

Effective Use of Tech Support

DevOps Track
November xx, 2014
LISA 2014
Seattle, WA USA

Caveats

Folks: This is a draft. Feel free to move/add/delete as you see fit. We may end up totally re-working this ... the final result may look *nothing* like what I sketch here ... that's fine ... this is a collaborative and iterative process. Myself, I don't see the need to polish yet ... I am scribbling down my ideas in various formats, just trying to get concepts out there, to help stimulate discussion and evolution

The overriding theme for me here is: Care & Knowledge ... i.e. speak about the areas where I both Care a Lot and Have Expertise. Will we be able to cover this complex topic thoroughly? Perhaps, perhaps not -- but I propose that we each speak to the specific subjects where we have both passion & expertise

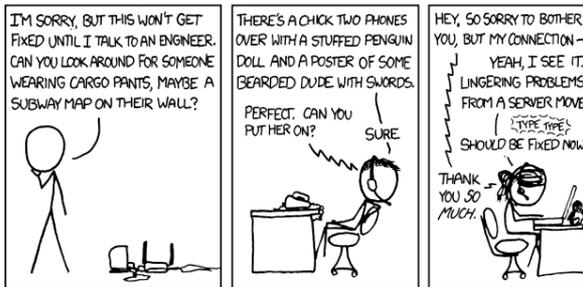
For structure, I propose that we each take ownership over one or more sections -- and during the presentation, we simply swap roles as speaker. If you don't want to do public speaking, that's OK -- we can still use you -- to provide content, float through the audience during the hands-on exercises, etc. If we have several people who want to speak to the same topic -- I'm good with that! I claim that the audience will appreciate hearing multiple viewpoints -- that's part of the culture of LISA. Is this a full-day class? Half-day? 90 minute talk? I don't know yet

--sk

Nirvana

TECH SUPPORT

< PREV RANDOM NEXT >



<https://xkcd.com/806/>

Workshop Outline

What We Offer

Who We Are

The Challenge

What Works for Us

Enterprise Perspective

The Problem Statement

The Business Impact

The Diagram

The First Five Questions

View from the Field

...

Hands-On Practice

Review

What We Offer

Sometimes, when you open a tech support case, you can move slowly -- you have a question about how to use a feature, you want to know more about an error message, you're RMAing a part. We're not here to talk about those calls.

Othertimes, you have a problem: service is down, end-users are screaming, your boss is blowing a gasket. That's the kind of call we're addressing today.

Between us, we have ~80 years experience providing enterprise IT support, on both the customer and the manufacturer sides. We have developed a grab bag of techniques for *Making Effective Use of Tech Support*, techniques which we claim will increase the chances that your vendor will give your case the kind of attention you want.

Like you, we in tech support are over-subscribed -- too many tickets, not enough time. When we're scanning our case load, looking for where to start, you want your case to stand out from the crowd. You want us to say: "Hey, here's a Case where the customer has a clue: look, they've provided all the information I need to engage. I'll start with this one ..."

Who We Are

Mark Foster

Stuart Kendrick

~30 years supporting IT at Cornell University and the Fred Hutchinson Cancer Research Center

Chris Shaiman

Tim Wright

{One line summary, then we each get a minute to talk about ourselves, using a dedicated slide.}

Mark Foster

Draft

Stuart Kendrick

sbk@cornella	student	1981
stuart@cpvax5 (Science Applications Inc)	programmer	1984
sbk@cornellc.cit.cornell.edu	desktop / server	1985
stuart.kendrick@med.cornell.edu	server / network	1991
skendric@fhcrc.org	multidisciplinary	1993
stuart.kendrick@isilon.com	sustaining engineer	2013

PL/1 on IBM mainframes	Cornell University	1981
FORTRAN on Cray-1	SAIC	1984
Terak, DisplayWriter, DOS, Mac OS, Netware, Corvus Omninet,	Cornell University	1985
AppleShare, QuickMail, Farallon, Cisco, Sniffer, TCP-IP / IPX / AppleTalk	Cornell Medical College	1991
Solaris, Windows, Linux, Perl, Fluke, Wireshark, Root Cause Analysis	Fred Hutchinson Cancer Research Center	1993
OneFS	EMC Isilon	2013

Chris Shaiman

Draft

Tim Wright

Draft

The Challenge

You have a Priority 1 Incident on your hands -- end-users are down. You want to move fast.

We on the tech support side want to help you. We like helping people: that's why we're in this business -- we want to the thrill of tackling a difficult problem and the satisfaction of riding off into the sunset, knowing that we made life better for you. *We all radically, desperately, innately, repeatedly need to know that we matter and we are contributing.* In this way, all human beings are the same.

But ... we're working in the IT equivalent of the emergency room of a major metropolitan hospital. The room, and it is a big room, is plastered with bleeding, moaning patients. You know that you want to make it easy for us to work on you. Big sign pointing to your stomach: "It hurts here" would be a great start, along with a detailed medical history and a recent set of x-rays.

On your end, of course, you don't have time to write the big sign saying "It hurts here", much less construct the medical history and cobble together your own x-ray machine to take your own images.

How do we make progress, given these challenges?

The Challenge

This is a difficult problem

Of course it is difficult -- if it were easy, we wouldn't be here, in this room, talking about it today

We don't claim to offer a silver bullet here -- there are no silver bullets. But we do claim that we can offer you insights from both sides of the fence, which, along with a string of techniques, will:

- Shrink Mean Time To Resolution
- Engage Tech Support Faster
- Escalate Your Case Higher Up the Expertise Chain
- Increase Your Enjoyment (or at least, go a little way toward reducing your frustration!)

Life is pain, Highness. Anyone who says differently is selling something. --The Man in Black

The Enterprise Perspective

Stuart Kendrick

The Enterprise Perspective

{Here I would sketch a primitive version of the ITIL Incident Mgmt process which we used at FHCRC. Key concepts include:

Scoping the Incident (what users and services are affected)

Prioritizing (typically 1-5)

Assigning Roles & Responsibilities

- Incident Commander (overall coordination, verifies that someone is assigned to each role)

- Communicator (handles communicating to lists, Web sites, mgmt, execs)

- Lead Tech (owns the technical response)

- Subject Matter Experts (desktop, network, server, database, application ...)

Establishing a cadence

Tools (war room, conference call, e-mail list, WebEx ...)

Helping mgmt understand why rushing around frantically is a bad idea

Depending on how much time we allocate to this, I can spend 10-60 minutes here}

The Enterprise Perspective

I know this sounds weird ... but the most important part of responding to a P1 Incident is:

Slow Down ... Take Your Time

Now, generally, audiences have two objections at this point:

- I know that's true -- but it's hard to do -- I get caught up in the fury of the moment
- Doesn't work in my environment; management insists that we rush

When our brains kick in the fear response, our nervous systems re-route resources away from non-essential stuff, like digestion, the immune system, and our higher cognitive functions ... and toward the heart, eyes, muscles -- *Fight, Freeze, or Flight*

This works fine when you're faced with a saber-toothed tiger (or a dangerous traffic situation).
But getting dumber when faced with a complex IT problem is a bad idea

Racing around like chickens without our heads is the wrong answer --FHCRC Ops Manager

The Problem Statement

XXX XXXX

The Problem Statement

“It hurts here”

This is the single most important aspect of opening a Case with tech support

The day long version of this class contains lots of hands-on exercises; in this half-day version, we have only one ... and that one exercise -- which we'll ask you to do in a few minutes ... will be practice writing Problem Statements

If you leave today with only one tip, this is the tip to take away: put your top person on the Problem Statement and whip it into shape *before* you open the case.

As you learn more, refine it -- and update the Case with your new understanding

The Problem Statement

{I propose including lots of examples, taken from actual Cases. Start with bad ones, then migrate to good ones. Include resolutions, so that the audience can see what the 'answer' was.}

PS: The cluster is down

Res: Re-instantiating the accidentally deleted DNS entry for the cluster 'homedrives.company.com' restored service

PS: No one can log in

Res: A bug in the Authentication service on some nodes intermittently disabled the connection to the Active Directory server, intermittently preventing some AD users from authenticating. Installing Patch xyz fixed the problem

...

The Problem Statement

{I propose hands-on practice. On this slide, we would describe the *symptoms* of a DU situation, and perhaps provide a sample diagram.

Then, give the audience 5-10 minutes to write Problem Statements, perhaps individually, perhaps chunked into small groups. We circulate; they can ask us technical questions about the situation. Might be a good idea to pick a real SR, that we have all reviewed in detail, so that we can each respond similarly.

Then, we ask for volunteers to read off their Problem Statements (or hand them to us), and one of us types them into a blank side, so that everyone can see

And the speaker offers coaching on improving them}

The Business Impact

XXX XXXX

Business Impact

In Tech Support, just like in a hospital Emergency Room, we do a lot of triage. Who is hurting the most?

Help us understand how much this hurts now and how much it is likely to hurt soon

{Lots of examples, from lousy ones to good ones}

BI: Production data is not replicating to the Disaster Recovery cluster

[Doesn't sound too bad, does it? Turns out, for this customer, the 'Production data' is financial data from trading houses -- this company's business is to provide off-site DR services to their customers ... lots of customer data gets replicated to their systems ... this feed failed three days ago ... they have 2 hour SLA with their customers ... they have breached their SLA grossly ... we didn't prioritize this case very high ... and people got unhappy ... make all our lives easier: Tell Us This Stuff!]

BI: 30 users from a base of 2000 unable to login. Tomorrow (Monday), we anticipate that all 2000 users will be unable to login. Users rely on cluster for their home & shared directories, as well as for Outlook PST storage (Outlook is crashing currently, so no email).

Business Impact

Ideally, express the impact in as many of the following ways as you can:

- # of users affected
- # of hosts affected
- Dollar amount as a rate (e.g. \$1000/hour)
- Deadlines and deals threatened
- Contractual obligations threatened or actually breached (aka SLAs)

Business Impact

Sausage

Warning: if you are sensitive to explicit images, close your eyes & ears now

Money makes the world go around. Yeah, it's sad, but this is reality

If this Case is important to you, get your local manufacturer's team involved (Dedicated Service Engineer, Technical Account Manager, Sales Engineer, Sales Lead ...)

Send them e-mail, including the Problem Statement, Business Impact, and Case #

Call them/ text them, verify that they received your e-mail

We are driven by the Field -- they are the folks closest to you, the customer. What they say matters.

They will set flags and insert comments in our Case management system: those flags and comments will help us prioritize your SR. They will know how much money is riding on your account -- are you close to renewing a service contract? To buying more of our gear? Are you considering a new purchase, where our gear might be a contender? Your sales team will include that information in the SR -- you want us to know this information

Caveats

Naturally, you have to be careful here

If you cry wolf ... claim that the business impact is larger than it really is, and we figure this out, your credibility goes through the floor, and that stain on your reputation will be hard to undo. *Trust and integrity makes all this work -- treasure yours.* Save your chits for when you really need them

Be Your Best -- Expect The Best

The Diagram

Stuart Kendrick

The Diagram

{Examples}

Draft

The First Five Questions

XXX XXXX

The First Five Questions

How do you know there is a problem? How will you know when it is fixed?

Symptoms: End-user reports, monitoring system output, your personal experiments, log messages

Can you reproduce the symptom?

When I do abc, then I see symptom xyz

When did the symptoms begin?

First reports began to arrive January 5th around 10am ..

How frequent are the symptoms?

What is the pattern? ["There is no pattern" is a perfectly reasonable answer]

What changed recently?

Practice

XXX XXXX

Practice

I'd like to do some sort of dynamic troubleshooting exercise where we have different categories of cards, a group picks one card from each pile and that is the problem they have to troubleshoot. So categories would be something like; generic problem, user base (all users, some users, one user), timing (consistent, intermittent, Same time every day/week). Based off of those they would work together to submit an initial case. We could then gather these together and evaluate these as a group, to see what is good in each submission, and what could be better.

Draft

Template

XXX XXXX

Template

Problem Statement: Specific HTTPS websites load incorrectly sometimes when using HTTPS Deep Packet Inspection.

- >
- > Business Impact: Our Finance department is unable to browse to certain websites needed for them to do their job until contacting IT to whitelist certain addresses. This is about 1 of every 10 https websites they visit. Here is an example. <https://www.yourexamplehere.com>
- >
- > Mechanics: This is reproducible using Internet Explorer and Google Chrome on any recent windows OS but not using Firefox.
- >
- > Diagram:
- > (client) ----> [Switch] ----> <firewall> ----> *https websites*
- >
- >
- > Attached are https Debug logs from the time of the issue as well as a packet capture from the client computer.
- >

View from the Field

Mark Foster

{Your Heading Here}

Logs

Look at your logs starting just before the start of the issue. See anything strange or out of the ordinary? If you do, this can help isolate the issue as well as help write a very succinct and to the point problem statement.

If you don't see anything in the logs, still send support your logs. Don't send support all 5 gigabytes of your logs either. Send them just the pertinent information. Usually this is the logging starting just before the event starts to occur, till the issue has occurred for a minute or two. Often times when support has the logs these we can see an issue immediately.

Your vendor may ask you to turn on debug logging for troubleshooting. Remember to turn off debug logging after gathering data as often times additional logging generates, stress and load on the system.

...Support specific files

Many vendors have files or output that can be generated specifically to aid tech support with diagnosing your issue. Know how to generate these files for all your appliances, and submit these to tech support when initially submitting your case as well as logs. When we have this in the initial post, we usually have everything we need to resolve the issue so long as we have a good description.

Description of the Issue

What defines a good description (?)

This is the body of the text. The storyline so to speak. It's taking the data you've gathered and providing context for that data.

Provide the timeline . Ex. at 11:00 AM the WAN link to our DR site went down, taking down our IPsec VPN tunnels to that site. at 11:02 AM our DR site WAN link became available again, however the tunnels did not rebuild. at 11:05 we rebooted the IPSEC termination point at the DR Site. This has not resolved the issue. Attached are the logs of the DR site from when the tunnel was attempting to be rebuilt as well as the support file output from the device at the DR site

Are there other devices involved in the problem? Can you put the data you've gathered for the checklist and put it into context for the problem?

View from the Field

Chris Shaiman

View from the Field -- Chris Shaiman

No matter how mad or frustrated you are, don't let it come through in your case notes. I'm a lot less likely to call you immediately, or pick up your web case, if I think you are hot and stewing or just a mean person in general. I hate to admit it but even after moving to IT I still have problem customers who I lower in priority because they are extremely rude to myself and my team. On that note, if you can make a tech feel good about working with you, they will be extremely diligent to your needs. If you have a good experience with a particular tech support agent, figure out who their manager is and let them know. Not only is it beneficial to the technician, it's likely beneficial to you as they are a lot more likely to remember you as a customer, and will be more likely to pick up your cases in the future.

If the incident is not urgent, start the case as a web case. Techs would much rather work web cases than deal with the awkwardness of being on the phone with another person. If you get a response back via web that is confusing, pick up the phone and call the technician and switch the case to a phone case.

Use your sales contacts appropriately. Call them to escalate urgent tickets, Support managers do prioritize cases based on sales reports of issues. However, do this only as necessary, as Sales associates and Support managers that start to see a trend with a particular customer stop this prioritization after a while.

Do basic level 1 troubleshooting. Seems like a no brainer, but it's very easy to have a knee jerk reaction to an issue, immediately panic and call support. This might work, but often times the initial device you suspect is the issue, isn't and now you've wasted a bunch of time calling support to rule out a device, instead of spending that time isolating out where the actual problem is.

View from the Field

XXX XXXX

View From the Field

{I haven't really thought this part through ... but I was imagining that one of us could structure the lessons we have to offer through the use of anecdote -- telling war stories to illustrate key points}

Running old versions of our software? On dated hardware? Don't want to upgrade?

Yeah, that sucks. But here's the reality. We have finite resources ... and we learn from our mistakes. The latest code train has the big improvements in it -- that's where we focus our dev time. Sure, we backport bug fixes to earlier code trains where necessary ... and where possible -- there are plenty of times when we really wish we could backport a bug fix, but it's too hard -- the code is too messy and would require re-engineering before we could apply the fix ... precisely the re-engineering that we've implemented in the latest train.

Do you want to run the very latest version? Probably not -- ask your local team for guidance -- given your needs for features and stability, which of our code trains is the best fit for you. {Include de-sensitised version of the circle chart illustrating adoption density vs DU/DL rate across branches}

View From the Field

Keep your local team apprised of your environment. When I was a customer, I intermittently sent our local team a copy of the Diagram which I would also hand to tech support on opening SRs -- so that they were reminded of what gear we owned, what versions, how it was deployed

Yeah, they want your money. But to get it, they will also keep you apprised of End-of-Life schedules, critical bugs in your version of software/gear -- you may still choose not to buy anything -- but at least you'll be informed

Use their eagerness to your advantage

Wrap-Up

Questions, Comments, Complaints?

Thank you

{URL to our Checklist}

{URL to our list of sample Problem Statements}

Follow-up

mark.foster@{obscured}

stuart.kendrick@{obscured}

chris.shaiman@{obscured}

tim.wright@{obscured}

