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It is a truth universally acknowledged... that a software engineer will hear the word ‘enterprise’ at least once in his/her career...

‘Enterprise Ready software’ ?

Key features:

1. Secure
2. Scalable
3. Reliable
4. Flexible
5. Provides interfaces to other enterprise software

Usually an *Enterprise* system can perform a variety of business functions. Its goal is to satisfy the needs of an organization rather than an individual user

Examples: Customer Relationship Management (CRM), Business Financial Applications , Human Resources Applications etc.

How does Open source fit?

Traditionally commercial enterprise solutions are

- Proprietary
- Licensing costs
- Require customization by consultants

... however newer “Open Source” Enterprise solutions can be

- Cheaper
- Standard API allows extending features
- Larger Talent pool

You can build a hosted solution with an externally managed provider in no time ! E.g. A Django application running on AmazonCloud or a Ruby on Rails turnkey solution on Heroku.

How to start?

Build a business case ...

- Create a checklist
- List out the challenges
- Prepare a project plan
- Prepare a software development cycle
- Follow best practices
- Get quotes
 - Compare with “traditional” solutions
- Present to management

Checklist

- ✓ Application Software
- ✓ OS
- ✓ Database software
- ✓ Packages
- ✓ Hosting service
- ✓ Security
- ✓ Support
- ✓ Quotes

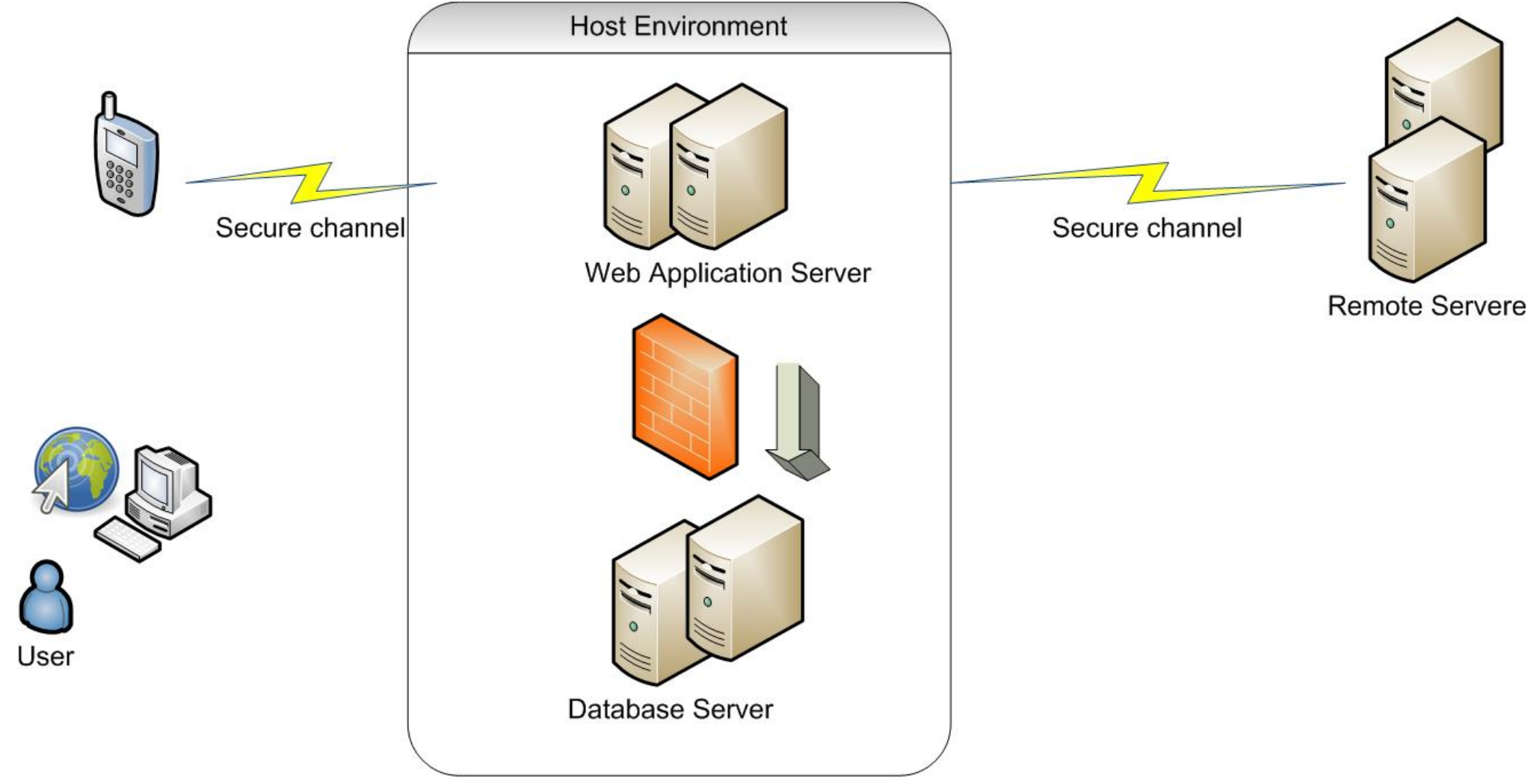


Figure 1. Example use case.

Example Use Case

Develop a custom business solution for building a Web Application with the following features :

- Tracking maintenance issues
- Data Analysis
- Generating Reports
- Web services based B2B integration
- Mobile Application integration

Commercial solutions

- ✧ CRM like application
 - ✧ Needs extensive customization
 - ✧ Lack of APIs – customized by the vendor
 - ✧ Every new feature – customized by vendor
- ✧ Support and Maintenance costs
- ✧ Upgrade costs
- ✧ Hosting costs
- ✧ Stuck with one product

On the plus side they usually provide robust solutions, add on features / plans and technical support.

OSS – Fill in the blanks

- ✧ Web server - e.g. **Tornado with nginx**
- ✧ Web framework or software – e.g. **Django, Ruby on Rails**
- ✧ Web services input – e.g. **pysimplesoap, ZSI**
- ✧ User input – **Forms**
- ✧ Database and Database adapters – e.g. **Postgresql**
- ✧ Task scheduler – e.g. **Celery /rabbitMQ**
- ✧ Email Support - e.g. **sendmail, postfix**
- ✧ Mobile app that syncs to database – e.g. **Android app**
- ✧ Third party software – E.g. Client software libraries , **jquery, Bootstrap**
- ✧ Managed Hosting – e.g. **Heroku**

OSS Challenges

- ? Packages /Plugins
- ? OS support – patching , version , security holes
- ? Database support
- ? Security compliance
- ? Network - Uptime/availability
- ? Performance Testing /Tuning
- ? Understanding managed plans and your needs

Software Best Practices

- Test Driven Development
- Exception Handling
- Logging
- Profiling e.g. cProfile
- Internal monitoring tools e.g. Nagios
- Daemonize
- Input and form validations
- Model /Database level validations
- Standard coding practices
- SCM tool with code review e.g. Git/Gerrit

OS Tips

- ☐ Enterprise Linux
 - Red Hat
 - CentOS
- ☐ Extra packages
 - EPEL
- ☐ Regular OS patching

Security Tips

- ☐ NIST guidelines and standards
- ☐ Apply critical updates
- ☐ Best practices to develop software
- ☐ Audits
- ☐ Antivirus software
- ☐ Spam filters

External Hosting

- Better than hosting yourself
 - Starter plans – free
 - Test /dev environment
 - Managed Hosting
- Cloud computing
 - SaaS, PaaS, IaaS
 - Elastic storage
 - 97% to 99.99% availability SLA’s
 - Managed OS/Application and Databases
- External SCM servers
 - Integrated code review
 - Integrated builds

Quotes

- ❖ 500 users for a CRM like application
- ❖ 20 hours /mo. maintenance

Specs	Salesforce	Oracle	Microsoft Dynamics	OSS
CRM license fee (USD)	~125 per user	~75 per user	~65 per user	0
Hosting (USD)	0	0	0	6000/mo.
Monthly Quote (USD)	62,500.00	37,500.00	32,500.00	6,000.00

• This comparison is from <http://www.microsoft.com/en-us/dynamics/crm-price-comparison.aspx>. It does not include costs related to customization and additional features.

• * Choose your plan based on your needs. Example Heroku allows you to add on dynos, security features , upgrade database plans as you go.

Contact

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