Instructions:

1. When starting a new document, modify page and document headers with the case number.

2. Name the file “Case xxx *Project Name Tech Spec*.docx” using the same project name specified in the name of the BRD and Functional Spec files for the case.

3. Store the document in SharePoint folder.

4. When two or more options are separated by a slash (“/”), delete the option(s) that don’t apply (e.g. from “Object/Object.Property/Object.Method” to “Object.Property”).

5. When updating the document, add a line to the Document History table indicating what changed.

6. When done with the first draft, delete any unused sections.

7. Delete any italicized instructions before finishing the document (e.g. “*(Repeat bulleted sections as necessary per task…)*”).

8. Always update the table of contents before finishing a document or revision (right-click on the table and select “Update Field”, then “Update Entire Table”).

9. Never estimate any task’s duration to be less than .25 hours.

10. As tasks are completed, update the “Actual” hours taken to complete the task.

11. If the design changes, update the specification to reflect those changes. If a new task must be added, set its “Estimate” to zero hours (since it wasn’t originally estimated).

12. In the “Objects” and “UI Modules” sections, group multiple objects under the same file they belong to (i.e. don’t duplicate the “VS Project Name” and “File Name” bullets for multiple objects to be modified within them). Insert a blank line to separate the tables defining the actual tasks. If there are a number of simple properties that need to be added to an object, use just one table and list all the property names in the table’s first line following the object name.

13. Delete this instruction page before distributing the document for the first time.

Case Clientelling Technical Specification

**Project Name:** **Clientelling**

**Client Name:**

**Affected Version(s):**

**Project Summary:**

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# Document History

|  |  |  |  |
| --- | --- | --- | --- |
| **Ver.** | **Date** | **Author** | **Revision** |
| 1.0 | 9/26/2016 | Leon | First draft |

# Technical Specification

This section specifies the technical design for this project.

## Database

This section specifies the changes which will be made to the database as part of this project.

### New Tables

The following tables will be added:

crt.ACTIVITYASSOCIATIONS

### Table Changes

The following table changes will be made:

| **Table Name** | **Column Name** | **Data Type** | **Default**  **Value** | **Add, Chg. or Del.?** |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

### New Stored Procedures

The following stored procedures will be added:

| **Stored Proc Name** | **Est. (Hrs.)** | **Actual**  **(Hrs.)** | **Description of New Stored Proc** |
| --- | --- | --- | --- |
|  |  |  |  |

### Stored Procedure Changes

The following stored procedure changes will be made:

| **Stored Proc Name** | **Est. (Hrs.)** | **Actual**  **(Hrs.)** | **Description of Change** |
| --- | --- | --- | --- |
|  |  |  |  |

### New Functions

The following functions will be added:

| **Function Name** | **Est. (Hrs.)** | **Actual**  **(Hrs.)** | **Description of New Function** |
| --- | --- | --- | --- |
|  |  |  |  |

### Function Changes

The following function changes will be made:

| **Function Name** | **Est. (Hrs.)** | **Actual (Hrs.)** | **Description of Change** |
| --- | --- | --- | --- |
|  |  |  |  |

### New Jobs

The following jobs will be added:

| **Job Name** | **Est. (Hrs.)** | **Actual (Hrs.)** | **Description of New Job** |
| --- | --- | --- | --- |
|  |  |  |  |

### Job Changes

The following function changes will be made:

| **Job Name** | **Est. (Hrs.)** | **Actual (Hrs.)** | **Description of Change** |
| --- | --- | --- | --- |
|  |  |  |  |

### Data Changes

The following data changes will be made:

| **Table Name** | **Affected Script(s)** | **Est. (Hrs.)** | **Actual**  **(Hrs.)** | **Description of Change** |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

## Objects

This section specifies the changes which will be made to the various classes, interfaces,XSDs, and other objects as part of this project.

*(Repeattable sections as necessary per task for a given file…)*

* **VS Project Name:** 
  + **File Name: Activity.cs**

|  |  |
| --- | --- |
| **Object/**  **Object.Property/**  **Object.Method/**  **Object.Event:** |  |
| **Action:** | New |
| **Estimate (Hours):** |  |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** |  |
| **Comment:** |  |
| **Task Description:** |  |

* **VS Solution Name: CommerceRuntimeSamples**
  + **File Name: Activity.cs**

|  |  |
| --- | --- |
| **Object** | Activityy |
| **Action:** | New |
| **Estimate (Hours):** | 0.25 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | Activity entity |
| **Task Description:** | Implementing a new CRT entity and use it in new CRT service |

* + **File Name: ActivityAssociations.cs**

|  |  |
| --- | --- |
| **Object** | **ActivityAssociations** |
| **Action:** | New |
| **Estimate (Hours):** | 0.25 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | **ActivityAssociations** entity |
| **Task Description:** | Implementing a new CRT entity and use it in new CRT service |

* + **File Name: ActivityAssociationsDataService.cs**

|  |  |
| --- | --- |
| **Object** | **ActivityAssociationsDataService** |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | **CRT service** |
| **Task Description:** | Implementing a new CRT service that handles multiple different new requests |

* + **File Name: ActivityDataService.cs**

|  |  |
| --- | --- |
| **Object** | **ActivityDataService** |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | **CRT service** |
| **Task Description:** | Implementing a new CRT service that handles multiple different new requests |

* + **File Name: GetActivitiesDataRequest.cs**

|  |  |
| --- | --- |
| **Object** | **GetActivitiesDataRequest** |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | to implement a new CRT service. First, new request and response classes need to be created. |
| **Task Description:** | The new Request type must implement [DataContract] and [DataMember] attributes in order for serialization to work. |

* + **File Name: GetActivitiesDataResponse.cs**

|  |  |
| --- | --- |
| **Object** | **GetActivitiesDataResponse** |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | to implement a new CRT service. First, new request and response classes need to be created. |
| **Task Description:** | The new Request type must implement [DataContract] and [DataMember] attributes in order for serialization to work. |

* + **File Name: CloseActivityDataRequest.cs**

|  |  |
| --- | --- |
| **Object** | **CloseActivityDataRequest** |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | to implement a new CRT service. First, new request and response classes need to becreated. |
| **Task Description:** | The new Request type must implement [DataContract] and [DataMember] attributes in order for serialization to work. |

* + **File Name: CreateActivityDataRequest.cs**

|  |  |
| --- | --- |
| **Object** | **CreateActivityDataRequest** |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | to implement a new CRT service. First, new request and response classes need to be created. |
| **Task Description:** | The new Request type must implement [DataContract] and [DataMember] attributes in order for serialization to work. |

* + **File Name: CreateActivityDataResponse.cs**

|  |  |
| --- | --- |
| **Object** | **CreateActivityDataResponse** |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | to implement a new CRT service. First, new request and response classes need to be created. |
| **Task Description:** | The new Request type must implement [DataContract] and [DataMember] attributes in order for serialization to work. |

* + **File Name: GetActivityAssociationsDataRequest.cs**

|  |  |
| --- | --- |
| **Object** | **GetActivityAssociationsDataRequest** |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | to implement a new CRT service. First, new request and response classes need to be created. |
| **Task Description:** | The new Request type must implement [DataContract] and [DataMember] attributes in order for serialization to work. |

* + **File Name: GetActivityAssociationsDataResponse.cs**

|  |  |
| --- | --- |
| **Object** | **GetActivityAssociationsDataResponse** |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | to implement a new CRT service. First, new request and response classes need to be created. |
| **Task Description:** | The new Request type must implement [DataContract] and [DataMember] attributes in order for serialization to work. |

* + **File Name: Utils.cs**

|  |  |
| --- | --- |
| **Object** | **Utils** |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | Some help method |
| **Task Description:** | Create static method that can be reused. |

* + **File Name: App.config**

|  |  |
| --- | --- |
| **Object** | **App.config** |
| **Action:** | Change |
| **Estimate (Hours):** | 0.1 |
| **Actual (Hours):** | 0.1 |
| **Unit Test Method(s):** | no |
| **Comment:** | Fix bug |
| **Task Description:** | Change the configuration so that the CommerceRuntime Test Host can test the new CRT service. |

* + **File Name: commerceruntime.config**

|  |  |
| --- | --- |
| **Object** | **c**ommerceruntime.config |
| **Action:** | Change |
| **Estimate (Hours):** | 0.1 |
| **Actual (Hours):** | 0.1 |
| **Unit Test Method(s):** | no |
| **Comment:** | Update the commerceRuntime.Config file’s composition section in order to register the CRT service |
| **Task Description:** | Change the configuration so that the test program can run normally. |

* + **File Name: Program.cs**

|  |  |
| --- | --- |
| **Object** | **Program** |
| **Action:** | Change |
| **Estimate (Hours):** | 0.1 |
| **Actual (Hours):** | 0.1 |
| **Unit Test Method(s):** | no |
| **Comment:** | Create new test method to test CRT service |
| **Task Description:** | Test **ActivityDataService and ActivityAssociationsDataService** |

* **VS Solution Name: RetailServer.Extensions.StoreHoursSample**
  + **VS Project Name: RetailServer.Extensions.StoreHoursSample**
  + **File Name: ActivityAssociationsController.cs**

|  |  |
| --- | --- |
| **Object** | ActivityAssociationsController |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | To fetch the data, A new RetailServer controller makes sense, and all the low-level work is done in the CRT (new entity, request, response, service). |
| **Task Description:** | Adding a new simple controller for entity |

* + **File Name: ActivityController.cs**

|  |  |
| --- | --- |
| **Object** | ActivityController |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | To fetch the data, A new RetailServer controller makes sense, and all the low-level work is done in the CRT (new entity, request, response, service). |
| **Task Description:** | Adding a new simple controller for entity |

* + **File Name: CustomizedEdmModelFactory.cs**

|  |  |
| --- | --- |
| **Object** | CustomizedEdmModelFactory |
| **Action:** | New |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | For any changes to the APIs to RetailServer, two steps to be done: 1. The new action or controller needs to be implemented, and 2. The model factory needs to be overridden, on order to add the new corresponding metadata. |
| **Task Description:** | override The model factory |

* **VS Project Name: Proxies.RetailProxy**
  + **File Name: ActivityAssociationsManager.cs**

|  |  |
| --- | --- |
| **Object** | ActivityAssociationsManager |
| **Action:** | new |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | Add new manager class in the Adapter folder and call CRT service from that manager. |
| **Task Description:** | Add ActivityAssociationsManager class in the Adapter folder and call ActivityAssociations CRT service from the manager.. |

* + **File Name: ActivityManager.cs**

|  |  |
| --- | --- |
| **Object** | ActivityManager |
| **Action:** | new |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | Add new manager class in the Adapter folder and call CRT service from that manager. |
| **Task Description:** | Add ActivityManagerclass in the Adapter folder and call Activity CRT service from the manager.. |

* **VS Project Name: RetailServer.Extensions.TestClient**
  + **File Name: MainForm.cs**

|  |  |
| --- | --- |
| **Object** | MainForm.cs |
| **Action:** | Change |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | Use RetailServer Test Client to verify customizations in the areas of Channel database, RTS, CRT, or RetailServer |
| **Task Description:** | Create test methods to verify Retailserver . |

## UI Modules

This section specifies the changes which will be made to the UI as part of this project.

*(Repeat table sections as necessary per task for a given file…)*

* **VS Project Name:**
  + **File Name:**

|  |  |
| --- | --- |
| **Object/Object.Property/Object.Method/Object.Event:** |  |
| **Action:** | New/Change/Delete |
| **Estimate (Hours):** |  |
| **Actual (Hours):** |  |
| **Comment:** |  |
| **Task Description:** |  |
| **Screen Shot:** |  |

* **VS Solution Name: CloudPos**
  + **VS Project Name: Pos.Extension.StoreHoursSample**
  + **File Name: IExtendedChannelManager.cs**

|  |  |
| --- | --- |
| **Object** | IExtendedChannelManager |
| **Action:** | Change |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | To use the new retailServer API, It needs an a Manager that that extend Commerce.Model.Managers.RetailSerer.ChannelManager . |
| **Task Description:** | Adding new methods to invoke ReatilServer APIs. |

* + **VS Project Name: Pos.ViewModels**
  + **File Name: ShowJournalViewModel.ts**

|  |  |
| --- | --- |
| **Object** | IExtendedChannelManager |
| **Action:** | Change |
| **Estimate (Hours):** | 1 |
| **Actual (Hours):** |  |
| **Unit Test Method(s):** | no |
| **Comment:** | Create methods to retrieve data. |
| **Task Description:** | Adding new methods to invoke ReatilServer APIs. |

# Project Workflow

The project will be worked on in the following order:

# Total Estimated Hours

Total hours of all the above estimates:

*(Enter the total into OnTime for this incident/feature…)*

# Total Actual Hours

Total hours spent creating technical specification:

| **Date** | **Name** | **Hours** |
| --- | --- | --- |
|  |  |  |

Total hours spent on all the tasks in the technical specification:

Total hours spent on system testing and rework:

Total hours spent on project:

# Future Considerations

*(If any…)*