

Virtualisation as Preservation Measure

A Contribution to the Handling of Born Digital Media Art

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Abstract: Based on recent case studies AktiveArchive applies virtualisation as meaningful strategy for handling and preserving born digital artworks. Connected to partially familiar subjects like emulation, migration and re-installation (Variable Media Categories) virtualisation mediates between different preservation approaches and contributes an interesting addition. The measure seems useful in different terms and can be applied to both, specific artworks as well as more general (long term) archiving and preservation requirements. It can be applied to single and bulk applications, to desktop and server systems.

This poster introduces virtualisation as a transferring method and shows how the digital artwork or piece-relevant components are isolated and ported to a so called virtual machine (VM). The VM functions as a digital carrier and enables the portability of computer- and internet-based artworks. It improves the maintenance of fragile artworks from this very genre.

Conclusion: In our research VMs provide an authentic computer environment. They offer an interaction-oriented, live-time surrounding that keeps original coding and enables so far sustaining unique cultural values and technological heritage.

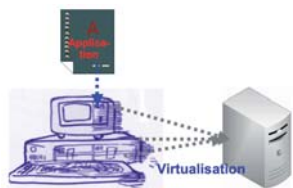


Fig. 1: Transfer of hard- and software components into the virtual environment.

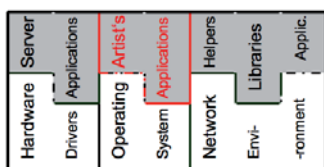


Fig. 2a: Digital Environment

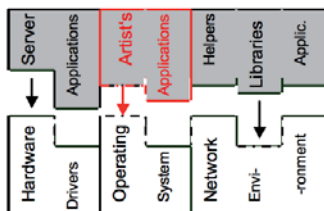


Fig. 2b: Concept of digital Environment. Schema for modularization.

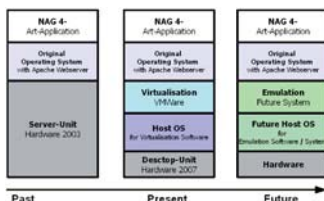


Fig. 3: Forecast development and migration of VMs into emulated computer systems.

Introduction: While virtualisation was used already in the 60ies for optimising meager hardware and memory resources AktiveArchive uses this technology for preserving born digital artworks. Beyond current market trends this technological approach is adapt to cultural requirements. Inducing parameters for lasting valences enhances technological knowledge.

The complexity in using virtualisation within the archiving and preservation context appears while defining the components which are to be stored on the virtual machine (VM) (Fig. 2).

Cours of Action: Providing suitable criteria for the preservatory evaluation chart is a crucial aspect within this process. It requires careful gathering of metadata information and retrieval of the artistic concept (Fig. 1).

The work logic of the artwork has to be detected: internal workflows as well as internal and external interfaces and additional elements are to be charted.

The Digital Environment: Within this context the co called digital environment obtains specific importance (Fig. 2). It contains an authentic operating system, the artistic software and additional modules (e.g. helpers), required by the artwork. Technically fragile components are encapsulated in this artificial safety zone and prepared for forthcoming migration processes (Fig.3).

The VM's Features: VMs maintain the artworks existence by preserving a true to original technological context. They offer an isolated, secure environment for examining all work relevant components in terms of:

- required technological infrastructure
- completeness of software components
- data-exchange and communication processes
- additional internal operations and any technological requirements.

Results & Advantages: Discussing virtualisation as preservation measure opens up new opportunities for daily routines in handling born digital artworks. Answering recurring demands within the exhibition, archiving and conservation context, the following features are to be emphasized:

- Through virtualisation artworks become savable, portable and therefore operable for the future. Decoupled from the artists original computer the risk of loss or damage is reduced.
- The VM serves original coding and software elements and so far sustains the artworks documentation, feasibility and just in case (re-)construction.
- So called snapshots and regularly done security back-ups enable restoring the VM in case of hacking attacks or digital damage.
- In contrast to transcoding operations virtualisation is a lossless transferring operation. No code conversion takes place.

For this reason virtualisation enhances the storage and sustainment of vintage hardware.

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