (supposedly) identical gold coins – but one is a fake, made from an alloy, and known to be lighter than the real coins
- Using just a balance scale, what is the fewest number of weighings needed to find the fake?

Bad Questions

- Three

Bad Questions

- Three
- Divide into 3 groups of 6; weigh any two
- If those two are equal in weight, the fake is in the third group, else it's in the lighter pile
- Divide into 3 groups of two; repeat the process
- Divide into 2 piles of 1; repeat

Bad Questions

- WHO CARES?

Bad Questions

- SO WHAT?!?!
- Here's another example ...

Bad Questions

- Questions about ls flags

Bad Questions

- What does the “-x” flag to “ls” do?
 - Or is it “-X”?
- Which “ls” flag produces a comma-separated list of file names?
 - “-m”
- Which “ls” flag displays ctime rather than mtime?
 - Trick question! No such flag

Bad Questions

- Again, **WHO CARES?**

Bad Questions

- Even if the candidate gets all the right answers, do you know if s/he is a good sysadmin?
- Or even if s/he is smart?
 - Maybe a little from the puzzle question
- Certainly nothing about whether s/he gets things done

Bad Questions

- What are you really trying to find out?

Bad Questions

- Let's face it: Do you want a candidate who can solve puzzles and has memorized all the flags to "Is?"
- Or do you want someone with a proven track record of getting things done and can demonstrate an ability to learn new stuff?
- I think the answer is obvious

Better Questions

- So what questions should we ask?

Better Questions

- So what should we ask instead?
- There's a technique known as "behavioral interviewing"
 - Also "behavior-based interviewing" or "experience-based interviewing"

Better Questions

- “Behavior-Based Interviewing”
- Fancy name, simple idea

Better Questions

- Fancy name, simple concept
- “Tell me about a time when you ...”
- “Tell me about the last time you deployed a new service”
 - “How did it go?”
 - “What problems did you encounter?”
 - “How did you solve those problems?”

Better Questions

- “Tell me about a time when you ...”
- Ask for direct recounting of past actions

Better Questions

- “Tell me about a group project that you think went especially well”
 - “What was your specific role in the project?”
 - “Why do you think it went so well?”
 - “Are there things you would do differently next time?”

Better questions

- “Tell me about the last new thing you learned”

Better Questions

- “Tell me about the last new thing you learned”
 - “How did you go about it?”
 - “How/from whom did you get help when you got stuck?”
 - “How long did it take you?”

But ... !

- “What if the candidate doesn’t know ...?”
- “How do I find out how much the candidate knows about ...?”

But ... !

- “But what if the candidate can’t even explain how to set up basic DNS or doesn’t know how to configure NTP?”
- “But how do I find out how much the candidate knows about <x>?”

But ... !

- “What if the candidate doesn’t know ...?”
 - Why do you care?

But ... !

- The first one (“doesn’t know <x>”) really doesn’t matter
- Smart people can learn new things
- Ask for examples of learning, including how quickly the candidate learned something new

But ... !

- “How do I find out how much the candidate knows about ...?”
 - Ask “knowledge questions” in the context of past experience

But ... !

- The second thing (“how much about <x>”) will be obvious from a good answer to a behavioral question
- For example ...

Here's How

- “Please tell me about the last time you configured <service>; what steps did you take, in what order, etc.”

Here's How

- “Have you ever set up <service>?”
- “Please tell me about the last time you configured that service; what steps did you take, in what order, etc.”
- Don't let the candidate get bogged down in low-level details
 - The high-level explanation should be enough to judge specific knowledge and experience

Here's How

- Ask about migrating or upgrading a service

Here's How

- Could also ask about migrating a service or a major upgrade or even replacing one service with another
- If the candidate can give a good, clear description of what s/he did, the low-level details don't matter

The Three Things

- It all comes back to “The Three Things”:
 - Is the candidate smart?
 - Does s/he get things done?
 - Will s/he be a good fit for the group?

The Three Things

- Really, “smart + gets things done + good fit” is much, much better than “knows the answers to a lot of technical questions”
- Because in the end, getting things done is what matters
 - And it’s what managers look for when doing performance reviews

The Three Things

- It all comes back to “The Three Things”:
 - Is the candidate smart?
 - Does s/he get things done?
 - Will s/he be a good fit for the group?

The Three Things

- Again, you can teach someone a new technology
 - It doesn't take nearly as long as you think
- Most smart people will learn for themselves
 - Don't need to be taught

The Three Things

- It all comes back to “The Three Things”:
 - Is the candidate smart?
 - Does s/he get things done?
 - Will s/he be a good fit for the group?

The Three Things

- It's impossible to teach someone to be smart
- It's very hard to teach someone how to apply “book knowledge”
- Both take way more time than you have

More Questions

- More examples of behavior-based interviewing

More Questions

- Back to examples of behavioral questions
- Some of these start to address the question of “fit”

More Questions

- “Tell me about a time when you and a colleague disagreed about how best to do something”

More Questions

- “Tell me about a time when you and a colleague disagreed about how best to do something”
 - “Looking back, do you think you could (or should) have done anything differently?”
 - “Is there anything you would do in the future to avoid a similar situation?”

More Questions

- “Tell me about a time when you and a colleague disagreed about how best to do something”

More Questions

- Again, past performance is usually the best indicator of future performance
- So get the candidate to tell you what s/he has done
- And what s/he has learned from those experiences

More Questions

- “Tell me about a time when you and a colleague disagreed about how best to do something”

More Questions

- You’re looking for success, clear descriptions including reasonable details, learning from past experiences, passion or excitement, and pride

More Questions

- “Tell me about a time when you and a colleague disagreed about how best to do something”

More Questions

- If too many of those are missing, the person may not be telling the truth
 - Or may be trying to inflate what s/he actually did
- Or the candidate is a bad communicator
- You don't want to hire either of those

More Questions

- Describe a problem you're working on
- Ask the candidate to propose a solution

More Questions

- Another thing to do is present the candidate with a problem and ask him/her to discuss a possible solution
- “Real-world” problems are best
 - For example, “Right now I’m trying to do <x>; how would you approach the problem?”

More Questions

- Describe a problem you're working on
- Ask the candidate to propose a solution

More Questions

- Let the candidate ask a few questions then present the outline of a solution
- Or, at least, define the major design issues and suggest an approach for one of them
- Doesn't have to be right, but should be acceptable

More Questions

- Look for insight, understanding, interest, enthusiasm, etc.
- Starts to address the question of “fit”

More Questions

- If the proposed solution is wrong or clearly weak, **gently** probe a bit, point out the weakness or flaw, ask candidate to modify his/her solution accordingly
- In general, get the candidate talking and look for insight, understanding, and passion

“Fit”

- Is the candidate a good fit for the group
 - That is, will you get along with him/her?
- Is the candidate a good fit for the company
 - “Company culture” is a vast and deep topic
 - More than we have time for today

Fit

- The other things you want to figure out is how well the candidate will work with the existing members of the team
- This can also be done behaviorally
 - “Tell me what you did to get to know the members of your last team”
 - “Tell me about a team activity you participated in that you think helped the team”

Fit

- Behavior-based technique works for this, too
- “Tell me something a member of your team used to do that annoyed you and what you did to resolve the situation”

Fit

- You can also find out about “rough spots”
 - “Tell me something a member of your team used to do that annoyed you and what you did to resolve the situation”
 - “Tell me about a time when the team as a whole had a problem and what was done to resolve the issue”

Fit

- “Tell me about a time when you had to change something about yourself or the way you did your job to fit in better with your team”

Fit

- “Tell me about a time when you had to change something about yourself or the way you did your job to fit in better with your team”
 - “Was that hard to do?”
 - “Why was it hard?”

Fit

- Hobbies?

Fit

- You can also ask about hobbies
 - Can give you some idea if this is a person who wants do the job well then go home
 - Or someone who will stay all night hacking away at something
- The latter may sound good but the results from the former are often better

Fit

- Open source projects?

Fit

- You can ask if the candidate contributes to any open source projects
- May give you some idea of what s/he finds interesting
- But some good candidates prefer to do non-computer things on their own time
- Don't hold this against them!

Back to Questions

- There are some questions you can't ask

Back to Questions

- There are some questions you can't ask
- Unlawful
- Grounds for discrimination lawsuit
- Rude
- Don't really matter

Don't Ask ...

- Age

Don't Ask ...

- Age

Don't Ask ...

- Age
- Marital status

Don't Ask ...

- Age
- Marital status

Don't Ask ...

- Age
- Marital status
- Kids

Don't Ask ...

- Age
- Marital status
- Kids

Don't Ask ...

- Age
- Marital status
- Kids
- Religion

Don't Ask ...

- Age
- Marital status
- Kids
- Religion

Don't Ask ...

- Age
- Marital status
- Kids
- Religion
- Ethnicity

Don't Ask ...

- Age
- Marital status
- Kids
- Religion
- Ethnicity

Don't Ask ...

- Age
- Marital status
- Kids
- Religion
- Ethnicity
- Sexual orientation

Don't Ask ...

- Age
- Marital status
- Kids
- Religion
- Ethnicity
- Sexual orientation

Don't Ask ...

- Age
- Marital status
- Kids
- Religion
- Ethnicity
- Sexual orientation
- Political affiliation

Don't Ask ...

- Age
- Marital status
- Kids
- Religion
- Ethnicity
- Sexual orientation
- Political affiliation

Don't Ask ...

- Age
- Marital status
- Kids
- Religion
- Ethnicity
- Sexual orientation
- Political affiliation
- **Medical history**

Don't Ask ...

- Age
- Marital status
- Kids
- Religion
- Ethnicity
- Sexual orientation
- Political affiliation
- **Medical history**

Don't Ask ...

- Age
- Marital status
- Kids
- Religion
- Ethnicity
- Sexual orientation
- Political affiliation
- Medical history
- **Personal habits**

Don't Ask ...

- Age
- Marital status
- Kids
- Religion
- Ethnicity
- Sexual orientation
- Political affiliation
- Medical history
- **Personal habits**

Don't Ask ...

- Age
- Marital status
- Kids
- Religion
- Ethnicity
- Sexual orientation
- Political affiliation
- Medical history
- Personal habits

Don't Ask ...

- Age
- Marital status
- Kids
- Religion
- Ethnicity
- Sexual orientation
- Political affiliation
- Medical history
- Personal habits

But What About ...?

But What About ...?

But What About ...?

- Job requirements that may conflict with the “don’t ask” questions
- Let HR handle these

But What About ...?

- If there are specific job requirements that may conflict with off-limits stuff
- Like:
 - Work or travel on weekends or holidays
 - After-hours on-call
 - Working in certain countries

But What About ...?

- Job requirements that may conflict with the “don’t ask” questions
- Let HR handle these

But What About ...?

- Inform HR of the requirements
- Ask HR to address with the candidate
- Let HR figure out how to do it
 - That’s their job

That's All, Folks

That's All, Folks

Attention Tutorial Attendees!
Please don't forget to fill out your Tutorial Surveys.

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and helps us shape the future
of the LISA training program.

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