EnterpriseWizard CRM Grid Computing

A CRM Technology Platform
from EnterpriseWizard and 3tera

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Introduction

It is widely acknowledged that SaaS-based solutions for CRM and other areas of Business Process Automation have the potential to revolutionize not just the software industry, but the entire industrial sector since they enable small to mid-sized companies to deploy enterprise-class software infrastructures at minimal initial cost and so compete more effectively with Fortune 500 corporations.

However, while the SaaS model lowers the barrier to entry, it creates a number of new challenges and costs that affect customers and VAR's. This paper analyzes these issues and describes technologies by which they can be reduced or eliminated, illustrated by case studies.

SaaS Challenges

SaaS products face unique challenges in the areas of Upgrades, Scalability, Security, Reliability, Setup/Configuration and Backup, but before reviewing them, let’s briefly recap why these issues are less significant for traditional software serving single customers from behind their firewall.

Upgrades - The system is upgraded at the time most convenient for a single customer.

Scalability – Traditional software serves a single company and simply needs a single server powerful enough to address that company's needs.

Reliability – Traditional hot-swap redundancy or clustering technology adequately address the needs of a single company and there are significant portions of each week, or even each day when the system can be taken offline for hardware and OS maintenance/upgrades.

Security – The customer administrators simply have full access to the entire system.

Setup and Configuration – Setup times of several days are perfectly acceptable, in fact the effective setup time may take weeks when the system is provisioned on specially ordered hardware.

Backup – When there is only one company using a system, there are no problems with simply restoring the entire system from a database backup.

As detailed below, the situation is more challenging when CRM is offered as a SaaS service.

Scalability	The failure of the old ASP model demonstrated that offering software as a service is only economically viable if multiple customers can be centrally managed and hosted. This requires a hardware/hosting infrastructure that can dynamically allocate additional computer resources as the customer base grows. However, there is no point in allocating additional machines without grid-aware software that scales across multiple servers without bottlenecks such as application/database locking. In brief, offering a SaaS solution requires both a SaaS-compliant software and hardware infrastructure.
Reliability	As multiple customers are served by a centrally managed SaaS application, the system will be accessed by users in different international time zones and must therefore be accessible 24/7, yet hardware failures are inevitable. This requires a software infrastructure that can dynamically and automatically switch between physical machines without losing customer data or interrupting service for longer than a few minutes.
Upgrades	Software upgrades are managed by the software provider and apply to all customers on that server. During the course of the upgrade, which may last for several hours, the server is either entirely offline or unavailable for write operations. This can present a severe problem if it occurs during a busy period for the customer and some customers have calendar-based busy periods that include weekends. The SaaS infrastructure must therefore be flexible enough to schedule upgrades for different customers at different times.
Security	The need to host multiple customers on the same server heightens the security issues that are common to web applications. Not only must the application be secure against traditional hackers, there must be full isolation of data between customers on the same server, sharing the same CPUs, memory and database. This requirement also precludes the customer from operations that depend upon direct database/OS access.
Setup and Configuration	The primary selling point of SaaS is the low cost of entry; so setting up the application for a new customer must be fast and highly automated.
Backup	Some customers are inevitably going to make mistakes and delete or damage critical data, requiring that their system be reverted to an earlier backup. This must be doable without reverting all other customer's data that resides within the same database. Backups therefore cannot simply rely on database backup technology, but must backup each customer separately. Further, the systems must continue to be accessible during creation of these backups and restoration of one backup must not affect other customers.

EnterpriseWizard CRM

This section details how the combination of EnterpriseWizard CRM with the 3tera grid infrastructure addresses each of the challenges detailed above.

Scalability

Scalability depends upon executing multiple processes in parallel, i.e. pipelining. 3tera CRM scales across multiple servers on the grid and automatically assigns transaction-data in Java to spread the load evenly across CPU's to optimize the use of computing resources and ensure that service levels are maintained.

The result is that the base system can handle over 60,000 records per hour and performance increases by over 80% with each doubling of the number or processors - a level of scalability that can easily handle the demands of the world's largest corporations.

Reliability

A grid-computing environment provides full redundancy, so that if one physical machine dies, the OS instance is automatically started on another and full service is restored in a matter of minutes. The data itself is copied across multiple physical servers so that no information is lost, even in the event of a catastrophic failure of one or two machines.

If a server dies, the queuing manager automatically re-routes its tasks to the remaining servers. Additional machines may be added to the grid and activated without affecting running processes, so hardware may be replaced, repaired and upgraded without downtime.

Security

E-Grid CRM builds on the billion dollar investment by firms such as IBM and Sun in J2EE for enterprise systems and has been independently certified as free of security holes.

Dedicated virtual servers with full redundancy can be provisioned in the space of 30 minutes for customers who want direct database or ssh/sftp access to their system, all without having to provision additional physical hardware.

Upgrades

The availability of dedicated virtual servers allows customers to schedule upgrades at the time most convenient for them, rather than the time chosen by the CRM vendor.

Setup and Configuration

New instances of EnterpriseWizard CRM applications can be provisioned in a matter of minutes and customized online.

Backup

The backup facility allows automated backups of application instances to be scheduled at any time and not only does the system remain online and fully operational during backups, but the backup time of each instance may be individually scheduled.

Adaptive Technology

The greatest driving factor behind the adoption of SaaS is speed of deployment, but rapid deployment is worthless unless the product meets the customer's specific requirements.

EnterpriseWizard CRM provides robust out-of-box functionality, and unlike other systems, it is built on a 100% adaptive technology core named SaaSWizard that dramatically reduces the time it takes to address customer specific requirements. The SaaSWizard modules available for functionality extensions are summarized below. Read More

Core Functionality

Alerts and Escalation
Attached Files
Activity Logs and Reports
Audit Trail and History
Automatic Hotlinks
Automatic Login
Automatic Reports
Asset Discovery and WMI Support
Business Rules Engine
Business Rules Wizard
Dashboards
Database Search/Sorting
Email Hotlinks
Full Text Search
Graphical Charts
Graphical Workflow
HTML Editor
Instant Messaging
Incoming E-mail Integration
Interactive FAQ
Interactive Reports
Integrated Chat
Issue Tracking and Management
Multi-language Support
Outgoing E-mail Integration
Saved Searches
Self Registration
Single Sign On
Standard Solutions
Ticket Links
Trend Charts and Reports

Customization and API's

Custom Tables
Custom Tables Relationships
Custom Interface
Custom Look and Feel
Custom Data Views
Custom Data Fields
Custom Choice Tables
Custom Graphic Images
Custom Fonts
Database Schema
Drag&Drop Customization
Field Types
Import / Export
Multiple Custom Brandings
Multi-Tab Input Forms
On-line Customization
REST API
Scripts API
Web Services API

Permissions and Access Control

Field Level Permissions
LDAP Integration
Password Configuration
Record Level Permissions
User Groups
Web Interface for Users
Web Interface for Staff

Case Studies

The following selection of case studies illustrates how this solution is addressing the needs of organizations that range from startups to the world's largest corporations.

HotTopicMedia
After a failed MS CRM deployment, the company selected 3tera CRM early in 2007. The system has received over a million support tickets in the first two years and is currently handling over 50,000 tickets per month with ease, while supporting users around the world. Read More

LexNet Consulting Group
LexNet built ManuLogic, a support product targeted at serialized equipment manufacturers, in less than a month and made its first sale before even announcing the product. Read More

Chevron
A custom Sarbanes Oxley solution for Chevron Corp took less than two calendar months to develop and went into full production use on time and on budget. Read More

Summary

The combination of a grid infrastructure and a CRM software suite architected to exploit its capabilities gives customers the benefits of a SaaS service coupled with the advantages of on-premise software for security, direct database access and the timing of upgrades. The result is an enterprise-class CRM system and infrastructure at a commodity price point.