

Software configuration chart

1. Base platform

1.1.PHP 5.2

1.2.Mysql 5.1

1.3.framework:

a) PEAR?

b) *SugarCRM*

1.4.Additional components

a) pdflib

2. Architecture

2.1.tri-tier web-based architecture

2.2.modelled after MVC principle

2.3.directly operating on database (no object-relational mapping layer)

2.4.database model – dual data-stores

a) CRM centred data repository – schema inherited from and shared with *SugarCRM* -> extensions to Sugar's schema:

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b) inventory centred data repository – schema for all information used in data-centre management:

- layout of data-centre
- inventory (equipment being either provider's property or customer provided)
- contracts
- current offer and pricing structure
- log of all service activities
- supplementary data describing customer

2.5.core components based on selected framework, constituting application server functionality

2.6.functionality contained in encapsulated, self-describing modules

a) module manifesto (XML or ini or method in main class)

b) classes, one per file (VIEW)

c) main class – plug-in to app-server (CONTROLLER), one method per screen (action)

- d) database installation/upgrade class for automated schema management (MODEL)

3. Interface

3.1.split design (back-end/front-end)

3.2.components

- a) menus
- b) grids
- c) forms
- d) reports
- e) pdf-reports

3.3.panels:

- a) top panel
 - context menu
- b) left panel
 - main menu
- c) main panel
 - application content

4. Functionality

4.1.core functionality modules

- a) quote request processor [*SugarCRM* module] coupled with request-for-quote front-end [corporate website module]
- b) products & services presentation module [corporate website module]
 - display services (general view)
 - display services (detailed view)
 - display options comparison
 - provide method for selection for customization
- c) customer data processing engine [independent intranet module, just business logic] coupled with administrative panel [corporate extranet module]
 - form
- d) inventory management [intranet module, part of *DatacenterManager*]
- e) service activity manager [intranet module, part of *DatacenterManager*]
- f) contracts manager [intranet module, part of *DatacenterManager*]
- g) offer manager [intranet module, part of *DatacenterManager*]

4.2.support functionality modules

- a) customers database adaptor for *SugarCRM*
- b) access control for *DatacenterManager*
- c) activity scheduling

5. Usage scenarios

5.1.Processes implemented

a) request for quote processing (done within *SugarCRM* module)

- **CUSTOMER** browses offer and pricing data, chooses one option on publicly accessible website
- **CUSTOMER** customizes selected option by filling request form
- **SYSTEM** checks form data for obvious errors
- **SYSTEM** stores request for quote in temporary storage, marks them as pending
- **SYSTEM** sends confirmation email to **CUSTOMER** provided address with cryptographically secured confirmation link
- **CUSTOMER** upon receiving email clicks through the link
- **SYSTEM** marks request for quote as confirmed
- **SYSTEM** notifies **OPERATOR** about pending confirmed request for quote using *SugarCRM* mechanisms
- **OPERATOR** validates & verifies request for quote, corrects mistakes
- **SYSTEM** stores customer information and request summary as *SugarCRM* contact object
- **SYSTEM** stores technical information in *DatacenterManager* database as contract with link to *SugarCRM* contact object, marks them as pending
- **SYSTEM** notifies **MANAGER** about pending request using *SugarCRM* mechanisms
- **MANAGER** proceeds with quote using ordinary *SugarCRM* work-flow

b) order preparation

- **MANAGER** revises pending contract stored in *DatacenterManager*
- **MANAGER** instructs **SYSTEM** to check pending contract
- **SYSTEM** checks selected suite for available rack space with all options selected in contract (connectivity, extra features, etc.) - (collocation & dedicated server variant)
- **SYSTEM** checks for availability of provider's equipment should customer request such an equipment (dedicated server variant)

- **SYSTEM** presents report to the **MANAGER**
- **MANAGER** revises report & selects due date
- **MANAGER** confirms report
- **SYSTEM** preallocates rack-space in selected suite and equipment in the inventory
- **SYSTEM** marks contract as booked for selected due period
- **SYSTEM** stores report as a document in *SugarCRM* and links it to customer's contact object
- **SYSTEM** automatically generates credentials for the **CUSTOMER** in *SugarCRM* database
- **SYSTEM** sends through *SugarCRM* an email to the **CUSTOMER** providing him/her with generated authentication data and instructions of use
- **MANAGER** proceeds with quote using ordinary *SugarCRM* work-flow

c) order processing

- **MANAGER** upon receiving customer's confirmation on quote revises pending contract stored in *DatacenterManager* and corrects it
- **MANAGER** confirms the contract
- **SYSTEM** marks contract as being processed
- **SYSTEM** checks selected suite for available rack space with all options selected in contract (connectivity, extra features, etc.) - (collocation & dedicated server variant)
- **SYSTEM** checks for availability of provider's equipment should customer request such an equipment (dedicated server variant)
- **SYSTEM** presents contract to the **MANAGER**
- **MANAGER** approves contract
- **SYSTEM** changes contract status to approved (allocations are made permanent)
- **SYSTEM** generates contract document and stores it in *SugarCRM* linking it to **CUSTOMER**'s contact object
- **SYSTEM** generates billing information in *DatacenterManager*
- **SYSTEM** generates invoice document, stores it in *SugarCRM* and links it to customer's contact object and notifies **OPERATOR**
- **OPERATOR** proceeds with ordinary *SugarCRM* work-flow sending generated documents to the **CUSTOMER**
- **CUSTOMERS** pays the invoice
- **OPERATOR** upon payment enters payment information into billing module

of *DatacenterManager*

- **SYSTEM** changes contract status to active
- **SYSTEM** generates appropriate request for service activity (preparation of rack space and other arrangements and – in case of dedicated hosting – preparation and installation of equipment [5.1.e]) in *DatacenterManager* and notifies **TECHNICIAN**
- **TECHNICIAN** proceeds with system-requested procedure ([5.1.d] or [5.1.e])

d) installation of customer provided equipment

- **TECHNICIAN** receives a request for action as a result of [5.1.c]
- **TECHNICIAN** prepares requested rack space, marking prepared space in *DatacenterManager* as his work progresses
- **TECHNICIAN** upon completions checks received request as completed
- **SYSTEM** sends an email through *SugarCRM* to inform **CUSTOMER** about necessary action to be performed, includes direct link to appropriate form
- **CUSTOMER** proceeds with [5.1.i]
- **TECHNICIAN** supervises installation's progress of equipment performed by **CUSTOMER** in data-centre
- **TECHNICIAN** creates in *DatacenterManager* new inventory entries for customer's equipment accepted into data-centre, assigns unique asset tags
- **TECHNICIAN** creates in *DatacenterManager* appropriate network configuration for customer's equipment and upon verification permits access to the network from customer's equipment

e) installation of provider's equipment

f) de-installation of customer provided equipment

g) de-installation of provider's equipment

h) customer's request for service action in data-centre

- **CUSTOMER** fills the service action request-form, selecting equipment to be accessed by entering assigned asset tags and specifying service actions as per asset-tag basis
- **SYSTEM** enqueues access request in selected suite queue
- **SYSTEM** broadcast email message to all **TECHNICIANS** assigned to particular suite informing about new access request
- **TECHNICIAN** (one of technicians – first come first served) accepts request in *DatacenterManager*, entering estimated completion time and asking additional questions (if needed)
- **SYSTEM** notifies **CUSTOMER** through email sent by *SugarCRM* about details of

service actions to be taken, with embedded link to confirmation and cancellation forms

- CUSTOMER confirms requested service actions (*triple hand-shake*)
- TECHNICIAN completes service actions
- TECHNICIAN modifies (if needed) inventory data, network configuration data in *DatacentreManager* assigning to every change service request id
- TECHNICIAN marks upon completion service request as completed
- SYSTEM marks service request as completed
- SYSTEM creates a document in *SugarCRM* containing all details of performed service activities and sends an email to the CUSTOMER through *SugarCRM*

i) customer's request for access to data-centre

- CUSTOMER fills the permit request-form, selecting (if applicable) equipment to be accessed by entering assigned asset tags
- SYSTEM enqueues access request in selected suite queue
- SYSTEM broadcast email message to all TECHNICIANS assigned to particular suite informing about new access request
- TECHNICIAN (one of technicians – first come first served) accepts request in *DatacenterManager*, entering details and making the appointment with CUSTOMER in data-centre
- SYSTEM notifies CUSTOMER through email sent by *SugarCRM* about details of appointed service visit, with embedded link to confirmation and cancellation forms
- CUSTOMER confirms appointed service visit (*triple hand-shake*)
- TECHNICIAN upon CUSTOMER'S arrival to the suite marks the time of arrival (checks the customer in)
- TECHNICIAN upon CUSTOMER'S departure from the suite marks the time departure (checks the customer out) and prepares report summarising actual customer's activity in data-centre
- SYSTEM marks access request as completed
- SYSTEM creates a document in *SugarCRM* containing all details of completed appointment and sends an email to the CUSTOMER through *SugarCRM*

5.2. Actors involved

- a) CUSTOMER – customer representative
- b) OPERATOR – provider representative
- c) MANAGER – provider representative with executive powers

- d) **TECHNICIAN** – provider representative involved in data-centre activities (either present there permanently or available on request) with physical access to suite installations
- e) **SYSTEM** – an automatic activity preformed by business logic in reaction to other's actions or scheduled time-out