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**Pabst Brewing Company  
Recipe for Cloud Success  
A Case Study**

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## **Summary**

*iDentitySential and AppZero™ team up for a 6-week migration of the PBC datacenter to the Rackspace cloud – enterprise applications identified, extracted, and moved in less than 1 hour.*

Pabst Brewing Company first majored in core competency by outsourcing production of its iconic beer brands, leaving the company free to concentrate on marketing promotion and service of more than 600 distributors. For a company that 'virtually brews' 35 brands such as Pabst Blue Ribbon, Schlitz, Stroh's, and Old Milwaukee beers, the decision to move its datacenter from in-house to the Rackspace cloud made business and cultural sense. Making it happen took vision and leadership. Making it happen in 6 weeks took solid cloud experience, first-rate resources, technology, trust, and teamwork.

## **PBC: Vision and Leadership**

For PBC CIO Ben Haines, the decision to virtualize the datacenter was about transformation and IT value. "It's never about change for the sake of change. It's about adding value and maximizing use of precious company money and time – something people can lose sight of too often. It's about understanding where IT adds value. A quick clue ... it is not by buying and running the cheapest server."

And it's not about greener pastures for sacred cows. Haines began his tenure by showing Microsoft Outlook and Exchange the door, to be replaced by Google Apps and other cloud-based solutions such as Okta, Zendesk, Box, and Tidemark. Out went Blackberries and the servers that served them; in came Apple iPhones and cloud mobile device management tools. Haines observes, "Eighty percent of our people don't set foot in an office so there's no point in having a Blackberry, virtual private network and a laptop." Haines says, "Mobility is the gateway drug to the cloud."

Commenting on the low-hanging fruit of replacing commodity infrastructure with cloud services, Haines notes, "We've got a big opportunity to modernize our processes and systems – to get out of the infrastructure business."

But the move was not automatic. Haines explains, "A bit of skepticism is healthy as there is no magical technical solution to most of the issues we face in business. The issues are more often than not political and habitual - and bad technology choices only exaggerate this. Any transformation takes a team to make it happen and starts with an agreement that things are broken and a willingness to change. We have a very motivated business community who wants efficiency in everything that they do and are very open to new ways of doing things."

Over a hot August weekend, the datacenter officially moved from in-house in San Antonio, Texas to the Rackspace private and public cloud, and is now live on a hybrid mixture of managed services and cloud, tailored to the demands of PBCa's business strategy.

## **iIdentitySential: “migration with confidence”**

Word of mouth brought in Kentucky-based iIdentitySential, a small powerhouse of experienced cloud and virtualization expertise. Spearheaded by Steve Blake and security/identity pro Dave McCluskey, the project kicked off with iIdentitySential’s preliminary, no-cost cloud adoption assessment. The assessment offers:

- Detailed performance characteristics of current systems
- Close alignment of cloud computing strategy with business strategy
- Recommended roadmap and alternative proposals
- High-level cost-benefit analysis (ROI/TCO)

Steve Blake takes pride in the company’s expertise in all things virtualization – specifically the strategy of moving traditional datacenters to managed cloud services. He says, “Everyone is interested in the proposition. They are intrigued by being able to reduce capital investment while focusing on making beer or yogurt or jeans. But there is always a lot of hesitation up front – a combination of fear and inexperience.

“That’s where we start. We perform our detailed cloud opportunity assessment and performance analysis so that, if migration is the right business decision, the company can move forward boldly and effectively. We call it ‘migration with confidence’.

“Migration with confidence has to go beyond cloud best practices. Because the biggest challenge we face in datacenter to cloud migrations is culture shock and fear. Fear of losing control of systems. It’s not the case. It’s a misconception. Cloud migration leaves full administrative control of systems – you just don’t have to worry about keeping the lights on. That’s Rackspace’s business. IT staff is freed for strategic work and new projects.

“It’s a good change, but it’s still a change. We care about performance. We look at CPU, RAM, and disk space resources – but we switch from a system-based view of the world to an application-based view of the world when you move to the cloud. The application perspective is a different world view and the only one that makes sense in the cloud.”

## **PBC Timeline: Assess, Prepare, Socialize...Go Live in 6 Weeks**

The initial cloud opportunity assessment took about 4 weeks and showed room for significant consolidation: 82 systems would be reduced to 34. Gains were found in usual places, such as lack of optimization in older systems and a lower level of virtualization than was possible. Speaking of the initial assessment, Dave McCluskey chuckled, “The process was so typical. There was a lot of ‘Oh yeah. I forgot about that [app]. I haven’t been at a client site where this hasn’t been true.”

The assessment included performance metrics to construct configurations in the cloud, as well as two scenarios: The aggressive scenario was for very lean application operations, while the more conservative approach gave the applications

more generous configurations with a lot more breathing room for spikes. PBC chose the conservative approach.

The assessment and project planning took 4 weeks. Then came a 4 month period in which the plan was socialized across PBC for business benefit and cost effectiveness as well as approvals, back-end preliminaries, and contract work.

Once approved, it took 6 weeks to move PBC's environment from in-house to Rackspace.

McCluskey described the move as follows: "In July, we started moving things. A dry run. We copied up to Rackspace in parallel. We had to prove it. Literally. More than one PBCer had expressed doubt that it would ever work. But it did work and we proved it. Then the time came to move it. August 24<sup>th</sup> we did the final updates and cut the cord on August 27<sup>th</sup>. We were there. It was pretty smooth actually. I was pretty impressed."

But 6 weeks could have easily been much longer. 3-4 weeks longer according to Steve Blake.

## **The Complexity Dilemma (Part I) – Mysterious Legacy Applications**

The migration team came face to face with moving two large third-party applications to Rackspace. Business critical, and central to all business activities, the applications had been heavily customized over the years and were tightly integrated with many other applications. To make matters worse, the subject matter experts were consultants whose contracts had ended years ago.

While the particular versions of OS, patch level, core systems, customization, and integration points all functioned perfectly for the end users' purposes, from an IT point of view these applications were effectively giant black boxes. Identifying, and reproducing all these black box components for movement to the cloud would be a long, time-consuming job full of trial and error. Compounding this task would be the requirement to discover all of the interdependent systems (applications) in order to move and reconnect them in the destination environment.

These great big, mysterious, undocumented, mission critical, legacy applications were a problem. They defied standard virtualization approaches. Blake recalls, "Planning for PBC, I saw the challenges. There were a number of highly customized, almost completely undocumented applications that I knew were going to be a problem unless I came up with something new. There was little to no institutional knowledge or subject matter experts on these apps. I wouldn't be able to just move the servers to Rackspace. P-V was not an option. But neither was spending weeks dissecting the applications like a highly customized Great Plains [Microsoft Dynamics GP]."

## **AppZero to the Rescue – Slashes 3-4 Weeks Off Pabst’s Migration Timeline**

Unlike any other migration tool available in the market, AppZero automatically identifies, extracts, packages, and moves server applications *without a VM*. AppZero CTO Giovanni Boschi explains, “The application-centric approach of AppZero is a hand-in-glove fit with the demands and opportunities of the cloud. The cloud requires that an app be virtualized. A managed cloud requires that an app be virtualized in accordance with cloud-specific templates.

“Applications need to be moved onto new, clean server images from your cloud provider. These known, standardized, and hardened server images form the basis on which providers deliver managed infrastructure services and the service level agreements (SLA) that so often accompany a move. And common sense says that you want to leave behind the baggage that accumulates on servers over years of production use.

“At PBC, Margin Minder is one example of an app that doesn’t have any installers in existence. In another example at Great Plains (Microsoft Dynamics GP), AppZero saved Steve a time-sinking exercise in archaeology. AppZero’s migration tool finds: executables, DLLs, configuration files, registry entries, installation meta-data, service description at a generic level. For business application suites, AppZero finds application user profile files, report definitions and meta-data, connector configurations, data sets, and integration middleware.

Example: using AppZero to identify, extract, and package an application in an application-only virtual application appliance (VAA) resulted in the following:

### **Total AppZero time to identify, extract, and migrate: 22 minutes**

**Microsoft Dynamics GP 10.0**, a mid-market business accounting software package, had many add-on applications. For example GP was extended with “eConnect” to integrate with external applications such as web storefronts, web services, point-of-sale systems, and any legacy applications. Crystal Reporting for end-user reports was another extension to the core system, while Doc-link software brought an integrated document management system (IDMS) into the mix. Doc-link enabled Pabst to archive, process through workflow, as well as retrieve and research document transactions from the desktop.

- Nine unique application services
- A total of 4 GB migrated
  - 215 files on the system drive (100 MB)
  - 7,778 files on the data drive (3.1 GB)
  - Miscellaneous registry and services entries

## **Total AppZero time to identify, extract and migrate: 40 minutes**

**Salient Margin Minder** is an application intended to balance inventory with market demands by integrating sales and inventory data in the context of related business activities. The application also performs “what-if” forecasting by bringing transaction-level data from Salient into Microsoft Excel. It also measures variance to actual sales and creates better synchronization between sales and operations. This business-critical system connects to many other systems, and is customized for all of the products and suppliers in Pabst’s complex distribution chain.

- Six unique application services
- A total of 28 GB migrated
  - 4,152 files on System Drive (612 MB)
  - 6,644 files on data drive (26.3 GB)
  - Miscellaneous registry and services entries
- Applications were moved to Rackspace at which point the AppZero VAA container was dissolved, leaving the application installed on the Rackspace machine – 10 minutes

Boschi concludes, “Not only did Steve not have to figure out what the pieces of Great Plains were, he didn’t have to spend his first few days doing the forensics – looking for current documentation that doesn’t exist and learning the app from outdated documentation that does.”

Blake agrees. “These legacy apps are a nightmare to reconfigure and install. Third parties – sometimes many third parties – have customized and updated and otherwise just plain changed these apps. We don’t have the original software not to mention plug-ins and add-ons. Hopefully the company is still in business. Where are the original source installation files? How would we have been successful identifying all the elements of Great Plains?”

“AppZero let me pick up the app and move it – decoupled from the OS – without my having to understand the app first. AppZero identified the elements and grabbed them, putting them all in one VAA for instant movement and true portability.” PBC chose to have us dissolve AppZero’s VAA once the move was made, but for other clients, we choose to keep the VAA encapsulation and the cloud mobility that comes with it.

Steve calls AppZero “a huge time savings” on the PBC migration, estimating the savings at 3-4 weeks, or more than 50% of the time the project would have taken without AppZero. Beyond the time savings, Steve also credits AppZero with making the migration much more effective and accurate than a forensic manual rebuild approach would have been.

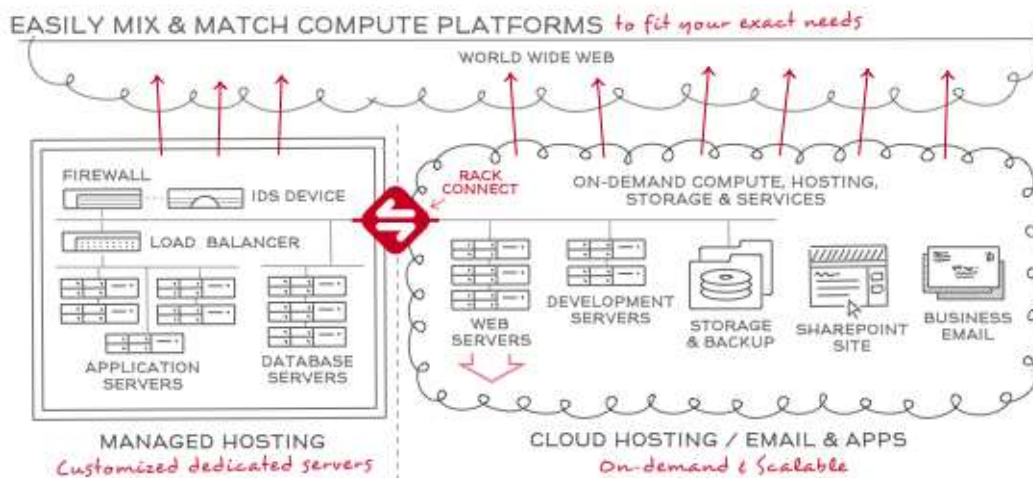
A summary of the manual migration compared to AppZero's zapp migration is illustrated in the table below.

Product	Manual migration time estimate (min)	Zapp extract & provision (min)	Zapp time improvement factor
Margin Minder	>2,400	40	60x
Dynamics 10.0	>2,400	30	80x
Total	>4,800	70	70x

## PBC chooses Rackspace

Cloud computing delivers flexible applications, web services, and IT infrastructure as a service using a utility pricing model. Cloud computing also allows businesses to instantly scale their technology requirements to meet new demands. The cloud is a cost-effective approach to technology because businesses don't need to make usage predictions, upfront capital investments, or over-purchase hardware or software to meet the demands of peak periods. With the right approach, cloud computing can work for organizations of any size.

Choosing the right cloud partner is a key component in ensuring a successful and long-term relationship. Rackspace, the Open Cloud Company, is a proven and trusted hosting provider that offers a wide portfolio of cloud services powered by OpenStack® and backed by Fanatical Support®.



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## **The Complexity Dilemma (Part II) – Co-Existing with IT's 'Real Life'**

By any measure – cost savings, project effectiveness, IT value – PBC's move to Rackspace was a success. But success was not a smooth, rose-strewn path.

Even with the right consulting partner, plan, provider, and migration technology, there were practical matters that absolutely required the support of and coordination with PBC's business application teams. A good example, common to all migrations, is the need for maintenance windows and UAT (user acceptance testing) cycles. An aggressive migration schedule moves forward in parallel with on-going production business and activities. Coordinating business imperatives and migration milestones is an orchestration moderated by compromise and foresight – subject to change and complexity.

These considerations make migration a master-level exercise in logistics. Enterprise IT typically sports a roster of many people, each with differing roles or functions that have to be coordinated. System administrators, database administrators, application owners, security/compliance, network owners (DNS) are just some of the IT pros who have to be in the know, approve the plan, and provide information for a successful migration.

Often the only time a migration can happen is during a scheduled maintenance window in which systems can be shut down for patches, backups, migrations, and other maintenance tasks to be performed. By design, these maintenance windows are limited to a few hours once or twice a week and are almost always late at night when the users are snuggled fast asleep in their warm beds.

Enter the outsider who needs access to the machines and the maintenance windows to effect the migration process. Keys to the IT kingdom are not given over easily. Simply getting access to the machines with the right credentials (administrator for the machine, correct user/password for databases and applications) is a time-consuming activity.

So, late at night, the intrepid consultant has access to a system for a couple of hours. The destination cloud has been provisioned. And the clock is ticking. It is most likely their first real view of the system and they have some concerns: I hope the network does not go down. Is there enough space to move all this data? Have we grabbed all configuration and application components? Do we have enough time? What new dependencies will be discovered? How am I going to move them?

Fast forward – the users are waking and the maintenance window is closed. Under these circumstances, AppZero's time-slashing efficiency and effectiveness are critical.

A significant practical benefit of using AppZero, according to Steve, is that AppZero leaves the source machine untouched. If for any reason something didn't work, the source is running unchanged. Describing the application at the Rackspace destination, he said, "It looks like a fresh build from our point of view – not like an app that has been running for 6 or 7 years, if not longer."

“We hear a lot about what products can do. It was nice to have AppZero do exactly what they said it could do. And their professional services people were very knowledgeable and accessible. They gave us some training and remained available to us, partnering.”

## **Summary Points**

- AppZero slashes the time and complexity of migrating complex, enterprise applications.
- AppZero leaves the source machine and application untouched. It makes no change to the source application and requires no AppZero software on the source machine. All AppZero software is on the destination machine in the Rackspace cloud.
- AppZero’s speed maximizes the productivity gains possible during limited maintenance windows
- AppZero effectively stands in as the application subject matter expert in the absence of documentation or institutional knowledge, discovering and reproducing application interdependencies.
- AppZero results in a clean installation build on the destination machine.
- iDentitySential’s expertise marshaled technologies and talent to effect the migration.
- The effort carried a big payload. Overhead is minimized; IT costs are decreased/controlled while IT’s agility and flexibility are increased. PBC is now well positioned to use IT to aggressively and effectively provision fast-changing business opportunities. As Ben Haines notes, “IT’s value to the business isn’t making sure the server light is green – it’s making sure the business has the services they need. It’s about speed and agility at the end of the day, making sure IT can do what they need to do for the business.”

## **See for Yourself**

If you’d like to see AppZero software in action, [request a demo](#) and a representative will show you a migration via web meeting. For more information, please visit [www.appzero.com](http://www.appzero.com) or contact us at [info@appzero.com](mailto:info@appzero.com).

AppZero is the fastest and most flexible way to move server applications to and across any clouds or datacenter servers, without re-engineering, re-installation, or lock-in. AppZero moves complex Windows server applications with ease.

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