



BASF Keeps Their Engineers Productive with the Latest Optimization Software

Overview

Country or Region: Europe

Industry: Manufacturing—Chemicals

Customer Profile

BASF, headquartered in Ludwigshafen, Germany, is the leading chemical company in the world. With 95,000 employees worldwide, it has a broad product portfolio from plastics to oil & gas.

Business Situation

To remain a leader, BASF optimizes its plant designs and processes, and for this they rely on aspenONE Process Engineering Suite. The challenge was to provide their engineers with the latest version of the software and to prevent conflicts with other software newly loaded to users' desktops.

Solution

BASF used Microsoft® SoftGrid® Application Virtualization to run aspenONE as a network service and make it available to engineers much faster without risking application conflicts.

Benefits

- New releases available in weeks instead of months
- Customized flexibility on top of a standard desktop
- Avoid application conflicts

“We run some of the largest and most complex process simulations in the chemical industry.”

Dr. Stefan Robert Deibel, Senior Vice President Engineering, BASF

BASF is the leading chemical company in the world with approximately 95,000 employees on five continents. BASF's product portfolio ranges from Chemicals, Plastics, Functional Solutions, Performance Products and Agricultural Solutions to Oil & Gas. No chemical plant or facility comes on stream without BASF Engineering involvement, and optimizing production processes is essential to staying competitive in the chemical industry. Having the right IT infrastructure and applications is essential, and BASF relies on AspenTech's aspenONE Process Engineering Suite optimization software. The challenge for BASF IT Services was to provide BASF engineers with the latest version of their aspenONE software and to prevent conflicts with other software newly loaded to users' desktops. Microsoft SoftGrid Application Virtualization, which decouples applications from the operating system and enables them to run as network services, provided a powerful solution.



“AspenTech enables us to model complex and large-scale process plants and to provide effective and efficient decision support for the BASF operating divisions.”

Dr. Alexander Wiesel,
Senior Process Engineer, BASF

Situation

BASF is the leading chemical company in the world with approximately 95,000 employees on five continents. BASF’s product portfolio ranges from Chemicals, Plastics, Functional Solutions, Performance Products and Agricultural Solutions to Oil & Gas. The Company has a strong record in optimizing its processes. For instance, by linking manufacturing plants, value-adding chains of production can be created where by-products and waste from one plant serve as the raw materials in other plants. Through this network of plants – called the Verbund, energy and resources are also conserved. This concept was first implemented in BASF’s facilities in Ludwigshafen, Germany, and has been implemented and fine-tuned at BASF’s Verbund sites around the world. To make this strategy work, BASF needs to design integrated and optimized production processes.

Because of the scope of engineering work that BASF needs to carry out, the engineers of BASF are organized in the global Engineering & Maintenance competence center, which designs and builds the state-of-the-art chemical plants and infrastructure facilities for BASF Group worldwide. No chemical plant or facility comes on stream without BASF Engineering involvement. Dr. Stefan Robert Deibel, Senior Vice President Engineering, BASF, noted, “Our engineers have outstanding engineering expertise.

BASF utilizes new innovative technologies that help them constantly improve methods and tools that are crucial for their work.” Therefore, especially in the Engineering

department, BASF is always interested in being among the first to apply new methods and ideas. Deibel continues: “In our Conceptual Process Design Department, we run some of the largest and most complex process simulations in the chemical industry.”

Optimizing plant processes is essential to staying competitive in the chemical industry. Dr. Alexander Wiesel, Senior Process Engineer, BASF, explains, “Our main task within BASF is to simulate processes for new plants and to optimize existing ones. We look for better process design, optimizing the use of our assets and increasing capacities by removing plant bottlenecks.” The BASF team is a mixture of experienced professionals and young engineers, continuously bringing new methods into the group from academia. Together they know how to create optimized process design and how to make the best use of their assets. Having the right IT infrastructure and applications is a core element of that.

BASF IT Services is a wholly owned subsidiary of BASF. Wiesel says, “We run most of our simulations with tools based on IT services provided by BASF IT Services.” Dr. Ralf Sonnberger, Managing Director of BASF IT Services, explains, “We were founded in 2001, as a consolidation of all IT activities within BASF in Europe. In this respect, we are a rather young company. Today, we have 2,400 employees at 30 sites all over Europe.” BASF IT Services is among the leading IT service providers for the process industry in Europe. For over 30 years, BASF IT Services’ experts have been planning, implementing, and operating solutions to optimize business processes for BASF. They also provide a broad spectrum of services to a variety of customers outside the BASF group. BASF IT Services is a Microsoft Certified Partner.

BASF Fast Facts

Global operations	5 continents
Global employment	95,000 people
Sales (FY 2007)	U.S.\$ 79.4 billion
Process optimization software	aspenONE Process Engineering Suite
Deployment software	Microsoft® SoftGrid Application Virtualization
Time to benefit from new releases	Reduced by more than 50 percent

“We sometimes faced the problem that our main process tools did not run anymore after we installed additional software, even if there was no interaction between the two. Things like this can cost you days and can make you really go crazy in busy moments.”

Dr. Jan Oldenburg, Senior Process Engineer,
Conceptual Process Engineering, BASF

“As an established IT provider and reliable business partner, we support our customers in all tasks necessary to design, create, integrate, optimize, and support IT systems. We develop innovative IT solutions and lean processes for our customers based on long years of project experience, extensive knowledge of technologies, and a thorough understanding of value-adding processes,” says Sonnberger.

The primary tool BASF uses for the simulation and optimization of plant processes is aspenONE Process Engineering Suite from AspenTech. Deibel notes, “BASF IT Services is our preferred partner for hardware, infrastructure, and software services, and AspenTech is our preferred supplier with the aspenONE application.” AspenTech is a market leader in process engineering software for the chemical industry. The aspenONE Process Engineering module provides a comprehensive solution for modeling and optimization in process design and operations. Wiesel notes, “AspenTech enables us to model complex and large-scale process plants and to provide effective and efficient decision support for the BASF operating divisions. We run most of our simulations with aspenONE tools. It balances the availability of easy-to-use models with the power of state-of-the-art process simulation and optimization technology”.

“AspenTech is in the unique position of being able to provide process manufacturing and engineering companies with advanced solutions to the industry-specific challenges they face. Our integrated aspenONE solutions help manufacturers to reduce costs, increase capacity, and optimize operational performance end-to-end resulting in millions of dollars in cost savings,” said Blair Wheeler, Senior Vice President, Marketing AspenTech. “aspenONE Process Engineering leverages our industry-leading experience in process modelling and optimization, to help our

customers dramatically improve engineering productivity, design quality and time-to-market.”

To provide users with the latest updates, BASF IT Services faced several related challenges: what was the best way to introduce the latest version of aspenONE and how to prevent conflicts with other software newly loaded to users’ desktops? Dr. Jan Oldenburg, Senior Process Engineer, Conceptual Process Engineering, BASF, notes, “We sometimes faced the problem that our main process tools did not run anymore after we installed additional software, even if there was no interaction between the two. Things like this can cost you days and can make you really go crazy in busy moments.” By introducing new software virtualization technology, BASF can now manage these challenges in an intuitive and user-friendly way.

Before software virtualization, versions were tested and cross checked for dependencies. However, these tests were only valid for a given set of applications and did not cover all possible future combinations. Oldenburg elaborates, “An important element of our daily business is to work with a variety of different software applications. In such an environment, it is a major challenge to allow desired interactions between software tools by providing mutual exclusivity among other applications.”

BASF IT Services found a powerful virtualization solution – Microsoft SoftGrid Application Virtualization.

Solution

Microsoft SoftGrid is a powerful application virtualization and streaming solution which transforms applications into centrally managed services that are available when and where needed. Sam Youness, Industry Technology Specialist, Manufacturing,

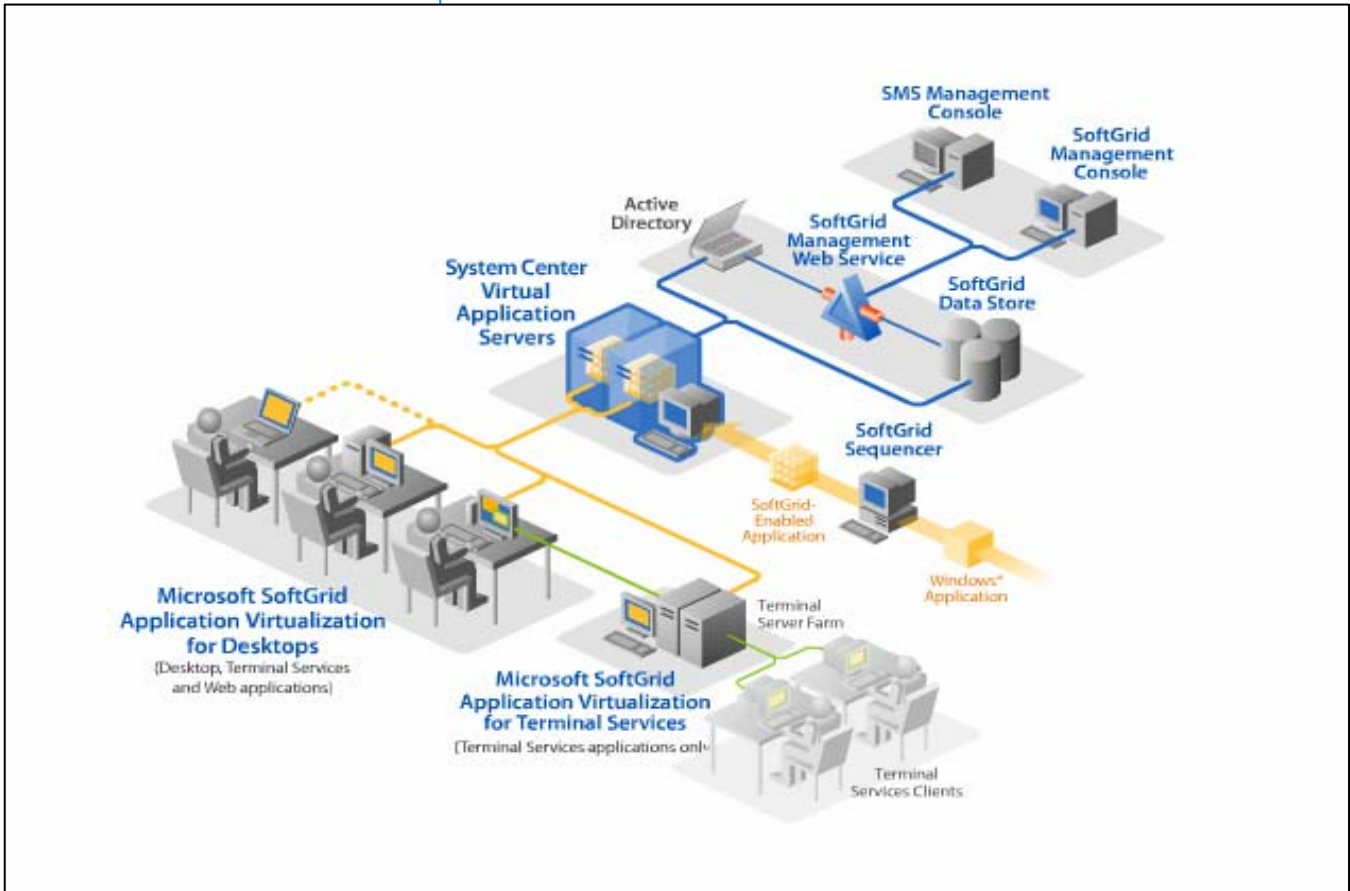
Microsoft, says “SoftGrid is technology that allows you to virtualize Windows applications so that those applications can run on the desktop without even being installed on that desktop.” Virtualized software has several advantages for the users. Updates and new releases are made available easier and faster and users give feedback much quicker than before, identifying any quality issue earlier.

Microsoft SoftGrid Application Virtualization changes the face of application lifecycle management. It enables a world without traditional software installation where users can access their applications from any licensed machine in seconds and where the user no longer has to be concerned with new software installation because nothing is installed locally. New patches and new

versions can be provided to the user the moment they click on their desktop icon and when the session terminates, the code, settings, and profiles are saved on the PC in a virtual “sandbox”. This enables the employee to use the program even when they are not connected to the network.

SoftGrid Application Virtualization decouples applications from the operating system and enables them to run as network services. To be clear, SoftGrid application virtualization is different than machine virtualization (such as Microsoft Virtual Server), which virtualizes the machine on which you are installing an operating system and applications. Machine virtualization provides an abstraction layer between the hardware and the operating system that’s running on top of it. It also

Figure 1: This diagram illustrates the key components of Microsoft SoftGrid Application Virtualization.



“AspenTech has been able to accelerate the benefits to our customers by at least 50% and up to 90%.”

Vikas Dhole, Senior Director, Engineering Product Management, AspenTech

allows you to manage and simultaneously operate multiple environments on a single machine.

Microsoft SoftGrid takes this concept and moves it up the logical stack. The abstraction layer created by SoftGrid lies between the operating system and the applications that run within it. By virtualizing all the aspects of an application, it doesn't affect the operating system or other applications running on that machine. The power of SoftGrid is that it allows applications to be delivered dynamically as services that can be added or removed without leaving a trail on the client system. This in turn reduces the total cost of deploying and maintaining applications and systems.

Heiko Ofer, IT Engineer, BASF IT Services, explains, “Besides supporting computer-aided engineering software, we will also use the Microsoft SoftGrid Application Virtualization technology for supporting different applications which are normally not compatible on the same desktop. In addition, we will try to virtualize more applications with frequent business-driven updates.”

Deployment of Microsoft SoftGrid was straightforward. No customization was needed and BASF IT Services was able to use Microsoft Application Virtualization almost out of the box. Frank Walburg, Manager Desktop Software Services, BASF IT Services, says, “The deployment of the Microsoft Application Virtualization infrastructure was easy. We successfully set up the new systems quickly and with no disruption to operations.”

Microsoft SoftGrid is available as part of the Desktop Optimization Pack for Software Assurance, which also include these three complementary technologies:

- Microsoft Asset Inventory Services is a hosted service that runs a complete

scan of the software installed on every PC in your environment and provides the customer with intelligent reports and analysis to understand and better manage their software assets.

- Microsoft Diagnostic and Recovery Toolset are powerful tools to accelerate desktop repair.
- Microsoft Advanced Group Policy Management enables group policy object versioning, change management and delegation.

Benefits

Microsoft SoftGrid provides customized flexibility on top of a standard desktop. Alexander Wiesel comments, “Software virtualization is an improvement in our daily work and simplifies the use of the software. It is no longer necessary to wait for updates and the most recent version.” It accelerates desktop deployment and enables IT to take control of the desktop. It minimizes application conflicts through application isolation at streaming server and minimizes significant application compatibility testing and scripting, multi-platform packaging, or significant regression testing. The bottom line is that it allows the users to focus on achieving their business goals.

Standard platform with customized flexibility

With the option to deploy software through virtualization technology, BASF IT Services has found it easier to define a standard desktop. Walburg points out, “The benefit of the Microsoft Application Virtualization technology for BASF IT Services is, first of all, a satisfied customer who benefits from fast deployment of very complex applications in a highly standardized desktop environment.” This gives BASF IT Services the benefits of a standardized desktop and the users the flexibility they need to achieve their business goals. Oldenburg adds, “We now have the flexibility of a customized solution, even

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Frank Walburg, Manager Desktop Software Services, BASF IT Services

though we are using the standardized platform predefined by our IT experts. The effort we were faced before deploying new or updated versions has been drastically reduced.”

With a standard desktop, BASF is saving significant costs. Microsoft SoftGrid enables IT to run real-time usage reports on any application that is streamed and allows device roaming for mobile users.

Faster deployment of new releases

AspenTech is continuously improving the capabilities of aspenONE. Wiesel points out, “The BASF process portfolio ranges from petrochemicals to intermediates to specialized products. We are involved in the basic engineering of highly complex chemical processes. When designing innovative processes, we often come up against the limits of our software tools. But together with AspenTech developers, we have pushed these limits forward.”

The issue has been how best to deploy patches and new software versions to the large and distributed user base quickly and without disruption of ongoing work. As Wiesel describes, “In the past, we were dependent on central software distribution and as a consequence scripted software installations. Scripting software requires rather extensive and time-consuming testing and cross checks, so our IT colleagues were faced with an enormous effort whenever a new release of a software package was deployed. The necessary installation of hot-fixes took weeks or even months, and new versions of the software even longer.”

With Microsoft SoftGrid Application Virtualization, BASF users benefit from faster deployments and can work with the most recent version of their simulation tools. According to Vikas Dhole, Senior Director, Engineering Product Management,

AspenTech, “Our large customers face delays of an average of 9 to 18 months to deploy the latest version of the software. We recognized the challenge this posed for our customers and so we leveraged our partnership with Microsoft to improve our product readiness for Microsoft Application Virtualization to help our customers reduce this time delay by at least 50% and up to 90%. We know that by providing opportunities for faster adoption and greater interoperability, AspenTech is able to accelerate the benefits to our customers – this type of leading-edge solution is what AspenTech is all about.”

Wiesel summarizes, “Response times for updates and patches have improved. New releases are now available within weeks instead of months. The quick deployment of new releases saves time. Instead of developing workarounds, we can focus on our core business, process and asset optimization, to create outstanding designs that are highly competitive for BASF. This contributes greatly to the success of our capital projects.”

Program conflicts eliminated allowing different versions to run concurrently

During a software update, it's often necessary to run different versions on the same desktop, which can lead to program conflicts. Wiesel remarked, “BASF profits because application virtualization enables us to overcome issues we have been facing for many years. Not only the deployment of new releases and updates is much quicker, we now have the ability to run different versions on the same PC without any conflicts. This helps us in one of the most risky tasks, the migration from one version to the next.”

Oldenburg continues, “People are now able to run different versions on only one PC. This is very important when it comes to the deployment of new releases. Now the migration to a new software release is no

longer a risk because it can be tested before in parallel to the current version. Before, we were always a little bit scared when we migrated to a new version. Even if we did tests, there was always something that did not work as expected. This is very difficult during the critical phase of a capital project.” The requirement to run different program versions on the same desktop also occurs during design and optimization projects of long duration where project life exceeds the lifetime of software version. Wiesel notes, “Now, we simply keep the former version, launch the new one, and test it. If we are facing problems, we can easily go back to the older release we still have on the PC.”

situation for everybody, for us, for AspenTech, and for BASF IT Services.”

System stability enhanced

A benefit that goes along with a standard desktop is system stability. Wiesel points out, “Finally, software virtualization also helps BASF IT Services. Since all interactions between the different applications are known and the content of the different containers has been defined, the system stability has been enhanced significantly.” Ofer adds, “We are very satisfied with the manageability, performance, and security of this solution. From a technical point of view, everything has worked as expected. We did not have to cope with any surprises, not from a technical nor a business perspective.”

Easy to use

Important to the users, the experience of working with local or virtualized version is the same. Wiesel, notes, “The new system has been very well accepted by the users. The functionality of the application is exactly as if they were loaded locally to the desktop. And even on first use, the software is quickly available as it streams to the user’s PC.”

Together BASF IT Services and AspenTech are giving BASF engineers exactly the tools they need to create competitive process designs. Wiesel concludes, “It is a clear win/win

For More Information

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For more information about BASF IT Services, visit the Web site at: www.basf-it-services.com

Microsoft Solutions for the Manufacturing Industry

Manufacturing enterprises must compete in an increasingly global environment. Success depends on finding ever-greater efficiencies throughout the enterprise, while developing a greater agility to react to local and global market opportunities. These challenges are best answered with technology from Microsoft and its partners. Microsoft-based solutions offer much needed value to manufacturers who are under increasing pressure to generate greater returns on the assets that they have employed. This focus on efficiency scales across all the critical functional areas—from getting products to market faster, to streamlining the supply chain, optimizing the manufacturing operations, and generating new revenue streams.

For more information about Microsoft solutions for the manufacturing industry, go to: www.microsoft.com/resources/manufacturing

Software and Services

- Microsoft SoftGrid Application Virtualization
- aspenONE Process Engineering Suite

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- AspenTech
- BASF IT Services