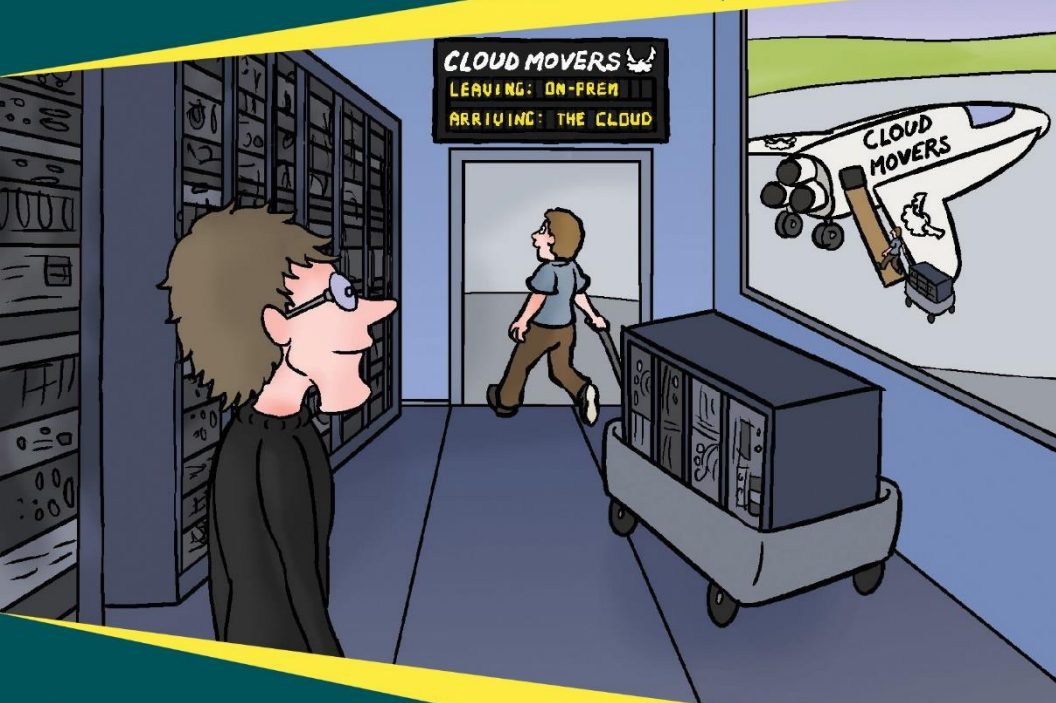


Conversational Cloud Migration



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Learn about:

- Cloud migration fear, uncertainty and doubt (FUD)
- Solid reasons for transitioning to the cloud and how to get started
- Migration assistance from a trusted cloud expert like Navisite

2nd
Edition

By **J. Peter Bruzzese** (Microsoft Office Servers and Services MVP)

Sponsored by Navisite, Inc.

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Conversational Cloud Migration

By J. Peter Bruzzese

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Note from the Author

I'll admit it... for the longest time I was afraid of the cloud. I won't say that it was just my inner dinosaur hating the idea of relinquishing control. I had legitimate concerns (as many of you reading this book do). We're going to talk about some of those concerns and I'm not going to lie to you and say they no longer exist and the cloud is a magic bullet one-to-one for what you have on-premises. In some cases, it's better, in other cases it requires a bit of risk mitigation assistance.

I started in this business over 20 years ago in downtown Manhattan working at Goldman Sachs, Merrill Lynch, Salomon Smith Barney. It was just as the Internet was being given to all within these companies, everyone was getting an email address, servers ran real hot and you needed some high end air conditioning if you wanted to keep them from dying. Hardware was expensive and we didn't just replace everything or toss servers out, we paid for companies to repair the boards and replace pieces. So you can see how some of us 'dinosaurs' might have a hard time putting our servers on a rocket ship to the cloud (as the opening cover would suggest). But that is the future (and for many, the present).

Maybe you just aren't ready for that move. That's ok. You're going to see within this book that there is no pressure for you to pack up all your systems. Notice on the cover that only some of these servers are being rolled out. The choices of what to transition and when, these are still in your hands.

J. Peter Bruzzese



The “Conversational” Method

We have two objectives when we create a “Conversational” book: First, to make sure it’s written in a conversational tone so it’s fun and easy to read. Second, to make sure you, the reader, can immediately take what you read and include it in your own conversations (personal or business-focused) with confidence.

These books are meant to increase your understanding of the subject. Terminology, conceptual ideas, trends in the market, and even fringe subject matter are brought together to ensure you can engage your customer, team, co-worker, friend and even the know-it-all Best Buy geek on a level playing field.

“Geek in the Mirror” Boxes

We infuse humor into our books through both cartoons and light banter from the author. When you see one of these boxes, it’s the author stepping outside the dialog to speak directly to you. It might be an anecdote, it might be a personal experience or gut reaction and analysis, it might just be a sarcastic quip, but these “geek in the mirror” boxes are not to be skipped.



Greetings. They call me J. Within these boxes I can share just about anything on the subject at hand. Read 'em!

Cloud Migration “FUD” (fear, uncertainty, doubt)



“What happens if my chute doesn’t open?!”

Everyone these days uses the word “cloud” but very few give thought to what the word truly means. Ask most and they’ll say “the Internet?” with that uncertain tone.

For some, the cloud really IS a mystery. I was out to dinner one night and my friend said the word “cloud” and literally looked up into the sky. I asked him “where do you think the cloud is?” and he had no idea. The concept of data centers running racks of virtualized servers hadn’t crossed his mind. He was picturing something abstract, rather than the reality of highly secured,

compound-like data centers, with built-in state-of-the-art cooling, redundant power, high availability features and more.

Cloud Types

For starters, it's important to grasp the different types of possible clouds that can exist. Oddly enough, you can even have a 'private cloud' that runs right on-premises. You might say 'wait, isn't that what we've always had' and the answer is yes and no. Let me explain the difference between private, hybrid and public cloud:

Private Cloud - When we say private cloud we are really talking about the model of computing we have been using forever. Basically this is an on-premises, hosted or co-located data center owned by a single organization. The reason it's been renamed to 'private cloud' is because the goal now is to provide the same benefits you obtain through a public cloud solution: virtualization, provisioning, scalability, high-availability and perhaps even self-service. Private clouds have the look and feel of a public cloud but with minimal risk since you control that cloud, hence, it's private.

The downside to private cloud is cost and complexity. Whether owned or hosted you need to configure and manage that cloud, which can be a bear... depending on which hypervisor or management platform you choose, so that's something to consider. Now there are some organizations that have no choice because their compliance issues will just not allow for a hybrid or public cloud deployment. But others may wish to look more toward one of these other solutions.

Hybrid Cloud – A hybrid cloud is as it sounds, a combination of one or more private and public cloud(s) co-existing, yet remaining separate. Hybrid clouds are usually perceived to be a private cloud with a test/dev environment running in a public cloud (like AWS, Azure, etc.). And that would be correct, but it would be equally correct if you had a private cloud that was

connected to a service like Azure AD, or Office 365, or perhaps even Salesforce. Typically, hybrid clouds are bound by an Identity and Access Management solution or perhaps a direct network connection. Today many participate in a hybrid cloud model whether or not they know it.

Public Cloud – Now most of the time when you think of cloud, this is what you're thinking of. These are clouds that are completely managed by a vendor like Amazon, VMware, Google or Microsoft. There is a certain amount of risk to public clouds, again it's the Internet, but there are some great rewards to this model as well. Reduced administrative overhead for your overloaded IT staff. That's appealing. I mean, who hasn't put in an 18-20 hour day trying to get something deployed. Unmatched scalability. Why/How? Because you don't need to walk into your boss's office and tell him or her you need \$700- 900K in your budget this year for compute and storage resources you will need over the next 5 years. And the ability to easily scale, spinning VMs or services up or down on demand is a big draw for public clouds. As well as the potential cost savings because along with the ability to scale up or down (aka cloud bursting), you pay for VMs or services based on usage (either in GBs used or hours running).

Often, when discussing cloud we hear of three key acronyms: SaaS, IaaS and PaaS. These are starters but then you have DRaaS, IDaaS, NaaS and more. I'll explain:

Software as a Service (SaaS) has applications in the cloud that you can utilize. If you have a Yahoo account or a Gmail account and you log in to a web browser to view your mail rather than going through an installed application like Outlook, then you are quite familiar with SaaS. In some cases you might pay for those services (like with an Office 365 subscription) whereas other times it is free.

Platform as a Service (PaaS) offers more than applications in the cloud, but a specific platform that you need. As opposed to

providing full access to an online server that you can log into or remote into and work with, you are given access to the platform service through other tools.

Infrastructure as a Service (IaaS) is a bit different. Here you are provided with computer infrastructure in a data center (local to your company or at a distance if you have solid Internet connectivity) that might include servers and specific software running on it, as well as storage space. The burden of worrying about the availability and backup/recovery of these servers is taken off your plate.



It's become common to make an aaS acronym for everything handled online these days. EaaS and TaaS (Education as a service or Training as a Service) are examples. Even PaaS (Pizza as a Service)... not kidding.

The Fear Factor

None of the above sounds excessively scary does it? Maybe not. But it's not all rainbows and unicorns either. There are justified fears in moving to the cloud. Let's review a few:

- **Loss of Control:** You're used to exclusively handling your own servers and now you'll be giving up at least some of that control. For some organizations it simply is not possible to relinquish control to that degree. If you don't need absolute control, but instead just detailed control over system configuration, memory, CPU, storage specs and so forth, the cloud may still be a viable option. But if you require clear knowledge of where a server is located, most—but not all—infrastructure providers don't give that information up. You might also have application architectures that don't

work in the cloud (or don't work smoothly), or hardware dependencies that require specific chips, drivers, etc that you cannot count on.

- **Cloud Costs:** Although often touted as a cost saver (which it can be for dev/test scenarios or short term/seasonal use) if you are running applications in the cloud that require persistent sustainability (always-on) you could be looking at some hefty fees depending on the provider and their cost for 24/7 usage. And you have no control over subscription prices should they go up.
- **Compliance Issues:** Being able to remain compliant with government and industry regulations may be a concern with a move to cloud. Patriot Act, HIPAA, SOX and other regulations may make it challenging or impossible to go full cloud.
- **Data Privacy:** There is a concern regarding the privacy of corporate data, either due to cloud providers seeking to monetize the data in their systems or through concerns that governments can more easily reach out and grab data (which causes some companies to insist their data remain within a data center within their own country's borders).



Hang in there... we'll be getting to the positive side soon. Just wanted to get all the fears on the table right at the outset.

- **Security Concerns:** There are fears of the known and fears of the unknown with regard to cloud vulnerabilities. Hacks have occurred and these become front-page tech news that only enhances the fear some people have with moving their data to the cloud.

Piggy Bank vs. Bank Vault

One of the best analogies I've heard for the distinction between putting precious data in the cloud and keeping it on-premises is that of the piggy bank and bank vault.

With the piggy bank it's simple, you can touch your money and see it every day. You might be able to provide a modicum of security for it. But with a bank vault, because it handles so much more money (from a variety of people) it provides more advanced security. Thicker doors, cameras, alarms, armed guards and so on. And should there be a break in, there is insurance where the bank will make you whole. None of that is available with your piggy bank.

- **Reliance on Internet:** The concern folks have is that if they put their compute outside their building, how will users access it? Obviously through the Internet but some would say the Internet is already over-utilized and, depending on your company connection to it, you may not feel comfortable separating your infrastructure and/or data from your workers because you either cannot trust the bandwidth you have to deliver a smooth experience or cannot trust the connection will be there. However, the workplace is evolving toward a more mobile world in which case the company connection may not be an issue because

employees are already using their personal and mobile connections for day-to-day work.



The issues we're discussing may increase fear, but rather than seeing it as an all-or-nothing decision, it might be better to consider cloud as an extension to on-premises. Not a replacement, but an extension of your data center.

We could go on and on. I saw one website that had 65 reasons why you shouldn't move to the cloud. 65!!! But let's remember, this is NOT a static discussion. Just because these fears may have been justified five years ago doesn't mean they are as off-putting as they once were. Third-party organizations have stepped in to assist and the benefit of moving to the cloud as a whole has been made more apparent. After all, if not we wouldn't see so many prominent organizations—from small to large—making the transition.

The Big Takeaways

There are legitimate reasons to have fear, uncertainty and doubt (FUD) when it comes to moving to the cloud. Whether you plan on moving services (like email) or infrastructure, storage, and so on, you have genuine cause for concern.

Costs, security vulnerabilities, Internet reliance, compliance, privacy, not to mention loss of control... these may be holding you back from the cloud. It's time we take a look at the positive side to making such a move.

Keys to a Cloud Migration



Truth be told, if you are a 'no cloud for me' IT administrator or decision maker, a list of pros isn't going to do it for you any more than the previous list of cons wouldn't stop an ultra-progressive futuristic cloud evangelist IT admin from leaping into the sky. It's the middle grounders that I'm looking to talk to here. You know the reasons for concern, you have a bit of that fear, uncertainty and doubt inside, but you are open to hearing about key use cases, reasons for moving to the cloud, benefits and so on. And you realize already that this isn't an all-or-nothing move. You can pick and choose what you move to the cloud. Be it services, infrastructure or a single application, it's your choice.

The Benefits of Cloud

In much the same way there are concerns with moving to the cloud, there are some very clearly defined benefits. These include some of the following:

- **You Don't Always NEED Absolute Control:** Control is an illusion, really. Having servers you can touch doesn't necessarily give you more control. Having the ability to manage servers in the cloud, adjust settings (memory, storage, software configuration, etc.) may be all the control you need.
- **Reduced Up-front Capital Costs and Power Savings:** Most cloud vendors like to point out the value of lowering Capex (capital expenditures) by going toward subscription services that get put in the Opex (operating expenditures) category. They have a point, to a degree. If you have an aging hardware infrastructure that you're looking to upgrade you can see the benefit of avoiding all that expensive, upgraded tech. Because cloud subscriptions are considered an operating expense you may see a benefit from a tax perspective. And you have fixed fees (with maintenance and support included – so you may save on staff expenses) so there is a bit of predictability involved. You also gain a more resilient environment without having to pay for all the hardware redundancy you would typically need on-premises.



Moving to the cloud is not a bottom line Capex/Opex discussion. You save up front, but may spend more over time. The idea that the cloud is 'cheaper' is over used and rarely proven true. Saving money shouldn't be your primary motivator here.

- Scalability: The ability to scale at will (up or down) depending on the needs of your organization. If you have a company that experiences seasonal fluctuations with greater demand and peak traffic times, then you either have to have servers on-premises that are way underutilized most of the year, or you can go cloud and elastically scale up or down at will.
- Security: Wait, didn't we put this on the last list under reasons for concern? We did, but some would argue that security in the cloud may actually be better than what your company is currently providing. These data centers are typically heavily secured environments with physical deterrents, serious screening for specialized staff, auditing of any and all actions on the servers and more.
- Ease of Server Setup/Upgrade/Patching: If you have ever spun up a server in the cloud you know it's a breeze compared to doing it the ol' fashioned way. Services can be setup in minutes when it used to take days, weeks or months to get through all the red tape of approval, purchase, setup and configuration. That time can go toward productivity now. In addition, upgrades and patches are handled for you, which in

some organizations is the reason for much time being wasted, not to mention added expense on personnel.

- **Mobility:** We're discussing 'cloud' as one giant entity but the usage varies, as we addressed in the previous chapter. In our mobile workforce world we must continue to be productive even when on the road. Cloud-based services and solutions offer solid connectivity use cases. Users are no longer confined within four walls, and so there are operational advantages to using cloud.



Back in the day we'd have servers in the basement and people on the first and second floors. Users and compute power all in one place. Connectivity wasn't a problem. Well, unless a backhoe cut your line (which did happen occasionally). But with the workplace evolving we have more "road warriors" and stay-at-home tele-commuters now than ever before. Your users aren't always in the building, so why does your compute power need to stay there?

Overcoming Challenges to Cloud Transitioning

You're convinced! You need to move some/half/most/all of your infrastructure to the cloud. You're not entirely sure how you will accomplish this, but you know you have to answer a few basic questions like 'what vendor will I go with?' and 'will I do it myself or seek assistance from a third-party vendor that has experience with cloud onboarding and migration?' These are decisions for you to make (not me).



Although I take a neutral position on your vendor choice and avoid 'selling' you on a third-party to assist with migration I will say this: time is precious. Anything that's going to save me time and brain power for something I need to do on a more consistent basis (unlike a migration) I'd seek out. I believe in letting professionals do what they do best, be it migration, risk mitigation and so on.

You do need to choose a cloud vendor (or two or three!). There are many to choose from. The big boys (AWS, VMware, Microsoft) and wanna-be big boys (Rackspace, etc.) You need to determine the vendor(s) that's right for your needs. You might consider the existing hypervisor solution you're using as a starting point because that may make for an easier hybrid approach (ie. Hyper-V to Azure, vSphere to VMware). You'll want to be certain the vendor you choose doesn't lock you in. If you have the ability to migrate in, you need to be able to easily migrate out. Maybe to a competitor, or simply back on-premises if their solution isn't meeting your expectations.



I like to warn folks away from "Hotel California" contracts. These allow you to check out any time you like, but you can never leave. (Cue the guitar solo). Watch the ingestion / exgestion fees in the contracts you sign.

You may need assistance in deciding which workloads could and should move to the cloud to start. Again, it's not an all-or-nothing decision. The cloud isn't going anywhere. You can have a slow migration, look for short term projects that might

fit a cloud infrastructure to build up confidence in it. Consider cloud as an extension, not a replacement for, your data center. Maybe look at non-core applications to your business. Maybe you want to move those up and over but keep internal resources for the critical stuff.

You might start by looking at new stuff as prime candidates for a cloud move. One suggestion I've read said "any new project should be viewed with a 'cloud-first' bias". Good advice because newer solutions won't have legacy data and technology involved to migrate too.

One of the challenges you may have in wanting to move infrastructure to the cloud is determining how to handle legacy systems. Some of these may not be moveable or they may require a little more work to make it happen. Another idea is to look at servers that have very limited utilization. These systems are just taking up valuable power and space.



I'm a huge proponent of the concept that two (or more) clouds are better than one. Julia White, Microsoft CVP for Azure and Security, said it best: "Enterprises have diverse needs when it comes to cloud apps, data analytics, development, management, and security. Belief that one cloud can meet all these diverse needs is simply out of touch with reality." I agree!

<http://tinyurl.com/hbusefk>

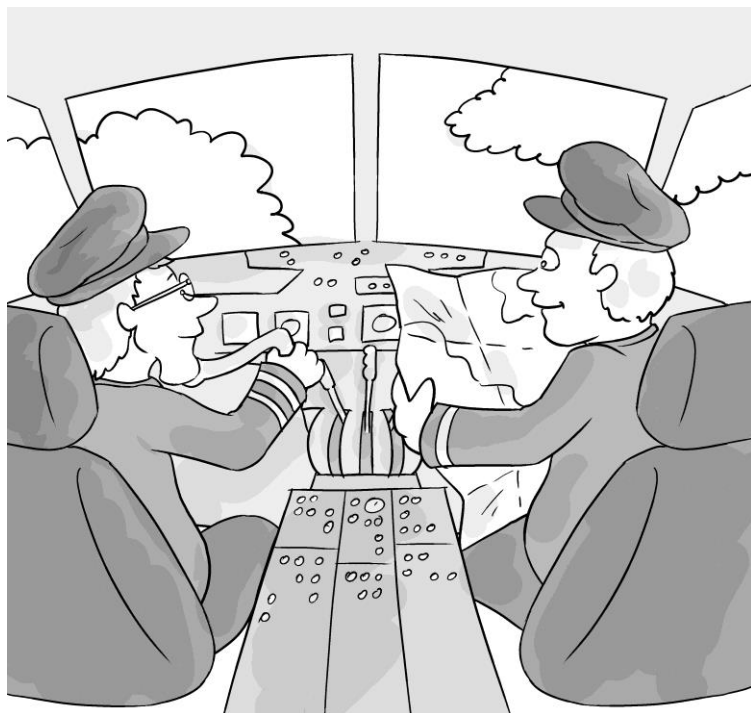
The Big Takeaways

In much the same way there are concerns that lead to FUD for a move to the cloud, there are an equal number of positive reasons to encourage the move.

Remember, it's not an all-or-nothing move. Nobody is trying to take your job... to take your data center. The cloud can help you if you view it as an extension to your existing on-premises environment. And your cloud vendor can work with you as an extension of your core IT team.

It's hard to determine sometimes how to make that change to "a cloud" transition a smooth one. There are many decisions to be made and it might be better to pull in a third-party to assist in making some of these decisions, assisting with the onboarding/migration process and helping with management provisions. There is a need to look for a blended approach of legacy/traditional/ managed applications to help customers find a way to bridge the gaps between cloud and on-premises.

Vendor Sponsored Chapter: Navisite® Cloud Onboarding and Migration



Every organization is different. There is no one way to move to the cloud. There is no “perfect” in this regard. Some organizations may need very little help to make it happen depending on the needs and the skill level of existing staff. Others may need a little hand holding through the process, while some may need a full force external team to make it happen. What every company needs, however, is an advisor.

Navisite is that advisor... that counselor (or “war time” consigliere). Let’s look at the value of having Navisite services when migrating to the cloud.

Navisite Tailors the Solution to Fit Your Needs

Through the years Navisite has learned the key to helping their customers is focusing on their overall business needs, not pushing them down any one path. As a managed multi-cloud provider, they offer the flexibility to choose either Managed Microsoft Azure or Managed NaviCloud, which uses a VMware-based hypervisor. For dev/test and short-term projects, they also offer self-service cloud options. They have a team of NaviCloud Engineers (experts in the field) to ensure your business needs are clearly outlined and focused on.



If you have ever walked into a mature organization (one that has been through growth through acquisitions, for example) you see a cornucopia of different legacy hardware and solutions and one-off purchases that can easily overwhelm. It's not possible to standardize overnight, nor is it possible to move every system to the cloud. But that doesn't mean you shouldn't move forward with a hybrid approach or colocation of services path. Navisite can help you navigate fitting unique, legacy system into a viable cloud migration strategy.

It's important to note that Navisite doesn't just do cloud either. A quick look at their website shows they do lots of other things, from managed applications--like Managed Microsoft Office 365--to hosting, professional services and beyond, with cloud migrations being one of them. They know there will always be a need for physical servers and workloads being handled on-premises. They're not looking to shove everyone into the cloud if it's not right for them. They want to help you move the workloads that make sense. That's their goal – to help. And that help can come in many forms.

Cloud Onboarding Offerings

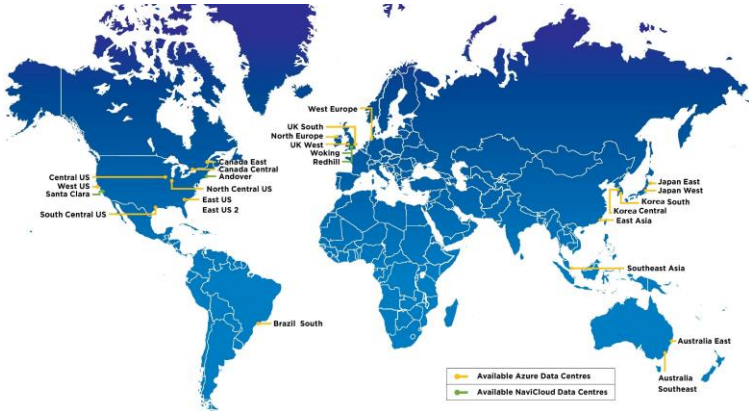
Navisite offers flexible Cloud Onboarding and Migration, so you can pick the service that best fits your needs, including:

- **Self-Service Cloud Onboarding:** This offering provides resources like videos, tutorials and so forth to assist you in moving from your legacy infrastructure to Self-Service NaviCloud®.
- **Guided Cloud Onboarding:** This offering pulls in experts to help you evaluate what you have already, and then create a cloud migration plan. Depending on the plan you adopt, you then either complete the migration using in-house resources (under expert Navisite guidance), or leave your complete migration to Navisite.
- **Managed Cloud Migration:** This offering is the soup to nuts, A to Z execution of a client's complete migration to Managed NaviCloud or Managed Azure with Navisite experts and partners handling the whole process.

All of these services help you minimize downtime and service disruptions, so your end users barely notice the change, if they notice at all. You probably trust your in-house IT staff wholeheartedly, and they're probably great too, but unless you've been jumping from cloud platform to cloud platform, the fact is they aren't going to be cloud migration experts. And that's actually a good thing because it means their focus is on what brings you value day in and day out, like innovation and strategic projects, instead of more rare IT efforts that are best tackled by highly specialized experts.

No matter how skilled your own IT may be, keep in mind that even expert mountain climbers count on expert guides to

tackle K2 and Everest. After years of helping customers make the move to the cloud, Navisite has learned the lessons so you don't have to. They know how to navigate past the potential pitfalls. At the end of the day, Navisite's experts are the ones "climbing the mountain" each day, and they have the experience to get you from where you are now to where you want to be in the way that works best for you.



Navisite Data Centers and Cloud-Enabled Data Centers

NOTES




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Easily “converse” about cloud migration in any setting.

There is no "one size fits all" methodology to moving to the cloud. Each organization has varying needs (and corresponding concerns). Contrary to popular belief, it's not an all-or-nothing endeavor. This book will help you face the fears head on, combat those fears with positive reasons for moving some (but not all, perhaps) of your infrastructure to the cloud, and to realize the value in having a guide throughout the cloud migration process.



About J. Peter Bruzzese

J. Peter is a Microsoft MVP for Office Servers and Services, an internationally published author and technical conference speaker, an InfoWorld journalist, co-founder of both Conversational Geek and ClipTraining.com and more. Follow him on Twitter @JPBruzzese



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