How to Integrate Macs into an enterprise PC World

THURSBY Software

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User experience

In April this year, Apple announced Mac quarterly shipments were up 28% from a year before, at a record 3.76 million computers, just behind Dell. The commercial successes of the iPad, iPhone, iPod and branded retail stores have also lifted iMac desktop and MacBook laptop consumer sales.

Macs have long been the computers of choice in academia, research and medicine, as well as creative and design work in music, video production, publishing and advertising. Today's doctors, students, young graduates and independent professionals are more likely than ever to use Macs than Windows-based PCs. The increased uptake of Macs in the general consumer realm is driving the uptake of Macs in all types of organizations, much as happened with Windows PCs themselves a generation previously.

Users choose Macs because of their overall ease-of-use compared to the typical home Windows PC with its malware, viruses and endless update hassles. That end-to-end productive user experience, tied to individual Mac workstations and laptops, is especially important to preserve since it requires greater and also qualitatively different work than integration of servers in the data center where one system administrator might be managing 50 to 100 machines.

Home, small or medium business integration

When first shipped a decade ago, the Mac OS X operating system had almost no Windows connectivity. That lack of connectivity made many Mac enterprise installations isolated from corporate infrastructure, unable to access resources like file shares and printers, or follow corporate standards for sign-in and group policies. Understandably this gave Macs an initial bad name in enterprises, along with the reluctance of Apple to share roadmaps of future hardware and software releases. Over time, OS X has acquired more functionality and *basic* Mac-Windows integration can be achieved today by checking a few settings boxes for homes or small businesses, and even for some larger organizations provided the integration requirements are not too taxing.

In some organizations, Mac-Windows integration was avoided entirely by simply having a separate Apple back-end based on Apple's Xserve server and the server version of OS X. However, in early 2011 Apple dropped Xserve, its one data center class server, making the strategy untenable for organizations requiring enterprise class infrastructure. In general, the strategy of using OS X server simply extended the isolation of Macs from the user space to the data center and prevented economies of scale in widely sharing enterprise server, printer and storage hardware, software and services.

The data center

Over the last quarter century, data center mainframes and minicomputers have been largely replaced by standardized Windows-centric infrastructure:

- Windows Servers
- Windows Server, NAS or Samba based storage
- Directory services
- Active Directory
- Group Policies
- Reporting/compliance
- Training and help desk support

For many years, innovation happened first in the enterprise data center with consumer devices being relatively simple and easy to integrate. Today, innovation occurs more and more in the consumer space, requiring greater flexibility in adding non-Windows consumer devices without reinventing the wheel on the back-end.

Enterprise integration

The key goal for integration of Macs into an enterprise PC world is managing Macs transparently - just like any other PC - reducing risk and preserving existing investments in infrastructure, staff training and experience.

Part of that transparency, simplicity and maintainability lies in avoiding the overall costs and disruption of introducing new, proprietary Windows server software or Xserve / OS X servers and/or making changes to Active Directory schemas.

Typical Mac-Windows enterprise integration requirements include:

- Full network sharing of files, directories and home folders via Microsoft SMB/CIFS protocols, especially for the needs of powerful Mac applications like Apple's Final Cut Pro, Adobe's Creative Suite, Avid and Microsoft Office since they are the heart of Mac workflows and productive user experiences.

- Microsoft Distributed File System (DFS) for replicated, fault-tolerant access to geographically dispersed files

  This is the standard for many enterprises and a key to true enterprise integration and scalability.

- Management of single sign-on (SSO), identity and access management (IAM) via Microsoft Active Directory (AD) / Group Policy Objects (GPO) or Apple Workgroup Manager (WGM)

  Depending on the growth and history of the enterprise, it may make more sense to manage IAM from the Mac-side, or from the PC-side.

- Tools to facilitate enterprise rollout and maintenance.

- In high security environments, support for all U.S. Government CAC and PIV smart cards, including CAC-NG, for two-factor authentication (having the ID card and corresponding PIN code)

- Best practices and direct support from Mac-Windows specialists

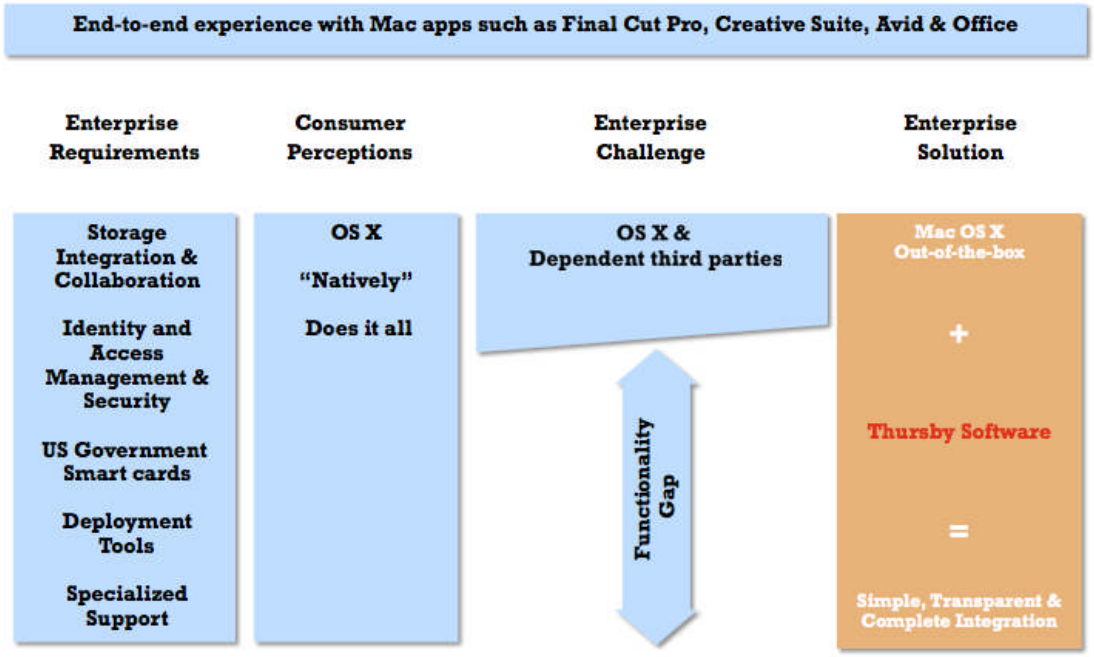
  Independent polls have emphasized enterprise support as one of the weakest areas in Mac-Windows integration, especially since the end-to-end productive Mac user experience can easily be broken by partial or niche solutions.

The enterprise challenge

The challenge in meeting these enterprise requirements is the *perception* that Mac OS X does everything right out of the box at an *enterprise* level just as much as it does in a home, small business context. With time wasted, known bugs and limitations rediscovered, forum and support groups visited and revisited, the false perception ends in both user and management frustration. The reality is that there are functionality gaps in current and prior versions of OS X as well as for third parties who rely knowingly, or unknowingly on it (often the case for third-party ports to the Mac).

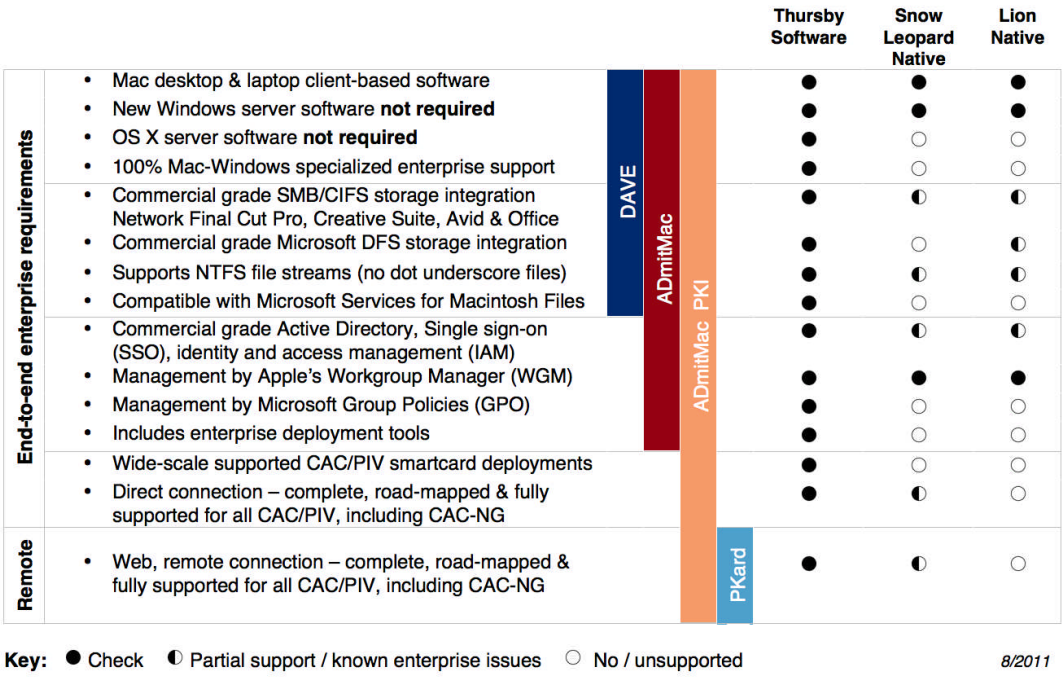
A subtle problem can be not recognizing that the challenge exists and potentially spending man months maintaining partial workarounds and fixes that typically break for every update and upgrade, increasing Mac total cost of ownership, decreasing return on investment, impacting integration and user productivity.

At worst, this can mean that Macs are no longer tolerated in a workplace environment, or run as stand-alone enclaves, cut off from enterprise resources, standards and best practices, marginalizing the users, admins, Macs and the organizations using them.



The enterprise solution

The solution for simple, transparent and complete Mac-Windows integration is to run Thursby Software that provides a fully supported, one-stop solution with direct access to Mac-Windows integration support specialists. Thursby does this in software, with no server-side work, training or on-site services required. Quite simply Thursby has the longest history, widest user base and best software for enterprise Apple integration in the industry.



- Our foundation software, **DAVE**, offers commercial grade Microsoft DFS and SMB**/**CIFS support for NAS, Samba and Windows server storage and print integration.

- Building on **DAVE** technology, **ADmitMac** turns a Mac into a true Active Directory client, offering single sign-on, identity and access management from either the PC or the Mac side of the house and includes deployment tools for volume users.

- For those requiring higher security, **ADmitMac PKI** builds on **ADmitMac** technology to handle even the latest generations of US Government CAC and PIV cards.

- **PKard for Mac** and **PKard for iOS** offer CAC and PIV authenticated remote access from Macs, iPads and iPhones.

Enterprise gold images

One of the larger challenges of Macs in the Enterprise is that older machines may only be able to run older versions of OS X and newer machines, newer versions. Many organizations standardize on a particular OS X version and 'gold image' that has been thoroughly tested and meets their needs. Apple corporate is not known for sharing roadmap information and release dates, making waiting on a feature or bug fix in the 'next release or future releases' an uncertain gamble.

New features are typically only available on new versions. Thursby stands behind its products with support and fixes in the current and previous OS X versions, going back to OS 2, not OS X 10.2, that's OS version 2! Thursby products work well on their own, or as part of an ecosystem of enterprise Mac application software. For example, ADmitMac includes deployment tools for volume users but is also compatible with the dozen or so third party Mac enterprise deployment and maintenance tools, the choice of which will depend on the particular organization.

Next steps

Don't just take our word for. All Thursby *enterprise* products are available for free trial prior to purchase. These are full function, fully documented site licenses including free technical support to facilitate enterprise deployment and scalability testing.

About Thursby Software

Rather than simply participating in the Mac-Windows integration marketplace, Thursby created it, releasing a series of innovative connectivity products ahead of all industry players and Apple itself.

- 1996 - 1st. Microsoft SMB / CIFS Mac integration
  (we later co-wrote the Mac standards with Microsoft)
- 2002 - 1st. Microsoft DFS Mac integration
- 2003 - 1st. Microsoft Active Directory Mac integration
- 2006 - 1st. Complete U.S. Government PKI Mac smart card integration
- 2011 - 1st. Complete Mac remote access smart card integration
- 2011 - 1st. Complete iPad and iPhone smart card integration

Thursby is celebrating a quarter century of enterprise Mac-Windows integration, management and security, with over 55,000 clients and over a million licenses sold to-date. Our clients come from all seven continents and range from movie and music production, to book and magazine publishing, advertising, the Federal government, education, healthcare and energy, to the Fortune 500.

