



Why packaging software?

The term „Software Packaging“ identifies those activities which prepare software so it becomes a „software package“, which in its final status allows the automated and unattended installation of software onto a defined target system - and by the way, also allows the reverse process, the de-installation of the software.

Software packaging is being used if the manual installation of software via regular data mediums (e.g. CD or DVD, etc.) does not make sense. This is almost always the case in those organization, which provide their employees with software via large networks. Simply from a timing perspective manual distribution and installations of hundreds of software applications does not make sense in an organization running thousands of workstations. Considering how many mistakes can be made when performing an installation and how many time is needed to do corrections, manual installations are not wise from a factual point of view either.

Managing your software becomes easier and its environment becomes more robust. The systems stay stable and are more reliable after installation as well as de-installation. You can count on significantly less inquiries (incident tickets) at your service desk.

Software distribution, which is always independent from packaging, and the following installation of software packages are carried out secured reproducibly and systematically following defined and agreed upon rules. This avoids a more or less coincidental execution of installations where the loudest caller gets served first, where systematic and reproducibility are absent and e.g. time caused interrupts in failure cases are regular (“sneaker administration”). Restore points are clearly defined as well as the interruption of package installations or their rejects.

All clients run significantly more stable and software administration costs get cut, additionally the uptime for users and therefore their productivity gets increased.

An application packaged in the standardized MSI-format can be used in different target environments with no or just low change efforts. This holds true for some formats of software virtualization (e.g. SVS) as well. This way, a packaged application could run on a German PC whilst it got packaged for a British one (“Package-once-use-many”-method).

Your individual packaging needs are covered by Raynet for different operating systems, e.g. MS-Windows, Linux, Unix, OS/2, Apple MacIntosh, etc..

Raynet packages in these formats:

- Microsoft Windows Installer Package (MSI)
- Altiris Software Virtualization Service (SVS)
- Microsoft SoftGrid
- VMware ThinApp (earlier Thinstall)
- Linux RPM Packages
- Debian Linux deb und dpkg Packages
- Apple MacOS package (pkg) und metapackage (mpkg)

Safety and cost reduction by process methodology

Using Raynet’s standardized packaging workflow results in an significantly improved package quality and certainly depending on this guaranteed, very low reject rates, which again reduces packaging costs.

Raynet does not look to initial packaging costs only (catchword: “low-price-packages”) but has a glance on the total costs per package after passing the complete packaging process. That includes rejected packages and the correction and other costs associated with them. Those efforts can easily double or even triple costs per package which would then justify an initially higher package price resulting in lower total costs.

The standardized packaging workflow consists roughly of EVALUATION, the PACKAGING itself and of QUALITY ASSURANCE. Depending on customer wishes or needs Raynet could add

- a) Preparing your software portfolio for the EVALUATION (e.g. checks on completeness of application sources and documentation, suitability for a certain operating system, etc.) and
- b) Supporting the roll out after you accepted the software packages.

The Raynet packaging workflow is defined as:



The **Evaluation** contains at first the inspection of the arriving package order (PO) and a technical analysis of the belonging software source. This ensures, that the application can be packaged in principle and determines the way of doing it. Also, test parameters / plans are getting determined during evaluation which later will be used when doing quality assurance. Deliverables of evaluation are the packaging-capable application and the belonging test plan.

Packaging itself consists of an entrance check of the evaluation results and all activities concerning packaging including a technical test. The deliverable is a final software package.

Quality Assurance covers the full technical test plus a functional test in customer environments, performed jointly with the customer's application owner, who also does the package acceptance. This is a necessary step which makes sure, that the final package cannot only be installed but runs without collision with other software within the customer's production environment. That is not always a step carried out usually within our industry even so it is standard with Raynet. Also, the responsible application owner can check the packed software functionally again.

These conceptually modular Raynet services function like building blocks and can be ordered depending on individual needs. It allows Raynet to be your competent partner at any stage of your software management lifecycle.

Raynet also could implement the process steps of the packaging workflow in your company and optimize your software packaging cycle. Why not profit from years of experience in successful projects!

Virtualising Software ?

Application virtualization is an umbrella term that describes software technologies that improve portability, manageability and compatibility of applications by encapsulating them from the

underlying operating system on which they are executed. A fully virtualized application is not installed in the traditional sense, although it is still executed as if it is. The application is fooled at runtime into believing that it is directly interfacing with the original operating system and all the resources managed by it, when in reality it is not. Application virtualization differs from operating system virtualization in that in the latter case, the whole operating system is virtualized rather than only specific applications.

Full application virtualization requires a virtualization layer. This layer must be installed on a machine to intercept all file and Registry operations of virtualized applications and transparently redirect these operations into a virtualized location. The application performing the file operations never knows that it's not accessing the physical resource it believes it is. In this way, applications with many dependent files and settings can be made portable by redirecting all their input/output to a single physical file, and traditionally incompatible applications can be executed side-by-side. Microsoft Application Virtualization, Software Virtualization Solution, LANDesk Application Virtualization and VMware ThinApp are examples of this technology for the Windows platform¹.

So software virtualization is a technique that executes applications with no effect to the real environment but to the abstraction layer only. Damages caused by inefficient or badly programmed applications are limited, original starting environment can be reloaded at any time. Software packaging uses this technique, to build exact customer environments as an abstract layer and test against that only and many times. In abstract layers applications can communicate with each other, so that interactive functionality can be tested as well.

Raynet produces packages for the virtualization platforms Altiris SVS, Microsoft SoftGrid and VMware ThinApp (earlier Thininstall). Even with this young technology Raynet was able to give evidence of its

capabilities and were successful in many projects. Large enterprises are utilizing on Raynet experiences and have already started to virtualize their complete application assets.

Onsite/Nearsite/Offsite – what's best for me?

To further reduce costs in software management Raynet offers different models of packaging, since packaging can be done at your premises (onsite) or at a Raynet packaging center (offsite or nearsite).

Related to the packaging process **evaluation** and **quality assurance** will always be done onsite, but you have multiple options for the packaging step itself.

Depending on the number of packages the most advantageous method for your long-term packaging needs will probably be **offsite packaging**. Once the application software leave the evaluation steps the packages get build in one of Raynet's packaging factories (offsite), whereas so called "images" (copies of your standard clients) will be used for packaging tests. The packagers will concentrate on packaging only, since all preparation has been performed in the evaluation phase. No interruptions will disturb the packaging and significant learning effects and a higher experience level are the results. Packagers are faster and deliver a higher quality since they can use the learning curve of all their colleagues as well. Exchanging information with clients is done via phone or internet. This way Raynet achieves a high level on effectiveness and conformity with its clients.

Onsite packaging is done on customer premises and becomes interesting, when smaller numbers of packages are to be processed, or if the applications in question have strong dependencies to related environments and can be tested at that place only, or also if special security or other requirements apply.

Raynet uses the term **Nearsite packaging** when the onsite packaging is not performed on customer premises but in a Raynet office nearby.

Raynet recommends and prefers a hybrid model of these three types in all larger projects. A small crew (minimum one person) will be present at your premises and will function like a bridge head and as your communication partner. This person will also hold the connection to the offsite packaging factory. That broadens the advantage of cost effective packages by the advantage of short ways in cases of comments or questions or if supporting measures are necessary at your place. Raynet views this hybrid

model as the optimal solution.

Packaging Factories – worthwhile?

Raynet has build several packaging factories for itself as well as for clients and partners. The packaging factory represents a packaging way utilizing on the advantages of packaging workflows by division of labour. Similar to an industrialised production belt a packaging factory also runs operations scheduling (called Evaluation) and a quality check after production (called quality assurance). During the packaging itself all work gets performed undisturbed in repeating forms following predetermined and practised patterns, so that they run faster with a better quality after its introduction.

At the same time the learning effects of all packages get aggregated, prepared and distributed among all packagers – the best way to build and constantly improve Best Practices. What was a complex software yesterday needing a high degree of knowledge for packaging becomes mechanical routine work after a while.

So Packaging Factory YES – but don't give up on a responsive, competent and communicative person or team onsite.

Trust is good ...

With all appreciation of trust: Once hundreds of thousands of packages get processed following one pattern, it becomes necessary, to follow those packages through the process on the one hand but check on each step and the progress within the flow on the other hand.

That is, why Raynet runs a governance process on top of the packaging process. Governance gets presented using the Raynet tool Rayflow accompanying each package and guiding it through the complete process, interrupting it, reject packages or cancel a package order. The tool delivers statistical data as well (e.g. number of packages in progress at a certain time or at certain status) and works independent of onsite, offsite or nearsite models.

Using Rayflow is intuitive and follows the basic approaches on standard Windows PC's, meaning the behaviour of Microsoft user interfaces.



About Raynet

Raynet GmbH is an innovative, technology-oriented service provider that specializes in the implementation and management of IT projects, particularly in the areas of system management, software management, software packaging, software distribution.

Concentrating on these themes of information technology allows us to offer innovative solutions and concepts in these areas.

Long-term experience, reliability, uncompromised customer orientation and last but not least meeting budgets and deadlines are the basic ingredients to our success.

Raynet offers the full range of services regarding software packaging and software management, client management and client migrations. We help increasing your processes efficiency and effectiveness around these matters and reduce costs at the same time.

There to Raynet offers comprehensive packages with

- Experienced project managers and consultants conceiving and managing your projects, setting up the necessary infrastructure and use and administer it optimally
- Well-rehearsed packaging teams, modularly and optionally taking over the complete packaging process from evaluation to quality assurance and upon request they also do a cleanup of the software portfolio to be packaged as well as supporting your roll-out process after package acceptance
- Certified, competent trainers transferring all knowledge relevant in this context, but also do coaching "on the job" or train by means of real cases of your enterprise. Our trainers are certified by the original vendors and Raynet seminars always end with the provision of official certificates about successful passing. Alternatively Raynet also provides workshops explicitly tailored to the individual needs of your company.

When executing orders Raynet always utilizes on the overall knowledge and collected experience of packaging thousands of packages. This way we ensure you take maximum use of best-practices in our industry. For example: For packaging and its surroundings we have developed a standardized packaging process jointly with customers and vendors and apply this process in all of our projects. This and other successful and proven processes can easily be adjusted to individual needs without cutting back on our long-term experience. All of that ensures a speedy, cost-conscious and highly qualitative execution of your projects.

- Using current tools and modern methodologies one can develop packaging scenarios technically not feasible just some years ago.
- Current software packaging tools, like e.g. Wise Package Studio, provide development environments allowing packaging offsite, away from customer premises.
- Offsite packaging can be provided at the same or better quality level and even as customer individual like onsite packaging, but is much more cost effective. We offer offsite-packaging at fixed price! For this, we differentiate between three categories of application complexity:
 - EASY
 - STANDARD
 - COMPLEX
- If offsite packaging is not possible or not desired, we will substitute or complete it with appropriate onsite measures and employees
- Onsite-Packaging
- Even today onsite packaging is done at customer premises for several reasons.
- On the one hand the onsite-model stands for a close relation to clients and short communication ways, on the other hand we need special hardware (servers, license-Dongle, ISDN-Scanner-cards, etc.) or server back-ends for testing.
- Because of our cost calculation based on long-term experience and utilizing on the efficiency of our consultants, even efforts for onsite-packaging are reliable and can be clearly arranged.
- Setup-Development
- Your core competence might be application development, our competence is the development of professional setup-routines. How much effort do you put in good and reliable installation routines to assure reliability and uptime for your users?

Raynet-Packaging at a glance

- We deliver solutions around software management since 10 years and have developed a service range allowing fast implementations and an efficient operation of one's software and with this strengthening the competitiveness of many companies.
- We manage the complete life cycle of your applications using optimized methodologies and approaches as well as suitable tools. We combine our superior expertise and extensive experience with the flexibility of our consultants during onsite and offsite packaging as well as during setup.
- Offsite-Packaging



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