

Full Stack Engine

Overview

Table of Contents

Executive Summary	1
Introduction	2
Information Technology Problems Today	2
A Clear Path to Productivity	3
Benefits	3
Summary	4



Executive Summary

The ADARA Networks Full Stack Engine (FSE) platform is a paradigm shift in Information Technology (IT) that enables a revolutionary advance in solutions for all networking and computing. The FSE platform is an Information Technology “brain” that intelligently manages the entire end-to-end IT infrastructure. The FSE platform extends the benefits of virtualization to all computing and networking operations, and enables customers to unlock and realize multiples in unleveraged financial gains and operational improvements.

There are significant improvements in the performance of Information Technology systems, services and infrastructure enabled by the FSE. Latency is dramatically reduced and resources are virtualized and aggregated to further improve service delivery.

The FSE platform utilizes open architecture with the most advanced technologies in standards-based software and hardware. Benefits include:

- Significant performance improvements in all existing services.
- Additional and new services become operationally viable.
- New revenue streams can be created and business models expanded.
- IT problems are natively transparently solved.
- Customers can architect, implement, and manage secure computing and networking environments.

The FSE platform actually provides simpler management and delivery of applications and content than is possible from environments which utilize single, special purpose appliances and products. The FSE platform communicates across layers and products, creating a seamless coordination between platforms and functionalities. The FSE delivers the complete virtualization of Information Technology services and infrastructures not achieved by previous attempts to provide unified networking and computing. Unlike the FSE, conventional “unified” platforms host multiple uncoordinated products and vary only by form factor—a chassis with each product connected by a backplane or multiple rack-mounted appliances serially connected via Ethernet.

This advanced platform completely integrates all OSI layers at once—intelligently, dynamically, and automatically. It satisfies the demands of end users for computing and networking that is fully dynamic and mobile. Service guarantees are provided on an end-to-end basis. The FSE platform is the revolutionary advance that virtualizes all Information Technology infrastructure..

The entire networking environment is enabled and improved, including cloud computing, Service Oriented Architectures (SOAs), Grid Computing, and other advanced networking and computing architectures and methods. Static legacy products cannot deliver upon the demands of these environments.

Introduction

Today, enterprises have more stringent financial and operational requirements. Their IT environments require high levels of efficiency, productivity, extensibility, and scalability. Enterprise-level services and applications must be more interactive for end-user consumption.

The FSE platform was developed to meet the needs of today’s dynamic Information Technology architectures, systems, and services. The platform’s Full Stack virtualization extends the benefits of virtualization to the entire IT infrastructure. The platform’s virtualized IT fabric is ultra-secure, dynamic, resilient, always optimal, and always available.

With the FSE platform, data center resources are pools of execution processing and storage. Networks are a dynamic mesh of intelligent responsive connectivity and transport that has full visibility into, and works seamlessly with, service and application flows. Clients are mobile end-points that can access any needed service with zero-latency, and create any needed view on demand. Services continuously meet their Service Level Agreements (SLAs) on an end-to-end basis.

Information Technology Today

Today, most infrastructures and services are natively dynamic:

- End-user devices are increasingly wireless and multi-purpose (e.g., smart phones and tablets).
- End users are actively mobile. Content applications and services need to be capable of being dynamically relocated and executed near the mobile client.
- Networks require full visibility into application flows to manage services delivery in a load balanced manner.
- Applications need to communicate computational/transport needs with transport networks.
- Content is customized to the end user and generated on demand.
- Applications are modular, composed of distributed elements of code.
- Service delivery channels are secure and created as needed.
- Many services utilize disconnected execution “islands” that interact to generate the needed deliverables.

The current, escalating level of dynamism required in infrastructure, content, applications, and services with mobile end users

requires a new operational paradigm. The IT platform must have complete knowledge of all elements at once. The elements must be simultaneously virtualized and managed. No person can manually configure a system to respond to ever-different conditions. A static configuration cannot deal with all of the myriad environmental operations. To work with and support these agile environments requires the FSE platform which can manage all elements of the network—all of the time.

If hardware solutions are utilized, the many individual products require constant monitoring. These devices are serially connected but not integrated into the data flow. Many are incompatible and use different mechanisms that operate at different performance levels. These are common problems:

- Routers do not know the content of servers, and cannot read into the application flows.
- Servers do not know network routes and cannot create Quality of Service (QoS) for communications.
- Clients cannot dynamically connect with data sources to create different applications, compose new services, or modify end-user views.

With the FSE platform, all of these individual products are integrated, coordinated and used to their full capabilities. Each layer of the OSI stack is simultaneously and automatically managed. All operations are balanced against infrastructure constraints amid dynamic priorities and changing conditions.

A Clear Path to Productivity

The ADARA Networks Full Stack Engine platform virtualizes the entire IT environment across and between enterprises and domains. The FSE platform:

- Delivers distributed/centralized management and dynamic autonomic control of all systems elements.
- Virtualizes IT infrastructures within the network, client, and execution environments.
- Enables complete system interoperability and data availability.
- Provides massive redundancy from end-to-end while supporting failure-proofing.
- Creates an optimized operating network environment.
- Enables ultra-secure processing, storage, transport, and accessibility.
- Scales the capacity of the entire IT environment.
- Federates all services including content delivery.
- Enables services not feasible on static configurations that use serially connected uncoordinated products.

Benefits

The ADARA Networks Full Stack Engine (FSE) platform:

- Reduces costs.
- Maximizes equipment capacity.
- Leverages IT capital investments.
- Scales the IT environment.
- Increases performance across the entire infrastructure.

Summary

The ADARA Networks Full Stack Engine platform dramatically improves network behavior without disrupting existing client, server, enterprise, or IP networking infrastructures. User demands for dynamic services are growing and becoming increasingly mobile. Only the FSE platform reduces operating expenses and capital investments while improving transaction capacities. All this is available from the ADARA Networks Full Stack Engine (FSE) platform.

For more information, visit www.adaranetworks.com or email sales@adaranetworks.com.