Governors State University

<FA2015 – SunRocket>

Combined Requirements and Design

CPSC 8845 – Version 1

Revision History

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| --- | --- | --- | --- |
| Rev | Date | Purpose | Originator |
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# **Feature Description**

SunRocket Inc. is planning to start up a new cable company in Chicago. The company is now on the short list for the final contract. This database system will allow potential customers and customer service staff of *SunRocket* to access information about current services, pricing, discounts and special deals. The system allows new users to register to any service(s). Current users are able to modify services, perform account maintenance and pay bills online. Additionally, through surveys and referrals, the system will gather consumer information about potential customers both in currently served and non-served geographic areas, enabling marketing outreach to potential customer populations. Services, pricing and special offers and discounts can be changed and the changes propagated to all system users in a matter of minutes.

## Competitive Information

Comcast is the competitor that will directly compete with SunRocket Inc. Although there will be different incentives and forms of advertising to potential markets, the company needs to build its subscriber base. SunRocket has identified strategies of offering promotional sign-up incentives to potential subscribers. The initial offering (targeted 12/1/15) will cover Illinois, Wisconsin, and Indiana. The promotion campaign has already started in these three states. Pre-offering sign-up with first 2 months free with a 6 months’ contract will start on 10/1/15. The initial offering will have exactly the same services as Comcast however, the monthly fee is 10% off from Comcast pricing.

## Relationship to Other Features

The web portal and front-end web user interface will be provided by GSU Multimedia Company. However, the data will be provided to them by interface with our databases. They will be using Java for web applications and real time database access will be written using C and C++. Network and internet bandwidth will also be provided by GSU Multimedia Company and shall not be a problem for database access needs.

## Assumptions and Dependencies

* Vonage will provide an interface with access to their monthly billing information
* The web portal and front-end web user interface will be provided by GSU Multimedia Company
* An interface will be provided by the customer into PeopleSoft for employee information.

## Future Enhancements

The expansion into additional states in the Midwest Region is currently a prospect by our expansion team. Fiber optics is also on our short list of service enhancements. We are currently looking to cloud based computing and big data storage options to keep in pace with current database trends.

## Definitions and Acronyms

GSU - Governors State University

DB - Database

# 

# **Technical Description**

The databases must support business applications such as retrieval, addition, deletion and updating of user and employee information. The users should be able to query database information. Please refer to the attached database schema for the overall flow of database information.

## Database Architecture



The database architecture will be three tier which will add an intermediate layer between the client and the database server. Application programs and the storing of business rules used for the database are stored on the intermediate layer. Database security is improved in this formed of architecture as the client’s login credentials are verified before a request is forwarded to the database server.

## Database Information flows

## Interactions with other Features (if Any)

## Interactions with other Database Elements

* The database should have functionality to interact with Vonage VoIP databases.
* The database should have functionality to interact with PeopleSoft databases.
* The databases should have functionality to interface with PayPal databases.

## Capabilities

* To insure the integrity of the databases, a schedule for weekly routine maintenance should be implemented to fix and correct database issues. This is scheduled for every Sunday starting at 10pm through 6am CST.
* Daily database maintenance and backup should be performed starting at 12pm through 2am CST.
* A duplex system will be implemented to ensure all data will be updated in real time and in sync at all times. To handle fail over case, the system must support 30 seconds worth of all data in temporary memory space.
* There will be an interface with PayPal for online bill pay once negotiations have been resolved.
* Vonage will provide an interface to their monthly billing information.
* An interface to PeopleSoft will be implemented to keep employee data in sync in both systems.

## Risk Assessment and Management

* Accountability will occur through an audit trail of all database transactions.
* Authentication will occur through the database application through token rather than the individual user.
* Roles will be assigned to each database user.

# **Feature Requirements**

## Identification of Requirements

## Database

### ***Employee Database***

**<SUNROCKET-FA2015-1.0 DB-EMP-000100>**

Employees should be able to login.

**<SUNROCKET-FA2015-1.0 DB-EMP-000101>**

Employees should be able to logout.

**<SUNROCKET-FA2015-1.0 DB-EMP-000102>**

Employees should be able to add to their employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000103>**

Employees should be able to update their employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000104>**

Employees should be able to delete their employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000105>**

Employees should be able to view their employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000106>**

Employees should be able to add to their emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000107>**

Employees should be able to view their emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000108>**

Employees should be able to update their emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000109>**

Employees should be able to delete their emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000110>**

Employees should be able to add their tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000111>**

Employees should be able to update their tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000112>**

Employees should be able to delete their tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000113>**

Employees should be able to view their tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000114>**

Employees should be able to view their W2 information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000115>**

Employees should be able to query their W2 information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000116>**

Employees should be able to view their salary information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000117>**

Employees should be able to add benefits information during open or special enrollment.

**<SUNROCKET-FA2015-1.0 DB-EMP-000118>**

Employees should be able to update their benefits information during open or special enrollment.

**<SUNROCKET-FA2015-1.0 DB-EMP-000119>**

Employees should be able to delete their benefits information during open or special enrollment.

**<SUNROCKET-FA2015-1.0 DB-EMP-000120>**

Employees should be able to view their benefits information during open or special enrollment.

**<SUNROCKET-FA2015-1.0 DB-EMP-000121>**

Employees should be able to view vacation time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000122>**

Employees should be able to view their sick time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000123>**

HR employee users should be able to login.

**<SUNROCKET-FA2015-1.0 DB-EMP-000124>**

HR employee users should be able to logout.

**<SUNROCKET-FA2015-1.0 DB-EMP-000125>**

HR employee users should be able to add employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000126>**

HR employee users should be able to update employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000127>**

HR employee users should be able to view employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000128>**

HR employee users should be able to delete employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000129>**

HR employee users should be able to query employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000130>**

HR employee users should be able to add employee emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000131>**

HR employee users should be able to update employee emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000132>**

HR employee users should be able to view employee emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000133>**

HR employee users should be able to delete employee emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000134>**

HR employee users should be able to query employee emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000135>**

HR employee users should be able to add employee tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000136>**

HR employee users should be able to update employee tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000137>**

HR employee users should be able to view employee tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000138>**

HR employee users should be able to delete employee tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000139>**

HR employee users should be able to query employee tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000140>**

HR employee users should be able to view employee W2 information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000141>**

HR employee users should be able to query employee W2 information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000142>**

HR employee users should be able to view employee benefit information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000143>**

HR employee users should be able to update employee benefit information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000144>**

HR employee users should be able to view employee vacation time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000145>**

HR employee users should be able to query employee vacation time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000146>**

HR employee users should be able to view employee sick time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000147>**

HR employee users should be able to query employee sick time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000148>**

HR employee users should be able to view salary information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000149>**

HR employee users should be able to query salary information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000150>**

HR employee power users should be able to login.

**<SUNROCKET-FA2015-1.0 DB-EMP-000151>**

HR employee power users should be able to logout.

**<SUNROCKET-FA2015-1.0 DB-EMP-000152>**

HR employee power users should be able to add employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000153>**

HR employee power users should be able to update employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000154>**

HR employee power users should be able to view employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000155>**

HR employee power users should be able to delete employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000156>**

HR employee power users should be able to query employee profile information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000157>**

HR employee power users should be able to add employee emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000158>**

HR employee power users should be able to update employee emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000159>**

HR employee power users should be able to view employee emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000160>**

HR employee power users should be able to delete employee emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000161>**

HR employee power users should be able to query employee emergency contact information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000162>**

HR employee power users should be able to add employee tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000163>**

HR employee power users should be able to update employee tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000164>**

HR employee power users should be able to view employee tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000165>**

HR employee power users should be able to delete employee tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000166>**

HR employee power users should be able to query employee tax information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000167>**

HR employee power users should be able to view employee W2 information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000168>**

HR employee power users should be able to query employee W2 information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000169>**

HR employee power users should be able to run reports.

**<SUNROCKET-FA2015-1.0 DB-EMP-000170>**

HR employee power users should be able to add vacation time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-0001¶1>**

HR employee power users should be able to update vacation time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000172>**

HR employee power users should be able to delete vacation time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000173>**

HR employee power users should be able to query vacation time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000174>**

HR employee power users should be able to add salary information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000175>**

HR employee power users should be able to update salary information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000176>**

HR employee power users should be able to delete salary information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000177>**

HR employee power users should be able to query salary information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000178>**

HR employee power users should be able to add sick time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000179>**

HR employee power users should be able to update sick time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000180>**

HR employee power users should be able to delete sick time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000181>**

HR employee power users should be able to query sick time information.

**<SUNROCKET-FA2015-1.0 DB-EMP-000182>**

HR employee power users should be able to reset a user password without the need to provide the current password.

**<SUNROCKET-FA2015-1.0 DB-EMP-000183>**

The administrative user should be able to run reports.

**<SUNROCKET-FA2015-1.0 DB-EMP-000184>**

The administrative user should be to backup and restore the database.

**<SUNROCKET-FA2015-1.0 DB-EMP-000185>**

The administrative user should be able to reset a user password without the need to provide the current password.

**<SUNROCKET-FA2015-1.0 DB-EMP-000186>**

The administrative user should be able to create a user account.

**<SUNROCKET-FA2015-1.0 DB-EMP-000187>**

The administrative user should be able to remove a user account.

**<SUNROCKET-FA2015-1.0 DB-EMP-000188>**

The administrative user should be able to deactivate a user account.

**<SUNROCKET-FA2015-1.0 DB-EMP-000189>**

The administrative user should be able to create user access privileges.

**<SUNROCKET-FA2015-1.0 DB-EMP-000190>**

The administrative user should be able to modify user access privileges.

**<SUNROCKET-FA2015-1.0 DB-EMP-000191>**

The system must maintain a transaction log. Occasional checkpoints must be recorded in the transaction log at times when all committed transactions are saved to disk.

**<SUNROCKET-FA2015-1.0 DB-EMP-000192>**

The system must allow a user to change his/her system password. Users must be required to enter his/her current password and the new password twice before a password change can be made.

**<SUNROCKET-FA2015-1.0 DB-EMP-000193>**

The system must allow weekly routine maintenance to fix and correct any database issues. This should be scheduled for every Sunday between 10pm and 6am Central Standard Time.

**<SUNROCKET-FA2015-1.0 DB-EMP-000194>**

Daily database maintenance and backup should be performed between 12pm and 2am central standard time.

**<SUNROCKET-FA2015-1.0 DB-EMP-000195>**

The system should support at least 30 seconds worth of data in temporary memory space.

**<SUNROCKET-FA2015-1.0 DB-EMP-000196>**

The system must able to receive employee information downloads from the company’s PeopleSoft main database into a separate employee database.

**<SUNROCKET-FA2015-1.0 DB-EMP-000197>**

The system must periodically query the separate employee database for changes to employees’ records. Any changes will be incorporated into the system employee table.

**<SUNROCKET-FA2015-1.0 DB-EMP-000198>**

The system must allow a full back-up to be performed.

**<SUNROCKET-FA2015-1.0 DB-EMP-000199>**

The system must prevent users from login into database while performing a full backup

**<SUNROCKET-FA2015-1.0 DB-EMP-000200>**

The system must able to interface with PeopleSoft to update employee records.

### ***Services Database***

**<SUNROCKET-FA2015-1.0 DB-SERV-000100>**

Existing customers should be able to login.

**<SUNROCKET-FA2015-1.0 DB-SERV-000101>**

Existing customers should be able to logout.

**<SUNROCKET-FA2015-1.0 DB-SERV-000102>**

Existing customers to query the availability of services to a geographic area by zip code. This feature must be available on a read-only basis through a generic, non-secure user account.

**<SUNROCKET-FA2015-1.0 DB-SERV-000103>**

Existing customers to view the availability of services to a geographic area by zip code. This feature must be available on a read-only basis through a generic, non-secure user account.

**<SUNROCKET-FA2015-1.0 DB-SERV-000104>**

Existing customers should be able to initiate an online chat with a customer service representative.

**<SUNROCKET-FA2015-1.0 DB-SERV-000105>**

Existing customers should be able to send an e-mail to customer service.

**<SUNROCKET-FA2015-1.0 DB-SERV-000106>**

Existing customers should be able to add current Vonage package information.

**<SUNROCKET-FA2015-1.0 DB-SERV-000107>**

Existing customers should be able to update current Vonage package information.

**<SUNROCKET-FA2015-1.0 DB-SERV-000108>**

Existing customers should be able to view current Vonage package information.

**<SUNROCKET-FA2015-1.0 DB-SERV-000109>**

Existing customers should be able to query current Vonage package information.

**<SUNROCKET-FA2015-1.0 DB-SERV-000110>**

Existing customers should be able to add cable packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000111>**

Existing customers should be able to update cable packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000112>**

Existing customers should be able to delete cable packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000113>**

Existing customers should be able to query cable packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000114>**

Existing customers should be able to add phone packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000115>**

Existing customers should be able to update phone packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000116>**

Existing customers should be able to delete phone packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000117>**

Existing customers should be able to query phone packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000118>**

Existing customers should be able to add internet packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000119>**

Existing customers should be able to update internet packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000120>**

Existing customers should be able to delete internet packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000121>**

Existing customers should be able to query internet packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000122>**

Existing customers should be able to add services bundles for cable, internet and phone packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000123>**

Existing customers should be able to update services bundles for cable, internet and phone packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000124>**

Existing customers should be able to delete services bundles for cable, internet and phone packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000125>**

Existing customers should be able to query services bundles for cable, internet and phone packages.

**<SUNROCKET-FA2015-1.0 DB-SERV-000126>**

The potential customer should be able to view information about current cable packages offered in their geographic area. This feature must be available on a read-only basis through a generic, non-secure user account as well as through individual, password-protected user accounts.

**<SUNROCKET-FA2015-1.0 DB-SERV-000127>**

The potential customer should be able to view information about current internet packages offered in their geographic area. This feature must be available on a read-only basis through a generic, non-secure user account as well as through individual, password-protected user accounts.

**<SUNROCKET-FA2015-1.0 DB-SERV-000128>**

The potential customer should be able to view information about current phone packages offered in their geographic area. This feature must be available on a read-only basis through a generic, non-secure user account as well as through individual, password-protected user accounts.

**<SUNROCKET-FA2015-1.0 DB-SERV-000129>**

The potential customer should be able to query information about current cable packages offered in their geographic area. This feature must be available on a read-only basis through a generic, non-secure user account as well as through individual, password-protected user accounts.

**<SUNROCKET-FA2015-1.0 DB-SERV-000130>**

The potential customer should be able to query information about current internet packages offered in their geographic area. This feature must be available on a read-only basis through a generic, non-secure user account as well as through individual, password-protected user accounts.

**<SUNROCKET-FA2015-1.0 DB-SERV-000131>**

The potential customer should be able to query information about current phone packages offered in their geographic area. This feature must be available on a read-only basis through a generic, non-secure user account as well as through individual, password-protected user accounts.

**<SUNROCKET-FA2015-1.0 DB-SERV-000132>**

Customer service users should be able to login.

**<SUNROCKET-FA2015-1.0 DB-SERV-000133>**

Customer service users should be able to logout.

**<SUNROCKET-FA2015-1.0 DB-SERV-000134>**

Customer service users should be able to view information about cable service details in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000135>**

Customer service users should be able to query information about cable service details in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000136>**

Customer service users should be able to view information about phone service details in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000137>**

Customer service users should be able to query information about phone details in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000138>**

Customer service users should be able to view information about internet service details in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000139>**

Customer service users should be able to query information about internet service details in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000140>**

Customer service users should be able to view information about cable pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000141>**

Customer service users should be able to query information about cable pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000142>**

Customer service users should be able to view information about cable pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000143>**

Customer service users should be able to query information about internet pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000144>**

Customer service users should be able to view information about phone pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000145>**

Customer service users should be able to query information about phone pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000146>**

Customer service users should be able to view information about promotional cable offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000147>**

Customer service users should be able to query information about promotional cable offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000148>**

Customer service users should be able to view information about promotional internet offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000149>**

Customer service users should be able to query information about promotional internet offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000150>**

Customer service users should be able to view information about promotional phone offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000151>**

Customer service users should be able to query information about promotional phone offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000152>**

Customer service users show be able to view the availability of cable service in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000153>**

Customer service users show be able to query the availability of cable service in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000154>**

Customer service users show be able to view the availability of internet service in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000155>**

Customer service users show be able to query the availability of internet service in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000156>**

Customer service users show be able to view the availability of internet service in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000157>**

Customer service users show be able to query the availability of internet service in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000158>**

Customer service users should be able to add potential customer personal information for sales.

**<SUNROCKET-FA2015-1.0 DB-SERV-000159>**

Customer service users should be able to update potential customer personal information for sales.

**<SUNROCKET-FA2015-1.0 DB-SERV-000160>**

Customer service users should be able to delete potential customer information for sales.

**<SUNROCKET-FA2015-1.0 DB-SERV-000161>**

Customer service users should be able to query potential customer personal information for sales.

**<SUNROCKET-FA2015-1.0 DB-SERV-000162>**

Customer service power users should be able to login.

**<SUNROCKET-FA2015-1.0 DB-SERV-000163>**

Customer service power users should be able to logout.

**<SUNROCKET-FA2015-1.0 DB-SERV-000164>**

Customer service power users should be able to add information about promotional cable offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000165>**

Customer service power users should be able to update information about promotional cable offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000166>**

Customer service power users should be able to view information about promotional cable offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000167>**

Customer service power users should be able to query information about promotional cable offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000168>**

Customer service power users should be able to add information about promotional internet offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000169>**

Customer service power users should be able to update information about promotional internet offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000170>**

Customer service power users should be able to view information about promotional internet offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000171>**

Customer service power users should be able to query information about promotional internet offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000172>**

Customer service power users should be able to add information about phone service details in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000173>**

Customer service power users should be able to update information about phone service details in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000174>**

Customer service power users should be able to view information about phone service details in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000175>**

Customer service power users should be able to query information about phone details in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000176>**

Customer service power users should be able to add information about promotional cable offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000177>**

Customer service power users should be able to update information about promotional cable offers in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000178>**

Customer service power users should be able to view information about internet service details in an existing/potential customer’s geographic area.

**SUNROCKET-FA2015-1.0 DB-SERV-000179**

Customer service power users should be able to query information about internet service details in an existing/potential customer’s geographic area.

**SUNROCKET-FA2015-1.0 DB-SERV-000180**

Customer service power users should be able to add information about cable pricing in an existing/potential customer's geographic area.

**SUNROCKET-FA2015-1.0 DB-SERV-000181**

Customer service power users should be able to update information about cable pricing in an existing/potential customer's geographic area.

**SUNROCKET-FA2015-1.0 DB-SERV-000182**

Customer service power users should be able to view information about cable pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000183>**

Customer service power users should be able to query information about cable pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000184>**

Customer service power users should be able to add information about internet pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000185>**

Customer service power users should be able to update information about internet pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000186>**

Customer service power users should be able to view information about internet pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000187>**

Customer service power users should be able to query information about internet pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000188>**

Customer service power users should be able to add information about phone pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000189>**

Customer service power users should be able to update information about phone pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000190>**

Customer service power users should be able to view information about phone pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000191>**

Customer service power users should be able to query information about phone pricing in an existing/potential customer's geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000192>**

Customer service power users show be able to add the availability of internet service in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000193>**

Customer service power users show be able to update the availability of internet service in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000194>**

Customer service power users show be able to view the availability of internet service in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000195>**

Customer service power users show be able to query the availability of internet service in an existing/potential customer’s geographic area.

**<SUNROCKET-FA2015-1.0 DB-SERV-000196>**

Customer service power users should be able to add potential customer personal information for sales.

**<SUNROCKET-FA2015-1.0 DB-SERV-000197>**

Customer service power users should be able to update potential customer personal information for sales.

**<SUNROCKET-FA2015-1.0 DB-SERV-000198>**

Customer service power users should be able to delete potential customer information for sales.

**<SUNROCKET-FA2015-1.0 DB-SERV-000199>**

Customer service power users should be able to query potential customer personal information for sales.

**<SUNROCKET-FA2015-1.0 DB-SERV-000200>**

Customer service power users to reset a user password without the need to provide the current password.

**<SUNROCKET-FA2015-1.0 DB-SERV-000201>**

Customer service power user should be able to run reports.

**SUNROCKET-FA2015-1.0 DB-SERV-000202**

The administrative user should be able to run reports.

**<SUNROCKET-FA2015-1.0 DB-SERV-000203>**

The administrative user should be to backup and restore the database.

**<SUNROCKET-FA2015-1.0 DB-SERV-000204>**

The administrative user should be able to reset a user password without the need to provide the current password.

**<SUNROCKET-FA2015-1.0 DB-SERV-000205>**

The administrative user should be able to create a user account.

**<SUNROCKET-FA2015-1.0 DB-SERV-000206>**

The administrative user should be able to remove a user account.

**<SUNROCKET-FA2015-1.0 DB-SERV-000207>**

The administrative user should be able to deactivate a user account.

**<SUNROCKET-FA2015-1.0 DB-SERV-000208>**

The administrative user should be able to create user access privileges.

**<SUNROCKET-FA2015-1.0 DB-SERV-000209>**

The administrative user should be able to modify user access privileges.

**<SUNROCKET-FA2015-1.0 DB-SERV-000210>**

The system must maintain a transaction log. Occasional checkpoints must be recorded in the transaction log at times when all committed transactions are saved to disk.

**<SUNROCKET-FA2015-1.0 DB-SERV-000211>**

The system must allow a user to change his/her system password. User must be required to enter his/her current password and the new password twice before a password change can be made.

**<SUNROCKET-FA2015-1.0 DB-SERV-000212>**

The system must allow weekly routine maintenance to fix and correct any database issues. This should be scheduled for every Sunday between 10pm and 6am central standard time. Daily database maintenance and backup should be performed between 12pm and 2am central standard time.

**<SUNROCKET-FA2015-1.0 DB-SERV-000213>**

The system should support at least 30 seconds worth of data in temporary memory space.

**<SUNROCKET-FA2015-1.0 DB-SERV-000214>**

The system must allow the update of availability (by zip code) of service packages without the need to upgrade web portal or the system database structure

**<SUNROCKET-FA2015-1.0 DB-SERV-000215>**

The system must allow the update of pricing levels of service packages without the need to upgrade web portal or the system database structure.

**<SUNROCKET-FA2015-1.0 DB-SERV-000216>**

The system must allow a customer to create his/her own user account. The system must restrict such accounts to view only general service information and information specific to that customer’s service account.

**<SUNROCKET-FA2015-1.0 DB-SERV-000217>**

The system must allow a full back-up to be performed.

**<SUNROCKET-FA2015-1.0 DB-SERV-000218>**

The system must prevent users from login into database while performing a full backup.

### ***3.2.3 Customer Database***

**<SUNROCKET-FA2015-1.0 DB-CUST-000100>**

Existing customers should be able to login.

**<SUNROCKET-FA2015-1.0 DB-CUST-000101>**

Existing customers should be able to logout.

**<SUNROCKET-FA2015-1.0 DB-CUST-000102>**

Existing customers should be able to add billing information for cable services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000103>**

Existing customers should be able to update billing information for cable services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000104>**

Existing customers should be able to delete billing information for cable services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000105>**

Existing customers should be able to query billing information for cable services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000106>**

Existing customers should be able to view billing information for cable services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000107>**

Existing customers should be able to add billing information for internet services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000108>**

Existing customers should be able to update billing information for internet services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000109>**

Existing customers should be able to delete billing information for internet services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000110>**

Existing customers should be able to query billing information for internet services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000111>**

Existing customers should be able to view billing information for internet services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000112>**

Existing customers should be able to add billing information for phone services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000113>**

Existing customers should be able to update billing information for phone services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000114>**

Existing customers should be able to delete billing information for phone services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000115>**

Existing customers should be able to query billing information for phone services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000116>**

Existing customers should be able to view billing information for phone services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000117>**

Existing customers should be able to exchange equipment for cable customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000118>**

Existing customers should be able to return equipment from cable customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000119>**

Existing customers should be able to exchange equipment for internet customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000120>**

Existing customers should be able to return equipment from internet customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000121>**

Existing customers should be able to exchange equipment for phone customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000122>**

Existing customers should be able to return equipment from phone customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000123>**

Existing customers should be able to schedule service calls.

**<SUNROCKET-FA2015-1.0 DB-CUST-000124>**

Existing customers should be able to re-schedule service calls.

**<SUNROCKET-FA2015-1.0 DB-CUST-000125>**

Existing customers should be able to bundle cable, internet and phone services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000126>**

Existing customers should be able to unbundle cable, internet and phone services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000127>**

Existing customers should be able to initiate an online chat with a customer service representative.

**<SUNROCKET-FA2015-1.0 DB-CUST-000128>**

Existing customers should be able to send an e-mail to customer service.

**<SUNROCKET-FA2015-1.0 DB-CUST-000129>**

Existing customers should be able to view past and current billing information statements.

**<SUNROCKET-FA2015-1.0 DB-CUST-000130>**

Existing customers should be able to view their Vonage package information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000131>**

Existing customers should be able to view their Vonage monthly summary charge information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000132>**

Existing customers should be able to make payments through PayPal.

**<SUNROCKET-FA2015-1.0 DB-CUST-000133>**

Existing customers should be to set up recurring payments through credit card.

**<SUNROCKET-FA2015-1.0 DB-CUST-000134>**

Existing customers should be to set up recurring payments through debit card.

**<SUNROCKET-FA2015-1.0 DB-CUST-000135>**

Existing customers should be to set up recurring payments through automatic electronic fund transfer or savings account.

**<SUNROCKET-FA2015-1.0 DB-CUST-000136>**

Existing customers should be to delete recurring payments through credit card.

**<SUNROCKET-FA2015-1.0 DB-CUST-000137>**

Existing customers should be to delete recurring payments through debit card.

**<SUNROCKET-FA2015-1.0 DB-CUST-000138>**

Existing customers should be to delete recurring payments through automatic electronic fund transfer or savings account.

**<SUNROCKET-FA2015-1.0 DB-CUST-000139>**

Existing customers should be to make one time payments through credit card.

**<SUNROCKET-FA2015-1.0 DB-CUST-000140>**

Existing customers should be to make one time payments through debit card.

**<SUNROCKET-FA2015-1.0 DB-CUST-000141>**

Existing customers should be to make one time payments through automatic electronic fund transfer or savings account.

**<SUNROCKET-FA2015-1.0 DB-CUST-000142>**

Existing customer should be able to make payments by mail.

**<SUNROCKET-FA2015-1.0 DB-CUST-000143>**

Potential customers should be able to become a customer by entering personal information, initialize a credit check and receiving credit approval.

**<SUNROCKET-FA2015-1.0 DB-CUST-000144>**

Potential customers should be able to create a user account on the system and selecting a service package once receiving credit approval.

**<SUNROCKET-FA2015-1.0 DB-CUST-000145>**

Customer service employees should be able to log in the database.

**<SUNROCKET-FA2015-1.0 DB-CUST-000146>**

Customer service employees should be able to logout of the database.

**<SUNROCKET-FA2015-1.0 DB-CUST-000147>**

Customer service employees should be able to add billing information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000148>**

Customer service employees should be able to delete billing information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000149>**

Customer service employees should be able to update billing information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000150>**

Customer service employees should be able to query billing information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000151>**

Customer service employees should be able to view billing information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000152>**

Customer service employees should be able to query billing information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000153>**

Customer service employees should be able to schedule installation.

**<SUNROCKET-FA2015-1.0 DB-CUST-000154>**

Customer service employees should be able to cancel installation.

**<SUNROCKET-FA2015-1.0 DB-CUST-000155>**

Customer service employees should be able to update installation.

**<SUNROCKET-FA2015-1.0 DB-CUST-000156>**

Customer service employees should be able to schedule service moves.

**<SUNROCKET-FA2015-1.0 DB-CUST-000157>**

Customer service employees should be able to update service moves.

**<SUNROCKET-FA2015-1.0 DB-CUST-000158>**

Customer service employees should be able to cancel service moves.

**<SUNROCKET-FA2015-1.0 DB-CUST-000159>**

Customer service employees should be able to stop services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000160>**

Customer service employees should be able to restore services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000161>**

Customer service employees should be able to transfer services

**<SUNROCKET-FA2015-1.0 DB-CUST-000162>**

Customer service employees should be able to query information about the number of referrals credited to account (read-only).

**<SUNROCKET-FA2015-1.0 DB-CUST-000163>**

Customer service employees should be able to view information about customer referrals credited to account (read-only).

**<SUNROCKET-FA2015-1.0 DB-CUST-000164>**

Customer service employees should be able to add cable packages for new customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000165>**

Customer service employees should be able to add cable packages for existing customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000166>**

Customer service employees should be able to add internet packages for new customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000167>**

Customer service employees should be able to add internet packages for existing customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000168>**

Customer service employees should be able to add phone packages for new customer.

**<SUNROCKET-FA2015-1.0 DB-CUST-000169>**

Customer service employees should be able to add phone packages for existing customer.

**<SUNROCKET-FA2015-1.0 DB-CUST-000170>**

Customer service employees should be able to update cable packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000171>**

Customer service employees should be able to update internet packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000172>**

Customer service employees should be able to update phone packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000173>**

Customer service employees should be able to delete cable packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000174>**

Customer service employees should be able to delete internet packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000175>**

Customer service employees should be able to delete phone packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000176>**

Customer service employees should be able to update services bundles for cable, internet and phone packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000177>**

Customer service employees should be able to delete services bundles for cable, internet and phone packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000178>**

Customer service employees should be able to exchange equipment for cable services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000179>**

Customer service employees should be able to exchange equipment for internet services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000180>**

Customer service employees should be able to exchange equipment for phone services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000181>**

Customer service employees should be able to return equipment for cable services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000182>**

Customer service employees should be able to return equipment for internet services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000183>**

Customer service employees should be able to return equipment for phone services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000184>**

Customer service employees should be able to place orders for additional cable services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000185>**

Customer service employees should be able to place orders for additional internet services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000186>**

Customer service employees should be able to place orders for additional phone services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000187>**

Customer service employees should be able to schedule service calls for cable services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000188>**

Customer service employees should be able to schedule service calls for internet services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000189>**

Customer service employees should be able to schedule service calls for phone services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000190>**

Customer service employees should be able to transfer cable services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000191>**

Customer service employees should be able to transfer internet services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000192>**

Customer service employees should be able to transfer phone services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000193>**

Customer service employees should be able to bundle services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000194>**

Customer service employees should be able to unbundle services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000195>**

Customer service users should be able to view past and current billing information statements.

**<SUNROCKET-FA2015-1.0 DB-CUST-000196>**

Customer service power user employees should be able to log in the database.

**<SUNROCKET-FA2015-1.0 DB-CUST-000197>**

Customer service power user employees should be able to logout of the database.

**<SUNROCKET-FA2015-1.0 DB-CUST-000198>**

Customer service power user employees should be able to add customer billing information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000199>**

Customer service power user employees should be able to delete customer billing information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000200>**

Customer service power user employees should be able to update customer billing information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000201>**

Customer service power user employees should be able to query billing information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000202>**

Customer service power user employees should be able to view billing information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000203>**

Customer service power user employees should be able to query billing information.

**<SUNROCKET-FA2015-1.0 DB-CUST-000204>**

Customer service power user employees should be able to schedule installation.

**<SUNROCKET-FA2015-1.0 DB-CUST-000205>**

Customer service power user employees should be able to cancel installation.

**<SUNROCKET-FA2015-1.0 DB-CUST-000206>**

Customer service power user employees should be able to update installation.

**<SUNROCKET-FA2015-1.0 DB-CUST-000207>**

Customer service power user employees should be able to schedule service moves.

**<SUNROCKET-FA2015-1.0 DB-CUST-000208>**

Customer service power user employees should be able to update service moves.

**<SUNROCKET-FA2015-1.0 DB-CUST-000209>**

Customer service power user employees should be able to cancel service moves.

**<SUNROCKET-FA2015-1.0 DB-CUST-000210>**

Customer service power user employees should be able to stop services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000211>**

Customer service power user employees should be able to restore services.

**<SUNROCKET-FA2015-1.0 DB-CUST-000212>**

Customer service power user employees should be able to query information about the number of referrals credited to account (read-only).

**<SUNROCKET-FA2015-1.0 DB-CUST-000213>**

Customer service power user employees should be able to view information about customer referrals credited to account (read-only).

**<SUNROCKET-FA2015-1.0 DB-CUST-000214>**

Customer service power user employees should be able to add cable packages for new customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000215>**

Customer service power user employees should be able to add cable packages for existing customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000216>**

Customer service power user employees should be able to add internet packages for new customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000217>**

Customer service power user employees should be able to add internet packages for existing customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000218>**

Customer service power user employees should be able to add phone packages for new customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000219>**

Customer service power user employees should be able to add phone packages for existing customers.

**<SUNROCKET-FA2015-1.0 DB-CUST-000220>**

Customer service power user employees should be able to update cable packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000221>**

Customer service power user employees should be able to update internet packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000222>**

Customer service power user employees should be able to update phone packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000223>**

Customer service power user employees should be able to delete cable packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000224>**

Customer service power user employees should be able to delete internet packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000225>**

Customer service power user employees should be able to delete phone packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000226>**

Customer service power user employees should be able to add services bundles.

**<SUNROCKET-FA2015-1.0 DB-CUST-000227>**

Customer service power user employees should be able to update services bundles.

**<SUNROCKET-FA2015-1.0 DB-CUST-000228>**

Customer service power user employees should be able to delete services bundles.

**<SUNROCKET-FA2015-1.0 DB-CUST-000229>**

Customer service power user employees should be able to add discounts.

**<SUNROCKET-FA2015-1.0 DB-CUST-000230>**

Customer service power user employees should be able to update discounts.

**<SUNROCKET-FA2015-1.0 DB-CUST-000231>**

Customer service power user employees should be able to delete discounts.

**<SUNROCKET-FA2015-1.0 DB-CUST-000232>**

Customer service power user employees should be able to add discounts.

**<SUNROCKET-FA2015-1.0 DB-CUST-000233>**

Customer service power user employees should be able to update discounts.

**<SUNROCKET-FA2015-1.0 DB-CUST-000234>**

Customer service power user employees should be able to delete discounts.

**<SUNROCKET-FA2015-1.0 DB-CUST-000235>**

Customer service power user employees should be able to query reports.

**<SUNROCKET-FA2015-1.0 DB-CUST-000236>**

Customer service power user employees should be able to view reports.

**<SUNROCKET-FA2015-1.0 DB-CUST-000237>**

Customer service power user employees should be able to add service credits.

**<SUNROCKET-FA2015-1.0 DB-CUST-000238>**

Customer service power user employees should be able to update service credits.

**<SUNROCKET-FA2015-1.0 DB-CUST-000239>**

Customer service power user employees should be able to delete service credits.

**<SUNROCKET-FA2015-1.0 DB-CUST-000240>**

Customer service power user employees should be able to add cable packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000241>**

Customer service power user employees should be able to add internet packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000242>**

Customer service power user employees should be able to add cable packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000243>**

Customer service power user employees should be able to update cable packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000244>**

Customer service power user employees should be able to update internet packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000245>**

Customer service power user employees should be able to update phone packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000246>**

Customer service power user employees should be able to delete cable packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000247>**

Customer service power user employees should be able to delete internet packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000248>**

Customer service power user employees should be able to delete phone packages.

**<SUNROCKET-FA2015-1.0 DB-CUST-000249>**

Customer service power users should be able to view past and current billing information statements.

**<SUNROCKET-FA2015-1.0 DB-CUST-000250>**

Customer service power users should be able to reset a user password without the need to provide the current password.

**<SUNROCKET-FA2015-1.0 DB-CUST-000251>**

The administrative user should be able to run reports.

**<SUNROCKET-FA2015-1.0 DB-CUST-000252>**

The administrative user should be to backup and restore the database.

**<SUNROCKET-FA2015-1.0 DB-CUST-000253>**

The administrative user should be able to reset a user password without the need to provide the current password.

**<SUNROCKET-FA2015-1.0 DB-CUST-000254>**

The administrative user should be able to create a user account.

**<SUNROCKET-FA2015-1.0 DB-CUST-000255>**

The administrative user should be able to remove a user account.

**<SUNROCKET-FA2015-1.0 DB-CUST-000256>**

The administrative user should be able to deactivate a user account.

**<SUNROCKET-FA2015-1.0 DB-CUST-000257>**

The administrative user should be able to create user access privileges.

**<SUNROCKET-FA2015-1.0 DB-CUST-000258>**

The administrative user should be able to modify user access privileges.

**<SUNROCKET-FA2015-1.0 DB-CUST-000259>**

The system must maintain a transaction log. Occasional checkpoints must be recorded in the transaction log at times when all committed transactions are saved to disk.

**<SUNROCKET-FA2015-1.0 DB-CUST-000260>**

The system must allow a user to change his/her system password. User must be required to enter his/her current password and the new password twice before a password change can be made.

**<SUNROCKET-FA2015-1.0 DB-CUST-000261>**

The system must allow weekly routine maintenance to fix and correction of any database issues. This should be scheduled for every Sunday between 10pm and 6am central standard time. Daily database maintenance and backup should be performed between 12pm and 2am central standard time.

**<SUNROCKET-FA2015-1.0 DB-CUST-000262>**

The system should support at least 30 seconds worth of data in temporary memory space.

**<SUNROCKET-FA2015-1.0 DB-CUST-000263>**

The system must allow the GSU system to interface with Vonage to retrieve monthly customer service records by phone number.

**<SUNROCKET-FA2015-1.0 DB-CUST-000264>**

The system must allow the GSU system to interface with Vonage to retrieve monthly billing information by phone number.

**<SUNROCKET-FA2015-1.0 DB-CUST-000265>**

The system must allow a full back-up to be performed.

**<SUNROCKET-FA2015-1.0 DB-CUST-000266>**

The system must prevent users from login into database while performing a full backup.

## Operations, Administration, Maintenance and Provisioning (OAM&P)

The customer has a duplex system (i.e. mirror system that can be switched in less than 30 seconds so all data can be updated in real time and in sync at all times. To handle fail over cases, the system will support at least 30 seconds worth of data in temporary memory. This is estimated as 5000 customer records.

To insure the integrity of the database, there will be a weekly routine maintenance run to fix and correct any database issues. This is scheduled for every Sunday between 10PM and 6AM central standard time. Daily database maintenance and backup will occur between 12PM and 2AM central standard time.

## Security and Fraud Prevention

A database security and authorization subsystem will ensure the security portions of the database against unauthorized access. Discretionary security mechanisms such as grant privileges will be implemented to access specific data files.

Mandatory security mechanisms such as multilevel security and role based security have been built into the user requirements of each database.

## Release and Transition Plan

Prior to deployment a timeline will be set in place to test the build procedures, schedule test and build activities, assign resources, prepare and build test environments. Pilot implementation will include surveying end users on the effectiveness of deployment. Once this is done, release dates will be given.

Explain how the feature will be deployed to customer sites, or from current release to newer release.

# ***Design Description***

The system will use transaction logging. Logs will be saved to a separate disk. Checkpointing will be done every 30 seconds, at which time all changes from committed transactions since the last checkpoint will be saved to the database. The system will use deferred update, so no changes will be made until the checkpointing occurs. Locking will be at the record level. Transaction isolation levels are set for each individual transaction so those that may cause concurrency issues are set as serializable while lower risk transactions are set at a lower isolation level.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| User | | | | | | |
| **User\_ID** | F\_Name | M\_Init | L\_Name | Email\_Add | Role | Password |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Customer | | | | | | | | |
| **Acct\_No** | Acct\_OpenDate | Street\_Add | City | State | Zip\_Code | Ref\_count | Phone\_No | User\_ID |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Employee | | | | | | |
| **Employee\_ID** | Location | Hire\_Date | Term\_Date | Role | Telephone\_Ext |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Billing Transactions | | | | | | | |
| **Bill\_T\_ID** | Trans\_Type | Trans\_Date | Trans\_Amount | Explanation | Employee\_ID | Acct\_NO | Package\_ID |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Cust\_Contract | | | | | |
| **Cust\_cont\_ID** | Activate\_Date | Contract\_Period | Acct\_No | Package\_ID | Contract\_Length |

|  |  |  |
| --- | --- | --- |
| Package | | |
| **Package\_ID** | Package\_Name | Pbase\_Price |

|  |  |  |
| --- | --- | --- |
| Service | | |
| **Service\_ID** | Service\_type | Service\_Name |

|  |
| --- |
| Availability |
| **Zipcode** |

|  |  |
| --- | --- |
| Package\_Service | |
| **Package\_ID** | **Service\_ID** |

|  |  |
| --- | --- |
| **Monthly\_Discount** | |
| Contract\_Length | Monthly\_Discount |

|  |
| --- |
| Role |
| **Role** |

|  |
| --- |
| **Referral\_Discount** |
| **Referral\_Pct** |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Calling\_Records** | | | | | | | |
| **CR\_ID** | Call\_Date | Start\_Time | End\_Time | Phone\_Num | Call\_Charge | Phone\_Dest | Dest\_Country |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Employee\_PS** | | | | | | | | |
| **Emp\_ID** | F\_Name | M\_Init | L\_Name | Location | Hire\_Date | Term\_Date | Telephone\_Ext | Email\_Add |

There are three subsystems in the design:

* Services
* Billing
* System Administration/Maintenance

The most critically intertwined subsystems are the services and billing subsystems. As all billing is based on services rendered, the billing subsystem relies on information entered in and maintained by the operations of the services subsystem. The connection happens mainly through the relationship between the customer contract, package and package service tables and through the service tables which include billing transactions, referral discounts and monthly discount tables.

The System Administration/Maintenance subsystem has an impact on both of the other systems in that it guarantees the security and accessibility of access to the operations of the two other subsystems.

# **Internal/external Interface Impacts and Specification**

The Customer database interfaces with Vonage. Vonage interfaces customer billing information. However, our database will need to interface phone package subscribed, monthly service charge information. The customer phone number is the primary key to retrieve billing information and calling records.

The customer database should also include the capability to interface with PayPal. Our database should maintain payment type/method and monthly summary charging info, customer name and related cable company account number. This will be used to retrieve detailed records from PayPal’s payment database server.

### The System Administration/Maintenance subsystem has one outside feature access. It accesses a separate Employee database which interfaces through PeopleSoft. This allows access a subset of employee records for purposes of synchronization.

# **Design Units Impacts**

## Services Subsystem

**Records from Vonage Interface**

**INPUT:** Customer Phone Number

**OUTPUT:** Calling Records {Call Date, Start Time, End Time, Call Charge, Destination Phone Number, Destination Country} for Customer

**STEPS:** 1) System obtains a customer phone number.

2) System accesses the Vonage database.

3) System downloads current calling records for customer from Vonage database.

4) System adds these calling records to the calling records table in the local database.

## Billing Subsystem

**Operation: Viewing a Billing Statement**

**INPUT:** User ID

Password

**OUTPUT:** Customer Account Number

Billing Transaction Information (Date, Type {“credit”, “debit”}, Amount, Notes)

Total Amount Due

**STEPS:** 1) Customer enters User ID and Password.

2) Customer selects statement period and clicks “Get Billing Statement” button.

3) System checks customer credentials (User ID, Password) and looks up Account Number.

4) System retrieves all billing transaction records (Date, Type, Amount, Notes) for the period and displays them.

5) System calculates the statement total and displays this.

**Operation: Entering A Payment**

**INPUT:** User ID

Password

Customer Account Number

Payment Information (Amount, Notes)

**OUTPUT:** Payment Information (Date, Amount, Notes, Employee ID) is added to BILLING\_TRANSACTION table

**STEPS:** 1) Employee enters User ID and Password.

2) System checks employee credentials (User ID, Password).

3) Employee enters customer account number.

4) System displays information about customer (Name {First Name, Middle Initial, Last Name}, Address {City, State, Zip Code}, E-Mail Address and Telephone Number)

5) System requests employee to confirm that this is the customer whose payment is to be entered.

6) Employee clicks “Yes” button to confirm. (If Employee clicks “No” button, operation returns to Step 3.)

7) Employee enters Payment Amount and Notes, if any.

8) Employee clicks “Submit” button to add payment.

9) System adds a payment record (with the data entered above and Date {current date} and Employee ID) into BILLING\_TRANSACTION table.

**Operation: Calculating A Customer’s Statement Balance**

**INPUT:** Customer Account Number

**OUTPUT:** Account Balance

**STEPS:** 1) System retrieves a customer Account Number.

2) System retrieves all debit records in customer’s account for the current period.

3) System calculates the sum of these debit records as the account balance.

4) System retrieves number of referrals credited to the customer.

5) System discounts account balance by the number of referrals. (Maximum discount: 100%)

6) System retrieves all credit record in customer’s account for the current period.

7) System calculates the sum of these credit records.

8) System takes the difference between the account balance and the sum of credits as the new account balance. (If the new account balance is negative, it is considered an amount due {debit}; if positive, an overpayment {credit}.)

## System/Administration Subsystem

The System Administration/Maintenance subsystem manages all aspects of the feature that having to do with allowing and controlling access to the system. The subsystem uses both the DBMS security features and coding to allow permissions to appropriate users and to restrict user access.

### The System Administration/Maintenance subsystem has one outside feature access. It accesses a separate Employee database which interfaces through PeopleSoft. This allows access a subset of employee records for purposes of synchronization.

# **Open Issues**

Relationship to Other Features

Assumptions and Dependencies

Future Enhancements

# **Acknowledgements**

This section should include a reference to prior authors, etc. and others who have assisted in the generation of this document.

# **References**

1. Elmarsi, Navathe, Fundamentals of Database Systems, page 48, fig 2.7
2. Chen*,* Project Description CPSC 8845, pages 2-3
3. Oracle Corp*, Oracle Security Guide,* docs.oracle.com

# **Appendices**