



NEXT  
GENERATION  
.NET CLOUD  
COMPUTING  
COMPANY

# Manjrascript

Innovative Solutions for  
Engineering Sector

## ANEKA

Next Generation  
Enterprise **.NET**  
Cloud Computing  
Platform

ANEKA in  
Engineering – A 3D  
Rendering  
Application:

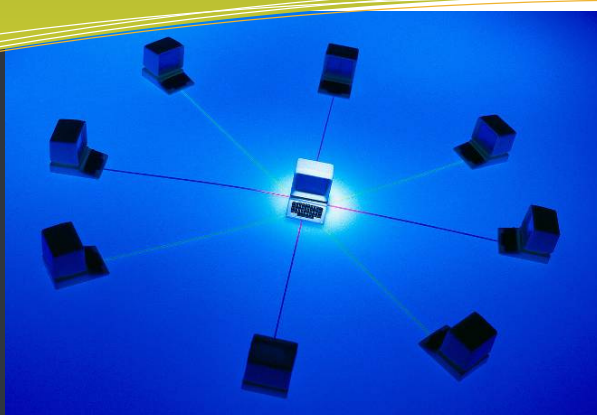
Maya 3D images can take more than three days to render:

- 2000+ frames, each frame with more than five different camera angles.
- A single frame from one camera angle takes two minutes to render.

Solution  
Is  
ANEKA

Using only 20, mostly idle legacy PCs, ANEKA software reduces the above Rendering scenario **from 3 days to 3 hours!**

**ANEKA integrates into the Maya GUI to provide a powerful management and execution environment.**



## Contents

- Introducing Manjrascript **P.1**
- Introducing ANEKA **P.2**
- ANEKA – Data Sheet **P.3**
- ANEKA – Example **P.4**

## Introducing Manjrascript Pty Ltd

Manjrascript Pty Ltd is a start-up business focused on developing Next Generation .NET-based Cloud Computing technologies that ultimately save you time and money.

### *What else do we do?*

- Develop flexible and scalable Building Blocks that are central to Cloud Computing platforms.
- Develop software optimised for networked Multi-core computers to accelerate applications.
- Provide Quality of Service (QoS) and Service Level Agreement (SLA)-based management solutions enabling application scheduling, dispatching, pricing, accounting for enterprise and/or public network computing environments.

### Introducing Aneka

The first of Cloud and Grid Computing technologies being commercialised is “**ANEKA**”, which is a proven platform for .NET-based enterprise Cloud Computing.

**ANEKA** is a patented (PCT pending) Cloud computing technology building block that enhances:

- **Applications development** through a support for **rapid creation** of legacy and new applications using innovative parallel and distributed programming models.
- Ability of organisations to **harness** computing resources within an enterprise for **accelerating** execution of “compute” or “data” - intensive applications.

## Meet the CEO



### Dr. Rajkumar Buyya

CEO – Manjrasoft Pty Ltd  
Director, GRIDS  
Laboratory, University of  
Melbourne, Australia

Dr Buyya is:

- **Globally recognised** as a thought leader in Utility and Distributed Computing.
- **Over 15 years experience** in research, design and development of high-performance distributed computing systems.
- Received the **2009 IEEE Medal for Excellence in Scalable Computing**, IEEE Computer Society TCSC, USA.
- For Engineering or other Opportunities, contact Raj at: [raj@manjrasoft.com](mailto:raj@manjrasoft.com)

**ANEKA**  
Your choice  
for Enterprise  
.NET  
Cloud Solutions



**ANEKA** provides a set of services that make enterprise cloud construction and development of applications as easy as possible without sacrificing flexibility, scalability, reliability and extensibility.

The key features supported by **ANEKA** are:

- A configurable and flexible execution platform (container) enabling -
  - pluggable services;
  - security implementations - multiple authentication / authorisation mechanisms such as role-based security and Windows domain-based authentication;
  - multiple persistence options including RDBMS, SQL Express, MySQL and flat files;
- SDK (Software Development Kit) supporting multiple programming models including –
  - Object oriented thread model,
  - Task model for legacy applications
  - Map Reduce model for data-intensive applications
  - Custom tools such as Design Explorer for parameter sweep studies
- Easy to use management tool for SLA and QoS negotiation and resource allocation

Specifications
Microsoft Windows / Vista (XP Pro SP3, Business)
Microsoft Windows Server 2003 / 2008
Microsoft .NET Framework (>2.0)

## Introducing the **ANEKA** PLATFORM

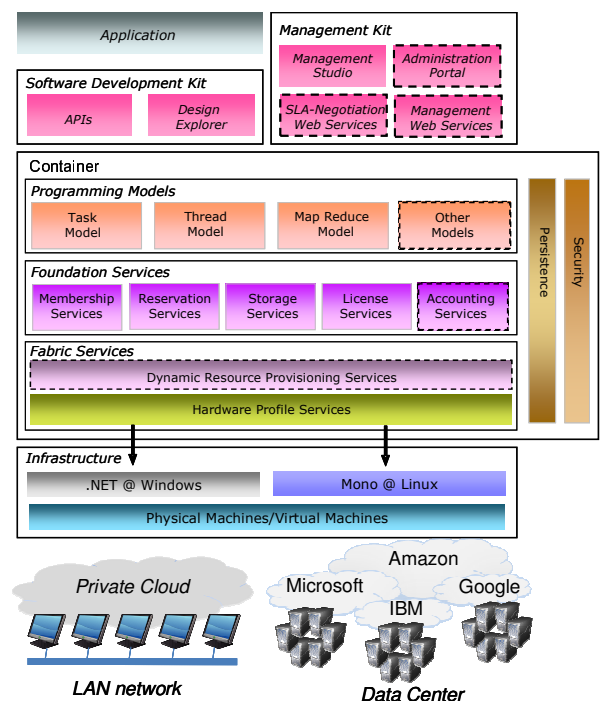
**ANEKA** – the first choice for flexible, extensible .NET enterprise Cloud application development and deployment.

ANEKA allows servers and desktop PCs to be linked together to form a very powerful computing infrastructure.

This allows companies to become energy efficient and save money without investing in greater numbers of computers to run their complex applications.

Typical customer environments include:

**CAD, 3D Rendering, Drug Discovery, Life Sciences, Data Mining & Investment Risk Analysis.**



# ANEKA TECHNICAL OVERVIEW

## Model choice

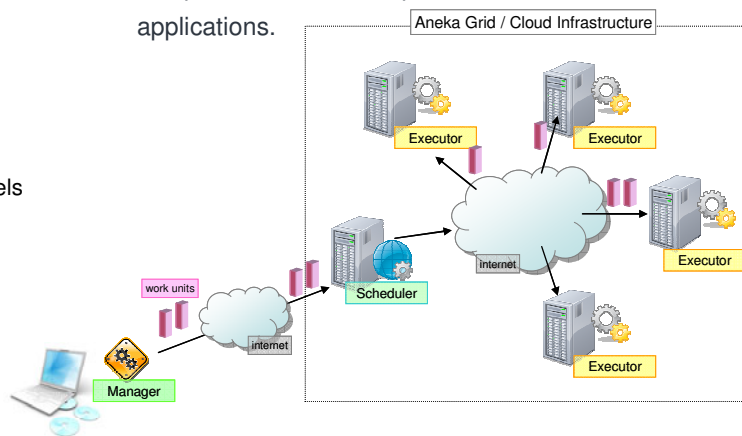
**ANEKA** offers four programming models which are closely aligned to many business and scientific applications, and also offers the unique ability to add more models as required.

### Chose from:

- Aneka task
- Aneka thread
- Map Reduce
- Custom Models

**ANEKA** is built on a decentralised architecture. Each **ANEKA** node consists of a configurable container which includes information & indexing, scheduling, execution and storage services. **ANEKA** supports multiple programming models, security, persistence and communications protocols.

**ANEKA** provides a flexible and extensible environment which runs multiple applications simultaneously and supports complex models and dependencies within those applications.



## EYE ON IT

### Current Industry Trends

#### “The clouds are gathering”

Nearly every major technology vendor, industry player and academic institutions have signalled or released a cloud computing offering . At Manjrasoft we believe that most large corporate, ISVs and Services providers require both reliable and scalable technologies in a cloud environment.

**ANEKA** is a product that meets this need – Try it and See!

#### “Everyone is talking Clouds”

Who isn't talking clouds? The hype around cloud computing is growing. At Manjrasoft, we believe that cloud computing is here to stay and many will first build internal or enterprise clouds.

## Enterprise Cloud Technology Tips

**Q: Many of the grid & cloud products only support Linux – what can I use on my Microsoft based systems ?**

**A:** ANEKA is the first .NET-based enterprise cloud computing platform that supports multiple programming models. With most corporates using Windows-based PCs as desktops, a .NET-based solution enables you to seamlessly integrate your desktops with enterprise grid/cloud systems.

If you are looking to develop new .NET distributed computing applications or cloud/grid enable your legacy .NET applications, ANEKA is the product for you. Using ANEKA's DesignExplorer, a corporate developer, a software vendor or a services provider can quickly turn legacy applications into cloud/grid applications. This build and deploy model allows the user to take advantage of the scalable and reliable grid / cloud computing environment provided by ANEKA.



## SDK License Available

Multiple programming models, including Thread, Task and Map Reduce available on one ANEKA platform.

## GET ANEKA SOFTWARE

Manjrasoft is seeking interested parties to:

1. Build applications using Aneka (ISVs)
2. Make use of Aneka for speeding up execution of applications (end users).
3. Build Commercial relationships and joint Go-To-Markets.
4. Discuss investment and business opportunities.

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### Engineering Applications for ANEKA include:

Electronics Design, Automotive/ Aerospace Design, CAD & 3D Rendering.

### Benefits

*Maximise ROI on underused assets*

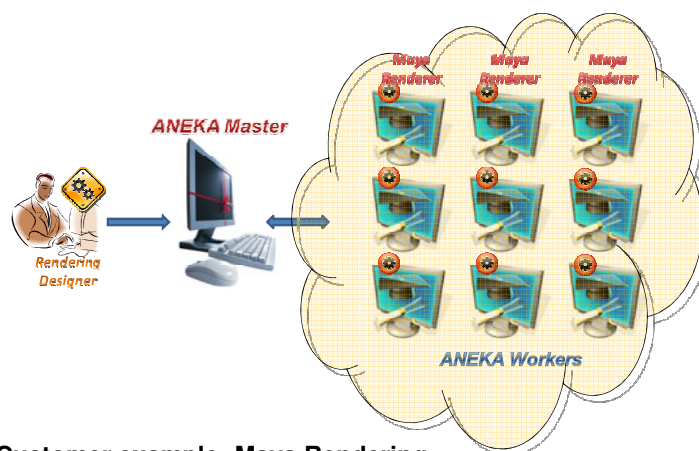
- Leverage idle hardware you already own

*Higher Productivity*

- Engineering simulations take hours instead of days to complete
- Speed time to market by doing parallel and multiple simulations

*Improve Quality and Precision*

- Extra time to repeat simulations with different data points



### Customer example: Maya Rendering

GoFront Group is China's premier and largest nationwide research and manufacturer of rail electric traction equipment. The GoFront group is responsible for designing the high speed electric locomotive, metro car, urban transportation vehicle and the motor train. The raw design of the prototypes require high quality 3D images using Autodesk's rendering software called Maya. By examining the 3D images, engineers identify problems in the original design and make the appropriate design improvements.

The Maya GUI is used to implement Maya rendering (batch mode parameters, generate ANEKA tasks, monitor submitted ANEKA tasks and collect completed rendered images. The design image used to take three days to render (2000+ frames, each frame with more than five different camera angles). Using only 20, mostly idle legacy PCs, ANEKA software reduces the above Rendering scenario **from 3 days to 3 hours!**

Jixiong Sun, Vice Director of IT, GoFront Group said "ANEKA technology not only improves the overall productivity of our product design, but also it gives us a fantastic opportunity to utilise our existing desktop resources which achieves the maximum utilisation of our existing investment."

## ANEKA – GET IT

### Recommended Uses



#### Aneka Thread

An application as a collection of one or more independent threads. A thread model fits better for architecting and implementing new applications, algorithms on clouds as this models gives finer degree of control and flexibility.

#### Aneka Task

An application as a collection of one or more tasks, where each task represents an independent unit of execution. This model is more suitable for grid/cloud enabling of legacy applications.

#### Map Reduce

This model is designed to model the MapReduce concept and applicable to processing of large data intensive applications. A MapReduce application is executed in a parallel manner through two phases.

#### Custom

Develop an application which uses one or all of these models or create a new model with ANEKA.

