“...because you have better things to do”

The Berkeley Desktop

Project Details

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Title: The Berkeley Desktop

Team

The Endpoint Engineering and Infrastructure Team, Information Services & Technology, UC Berkeley
Ben Gross, Manager
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Riff Khan, Systems Administrator
Stan Cheung, Systems Administrator
Timothy Scoppetta, Systems Administrator
Vanessa Kaskiris, Project Manager

URLs

desktop.berkeley.edu
software.berkeley.edu

Informational Videos

What is The Berkeley Desktop?
http://youtu.be/Olx3CwDxkFo

How does The Berkeley Desktop make campus better?
http://youtu.be/GZtjOcim9is
The Berkeley Desktop in a Nutshell

The Berkeley Desktop is a campus computing ecosystem that provides a standardized, unobtrusive, and cost-effective computing experience at no additional cost to departments and their users. The Berkeley Desktop is a reliable, secure, and integrated computing environment that reduces the amount of time faculty and staff spend maintaining their computers.

The Berkeley Desktop team mission is to produce an overall campus strategy that links together a standard for operating systems, software, and hardware, along with automated and self-service system management functions. This combination allows campus to provide more cost-effective and flexible IT services.

Criteria for Success

1. Create an ecosystem that delivers a de facto campus standard for end-user hardware, software, and services
2. Reduce IT security risks and compromises by ensuring machines receive constant patches and updates
3. Reduce time loss associated with software and operating system patches and updates across campus
4. Combine and integrate previously disparate and decentralized services into a single unified and automated offering
5. Provide a positive and predictable updating and patching process that gets better - not worse - as it expands
6. Improve the lives of IT staff across campus by automating work that was previously manual and laborious
7. Develop tools for automation that greatly simplify and reduce the cost of providing campus IT services
8. Eliminate inequity by providing the same tools and infrastructure to departments large and small
9. Establish an easily-identifiable identity for our services to enable better user understanding and faster service
Project Timeframe
March 2013 - present

The Berkeley Desktop Beginnings
The Berkeley Desktop began approximately two years ago in what could be characterized as the campus computing Wild West. There existed no uniform central campus desktop computing infrastructure strategy; well-funded departments could offer premium service levels, while departments with few or no dedicated IT staff found themselves in constant crisis response mode. Existing IT organizations were often overloaded due to the high variance in machines across campus.

Ben Gross, the team manager, imagined the Berkeley Desktop as an original concept for campus. As a seasoned technologist, Ben was fully aware of and acknowledged the computing complexity and variety on campus. He understood the intrinsic balance of guiding his team to project completion and also letting them explore and learn on their own to discover new solutions to improve service delivery on campus.

In two years, there are over 11,000 machines in the Berkeley Desktop primary inventory and management system. Nearly 6,000 of these machines run the standard Berkeley Desktop image. More than 40 campus departments have selected the Berkeley Desktop and are more secure and automatically receive critical updates and patches, reducing the risk of exposure to vulnerabilities. Large and complex campus departments are increasingly requesting use of The Berkeley Desktop to manage and administer their computing needs. The Berkeley Desktop is currently onboarding the Library and Intercollegiate Athletics among other departments.

The success of the Berkeley Desktop and its accomplishments are a direct reflection of the core team. Composed of 10 individuals, it is a dedicated, thoughtful, extremely hard-working and diligent group. The team is characterized by a strong desire to systematically evaluate challenges, and succeed in untangling complex and often difficult problems.

The team worked throughout 2013, 2014 and continues to standardize operational infrastructure, build out the patch management system and imaging services as routine and surprise-free offerings. The team intentionally built its services to scale to meet expanding campus needs. The team shares a belief in the importance of offering these features to campus while fully enabling the University mission statement of teaching, research, and public service.

The Berkeley Desktop in Depth
The Berkeley Desktop provides numerous and previously disparate IT infrastructure service offerings in one place and reduces the labor costs and overall time sink previously associated with the use of these services.

The Berkeley Desktop delivers the following:

- Centralized and automated patching and updates for OS and applications
- Centralized management of security settings to meet campus security requirements
- Preconfigured campus Windows OS image
- Preconfigured campus Mac OS X image
- Campus-wide software license administration and distribution
- Self-service software packaging and distribution for managed machines
- Anti-virus management
- Managed desktop backup deployment
- Manages remote support infrastructure
- Power management in testing phase
- Campus computer recommendations
- Centralized configuration management
- User environment management
The cornerstone of the Berkeley Desktop is a preconfigured operating system (OS) - offered for both Windows and Mac - that can be installed on a new or repurposed desktop or laptop. Along with the OS, the machine then receives updates and patches to critical vulnerabilities. The team researches, tests, and patches these updates and builds them into the standard offering. In the old days, new workstation configuration would often take 4-6 hours or more with a dedicated technician, add to that the loss of productivity for a faculty or staff member, add to that the probable risks of infrequent or self-initiated updates. The Berkeley Desktop standard configuration can be installed and ready to go in less than an hour with standard monthly patching and critical updates deployed as needed due to significant backend automation.

As a comprehensive one-stop infrastructure service for university faculty and staff to access information on hardware, software and getting help, the Berkeley Desktop consolidates services that were previously disparate and hard to find. The Berkeley Desktop team conceives, develops, tests and implements a long range vision of the best possible tools to reach the largest possible audience to make their lives on campus better.

The Berkeley Desktop also functions as the home for the Joint Administrative Computing Standards (JACS) Program. JACS is a collaboration between UC Berkeley and UC San Francisco to research, test and create standards for desktop computing hardware. All Berkeley Desktop models are fully tested with integrated software and services. By creating and administering the program for hardware standards across both campuses, the JACS Program in conjunction with The Berkeley Desktop creates a comprehensive computing solution that is compact and deployable UC-wide.

**Importance of The Berkeley Desktop**

Efficient Campus Technology Infrastructure
- Provides a significant reduction in IT security risk and vulnerability exposure via frequent and automated updates.
- Common base reduces costs associated with disparate or non-coordinated offerings.
- Advanced automation means that maintenance costs are reduced and mapped and predicted for future years.
- Encourages standards and best practices for campus-wide workstation infrastructure.
- Provides tools that greatly simplify and reduce the cost of providing campus IT services.

Improved Campus Experience:
- Minimizes desktop-related loss of productivity for faculty and staff.
- Enables CSS IT and departmental IT to effectively serve their users in a unified, predictable and consistent manner.
- Provides a comprehensive and accessible suite of essential software offerings to all of campus.
- Significantly reduces support-related time loss for campus administration.
- Supports ease-of-use for departmental research
- Software licensing and distribution for students, faculty, and staff, touches every department on campus and includes packages for research, teaching, and administration.

Innovation through Iteration:
- The Berkeley Desktop is the first model of its kind to be offered campus-wide. It was built from scratch by the team and is quickly becoming the de facto standard for endpoint management.
- The team is constantly improving the image and offerings provided. EEI takes feedback from CSS and departmental IT to customize offerings and fine tune current offerings.

**Impact of The Berkeley Desktop: Metrics**
- +11,000 machines in 2 years that are inventoried and managed via departmental IT using EEI systems
- +Nearly 6,000 machines in 2 years directly managed by EEI via The Berkeley Desktop
- +50% reduction in average desktop imaging time for IT staff
- Departmental and Campus Shared Services IT cost savings in endpoint management and deployment
- Software Central touches every department on campus and provides Microsoft and Adobe licenses campus-wide
- Automated patches and updates rolled out to machines on a weekly basis with no interruption in user service
- CSS and Departmental IT have more time to resolve support requests
- End users are empowered to be more autonomous and secure
Saving Time
with the Berkeley Desktop Image

Average Time to Image a Computer

Before the Berkeley Desktop

<table>
<thead>
<tr>
<th>Time</th>
<th>Berkeley Desktop</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 hours</td>
<td>1 hour less</td>
</tr>
<tr>
<td>50% less time</td>
<td></td>
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</tbody>
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The Berkeley Desktop image has reduced the amount of time spent setting up new computers by 50%.

With nearly 6000 images, the Berkeley Desktop has saved almost 750 days of work.

That’s the time of 3 Full Time Employees!

The Berkeley Desktop

before

after

customers

Tech

Tech

customers
Testimonials

Scott McCoy, University Health Services, UC Berkeley:
“At University Health Services we strive to minimize complexity in our computer environment, so the ability to customize computer builds and software offers to our specification makes all the difference. On top of that, The Berkeley Desktop distributes OS and software patches with an announced schedule so that we can warn our users when to expect patches. This single project has saved UHS more computer admin time than any other project I've seen at the University in 20 years. You know it must be good if it makes a sysadmin happy!”

Shirley Davis, Technical Support Supervisor, Campus Shared Services, UC Berkeley:
“We love the Berkeley Desktop; it has been integral to our efforts to promote standardization on campus. We know what to expect when a computer has The Berkeley Desktop, we find that troubleshooting is more efficient, downtime is minimized and the overall customer experience is improved. In addition, we are able to work with our clients to budget efficiently for computer refresh cycles several years in advance because of The Berkeley Desktop.”
Mark Chiang, Enterprise Data Warehouse Manager, IST, UC Berkeley:
“The Berkeley Desktop solution to roll out the Internet Explorer compatibility mode setting was a tremendous value add for the Cal Answers user community. Due to the ability to deploy critical web browser changes quickly on mass, our reporting application users were able to pull the campus data and make decisions based off of the info. Finally, Cal Answers users could access the tool via any web browser, which drastically improved the user experience. The Oracle Business Intelligence upgrade project would not have been successful without the partnership and solution from the UCB IT Endpoint Engineering team.”

Calvin Burnes, End User Device Support Group, Campus Shared Services, UC Berkeley:
“The benefits that we see with the Berkeley Desktop are a stable operating environment; tools like BigFix self serve offers which allow clients to install applications without the need to involve CSS IT; PostDeploy which allows us to rapidly deploy the computer onto the UCB network. An environment that allows the computer to seamlessly work with UCB IT services like AirBears2 and Citrix. And a more secure environment with tools such as IEM (IBM Endpoint Manager) to make sure that critical security updates are automatically delivered to our client's computers. The net result that we see here in CSS IT Lower Hearst Zone is fewer problems with computers running The Berkeley Desktop. And it typically takes us less time to resolve problems on computers running The Berkeley Desktop. The overall result is that it enables us to service our clients better.”

**The Future of The Berkeley Desktop**

The team is actively working on the following meaningful implementation projects for The Berkeley Desktop:

- **New Generation Desktop:** In partnership with the Information Security and Policy Office at UC Berkeley, build and offer an even more secure Berkeley Desktop. Features include: options for full disk encryption, limit browser plugins to reduce attack surface, Microsoft Enhanced Mitigation Experience Toolkit (EMET) included and application whitelisting on Windows to further reduce attack surface.

- **Automate All Things:** A core ongoing team objective, automation via scripts, alerts, and monitoring, is essential to smoothly scale the implementation of The Desktop across campus. The team currently uses BigFix, Casper, Puppet, Zabbix and Splunk and is in the mid-stages of a full-scale automation project implementation.

- **Self Service Printer Management:** Using PrinterLogic Printer Installer, the team is currently executing on a campus-wide project to provide a new service that makes adding, configuring, and maintaining printers on campus easier. Printer Installer allows for easy installation of campus printers on Berkeley Desktop computers.

- **Improve Tech Lives on Campus:** Continuous improvements to device inventory allowing technicians to quickly determine machine type, configuration, and installed software without having to play 20 questions with users that need support.

- **Campus Hardware Recommendations:** Continuous management with vendors and internally on hardware standards for campus desktops and laptops.

The Berkeley Desktop may only be 2 years old, but the efficiencies and cost savings from its existence are dramatic.