

MasterKey

Unlock the World of Engineering Simulation

Imagine having a single key that provides any means of transport, whenever and wherever you need it – an SUV for a cross-country tour, an airplane to get to faraway locations, a truck to haul heavy loads. That is the concept behind the MasterKey License System from MSC.Software. With MasterKey, one single license opens the door to many types of engineering analysis – structural analysis, durability simulation, crash simulation, to name just a few. MasterKey unlocks the world of Enterprise Simulation.

Why Consider MasterKey?

Engineers use MSC.Software's technologies every day to solve design problems, optimize performance, and speed development time. These market-leading solutions have become common names in the engineering lexicon: MSC Nastran, Adams, Patran, Marc, Dytran, to name just a few.

Unfortunately, too often, separate teams in isolated areas of an enterprise use these tools individually. Such use is neither efficient nor cost-effective. MSC.Software's innovative MasterKey license system provides access to MSC.Software engineering solutions portfolio under a single license, supporting the engineering, product development, and technology demands of global manufacturers. This gives manufacturers a unique depth and flexibility in simulation capabilities and enables them to generate, manage, validate, and communicate product data throughout the enterprise – within one group, across multiple groups, or across multiple locations.

Whether a company is new to MSC.Software's Enterprise Simulation solutions or a long-time user of one or more MSC.Software products, MasterKey offers significant benefits. First-time users are able to start implementing a variety of engineering solutions simply, with a small investment, and continually mature their capabilities over time with low risk. MasterKey eliminates unnecessary purchases as well as the need to integrate disparate tools from multiple vendors.

Current customers have a path to leverage their existing individual seats to MasterKey which provides access to more engineering solutions and reduce overall costs by replacing redundant software from other sources. In either case, administrative time and cost are reduced. No more multiple vendors and multiple software licenses – MasterKey simplifies purchasing.

More Power

Performing durability or fatigue analysis as part of the Enterprise Simulation process involves several engineering disciplines and thus typically requires several different engineering applications – one to generate component geometry and stress data, another to generate loading time-histories, and yet another to predict hot spots and the durability or life of the component. Without MasterKey, you would have to invest in licenses for these three or more different applications, even if they came from the same vendor, such as with MSC Nastran, and Adams. But with MasterKey, you can run nearly all MSC.Software's engineering solutions using the same pool of tokens, and only need to invest enough money to run the application consuming the most tokens.

More Flexibility

Bird strike analysis, a common type of analysis done during the design and analysis of aircraft engine fans, is performed in order to predict whether a design will pass the necessary certification tests. The cost of the physical certification test can run as high as \$1 million USD, making the need to 'get it right the first time' critical. Using Dytran, engineers can virtually simulate the test and make design changes until performance targets are met. But what happens to this application until the next product is ready for certification? In the usual scenario, the product would sit on the shelf. Under MasterKey, the tokens used to run this application are now available to other teams and/or for other applications.

What is MasterKey?

- Token-based software licensing system
- Access to over 100 engineering tools with a single license installation
- Eliminates the need for separate software purchases
- Investigation of and access to new engineering software tools, when and if needed
- All software and support under one contract from a single provider

Key Reasons to Choose MasterKey

- Gain flexible, 'on demand' access to the industry's broadest and deepest suite of best-in-class CAE engineering solutions
- Achieve cost and time efficiencies through single-source software acquisition, licensing, and maintenance; eliminate redundant software applications
- Investigate and adopt untried CAE engineering tools without having to obtain additional funds, complete new paperwork, or get new authorization codes
- Invest at the right level – initiate use of CAE engineering tools and gradually build capabilities, or leverage existing investment in MSC.Software tools
- Work with the industry's most experienced CAE engineering software and services provider

MasterKey-Enabled Products

Adams: functional virtual prototyping tools for building, testing, reviewing, and improving mechanical systems before committing to physical prototypes.

Dytran: simulation of extreme, short-duration dynamic events involving the interaction of fluids and structures, or deformation of structural materials.

Easy5: graphics-based software tool used to model, simulate, and design dynamic systems characterized by differential and algebraic equations.

Flightloads: prediction of external dynamic loads for aerospace applications.

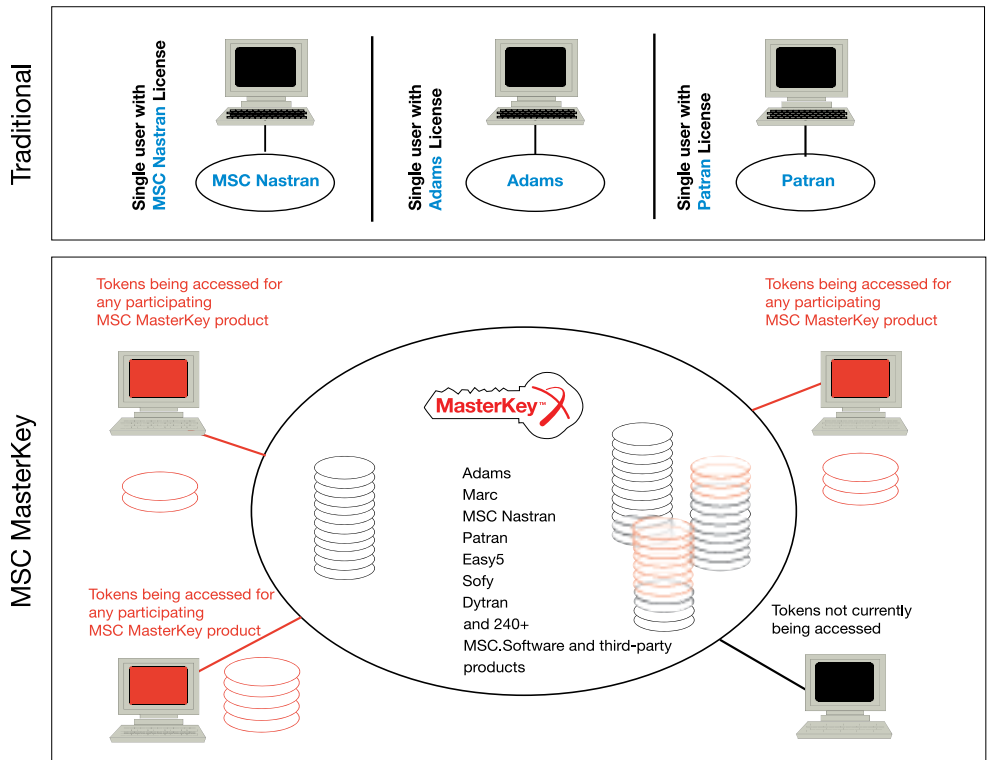
Marc: leading FEA program for assessing structural integrity and performance of parts experiencing large geometric or material nonlinearities.

MSC Nastran: the world's most widely used FEA program for simple to complex, linear and nonlinear analyses of structural, fluid, thermal, and coupled systems.

Mvision: a family of products providing consistent, centralized, and reliable materials engineering information for predictive engineering.

Patran: leading finite element modeler for interactive 3D modeling and visualization of analysis results.

Sofy: advanced, comprehensive finite element pre- and post-processor powered by object-oriented technology.



Traditional Licensing System vs. MSC MasterKey Licensing System

More Collaboration

Engineering teams within a manufacturing enterprise perform many different kinds of simulation, including structural and motion dynamics, durability, noise and acoustics, hydraulics and controls, and thermal analysis. Sharing information and data quickly and accurately among these teams is critical to an efficient, effective development process. With MasterKey, these groups have access to the same suite of tools under a single license. Engineering data can be shared easily, without the time and potential pitfalls of translation from one package to another.

With MasterKey, every company, regardless of size or industry, makes the right investment in CAE simulation.

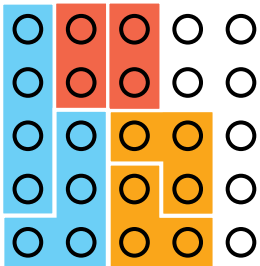
Engineering consulting firms need a wide array of CAE technologies in order to provide the best service to their clients, but the cost of such an extensive library of tools is usually out of reach. MasterKey provides access to the industry's broadest portfolio of tools with one license key, making the necessary software tools for each client immediately available. Potential clients often ask for a list of CAE tools at a consulting firm's disposal prior to choosing a firm – 100+ solutions offered through MasterKey provide a formidable competitive advantage.

Small- to medium-size manufacturers and supply chain companies have no choice but to keep up with the latest CAE tools used by OEMs in order to win contracts. With MasterKey, 'keeping up' is no longer a concern. MSC.Software's Enterprise Simulation solutions are in use at OEM companies around the world, and MasterKey gives small- to medium-size manufacturers and suppliers immediate access to the same best-in-class tools. No more fighting to win contracts with a differing set of tools – no more lost investments trying to 'keep up.' With MasterKey, these manufacturers and suppliers can grow their business alongside many OEMs.

Global enterprise companies have the difficult responsibility of providing the right type and number of CAE tools to the correct number of engineers in an ever-changing and competitive environment. Implementing MasterKey mitigates risk, cuts costs, and ensures the use of the same comprehensive technology throughout the enterprise.

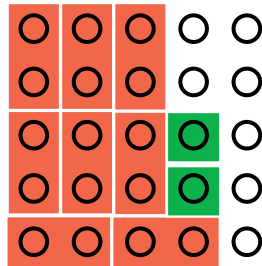
Here are three ways that one pool of tokens could be utilized to access multiple software products.

Option 1



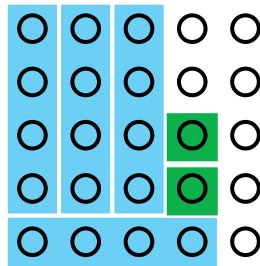
2 MSC Nastran 'seats'
2 Adams 'seats'
2 Marc 'seats'

Option 2



8 Adams
2 Easy5

Option 3



4 MSC Nastran
2 Easy5

O = tokens

*This example illustrates token usage and is not meant to represent the actual token counts required to run the products mentioned.

Non-MSC.Software customer companies in need of CAE solutions should carefully consider the long-term investment they are about to make – not only the cost of the solution itself, but also the training, implementation, and maintenance required. Selecting MasterKey provides access to the industry's best-in-class, most comprehensive product portfolio, so that when additional CAE solutions are needed, they are available. The problem of integrating disparate tools from different vendors is eliminated, speeding implementation and increasing efficiency.

There is a path forward for current MSC.Software customers with existing per-seat software investments to take advantage of MasterKey at a lower cost.

Current MasterKey customers can take full advantage of the over 100 solutions at their disposal. Cut costs by eliminating maintenance on non-MSC.Software products that duplicate applications available under MasterKey. Enhance efficiency and innovation in product development by exploring the wide variety of engineering applications offered by MSC.Software.

If token limits become an issue, you can purchase more tokens, in increments as small as 10 tokens at a time.

MSC.Software is a trusted partner of leading manufacturing firms worldwide. For more than 40 years, we have been developing simulation software, capturing process knowledge, and supporting vital engineering decision-making capabilities. Today, we provide the world's most complete portfolio of simulation software technology, engineering expertise, and process improvement capabilities.

When selecting the MasterKey License System, manufacturers also get the high-quality support, training, and implementation services only MSC.Software can provide. By choosing to work with MSC.Software, you are selecting a partner with the resources, knowledge, and experience to assist in managing product development risks more efficiently and effectively.

Administrative Benefits of MasterKey

Purchasing managers face a complicated landscape of products, vendors, sites, user requirements, and budget restrictions. If a particular software program is purchased based on the requirements of a small group of users and it turns out not to be the right tool, the company is stuck with that decision – a waste of time and money. What if there is a short-term need for a particular software product on a certain project? Or an emergency situation in which a specific tool is needed immediately to solve a critical engineering problem? MasterKey solves these problems, and addresses other purchasing concerns.

- One purchasing decision provides access to the best-in-class, most comprehensive engineering software product portfolio for the widest range of product engineering needs
- No more software investments 'sitting on the shelf' – 100% of software investment used
- No guesswork about the number of seats to buy – won't end up with too few or too many
- One annual maintenance renewal instead of multiple per-seat renewals
- Purchasing additional tokens, when needed, is simple and straightforward
- More leverage with a single CAE software and services supplier

Administrative Benefits of MasterKey

IT managers also face a daunting task – keeping the enterprise technologically up-to-date and working efficiently. Managing hardware and software requirements, installing and integrating disparate tools from different vendors, and ensuring that multiple sites can access enterprise tools without problems are just a few of the issues that IT personnel deal with on a daily basis. MasterKey makes the IT department's job much easier.

- Common tools across enterprise
- Single license installation covers the entire enterprise
- Work with a vendor experienced in large-scale implementation, including High-performance computing, and hardware/software installations including multiprocessor environments

"We use Marc to simulate almost all the products we develop and now want to simulate structural dynamics.... the MasterKey License System was the kind of flexible offer that would include all the products we wanted and cover all of our simulation needs within structural analysis at reasonable conditions."

Ing. Ferdinand Di Pauli
Manager, Simulation Department
Seeber Röchling Automotive

"We definitely see a need to increase virtual development activities. ... MasterKey gives us the ability to use Adams whenever we need it, plus extend our virtual product development activities to other CAE too."

Dan Windmar
R&D Manager, ABB

"We selected MasterKey due to its flexibility and cost-effectiveness. [It] enables us to use a suite of compatible simulation tools anywhere within the Asia/Pacific region, providing us the flexibility to simultaneously use a number of applications for projects conducted at more than one site."

Dr. K.H. Leong
Petronas Research & Scientific Services

"In the international motorsports panorama, the need to speed up our cars determines our success... We switched to MasterKey because the software we need has to be as reliable, versatile, and flexible as the cars we want to develop with it."

Andrea Adamo
N.Technology

"The flexibility of the MasterKey system is what makes John Deere's software investment both more versatile and cost-effective."

Ken Basken
IT Team Leader, Deere & Company

How MasterKey Works

Unlike traditional per-seat software licenses, MasterKey utilizes a token-based method to provide access to software tools. Each software product has an assigned token value. When a product is being used, the appropriate number of tokens is 'checked out' from the token pool. When finished, the tokens are returned to the pool for use by other engineers, or for a different software application by the same engineer. Access is limited only by the number of tokens available in the pool and your network setup. Should all tokens be checked out, a queuing feature allows access as soon as enough tokens become available.

There are more than 100 engineering solutions enabled under MasterKey. Compared to traditional per-seat licensing, there are no restrictions on the number of users, frequency of usage, number of seats, or combination of tools used.

With over 100 features available with a single, easy-to-use, and flexible key, the possibilities in CAE engineering are now limitless.

By extending CAE capabilities with MasterKey, manufacturers can study and optimize the complete range of product performance without incurring the time, cost, and integration efforts associated with adopting separate software tools. Under MasterKey, any needed simulation tool is quickly accessible. A company using engineering tools in only one discipline, such as structural analysis, can easily explore other development areas, such as dynamics simulation, NVH, durability, acoustics, or safety.

Maturing the CAE engineering environment requires this expansion of capabilities. Using the same pool of tokens, MasterKey allows users to investigate the functionality and usefulness of other MSC.Software engineering tools.

The flexibility of MasterKey offers significant benefits. Under traditional licensing plans, four seats of Patran and two seats of MSC Nastran can be used only for those products. What if, at a particular point in development, the two seats of MSC Nastran are not enough to meet project demands? Even if the Patran licenses are not in use, the investment in them cannot be temporarily translated into additional seats of MSC Nastran. With MasterKey, the tokens not being used for Patran could be used for an additional license of MSC Nastran. This flexibility puts the right tool in place just when it is most needed.

MasterKey supports collaboration by providing flexible, integrated tools that can be accessed throughout the enterprise. Data integrity is preserved because the need to translate data from one software tool to another is reduced.

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