CALCNODE

Excel meets Compliance und real-time Supercomputing

BCC Group INTERNATIONAL

Flexibility, speed and productivity: these are some of the reasons why Microsoft Excel is used for over 20 years as an individual calculation application by millions of users. According to Agentis AG, a study found that 97% of all surveyed banks use spreadsheets for the modeling, analysis, or pricing of financial instruments. Almost half of them use Excel for processing real-time trade data or for risk management.

Despite many efforts to implement other software the flexible and fast work with Excel is common usage. Risk figures or market price calculations in real time; the calculation bases are often designed in Excel! The business speaks Excel.

Today's compliance and performance issues

And here begins the dilemma: Professional and IT departments draw attention increasingly on risks and hazards by using the local Excel application. It can be particularly sensitive in mission-critical calculations. Here is the individual use of Excel in contrast to regulatory requirements.

How is to succeed, to get the flexibility for the Business, but to integrate Excel at the same time in a revision-proofed manner in the bank's internal processes? How do you get the constantly increasing performance requirements of the business under control and makes the Excel applications manageable?

CALCNODE: new opportunities through technological innovation

CALCNODE is a software that solves compliance and performance problems of the current local Excel application. Excel as an IDV (individual software solution) is replaced by a high high-performance Excel on HPC servers, with local control but audit-proofed integrated into internal processes. .

High volumes of data are calculated in not viewable Excel instances on a centralized HPC cluster in so far still never seen speed. The results can be distributed traceable to all important consumers and applications in real time.

A permission system assigns access rights down to the individual cell. All workbooks are centrally stored and each equipped with new version number when you check in on the server. Each operation is logged

Benefits of a server-based Excel solution

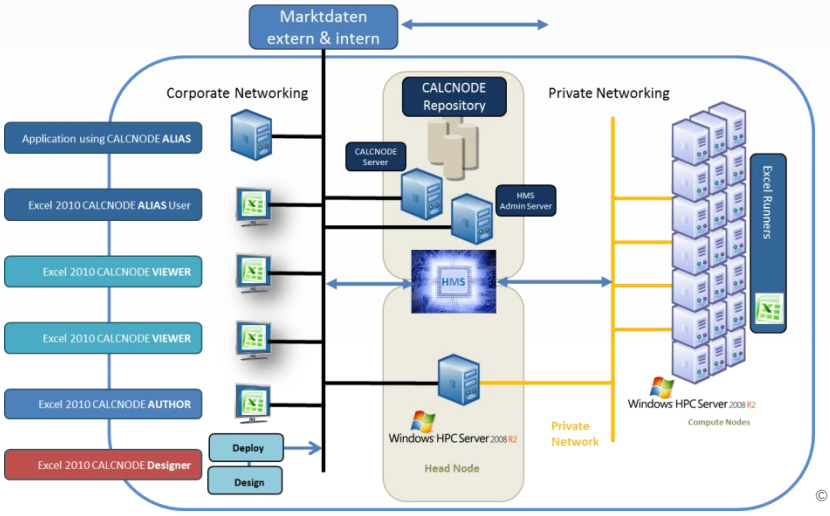
Bank's own created market data can much easier and faster calculated and distributed within the company in real time without any media breaks (f. e. EUR Curncy e.g. is the new instrument EUR_BANK).

The high-performance, Hardware based Market Data Distribution Infrastructure, lower implementation costs and faster integration is an excellent basis for the use as a "Pricing Engine" in investment banking.

Merging individual requirements and company policies

Advantages for management, Business and IT Department:

- "Time to market" when developing new products without any media breaks.
- More flexibility, speed and productivity
- Major performance enhancements in calculating and delivering market data.
- Excel as an integral part in financial engineering.
- improved processes in the data workflow management through the use of market standards and a central repository.
- Excel first time now integrated in the IT-department's support procedures.
- Reduction of operational risk through a centralized management
- Solve Excel compliance problems within the whole company.
- Cost reduction by leveraging existing standards.



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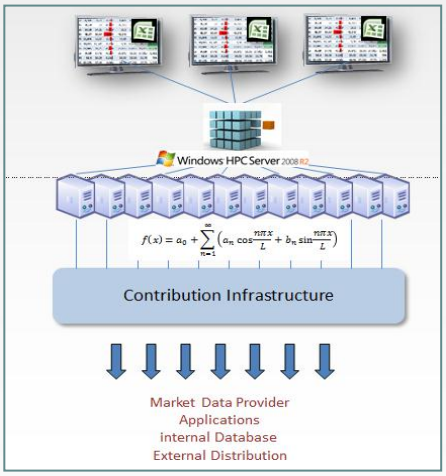
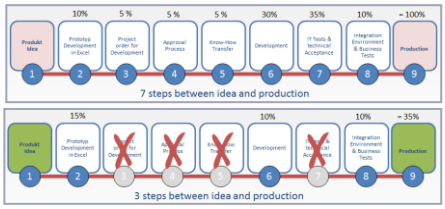
CALCNODE is built on common standard applications from Microsoft (Excel, HPC Server 2008R2). The messaging service for data delivery and the communication between all users and applications is based on a hardware-based middleware from Solace Systems. It distributes large quantities of data and messages with very low latency.



Time to Market and Cost Reduction

Remaining standards means reducing effort and costs for product development, support and maintenance.

Several resources are involved to create a new financial product based on a third party software. The process takes often seven steps between idea and production.



To keep within well known Excel application it can save time and costs.

Project	Third Party Software	Excel and CALCNODE	Saving Potential with CALCNODE
Period	12 month	4 month	8 month
Time Effort in MD	480 MD	160 MD	320 MD
Costs in EUR	384.000 €	128.000 €	256.000 €

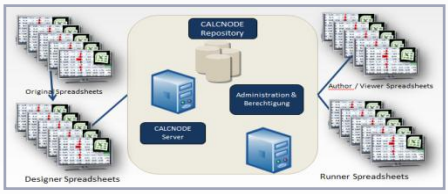
CALCNODE: High Performance for real-time Market Data and complex Calculations

Calcnode allows splitting calculations (incl. financial Libaries) from a single spreadsheet with real-time market data into many Excel Runners on a HPC Cluster. Through this calculations with thousands of real-time data can be computed much faster. Distribution and contribution to the financial market participants, applications and users will be realized in a significantly shorter time than ever before."

A single Spreadsheet can provide up to 2500 contributions per second and a 10x16 HPC platform can provide 400,000 contributions per second.

Possibilities for the usage of CALCNODE

- Contribution Engine
- Calculation Engine
- Real-time Distribution Engine



Excel integrated in IT-Processes

Spreadsheets which are running on the HPC server are comprehensible in all Operations. A version management is part of the CALCNODE Service and all changes will be logged.

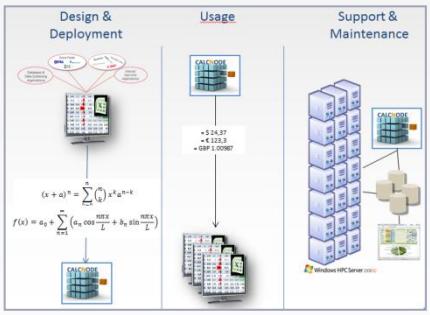
An authorization Service enables an access control down to a single cell. It is also responsible for the market data distribution entitlement.

All server spreadsheets are stored in a centralized repository which reduces a lot of efforts in support and maintenance.

Clear Task Sharing between Business and IT

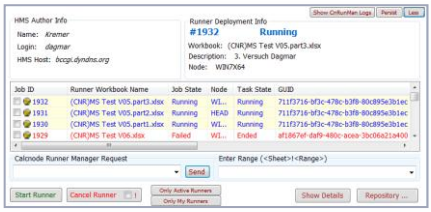
The business speaks Excel!

- Design the spreadsheet
- Deploy it to the HPC cluster
- Use the results were ever they are required

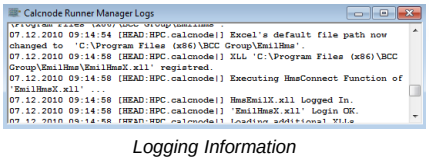


Because CALCNODE is a business driven application the whole know-how remains in the business department.

Entitled users have access to the server based Excel calculations and can work remotely to change parameters, to run and stop the service.



Excel Runner Deployment Info



Logging Information