ZINSTALL

arm

Full Backup and Seamless PC Migration for a New Era of Compute

Company snapshot

Name: **Zinstall**

Description: **A worldwide innovation leader in DR & Windows migration technology, offering PC and Server migration solutions unavailable with traditional tools.**

Website: **zinstall.com**

Goal

Develop backup software for Windows on Arm laptops to meet growing customer demand.

Solution

Windows on Arm with porting and emulation services.

Benefits

✤ First backup product for Windows on Arm

✤ Local or cloud backup capabilities

✤ Easy migration to other devices

✤ Fully automatic and updated backups

✤ Minimal effort and rapid time to market

### Complete Backup and Restore Now Available on Windows on Arm

As more and more people start using Windows on Arm devices as their primary day-to-day laptop, they are looking for the right backup software to keep everything safe.

Zinstall is the first backup solution for Windows on Arm, and covers the entire device: applications, settings, accounts, profiles, and all files. Backups are completely automatic and up to date, and users can choose to securely store their backup locally, for instance on an SD card or a network drive, or on Cloud storage.

In addition to backup, Zinstall software can be used for the migration of applications and files from one laptop to another. This includes migration from x86/x64 laptops to new Windows on Arm laptop devices, so users can upgrade to the new era of compute without leaving anything behind. Users enjoy the same personalized experience they had previously, but on a brand-new laptop device, with limited disruptions.

A Straightforward Move to Windows on Arm for Zinstall

Developing for Windows on Arm devices has never been easier, with resources available on porting applications to Windows on Arm. Zinstall found that the whole process was far more straightforward than anticipated, despite the complexity of the application.
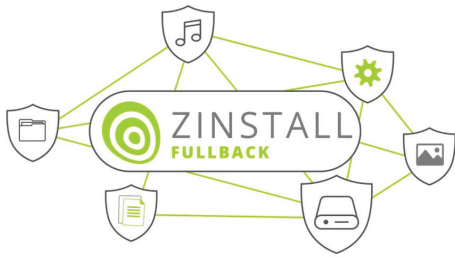
> "We started seeing regular consumers – not just developers – buying Windows on Arm laptops due to the positive productivity experiences of all-day battery life and always on, always connected capabilities. As they were constantly reaching out to Zinstall for a backup solution, we decided to answer the call, making Zinstall the first complete backup product for Windows on Arm."
>
> Sam Silverman, Product Manager at Zinstall

Since Zinstall is backup software, its core operation is at the system level. This includes a driver and service that controls the core backup operation. The same is true for restore: its software not only recovers files, but applications, settings, and profiles. This requires writing code that goes deep into the OS—a challenge no matter the platform. Initially, developers at Zinstall thought developing system-level code would be a demanding tough task for Windows on Arm and require rewriting most of the product from scratch. However, it actually required a lot less effort and was far easier than anticipated.

As Sam Silverman says: "Fortunately, we were pleasantly surprised by the Windows on Arm platform and how straightforward it is. Going into the project, at a minimum we wanted to be able to backup and restore all files but were pleased to find that we could achieve feature parity with the x86/x64 version, including all applications and settings – essentially the entire environment. It clearly demonstrates that developers can do system-level coding on Windows on Arm with minimal effort."

Seamless Transition to Windows on Arm

Since Zinstall is a system-level product, there were many levels to consider during development for Windows on Arm. These levels start deep in the OS with the drivers that must be developed natively, starting with the Arm kernel-mode driver. Next, the user-mode components and a way for the user-mode and kernel-mode drivers to communicate was established.

Moving up a level, the user-mode processes are 32-bit. Thanks to Windows on Arm app emulation, most of that code did not need rewriting. However, some libraries had assembly implementations, such as encryption, compression, and atomic memory operations for synchronisation, which did require some effort.

Past this point, emulation saves a lot of time and work. There were some quirks with OS-level operations, but these were remedied with a native ARM64 component to take over operations that have to be run non-emulated. This allowed Zinstall to have direct, non-emulated access to OS APIs, utilities and even command-line tools.

Arm emulation can run 32-bit services to near perfect performance levels, and since Zinstall is not a regular service, and requires native access and communication with drivers, a native ARM64 service was developed as well. However, for most products, Arm emulation allows services to work smoothly.

Finally, the build environment was upgraded to be able to compile for Arm, and the software installer was upgraded to be 'Arm-aware' in terms of where to place the executables and other software components.

"Emulation was a significant aide when porting over existing code, making the task far more approachable. Granted, with programs that need lower-level APIs or OS components, you need some code for native ARM64 execution, however, once you move up to higher levels of the OS, developers face very few hurdles and breeze through just like the Zinstall team," Sam Silverman says.

A Perfect Match of Zinstall and Windows on Arm

The seamless productivity made possible by Zinstall and Windows on Arm laptops – with the always on, always connected and all-day battery life features – makes the app and the devices a perfect match. For Zinstall, the battery life and constant connectivity makes cloud backup on-the-go a highly feasible option and for physical backup options, Zinstall can now support backups to SD cards. This demonstrates how Windows on Arm can bring users one step closer to the true mobile computing experience that laptops were designed to provide.

> "Windows on Arm laptops are really smooth products to use, perfect for the Zinstall application. We believe that Windows on Arm, with its cost, performance, inherent power efficiency, battery life, and, constant connectivity is the next natural evolution of mobile computing."
>
> Sam Silverman, Product Manager at Zinstall

Learn more about Zinstall.
Learn more about developing for Windows on Arm.
Watch this video on how to build applications for Windows 10 on Arm.

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